

Department of Administration **Purchasing Division** 2019 Washington Street East Post Office Box 50130 Charleston, WV 25305-0130

#### State of West Virginia **Purchase Order**

Order Date: 09-20-2022

CORRECT ORDER NUMBER MUST APPEAR ON ALL PACKAGES, INVOICES, AND SHIPPING PAPERS, QUESTIONS CONCERNING THIS ORDER SHOULD BE DIRECTED TO THE DEPARTMENT CONTACT.

Order Number:	CPO 0211 4001 GSD2300000005 1	Procurement Folder: 1081287		
Document Name:	WV State Capitol Exterior Lighting Upgrades West Lawn	Reason for Modification:		
Document Description:	WV State Capitol Exterior Lighting Upgrades West Lawn	Award of CRFQ GSD2300000013		
Procurement Type:	Central Purchase Order			
Buyer Name:	Melissa Pettrey			
Telephone:	(304) 558-0094			
Email:	melissa.k.pettrey@wv.gov	*		
Shipping Method:	Best Way	Effective Start Date:		
Free on Board: FOB Dest, Freight Prepaid		Effective End Date:		

		VENDOR				DEPARTMENT CONTACT
Vendor	Customer Code:	00000020421	2		Requestor Name:	David K Parsons
SPECIA	ALTY GROUPS INC				Requestor Phone:	304-352-5486
PO BOX	X 96				Requestor Email:	david.k.parsons@wv.gov
	EPORT		WV	26330		00
US Vendor	Contact Phone:	999-999-9999	Extensi	on:		23
Discou	nt Details:					FILE LOCATION
	Discount Allowed	Discount Perc	entage	Discount Days	-	
#1	No	0.0000		0.	=2	
#2	Not Entered					
#3	Not Entered					
#4	Not Entered					

INVOICE TO		SHIP TO	
DEPARTMENT OF ADMINISTRATION GENERAL SERVICES DIVISION		DEPARTMENT OF ADMINISTRATION GENERAL SERVICES DIVISION BLDG 1	
103 MICHIGAN AVENUE		1900 KANAWHA BLVD E	
CHARLESTON	WV 25305	CHARLESTON	WV 25305
us		us	

9-12-12 BAY

**Total Order Amount:** \$799,600.00

Purchasing Division's File Copy

PURCHASING DIVISION AUTHORIZATION

ELECTRONIC SIGNATURE ON FILE

ATTORNEY GENERAL APPROVAL AS TO FORM

**ELECTRONIC SIGNATURE ON FILE** 

ENCUMