

PROJECT MANUAL

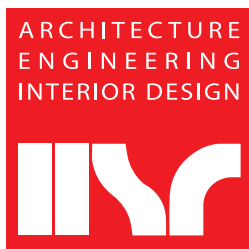
February 2026

Western Technical College Sparta Public Safety Training Sim City

La Crosse, Wisconsin

Western
Technical College

HSR No: 25039



HSR Associates, Inc.

100 Milwaukee Street

La Crosse, WI 54603

608.784.1830 Fax: 608.782.5844

www.hsrassociates.com

Page Intentionally Left Blank

**SECTION 00 01 01
PROJECT MANUAL TITLE PAGE**

PROJECT: WESTERN TECHNICAL COLLEGE
SPARTA PUBLIC SAFETY TRAINING SIM CITY
11177 COUNTY HWY A
SPARTA, WISCONSIN 54656
PROJECT NO.: 25039
DATE OF PROJECT MANUAL: FEBRUARY 2026

OWNER: WESTERN TECHNICAL COLLEGE
PHYSICAL PLANT OFFICE
505 9TH STREET NORTH
LA CROSSE, WISCONSIN 54601

ARCHITECT/ HSR ASSOCIATES, INC.
ENGINEER: 100 MILWAUKEE STREET
LA CROSSE, WI 54603
TEL: 608-784-1830

PROJECT MANAGER	DOUG RAMSEY	608-785-4710
PROJECT ARCHITECT	MICHELLE MALAND	608-785-4720
JOB CAPTAIN	DAVE HANNU	608-785-4732
SPECIFICATIONS	TOBIN FAUCHEUX	608-785-4717
ELECTRICAL	CHRIS CRANDALL	608-785-4737

DESIGN CONSULTANTS:

CIVIL:

POINT OF BEGINNING, INC.
4941 KIRSHLING COURT
STEVENS POINT, WISCONSIN 54481
MELISSA KLUCK
melissak@pobinc.com
TEL: 715-344-9999

STRUCTURAL:

RAMAKER & ASSOCIATES, INC.
855 COMMUNITY DRIVE
SAUK CITY, WISCONSIN 53583
DOUGLAS REED
douglas.reed@ramaker.com
TEL: 262-317-1388

END OF DOCUMENT

Page Intentionally Left Blank

**DOCUMENT 00 01 10
TABLE OF CONTENTS**

Introductory Information

00 01 01	PROJECT TITLE PAGE
00 01 10	TABLE OF CONTENTS

Bidding Requirements

00 11 13	ADVERTISEMENT FOR BIDS
00 11 15	WESTERN PREQUALIFIED CONTRACTORS 2026
00 21 13	INSTRUCTIONS TO BIDDERS AIA-A701
00 22 13	SUPPLEMENTARY INSTRUCTIONS TO BIDDERS
00 41 00	BID FORM
00 43 25	SUBSTITUTION REQUEST FORM – DURING PROCUREMENT
00 45 00	PROCUREMENT REPRESENTATIONS AND CERTIFICATIONS
00 45 13	CERTIFICATE OF ORGANIZATION AND AUTHORITY
00 45 19	NON-COLLUSIVE AFFIDAVIT
00 45 33	CERTIFICATION OF NON-SEGREGATED FACILITIES

Contracting Requirements

00 52 13	AGREEMENT FORMS AIA-A101
00 60 00	PROJECT FORMS
00 61 13.13	PERFORMANCE BOND FORM
00 61 13.16	PAYMENT BOND FORM
00 63 25	SUBSTITUTION REQUEST FORM – DURING CONSTRUCTION
00 64 00	SALES AND USE TAX FORM
00 65 19.19	CONSENT OF SURETY TO FINAL PAYMENT

00 72 00	GENERAL CONDITIONS AIA-A201
00 73 00	SUPPLEMENTARY CONDITIONS
00 73 16	INSURANCE REQUIREMENTS
00 73 17	BOND REQUIREMENTS

General Requirements

Division 1 – General Requirements

<u>Section</u>	<u>Title</u>
01 10 00	Summary
01 20 00	Price and Payment Procedures
01 22 00	Unit Prices
01 23 00	Alternates
01 25 00	Substitution Procedures
01 30 00	Administrative Requirements
01 40 00	Quality Requirements
01 50 00	Temporary Facilities and Controls
01 60 00	Product Requirements
01 70 00	Execution and Closeout Requirements
01 78 00	Closeout Submittals

Facility Construction

<u>Section</u>	<u>Title</u>
-----------------------	---------------------

Division 2 – Existing Conditions [Not Used]

Division 3 – Concrete

<u>Section</u>	<u>Title</u>
03 30 00	Cast-In-Place Concrete

Division 4 – Masonry [Not Used]

Division 5 – Metals

<u>Section</u>	<u>Title</u>
05 50 00	Metal Fabrications

Division 6 – Wood, Plastics and Composites

<u>Section</u>	<u>Title</u>
06 10 00	Rough Carpentry
06 17 53	Shop-Fabricated Wood Trusses
06 41 00	Architectural Wood Casework

Division 7 – Thermal and Moisture Protection

<u>Section</u>	<u>Title</u>
07 21 00	Thermal Insulation
07 25 00	Weather Barriers
07 31 13	Asphalt Shingles
07 41 13	Metal Roof Panels
07 42 13	Metal Wall Panels
07 46 33	Plastic Siding
07 62 00.01	Sheet Metal Flashing and Trim for Residential Buildings
07 92 00	Joint Sealants

Division 8 – Openings

<u>Section</u>	<u>Title</u>
08 11 13	Hollow Metal Doors and Frames
08 31 00	Access Doors and Panels
08 36 13	Sectional Doors
08 43 13	Aluminum-Framed Storefronts
08 71 00	Door Hardware
08 80 00	Glazing

Division 9 – Finishes

<u>Section</u>	<u>Title</u>
09 91 00	Site Painting

Division 10 – Specialties

<u>Section</u>	<u>Title</u>
10 22 43	Fabricated Sliding Partitions

Division 11 – Equipment [Not Used]

Division 12 – Furnishings

<u>Section</u>	<u>Title</u>
12 36 00	Countertops

Division 13 – Special Construction [Not Used]

Division 14 – Conveying Equipment [Not Used]

Facility Services

Division 21 – Fire Suppression: [Not Used]

Division 22 – Plumbing: [Not Used]

Division 23 – HVAC: [Not Used]

Division 26 – Electrical: [See Table of Contents at the start of Division 26]

Division 27 – Communications: [Not Used]

Division 28 – Electronic Safety and Security: [Not Used]

Site and Infrastructure

Division 31 – Earthwork

<u>Section</u>	<u>Title</u>
31 10 00	Site Clearing
31 20 00	Earth Moving
31 25 00	Erosion Control

Division 32 – Exterior Improvements

<u>Section</u>	<u>Title</u>
32 11 23	Aggregate Base Courses
32 12 16	Asphalt Paving
32 13 13	Portland Cement Concrete Paving
32 17 23	Pavement Markings
32 92 00	Turf and Grasses

Division 33 – Utilities

<u>Section</u>	<u>Title</u>
33 11 00	Water Distribution
33 41 00	Storm Utility Drainage Piping

END OF DOCUMENT 00 01 10

Page Intentionally Left Blank

**SECTION 00 11 13
ADVERTISEMENT FOR BIDS**

Sealed bids for the construction of:

**WESTERN TECHNICAL COLLEGE
SPARTA PUBLIC SAFETY TRAINING SIM CITY
11177 COUNTY HWY A
SPARTA, WISCONSIN 54656**

will be received by:

**WESTERN TECHNICAL COLLEGE
PHYSICAL PLANT OFFICE
505 9TH STREET NORTH
LA CROSSE, WISCONSIN 54601
GENE McCURDY - DIRECTOR, FACILITIES**

until 2:00pm, March 24, 2026, after which they will be opened publicly and read aloud. Bids received after the time set for receipt of bids will not be accepted. Bids will not be accepted via electronic delivery. Bids will not be accepted from prime contractors that are not pre-qualified through the Owner's annual pre-qualification process.

In General the work includes but is not limited to construction of a simulated city for public safety training. Facility construction work includes erecting 1 (or 2 with alternate) residential style and 3 (or 4 with alternate) commercial style buildings. Work includes concrete, wood framing, wood trusses, wood casework, fabricated sliding partitions, hollow metal doors, aluminum storefront framed windows, polycarbonate glazing, and sectional doors. There is no plumbing. There is no HVAC. Electrical work includes electrical power and lighting. Site work includes earthwork, asphalt and concrete paving, water utility, stormwater, and turf.

All Work performed under this Contract shall have a 2 year Contractor obligation as specified in Section 00 73 00 Article 12.

Lump-sum Bids will be received on a SINGLE PRIME CONSTRUCTION CONTRACT FOR THE ENTIRE WORK including plumbing, fire protection, mechanical and electrical work.

The Project Drawings, Project Manual and other Bidding Documents may be examined at the following locations:

AE's Office: HSR ASSOCIATES, INC.
100 MILWAUKEE STREET
LA CROSSE, WI 54603
608-784-1830

Builder's Exchanges: LA CROSSE, WI
NORTHWEST REGIONAL (EAU CLAIRE/CHIPPEWA FALLS)
WAUSAU, WI
BUILDERS EXCHANGE OF WISCONSIN (APPLETON)
MINNEAPOLIS, MN

ROCHESTER, MN
CONSTRUCTCONNECT
DODGE DATA & ANALYTICS (WEST ALLIS, WI)

Electronic Bidding Documents (.pdf) will be available from HSR Associates, Inc. via Sharefile electronic distribution and will be distributed to the listed Builders Exchanges. Electronic versions of addenda will be distributed via the same systems.

Hardcopy Bidding Documents may be picked up at HSR Associates' office. Bidders may request shipment of hardcopies by sending a check made out to HSR Associates in the amount of \$25.00. The shipping fee will not be refunded and must be received prior to shipment.

HSR Associates is responsible for distribution of addenda only to those who have requested project documents from HSR in formats described above.

HSR Associates will make AutoCAD files available to the Contractor following award of contract.

HSR Associates maintains a plan holder list at www.hsrassociates.com. This list includes only those who have requested plans from HSR and those who have requested to be added our list.

Bid Security in the amount of five percent (5%) of the maximum amount of the Bid must accompany each Bid as described in the Project Manual, Instructions to Bidders.

The Owner reserves the right to waive irregularities and to reject any or all Bids. Bids may only be withdrawn in accordance with the Project Manual, Instructions to Bidder

A non-mandatory pre-bid meeting will be conducted by the Owner and Architect/Engineer to answer questions and to enable bidders to examine conditions at the Project Site. Pre-Bid meeting will occur at **1:00 pm March 11, 2026** at the Main Building of the WTC Sparta Campus.

By: Gene McCurdy Title: Director, Facilities

Publish Date: Weeks of March 2, 2026 and March 9, 2026, La Crosse Tribune.

END OF DOCUMENT 00 11 13

DOCUMENT 00 11 15
PREQUALIFIED CONTRACTORS

THE FOLLOWING LIST REPRESENTS PRE-QUALIFIED PRIME CONTRACTORS FOR WESTERN TECHNICAL COLLEGE 2026 PROJECTS:

1. Altmann Construction Company, Inc.
 - a. 5921 Plover Road, Wisconsin Rapids WI 54494
 - b. Contact: Tom Altmann
 - c. Phone: 715-421-2550
 - d. Email: altmann@altmannconstruction.com
2. B & B Electric, Inc.
 - a. 1303 Western Ave, Eau Claire WI 54703
 - b. Contact: Eric Fanetti
 - c. Phone: 715-832-1676
 - d. Email : ef@b-belectric.com
3. Bernie Buchner, Inc.
 - a. 224 Causeway Blvd, La Crosse WI 54603
 - b. Contact: Ryan Deml
 - c. Phone: 608-784-9000
 - d. Email: ryandeml@berniebuchnerinc.com
4. BMS CAT
 - a. 5515 W Florist Ave., Milwaukee WI 53218
 - b. Contact: Lila Kothari
 - c. Phone: 866-950-5317
 - d. Email: lkothari@bmsmanagement.com
5. Borton Construction, Inc.
 - a. 2 Copeland Ave, Suite 201, La Crosse WI 54603
 - b. Contact: Caleb Carpenter
 - c. Phone: 608-779-0400
 - d. Email: calebcarpenter@bortonconstruction.com
6. Brennan Construction of MN, Inc.
 - a. 124 Walnut St. Ste 340, Mankato MN 56001
 - b. Contact: Brian Barnett
 - c. Phone: 507-625-5417
 - d. Email: bbarnett@bcofmn.com
7. C.D. Smith Construction, Inc.
 - a. 333 Front St N Ste 701, La Crosse WI 54601
 - b. Contact: Jasen Anhalt
 - c. Phone: 920-924-2900
 - d. Email: janhalt@cdsmith.com

8. Fahrner Asphalt Sealers, LLC.
 - a. 2800 Mecca Dr. Plover, WI 54467
 - b. Contact: Jeff Sheehan
 - c. Phone: 800-332-3360
 - d. Email: jeff.sheehan@fahrnerasphalt.com
9. Five Star Telecom, Inc.
 - a. 5136 Mormon Coulee Rd. La Crosse, WI 54601
 - b. Contact: Andy Smith
 - c. Phone: 608-796-9088
 - d. Email: asmith@5startel.com
10. Fowler & Hammer, Inc.
 - a. 313 Monitor Street La Crosse, WI 54603
 - b. Contact: Vittoria Storlie
 - c. Phone: 608-782-6849
 - d. Email: vstorlie@fowlerhammer.com
11. Hoeft Builders, Inc.
 - a. 5410 Stevens Prky Ste. 100 Eau Claire, WI 54701
 - b. Contact: Luke Rykal
 - c. Phone: 715-833-1761
 - d. Email: lrykal@hoeftbuilders.com
12. Hooper Corporation
 - a. 950 Pederson Crossing Blvd DeForest, WI 53532
 - b. Contact:
 - c. Phone: 608-249-0451
 - d. Email: bidmechanical@hoopercorp.com
13. Immel Construction
 - a. 2601 Development Drive Green Bay, WI 54311
 - b. Contact: Paul Martzke
 - c. Phone: 920-468-8208
 - d. Email: paulma@immelconstruction.com
14. Integrity Grading and Excavating, Inc.
 - a. 605 Grossman Dr. Schofield, WI 54476
 - b. Contact: Ashley Bohman
 - c. Phone: 715-359-4042
 - d. Email: quotes@integrityge.com
15. Interstate Roofing & WTP, Inc.
 - a. N5544 Commerce Rd. Onalaska, WI 54650
 - b. Contact: Jon Kloehn
 - c. Phone: 608-783-2106
 - d. Email: jon@interstate-roofing.com

16. J.F. Ahern Co.
 - a. 5315 Freitag Drive Menomonie, WI 54751
 - b. Contact: Kaimana Rodgers
 - c. Phone: 715-233-1841
 - d. Email: krodgers@jfahern.com
17. Jackson & Associates, LLC
 - a. 1817 Buerkle Rd. White Bear Lake, MN 55110
 - b. Contact: Bo Schulz
 - c. Phone: 507-421-4277
 - d. Email: bo@jaarroofing.com
18. Knutson Construction Services, Inc.
 - a. 300 2nd St. N. La Crosse, WI 54601
 - b. Contact: Jordan Cepass
 - c. Phone: 507-280-9788
 - d. Email: rochbids@knutsonconstruction.com
19. Ledegar Roofing
 - a. 1701 Miller St. La Crosse, WI 54601
 - b. Contact: Trent Adams
 - c. Phone: 608-785-0901
 - d. Email: tadams@ledegarroofing.com
20. Long Life Roofing Co.
 - a. 808 Business Park Rd. Wisconsin Dells, WI 53965
 - b. Contact: Dick Preissel
 - c. Phone: 608-254-7948
 - d. Email: longlife@longliferroofing.com
21. LVC INC
 - a. 3233 Louis Ave. Ste. E Eau Claire, WI 54703
 - b. Contact : Tom Christman
 - c. Phone : 715-688-4600
 - d. Email : tchristman@lvcinc.com
22. Market & Johnson, Inc.
 - a. 2350 Galloway Street Eau Claire, WI 54703
 - b. Contact: Tyler Schulz
 - c. Phone: 715-834-1213
 - d. Email: bidding@market-johnson.com
23. Mathy Construction Company
 - a. 920 10th Ave North Onalaska, WI 54650
 - b. Contact: Kevin Christopherson
 - c. Phone: 608-783-6411
 - d. Email: kevin.christpherson@mathy.com

24. McCabe Construction, Inc.
 - a. 3101 Alpine Drive Eau Claire, WI 54703
 - b. Contact: Brady Shepler, Damien Hoernke
 - c. Phone: 715-552-1346
 - d. Email: bshepler@mccabeconstruction.net, dhoernke@mccabeconstruction.net
25. Olympic Builders
 - a. 405 North Star Road Holmen, WI 54636
 - b. Contact: Julie Yahnke
 - c. Phone: 608-526-4622
 - d. Email: office@olympicbuildersgc.com
26. P & T Electric, Inc.
 - a. 1122 South Oak Street La Crescent, MN 55947
 - b. Contact: Paul Siegersma
 - c. Phone: 507-895-8585
 - d. Email: paulptelectric@acegroup.cc
27. Pember Companies
 - a. N4449 469th St. Menomonie, WI 54751
 - b. Contact: Brent Pember
 - c. Phone: 715-235-0316
 - d. Email: bpember@pembercompanies.com
28. Pioneer Roofing, LLC
 - a. 151 Maple St. Johnson Creek, WI 53038
 - b. Contact: Anthony Graziano
 - c. Phone: 920-699-2731
 - d. Email: info@pioneerroofing.net
29. Poellinger Electric, Inc.
 - a. 5416 33rd St South La Crosse, WI 54601
 - b. Contact: Breanne White
 - c. Phone: 608-788-6800
 - d. Email: breanne@poellingerelectric.com
30. V & S Construction Services
 - a. 2019 - 22 ½ Avenue PO Box 557 Rice Lake, WI 54868
 - b. Contact: Todd Schieffer or Kevin Klemme
 - c. Phone: 715-234-9174
 - d. Email: todds@vscontractors.com, kevink@vscontractors.com
31. Wieser Brothers General Contractor, Inc.
 - a. 200 Twilite Street La Crescent, MN 55947
 - b. Contact: Jeff Wieser
 - c. Phone: 507-895-8903
 - d. Email: bids@wieserbrothers.com

32. Winona Heating & Ventilating, Inc.
 - a. 374 East Second Street Winona, MN 55987
 - b. Contact: Timothy Russell
 - c. Phone: 507-452-2064
 - d. Email: trussell@whvr.com
33. Winona Nursery, Inc.
 - a. 1280 Frontenac Drive Winona, MN 55987
 - b. Contact: Mclean Benson
 - c. Phone: 507-452-6237
 - d. Email: info@winonanursery.com

END OF DOCUMENT 00 11 15

Page Intentionally Left Blank

SECTION 00 21 13
INSTRUCTIONS TO BIDDERS

PART 1 GENERAL

1.01 SECTION INCLUDES:

- A. AIA Document A701, 2018 Edition, "Instructions to Bidders": The document is included in this project manual immediately following this coversheet type of section.

1.02 RELATED REQUIREMENTS

- A. Section 00 22 13 - Supplementary Instructions to Bidders: Modify Instructions to Bidders with the revisions, additions and deletions presented in the Supplementary Instructions to Bidders.
- B. Section 00 41 00 - Bid Form
- C. Section 00 43 25 - Substitution Request Form - During Procurement
- D. Section 00 45 00 – Procurement Representations and Certifications
- E. Section 00 45 13 - Certificate of Organization and Authority
- F. Section 00 45 19 - Non-Collusive Affidavit
- G. Section 00 45 33 - Certification of Non-Segregated Facilities

END OF SECTION

Page Intentionally Left Blank



AIA[®] Document A701[™] – 2018

Instructions to Bidders

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

| See Supplementary Instructions

THE OWNER:

(Name, legal status, address, and other information)

| See Supplementary Instructions

THE ARCHITECT:

(Name, legal status, address, and other information)

| See Supplementary Instructions

TABLE OF ARTICLES

- 1 **DEFINITIONS**
- 2 **BIDDER'S REPRESENTATIONS**
- 3 **BIDDING DOCUMENTS**
- 4 **BIDDING PROCEDURES**
- 5 **CONSIDERATION OF BIDS**
- 6 **POST-BID INFORMATION**
- 7 **PERFORMANCE BOND AND PAYMENT BOND**
- 8 **ENUMERATION OF THE PROPOSED CONTRACT DOCUMENTS**

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.

FEDERAL, STATE, AND LOCAL LAWS MAY IMPOSE REQUIREMENTS ON PUBLIC PROCUREMENT CONTRACTS. CONSULT LOCAL AUTHORITIES OR AN ATTORNEY TO VERIFY REQUIREMENTS APPLICABLE TO THIS PROCUREMENT BEFORE COMPLETING THIS FORM.

It is intended that AIA Document G612[™]-2017, Owner's Instructions to the Architect, Parts A and B will be completed prior to using this document.

ARTICLE 1 DEFINITIONS

§ 1.1 Bidding Documents include the Bidding Requirements and the Proposed Contract Documents. The Bidding Requirements consist of the advertisement or invitation to bid, Instructions to Bidders, supplementary instructions to bidders, the bid form, and any other bidding forms. The Proposed Contract Documents consist of the unexecuted form of Agreement between the Owner and Contractor and that Agreement's Exhibits, Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications, all Addenda, and all other documents enumerated in Article 8 of these Instructions.

§ 1.2 Definitions set forth in the General Conditions of the Contract for Construction, or in other Proposed Contract Documents apply to the Bidding Documents.

§ 1.3 Addenda are written or graphic instruments issued by the Architect, which, by additions, deletions, clarifications, or corrections, modify or interpret the Bidding Documents.

§ 1.4 A Bid is a complete and properly executed proposal to do the Work for the sums stipulated therein, submitted in accordance with the Bidding Documents.

§ 1.5 The Base Bid is the sum stated in the Bid for which the Bidder offers to perform the Work described in the Bidding Documents, to which Work may be added or deleted by sums stated in Alternate Bids.

§ 1.6 An Alternate Bid (or Alternate) is an amount stated in the Bid to be added to or deducted from, or that does not change, the Base Bid if the corresponding change in the Work, as described in the Bidding Documents, is accepted.

§ 1.7 A Unit Price is an amount stated in the Bid as a price per unit of measurement for materials, equipment, or services, or a portion of the Work, as described in the Bidding Documents.

§ 1.8 A Bidder is a person or entity who submits a Bid and who meets the requirements set forth in the Bidding Documents.

§ 1.9 A Sub-bidder is a person or entity who submits a bid to a Bidder for materials, equipment, or labor for a portion of the Work.

ARTICLE 2 BIDDER'S REPRESENTATIONS

§ 2.1 By submitting a Bid, the Bidder represents that:

- .1 the Bidder has read and understands the Bidding Documents;
- .2 the Bidder understands how the Bidding Documents relate to other portions of the Project, if any, being bid concurrently or presently under construction;
- .3 the Bid complies with the Bidding Documents;
- .4 the Bidder has visited the site, become familiar with local conditions under which the Work is to be performed, and has correlated the Bidder's observations with the requirements of the Proposed Contract Documents;
- .5 the Bid is based upon the materials, equipment, and systems required by the Bidding Documents without exception; and
- .6 the Bidder has read and understands the provisions for liquidated damages, if any, set forth in the form of Agreement between the Owner and Contractor.

ARTICLE 3 BIDDING DOCUMENTS

§ 3.1 Distribution

§ 3.1.1 Bidders shall obtain complete Bidding Documents, as indicated below, from the issuing office designated in the advertisement or invitation to bid, for the deposit sum, if any, stated therein.

(Indicate how, such as by email, website, host site/platform, paper copy, or other method Bidders shall obtain Bidding Documents.)

§ 3.1.2 Any required deposit shall be refunded to Bidders who submit a bona fide Bid and return the paper Bidding Documents in good condition within ten days after receipt of Bids. The cost to replace missing or damaged paper documents will be deducted from the deposit. A Bidder receiving a Contract award may retain the paper Bidding Documents, and the Bidder's deposit will be refunded.

§ 3.1.3 Bidding Documents will not be issued directly to Sub-bidders unless specifically offered in the advertisement or invitation to bid, or in supplementary instructions to bidders.

§ 3.1.4 Bidders shall use complete Bidding Documents in preparing Bids. Neither the Owner nor Architect assumes responsibility for errors or misinterpretations resulting from the use of incomplete Bidding Documents.

§ 3.1.5 The Bidding Documents will be available for the sole purpose of obtaining Bids on the Work. No license or grant of use is conferred by distribution of the Bidding Documents.

§ 3.2 Modification or Interpretation of Bidding Documents

§ 3.2.1 The Bidder shall carefully study the Bidding Documents, shall examine the site and local conditions, and shall notify the Architect of errors, inconsistencies, or ambiguities discovered and request clarification or interpretation pursuant to Section 3.2.2.

§ 3.2.2 Requests for clarification or interpretation of the Bidding Documents shall be submitted by the Bidder in writing and shall be received by the Architect at least seven days prior to the date for receipt of Bids.
(Indicate how, such as by email, website, host site/platform, paper copy, or other method Bidders shall submit requests for clarification and interpretation.)

§ 3.2.3 Modifications and interpretations of the Bidding Documents shall be made by Addendum. Modifications and interpretations of the Bidding Documents made in any other manner shall not be binding, and Bidders shall not rely upon them.

§ 3.3 Substitutions

§ 3.3.1 The materials, products, and equipment described in the Bidding Documents establish a standard of required function, dimension, appearance, and quality to be met by any proposed substitution.

§ 3.3.2 Substitution Process

§ 3.3.2.1 Written requests for substitutions shall be received by the Architect at least ten days prior to the date for receipt of Bids. Requests shall be submitted in the same manner as that established for submitting clarifications and interpretations in Section 3.2.2.

§ 3.3.2.2 Bidders shall submit substitution requests on a Substitution Request Form if one is provided in the Bidding Documents.

§ 3.3.2.3 If a Substitution Request Form is not provided, requests shall include (1) the name of the material or equipment specified in the Bidding Documents; (2) the reason for the requested substitution; (3) a complete description of the proposed substitution including the name of the material or equipment proposed as the substitute, performance and test data, and relevant drawings; and (4) any other information necessary for an evaluation. The request shall include a statement setting forth changes in other materials, equipment, or other portions of the Work, including changes in the work of other contracts or the impact on any Project Certifications (such as LEED), that will result from incorporation of the proposed substitution.

§ 3.3.3 The burden of proof of the merit of the proposed substitution is upon the proposer. The Architect's decision of approval or disapproval of a proposed substitution shall be final.

§ 3.3.4 If the Architect approves a proposed substitution prior to receipt of Bids, such approval shall be set forth in an Addendum. Approvals made in any other manner shall not be binding, and Bidders shall not rely upon them.

§ 3.3.5 No substitutions will be considered after the Contract award unless specifically provided for in the Contract Documents.

§ 3.4 Addenda

§ 3.4.1 Addenda will be transmitted to Bidders known by the issuing office to have received complete Bidding Documents.

(Indicate how, such as by email, website, host site/platform, paper copy, or other method Addenda will be transmitted.)

§ 3.4.2 Addenda will be available where Bidding Documents are on file.

§ 3.4.3 Addenda will be issued no later than four days prior to the date for receipt of Bids, except an Addendum withdrawing the request for Bids or one which includes postponement of the date for receipt of Bids.

§ 3.4.4 Prior to submitting a Bid, each Bidder shall ascertain that the Bidder has received all Addenda issued, and the Bidder shall acknowledge their receipt in the Bid.

ARTICLE 4 BIDDING PROCEDURES

§ 4.1 Preparation of Bids

§ 4.1.1 Bids shall be submitted on the forms included with or identified in the Bidding Documents.

§ 4.1.2 All blanks on the bid form shall be legibly executed. Paper bid forms shall be executed in a non-erasable medium.

§ 4.1.3 Sums shall be expressed in both words and numbers, unless noted otherwise on the bid form. In case of discrepancy, the amount entered in words shall govern.

§ 4.1.4 Edits to entries made on paper bid forms must be initialed by the signer of the Bid.

§ 4.1.5 All requested Alternates shall be bid. If no change in the Base Bid is required, enter "No Change" or as required by the bid form.

§ 4.1.6 Where two or more Bids for designated portions of the Work have been requested, the Bidder may, without forfeiture of the bid security, state the Bidder's refusal to accept award of less than the combination of Bids stipulated by the Bidder. The Bidder shall neither make additional stipulations on the bid form nor qualify the Bid in any other manner.

§ 4.1.7 Each copy of the Bid shall state the legal name and legal status of the Bidder. As part of the documentation submitted with the Bid, the Bidder shall provide evidence of its legal authority to perform the Work in the jurisdiction where the Project is located. Each copy of the Bid shall be signed by the person or persons legally authorized to bind the Bidder to a contract. A Bid by a corporation shall further name the state of incorporation and have the corporate seal affixed. A Bid submitted by an agent shall have a current power of attorney attached, certifying the agent's authority to bind the Bidder.

§ 4.1.8 A Bidder shall incur all costs associated with the preparation of its Bid.

§ 4.2 Bid Security

§ 4.2.1 Each Bid shall be accompanied by the following bid security:

(Insert the form and amount of bid security.)

§ 4.2.2 The Bidder pledges to enter into a Contract with the Owner on the terms stated in the Bid and shall, if required, furnish bonds covering the faithful performance of the Contract and payment of all obligations arising thereunder. Should the Bidder refuse to enter into such Contract or fail to furnish such bonds if required, the amount of the bid security shall be forfeited to the Owner as liquidated damages, not as a penalty. In the event the Owner fails to comply with Section 6.2, the amount of the bid security shall not be forfeited to the Owner.

§ 4.2.3 If a surety bond is required as bid security, it shall be written on AIA Document A310™, Bid Bond, unless otherwise provided in the Bidding Documents. The attorney-in-fact who executes the bond on behalf of the surety shall affix to the bond a certified and current copy of an acceptable power of attorney. The Bidder shall provide surety bonds from a company or companies lawfully authorized to issue surety bonds in the jurisdiction where the Project is located.

§ 4.2.4 The Owner will have the right to retain the bid security of Bidders to whom an award is being considered until (a) the Contract has been executed and bonds, if required, have been furnished; (b) the specified time has elapsed so that Bids may be withdrawn; or (c) all Bids have been rejected. However, if no Contract has been awarded or a Bidder has not been notified of the acceptance of its Bid, a Bidder may, beginning days after the opening of Bids, withdraw its Bid and request the return of its bid security.

§ 4.3 Submission of Bids

§ 4.3.1 A Bidder shall submit its Bid as indicated below:

(Indicate how, such as by website, host site/platform, paper copy, or other method Bidders shall submit their Bid.)

§ 4.3.2 Paper copies of the Bid, the bid security, and any other documents required to be submitted with the Bid shall be enclosed in a sealed opaque envelope. The envelope shall be addressed to the party receiving the Bids and shall be identified with the Project name, the Bidder's name and address, and, if applicable, the designated portion of the Work for which the Bid is submitted. If the Bid is sent by mail, the sealed envelope shall be enclosed in a separate mailing envelope with the notation "SEALED BID ENCLOSED" on the face thereof.

§ 4.3.3 Bids shall be submitted by the date and time and at the place indicated in the invitation to bid. Bids submitted after the date and time for receipt of Bids, or at an incorrect place, will not be accepted.

§ 4.3.4 The Bidder shall assume full responsibility for timely delivery at the location designated for receipt of Bids.

§ 4.3.5 A Bid submitted by any method other than as provided in this Section 4.3 will not be accepted.

§ 4.4 Modification or Withdrawal of Bid

§ 4.4.1 Prior to the date and time designated for receipt of Bids, a Bidder may submit a new Bid to replace a Bid previously submitted, or withdraw its Bid entirely, by notice to the party designated to receive the Bids. Such notice shall be received and duly recorded by the receiving party on or before the date and time set for receipt of Bids. The receiving party shall verify that replaced or withdrawn Bids are removed from the other submitted Bids and not considered. Notice of submission of a replacement Bid or withdrawal of a Bid shall be worded so as not to reveal the amount of the original Bid.

§ 4.4.2 Withdrawn Bids may be resubmitted up to the date and time designated for the receipt of Bids in the same format as that established in Section 4.3, provided they fully conform with these Instructions to Bidders. Bid security shall be in an amount sufficient for the Bid as resubmitted.

§ 4.4.3 After the date and time designated for receipt of Bids, a Bidder who discovers that it made a clerical error in its Bid shall notify the Architect of such error within two days, or pursuant to a timeframe specified by the law of the jurisdiction where the Project is located, requesting withdrawal of its Bid. Upon providing evidence of such error to the reasonable satisfaction of the Architect, the Bid shall be withdrawn and not resubmitted. If a Bid is withdrawn pursuant to this Section 4.4.3, the bid security will be attended to as follows:

(State the terms and conditions, such as Bid rank, for returning or retaining the bid security.)

ARTICLE 5 CONSIDERATION OF BIDS

§ 5.1 Opening of Bids

If stipulated in an advertisement or invitation to bid, or when otherwise required by law, Bids properly identified and received within the specified time limits will be publicly opened and read aloud. A summary of the Bids may be made available to Bidders.

§ 5.2 Rejection of Bids

Unless otherwise prohibited by law, the Owner shall have the right to reject any or all Bids.

§ 5.3 Acceptance of Bid (Award)

§ 5.3.1 It is the intent of the Owner to award a Contract to the lowest responsive and responsible Bidder, provided the Bid has been submitted in accordance with the requirements of the Bidding Documents. Unless otherwise prohibited by law, the Owner shall have the right to waive informalities and irregularities in a Bid received and to accept the Bid which, in the Owner's judgment, is in the Owner's best interests.

§ 5.3.2 Unless otherwise prohibited by law, the Owner shall have the right to accept Alternates in any order or combination, unless otherwise specifically provided in the Bidding Documents, and to determine the lowest responsive and responsible Bidder on the basis of the sum of the Base Bid and Alternates accepted.

ARTICLE 6 POST-BID INFORMATION

§ 6.1 Contractor's Qualification Statement

Bidders to whom award of a Contract is under consideration shall submit to the Architect, upon request and within the timeframe specified by the Architect, a properly executed AIA Document A305™, Contractor's Qualification Statement, unless such a Statement has been previously required and submitted for this Bid.

§ 6.2 Owner's Financial Capability

A Bidder to whom award of a Contract is under consideration may request in writing, fourteen days prior to the expiration of the time for withdrawal of Bids, that the Owner furnish to the Bidder reasonable evidence that financial arrangements have been made to fulfill the Owner's obligations under the Contract. The Owner shall then furnish such reasonable evidence to the Bidder no later than seven days prior to the expiration of the time for withdrawal of Bids. Unless such reasonable evidence is furnished within the allotted time, the Bidder will not be required to execute the Agreement between the Owner and Contractor.

§ 6.3 Submittals

§ 6.3.1 After notification of selection for the award of the Contract, the Bidder shall, as soon as practicable or as stipulated in the Bidding Documents, submit in writing to the Owner through the Architect:

- .1 a designation of the Work to be performed with the Bidder's own forces;
- .2 names of the principal products and systems proposed for the Work and the manufacturers and suppliers of each; and
- .3 names of persons or entities (including those who are to furnish materials or equipment fabricated to a special design) proposed for the principal portions of the Work.

§ 6.3.2 The Bidder will be required to establish to the satisfaction of the Architect and Owner the reliability and responsibility of the persons or entities proposed to furnish and perform the Work described in the Bidding Documents.

§ 6.3.3 Prior to the execution of the Contract, the Architect will notify the Bidder if either the Owner or Architect, after due investigation, has reasonable objection to a person or entity proposed by the Bidder. If the Owner or Architect has reasonable objection to a proposed person or entity, the Bidder may, at the Bidder's option, withdraw the Bid or submit an acceptable substitute person or entity. The Bidder may also submit any required adjustment in the Base Bid or Alternate Bid to account for the difference in cost occasioned by such substitution. The Owner may accept the adjusted bid price or disqualify the Bidder. In the event of either withdrawal or disqualification, bid security will not be forfeited.

§ 6.3.4 Persons and entities proposed by the Bidder and to whom the Owner and Architect have made no reasonable objection must be used on the Work for which they were proposed and shall not be changed except with the written consent of the Owner and Architect.

ARTICLE 7 PERFORMANCE BOND AND PAYMENT BOND

§ 7.1 Bond Requirements

§ 7.1.1 If stipulated in the Bidding Documents, the Bidder shall furnish bonds covering the faithful performance of the Contract and payment of all obligations arising thereunder.

§ 7.1.2 If the furnishing of such bonds is stipulated in the Bidding Documents, the cost shall be included in the Bid. If the furnishing of such bonds is required after receipt of bids and before execution of the Contract, the cost of such bonds shall be added to the Bid in determining the Contract Sum.

§ 7.1.3 The Bidder shall provide surety bonds from a company or companies lawfully authorized to issue surety bonds in the jurisdiction where the Project is located.

§ 7.1.4 Unless otherwise indicated below, the Penal Sum of the Payment and Performance Bonds shall be the amount of the Contract Sum.

(If Payment or Performance Bonds are to be in an amount other than 100% of the Contract Sum, indicate the dollar amount or percentage of the Contract Sum.)

§ 7.2 Time of Delivery and Form of Bonds

§ 7.2.1 The Bidder shall deliver the required bonds to the Owner not later than three days following the date of execution of the Contract. If the Work is to commence sooner in response to a letter of intent, the Bidder shall, prior to commencement of the Work, submit evidence satisfactory to the Owner that such bonds will be furnished and delivered in accordance with this Section 7.2.1.

§ 7.2.2 Unless otherwise provided, the bonds shall be written on AIA Document A312, Performance Bond and Payment Bond.

§ 7.2.3 The bonds shall be dated on or after the date of the Contract.

§ 7.2.4 The Bidder shall require the attorney-in-fact who executes the required bonds on behalf of the surety to affix to the bond a certified and current copy of the power of attorney.

ARTICLE 8 ENUMERATION OF THE PROPOSED CONTRACT DOCUMENTS

§ 8.1 Copies of the proposed Contract Documents have been made available to the Bidder and consist of the following documents:

- .1 AIA Document A101™–2017, Standard Form of Agreement Between Owner and Contractor, unless otherwise stated below.
(Insert the complete AIA Document number, including year, and Document title.)

- .2 AIA Document A101™–2017, Exhibit A, Insurance and Bonds, unless otherwise stated below.
(Insert the complete AIA Document number, including year, and Document title.)

- .3 AIA Document A201™–2017, General Conditions of the Contract for Construction, unless otherwise stated below.
(Insert the complete AIA Document number, including year, and Document title.)

- .4 AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, dated as indicated below:
(Insert the date of the E203-2013.)

- .5 Drawings

Number	Title	Date
.6	Specifications	

Section	Title	Date	Pages
.7	Addenda:		

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

.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.)

The Sustainability Plan:

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

Supplementary and other Conditions of the Contract:

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

.9 Other documents listed below:
(List here any additional documents that are intended to form part of the Proposed Contract Documents.)

Additions and Deletions Report for **AIA[®] Document A701[™] – 2018**

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 17:40:02 ET on 01/20/2022.

PAGE 1

See Supplementary Instructions

...

See Supplementary Instructions

...

See Supplementary Instructions

Certification of Document's Authenticity

AIA® Document D401™ – 2003

I, Tobin J. Faucheux, 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 17:40:02 ET on 01/20/2022 under Order No. 7329489615 from AIA Contract Documents software and that in preparing the attached final document I made no changes to the original text of AIA® Document A701™ – 2018, Instructions to Bidders, as published by the AIA in its software, other than those additions and deletions shown in the associated Additions and Deletions Report.

Tobin Faucheux

(Signed)

Specifier

(Title)

01/31/2022

(Dated)

SECTION 00 22 13
SUPPLEMENTARY INSTRUCTIONS

GENERAL

APPLICATION

The following Supplementary Instructions to Bidders modify, change, delete from or add to AIA Document A701-2018 Instructions to Bidders. Where any Article of the AIA Instructions to Bidders is modified or any Paragraph, Subparagraph or Clause thereof is modified or deleted by these Supplementary Instructions to Bidders, the unaltered provisions of that Article, Paragraph, Subparagraph or Clause shall remain in effect.

PAGE 1

PROJECT PROMPT

After the prompt "for the following PROJECT: (Name and location or address)" insert the following:

Western Technical College
Sparta Public Safety Training Sim City
11177 County Hwy A
Sparta, Wisconsin 54656
Project No. 25039

OWNER PROMPT

After the prompt "THE OWNER: (Name, legal status and address)" insert the following:

Western Technical College
Physical Plant Office
505 9th Street North
La Crosse, Wisconsin 54601

ARCHITECT PROMPT

After the prompt "THE ARCHITECT: (Name, legal status and address) insert the following:

HSR Associates, Inc.
100 Milwaukee Street
La Crosse, WI 54603

ARTICLE 3

3.1.1

Delete the text of the existing sub-article including the prompt in parenthesis:

~~"Bidders shall obtain complete Bidding Documents, as indicated below, from the issuing office designated in the advertisement or invitation to bid, for the deposit sum, if any, stated therein. (Indicate how, such as by email, website, host site/platform, paper copy, or other method Bidders shall obtain Bidding Documents.)"~~

Replace with:

"Bidders shall obtain complete Bidding Documents. Refer to the Advertisement of Bids for sources of bidding documents."

3.1.2

Delete the existing sub-article:

~~"3.1.2 Any required deposit shall be refunded to Bidders who submit a bona fide Bid and return the paper Bidding Documents in good condition within ten days after receipt of Bids. The cost to replace missing or damaged paper documents will be deducted from the deposit. A Bidder receiving a Contract award may retain the paper Bidding Documents, and the Bidder's deposit will be refunded."~~

3.1.3

Delete the existing sub-article:

~~"3.1.3 Bidding Documents will not be issued directly to Sub-bidders unless specifically offered in the advertisement or invitation to bid, or in supplementary instructions to bidders."~~

3.2.2

After 3.2.2, insert the following:

Contact Michelle Maland, HSR Associates, Inc., mmaland@hsrassociates.com, 608-785-4720.

3.3.2.2

Delete the text of the existing sub-article:

~~"Bidders shall submit substitution requests on a Substitution Request Form if one is provided in the Bidding Documents."~~

Replace with:

"Bidders shall submit substitution requests in accordance with Section 01 25 00 Substitution Procedures."

3.3.5

After 3.3.5, insert the following new sub-article:

3.3.6 Bidders may use the space on the Bid Form labeled Bidder's Choice Substitution to offer one or more substitutions with their bid. Bidders may provide a price for a substitute product or process that the Bidder deems comparable to that specified. These substitutions may be reviewed by the Architect on behalf of the Owner after the low bid has been accepted, but this application does not imply any obligation on the part of the Architect to review or accept any Bidder's Choice Substitution. Contractor may copy the Bidder's Choice Substitution portion of the Bid Form for multiple entries."

3.4.1

Delete the text of the existing sub-article including the prompt in parenthesis:

~~"Addenda will be transmitted to Bidders known by the issuing office to have received complete Bidding Documents. (Indicate how, such as by email, website, host site/platform, paper copy, or other method Addenda will be transmitted.)"~~

Replace with:

"Addenda will be transmitted by email to the Builder's Exchanges listed in the Advertisement for Bids and to Plan Holders on the HSR Plan Holder list."

3.4.2

Delete the existing sub-article:

~~"3.4.2 Addenda will be available where Bidding Documents are on file."~~

ARTICLE 4

4.1.8

After 4.1.8, insert the following new sub-articles:

4.1.9 Prime contractor bidders are required to pre-qualify to bid using the Owner's pre-qualification process prior to submitting a bid.

4.1.10 Each bid shall be accompanied by the following:

.1 A completed 00 45 13 Certificate of Organization and Authority form properly notarized.

.2 A completed 00 45 17 Non-Collusive Affidavit form properly notarized.

.3 A completed 00 45 19 Certification of Non-Segregated Facilities form."

4.1.11 Informational Bids: The Bidder shall state the amount that is included in the Base Bid for all equipment, materials and labor required to complete the work described. Informational bids are amounts requested for accounting purposes and for allocation of funds only. It is not intended to omit any of the work described or related items from this project."

4.2.1

After 4.2.1, insert the following:

"Make Bid Security payable to the Owner in an amount not less than five percent (5%) of the maximum amount of the Bid. Bid Security shall be either a certified check or AIA Document A310; Bid Bond issued by a surety licensed to conduct business in the state with jurisdiction over the project and listed currently in Circular 570 issued by the U.S. Treasury Department."

4.2.2

In the sub-article change "~~such bonds if required~~" to "bonds as required in Article 7 of this document"

4.2.3

Delete the first sentence of the existing sub-article:

~~"If a surety bond is required as bid security, it shall be written on AIA Document A310™, Bid Bond, unless otherwise provided in the Bidding Documents."~~

Replace with:

"If a surety bond is provided as bid security, it shall be written on AIA Document A310™, Bid Bond."

4.2.4

Insert "30" in the space indicating days after the opening of bids.

4.3.1

After 4.3.1, insert the following:

"See Document 00 11 13 Advertisement for Bids in the Project Manual for instructions."

4.4.3

After 4.4.3, insert the following:

"Bidders may be eligible for return of the bid security for a bid withdrawn pursuant to Section 4.4.3 at the Owner's discretion. Where applicable law expressly sets forth requirements for return of bid security it may be returned in accordance with the applicable law."

ARTICLE 5

5.1

After 5.1, insert the following new sub-article:

"**5.1.1** Bids from prime contractor bidders that are not pre-qualified through the Owner's prequalification process will not be opened nor will they be considered."

5.3.2

After 5.3.2, insert the following new sub-article:

"**5.3.2.1** The lowest bid shall be determined by adding the base bid and all alternates."

ARTICLE 7

7.1.1

In 7.1.1, change "~~If stipulated in the Bidding Documents, the~~" to "The".

Add the following sentence to the end of the modified sub-article:

"Refer to Document 00 73 17 Bond Requirements for additional requirements."

7.1.2

Delete the text of the existing sub-article:

~~"If the furnishing of such bonds is stipulated in the Bidding Documents, the cost shall be included in the Bid. If the furnishing of such bonds is required after receipt of bids and before execution of the Contract, the cost of such bonds shall be added to the Bid in determining the Contract Sum."~~

Replace with:

"The cost of such bonds shall be included in the Bid."

7.1.3

Add the following sentences to the end of the existing sub-article:

"The bonds shall be written with such sureties secured through the Contractor's usual sources as may be agreeable to the parties. The sureties and any re-insuring companies shall be listed in the current Department of the Treasury circular No. 570 with an underwriting limitation equal to or greater than the penal sum of the bonds to be furnished. Bond amounts shall not exceed the single bond limit for the Contractor's bonding company as set forth in the Federal Register current as of the date."

7.1.4

Delete the text of the existing sub-article including the prompt in parenthesis:

~~"Unless otherwise indicated below, the Penal Sum of the Payment and Performance Bonds shall be the amount of the Contract Sum. (If Payment or Performance Bonds are to be in an amount other than 100% of the Contract Sum, indicate the dollar amount or percentage of the Contract Sum.)"~~

Replace with:

"The Penal Sum of the Payment and Performance Bonds shall be the amount of the Contract Sum."

7.2.2

In 7.2.2, change "~~Unless otherwise provided, the~~" to "The".

ARTICLE 8

8.1.1

Delete the following words from the existing sub-article:

~~", unless otherwise stated below. (Insert the complete AIA Document number, including year, and Document title.)"~~

Replace with:

","

8.1.2

Delete the existing sub-article:

~~"8.1.2 AIA Document A101-2017, Exhibit A, Insurance and Bonds, unless otherwise stated below. (Insert the complete AIA Document number, including year, and Document title.)"~~

8.1.3

Delete the following words from the existing sub-article:

~~", unless otherwise stated below. (Insert the complete AIA Document number, including year, and Document Title.)"~~

Replace with:

","

8.1.4

Delete the existing sub-article:

~~"8.1.4 AIA Document E203-2014, Building Information Modeling and Digital Data Exhibit, dated as indicated below: (Insert the date of the E203-2013.)"~~

8.1.5

Delete the following words:

~~"Number Title Date"~~

Replace with:

"See Index of drawings on sheet A000 Cover Sheet."

8.1.6

Delete the following words:

~~"Section Title Date Pages"~~

Replace with:

"See document 00 01 10 Table of Contents in the Project Manual for a listing of specification sections to be included in the contract documents. Sections not listed in the Table of Contents that are distributed as part of the Project Manual and those that are added and revised via Addenda shall be treated the same as those listed in the Table of Contents. Sections removed via Addenda shall be treated as having been removed from the Table of Contents. Documents and sections identified in this sub-paragraph to be included in the Contract documents will be Contract Documents except for 00 30 00 Information Available to Bidders."

8.1.7

Delete the following words:

~~"Number Date Pages"~~

Replace with:

"The existence of Addenda is not known at the time of the first issuance of this Supplementary Instructions to Bidders."

8.1.8

Place checkmark in the box next to "Supplementary and other Conditions of the Contract:"

Prior to 8.1.9, insert the following new sentence:

"00 73 00 Supplementary Conditions and sections listed therein are included in the Project Manual."

8.1.9

Delete the existing sub-article:

~~"8.1.9 Other documents listed below: (List here any additional documents that are intended to form part of the Proposed Contract Documents.)"~~

END OF SECTION

Page Intentionally Left Blank

**DOCUMENT 00 41 00
BID FORM**

BIDDER: _____

BID FOR SINGLE PRIME CONTRACT

PROJECT: WESTERN TECHNICAL COLLEGE
SPARTA PUBLIC SAFETY TRAINING SIM CITY
11177 COUNTY HWY A
SPARTA, WISCONSIN 54656
PROJECT NO. 25039

TO: WESTERN TECHNICAL COLLEGE
PHYSICAL PLANT OFFICE
505 9TH STREET NORTH
LA CROSSE, WISCONSIN 54601

BASE BID

The undersigned, having examined the site where the Work is to be executed and become familiar with local conditions affecting the cost of the Work and carefully examined the Project Manual, the Project Drawings, all other Bidding Documents and Addenda thereto prepared by the AE, HSR Associates, Inc., hereby agrees to provide all labor, materials, equipment and services necessary for the complete and satisfactory execution of the ENTIRE WORK, in the time frame stipulated in these contract documents, for the Base Bid stipulated sum of:

_____ Dollars (\$_____ .00)

ALTERNATE BIDS

The undersigned further agrees to perform the alternative portions of the Work as described in the Project Manual, Section 01 23 00 Alternates, for the following additions to or deductions from the Base Bid sum stipulated above:

Alternate No. 1 (New Water Service)

Add _____ Dollars (\$_____ .00)

Alternate No. 2 (New Roundabout)

Add _____ Dollars (\$_____ .00)

Alternate No. 3 (Repair Driving Pad and Roadways)

Add _____ Dollars (\$_____ .00)

Alternate No. 4 (Repair Parking Lot and Roadways)

Add _____ Dollars (\$_____ .00)

Alternate No. 5 (Surge Protectors)

Add _____ Dollars (\$_____ .00)

Alternate No. 6 (Flat Roof / Chop Out FD Building Slab)

Add _____ Dollars (\$_____ .00)

Alternate No. 7 (Commercial Building #4)

Add _____ Dollars (\$_____ .00)

Alternate No. 8 (Residential Building B)

Add _____ Dollars (\$_____ .00)

UNIT PRICES

The undersigned agrees to add or deduct portions of the Work from the Contract as described in the Project Manual, Section 01 22 00 Unit Prices, for the following Unit Price amounts:

Item	Reference Section	Unit Price	Quantity included in Lump Sum Base Bid
UP-1 Over Excavation of Unsuitable Soils	31 20 00	\$_____ / cubic yard	30 / cubic yard
UP-2 Compacted Granular Fill	31 20 00	\$_____ / cubic yard	30 / cubic yard

BIDDER'S CHOICE SUBSTITUTIONS

The following Bidder's Choice Substitution is proposed for your consideration subject to the requirements set forth in Document 00 22 13 Supplementary Instructions to Bidders, Subparagraph 3.3.4:

Substitution No. S1:

For substituting _____

Type, Brand, Catalog No. _____

Manufacturer _____

Deduct from BASE BID _____ Dollars (\$ _____ .00)

BIDDER'S CHOICE SUBSTITUTIONS

The following Bidder's Choice Substitution is proposed for your consideration subject to the requirements set forth in Document 00 22 13 Supplementary Instructions to Bidders, Subparagraph 3.3.4:

Substitution No. S2:

For substituting _____

Type, Brand, Catalog No. _____

Manufacturer _____

Deduct from BASE BID _____ Dollars (\$ _____ .00)

In submitting this Bid, the undersigned agrees to:

1. Hold this Bid open for **30** days.
2. Accept the provisions of Instructions to Bidders regarding disposition of Bid Security.
3. Enter into and execute an Agreement, if awarded on the basis of this Bid, and to furnish Performance and Labor and Material Payment Bonds according to the Supplementary Conditions.
4. Accomplish work according to the Contract Documents.
5. Complete the work by the time stated in Section 01 10 00 Summary of the Work.

Receipt of the following Addenda and inclusion of their provisions in this Bid is hereby acknowledged:

Addendum No. _____ Dated _____

Addendum No. _____ Dated _____

Addendum No. _____ Dated _____

Addendum No. _____ Dated _____

Attached hereto are the required:

- a. Bid Security
- b. Certificate of Organization and Authority
- c. Non-Collusive Affidavit: An affidavit in proof that the undersigned has not entered into any collusion with any person in respect to this Bid or any other bid or the submitting of bids for the contract for which this bid is submitted.
- d. Certification of Non-segregated Facilities

Affix Corporate
Seal (if corp.)

FIRM NAME: _____

Title: _____

By: _____

Title: _____

Date: _____

Official Address: _____

Telephone: _____

END OF DOCUMENT 00 41 00

DOCUMENT 00 43 25

SUBSTITUTION REQUEST FORM – DURING PROCUREMENT

Use this form for substitution requests that will be made prior to signed agreement. This form is not strictly mandatory but may be required by the Architect for specific requests. The bidding documents, including those identified below, define the process for requesting a substitution.

Complete the form and provide attachments that document any other information necessary for an evaluation of the substitute items. Provide a complete description of the proposed substitution including the name of the material or equipment proposed, performance and test data, and relevant drawings. Identify reference standards and provide test results that fully explain how the proposed substitution compares to the specified items. Identify any changes to contract documents that are necessary for inclusion of the substitute items into the project.

Send form to Tobin Fauchaux, tfaucheux@hsrassociates.com, 608-785-4717.

Reference Documents (AIA A701):

- A. Instructions to Bidders Article 3.3.
- B. Supplementary Instructions to Bidders Article 3 (if Supplementary Instructions apply).
- C. Section 01 25 00 Substitution Procedures.

PROJECT NAME: _____ PROJ. #: _____

REQUESTING COMPANY: _____

CONTACT PERSON: _____ DATE OF REQUEST: _____

CONTACT EMAIL: _____ CONTACT PHONE: _____

SPECIFIED ITEM: _____ SECTION #: _____

PROPOSED SUBSTITUTE ITEM: _____

REASON FOR REQUESTED SUBSTITUTION: _____

ATTACHMENTS:

The undersigned certifies that the following paragraphs, unless modified on attachments, are correct:

1. The proposed substitution does not affect dimensions shown on drawings.
2. The undersigned will pay for changes to the building design, including architectural/engineering design, detailing and construction costs caused by the requested substitution.
3. The proposed substitution will have no adverse affect on other trades, the construction schedule, or specified warranty requirements.
4. Maintenance and service parts will be locally available for the proposed substitution.
5. The function appearance and quality of the Proposed Substitution are equivalent or superior to the Specified Item

SUBMITTER SIGNATURE: _____

HSR Reviewer: _____

Watch for acceptance of the substitution in a future addendum and any associated notes clarifying the acceptance.

This item can be submitted as a bidder's choice substitution if bidder choice substitutions are defined and permitted on the bid form.

Not accepted

Received too late

HSR Reviewer Notes: _____

END OF DOCUMENT

DOCUMENT 00 45 00

PROCUREMENT REPRESENTATIONS AND CERTIFICATIONS

The following representations and certifications are required from the Bidders or the selected Bidder as part of the procurement process. See Document 00 41 00 Bid Form to see which documents must be included with the bid. See Document 00 22 13 Supplementary Instructions Article 6 to see the timeframe for submitting the other documents.

- 1.01 CERTIFICATE OF ORGANIZATION AND AUTHORITY - DOCUMENT 00 45 13
- 1.02 NON-COLLUSIVE AFFIDAVIT - DOCUMENT 00 45 19
- 1.03 CERTIFICATION OF NON-SEGREGATED FACILITIES – DOCUMENT 00 45 33

END OF DOCUMENT 00 45 00

Page Intentionally Left Blank

DOCUMENT 00 45 13
CERTIFICATE OF ORGANIZATION AND AUTHORITY

(State of _____)

(County of _____)

I hereby certify that the Bidder on the attached Bid Form is organized as indicated below and that all statements herein are made on behalf of such Bidder. (Fill out applicable paragraph)

CORPORATION: The Bidder is a corporation organized and existing under the

laws of the State of _____.

President: _____.

Secretary: _____.

PARTNERSHIP: The Bidder is a partnership consisting of the following partners:

_____.

_____.

and _____.

SOLE TRADER: The Bidder is an individual operating under the following trade name:

_____.

ADDRESS: The Bidder's business address is: _____

STATUTORY CERTIFICATE

I hereby further certify that I have examined and carefully prepared this Bid from the Project Drawings, Project Manual and other Bidding Documents, have checked the same in detail before submitting this Bid, and have full authority to make these statements, to submit this Bid on behalf of the above mentioned Bidder, and that the above statements are true and correct.

BIDDER: _____

BY: _____

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

_____ Notary Public.

My commission expires _____, 20_____.

END OF DOCUMENT 00 45 13

Page Intentionally Left Blank

**DOCUMENT 00 45 19
NON-COLLUSIVE AFFIDAVIT**

(State of _____)

(County of _____)

_____ being duly sworn, deposes and says that:

1. S/He is (owner, partner, officer, representative, or agent) of the Bidder that has submitted the attached Bid;
2. S/He is fully informed respecting the preparation and contents of the attached Bid and of all pertinent circumstances respecting such Bid;
3. Such Bid is genuine and is not a collusive or sham Bid;
4. Neither the said Bidder nor any of its officers, partners, owners, agents, representatives, employees or parties in interest, including this affiant, has in any way colluded, conspired, connived or agreed, directly or indirectly with any other Bidder, firm or person to submit a collusive or sham Bid in connection with the Contract for which the attached Bid has been submitted or to refrain from bidding in connection with such Contract, or has in any manner, directly or indirectly, sought by agreement or collusion or communication or conference with any other Bidder, firm or person to fix the sum or sums in the attached Bid or of any other Bidder, or to fix any overhead, profit or cost element of the Bid sum or the Bid sum of any other Bidder, or to secure through any collusion, conspiracy, connivance or unlawful agreement any advantage against Western Technical College or any person interested in the proposed Contract; and
5. The sum or sums quoted in the attached Bid are fair and proper and are not tainted by any collusion, conspiracy, connivance or unlawful agreement on the part of the Bidder or any of its agents, representatives, owners, employees, or parties in interest, including this affiant.

Signed

Title

Subscribed and sworn to before me this

_____ day of _____ 20____.

_____ Notary Public

_____ County

My commission expires: _____

END OF DOCUMENT 00 45 19

Page Intentionally Left Blank

**DOCUMENT 00 45 33
CERTIFICATION OF NONSEGREGATED FACILITIES**

The Bidder certifies that he/she does not maintain or provide for his/her employees any segregated facilities at any of his/her establishments and that he/she does not permit his/her employees to perform their services at any location, under his/her control, where segregated facilities are maintained. The Bidder certifies further that he/she will not maintain or provide for his/her employees any segregated facilities at any of his/her establishments and that he/she will not permit his/her employees to perform their services at any location, under his/her control, where segregated facilities are maintained. The Bidder agrees that a breach of this certification will be a violation of the Equal Opportunity Clause in any Contract resulting from acceptance of this Bid. As used in this certification, the term "segregated facilities" means any waiting rooms, work areas, restrooms and washrooms, restaurants and other eating areas, time clocks, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation and housing facilities provided for employees which are segregated by explicit directive or are in fact segregated on the basis of race, color, religion, or natural origin, because of habit, local custom or otherwise. The Bidder agrees that (except where he/she has obtained identical certification from proposed subcontractors for specific time periods) he/she will obtain identical certifications from proposed subcontractors prior to the award of subcontracts exceeding \$10,000 which are not exempt from the provisions of the Equal Opportunity Clause, and that he/she will retain such certifications in his/her files.

NOTE: The penalty for making false statements in offers is prescribed in 18 U.S.C. Section 1001.

Date: _____, 20_____.

(Name of Bidder)

By: _____

Title: _____

Official Address (Including Zip Code):

END OF DOCUMENT 00 45 33

Page Intentionally Left Blank

**DOCUMENT 00 52 13
AGREEMENT FORMS**

The following agreement form will be provided by the Owner and shall be reviewed and completed by the successful Contractor and submitted to the Owner at the Owner's direction following notification.

1. "Standard Form of Agreement Between Owner and Contractor - Stipulated Sum", AIA Document A101, 2017 Edition.

END OF DOCUMENT 00 52 13

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)

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

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

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

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.

The Owner and Contractor agree as follows.

Init.

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)

CONTRACTOR (Signature)

(Printed name and title)

(Printed name and title)

**DOCUMENT 00 60 00
PROJECT FORMS**

The following is a partial list of forms used during the project.

1.01 BOND FORMS REQUIRED OF THE CONTRACTOR

- A. Document 00 61 13.13 Performance Bond Form
- B. Document 00 61 13.16 Payment Bond Form

1.02 CLARIFICATION AND MODIFICATION FORMS

- A. Document 00 63 25 Substitution Request Form – During Construction

1.03 OWNER FORMS

- A. Document 00 64 00 Sales and Use Tax Form: A completed version of this form will be provided by the Owner following award of the contract.

1.04 CLOSEOUT FORMS

- A. Document 00 65 19.19 Consent of Surety to Final Payment

END OF DOCUMENT 00 60 00

Page Intentionally Left Blank

Performance Bond Form (Sample)

 **AIA[®] Document A312[™] – 2010**

Performance Bond

CONTRACTOR:
(Name, legal status and address)

SURETY:
(Name, legal status and principal place of business)

OWNER:
(Name, legal status and address)

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

Any singular reference to Contractor, Surety, Owner or other party shall be considered plural where applicable.

CONSTRUCTION CONTRACT

Date:

Amount:

Description:
(Name and location)

BOND

Date:
(Not earlier than Construction Contract Date)

Amount:

Modifications to this Bond: None See Section 16

CONTRACTOR AS PRINCIPAL

Company: *(Corporate Seal)*

SURETY

Company: *(Corporate Seal)*

Signature: _____
Name and Title:
(Any additional signatures appear on the last page of this Performance Bond.)

Signature: _____
Name and Title:

(FOR INFORMATION ONLY — Name, address and telephone)

AGENT or BROKER:

OWNER'S REPRESENTATIVE:
(Architect, Engineer or other party:)

§ 1 The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to the Owner for the performance of the Construction Contract, which is incorporated herein by reference.

§ 2 If the Contractor performs the Construction Contract, the Surety and the Contractor shall have no obligation under this Bond, except when applicable to participate in a conference as provided in Section 3.

§ 3 If there is no Owner Default under the Construction Contract, the Surety's obligation under this Bond shall arise after

- .1 the Owner first provides notice to the Contractor and the Surety that the Owner is considering declaring a Contractor Default. Such notice shall indicate whether the Owner is requesting a conference among the Owner, Contractor and Surety to discuss the Contractor's performance. If the Owner does not request a conference, the Surety may, within five (5) business days after receipt of the Owner's notice, request such a conference. If the Surety timely requests a conference, the Owner shall attend. Unless the Owner agrees otherwise, any conference requested under this Section 3.1 shall be held within ten (10) business days of the Surety's receipt of the Owner's notice. If the Owner, the Contractor and the Surety agree, the Contractor shall be allowed a reasonable time to perform the Construction Contract, but such an agreement shall not waive the Owner's right, if any, subsequently to declare a Contractor Default;
- .2 the Owner declares a Contractor Default, terminates the Construction Contract and notifies the Surety; and
- .3 the Owner has agreed to pay the Balance of the Contract Price in accordance with the terms of the Construction Contract to the Surety or to a contractor selected to perform the Construction Contract.

§ 4 Failure on the part of the Owner to comply with the notice requirement in Section 3.1 shall not constitute a failure to comply with a condition precedent to the Surety's obligations, or release the Surety from its obligations, except to the extent the Surety demonstrates actual prejudice.

§ 5 When the Owner has satisfied the conditions of Section 3, the Surety shall promptly and at the Surety's expense take one of the following actions:

§ 5.1 Arrange for the Contractor, with the consent of the Owner, to perform and complete the Construction Contract;

§ 5.2 Undertake to perform and complete the Construction Contract itself, through its agents or independent contractors;

§ 5.3 Obtain bids or negotiated proposals from qualified contractors acceptable to the Owner for a contract for performance and completion of the Construction Contract, arrange for a contract to be prepared for execution by the Owner and a contractor selected with the Owner's concurrence, to be secured with performance and payment bonds executed by a qualified surety equivalent to the bonds issued on the Construction Contract, and pay to the Owner the amount of damages as described in Section 7 in excess of the Balance of the Contract Price incurred by the Owner as a result of the Contractor Default; or

§ 5.4 Waive its right to perform and complete, arrange for completion, or obtain a new contractor and with reasonable promptness under the circumstances:

- .1 After investigation, determine the amount for which it may be liable to the Owner and, as soon as practicable after the amount is determined, make payment to the Owner; or
- .2 Deny liability in whole or in part and notify the Owner, citing the reasons for denial.

§ 6 If the Surety does not proceed as provided in Section 5 with reasonable promptness, the Surety shall be deemed to be in default on this Bond seven days after receipt of an additional written notice from the Owner to the Surety demanding that the Surety perform its obligations under this Bond, and the Owner shall be entitled to enforce any remedy available to the Owner. If the Surety proceeds as provided in Section 5.4, and the Owner refuses the payment or the Surety has denied liability, in whole or in part, without further notice the Owner shall be entitled to enforce any remedy available to the Owner.

§ 7 If the Surety elects to act under Section 5.1, 5.2 or 5.3, then the responsibilities of the Surety to the Owner shall not be greater than those of the Contractor under the Construction Contract, and the responsibilities of the Owner to the Surety shall not be greater than those of the Owner under the Construction Contract. Subject to the commitment by the Owner to pay the Balance of the Contract Price, the Surety is obligated, without duplication, for

- .1 the responsibilities of the Contractor for correction of defective work and completion of the Construction Contract;
- .2 additional legal, design professional and delay costs resulting from the Contractor's Default, and resulting from the actions or failure to act of the Surety under Section 5; and
- .3 liquidated damages, or if no liquidated damages are specified in the Construction Contract, actual damages caused by delayed performance or non-performance of the Contractor.

§ 8 If the Surety elects to act under Section 5.1, 5.3 or 5.4, the Surety's liability is limited to the amount of this Bond.

§ 9 The Surety shall not be liable to the Owner or others for obligations of the Contractor that are unrelated to the Construction Contract, and the Balance of the Contract Price shall not be reduced or set off on account of any such unrelated obligations. No right of action shall accrue on this Bond to any person or entity other than the Owner or its heirs, executors, administrators, successors and assigns.

§ 10 The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders and other obligations.

§ 11 Any proceeding, legal or equitable, under this Bond may be instituted in any court of competent jurisdiction in the location in which the work or part of the work is located and shall be instituted within two years after a declaration of Contractor Default or within two years after the Contractor ceased working or within two years after the Surety refuses or fails to perform its obligations under this Bond, whichever occurs first. If the provisions of this Paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

§ 12 Notice to the Surety, the Owner or the Contractor shall be mailed or delivered to the address shown on the page on which their signature appears.

§ 13 When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

§ 14 Definitions

§ 14.1 **Balance of the Contract Price.** The total amount payable by the Owner to the Contractor under the Construction Contract after all proper adjustments have been made, including allowance to the Contractor of any amounts received or to be received by the Owner in settlement of insurance or other claims for damages to which the Contractor is entitled, reduced by all valid and proper payments made to or on behalf of the Contractor under the Construction Contract.

§ 14.2 **Construction Contract.** The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and changes made to the agreement and the Contract Documents.

§ 14.3 **Contractor Default.** Failure of the Contractor, which has not been remedied or waived, to perform or otherwise to comply with a material term of the Construction Contract.

§ 14.4 **Owner Default.** Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.

§ 14.5 **Contract Documents.** All the documents that comprise the agreement between the Owner and Contractor.

§ 15 If this Bond is issued for an agreement between a Contractor and subcontractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

§ 16 Modifications to this bond are as follows:

Sample

(Space is provided below for additional signatures of added parties, other than those appearing on the cover page.)

CONTRACTOR AS PRINCIPAL

SURETY

Company: _____ *(Corporate Seal)*

Company: _____ *(Corporate Seal)*

Signature: _____

Signature: _____

Name and Title: _____

Name and Title: _____

Address _____

Address _____

Init.

AIA Document A310™ – 2010 Performance Bond. Copyright © 2010 by The American Institute of Architects. All rights reserved. **WARNING: This AIA® Document is protected by U.S. Copyright Law and International Treaties. Unauthorized reproduction or distribution of this AIA® Document, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under the law.** To report copyright violations of AIA Contract Documents, e-mail The American Institute of Architects' legal counsel, copyright@aia.org.

§ 1 The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to the Owner to pay for labor, materials and equipment furnished for use in the performance of the Construction Contract, which is incorporated herein by reference, subject to the following terms.

§ 2 If the Contractor promptly makes payment of all sums due to Claimants, and defends, indemnifies and holds harmless the Owner from claims, demands, liens or suits by any person or entity seeking payment for labor, materials or equipment furnished for use in the performance of the Construction Contract, then the Surety and the Contractor shall have no obligation under this Bond.

§ 3 If there is no Owner Default under the Construction Contract, the Surety's obligation to the Owner under this Bond shall arise after the Owner has promptly notified the Contractor and the Surety (at the address described in Section 13) of claims, demands, liens or suits against the Owner or the Owner's property by any person or entity seeking payment for labor, materials or equipment furnished for use in the performance of the Construction Contract and tendered defense of such claims, demands, liens or suits to the Contractor and the Surety.

§ 4 When the Owner has satisfied the conditions in Section 3, the Surety shall promptly and at the Surety's expense defend, indemnify and hold harmless the Owner against a duly tendered claim, demand, lien or suit.

§ 5 The Surety's obligations to a Claimant under this Bond shall arise after the following:

§ 5.1 Claimants, who do not have a direct contract with the Contractor,

- .1 have furnished a written notice of non-payment to the Contractor, stating with substantial accuracy the amount claimed and the name of the party to whom the materials were, or equipment was, furnished or supplied or for whom the labor was done or performed, within ninety (90) days after having last performed labor or last furnished materials or equipment included in the Claim; and
- .2 have sent a Claim to the Surety (at the address described in Section 13).

§ 5.2 Claimants, who are employed by or have a direct contract with the Contractor, have sent a Claim to the Surety (at the address described in Section 13).

§ 6 If a notice of non-payment required by Section 5.1.1 is given by the Owner to the Contractor, that is sufficient to satisfy a Claimant's obligation to furnish a written notice of non-payment under Section 5.1.1.

§ 7 When a Claimant has satisfied the conditions of Sections 5.1 or 5.2, whichever is applicable, the Surety shall promptly and at the Surety's expense take the following actions:

§ 7.1 Send an answer to the Claimant, with a copy to the Owner, within sixty (60) days after receipt of the Claim, stating the amounts that are undisputed and the basis for challenging any amounts that are disputed; and

§ 7.2 Pay or arrange for payment of any undisputed amounts.

§ 7.3 The Surety's failure to discharge its obligations under Section 7.1 or Section 7.2 shall not be deemed to constitute a waiver of defenses the Surety or Contractor may have or acquire as to a Claim, except as to undisputed amounts for which the Surety and Claimant have reached agreement. If, however, the Surety fails to discharge its obligations under Section 7.1 or Section 7.2, the Surety shall indemnify the Claimant for the reasonable attorney's fees the Claimant incurs thereafter to recover any sums found to be due and owing to the Claimant.

§ 8 The Surety's total obligation shall not exceed the amount of this Bond, plus the amount of reasonable attorney's fees provided under Section 7.3, and the amount of this Bond shall be credited for any payments made in good faith by the Surety.

§ 9 Amounts owed by the Owner to the Contractor under the Construction Contract shall be used for the performance of the Construction Contract and to satisfy claims, if any, under any construction performance bond. By the Contractor furnishing and the Owner accepting this Bond, they agree that all funds earned by the Contractor in the performance of the Construction Contract are dedicated to satisfy obligations of the Contractor and Surety under this Bond, subject to the Owner's priority to use the funds for the completion of the work.

§ 10 The Surety shall not be liable to the Owner, Claimants or others for obligations of the Contractor that are unrelated to the Construction Contract. The Owner shall not be liable for the payment of any costs or expenses of any Claimant under this Bond, and shall have under this Bond no obligation to make payments to, or give notice on behalf of, Claimants or otherwise have any obligations to Claimants under this Bond.

§ 11 The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders and other obligations.

§ 12 No suit or action shall be commenced by a Claimant under this Bond other than in a court of competent jurisdiction in the state in which the project that is the subject of the Construction Contract is located or after the expiration of one year from the date (1) on which the Claimant sent a Claim to the Surety pursuant to Section 5.1.2 or 5.2, or (2) on which the last labor or service was performed by anyone or the last materials or equipment were furnished by anyone under the Construction Contract, whichever of (1) or (2) first occurs. If the provisions of this Paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

§ 13 Notice and Claims to the Surety, the Owner or the Contractor shall be mailed or delivered to the address shown on the page on which their signature appears. Actual receipt of notice or Claims, however accomplished, shall be sufficient compliance as of the date received.

§ 14 When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

§ 15 Upon request by any person or entity appearing to be a potential beneficiary of this Bond, the Contractor and Owner shall promptly furnish a copy of this Bond or shall permit a copy to be made.

§ 16 Definitions

§ 16.1 Claim. A written statement by the Claimant including at a minimum:

- .1 the name of the Claimant;
- .2 the name of the person for whom the labor was done, or materials or equipment furnished;
- .3 a copy of the agreement or purchase order pursuant to which labor, materials or equipment was furnished for use in the performance of the Construction Contract;
- .4 a brief description of the labor, materials or equipment furnished;
- .5 the date on which the Claimant last performed labor or last furnished materials or equipment for use in the performance of the Construction Contract;
- .6 the total amount earned by the Claimant for labor, materials or equipment furnished as of the date of the Claim;
- .7 the total amount of previous payments received by the Claimant; and
- .8 the total amount due and unpaid to the Claimant for labor, materials or equipment furnished as of the date of the Claim.

§ 16.2 Claimant. An individual or entity having a direct contract with the Contractor or with a subcontractor of the Contractor to furnish labor, materials or equipment for use in the performance of the Construction Contract. The term Claimant also includes any individual or entity that has rightfully asserted a claim under an applicable mechanic's lien or similar statute against the real property upon which the Project is located. The intent of this Bond shall be to include without limitation in the terms "labor, materials or equipment" that part of water, gas, power, light, heat, oil, gasoline, telephone service or rental equipment used in the Construction Contract, architectural and engineering services required for performance of the work of the Contractor and the Contractor's subcontractors, and all other items for which a mechanic's lien may be asserted in the jurisdiction where the labor, materials or equipment were furnished.

§ 16.3 Construction Contract. The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and all changes made to the agreement and the Contract Documents.

§ 16.4 **Owner Default.** Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.

§ 16.5 **Contract Documents.** All the documents that comprise the agreement between the Owner and Contractor.

§ 17 If this Bond is issued for an agreement between a Contractor and subcontractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

§ 18 Modifications to this bond are as follows:

Sample

(Space is provided below for additional signatures of added parties, other than those appearing on the cover page.)

CONTRACTOR AS PRINCIPAL

SURETY

Company: _____ *(Corporate Seal)*

Company: _____ *(Corporate Seal)*

Signature: _____

Signature: _____

Name and Title: _____

Name and Title: _____

Address _____

Address _____

DOCUMENT 00 63 25

SUBSTITUTION REQUEST FORM – DURING CONSTRUCTION

Use this form for substitution requests following signed agreement. This form is not strictly mandatory but may be required by the Architect for specific requests. The contract documents, including those identified below, define the process for requesting a substitution or getting approval of an item.

Complete the form and provide attachments that document any other information necessary for an evaluation of the substitute items. Provide a complete description of the proposed substitution including the name of the material or equipment proposed, performance and test data, and relevant drawings. Identify reference standards and provide point by point comparison that documents how the proposed substitute item compares to the specified item. Identify any changes to contract documents that are necessary for inclusion of the substitute items into the project.

Send form to Tobin Fauchaux, tfaucheux@hsrassociates.com, 608-785-4717.

Reference Documents (AIA A201):

- A. General Conditions Articles 3.4.2 & 3.5.
- B. Section 01 25 00 Substitution Procedures.

PROJECT NAME: _____ PROJ. #: _____

REQUESTING COMPANY: _____

CONTACT PERSON: _____ DATE OF REQUEST: _____

CONTACT EMAIL: _____ CONTACT PHONE: _____

SPECIFIED ITEM: _____ SECTION #: _____

PROPOSED SUBSTITUTE ITEM: _____

REASON FOR NOT PROVIDING THE SPECIFIED ITEM: _____

COST SAVINGS TO OWNER FOR SUBSTITUTION: \$ _____

SCHEDULE IMPACT DUE TO SUBSTITUTION: _____

DAYS ADD: _____ DAYS DEDUCT: _____ NEW SUB. COMP. DATE: _____

ATTACHMENTS:

The undersigned certifies that the following paragraphs, unless modified on attachments, are correct:

1. The proposed substitution does not affect dimensions shown on drawings.
2. The undersigned will pay for changes to the building design, including architectural/engineering design, detailing and construction costs caused by the requested substitution.
3. The proposed substitution will have no adverse effect on other trades, the construction schedule, or specified warranty requirements.
4. Maintenance and service parts will be locally available for the proposed substitution.
5. The function appearance and quality of the Proposed Substitution are equivalent or superior to the Specified Item.
6. Cost and schedule information provided are complete. Any additional costs or schedule delays associated with this substitution will be paid for and remediated by the requestor without claim to the Owner or Architect.

Submitter Signature: _____

HSR Reviewer: _____

HSR Reviewer Notes: _____

Disposition of submittal request:

Watch for acceptance of the substitution in a future change order or change directive including any associated notes clarifying the acceptance.

Not accepted – Use specified item

Date of Disposition: _____

END OF DOCUMENT



Wisconsin Sales and Use Tax Exemption Certificate

Form S-211

Do not send this certificate to the Department of Revenue

Purchaser: Complete this certificate and give it to the seller.

Seller: If this certificate is not fully completed, you must charge sales tax. Keep this certificate as part of your records.

Check One Single Purchase Continuous

Purchaser Information				
Business Name			Type of Business	
Business Address		City	State	ZIP Code
Purchaser's Tax ID Number			State of Issue	
If no Tax ID Number, enter one of the following:	FEIN	Driver's License Number/State Issued ID Number		State of Issue
Seller Information				
Name				
Address		City	State	ZIP Code
Reason for Exemption				
<input type="checkbox"/> Resale (Enter purchaser's seller's permit or use tax certificate number) _____				

Sample Document

Manufacturing and Biotechnology

- Tangible personal property (TPP) or item under s.77.52(1)(b) that is used exclusively and directly by a manufacturer in manufacturing an article of TPP or items or property under s.77.52(1)(b) or (c) that is destined for sale and that becomes an ingredient or component part of the article of TPP or items or property under s.77.52(1)(b) or (c) destined for sale or is consumed or destroyed or loses its identity in manufacturing the article of TPP or items or property under s.77.52(1)(b) or (c) destined for sale.
- Machines and specific processing equipment and repair parts or replacements thereof, exclusively and directly used by a manufacturer in manufacturing tangible personal property or items or property under s.77.52(1)(b) or (c) and safety attachments for those machines and equipment.
- The repair, service, alteration, fitting, cleaning, painting, coating, towing, inspection, and maintenance of machines and specific processing equipment, that the above purchaser would be authorized to purchase without sales or use tax, at the time the service is performed. Tools used to repair exempt machines are not exempt.
- Fuel and electricity consumed in manufacturing tangible personal property or items or property under s.77.52(1)(b) or (c) in this state.
Percent of fuel exempt: _____ % Percent of electricity exempt: _____ %
- Portion of the amount of fuel converted to steam for purposes of resale. Percent of fuel exempt: _____ %
- Property used exclusively and directly in qualified research, by persons engaged in manufacturing at a building assessed under s. 70.995, by persons engaged primarily in biotechnology in Wisconsin, or a combined group member conducting qualified research for another combined group member that meets these requirements.

Farming

(To qualify for this exemption, the purchaser must use item(s) exclusively and directly in the business of farming, including dairy farming, agriculture, horticulture, floriculture, silviculture, beekeeping or custom farming services.)

- Tractors (except lawn and garden tractors), all-terrain vehicles (ATV) and farm machines, including accessories, attachments, and parts, lubricants, nonpowered equipment, and other tangible personal property or items or property under s.77.52(1)(b) or (c) that are used exclusively and directly, or are consumed or lose their identities in the business of farming. This includes services to the property and items above.
- Feed, seeds for planting, plants, fertilizer, soil conditioners, sprays, pesticides, and fungicides.
- Breeding and other livestock, poultry, farm work stock, bees, beehives and bee combs.
- Containers for fruits, vegetables, bee products, grain, hay, and silage (including containers used to transfer merchandise to customers), and plastic bags, sleeves, and sheeting used to store or cover hay and silage. Baling twine and baling wire.
- Animal waste containers or component parts thereof (may only mark certificate as "Single Purchase").
- Animal bedding, drugs for farm livestock or bees, and milk house supplies.

Governmental Units and Other Exempt Entities

Enter CES No., if applicable

- The United States and its unincorporated agencies and instrumentalities.
- Any federally recognized American Indian tribe or band in this state.
- Wisconsin state and local governmental units, including the State of Wisconsin or any agency thereof, Wisconsin counties, cities, villages, or towns, and Wisconsin public schools, school districts, universities, or technical college districts.
- Organizations meeting the requirements of section 501(c)(3) of the Internal Revenue Code. Wisconsin organizations must enter a CES number above.

Other

- Containers and other packaging, packing, and shipping materials, used to transfer merchandise to customers of the purchaser.
- Trailers and accessories, attachments, parts, supplies, materials, and service for motor trucks, tractors, and trailers which are used exclusively in common or contract carriage under LC, IC, or MC No. (if applicable) _____.
- Machines and specific processing equipment used exclusively and directly in a fertilizer blending, feed milling, or grain drying operation, including repair parts, replacements, and safety attachments.
- Building materials acquired solely for and used solely in the construction or repair of holding structures used for weighing and dropping feed or fertilizer ingredients into a mixer or for storage of such grain, if such structures are used in a fertilizer blending, feed milling, or grain drying operation.
- Tangible personal property purchased by a person who is licensed to operate a commercial radio or television station in Wisconsin, if the property is used exclusively and directly in the origination or integration of various sources of program material for commercial radio or television transmissions that are generally available to the public free of charge without a subscription or service agreement.
- Fuel and electricity consumed in the origination or integration of various sources of program material for commercial radio or television transmissions that are generally available to the public free of charge without a subscription or service agreement.
Percent of fuel exempt: _____ % Percent of electricity exempt: _____ %

Tangible personal property, property, items and goods under s.77.52(1)(b), (c), and (d), or services purchased by a Native American with enrollment # _____, who is enrolled with and resides on the _____ Reservation, where buyer will take possession of such property, items, goods, or services.

Tangible personal property and items and property under s.77.52(1)(b) and (c) becoming a component of an industrial or municipal waste treatment facility, including replacement parts, chemicals, and supplies used or consumed in operating the facility. Caution: Do not check the "continuous" box at the top of page 1.

Portion of the amount of electricity or natural gas used or consumed in an industrial waste treatment facility.
(Percent of electricity or natural gas exempt _____ %)

Electricity, natural gas, fuel oil, propane, coal, steam, corn, and wood (including wood pellets which are 100% wood) used for fuel for **residential or farm** use.

	% of Electricity Exempt	% of Natural Gas Exempt	% of Fuel Exempt
<input type="checkbox"/> Residential	_____ %	_____ %	_____ %
<input type="checkbox"/> Farm	_____ %	_____ %	_____ %

Address Delivered: _____

- Percent of printed advertising material solely for out-of-state use. _____ %
- Catalogs, and the envelopes in which the catalogs are mailed, that are designed to advertise and promote the sale of merchandise or to advertise the services of individual business firms.
- Computers and servers used primarily to store copies of the product that are sent to a digital printer, a plate-making machine, or a printing press or are used primarily in prepress or postpress activities, by persons whose NAICS code is 323111, 323117, or 323120.
- Purchases from out-of-state sellers of tangible personal property that are temporarily stored, remain idle, and not used in this state and that are then delivered and used solely outside this state, by persons whose NAICS code is 323111, 323117, or 323120.
- Other purchases exempted by law. (State items and exemption). _____

I declare that the information provided is complete and accurate to the best of my knowledge, and that the product(s) purchased will be used in the exempt manner indicated. If a product is not used in an exempt manner, I will remit use tax on the purchase price at the time of first taxable use. I understand that failure to remit the use tax may result in a future liability, including tax, interest, and penalty.

CAUTION: Using this certificate to avoid paying sales tax may result in a fine of \$250 for each transaction for which the certificate is used

Signature of Purchaser	Print or Type Name	Title	Date

(DETACH AND PRESENT TO SELLER)

DOCUMENT 00 65 19.19

CONSENT OF SURETY TO FINAL PAYMENT

PROJECT: WESTERN TECHNICAL COLLEGE
SPARTA PUBLIC SAFETY TRAINING SIM CITY
11177 COUNTY HWY A
SPARTA, WISCONSIN 54656
PROJECT NO. 25039

OWNER: WESTERN TECHNICAL COLLEGE
PHYSICAL PLANT OFFICE
505 9TH STREET NORTH
LA CROSSE, WISCONSIN 54601

CONTRACTOR: _____

CONTRACT FOR: ENTIRE WORK for single prime contractor.

CONTRACT DATE: _____

In accordance with the provisions of the Contract between the Owner and the Contractor as indicated above, _____, SURETY

COMPANY, on bond of _____, Contractor, hereby approves of the final payment to the Contractor, and agrees that final payment to the Contractor shall not relieve the Surety Company of any of its obligations to the Owner, named above, as set forth in said Surety Company's bond.

It is further agreed that, in giving this consent, the Surety has made its own investigation to determine that said payment should be made to the Contractor and has not relied on any representation by the Architect/Engineer which has induced it to consent to such payment. Surety hereby expressly waives all claims against the Architect/Engineer and the Owner for wrongful release of funds to the Contractor.

IN WITNESS WHEREOF,

The Surety Company has hereunto set its hand this day of _____, 20____.

Surety Company _____

Attest: Signature of Authorized Representative _____

(Seal)

Title _____

END OF DOCUMENT 00 65 19.19

Page Intentionally Left Blank

DOCUMENT 00 72 00

GENERAL CONDITIONS

The "General Conditions of the Contract for Construction" AIA Document A201, 2017 Edition, Articles 1-15, are hereby made a part of this Project Manual.

END OF DOCUMENT 00 72 00

Page Intentionally Left Blank



AIA® Document A201® – 2017

General Conditions of the Contract for Construction

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

| See Supplementary Conditions

THE OWNER:
(Name, legal status and address)

| See Supplementary Conditions

THE ARCHITECT:
(Name, legal status and address)

| See Supplementary Conditions

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
- 15 CLAIMS AND DISPUTES

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.

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.

/

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, 7.3.10, 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**

Init.

/

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

Init.

/

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

Init.

/

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.

§ 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.

§ 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 by any trade.

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

§ 1.3 Capitalization

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

§ 1.4 Interpretation

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

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

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

§ 1.5.2 The Contractor, Subcontractors, Sub-subcontractors, and suppliers are authorized to use and reproduce the Instruments of Service provided to them, subject to any protocols established pursuant to Sections 1.7 and 1.8, solely and exclusively for execution of the Work. All copies made under this authorization shall bear the copyright notice, if any, shown on the Instruments of Service. The Contractor, Subcontractors, Sub-subcontractors, and suppliers may not use the Instruments of Service on other projects or for additions to the Project outside the scope of the Work without the specific written consent of the Owner, Architect, and the Architect's consultants.

§ 1.6 Notice

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

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

§ 1.7 Digital Data Use and Transmission

The parties shall agree upon protocols governing the transmission and use of Instruments of Service or any other information or documentation in digital form. The parties will use 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 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 Information and Services Required of the Owner

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

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

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

§ 2.3.4 The Owner shall furnish surveys describing physical characteristics, legal limitations and utility locations for the site of the Project, and a legal description of the site. The Contractor shall be entitled to rely on the accuracy of information furnished by the Owner but shall exercise proper precautions relating to the safe performance of the Work.

§ 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.

§ 2.5 Owner's Right to Carry Out the Work

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

ARTICLE 3 CONTRACTOR

§ 3.1 General

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

§ 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.

§ 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.

§ 3.3 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.

§ 3.4 Labor and Materials

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

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

§ 3.4.3 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.

§ 3.5 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

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.

§ 3.7 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.

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

§ 3.7.3 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.

§ 3.8 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.

§ 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.

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

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

§ 3.11 Documents and Samples at the Site

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

delivered to the Architect for submittal to the Owner upon completion of the Work as a record of the Work as constructed.

§ 3.12 Shop Drawings, Product Data and Samples

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

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

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

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

§ 3.12.5 The Contractor shall review for compliance with the Contract Documents, approve, and submit to the Architect, Shop Drawings, Product Data, Samples, and similar submittals required by the Contract Documents, in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness and in such sequence as to cause no delay in the Work or in the activities of the Owner or of Separate Contractors.

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

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

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

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

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

§ 3.12.10.1 If professional design services or certifications by a design professional related to systems, materials, or equipment are specifically required of the Contractor by the Contract Documents, the Owner and the Architect will

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

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

§ 3.13 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.

§ 3.14 Cutting and Patching

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

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

§ 3.15 Cleaning Up

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

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

§ 3.16 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, Contractor, and Architect. Consent shall not be unreasonably withheld.

§ 4.2 Administration of the Contract

§ 4.2.1 The Architect will provide administration of the Contract as described in the Contract Documents and will be an Owner's representative during construction until the date the Architect issues the final Certificate for Payment. 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.

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

§ 4.2.4 Communications

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

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

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

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

§ 4.2.8 The Architect will prepare Change Orders and Construction Change Directives, and may order minor changes in the Work as provided in Section 7.4. The Architect will investigate and make determinations and recommendations regarding concealed and unknown conditions as provided in Section 3.7.4.

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

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

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

§ 4.2.12 Interpretations and decisions of the Architect will be consistent with the 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.

ARTICLE 5 SUBCONTRACTORS

§ 5.1 Definitions

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

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

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

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

§ 5.2.2 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.

§ 5.4 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.

§ 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. If 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.

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.

Init.

§ 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.

§ 7.2 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.

§ 7.3 Construction Change Directives

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

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

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

- .1 Mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation;
- .2 Unit prices stated in the Contract Documents or subsequently agreed upon;
- .3 Cost to be determined in a manner agreed upon by the parties and a mutually acceptable fixed or percentage fee; or
- .4 As provided in Section 7.3.4.

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

- .1 Costs of labor, including applicable payroll taxes, fringe benefits required by agreement or custom, workers' compensation insurance, 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 or Contract Time.

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

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

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

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

§ 7.4 Minor Changes in the Work

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

ARTICLE 8 TIME

§ 8.1 Definitions

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

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

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

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

§ 8.2 Progress and Completion

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

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

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

§ 8.3 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.

§ 8.3.2 Claims relating to time shall be made in accordance with applicable provisions of Article 15.

§ 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.

ARTICLE 9 PAYMENTS AND COMPLETION

§ 9.1 Contract Sum

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

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

§ 9.2 Schedule of Values

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.

§ 9.3 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, if required, 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.

§ 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.

§ 9.3.2 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.

§ 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.

§ 9.4 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;

Init.

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

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

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

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

§ 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.

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

§ 9.6.4 The Owner has the right to request written evidence from the Contractor that the Contractor has properly paid Subcontractors and suppliers amounts paid by the Owner to the Contractor for subcontracted Work. If the Contractor fails to furnish such evidence within seven days, the Owner shall have the right to contact Subcontractors and suppliers to ascertain whether they have been properly paid. Neither the Owner nor Architect shall have an obligation to pay, or to see to the payment of money to, a Subcontractor or supplier, except as may otherwise be required by law.

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

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

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

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

§ 9.7 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, plus interest as provided for in the Contract Documents.

§ 9.8 Substantial Completion

§ 9.8.1 Substantial Completion is the stage in the progress of the Work when the Work or designated portion thereof is sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work for its intended use.

§ 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.

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

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

§ 9.10.2 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

Init.

- .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.

§ 10.2.3 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. By Change Order, the Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable additional costs of shutdown, delay, and start-up.

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

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

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

§ 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 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 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 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 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.

§ 11.1.4 Notice of Cancellation or Expiration of Contractor's Required Insurance. Within three (3) 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.

§ 11.2 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.

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

Init.

AIA Document A201® – 2017. Copyright © 1911, 1915, 1918, 1925, 1937, 1951, 1958, 1961, 1963, 1966, 1970, 1976, 1987, 1997, 2007 and 2017 by The American Institute of Architects. All rights reserved. The "American Institute of Architects," "AIA," the AIA Logo, "A201," and "AIA Contract Documents" are registered trademarks and may not be used without permission. This document was produced by AIA software at 17:39:03 ET on 01/20/2022 under Order No.7329489615 which expires on 07/24/2022, 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 copyright@aia.org.

User Notes:

(1667850807)

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.

§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.

§ 13.2 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.

§ 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.

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;
- .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.

§ 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, as well as reasonable overhead and profit on Work not 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.

§ 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.

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.

§ 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.

§ 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.

§ 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.

§ 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.



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 17:39:03 ET on 01/20/2022.

PAGE 1

See Supplementary Conditions

...

See Supplementary Conditions

...

See Supplementary Conditions

Certification of Document's Authenticity

AIA® Document D401™ – 2003

I, Tobin J. Faucheux, 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 17:39:03 ET on 01/20/2022 under Order No. 7329489615 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, as published by the AIA in its software, other than those additions and deletions shown in the associated Additions and Deletions Report.

Tobin Faucheux

(Signed)

Specifier

(Title)

01/31/2022

(Dated)

Page Intentionally Left Blank

SECTION 00 73 00
SUPPLEMENTARY CONDITIONS

GENERAL

APPLICATION

The following amendments modify, delete and add to AIA document A201-2017 General Conditions. Where any article, paragraph or subparagraph in the general conditions is supplemented by one of the following paragraphs, the provisions of such article, paragraph or subparagraph shall remain in effect and the supplemental provisions shall be considered as added thereto. Where any article, paragraph or subparagraph of the general conditions is not supplemented, amended, voided or superseded by any of the following paragraphs, the provisions of such article, paragraph or subparagraph not so amended, voided or superseded shall remain in effect.

DOCUMENTS INCLUDED IN THE SUPPLEMENTARY CONDITIONS:

Document 00 73 16 Insurance Requirements

Document 00 73 17 Bond Requirements

ARTICLE 1

1.1.3

Add the following sentence to the end of the existing sub-article:

"The word 'provide' shall also be understood to require 'furnish and install'."

1.1.4

Add the following sentence to the end of the existing sub-article:

"A detailed description of the Project can be found in Document 00 11 13."

1.2.3

After 1.2.3, insert the following new sub-articles:

"1.2.4 Where a number is listed in the Project Manual (as for gauges, weights, temperatures, amount of time, etc.) the number shall be interpreted as that or better."

"1.2.5 Whenever the words 'approved', 'satisfactory', 'directed', 'submitted', 'inspected', or similar words or phrases are used in the product specification sections, it shall be assumed that the words 'Architect/Engineer or Architect/Engineer's representative' follows the verb as the object of the clause, such as 'approved by the Architect/Engineer or Architect/Engineer's representative'."

ARTICLE 2

2.1.2

After 2.1.2, insert the following new sub-article:

"2.1.3 Refer to Document 00 22 13 for a detailed description of the Owner."

ARTICLE 3

3.3.3

After 3.3.3, insert the following new sub-article:

"3.3.4 Refer to Section 01 40 00 for detailed quality control requirements."

3.5.1

Add the following sentence to the end of the existing sub-article:

"Refer to Article 12 to see the time frame for correcting defective Work."

After 3.5.1, insert the following new sub-article:

"3.5.1.1 Where the Contract Documents require Work better than that required by statute, the Contract Documents shall govern."

3.6

After 3.6, insert the following new sub-article:

"3.6.1 As of July 1, 2018, and in accordance with Section 77.54(9m), Wis. Stats. (2015-2016) Wisconsin contractors are exempt from sales tax on real property materials purchased for this Project. A Wisconsin Sales and Use Tax Exemption Certificate will be included with the contract.

The exemption only applies to a contractor's purchase of materials and other components that become part of a **real property improvement** that is a "facility." The sale of a real property improvement is not subject to tax, regardless of who is the purchaser.

"Facility" means any building, shelter, parking lot, parking garage, athletic field, athletic park, storm sewer, water supply system, or sewerage and waste water treatment facility, but does not include a highway, street, or road.

The exemption does not apply to lab equipment or other property that remains **tangible personal property** after sale or installation. However, all of a Wisconsin Technical College's purchases of tangible personal property are already exempt from tax. The contractor may purchase property without tax, for resale, that remains tangible personal property after sale or installation. The contractor must be sure to make all invoices and other billing documents out in the name of the Wisconsin Technical College District to substantiate that its sale was to an exempt entity."

3.7.1

Add the following sentence to the end of the existing sub-article:

"Contractor shall provide permits for driveway/curb-cuts, and cost for relocation of light poles and tree."

3.7.4

In 3.7.4, change "~~14 days after first observance~~" to "10 days after first observance"

3.8.3

After 3.8.3, insert the following new sub-article:

"3.8.4 Refer to Section 01 21 00 for detailed description of allowances."

3.12.6

After 3.12.6, insert the following new sub-articles:

".1 Contractor shall use a verification stamp with signature and date to signify Contractor's approval of Shop Drawings."

".2 Refer to Sections 01 30 00, 01 40 00 and 01 60 00 for detailed submittal information."

3.14.2

After 3.14.2, insert the following new sub-article:

"3.14.3 Refer to Section 01 70 00 for detailed cutting and patching requirements."

ARTICLE 4

4.1.1

Add the following sentence to the end of the existing sub-article:

"Wherever the term 'Architect' appears, it shall be changed to 'Architect/Engineer (AE)'."

After 4.1.1, insert the following new sub-article:

".1 Refer to Document 00 21 13 for a detailed description of the AE and any applicable consultants."

ARTICLE 5

5.2.1

Delete the first sentence of the existing sub-article:

~~“Unless otherwise stated in Contract Documents, the Contractor, as soon as practicable after award of the Contract, shall notify the Owner and Architect of the persons or entities proposed for each principal portion of the Work, including those who are to furnish materials or equipment fabricated to a special design.”~~

Replace with:

“The successful bidder, within 10 calendar days from notification of selection for award of contract, shall furnish in writing to the Owner through the Architect a listing of major subcontractors and suppliers, their addresses, phone numbers, and the portions of the work which they will perform.”

ARTICLE 7

7.2.1

After sub-article 7.2.1, insert the following new sub-article:

“7.2.2 Refer to Section 01 20 00 and 7.3.4 below for detailed change order procedures.”

7.3.3.2

Delete the text of existing sub-article:

~~“Unit prices stated in the Contract Documents or subsequently agreed upon;”~~

Replace with:

“Unit prices stated in the Contract Documents including Section 01 22 00 or subsequently agreed upon;”

7.3.4

In the first sentence of sub-article 7.3.4, 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.”~~ To “including the allowance for overhead and profit as set forth in the Agreement”

7.3.8

Delete the text of the first sentence of sub-article 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.”~~

Replace with:

“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 and the allowance for overhead and profit applied to the net cost as confirmed by the Architect.”

7.3.10

After 7.3.10, insert the following new sub-article:

“7.3.11 In Subparagraphs 7.3.3 and 7.3.4 the percentage fee allowance for the combined overhead and profit included in the total cost to the Owner shall be based on the following schedule:

- .1 for the Contractor, for Work performed by the Contractor’s own forces, 10 percent of the cost.
- .2 for the Contractor, for Work performed by the Contractor’s Subcontractor, 7 percent of the amount due the Subcontractor.
- .3 for each Subcontractor or Sub-subcontractor involved, for Work performed by that Subcontractor’s or Sub-subcontractor’s own forces, 7 percent of the cost.

.4 for each Subcontractor, for Work performed by the Subcontractor's Sub-subcontractor, 5 percent of the amount due the Sub-subcontractor.

.5 In order to facilitate checking of quotations for extras or credits, all proposals, except those so minor that their propriety can be seen by inspection, shall be accompanied by a complete itemization of costs including labor, materials and Subcontracts. Labor and materials shall be itemized in manner prescribed above. Where major cost items are subcontracts, they shall be itemized also. In no case will a change involving over \$500.00 be approved without such itemization."

7.4

After 7.4, insert the following new sub-article:

"7.5 Bulletins

A Bulletin is a written document prepared by the Architect/Engineer as a statement of changes in the scope of Work which may or may not change the Contract Amount or Time. The Contractor shall return the executed Bulletin to the Architect/Engineer on or before the date stated in the Bulletin stating Contractor's agreement to change the Scope of Work and any proposed adjustment to the Contract Amount and the Contract Time. All Bulletin items shall subsequently be recorded on a Change Order."

ARTICLE 9

9.2

After 9.2, insert the following new sub-article:

"9.2.1 Refer to Section 01 20 00 for detailed schedule of values requirements."

9.3.1

Delete the first sentence of the existing sub-article:

~~"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."~~

Replace with:

Submission of Applications for Payment shall follow sub-article 9.6 of the Supplementary Conditions.

9.6.8

After 9.6.8, insert the following new sub-article:

"9.6.9 Based upon Applications for Payment submitted to the Architect by the Contractor, the Owner shall make progress payment on account of the Contract Sum to the Contractor as provided below and elsewhere in the Contract Documents.

.1 The period covered by each Application for Payment shall be on the 25th day of the month.

.2 Provided an Application for Payment is received by the Architect not later than the 25th day of a month, the Owner shall make payment to the Contractor not later than the 25th day of the following month. If an Application for Payment is received by the Architect after the application date fixed above, payment shall be made by the Owner not later than 60 days after the Architect receives the Application for Payment.

.3 Each Application for Payment shall be based upon the 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 and be prepared in such form and supported by such data to substantiate its accuracy as the Architect may require. This schedule, unless objected to by the Architect, shall be used as a basis for reviewing the Contractor's Applications for Payment.

.4 Applications for Payment shall indicate the percentage of completion of each portion of the Work as of the end of the period covered by the Application for Payment.

.5 Subject to the provisions of the Contract Documents, the amount of each progress payment shall be computed as follows:

The retainage shall be an amount equal to not more than 5% of the estimate until 50% of the work has been completed. At 50% completion, no additional amounts shall be retained except that at 50% completion or any time thereafter when the progress of the work is not satisfactory, additional amounts may be retained, but in no event shall the total retainage be more than 10% of the value of the work completed.

.6 The progress payment amount determined in accordance with Paragraph 9.6.9.5 shall be further modified per Paragraph 9.6.9.6.1 of the Supplementary Conditions.

.6.1 Upon Substantial Completion of the Work, retainage to remain at 5% of Contract Sum until the Contract is closed out. This amount MAY be reduced to a lower percentage or lump sum if agreed to by Owner, Contractor and A/E.

.7 Reduction or limitation of retainage, if any, shall be per Paragraph 9.6 of the Supplementary Conditions.”

9.8.5

After 9.8.5, insert the following new sub-article:

“**9.8.6** Failure to reach final completion within 60 days from total Substantial Completion of the Project shall be cause to terminate the Contract and the Contractor’s surety shall be notified accordingly.”

9.10.1

After 9.10.1, insert the following new sub-articles:

“.1 Upon completion of the Final Inspection if the Work is not acceptable and the Contract not fully performed, the AE will notify the Contractor, in writing, of all unfinished Work and fix the time within which the Contractor shall complete the items listed. Upon notification by the Contractor that the list of uncompleted items is complete, the AE will make a follow-up inspection trip.”

“.2 Time spent by the AE to follow-up on such unfinished Work to determine that the Contractor has fully performed the Contract shall be paid for by the Contractor on the basis of the AE’s regular hourly rate schedule for supplementary services and reimbursable expenses as stated in the AE’s agreement for services with the Owner.”

“.3 Payment for all such additional services required of the AE will be deducted from the balance due the Contractor, duly noted on the final Certificate for Payment and paid by the Owner directly to the AE.”

9.10.5

After 9.10.5, insert the following new sub-article:

“**9.10.6** Refer to Section 01 78 00 for detailed Contract closeout procedures.”

ARTICLE 11

11.1.1

After 11.1.1, insert the following new sub-article:

“.1 Refer to Supplementary Conditions for requirements and coverages for bonds and insurance.”

11.2.1

After 11.2.1, insert the following new sub-article:

".1 The Contractor shall provide and maintain Property Insurance to cover the deductible of the Owner's property insurance in the amount of \$1,000 of loss on any claim, or provide evidence satisfactory to the Owner that the Contractor shall pay for all such losses not covered by the Owner against the same peril as described for the Owner's Property Insurance."

ARTICLE 12

12.2.2.1

In 12.2.2.1, change the words "~~one-year~~" in the first sentence to "two years".

12.2.2.2

In 12.2.2.2, change the words "~~one-year~~" in the first sentence to "two-year".

12.2.2.3

In 12.2.2.3, change the words "~~one-year~~" in the first sentence to "two-year".

END OF SECTION

DOCUMENT 00 73 16
INSURANCE REQUIREMENTS

1.01 SUMMARY

- A. This Section includes instructions for insurance.

1.02 RELATED REQUIREMENTS

- A. Section 00 72 00 General Conditions of the Contract for Construction, AIA A201. Note the requirements of Article 11.
- B. Section 00 73 17 Bond Requirements

1.03 INSTRUCTIONS FOR INSURANCE

- A. Notification to Owner: The Contractor shall, in consultation with insurance provider, submit documentation for the insurance coverages listed below.
- B. Contractor's Liability Insurance: Concerning the insurance referenced in Article 11 in AIA Document A201, 2017 edition, policy shall be written for the following minimum limits or greater if required by law.
 - 1. Workers' Compensation:
 - a) State Statutory Limit
 - b) Employer's Liability: \$500,000 per Accident.
 - 2. Comprehensive or Commercial General Liability (including Premises-Operations; Independent Contractors' Protective; Products and Completed Operations; Broad Form Property Damage):
 - a) Bodily Injury and Property Damage:
\$1,000,000 Each Occurrence
Minimum \$2,000,000 Aggregate or Per Project Endorsement
 - 3. Contractual Liability:
 - a) Bodily Injury and Property Damage:
\$1,000,000 Each Occurrence
Minimum \$2,000,000 Aggregate or Per Project Endorsement.
 - 4. Business Auto Liability (including owned, non-owned and hired vehicles):
 - a) Bodily Injury and Property Damage:
\$1,000,000 Combined Single Limit (CSL) Each Occurrence
 - 5. Umbrella Excess Liability:
\$2,000,000 over primary insurance.
Maximum self-insured retention of \$25,000.
 - 7. The Owner and AE shall be named as additional insureds.
 - 8. If this insurance is written on the Comprehensive General Liability policy form, the Certificates shall be AIA Document G705, Certificate of Insurance. If this insurance is written on a Commercial General Liability policy form, ACORD form 25 will be acceptable.

END OF DOCUMENT 00 73 16

Page Intentionally Left Blank

DOCUMENT 00 73 17
BOND REQUIREMENTS

1.01 SUMMARY

- A. This Section includes instructions for performance and payment bonds.

1.02 RELATED REQUIREMENTS

- A. Document 00 21 00 Instructions to Bidders: Requirements for Bid Bond.
- B. Document 00 61 13.13 Performance Bond Form
- C. Document 00 61 13.16 Payment Bond Form
- D. Section 00 72 00 General Conditions of the Contract for Construction, AIA A201. Note the requirements of Article 11.
- E. Section 00 73 16 Insurance Requirements

1.03 INSTRUCTIONS FOR PERFORMANCE AND PAYMENT BOND

- A. The Contractor shall furnish bonds as described below, covering the faithful performance of the Contract and the payments of all obligations arising thereunder.
- B. Furnish both AIA A312 Performance Bond and AIA A312 Payment Bond, 2010 edition, each in the amount of 100% of the contract price.
- C. Bond amounts shall not exceed the single bond limit for the Contractor's bonding company as set forth in the Federal Register current as of the date.
- D. The bonds shall be written with such sureties secured through the Contractor's usual sources as may be agreeable to the parties. In addition, the sureties shall be authorized to conduct surety business in the state in which the Project is located, and the sureties and any reinsuring companies shall be listed in the current Department of the Treasury Circular No. 570 with an underwriting limitation equal to or greater than the penal sum of the bonds to be furnished.
- E. 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 the attorney-in-fact's power of attorney.
- F. Form of bond shall be "Public Improvement Performance/Labor and Material Payment Bond," pursuant to Section 779.14 Wisconsin Statutes, WIS. AIA Document WIS A312, published by the Wisconsin Society of Architects/AIA.
- G. All bonds shall be signed by an agent or official of the surety company and shall include the certified power of attorney provided by the surety company showing that the person who signs the bonds has the power of attorney to so sign for the surety company. Such certification shall be signed by the Secretary or Assistant Secretary of the company and not by an attorney-in-fact. This certification shall bear the same or earlier date as the bonds.

- H. Surety company shall have a B, or better, rating by the "Best Guide," licensed to do business in the State of Wisconsin.
- I. Provide four copies each of the bonds and the power of attorney to attachment to each copy of the Agreement.
- J. Contractor shall pay the premiums for the surety bonds.
- K. Date of Agreement and surety bonds shall be the same.
- L. Contractor shall sign the bonds, consistent with the following, as applicable:
 - 1. Under a partnership or a joint venture, the Agreement may be signed by one partner of the partnership, or one partner of each firm comprising the joint venture, but the surety bonds shall be signed by all partners.
 - 2. Under a corporation, the bonds shall be signed by the official signing the Agreement and the corporate seal affixed to the Agreement and the surety bonds. If the corporation has no seal, include a statement to the effect that the corporation has no seal.

1.04 AVAILABILITY OF FORMS

Sample document forms as specified above are attached hereto, and may be purchased directly from:

WISCONSIN SOCIETY OF ARCHITECTS/AIA
321 South Hamilton Street
Madison, Wisconsin 53703
Telephone: (608) 257-8477 or (800) 272-4483

END OF DOCUMENT 00 73 17

SECTION 01 10 00
SUMMARY

PART 1 GENERAL

1.01 PROJECT

- A. Refer to Cover Sheet on Drawings for project title and location.
- B. Refer to 00 11 13 Advertisement for Bids for brief description of Project.

1.02 RELATED REQUIREMENTS

- A. Section 01 50 00 - Temporary Facilities: Requirements for temporary utilities.
- B. Section 01 70 00 - Administrative Requirements: Contract limits and protection of existing conditions.

1.03 CONTRACT DESCRIPTION

- A. Contract Type: A single prime contract based on a Stipulated Price as described in Document 00 52 00 - Agreement Form.

1.04 PHASED CONSTRUCTION

- A. The Work shall be conducted in a single phase.

1.05 WORK BY OTHERS

- A. Items indicated "N.I.C." on the Project Drawings will be furnished and installed by others not a party to the Prime Contracts.

1.06 OWNER OCCUPANCY

- A. Owner intends to occupy the Project area upon Substantial Completion.
- B. Cooperate with Owner to minimize conflict and to facilitate Owner's operations.
- C. Schedule the Work to accommodate Owner occupancy.

1.07 CONTRACTOR USE OF SITE AND PREMISES

- A. Construction Operations: Limited to areas noted on Drawings.
- B. Arrange use of site and premises to allow:
 - 1. Owner occupancy.
 - 2. Work by Others.
 - 3. Work by Owner.
- C. 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.
- D. Time Restrictions:
 - 1. Work on the Project shall be done during normal working hours. If at any time during construction it becomes necessary to accelerate the Work in order to meet completion dates for portions or all of the Work, all trades shall work overtime at no additional cost to Owner.
- E. Utility Outages and Shutdown:
 - 1. Notify Owner within 48 hours of necessary interruptions of services including, but not limited to: HVAC systems, water service (hot & cold), electrical service, communications systems.
 - 2. Do not disrupt or shut down life safety systems, including but not limited to fire sprinklers and fire alarm system, without 7 days notice to Owner and authorities having jurisdiction.
 - 3. Prevent accidental disruption of utility services to other facilities.

1.08 CONSTRUCTION SCHEDULE

- A. Date of Commencement of the Work: April 13, 2026.
- B. Date of Substantial Completion: September 25, 2026.
- C. Final Completion: The completion of all Work according to the contract Documents, approved by the AE and accepted by the Owner shall be within 30 days after the Date of Substantial Completion.
- D. Exceptions: The only exceptions to the above completion dates are delay or termination because of a national emergency and/or extension of time for completion claimed and allowed according to the General Conditions and/or Supplementary Conditions.

1.09 WORK SEQUENCE

- A. Coordinate construction schedule and operations with Architect.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

SECTION 01 20 00
PRICE AND PAYMENT PROCEDURES

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Procedures for preparation and submittal of applications for progress payments.
- B. Documentation of changes in Contract Sum and Contract Time.
- C. Change order procedures.
- D. Correlation of Contractor submittals based on changes.
- E. Procedures for preparation and submittal of application for final payment.

1.02 RELATED REQUIREMENTS

- A. Document 00 52 13 - Agreement Forms AIA-A101: Contract Sum, payment period.
- B. Section 00 72 00 General Conditions and 00 73 00 Supplementary Conditions: Additional requirements for progress payments, final payment, changes in the Work.
- C. Section 00 73 00 - Supplementary Conditions: Percentage allowances for Contractor's overhead and profit.
- D. Document 00 73 00 - Supplementary Conditions: Dates for applications for payment.
- E. Section 01 22 00 - Unit Prices: Monetary values of unit prices; Payment and modification procedures relating to unit prices.

1.03 SCHEDULE OF VALUES

- A. The Schedule of Values shall allocate the entire Contract Sum among the various portions of the Work and be prepared in such form and supported by such data to substantiate its accuracy as the Architect may require. This Schedule, unless objected to by the Architect, shall be used as a basis for reviewing the Applications for Payment.
- B. Use Schedule of Values Form: AIA G703, edition stipulated in the Agreement.
- C. Electronic media printout including equivalent information will be considered in lieu of standard form specified; submit draft to Architect for approval.
- D. Forms filled out by hand will not be accepted.
- E. At least 10 days prior to submission of the first Application for Payment, secure A/E's approval of the schedule of values required to be submitted under 9.2 of the General Conditions.
- F. Include in each line item, the amount of Allowances specified in this section. For unit cost Allowances, identify quantities taken from Contract Documents multiplied by the unit cost to achieve the total for the item.
- G. Revise schedule to list approved Change Orders, with each Application For Payment.

1.04 APPLICATIONS FOR PROGRESS PAYMENTS

- A. Based upon Applications for Payment submitted to the Architect by the Contractor and Certificates of 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.
- B. Payment Period: One calendar month time frame.
- C. Use Form AIA G702 and Form AIA G703, edition stipulated in the Agreement.
- D. Electronic media printout including equivalent information will be considered in lieu of standard form specified; submit sample to Architect for approval.
- E. Forms filled out by hand will not be accepted.
- F. Provide an application for payment and determine progress payment amount per 9.6 of AIA A201 and 00 73 00 Supplementary Conditions.

- G. For each item, provide a column for listing each of the following:
 - Item Number.
 - Description of work.
 - . Scheduled Value.
 - Work Completed From Previous Application (D + E).
 - Work Completed This Period.
 - Materials Presently Stored (Not in D or E).
 - Total Completed and Stored to Date (D + E + F) & Percentage Complete (G/C).
 - Balance to Finish (C-G).
 - Retainage.
- H. Execute certification by signature of authorized officer.
- I. Use data from approved Schedule of Values. Provide dollar value in each column for each line item for portion of work performed and for stored products.
- J. List each authorized Change Order as a separate line item, listing Change Order number and dollar amount as for an original item of work.
- K. Submit one electronic copy, in .pdf format, of each Application for Payment.
- L. Include the following with the application:
 - 1. Transmittal letter as specified for submittals in Section 01 30 00.
 - 2. Construction progress schedule, revised and current as specified in Section 01 30 00.
 - 3. Current construction photographs specified in Section 01 30 00.
- M. When Architect requires substantiating information, submit data justifying dollar amounts in question. Provide one copy of data with cover letter for each copy of submittal. Show application number and date, and line item by number and description.

1.05 PRODUCT HANDLING

- A. Maintain a "Register of Bulletins and Change Orders" at the job site, accurately reflecting current status of all pertinent data.
- B. Make the Register available for review upon request.

1.06 PROCESSING CHANGES INITIATED BY THE OWNER AND/OR AE

- A. For minor changes not involving an adjustment to the Contract Price or Contract Time, Architect will issue instructions directly to Contractor.
- B. Should the Owner contemplate making a change in the Work or a change in the Contract Time of Completion, the Architect/Engineer, upon Owner direction, will issue a "Bulletin" to the Contractor.
 - 1. Bulletins will be dated and will be numbered in sequence.
 - 2. The Bulletin will describe the contemplated change.
 - a. Promptly advise Architect/Engineer as to credit or cost and time required proposed for the described change. This is not an authorization to proceed with the change.
- C. If the Contractor has been directed by Architect/Engineer to make the described change in the Work at no change in the Contract Sum and no change in the Contract Time of Completion, but the Contractor wishes to make a claim for one or both of such changes, the Contractor shall proceed with the change and shall notify the Architect/Engineer as provided for under Article 7 of the General Conditions.
- D. If the Contractor has been directed by Architect/Engineer to make the described change subject to later determination of cost or credit in accordance with Article 7 of the General Conditions, the Contractor shall:
 - 1. Take such measures as needed to make the change.
 - 2. Consult with Architect/Engineer and reach agreement on the most appropriate method for determining credit or cost for the change.

1.07 PROCESSING CHANGES INITIATED BY CONTRACTOR

- A. Should the Contractor discover a discrepancy among the Contract Documents, a concealed condition or other cause for suggesting a change in the Work, a change in the Contract Sum, or a change in the Contract Time of Completion, the Contractor shall notify Architect/Engineer as required by pertinent provisions of the Contract Documents.
- B. Upon agreement by Architect/Engineer that there is reasonable cause to consider the Contractor's proposed change, Architect/Engineer will issue a Bulletin in accordance with the provisions described in the preceding article.

1.08 PROCESSING OF BULLETINS

- A. Make written reply to Architect/Engineer in response to each Bulletin by date stated on the Bulletin:
 - 1. State proposed change in the Contract Sum, if any.
 - 2. State proposed change in the Contract Time of Completion, if any.
 - 3. Clearly describe other changes in the Work required by the proposed change, or desirable therewith, if any.
 - 4. Include full backup data such as subcontractor's letter of proposal or similar information.
- B. When cost or credit for the proposed change has been agreed upon by the Owner and the Contractor, or the Owner has directed that cost or credit be determined in accordance with provisions of Article 7 of the General Conditions of the Contract for Construction A201 as modified in the Supplementary Conditions, A/E will notify contractor in writing. A formal Change Order will be initiated and executed at the time of completion of the Contract, or at a time when the payment for work completed is due. All approved Bulletins previously not incorporated into the Contract by a Change Order, shall be combined into a Change Order to adjust the final Contract Sum to compensate for all Changes in the Work to date.

1.09 PROCESSING CHANGE ORDERS

- A. Change Orders will be dated and will be numbered in sequence.
- B. The Change Order will describe the change or changes, will refer to the Bulletin or Bulletins involved, and will be endorsed by Architect/Engineer and signed by the Contractor and the Owner.
- C. Architect/Engineer will issue three copies of each Change Order.
 - 1. The Contractor promptly shall sign all three copies and return all copies to Architect/Engineer.
 - 2. Architect/Engineer shall forward the Change Order to the Owner for his signature. Upon approval, he shall distribute two fully executed copies of the Change Order to Architect/Engineer. A/E to distribute one to the Contractor.
- D. Substantiation of Costs: Provide full information required for evaluation.
 - 1. On request, provide the following data:
 - a. Quantities of products, labor, and equipment.
 - b. Taxes, insurance, and bonds.
 - c. Overhead and profit.
 - d. Justification for any change in Contract Time.
 - e. Credit for deletions from Contract, similarly documented.
 - 2. Support each claim for additional costs with additional information:
 - a. Origin and date of claim.
 - b. Dates and times work was performed, and by whom.
 - c. Time records and wage rates paid.
 - d. Invoices and receipts for products, equipment, and subcontracts, similarly documented.
 - 3. For Time and Material work, submit itemized account and supporting data after completion of change, within time limits indicated in the Conditions of the Contract.

- E. Execution of Change Orders: Architect will issue Change Orders for signatures of parties as provided in the Conditions of the Contract.
- F. After execution of Change Order, promptly revise Schedule of Values and Application for Payment forms to record each authorized Change Order as a separate line item and adjust the Contract Sum.
- G. Promptly revise progress schedules to reflect any change in Contract Time, revise sub-schedules to adjust times for other items of work affected by the change, and resubmit.
- H. Promptly enter changes in Project Record Documents.

1.10 APPLICATION FOR FINAL PAYMENT

- A. Prepare Application for Final Payment as specified for progress payments, identifying total adjusted Contract Sum, previous payments, and sum remaining due.
- B. Application for Final Payment will not be considered until the following have been accomplished:
 - 1. All closeout procedures specified in Section 01 70 00.
 - 2. All closeout submittals specified in Section 01 78 00.
 - 3. Completion of payment procedures for final payment per Article 27 of General Conditions for Construction - Public Housing Programs and applicable Supplementary Conditions.
 - 4. Requirements for final payments in General Conditions of the Contract for Construction A201 as modified in the Supplementary Conditions including sub-article 9.10.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

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.

1.02 RELATED REQUIREMENTS

- A. Document 00 21 13 - Instructions to Bidders: Instructions for preparation of pricing for Unit Prices.
- B. Section 01 20 00 - Price and Payment Procedures: Additional payment and modification procedures.

1.03 COSTS INCLUDED

- A. Unit prices shall be used in determining additions to or deductions from the Contract amount when changes in the Work as shown on the Drawings or in the Project Manual are directed. They will apply only when the changes involve materials, specifications, methods, and designs that are the same as those required in the work shown and/or specified. This will not be applied to changes requiring the use of materials, specifications, methods or design of different character from those shown or specified. The unit prices shall include full compensation for all required labor, products, tools, equipment, plant, transportation, inspections, measurements, services and incidentals; erection, application or installation of an item of the Work; overhead and profit.

1.04 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.

1.05 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. Assist by providing necessary equipment, workers, and survey personnel as required.
- C. Measurement Devices:
 - 1. Weigh Scales: Inspected, tested and certified by the applicable state Weights and Measures department within the past year.
 - 2. Platform Scales: Of sufficient size and capacity to accommodate the conveying vehicle.
 - 3. Metering Devices: Inspected, tested and certified by the applicable state department within the past year.
- D. Measurement by Weight: Concrete reinforcing steel, rolled or formed steel or other metal shapes will be measured by handbook weights. Welded assemblies will be measured by handbook or scale weight.
- E. Measurement by Volume: Measured by cubic dimension using mean length, width and height or thickness.
- F. Measurement by Area: Measured by square dimension using mean length and width or radius.
- G. Linear Measurement: Measured by linear dimension, at the item centerline or mean chord.
- H. Stipulated Price Measurement: Items measured by weight, volume, area, or linear means or combination, as appropriate, as a completed item or unit of the Work.

1.06 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 Architect, 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.

1.07 SCHEDULE OF UNIT PRICES

- A. OverUnit Price UP-1: (Over Excavation of Unsuitable Soils)
 - 1. State the amount per cubic yard to add or delete removal of unsuitable soil, in place, as specified in Section 31 20 00 Earth Moving. Such amount shall include legal removal of said soil from the Project Site.
 - 2. Include 30 cubic yard of UP-1 in base bid.
- B. Unit Price UP-2: (Compacted Granular Fill)
 - 1. State the amount per cubic yard to add or delete compacted granular fill, in place, as specified in Section 31 20 00 Earth Moving.
 - 2. Include 30 cubic yard of UP-2 in base bid.

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.

1.02 RELATED REQUIREMENTS

- A. Document 00 21 13 - Instructions to Bidders: Instructions for preparation of pricing for Alternates.

1.03 DESCRIPTION

- A. Conditions of the Contract and pertinent portions of Sections in Division One of this Project Manual, apply to the Work of this Section as fully as though repeated herein.
- B. This Section describes the alternates to the project. Refer to the Product/Execution Articles of the Contract Documents for information pertaining to the work of each alternate.
- C. Each proposal under an alternate shall include all incidental work and all adjustments necessary to accommodate the changes. All work shall meet the requirements of the Contract Documents.
- D. Each alternate proposal shall be submitted as an individual cost for the particular alternate and shall be proposed under the premise that no other alternates have been accepted. Should the work of an alternate called for by the Bid Form not affect the cost of the work, "No Change" shall be stated.
- E. Owner may, at Owner's option, vary the scope of the work by authorizing alternates which will add to the work, deduct from the work or substitute materials, equipment or methods.
- F. Immediately following Award of Contract, awarded Contractor shall prepare and distribute to each party involved, notification of the status of each alternate. Indicate whether alternates have been accepted, rejected, or deferred for consideration at a later date. Include a complete description of negotiated modifications to alternates, if any.

1.04 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.

1.05 SCHEDULE OF ALTERNATES

- A. Alternate No. 1: New Water Service.
 - 1. The following work shall be priced under Alternate No. 1: State the amount to be added to the base bid to install new water service. Work includes but is not limited to trenching, excavating, installing pipe, backfill, landscaping. Refer to Specification Sections 33 11 00 Water Distribution and Drawing numbers C500, C501, C601.
- B. Alternate No. 2: New Roundabout.
 - 1. The following work shall be priced under Alternate No. 2: State the amount to be added to the base bid to remove an existing intersection and replace with a roundabout. Work includes but is not limited to clearing and grubbing, earthwork, paving, stormwater, landscaping. Refer to generally applicable sections and Drawing numbers C100, C200, C300, C400, C500.
- C. Alternate No. 3: Repair Driving Pad and Roadways.
 - 1. The following work shall be priced under Alternate No. 3: State the amount to be added to the base bid to repair paving at the driving pad and roadways. Work includes but is not limited to: remove existing bituminous paving, proof roll, repair subgrade, provide asphalt paving at the driving pad and roadways indicated by the hatch shown on the sheet. Refer to generally applicable specification sections and Drawing numbers C100, C101, C200, and C201.

- D. Alternate No. 4: Repair Parking Lot and Roadways.
 - 1. The following work shall be priced under Alternate No. 4: State the amount to be added to the base bid to repair paving at the driving pad and roadways. Work includes but is not limited to: remove existing bituminous paving, proof roll, repair subgrade, provide asphalt paving at the parking lot and roadways indicated by the hatch shown on the sheet. Refer to generally applicable specification sections and Drawing numbers C101, C201.
- E. Alternate No. 5: Surge Protectors.
 - 1. The following work shall be priced under Alternate No. 5: State the amount to be added to the base bid to provide (including furnish, install, and test) 5 surge protectors at 5 locations on or around the WTC Sparta Campus. Work includes but is not limited to providing the scheduled devices, testing, startup. Refer to generally applicable specification sections and Drawing number E002.
- F. Alternate No. 6: Flat Roof / Chop out FD Building Slab.
 - 1. The following work shall be priced under Alternate No. 6: State the amount to be added to the base bid to provide a concrete pad sized to accept a future piece of training equipment. Work includes but is not limited to clearing, leveling and pouring a concrete pad. Refer to generally applicable specification section and keynote #10 on Drawing numbers C200, C201.
- G. Alternate No. 7: Commercial Building #4.
 - 1. The following work shall be priced under Alternate No. 7: State the amount to be added to the base bid to build commercial building D. Work includes but is not limited to facility construction, power, lighting, utilities and exterior improvements. Refer to generally applicable specification sections and drawing numbers C200, A100, A102, A201, A600, S102, and S112.
- H. Alternate No. 8: Residential Building B.
 - 1. The following work shall be priced under Alternate No. 8: State the amount to be added to the base bid to build residential building B. Work includes but is not limited to facility construction, power, lighting, utilities and exterior improvements. Refer to generally applicable specification sections and drawing numbers C200, A100, A101, A600, S101, and S111.

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.

1.02 RELATED REQUIREMENTS

- A. Document 00 21 13 - Instructions to Bidders: Submittal process prior to contract award. See Article 3.
- B. Document 00 22 13 - Supplementary Instructions to Bidders: Submittal process prior to contract award. See Article 3.
- C. Document 00 43 25 - Substitution Request Form - During Procurement: Form for substitution requests made prior to award of contract (During procurement).
- D. Document 00 63 25 - Substitution Request Form - During Construction: Required form for substitution requests made after award of contract (During construction).
- E. Section 00 72 00 - General Conditions of the Contract: AIA A201 - Review index item "Substitution of Materials".

1.03 DEFINITIONS

- A. Substitutions: Changes from Contract Documents requirements proposed by Contractor to materials, products, assemblies, and equipment.
 - 1. Substitutions during Procurement: Proposed changes prior to contract award.
 - 2. Substitutions during Construction:
 - a. Substitutions for Cause: Proposed changes following contract award due to changed Project circumstances beyond Contractor's control.
 - 1) Unavailability.
 - 2) Regulatory changes.
 - b. Substitutions for Convenience: Proposed changes following contract award due to possibility of offering substantial advantage to the Project. Substitution requests offering advantages solely to the Contractor will not be considered without a fair credit being offered to the owner.

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 coordinate installation and make changes to other work that may be required for the work to be complete, with no additional cost to Owner.
 - 4. Waives claims for additional costs or time extension that may subsequently become apparent.
 - 5. Agrees to reimburse Owner and Architect for review or redesign services associated with re-approval by authorities.
- B. A Substitution Request for a 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.
 - 1. Explicitly note any non-compliant characteristics.
- D. Limit each request to a single proposed substitution item.

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.
 - 2. Document 00 21 13 - Instructions to Bidders specifies time restrictions and the documents required for submitting substitution requests during the bidding period.
- B. Document 00 22 13 Supplementary Instructions to Bidders describes substitution process during bidding and specifies time restrictions for submitting requests for substitutions during the bidding period, and the documents required.
- C. Submittal Form (before award of contract):
 - 1. Submit substitution request. Use form in Document 00 43 25 or otherwise provide the required documentation.

3.03 SUBSTITUTION PROCEDURES DURING CONSTRUCTION

- A. Submittal Form (after award of contract):
 - 1. Submit substitution requests by completing the form in Document 00 63 25; see this section for additional information and instructions. Use only this form; other forms of submission are unacceptable.
- B. Architect will consider requests for substitutions only within 15 days after date of Agreement.
- C. Submit request for Substitution for Cause within 14 days of discovery of need for substitution, but not later than 14 days prior to time required for review and approval by Architect, in order to stay on approved project schedule.
- D. Submit request for Substitution for Convenience within 14 days of discovery of its potential advantage to the project, but not later than 14 days prior to time required for review and approval by Architect, 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 Architect for any required redesign, time spent processing and evaluating the request.
- E. 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. Architect may request additional information and documentation prior to rendering a decision. Provide this data in an expeditious manner.
- B. Architect will notify Contractor in writing of decision to accept or reject request.
 - 1. Architect's decision following review of proposed substitution will be noted on the submitted form.

3.05 ACCEPTANCE

- A. Accepted substitutions will be documented and incorporated into work of the project only by Addendum, 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 01 78 00 - Closeout Submittals for additional information regarding documenting warranties for accepted substitutions.

END OF SECTION

Page Intentionally Left Blank

- D. Comply with Project Coordinator's procedures for intra-project communications; submittals, reports and records, schedules, coordination drawings, and recommendations; and resolution of ambiguities and conflicts.
- E. Comply with instructions of the Project Coordinator for use of temporary utilities and construction facilities.
- F. Coordinate field engineering and layout work under instructions of the Project Coordinator.
- G. Make the following types of submittals to Architect through the Project Coordinator:
 - 1. Requests for Interpretation.
 - 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 ELECTRONIC DOCUMENT SUBMITTAL SERVICE

- A. All documents transmitted for purposes of administration of the contract are to be in electronic (PDF, MS Word, or MS Excel) format, as appropriate to the document, and transmitted via an Internet-based submittal service that receives, logs and stores documents, provides electronic stamping and signatures, and notifies addressees via email.
 - 1. Besides submittals for review, information, and closeout, this procedure applies to Requests for Interpretation (RFIs), progress documentation, contract modification documents (e.g. supplementary instructions, change proposals, change orders), applications for payment, field reports and meeting minutes, Contractor's correction punchlist and any other document any participant wishes to make part of the project record.
 - 2. Contractor and Architect are required to use this service.
 - 3. It is Contractor's responsibility to submit documents in allowable format.
 - 4. Subcontractors, suppliers, and Architect's consultants and Owner are to be permitted to use the service at no extra charge.
 - 5. Users of the service need an email address, internet access, and PDF review software that includes ability to mark up and apply electronic stamps (such as Adobe Acrobat, www.adobe.com, or Bluebeam PDF Revu, www.bluebeam.com), unless such software capability is provided by the service provider.
 - 6. Paper document transmittals will not be reviewed without prior authorization; emailed electronic documents will not be reviewed.
 - 7. All other specified submittal and document transmission procedures apply, except that electronic document requirements do not apply to samples or color selection charts.
 - 8. Physical samples or color charts required for color selection shall be scanned into PDF format and submitted for approval via the Electronic Document Submittal Service in addition to physical delivery of the samples.

9. If the service allows for customization of the submittal review and acknowledgement categories, then the Contractor shall adjust the categories to match the following categories. If the service is not customizable, then the reviewer is free to pick the category of the service that best matches the desired workflow for the submittal without changing the substance of the reviewer's stamped response.
 - a. The Architect's Review Stamp includes the following categories:
 - 1) Review Completed.
 - 2) Exceptions as Noted.
 - 3) Rejected.
 - 4) Revise and Resubmit.
 - 5) Confirmation Required.
 - 6) Additional Information Requested.
 - 7) Not Required for Review.
- B. Submittal Service: The Contractor will provide and administer one of the following services.
 1. Procore: Project Management Pro (<https://www.procore.com/>).
 2. Primavera Submittal Exchange Cloud Service: (www.Oracle.com/industries/construction-engineering/submittal-exchange/).
 3. Viewpoint Team: <https://www.viewpoint.com/products/viewpoint-team>.
 4. PlanGrid Build: <https://construction.autodesk.com/products/autodesk-plangrid-build/?pgr=1>.
 5. Information for contractors not currently using one of the services listed above:
 - a. Substitute services can be submitted for consideration by the Architect prior to bid using the substitution processes described in Section 01 25 00 Substitution Procedures.
 - b. Primavera Submittal Exchange is available on a per-project basis.
- C. Project Closeout: Architect will determine when to terminate the service for the project and is responsible for obtaining archive copies of files for Owner.

3.02 PRECONSTRUCTION MEETING

- A. Architect will schedule a meeting within 10 working days after Notice of Award.
- B. Attendance Required:
 1. Owner.
 2. Architect.
 3. Contractor.
 4. Major subcontractors.
 5. Architect/Engineer will advise other interested parties, and request their attendance.
- C. Agenda:
 1. Organizational arrangement of Contractor's forces and personnel, and those of subcontractors, materials suppliers, and Architect/Engineer.
 2. Channels and procedures for communication.
 3. Construction schedule, including sequence of critical work.
 4. Coordination of separate contract work, if any.
 5. Distribution of Contract Documents.
 6. Designation of personnel representing the parties to Contract and Architect.
 7. Procedures and processing of field decisions, submittals, substitutions, applications for payments, proposal request, Change Orders, and Contract closeout procedures.
 8. Rules and regulations governing performance of the Work.
 9. Procedures for safety and first aid, security, quality control, housekeeping, and related matters.
- D. Architect will conduct meeting, record and distribute minutes.

SECTION 01 40 00
QUALITY REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Submittals.
- B. References and standards.
- C. Inspection agencies and services.
- D. Contractor's design-related professional design services.
- E. Control of installation.
- F. Tolerances.
- G. Manufacturers' field services.
- H. 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 C1021 - Standard Practice for Laboratories Engaged in Testing of Building Sealants; 2008 (Reapproved 2023).
- B. ASTM C1077 - Standard Practice for Agencies Testing Concrete and Concrete Aggregates for Use in Construction and Criteria for Testing Agency Evaluation; 2026.
- C. ASTM C1093 - Standard Practice for Accreditation of Testing Agencies for Masonry; 2023.
- 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; 2023.
- E. ASTM E329 - Standard Specification for Agencies Engaged in Construction Inspection, Testing, or Special Inspection; 2025b.
- F. ASTM E543 - Standard Specification for Agencies Performing Nondestructive Testing; 2026.
- G. ASTM E699 - Standard Specification for Agencies Involved in Testing, Quality Assurance, and Evaluating of Manufactured Building Components; 2016.

1.04 DEFINITIONS

- A. Contractor's Professional Design Services: Design of some aspect or portion of the project by party other than the design professional of record. Provide these services as part of the Contract for Construction.
 - 1. Design Services Types Required:
 - a. Design-Related: Design services explicitly required to be performed by another design professional due to highly-technical and/or specialized nature of a portion of the project. Services primarily involve engineering analysis, calculations, and design, and are not intended to alter the aesthetic aspects of the design.
 - B. Design Data: Design-related, signed and sealed drawings, calculations, specifications, certifications, shop drawings and other submittals provided by Contractor, and prepared directly by, or under direct supervision of, appropriately licensed design professional.

1.05 CONTRACTOR'S DESIGN-RELATED PROFESSIONAL DESIGN SERVICES

- A. Coordination: Contractor's professional design services are subject to requirements of project's Conditions for Construction Contract.

- B. Base design on performance and/or design criteria indicated in individual specification sections.
 - 1. Submit a Request for Interpretation to Architect if the criteria indicated are not sufficient to perform required design services.
- C. Scope of Contractor's Professional Design Services: Provide for the following items of work:
 - 1. Structural Design of Wood Trusses: As described in Section 06 17 53 - Shop-Fabricated Wood Trusses.

1.06 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements for procedures.
- B. Information Submittals - Preparatory:
 - 1. Designer's Qualification Statement: Submit for Architect's knowledge as contract administrator, or for Owner's information.
 - a. Include information for each individual professional responsible for producing, or supervising production of, design-related professional services provided by Contractor.
 - 1) Full name.
 - 2) Professional licensure information.
 - 3) Statement addressing extent and depth of experience specifically relevant to design of items assigned to Contractor.
 - 2. Design Data: Submit for Architect's knowledge as contract administrator for the limited purpose of assessing compliance with information given and the design concept expressed in the Contract Documents, or for Owner's information. Provide the following information:
 - a. Include calculations that have been used to demonstrate compliance to performance and regulatory criteria provided, and to determine design solutions.
 - b. Include required product data and shop drawings.
 - c. Include a statement or certification attesting that design data complies with criteria indicated, such as building codes, loads, functional, and similar engineering requirements.
 - d. Include signature and seal of design professional responsible for allocated design services on calculations and drawings.
 - 3. Certificates: When specified in individual specification sections, submit certification by the manufacturer and Contractor or installation/application subcontractor to Architect, in quantities specified for Product Data.
 - a. Indicate material or product complies with or exceeds specified requirements. Submit supporting reference data, affidavits, and certifications as appropriate.
 - b. Certificates may be recent or previous test results on material or product, but must be acceptable to Architect.
 - 4. 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.

- C. Information Submittals - During Execution:
 - 1. Test Reports: After each test/inspection, promptly submit two copies of report to Architect 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 Architect, provide interpretation of results.
 - b. Test report submittals are for Architect's knowledge as contract administrator for the limited purpose of assessing compliance with information given and the design concept expressed in the Contract Documents, or for Owner's information.
 - 2. Manufacturer's Field Reports: Submit reports for Architect's benefit as contract administrator or for Owner.
 - a. Submit report in duplicate within 30 days of observation to Architect for information.
 - b. Submit for information for the limited purpose of assessing compliance with information given and the design concept expressed in the Contract Documents.

1.07 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 Architect before proceeding.
- F. Neither the contractual relationships, duties, or responsibilities of the parties in Contract nor those of Architect shall be altered from Contract Documents by mention or inference otherwise in any reference document.

1.08 CONFLICTING REQUIREMENTS

- A. 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 uncertainties and requirements that are different, but indicated as equal to the Architect for a decision.

1.09 TESTING AND INSPECTION AGENCIES AND SERVICES

- A. Owner will employ services of an independent testing agency to perform testing and inspection specified as Special Inspections on sheet S002.
- B. Unless noted otherwise Contractor shall employ and pay for services of an independent testing agency to perform other specified testing and inspection not identified as special inspections on sheet S002.

- C. Employment of agency in no way relieves Contractor of obligation to perform Work in accordance with requirements of Contract Documents.
- D. Contractor Employed Agency:
 1. Testing agency: Comply with requirements of ASTM E329, ASTM E543, ASTM E699, ASTM C1021, ASTM C1077, ASTM C1093, and ASTM D3740.
 2. Inspection agency: Comply with requirements of ASTM D3740 and ASTM E329.
 3. Laboratory: Authorized to operate in the state in which the project is located.
 4. Testing Equipment: Calibrated at reasonable intervals either by NIST or using an NIST established Measurement Assurance Program, under a laboratory measurement quality assurance program.

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 Architect 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 Architect 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 required.
- B. Testing Agency Duties:
 1. Test samples of mixes submitted by Contractor.
 2. Provide qualified personnel and required equipment at site. Cooperate with Architect and Contractor in performance of services.
 3. Perform specified sampling and testing of products in accordance with specified standards.
 4. Ascertain compliance of materials and mixes with requirements of Contract Documents.
 5. Promptly notify Architect and Contractor of observed irregularities or non-compliance of Work or products.
 6. Perform additional tests and inspections required by Architect.
 7. Submit reports of all tests/inspections specified. Test results and reports shall be furnished simultaneously to the Architect/Engineer (1 copy) and the General Contractor (1 copy) within one week of testing.

- 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. 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.
 - 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 Architect 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.
- E. Re-testing required because of non-compliance with specified requirements shall be performed by the same agency on instructions by Architect.
- F. Re-testing required because of non-compliance with specified requirements shall be paid for by Contractor.

3.04 MANUFACTURERS' FIELD SERVICES

- A. *When specified in individual specification sections, require material or product suppliers or manufacturers to provide qualified staff personnel to observe site conditions, conditions of surfaces and installation, quality of workmanship, start-up of equipment, test, adjust, and balance equipment as applicable, and to initiate instructions when necessary.*
- B. Report observations and site decisions or instructions given to applicators or installers that are supplemental or contrary to manufacturers' written instructions.

3.05 DEFECT ASSESSMENT

- A. Replace Work or portions of the Work not complying with specified requirements.
- B. If, in the opinion of Architect, it is not practical to remove and replace the work, Architect will direct an appropriate remedy or adjust payment.

END OF SECTION

Page Intentionally Left Blank

SECTION 01 50 00
TEMPORARY FACILITIES AND CONTROLS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Temporary utilities.
- B. Temporary telecommunications services.
- C. Temporary sanitary facilities.
- D. Temporary Controls: Barriers, enclosures, and fencing.
- E. Security requirements.
- F. Vehicular access and parking.
- G. Field offices.

1.02 RELATED REQUIREMENTS

- A. Section 01 10 00 - Summary of the Work: Limitations on utility interruptions.
- B. Section 01 70 00 - Execution and Closeout Requirements: Instructions for protection of floors and finished work.
- C. Section 01 70 00 - Execution and Closeout Requirements: Contract limits and protection of existing site conditions.

1.03 EXISTING SERVICES AND UTILITIES

- A. Maintain existing services and utilities in use at all times during construction. Provide and pay for temporary connections or devices when necessary to avoid interruptions of such services and utilities, and remove same when no longer needed.
- B. Schedule unavoidable, construction related interruptions with the AE and the Owner well in advance of the need for such interruptions.
- C. When new services and utilities are ready to change over from Contractor's to Owner's responsibility, notify the AE in writing 10 days in advance of the proposed date of change over. If AE and Owner concur, make change over as proposed. If not, AE will so notify the Contractor in writing stating the reasons why, and stating a new date when the change over can be made.

1.04 TEMPORARY UTILITIES

- A. Water:
 - 1. Use Owners existing water service. Provide any modifications at contractor's expense. Owner to pay for water used.
 - 2. Each contractor shall provide their own hoses.
 - 3. Drinking Water: The Contractor shall provide drinking water for all persons on the Project during construction.
 - 4. Use trigger-operated nozzles for water hoses, to avoid waste of water.
- B. Electricity:
 - 1. Use the Owners existing electrical service.
 - 2. The Owner will furnish all electricity expended to complete construction at no cost to Contractor. Where required power requirements are not met with Owner's available service, Contractor shall provide necessary portable power to meet Project needs.
 - 3. Furnish and install all necessary temporary wiring and lighting for use of all Contractors.
 - 4. Furnish, install and maintain a 200 amp 120/240 volt, 1 phase, 3 wire temporary light and power system.
 - 5. Lighting: One 200 equivalent watt lamp per 625 square feet (25 feet on center).
 - 6. Receptacles: One 20 amp 120 volt duplex grounding type per 2,500 SF (50 feet on center) with ground fault circuit protection, installed in outlet boxes with plates.

7. When installation of the permanent electrical service and distribution system is sufficiently complete to be operated safely, the system may be used to provide construction light and power and testing and operation of permanent equipment.
8. The Owner will assume the responsibility and pay the costs of providing electrical light and power including the energy costs on the date of his occupancy or the Date of Substantial Completion of the Project, whichever is sooner.

1.05 TEMPORARY HEAT AND VENTILATION

- A. Provide temporary heat and ventilation as required to maintain adequate environmental conditions to facilitate progress of the Work, to meet specified minimum conditions for the installation of materials, and to protect materials and finishes from damage due to temperature and humidity.
- B. Provide adequate forced ventilation of enclosed areas for curing of installed materials, to disperse humidity, and to prevent hazardous accumulations of dust, fumes, vapors or gases.
- C. Coordinate operation of existing HVAC systems during construction to prevent contaminating system with dust and debris. Cover return air grilles and supply air outlets as required to protect system. Coordinate with owner required shutdown to protect system. Replace filters at substantial completion.
- D. Portable heaters shall be standard approved units complete with controls.
- E. Pay all costs of installation, maintenance, operation and removal, and for fuel consumed.

1.06 TELEPHONE AND INTERNET SERVICE

- A. Provide, maintain, and pay for telecommunications services to field office at time of project mobilization.
- B. Telecommunications services shall include:
 1. Windows-based personal computer dedicated to project telecommunications, with necessary software and laser printer.
 2. Telephone Land Lines or Cell Phone: One line, minimum; one handset per line.
 3. Internet Connections: Minimum of one; DSL modem or faster.
 4. Email: Account/address reserved for project use.
 5. Contractor option to have internet and email service at their main office.

1.07 TEMPORARY SANITARY FACILITIES

- A. General Contractor shall provide and maintain temporary toilet facilities for use by all trades during the construction period. Such toilet facilities shall be sanitary, weathertight, painted, and complete with privacy enclosure, self-closing door and appropriate hardware.
- B. Provide and maintain required facilities and enclosures. Provide at time of project mobilization.

1.08 BARRIERS

- A. Provide barriers to prevent unauthorized entry to construction areas, to prevent access to areas that could be hazardous to workers or the public, to allow for owner's use of site and to protect existing facilities and adjacent properties from damage from construction operations and demolition.
- B. Provide barricades and covered walkways required by governing authorities for public rights-of-way and for public access to existing building. Furnish, install, and maintain for the duration of construction all required scaffolds, tarpaulins, barricades, canopies, warning signs and lights, steps, fencing, barricades, bridges, platforms, and other temporary construction protection necessary for proper completion of the Work in compliance with all safety and other regulations.
- C. Protect non-owned vehicular traffic, stored materials, site, and structures from damage.

1.09 FENCING

- A. Provide fencing at Contractor's option.

1.10 TEMPORARY SHEETING AND SHORING

- A. Provide temporary sheeting and shore and brace excavations as necessary for the safe and proper execution of the Work. Remove temporary supports when backfilling is complete or new construction can safely support the loads.

1.11 SECURITY

- A. Take precautions against fire and comply fully with requirements of insurance authorities and regulations of the local fire department.
- B. Remove combustible refuse and dispose in an approved manner off the Project Site. Burning refuse on the Project Site shall not be permitted. Do not store combustible materials or supplies in areas where concrete forms are still in place. Limit materials storage to completely fireproof areas. When storing outside keep at least 10 feet away from any building.
- C. During entire construction period, provide fire extinguishers of the types, sizes, quantity and locations effective for use by all trades to extinguish fires in the construction area(s), as defined in NFPA publication No. 10 but no less than the following:
 - 1. Type A at locations of low potential for fires caused by either electrical hazards or grease-oil-flammable liquids.
 - 2. Type ABC dry chemical at other locations, including but not limited to each workshop and each material storage shed.
- D. Post warning and quick-use instructions at each extinguisher location and instruct all personnel upon first arrival at the Project Site in the proper use of fire extinguishers and fire related procedures. Post the local fire department call number on each telephone instrument at the Project Site. Post "No Smoking" signs in areas of unusual hazard.
- E. Do not relax fire protection precautions during Work interruptions such as strikes or other reasons.
- F. Provide and maintain barricades with appropriate lighting to identify excavations or stored materials placed on any public street, highway or other public ground. Conform to requirements of the local governing authority.
- G. For the building proper, provide suitable protection at openings through roof and floors, and at openings through walls where a hazard exists, such as man-sized openings within three feet of the floor, and provide visual barriers at installed glass but do not use tape or markings applied directly to the glass surface.
- H. Be responsible to maintain complete security of the building at all times during the entire period of the Work of the Project.

1.12 MOISTURE CONTROL

- A. Each Contractor: Carry on construction work in manner that will direct surface water away from new construction and off the project Site, away from adjoining property.
- B. General Contractor shall be responsible for pumping of building excavations as a part of the work of the General construction Contract without extra compensation. Pumping of other than building excavations shall be the responsibility of the contractor doing the work.
- C. During process of completing building weatherproof enclosure contractors shall protect materials and areas of work susceptible to moisture damage. Installation of wet or moisture damaged materials is prohibited.

1.13 VEHICULAR ACCESS AND PARKING

- A. Provide and maintain all required access to the Work from paved areas and other routes, in strict accordance with Owners requirements. Do not obstruct existing service drives and parking lots with equipment, materials and/or vehicles. Keep accessible for Owner's use at all times.
- B. Contractors and their employees will be allowed to park vehicles in area designated by Owner.
- C. Coordinate access and haul routes with governing authorities and Owner.

- D. Provide and maintain access to fire hydrants, free of obstructions.
- E. Provide means of removing mud from vehicle wheels before entering streets.

1.14 WASTE REMOVAL

- A. Provide waste removal facilities and services as required to maintain the site in clean and orderly condition.
- B. Provide containers with lids. Remove trash from site periodically.
- C. If materials to be recycled or re-used on the project must be stored on-site, provide suitable non-combustible containers; locate containers holding flammable material outside the structure unless otherwise approved by the authorities having jurisdiction.
- D. Open free-fall chutes are not permitted. Terminate closed chutes into appropriate containers with lids.

1.15 MATERIALS HANDLING AT PROJECT SITE

- A. Each Contractor: Provide suitable storage facilities for own materials at the Project Site within the limits of construction, provide and maintain staging, scaffolding and the like, tools and equipment for the erection and completion of own work and remove all upon completion.
- B. Each Contractor: Protect and preserve own materials, products and equipment stored at Project Site. Materials such as wood, steel, cement, and plasters shall not be piled directly on the ground. Protective coverings shall be watertight and substantial to prevent blowing away. Confine storage of materials, sheds and other apparatus to areas designated for such purposes.
- C. During the course of construction, do not place construction materials on any structural plane or member such as a floor area, beam or column, in any manner, group or arrangement which exceeds the design live load of such structural plane or member.

1.16 FIRST AID

- A. Each Contractor: Provide and maintain first aid supplies and equipment in quantity and content commensurate with size of Project and type of construction work, for the use of each Contractor's personnel. Advise all personnel of the location of first aid supplies.

1.17 FIELD OFFICES

- A. Office: Weathertight, with lighting (50 ft candles at desk top), electrical outlets (minimum 4 duplex), heating, cooling equipment, and equipped with sturdy furniture, drawing rack and drawing display table.
- B. Provide space for Project meetings, with table and chairs to accommodate 8 persons.
- C. Exterior lighting at entrance door.

1.18 REMOVAL OF UTILITIES, FACILITIES, AND CONTROLS

- A. Maintain all temporary facilities and controls as long as needed for the safe and proper completion of the Work. Remove all such temporary facilities and controls as rapidly as progress of the Work will permit, or as directed by the Architect/Engineer.
- B. Clean and repair damage caused by installation or use of temporary work.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

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. Maintenance materials, including extra materials, spare parts, tools, and software.

1.02 RELATED REQUIREMENTS

- A. Applicable provisions of Division 1 govern work under this Section.
- 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.
- D. Section 01 74 19 - Construction Waste Management and Disposal: Waste disposal requirements potentially affecting product selection, packaging and substitutions.

1.03 REFERENCE STANDARDS

- A. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

PART 2 PRODUCTS

2.01 EXISTING PRODUCTS

- A. Do not use materials and equipment removed from existing premises unless specifically required or permitted by Contract Documents.
- B. Unforeseen historic items encountered remain the property of the Owner; notify Owner promptly upon discovery; protect, remove, handle, and store as directed by Owner.
- C. Existing materials and equipment indicated to be removed, but not to be re-used, salvaged, relocated, reinstalled, delivered to the Owner, or otherwise indicated as to remain the property of the Owner, become the property of the Contractor; remove from site.

2.02 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. Made of wood from newly cut old growth timber.

2.03 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.

2.04 MAINTENANCE MATERIALS

- A. Furnish extra materials, spare parts, tools, and software of types and in quantities specified in individual specification sections.

PART 3 EXECUTION

3.01 SUBSTITUTION LIMITATIONS

- A. See Section 01 25 00 - Substitution Procedures.

3.02 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.

3.03 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. Protect products from damage or deterioration due to construction operations, weather, precipitation, humidity, temperature, sunlight and ultraviolet light, dirt, dust, and other contaminants.
- G. Comply with manufacturer's warranty conditions, if any.
- H. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to prevent condensation and degradation of products.
- I. Store loose granular materials on solid flat surfaces in a well-drained area. Prevent mixing with foreign matter.
- J. Prevent contact with material that may cause corrosion, discoloration, or staining.
- K. Provide equipment and personnel to store products by methods to prevent soiling, disfigurement, or damage.
- L. 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

SECTION 01 70 00
EXECUTION AND CLOSEOUT REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Examination, preparation, and general installation procedures.
- B. Requirements for alterations work, including selective demolition.
- C. Pre-installation meetings.
- D. Cutting and patching.
- E. Cleaning and protection.
- F. Starting of systems and equipment.
- G. Demonstration and instruction of Owner personnel.
- H. Closeout procedures, including Contractor's Correction Punch List, except payment procedures.
- I. General requirements for maintenance service.

1.02 RELATED REQUIREMENTS

- A. Applicable provisions of Division 1 govern work under this Section.
- B. Section 01 10 00 - Summary: Limitations on working in existing building; continued occupancy; work sequence; identification of salvaged and relocated materials.
- C. Section 01 30 00 - Administrative Requirements: Submittals procedures, Electronic document submittal service.
- D. Section 01 40 00 - Quality Requirements: Testing and inspection procedures.
- E. Section 01 78 00 - Closeout Submittals: Project record documents, operation and maintenance data, warranties, and bonds.

1.03 SUBMITTALS

- A. See contract Conditions and General Requirements for procedures.
- B. Provide submittal transmittals that include all submittal items identified in each submittal group below.
- C. Cutting and Patching Beyond Work Identified on Plans: Submit written request in advance of cutting or alteration which affects:
 - 1. Structural integrity of any element of Project.
 - 2. Integrity of weather exposed or moisture resistant element.
 - 3. Efficiency, maintenance, or safety of any operational element.
 - 4. Visual qualities of sight exposed elements.
 - 5. Work of Owner or separate Contractor.
 - 6. Include in request:
 - a. Identification of Project.
 - b. Location and description of affected work.
 - c. Necessity for cutting or alteration.
 - d. Description of proposed work and products to be used.
 - e. Alternatives to cutting and patching.
 - f. Effect on work of Owner or separate Contractor.
 - g. Written permission of affected separate Contractor.
 - h. Date and time work will be executed.
- D. Project Record Documents: Accurately record actual locations of capped and active utilities.

1.04 REQUIREMENTS OF REGULATORY AGENCIES

- A. Comply with National Electric Code for temporary power.
- B. Comply with Federal, State and local codes and regulations, and with utility company requirements.

1.05 PROJECT CONDITIONS

- A. Grade site to drain. Maintain excavations free of water.
- B. Protect site from puddling or running water. Provide water barriers as required to protect site from soil erosion.
- C. Ventilate enclosed areas to assist cure of materials, to dissipate humidity, and to prevent accumulation of dust, fumes, vapors, or gases.
- D. Dust Control: Execute work by methods to minimize raising dust from construction operations. Provide positive means to prevent air-borne dust from dispersing into atmosphere and over adjacent property.
- E. Erosion and Sediment Control: Plan and execute work by methods to control surface drainage from cuts and fills, from borrow and waste disposal areas. Prevent erosion and sedimentation.
- F. Noise Control: Provide methods, means, and facilities to minimize noise produced by construction operations.
- G. Rodent Control: Provide methods, means, and facilities to prevent rodents from accessing or invading premises.
- H. Pollution Control: Provide methods, means, and facilities to prevent contamination of soil, water, and atmosphere from discharge of noxious, toxic substances, and pollutants produced by construction operations. Comply with federal, state, and local regulations.

1.06 CONTRACT LIMITS AND PROTECTION OF EXISTING CONDITIONS

- A. All work shall be confined within the Contract limits indicated on the Project Drawings. Do not infringe upon other areas without the permission of the AE. If not indicated otherwise, consider the property lines to be the Contract limits.
- B. Existing property, buildings, walks, curbs, trees, shrubs, lawns, boulevards, and the Work of other Contractors, which are damaged or disturbed outside the Contract limits shall be restored to original condition or better. Contractor shall be responsible for the damage or disturbance and shall restore disturbed lawn areas with sod and replace damaged trees and shrubs.
- C. Existing Pavement and Flatwork Protection:
 - 1. Where excessive loading of trucks and travel of tracked equipment occurs over existing asphalt paving and concrete flatwork, provide constructions mats to prevent cracking, deformation or similar damage. Damaged pavements, slabs or curb and gutter shall be replaced with new. Prior to construction start, review existing conditions with Owner and A/E and document with photos.
- D. Existing shrubs and trees indicated on the Project Drawings to remain shall be protected from physical damage. Observe the following precautions within a distance of 15 feet of the trunk of such trees:
 - 1. Install temporary fencing as required to control traffic under trees.
 - 2. Dump no trash, especially concrete, plaster, mortar, or wash water.
 - 3. No storing of cement, plaster, concrete block, brick and similar products.
 - 4. Provide and maintain good drainage; no ponding water permitted.
 - 5. Clean up the area immediately as nearby construction work is completed.

1.07 COORDINATION

- A. See Section 01 10 00 for occupancy-related requirements.
- B. 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, with provisions for accommodating items installed later.
- C. Notify affected utility companies and comply with their requirements.
- D. 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.
- E. 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.
- F. In finished areas except as otherwise indicated, conceal pipes, ducts, and wiring within the construction. Coordinate locations of fixtures and outlets with finish elements.
- G. Coordinate completion and clean-up of work of separate sections.

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 25 00 - Substitution Procedures.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that existing site conditions and substrate surfaces are acceptable for subsequent work. Start of work means acceptance of existing conditions.
- B. Verify that existing substrate is capable of structural support or attachment of new work being applied or attached.
- C. Examine and verify specific conditions described in individual specification sections.
- D. Take field measurements before confirming product orders or beginning fabrication, to minimize waste due to over-ordering or miss-fabrication.
- E. Verify that utility services are available, of the correct characteristics, and in the correct locations.
- F. 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. Clean substrate surfaces prior to applying next material or substance.
- B. Seal cracks or openings of substrate prior to applying next material or substance.
- C. Apply manufacturer required or recommended substrate primer, sealer, or conditioner prior to applying any new material or substance in contact or bond.

3.03 LAYING OUT THE WORK

- A. Verify locations of survey control points prior to starting work.
- B. Promptly notify Architect of any discrepancies discovered.
- C. Contractor shall locate and protect survey control and reference points.
- D. Control datum for survey is that established by Owner provided survey.
- E. Protect survey control points prior to starting site work; preserve permanent reference points during construction.
- F. Promptly report to Architect 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 Architect.
- H. Utilize recognized engineering survey practices.
- I. Establish a minimum of two permanent bench marks on site, referenced to established control points. Record locations, with horizontal and vertical data, on project record documents.
- J. 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.
 - 2. Grid or axis for structures.
 - 3. Building foundation, column locations, ground floor elevations.
- K. Periodically verify layouts by same means.
- L. Maintain a complete and accurate log of control and survey work as it progresses.

3.04 GENERAL INSTALLATION REQUIREMENTS

- A. 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.
- B. Make vertical elements plumb and horizontal elements level, unless otherwise indicated.
- C. Install equipment and fittings plumb and level, neatly aligned with adjacent vertical and horizontal lines, unless otherwise indicated.
- D. Make consistent texture on surfaces, with seamless transitions, unless otherwise indicated.
- E. Make neat transitions between different surfaces, maintaining texture and appearance.

3.05 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 Architect before disturbing existing installation.
 - 3. Beginning of alterations work constitutes acceptance of existing conditions.
- B. Keep areas in which alterations are being conducted separated from other areas that are still occupied.
 - 1. Provide, erect, and maintain temporary dustproof partitions of construction specified in Section 01 50 00 - Temporary Facilities and Controls.
- C. Maintain weatherproof exterior building enclosure except for interruptions required for replacement or modifications; take care to prevent water and humidity damage.
 - 1. Where openings in exterior enclosure exist, provide construction to make exterior enclosure weatherproof.
 - 2. Insulate existing ducts or pipes that are exposed to outdoor ambient temperatures by alterations work.

- D. Remove existing work as indicated and as required to accomplish new work.
 - 1. Remove rotted wood, corroded metals, and deteriorated masonry and concrete; replace with new construction specified.
 - 2. Remove items indicated on drawings.
 - 3. Relocate items indicated on drawings.
 - 4. Where new surface finishes are to be applied to existing work, perform removals, patch, and prepare existing surfaces as required to receive new finish; remove existing finish if necessary for successful application of new finish.
 - 5. Where new surface finishes are not specified or indicated, patch holes and damaged surfaces to match adjacent finished surfaces as closely as possible.
- 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.
- F. Adapt existing work to fit new work: Make as neat and smooth transition as possible.
 - 1. When existing finished surfaces are cut so that a smooth transition with new work is not possible, terminate existing surface along a straight line at a natural line of division and make recommendation to Architect.
 - 2. Where removal of partitions or walls results in adjacent spaces becoming one, rework floors, walls, and ceilings to a smooth plane without breaks, steps, or bulkheads.
 - 3. Where a change of plane of 1/4 inch or more occurs in existing work, submit recommendation for providing a smooth transition for Architect review and request instructions.
- G. Patching: Where the existing surface is not indicated to be refinished, patch to match the surface finish that existed prior to cutting. Where the surface is indicated to be refinished, patch so that the substrate is ready for the new finish.
- H. Clean existing systems and equipment.
- I. Remove demolition debris and abandoned items from alterations areas and dispose of off-site; do not burn or bury.
- J. Do not begin new construction in alterations areas before demolition is complete.
- K. Comply with all other applicable requirements of this section.

3.06 CUTTING AND PATCHING

- A. Whenever possible, execute the work by methods that avoid cutting or patching.
- B. See Alterations article above for additional requirements.
- C. 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.
- D. Unless noted otherwise, each major subcontractor shall be responsible for all cutting and patching of the existing structure and appurtenances to complete that subcontractor's Work for this Project.
- E. 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.

- F. Verify warranty requirements at areas of alteration and to make certain that required certified installers are employed for repairs to maintain said warranty.
- G. Employ skilled and experienced installer to perform cutting for weather exposed and moisture resistant elements, and sight exposed surfaces.
- H. Cut rigid materials using masonry saw or core drill. Pneumatic tools not allowed without prior approval.
- I. Restore work with new products in accordance with requirements of Contract Documents.
- J. Fit work air tight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.
- K. 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.
- L. 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.
 - 4. At patches/repairs in rated walls verify required UL fire rating design to confirm integrity of fire rating at completion of repair.

3.07 PROGRESS CLEANING

- A. Maintain areas free of waste materials, debris, and rubbish. Maintain site in a clean and orderly condition. Accomplish rubbish removal weekly and additionally as directed by the AE. Keep interior of building free of unattended combustible rubbish at all times.
- 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.
- E. Remove all tools, equipment, scaffolding and temporary facilities immediately when no longer required for execution of the Work.
- F. As used herein, the term "premises" shall include all areas within and outside the construction limits which have been soiled, littered or disturbed in any manner by the Work of the Project.

3.08 PROTECTION OF INSTALLED WORK

- A. Protect installed work from damage by construction operations.
- B. Provide special protection where specified in individual specification sections.
- C. Provide temporary and removable protection for installed products. Control activity in immediate work area to prevent damage.
- D. Protect installed work from damage by construction operations. Provide protective coverings at walls, projections, jambs, sills, and soffits of openings.

- E. Protect finished floors, stairs, and other surfaces from traffic, dirt, wear, damage, or movement of heavy objects, by protecting with durable sheet materials.
 - 1. The General Contractor shall assume responsibility for the floors being in like new condition upon completion of the Project.
 - 2. Exercise care to prevent damage to exposed, finished concrete floor surfaces during the course of construction of the Project. Remove all spills or smears immediately and sweep floors frequently.
 - 3. Instruct all workmen and deliverymen to exercise caution against accidental damage to the floors by actions such as dropping heavy objects like tools and products, or scratching by sliding objects, or scoring by vibration from metal legs of stand mounted power tools, or permanent discoloration from oil dripping from pipe thread cutting machine, or the like.
 - 4. Avoid using areas with exposed concrete floors as workshops or in any other way which would damage the finished floors. When rooms or areas must be so used, cover floor with 5/8 inch thick plywood panels fastened together and underlain with 10 mil minimum plastic taped in place.
- F. 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.
- G. Prohibit traffic from landscaped areas.
- H. Remove protective coverings when no longer needed; reuse or recycle coverings if possible.

3.09 SYSTEM STARTUP

- A. Coordinate schedule for start-up of various equipment and systems.
- B. Verify that each piece of equipment or system has been checked for proper lubrication, drive rotation, belt tension, control sequence, and for conditions that may cause damage.
- C. Verify tests, meter readings, and specified electrical characteristics agree with those required by the equipment or system manufacturer.
- D. Verify that wiring and support components for equipment are complete and tested.
- E. Execute start-up under supervision of applicable Contractor personnel and manufacturer's representative in accordance with manufacturers' instructions.
- F. Submit a written report that equipment or system has been properly installed and is functioning correctly.

3.10 DEMONSTRATION AND INSTRUCTION

- A. Demonstrate start-up, operation, control, adjustment, trouble-shooting, servicing, maintenance, and shutdown of each item of equipment at scheduled time, at equipment location.
- B. For equipment or systems requiring seasonal operation, perform demonstration for other season within six months.
- C. Provide a qualified person who is knowledgeable about the Project to perform demonstration and instruction of owner personnel.

3.11 ADJUSTING

- A. Adjust operating products and equipment to ensure smooth and unhindered operation.

3.12 FINAL CLEANING

- A. Execute final cleaning after Substantial Completion but before making final application for payment. Clean all surfaces to condition acceptable for immediate occupancy by the Owner.
- B. Use cleaning materials that are nonhazardous.
- C. Remove all marks, stains, fingerprints, paint droppings and other foreign matter from all finished surfaces.
- D. Clean and polish all hardware.

- E. 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.
- F. Remove all labels that are not permanent. Do not paint or otherwise cover fire test labels or nameplates on mechanical and electrical equipment.
- G. Clean equipment and fixtures to a sanitary condition with cleaning materials appropriate to the surface and material being cleaned.
- H. Replace filters of operating equipment.
- I. Clean debris from roofs and drainage systems.
- J. Clean site: sweep paved areas, rake clean landscaped surfaces.
- K. Remove waste, surplus materials, trash/rubbish, and construction facilities from the site; dispose of in legal manner; do not burn or bury.

3.13 SUBSTANTIAL COMPLETION

- A. Comply with General Conditions of the Contract for Construction and Supplementary Conditions for reaching Substantial Completion.

3.14 FINAL INSPECTION

- A. Comply with General Conditions of the Contract for Construction and Supplementary Conditions for completing Final Inspection.

3.15 MAINTENANCE

- A. Provide service and maintenance of components indicated in specification sections.
- B. Examine system components at a frequency consistent with reliable operation. Clean, adjust, and lubricate as required.
- C. Include systematic examination, adjustment, and lubrication of components. Repair or replace parts whenever required. Use parts produced by the manufacturer of the original component.
- D. Maintenance service shall not be assigned or transferred to any agent or subcontractor without prior written consent of the Owner.

END OF SECTION

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. Prior to requesting Architect/Engineer's final inspection for certification of final acceptance and final payment, as required by General Conditions, complete the following and list known exceptions (if any) in request:
 - 1. Submit final payment request with final releases and supporting documentation not previously submitted and accepted. Include certificates of insurance for products and completed operations where required.
 - 2. Submit updated final statement, accounting for additional (final) changes to Contract Sum.
 - 3. Submit certified copy of Architect/Engineer's final punch list of itemized work to be completed or corrected (including equipment requiring final connection), stating that each item has been completed or otherwise resolved for acceptance, endorsed and dated by Architect/Engineer.
 - 4. Submit record documents, as-built drawings, maintenance manuals, damage or settlement survey, property survey, and similar final record information as described in Part 3 below.
 - 5. Complete final clean up requirements, including touch-up painting of marred surfaces.
 - 6. Submit final meter readings for utilities, measured record of stored fuel, and similar data as of time of Substantial Completion or when Owner took possession of and responsibility for corresponding elements of the work.
 - 7. Submit consent of surety.
 - 8. Revise and submit evidence of final, continuing insurance coverage complying with insurance requirements.
 - 9. Submit test, inspection and acceptance certificates as required in each product section of the Specifications.
 - 10. Submit Contractor's Affidavit and Lien Waivers.
 - 11. Submit lien waivers from all Subcontractors, sub-subcontractors and major material suppliers who have furnished material or labor for the Work under contract with the Contractor or Subcontractor. The lien waivers shall be in the full amount of the Contract involved.

12. Operation and Maintenance Data:
 - a. As requested by the Owner and prior to final acceptance, organize maintenance-and-operating manual information into two (2) complete sets, each in manageable size, and bind into individual 3-ring binders properly identified with table of contents and tabbed accordingly. Or organized in similar fashion in PDF format. Include emergency instructions, spare parts listing, copies of warranties, wiring diagrams, recommended "turn-around" cycles, inspection procedures, shop drawings, product data, and similar applicable information.
 - b. If project includes multiple sites, provide number of sets of manuals for each site as indicated above.
 - c. Provide additional manuals as required by product specification sections.
 - d. As-built temperature control drawings.
 - e. Mechanical testing report from Division 23 (if required in Division 23).
13. Warranties and Bonds:
 - a. Guarantees and warranties as required in each product section of the Specifications.
 - b. For equipment or component parts of equipment put into service during construction with Owner's permission, submit documents within 10 days after acceptance.
 - c. Make other submittals within 10 days after Date of Substantial Completion, prior to final Application for Payment.
 - d. 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.

3.02 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. Include originals of each in operation and maintenance manuals, indexed separately on Table of Contents.

END OF SECTION

Page Intentionally Left Blank

SECTION 03 30 00
CAST-IN-PLACE CONCRETE

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Concrete formwork.
- B. Floors and slabs on grade.
- C. Concrete foundation walls.
- D. Fiber reinforcement.
- E. Concrete reinforcement.
- F. Joint devices associated with concrete work.
- G. Miscellaneous concrete elements, including equipment pads.
- H. Under slab vapor barrier.
- I. Concrete curing.

1.02 RELATED REQUIREMENTS

- A. Applicable provisions of Division 1 govern the work of this section.
- B. 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 CODE-318 - Building Code Requirements for Structural Concrete and Commentary; 2019 (Reapproved 2022).
- B. ACI PRC-211.1 - Selecting Proportions for Normal-Density and High Density-Concrete - Guide; 2022.
- C. ACI PRC-302.1 - Guide to Concrete Floor and Slab Construction; 2015.
- D. ACI PRC-304 - Guide for Measuring, Mixing, Transporting, and Placing Concrete; 2000 (Reapproved 2009).
- E. ACI PRC-305 - Guide to Hot Weather Concreting; 2020.
- F. ACI PRC-306 - Guide to Cold Weather Concreting; 2016.
- G. ACI PRC-308 - Guide to External Curing of Concrete; 2016.
- H. ACI PRC-347 - Guide to Formwork for Concrete; 2014 (Reapproved 2021).
- I. ACI SPEC-117 - Specification for Tolerances for Concrete Construction and Materials; 2010 (Reapproved 2015).
- J. ACI SPEC-301 - Specifications for Concrete Construction; 2020.
- K. ASTM A615/A615M - Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement; 2025.
- L. ASTM C1609/C1609M - Standard Test Method for Flexural Performance of Fiber-Reinforced Concrete (Using Beam With Third-Point Loading); 2019a.
- M. ASTM C33/C33M - Standard Specification for Concrete Aggregates; 2024a.
- N. ASTM C39/C39M - Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens; 2024.
- O. ASTM C94/C94M - Standard Specification for Ready-Mixed Concrete; 2025a.
- P. ASTM C109/C109M - Standard Test Method for Compressive Strength of Hydraulic Cement Mortars (Using 50 mm [2 in.] Cube Specimens); 2024.
- Q. ASTM C150/C150M - Standard Specification for Portland Cement; 2024.

- R. ASTM C171 - Standard Specification for Sheet Materials for Curing Concrete; 2020.
- S. ASTM C173/C173M - Standard Test Method for Air Content of Freshly Mixed Concrete by the Volumetric Method; 2024a.
- T. ASTM C260/C260M - Standard Specification for Air-Entraining Admixtures for Concrete; 2024.
- U. ASTM C494/C494M - Standard Specification for Chemical Admixtures for Concrete; 2024.
- V. ASTM C618 - Standard Specification for Coal Ash and Raw or Calcined Natural Pozzolan for Use in Concrete; 2025a.
- W. ASTM C881/C881M - Standard Specification for Epoxy-Resin-Base Bonding Systems for Concrete; 2020a.
- X. ASTM C1059/C1059M - Standard Specification for Latex Agents for Bonding Fresh to Hardened Concrete; 2024.
- Y. ASTM C1107/C1107M - Standard Specification for Packaged Dry, Hydraulic-Cement Grout (Nonshrink); 2020.
- Z. ASTM C1315 - Standard Specification for Liquid Membrane-Forming Compounds Having Special Properties for Curing and Sealing Concrete; 2025.
- AA. ASTM C1602/C1602M - Standard Specification for Mixing Water Used in the Production of Hydraulic Cement Concrete; 2022.
- BB. ASTM D8139 - Standard Specification for Semi-Rigid, Closed-Cell Polypropylene Foam, Preformed Expansion Joint Fillers for Concrete Paving and Structural Construction; 2023.
- CC. ASTM E154/E154M - Standard Test Methods for Water Vapor Retarders Used in Contact with Earth Under Concrete Slabs, on Walls, or as Ground Cover; 2008a (Reapproved 2025).
- DD. ASTM E1155/E1155M - Standard Test Method for Determining FF Floor Flatness and FL Floor Levelness Numbers; 2023.
- EE. 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; 2024.
- FF. ASTM E1745 - Standard Specification for Plastic Water Vapor Retarders Used in Contact with Soil or Granular Fill under Concrete Slabs; 2017 (Reapproved 2023).
- GG. ICC (IBC)-2015 - International Building Code; 2015.

1.04 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements for procedures.
- B. Provide submittal transmittals that include all submittal items identified in each submittal group below.
- C. Review Submittals - Preparatory:
 1. Mix Design: Submit proposed concrete mix designs prior to proceeding with any concrete work. Do not proceed until A/E responds to permit use of the concrete mixes.
 - a. Aggregates: Include service record data indicating absence of deleterious expansion of concrete due to alkali aggregate reactivity.
 - b. Admixtures required to meet job and environment requirements.
 2. Product Data: Submit manufacturers' data on manufactured products showing compliance with specified requirements and installation instructions.
 - a. For curing compounds, provide data on method of removal in the event of incompatibility with floor covering adhesives.
 3. Control Joint Drawings: Prior to start of concrete work submit drawings showing proposed construction and control joints for slabs.

4. Shop Drawings: Comply with requirements of ACI SP-66. Include bar schedules, shapes of bent bars, spacing of bars, and location of splices.
 - a. Show sizes and dimensions for fabrication and placing of reinforcing steel and bar supports.
 - 1) Show type size and location of all accessories.
 - 2) Indicate bar schedules, stirrup spacing, and diagrams of bent bars, arrangements and assemblies.
 - 3) Indicate yield strength of bars being provided.
 - 4) Show required bar laps on all strings of horizontal bars.
 - 5) All lap splices shall develop the full strength of the bar unless lesser laps are permitted drawings.
- D. Information Submittals - Preparatory:
 1. Material Certificates: Provide signed manufacturer certificates:
 - a. Cementitious materials.
 - b. Admixtures.
 2. Concrete Placement Schedule: Submit to Architect/Engineer prior to placing any concrete.
- E. Information Submittals - During Execution:
 1. Test Reports: Provide test reports for the work of this section as the test reports are issued by the testing agency. If the A/E is included in the distribution from the testing agency, it is not necessary for test results to be provided via the submittal process as part of this submittal group. Collected test reports will be required as part of the closeout submittal group.
- F. Closeout Submittals:
 1. Project Record Documents: Accurately record actual locations of embedded utilities and components that will be concealed from view upon completion of concrete work.
 2. Test Reports: Laboratory test reports to AE for placed concrete as specified herein.
 3. Copies of delivery tickets for each load of concrete delivered to Project shall be submitted with closeout documents.

1.05 QUALITY ASSURANCE

- A. Perform work of this section in accordance with ACI SPEC-301 and ACI CODE-318.
- B. Follow recommendations of ACI PRC-305 when concreting during hot weather.
- C. Follow recommendations of ACI PRC-306 when concreting during cold weather.
- D. Contractor shall confirm and coordinate various requirements, restrictions or special conditions (i.e. slump, surface finish, curing and sealing compatibility) with floor finish suppliers prior to placing concrete.

PART 2 PRODUCTS

2.01 FORMWORK

- A. Formwork Design and Construction: Comply with guidelines of ACI PRC-347 to provide formwork that will produce concrete complying with tolerances of ACI SPEC-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 Coating: Release agent that will not adversely affect concrete or interfere with application of coatings.

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. Slab-On-Grade Poly Fiber Reinforcement Systems:
1. Use where indicated.
 2. Synthetic Structural Fiber Reinforcement: Provide synthetic structural fibers complying with the following requirements:
 - a. Synthetic structural fibers shall meet requirements of ASTM C 1116, Paragraph 4.1.3, Type III.
 - b. Synthetic structural fibers shall be monofilament, made of polypropylene or polypropylene/polyethylene blend.
 - c. Synthetic structural fibers shall have a minimum length of 1.38 inches (35 mm) and a maximum length of 2.00 inches (51 mm).
 - d. Specific gravity between 0.90 and 0.95.
 - e. Synthetic structural fibers shall have an aspect ratio (length divided by equivalent diameter of fiber) between 60 and 100.
 - f. Dosage rate:
 - 1) Slabs-On-Grade: 5.0 lbs/cubic yard or the addition rate to achieve the concrete required minimum equivalent flexural strength, f_{e3} of 165 psi for a concrete with a compressive strength of 4,000 psi at 28 days. Determined from the manufacturer's test data verifying fiber performance in concrete based on ASTM C1609/C1609M, utilizing the beam size 6" x 6"x 20" (f_{e3}) calculated using JCI-SF4 method.
 - g. Synthetic structural fibers shall be:
 - 1) Grace STRUX, 90/40 synthetic fiber.
 - 2) Propex Concrete Systems, Novomesh 950 Synthetic Fiber.
 - 3) Euclid Chemical Company, Tuf-Strand SF.

2.03 CONCRETE MATERIALS

- A. Cement: ASTM C150/C150M, Type I - Normal Portland type.
 1. Acquire cement for entire project from same source.
- B. Air Entraining Portland Cement: ASTM C 150, Type 1A.
- C. Fine and Coarse Aggregates: ASTM C33/C33M.
 1. Acquire aggregates for entire project from same source.
- D. Fly Ash: ASTM C618, Class C.
- E. Calcined Pozzolan: ASTM C618, Class C.
- F. Water: Clean and not detrimental to concrete in accordance with ASTM C1602/C1602M.

2.04 ADMIXTURES

- A. Except for air entraining and water reducing, admixtures are not permitted without approval of Architect/Engineer. Submit manufacturer's information to A/E with historical stress testing.
- B. Do not use chemicals that will result in soluble chloride ions in excess of 0.1 percent by weight of cement.
- C. Air Entrainment Admixture: ASTM C260/C260M. Use for exterior walls, exterior slabs, walks, platforms, ramps, steps, portions of parking ramp and other concrete exposed to freezing and thawing. Air entrainment not allowed at interior floor slabs.
 1. Products:
 - a. Darex II - W.R. Grace.
 - b. AEA 92S - Euclid.
 - c. Catexol AE 260 - Axim Concrete Technologies.
 - d. General Resource Technology - Polychem SA-50.
 - e. MasterAir Series - Master Builders Solutions.
 - f. Substitutions: See Section 01 25 00 - Substitution Procedures for requirements.

- D. Mid-Range Water Reducing: ASTM C494/C494M Type A or Type F.
 - 1. Products: Subject to compliance with requirements, provide one of the following:
 - a. Daracem 65 - W.R. Grace.
 - b. Eucon MR - Euclid.
 - c. Catexol 3500N" – Axim Concrete Technologies.
 - d. General Resource Technology - KB-1200.
 - e. MasterPolyheed Series" - Master Builders Solutions.
 - f. Substitutions: See Section 01 25 00 - Substitution Procedures for requirements.
- E. High Range Water Reducing Admixture (Super Plasticizer: ASTM C494/C494M Type F or type G.
 - 1. Products: Subject to compliance with requirements, provide one of the following:
 - a. Daracem 19 - W.R. Grace.
 - b. ADVA 100 - W.R. Grace & Co.
 - c. Catexol 1000SP-MN – Axim Concrete Technologies.
 - d. General Resource Technology - Melchem Superplasticizer.
 - e. MasterRheobuild 1000 or MasterGlenium Series - Master Builders Solutions.
 - f. Substitutions: See Section 01 25 00 - Substitution Procedures for requirements.
- F. Water Reducing, Non-Chloride Accelerating Admixture: ASTM C494/C494M Type C or E.
 - 1. Products: Subject to compliance with requirements, provide one of the following:
 - a. Polarset - W.R. Grace.
 - b. Catexol 2000RHE – Axim Concrete Technologies.
 - c. General Resource Technology - Polychem Superset.
 - d. MasterSet AC 534 or MasterSet FP 20 - Master Builders Solutions.
 - e. Substitutions: See Section 01 25 00 - Substitution Procedures for requirements.
- G. Water Reducing and Retarding Admixture: ASTM C494/C494M Type D.
 - 1. Products: Subject to compliance with requirements, provide one of the following:
 - a. Daratard 17 - W.R. Grace.
 - b. Eucon Retarder 100 - Euclid.
 - c. Catexol 1000R – Axim Concrete Technologies.
 - d. MasterSet R Series or MasterSet DELVO Series - Master Builders Solutions.
 - e. Substitutions: See Section 01 25 00 - Substitution Procedures for requirements.
- H. Water Reducing Admixture: ASTM C494/C494M Type A.
 - 1. Products: Subject to compliance with requirements, provide one of the following:
 - a. WRDA 82 - W.R. Grace.
 - b. MasterPozzolith Series – Master Builders Solutions.
 - c. Catexol 1000N – Axim Concrete Technologies.
 - d. Substitutions:
- I. Interior Slabs on Grade: Install vapor retarder under interior slabs on grade. Comply with ASTM E1643. 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.
 - 1. Vapor Retarder Over Granular Fill: Install compactible granular fill before placing vapor retarder as indicated on drawings. Do not use sand.

2.05 ACCESSORY MATERIALS

- A. Underslab Vapor Retarder:
 - 1. Sheet Material: ASTM E1745, Class A; stated by manufacturer as suitable for installation in contact with soil or granular fill under concrete slabs. Single-ply polyethylene is prohibited.
 - 2. Accessory Products: Vapor retarder manufacturer's recommended tape, adhesive, mastic, prefabricated boots, etc., for sealing seams and penetrations.

3. Products:
 - a. Fortifiber Building Systems Group; Moistop Ultra 15. www.fortifiber.com.
 - b. Intoplast Group; Barrier-Bac VB-350: www.barrierbac.com.
 - c. ISI Building Products; Viper VaporCheck II 15-mil (Class A): www.isibp.com.
 - d. Stego Industries, LLC; Stego Wrap 15 mil: www.stegoindustries.com.
 - e. W. R. Meadows, Inc; PERMINATOR Class A - 15 mils (0.38 mm): www.wrmeadows.com.
 - f. Vaporblock VB15 by Raven Industries: www.vaporblock.com.
 - g. Substitutions: See Section 01 25 00 - Substitution Procedures for requirements.
- B. Non-Shrink Cementitious Grout: Premixed compound consisting of nonmetallic aggregate, cement, water reducing and plasticizing agents.
 1. Grout: Comply with ASTM C1107/C1107M.
 2. Minimum Compressive Strength at 48 Hours, ASTM C109/C109M: 2,000 pounds per square inch.
 3. Minimum Compressive Strength at 28 Days, ASTM C109/C109M: 8000 pounds per square inch.
 4. Flowable Products:
 - a. Five Star Products, Inc; Five Star Fluid Grout 100: www.fivestarprouducts.com.
 - b. W. R. Meadows, Inc; 588-10K: www.wrmeadows.com.
 - c. Substitutions: See Section 01 25 00 - Substitution Procedures for requirements.
 5. Low-Slump, Dry Pack Products:
 - a. Five Star Products, Inc; Five Star Grout: www.fivestarprouducts.com.
 - b. SpecChem, LLC; SC Multipurpose Grout: www.specchemllc.com.
 - c. W. R. Meadows, Inc; PAC-IT: www.wrmeadows.com.
 - d. Substitutions: See Section 01 25 00 - Substitution Procedures for requirements.
- C. Absorptive Cover: AASHTO M 182, Class 2, burlap cloth made from jute or kenaf.
- D. Moisture-Retaining Cover: ASTM C171; clear polyethylene, white polyethylene, or white burlap-polyethylene sheet.
- E. Bond Breaker: 4 mil plastic, 15# building paper, or vapor retarder returned up on wall.
- F. Drainage Gravel: Pea gravel, natural stone, washed free of clay, shale and organic matter.
 1. Filter Fabric: 6.0 oz. Non-Woven, Needle-Punched Polypropylene Fabric.

2.06 BONDING AND JOINTING PRODUCTS

- A. Latex Bonding Agent: Non-redisersable acrylic latex, complying with ASTM C1059/C1059M, Type II.
 1. Products:
 - a. Kaufman Products Inc; SureBond: www.kaufmanproducts.net.
 - b. SpecChem, LLC; Strong Bond Acrylic Bonder: www.specchemllc.com.
 - c. W. R. Meadows, Inc; ACRY-LOK: www.wrmeadows.com.
 - d. Substitutions: See Section 01 25 00 - Substitution Procedures for requirements.
- B. Epoxy Bonding System:
 1. Products:
 - a. Dayton Superior Corporation; Slow Set Bonding Agent: www.daytonsuperior.com.
 - b. Kaufman Products Inc; SurePoxxy HM EPL: www.kaufmanproducts.net.
 - c. Kaufman Products Inc; SurePoxxy HM Class B: www.kaufmanproducts.net.
 - d. SpecChem, LLC; SpecPoxxy 1000, SpecPoxxy 2000, SpecPoxxy 3000, or SpecPoxxy 3000FS: www.specchemllc.com.
 - e. W. R. Meadows, Inc; Rezi-Weld Gel Paste, Rezi-Weld Gel Paste State, Rezi-Weld 1000: www.wrmeadows.com.
 - f. Substitutions: See Section 01 25 00 - Substitution Procedures for requirements.

- C. Slab Isolation Joint Filler: 1/2-inch thick, height equal to slab thickness, with removable top section forming 1/2-inch deep sealant pocket after removal.
 - 1. Material: ASTM D8139, semi-rigid, closed-cell polypropylene foam.
 - 2. Products:
 - a. Nomaco, Inc; Isoflex: www.nomaco.com.
 - b. Sakrete: Concrete Expansion Joint. www.sakrete.com.
 - c. Quikrete: Concrete Expansion Joint. www.quikrete.com.
 - d. Greenstreak: Polypropylene Expansion Board with Expansion Board Cap. www.greenstreak.com.
 - e. Substitutions: See Section 01 25 00 - Substitution Procedures for requirements.
- D. Slab Construction Joint Devices: Combination keyed joint form and screed, galvanized steel or plastic, with minimum 1 inch diameter holes for conduit or rebars to pass through at 6 inches on center; ribbed steel stakes for setting. Removable screed cap to form minimum 1/4 inch wide by 3/8 inch deep joint.
 - 1. Provide removable plastic cap strip that forms wedge-shaped joint for sealant installation.
 - 2. Height: To suit slab thickness.
 - 3. Manufacturers:
 - a. Form-A-Key Concrete Specialties Products: Key-Loc Joint System with #3017 Clean-Strip Cap. www.formakey.com.
 - b. Greenstreak: Screed Cap. www.greenstreak.com.
 - c. Substitutions: See Section 01 25 00 - Substitution Procedures for requirements.

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 and Sealing Compound, Low Gloss: Liquid, membrane-forming, clear, non-yellowing acrylic; complying with ASTM C1315 Type 1 Class A.
 - 1. Application: Use at All concrete flatwork shown on structural drawings. Note: it is acceptable to use the same sealer as is specified in the Division 32 specifications for exterior slabs.
 - 2. Vehicle: Water-based.
 - 3. Solids by Mass: 25 percent, minimum.
 - 4. VOC Content: OTC compliant.
 - 5. Products:
 - a. Concrete Sealers USA; TS202 Acrylic WB-25 Topical Sealer w/ Low Gloss: www.concretesealersusa.com.
 - b. Euclid Chemical Company; DIAMOND CLEAR VOX: www.euclidchemical.com.
 - c. ProSpec: Cure & Seal WB 1315. www.tccmaterials.com.
 - d. SpecChem; Cure & Seal 25. www.specchemllc.com.
 - e. Lucas Products: #7200 Cure Seal Water Based. www.rmlucas.com.
 - f. W. R. Meadows, Inc; VOCOMP-25: www.wrmeadows.com.
 - g. TK Products; TK TRI-SEAL 1315. www.tkproducts.com.
 - h. Substitutions: See Section 01 25 00 - Substitution Procedures for requirements.
- C. Moisture-Retaining Sheet: ASTM C171.
 - 1. Curing paper, regular.
 - 2. Polyethylene film, white opaque, minimum nominal thickness of 4 mil, 0.004 inch.
 - 3. White-burlap-polyethylene sheet, weighing not less than 3.8 ounces per square yard.
- D. Water: Potable, not detrimental to concrete.

2.08 CONCRETE MIX DESIGN

- A. Proportioning Normal Weight Concrete: Comply with ACI PRC-211.1 recommendations.
 - 1. Replace as much Portland cement as possible with fly ash, ground granulated blast furnace slag, silica fume, or rice hull ash as is consistent with ACI recommendations.
- B. Admixtures: Add acceptable admixtures as recommended in ACI PRC-211.1 and at rates recommended or required by manufacturer.
- C. Normal Weight Concrete: Design all concrete mixes from the following table of requirements:

	W/C Max	%AIR +-1%	Max Slump (inches)	MIN f'c(psi) @ 28 days
1. Concrete				
a. Footings	0.55	0	4	See Struct. Drawings
b. Foundations	0.50	6	4	See Struct. Drawings
c. Interior Slab on Grade	0.50	0	4	See Struct. Drawings
d. Exterior Slabs (Only those shown on structural drawings)	0.50	6	4	See Struct. Drawings
f. All other Cast-in-place concrete shown on structural drawings.	0.50	6	4	See Struct. Drawings
2. Concrete shown on civil drawings (excluding stoops)	see Division 32 specifications			

- 1. Fly Ash Content: Maximum 20 percent of cementitious materials by weight when used alone.
 - a. At walls, piers, interior slab on grade, bond beams and metal pan stairs: A maximum of 50 percent total replacement of portland cement with fly ash at a 1:1 ratio; up to 350 pounds, with a maximum 20 percent fly ash.
 - b. At exposed columns, exterior slab on grade and miscellaneous non-scheduled concrete: A maximum of 20 percent total replacement of Portland cement with fly ash at a 1:1 ratio where freeze-thaw durability and exposure to deicers is likely; up to 350 pounds, with a maximum 20 percent fly ash.
- 2. Calcined Pozzolan Content: Maximum 10 percent of cementitious materials by weight.
 - a. Note: Total of combination of flyash and calcined pozzalon shall not exceed 20 percent.
- 3. Maximum Coarse Aggregate Size: For footings 1 1/2 inch.
- 4. Maximum Coarse Aggregate Size: For slabs, walls, precast plank topping and piers: 3/4 inch.

2.09 MIXING

- A. Transit Mixers: Comply with ASTM C94/C94M except where requirements in table above are more restrictive.
- B. Adding Water: If concrete arrives on-site with slump less than suitable for placement, do not add water that exceeds the maximum water-cement ratio or exceeds the maximum permissible slump.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify lines, levels, and dimensions before proceeding with work of this section.

3.02 PREPARATION

- A. Inspect all excavations and/or prepared subgrade for suitability of pouring concrete. No standing water, organic material, debris, etc., should be present. Slab subgrade should be compacted as specified and have optimum moisture content.
- B. Points of concrete placement shall be clean, damp but not wet surfaces, or properly consolidated fills, but never soft mud, dry porous earth, or frozen ground.
- C. Verify that forms are clean and free of rust before applying release agent.
- D. Coordinate placement of embedded items with erection of concrete formwork and placement of form accessories.
- E. Contractor shall make certain that references to all related sections for floor finishes and their substrate finish requirements are complied with including but not limited to; mix/slump, flatness, curing/sealing compounds, curing timeframe, aggregate colors etc.
- F. 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.
- G. Interior Slabs on Grade: Install vapor retarder under interior slabs on grade. Comply with ASTM E1643. 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.
 - 1. Vapor Retarder Over Granular Fill: Install compactible granular fill before placing vapor retarder as indicated on drawings. Do not use sand.

3.03 INSTALL UNDERSLAB VAPOR BARRIER

- A. Repair underslab vapor barrier damaged during placement of concrete reinforcing. Repair with vapor retarder material; lap over damaged areas minimum 6 inches and seal watertight.

3.04 INSTALLING REINFORCEMENT AND OTHER EMBEDDED ITEMS

- A. Comply with requirements of ACI SPEC-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.

3.05 PLACING CONCRETE

- A. Place concrete in accordance with ACI PRC-304.
- B. Place concrete for floor slabs in accordance with ACI PRC-302.1.
- C. Ensure reinforcement, inserts, waterstops, and embedded parts will not be disturbed during concrete placement.
- D. **Addition of water or admixtures to concrete on site without written approval of Architect/Engineer is prohibited and shall be grounds for rejection.**
- E. Convey concrete from mixing to point of placement rapidly and continuously until unit of operation is completed using methods which prevent segregation or loss of ingredients. Deposit at or very near final placement position. Use chutes such that the concrete slides in the chute and does not flow. For vertical drops more than 5 feet, utilize tremies or similar devices to prevent segregation of concrete ingredients. Do not convey or handle concrete in containers or devices made of aluminum.

- 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. Consolidate placed concrete by vibration so the concrete is thoroughly worked around reinforcement, around embedded items, and into corners of forms, eliminating air or stone pockets which may cause honeycombing, pitting, or planes of weakness. Use mechanical vibrators with a minimum frequency of 7,000 revolutions per minute, operated by competent workmen. Use of vibrators to move concrete within forms is not permitted. Insert and withdraw vibrators at many points, from 18 to 30 inches apart for 5 to 10 seconds duration. Keep a spare vibrator on the Project Site during all concrete placement operations. Use vibrators of internal type, apply directly to concrete, not through formwork, except in sections too thin to permit insertion of internal type, in which case, employ use of form vibrators approved by Architect/Engineer.
- H. Finish floors level and flat, unless otherwise indicated, within the tolerances specified below.
- I. Concrete in vertical members shall have been in place at least four hours before concrete in horizontal or vertical members resting thereon is placed.
- J. Placing concrete shall be continuous between vertical construction joints. Make vertical construction joints at approximately the center of a panel or beam, in a straight line to the full depth. See Project Drawings for location of architecturally delineated construction joints.

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.
 - 1. Install wherever necessary to separate slab from other building members, including columns, walls, equipment foundations, footings, stairs, manholes, sumps, and drains.
 - 2. Conform to Section 07 92 00 for finish joint sealer requirements.
- D. Saw Cut Contraction Joints: Saw cut joints as soon as joints can be cut without joint deformation; 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. Apply specified sealant from 07 92 00 flush with floor.
- E. Construction Joints: Where not otherwise indicated, use metal combination screed and key form, with removable top section for joint sealant.
- F. Separate slabs on grade from vertical surfaces with bond break of #15 felt, 6 mil poly or slab vapor barrier.

3.07 STRUCTURAL COMPONENT JOINTS

- A. Construction joints for walls and continuous wall footings shall have reinforcing cross joints so that shear keys will not be necessary. Construction joints will be located at Contractor's discretion and will be at such locations that each section can be filled in one continuous operation.
- B. Construction joints for concrete beams and structural slabs shall be at mid-span. Reinforcing shall extend through joint. No horizontal joint will be allowed.
- C. Construction joints for concrete columns shall be at underside of each floor level.

3.08 FLOOR FLATNESS AND LEVELNESS TOLERANCES

- A. A Contractor hired testing agency, as specified in Section 01 40 00 - Quality Requirements, will inspect finished slabs for compliance with specified tolerances.
- B. Minimum F(F) Floor Flatness and F(L) Floor Levelness Values:
 - 1. Exposed to View and Foot Traffic: F(F) of 20; F(L) of 15, on-grade only.

- C. Measure F(F) Floor Flatness and F(L) Floor Levelness in accordance with ASTM E1155/E1155M (ASTM E1155M), within 48 hours after slab installation; report both composite overall values and local values for each measured section.
- D. Correct the slab surface if composite overall value is less than specified and if local value is less than two-thirds of specified value or less than F(F) 13/F(L) 10.
- E. 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.

3.09 EXTERIOR CONCRETE WORK

- A. Use air-entrained concrete for all exterior work such as sidewalks, curbs, and retaining walls.
- B. Exterior slabs shown on structural drawings:
 1. Construct 4 inches thick in panels with control and expansion joints spaced as indicated below.
 2. Control Joints: Not more than 1/8 inch in width, saw cut to a depth of 1/4 of walk thickness. Space not more than 6 feet on center for walks and 8 feet on center for curb and gutter.
 3. Expansion Joints: 1/2 inch thick expansion joint filler. Construct between walk and any abutting masonry or concrete. Construct transverse expansion joints at uniform intervals of not more than 40 feet. Maintain 1/2 inch deep recess. Fill with sealant specified in 07 90 05.
 4. Finish: Wood float with joints and edges tooled with edging tool. Surface shall not vary more than 1/4 inch in 10 feet.

3.10 COLD WEATHER REQUIREMENTS

- A. Cold weather requirements govern when minimum ambient temperature is expected to fall below 40 degrees F.
 1. Concrete will not be placed on frozen ground.
 2. Mix, place, protect and cure concrete in strict accordance with ACI 306 R-88 "cold Weather Concreting".

3.11 HOT WEATHER REQUIREMENTS

- A. Hot weather requirements govern when maximum ambient temperature is expected to rise above 85 degrees F.
- B. Mix, place, protect and cure concrete in strict accordance with ACI 305R.
- C. Admixtures proposed for construction under these conditions, such as water-reducing retarders, shall be tested thoroughly with concrete mixes for this job. All aspects of concrete construction applicable shall be considered before approval. Submit specifications on retarder to Engineer for approval with concrete mix designs.
- D. Batch, mix and transport concrete per ACI 304R.
- E. Water curing will be required for hot weather construction.

3.12 CONCRETE FINISHING

- A. Concrete Slabs: Finish to requirements of ACI PRC-302.1 and as follows:
 1. Surfaces to be Sealed: Troweled finish.
- B. Exterior Foundation Wall Surface Form Finish: Rub down or chip off fins or other raised areas 1/4 inch or more in height. Fill tie break-off holes with grout flush with wall.

3.13 CURING AND PROTECTION

- A. Moisture cure slabs only. Exception; where curing/sealing compounds are indicated.
- B. Comply with requirements of ACI PRC-308. Immediately after placement, protect concrete from premature drying, excessively hot or cold temperatures, and mechanical injury.

- C. Maintain concrete with minimal moisture loss at relatively constant temperature for period necessary for hydration of cement and hardening of concrete.
 - 1. Normal concrete: Not less than seven days.
- D. Formed Surfaces: Cure by moist curing with forms in place for full curing period.
- E. 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.
 - 3. Final Curing: Begin after initial curing but before surface is dry.
 - a. Curing/Sealing Compound (At sealed concrete locations only): Apply in two coats at right angles, using application rate recommended by manufacturer.

3.14 FIELD QUALITY CONTROL

- A. An Owner hired testing agency will perform field quality control tests, as specified in General 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. Record time, place, mix design, quantity, slump, concrete temperature, air temperature and weather conditions, cylinders taken, date shoring is removed, curing and other data pertaining to concrete placement.
- E. Tests of concrete and concrete materials may be performed at any time to ensure compliance with specified requirements.
- F. Compressive Strength Tests: ASTM C39/C39M. For each test, mold and cure four concrete test cylinders. Obtain test samples for first 50 cu yd or less of each class of concrete placed. Cast one set of four test cylinders for each additional 100 cu. yd.
 - 1. Test one (1) cylinder at 7 days and two (2) cylinders at 28 days and (1) on hold.
 - 2. For first set of cylinders cast for slab-on-grade, test one (1) cylinder at 3 days. Analyze probable 28 day strength. Inform Architect/Engineer immediately by telephone if there appears to be concern for achieving required 28 day strength.
 - 3. If reasonable consistency of slump and air tests is recorded on 4 consecutive tests, testing company may reduce requirements to test every 150 cu. yds.
- G. Air Entrainment Tests: Perform air entrainment test per ASTM C173/C173M for each compressive strength test of a concrete mix with a requirement for air entrainment.
- H. Take one additional test cylinder during cold weather concreting, cured on job site under same conditions as concrete it represents.
- I. Deviation from specifications shall be grounds for rejection.
- J. **Addition of water or admixtures to concrete on site without written approval of Architect/Engineer is prohibited and shall be grounds for rejection.**

3.15 MOISTURE TESTING

- A. Testing requirements are addressed in Section 09 05 61.

3.16 DEFECTIVE CONCRETE

- A. Test Results: The testing agency shall report test results in writing to Architect 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 Architect. The cost of additional testing shall be borne by Contractor when defective concrete is identified.
- D. Do not patch, fill, touch-up, repair, or replace exposed concrete except upon express direction of Architect for each individual area.

END OF SECTION

Page Intentionally Left Blank

SECTION 05 50 00
METAL FABRICATIONS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Shop fabricated steel bollards.

1.02 RELATED REQUIREMENTS

- A. Applicable provisions of Division 1 govern the work of this section.
- B. Section 03 30 00 - Cast-in-Place Concrete: Placement of metal fabrications in concrete.

1.03 REFERENCE STANDARDS

- A. ASTM A36/A36M - Standard Specification for Carbon Structural Steel; 2019.
- B. ASTM A53/A53M - Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless; 2024.
- C. ASTM A123/A123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products; 2024.
- D. ASTM A501/A501M - Standard Specification for Hot-Formed Welded and Seamless Carbon Steel Structural Tubing; 2021.
- E. ASTM A992/A992M - Standard Specification for Structural Steel Shapes; 2022.
- F. AWS B2.1/B2.1M - Specification for Welding Procedure and Performance Qualification; 2021, with Errata (2023).
- G. AWS D1.1/D1.1M - Structural Welding Code - Steel; 2025.

1.04 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements for procedures.
- B. Review Submittals - Preparatory:
 - 1. Shop Drawings: Indicate profiles, sizes, connection attachments, reinforcing, anchorage, size and type of fasteners, and accessories. Include erection drawings, elevations, and details where applicable. Verify roof insulation thickness at roof ladder locations to confirm ladder dimensions.
- C. Information Submittals - Preparatory:
 - 1. Welders' Qualification Statement: Welders' certificates in accordance with AWS B2.1/B2.1M and dated no more than 12 months before start of scheduled welding work.
 - 2. Welders' Certificates: (Upon request) Submit certification for welders employed on the project, verifying AWS qualification within the previous 12 months.

1.05 QUALITY ASSURANCE

- A. 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. Pipe Bollards: ASTM A 53/A 53M, Grade B Schedule 80, hot-dip galvanized finish.
- B. Welding Materials: AWS D1.1; type required for materials being welded.
- C. 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. Furnish 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; galvanized finish. Fabricated of 6" diameter Extra Strong steel pipe, ten feet long. Fill with concrete and set as detailed.

2.04 FINISHES - STEEL

- A. Galvanizing items to be embedded in concrete: Galvanize after fabrication to ASTM A123/A123M requirements.
- B. Galvanize Repair: ZRC Worldwide; Galvilite. www.zrcworldwide.com.

2.05 FABRICATION TOLERANCES

- A. Maximum Misalignment from Actual Position: 1/16 inch.
- B. Maximum Bow: 1/8 inch in 48 inches.
- C. Maximum Deviation From Vertical: 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. Furnish setting templates to the appropriate entities for steel items required to be cast into concrete.

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. Barrier Protection: Do not install over cementitious materials, dissimilar metals or pressure treated material without adequate barrier protection.
- D. Field weld components as indicated on drawings.
- E. Perform field welding in accordance with AWS D1.1/D1.1M.
- F. Obtain approval prior to site cutting or making adjustments not scheduled.

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

SECTION 06 10 00
ROUGH CARPENTRY

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Structural dimension lumber framing.
- B. Nonstructural dimension lumber framing.
- C. Rough opening framing for doors, windows, and roof openings.
- D. Sheathing.
- E. Roofing nailers.

1.02 RELATED REQUIREMENTS

- A. Applicable provisions of Division 1 govern the work of this section.
- B. Section 06 41 00 - Architectural Wood Casework: Coordinate with fabricator, shop drawings.
- C. Section 06 17 53 - Shop-Fabricated Wood Trusses.
- D. Section 06 41 00 - Architectural Wood Casework: Wood blocking requirements for cabinet installation.
- E. Section 07 25 00 - Weather Barriers: Water-resistive barrier over sheathing.
- F. Section 07 31 13 - Asphalt Shingles: Confirm special requirements for sheathing installation for asphalt shingle system.
- G. Section 07 61 00 - Sheet Metal Roofing: Confirm special requirements for sheathing installation.
- H. Section 10 22 43 - Fabricated Sliding Partitions: The partitions sections refers to this section for materials. Refer to requirements for dimensional lumber, panels, and fasteners.

1.03 REFERENCE STANDARDS

- A. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware; 2023.
- B. AWPA M4 - Standard for the Handling, Storage, Field Fabrication and Field Treatment of Preservative-Treated Wood Products; 2023.
- C. ICC (IBC) - International Building Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- D. PS 20 - American Softwood Lumber Standard; 2025.
- E. WWPA G-5 - Western Lumber Grading Rules; 2025.

1.04 SUBMITTALS

- A. See contract Conditions and General Requirements for procedures.
- B. Provide submittal packages that contain all the information identified in the submittal groups identified below. Follow any instructions regarding coordinating submittal timing between submittals of different sections.
- C. Review Submittals - Preparatory:
 - 1. Product Data: Provide technical data on lumber and wood preservative materials.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. General: Cover wood products to protect against moisture. Support stacked products to prevent deformation and to allow air circulation.

PART 2 PRODUCTS

2.01 GENERAL REQUIREMENTS

- A. Dimension Lumber: Comply with PS 20 and requirements of specified grading agencies.
 - 1. Species: Use Douglas Fir-Larch #1 or Spruce-Pine-Fir #1/#2.

2.02 DIMENSION LUMBER FOR CONCEALED APPLICATIONS

- A. Grading Agency: Western Wood Products Association; WWPA G-5.
- B. Sizes: Nominal sizes as indicated on drawings.
- C. Moisture Content: S-dry or MC19.
- D. Refer to Structural Drawings for design stresses.
- E. Materials: See structural sheets for materials requirements.

2.03 CONSTRUCTION PANELS

- A. Roof sheathing: See structural drawings for requirements.
- B. Shear wall sheathing: See structural drawings for requirements.
- C. Wall Sheathing: See structural drawings for requirements.
- D. Plywood Panels for Sliding Partitions: Plywood, PS 1, Grade B-B, Exposure 1, 5/8 inch unless indicated otherwise.

2.04 PRESSURE-PRESERVATIVE TREATMENT (PPT)

- A. Application: Wood in contact with slab.
- B. Factory-treat wood members in accordance with AWPA U1 and use category indicated.
- C. Preservative Limitations for Interior Use Categories UC1 and UC2:
 - 1. Use SBX preservative.
- D. Kiln-dry wood after treatment with waterborne preservative to maximum moisture content of 19 percent for lumber and 15 percent for plywood.
- E. Fabricate to maximum extent possible before treatment.
- F. Label preservative-treated wood with marking as required by AWPA U1 and ICC (IBC). Unless otherwise permitted by standard U1 and building code, include the following markings: AWPA U1, accredited inspection agency mark, treating plant identification, type of preservative, preservative retention, and permitted end use.
- G. Field Treatment for Cuts and Holes in Preservative-Treated Wood: Comply with AWPA M4.

2.05 ACCESSORIES

- A. Metal and Finish of Fasteners:
 - 1. See requirements in structural drawings.
 - 2. Preservative-Treated Wood:
 - a. Nails, timber rivets, wood screws, and lag screws - general use: Hot-dip galvanized steel complying with ASTM A153/A153M Class D.
 - 3. Untreated Wood: Unfinished steel.
- B. Water-Resistive Barrier: See Section 07 25 00.

PART 3 EXECUTION

3.01 PREPARATION

- A. Where wood framing bears on cementitious foundations, install full width sill flashing continuous over top of foundation, lap ends of flashing minimum of 4 inches and seal.
- B. Coordinate installation of rough carpentry members specified in other sections.
- C. Where wood framing is in contact with concrete or masonry, separate wood with No.15 felt bond break.

3.02 INSTALLATION - GENERAL

- A. Select material sizes to minimize waste.
- B. Reuse scrap to the greatest extent possible; clearly separate scrap for use on site as accessory components, including: shims, bracing, and blocking.

3.03 FRAMING INSTALLATION

- A. Set structural members level, plumb, and true to line. Discard pieces with defects that would lower required strength or result in unacceptable appearance of exposed members.
- B. Make provisions for temporary construction loads, and provide temporary bracing sufficient to maintain structure in true alignment and safe condition until completion of erection and installation of permanent bracing.
- C. Comply with member sizes, spacing, and configurations indicated, and fastener size and spacing indicated, but not less than 16 inches on center.
- D. Install horizontal spanning members with crown edge up and not less than 1-1/2 inches of bearing at each end.
- E. Frame to metal 1/2 wall posts with a stud at each side.

3.04 BLOCKING, NAILERS, AND SUPPORTS

- A. Provide framing and blocking members as indicated or as required to support finishes, fixtures, specialty items, and trim.
- B. In framed assemblies that have concealed spaces, to close concealed draft openings between floors and between top story and roof/attic space; other material acceptable to code authorities may be used in lieu of solid wood blocking.
- C. In walls, provide blocking attached to studs as backing and support for wall-mounted items, unless item can be securely fastened to two or more studs or other method of support is explicitly indicated.
- D. Where ceiling-mounting is indicated, provide blocking and supplementary supports above ceiling, unless other method of support is explicitly indicated.

3.05 ROOF-RELATED CARPENTRY

- A. Coordinate installation of roofing carpentry with deck construction, framing of roof openings, and roofing assembly installation.

3.06 INSTALLATION OF CONSTRUCTION PANELS

- A. Miscellaneous Panels at Vertical and Horizontal Locations: Secure panels to framing members, with ends staggered (where applicable) and over firm bearing.
 - 1. Screw panels to metal or wood framing. Staples are not permitted.
- B. Roof Sheathing: Secure panels with long dimension perpendicular to framing members, with ends staggered and over firm bearing.
 - 1. At long edges use sheathing clips where joints occur between roof framing members.
 - 2. Nail panels to framing; staples are not permitted.
 - 3. Install in accordance with recommendations of APA.

3.07 SITE-APPLIED WOOD TREATMENT

- A. Apply preservative treatment compatible with factory applied treatment at site-sawn cuts, complying with manufacturer's instructions.
- B. Allow preservative to dry prior to erecting members.

3.08 TOLERANCES

- A. Framing Members: 1/8 inch from true position, maximum.
- B. Variation from Plane, Other than Floors: 1/4 inch in 10 feet maximum, and 1/4 inch in 30 feet maximum.

3.09 FIELD QUALITY CONTROL

- A. See Section 01 40 00 - Quality Requirements for related requirements.
- B. Provide free access to concrete operations at project site and cooperate with appointed firm.

3.10 CLEANING

- A. Waste Disposal:
 - 1. Comply with applicable regulations.
 - 2. Do not burn scrap on project site.
 - 3. Do not burn scraps that have been pressure treated.
 - 4. Do not send materials treated with pentachlorophenol, CCA, or ACA to co-generation facilities or "waste-to-energy" facilities.
- B. Do not leave wood, shavings, sawdust, etc. on the ground or buried in fill.
- C. Prevent sawdust and wood shavings from entering the storm drainage system.

END OF SECTION

SECTION 06 17 53
SHOP-FABRICATED WOOD TRUSSES

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Shop-fabricated wood trusses.
- B. Truss bridging.

1.02 RELATED REQUIREMENTS

- A. Applicable provisions of Division 1 govern the work of this section.
- B. Section 01 40 00 - Quality Requirements: Requirements for Contractor's Design-Related Professional Design Service.
- C. Section 06 10 00 - Rough Carpentry.

1.03 REFERENCE STANDARDS

- A. ANSI/TPI 1 - National Design Standard for Metal Plate Connected Wood Truss Construction; 2022.
- B. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2025a.
- C. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2026.
- D. RIS (GR) - Standard Specifications for Grades of California Redwood Lumber; 2019.
- E. SBCA (BCSI) - Building Component Safety Information: Guide to Good Practice for Handling, Installing, Restraining & Bracing of Metal Plate Connected Wood Trusses; 2018 (Updated 2020).
- F. TPI DSB-89 - Recommended Design Specification for Temporary Bracing of Metal Plate Connected Wood Trusses; 1989.

1.04 DESIGN REQUIREMENTS

- A. Comply with applicable code for structural loading criteria.

1.05 SUBMITTALS

- A. See contract Conditions and General Requirements for procedures.
- B. Provide submittal transmittals that include all submittal items identified in each submittal group below.
- C. Review Submittals - Preparatory:
 - 1. Product Data: Manufacturer's data sheets on plate connectors, bearing plates, and metal bracing components.
 - 2. Shop Drawings: Show truss configurations, sizes, spacing, size and type of plate connectors, cambers, framed openings, bearing and anchor details, and bridging and bracing.
 - a. Include identification of engineering software used for design.
 - b. Provide shop drawings stamped or sealed by design engineer.
- D. Information Submittals - Preparatory:
 - 1. Designer's Qualification Statement.
 - 2. Fabricator's Qualification Statement.

1.06 QUALITY ASSURANCE

- A. Truss Design, Fabrication, and Installation: In accordance with TPI 1, TPI DSB-89, and BCSI 1.
- B. Design the work of this section under the direct supervision of a professional engineer experienced in the design of this type of work and licensed in Wisconsin. Provide plans, drawings, documents, specifications and reports for this work that are signed, sealed and dated by the professional engineer who prepared or who directed and controlled the preparation of the written material.
- C. Fabricator Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years of documented experience.

1.07 DELIVERY, STORAGE, AND HANDLING

- A. Handle trusses in accordance with SBCA (BCSI).
- B. Store trusses in vertical position resting on bearing ends.

PART 2 PRODUCTS

2.01 TRUSSES

- A. Wood Trusses: Design and fabricate trusses in accordance with ANSI/TPI 1 and to achieve specified design requirements indicated.
 - 1. Connectors: Steel plate.
 - 2. Structural Design: Comply with applicable code for structural loading criteria.

2.02 MATERIALS

- A. Lumber:
 - 1. Refer to Structural Drawings for design stresses.
 - 2. Moisture Content: Between 7 and 9 percent.
 - 3. Lumber fabricated from old growth timber is not permitted.
- B. Steel Connectors: Hot-dipped galvanized steel sheet, ASTM A653/A653M Structural Steel (SS) Grade 33/230, with G60/Z180 coating; die stamped with integral teeth; thickness as indicated.
- C. Truss Bridging: Type, size and spacing recommended by truss manufacturer.

2.03 ACCESSORIES

- A. Wood Blocking, Bridging, Plates, and Miscellaneous Framing: As specified in Section 06 10 00.
- B. Fasteners: Hot-dip galvanized steel, type to suit application.
- C. Bearing Plates: Hot-dip galvanized steel.

2.04 FABRICATION

- A. Fabricate trusses to achieve structural requirements specified.
- B. Brace wood trusses in accordance with TPI DSB-89 and BCSI 1.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that field measurements are as indicated.
- B. Verify that supports and openings are ready to receive trusses.

3.02 PREPARATION

- A. Coordinate placement of bearing items.

3.03 ERECTION

- A. Install trusses in accordance with manufacturer's instructions, SBCA (BCSI); maintain a copy of applicable documents on site until installation is complete.
- B. Set members level and plumb, in correct position.

- C. Make provisions for erection loads, and for sufficient temporary bracing to maintain structure plumb, and in true alignment until completion of erection and installation of permanent bracing.
- D. Do not field-cut or alter structural members without approval of Architect.
- E. Install permanent bridging and bracing.
- F. Install headers and supports to frame openings required.
- G. Frame openings between trusses with lumber in accordance with Section 06 10 00.
- H. Coordinate placement of decking with work of this section.

END OF SECTION

Page Intentionally Left Blank

SECTION 06 41 00
ARCHITECTURAL WOOD CASEWORK

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Wood casework with laminate cladding.
- B. Cabinet and drawer hardware.

1.02 RELATED REQUIREMENTS

- A. Applicable provisions of Division 1 govern work under this Section.
- B. Section 06 10 00 - Rough Carpentry.
- C. Section 12 36 00 - Countertops.

1.03 REFERENCE STANDARDS

- A. ANSI A208.2 - Medium Density Fiberboard (MDF) for Interior Applications; 2022.
- B. ANSI/AWI 0400 - Factory Finishing; 2022.
- C. ANSI/AWI 0620 - Finish Carpentry/Installation; 2024.
- D. ANSI/AWI 0641 - Architectural Wood Casework; 2019.
- E. AWI 100 - Submittals; 2018.
- F. AWI 300 - Materials; 2018.
- G. BHMA A156.9 - Cabinet Hardware; 2020.
- H. PS 1 - Structural Plywood; 2023.
- I. PS 20 - American Softwood Lumber Standard; 2025.

1.04 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements for procedures.
- B. Review Submittals - Preparatory:
 - 1. Provide submittal packages that contain all the information identified in the submittal groups identified below. Follow any instructions regarding coordinating submittal timing between submittals of different sections.
 - 2. Product Data for Wood Casework for Transparent Finish: Submit manufacturer's published, product descriptive data.
 - a. Panel Cores for Wood Veneer and HPDL Panels: For each type, include thickness.
 - b. HPDL Laminates: For each type, indicate description, thickness, and color.
 - c. Laminate Edgebanding: For each type, indicate thickness.
 - d. Hardware: For each type of cabinet and drawer hardware.
 - e. Locks: For each type of cabinet and drawer lock.
 - f. Accessory Components: For each type of grommet.
- C. Shop Drawings:
 - 1. Shop Drawings: Indicate materials, component profiles, fastening methods, jointing details, and accessories.
 - 2. General: Each sheet sequentially numbered and dated.
 - a. Sheet Size: 11 by 17 inches.
 - b. Contents: Indicate project name and project address.
 - 3. AWI QCP Program Shop Drawing Requirements:
 - a. Comply with AWI 100 for shop drawing front matter documentation.
 - b. Cover Sheet: Include phone numbers of design and general contractor firms.
 - c. Table of Contents: Include page number and title of each shop drawing.
 - d. Aesthetic Grade: Identify specified grade and indicate compliance.
 - e. Performance Duty Level: Identify specified duty level and indicate compliance.

- f. Identification of Materials: Include material lists or schedules.
 - g. Reference Plans: Casework locations in relative context of building floor plans.
 - h. Plans and Elevations: Plan and elevation views of each assembly type.
 - 1) Include rough opening dimensions, casework assembly dimensions, locations and sizes of cutouts, drawer locations, door locations, door swings, and hinge locations.
 - i. Detailed Sections: Dimensioned section views of each casework configuration.
 - j. Details: Dimensioned casework assembly details with material thicknesses.
 - 1) Include laminate-clad panels and panel cores.
- D. Review Submittals - Samples:
- 1. Samples for laminate-clad wood casework.
 - a. Samples, Laminate-Clad Panels: For each laminate-clad type, submit two, laminate-clad sample panels; size: 8 by 8 inches; thickness: 3/4 inch.
 - b. Samples for Initial Selection:
 - 1) HPDL Edgebanding: For each edgebanding type, submit two manufacturer's standard palettes, indicating full range of colors.
 - c. Samples, Edgebanding:
 - 1) HPDL Edgebanding: For each edgebanding type, submit two sample strips, 6 inches long, minimum.
 - d. Samples, Laminates: For each laminate type, submit two samples for each specified color.
 - 2. Hardware Samples:
 - a. Samples, Hardware: For each hinge, pull, catch, latch, and shelf rest type, submit one sample, full-size, indicating specified finish.
- E. Closeout Submittals:
- 1. See Section 01 78 00 - Closeout Submittals for additional information regarding documenting warranties.
 - 2. Warranty Documentation: Submit documentation of manufacturer's warranty that acknowledges the requirements defined in this section.
 - a. Provide procurement information including date(s) of procurement, identification of suppliers and contractors involved in the procurement.
 - b. Provide manufacturer certification of the warranty that is executed in the Owner's name.

1.05 QUALITY ASSURANCE

- A. Fabricator and installer Qualifications: Firm specializing in fabricating and installing products specified in this section with minimum five years of documented experience; with qualifications indicating ability to comply with requirements of this section.
 - 1. Casework company with at least one project in past five years with value of casework within 20 percent of casework cost for this project.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Deliver products in original packaging materials bearing product identification.

1.07 WARRANTY

- A. See Section 01 78 00 - Closeout Submittals for additional warranty requirements.
- B. Section Specific Warranty: Provide manufacturer's customized warranty as described in this section. Document the warranty as defined under the Submittals heading of this section. Provide warranty in conformance with the following:
 - 1. Repair or replace components that fail in materials or workmanship. Failures include, but are not limited to, the following:
 - a. Delamination of components or other failures of glue bond.
 - b. Warping of components.
 - c. Failure of operating hardware.

- d. Deterioration of finishes.

PART 2 PRODUCTS

2.01 ARCHITECTURAL WOOD CASEWORK

- A. Casework Finish: Wood casework with laminate cladding.
- B. Provide casework and casework components in sizes and profiles as indicated on drawings.
 - 1. Interior Clearances: Comply with specified performance requirements.
- C. Adjustable Shelves, Number of Shelves Per Cabinet Unit:
 - 1. Base Cabinets: As indicated on drawings.
 - 2. Wall Cabinets: As indicated on drawings.
- D. Scribed Fillers:
 - 1. Finish and Materials: Same materials and finish as exposed surfaces.

2.02 PERFORMANCE REQUIREMENTS

- A. Architectural Woodwork Institute (AWI) Performance Requirements:
 - 1. Comply with AWI 300, ANSI/AWI 0641, ANSI/AWI 0400, and ANSI/AWI 0620 as applicable for specified casework finish, aesthetic grade, and performance duty level.
 - a. Aesthetic Grade: Custom.
 - b. Product Performance Duty Level: Duty Level 3.
 - 2. Panel and Material Thicknesses: Provide panels and materials as required to meet specified performance duty level, subject to minimum thickness requirements of AWI 300 and ANSI/AWI 0641 and flatness requirements indicated below.
 - 3. Panel Flatness: Provide panels with maximum variation from flat in 12 inches as measured diagonally across panel.
 - a. Custom Grade: Plus or minus 0.047 inch maximum.
 - 4. Cabinet Door Flatness:
 - a. Comply with specified performance requirements.

2.03 WOOD CASEWORK WITH LAMINATE CLADDING

- A. Casework Construction:
 - 1. Frameless Cabinet and Door Interface: Flush overlay.
 - 2. Door and Drawer Front Profile: Flush.
- B. Clad all surfaces, exposed and not exposed with PLAM Cladding or edge banding.
- C. Custom Grade - Laminate-Clad Wood Casework:
 - 1. Exposed Exterior Surfaces, Panels to Receive Laminate Cladding:
 - a. HPDL Panels; Surface Finish: Wilsonart. Monticello Maple, Fine Velvet Finish.
 - 2. Exposed Interior Surfaces at Door and Drawer Fronts:
 - a. Same laminate materials and thicknesses as exposed exterior surfaces.
 - 1) Color, grain and pattern to match exposed interior or face.
 - 3. Exposed Interior Surfaces Except Door and Drawer Front Surfaces:
 - a. Same laminate materials and thicknesses as exposed exterior surfaces.
 - 1) Color, grain and pattern to match exposed interior or face.
 - 4. Semi-Exposed Surfaces; Panels to Receive Laminate Cladding:
 - a. Comply with specified performance requirements.
- D. Edgebanding Materials for Laminate-Clad Wood Casework:
 - 1. PVC: Well-matched to exposed face; radiused and beveled on edges and corners if thickness is greater than 0.039 inch. Provide edgebanding with minimum thickness of 0.018 inch. See applications paragraph below for additional requirements for edgebanding thicknesses.

2.04 EDGEBANDING APPLICATIONS

- A. Clad all surfaces, exposed and not exposed with PLAM Cladding or edge banding.

- B. Front Edges of Frameless Cabinet Components:
 - 1. Provide edgebanding materials and color to match exposed exterior surfaces.
 - a. Provide 2mm thick plastic edge banding at front edges of shelves.
- C. Top Edges of Cabinets:
 - 1. Provide edgebanding at top edges of cabinets.
- D. Bottom Edges of Wall Cabinet Ends:
 - 1. Provide edgebanding materials and color to match exposed exterior surfaces.
- E. Bottom Edges of Aprons:
 - 1. Provide edgebanding materials and color to match exposed exterior surfaces.
- F. Hinged Door Edges:
 - 1. Provide edgebanding on all four edges except for solid wood doors.
- G. Drawer Front and Drawer False Front Edges:
 - 1. Provide edgebanding on all four edges except for solid wood drawers.
- H. Drawer Box Top Edges:
 - 1. Provide HPDL to match semi-exposed surfaces.
- I. Adjustable Shelf Edges, Semi-Exposed Surfaces:
 - 1. Provide edgebanding materials and color to match adjacent surfaces.

2.05 HDPL-CLAD PANELS

- A. Description: Panels consisting of High-Pressure Decorative Laminate (HPDL) faces applied to cores; panel layup with face ply, back ply, and core of either single ply or odd number of inner plies, to produce balanced construction panel.
 - 1. Panels subject to size limitations, minimum thickness requirements, and fabrication tolerances of specified aesthetic grade and performance duty level in accordance with AWI 300 and ANSI/AWI 0641.
- B. High-Pressure Decorative Laminate (HPDL): Sheet consisting of fibrous material impregnated with thermosetting resins; bonded by high-pressure process.
- C. Manufacturers: Refer to Master Color Schedule on ID Drawings for basis of design.
 - 1. Formica Corporation: www.formica.com.
 - 2. Panolam Industries International, Inc: Including brands Panolam, Nevemar and Pionite; www.panolam.com.
 - 3. Wilsonart LLC: www.wilsonart.com.
 - 4. Substitutions: See Section 01 25 00 - Substitution Procedures for requirements.
 - a. Submit substitutions to A/E for pre-bid authorization.
- D. 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. Post-Formed Horizontal Surfaces: HGP, 0.039 inch nominal thickness, through color, color as selected, finish as indicated.
 - 4. Post-Formed Vertical Surfaces: VGP, 0.028 inch nominal thickness, through color, color as selected, finish as indicated.
 - 5. Cabinet Liner: CLS, 0.020 inch nominal thickness (melamine), color as selected, finish as selected.
 - 6. Laminate Backer: BKL, 0.020 inch nominal thickness (melamine), undecorated; for application to concealed backside of panels faced with high pressure decorative laminate.

2.06 PANEL CORES

- A. Medium Density Fiberboard (MDF):
 - 1. Application: backing for plastic laminate unless otherwise indicated and components not indicated as another material.
 - 2. Description: Composite panel composed of cellulosic fibers, additives, and bonding system cured under heat and pressure; comply with ANSI A208.2.
 - 3. Grade: 115.
 - 4. Panel Thickness: 3/4 inch unless specified otherwise.
 - 5. Moisture Resistance: MR10; color-tinted to indicate moisture-resistance core.

2.07 CONCEALED CABINET BASE COMPONENTS

- A. Cabinet Base Toe-Kick Subfronts:
 - 1. Materials: Fabricator's option wood boards or plywood.
 - 2. Finished Face of Toe Kick Subfronts: As indicated on drawings.
- B. Cabinet Base Blocking and Stretchers:
 - 1. Materials: Fabricator's option wood boards.
- C. Cabinet Base Sleepers:
 - 1. Materials: Fabricator's option wood boards or plywood.

2.08 WOOD AND WOOD-BASED MATERIALS

- A. Plywood: Comply with PS 1.
 - 1. Structural I, Grade C-D, Exposure I.
 - 2. Performance Category: 23/32 minimum, unless indicated otherwise.
- B. Wood Boards: Comply with PS 20.
 - 1. Thickness: 11/16 inch, actual minimum, unless indicated otherwise.

2.09 CABINET AND DRAWER HARDWARE

- A. General: Comply with BHMA A156.9 for hardware types and grades indicated below:
 - 1. Hardware Types: As indicated on drawings.
 - 2. Product Grade: Grade 2.
- B. Hinges: 5 knuckle type, institutional style, hospital tipped, stainless steel with satin finish.
 - 1.
 - 2. Manufacturers:
 - a. Blum, Inc: www.blum.com.
 - b. Rockford Process Control (RPC): www.rockfordprocess.com.
 - c. Hardware Resources: www.hardwareresources.com.
 - d. Substitutions: See Section 01 25 00 - Substitution Procedures for requirements.
- C. Cabinet Door and Drawer Pulls:
 - 1. Description: Back-mounted pulls.
 - 2. Provide the number of pulls per drawer as indicated on drawings.
 - 3. Comply with specified performance requirements.
 - 4. Design: U-shape wire pulls.
 - 5. Center-to-Center Mounting Dimension: 4 inches.
 - 6. Material and Finish: Satin stainless steel.
 - 7. Products:
 - a. Hafele: Wire Pull, Stainless Steel 304; www.hafele.com.
 - b. Rockwood: 853; www.assaabloydooraccessories.us.
 - c. Sugatsune: SWP-640/S Stainless Steel Wire Pull; www.sugatsune.com.
 - d. Substitutions: See Section 01 25 00 - Substitution Procedures for requirements.
- D. Cabinet Magnetic Catches:
 - 1. Description: Fastening devices with magnetic holding capacities that keep cabinet doors closed until pulling actions release doors for opening.

2. Provide one catch for each swinging door 48 inches and less in height.
 3. Provide two catches for each swinging door over 48 inches in height.
 4. Non-Tabbed Magnetic Catch:
 - a. Install one at base and wall cabinets, two (top and bottom) at each door of tall storage units.
 - b. Products:
 - 1) Ives; 326 Magnetic Catch, dual double pole; us.allegion.com.
 - 2) Rockwood Pull; Rockwood 900 Heavy Duty Magnetic Catch: www.rockwoodpull.com.
 - 3) Substitutions: See Section 01 25 00 - Substitution Procedures for requirements.
- E. Elbow Latches:
1. Application: Provide latch at locking casework units double doors.
 2. Products:
 - a. Ives: Ives #2 Elbow Latch; www.iveshinges.com.
 - b. EPCO: Heavy Duty Elbow Latch; www.epcohardware.com.
 - c. Substitutions: See Section 01 25 00 - Substitution Procedures for requirements.
- F. Plastic Shelf Rests for In-Cabinet Adjustable Shelves:
1. Also referred to as "Shelf Pegs" in the drawings.
 2. Application: Shelf rests with locking tabs for the top side of the selves that mount into holes (spaced at 1 inch centers) in the sides of cabinets.
 3. Product: #55 Double Pin manufactured by Allenfield Manufacturing and Development.
 4. Shelf Support Clip #3220CL from Bainbridge Manufacturing Inc.
 5. Substitutions: See Section 01 25 00 - Substitution Procedures for requirements.
- G. Drawer Slides:
1. Type: Combination metal and roller bearing, three-quarter extension.
 2. Basis of Design for Standard Drawers: 100 lb. Accuride 3832 self close or comparable .
 3. Basis of Design for File Drawers: Combination metal and roller bearing, full extension with over travel, 150 lb. Accuride 4034 Series or comparable.
 4. Mounting: Side mounted.
 5. Stops: Integral type.
 6. Features: Provide self closing/stay closed type.
 - a. Manufacturers:
 - 1) Accuride International, Inc: www.accuride.com.
 - 2) Blum; www.blum.com.
 - 3) Fulterer; www.fultererusa.com.
 - 4) Knappe & Vogt Manufacturing Company: www.knappeandvogt.com.
 - b. Substitutions: See Section 01 25 00 - Substitution Procedures for requirements.
- H. Cabinet Door and Drawer Silencers:
1. Description: Self-adhesive rubber silencers.
 2. Doors, Quantity: One silencer at top and bottom of closing edge of each door.
 3. Drawers, Quantity: One silencer at back side of each drawer front cover.
 4. Size: 1/4 inch diameter; 1/8 inch projection.
 5. Color: Provide solid color, selected to blend in to substrate surface.

2.10 ACCESSORIES

- A. Fasteners: Size and type to suit application.
- B. 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.
- C. Adhesives: Type recommended by fabricator to suit application.

2.11 FABRICATION

- A. Shop-fabricate casework to dimensions, profiles, and details indicated on drawings.
- B. Fabricate to maximum extents plausible, including doors, drawers, and hardware; fabricate units in sizes transportable through building openings.
- C. When necessary to cut and fit on site, provide materials with sufficient allowance for cutting.
- D. Wood Casework with Laminate Cladding: Apply laminates in full uninterrupted sheets consistent with manufactured sizes. Fit corners and joints hairline.
- E. Provide cutouts for plumbing fixtures; verify locations of cutouts from on-site dimensions. Sand and seal cut edges.
- F. Edgebanding: Apply where specified; do not use more than one piece for any single length.
- G. Hardware: Install hardware in accordance with hardware manufacturer's written instructions; use fasteners supplied by hardware manufacturer.
- H. Fabrication Tolerances: Comply with specified performance requirements.
- I. Wall Cabinets:
 - 1. Provide manufacturer's standard construction to reinforce cabinets for wall attachment, minimum two, full width 3/4 inch thick x 3 inch, glued and mechanically fastened at cabinet back.
- J. Drawers:
 - 1. Bottoms and Sides: 1/2 inch Veneer core panel product, "B" face hardwood veneer or 1/2 inch medium density fiberboard with thermoset decorative overlay. PVC edge banding at exposed edges.
 - 2. Bottoms shall be dadoed into sides, front and back. Staple and glue.
 - 3. Reinforcement; 1/2 inch thick under-bottom stiffeners, one at 24 inch drawers, two at 36 inch drawers and four at 48 inch drawers.
 - 4. File drawers shall be sized to accommodate a follower mechanism or use of hanging folders. Selection to be confirmed by A/E.
- K. Tall Storage Units:
 - 1. Center shelf shall be fixed to allow for installation of lock where applicable.
- L. HDPL Veneer Shelves:
 - 1. Provide 3/4 inch thick shelves unless noted otherwise on drawings or to satisfy span limits described below.
 - 2. Shelf spans for 3/4 inch thick shelf panels:
 - a. Medium Density Fiberboard: Maximum span 36 inches.
 - 3. Shelf spans for 1 inch thick shelf panels:
 - a. Medium Density Fiberboard: Maximum span 44 inches.
 - b. Use for shelves indicated to support microwaves.
 - 4. Shelf Veneer Material: HDPL at top and bottom of panels unless noted otherwise.
 - 5. Shelf Edge Material: PVC banding that is pattern/color matched to the veneer unless noted otherwise.
 - 6. Enclosed Shelves: Finish to match inside faces of cabinet. Fabricate all shelves to the full depth of the cabinet. Finish edges with banding at surfaces exposed when the doors are open.
 - 7. Non-enclosed Shelves - Finish all edges with banding if not otherwise indicated.

2.12 SOURCE QUALITY CONTROL

- A. See Section 01 40 00 - Quality Requirements for additional requirements.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify casework and materials required for installation have been delivered, handled and stored as specified.
- B. Verify wood blocking and wood backing that provides casework backing is installed as indicated on drawings.
- C. Verify location and sizes of rough-in plumbing and rough-in electrical associated with work of this section.

3.02 PREPARATION

- A. Acclimate casework to environments indicated for installation.

3.03 INSTALLATION

- A. Install and secure work of this section in accordance with specified performance requirements.
- B. Install work of this section rigid, plumb, and level and in accordance with fabricator's documented instructions; secure casework as indicated on drawings.
 - 1. Align and secure adjoining cabinet units with fasteners in concealed locations.
- C. Base and Wall Cabinet Anchorage Support Construction:
 - 1. See Section 06 10 00 for load-bearing and non-load-bearing wood stud framing providing backing and structural support for casework.
- D. Install cabinet hardware in accordance with hardware manufacturer's documented instructions using hardware manufacturer's furnished fasteners.
- E. Install scribe fillers to close gaps between casework and adjacent walls.

3.04 TOLERANCES

- A. Comply with specified performance requirements for tolerances.

3.05 FIELD QUALITY CONTROL

- A. See General Requirements for additional requirements.

3.06 ADJUSTING

- A. Adjust hardware for smooth operation in accordance with hardware manufacturer's documented instructions.

3.07 CLEANING

- A. See Section 01 70 00 - Execution and Closeout Requirements for additional requirements.
- B. Clean exposed and semi-exposed surfaces of casework, shelving, and hardware.

3.08 PROTECTION

- A. Protect installed casework from subsequent construction operations.

SECTION 07 21 00
THERMAL INSULATION

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Batt insulation in exterior ceiling construction.

1.02 RELATED REQUIREMENTS

- A. Applicable provisions of Division 1 govern the work of this section.

1.03 REFERENCE STANDARDS

- A. ASTM C578 - Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation; 2023.
- B. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2026.
- C. ASTM E136 - Standard Test Method for Assessing Combustibility of Materials Using a Vertical Tube Furnace at 750 Degrees C; 2026.

1.04 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements for procedures.
- B. Provide submittal packages that contain all the information identified in the submittal groups identified below. Follow any instructions regarding coordinating submittal timing between submittals of different sections.
- C. Review Submittals - Preparatory:
 - 1. Product Data: Provide data on product characteristics, performance criteria, and product limitations.

1.05 FIELD CONDITIONS

- A. Do not install insulation adhesives when temperature or weather conditions are detrimental to successful installation.

1.06 SEQUENCING

- A. Sequence work to ensure air barrier materials are in place before beginning or continuation of work in this section.

PART 2 PRODUCTS

2.01 APPLICATIONS

- A. Insulation in Wood Framed Ceiling Structure: Batt insulation with no vapor retarder.

2.02 FLEXIBLE GLASS FIBER BLANKET THERMAL INSULATION: PREFORMED INSULATION, COMPLYING WITH ASTM C665; FRICTION FIT.

- A. Flame Spread Index: 25 or less, when tested in accordance with ASTM E84.
- B. Smoke Developed Index: 450 or less, when tested in accordance with ASTM E84.
- C. Combustibility: Non-combustible, when tested in accordance with ASTM E136, except for facing, if any.
- D. Formaldehyde Content: Zero.
- E. Thickness: As indicated. See RCP Key Notes on sheet A110.
- F. Facing: Unfaced.
- G. Products:
 - 1. CertainTeed Corporation: www.certainteed.com.
 - 2. Johns Manville: www.jm.com.
 - 3. Owens Corning Corporation: www.ocbuildingspec.com.
 - 4. Substitutions: See Section 01 25 00 - Substitution Procedures for requirements.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that substrate, adjacent materials, and insulation materials are dry and that substrates are ready to receive insulation and adhesive.
- B. Verify substrate surfaces are flat, free of honeycomb, fins, irregularities, or materials or substances that may impede adhesive bond.

3.02 BLANKET INSTALLATION

- A. Install insulation in accordance with manufacturer's instructions.
- B. Install in ceiling spaces without gaps or voids. Do not compress insulation.
- C. Trim insulation neatly to fit spaces. Insulate miscellaneous gaps and voids.
- D. Fit insulation tightly in cavities and tightly to exterior side of and electrical services within the plane of the insulation.

3.03 PROTECTION

- A. Do not permit installed insulation to be damaged prior to its concealment.

END OF SECTION

SECTION 07 25 00
WEATHER BARRIERS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Weather-resistive barriers.

1.02 DEFINITIONS

- A. Weather Barriers: Materials or assemblies forming water-resistive barriers.

1.03 REFERENCE STANDARDS

- A. AATCC Test Method 127 - Test Method for Water Resistance: Hydrostatic Pressure; 2018, with Editorial Revision (2019).
- B. ASTM D1970/D1970M - Standard Specification for Self-Adhering Polymer Modified Bituminous Sheet Materials Used as Steep Roofing Underlayment for Ice Dam Protection; 2025.
- C. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2026.
- D. ASTM E96/E96M - Standard Test Methods for Gravimetric Determination of Water Vapor Transmission Rate of Materials; 2024a.

PART 2 PRODUCTS

2.01 WEATHER BARRIER MATERIALS (VAPOR PERMEABLE).

- A. Weather Barrier Sheet, Mechanically Fastened:
 - 1. Thickness: 3.6 mils, 0.0036 inch.
 - 2. Water Vapor Permeance: 10 perms, minimum, when tested in accordance with ASTM E96/E96M using Procedure A - Desiccant Method, at 73.4 degrees F.
 - 3. Water Penetration Resistance: Withstand a water head of 21 inches, minimum, for at least 5 hours, when tested in accordance with AATCC Test Method 127.
 - 4. Ultraviolet (UV) and Weathering Resistance: Approved by manufacturer for up to 90 days of weather exposure.
 - 5. Surface Burning Characteristics: Flame spread index of 25 or less, and smoke developed index of 50 or less, Class A, when tested in accordance with ASTM E84.
 - 6. Products:
 - a. DuPont de Nemours, Inc; Tyvek Construction Wrap with Tyvek Fluid Applied Flashing - Brush Formulation, Tyvek Fluid Applied Flashing and Joint Compound, FlexWrap, StraightFlash, VersaFlange, Tyvek Wrap Caps, and Tyvek Tape: building.dupont.com.
 - b. Kimberly-Clark, distributed by Wolf Home Products; BLOCK-IT House Wrap: www.wolfhomeproducts.com.
 - c. TYPAR; TYPAR BuildingWrap: www.typar.com.
 - d. Substitutions: See Section 01 25 00 - Substitution Procedures for requirements.

2.02 ACCESSORIES

- A. Seal and Perimeter Tapes: As recommended by water-resistive barrier manufacturer.
- B. Flashings and Sealants: As recommended by water-resistive barrier manufacturer for application.
- C. Flexible Flashing: Self-adhering sheet flashing complying with ASTM D1970/D1970M; waive slip resistance requirement if not installed on roof.
 - 1. Width: 3 inches.
 - 2. Provide materials recommended in writing by manufacturer for their sheet materials.

2.03 FASTENERS

- A. Provide fasteners recommended in writing by the manufacturer.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that surfaces and conditions comply with requirements of this section.

3.02 PREPARATION

- A. Remove projections, protruding fasteners, and loose or foreign matter that might interfere with proper installation.

3.03 INSTALLATION

- A. Install materials in accordance with manufacturer's installation instructions.
- B. Install continuous water-resistive barriers where indicated on drawings, with sheets lapped to shed water.
- C. Apply sealants within recommended temperature range in accordance with manufacturer's installation instructions.
- D. Mechanically Fastened Sheets:
 - 1. Install sheets in shingle fashion to shed water; align horizontally.
 - 2. Overlap seams as recommended by manufacturer, 6 inches, minimum.
 - 3. Overlap at outside and inside corners as recommended by manufacturer, 12 inches, minimum.
 - 4. Attach to framed construction with fasteners extending through sheathing into framing, and space fasteners at 12 to 18 inches on center along each framing member supporting sheathing.

END OF SECTION

SECTION 07 31 13
ASPHALT SHINGLES

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Asphalt shingle roofing for non-insulated, non-heated, wood framed building.
- B. Flexible sheet membranes for eave protection and underlayment.
- C. Roof edge sheetmetal and metal soffit for Residential Buildings.

1.02 RELATED REQUIREMENTS

- A. Applicable provisions of Division 1 govern the work of this section.
- B. Section 06 10 00 - Rough Carpentry: Roof sheathing.
- C. Section 07 62 00.01 - Sheet Metal Flashing and Trim for Residential Buildings: Roof edge trim and soffit.

1.03 REFERENCE STANDARDS

- A. ASTM D1970/D1970M - Standard Specification for Self-Adhering Polymer Modified Bituminous Sheet Materials Used as Steep Roofing Underlayment for Ice Dam Protection; 2025.
- B. ASTM D3161/D3161M - Standard Test Method for Wind Resistance of Steep Slope Roofing Products (Fan-Induced Method); 2020 (Reapproved 2025).
- C. ASTM D3462/D3462M - Standard Specification for Asphalt Shingles Made from Glass Felt and Surfaced with Mineral Granules; 2025.
- D. ASTM D4586/D4586M - Standard Specification for Asphalt Roof Cement; 2025.
- E. ASTM D4869/D4869M - Standard Specification for Asphalt-Saturated Organic Felt Underlayment Used in Steep Slope Roofing; 2016a (Reapproved 2025).
- F. ASTM E96/E96M - Standard Test Methods for Gravimetric Determination of Water Vapor Transmission Rate of Materials; 2024a.
- G. ASTM E108 - Standard Test Methods for Fire Tests of Roof Coverings; 2025.
- H. ICC-ES AC188 - Acceptance Criteria for Roof Underlayments; 2023.
- I. NRCA (RM) - The NRCA Roofing Manual; 2025.

1.04 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements for procedures.
- B. Review Submittals - Preparatory:
 - 1. Product Data: Provide data indicating material characteristics, performance criteria, and limitations.
- C. Review Submittals - Samples:
 - 1. Samples: Submit two samples of each shingle color indicating color range and finish texture/pattern ; for color selection.
- D. Information Submittals - Preparatory:
 - 1. Manufacturer's Installation Instructions: Indicate installation criteria and procedures.
 - 2. Manufacturer's Certificate: Certify products meet or exceed specified requirements.
- E. Maintenance Materials:
 - 1. Furnish the following for Owner's use in maintenance of project.
 - a. See Section 01 60 00 - Product Requirements for additional provisions.
 - b. Extra Shingles: 30 sq ft of each type and color.

F. Closeout Submittals:

1. Warranty Documentation: Submit documentation of manufacturer's warranty that acknowledges the requirements defined in this section.
 - a. Provide procurement information including date(s) of procurement, identification of suppliers and contractors involved in the procurement.
 - b. Provide manufacturer certification of the warranty that is executed in the Owner's name.

1.05 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacture of roofing systems similar to those required for this project, with not less than 5 years of documented experience.
- B. Installer Qualifications: Company specializing in installing asphalt shingles, with at least 3 years of documented experience.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Deliver and store materials with labels intact in manufacturer's unopened packaging until ready for installation.
- B. When storing roofing materials on roofing system ensure no damage occurs to supporting members and other materials.

1.07 FIELD CONDITIONS

- A. Do not install shingles, eave protection membrane or underlayment when surface, ambient air, or wind chill temperatures are below 45 degrees F.

1.08 WARRANTY

- A. Section Specific Warranty: Provide manufacturer's customized warranty as described in this section. Document the warranty as defined under the Submittals heading of this section. Provide warranty in conformance with the following:
 1. Provide lifetime manufacturer's warranty for coverage against black streaks caused by algae.
 2. Provide 5-year manufacturer's warranty for wind damage.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Asphalt Shingles:
 1. Certaineed Roofing: www.certainteed.com.
 2. GAF: www.gaf.com.
 3. IKO Industries Inc: www.iko.com.
 4. Owens Corning Corp: www.owenscorning.com.
 5. Substitutions: See Section 01 25 00 - Substitution Procedures for requirements.

2.02 ASPHALT SHINGLES

- A. Asphalt Shingles: Asphalt-coated glass felt, mineral granule surfaced, complying with ASTM D3462/D3462M.
 1. Fire Resistance: Class A, complying with ASTM E108.
 2. Wind Resistance: Class A, when tested in accordance with ASTM D3161/D3161M.
 3. Warranted Wind Speed: Not greater than 90 mph.
 4. 10 year algae Resistant.
 5. 4 bundles per square. 13 x 39 inches nominal. 220 lb/sq nominal.
 6. Self-sealing type.
 7. Style: Laminated overlay.
 8. Color: As selected by Architect from manufacturer's standard line.

2.03 SHEET MATERIALS

- A. Eave Edge Starter Shingles: Glass felt base, with ceramic coated mineral granules tightly embedded in refined, water-resistant asphalt, complying with ASTM D3462/D3462M.
 - 1. Use shingle manufacturer's recommended product compatible with warranty requirements.
- B. Underlayment: Self-adhering, rubber-modified asphalt sheet complying with ASTM D1970/D1970M; with strippable release film and woven polypropylene sheet top surface.
 - 1. Warranty: Compatible with shingle manufacturer's warranty requirements.
 - 2. Minimum Requirements: Comply with ICC-ES AC188.
 - 3. Thickness: 40 mils, 0.040 inch.
 - 4. Self Sealability: Passing nail sealability test specified in ASTM D1970/D1970M.
 - 5. Low Temperature Flexibility: Passing test specified in ASTM D1970/D1970M.
 - 6. Water Vapor Permeance: 0.067 perm, when tested in accordance with ASTM E96/E96M, Procedure A (desiccant method).
 - 7. Liquid Water Transmission: Passes ASTM D4869/D4869M.
 - 8. Functional Temperature Range: From minus 70 degrees F to 212 degrees F.
 - 9. Products:
 - a. Certaineed Roofing; DryRoof SA - Self-Adhered: www.certainteed.com.
 - b. GAF; FT Solutions Performance SA Leak Barrier: www.ftsolutionsroof.com.
 - c. Soprema, Inc; LASTOBOND SHIELD HT: www.soprema.us.
 - d. System Components Corporation, Inc; FeITex SA300: www.systemcomponents.net.
 - e. Substitutions: See Section 01 25 00 - Substitution Procedures for requirements.

2.04 FLASHING

- A. See requirements in Section 07 62 00.01.

2.05 ACCESSORIES

- A. Roofing Nails: Standard round wire shingle type, galvanized steel, minimum 3/8 inch head diameter, 12 gage, 0.109 inch nail shank diameter, 1-1/2 inch long and complying with ASTM F1667.
- B. Asphalt Roof Cement: ASTM D4586/D4586M, asbestos-free.
- C. Ridge Vents: Plastic, extruded with vent openings that do not permit direct water or weather entry; flanged to receive shingles.
 - 1. GAF: Cobra Snow Country.
 - 2. OwensCorning: VentSure Heat and Moisture Ridge Vents with Weather PROtector Moisture Barrier.
 - 3. Metal Era: High Perf Ridge Vent.
 - 4. Lomanco; OR4-S.
 - 5. Substitutions: See Section 01 25 00 - Substitution Procedures for requirements.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify existing conditions prior to starting this work.
- B. Verify roof deck is of sufficient thickness to accept fasteners.
- C. Verify roof penetrations and plumbing stacks are in place and flashed to deck surface.
- D. Verify deck surfaces are dry, free of ridges, warps, or voids.

3.02 PREPARATION

- A. At areas where eave protection membrane is to be adhered to substrate, cover knot holes with sheet metal.
- B. Broom clean deck surfaces before installing underlayment or eave protection.

- C. Install eave edge flashings tight with fascia boards, weather lap joints 2 inches and seal with plastic cement, and secure flange with nails spaced 12 inches on center.

3.03 INSTALLATION

- A. Underlayment:
 - 1. Install two layers of underlayment over entire roof area, with ends and edges weather lapped minimum 4 inches; stagger end laps of each consecutive layer and nail in place.
 - 2. Weather lap and seal watertight with plastic cement any items projecting through or mounted on roof.
- B. Shingles:
 - 1. Install shingles in accordance with manufacturer's instructions and NRCA (RM) applicable requirements.
 - a. Fasten strip shingles using four nails per strip, or as required by manufacturer and local building code, whichever is greater.
 - 2. Place shingles in straight coursing pattern with 5-inch weather exposure to produce double thickness over full roof area, and provide double course of shingles at eaves.
 - 3. Project first course of shingles 3/4 inch beyond fascia boards.
 - 4. Extend shingles 1/2 inch beyond face of gable edge fascia boards.
 - 5. After installation, place one daub of plastic cement 1-inch diameter under each individual shingle tab exposed to weather to prevent lifting.
 - 6. Complete installation to provide weathertight service.

3.04 INSTALLATION - SHINGLES

- A. Project first course of shingles 1/4 inches beyond center and conceal fastenings.
- B. Extend shingles 1/4 inch beyond face of gable roof edge flashing.

END OF SECTION

SECTION 07 41 13
METAL ROOF PANELS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Metal roof panel system of preformed steel panels.

1.02 RELATED REQUIREMENTS

- A. Applicable provisions of Division 1 govern the work of this section.
- B. Section 01 40 00 - Quality Requirements: Additional requirements for mockups.
- C. Section 06 10 00 - Rough Carpentry: Roof sheathing.
- D. Section 07 42 13 Metal Wall Panels: Single source the supplier of these two sections.
- E. Section 07 92 00 - Joint Sealants: Sealing joints between metal roof panel system and adjacent construction.

1.03 REFERENCE STANDARDS

- A. AAMA 2605 - Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels (with Coil Coating Appendix); 2022.
- B. ASTM B209/B209M - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate; 2021a.
- C. ASTM D226/D226M - Standard Specification for Asphalt-Saturated Organic Felt Used in Roofing and Waterproofing; 2025.
- D. ASTM D1970/D1970M - Standard Specification for Self-Adhering Polymer Modified Bituminous Sheet Materials Used as Steep Roofing Underlayment for Ice Dam Protection; 2025.
- E. ASTM D4869/D4869M - Standard Specification for Asphalt-Saturated Organic Felt Underlayment Used in Steep Slope Roofing; 2016a (Reapproved 2025).
- F. ASTM E96/E96M - Standard Test Methods for Gravimetric Determination of Water Vapor Transmission Rate of Materials; 2024a.
- G. ASTM E1592 - Standard Test Method for Structural Performance of Sheet Metal Roof and Siding Systems by Uniform Static Air Pressure Difference; 2025.
- H. ASTM E1646 - Standard Test Method for Water Penetration of Exterior Metal Roof Panel Systems by Uniform Static Air Pressure Difference; 1995 (Reapproved 2024).
- I. UL 580 - Standard for Tests for Uplift Resistance of Roof Assemblies; Current Edition, Including All Revisions.

1.04 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements for procedures.
- B. Provide submittal transmittals that include all submittal items identified in each submittal group below.
- C. Review Submittals - Preparatory:
 - 1. Product Data: Manufacturer's data sheets on each product to be used, including:
 - a. Summary of test results, indicating compliance with specified requirements.
 - b. Storage and handling requirements and recommendations.
 - c. Installation methods.
 - d. Specimen warranty.
 - 2. Shop Drawings: Include layouts of roof panels, details of edge and penetration conditions, spacing and type of connections, flashings, underlayments, and special conditions.
 - a. Show work to be field-fabricated or field-assembled.

- D. Review Submittals - Samples:
 1. Selection Samples: For each roofing system specified, submit color chips representing manufacturer's full range of available colors and patterns.
 2. Verification Samples: For each roofing system specified, submit samples of minimum size 12 inches square, representing actual roofing metal, thickness, profile, color, and texture.
- E. Information Submittals - Preparatory:
 1. Test Reports: Indicate compliance of metal roofing system to specified requirements.
- F. Closeout Submittals:
 1. Extended Period: Submit certificate by Contractor acknowledging the section specific period to correct work described in this Section.
 2. Warranty Documentation: Submit documentation of manufacturer's warranty that acknowledges the requirements defined in this section.
 - a. Provide procurement information including date(s) of procurement, identification of suppliers and contractors involved in the procurement.
 - b. Provide manufacturer certification of the warranty that is executed in the Owner's name.

1.05 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section, with not less than five years of documented experience.
- B. Installer Qualifications: Company specializing in performing work of the type specified and with at least three years of documented experience.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Store roofing panels on project site as recommended by manufacturer to minimize damage to panels prior to installation.

1.07 FIELD CONDITIONS

- A. Do not install metal roof panels, underlayment, when surface, ambient air, or wind chill temperatures are below 45 degrees F.

1.08 WARRANTY

- A. See Section 01 78 00 - Closeout Submittals for additional warranty requirements.
- B. Section Specific Warranty: Provide manufacturer's customized warranty as described in this section. Document the warranty as defined under the Submittals heading of this section. Provide warranty in conformance with the following:
 1. Finish Warranty: Provide manufacturer's special warranty covering failure of factory-applied exterior finish on metal roof panels and agreeing to repair or replace panels that show evidence of finish degradation, including significant fading, chalking, cracking, or peeling within specified warranty period of 20 year period from date of Substantial Completion.
- C. Extended Period: Correct work in accordance with the terms of the General Conditions.
 1. Provide warranty for weathertightness of roofing system, including agreement to repair or replace metal roof panels that fail to keep out water.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Architectural Metal Roof Panel Manufacturers:
 1. ATAS International, Inc: www.atas.com.
 2. Drexel Metals Inc.: www.drexmet.com.
 3. McElroy Metal: www.mcelroymetal.com.
 4. Metal Roofing Systems, Inc: www.metalroofingsystems.biz.
 5. Metl-Span, a Division of NCI Group, Inc: www.metlspan.com.
 6. Minnkota Architectural Products, Inc.: www.minnkotawebsite.com.

7. Morin Corporation: www.morincorp.com.
8. MS Metal Sales Manufacturing Corp; metalsales.us.com.
9. Petersen Aluminum Corporation: www.pac-clad.com.

2.02 PERFORMANCE REQUIREMENTS

- A. Metal Roof Panels: Provide complete roofing assemblies, including roof panels, clips, fasteners, connectors, and miscellaneous accessories, tested for compliance with the following minimum standards:
 1. Structural Design Criteria: Provide panel assemblies designed to safely support design loads at support spacing indicated, with deflection not to exceed L/180 of span length(L) when tested in accordance with ASTM E1592.
 - a. Dead Loads: Weight of roofing system.
 - b. See S001 for Components and Cladding and Wind Pressures.
 2. Overall: Complete weathertight system tested and approved in accordance with ASTM E1592.
 3. Wind Uplift: Class 90 wind uplift resistance of UL 580.
 4. Water Penetration: No water penetration when tested in accordance with procedures and recommended test pressures of ASTM E1646; perform test immediately following air infiltration test.
 5. Thermal Movement: Design system to accommodate without deformation anticipated thermal movement over ambient temperature range of 100 degrees F.

2.03 METAL ROOF PANELS

- A. Metal Roof Panels: Provide complete engineered system complying with specified requirements and capable of remaining weathertight while withstanding anticipated movement of substrate and thermally induced movement of roofing system.
- B. Metal Panels: Factory-formed panels with factory-applied finish.
 1. Aluminum Panels:
 - a. Alloy and Temper: Aluminum complying with ASTM B209/B209M; temper as required for forming.
 - b. Thickness: Minimum 20 gauge, 0.032 inch.
 2. Profile: Standing seam, with minimum 1.5 inch seam height; concealed fastener system for field seaming with special tool. 180 degree double lock.
 3. Texture: Smooth, with intermediate ribs for added stiffness.
 4. Length: Where possible, full length of roof. At distances longer than maximum sheet lengths install manufacturer's standard fixed clip at center of span and expansion clips at both ends per manufacturer's standard installation.
 5. Width: Maximum panel coverage of 20 inches.

2.04 ATTACHMENT SYSTEM

- A. Concealed System: Provide manufacturer's standard stainless steel concealed anchor clips designed for specific roofing system and engineered to meet performance requirements, including anticipated thermal movement.

2.05 FABRICATION

- A. Panels: Provide factory or field fabricated panels with applied finish and accessory items, using manufacturer's standard processes as required to achieve specified appearance and performance requirements.
- B. Joints: Provide captive gaskets, sealants, or separator strips at panel joints to ensure weathertight seals, eliminate metal-to-metal contact, and minimize noise from panel movements.

2.06 FINISHES

- A. Fluoropolymer Coil Coating System: Polyvinylidene fluoride (PVDF) multi-coat superior performing organic coatings system complying with AAMA 2605, including at least 70 percent

PVDF resin, and at least 80 percent of coil coated metal surfaces having minimum total dry film thickness (DFT) of 0.9 mil, 0.0009 inch; color and gloss as selected by Architect from manufacturer's standard line.

2.07 ACCESSORIES

- A. Miscellaneous Sheet Metal Items: Provide flashings, and trim of the same material, thickness, and finish as used for the roofing panels. Items completely concealed after installation may optionally be made of stainless steel.
- B. Rib and Ridge Closures: Provide prefabricated, close-fitting components of combination steel and closed-cell foam.
- C. Clip fasteners: Stainless steel in size as recommended by system supplier.
- D. Sealants:
 - 1. Exposed Sealant: Elastomeric; silicone, polyurethane, or silyl-terminated polyether/polyurethane.
 - 2. Concealed Sealant: Non-curing butyl sealant or tape sealant.
 - 3. Seam Sealant: Factory-applied, non-skinning, non-drying type.
- E. Underlayment: Self-adhering rubber-modified asphalt sheet complying with ASTM D1970/D1970M; 40 mil total thickness; with strippable release film and woven polypropylene sheet top surface.
 - 1. Sheet Thickness: 40 mil, 0.040 inch minimum total thickness.
 - 2. Self Sealability: Nail sealability in accordance with ASTM D1970/D1970M.
 - 3. Low Temperature Flexibility: Comply with ASTM D1970/D1970M.
 - 4. Water Vapor Permeance: 0.067 perm, maximum, when tested in accordance with ASTM E96/E96M Procedure A (desiccant method).
 - 5. Performance: Meet or exceed requirements for ASTM D226/D226M, Type II asphalt-saturated organic felt.
 - 6. Liquid Water Transmission: Passes ASTM D4869/D4869M.
 - 7. Functional Temperature Range: Minus 70 degrees F to 212 degrees F.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Do not begin installation of preformed metal roof panels until substrates have been properly prepared.
- B. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.02 PREPARATION

- A. Broom clean wood sheathing prior to installation of roofing system.
- B. Coordinate roofing work with provisions for roof drainage, flashing, trim, penetrations, and other adjoining work to ensure that completed roof will be free of leaks.
- C. Coordinate installation of waterproof membrane over roof sheathing with Section 06 10 00.
- D. Remove protective film from surface of roof panels immediately prior to installation; strip film carefully to avoid damage to prefinished surfaces.
- E. Separate dissimilar metals by applying a bituminous coating, self-adhering rubberized asphalt sheet, or other permanent method approved by metal roof panel manufacturer.
- F. At locations where metal will be in contact with wood or other absorbent material subject to wetting, seal joints with sealing compound and apply one coat of heavy-bodied bituminous paint.

3.03 INSTALLATION

- A. Overall: Install roofing system (insulation, sheathing, waterproof membrane and metal panels) in accordance with approved shop drawings and panel manufacturer's instructions

recommendations and to meet warranty requirements, as applicable to specific project conditions. Anchor all components of roofing system securely in place while allowing for thermal and structural movement.

1. Install roofing system with concealed clips and fasteners, except as otherwise recommended by manufacturer for specific circumstances.
 2. Minimize field cutting of panels. Where field cutting is required, use methods that will not distort panel profiles. Use of torches for field cutting is prohibited.
- B. Accessories: Install necessary components that are required for complete roofing assembly, including flashings, gutters, downspouts, trim, moldings, closure strips, preformed crickets, caps, equipment curbs, rib closures, ridge closures, and similar roof accessory items.
- C. Install perimeter blocking, sub-fascia and related blocking.
- D. Install plywood sheathing and fasten as required to meet uplift requirements.
- E. Underlayment: Install waterproof membrane on roof deck before installing preformed metal roof panels. Secure by methods acceptable to roof panel manufacturer, minimizing use of metal fasteners. Apply from eaves to top in shingle fashion, overlapping horizontal joints a minimum of 3.5 inches and side and end laps a minimum of 6 inches.
- F. Roof Panels: Install panels in strict accordance with manufacturer's instructions, minimizing transverse joints except at junction with penetrations.
1. Form weathertight standing seams incorporating concealed clips, using an automatic mechanical seaming device approved by panel manufacturer.
 2. Install sealant or sealant tape at end laps and side joints as recommended by metal roof panel manufacturer.

3.04 CLEANING AND PROTECTION

- A. Clean exposed sheet metal work at completion of installation. Remove grease and oil films, excess joint sealer, handling marks, and debris from installation, leaving the work clean and unmarked, free from dents, creases, waves, scratch marks, or other damage to the finish.
- B. Do not permit storage of materials or roof traffic on installed roof panels. Provide temporary walkways or planks as necessary to avoid damage to completed work. Protect roofing until completion of project.
- C. Touch-up, repair, or replace damaged roof panels or accessories before Date of Substantial Completion.

END OF SECTION

Page Intentionally Left Blank

SECTION 07 42 13
METAL WALL PANELS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Manufactured metal panels for exterior wall panels, with related flashings and accessory components.

1.02 RELATED REQUIREMENTS

- A. Applicable provisions of Division 1 govern the work of this section.
- B. Section 07 41 00 - Metal Roof Panels: Single source the supplier of these two sections.
- C. Section 07 92 00 - Joint Sealants: Sealing joints between metal wall panel system and adjacent construction.

1.03 REFERENCE STANDARDS

- A. AATCC Test Method 127 - Test Method for Water Resistance: Hydrostatic Pressure; 2018, with Editorial Revision (2019).
- B. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2025a.
- C. ASTM E2178 - Standard Test Method for Determining Air Leakage Rate and Calculation of Air Permeance of Building Materials; 2021a.
- D. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2026.

1.04 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements for procedures.
- B. Review Submittals - Preparatory:
 - 1. Product Data - Wall System: Manufacturer's data sheets on each product to be used, including:
 - a. Physical characteristics of components shown on shop drawings.
 - b. Storage and handling requirements and recommendations.
 - c. Installation instructions and recommendations.
 - 2. Shop Drawings: Indicate dimensions, layout, joints, construction details, and methods of anchorage.
- C. Review Submittals - Samples:
 - 1. Samples: Submit two samples of wall panel, 12 inch by 12 inch in size illustrating finish color, sheen, and texture.
- D. Information Submittals - Preparatory:
 - 1. Design Data: Submit design data reports indicating calculations for loadings and stresses of wall panel supports.
 - 2. Manufacturer's qualification statement.
 - 3. Installer's qualification statement.
- E. Closeout Submittals:
 - 1. Extended Period: Submit certificate by Contractor acknowledging the section specific period to correct work described in this Section.
 - 2. Warranty Documentation: Submit documentation of manufacturer's warranty that acknowledges the requirements defined in this section.
 - a. Provide procurement information including date(s) of procurement, identification of suppliers and contractors involved in the procurement.
 - b. Provide manufacturer certification of the warranty that is executed in the Owner's name.

1.05 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section with minimum three years of documented experience.
- B. Installer Qualifications: Company specializing in installing products specified in this section with minimum three years of documented experience.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Protect panels from accelerated weathering by removing or venting sheet plastic shipping wrap.
- B. Store prefinished material off the ground and protected from weather; prevent twisting, bending, or abrasion; provide ventilation; slope metal sheets to ensure proper drainage.
- C. Prevent contact with materials that may cause discoloration or staining of products.
- D. Coordinate the work with placement of HVAC equipment under Division 23.

1.07 WARRANTY

- A. See Section 01 78 00 - Closeout Submittals for additional information regarding documenting warranties.
- B. Section Specific Warranty: Provide manufacturer's customized warranty as described in this section. Document the warranty as defined under the Submittals heading of this section. Provide warranty in conformance with the following:
 - 1. Finish Warranty: Provide 15-year manufacturer warranty against excessive degradation of exterior finish. Include provision for replacement of units with excessive fading, chalking, or flaking. Complete forms in Owner's name and register with warrantor.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Metal Wall Panels - Concealed Fasteners:
 - 1. ATAS International, Inc: www.atas.com.
 - 2. Drexel Metals Inc: www.drexmet.com.
 - 3. McElroy Metal: www.mcelroymetal.com.
 - 4. Metal Roofing Systems, Inc: www.metalroofingsystems.biz.
 - 5. Morin Corporation: www.morincorp.com.
 - 6. MS Metal Sales Manufacturing Corp; metalsales.us.com.
 - 7. Petersen Aluminum Corporation: www.pac-clad.com.

2.02 METAL WALL PANEL SYSTEM

- A. Wall Panel System: Factory fabricated prefinished metal panel system, site assembled.
 - 1. Provide exterior wall panels, wall coping, trim.
 - 2. Movement: Accommodate movement within system without damage to components or deterioration of seals, movement between system and perimeter components when subject to seasonal temperature cycling; dynamic loading and release of loads; and deflection of structural support framing.
 - 3. Drainage: Provide positive drainage to exterior for moisture entering or condensation occurring within panel system.
 - 4. Fabrication: Formed true to shape, accurate in size, square, and free from distortion or defects; pieces of longest practical lengths.
 - 5. Corners: Factory-fabricated in one continuous piece with minimum 2-inch returns.
- B. Exterior Wall Panels:
 - 1. Material: Precoated aluminum sheet, 18 gage, 0.0403 inch minimum thickness.
 - 2. Hidden fasteners, with retention clips, per manufacturer's system.
 - 3. Color: As selected by Architect from manufacturer's full line.
 - 4. Architectural Metal Panel A: Pac-Clad, Reveal Wall Panels.
 - a. Profile: Horizontal.
 - b. Panel Width: 7 inches.

5. Architectural Metal Panel B: Pac-Clad, Flush Wall Panels.
 - a. Profile: Vertical.
 - b. Panel Width: 12 inches.
 6. Architectural Metal Panel C: Pac-Clad, Flush Wall Panels.
 - a. Profile: Vertical.
 - b. Panel Width: 12 inches.
 - c. Color: As selected by Architect from manufacturer's full line.
- C. Internal and External Corners: Same material, thickness, and finish as exterior sheets; profile to suit system; shop cut and factory mitered to required angles.
- D. Trim, Closure Pieces, Caps, and Flashings: Same material, thickness and finish as exterior sheets; brake formed to required profiles.

2.03 WEATHER BARRIER

- A. See requirements in 07 25 00.

2.04 FINISHES

- A. Exposed Surface Finish: Panel manufacturer's standard polyvinylidene fluoride (PVDF) coating, top coat over epoxy primer.

2.05 ACCESSORIES

- A. Exposed Sealant: Elastomeric; silicone, polyurethane, or silyl-terminated polyether/polyurethane.
- B. Sealants: Manufacturer's standard type suitable for use with installation of system; non-staining.
- C. Field Touch-up Paint: As recommended by panel manufacturer.
- D. Bituminous Paint: Asphalt base.
- E. Bond Break Tape: Butyl type.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that building framing members are ready to receive panels.
- B. Verify that weather barrier has been installed over substrate completely and correctly.

3.02 PREPARATION

- A. At openings to be filled with frames having nailing flanges, wrap excess sheet into opening; at head, seal sheet over flange and flashing.

3.03 INSTALLATION

- A. Install panels on walls in accordance with manufacturer's instructions.
- B. Protect surfaces in contact with dissimilar metals with bituminous paint or butyl tape. Allow paint to dry prior to installation.
- C. Fasten panels to structural supports; aligned, level, and plumb.

3.04 CLEANING

- A. Remove site cuttings from finish surfaces.
- B. Remove protective material from wall panel surfaces.
- C. Clean and wash prefinished surfaces with mild soap and water; rinse with clean water.

END OF SECTION

Page Intentionally Left Blank

SECTION 07 46 33
PLASTIC SIDING

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Plastic siding and trim.

1.02 RELATED REQUIREMENTS

- A. Section 06 10 00 - Rough Carpentry: Siding substrate.
- B. Section 07 25 00 - Weather Barriers: Water-resistive barrier under siding.
- C. Section 07 92 00 - Joint Sealants: Sealing joints between siding and adjacent construction and fixtures.

1.03 REFERENCE STANDARDS

- A. ASTM D635 - Standard Test Method for Rate of Burning and/or Extent and Time of Burning of Plastics in a Horizontal Position 2014.
- B. ASTM D3679 - Standard Specification for Rigid Poly(Vinyl Chloride) (PVC) Siding 2013.
- C. ASTM D5206 - Standard Test Method for Windload Resistance of Rigid Plastic Siding 2013.
- D. VSI (INST) - Vinyl Siding Installation Manual Edition date unknown.

1.04 SUBMITTALS

- A. See general 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. Installation methods.
- C. Samples: Provide samples in colors specified, not less than 12 inches in length.
- D. Color Samples: Where colors are not specified, provide samples of manufacturer's entire color line for selection.

PART 2 PRODUCTS

2.01 MANUFACTURERS:

- A. Norandex: www.norandex.com.
- B. Rollex: www.rollex.com.
- C. CertainTeed Corporation: www.certainteed.com.
- D. Substitutions: See Section 01 25 00 - Substitution Procedures for requirements.

2.02 MATERIALS

- A. General Requirements:
 - 1. Siding: Complying with ASTM D3679.
 - 2. Wind Resistance: Capable of withstanding minimum of 30 psf negative pressure, when tested in accordance with ASTM D5206.
 - 3. Horizontal Flammability: When tested in accordance with ASTM D635.
 - a. Burn Distance: 0.79 inch, maximum.
 - b. Burn Time: Less than five seconds.
- B. Horizontal Plastic Siding:
 - 1. Profile: Clapboard, Double 4-Inch; 4 inches wide; 8 inch exposure.
 - 2. Thickness: 0.038 inch, minimum.
 - 3. Length: 12 feet, minimum.

4. Nailing Hem: Single layer, with 1-1/8 inch long nail holes at maximum 18 inch on center.
5. Finish: Woodgrain. Verify match with existing siding prior to submitting.
6. Color: As selected by Architect from manufacturers full range of available colors.

2.03 ACCESSORIES

- A. Accessories: Provide coordinating accessories made of same material as required for complete and proper installation even when not specifically indicated on drawings.
 1. Color: Match adjacent siding or soffit panels.
 2. Starter Strip: Single-row nailing hem with elongated nailing holes 1-1/4 inch long at 18 inch on center, with 1/4 inch base projection.
 3. J-Channel Trim: 3/8 inch. Use at corner between re-sided exterior walls.
- B. Fasteners: Aluminum nails, alloy 5056 or 6110, with minimum tensile strength of 63,000 psi; length as required to penetrate framing at least 3/4 inch.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Examine substrate conditions before beginning installation; verify dimensions and acceptability of substrate.
- B. Verify that water-resistive barrier has been installed over substrate completely and correctly; see Section 06 10 00.
- C. Do not proceed with installation until unacceptable conditions have been corrected.
- D. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.02 INSTALLATION

- A. Install siding, and trim in accordance with manufacturer's printed installation instructions and VSI (INST).
- B. Attach securely to framing, not sheathing, with horizontal components true to level and vertical components true to plumb, providing a weather resistant installation.
- C. Clean dirt from surface of installed products, using mild soap and water.
- D. At installation locations adjacent to existing siding install new siding into existing corner trim.

END OF SECTION

SECTION 07 62 00.01

SHEET METAL FLASHING AND TRIM FOR RESIDENTIAL BUILDINGS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Fabricated sheet metal items, including edge metal for steep roofs and soffit.
- B. Sealants for joints within sheet metal fabrications.

1.02 RELATED REQUIREMENTS

- A. Applicable provisions of Division 1 govern the work of this section.
- B. Section 07 31 13: Asphalt Shingles: Roofing system edge trim.

1.03 REFERENCE STANDARDS

- A. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2025a.
- B. ASTM C920 - Standard Specification for Elastomeric Joint Sealants; 2018 (Reapproved 2024).
- C. ASTM D4586/D4586M - Standard Specification for Asphalt Roof Cement; 2025.
- D. SMACNA (ASMM) - Architectural Sheet Metal Manual; 2012.

1.04 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements for procedures.
- B. Provide submittal transmittals that include all submittal items identified in each submittal group below.
- C. Review Submittals - Preparatory:
 - 1. Product Data: Provide manufacturer's data sheet for sheet material.
 - 2. Gutter style.
 - 3. Calculations showing determination of gutter size.
- D. Review Submittals - Samples:
 - 1. If Section 07 61 00 is included in the project manual, it is permissible to send one set of samples that applies to both sections. Note the applicability of the sample to both sections on the coverage of the submittal.
 - 2. Selection Samples: Submit manufacturer's color sample set for selection by AE.
 - 3. Confirmation Samples: Submit two samples 6 by 6 inches in size illustrating metal finish color.

1.05 QUALITY ASSURANCE

- A. Perform work in accordance with SMACNA (ASMM) requirements and standard details, except as otherwise indicated.
- B. Fabricator and Installer Qualifications: Company specializing in sheet metal work with 3 years of documented experience.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Stack material to prevent twisting, bending, and abrasion, and to provide ventilation. Slope metal sheets to ensure drainage.
- B. Prevent contact with materials that could cause discoloration or staining.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Single source the products / coil for the work of this section.
- B. Residential Style Manufactured Sheet Metal Flashing and Trim:
 - 1. Requirements:
 - a. Sheet Material: Aluminum sheet, 0.019 thickness.

- b. Sheet Finish: Prefinished polyester coating.
 - c. Profiles: Select manufactured profiles to closely match the trim assemblies shown on the drawings. Submit products and configuration for A/E approval prior to procurement.
 - d. Color: To be selected by A/E from manufacturer's full line of solid colors.
 - e. Fasteners: Color-matched exposed fasteners are acceptable.
 - f. Accessories: Provide manufacturer recommended fasteners, trim, accessories consistent with the soffit assembly presented in the project drawings.
2. Products:
- a. Norandex: www.norandex.com.
 - b. Rollex: www.rollex.com.
 - c. Quality Edge: www.qualityedge.com.
 - d. Substitutions: See Section 01 25 00 - Substitution Procedures for requirements.
- C. Residential Style Manufactured Sheet Metal Soffit:
1. Requirements:
- a. Sheet Material: Aluminum sheet, 0.019 thickness.
 - b. Sheet Finish: Prefinished polyester coating.
 - c. Style: Full Vent at low eaves. Solid at rake eaves and covered stoop.
 - d. Profile: 6 inch wide ribs.
 - e. Color: To be selected by A/E from manufacturer's full line of solid colors.
 - f. Fasteners: Color-matched exposed fasteners are acceptable.
 - g. Accessories: Provide manufacturer recommended fasteners, trim, accessories consistent with the soffit assembly presented in the project drawings.
2. Products:
- a. Norandex: www.norandex.com.
 - b. Rollex: www.rollex.com.
 - c. Quality Edge: www.qualityedge.com.

2.02 FABRICATION

- A. General:
- 1. Provide sections true to shape, accurate in size, square, and free from distortion or defects.
 - 2. Provide Form pieces in longest possible lengths.
 - 3. Hem exposed edges on underside 1/2 inch; miter and seam corners.
 - 4. Fabricate corners from one piece with minimum 18-inch long legs; seam for rigidity, seal with sealant.

2.03 ACCESSORIES

- A. Fasteners: Aluminum, with soft neoprene washers for fasteners exposed to rainfall.
- B. Concealed Sealants: Non-curing butyl sealant.
- C. Exposed Sealants: ASTM C920; elastomeric sealant, with minimum movement capability as recommended by manufacturer for substrates to be sealed; color to match adjacent material.
- D. Asphalt Roof Cement: ASTM D4586/D4586M, Type I, asbestos-free.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify roof openings, curbs, pipes, sleeves, ducts, and vents through roof are solidly set, reglets in place, and nailing strips located.
- B. Verify roofing termination and base flashings are in place, sealed, and secure.

3.02 PREPARATION

- A. Install starter and edge strips, and cleats before starting installation.

- B. Back paint concealed metal surfaces with protective backing paint to a minimum dry film thickness of 15 mil, 0.015 inch.

3.03 INSTALLATION

- A. General:
 - 1. Secure flashings and trim in place using concealed fasteners, and use exposed fasteners only where permitted.
 - 2. Fit flashings tight in place; make corners square, surfaces true and straight in planes, and lines accurate to profiles.
 - 3. Seal metal joints watertight.

END OF SECTION

Page Intentionally Left Blank

SECTION 07 92 00
JOINT SEALANTS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Non-sag gunnable joint sealants.
- B. Self-leveling pourable joint sealants.
- C. Joint backings and accessories.

1.02 RELATED REQUIREMENTS

- A. Applicable provisions of Division 1 govern the work of this section.
- B. Section 03 30 00 - Cast-in-Place Concrete: Installation of sealant at floor joints.
- C. Section 08 71 00 - Door Hardware: Setting exterior door thresholds in sealant.
- D. 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 C920 - Standard Specification for Elastomeric Joint Sealants; 2018 (Reapproved 2024).
- C. ASTM C1193 - Standard Guide for Use of Joint Sealants; 2025.
- D. ASTM C1311 - Standard Specification for Solvent Release Sealants; 2022.
- E. ASTM C1330 - Standard Specification for Cylindrical Sealant Backing for Use with Cold Liquid-Applied Sealants; 2023.
- F. ASTM C1521 - Standard Practice for Evaluating Adhesion of Installed Weatherproofing Sealant Joints; 2019 (Reapproved 2025).
- G. ASTM D2240 - Standard Test Method for Rubber Property--Durometer Hardness; 2015 (Reapproved 2021).
- H. SCAQMD 1168 - Adhesive and Sealant Applications; 1989, with Amendment (2022).

1.04 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements for procedures.
- B. Provide submittal packages that contain all the information identified in the submittal groups identified below. Follow any instructions regarding coordinating submittal timing between submittals of different sections.
- C. Review Submittals - Preparatory:
 - 1. Product Data: Submit manufacturer's technical datasheets for each product to be used; include the following:
 - a. Physical characteristics, including movement capability, VOC content, hardness, cure time, and color availability.
 - b. List of backing materials approved for use with the specific product.
 - c. Substrates that product is known to satisfactorily adhere to and with which it is compatible.
 - d. Substrates the product should not be used on.
 - e. Substrates for which use of primer is required.
 - f. Substrates for which laboratory adhesion and/or compatibility testing is required.

- g. Installation instructions, including precautions, limitations, and recommended backing materials and tools.
 - h. Sample product warranty.
 - i. Certification by manufacturer indicating that product complies with specification requirements.
 - j. Instructions for repairing and replacing failed sealant joints.
2. Product Data for Accessory Products: Submit manufacturer's technical data sheet for each product to be used, including physical characteristics, installation instructions, and recommended tools.
- D. Review Submittals - Samples:
- 1. Color Cards for Selection: Where sealant color is not specified, submit manufacturer's color cards showing standard colors available for selection.
 - 2. Samples for Verification: Where custom sealant color is specified, obtain directions from Architect and submit at least two physical samples for verification of color of each required sealant.
- E. Closeout Submittals:
- 1. See Section 01 78 00 - Closeout Submittals for additional information regarding documenting warranties.
 - 2. Extended Period: Submit certificate by Contractor acknowledging the section specific period to correct work described in this Section.
 - 3. Warranty Documentation: Submit documentation the manufacturer's warranty.

1.05 QUALITY ASSURANCE

- A. Maintain one copy of each referenced document covering installation requirements on site.
- B. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.
- C. Installer Qualifications: Company specializing in performing the work of this section and with at least three years of documented experience.
- D. Nondestructive Field Adhesion Test: Test for adhesion in accordance with ASTM C1521, using Nondestructive Spot Method.
 - 1. Record results on Field Quality Control Log.
 - 2. Repair failed portions of joints.
- E. Field Adhesion Tests of Joints: Test for adhesion using most appropriate method in accordance with ASTM C1521, or other applicable method as recommended by manufacturer.
- F. Sample Color Verification: At locations identified by A/E, install selected color of sealant at interior and exterior building locations agreed upon with Architect and Owner for final approval.

1.06 WARRANTY

- A. See Section 01 78 00 - Closeout Submittals for additional information regarding documenting warranties.
- B. Section Specific Warranty: Provide manufacturer's customized warranty as described in this section. Document the warranty as defined under the Submittals heading of this section. Provide warranty in conformance with the following:
 - 1. Provide 2-year manufacturer warranty for installed sealants and accessories that fail to achieve a watertight seal, exhibit loss of adhesion or cohesion, or do not cure. Complete forms in Owner's name and register with manufacturer.
- C. Extended Period: Correct work in accordance with the terms of the General Conditions for a duration of not less than one year.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Nonsag Sealants:
 - 1. Adhesives Technology Corporation: www.atcepoxy.com.
 - 2. Bostik Inc: http://www.bostik.com/us/en_US/.
 - 3. Dow Corning Corporation: <https://www.dow.com/en-us/product-technology/pt-adhesives-sealants.html>.
 - 4. Franklin International, Inc: www.titebond.com.
 - 5. Henry Company: www.henry.com.
 - 6. Hilti, Inc: www.us.hilti.com.
 - 7. Master Builders Solutions by BASF: www.master-builders-solutions.com/en-us.
 - 8. Lucas Products: www.rmlucas.com.
 - 9. Momentive Performance Materials, Inc (formerly GE Silicones): www.momentive.com.
 - 10. Pecora Corporation: www.pecora.com.
 - 11. The QUIKRETE Companies: www.quikrete.com.
 - 12. Sherwin-Williams Company: www.sherwin-williams.com.
 - 13. Sika Corporation: www.sika.com.
 - 14. Tremco Commercial Sealants & Waterproofing: www.tremcosealants.com.
 - 15. W.R. Meadows, Inc: www.wrmeadows.com.
 - 16. Novagard Solutions: www.novagard.com.
 - 17. csl Silicones Inc: www.cslsilicones.com.
 - 18. Substitutions: See Section 01 25 00 - Substitution Procedures for requirements.
- B. Self-Leveling Sealants:
 - 1. Adhesives Technology Corporation: www.atcepoxy.com.
 - 2. Bostik Inc: http://www.bostik.com/us/en_US/.
 - 3. Dayton Superior Corporation: www.daytonsuperior.com.
 - 4. Dow Corning Corporation: <https://www.dow.com/en-us/product-technology/pt-adhesives-sealants.html>.
 - 5. Master Builders Solutions by BASF: <http://www.master-builders-solutions.com/en-us>.
 - 6. Lucas Products: www.rmlucas.com.
 - 7. Pecora Corporation: www.pecora.com.
 - 8. The QUIKRETE Companies: www.quikrete.com.
 - 9. Sherwin-Williams Company: www.sherwin-williams.com.
 - 10. Sika Corporation: www.sika.com.
 - 11. SpecChem: www.specchem.com.
 - 12. Tremco Commercial Sealants & Waterproofing: www.tremcosealants.com.
 - 13. W.R. Meadows, Inc: www.wrmeadows.com.
 - 14. Substitutions: See Section 01 25 00 - Substitution Procedures for requirements.

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:
 - a. Joints between door, window, and other frames and adjacent construction.
 - b. Joints between different exposed materials.
 - c. Other joints indicated below.
 - 2. Interior Joints: 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. Intersection of countertop/backsplash at wall.
 - c. Other joints indicated below.

3. Do Not Seal:
 - a. Intentional weep holes in masonry.
 - b. Joints indicated to be covered with expansion joint cover assemblies.
 - c. Joints where sealant is specified to be furnished and installed by manufacturer of product to be sealed.
 - d. Joints where sealant installation is specified in other sections.
 - e. Joints between suspended ceilings and walls.
 - f. Weepholes in window frames.
- B. Type JS-2 - Exterior Joints: Use non-sag silyl-terminated polyether/polyurethane sealant, unless otherwise indicated.
 1. Type JS-6 - Lap Joints between Manufactured Metal Panels: Butyl rubber, non-curing.
- C. Type JS-3 - Interior Joints: Use non-sag polyurethane sealant, unless otherwise indicated.
 1. Type FLR-3 or FLR-4 -Narrow Control Joints in Interior Concrete Slabs: Self-leveling epoxy sealant.

2.03 JOINT SEALANTS - GENERAL

- A. Sealants and Primers: Provide products having lower volatile organic compound (VOC) content than indicated in SCAQMD 1168.

2.04 NONSAG JOINT SEALANTS

- A. Type JS-2 - Silyl-Terminated Polyether (STPE) and Polyurethane (STPU) 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 50 percent, minimum.
 2. Hardness Range: 15 to 25, Shore A, when tested in accordance with ASTM C661.
 3. Color: To be selected by Architect from manufacturer's full range.
 - a. For exterior masonry colors A/E shall select up to 3 colors from manufacturer's chart of a minimum of 30 colors. Refer to 04 20 00 for required mockup directions.
 4. Service Temperature Range: Minus 75 to 300 degrees F.
 5. Products:
 - a. Sika: SikaHyflex-150 LM.
 - b. Sika; MasterSeal NP 150 Tint Base.
 - c. Franklin International Inc.; WeatherMaster Sealant: www.titebond.com.
 - d. Sherwin-Williams Company; Loxon H1: www.sherwin-williams.com.
 - e. Tremco Commercial Sealants and Waterproofing; Dymonic FC: www.tremcosealants.com.
 - f. Substitutions: See Section 01 25 00 - Substitution Procedures for requirements.
- B. Type JS-3 - Polyurethane Sealant: ASTM C920, Grade NS, Uses M and A; single or multicomponent; not expected to withstand continuous water immersion or traffic.
 1. Movement Capability: Plus and minus 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's standard range.
 4. Service Temperature Range: Minus 40 to 180 degrees F.
 5. Products:
 - a. BASF Construction Chemicals-Building Systems: www.buildingsystems.basf.com.
 - b. Lucas Products: #9600 Joint & Termination Sealant. www.rmlucas.com.
 - c. Sherwin-Williams Company; Loxon S1: www.sherwin-williams.com.
 - d. Sika Corporation; Sikaflex-1a: www.usa.sika.com.
 - e. Sika Corporation; Sikaflex-15 LM: www.usa.sika.com.

- f. Sika Corporation; Sikaflex-2c NS: www.usa.sika.com.
 - g. Tremco Commercial Sealants & Waterproofing; Dymonic 100: www.tremcosealants.com.
 - h. W. R. Meadows, Inc; POURTHANE NS: www.wrmeadows.com.
 - i. Substitutions: See Section 01 25 00 - Substitution Procedures for requirements.
- C. Type JS-6 - Non-Curing Butyl Sealant: Solvent-based; ASTM C1311; single component, non-sag, non-skinning, non-hardening, non-bleeding; vapor-impermeable; intended for fully concealed applications.

2.05 SELF-LEVELING JOINT SEALANTS

- A. Type FLR-3 - Semi-Rigid Self-Leveling Epoxy Joint Filler: Epoxy or epoxy/polyurethane copolymer; intended for filling cracks and control joints not subject to significant movement; rigid enough to support concrete edges under traffic.
- 1. Composition: Multicomponent, 100 percent solids by weight.
 - 2. Durometer Hardness: Minimum of 85 for Type A or 35 for Type D, after seven days when tested in accordance with ASTM D2240.
 - 3. Color: To be selected by Architect from manufacturer's standard colors.
 - 4. Joint Width, Minimum: 1/8 inch.
 - 5. Joint Width, Maximum: 1/4 inch.
 - 6. Joint Depth: Provide product suitable for joints from 1/8 inch to 2 inches in depth including space for backer rod.
 - 7. Products:
 - a. Dayton Superior Corporation; Pro=Poxy P606: www.daytonsuperior.com.
 - b. SpecChem; Spec Poxy CJ. www.specchemllc.com.
 - c. Substitutions: See Section 01 25 00 - Substitution Procedures for requirements.
- B. Type FLR-4 - Semi-Rigid Self-Leveling Polyurea Joint Filler: Two-component, 100 percent solids; intended for filling cracks and control joints not subject to significant movement; rigid enough to support concrete edges under traffic.
- 1. Durometer Hardness, Type A: 75, minimum, after seven days when tested in accordance with ASTM D2240.
 - 2. Color: To be selected by Architect from manufacturer's standard colors.
 - 3. Joint Width, Minimum: 1/8 inch.
 - 4. Joint Width, Maximum: 1/2 inch.
 - 5. Joint Depth: Provide product suitable for joints from 1/8 inch to 1 inch in depth excluding space for backer rod.
 - 6. Products:
 - a. ARDEX Engineered Cements; ARDEX ARDISEAL RAPID PLUS: www.ardexamericas.com.
 - b. Euclid Chemical Company; EUCO QWIKjoint UVR: www.euclidchemical.com.
 - c. Nox-Crete Inc; DynaFlex JF-85: www.nox-crete.com.
 - d. SpecChem, LLC; Rapid Flex CJ: www.specchemllc.com.
 - e. Substitutions: See Section 01 25 00 - Substitution Procedures for requirements.

2.06 ACCESSORIES

- A. Backing Tape: Self-adhesive polyethylene tape with surface that sealant will not adhere to and recommended by tape and sealant manufacturers for specific application.
- B. Masking Tape: Self-adhesive, nonabsorbent, nonstaining, removable without adhesive residue, and compatible with surfaces adjacent to joints and sealants.
- C. Joint Cleaner: Noncorrosive and nonstaining type, type recommended by sealant manufacturer; compatible with joint forming materials.
- D. Primers: Type recommended by sealant manufacturer to suit application; nonstaining.

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.
- E. Concrete Floor Joints That Will Be Exposed in Completed Work: Test joint filler in an inconspicuous area to verify that it does not stain or discolor slab.

3.03 INSTALLATION

- A. Install this work in accordance with sealant manufacturer's requirements for preparation of surfaces and material installation instructions.
- B. Provide joint sealant installations complying with ASTM C1193.
- C. 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.
- D. Install bond breaker backing tape where backer rod cannot be used.
- E. Install sealant free of air pockets, foreign embedded matter, ridges, and sags, and without getting sealant on adjacent surfaces.
- F. 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.
- G. Nonsag Sealants: Tool surface concave, unless otherwise indicated; remove masking tape immediately after tooling sealant surface.
- H. Concrete Floor Joint Filler: After full cure, shave joint filler flush with top of concrete slab.

3.04 FIELD QUALITY CONTROL

- A. See Section 01 40 00 - Quality Requirements for related requirements.
- B. Perform field quality control inspection/testing as specified in PART 1 under QUALITY ASSURANCE article.
- C. Remove and replace failed portions of sealants using same materials and procedures as indicated for original installation.

END OF SECTION

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. Accessories, including glazing and louvers.

1.02 RELATED REQUIREMENTS

- A. Applicable provisions of Division 1 govern the work of this section.
- B. Section 07 92 00 - Joint Sealants: Sealing joints between door frames and adjacent construction.
- C. Section 08 71 00 - Door Hardware.
- D. Section 08 80 00 - Glazing: Glass for doors and borrowed lites.
- E. Section 09 91 00 Site Painting: Field painting.
- F. Division 26 and 28: Connection to related powered and access control accessories.

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; 2024.
- 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; 2025.
- E. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2025a.
- 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; 2025.
- 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; 2025.
- H. BHMA A156.115 - Hardware Preparation in Steel Doors and Frames; 2016.
- I. ICC A117.1 - Accessible and Usable Buildings and Facilities; 2017.
- J. NAAMM HMMA 830 - Hardware Selection for Hollow Metal Doors and Frames; 2002.
- K. NAAMM HMMA 831 - Hardware Locations for Hollow Metal Doors and Frames; 2024.
- L. NAAMM HMMA 840 - Guide Specifications for Receipt, Storage and Installation of Hollow Metal Doors and Frames; 2024.
- M. NAAMM HMMA 861 - Guide Specifications for Commercial Hollow Metal Doors and Frames; 2014.
- N. NFPA 80 - Standard for Fire Doors and Other Opening Protectives; 2025.
- O. SDI 117 - Manufacturing Tolerances for Standard Steel Doors and Frames; 2023.

1.04 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements for procedures.
- B. Provide submittal transmittals that include all submittal items identified in each submittal group below.

- C. It is permissible for a single supplier to combine submittal items for multiple sections within Division 8 Openings. This permission applies to sections that describe requirements for glazing, hardware, any passage door and windows that are framed using the same systems as the passage doors. Identify all sections that are included in the transmittal on the coversheet.
- D. Review Submittals - Preparatory:
 1. Product Data: Materials and details of design and construction, hardware locations, reinforcement type and locations, anchorage and fastening methods, manufacturer's published instructions, including any special installation instructions relating to this project and finishes; and one copy of referenced standards/guidelines.
 2. 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. Supplier: A company experienced in the builders' hardware industry representing hollow metal products for a minimum of two (3) years, and can call upon an AHC, registered Architectural Hardware Consultant, for consultation during the full extent of the project.

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.
 2. Curries, an Assa Abloy Group Company: www.assaabloydss.com.
 3. Mesker, dormakaba Group: www.meskeropeningsgroup.com.
 4. Republic Doors, an Allegion brand: www.republicdoor.com.
 5. Steelcraft, an Allegion Brand: www.allegion.com.
 6. Technical Glass Products: www.tgpamerica.com.
 7. Amweld: www.amweld.com.
 8. Substitutions: See Section 01 60 00 - Product Requirements for 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: Manufacturer's standard for application indicated.
 5. Typical Door Face Sheets: Flush.
 6. Glazed Lights: Non-removable stops on non-secure side; sizes and configurations as indicated on drawings. Style: Manufacturer's standard.
 7. 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.
- 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. Doors:
 - 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 2 - Seamless.
 - d. Door Face Metal Thickness: 16 gage, 0.053 inch, minimum.
 - e. Zinc Coating: A60/ZF180 galvanized coating; ASTM A653/A653M.
 - 2. Core Material: Polystyrene, 1 lbs/cu ft minimum density.
 - 3. Door Thickness: 1-3/4 inches, nominal.
 - 4. Weatherstripping: Refer to Section 08 71 00.

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. Door Frames: Face welded type.
 - 1. Galvanizing: Components hot-dipped zinc-iron alloy-coated (galvanized) in accordance with ASTM A653/A653M, with A60/ZF180 coating.
 - 2. Frame Metal Thickness: 14 gage, 0.067 inch, minimum.
 - 3. Provide applied metal drip at head of frame.
 - 4. Weatherstripping: Separate, see Section 08 71 00.

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.
- B. Door Window Frames: Door window frames with glazing securely fastened within door opening.
- C. Glazing: As specified in Section 08 80 00.
- 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 finished walls are in plane to ensure proper door alignment.

3.02 PREPARATION

- A. Protective coating at inside of frames installed in masonry or to be filled with mortar or grout, shall be applied by Division 4 Contractor.

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. Coordinate frame anchor placement with wall construction.

- C. Coordinate installation of conduit box at head of frame and flexible conduit in frame to electric strike doors at electrified doors identified in Hardware Schedule with Division 26.
- D. Install door hardware as specified in Section 08 71 00.
- E. Comply with glazing installation requirements of Section 08 80 00.
- F. Coordinate installation of electrical connections to powered 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.

END OF SECTION

SECTION 08 31 00
ACCESS DOORS AND PANELS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Access door and frame units, non-fire-rated, in ceiling locations.

1.02 RELATED REQUIREMENTS

- A. Applicable provisions of Division 1 govern the work of this section.

1.03 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements for procedures.
- B. Provide submittal transmittals that include all submittal items identified in each submittal group below.
- C. Review Submittals - Preparatory:
 - 1. Product Data: Provide sizes, types, finishes, hardware, scheduled locations, and details of adjoining work.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Access Doors; Non-rated:
 - 1. Acudor Products Inc: www.acudor.com.
 - 2. Karp Associates, Inc: www.karpinc.com.
 - 3. Milcor by Commercial Products Group of Hart & Cooley, Inc: www.milcorinc.com.
 - 4. BarCo. www.alfabinc.com.
 - 5. Cesco Products. www.cescoproducts.com.
 - 6. J.L. Industries. www.jlindustries.com.
 - 7. Elmdor Mfg. Co. www.elmdorstoneman.com.
 - 8. Cierra Products. www.cierraproducts.com.
 - 9. Nystrom: www.nystrom.com.
 - 10. The Williams Brothers; www.wbdoors.com.
 - 11. Substitutions: See Section 01 25 00 - Substitution Procedures for requirements.

2.02 CEILING-MOUNTED ACCESS UNITS

- A. Ceiling-Mounted Units: Factory-fabricated door and frame, fully assembled units with corner joints welded, filled and ground flush; square and without rack or warp; coordinate requirements with type of installation assembly being used for each unit.
 - 1. Material: Steel.
 - 2. Style: Exposed frame with door surface flush with frame surface.
 - 3. Door Style: Single thickness with rolled or turned in edges.
 - 4. Heavy-Duty Frames: 14-gauge, 0.0747-inch minimum thickness.
 - 5. Heavy-Duty Single Steel Sheet Door Panels: 14-gauge, 0.0747-inch minimum thickness.
 - 6. Steel Finish: Primed.
 - 7. Primed and Factory Finish: Polyester powder coat; color as selected by Architect from manufacturer's standard colors.
 - 8. Door/Panel Size: As indicated on the drawings.
 - 9. Hardware:
 - a. Hinges for Non-Fire-Rated Units: Concealed, constant force closure spring type.
 - b. Latch/Lock: Screw driver slot for quarter turn cam latch.
 - c. Inside Latch Release: Mechanism that allows door/panel to be opened from inside.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that rough openings are correctly sized and located.

3.02 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 36 13
SECTIONAL DOORS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Overhead sectional doors, manually operated.
- B. Operating hardware and supports.

1.02 RELATED REQUIREMENTS

- A. Applicable provisions of Division 1 govern the work of this section.
- B. Division 26: Equipment wiring.

1.03 REFERENCE STANDARDS

- A. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2025a.
- B. ASTM E330/E330M - Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference; 2014 (Reapproved 2021).
- C. DASMA 102 - American National Standard Specifications for Sectional Doors; 2018.
- D. ITS (DIR) - Directory of Listed Products; Current Edition.
- E. NEMA ICS 2 - Industrial Control and Systems Controllers, Contactors and Overload Relays Rated 600 Volts; 2008 (Reaffirmed 2020).
- F. NEMA MG 00001 - Motors and Generators; 2024.
- G. NEMA EN 10250 - Enclosures for Electrical Equipment (1000 Volts Maximum); 2024.
- H. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- I. UL (DIR) - Online Certifications Directory; Current Edition.
- J. UL 325 - Standard for Door, Drapery, Gate, Louver, and Window Operators and Systems; Current Edition, Including All Revisions.

1.04 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements for procedures.
- B. Provide submittal transmittals that include all submittal items identified in each submittal group below.
- C. Review Submittals - Preparatory:
 - 1. Shop Drawings: Indicate opening dimensions and required tolerances, connection details, anchorage spacing, hardware locations, and installation details.
 - 2. Product Data: Show component construction, anchorage method, and hardware.
- D. Review Submittals - Samples:
 - 1. Samples: Submit two panel finish samples, 12 by 12 inch in size, illustrating color and finish.
- E. Information Submittals - Preparatory:
 - 1. Manufacturer's Installation Instructions: Include any special procedures required by project conditions.
- F. Closeout Submittals:
 - 1. Operation Data: Include normal operation, troubleshooting, and adjusting.
 - 2. Maintenance Data: Include data for transmission, shaft and gearing, lubrication frequency, spare part sources.

3. Warranty Documentation: Submit documentation of manufacturer's warranty that acknowledges the requirements defined in this section.
 - a. Provide procurement information including date(s) of procurement, identification of suppliers and contractors involved in the procurement.
 - b. Provide manufacturer certification of the warranty that is executed in the Owner's name.

1.05 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years of documented experience.
- B. Installer Qualifications: Company specializing in performing work of type specified and with at least three years documented experience.
- C. Comply with applicable code for motor and motor control requirements.

1.06 WARRANTY

- A. See Section 01 78 00 - Closeout Submittals for warranty requirements.
- B. Section Specific Warranty: Provide manufacturer's standard warranty. Document the warranty as defined under the Submittals heading of this section.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Sectional Doors:
 1. C.H.I. Overhead Doors: www.chiohd.com.
 2. Clopay Building Products: www.clopaydoor.com.
 3. Cornell Ironworks: www.cornelliron.com.
 4. Overhead Door Co.: www.overhaddoor.com.
 5. Raynor Garage Doors: www.raynor.com.
 6. Wayne-Dalton, a Division of Overhead Door Corporation: www.wayne-dalton.com.
 7. Substitutions: See Section 01 25 00 - Substitution Procedures for requirements.

2.02 PERFORMANCE REQUIREMENTS

- A. Performance: Withstand positive and negative wind loads equal to 1.5 times design wind loads specified by local code without damage or permanent set, when tested in accordance with ASTM E330/E330M, using 10 second duration of maximum load.

2.03 STEEL DOORS - EXTERIOR

- A. Exterior Steel Doors (Commercial and Residential): Flush steel, insulated; standard lift operating style with track and hardware; complying with DASMA 102, Commercial application.
 1. Door Panels: Steel construction; outer steel sheet of 26 gauge, 0.016 inch minimum thickness, flush profile; inner steel sheet of 20 gauge, 0.0359 inch minimum thickness, flat profile; core reinforcement sheet steel roll formed to channel shape, rabbeted weather joints at meeting rails; polyurethane insulation.
 2. Door Nominal Thickness: 2 inches thick.
 3. Exterior Finish:
 - a. Factory finished with acrylic baked enamel; color as selected by Architect.
 4. Interior Finish:
 - a. Factory finished with standard factory finish; color as selected from manufacturer's standard line.
 5. Manual Operation: Pull rope.

2.04 COMPONENTS

- A. Track: Rolled galvanized steel, 0.060 inch minimum thickness; 2 inch wide, continuous one piece per side; galvanized steel mounting brackets 1/4 inch thick.

- B. Hinge and Roller Assemblies: Heavy duty hinges and adjustable roller holders of galvanized steel; floating hardened steel bearing rollers, located at top and bottom of each panel, each side.
- C. Lift Mechanism: Torsion spring on cross head shaft, with braided galvanized steel lifting cables.
 - 1. For Manual Operation: Requiring maximum exertion of 25 lbs force to open.
- D. Sill Weatherstripping: Resilient hollow rubber strip, one piece; fitted to bottom of door panel, full length contact.
- E. Jamb Weatherstripping: Roll formed steel section full height of jamb, fitted with resilient weatherstripping, placed in moderate contact with door panels.
- F. Head Weatherstripping: EPDM rubber seal, one piece full length.
- G. Panel Joint Weatherstripping: Neoprene foam seal, one piece full length.

2.05 MATERIALS

- A. Sheet Steel: Hot-dipped galvanized steel sheet, ASTM A653/A653M, with G60/Z180 coating, plain surface.
- B. Insulation: Rigid polyurethane, bonded to facing. Minimum R-14.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that wall openings are ready to receive work and opening dimensions and tolerances are within specified limits.
- B. Verify that electric power is available and of the correct characteristics.

3.02 PREPARATION

- A. Prepare opening to permit correct installation of door unit to perimeter air and vapor barrier seal.

3.03 INSTALLATION

- A. Install door unit assembly in accordance with manufacturer's instructions.
- B. Anchor assembly to wall construction and building framing without distortion or stress.
- C. Securely brace door tracks suspended from structure. Secure tracks to structural members only.
- D. Fit and align door assembly including hardware.
- E. Coordinate installation of electrical service. Complete power and control wiring from disconnect to unit components.
- F. Install warning placard provided by supplier at each door.

3.04 ADJUSTING

- A. Adjust door assembly for smooth operation and full contact with weatherstripping.

3.05 CLEANING

- A. Clean doors and frames.
- B. Remove temporary labels and visible markings.

3.06 PROTECTION

- A. Protect installed products from damage until Date of Substantial Completion.
- B. Clean doors, frames.
- C. Remove temporary labels and visible markings.
- D. Do not permit construction traffic through overhead door openings after adjustment and cleaning.

END OF SECTION

Page Intentionally Left Blank

SECTION 08 43 13
ALUMINUM-FRAMED STOREFRONTS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Aluminum-framed storefront, with vision glazing.
- B. Aluminum doors and frames.
- C. Weatherstripping.

1.02 RELATED REQUIREMENTS

- A. Applicable provisions of Division 1 govern the work of this section.
- B. Section 07 92 00 - Joint Sealants: Sealing joints between frames and adjacent construction.
- C. Section 08 71 00 - Door Hardware: Hardware items other than specified in this section.
- D. Section 08 80 00 - Glazing: Glass and glazing accessories.
- E. Division 26: Connection to related powered and access control accessories.

1.03 REFERENCE STANDARDS

- A. AAMA CW-10 - Care and Handling of Architectural Aluminum from Shop to Site; 2015.
- B. AAMA 501.2 - Quality Assurance and Diagnostic Water Leakage Field Check of Installed Storefronts, Curtain Walls, and Sloped Glazing Systems; 2025.
- C. AAMA 1503 - Voluntary Test Method for Thermal Transmittance and Condensation Resistance of Windows, Doors and Glazed Wall Sections; 2009.
- D. AAMA 2605 - Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels (with Coil Coating Appendix); 2022.
- E. ASCE 7 - Minimum Design Loads and Associated Criteria for Buildings and Other Structures; Most Recent Edition Cited by Referring Code or Reference Standard.
- F. ASTM E283/E283M - Standard Test Method for Determining Rate of Air Leakage Through Exterior Windows, Skylights, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen; 2019.
- G. ASTM E330/E330M - Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference; 2014 (Reapproved 2021).
- H. ASTM E331 - Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference; 2000 (Reapproved 2023).
- I. FLA (PAD) - Florida Building Code Online - Product Approval Directory; Current Edition.

1.04 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements for procedures.
- B. Provide submittal transmittals that include all submittal items identified in each submittal group below.
- C. Review Submittals - Preparatory:
 - 1. Product Data: Provide component dimensions, describe components within assembly, anchorage and fasteners, glass and infill, internal drainage details and unit u-value, center of glass u-value and solar heat gain coefficient.
 - a. For existing buildings, field verify
 - 2. Shop Drawings: Indicate system dimensions, framed opening requirements and tolerances, affected related work, expansion and contraction joint location and details, and field welding required.

- D. Review Submittals - Samples:
 1. Selection Samples: Submit sample set of finish options, including colors, for selection by A/E.
 2. For existing buildings, include a statement with the samples stating which sample in the set represents the manufacturer's finish that most closely matches the finish of existing building components of the same type that are to remain in place.
- E. Information Submittals - During Execution:
 1. Field Quality Control Submittals: Report of field testing for water penetration.
- F. Closeout Submittals:
 1. Extended Period: Submit certificate by Contractor acknowledging the section specific period to correct work described in this Section.
 2. Warranty Documentation: Submit documentation of manufacturer's warranty that acknowledges the requirements defined in this section.
 - a. Provide procurement information including date(s) of procurement, identification of suppliers and contractors involved in the procurement.
 - b. Provide manufacturer certification of the warranty that is executed in the Owner's name.

1.05 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in performing work of type specified and with at least three years of documented experience.
- B. Installer Qualifications: Company specializing in performing work of type specified and with at least three years of documented experience.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Handle products of this section in accordance with AAMA CW-10.
- B. Protect finished aluminum surfaces with wrapping. Do not use adhesive papers or sprayed coatings that bond to aluminum when exposed to sunlight or weather.

1.07 FIELD CONDITIONS

- A. Do not install sealants when ambient temperature is less than 40 degrees F. Maintain this minimum temperature during and 48 hours after installation.

1.08 WARRANTY

- A. See Section 01 78 00 - Closeout Submittals for additional warranty requirements.
- B. Extended Period: Correct work in accordance with the terms of the General Conditions for a duration of not less than two years.
- C. Section Specific Warranty: Provide manufacturer's customized warranty as described in this section. Document the warranty as defined under the Submittals heading of this section. Provide warranty in conformance with the following:
 1. Provide 20 year manufacturer warranty against excessive degradation of exterior PVDF finish. Include provision for replacement of units with excessive fading, chalking, or flaking.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Aluminum-Framed Storefronts Manufacturers:
 1. Kawneer North America: www.kawneer.com.
 2. Manko Window Systems, Inc: www.mankowindows.com.
 3. Oldcastle Building Envelope: www.oldcastlebe.com.
 4. Tubelite, Inc: www.tubeliteinc.com.
 5. Substitutions: See Section 01 25 00 - Substitution Procedures for requirements.

2.02 FRAMING FOR MONOLITHIC GLAZING

A. Center-Set Style

1. Vertical Mullion Dimensions: 2 inches wide by 4-1/2 inches deep.

2.03 ALUMINUM-FRAMED STOREFRONT

A. Aluminum-Framed Storefront: Factory fabricated, factory finished aluminum framing members with infill, and related flashings, anchorage and attachment devices.

1. Glazing Position: Centered (front to back).
2. Vertical Mullion Dimensions: 2 inches wide x 4 1/2 inches deep
3. Frame Member Wall Thickness: 1/8 inch.
4. Finish: Provide bid pricing based on providing Superior Performing Organic Coatings finish.
 - a. Factory finish all surfaces that will be exposed in completed assemblies.
 - b. Touch-up surfaces cut during fabrication so that no natural aluminum is visible in completed assemblies, including joint edges.
 - c. Coat concealed metal surfaces that will be in contact with cementitious materials or dissimilar metals with bituminous paint.
 - d. Finish Color: As selected by Architect from manufacturer's full line.
 - e. Use the sample submittal process to confirm finish/color selection prior to start of fabrication.
5. Fabrication: Joints and corners flush, hairline, and weatherproof, accurately fitted and secured; prepared to receive anchors and hardware; fasteners and attachments concealed from view; reinforced as required for imposed loads.
6. Construction: Eliminate noises caused by wind and thermal movement, prevent vibration harmonics, and prevent "stack effect" in internal spaces.
7. System Internal Drainage: Drain to the exterior by means of a weep drainage network any water entering joints, condensation occurring in glazing channel, and migrating moisture occurring within the system.
8. Expansion/Contraction: Provide for expansion and contraction within system components caused by cycling temperature range of 170 degrees F over a 12 hour period without causing detrimental effect to system components, anchorages, and other building elements.
9. Movement: Allow for movement between storefront and adjacent construction, without damage to components or deterioration of seals.
10. Perimeter Clearance: Minimize space between framing members and adjacent construction while allowing expected movement.
11. Maintain continuous air barrier and/or vapor retarder seal throughout assembly, primarily in line with inside pane of glazing and inner sheet of infill panel, and heel bead of glazing compound.

B. Performance Requirements:

1. Wind Loads: Design and size components to withstand the specified load requirements without damage or permanent set, when tested in accordance with ASTM E330/E330M, using loads 1.5 times the design wind loads and 10 second duration of maximum load.
 - a. Design Wind Loads: See Components and Cladding Wind Pressures on sheet S001.
 - b. Member Deflection: Limit member deflection to flexure limit of glass in any direction, with full recovery of glazing materials.
2. Wind-Borne-Debris Resistance: Identical full-size glazed assembly without auxiliary protection, having Florida Building Code FLA (PAD) approval for Large and Small Missile impact and pressure cycling at design wind pressure.
3. Water Penetration Resistance: No uncontrolled water on interior face, when tested in accordance with ASTM E331 at pressure differential of 12 psf.
4. Air Leakage: 0.06 cfm/sq ft maximum leakage of storefront wall area when tested in accordance with ASTM E283/E283M at 1.57 psf pressure difference.

2.04 DOOR COMPONENTS

- A. Aluminum Exterior Door Framing Members: 1/8 inch minimum wall thickness, tubular aluminum sections, drainage holes and internal weep drainage system.
 - 1. Glazing stops: Applied.
- B. Interior Aluminum Door Framing Members: Tubular aluminum sections, drainage holes and internal weep drainage system.
 - 1. Glazing stops: Applied.

2.05 WINDOW AND SIDELIGHT COMPONENTS

- A. Aluminum Framing Members: Tubular aluminum sections, drainage holes and internal weep drainage system.
 - 1. Glazing Stops: Applied.
- B. Glazing: See Section 08 80 00.
- C. Swing Doors: Glazed aluminum.
 - 1. Thickness: 1-3/4 inches.
 - 2. Wide Stile: 5 inch minimum stiles and top rail.
 - 3. Bottom Rail: 10 inches wide minimum single rail design.
 - 4. Glazing Stops: Square.
 - 5. Finish: Same as storefront.

2.06 FINISHES

- A. Superior Performing Organic Coatings System: Manufacturer's standard multi-coat superior performing organic coatings system complying with AAMA 2605, including at least 70 percent polyvinylidene fluoride (PVDF) resin, and at least 80 percent of aluminum extrusion and panels surfaces having minimum total dry film thickness (DFT) of 1.2 mils, 0.0012 inch.
- B. Touch-Up Materials: As recommended by coating manufacturer for field application.

2.07 HARDWARE

- A. Other Door Hardware: See Section 08 71 00.
- B. Weatherstripping: Wool pile, continuous and replaceable; provide on all doors.
- C. Sill Sweep Strips: Resilient seal type, retracting, of neoprene; provide on all doors.

2.08 FABRICATION

- A. Fabricate components with minimum clearances and shim spacing around perimeter of assembly, yet enabling installation and dynamic movement of perimeter seal.
- B. Accurately fit and secure joints and corners. Make joints flush, hairline, and weatherproof.
- C. Prepare components to receive anchor devices. Fabricate anchors.
- D. Coat concealed metal surfaces that will be in contact with cementitious materials or dissimilar metals with bituminous paint.
- E. Arrange fasteners and attachments to conceal from view.
- F. Reinforce components internally for door hardware and door operators.
- G. Reinforce framing members for imposed loads.
- H. Finishing: Apply factory finish to all surfaces that will be exposed in completed assemblies.
 - 1. Touch-up surfaces cut during fabrication so that no natural aluminum is visible in completed assemblies, including joint edges.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install wall system in accordance with manufacturer's instructions.
- B. Attach to structure to permit sufficient adjustment to accommodate construction tolerances and other irregularities.

- C. Provide alignment attachments and shims to permanently fasten system to building structure.
- D. Align assembly plumb and level, free of warp or twist. Maintain assembly dimensional tolerances, aligning with adjacent work.
- E. Install sill flashings. Turn up ends and edges; seal to adjacent work to form water tight dam.
- F. Where fasteners penetrate sill flashings, make watertight by seating and sealing fastener heads to sill flashing.
- G. Coordinate installation of conduit box at head of frame and flexible conduit in frame to electric strike at electrified doors identified in Hardware Schedule with Division 26.
- H. Coordinate attachment and seal of perimeter air and vapor barrier materials.
- I. Set thresholds in bed of sealant and secure.
- J. Install glazing in accordance with Section 08 80 00, using glazing method required to achieve performance criteria.
- K. Touch-up minor damage to factory applied finish; replace components that cannot be satisfactorily repaired.

3.02 FIELD QUALITY CONTROL

- A. Water-Spray Test: Provide water spray quality test of installed storefront components in accordance with AAMA 501.2 during construction process and before installation of interior finishes.
 - 1. Perform a minimum of two tests in each designated area as directed by Architect.
 - 2. Conduct tests in each area prior to 10 percent and 50 percent completion of this work.
 - 3. Tests performed when owner determines a questionable installation has occurred.
 - 4. If test passes, owner shall pay for testing.
 - 5. If test fails, contractor shall pay for testing.

3.03 ADJUSTING

- A. Adjust operating hardware for smooth operation.

3.04 CLEANING

- A. Remove protective material from pre-finished aluminum surfaces.
- B. Wash down surfaces with a solution of mild detergent in warm water, applied with soft, clean wiping cloths, and take care to remove dirt from corners and to wipe surfaces clean.

END OF SECTION

Page Intentionally Left Blank

SECTION 08 71 00

DOOR HARDWARE

PART 1: GENERAL

1.01 RELATED DOCUMENTS

- A.** Conditions of the Contract and portions of Division One of this Project Manual apply to this Section as though repeated herein.

1.02 WORK INCLUDED

- A.** Furnish all finish hardware specified herein, listed in the hardware schedule, or required by the drawings.
- B.** Where items of hardware are not definitely or correctly specified and are required for the intended service, such omission, error, or other discrepancy should be directed to the Architect prior to the bid date for clarification by addendum. Otherwise, furnish such items in the type and quantity established by this specification for the appropriate service intended.

1.03 RELATED WORK

- A.** Section 08 12 13 – Hollow Metal Frames.
- C.** Section 08 43 13 – Aluminum-Framed Storefronts
- D.** Division 26 - Electrical.

1.04 REFERENCES

- A.** A.D.A. - Americans with Disabilities Act.
- B.** ANSI A117.1 - Specifications for making facilities accessible to physically handicapped people.
- C.** 36 CFR 1191 - Americans with Disabilities Act Accessibility Guidelines for Buildings and Facilities; Final Rule; current edition; (ADA Standards for Accessible Design).
- D.** NFPA 80 - Standards For Fire Doors and Windows.
- E.** NFPA 101 - Life Safety Code.
- F.** U.L. - Building Material Directory.
- G.** D.H.I. - Recommended Locations for Architectural Hardware.
- H.** Applicable State and Local Building Codes, including IBC2009.

1.05 SUBMITTALS

- A.** Submit five (5) copies of a detailed hardware schedule, vertical format. Prepare under the supervision of an AHC, registered Architectural Hardware Consultant, and under provisions of Division One.
 - 1. Itemize hardware in the sequence and format established by this specification.
 - 2. List and describe each opening separately. Include all doors with identical hardware, except hand, in a single heading. Include door number, room designations, degree of swing, and hand.
 - 3. List related details. Include dimensions, door and frame material, and other considerations affecting hardware.
 - 4. List all hardware items to be supplied. Include manufacturer's name, quantity, product name, catalog number, size, finish, attachments, and related details where applicable.
 - 5. Resubmit five (5) copies of the corrected schedule when required.
- B.** Keying Schedule: After receipt of approved hardware schedule submit a copy of keying schedule as a result of a keying meeting between the Owner and the hardware supplier.
- C.** Samples: If so directed by the Architect, submit samples of finish hardware items for approval. Properly identify each sample as to make and number, and furnish in the specified finish.
- D.** Templates: Furnish a copy of approved hardware schedule, along with applicable templates for factory-prepared hardware to each door and frame fabricator.
- E.** Electrical Hardware: Submit electrical specifications and applicable information to the electrical contractor after receipt of the approved hardware schedule.
- F.** Substitutions: Submit under provisions of Division One. Provide detailed information and catalog cuts indicating the comparison to the specified hardware. If requested by the Architect, provide a sample accompanied by a sample of the specified item for comparison.

1.06 QUALITY ASSURANCE

- A.** Qualifications:
 - 1. Manufacturer: Except where specified in the hardware schedule, furnish products of only one manufacturer for each type of hardware.
 - 2. Supplier: A company experienced in the builders' hardware industry for a minimum of two (2) years, and can call upon an AHC, registered Architectural Hardware Consultant, for consultation during the full extent of the project
- B.** Regulatory Requirements:
 - 1. Furnish UL or Warnock Hersey listed hardware for all fire labeled and 20 minute openings in conformance with requirements for class of opening scheduled, whether specifically called for in this specification or not.
 - 2. Furnish hardware that conforms to all applicable state and local building codes, including IBC 2000 positive pressure testing requirements. Where specified hardware is not in conformance with applicable codes, such omission or error should be directed to the Architect prior to the bid date for clarification by addendum; otherwise furnish hardware as required by code.

C. Training and Inspection:

1. Hold pre-installation meeting to coordinate training of installation personnel. Installers shall be trained by manufacturer's representative.
2. Manufacturer's representative shall inspect installation of hardware as part of substantial completion requirements.

1.07 DELIVERY, STORAGE AND HANDLING

- A. Deliver, store and handle in accordance with Division One. Mark each original container with a door number that corresponds to the approved hardware schedule for the installation location.
- B. Receive, inventory and store hardware in a secure and dry environment; protect against loss and damage.
- C. Report any shortages to the hardware supplier no later than 48 hours after receipt of delivery to the job site.
- D. Stockpile items sufficiently in advance to ensure their availability. Coordinate delivery, handling, and installation of hardware items to ensure orderly progress of total work, and minimize or eliminate losses and damage.

PART 2: PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

<u>Products</u>	<u>Specified</u>	<u>Acceptable</u>
Hinges	Stanley	IVES, McKinney, Hager
Flush Bolts	Rockwood	DCI, Trimco, Ives
Locks and Latches	Marshall Best	NO SUB
Push/Pull Latches	Rockwood	Trimco, Burns, Hager
Exit Devices	Von Duprin	Sargent
Door Closers	LCN	NO SUB
Protective Plates	Rockwood	Burns, Hager
Wall Stops/Floor Stops	Rockwood	Trimco, Hager, DCI
Thresholds, Sweeps, Weatherstrip	Reese	National Guard Products, Pemko

2.02 HINGES

A. Acceptable manufacturers and respective catalog numbers:

<u>Description</u>	<u>P.B.B.</u>	<u>Stanley</u>	<u>McKinney</u>	<u>Hager</u>
Std. Wt. Plain Bearing - Steel	PB81	F179	T2714	1279
Std. Wt. Ball Bearing - Steel	BB81	FBB179	TA2714	BB1279
Std. Wt. Ball Bearing -non ferrous	BB21/BB51	FBB191	TB2314	BB1191
Hvy. Wt. Ball Bearing Steel	4B81	FBB168	T4B3786	BB1168
Hvy. Wt. Ball Bearing – non ferrous	4B21/4B51	FBB179	T4B3386	BB1199

B. Hinges supplied must be tested and comply with ANSI/BHMA standards for consistency, wear and corrosion resistance.

C. Quantity: Furnish hinges for each door leaf as follows, unless otherwise noted in

groups:

1. Doors up to and including 90" high - 3 hinges.
2. Doors over 90" high through 120" high - 4 hinges.

D. Type: Furnish as follows, unless otherwise noted in groups:

1. Standard weight, plain bearing hinge for interior openings through 36" wide without a door closer.
2. Standard weight, ball bearing hinge for interior openings over 36" through 40" wide with a door closer, and for interior openings through 40" wide with a door closer.
3. Heavy weight, four ball bearing hinge for all exterior openings unless noted in groups.

E. Size: Furnish as follows, unless otherwise noted in groups:

1. 1 3/4" doors: 4-1/2" x 4-1/2"
2. Provide proper hinge width to clear trim and allow full 180° swing.

F. Hinges for all lockable doors opening outward shall have non-removable pin (NRP). All other hinges shall have non-rising pins.

2.03 FLUSH BOLTS

A. Acceptable manufacturers and respective catalog numbers:

<u>Description</u>	<u>Rockwood</u>	<u>Ives</u>	<u>Trimco</u>	<u>DCI</u>
Manual - Metal Door	555	FB458	3917	780F
Automatic - Metal Door	1842	FB31P	3810	842
Self Latching - Metal Door	1845	FB51P	3820	845
Dust Proof Strike	570	DP2	3911	82

B. Furnish a dustproof strike for all bottom bolts.

2.04 LOCKS AND LATCHES

A. Acceptable manufacturers and respective catalog numbers:

<u>Description</u>	<u>Marshall Best</u>
Mortise Locks	RE Series x Sentinel
Cylindrical Locks	MB1 Series x 15 Style

B. Furnish lock types and functions as specified in the hardware schedule, and as follows:

1. Provide 2-3/4" backset.
2. Provide 2-3/4" x 1-1/8" "T" strike with a dust box for use in wood doors or frames.
3. Provide 4-7/8" x 1-1/4" ANSI strike for installation in a hollow metal door or frame.
4. Locksets to conform to ANSI A156.2, Series 4000, Grade 1 and be UL listed.

2.05 EXIT DEVICES

A. Acceptable manufacturers and respective catalog numbers:

<u>Description</u>	<u>Von Duprin</u>	<u>Sargent</u>
Wide Stile Rim	98 RIM	8800
Wide Stile Surf. Vert. Rod	9827	8700
Wide Stile Conc. Vert. Rod	9847	8600
Wide Stile Mortise	9875	8900

- B. Furnish exit device types and functions as specified in the hardware schedule.
- C. Lever handles supplied with exit devices shall match the design specified for locks and latches.

2.06 PULLS, PUSHBARS, PUSH/PULL PLATES

- A. Acceptable manufacturers and respective catalog numbers:

<u>Description</u>	<u>Rockwood</u>	<u>Trimco</u>	<u>Burns</u>
--------------------	-----------------	---------------	--------------

- B. Supply product as listed in groups or equal to acceptable manufacturers.

2.07 DOOR CLOSERS

- A. Acceptable manufacturers and respective catalog numbers:

<u>Description</u>	<u>LCN</u>	<u>Sargent</u>
Heavy Duty Reg. Arm	4041	281
Heavy Duty Parallel Arm	4041 EDA	281 P10
Heavy Duty Stop Arm	4041 CUSH	281 PS

- B. Furnish complete with mounting brackets, drop plates, spacers, special shoes, and thru bolts as may be required by the door and frame conditions.

2.09 PROTECTIVE PLATES

- A. Acceptable manufacturers: Rockwood, Trimco, Burns, Hager.
- B. All kickplate heights shall be as listed in groups and 2" less door width single doors and 1" less for pairs.
- C. Thickness shall be .050" (16 gauge).

2.11 WALL STOPS

- A. Acceptable manufacturers and respective catalog numbers:

<u>Description</u>	<u>Rockwood</u>	<u>Hager</u>
Wrought Convex Wall	407	232W
Wrought Concave w/Toggle	409	237W

- B. When "wall stop" is called for in hardware group, provide 407 or 409. When overhead stops are required, they will be specified by product number in the group.
- C. Wall stops shall not be mounted to casework, cabinet work, sidelights, or equipment.

2.13 THRESHOLDS, SWEEPS, WEATHERSTRIP, DRIP CAPS, GASKET, ASTRAGALS

- A. Acceptable manufacturers and respective catalog numbers:

<u>Description</u>	<u>Reese</u>	<u>Pemko</u>	<u>National Guard</u>
Threshold	S205	171A	425A
Sweep	323	315N	200N
Sweep	967	18133CP	OV633

Weatherstrip	970	45100CP	603
Weatherstrip	DS78	315CR	130N
Gasket	797B	S88	1010

B. Where specified in groups, furnish the above products unless otherwise detailed.

2.14 DOOR HARDWARE FINISHES

A. Unless indicated otherwise in the groups provide finishes as follows:

1. Hinges, exterior: US32D
2. Hinges, interior: US26D
3. Flush Bolts: US26D
4. Exit Devices: US32D
5. Locks and Latches: US26D
6. Pulls, Pushbars, Push/Pull: US32D
7. Door Closers: Painted Aluminum
8. Protective Plates: US32D
9. Overhead Stops: Painted Aluminum
10. Wall Stops: US32D
11. Gasket: Black
12. Thresholds: Mill Aluminum
13. Weatherstrip, Sweeps: Clear Anodized Aluminum

2.15 KEYING REQUIREMENTS:

- A. Key System: New factory-registered master key system. MBS 7-PIN Small Format Interchangeable Core. Initiate and conduct meetings(s) with Owner representatives to determine system keyway(s), keybow marking, structure, degrees of physical security and degree of geographic exclusivity. Furnish Owner's written approval of the system.
- B. Small Format Interchangeable Cores: furnish 7-pin solid brass construction.
- C. Cylinders/cores: keyed at factory of lock manufacturer where permanent records are maintained. Locksets and cylinders same manufacturer.
- D. Permanent keys: Use secured shipment direct from point of origination to Owner.
- E. Masterkeyed System Documents: Use secured shipment direct from point of origination to Owner at completion.

PART 3: EXECUTION

3.01 EXAMINATION

- A. Examine doors, frames, and related items for conditions that would prevent the proper application of finish hardware. Do not proceed until defects are corrected.

3.02 INSTALLATION

- A. Install each hardware item in strict compliance with the manufacturer's printed instructions and recommendations, using only fasteners supplied by, or called for by the manufacturer.

- B. Set units level, plumb and true to the line and location. Prepare and reinforce the attachment substrate as necessary for proper installation and operation.
- C. Mortise and cut to close tolerance and conceal evidence of cutting in the finished work. Drill and countersink units which are not factory prepared for anchorage fasteners.
- D. If manufacturer's instructions do not call out a mounting location, refer to the Door and Hardware Institute's publication *Recommended Locations for Architectural Hardware*.
- E. Deliver to the Owner one (1) complete set of installation and adjustment instructions, as well as all tools that were furnished with the hardware.

3.03 ADJUSTMENT AND CLEANING

- A. At final completion, adjust and check each operating item of hardware at each door to ensure proper operation and function of every unit. Lubricate any moving parts that do not operate freely, smoothly, and quietly using only lubricant as recommended by the manufacturer of the hardware item. Replace units that cannot be adjusted or lubricated to operate properly.
- B. Instruct the Owner's personnel in the proper adjustments of the hardware as needed.
- C. Clean and restore hardware to the original finish.

3.04 HARDWARE SCHEDULE

HARDWARE GROUP 1

EACH SINGLE ALUM DOOR TO HAVE:
DR.CA-02.1,CC-02.1

1 EA	CONTINUOUS HINGE	BY ALUM DR AND FRAME SUPPLIER	
1 EA	RIM EXIT DEVICE	99NL-OP X 110MD 626	VONDUPRIN
1 EA	RIM CYLINDER WITH CORE	MBS-ICR X MBS-IC7 626	MBS
1 EA	ELECTRIC STRIKE	6300 US32D	VONDUPRIN
1 EA	OFFSET PULLS	BF157 US32D	ROCKWOOD
1 EA	CLOSER	4111 SCUSH 689	LCN
1 EA	DROP PLATES	4110-18 689	LCN
1 EA	SHOE SUPPORTS	4110-30 689	LCN
1 EA	BLADE SPACERS	4110-61 689	LCN
1 EA	THRESHOLD	S425A	REESE
1 EA	WEATHERSTRIP AND SWEEPS	BY ALUM DR AND FR SUPPLIER	

HARDWARE GROUP 2(ALTERNATE)

EACH SINGLE ALUM DOOR TO HAVE:
DR.CD-02.1,

1 EA	CONTINUOUS HINGE	BY ALUM DR AND FRAME SUPPLIER	
1 EA	RIM EXIT DEVICE	99NL-OP X 110MD 626	VONDUPRIN
1 EA	RIM CYLINDER WITH CORE	MBS-ICR X MBS-IC7 626	MBS
1 EA	ELECTRIC STRIKE	6300 US32D	VONDUPRIN
1 EA	OFFSET PULLS	BF157 US32D	ROCKWOOD
1 EA	CLOSER	4111 SCUSH 689	LCN
1 EA	DROP PLATES	4110-18 689	LCN
1 EA	SHOE SUPPORTS	4110-30 689	LCN
1 EA	BLADE SPACERS	4110-61 689	LCN
1 EA	THRESHOLD	S425A	REESE
1 EA	WEATHERSTRIP AND SWEEPS	BY ALUM DR AND FR SUPPLIER	

HARDWARE GROUP 3

EACH SINGLE DR TO HAVE:

DR. CA-01.1,CA-01.2,CA-03.1,CA-03.2, CC-01.1,CC-01.2,CC-03.1,CC-03.2

3 EA	HINGES	FBB168 4.5 X 4.5 652	STANLEY
1 EA	ENTRANCE LOCK	MB1-3-O1-15-626	MARSHALL B
1 EA	CLOSER	4040XP SCUSH 689	LCN
1 EA	WEATHERSTRIP	815A3684	REESE
1 EA	SWEEP	323C36	REESE
1 EA	THRESHOLD	S425A36	REESE
1 EA	RAIN DRIP	R201C40	REESE

HARDWARE GROUP 4 (ALTERNATE)

EACH SINGLE DR TO HAVE:

DR. CD-01.1,CD-01.2,CD-03.1,CD-03.2,

3 EA	HINGES	FBB168 4.5 X 4.5 652	STANLEY
1 EA	ENTRANCE LOCK	MB1-3-O1-15-626	MARSHALL B
1 EA	CLOSER	4040XP SCUSH 689	LCN
1 EA	WEATHERSTRIP	815A3684	REESE
1 EA	SWEEP	323C36	REESE
1 EA	THRESHOLD	S425A36	REESE
1 EA	RAIN DRIP	R201C40	REESE

HARDWARE GROUP 5

EACH OVERHEAD DOOR

DRS. ALL OVERHEAD DOORS

ALL MATERIALS BY OVERHEAD DOOR SUPPLIER

HARDWARE GROUP 6

EACH SINGLE DR TO HAVE:

DR. CB-01.1,CB-01.2,CB-02.1,CB-03.1,CB-03.2,

3 EA	HINGES	FBB168 4.5 X 4.5 652	STANLEY
1 EA	ENTRANCE LOCK	MB1-3-O1-15-626	MARSHALL B
1 EA	CLOSER	4040XP SCUSH 689	LCN
1 EA	WEATHERSTRIP	815A3684	REESE
1 EA	SWEEP	323C36	REESE
1 EA	THRESHOLD	S425A36	REESE
1 EA	RAIN DRIP	R201C40	REESE

HARDWARE GROUP 7

EACH SINGLE DOOR TO HAVE:

DR. RA-01

3 EA	HINGES	BY PREHUNG DR SUPPLIER	
1 EA	ENTRANCE LOCK	MB1-3-O1-15-626	MARSHALL B
1 EA	WEATHERSTRIP/THRESH/SWEEP	BY PERHUNG DR SUPPLIER	

HARDWARE GROUP 8

EACH SINGLE DOOR TO HAVE:

DR. RA-05

3 EA	HINGES	5BB1 4.5 X 4.5 652	IVES
1 EA	ENTRANCE LOCK	MB1-3-O1-15-626	MARSHALL B
1 EA	WEATHERSTRIP	815A3684	REESE
1 EA	SWEEP	323C36	REESE
1 EA	THRESHOLD	S425A36	REESE
1 EA	RAIN DRIP	R201C40	REESE

HARDWARE GROUP 9

EACH SINGLE DOOR TO HAVE:

DR. RA-02,RA-04.1,RA-04.2

3 EA	HINGES	BY PREHUNG DR SUPPLIER	
1 EA	PASSAGE LOCK	MB2-3-30-15-626	MARSHALL B
1 EA	WALL STOP	409 US32D	ROCKWOOD
3 EA	SILENCERS	609 GREY	ROCKWOOD

HARDWARE GROUP 10

EACH SINGLE DOOR TO HAVE:

DR. RA-03,

3 EA	HINGES	BY PREHUNG DR SUPPLIER	
1 EA	PRIVACY LOCK	MB2-3-20-15-626	MARSHALL B
1 EA	WALL STOP	409 US32D	ROCKWOOD
3 EA	SILENCERS	609 GREY	ROCKWOOD

HARDWARE GROUP 11

EACH SINGLE DOOR TO HAVE:
DR. RA-08,RA-09

3 EA	HINGES	BY PREHUNG DR SUPPLIER	
1 EA	STORERM LOCK	MB2-3-05-15-626	MARSHALL B
1 EA	WALL STOP	409 US32D	ROCKWOOD
3 EA	SILENCERS	609 GREY	ROCKWOOD

HARDWARE GROUP 12

EACH SINGLE DOOR TO HAVE:
DR. RA-06

3 EA	HINGES	BY PREHUNG DR SUPPLIER	
1 EA	ENTRANCE LOCK	MB1-3-01-15-626	MARSHALL B
1 EA	CLOSER	4040XP SHCUSH 689	LCN
1 EA	WEATHERSTRIP/THRESH/SWEEP	BY PERHUNG DR SUPPLIER	

HARDWARE GROUP 13(ALTERNATE)

EACH SINGLE DOOR TO HAVE:
DR. RB-01

3 EA	HINGES	BY PREHUNG DR SUPPLIER	
1 EA	ENTRANCE LOCK	MB1-3-01-15-626	MARSHALL B
1 EA	WEATHERSTRIP/THRESH/SWEEP	BY PERHUNG DR SUPPLIER	

HARDWARE GROUP 14(ALTERNATE)

EACH SINGLE DOOR TO HAVE:
DR. RB-05

3 EA	HINGES	5BB1 4.5 X 4.5 652	IVES
1 EA	ENTRANCE LOCK	MB1-3-01-15-626	MARSHALL B
1 EA	WEATHERSTRIP	815A3684	REESE
1 EA	SWEEP	323C36	REESE
1 EA	THRESHOLD	S425A36	REESE
1 EA	RAIN DRIP	R201C40	REESE

HARDWARE GROUP 15(ALTERNATE)

EACH SINGLE DOOR TO HAVE:
DR. RB-02,RB-04.1,RB-04.2

3 EA	HINGES	BY PREHUNG DR SUPPLIER	
1 EA	PASSAGE LOCK	MB2-3-30-15-626	MARSHALL B
1 EA	WALL STOP	409 US32D	ROCKWOOD
3 EA	SILENCERS	609 GREY	ROCKWOOD

HARDWARE GROUP 16(ALTERNATE)

EACH SINGLE DOOR TO HAVE:

DR. RB-03,

3 EA	HINGES	BY PREHUNG DR SUPPLIER	
1 EA	PRIVACY LOCK	MB2-3-20-15-626	MARSHALL B
1 EA	WALL STOP	409 US32D	ROCKWOOD
3 EA	SILENCERS	609 GREY	ROCKWOOD

HARDWARE GROUP 17(ALTERNATE)

EACH SINGLE DOOR TO HAVE:

DR. RB-06

3 EA	HINGES	BY PREHUNG DR SUPPLIER	
1 EA	ENTRANCE LOCK	MB1-3-01-15-626	MARSHALL B
1 EA	CLOSER	4040XP SHCUSH 689	LCN
1 EA	WEATHERSTRIP/THRESH/SWEEP	BY PERHUNG DR SUPPLIER	

END OF SECTION 08 71 00

Page Intentionally Left Blank

SECTION 08 80 00

GLAZING

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Plastic sheet glazing units.
- B. Glazing compounds.

1.02 RELATED REQUIREMENTS

- A. Applicable provisions of Division 1 govern the work of this section.
- B. Section 08 11 13 - Hollow Metal Doors and Frames: Glazed lites in doors and borrowed lites.
- C. Section 08 43 13 - Aluminum-Framed Storefronts: Glazing provided as part of storefront assembly.

1.03 REFERENCE STANDARDS

- A. ANSI Z97.1 - American National Standard for Safety Glazing Materials Used in Buildings - Safety Performance Specifications and Methods of Test; 2015 (Reaffirmed 2020).
- B. ASCE 7 - Minimum Design Loads and Associated Criteria for Buildings and Other Structures; Most Recent Edition Cited by Referring Code or Reference Standard.
- C. ASTM C864 - Standard Specification for Dense Elastomeric Compression Seal Gaskets, Setting Blocks, and Spacers; 2005 (Reapproved 2019).
- D. ASTM C1036 - Standard Specification for Flat Glass; 2025.
- E. ASTM C1193 - Standard Guide for Use of Joint Sealants; 2025.
- F. GANA (GM) - GANA Glazing Manual; 2022.
- G. GANA (SM) - GANA Sealant Manual; 2008.
- H. IGMA TM-3000 - North American Glazing Guidelines for Sealed Insulating Glass Units for Commercial & Residential Use; 1990 (Reaffirmed 2016).

1.04 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements for procedures.
- B. Provide submittal transmittals that include all submittal items identified in each submittal group below.
- C. Review Submittals - Preparatory Group:
 - 1. Product Data on Insulating Glass Unit and Glazing Unit Glazing Types: Provide structural, physical and environmental characteristics, size limitations, special handling and installation requirements.
 - 2. Product Data on Glazing Compounds and Accessories: Provide chemical, functional, and environmental characteristics, limitations, special application requirements. Identify available colors. Coordinate the following information with product in Section 08 43 13 and 08 44 13; unit u-value, center of glass u-value and solar heat gain coefficient.
- D. Closeout Submittals:
 - 1. See Section 01 78 00 - Closeout Submittals for additional information regarding documenting warranties.
 - 2. Warranty Documentation: Submit documentation of manufacturer's warranty that acknowledges the requirements defined in this section.
 - a. Provide procurement information including date(s) of procurement, identification of suppliers and contractors involved in the procurement.
 - b. Provide manufacturer certification of the warranty that is executed in the Owner's name.

1.05 QUALITY ASSURANCE

- A. Perform Work in accordance with GANA (GM), GANA (SM), and IGMA TM-3000 for glazing installation methods. Maintain one copy on site.
- B. Installer Qualifications: Company specializing in performing work of the type specified and with at least three years documented experience.

1.06 FIELD CONDITIONS

- A. Do not install glazing when ambient temperature is less than 40 degrees F.
- B. Maintain minimum ambient temperature before, during and 24 hours after installation of glazing compounds.

1.07 WARRANTY

- A. See Section 01 78 00 - Closeout Submittals for additional warranty requirements.
- B. Section Specific Warranty: Provide manufacturer's customized warranty as described in this section. Document the warranty as defined under the Submittals heading of this section. Provide warranty in conformance with the following:
 - 1. Insulating Glass Units: Provide a ten (10) year manufacturer warranty to include coverage for seal failure, interpane dusting or misting, including replacement of failed units.

PART 2 PRODUCTS

2.01 PERFORMANCE REQUIREMENTS - EXTERIOR GLAZING ASSEMBLIES

- A. Provide type and thickness of exterior glazing assemblies to support assembly dead loads, and to withstand live loads caused by positive and negative wind pressure acting normal to plane of glazing:
 - 1. Design Pressure: Calculated in accordance with Components and Cladding Wind Pressures shown on S001.
 - 2. Provide glazing edge support system sufficiently stiff to limit the lateral deflection of supported glazing edges to less than 1/175 of their lengths under specified design load.
 - 3. Glazing thicknesses listed are minimum.
- B. Weather-Resistive Barrier Seals: Provide completed assemblies that maintain continuity of building enclosure water-resistive barrier, vapor retarder, and/or air barrier.
 - 1. In conjunction with weather barrier related materials described in other sections, as follows:
 - a. Water-Resistive Barriers: See Section 07 25 00.

2.02 PLASTIC SHEET GLAZING UNITS

- A. GLT-3 - Solid Standing Seam Polycarbonate Sheet: Ultraviolet (UV) protected.
 - 1. Applications: Locations as indicated on drawings.
 - 2. Type: Monolithic (solid single layer) sheet.
 - 3. Silicone abrasion resistant coating for scratch resistance.
 - 4. Tint: Clear.
 - 5. Thickness: 1/2 inch.

2.03 ACCESSORIES

- A. Setting Blocks: Silicone, with 80 to 90 Shore A durometer hardness; ASTM C864 Option II. Length of 0.1 inch for each square foot of glazing or minimum 4 inch by width of glazing rabbet space minus 1/16 inch by height to suit glazing method and pane weight and area.
- B. Spacer Shims: Neoprene, 50 to 60 Shore A durometer hardness; ASTM C864 Option II. Continuous by one half the height of the glazing stop by thickness to suit application, self adhesive on one face.

PART 3 EXECUTION

3.01 VERIFICATION OF CONDITIONS

- A. Verify that openings for glazing are correctly sized and within tolerances, including those for size, squareness, and offsets at corners.
- B. Verify that surfaces of glazing channels or recesses are clean, free of obstructions that may impede moisture movement, weeps are clear, and support framing is ready to receive glazing system.

3.02 PREPARATION

- A. Clean contact surfaces with appropriate solvent and wipe dry within maximum of 24 hours before glazing. Remove coatings that are not tightly bonded to substrates.
- B. Seal porous glazing channels or recesses with substrate compatible primer or sealer.
- C. Prime surfaces scheduled to receive sealant where required for proper sealant adhesion.

3.03 INSTALLATION, GENERAL

- A. Install glazing in compliance with written instructions of glazing, gaskets, and other glazing material manufacturers, unless more stringent requirements are indicated, including those in glazing referenced standards.
- B. Install glazing sealants in accordance with ASTM C1193, GANA (SM), and manufacturer's instructions.
- C. Do not exceed edge pressures around perimeter of glass lites as stipulated by glass manufacturer.
- D. Prevent glazing from contact with any contaminating substances that may be the result of construction operations such as, and not limited to the following; weld splatter, fire-safing, plastering, mortar droppings, and paint.

3.04 INSTALLATION - DRY GLAZING METHOD (GASKET GLAZING)

- A. Application - Exterior and/or Interior Glazed: Set glazing infills from either the exterior or the interior of the building.
- B. Place setting blocks at 1/4 points with edge block no more than 6 inch from corners.
- C. Rest glazing on setting blocks and push against fixed stop with sufficient pressure on gasket to attain full contact.
- D. Install removable stops without displacing glazing gasket; exert pressure for full continuous contact.

3.05 CLEANING

- A. Remove excess glazing materials from finish surfaces immediately after application using solvents or cleaners recommended by manufacturers.
- B. Remove nonpermanent labels immediately after glazing installation is complete.
- C. Clean glass and adjacent surfaces after sealants are fully cured.
- D. Clean glass on both exposed surfaces not more than 4 days prior to Date of Substantial Completion in accordance with glass manufacturer's written recommendations.

3.06 PROTECTION

- A. After installation, mark pane with an 'X' by using removable plastic tape or paste; do not mark heat absorbing or reflective glass units.
- B. Remove and replace glass that is damaged during construction period prior to Date of Substantial Completion.

END OF SECTION

Page Intentionally Left Blank

SECTION 09 91 00
SITE PAINTING

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Surface preparation.
- B. Field application of paints.
- C. Scope: Finish hollow interior and exterior metal doors.
- D. Do not paint any items other than those identified above.

1.02 RELATED REQUIREMENTS

- A. Applicable provisions of Division 1 govern the work of this section.

1.03 REFERENCE STANDARDS

- A. SSPC-SP 1 - Solvent Cleaning; 2015, with Editorial Revision (2016).

1.04 SUBMITTALS

- A. See contract Conditions and General Requirements for procedures.
- B. Provide submittal transmittals that include all submittal items identified in each submittal group below.
- C. Review Submittals - Preparatory:
 - 1. Product Data: Provide complete list of products to be used, with the following information for each:
 - a. Manufacturer's name, product name and/or catalog number, and general product category (e.g. "alkyd enamel").
 - b. Cross-reference to specified paint system(s) product is to be used in; include description of each system.
 - c. Manufacturer's installation instructions.
 - d. If proposal of substitutions is allowed under submittal procedures, explanation of substitutions proposed.
- D. Review Submittals - Samples:
 - 1. Samples: Submit three paper "draw down" samples, 8-1/2 by 11 inches in size, illustrating range of colors available for each finishing product specified.
 - a. Where sheen is specified, submit samples in only that sheen.
 - b. Where sheen is not specified, discuss sheen options with Architect before preparing samples, to eliminate sheens not required.
- E. Information Submittals - Preparatory:
 - 1. Certification: By manufacturer that paints and finishes comply with VOC limits specified.
 - 2. Manufacturer's Instructions: Indicate special surface preparation procedures.
 - 3. Maintenance Data: Submit data including product technical data sheets, material safety data sheets (MSDS), care and cleaning instructions, touch-up procedures, repair of painted and finished surfaces, and color samples of each color and finish used.

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 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. Do not apply exterior paint and finishes during rain or snow, or when relative humidity is outside the humidity ranges required by the paint product manufacturer.
- D. Minimum Application Temperatures for Latex Paints: 50 degrees F for exterior; 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:
 - 1. Sherwin Williams (SW). www.sherwin-williams.com.
 - 2. Hallman-Lindsay (HL). www.hallmanlindsay.com.
- C. Primer Sealers: Same manufacturer as top coats.
- D. Substitutions: See contract Conditions and General Requirements for requirements.

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. 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. For opaque finishes, tint each coat including primer coat and intermediate coats, one-half shade lighter than succeeding coat, with final finish coat as base color.
 - 4. Supply each paint material in quantity required to complete entire project's work from a single production run.
 - 5. Do not reduce, thin, or dilute paint or finishes or add materials unless such procedure is described explicitly in manufacturer's product instructions.
- B. Sheens: Provide the sheens specified; where sheen is not specified, sheen will be selected later by Architect from the manufacturer's full line.
- C. Colors: To be selected from manufacturer's full range of available colors.
 - 1. Selection to be made by Architect after award of contract.
 - 2. Allow for minimum of three colors for each system, unless otherwise indicated, without additional cost to Owner.
 - 3. Extend colors to surface edges; colors may change at any edge as directed by Architect.

2.03 PAINT SYSTEMS

- A. EPS 1 Ferrous Material Primed & Un-primed: Acrylic Semi-Gloss, spray applied:
 - 1. (SW) Prep surface with SSPC-SP2. One coat ProCryl Universal Primer and two coats Sher-Cryl HPA High Performance Acrylic B66-300 Series.
 - 2. (HL) Prep surface with SSPC-SP2. One coat Metalguard DTM Acrylic Primer/finish 338 and two coats Rustoleum High Performance DTM Acrylic 3800.

2.04 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: Original Bondo filler for sheetmetal.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Do not begin application of paints and finishes until substrates have been properly prepared.
- B. Verify that surfaces are ready to receive work as instructed by the product manufacturer.
- C. Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially affect proper application.
- D. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.
- E. Test shop-applied primer for compatibility with subsequent cover materials.

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. Fill dings and damage in existing metal panels.
- C. Remove items or mask adjacent surfaces and items 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.
- F. Ferrous Metal:
 - 1. Coordinate surface preparation in accordance with requirements of selected paint/coating supplier recommendations.
 - 2. Solvent clean according to SSPC-SP 1.
 - 3. 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.
 - 4. Remove rust, loose mill scale, and other foreign substances using methods recommended in writing by paint manufacturer. Protect from corrosion until coated. Apply rust converter as required.

3.03 APPLICATION

- A. Remove louvers and paint separately.
- B. Apply products in accordance with manufacturer's written instructions.
- C. Where adjacent sealant is to be painted, do not apply finish coats until sealant is applied.
- D. Do not apply finishes to surfaces that are not dry. Allow applied coats to dry before next coat is applied.
- E. Apply each coat to uniform appearance.
- F. Dark Colors and Deep Clear Colors: Regardless of number of coats specified, apply additional coats until complete hide is achieved.
- G. Use tack cloth to remove dust and particles just prior to applying next coat.

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 22 43
FABRICATED SLIDING PARTITIONS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Fabricated sliding partitions.

1.02 RELATED REQUIREMENTS

- A. Applicable provisions of Division 1 govern work under this Section.
- B. Section 06 10 00 - Rough Carpentry: Requirements for wood materials and fasteners.

1.03 REFERENCE STANDARDS

- A. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2025a.
- B. ASTM A666/A666M - Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar; 2024.

1.04 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements for procedures.
- B. Provide submittal transmittals that include all submittal items identified in each submittal group below.
- C. Review Submittals - Preparatory:
 - 1. Product Data: Manufacturer's descriptive literature for each component in partition assembly.
 - 2. Shop Drawings: Indicate layout, dimensions, identification of components, and interface with adjacent construction.
 - a. Include field measurements of openings.
 - b. Include:
 - 1) Requirements and details for support and bracing of overhead track.
 - 2) Installation details.
 - 3) Appearance of manufacturer-supplied door hardware and fittings.
- D. Maintenance Materials Submittals:
 - 1. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
 - a. Extra bottom guides, 6 count.
 - b. Extra side mount guides, 6 count.
 - c. Deliver stock of extra materials to Owner. Furnish extra materials from same manufactured lot as materials installed and enclosed in protective packaging with appropriate identifying labels.

1.05 QUALITY ASSURANCE

- A. Fabricator Qualifications: Minimum three years of experience designing, assembling, and installing partition assemblies similar to those specified in this section.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Store products in manufacturer's unopened packaging until installation.

PART 2 PRODUCTS

2.01 SLIDING PANELS:

- A. See plans and details on sheet A102 for configuration.
- B. Overhead Track and Hardware:
 - 1. Johnson Products Inc.; Johnson Hardware 200 MD Multi-Pass Sliding Door Hardware; www.johnsonhardware.com.
 - a. Configuration: 6-Door Configuration with Trackless Guide.
 - b. Components: 2 count, 200MD Assembly:
 - 1) 200MD Hardware Sets:
 - (a) 200 Series Track.
 - (b) 1050 Guide Track.
 - (c) 1705 Door Guides.
 - (d) 2020 Ball Bearing Door Hangers.
 - (e) Hardware Mounting Screws.
 - 2) 2055 Track Stops.
 - 3) 2033 Side Mount 1/34" Door Guide.

2.02 MATERIALS

- A. Galvanized Steel: ASTM A653/A653M, with G90/Z275 zinc coating; minimum 24-gauge, 0.0239-inch thick base metal.
- B. See requirement for wood materials and fasteners in Section 06 10 00.
- C. Stainless Steel Components: Comply with ASTM A666/A666M, Type 304.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify track supports are laterally braced and permit track leveling within 1/4 inch of required position, parallel to floor surface.
- B. Verify floor flatness of 1/8 inch in 10 feet, noncumulative.
- C. Do not begin installation until supports and adjacent substrates are prepared in accordance with manufacturer's instructions.
- D. Notify Architect of unsatisfactory preparation before proceeding if another installer is responsible for substrate preparation.

3.02 PREPARATION

- A. Clean substrates thoroughly prior to installation.
- B. Prepare substrates using methods recommended by manufacturer for achieving best result for substrate under project conditions.

3.03 FABRICATION

- A. Assemble wood, sheet metal, door hardware in accordance with details and manufacturer instructions.
- B. Route exposed corners of dimensional lumber to minimum 3/16" radius.

3.04 INSTALLATION

- A. Shim track for level installation.
- B. Install in accordance with track hardware manufacturer's instructions.
- C. Fit and align partition assembly level and plumb.

3.05 ADJUSTING

- A. Adjust partition to operate smoothly from stacked to fully extended position.

3.06 PROTECTION

- A. Protect installed products and materials until Date of Substantial Completion.
- B. Touch up, repair, or replace damaged products before Date of Substantial Completion.

END OF SECTION

Page Intentionally Left Blank

SECTION 12 36 00
COUNTERTOPS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Countertops for architectural cabinet work.

1.02 RELATED REQUIREMENTS

- A. Applicable provisions of Division 1 govern the work of this section.
- B. Section 06 41 00 - Architectural Wood Casework: Casework - Single source the work of these sections.
- C. Owner will provide plumbing fixtures salvaged from another project. Coordinate with Owner.

1.03 REFERENCE STANDARDS

- A. ANSI A208.1 - American National Standard for Particleboard; 2022.
- B. ANSI/AWI 0641 - Architectural Wood Casework; 2019.
- C. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2026.
- D. AWI 300 - Materials; 2018.

1.04 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements for procedures.
- B. Provide submittal transmittals that include all submittal items identified in each submittal group below.
- C. Review Submittals - Preparatory:
 - 1. Product Data: Manufacturer's data sheets on each product to be used, including:
 - a. Preparation instructions and recommendations.
 - b. Storage and handling requirements and recommendations.
 - c. Specimen warranty.
- D. Shop Drawings: Complete details of materials and installation ; combine with shop drawings of cabinets and casework specified in other sections.
- E. Review Submittals - Samples:
 - 1. Verification Samples: For each finish product specified, minimum size 6 inches square, representing actual product, color, and patterns.
- F. Information Submittals - Preparatory:
 - 1. Test Reports: Chemical resistance testing, showing compliance with specified requirements.
 - 2. Installation Instructions: Manufacturer's installation instructions and recommendations.
- G. Closeout Submittals:
 - 1. 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. Quality Standard: Match Section 06 41 00.
- B. Plastic Laminate Countertops: High-pressure decorative laminate (HPDL) sheet bonded to substrate.
 - 1. Laminate Sheet: NEMA LD 3, Grade HGS, 0.048 inch nominal thickness.
 - a. Horizontal Surfaces: HGS, 0.048 inch nominal thickness, through color, color as selected, finish as indicated.
 - b. Manufacturers: Basis of Design: Nevamar, Veto Proof.
 - 1) Formica Corporation: www.formica.com.
 - 2) Panolam Industries International, Inc: Including brands Panolam, Nevemar and Pionite; www.panolam.com.
 - 3) Wilsonart LLC: www.wilsonart.com.
 - 4) Substitutions: See Section 01 25 00 - Substitution Procedures for requirements.
 - (a) Submit substitutions to A/E for pre-bid authorization.
 - c. Surface Burning Characteristics: Flame spread index of 25, maximum; smoke developed index of 450, maximum; when tested in accordance with ASTM E84.
 - d. Surface Color and Pattern: As selected by Architect from the manufacturer's full line.
 - 2. Exposed Edge Treatment: Square, substrate built up to minimum 1 1/2 inch thick; covered with matching laminate.
 - 3. Back and End Splashes: Same material, same construction.

2.02 MATERIALS

- A. Panel Cores:
 - 1. Moisture-Resistant Cores: Provide color-tinting or other distinguishing markings to indicate cores with moisture-resistant or fire-resistant properties.
 - 2. Particleboard (PTB):
 - a. Application: Countertops and Backsplash.
 - b. Description: Composite panel composed of cellulosic particles, additives, and bonding system; comply with ANSI A208.1.
 - c. Grade:
 - 1) M-2.
 - d. Thickness: As indicated.
 - e. Moisture-Resistant Category: MR50.
- B. Wood-Based Components:
 - 1. Wood fabricated from old growth timber is not permitted.
 - 2. Wood fabricated from timber recovered from riverbeds or otherwise abandoned is permitted, unless otherwise noted, provided it is clean and free of contamination; identify source; provide lumber re-graded by an inspection service accredited by the American Lumber Standard Committee, Inc.
- C. Adhesives: Chemical resistant waterproof adhesive as recommended by manufacturer of materials being joined.
- D. Joint Sealant: Mildew-resistant silicone sealant, color as selected by A/E.

2.03 FABRICATION

- A. Fabricate in accordance with standards governing fabrication quality that are specified in Section 06 41 00.

- B. 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 or otherwise noted.
 - 3. Prepare all cutouts accurately to size; replace tops having improperly dimensioned or unnecessary cutouts or fixture holes.
- C. Provide back/end splash wherever counter edge abuts vertical surface unless otherwise indicated.
 - 1. Install plastic laminate to bottom edge of back splash.
 - 2. Secure to countertop with concealed fasteners and with contact surfaces set in waterproof glue.
 - 3. Height: 4 inches, unless otherwise indicated.

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 Architect 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 plastic laminate countertops using screws with minimum penetration into substrate board of 5/8 inch.
- C. Seal joint between back/end splashes and vertical surfaces.

3.04 CLEANING

- A. Clean countertops surfaces thoroughly.

3.05 CLEANING AND 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

Page Intentionally Left Blank

**SECTIONS 26 00 01
TABLE OF CONTENTS**

Division 26 – Electrical

<u>Section Number</u>	<u>Title</u>
26 05 00	COMMON WORK RESULTS FOR ELECTRICAL
26 05 04	CLEANING, INSPECTION AND TESTING ELECTRICAL EQUIPMENT
26 05 19	LOW VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES
26 05 23	CONTROL-VOLTAGE ELECTRICAL POWER CABLES
26 05 26	GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS
26 05 29	HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS
26 05 33	RACEWAY AND BOXES FOR ELECTRICAL SYSTEMS
26 05 53	IDENTIFICATION FOR ELECTRICAL SYSTEMS
26 24 13	SWITCHBOARDS
26 24 16	PANELBOARDS
26 27 02	EQUIPMENT WIRING SYSTEMS
26 27 26	WIRING DEVICES
26 27 28	DISCONNECT SWITCHES
26 28 13	FUSES
26 28 16	ENCLOSED SWITCHES AND CIRCUIT BREAKERS
26 51 13	LED LIGHTING FIXTURES

END OF SECTION 26 00 01

Page Intentionally Left Blank

SECTION 26 05 00
COMMON WORK RESULTS FOR ELECTRICAL

PART 1 GENERAL

1.01 RELATED WORK

- A. Applicable provisions of Division 1 govern work under this Section.

1.02 REFERENCE STANDARDS

- A. Abbreviations of standards organizations referenced in this and other sections are as follows:
 - 1. ANSI American National Standards Institute
 - 2. ASTM American Society for Testing and Materials
 - 3. EPA Environmental Protection Agency
 - 4. ETL Electrical Testing Laboratories, Inc.
 - 5. IEEE Institute of Electrical and Electronics Engineers
 - 6. IES Illuminating Engineering Society
 - 7. ISA Instrument Society of America NBS National Bureau of Standards
 - 8. NEC National Electric Code
 - 9. NEMA National Electrical Manufacturers Association
 - 10. NESC National Electrical Safety Code
 - 11. NFPA National Fire Protection Association
 - 12. UL Underwriters Laboratories Inc.
 - 13. DSPS Wisconsin Department of Safety and Professional Services

1.03 REGULATORY REQUIREMENTS

- A. All work and materials are to conform in every detail to applicable rules and requirements of the National Electrical Code (NFPA 70), other applicable National Fire Protection Association codes, the National Electrical Safety Code, and present manufacturing standards (including NEMA).
- B. All Division 26 work shall be done under the direction of a currently certified State of Wisconsin Certified Master Electrician.

1.04 QUALITY ASSURANCE

- A. Where equipment or accessories are used which differ in arrangement, configuration, dimensions, ratings, or engineering parameters from those indicated on the contract documents, the contractor is responsible for all costs involved in integrating the equipment or accessories into the system and the assigned space, and for obtaining the performance from the system into which these items are placed.
- B. Manufacturer references used herein are intended to establish a level of quality and performance requirements unless more explicit restrictions are stated to apply.
- C. All materials shall be listed by and shall bear the label of an approved electrical testing laboratory. If none of the approved electrical testing laboratories has published standards for a particular item, then other national independent testing standards, if available, applicable, and approved by South Shore School District, shall apply and such items shall bear those labels. Where one of the approved electrical testing laboratories has an applicable system listing and label, the entire system shall be so labeled.

1.05 CONTINUITY OF EXISTING SERVICES AND SYSTEMS

- A. No outages shall be permitted on existing systems except at the time and during the interval specified by the user agency and by the Project Representative. The institution may require written approval. Any outage must be scheduled when the interruption causes the least interference with normal institutional schedules and business routines. No extra costs will be paid to the Contractor for such outages which must occur outside of regular weekly working hours.
- B. This Contractor shall restore any circuit interrupted as a result of this work to proper operation as soon as possible.

1.06 PROTECTION OF FINISHED SURFACES

- A. Furnish one can of touch-up paint for each different color factory finish furnished by the Contractor. Deliver touch-up paint with other "loose and detachable parts" as covered in the General Requirements.

1.07 APPROVED ELECTRICAL TESTING LABORATORIES

- A. The following laboratories are approved for providing electrical product safety testing and listing services as required in these specifications:
 - 1. Underwriters Laboratories Inc.
 - 2. Electrical Testing Laboratories, Inc.

1.08 SEALING AND FIRESTOPPING

- A. By Electrical Contractor.

1.09 WTC SPARTA SIM CITY EQUIPMENT AND WORK

- A. Telecommunication's:
 - 1. Future work.

2. 1.10 PROVISIONS FOR FUTURE WORK

- A. Pull strings and weatherproof endcaps.

1.11 INTENT

- A. The Contractor shall furnish and install all the necessary materials, apparatus, and devices to complete the electrical equipment and systems installation herein specified, except such parts as are specifically exempted herein.
- B. If an item is either called for in the specifications or shown on the plans, it shall be considered sufficient for the inclusion of said item in this contract. If a conflict exists within the Specifications or exists within the Drawings, the Contractor shall furnish the item, system, or workmanship, which is the highest quality, largest, or most closely fits South Shore School District intent. Refer to the General Conditions of the Contract for further clarification.
- C. It must be understood that the details and drawings are diagrammatic. The Contractor shall verify all dimensions at the site and be responsible for their accuracy.
- D. All sizes as given are minimum except as noted.
- E. Materials and labor shall be new (unless noted or stated otherwise), first class, and workmanlike, and shall be subject at all times to the South Shore School District and/or A/E's inspections, tests and approval from the commencement until the acceptance of the completed work.
- F. Whenever a particular manufacturer's product is named, it is intended to establish a level of quality and performance requirements unless more explicit restrictions are stated to apply.

1.12 OMISSIONS

- A. No later than ten (10) days before bid opening, the Contractor shall call the attention to any materials or apparatus the Contractor believes to be inadequate and to any necessary items of work omitted.

1.13 SUBMITTALS (ELECTRONIC IS ACCEPTABLE)

- A. Submit for all equipment and systems as indicated in the respective specification sections, marking each submittal with that specification section number. Mark general catalog sheets and drawings to indicate specific items being submitted and proper identification of equipment by name and/or number, as indicated in the contract documents. Failure to do this may result in the submittal(s) being returned to the Contractor for correction and resubmission. Failing to follow these instructions does not relieve the Contractor from the requirement of meeting the project schedule.
- B. On request from the A/E, the successful bidder shall furnish additional drawings, illustrations, catalog data, performance characteristics, etc.
- C. Submittals shall be grouped to include complete submittals of related systems, products, and accessories in a single submittal. Mark dimensions and values in units to match those specified. Include wiring diagrams of electrically powered equipment.
- D. The submittals must be approved before fabrication is authorized.
- E. Submit sufficient quantities of submittals to allow the following distribution:
 - 1. Operating and Maintenance Manuals 2 copies
 - 2. User agency 1 copy
 - 3. A/E 1 copy
 - 4. WTC Field Office 1 copy

1.14 PROJECT/SITE CONDITIONS

- A. Install Work in locations shown on drawings, unless prevented by project conditions.
- B. Prepare drawings showing proposed rearrangement of work to meet project conditions, including changes to work specified in other sections. Obtain permission before proceeding.
- C. Tools, materials and equipment shall be confined to areas designated by the South Shore School District and or the Users Agent.
- D. Ceilings are used for environmental air distribution. ALL low voltage wiring and cables shall be **PLENUM** rated.

1.15 WORK SEQUENCE AND SCHEDULING

- A. Install work in phases to accommodate user agency's occupancy requirements. During the construction period coordinate electrical schedule and operations with South Shore School District Construction Representative.

1.16 WORK BY OTHER TRADES

- A. Every attempt has been made to indicate in this trade's specifications and drawings all work required of this Contractor. However, there may be additional specific paragraphs in other trade specifications and addenda, and additional notes on drawings for other trades which pertain to this trade's work, and thus those additional requirements are hereby made a part of these specifications and drawings.

- B. Electrical details on drawings for equipment to be provided by others are based on preliminary design data only. This Contractor shall lay out the electrical work and shall be responsible for its correctness to match equipment actually provided by others.

1.17 SALVAGE MATERIALS

- A. None

1.18 CERTIFICATES AND INSPECTIONS

- A. Obtain and pay for all required Local Electrical installation inspections.
- B. This contractor is responsible for coordination of electrical inspections.

1.19 OPERATION AND MAINTENANCE DATA

- A. All operations and maintenance data shall comply with the submission and content requirements specified under section GENERAL REQUIREMENTS.
- B. In addition to the general content specified under GENERAL REQUIREMENTS supply the following additional documentation:
 - 1. Manufacturer's wiring diagrams for electrically powered equipment.

1.20 RECORD DRAWINGS

- A. The Contractor shall maintain at least one copy each of the specifications and drawings on the job site at all times.
- B. The A/E will provide the Contractor with a suitable set of contract drawings on which daily records of changes and deviations from contract shall be recorded. Dimensions and elevations on the record drawings shall locate all buried or concealed piping, conduit, or similar items.
- C. The daily record of changes shall be the responsibility of Contractor's field superintendent. No arbitrary mark-ups will be permitted.
- D. At completion of the project, the Contractor shall submit the marked-up record drawings to the A/E prior to final payment.

PART 2 PRODUCTS

2.01 ACCESS PANELS AND DOORS

- A. Hard deck Ceilings: surface mounted fixtures 1x4, 1x8.
- B. Concealed Spline Ceilings: Removable sections of ceiling tile held in position with metal slats or tabs compatible with the ceiling system used will be provided under other divisions.
- C. Metal Pan Ceilings: Removable sections of ceiling tile held in position by pressure fit will be provided under other divisions.
- D. Plaster Walls and Ceilings: 16-gauge frame with not less than a 20-gauge hinged door panel, prime coated steel for general applications, stainless steel for use in toilets, showers and similar wet areas, concealed hinges, screwdriver operated cam latch for general application, key lock for use in public areas, UL listed for use in fire rated partitions if required by the application. Use the largest size access opening possible, consistent with the space and the equipment needing service; minimum size is 12" by 12".

2.02 IDENTIFICATION

- A. See Electrical section 26 05 53 – Identification for Electrical Systems.
- B. Provide an adhesive type of label on the cover plate of each duplex and double-duplex receptacle with branch-circuit number.

2.03 SEALING AND FIRESTOPPING

- A. Fire and/or Smoke Rated Penetrations:
 - 1. Manufacturers: 3M, STI/SpecSeal, Tremco, Hilti or approved equal.
 - 2. All firestopping systems shall be by the same manufacturer.
 - 3. Submittals: Contractor shall submit product data for each firestop system. Submittals shall include product characteristics, performance and limitation criteria, test data, MSDS sheets, installation details and procedures for each method of installation applicable to this project. For non-standard conditions where no UL tested system exists, submit manufacturer's drawings for UL system with known performance for which an engineering judgment can be based upon.
 - 4. Product: Firestop systems shall be UL listed or tested by an independent testing laboratory.
 - 5. Use a product that has a rating not less than the rating of the wall or floor being penetrated. Reference architectural drawings for identification of fire and/or smoke rated walls and floors.
 - 6. Refer to Architectural Drawings for identification of smoke partitions and fire rated walls. Contractor shall use firestop putty, caulk sealant, intumescent wrap strips, intumescent firestop

collars, firestop mortar or a combination of these products to provide a UL listed system for each application required for this project. Provide mineral wool backing where specified in manufacturer's application detail.

B. Non-rated penetrations:

1. Conduit Penetrations: At conduit penetrations of non-rated interior partitions, floors and exterior walls above grade, use urethane caulk in annular space between conduit and sleeve, or the core drilled opening.

PART 3 EXECUTION

3.01 EXCAVATION AND BACKFILL

- A. Perform all excavation and backfill work to accomplish indicated electrical systems installation.

3.02 CONCRETE WORK

- A. As noted on drawings.

3.03 CUTTING AND PATCHING

- A. Refer to Division 1, General Requirements, Cutting and Patching.

3.04 BUILDING ACCESS

- A. Arrange for the necessary openings in the building to allow for admittance of all apparatus. When the building access was not previously arranged and must be provided by this contractor, restore any opening to its original condition after the apparatus has been brought into the building.

3.05 EQUIPMENT ACCESS

- A. Install all piping, conduit, ductwork, and accessories to permit access to equipment for maintenance. Coordinate the exact location of wall and ceiling access panels and doors with the General Contractor, making sure that access is available for all equipment and specialties. Where access is required in plaster or drywall walls or ceilings, furnish the access doors to the General Contractor and reimburse the General Contractor for installation of those access doors.

3.06 COORDINATION

- A. The Contractor shall cooperate with other trades in locating work in a proper manner. Should it be necessary to raise or lower or move longitudinally any part of the electrical work to better fit the general installation, such work shall be done at no extra cost, provided such decision is reached prior to actual installation. The Contractor shall check location of electrical outlets with respect to other installations before installing.
- B. The Contractor shall verify that all devices are compatible for the surfaces on which they will be used. This includes, but is not limited to light fixtures, panelboards, devices, etc. and recessed or semi-recessed heating units installed in/on architectural surfaces.
- C. Coordinate all work with other contractors prior to installation. Any installed work that is not coordinated and that interferes with other contractor's work shall be removed or relocated at the installing contractor's expense.

3.07 SLEEVES

- A. Pipe sleeves for conduits 6" in diameter and smaller, in new poured concrete construction, shall be schedule 80 PVC, all cast in place.
- B. In wet area floor penetrations, the top of the sleeve shall be 2 inches above the adjacent floor. In existing wet area floor areas, core drill sleeve openings large enough to insert a schedule 80 sleeve and grout the area around the sleeve. If a pipe clamp resting on the sleeve supports the pipe penetrating the sleeve, weld a collar or struts to the sleeve that will transfer weight to the existing floor structure. Wet areas for this paragraph are rooms or spaces containing air handling unit coils, converters, pumps, chillers, boilers, and similar waterside equipment.

3.08 SEALING AND FIRESTOPPING

A. Fire and/or Smoke Penetrations:

1. Install approved product in accordance with the manufacturer's instructions where a pipe (i.e., conduit, wireway, trough, etc.) penetrates a fire rated surface.
2. Where firestop mortar is used to infill large fire-rated floor openings that could be required to support weight, provide permanent structural forming. Firestop mortar alone is not adequate to support any substantial weight.

B. Non-Rated Surfaces:

1. When the opening is through a non-fire rated wall, floor, ceiling or roof the opening must be sealed using an approved type of material.
2. Install escutcheons or floor/ceiling plates where conduit, penetrates non-fire rated surfaces in occupied spaces. Occupied spaces for this paragraph include only those rooms with finished ceilings and the penetration occurs below the ceiling.
3. In exterior wall openings below grade, assemble rubber links of mechanical seal to the proper size for the conduit and tighten in place, in accordance with the manufacturer's instructions. Install so that the bolts used to tighten the seal are accessible from the interior of the building.

1.09 HOUSEKEEPING AND CLEAN UP

- #### **A.**
- The Contractor shall clean up and remove from the premises, daily, all debris and rubbish resulting from its work and shall repair all damage to new and existing equipment resulting from its work. When job is complete, this Contractor shall remove all tools, excess material and equipment, etc., from the site.

3.10 TEMPORARY ELECTRICAL WORK

- #### **A.**
- Temporary Electric Power shall be fed from existing panelboards located in the South Shore School. The Electrical contractor shall coordinate thoroughly with South Shore School District Maintenance Department to determine best source for Temporary Electric Power. South Shore School District shall pay for monthly electric service.
- #### **B.**
- If a Contractor contemplates the use of equipment that requires a different voltage or greater capacity than that specified, then that Contractor must arrange with South Shore School District for this additional service and pay for installation of the service and the necessary additional switches and wiring required.
- #### **C.**
- The meter shall remain in South Shore School District name.
- #### **D.**
- South Shore School District shall pay for all electrical energy consumed for construction purposes for all trades including temporary offices, for operation of ventilating equipment, for heating of building, and for testing and operating of all equipment.
- #### **E.**
- Any Trade that has a temporary office shall provide and pay for installation of temporary service for lighting of such temporary office.
- #### **F.**
- The Electrical Contractor shall provide, at no cost to others, all lamps, wiring, switches, sockets, and similar equipment required for temporary system until substantial completion. Upon completion of the project, the Electrical Trade shall remove the existing temporary electric power system.
- #### **G.**
- The temporary lighting system shall be sufficient to enable all trades to safely complete their work. Illumination shall be 5 foot-candles minimum in all areas and, in addition, shall meet or exceed the requirements of 29 CFR 1926.56 Illumination (OSHA regulations).
- #### **H.**
- Provide at least one duplex outlet for small power tools for each 400 square feet of floor space, 120-volt single phase. Circuits shall be 20 ampere, single pole.
- #### **I.**
- In accordance with the latest issue of the National Electrical Code, all temporary electrical circuits for construction purposes shall be equipped with combination ground fault interrupter and circuit breakers meeting the requirements of UL for Class A, Group 1 devices. The ground fault interrupter portion shall be solid state type, insulated and isolated from the breaker mechanism. A test button shall be provided for checking the device. The breaker mechanism shall provide overload and short

circuit protection and shall be operated by a toggle switch with over-current switching mechanism so that contact cannot be held closed.

- J. All Trades shall furnish their extension cords and lamps other than those furnished for general lighting.
- K. All Trades and other separate Contractors shall be allowed to use the service provided for general lighting and fractional horsepower hand tools at no cost.
- L. Those trades requiring lighting or other electrical service outside of building shall pay for the installation and removal of service, maintenance charges.
- M. Trades requiring voltage other than basic temporary system specified, shall make their own arrangements with the Electrical Contractor for the cost of installation, and removal when no longer required.
- N. Heating and Ventilating Trade shall provide wiring, equipment, and connections for portable or temporary heating units.
- O. The Electrical Contractor shall expedite the work under this contract in such a manner that the permanent power wiring system and panels will be installed and connected to permanent heating and ventilating equipment in time to operate and test this equipment when the building has been closed sufficiently to permit the use of portions of heating and ventilating system for temporary heating during construction. Permanent wiring and connections may be used at permanent equipment; however, the use of the permanent system during construction shall in no way waive any part of the guarantee period.
- P. After Substantial Completion of the permanent electrical system and building wiring, permanent receptacles may be used during finishing work. Permanent wiring for lighting fixtures, switches and receptacles shall be installed only after all masonry and plastering has been completed, but this wiring shall not be used for motors larger than fractional HP or for welding equipment. Circuits for larger motors and welding equipment may be provided with special circuits to mains of electrical panels at the expense of those trades requiring them, provided that special permission is obtained from South Shore School District Project Representative and the installation is made by skilled electricians.

3.11 WARRANTY

- A. Electrical contractors shall provide a 1-year minimum warranty for product and labor.

END OF SECTION 26 05 00

Page Intentionally Left Blank

SECTION 26 05 04

CLEANING, INSPECTION, AND TESTING OF ELECTRICAL EQUIPMENT

PART 1 GENERAL

1.01 RELATED WORK

- A. Applicable provisions of Division 1 govern work under this Section.

PART 2 PRODUCTS

- A. Not Used.

PART 3 EXECUTION

3.01 GENERAL INSPECTION AND CLEANING OF ALL ELECTRICAL EQUIPMENT

- A. Inspect for physical damage and abnormal mechanical and electrical conditions.
- B. Any item found to be out of tolerance, or in any other way defective as a result of the required inspection or testing, shall be reported. Procedure for repair and/or replacement will be outlined. After appropriate corrective action is completed, the item shall be re-tested.
- C. Compare equipment nameplate information with the latest single line diagram and report any discrepancies.
- D. Verify proper auxiliary device operation and indicators.
- E. Check tightness of accessible bolted electrical joints. Use torque wrench method.
- F. Make a close examination of equipment and remove any shipping brackets, insulation, packing, etc. that may not have been removed during original installation.
- G. Make a close examination of equipment and remove any dirt or other forms of debris that may have collected in existing equipment or in new equipment during installation.
- H. Clean All Equipment:
 - 1. Vacuum inside of panelboards, switchboards, switchgear, fire alarm panels, comm/data, security panel, etc.
 - 2. Loosen attached particles and vacuum them away.
 - 3. Wipe all insulators with a clean, dry, lint free rag.
 - 4. Clean insulator grooves.
 - 5. Re-vacuum inside surfaces as directed by the St. Charles School District Construction Representative or Inspector
- I. Inspect equipment anchorage.
- J. Inspect equipment and bus alignment.
- K. Check all heater elements for operation and control.
- L. Lubricate nonelectrical equipment per manufacturer's recommendations.

3.02 GROUNDING SYSTEMS

- A. Inspect the ground system for adequate termination at all devices.

3.03 METERING AND INSTRUMENTATION (IF REQUIRED)

- A. Examine all devices for broken parts, damage and wire connection tightness.
- B. Verify the electronic meter is connected properly and displays proper voltage and power quantities.
- C. Inspect nameplate information for compatibility with one-line drawings.
- D. Verify the instrument transformer connections with the system requirements.
- E. Verify tightness of all bolted connections and assure adequate clearances exist from primary circuits to secondary circuit wiring and to grounds.
- F. Verify that all required grounding and shorting connections exist and that those connections have

good contact: i.e. sufficient surface area, good cleanliness, and proper pressure.

G. Verify proper primary and secondary fuses and required sizes.

3.04 MECHANICAL AND ELECTRICAL INTERLOCK SYSTEM

- A. Physically test each system to insure proper function, operation, and sequencing.
- B. Closure attempt shall be made on locked open devices.
- C. Opening attempt shall be made on locked closed devices.
- D. Key exchange shall be made with devices operated in off normal positions.

3.05 DISTRIBUTION/BRANCH CIRCUIT PANELBOARDS (LOW VOLTAGE)

- A. Visual and Mechanical Inspection:
 - 1. Inspect physical, electrical, and mechanical conditions. Re-torque all bolted connections.
 - 2. Compare equipment nameplate information with latest single line diagram and report discrepancies.
 - 3. Inspect for proper alignment, anchorage, and grounding
 - 4. All doors, panels and sections shall be inspected for paint, dents, scratches, and fit.
 - 5. Inspect cleanliness
- B. Clean panelboard enclosure using the following methods:
 - 1. Loosen attached particles and vacuum them away.
 - 2. Wipe all porcelain with a clean, dry, lint-free rag.
 - 3. Clean all insulator grooves.
 - 4. Vacuum inside of switchgear enclosure
 - 5. Lubricate per manufacturer's recommendations.
- C. All active components shall be exercised and cleaned where possible.
- D. All indicating devices shall be inspected for proper operation.

3.06 CABLES

- A. 600 Volt cable:
 - 1. Visually inspect cables, lugs, connectors and all other components for physical damage and proper connections.
 - 2. Check all cable connectors for tightness (with a torque wrench) and clearances. Torque test conductor terminations to manufacturer's recommendations.

3.07 PANELBOARDS

- A. Torque all the connections per the manufacturers spec. Verify phase wires, color coding, separate neutral and mechanical bonding. Verify circuit breaker operation. Verify the directory.

3.08 LIGHT FIXTURES

- A. Check the bonding and proper lamping. Verify that recessed fixtures are installed with hold down clips. Confirm operation of the fixture with the proper switch or sensor.

3.09 OCCUPANCY SENSORS

- A. Confirm operation of the sensor per the manufacturers spec.

3.10 BATTERY PACK EMERGENCY LIGHTING (IF AVAILABLE)

- A. Verify the operation per the manufacturers spec and run all of the diagnostic steps. Confirm proper grounding and location.

3.11 UPS SYSTEM

- A. Operate and test the system per the manufacturer's spec.

3.12 MOTOR STARTERS

- A. Verify the control circuits. Confirm the fusing and the grounding of the control transformers. Torque all of the connections. Confirm the overload elements and the circuit breakers (fuse) for proper sizing. Verify all grounding. Operate and test each motor starter for proper operation.

END OF SECTION 26 05 04

Page Intentionally Left Blank

SECTION 26 05 19

LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLE

PART 1 GENERAL

1.01 RELATED WORK

- A. Applicable provisions of Division 1 govern work under this Section. Section 26 0533 – Raceway and Boxes for Electrical Systems. Section 26 0526 – Grounding and Bonding for Electrical Systems. Section 26 0553 – Identification for Electrical Systems.

1.02 REFERENCES

- A. NFPA 70 - National Electrical Code

1.03 SUBMITTALS

- A. Submit product data: Provide for each cable assembly type.
- B. Submit factory test reports: Indicate procedures and values obtained. Not required.
- C. Submit shop drawings for modular wiring system including layout of distribution devices, branch circuit conduit and cables, circuiting arrangement, and outlet devices.
- D. Submit manufacturer's installation instructions. Indicate application conditions and limitations of use stipulated by product testing agency specified under Regulatory Requirements.

1.04 PROJECT CONDITIONS

- A. Verify that field measurements are as shown on Drawings.
- B. Conductor sizes are based on copper.
- C. Wire and cable routing shown on Drawings is approximate unless dimensioned. Route wire and cable as required to meet project conditions.
- D. Where wire and cable routing are not shown, and destination only is indicated, determine exact routing and lengths required.

PART 2 PRODUCTS

2.01 GENERAL

- A. All wire shall be new, delivered to the site in unbroken cartons and shall be less than one year old out of manufacturer's stock.
- B. All conductors shall be copper. All ground conductors shall be copper.
- C. Insulation shall have a 600-volt rating.
- D. All conductors shall be stranded.
 - 1. Stranded conductors may only be terminated with UL OR ETL Listed type terminations or methods: e.g., stranded conductors may not be wrapped around a terminal screw but must be terminated with a crimp type device or must be terminated in an approved back wired method.

2.02 BUILDING WIRE

- A. Description: Single conductor insulated wire 90-degree C.
- B. Insulation: Type THHN/THWN-2, XHHW-2 insulation.

2.03 SERVICE ENTRANCE CONDUCTORS

- A. Description:
 - 1. Single conductor or multi-conductor insulated wire. 90 degree C sized at the 75 degree C table.
- B. Insulation:
 - 1. Type USE-2, XHHW-2 insulation for service entrance conductors routed from exterior source to exterior termination location.
 - 2. Type XHHW-2 insulation for services entrance conductors routed from exterior source to interior termination location.

2.05 ABOVE GROUND WIRE FOR EXTERIOR WORK

- A. Description: Single conductor insulated wire, 90-degree C.
- B. Insulation: Type THHN/THWN-2, XHHW-2 insulation.

2.06 UNDERGROUND WIRE FOR EXTERIOR WORK

- A. Description: Stranded single or multiple conductors insulated wire, 90-degree C.
- B. Insulation: Type USE-2, XHHW-2, RHW-2 insulation.
- C. This wiring shall be used in all underground feeder and branch circuit applications.

2.07 WIRING CONNECTORS

- A. Split Bolt Connectors: Not acceptable.
- B. Solderless Pressure Connectors: High copper alloy terminal. May be used only for cable termination to equipment terminals. Not approved for splicing.
- C. Twist Type Wire Connectors: Solderless twist type spring connector (wire-nut) with insulating cover for copper wire splices and taps. Use for conductor sizes 10 AWG and smaller. The manufacturer's wire fill capacity must be followed.
- D. All wire connectors used in underground or exterior pull boxes shall be gel filled twist connectors, or a connector designed for damp and wet locations. Gel filled twist type connectors can be used for copper conductor sizes 6 AWG and smaller for site lighting applications. The manufacturer's wire fill capacity must be followed.
- E. Mechanical Connectors: Bolted type tin-plated; high conductivity copper alloy; spacer between conductors; beveled cable entrances.
- F. Compression (crimp) Connectors: Long barrel; seamless, tin-plated electrolytic copper tubing; internally beveled barrel ends. The connector shall be clearly marked with the wire size and type and proper number and location of crimps. The connector must be installed with a crimper tool listed for use with the manufacturer and type of compression connector.

PART 3 EXECUTION

3.01 GENERAL WIRING METHODS

- A. All power conductors wire and cable shall be installed in conduit.
- B. Do not use wire smaller than 12 AWG for power and lighting circuits.
- C. All conductors shall be sized to prevent excessive voltage drop at rated circuit ampacity. As a minimum use 10 AWG conductors for 20-ampere, 120-volt branch circuit home runs longer than 100 feet (30 m), and for 20-ampere, 277-volt branch circuit home runs longer than 200 feet (61 m).
- D. Make conductor lengths for parallel conductors equal.
- E. Splice only in junction or outlet boxes.
- F. No conductor less than 12 AWG shall be installed in exterior underground conduit.
- G. Identify ALL low voltage wire, 600V and lower, per section 26 0553.
- H. Neatly train and lace wiring inside boxes, equipment, and panelboard.

3.02 WIRING INSTALLATION IN RACEWAYS

- A. Pull all conductors into a raceway at the same time. Use Listed water or silicone-based wire pulling lubricant for pulling 4 AWG and larger wires and for other conditions when necessary. Wax based lubricants are not allowed. Pulling lubricant is not required for low friction type products where the cable manufacturer recommends that cables be pulled without lube.
- B. Install wire in raceway after interior of building has been physically protected from the weather and all mechanical work likely to injure conductors has been completed.
- C. Completely and thoroughly swab raceway system before installing conductors.

- D. Place all conductors of a given circuit (this includes phase wires, neutral (if any), and ground conductor) in the same raceway. If parallel phase and/or neutral wires are used, then place an equal number of phase and neutral conductors in same raceway or cable.
- E. VFD Installations: Install VFD input wiring and output wiring in separate conduit systems. Do not mix VFD input power and output power, or control wiring in a common raceway.
- F. In high ambient spaces, mechanical rooms, utility rooms and exterior exposed conduit, 90- degree C conductors shall be utilized.

3.03 WIRING CONNECTIONS AND TERMINATIONS

- A. Splice only in accessible junction boxes.
- B. Wire splices and taps shall be made firm, and adequate to carry the full current rating of the respective wire without soldering and without perceptible temperature rise.
- C. All splices shall be so made that they have an electrical resistance not in excess of two feet (600 mm) of the conductor.
- D. Use solderless twist type spring connectors (wire nuts) with insulating covers for wire splices and taps, 10 AWG and smaller.
- E. Use mechanical or compression connectors for wire splices and taps, 8 AWG and larger. Tape uninsulated conductors and connectors with electrical tape to 150 percent of the insulation value of the wiring.
- F. Thoroughly clean wires before installing lugs and connectors.
- G. At all splices and terminations, leave tails long enough to cut splice out and completely re- splice.

3.04 FIELD QUALITY CONTROL

- A. Field inspection and testing will be performed under the provisions of Section 26 05 04.

3.05 WIRE COLOR

- A. General:
 1. Solid colored insulation is required for all THHN/THWN-2 wire. For other wire types use colored wire or identify wire with colored tape at all terminals, splices, and boxes. Wire shall be colored as indicated below.
 2. In existing facilities, use existing color scheme.
 3. In new facilities, use black and red for single phase circuits at 120/240 volts, use Phase A black, Phase B red and Phase C blue for circuits at 120/208 volts single or three phase, and use Phase A brown, Phase B orange and Phase C yellow for circuits at 277/480 volts single or three phase. Note: This includes fixture whips except for Listed whips mounted by the fixture manufacturer on the fixture and Listed as a System.
 4. All switch legs shall be the same color as their associated circuit. Traveler conductors run between 3 and 4-way switches shall be colored pink or purple.
- B. Neutral Conductors: White for 120/208V and 120/240V systems, Gray for 277/480V systems. Where there are two or more neutrals in one conduit, each shall be individually identified with a different stripe.
- C. Branch Circuit Conductors: Three or four wire home runs shall have each phase uniquely color coded.
- D. Feeder Circuit Conductors: Each phase shall be uniquely color coded.
- E. Ground Conductors: Green colored insulation for THHN/THWN-2 wire. For other wire types use green colored wire or identify wire with green tape at both ends and at all access points, such as panelboards, motor starters, disconnects and junction boxes. When isolated grounds are required, the contractor shall provide green with yellow tracer.

3.06 BRANCH CIRCUITS

- A. The use of single-phase, multi-wire branch circuits with a common neutral is not permitted. All single-phase branch circuits shall be furnished and installed with an individual accompanying neutral, sized the same as the phase conductors.

END OF SECTION 26 05 19

SECTION 26 05 23

CONTROL-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES

PART 1 GENERAL

1.01 RELATED WORK

- A. Applicable provisions of Division 1 govern work under this Section.
Section 26 0533 – Raceway and Boxes for Electrical Systems.
Section 26 0553 – Identification for Electrical Systems.

1.02 REFERENCES

- A. NFPA 70 - National Electrical Code.

1.03 SUBMITTALS

- A. Submit product data: Provide for each cable assembly type.
- B. Submit manufacturer's installation instructions. Indicate application conditions and limitations of use stipulated by product testing agency specified under Regulatory Requirements.

1.04 PROJECT CONDITIONS

- A. Verify that field measurements are as shown on Drawings.
- B. Conductor sizes are based on copper.
- C. Wire and cable routing shown on Drawings is approximate unless dimensioned. Route wire and cable as required to meet Project Conditions.
- D. Where wire and cable routing are not shown, and destination only is indicated, determine exact routing and lengths required.

PART 2 PRODUCTS

2.01 GENERAL

- A. All wire shall be new, delivered to the site in unbroken cartons and shall be less than one year old out of the manufacturer's stock.
- B. All conductors shall be copper.
- C. Insulation shall have a 600-volt rating.
- D. All conductors must be suitable for the application intended. Conductors #12 and smaller may be solid or stranded with the following requirements or exceptions:
 - 1. All conductors terminated with crimp type devices must be stranded.
 - 2. Stranded conductors may only be terminated with UL OR ETL Listed type terminations or methods: e.g., stranded conductors may not be wrapped around a terminal screw but must be terminated with a crimp type device or must be terminated in an approved back wired method.
 - 3. All low voltage cables shall be **PLENUM** rated.

2.02 REMOTE CONTROL AND SIGNAL CABLE

- A. Coordinate with 'Per Mar Security' for requirements for cable to be used on fire alarm systems.
- B. All other systems cabling shall meet the requirements of NEC Article 725 and the following:
 - 1. Control Cable for Class 1 Remote Control and Signal Circuits: 600-volt insulation, individual conductors twisted together and covered with an overall PVC jacket. Cable shall be Listed, temperature rated, and plenum rated for the application as required in the National Electrical Code.
 - 2. Control Cable for Class 2 or Class 3 Remote Control and Signal Circuits shall be constructed, Listed, temperature rated, and plenum or non-plenum rated for the application as required in the National Electrical Code.

2.03 WIRING CONNECTORS

- A. Split Bolt Connectors: Not acceptable.
- B. Spring Wire Connectors: Solderless spring type pressure connector with insulating covers for copper wire splices and taps. Use for conductor sizes 10 AWG and smaller.
- C. All wire connectors used in underground or exterior pull boxes shall be gel filled twist connectors, or a connector designed for damp and wet locations.

PART 3 EXECUTION

3.01 GENERAL WIRING METHODS

- A. Low voltage control and signal cables shall be installed in conduit. However, they may be installed without conduit above accessible ceilings if the cable meets NEC requirements for the application, unless specified to be in conduit in other sections of the specifications. See requirements for free-air cabling installation below.
- B. Do not use wire smaller than 14 AWG for control wiring greater than 60-volts, or 18 AWG for voltages less than 60 volts, all sizes subject to NEC 725 requirements.
- C. Splice only in junction boxes.
- D. Identify wire per section 26 0553.
- E. Neatly train and lace wiring inside boxes, and equipment.

3.02 WIRING INSTALLATION IN RACEWAYS

- A. Pull all conductors into a raceway at the same time. Use Listed wire pulling lubricant for pulling conditions when necessary.
- B. Install wire in raceway after interior of building has been physically protected from the weather and all mechanical work likely to injure conductors has been completed.

3.03 FREE-AIR CABLE INSTALLATION (ABOVE SUSPENDED CEILING ONLY)

- A. Cabling shall be neatly run at right angles and be kept clear of other trades work.
- B. Cabling shall be supported at a maximum of 4-foot intervals utilizing 'bridal-type' mounting rings anchored to ceiling concrete, piping supports or structural steel beams. If cable sag at mid-span exceeds 12-inches, another support shall be provided. Mounting rings shall be designed to maintain cables bend to larger than the minimum bed radius (typically 4 x cable diameter).
- C. Cabling shall not be attached to or supported by existing cabling, plumbing or steam piping, ductwork, suspended ceiling supports or electrical or communications conduit. Additionally, cabling shall not be laid directly on the ceiling grid.
- D. To reduce or eliminate Electro-Magnetic Interference (EMI), the following minimum separation distances for 'Free-Air' cabling installations shall be adhered to:
 - 1. Twelve (12) inches from power lines of less than 5kV.
 - 2. Thirty-nine (39) inches from power lines of 5kV or greater.
 - 3. Eighteen (18) inches from lighting fixtures.
 - 4. Thirty-nine (39) inches from transformers and motors.
- E. A coil of 4 feet in each cable shall be placed in the ceiling at each 'free air' wired device. These coils shall be secured (wire tied) at the last cable support before the cable reaches the device and shall be coiled from 100% to 200% of the cable recommended minimum bend radius.
- F. All cables shall be free of tension at both ends. Nylon strain relief connectors shall be provided at each device and junction box where cables enter. In cases where the cable must bear some stress, Kellum type grips may be used to spread the strain over a longer length of cable.
- G. Cable manufacturers' minimum bend radius shall be observed in all instances. Care should be taken in the use of cable ties to secure and anchor the station cabling. Ties should not be over tightened as to compress the cable jacket. No sharp burrs should remain where excess length of the cable tie has been cut.

- H. All exposed vertical cable extensions to devices located below the finished ceiling shall be in conduit.
- I. Provide protection for exposed cables subject to damage.
- J. Use suitable cable fittings and connectors.

3.04 WIRING CONNECTIONS AND TERMINATIONS

- A. Splice only in accessible junction boxes (except splices to low voltage occupancy sensor power packs and terminations to temperature control devices).
- B. All splices shall be so made that they have an electrical resistance not more than two feet (600 mm) of the conductor.
- C. Use solderless spring type pressure connectors with insulating covers for wire splices and taps, 10 AWG and smaller.
- D. Thoroughly clean wires before installing lugs and connectors.
- E. At all splices and terminations, leave tails long enough to cut splice out and completely re-splice.

3.05 FIELD QUALITY CONTROL

- A. Field inspection and testing will be performed under the provisions of Section 26 05 04.

END OF SECTION 26 05 23

Page Intentionally Left Blank

SECTION 26 05 26
GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS

PART 1 GENERAL

1.01 RELATED WORK

- A. Applicable provisions of Division 1 govern work under this Section.

1.02 REFERENCES

- NFPA 70 - National Electrical Code
- ANSI/IEEE 142 (Latest edition) - Recommended Practice for Grounding of Industrial and Commercial Power Systems
- UL 467 Electrical Grounding and Bonding Equipment
- IEEE 837 - IEEE Standard for Qualifying Permanent Connections Used in Substation Grounding
- ANSI J-STD-607-B - Commercial Building Grounding (Earthing) and Bonding Requirements for Telecommunications
- TIA/EIA-606-A - Administration Standard for Commercial Telecommunications Infrastructure

1.03 PERFORMANCE REQUIREMENTS

- A. Grounding System Resistance:
1. Equipment Rated 500 KVA and Less: 10 ohms maximum at building service entrance.
 2. Equipment Rated 500 to 1000 KVA: 5 ohms maximum at building service entrance.
 3. Equipment Rated more than 1000 KVA: 3 ohms building service entrance.
 4. Communications Busbars: 5 ohms maximum.

1.04 SUBMITTALS

- A. Product Data: Provide data for grounding electrodes and connections (If Required).
- B. Test Reports: Indicate overall resistance to ground and resistance of each electrode. Not required for this project.
- C. Manufacturer's Instructions: Include instructions for preparation, installation and examination of exothermic connectors.

1.05 PROJECT RECORD DOCUMENTS

- A. Accurately record locations of all ground rods and other grounding electrodes. (Not required for this project)

1.06 REGULATORY REQUIREMENTS

- A. Conform to requirements of NFPA 70.
- B. Furnish products listed and classified by Underwriters Laboratories, Inc. or testing firm acceptable to authority having jurisdiction as suitable for purpose specified and shown.

PART 2 PRODUCTS

2.01 ROD ELECTRODE

- A. Material: Copper-clad steel.
- B. Diameter: 3/4-inch (19 mm) minimum.
- C. Length: 10 feet (3.5 m) minimum. Rod shall be driven at least 9' 6" deep.

2.02 CONCRETE-ENCASED GROUNDING ELECTRODE

- A. Fabricate per NFPA 70, Article 250.52 (A)(3) using 20 feet (6m) of bare copper wire not smaller than #4 AWG. If concrete foundation is less than 20 feet (6m) long, coil excess conductor within

the base of the foundation. Bond grounding conductor to reinforcing steel in at least four locations and to anchor bolts.

2.03 MECHANICAL CONNECTORS

- A. The mechanical connector bodies shall be manufactured from high strength, high conductivity cast copper alloy material. Bolts, nuts, washers, and lock washers shall be made of Silicon Bronze and supplied as a part of the connector body and shall be of the two-bolt type.
- B. Split bolt connector types are NOT allowed. Exception: the use of split bolts is acceptable for grounding of wire-basket type cable tray, and for cable shields/straps of medium voltage cable.
- C. The connectors shall meet or exceed UL 467 and be clearly marked with the catalog number, conductor size and manufacturer.

2.04 COMPRESSION CONNECTORS

- A. The compression connectors shall be manufactured from pure wrought copper. The conductivity of this material shall be no less than 99% by IACS standards.
- B. Each connector shall be factory filled with an oxide-inhibiting compound.
- C. The connectors shall meet or exceed the performance requirements of IEEE 837, latest revision.
- D. The connectors shall be clearly marked with the manufacturer, catalog number, conductor size and the required compression tool settings.
- E. The installation of the connectors shall be made with a compression tool and die system, as recommended by the manufacturer of the connectors, and shall be irreversible.
- F. Pre-crimping of the ground rod is required for all irreversible compression connections to a ground rod. (Not Required)
- G. Terminal lug for communication system grounding shall be compression type and conform to the following:
 - 1. Material: Tin Plated Copper (aluminum not permitted).
 - 2. Wire Size: to match conductor
 - 3. Number of Stud Holes: 2
 - 4. Stud Hole Size: 3/8"
 - 5. Bolt Hole Spacing: per ANSI Joint Standard J-STD-607-A
 - 6. Tongue Angle: Straight

2.05 EXOTHERMIC CONNECTIONS (Not Required)

- A. As manufactured by Cadweld or similar.

2.06 CONDUCTORS

- A. Material: Stranded copper (aluminum not permitted).
- B. Grounding Electrode Conductor: Size as shown on drawings, specifications or as required by NFPA 70, whichever is larger.
- C. Foundation Electrodes: As shown on the drawings. (Not Required)
- D. Primary Manhole, Main Switchgear room and Vault Bonding: No. 4/0 minimum.
- E. Feeder and Branch Circuit Equipment Ground: Size as shown on drawings, specifications or as required by NFPA 70, whichever is larger. Differentiate between the normal ground and the isolated ground when both are used at the same facility.
- F. Conductors for Telecommunications shall be as follows:
 - 1. Telecommunications Equipment Rack Conductor No. 4 minimum or as shown on drawings.

2.07 BUS/BUSBAR

- A. Material: Copper (aluminum not permitted).

- B. Size: All Power systems: 1/4" X 2", length as needed.
 - 1. Telecommunications Main Ground Busbar (TMGB): 1/4" x 4" x 20" long (minimum).
 - 2. Telecommunications Grounding Busbar (TGB): 1/4" x 2" x 12" long (minimum).
- C. Busbars for Telecommunications shall:
 - 1. Be pre-drilled to accommodate two-hole lugs.
 - 2. 3/8" stud hole size; hole spacing per ANSI J-STD-607-A.
 - 3. Incorporate insulators and stand-off brackets that electrically isolate busbar from mounting surface.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that final back fill and compaction has been completed before driving rod electrodes.

3.02 GENERAL

- A. Install products in accordance with manufacture's instruction.
- B. Mechanical connections shall be accessible for inspection and checking. No insulation shall be installed over mechanical ground connections.
- C. Ground connection surfaces shall be cleaned, and all connections shall be made so that it is impossible to move them.
- D. Attach grounds permanently before permanent building service is energized.
- E. Terminate each grounding conductor on its own terminal lug. Sharing a single lug by multiple conductors is not allowed.
- F. All grounding electrode conductors and individual grounding conductors shall be installed in PVC conduit, in exposed locations.

3.03 LESS THAN 600 VOLT ELECTRICAL SYSTEM GROUNDING

- A. Supplementary Grounding Electrode: Use driven ground rod on exterior of building. Use effectively grounded metal frame of the building.
- B. Provide code sized copper grounding electrode conductor from secondary switchboard ground bus, each separately derived system neutral, secondary service system neutral to street side of water meter, building steel, ground rod, and any concrete encased electrodes. Provide bonding jumper around water meter.
- C. Equipment Grounding Conductor: Provide separate, insulated equipment grounding conductor within each raceway. Terminate each end on suitable lug, bus, enclosure or bushing. Provide a ground wire from each device to the respective enclosure.
- D. Bond together system neutrals, service equipment enclosures, exposed non-current carrying metal parts of electrical equipment, metal raceway systems, grounding conductor in raceways and cables, receptacle ground connectors, and plumbing systems.
- E. Bond together each metallic raceway, pipe, duct and other metal object entering space under access floors. Bond to under floor ground grid. Use #4 AWG bare copper conductor.

3.04 FIELD QUALITY CONTROL

- A. Inspect grounding and bonding system conductors and connections for tightness and proper installation.

3.05 IDENTIFICATION AND LABELING

- A. Label Grounds at point of termination.

END OF SECTION 26 05 26

Page Intentionally Left Blank

SECTION 26 05 29

HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS

PART 1 GENERAL

1.01 RELATED WORK

- A. Applicable provisions of Division 1 govern work under this Section.

1.02 SUBMITTALS

- A. Product Data: Provide data for support channel.

1.03 QUALITY ASSURANCE

- A. Support systems shall be adequate for weight of equipment and conduit, including wiring, which they carry.

PART 2 PRODUCTS

2.01 MATERIAL

- A. Support Channel: Steel, Galvanized, Enameled or other corrosion resistant.
- B. Hardware: Corrosion resistant.
- C. Minimum sized threaded rod for supports shall be 3/8" for trapezes and single conduits 1-1/4" and larger, and 1/4" for single conduits 1" and smaller.
- D. Conduit clamps, straps, supports, etc., shall be steel or malleable iron. One-hole straps shall be heavy duty type. All straps shall have steel or malleable backing plates when rigid steel conduit is installed on the interior or exterior surface of any exterior building wall.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Fasten hanger rods, conduit clamps, outlet, junction and pull boxes to building structure using pre-cast insert system, preset inserts, beam clamps, expansion anchors, or spring steel clips (interior metal stud walls only).
- B. Use toggle bolts or hollow wall fasteners in hollow masonry, plaster, or gypsum board partitions and walls; expansion anchors or preset inserts in solid masonry walls; self-drilling anchors or expansion anchors on concrete surfaces; sheet metal screws in sheet metal studs and wood screws in wood construction. If nail-in anchors are used, they must be removable type anchors.
- C. Powder-actuated fasteners and plastic wall anchors are not permitted. Compressed-air power-actuated fasteners may ONLY be used for the installation of separate ceiling wires required for support of conduits and aircraft cable hung light fixtures.
- D. File and de-bur cut ends of support channel and spray paint with cold galvanized paint to prevent rusting.
- E. Do not fasten supports to piping, ductwork, mechanical equipment, cable tray or conduit. Do not fasten to the suspended ceiling grid system.
- F. Do not drill structural steel members unless approved by Structural Engineer.
- G. Fabricate supports from galvanized structural steel or steel channel, rigidly welded or bolted to present a neat appearance. Use hexagon head bolts with spring lock washers under all nuts.
- H. In mechanical rooms and electrical rooms install free-standing electrical equipment on 3.5-inch (89 mm) concrete pads (minimum).
- I. Install surface-mounted cabinets and panelboards with a minimum of four anchors. At all cabinet and panelboard locations on concrete or concrete block walls, and at ALL locations below grade, provide steel channel supports to stand cabinet one inch (25 mm) off wall (7/8" Uni-strut or 3/4" painted, fire-retardant plywood is acceptable). In above-grade equipment rooms that have drywall walls, the cabinets and panelboards may be mounted to the drywall if backing is provided in the stud walls behind the equipment.

- J. Bridge studs top and bottom with channels to support flush-mounted cabinets and panelboards in stud walls.
- K. Furnish and install all supports as required to fasten all electrical components required for the project, including free standing supports required for those items remotely mounted from the building structure, catwalks, walkways etc.

END OF SECTION 26 05 29

SECTION 26 05 33
RACEWAY AND BOXES FOR ELECTRICAL SYSTEMS

PART 1 GENERAL

1.01 RELATED WORK

- A. Applicable provisions of Division 1 govern work under this section. Section 26 0529 – Hangers and Supports for Electrical Systems. Section 26 2702 – Equipment Wiring Systems.
- Section 26 2726 – Wiring Devices.
 - Section 28 3100 – Fire Detection and Alarm.

1.02 SUBMITTALS

- A. Surface Raceway System - submit product data and catalog sheets for all components.
- B. Boxes - provide product data showing configurations, finishes, dimensions, and manufacturer's instructions.

PART 2 PRODUCTS

2.01 RIGID METAL CONDUIT (RMC) AND FITTINGS

- A. Conduit: Heavy wall threaded, galvanized steel, schedule 40.
- B. Fittings and Conduit Bodies: Use all steel threaded fittings and conduit bodies.

2.02 ELECTRICAL METALLIC TUBING (EMT) AND FITTINGS

- A. Conduit: Steel, galvanized tubing.
- B. Fittings: All steel, set screw, concrete tight. No push-on or indenter types permitted.
- C. Conduit Bodies: All steel threaded conduit bodies.

2.03 FLEXIBLE METAL CONDUIT (FMC) AND FITTINGS

- A. Conduit: steel, galvanized, spiral strip.
- B. Fittings and Conduit Bodies: All steel, galvanized, or malleable iron (except as allowed in specification 26 51 13).

2.04 LIQUIDTIGHT FLEXIBLE METAL CONDUIT (LFMC) AND FITTINGS

- A. Conduit: flexible, steel, galvanized, spiral strip with an outer Liquidtight, nonmetallic, sunlight-resistant jacket.
- B. Fittings and Conduit Bodies: ANSI/NEMA FB 1, compression type. There shall be a metallic cover/insert on the end of the conduit inside the connector housing to seal the cut conduit end.

2.05 RIGID POLYVINYL CHLORIDE CONDUIT (PVC) AND FITTINGS

- A. Conduit: Rigid non-metallic conduit, Schedule 40 PVC minimum, Listed, sunlight resistant, rated for 90° C conductors.
- B. Fittings and Conduit Bodies: NEMA TC 2, Listed.

2.06 METAL CLAD (MC) CABLE

- 600 V MC Metal Clad Cables
- UL 1569 Standard for Metal Clad Cables.
- Stranded Conductors.
- XLPE Insulation.
- Polyester wrap.
- Interlocked Armor.
- PVC Outer Jacket

2.07 CONDUIT SUPPORTS

- A. See section 26 0529.

2.08 PULL AND JUNCTION BOXES

- A. Interior Sheet Metal Boxes: code gauge galvanized steel, screw covers, flanged and spot-welded joints and corners.
- B. Interior Sheet Metal Boxes Larger Than 12 Inches (300 mm) in any dimension shall have a hinged cover or a chain installed between box and cover.
- C. Exterior Boxes and Wet Location Installations: Type 4 and Type 6, flat-flanged, surface-mounted junction box, UL listed as raintight.
- D. Fiberglass, Quazite or Concrete Handholes with weatherproof cover of non-skid finish shall be used for underground installations. Cover shall identify system serviced.
- E. Box extensions and adjacent boxes within 48" of each other are not allowed for the purpose of creating more wire capacity.
- F. Junction boxes 6" x 6" or larger size shall be without stamped knockouts.
- G. Wireways shall not be used in lieu of junction boxes.

2.09 OUTLET BOXES

- A. Sheet Metal Outlet Boxes: galvanized steel, with stamped knockouts.
- B. Luminaire and Equipment Supporting Boxes: Rated for weight of equipment supported; include 3/8-inch male fixture studs where required.
- C. Concrete Ceiling Boxes: Concrete type.
- D. Cast Boxes: Cast ferroalloy, or aluminum type deep type, gasketed cover, threaded hubs.

2.10 GENERAL

- A. All steel fittings and conduit bodies shall be galvanized.
- B. No cast metal or split-gland type fittings permitted.
- C. Mogul-type condulets larger than 2-inch (50 mm) not permitted except as approved or detailed.
- D. All conduit covers must be fastened to the conduit body with screws and be of the same manufacture.
- E. Wireways, gutters and c-condulets shall not be used in lieu of pull boxes and condulets.
- F. All boxes shall be of sufficient size to provide free space for all conductors enclosed in the box and shall comply with NEC requirements.

PART 3 EXECUTION

3.01 CONDUIT SIZING, ARRANGEMENT, AND SUPPORT

- A. EMT is permitted to be used in sizes 4" (50 mm) and smaller for power and low-voltage systems.
- B. Size power conductor raceways for conductor type installed. Conduit size shall be ½-inch (16 mm) minimum except all homerun conduits shall be ¾" (21 mm), or as specified elsewhere. Caution: Per the NEC, the allowable conductor ampacity is reduced when more than three current-carrying conductors are installed in a raceway. The contractor must take the NEC ampacity adjustment factors into account when sizing the raceway and wiring system.
- C. The minimum size for raceway for communications, control, security, fire alarm, signal, video, and other low-voltage applications shall be 3/4 inch, unless otherwise noted on drawings.
- D. Provide one raceway from each communications outlet box to the above accessible ceiling as detailed on drawings.
- E. Arrange conduit to maintain headroom and present a neat appearance.
- F. Route exposed conduit and conduit above accessible ceilings parallel and perpendicular to walls and adjacent piping.

- G. Maintain minimum 6-inch (150 mm) clearance between conduit and piping. Maintain 12-inch (300 mm) clearance between conduit and heat sources such as flues, steam pipes, and heating appliances.
- H. Arrange conduit supports to prevent distortion of alignment by wire pulling operations. Fasten conduit using galvanized pipe straps, conduit racks (lay-in adjustable hangers), clevis hangers, or bolted split stamped galvanized hangers.
- I. Group conduit in parallel runs where practical and use conduit rack (lay-in adjustable hangers) constructed of steel channel with conduit straps or clamps. Provide space for 25 percent additional conduit.
- J. Do not fasten conduit with wire or perforated pipe straps. Before conductors are pulled, remove all wire used for temporary conduit support during construction.
- K. Support and fasten metal conduit at a maximum of 8 feet (2.4 m) on center.
- L. Supports shall be independent of the installations of other trades, e.g., ceiling support wires, HVAC pipes, other conduits, etc., unless so approved or detailed.
- M. Changes in direction shall be made with symmetrical bends, cast steel boxes, stamped metal boxes or cast steel conduit bodies.
- N. For indoor conduits, no continuous conduit run shall exceed 100 feet (30 meters) without a junction box.
- O. All conduits installed in exposed areas shall be installed with a box offset before entering box.
- P. MC cable only allowed in concealed walls and where allowed by NEC and State of Minnesota. Use MC Cable when installing 'fishing' in existing walls.

3.02 CONDUIT INSTALLATION

- A. Cut conduit square; de-burr cut ends.
- B. Conduit shall not be fastened to the corrugated metal roof deck.
- C. Bring conduit to the shoulder of fittings and couplings and fasten securely.
- D. Use conduit hubs for fastening conduit to cast boxes. Use sealing locknuts or conduit hubs for fastening conduit to sheet metal boxes in damp or wet locations.
- E. Terminate all conduit (except for terminations into conduit bodies) using conduit hubs, or connectors with one locknut, or shall use double locknuts (one each side of box wall) and insulated bushing. Provide bushings for the ends of all conduit not terminated in box walls. Refer to Section 26 05 26 – Grounding and Bonding for Electrical Systems for grounding bushing requirements.
- F. Install no more than the equivalent of:
 - 1. Three 90-degree bends between boxes for electrical systems.
 - 2. Two 90-degree bends between boxes for communications and other low voltage systems.
- G. Use hydraulic one-shot conduit bender or factory elbows for bends in conduit larger than 2-inch (50 mm) size unless sweep elbows are required.
- H. Bend conduit according to manufacturer's recommendations. Torches or open flame shall not be used to aid in bend of PVC conduit.
- I. Use suitable conduit caps or other approved seals to protect installed conduit against entrance of dirt and moisture.
- J. Provide 1/8-inch (3 mm) nylon pull string in empty conduit, except sleeves and nipples.
- K. Install expansion-deflection joints where conduit crosses building expansion joints. Note: expansion-deflection joints are not required where conduit crosses building control joints if the control joint does not act as an expansion joint. Install expansion fitting in PVC conduit runs as recommended by the manufacturer.
- L. Avoid moisture traps where possible. Where moisture traps are unavoidable, provide junction boxes with drain fittings at conduit low points.

- M. Where conduit passes between areas of differing temperatures such as into or out of cool rooms, freezers, unheated and heated spaces, buildings, etc., provide Listed conduit seals to prevent the passage of moisture and water vapor through the conduit.
- N. Route conduit through roof openings for piping and ductwork where possible.
- O. Where communication cabling is to be installed in conduit to the wiring hub (e.g., Telcom Room), multiple conduits may be consolidated into fewer, larger conduits. Capacity of shared conduits shall equal the capacity of the individual conduits unless otherwise noted. Electrical Contractor is responsible for sizing of conduit for all low-voltage systems.
- P. Use U.L. listed metallic grounding clamps when terminating conduit to cable tray.
- Q. Ground and bond conduit under provisions of Section 26 0526.
- R. Conduit is not permitted in any slab topping of two inches (50 mm) or less.
- S. Maximum Size Conduit in Slabs Above Grade: 3/4 inch (19 mm). Do not route conduits to cross each other in slabs above grade.
- T. Identify conduit under provisions of Section 26 0553.
- U. All conduit installed underground (exterior to building) shall be buried a minimum of 24" below finished grade, whether or not the conduit is concrete encased.
- V. Clean PVC conduit with solvent, and dry before application of glue. The temperature rating of glue/cement shall match weather condition. Apply full even coat of cement/glue to entire area that will be inserted into fitting. The entire installation shall meet manufacturer's recommendations.

3.03 CONDUIT INSTALLATION SCHEDULE

- A. Conduit other than that specified below for specific applications shall not be used.
 1. Underground Installations: Rigid metal conduit, Schedule 40/80 PVC conduit.
 2. Under Slab on Grade Installations: Rigid metal conduit. Schedule 40 PVC conduit.
 3. Exposed Outdoor Locations: Schedule 80 PVC conduit.
 4. Concealed in Concrete Walls: Schedule 40 PVC conduit.
 5. Concealed in Block Walls: Electrical metallic tubing, Schedule 40 PVC conduit.
 6. Within Concrete Slab: Rigid Metal conduit. Schedule 40 PVC conduit.
 7. Wet Interior Locations: Rigid metal conduit, Schedule 40 PVC conduit.
 8. Concealed Dry Interior Locations: Rigid metal conduit. Electrical metallic tubing. Flexible Metallic Tubing and MC cable.
 9. Exposed Dry Interior Locations: Rigid metal conduit. Electrical metallic tubing.
 10. Motor and equipment connections: Liquidtight flexible metal conduit (LFMC) (all locations). Minimum length shall be one foot (300 mm), maximum length shall be three feet (900 mm). Conduit must be installed perpendicular to direction of equipment vibration to allow conduit to freely flex.
 11. Light fixtures: Direct box or conduit connection for surface mounted and recessed fixtures. Flexible metal conduit from a J-box for recessed lay-in light fixtures. Conduit size shall be 3/8" (10 mm) minimum diameter and six foot (1.8 M) maximum length. Conduit length shall allow movement of fixture for maintenance purposes.

3.04 COORDINATION OF BOX LOCATIONS

- A. Provide electrical boxes as shown on Drawings, and as required for splices, taps, wire pulling, equipment connections, and code compliance.
- B. Electrical box locations shown on Contract Drawings are approximate unless dimensioned. Verify location of outlets in offices, classroom and work areas prior to rough-in.
- C. No outlet, junction, or pull boxes shall be located where it will be obstructed by other equipment, piping, lockers, benches, counters, etc.

- D. Conduit and boxes shall not be fastened to the metal roof deck. If conduit and boxes are required to be located and installed on roof decks, the conduit and boxes are required to be spaced minimum 1-5/8" off the lowest part of the metal roof decking material, per NEC 300.4 (E).
- E. It shall be the Contractor's responsibility to study drawings pertaining to other trades, to discuss location of outlets with workmen installing other piping and equipment and to fit all electrical outlets to job conditions.
- F. In case of any question or argument over the location of an outlet, the Contractor shall refer the matter to the Architect/Engineer and install outlet as instructed by the Architect/Engineer.
- G. The proper location of each outlet is considered a part of this contract and no additional compensation will be paid to the Contractor for moving outlets which were improperly located.
- H. Locate and install boxes to allow access to them. Where installation is inaccessible, coordinate locations and provide 18-inch (450 mm) by 24-inch (600 mm) access doors. Boxes must be installed within 12" from edge of the access door.
- I. Locate and install to maintain headroom and to present a neat appearance.
- J. Install boxes to preserve fire resistance rating of partitions and other elements, using approved materials and methods.

3.05 PULL AND JUNCTION BOX INSTALLATION

- A. Pull boxes and junction boxes shall be minimum 4-inch square (100 mm) by 2 1/8 inches (54 mm) deep for use with 1-inch (25 mm) conduit and smaller. On conduit systems using 1-1/4- inch (31.75 mm) conduit, minimum junction box size shall be 4 11/16" by 2-1/8" deep.
- B. Where used with raceway(s) of larger than 1 1/4" trade size or larger, pull box shall be sized as follows unless otherwise noted on the drawings:
- C. For straight pull through, have a length of at least 8-times trade-size diameter of largest raceway:
- D. For angle and U pulls:
 - 1. Have a distance between each raceway entry inside box and opposite wall of box of at least 6-times trade-size diameter of largest raceway, this distance being increased by sum of trade-size diameters of other raceways on same wall of box; and
 - 2. Have a distance between nearest edges of each raceway entry enclosing same conductor of at least six times trade-size diameter of raceway; or six times trade- size diameter of larger raceway if they are of different sizes.
- E. For a raceway entering wall of a pull box opposite to a removable cover, have a distance from wall to cover of not less than trade-size diameter of largest raceway plus 6-times diameter of largest conductor.
- F. Locate pull boxes and junction boxes above accessible ceilings, in unfinished areas or furnish and install approved access panels in non-accessible ceilings where boxes are installed. All boxes are to be readily accessible.
- G. Provide Pull and Junction boxes for communications and other low voltage applications (a) in any section of conduit longer than 100 feet, (b) where there are bends totaling more than 180 degrees between pull points or pull boxes and (c) wherever there is a reverse bend in run. Locate boxes on straight section of raceway (e.g., do not use boxes in place of raceway bends).
- H. Support pull and junction boxes independent of conduit.

3.06 OUTLET BOX INSTALLATION

- A. Do not install boxes back-to-back in walls. Provide minimum 6-inch (150 mm) separation, except provide minimum 24-inch (600 mm) separation in acoustic-rated walls.
- B. Power:
 - 1. Recessed (1/4" maximum) outlet boxes in masonry, concrete, tile construction, or drywall shall be minimum 4-inch square, with device rings. Device covers shall be square cut except rounded corner plaster rings are allowed in drywall applications. Angle cut plaster rings are not permitted. Coordinate masonry cutting to achieve neat openings for boxes. A single gang box can be used in drywall and masonry, for a single device location, when a single conduit enters box.

2. Shallow 4x4x1-1/2" deep boxes can be used as device boxes for power provided the box and plaster ring is sized for installed device and conductors.
- C. Low Voltage:
1. Recessed (1/4" maximum) outlet boxes in masonry, concrete, tile construction or drywall shall be minimum 4-inch square, 2-1/8" deep with single gang device ring (unless noted otherwise on drawings). Device covers shall be square cut except rounded corner plaster rings are allowed in drywall applications. Angle cut plaster rings are not permitted. Coordinate masonry cutting to achieve neat openings for boxes.
 2. Provide one conduit from each communications outlet box. Conduit runs between outlet boxes for communications are not allowed. In general, terminate conduit above accessible ceiling in corridor on cable tray unless noted otherwise. The intent is to provide a conduit path between the low voltage junction box and the cable tray.
- D. Provide knockout closures for unused openings.
- E. Support boxes independently of conduit except for cast boxes that are connected to two rigid metal conduits, both supported within 12 inches (300 mm) of box.
- F. Use multiple-gang boxes where more than one device is mounted together; do not use sectional boxes. Provide non-metallic barriers to separate wiring of different voltage systems.
- G. Install boxes in walls without damaging wall insulation.
- H. Coordinate mounting heights and locations of outlets mounted above counters, benches, and backsplashes.
- I. Ceiling outlets shall be 4-inch square, minimum 2-1/8 inch (54 mm) deep except that concrete boxes and plates will be approved where applicable. Position outlets to locate luminaires as shown on reflected ceiling plans.
- J. In inaccessible ceiling areas, position outlets and junction boxes within 6 inches (150 mm) of recessed luminaire, to be accessible through luminaire ceiling opening.
- K. Provide recessed outlet boxes in finished areas; secure boxes to interior wall and partition studs, accurately positioning to allow for surface finish thickness. Use stamped steel stud bridges for flush outlets in hollow stud wall, and adjustable steel channel fasteners for flush ceiling outlet boxes.
- L. Align wall-mounted outlet boxes for switches, thermostats, and similar devices.
- M. Provide cast ferroalloy or aluminum outlet boxes in exterior and wet locations.
- N. Surface wall outlets shall be 4-inch (100 mm) square with raised covers for one and two gang requirements. For three gang or larger requirements, use gang boxes with non-overlapping covers.

END OF SECTION 26 05 33

SECTION 26 05 53
IDENTIFICATION FOR ELECTRICAL SYSTEMS

PART 1 GENERAL

1.01 RELATED WORK

- A. Applicable provisions of Division 1 shall govern work under this section.
 - Section 26 05 19 - Low-Voltage Electrical Power Conductors and Cables
 - Section 26 05 23 - Control-Voltage Electrical Power Cables
 - Section 26 05 33 - Raceway and Boxes for Electrical Systems
 - Section 26 24 13 – Switchboards
 - Section 26 24 16 - Panelboards
 - Section 26 27 26 - Wiring Devices
 - Section 26 27 28 - Disconnect Switches
 - Section 26 29 00 - Low Voltage Controllers
 - Section 27 00 00 - Communications Cable and Equipment
 - Section 28 31 00 - Fire Detection and Alarm

1.02 SUBMITTALS

- A. Include schedule for nameplates.
- B. Prior to installation, the Contractor shall provide samples of all label types planned for the project. These samples shall include examples of the lettering to be used. Samples shall be mounted on 8 1/2" x 11" sheets annotated, explaining their purposed use.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Labels: All labels shall be permanent, and machine generated. NO HANDWRITTEN OR NON-PERMANENT LABELS ARE ALLOWED.
- B. All wiring labels shall be white/transparent vinyl or vinyl-cloth, self-laminating, wraparound type. Flag type labels are not allowed. The labels shall be of adequate size to accommodate the circumference of the cable being labeled and properly self-laminate over the full extent of the printed area of the label.
- C. Tape (wiring phase identification only): Scotch #35 tape in appropriate colors for system voltage and phase.
- D. Nameplates: Engraved three-layer laminated plastic. Normal system shall use nameplates with black letters on white background.
- E. Adhesive type labels not permitted except for identification of wires, wiring devices (device plates), 8" square and smaller junction boxes, and control devices.
- F. See Junction and Pullbox Identification and Wiring Device Identification sections for allowed usage of permanent marker.

PART 3 EXECUTION

3.01 GENERAL

- A. All branch circuit and power panels shall be identified with the same symbol used in circuit directory in main distribution center.
- B. Clean all surfaces before attaching labels with the label manufacturer's recommended cleaning agent. Install all labels firmly as recommended by the label manufacturer. Labels shall be installed plumb and neatly on all equipment.
- C. Install nameplates parallel to equipment lines.

- D. Secure nameplates to equipment fronts using screws, rivets or manufacturer approved adhesive or cement.
- E. Embossed tape will not be permitted for any application.
- F. Provide a sign at each service disconnect indicating "Service Disconnect", and locate above the main switch or circuit breaker, per NEC 230.70(B).

3.02 JUNCTION AND PULLBOX IDENTIFICATION

- A. The following junction and pullboxes shall be identified utilizing spray-painted covers:

System	Color(s)
Secondary Power – 208Y/120V, 240/120V	White
Fire Alarm	Red
Temperature Control	Green
Door Control and Door Monitoring System	Orange
Sound and Intercom Systems	Gray
Video Surveillance System	Yellow
Data	Blue

- B. Additional required junction and pullbox identification shall include:

1. Provide circuit numbers and source panel designations for power wiring junction boxes. Other system junction boxes shall be identified as shown on details or approved shop drawings. Temperature control boxes shall identify the source.
2. Where exposed, junction boxes larger than 8" square shall utilize engraved nameplates with 1/2" minimum letter height. Identify system source(s) and load(s) served.
3. Where exposed, 8" square and smaller junction boxes shall utilize machine generated, adhesive labels.
4. Where located above an accessible ceiling, junction boxes shall utilize machine generated adhesive labels.

3.03 COMMUNICATION CONDUIT LABELING

- A. All conduits installed between Telecommunication Equipment Rooms shall be clearly labeled in accordance with ANSI/TIA/EIA-606. Both ends of the conduits shall be labeled.
- B. All labels shall be mechanical, no handwritten labels.
- C. The label shall indicate the location of the far end of the conduit run and a unique conduit number. (i.e., TR-1A-01 or Room #216 – 01).

3.04 POWER, CONTROL AND SIGNAL WIRE IDENTIFICATION

- A. Provide wire labels on each conductor in panelboard gutters, pull boxes, outlet and junction boxes, and at load connection. Identify branch circuit or feeder number for power and lighting circuits, and with wire number as indicated on schematic and interconnection diagrams or equipment manufacturer's shop drawings for control and signal wiring.
- B. All wiring shall be labeled within 2 to 4 inches of terminations. Each end of a wire or cable shall be labeled as soon as it is terminated including wiring used for temporary purposes.

3.05 WIRING DEVICE IDENTIFICATION

- A. Wall switches, receptacles, occupancy sensors, wall dimmers, device plates and box cover's, photocells, and time clocks shall be identified with circuit numbers and source (ex. Panel ABC- 3). In exposed areas, identifications should be made outside of device covers, unless directed otherwise. Use machine-generated adhesive labels. For wiring devices such as but not limited to duplex, double duplex and single receptacles MUST have machine generated adhesive label on device cover plate identifying branch circuit and panelboard. NO EXCEPTIONS.

3.06 NAMEPLATE ENGRAVING FOR ELECTRICAL EQUIPMENT

- A. Provide nameplates of minimum letter height as scheduled below.
- B. Distribution Panelboards, Branch Panelboards, and Switchboards: 1 inch (25 mm); identify equipment designation. 1/2 inch (13 mm); identify voltage rating, source and room location of the source.
- C. Circuit Breakers, Switches, and Motor Starters in Distribution Panelboards, and Switchboards; 1/2 inch (13 mm); identify circuit and load served, including location.
- D. Individual Circuit Breakers, Disconnect Switches, Enclosed Switches, and Motor Starters: 1/2 inch (13 mm); identify source and load served.

3.07 PANELBOARD DIRECTORIES

- A. Typed directories for panels must be covered with clear plastic and have a metal frame. Room numbers on directories shall be Owner's numbers, not Plan numbers unless Owner so specifies.

END OF SECTION 26 05 53

Page Intentionally Left Blank

SECTION 26 24 13
SWITCHBOARDS

PART 1 GENERAL

1.01 RELATED WORK

- A. Applicable provisions of Division 1 govern work under this section.
Section 26 4313- Surge Protective Devices for Low Voltage Electrical Power Circuits

1.02 REFERENCES

ANSI C57.13	Instrument Transformers
NEMA AB 1	Molded Case Circuit Breakers
NEMA KS 1	Enclosed Switches
NEMA PB 2	Dead Front Distribution Switchboards
NEMA PB 2.1	Proper Handling, Installation, Operation and Maintenance of Dead-front Switchboards Rated 600 Volts or Less.
UL-891	Dead Front Switchboards

1.03 SUBMITTALS

- A. Include plan and elevation layouts showing overall dimensions and compartment layout with available spaces; conduit entrance locations and requirements; nameplate legends; one-line diagrams; size and number of bus bars per phase, neutral, and ground; switchboard instrument details; instructions for handling and installation of switchboard; and electrical characteristics including voltage, frame size and trip ratings, withstand ratings, time-current curves, and interrupting ratings confirming a fully-rated system for all equipment and components.

1.04 OPERATION AND MAINTENANCE DATA

- A. All operations and maintenance data shall comply with the submission and content requirements specified under section GENERAL REQUIREMENTS.
- B. In addition to the general content specified under GENERAL REQUIREMENTS supply the following additional documentation:
 - 1. Bus tightening intervals and procedures
 - 2. Overcurrent protective device testing and maintenance procedures
 - 3. Field report noting final adjustments to overcurrent protective device settings.

1.05 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 in accordance with NEMA PB2.1 and manufacturer's written instructions. Lift only with lugs provided for the purpose. Handle carefully to avoid damage to switchboard internal components, enclosure, and finish.

1.06 EXTRA MATERIALS

- A. Submit one set of spare fuses of each size and type used in the equipment provided.

PART 2 PRODUCTS

2.01 SWITCHBOARD CONSTRUCTION AND RATINGS

- A. Switchboard electrical rating and short circuit current rating shall be as shown on the Drawings or as required by Short Circuit/Fault Current Study.
- B. The switchboard and overcurrent devices contained within shall be fully rated.
- C. Main Section Devices: Individually mounted.

- D. Distribution Section Devices: Group-mounted and/or individually mounted, complete with bus in an integrated assembly. All breakers shall be bolted, quick-make, quick-break, trip indicating and common trip on all multi-pole breakers. No handle ties will be permitted.
- E. Buses:
 - 1. The switchboard bussing (and all other current carrying parts such as fingers, neutral and ground buses) shall be plated copper. The bussing shall be of sufficient cross-sectional area to meet UL 891 temperature rise requirements.
 - 2. For 4-wire systems, the neutral bus shall be the equivalent ampacity as the phase bus bars.
 - 3. Provide a copper ground bus through the length of the switchboard sized per UL 891 and NFPA requirements.
 - 4. Ground bus shall be continuous throughout the length of the switchboard. Factory supplied bus jumpers shall be utilized for field connection of ground bus between shipping splits. Field fabricated jumpers are not permitted.
 - 5. Where spaces are indicated for future breakers, extend bus bars, drill and tap bus, and fully equip for the future breakers, including all connectors and mounting hardware.
 - 6. Line and load terminations shall be rated for the size, number of conductors and conductor material.
 - 7. Line and Load Terminations: Accessible from the front only of the switchboard, suitable for the conductor materials used.
- F. Enclosure:
 - 1. Factory assembled, dead front, metal-enclosed, and self-supporting switchboard assembly conforming to NEMA PB2, and complete from incoming line terminals to load side terminations.
 - 2. All closure plates shall be screw removable and small enough for easy handling by one person.
 - 3. Finish: Manufacturer's standard medium gray enamel over external surfaces. Coat internal surfaces with minimum one coat corrosion resistant paint, or plate with cadmium or zinc.
 - 4. Enclosure shall be NEMA PB 2 Type 1 - General Purpose.
 - 5. Front accessible only.

2.02 MAIN CIRCUIT BREAKER

- A. The main 1,200 Amp circuit breaker in 480/277VAC switchboard shall be an individually mounted and bussed molded case circuit breaker, 100% rated, with a full function electronic trip unit.

2.03 CIRCUIT BREAKER DISTRIBUTION SECTIONS

- A. Distribution circuit breakers shall be group mounted in frame sizes 100 amp through 600 amp. Frame sizes larger than 600 amp shall be individually mounted.
- B. The circuit breakers are to be totally front accessible and mounted in the switchboard to permit installation, maintenance and testing without reaching overline side bussing. The circuit breakers are to be removable by the disconnection of only the load side terminations and line and load side connections are to be individual to each circuit breaker. Common mounting brackets or electrical bus connectors are not acceptable.
- C. Circuit breakers shall be provided with provisions for mounting handle padlock attachments.
- D. Breaker feeder lugs shall be dual rated for use with either aluminum or copper conductors.
- E. Each circuit breaker is to be furnished with an externally operable mechanical means to trip the circuit breaker, enabling maintenance personnel to verify the ability of the circuit breaker trip mechanism to operate, as well as exercise the circuit breaker operating mechanisms.

- F. A minimum of 25% future circuit breaker spaces shall be included. Spaces for future circuit breakers shall be "prepared" spaces. These spaces shall be provided with the necessary mounting hardware and bus extensions so that when future breakers are added, only the breaker itself needs to be purchased by the installer.
- G. Circuit breakers serving single motor loads shall be magnetic only, instantaneous trip. Overload protection shall be part of the motor combination controller.
- H. Circuit Breakers:
 - 1. Electronic Trip Circuit Breakers: As scheduled on the drawings, electronic circuit breakers shall have, at a minimum, adjustments for long time, short time and instantaneous trip. Provide integral ground fault sensing with adjustable ground fault trip where indicated on the drawings. Provide for 400 amp or larger circuit breakers.
 - 2. Molded Case Circuit Breakers: As scheduled on the drawings, integral thermal and instantaneous magnetic trip elements in each pole.
 - 3. Refer to Switchboard Schedule and Electric Riser Diagram.

2.04 INSTRUMENTS AND SENSORS

- A. Provide an electronic meter (with meter test switch and instrument transformers) for Owner's use in the switchboard.

2.05 SURGE PROTECTIVE DEVICE

- A. Provide a surge protective device meeting the requirements of specification section 26 4313. Surge protective devices shall be served from an overcurrent protective device within the switchboard.
- B. Surge protective device shall be installed internal to the switchboard.

PART 3 - EXECUTION

3.01 INSTALLATION

- A. Install switchboards in locations shown on Drawings, in accordance with manufacturer's written instructions and NEMA PB 2.1.
- B. Install switchboards on a 3.5" high concrete equipment pad. Concrete pad provided and installed by General Contractor.
- C. Tighten accessible bus connections and mechanical fasteners after placing switchboard per manufacturer's requirements.

3.02 FIELD QUALITY CONTROL

- A. Inspect completed installation for physical damage, proper alignment, anchorage, and grounding.
- B. Check tightness of accessible bolted bus joints using a calibrated torque wrench. Tightness shall be in accordance with manufacturer's recommended values.
- C. Measure insulation resistance of each bus section phase to phase and phase to ground for one minute each. Test voltage shall be 1000 volts, and minimum acceptable value for insulation resistance is 2 megohms.
- D. Touch up scratched or marred surfaces to match original finish.

3.03 ADJUSTING

- A. Adjust all operating mechanisms for free mechanical movement.

END OF SECTION 26 24 13

Page Intentionally Left Blank

SECTION 26 24 16
PANELBOARDS

PART 1 GENERAL

1.01 RELATED WORK

- A. Applicable provisions of Division 1 govern work under this Section.
 - Section 26 0553 – Identification for Electrical Systems

1.02 SUBMITTALS

- A. Include outline and support point dimensions, voltage, main bus ampacity, circuit breaker arrangement and sizes, and interrupting ratings confirming a fully rated system for all equipment and components.

1.03 OPERATION AND MAINTENANCE DATA

- A. All operations and maintenance data shall comply with the submission and content requirements specified under section GENERAL REQUIREMENTS.

1.04 SPARE PARTS

- A. Keys: Furnish 2 keys for each panelboard to Owner.
- B. One set of three spare fuses of each size and type utilized.

PART 2 PRODUCTS

2.01 BRANCH CIRCUIT PANELBOARDS

- A. Lighting and Appliance Branch Circuit Panelboards: Circuit breaker type.
- B. The panelboard and overcurrent devices contained within shall be fully rated.
- C. Enclosure: NEMA Type 1 or as scheduled. Minimum cabinet size: 5-3/4 inches (144 mm) deep; 20 inches (508 mm) wide with 5" minimum gutter space top and bottom. Constructed of galvanized code gauge steel. Panel enclosure (back box) shall be of non-stamped type (without KO's) to avoid concentric break out problem.
- D. Cabinet front cover and cabinet shall be Type 3R, 4X, 304 stainless steel in wet and damp locations.
- E. Provide cabinet front (flush or surface per plans) with concealed trim clamps, concealed hinge and flush cylinder lock all keyed alike. Front cover shall be hinged to allow access to wiring gutters without removal of panel trim. Hinged trim shall be held in place with screw fasteners. Finish in manufacturer's standard gray enamel.
- F. Provide metal directory holders with clear plastic covers.
- G. Provide panelboards with copper bus (phase buses, bus fingers, etc.), ratings as scheduled on Drawings.
- H. Provide ground bars in all panelboards. Phase, neutral and ground bar terminations can be dual rated ALCU9. All spaces shall have bus fully extended and drilled for the future installation of breakers.
- I. Incoming conductors shall terminate at lug landing pads rated for the panelboard. Provide double lugs and/or feed-thru lugs to allow installation of additional panelboards.
- J. Provide mechanical screw (not compression) type lugs to accommodate feeder conductors shown on drawings.
- K. Minimum System (i.e., individual component) Short Circuit Rating: As shown on the Drawings.
- L. Molded Case Circuit Breakers: Bolt-on type thermal magnetic trip circuit breakers. Provide UL Class A ground fault interrupter circuit breakers where shown on Drawings. Provide circuit breakers UL listed as Type HACR for air conditioning equipment branch circuits.
- M. Do not use tandem circuit breakers.

- N. Circuit breakers shall be bolt-on type with common trip handle for all poles. No handle ties of any sort will be approved.
- O. All the panelboards provided under this section shall be by the same manufacturer.
- P. All sub-feed panelboards installed side by side shall utilize same enclosure height.
- Q. Manufacturers shall be Square 'D', Siemens, Cutler Hammer or General Electric.

PART 3 EXECUTION

3.01 INSTALLATION

- A. See section 26 05 29 for support requirements.
- B. Install panelboards plumb with wall finishes.
- C. Height: 6 feet (2 m) to top.
- D. Install a crimp type stud termination to stranded conductor when terminating on circuit breakers without a captive assembly rated for terminating stranded conductors.
- E. Provide filler plates for unused spaces in panelboards.
- F. See section 26 05 53 for identification requirements. Provide typed circuit directory for each branch circuit panelboard. Revise directory to reflect circuiting changes required to balance phase loads.

3.02 FIELD QUALITY CONTROL

- A. Visual and Mechanical Inspection: Inspect for physical damage, proper alignment, anchorage, and grounding. Check proper installation and tightness of connections.

END OF SECTION 26 24 16

SECTION 26 27 02
EQUIPMENT WIRING SYSTEMS

PART 1 GENERAL

1.01 RELATED WORK

- A. Applicable provisions of Division 1 govern work under this Section. Section 26 0519 – Low-Voltage Electrical Power Conductors and Cables. Section 26 0533 – Raceway and Boxes for Electrical Systems.

Section 26 0553 – Identification for Electrical Systems Section 26 2726 – Wiring Devices

Section 26 2728 – Disconnect Switches

1.02 SUBMITTALS

- A. Product Data: Provide data for cord and wiring devices.

1.03 COORDINATION

- A. Coordinate all equipment requirements with the various contractors and the Owner. Review the complete set of drawings and specifications to determine the extent of wiring, starters, devices, etc., required.

PART 2 PRODUCTS

2.01 CORDS AND CAPS

- A. Straight-blade Attachment Plug: NEMA WD 1.
- B. Locking-blade Attachment Plug: NEMA WD 5.
- C. Attachment Plug Configuration: Match receptacle configuration at outlet provided for equipment.
- D. Cord Construction: Oil-resistant thermoset insulated multi-conductor flexible cord with identified equipment grounding conductor, suitable for hard usage in damp locations.
- E. Cord Size: Suitable for connected load of equipment and rating of branch circuit overcurrent protection.

PART 3 EXECUTION

3.01 INSPECTION

- A. Verify that equipment is ready for electrical connection, wiring, and energy.

3.02 PREPARATION

- A. Review equipment submittals prior to installation and electrical rough-in. Verify location, size, and type of connections. Coordinate details of equipment connections with supplier and installer.

3.03 INSTALLATION

- A. Use wire and cable with insulation suitable for temperatures encountered in heat-producing equipment.
- B. Provide a green equipment ground conductor for all installed equipment wiring.
- C. Make conduit connections to equipment using flexible PVC-coated metal conduit.
- D. Install pre-finished cord set where connection with attachment plug is indicated or specified, or use attachment plug with suitable strain-relief clamps.
- E. Provide suitable strain-relief clamps for cord connections to outlet boxes and equipment connection boxes.
- F. Make wiring connections in control panel or in wiring compartment of pre-wired equipment in accordance with manufacturer's instructions. Provide interconnecting wiring where indicated.
- G. Install disconnect switches, controllers, control stations, and control devices such as limit switches and temperature switches as indicated. Connect with conduit and wiring as indicated.

3.04 HVAC AND PLUMBING CONNECTIONS

- A. Provide all power wiring including all circuitry carrying electrical energy from panelboard or other source through starters, variable frequency drives (VFDs), and disconnects to motors or to packaged control panels. Packaged control panels may include disconnects and starters and overcurrent protection. Provide all wiring between packaged control panels and motors.
- B. Contractor shall verify with mechanical contractor the electrical requirements including voltages, horsepower, disconnecting means, starters and variable frequency drives for motors and equipment prior to ordering circuit breakers, disconnects and starters.
- C. VFD Installations: Install VFD input wiring and output wiring in separate conduit systems. Do not mix VFD input power and output power, or control wiring in a common raceway.
- D. Provide 120 volts to each temperature control panel. Coordinate quantity and exact locations with HVAC/DDC contractors. Connect to the nearest Emergency (Equipment Branch) panelboard.
- E. Unless otherwise specified, all electrical motors and control devices such as aqua stats, float and pressure switches, fan powered VAV boxes, switches, electro-pneumatic switches, solenoid valves and damper motors requiring mechanical connections shall be furnished and installed and wired by the Contractor supplying the devices.
- F. Each motor terminal box shall be connected with a minimum 12", maximum 36" piece of flexible PVC-coated metal conduit to a fixed junction box. Conduit must be installed perpendicular to direction of equipment vibration to allow conduit to freely flex.
- G. Check for proper rotation of each motor.
- H. All heating, air conditioning and refrigeration equipment installed on the exterior of the building or rooftop shall have a 120V, single phase 20 ampere rated outlet at an accessible location within 25 feet of the equipment.
- I. Make connection to Elevator sump pump located in elevator pit, coordinate with plumbing contractor.

3.05 EQUIPMENT CONNECTION SCHEDULE

- A. As indicated on the drawings.

3.06 ELEVATOR CONNECTIONS (NOT REQUIRED)

- A. Disconnect Switch (Power Module) - Fused Elevator Shunt Trip:
- B. Description: Provide shunt-trip fused disconnect switch with necessary relay(s), control transformer and other options, as required.
- C. Connections:
 - 1. Provide all power wiring from source through disconnect to elevator controller to motor.
 - 2. Provide single means of disconnect; manual starter, enclosed circuit breaker or disconnect, labeled "elevator cab lights" located in equipment room Per NEC 620.22. The means of disconnect shall be capable of being locked in the open position. Extend 120-volt circuit from source through lockable switch to controller. Provide one lockable switch and 120-volt circuit per unit. The overcurrent device protecting the branch circuit shall be located in the elevator machine room.
 - 3. Provide 120V, 20 ampere separate branch circuit to serve machine room lighting and receptacle(s) per NEC 620.23. Provide light switch and duplex receptacle (s). A GFCI receptacle shall be located adjacent to elevator motor. Required lighting shall not be connected to load side of GFCI.
 - 4. Provide 120V, 20 ampere separate branch circuit to serve elevator pit lighting and receptacle(s) per NEC 620.24. Required lighting shall not be connected to load side of GFCI.
 - 5. Provide 120V, 20 ampere separate branch circuit to serve elevator pit sump pump. Dedicated circuit shall not be GFCI protected.

6. Provide 120V, 20 ampere separate branch circuits for additional circuits supplying utilization equipment not identified in NEC 620.22, 620.23 and 620.4 but limited to loads per 620.1. Coordinate with elevator manufacturer's requirements. Overcurrent devices protecting these additional loads shall be located in the elevator equipment room.

D. Lighting:

1. Provide minimum (4) 4'-LED Strip Type fixtures (2) elevator pit and (2) top of elevator shaft.
2. Provide switch adjacent to pit access ladder, 36" above door sill. Provide 3-way and 4- way switches, receptacle and lighting on every other floor above lowest level.
3. Provide 4'- LED strip type fixtures as required to maintain a minimum of 10 FC throughout the elevator pit.
4. Provide 4'-LED strip type fixtures as required to maintain a minimum of 19 FC throughout the elevator equipment room or required working clearance around equipment in room-less equipment locations (equipment integral with elevator car).
5. Provide elevator lobby LED lighting to provide minimum 10 FC at elevator door (s) with the door (s) closed.

E. Misc. connections:

1. Provide all wiring for and mount exterior alarm bell (If required). Feed from emergency source.
2. Provide smoke detector and heat detector in each elevator equipment room or space. Connect main alarm contacts to elevator recall alarm system and auxiliary contacts to the controller.
3. Provide smoke detector in each elevator lobby. Connect main alarm contacts to elevator recall alarm system and auxiliary contacts to elevator controller.
4. All traveling cables, control stations, control station wiring and final control connections at the controller shall be furnished and installed under Elevator Work.
5. Provide 3/4" conduit from controller to nearest available cable tray for two (2) four pair UTP Cat.6 cables to be provided and installed by WTC IT Department.
6. Coordinate entire installation with Elevator Contractor prior to rough-in.
7. Coordinate entire installation with Western Technical College IT department for communication and security requirements.

3.07 COOLER AND FREEZER WIRING (NOT REQUIRED)

- A. Provide EMT or PVC conduit for all surface wiring in coolers and freezers. Whenever possible avoid the use of surface wiring and run conduit in space behind or above insulated panels.
- B. Coolers and Freezers: Cut and seal conduit openings in freezer and cooler walls, floor, and ceilings.
- C. Provide RMC, IMC or non-metallic nipple and sealing fittings whenever conduit pierces wall of cooler or freezer. Provide grounding conductor.
- D. All openings cut in walls of cooler or freezer shall be patched, and insulation integrity shall be maintained. Patching shall be approved by freezer or cooler installer.
- E. Install all wiring for lighting, switches, evaporator, coil fans, compressors, interlocks, defrost heaters, door heaters, drain heaters, alarms, or any other electric devices supplied with unit.
- F. Seal all conduits entering and leaving temperature-controlled areas.

3.08 KITCHEN AND DISHWASHING EQUIPMENT CONNECTIONS

- A. Check loose equipment delivered to job by equipment installer against approved shop drawings or other required Drawings. Loose electrical equipment including disconnects, starters, thermostats, controls, local and remote switches furnished by equipment contractor shall be installed by electrical contractor.
- B. Review dimensioned equipment layouts, detailed shop drawings of equipment, wiring, control and final connection diagrams available from the equipment supplier.

- C. Provide non-fused disconnect switches serving equipment. Equipment installed in damp or wet locations shall be provided with NEMA3R/4X enclosures.
- D. Equipment contractor will receive all equipment and position in place.
- E. Electrical Contractor shall rough in for equipment only from approved equipment shop drawings.
- F. Rough in location shall be within three inches of equipment. If direct connection is required, use liquid-tight flexible conduit. If receptacle connection is required, verify proper receptacle configuration with equipment installer.
- G. Final connections shall include extension of all service to each piece of equipment. All labor and material required to completely connect the equipment ready to operate shall be included in the final connections. All control wiring not integral with equipment shall be included.
- H. Provide all required power and control wiring. This may include (but is not limited to) the following:
 - 1. Provide switch in exhaust hood and branch circuit for integral light fixtures.
 - 2. Provide pushbutton switch or manual starter for exhaust fan.
 - 3. Provide emergency branch circuit for fire suppression system. Wire automatic heat detectors or manual station so, when activated, valve of dry chemical bottle opens, gas solenoid valve shuts down, all dampers close, and make-up fans shut down, electrical power contactor opens (integral in equipment), and building fire alarm system is activated. Provide all required wiring, conduit and final connections. Refer to wiring diagrams supplied with equipment.

END OF SECTION 26 27 02

SECTION 26 27 26
WIRING DEVICES

PART 1 GENERAL

1.01 RELATED WORK

- A. Applicable provisions of Division 1 govern work under this Section.

1.02 SUBMITTALS

- A. Provide product data showing model numbers, configurations, finishes, dimensions, and manufacturer's instructions.
- B. For occupancy sensor shop drawings, the manufacturer's actual layout of occupancy sensors and the wiring diagrams shall be provided.

1.03 OPERATION AND MAINTENANCE DATA

- A. All operations and maintenance data shall comply with the submission and content requirements specified under section GENERAL REQUIREMENTS.

PART 2 PRODUCTS

2.01 WALL SWITCHES

- A. General: Heavy duty use toggle switch, rated 20 amperes and 120/277 volts AC. Switches shall be UL20 Listed and meet Federal Specification WS-896. All switches shall be heavy duty Specification Grade.
 - 1. Handle: Gray color made of nylon or high impact resistant material.
- B. Wall Switches for Lighting Circuits and Motor Loads Under 1/2 HP: All switches shall be back, and side wired, screw clamp type, suitable for solid or stranded wire up to #10 AWG, with separate green ground screw. Switches shall be Cooper Arrow-Hart1221*, Hubbell 1221*, Leviton 1221-S*, Pass & Seymour CS20AC1-*, or approved equal. (* indicates color selection).

2.02 RECEPTACLES

- A. General Requirements: NEMA Type 5-20R color (to match existing School) nylon or high impact resistant face. Receptacles shall be UL498 Listed and meet Federal Specification WC-596. All duplex receptacles shall be heavy duty Specification Grade, 20 amp rated. All receptacles shall be Tamper-Resistant.
- B. Generally, all receptacles shall be Tamper-Resistant duplex convenience type unless otherwise noted.
- C. All receptacles installed in bathrooms, kitchens, exterior and within 6 feet of the outside edge of sinks shall be GFCI type.
- D. All receptacles installed in outdoor locations, garages, rooftops, and in other damp or wet locations shall be GFCI type with a weather resistant (WR) rating.
- E. Convenience and Straight-blade Receptacles: All receptacles shall be Tamper-Resistant, back and side wired, screw clamp type, suitable for solid or stranded wire up to #10 AWG, with a separate green ground screw. Receptacles shall be Cooper Arrow-Hart 5362TR*, Hubbell5362TR*, Leviton5362-STR*, Pass& SeymourPS5362TR-*, or approved equal. (* indicates color selection).
- F. Convenience Straight-blade Receptacle and USB charger: Cooper Arrow-Hart 5362USB*, Hubbell USB20X2*, Leviton 5832*, Pass & Seymour TR5362USB* or approved equal. Receptacle shall be Tamper-Resistant.
- G. Single Receptacle: 20 amp., 120VAC, 2-pole, 3-wire, grounding, Commercial Grade, Hubbell HBL5461* or approved equal.
- H. GFCI Receptacles: Duplex convenience receptacle with integral ground fault current interrupter meeting the requirements of UL standard 943 Class A. GFCI receptacles shall be Cooper Arrow-Hart VGF20TR*, HubbellGFRST20TR*, LevitonG5362TR*, Pass & Seymour2097TR*, or approved equal. Receptacle shall be Tamper-Resistant.

- I. GFCI Receptacles with a weather-resistant (WR) rating: Weather-Resistant duplex convenience receptacle with integral ground fault current interrupter meeting the requirements of UL standard 943 Class-A.WR., GFCI receptacles shall be Cooper Arrow-Hart WRVGF20TR*, HubbellGFR5362*TR, LevitonG5362TRWR*, Pass & Seymour2097TRWR*, or approved equal. Receptacle shall be Tamper-Resistant.
- J. Provide 'Red' wiring devices when connected to the emergency generator system.

2.03 OCCUPANCY SENSORS

- A. All occupancy sensors shall be hardwired type; battery type shall not be permitted.
- B. Wall Mounted (Wall Switch Type)
 - 1. The sensor shall use either passive infrared or, if dual technology, passive infrared and passive acoustic sensing, or passive infrared and ultrasonic, for detecting room occupancy. The unit shall fit in/on a standard single gang switch box.
 - 2. Rated capacity: 600 watts minimum at 120 volts, 60 Hz; 1000 watts minimum at 277 volts, 60 Hz.
 - 3. Sensitivity shall be user adjustable or self-adjusting type.
 - 4. The delay timer shall be adjusted within a range of 6 to 30 minutes by the contractor in the field. The sensor shall have a test mode for performance testing.
 - 5. The sensor shall have two switches where dual-level lighting is required. The off switch shall have manual override for positive off and automatic on.
 - 6. The test LED shall indicate motion.
 - 7. The area of coverage shall be approximately 180 degrees by 35-40 feet.
 - 8. The unit shall have a five-year warranty.
 - 9. Color shall be selected by Architect.
 - 10. Manufacturer Acuity Controls, n-Light, Sensor switch or equal.
- C. Ceiling Mounted
 - 1. The sensor shall use either passive infrared or, if dual technology, passive infrared and passive acoustic sensing, or passive infrared and ultrasonic, for detecting room occupancy. The unit shall fit in/on a standard octagon box. All ceiling mounted sensors shall be installed to a box with ring and box support.
 - 2. Rated capacity shall be 20 amps at 120 or 277 volts, for fluorescent lamps. Line voltage sensors are acceptable, especially in exposed ceiling areas where all wiring shall be installed in conduit, including low voltage cabling if power packs are used. Provide power pack as required for low voltage sensors.
 - 3. Sensitivity shall be user adjustable or self-adjusting type.
 - 4. The delay timer shall be adjusted within a range of 6 to 30 minutes by the contractor in the field. The sensor shall have a test mode for performance testing.
 - 5. The coverage area shall be 360 degrees by approximately 15 feet radius when mounted at 9-foot height. The sensor shall have provisions, such as masking, to block out problem areas.
 - 6. Test LED to indicate motion.
 - 7. The unit shall have a five-year warranty.
 - 8. See drawings for actual type of sensor.
 - 9. Manufacturer: Acuity Controls, n-Light, Sensor switch or equal

2.04 WALL DIMMERS (Line Voltage)

- A. Wall Dimmers: linear slide semiconductor type, suitable for use with LED drivers (0-10 Volts), with positive 'OFF' as indicated on the Drawings.
- B. Manufacturer: Acuity Controls, n-Light, Sensor switch or equal.

2.05 LOW VOLTAGE LIGHTING CONTROL SYSTEM (WIRELESS n-LIGHT AIR)

- A. Low voltage lighting control system shall be 'Acuity Controls, n-Light' as detailed on the drawings, equal manufacturers will be allowed.

2.06 DEVICE PLATES AND BOX COVERS

- A. Standard Cover Plate: Stainless Steel 302/304.
- B. Weatherproof Cover Plate: Gasketed metal with hinged "in-use" device covers, powder coat painted. Non-metallic covers are not allowed. All receptacles installed in wet locations shall have an enclosure that is weatherproof whether or not the attachment plug is inserted.
- C. Damp Location Cover Plate: Gasketed metal with hinged device covers, powder coat painted. Non-metallic covers are not allowed. All receptacles installed outdoors in a location protected from the weather or in other damp locations shall have an enclosure that is weatherproof when the receptacle is covered (attachment plug not inserted and receptacle covers closed).
- D. Surface Cover Plate: Raised galvanized steel.

2.07 PHOTOCELLS

- A. The controller shall be rated 2000 watts tungsten at 120, 240 or 277 volts. The cell shall be cadmium sulfide, 1" diameter.
- B. The enclosure shall be die-cast zinc, gasketed for maximum weather proofing.
- C. The enclosure shall include the positioning lug on the top of the enclosure.
- D. The unit shall have a delay of up to two minutes to prevent false switching. ON/Off adjustment shall be done by moving a light selector with a range from 2 to 50 foot-candles.
- E. Mounting shall be for a 1/2" conduit nipple.
- F. The unit shall have a 5-year warranty.
- G. The contacts shall be SPST normally closed.
- H. The operational temperature range shall be -40 to 140 degrees F (-40 to +60 degrees C).

PART 3 EXECUTION

3.01 INSTALLATION

- A. See plans for device mounting heights.
- B. Install wall switches with OFF position down.
- C. Wall dimmers: de-rate ganged dimmers as instructed by manufacturer; do not use common neutral.
- D. Install convenience receptacles with grounding pole on bottom.
- E. Install box for information outlet at the same height as adjacent convenience receptacles. Locate boxes for information outlet as close as practical to duplex power outlet, approximately 2-inches apart.
- F. Install box for telephone jack for wall telephone at 46-inches to center above finished floor.
- G. Install specific-use receptacles at heights shown on Contract Drawings.
- H. Install decorative plates on switch, receptacle, and blank outlets in finished areas.
- I. Install galvanized steel plates on outlet boxes and junction boxes in unfinished areas, above accessible ceilings, and on surface-mounted outlets.
- J. Install devices and wall plates flush and level.
- K. Receptacles shall have a bonding conductor from grounding terminal to the metal conduit system. Self-grounding receptacles using mounting screws as bonding means are not approved.
- L. Provide Circuit and Panel Identification on the FACE of wiring device cover plates.
- M. Provide same color as existing wiring devices in the building with Stainless Steel cover plates.

3.02 FIELD QUALITY CONTROL

- A. Inspect each wiring device for defects.
- B. Operate each wall switch and sensor with circuit energized and verify proper operation.
- C. Verify that each receptacle device is energized.
- D. Test each receptacle device for proper polarity.
- E. Test each GFCI receptacle device for proper operation.

3.03 OCCUPANCY SENSORS

- A. Provide a minimum of 4' of coiled cable for ceiling-mounted sensors.
- B. Occupancy sensors shall be installed at locations indicated on the manufacturer's submittal layout drawings. Sensors shall be located to prevent false "ON" tripping of the lights.
- C. Sensitivity Test: After the sensor has been energized for at least 15 minutes, walk to the middle of the room (if conference room) or sit at the normal desk position (if an office). Make no motion for 20 seconds. Move one arm up and down slowly. The test LED should blink.
- D. Time Delay Test: Set the time delay for 10 minutes. Walk into the room to activate the sensor then leave room. Sensor must turn lights off at approximately 10 minutes. Walk into the room again to reactivate the lights. Lights should activate within 1 second.

3.04 ADJUSTING

- A. Adjust devices and wall plates to be flush and level.
- B. Mark all conductors with the panel and circuit number serving the device with a machine generated label, at the device, and on the back of the device cover.

END OF SECTION 26 27 26

SECTION 26 27 28
DISCONNECT SWITCHES

PART 1 GENERAL

1.01 RELATED WORK

- A. Applicable provisions of Division 1 govern work under this Section. Section 26 0526- Grounding and Bonding for Electrical Systems
- Section 26 0529- Hangers and Supports for Electrical Systems Section 26 0553- Identification for Electrical Systems
 - Section 26 2813- Fuses
 - Section 26 2702- Equipment Wiring Systems
 - Section 26 2900- Low voltage Controllers

1.02 SUBMITTALS

- A. Include outline drawings with dimensions, and equipment ratings for voltage, ampacity, horsepower, and short circuit.

1.03 OPERATION AND MAINTENANCE DATA

- A. All operations and maintenance data shall comply with the submission and content requirements specified under section GENERAL REQUIREMENTS.

1.04 GENERAL

- A. Provide disconnect switches for loads required by code. Review HVAC and Plumbing specifications to determine what equipment is furnished with disconnect switches. Install disconnect switches whether furnished under this contract or not. It is the Electrical Contractors' responsibility to determine the need for a disconnect switch for each load. The contractors shall include in their bid the code required disconnect switches whether indicated on the drawings or not.

PART 2 PRODUCTS

2.01 DISCONNECT SWITCHES

- A. Fusible Switch Assemblies (use only when overcurrent protection is required): NEMA Type Heavy Duty; quick-make, quick-break, load interrupter, enclosed knife switch with externally operable handle interlocked to prevent opening front cover with switch in ON position. Handle lockable in OFF position. Fuse Clips: designed to accommodate Class R, Class J or Class CC (motors) cartridge type fuses.
- B. Non-fusible Switch Assemblies: NEMA Type Heavy Duty; quick-make, quick-break, load interrupter, enclosed knife switch with externally operable handle interlocked to prevent opening front cover with switch in ON position. Handle lockable in OFF position.
- C. Enclosure:
1. Indoor: NEMA 1 code gauge steel with rust inhibiting primer and baked enamel finish
 2. Outdoors: NEMA 3R code gauge zinc coated steel with baked enamel finish or NEMA 4 when indicated on drawings.
 - a. Corrosive Areas: NEMA Type 4X, 304 stainless steel with brushed finish.
 - b. Provide manufacturer's equipment ground kit in all disconnect switches.
 - c. In applications where the switch serves as the service entrance disconnect, provide service ground kit, label as service disconnect and provide UL listing for service disconnect.

2.02 FUSES

- A. Fuses 600 Amperes and Less: Dual element, time delay, 250-volt, UL Class RK 1, LPJ Interrupting Rating: 200,000 rms amperes.

- B. Fuses 601 Amperes and Larger: Low Peak, time delay, 600-volt, UL Class L. Interrupting Rating: 200,000 rms amperes.
- C. Fuses 30 Amperes and less: Time-Delay, 600-volt, UL Class CC, UL Class RK. Interrupting rating: 200,000 rms amperes.
- D. Provide three (3) spares of each size and type fuse.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install disconnect switches where indicated on Drawings or required by NEC.
- B. Provide identification as specified in Section 26 0553.
- C. Provide label on inside of disconnect cover identifying the type and size of fuse to be utilized.

END OF SECTION 26 27 28

SECTION 26 28 13

FUSES

PART 1 GENERAL

1.01 RELATED WORK

- A. Applicable provisions of Division 1 govern work under this Section.

1.02 SUBMITTALS

- A. Provide device dimensions, nameplate nomenclature, and electrical ratings.
- B. Submit manufacturer's product data sheets with installation instructions.

1.03 REGULATORY REQUIREMENTS

- A. Listed by Underwriter's Laboratories, Inc., and suitable for specific application.

1.02 EXTRA MATERIALS

- A. Provide three (3) spares of each size and type fuse.

PART 2 PRODUCTS

2.01 FUSES

- A. Fuses 600 Amperes and Less: Dual element, time delay, 250-volt, UL Class RK 1, LPJ Interrupting Rating: 200,000 rms amperes.
- B. Fuses 601 Amperes and Larger: Low Peak, time delay, 600-volt, UL Class L. Interrupting Rating: 200,000 rms amperes.
- C. Fuses 30 Amperes and less: Time-Delay, 600-volt, UL Class CC, UL Class RK 1. Interrupting rating: 200,000 rms amperes.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Fuses shall not be installed until equipment is ready to be energized.

END OF SECTION 26 28 13

Page Intentionally Left Blank

SECTION 26 28 16
ENCLOSED SWITCHES AND CIRCUIT BREAKERS

PART 1 GENERAL

1.01 RELATED WORK

- A. Applicable provisions of Division 1 govern work under this Section.

1.02 REFERENCES

- A. NEMA AB 1 - Molded Case Circuit Breakers.

1.03 SUBMITTALS

- A. Include circuit breaker ratings, withstand ratings, frame size, time-current and let-through current curves, outline dimensions, and terminal lug sizes.

1.04 OPERATION AND MAINTENANCE DATA

- A. All operations and maintenance data shall comply with the submission and content requirements specified under section GENERAL REQUIREMENTS.

1.05 REGULATORY REQUIREMENTS

- A. Circuit breakers listed by Underwriter's Laboratories, Inc., and suitable for specific application.

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.

PART 2 PRODUCTS

2.01 CIRCUIT BREAKERS

- A. Molded Case Circuit Breakers: Inverse time with integral thermal and instantaneous magnetic trip elements in each pole.

2.02 RATINGS:

- A. Ratings as shown on the Drawings.

2.03 ENCLOSURE

- A. Enclosure: NEMA AB 1; Type 1, 3R
- B. Fabricate enclosure from steel.
- C. Finish using manufacturer's standard gray enamel finish.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install enclosed circuit breakers where shown on Drawings, in accordance with manufacturer's instructions.

3.02 FIELD QUALITY CONTROL

- A. Inspect visually and perform several mechanical ON-OFF operations on each circuit breaker.

END OF SECTION 26 28 16

Page Intentionally Left Blank

SECTION 26 51 13
LED LIGHTING FIXTURES

PART 1 GENERAL

1.01 GENERAL

- A. Applicable provisions of Division 1 govern work under this Section.

1.02 SUBMITTALS

- A. Include outline drawings, LED drivers, support points, weights, accessory information and performance data for each luminaire type.
- B. For each luminaire type, submit luminaire information and submit catalog cuts with highlighted catalog numbers and required accessories.

1.03 OPERATION AND MAINTENANCE DATA

- A. All operations and maintenance data shall comply with the submission and content requirements specified under section GENERAL REQUIREMENTS.

PART 2 PRODUCTS

2.01 LUMINAIRES AND ACCESSORIES

- A. See the Lighting Fixture Schedule on the drawings, for type of fixtures and catalog numbers. Catalog numbers are shown on the drawings for quality and performance requirements only. Fixtures manufactured by others are equally acceptable provided they meet or exceed the performance of the indicated fixtures and meet the intent of the design.
- B. LED Lighting Fixtures (ONLY) will be installed for this project.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. Install suspended luminaires and exit signs using pendants supported from swivel hangers. Heavy duty jack chain supports may be used where indicated on the fixture schedule. Provide pendant or chain length required to suspend luminaire at indicated height.
- C. Support luminaires larger than 1X8 size independent of ceiling framing.
- D. Locate ceiling luminaires as indicated on reflected ceiling plan.
- E. Install surface mounted luminaires and exit signs plumb and adjust to align with building lines and with each other. Secure to prohibit movement.
- F. The Contractor shall install fixture supports as required. Fixture installations with fixtures supported only by insecure boxes will be rejected. It shall be the Contractor's responsibility to support all lighting fixtures adequately, providing extra steel work for the support of fixtures if required. Any components necessary for mounting fixtures shall be provided by the Contractor. No plastic, composition or wood type anchors shall be used.
- G. Install recessed luminaires to permit removal from below.
- H. Install recessed luminaires using accessories and firestopping materials to meet regulatory requirements for fire rating.
- I. Install code required hardware to secure recessed grid-supported luminaires in place.
- J. Install wall mounted luminaires and exit signs at height as scheduled.
- K. Install accessories furnished with each luminaire.
- L. Make wiring connections to branch circuit using building wire with insulation suitable for temperature conditions within luminaire.
- M. Bond fixtures and metal accessories to branch circuit equipment grounding conductor.
- N. Install specified lamps in each luminaire and exit sign.

- O. All LED/Drivers shall be delivered to the job in sealed cartons and protected from dirt and dust during storage on the project. Lamps shall be taken directly from the cartons and installed in the fixture with special care so that they do not become dusty and are not soiled in the operation.
- P. All new LED Fixtures shall be operational at the Substantial Completion of the project.
- Q. All LED fixtures shall be approved by Focus-On-Energy.

3.02 ADJUSTING AND CLEANING

- A. Align luminaires and clean lenses and diffusers at completion of Work. Clean paint splatters, dirt, and debris from installed luminaires.
- B. Aim and adjust luminaires as indicated on Drawings or as directed by the A/E.
- C. Touch up luminaire finish at completion of work.

3.03 FIELD QUALITY CONTROL

- A. Operate each luminaire after installation and connection. Inspect for proper connection and operation.

3.04 ALL FIXTURE CONNECTIONS

- A. Direct box or conduit connections for surface and recessed fixtures. Flexible metal conduit from a J-box for recessed lay-in light fixtures. Flexible metal conduit shall be minimum 3/8" (10 mm) minimum diameter and six foot (1.8 M) maximum length. Conduit length shall allow movement of the fixture for maintenance purposes.
- B. The flexible connectors shall be all steel, galvanized, clamp type with locknut or snap-in connector including those used on the master-slave unit.

END OF SECTION 26 51 13

SECTION 31 10 00

SITE CLEARING

PART 1 - GENERAL

1.1 WORK INCLUDED

- A. The CONTRACTOR shall provide all materials, labor, equipment and service necessary, for the completion of the work specified in this section.
- B. Removal and or transplanting of trees, shrubs, plant life and grasses as indicated on the construction documents within the project limits.
- C. Grubbing of any stumps or vegetation as indicated on the construction documents within the project limits.
- D. Removal of buildings, concrete, asphalt, existing utilities, and all fixed elements as indicated on the construction drawings.
- E. Coordinate all work within the right of way with the municipality.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

3.1 Extent of Work

- A. Site preparation work shall be performed over all of the area lying within the project limit lines.
- B. Prior to the start of demolition, site clearing activities and/or earthwork verify that perimeter erosion control measures are in place.

3.2 Clearing and Grubbing

- A. Clear all trees, vegetation, weeds, brush, roots, etc., lying within the project limits as indicated on the construction documents.
- B. Trees that are specified to remain shall be protected from construction activity and are indicated on the construction documents.
- C. It is intended that those areas that are to be undisturbed by construction remain as is, however, if disturbed, they must be returned to their existing condition prior to damage when construction is complete.

3.3 Oak Wilt

- A. Do not cut, prune or otherwise wound oaks in the spring or early summer, generally from April 15th through July 1st.
- B. Any activity during this period that cuts or tears through the bark and exposes live wood in oak trees shall have applied immediately and thoroughly pruning sealer or tree paint over the wound.

- C. Torn branches or roots should be cut clean and the cut surface painted. For additional treatment of the roots, after treating cover the exposed roots with soil.
- D. Should an oak tree be damaged, immediately notify the CONSTRUCTION MANAGER so the proper specialists can be consulted as to how to resolve the situation.
- E. Damage to oak trees indicated to remain shall be repaired and the proper preventative measure taken by the CONTRACTOR at no additional costs to the OWNER.

3.4 Protection of Trees

- A. Existing trees which are to remain are to be protected against construction activity. Do not smother trees by storing materials within the canopy line. Wire plank protection shall be placed around the trunks.
- B. If a tree scheduled to remain is destroyed by construction activity, the CONTRACTOR shall provide a tree of equivalent size and species or may be assessed a penalty not to exceed \$2,000.00. Any such assessment will be deducted from the contract sum by Change Order.

3.5 Demolition

- A. Conduct demolition work with minimum interference to roads, streets, driveways, sidewalks, and other facilities including adjacent buildings, structures and their occupants.
- B. Sawcut all hard surfaces to provide a clear break line for new abutting surfaces to join at all locations indicated on the construction documents.
- C. Remove all fixed elements, hard surface areas, utilities, vegetation, miscellaneous items as indicated on the construction drawings.
- D. Take precautions to guard against movement, settlement or collapse of any surrounding structures indicated to remain and be liable for any such movement, settlement or collapse.

3.6 Disposal of Waste Material

- A. Burning is not permitted on the OWNER'S property, unless authorization is obtained from the OWNER and the local governing Fire Department.
- B. Remove all organic and cleared vegetative matter from the site and dispose of in a legal manner.
- C. Remove all concrete, bituminous and debris from site and dispose of in a legal manner.

END OF DOCUMENT 31 10 00

SECTION 31 20 00

EARTH MOVING

PART 1 - GENERAL

1.1 Work Included

- A. The CONTRACTOR shall provide all materials, labor, equipment and services necessary for the completion of the work specified in this section.
- B. Salvaging Topsoil
- C. Unclassified Excavation
- D. Excavating, Backfilling, and Compacting for Structure
- E. Excavating, Backfilling, and Compacting for Utilities
- F. Excavating, Backfilling, and Compacting for Pavement
- G. Topsoil Placement
- H. Landscape Finish Grading

1.2 References

- A. ANSI/ASTM D698 - Test Methods for Moisture-Density Relations of Soils and Soil-Aggregate Mixtures. Using 5.5 lb Rammer and 12" Drop.
- B. ANSI/ASTM D1556 - Test Method for Density of Soil in Place by Sand-Cone Method.
- C. ANSI/ASTM D1557 - Test Methods for Moisture-Density Relations of Soils and Soil-Aggregate Mixtures Using 10 lb Rammer and 18" Drop.

1.3 Existing Conditions

- A. Known underground, surface, and aerial utility lines and buried objects are indicated on the drawings. Contact Digger's Hotline and the OWNER five (5) working days prior to start of demolition and construction.
- B. Locate all private utilities; coordinate with OWNER five (5) working days prior to the start of work.
- C. Hand expose existing utilities prior to start of work.

1.4 Submittals

- A. Samples: Submit 25 lb sample of each type of fill to testing laboratory, in air-tight containers.

1.5 Record Documents

- A. Accurately record locations of utilities remaining, by horizontal dimensions, elevations or inverts, q and slope gradients.

PART 2 - PRODUCTS

2.1 Materials

- A. Topsoil: On site excavated material consisting of loam, silt loam, silty clay loam, or clay loam humus-bearing adapted to sustain plant life. Topsoil shall be graded, free of roots, rocks larger than 5/8", subsoil, debris, and large weeds.
- B. Subgrade: Excavated material, graded, free of clumps larger than 6", rocks larger than 3", and debris.
- C. Rock and Boulders
 - 1. Rock excavation shall include all hard, solid rock in ledges, bedded deposits, and unstratified masses and all conglomerate deposits, or any other material so firmly cemented as to present all the characteristics of solid rock; which material is so hard or so firmly cemented that in the opinion of the CIVIL ENGINEER it is not practical to excavate and remove except after thorough and continuous drilling and blasting.
 - 2. Boulder excavation shall include all rock boulders necessary to be removed having a volume of 1-1/2 cubic yard or more.
 - 3. The classification of rock and boulder excavation shall not apply to plain or bituminous bound bases or surface courses of macadam, gravel, or frozen material.
 - 4. Rock and boulder excavation shall be removed to provide a clearance of at least 6" below and on all sides of pipe and other appurtenances.
- D. Granular Fill: Granular fill material, when required, shall consist of natural sand or a mixture of sand with gravel, crushed gravel, crushed stone or other broken or fragmented material. Granular fill shall meet the requirements of Section 209, Granular backfill of the Standard Specifications for Highway and Structure Construction.
- E. Stone Bedding: Stone for Class "B" bedding shall meet requirements of ASTM 33.0 with P200 content not exceeding 5%.
- F. Dense Graded Base Course: Dense graded base course shall meet the requirements of Section 305, Dense Graded Base course of Standard Specifications for Highway and Structure Construction for D.O.T. 3/4" or 1-1/4" Gradation as per stated on design documents.

PART 3 - EXECUTION

3.1 Salvaging and Spreading Topsoil

- A. Remove materials of horticultural value from topsoil prior to stripping.
- B. Disc existing two directions prior to stripping topsoil material.
- C. Strip topsoil; do not allow topsoil to be mixed with subgrade.
- D. Stockpile salvaged topsoil on site for future use.
 - A. Place silt fence around the base of the topsoil stockpile to prevent sediment runoff if piles within 100 ft of property lines, waterways, drainage ways, public roads or streets and as per plans.
- E. All topsoil shall be removed from hardsurface areas. If topsoil is not to be utilized in other grass areas within the proposed construction site, it shall be exported from the site.

3.2 Unclassified Excavation

A. Excavating

1. Excavate in accordance with design grades and elevations.
2. Do not perform additional excavation without prior written authorization of CIVIL ENGINEER/OWNER.
3. Machine shape banks.
4. Hand trim excavations to remove loose and/or organic matter.
5. Fill over-excavated areas under structure bearing surfaces with stone bedding.
6. Do not disturb soil within canopy line of existing trees or shrubs that are to remain.
7. If necessary to excavate through canopy line, perform work by hand and cut roots encountered with a sharp ax.

B. Overhaul

1. Haul excess material from site and dispose of in a legal manner unless otherwise stated.

C. Granular Fill

1. Place fill materials in compacted lifts not exceeding 8" in depth in accordance with design grades and contours.

D. Rough Grading

1. Rough grade site to required contours and elevations as required for finish grading and surface treatment.
2. Prior to placing fill material over undisturbed subgrade surfaces, scarify to a minimum depth of 12" and compact. Compact to 100% Standard Proctor in areas under pavement. Compact to 95% Standard Proctor in general grass areas.

3.3 Excavating, Backfilling, and Compacting for Utilities

A. Preparation

1. Establish limits of excavation by area and elevation. Designate and identify datum elevation.
2. Set required lines and levels.
3. Maintain existing and established benchmarks, monuments, and other reference points.

B. Utilities

1. Notify utility companies to adjust, relocate, and/or remove lines which are in the way of excavation.
2. CONTRACTOR shall be responsible for maintaining, adjusting, or relocating existing utility lines which are located in the work area. Costs exceeding those covered by utility companies shall be included in CONTRACTOR'S bid.

3. Protect and maintain active utility services exposed by excavation.
4. Remove abandoned utility lines from areas of excavation. Cap, plug, or seal such lines and notify project CIVIL ENGINEER of such work completed.
5. Locate and record abandoned and/or active utility lines adjusted or relocated during construction with the project CIVIL ENGINEER.
6. Gas, electric (including main service, site lighting, conduits, and signage) cable, and telephone construction by others. Coordinate all earthwork activities with respective trades responsible for installation of said utilities.

C. Excavation

1. Excavate in accordance with lines and grades indicated on the plan set documents.
2. Excavate trenches wide enough to enable proper installation of utilities and to allow for inspection. Trim and shape trench bottoms and leave free of irregular lumps and projections.
3. Do not disturb soil within canopy line of existing trees or shrubs that are indicated to remain. If it is necessary to excavate within the canopy line, perform work by hand and cut exposed roots with a sharp ax.
4. When complete with work, request CIVIL ENGINEER to inspect excavations. Correct unauthorized excavation as instructed by CIVIL ENGINEER at no additional cost to OWNER.
 5. Stockpile excavated subsoil material for reuse on site. Remove excess or unsuitable excavated subsoil/ topsoil material from site and dispose of it in a legal manner unless otherwise stated on plans.

D. Dewatering Trenches

1. Each Contractor shall provide own separate equipment including pumps, piping, and temporary drains required to keep trenches dry during construction.
2. Do not discharge pumped water directly into municipal sewer systems without receiving prior approval. Ensure discharge water does not contain contamination or silt held in suspension.
3. Direct surface drainage away from excavated areas. Control grading in and adjacent to excavations to prevent water running into excavated areas or onto adjacent properties or public thoroughfares.
4. Furnish and operate pumping equipment on a twenty-four (24) hour basis if needed to keep excavated areas free of water until utilities have been placed and backfilled.

E. Backfilling

1. All backfill material shall be on-site material unless granular fill is required by CIVIL ENGINEER/OWNER.
2. Do not start backfilling until utilities have been inspected by project CIVIL ENGINEER.
3. Ensure trenches are not in a frozen condition and are free of debris, snow, ice, or water.

4. Backfill as early as possible to provide time for natural settlement and compaction.
5. Place and compact backfill materials in lifts not exceeding 8". Use methods so as not to damage or disturb utilities.
6. Maintain $\pm 1.0\%$ optimum moisture content of backfill materials so as to attain required compaction density.
7. Remove excess backfill materials from site.

3.4 Excavating, Backfilling, and Compacting for Pavement

A. Excavation

1. Excavate the subsoil in accordance with grades and elevation required for completion of the work.

B. Backfilling

1. Verify areas to be backfilled are not frozen and are free from debris, snow, ice, and water.
2. Do not backfill over existing subgrade materials which are wet or spongy.
3. Prior to placing fill material over undisturbed subgrade surfaces, scarify to a minimum depth of 12" and compact. Compact to 100% Standard Proctor in areas under pavement. Compact to 95% Standard Proctor in general grass areas.
4. Direct surface drainage away from working areas. Control grading in and adjacent to working areas to prevent water from standing or running onto adjacent properties or public thoroughfares.
5. Place and compact backfill materials in lifts not exceeding 8". Use methods so as not to damage or disturb utilities.
6. Maintain $\pm 1.0\%$ optimum moisture content of backfill materials so as to attain required compaction density
7. Disk subgrade and fill if needed to dry out any wet, soft, or spongy areas prior to placing additional layers of fill or base course which do not pass loaded truck proof rolls. Disking operations for any one area or lift may extend for 3 days. Days with excessive rain or poor drying conditions as determined by the engineer will not be counted towards the 3 days. Areas that are not properly prepared for rain events may result in restarting the 3 days of disking/drying at the cost of the contractor. Preparation measures for rain event should be discussed with the project engineer. Disking shall occur a minimum of once per day. Any additional disking required after 3 days must be approved by the owner before work proceeds.

Backfill as early as possible to provide time for natural settlement and compaction to occur.

Provide water if needed to maintain optimum moisture content of backfill materials to meet specified compaction density.

C. Excavation Below Asphalt

1. Deposits of water-bearing soil, organic topsoil, and existing material containing considerable amounts of vegetable matter, or other unsuitable debris shall be removed from the area to receive paved surfaces to a minimum depth of proposed subgrade shown on the plans or until an elevation of non-organic material is reached, and/or as direction by the CIVIL ENGINEER. See Geotechnical Boring Report depicting any existing anticipated depths. Areas of excavation shall be backfilled with on-site suitable material if present. If said suitable material is not present, imported material (approved by CE) shall be imported as part of the base bid. The bottoms of such excavations shall be sloped and graded so that water does not pond in the bottoms of excavated areas.
2. Humus-bearing soils and other excavated materials not suitable for embankment construction shall be disposed of off site in a legal manner.
3. Overexcavation of unsuitable subgrade material discovered during construction under proposed asphalt area not depicted on geotechnical report or plans shall be deemed as an extra cost.
4. Backfill required for over-excavation of areas discovered during construction under proposed asphalt/synthetic area not depicted on geotechnical report or plans shall be clean non-organic fill, stone/ or granular material (approved by CE) and deemed as an extra cost.

3.5 Topsoil Placement as Finish Grading

- A. Place topsoil in areas where seeding and/or sodding is required to a min thickness of 4" lightly compacted depth.
- B. Place topsoil in relatively dry state, during dry weather.
- C. Finish grade topsoil eliminating rough or low areas while maintaining profiles and contour of subgrade and achieving required min 6" compacted depth.
- D. Remove roots, debris, rocks larger than 5/8" in size, weeds, and foreign material while spreading.
- E. Manually spread topsoil close to trees, fences, buildings, and other objects to prevent damage.
- F. Lightly compact topsoil after placement.
- G. Leave the stockpile area and site clean and ready for seeding, sodding, or other finish treatment.

3.6 Protection

- A. Protect existing features remaining as part of final landscaping.
- B. Protect existing and established benchmarks, roads, sidewalks, paving, vegetation, and curbs against damage from equipment and vehicular or foot traffic.
- C. Protect excavation areas by shoring, bracing, sheet piling, underpinning, or other methods as needed to prevent cave-ins or loose dirt from falling into excavations.
- D. Secure adjacent structures prior to the start of excavation which may be damaged by excavation work, including utility lines and pipe chases.
- E. Notify CIVIL ENGINEER of unforeseen subsurface conditions encountered and discontinue work in the area until CIVIL ENGINEER provides notification to resume work.

- F. Grade around excavation areas to prevent surface water runoff into excavated areas resulting in pounding.
- G. Haul roads shall be maintained and repaired in accordance with Section 618 of the Standard Specifications for Highway and Structure Construction.

3.7 Compaction Requirements

- A. Compact all subgrade and fill below proposed bituminous pavement to ASTM D1557, 100% Standard Proctor. Compact to 95% Standard Proctor in general grass areas.
- B. Proof roll testing shall also be performed using a fully loaded (20 US tons of material) tandem axle dump truck. The truck shall slowly drive back and forth at approximately 10'-15' wide intervals apart while the soils are evaluated for deflection / deformation below the rear tires. The truck shall cover the entire area being evaluated. Areas found to deflect more than approximately 1.5" in depth or leave permanent ruts of 2" or more will be evaluated by site engineer for potential subgrade improvements based on testing agency's recommendations.
- C. The CONTRACTOR shall provide equipment capable of adding measured amounts of moisture to the soil material as determined by moisture-density tests. Where the subgrade or layer of soil material must be moisture conditioned before compaction, uniformly apply required amount of water to the surface of subgrade, or layer of soil material in such manner as to prevent free water from appearing on the surface during or subsequent to compaction operations. Remove and replace soil material that is too wet to permit specified compaction of maximum dry density, as established in accordance with ASTM-D1557.

3.8 Compaction Testing

- A. Testing of compacted materials will be performed by an independent testing laboratory appointed and paid for by CONTRACTOR.
- B. Density testing shall be performed at a rate of 1 test per 10,000 SF or fraction thereof. Minimum of 3 test per lift. Additional proctors may be required if onsite material varies.
- C. Proof rolls shall be performed on all subgrades and finished aggregate base courses under pavements.
- D. When work for this section or portions of work are completed, notify the testing laboratory to perform density tests. Do not continue with additional portions of work until test results have been verified.
- E. If, during progress of work, tests indicate that compacted backfill materials do not meet specified requirements, remove defective work, replace and retest at no cost to OWNER as directed by the CIVIL ENGINEER.
- F. Verify that compacted fills have been tested before proceeding with placement of additional fill layers or finished aggregate base course.
- G. In-field testing shall be in accordance with ASTM D2922-78 "Density of Soil and Soil-Aggregate in Place by Nuclear Method." This test correlates to D-1556-74 "Density of Soil in Place by the Sand-Cone Method."
- H. The CONTRACTOR shall notify the testing laboratory and the CIVIL ENGINEER a minimum of forty-eight (48) hours in advance of the time compaction testing is required.

3.9 Tolerances

- Grade shall not vary from proposed plan grade in any location by the following:

- A. Top surface of subgrade in grassed areas: Plus or minus .5".
- B. Top surface of subgrade in paved areas: Plus or minus .5".
- C. Finish grade of general grassed areas: Plus or minus .5".

3.10 Field Quality Control

- A. Testing of granular fill and backfill materials will be performed by an independent testing laboratory appointed and paid for by the CONTRACTOR.
- B. Tests and analysis of fill material shall be performed in accordance with ANSI/ASTM D698 D1557.
- C. Compaction testing shall be performed in accordance with ANSI/ASTM D1556, ANSI/ASTM D1557, ANSI/ASTM D698.
- D. If testing indicates that the work does not meet specified requirements, remove work, replace and retest at no cost to OWNER.

3.11 Utility Locates

- A. All required Diggers Hotline locates and private utility locates shall be ordered and paid for by each contractor requiring the locate service.

END OF DOCUMENT 31 20 00

SECTION 31 25 00

EROSION CONTROL

PART 1 – GENERAL

1.1 SECTION INCLUDES

- A. The CONTRACTOR shall provide all materials, labor, equipment and services necessary for the completion of the work specified in this section.
- B. Placement and removal of silt fence.
- C. Placement of erosion control blankets/turf reinforcement.
- D. Installation of sediment tracking construction entrance.
- E. Placement, cleaning, and removal of inlet protection.

1.2 RELATED SECTIONS

- A. Section 311000 – Site Clearing
- B. Section 312000 – Earthmoving
- C. Section 334100 – Storm Utility Drainage Piping

1.3 REFERENCES

- A. State of Wisconsin Department of Transportation, Standard Specifications for Highway and Structure Construction, Current Edition.
- B. Wisconsin Department of Natural Resources Storm Water Construction and Post-Construction Technical Standards.
- C. State of Wisconsin Department of Transportation, Erosion Control Product Acceptability List for Multi-Modal Applications (PAL), Current Edition

1.4 REQUIREMENTS

- A. CONTRACTOR shall provide and secure all erosion control permits from all governing authorities not previously obtained by the OWNER.
- B. The OWNER shall obtain the WDNR/WPDES Notice of Intent: The CONTRACTOR shall abide by the requirements set in the Notice of Intent (NOI). A copy may be acquired from the ARCHITECT.
- C. Erosion control measures shall be installed as indicated on the project construction documents and abiding with requirements of the Wisconsin Storm Water Construction and Post-Construction Technical Standards.
- D. Including but not limited to the WDNR/WPDES Notice of Intent (N.O.I.).

PART 2 – PRODUCTS

2.1 EROSION CONTROL BLANKETS

- A. Erosion control blankets for non-channel use shall meet the requirements in Standard 1052 in the Wisconsin Storm Water Construction and Post-Construction Technical Standards.
- B. Erosion control blankets for non-channel use shall be on the Wisconsin Department of Transportation's PAL for Class I Erosion Mats, Type A.
- C. Erosion control blankets for use in channels shall be on the Wisconsin Department of Transportation's PAL for Class III, Type B Turf Reinforcement.

2.2 SILT FENCE

- A. Silt Fence shall meet the requirements in Standard 1056 in the Wisconsin Storm Water Construction and Post-Construction Technical Standards.
- B. Silt Fence shall have Wisconsin Department of Transportation PAL Type FF, geotextile fabric.

- 2.3 SEDIMENT TRACKING CONSTRUCTION ENTRANCE
 - A. Sediment tracking construction entrance shall meet the requirements in Standard 1057 in the Wisconsin Storm Water Construction and Post-Construction Technical Standards.
- 2.4 INLET PROTECTION
 - A. Inlet Protection shall meet the requirements in Standard 1060 in the Wisconsin Storm Water Construction and Post-Construction Technical Standards.
 - B. Inlet Protection shall have Wisconsin Department of Transportation PAL Type FF, geotextile fabric.

PART 3 – EXECUTION

- 3.1 INSTALLATION OF EROSION CONTROL BLANKET
 - A. Install Erosion Control blanket in accordance with Standard 1052 and 1053 in the Wisconsin Storm Water Construction and Post-Construction Technical Standards.
 - B. Refer to manufacturer's recommendations and detail drawings for additional installation information.
- 3.2 INSTALLATION OF SILT FENCE
 - A. Install silt fence in accordance with Standard 1056 in the Wisconsin Storm Water Construction and Post-Construction Technical Standards.
- 3.3 SEDIMENT TRACKING CONSTRUCTION ENTRANCE
 - A. Install sediment tracking construction entrance in accordance with Standard 1057 in the Wisconsin Storm Water Construction and Post-Construction Technical Standards.
- 3.4 INLET PROTECTION
 - A. Install inlet protection in accordance with Standard 1060 in the Wisconsin Storm Water Construction and Post-Construction Technical Standards.
- 3.5 NOTICE OF INTENT
 - A. The PROJECT CIVIL ENGINEER, on behalf of the OWNER, has submitted to the Wisconsin Department of Natural Resources, the Notice of Intent (NOI). It is the responsibility of the CONTRACTOR to perform all work in accordance with the NOI application. A copy may be obtained from the A/E upon request.
- 3.6 ONGOING INSPECTIONS
 - A. Inspect and document all inspections of erosion control elements for the required NOI documentation

END OF DOCUMENT 31 25 00

SECTION 32 11 23

AGGREGATE BASE COURSES

PART 1 - GENERAL

1.1 Work Included

- A. The CONTRACTOR shall provide all materials, labor, equipment and services necessary for the completion of the work specified in this section.
- B. Furnish, place and compact dense graded base course for pavement areas as indicated on construction documents.

1.2 References

- A. State of Wisconsin Department of Transportation, Division of Highways Standard Specifications for Highway and Structure Construction, Current Edition.

PART 2 - PRODUCTS

2.1 Dense Graded Base Course

- A. Dense graded base course shall meet Section 305 Base Aggregate Dense ¾ inch and 1 ¼ Inch, of Standard Specifications for Highway and Structure Construction.

2.2 BREAKER RUN (IF Required)

- A. Material shall consist of crushed gravel, stone, or broken fragmented material meeting the following gradation requirements:

B.	Sieve	% Passing (by weight)
	3"	100
	2"	75-90
	1 1/2"	60-75
	3/4"	40-60
	3/8"	20-40
	#4	20-40
	#10	10-30
	#40	5-20
	#100	5-10
	#200	1-5

PART 3 - EXECUTION

3.1 General

- A. Place material meeting requirements of Section 305 of Standard Specifications for Highway and Structure Construction, Current Edition, State of Wisconsin Department of Transportation, Division of Highways.
- B. Compact material meeting Special Compaction Requirements of Section 305 of Standard Specifications for Highway and Structure Construction, Current Edition, State of Wisconsin Department of Transportation, Division of Highways.

- A. Remove surplus material from site and dispose of in a legal manner.

3.2 Testing

- A. Testing of aggregate materials will be performed by an independent testing laboratory appointed and paid for by CONTRACTOR.
- B. One gradation test shall be performed prior to placement of any aggregate material. Sample may be obtained from stockpile or production test that are less than 3 months old.
- C. Gradation test shall be performed on the first day of placement and 1 additional test for every 2,000 tons of material placed or fraction thereof.

END OF DOCUMENT 32 11 23

SECTION 32 12 16

ASPHALT PAVING

PART 1 – GENERAL

1.1 WORK INCLUDED

- A. The CONTRACTOR shall provide all materials, labor, equipment and services necessary for the completion of the work specified in this section.
- B. Finish grading of dense graded base.
- C. Asphaltic concrete pavement for all proposed paved areas indicated on drawings.

1.2 REFERENCES

- A. State of Wisconsin Department of Transportation, Latest Edition, Standard Specifications for Highway and Structure Construction.

1.3 QUALITY ASSURANCES

A. Job Mix Formula

1. Prior to starting work, the CONTRACTOR shall submit to the project Civil Engineer a Job Mix Formula which has been prepared by a credible and independent testing laboratory. The CONTRACTOR, if required, shall submit separate job mixes for the surface and binder courses. The formula shall be based on testing of the material actually intended for use on the project. The report shall be based on the Marshall Stability Method of Mix Design (ASTM D1559) and shall indicate the proposed mix meets the requirements in Section 460.2 of the Standard Specifications for Highway and Structure Construction for the specified mix.
2. No work shall start until receipt of project Civil Engineer approval of the formula.
3. The project Civil Engineer will inspect the paving operation, monitoring construction methods, gradation, temperature and finished density. Paving mix shall be monitored for proper gradation to ensure stability, flow and air voids is produced, and is maintained. It shall be the responsibility of the CONTRACTOR to insure that the mix meets the specified and submitted formula. The CONTRACTOR shall provide samples of aggregate and asphalt on request for purposes of testing or patching density core removals.
4. All construction procedures and materials noted by Civil Engineer not in accordance with this specification shall be discontinued or made to conform.

PART 2 – PRODUCTS

2.1 ASPHALT PAVEMENT

- A. Asphaltic pavement shall meet the requirements of HMA Pavement 5 LT 58-28 S or 4 LT 58-28 S Section 460.2.1 to 460.2.7 of the Standard Specifications for Highway and Structure Construction.
- B. Asphaltic pavement surface course aggregate gradation shall conform to the 12.5 mm aggregate gradation master range in Table 460-1 of the Standard Specifications for Highway and Structure Construction.
- C. Asphaltic pavement binder course aggregate gradation shall conform to the 12.5 mm aggregate gradation master range in Table 460-1 of the Standard Specifications for Highway and Structure Construction.
- D. Asphaltic binder grade shall be PG 58-28 S.
- E. The project Civil Engineer reserves the right to alter the grade of asphalt at the time of construction other than that specified in the contract, based on existing conditions.

PART 3 – EXECUTION

3.1 PREPARATION OF DENSE GRADED BASE

- A. Finish grade dense graded base.
 - B. Dense graded base shall be finish graded smooth and trimmed. It shall not vary more than 1/4" in any direction within 10' from required line, grade and level. It is the CONTRACTOR'S responsibility to maintain it in this condition until placement of asphaltic concrete.
 - C. Base course shall be watered and rolled immediately prior to placement of asphaltic concrete.
 - D. The project CONSTRUCTION MANAGER/ARCHITECT/OWNER reserves the right to alter the grade of asphalt at the time of construction other than that specified in the contract, based on existing conditions.
- 3.2 INSTALLATION OF ASPHALTIC CONCRETE PAVEMENT
- A. Asphaltic concrete paving shall conform to Section 460 Standard Specifications for Highway and Structure Construction, Latest Edition, unless specifically mentioned otherwise.
- 3.3 TESTING OF ASPHALTIC CONCRETE PAVEMENT
- A. Asphaltic concrete testing shall conform to Section 460 Standard Specifications for Highway and Structure Construction, Latest Edition, unless specifically mentioned otherwise.
 - B. Density
 - a. Modify the average sub-lot in-place density for surface course to 94.0% of the Gmm with no individual test less than 92.5% of the Gmm
 - b. Modify the average sub-lot in-place density for binder course to 92.0% of the Gmm with no individual test less than 90.5% of the Gmm
 - C. Mix Testing
 - a. Retained samples shall be kept for 30 days.
- 3.4 TOLERANCES
- A. Finish grade shall not vary from plan grade in any location by the following:
 - 1. Drives and parking areas: 1/8"

END OF SECTION 32 12 16

SECTION 32 13 13

PORTLAND CEMENT CONCRETE PAVING

PART 1 - GENERAL

1.1 WORK INCLUDED

- A. Exterior concrete for:
 - 1. Paving/Slabs
 - 2. Concrete sidewalks
- B. Reinforcement
- C. Surface finish.
- D. Curing.

1.2 RELATED WORK

- A. Section 32 11 23 – Aggregate Base Course.

1.3 QUALITY ASSURANCE

- A. Perform work in accordance with ACI 301.
- B. Obtain materials from same source throughout.
- C. Regulatory Requirements:
 - 1. Construct ramps and curb ramps in accordance with Americans with Disabilities Act.

1.4 SUBMITTALS

- A. Submittals:
 - 1. Proposed Mix Design for review prior to commencement of work.
 - 2. Prior to any concrete work being performed, the contractor must provide an on site reference sample to be used for acceptance of workmanship and finish. Samples shall be large enough to represent all finishing that apply, including but not limited to joints, saw cuts, brooming, coloring and stamping. In Lieu of an onsite sample, the contractor may provide a recently finish project within the municipality or at a reasonable distance from the project, as determined by the owner, to be used as a reference site.
 - 3. Product Data: Manufacturer's specifications and installation instructions for Detectable Warnings for Curb Ramps.

1.5 TESTS

- A. Submit proposed mix design for review prior to commencement of work.
- B. Test Reports: Reports in accordance with requirements specified in Article D, Field Quality Control.

PART 2 – PRODUCTS

2.1 CONCRETE MATERIALS

- A. Portland Cement: Type I conforming to ASTM C 150, "Standard Specification for Portland Cement".
- B. Normal Weight Aggregates: Conforming to ASTM C 33 "Standard Specification for Concrete Aggregate." Aggregates not complying with this standard may be used providing it can be shown by special test or a record of past performance that these aggregates produce concrete of adequate strength and durability.
- C. Fine aggregate: clean, natural sand, free from loam, clay lumps or deleterious substances. Fineness modulus of sand shall have a minimum value of 2.3 and a maximum value of 3.0.
- D. Coarse aggregate:
 - 1. Crushed and graded limestone containing no clay, mud, loam or foreign matter.

2. Limit to 1% of the coarse aggregate by weight the amount of chert with a specific gravity less than 2.40 in exposed concrete.
 3. Coarse aggregate shall be nominal maximum sizes of 3/4", conforming to ASTM C33, Table 2.
- E. Water: shall be clean and free from deleterious materials.
- F. Curing Compounds: Conforming to ASTM C-309, Type 1, Class A, clear or translucent without fugitive dye; Wax or saponifiable resin types are not approved.
1. Curing compounds shall exceed the moisture retention requirements of ASTM C309, when tested in accordance with ASTM C156 at the maximum coverage rate recommended by the manufacturer.
 2. Approved Products:
 - a. "Masterseal" by Master Builders
 - b. "1100 Clear" by W.R. Meadows
 - c. "Tri-Kote 26" by T. K. Products

2.2 REINFORCEMENT

- A. Welded Steel Wire Fabric: ASTM A185 plain type; in flat sheets; uncoated finish.
- B. Fibermesh 300 homopolymer polypropylene fibrillated fibers. Apply at 1.5 lbs/yd³

2.3 DESIGN

- A. Provide concrete mix with the following properties:
 1. Compressive Strength: 4,000 psi at 28 days
 2. Slump: 2" to 4"
 3. Maximum water to cementitious material (cement plus fly ash) ratio: 0.45.
 4. Minimum cement plus fly ash content: 520 lbs. per cubic yard
 5. Total air content required (air-entrained and entrapped air): 6% +/- 1.5%.

2.4 ACCESSORIES

- A. Preformed Joint Filler: ASTM D1751, asphalt impregnated fiber board. Provide filler throughout the slab depth and of 1/2" thickness.
- B. Detectable Warnings for Curb Ramps: Mat with truncated domes complying with Americans with Disabilities Act; provide fasteners and adhesives as recommended by mat manufacturer.
 1. Recycled Tire Core: Nylon and Rayon fibers mixed into rubber composite.
 2. Slip resistant surface.
 3. Perimeter beveled-edge.
 4. Provide fasteners, sealers, and adhesives as recommended by mat manufacturer:

PART 3 – EXECUTION

3.1 GENERAL

- A. Place material meeting requirements of Section 305 of Standard Specifications for Highway and Structure Construction, Current Edition, State of Wisconsin Department of Transportation, Division of Highways.
- B. Compact material meeting Special Compaction Requirements of Section 305 of Standard Specifications for Highway and Structure Construction, Current Edition, State of Wisconsin Department of Transportation, Division of Highways.
- C. Remove surplus material from site and dispose of in a legal manner.

3.1 INSPECTION

- A. Verify compacted granular base is ready to support paving and imposed loads.
- B. Verify gradients and elevations of base are correct.
- C. Beginning of installation means acceptance of existing conditions.

3.2 PREPARATION

- A. Moisten base to minimize absorption of water from fresh concrete.
- B. Notify ENGINEER a minimum 24 hours prior to commencement of concreting operations.

3.3 FORMING

- A. Place and secure forms to correct location, dimension, and profile.
- B. Place joint fillers vertical in position, in straight lines. Secure to formwork during concrete placement.

3.4 REINFORCEMENT

- A. Place reinforcement at top third height of slabs-on-grade.
- B. Interrupt reinforcement at all joints.

3.5 FORMED JOINTS

- A. Place expansion joints in sidewalks every 400 square feet with a maximum 40 ft. o.c. spacing.
- B. Place expansion joints in curb and gutter at 40 ft. o.c.
- C. Place expansion joints between curbs and walks.
- D. Place joint filler in expansion joints and between curbs and walks, between paving components and building, and at catch basins, manholes, and other appurtenances.
- E. Provide scored or sawn control joints unless otherwise specified on plans. Joints shall be at right angles to the edges of work.
 - 1. Where walks are wider than 8'-0" provide longitudinal joints as directed.
 - 2. Space control joints per plan or if not stated at 5 foot intervals for sidewalks.
 - 3. Space control joints at 10 feet intervals for curbs.
 - 4. Place control joints in flat work every 100 square feet with maximum 10 ft. spacing.
 - 5. All panels should be square or nearly so. The length should not exceed 1.5 times the width.
- F. Align curb, gutter, and sidewalk joints.
- G. Place construction joints at the end of all pours and at locations where placement operations are stopped for more than 1/2 hour. If the construction joint will also be an expansion joint, dowel and sleeve the reinforcement.

3.6 PLACING CONCRETE

- A. Place concrete in accordance with ACI 301.
- B. Tolerances
Finish grade shall not vary from plan grade at any location by the following:
 - a. Concrete walks/flat work: 1/8"
 - b. Concrete curbs and gutter: 1/8"

Sawcuts and/or tooled joints shall not vary more than 0.5" off a straight line pulled in 50' of length.

If the concrete surface or joint line varies more than the allowed tolerance, it will be at the Discretion of the CIVIL ENGINEER/or Owner whether the concrete section shall be removed and replaced.

3.7 FINISHING

- A. After striking off and consolidating concrete, smooth the surface by screeding and floating. Use hand methods only where mechanical floating is not possible. Adjust the floating to compact the surface and produce a uniform texture.
- B. Provide positive slope on concrete surfaces to provide drainage. After floating, test surface for trueness with a 10' straightedge. Distribute concrete as required to remove surface irregularities, and refloat repaired areas to provide a continuous, smooth finish.
- C. Work edges of walks and joints with a 1/4" radius edging tool. and a 4" wide smooth troweled surface at edges; provide broom finish on remainder of surface.

- D. After completion of floating and when excess moisture or surface sheen has disappeared, complete surface finishing by drawing a fine-hair broom across the concrete surface, perpendicular to the line of traffic. Repeat operation if required to provide a fine line texture acceptable to the A/E.
- E. Provide photo evidence of previous project or provide on-site mockup of finished concrete to be deemed an acceptable finish by construction manager prior to installation.

3.8 CURING/PROTECTION

- A. Use curing methods and provide protection as required.
- B. Apply Curing Compound uniformly in continuous operation by power-spray or roller in accordance with manufacturer's instructions.
 - 1. Recoat areas subjected to heavy rainfall occurring within 3 hours after initial application.
 - 2. Maintain continuity of coating and repair damage during curing period.
- C. Immediately after placement, protect concrete from premature drying, excessive hot or cold temperatures, and mechanical injury.
- D. Exclude traffic from concrete for at least 14 days after placement. When construction traffic is permitted, maintain the work as clean as possible and remove surface stains and spillage of materials as stains and spillages occur.

3.9 FIELD QUALITY CONTROL

- A. Materials and operations shall be tested and inspected as work progresses. Failure to detect defective work shall not prevent rejection when defect is discovered, nor shall it obligate the owner for final acceptance.
- B. Testing agencies shall meet the requirements of "Standard Recommended Practice for Inspection and Testing Agencies for Concrete, Steel, and Bituminous Materials as Used in Construction", ASTM E 329.
- C. The following testing services shall be performed by the testing agency and shall be paid for by the CONTRACTOR. Any additional testing due to failing results will be paid for by the Contractor.
 - 1. Secure composite samples in accordance with "Standard Method of Sampling Fresh Concrete," ASTM C 172.
 - 2. Mold and cure four cylinders from each test required in accordance with "Standard Method of Making the Curing Concrete Test Specimens in the Field," ASTM C 31.
 - 3. Test cylinders in accordance with "Cylindrical Standard Test Method for Compressive Strength of Concrete Specimens," ASTM C 39. Two cylinders shall be tested at 28 days for acceptance and one shall be tested at 7 days and one at 14 days for information.
 - 4. Make one set of cylinders for each 50 cubic yard or 5000 square feet of wall or floor surface or fraction thereof, of each mix design of concrete placed in any one day.
 - 5. A record shall be made by a representative of the General Contractor of the delivery ticket number for the particular load of concrete tested and the approximate location in the work at which each load represented by a strength test is deposited.
 - 6. Determine total air content of normal-weight concrete sample for each strength test in accordance with "Standard Test Method for Air Content of Freshly Mixed Concrete by the Pressure Method," ASTM C231 or "Standard Test Method for Air Content of Freshly Mixed Concrete by the Volumetric Method", ASTM C173.
 - 7. Submit one copy of all test data to A/E and the CONCRETE SUPPLIER within 3 days of tests.

END OF DOCUMENT 32 13 13

SECTION 32 17 23

PAVEMENT MARKINGS

PART 1 – GENERAL

1.1 SCOPE OF WORK

- A. The CONTRACTOR shall provide all labor, materials, equipment and service necessary, or incidental, to the completion of the work specified in this section.
- B. Parking lot striping.

1.2 QUALITY ASSURANCE

- A. Work in this section shall be completed by workmen skilled and experienced in the application of pavement markings on bituminous surfaces. Submit to the ARCHITECT evidence of five (5) years of experience. List projects of a similar scope.

1.3 JOB CONDITIONS

- A. Verify with the asphaltic paving contractor that the surface on which the markings are to be applied has cured and is ready to be striped.
- B. Observe the environmental precautions regarding temperature and humidity in the application of the line marking paint. Delay applications when drying conditions will not allow the paint materials to dry in a timely manner.

PART 2 – PRODUCTS

2.1 MATERIALS

- A. Paint shall be waterborne or solvent borne, colors as shown or specified herein. Pavement marking paints shall comply with applicable state and local laws enacted to ensure compliance with Federal Clean Air Standards. Paint materials shall conform to the restrictions of the Local Air Pollution Control District.
- B. Waterborne Paint: Paints shall conform to FS TT-P-1952
- C. Solvent Borne Paint: Paint shall conform to FS A-A-2886 or AASHTO M248. Paint shall be non-bleeding, quick-drying, and alkyd petroleum base paint suitable for traffic-bearing surface and be mixed in accordance with manufacture's instructions before application for colors White.

PART 3 – EXECUTION

3.1 LAYOUT

- A. Do not apply paint until paving has cured a minimum of 14 days.
- B. Use steel tapes, transits, and other surveying equipment which will allow the precise measurement of distances and angles.
- C. Perform layout with chalk or lumber crayon only.
- D. Remove grease, oil, dirt, or other surface contaminants which would affect the appearance or performance of the painting work.

3.2 APPLICATION

- A. Install pavement markings according to the manufacture's recommended procedures for the specified material.
- B. Tolerances:
 - 1. General: Make lines parallel, evenly spaced, and with sharply defined edges.
 - 2. Line Widths:
 - a. Plus or minus 1/4 inch variance on straight segments.
 - b. Plus or minus 1/2 inch variance on curved alignments.
- C. Protect completed work from damage.

3.3 CLEANING

- A. Remove drips, overspray, improper markings, and paint material tracked by traffic by sand blasting, wire brushing, or other methods approved by architect.

END OF DOCUMENT 32 17 23

SECTION 32 92 00

TURF AND GRASSES

PART 1 – GENERAL

1.1 WORK INCLUDED

- A. Fertilizing
- B. Seeding
- C. Mulching
- D. Maintenance

1.2 REFERENCES

- A. FS O-F-241 - Fertilizers, Mixed, Commercial.

1.3. DEFINITIONS

- A. Weeds: Includes Dandelion, Jimsonweed, Quack grass, Horsetail, Morning Glory, Rush Grass, Mustard, Lambsquarter, Chickweed, Cress, Crabgrass, Canadian Thistle, Nutgrass, Poison Oak, Blackberry, Tansy Ragwort, Bermuda Grass, Johnson Grass, Poison Ivy, Nut Sedge, Nimble Will, Bindweed, Bent Grass, Wild Garlic, Perennial Sorrel, and Brome Grass.

1.4 REGULATORY REQUIREMENTS

- A. Comply with local governing regulatory agencies for fertilizer and herbicide composition.

1.5 QUALITY ASSURANCE

- A. Provide to project CONSTRUCTION MANAGER tags from seed mixture containers showing percentage of seed mix, year of production, net weight, date of packaging, and location of packaging prior to the start of seeding.

1.6 TESTS

- A. Testing is not required if recent tests are available for imported topsoil. Submit these test results to testing laboratory for approval. Indicate, by test results, information necessary to determine suitability.

1.7 MAINTENANCE DATA

- A. Submit maintenance data for the OWNER'S continuation of maintenance.
- B. Include maintenance instructions for the OWNER relating to cutting method and maximum grass height, type, application frequency, and recommended coverage of fertilizer to be utilized.

1.8 DELIVERY, STORAGE AND HANDLING

- A. Deliver grass seed mixture in sealed containers. Seed provided in damaged packages will not be accepted.

- B. Deliver fertilizer in waterproof bags showing weight, chemical analysis, and name of manufacturer.

1.9 MAINTENANCE SERVICE

- A. Maintain seeded areas until acceptable growth is established.

- B. Maintenance

1. Immediately re-seed areas which show bare spots.
2. Protect seeded areas with warning signs during maintenance period.

- C. Acceptable Growth

1. When the majority of the seeding reaches the height of one-third greater than the anticipated cutting height, mowing should then follow standard frequency. (e.g. If a Kentucky Bluegrass turf is to be maintained at a 3 inch cutting height the new seedlings should be mowed when they reach a height of 4 inches.) After the second mowing and after the assessment that no washouts or large bare areas exist, the growth shall be deemed acceptable and from that point on, it is the OWNER'S responsibility.

PART 2 – PRODUCTS

2.1 ACCEPTABLE SEED SUPPLIERS

- A. L.L. Olds Seed Company
- B. Reinders
- C. The Scott's Company
- D. Horst Distributing
- E. Wisconsin Turf
1917 W. Court Street
P.O. Box 708
Janesville, WI 53547-0708

2.2 SEED MIXTURE

- A. Lawn Seed Mixture (General Turf Areas)

50% Kentucky Bluegrass
15% Creeping Red Fescue
12% Chewing Fescue
23% Improved Turf Type Perennial Ryegrass
Or Approved by CIVIL ENGINEER
Seeding Rate of 6 lbs. per 1,000 square feet

2.3 SOIL MATERIALS

- A. Additional Topsoil: Fertile, agricultural soil, typical for locality, capable of sustaining vigorous plant growth, taken from drained site; free of subsoil, clay or impurities, plants, weeds and roots; pH value: 5.4 minimum and 7.0 maximum.
- B. Salvaged Topsoil: Excavated from site and in accordance with Section 312000 - Earthmoving.

2.4 ACCESSORIES

- A. Mulching Material: Marsh hay or wheat straw, free from weeds, foreign matter detrimental to plant life, and dry. Hay or chopped cornstalks are not acceptable.
- B. Fertilizer: Starter Fertilizer to the following proportions: Nitrogen 10 percent, phosphoric acid 18 percent, soluble potash 22 percent. Apply at rate of .5 lb N per 1000 S.F.
- C. Water: Clean, fresh and free of substances or matter which could inhibit vigorous growth of grass.

PART 3 – EXECUTION

3.1 INSPECTION

- A. Verify that prepared soil base is ready to receive work of this section.
- B. Beginning of installation means acceptance of existing site conditions.

3.2 FERTILIZING

- A. Apply fertilizer in accordance with manufacturer's instructions.
- B. Apply after smooth raking of topsoil and prior to roller compaction.
- C. Do not apply fertilizer at same time or with same machine as will be used to apply seed. Apply fertilizer after seed has been dragged and soil leveled.
- D. Mix thoroughly into upper 2" of topsoil.
- E. Lightly water to aid dissipation of fertilizer.

3.3 SEEDING

- A. Apply seed evenly in two (2) intersecting directions. Rake in lightly. Do not seed area in excess of that which can be mulched on same day.
- B. Planting Season:
 - 1. General green areas - Starting May 1 through October 1.
 - 2. Athletic fields - Starting May 1 through August 15.
- C. Do not sow immediately following rain, when ground is too dry, or during windy periods.
- D. Drag seeded area with lightweight drag to cover seed and level soil.

- F. Immediately following seeding, fertilizing and compacting, apply mulch to a thickness of 1" to 1/2". Maintain clear of shrubs and trees. Crimping of mulch shall be performed in two (2) directions after placement of mulch.

3.4 MAINTENANCE

- A. During the maintenance period, LANDSCAPING CONTRACTOR shall, water, mow, and topdress/over seed all eroded or bare areas until substantial growth is established to prevent erosion or as approved by CIVIL ENGINEER/ OWNER.

END OF DOCUMENT 32 92 00

SECTION 33 11 00
WATER DISTRIBUTION

PART 1 - GENERAL

1.1 Work Included

- A. Connection to existing water at location shown on plans.
- B. Water Laterals and appurtenances.

1.2 REFERENCE

- A. Standard Specifications for Sewer and Water Construction in Wisconsin, 6th Edition, Public Works Industry Improvement Program, 2835 North Mayfair Road, Milwaukee, WI 53227.
- B. AWWA - American Water Works Association Standards.
- C. ASTM D1785.

PART 2 – PRODUCTS

2.1 Water Lateral Pipe Material

- A. Polyvinyl Chloride Service
Polyvinyl Chloride (PVC) pipe Class 150, DR18 conforming to AWWA-C900 and in compliance with the requirements of Chapter 4.6.0 of Standard Specifications for Sewer and Water Construction.
- B. Ductile Iron Service
Ductile iron water pipe, class 50 meeting the requirements of Chapter 8.18.0 of the Standard Specifications.
- C. Copper water Service
Type K, soft copper tubing meeting the requirements of ASTM B88.
- D. HDPE Water Service
HDPE high density polyethylene tubing conforming to the Wisconsin Department of Commerce Administrative Code Section 84.30(4) (e).

2.2 Water Service Fittings

- A. Corporation Stops
Corporation stops shall be Ford, FB-1001. Fittings furnished under these specifications shall conform to ANSI/AWWA C800-01.
- B. Tapping Saddles
Tapping saddles used with ductile iron pipe shall be Smith Blair, type 313 double strap, with AWWA taper (cc or cs) thread, or equal. For PVC pipe, when specified, the tapping saddle shall be Smith Blair, type 317 or equal. Fittings furnished under these specifications shall conform to ANSI/AWWA C800-01.
- C. Curb Stops

Curb stops shall be McDonald 4701-T or equivalent, and shall be furnished with a stationary rod of compatible design, made by the same manufacturer as the curb stop.

D. Unions

Unions shall be 3-piece brass, with compression connections having a positive indicator to avoid over-tightening.

Unions shall be Mueller H-15403, or approved equal.

E. U-Branch, Wyes, Etc.

U-branch, wye and other fittings shall be brass, with compression connections having a positive indicator to avoid over-tightening. Fittings shall be produced specifically for water supply applications.

Mueller or approved equal.

2.3 Water Main Fittings

A. Water main fittings shall be push-on or mechanical joint (mechanical joint to have restrained joints are required) and shall meet requirements of Chapter 8.22.0 of the Standard Specifications for Sewer and Water Construction.

B. Compact style fittings per AWWA C153 are acceptable.

C. Cement lined per AWWA C104.

D. All fittings shall be fastened with fluorocarbon coated T-head bolts, Corblue or equal.

2.3 Polyethylene Film Envelope

A. Polyethylene film envelope is not required.

2.4 Gate Valves

A. Gate valves shall be a Waterous, or equivalent, mechanical joint, cast iron body, epoxy coated, resilient seal, bronze mounted with bronze non-rising stems, having "O" ring seals, opening left and tested at 200 psi working pressure. Valves shall be supported in a vertical position on a solid concrete block or concrete support.

B. Gate valves shall meet the requirements of Chapter 8.27.0 of Standard Specifications for Sewer and Water Construction.

C. Epoxy lined per AWWA C550.

2.5 Cast Iron Valve Boxes

A. Valve boxes shall be Mueller H-10357 or equal with a no tilt drop cover marked "Water" and of the length required for the depth of cover shown on the plans. Valve boxes shall be supported on gate valve adaptors as manufactured by Adaptor, Inc. or approved equal.

B. Cast iron valve boxes shall meet requirements of Chapter 8.29.0 of the Standard Specifications for Sewer and Water Construction. CONTRACTOR will furnish extension if required to meet existing surface or finished grades.

2.6 Concrete Buttresses

- A. Ready-mixed concrete shall be used.
- B. Concrete shall have following characteristics:

<u>Buttresses</u>	
28 day Compressive Strength	2000
Maximum Slump	5"
Air-Entertainment by Volume	4%-7%
Minimum Cement Content	4 bags
Maximum Aggregate	3/4"

2.7 Detectable Pipe Warning Wire for Non-Metallic Pipe

- A. 14 gauge wire with 0.015" thick vinyl insulation.
- B. Moisture, oil and gasoline resistant.
- C. Splices either solder or brass clamp wrapped with electrical tape or shrink wrapped.

2.8 Tapping Valve and Sleeve

- A. Tapping sleeve shall be stainless steel and shall be approved by the Municipality.
- B. The valve shall open counter clockwise and shall be approved by the Municipality prior to installation.

PART 3 – EXECUTION

3.1 Connection to Existing System

- A. CONTRACTOR shall coordinate with the Municipality prior to filling new watermain.
- B. Disinfect and test new main in accordance with Part IV of the Standard Specification for Sewer and Water Construction.

3.2 Connection to Existing Water

- A. Connection of new water to existing shall meet the requirements of Chapter 4.14.0 of Standard specifications. Connection or tap method shall be approved by the Municipality prior to installation

3.3 Gate Valve and Valve Box Installation

- A. Provide sufficient quantities of crushed stone or rock conforming to the requirements of ASTM C33, Gradation No. 2 over and around the valve to prevent sand blockages of valve bonnet and box.

3.4 Pipe Restraint

- A. Concrete buttresses shall meet requirements of Article 4.3.13 of Standard Specification for Sewer and Water Construction, except as modified herein. Water main joints shall be kept free of concrete.

3.5 Trench Length

A. Trench shall be backfilled every day. No open trench will be allowed to remain open overnight. Backfill material shall be installed to shed water.

3.6 Hydrostatic Test

A. Test watermain, including valves, in accordance with Section 4.15.0 of the Standard Specifications.

3.7 Detectable Warning Wire

A. Install warning wire above pipe for all non-metallic pipe installations.

3.8 Separation From Sewers

A. When water mains cross over sewers, provide a minimum of 12 inches from the bottom of the water main to the top of the sewer.

B. When water mains cross under sewers, provide a minimum of 18 inches from the top of the water main to the bottom of the sewer.

END OF DOCUMENT 33 11 00

SECTION 33 41 00

STORM UTILITY DRAINAGE PIPING

PART 1 – GENERAL

1.1 WORK INCLUDED

- A. The CONTRACTOR shall provide all materials, labor, equipment and services necessary for the completion of the work specified in this section.
- B. Installation of storm sewer pipe, endwall structures

1.2 REFERENCES

- A. 6th Edition of Standard Specifications for Sewer and Water Construction in Wisconsin, Public Works Industry Improvement Program, 2835 North Mayfair Road, Milwaukee, WI 53223.
- B. Standard Specifications for Highway and Structure Construction, Latest Edition, State of Wisconsin, Department of Transportation, Division of Highways.
- C. Wisconsin Department of Safety and Professional Services (DSPS), Wisconsin Plumbing Products Register, latest edition.

PART 2 – PRODUCTS

2.1 STORM SEWER PIPE AND CULVERT

- A. Storm sewer pipe with diameters greater than 10" may use any of the pipe materials below unless specifically identified on the plan.
 - 1. Polyvinyl Chloride (PVC) pipe conforming to ASTM D3034. Pipes over 15" in diameter shall meet the requirements of ASTM F679. Do not mix different manufacturer's products or fittings.
 - 2. Corrugated Wall High-density Polyethylene (HDPE) dual wall pipe with diameters 12"-36", shall meet the requirements of ASTM F2306, AASHTO M-294, Type S. Joints for fittings and pipe shall be soil-tight bell and spigot, provided with rubber gasket. Rubber gasket shall be installed by the pipe manufacturer.
 - 3. Reinforced concrete pipe (RCP)
- B. Perforated underdrain storm sewer pipe 8" Dia or over utilizing High-density Polyethylene (HDPE) shall be dual wall. Underdrain shall be wrapped with a geotextile fabric of knitted, or non-woven fibers of polyester, polypropylene, stabilized nylon, polyethylene, or polyvinylidene chloride. Do not use slit film woven fabrics. Fabric shall have a minimum grab tensile strength of 35 lb (ASTM D-46320), an apparent opening size No. 30-200 (ASTM D-4751), and a minimum permeability of 1.35 s^{-1} .

2.2 PIPE BEDDING

- A. Pipe bedding shall conform to Section 312000 Earthmoving, 2.1.D Stone Bedding.
- B. Use bedding material of 3/8" crushed stone chips with the following gradation:

<u>Sieve Size</u>	<u>Percent Passing</u>
1/2-inch	100%
3/8-inch	90-100%
No. 8	0-15%
No. 30	0-3%

2.3 STORM SEWER ENDWALL

- A. All Endwalls/Outfalls shall be Reinforced Concrete Pipe (RCP).

2.4 INLET STRUCTURES

- A. Concrete inlet structures shall conform to details in the plan and materials shall meet the requirements of Section 611.2 of the Standard Specifications for Highway and Structure Construction, Latest Edition.

2.5 CONCRETE MANHOLE CASTINGS AND GRATES

- A. Neenah Foundary Casting and Grates or approved equivalent shall be provided as specified in the construction documents for all concrete catch basins, manholes, and inlet structures.

2.6 MODULAR DRAIN INLETS

1. Modular inlets shall be as manufactured by Nyloplast (Advanced Drainage systems), or approved equal.
2. Basin size, pipe connection size alignment and invert as shown on drawings.
3. Grates shall be furnished by basin manufacturer and shall be considered an integral part of the surface drainage inlet. Manufacturer of cast iron grates shall conform to ASTM A-48- 83 Class 30B.
4. Modular inlets shall be manufactured from PVC pipe stock, utilizing a thermo-molding process to reform the pipe stock to the furnished configuration.
5. The joint tightness shall conform to ASTM 3212. Modular inlets shall meet the mechanical property requirements for fabricated fittings as described in ASTM F794, F949 and F1336.

2.7 DETECTABLE PIPE WARNING WIRE FOR NON-METALLIC PIPE

- A. 14 gauge wire with 0.015" thick vinyl insulation. Color brown or as approved
- B. Moisture, oil and gasoline resistant.
- C. Splices either solder or brass clamp wrapped with electrical tape or shrink wrapped.

2.8 PIPE BEDDING

- A. Pipe bedding shall conform to Section 312000 Earthmoving, 2.1.E Stone Bedding.

2.9 CONNECTIONS

- A. Connections between pipes shall be made by using fittings furnished by the manufacturer of the pipe and designed specifically for that purpose.

PART 3 – EXECUTION

3.1 INSTALLATION

- A. Install storm sewer pipe in accordance with the Standard Specifications for Highway and Structure Construction, Latest Edition subsection 607.3 and supplemented as follows:
- B. Trench width shall be in accordance with ASTM Designation D2321 for the standard practice for Underground Installation of Flexible Thermoplastic Sewer Pipe. Minimum width of trench

shall be not less than the greater of either the pipe outside diameter plus 16 inches or the pipe outside diameter times 1.25 plus 12 inches.

B. Joints for storm sewer pipe shall be sealed to 10 psi.

3.2 STORM SEWER OUTFALL

A. Construct storm sewer outfall in accordance with Wisconsin Department of Transportation Standard Specifications for Highway and Structure Construction, Latest Edition.

3.3 DETECTABLE WARNING WIRE

A. Install warning wire above pipe for all non-metallic pipe installations.

3.4 CLEANING CULVERTS AND STORM PIPES

A. CONTRACTOR shall remove all silt and debris accumulated in the culverts and storm sewer pipe, including pipe, inlets and outlets of the system. This work shall be performed after the completion of paving and after all turf areas have an established sufficient growth of grass to prevent sediment runoff.

3.5 SEPARATION FROM WATER MAIN

A. Storm sewer mains shall be placed at least 8 feet horizontally (center to center) from any existing or proposed water main. If, due to ledge rock conditions or physical barriers, the Project Manager determines that the 8-foot horizontal separation cannot be maintained, the horizontal separation may be reduced to a minimum of 3 feet if the bottom of the water main is at least 18 inches above the top of the sewer.

B. When storm sewer mains cross under water mains, provide a minimum separation of 12 inches from the bottom of the water main to the top of the sewer. When storm sewer mains, provide a minimum of 18 inches from the bottom off the sewer to the top of the water main.

C. If an existing water main is encountered while laying the storm sewer and it is impossible to obtain the proper vertical separation, immediately inform the Project Manager and reconstruct the water main for a minimum distance of 8 feet on either side of the storm sewer to permit centering one full length of water main under the storm sewer.

END OF DOCUMENT 33 41 00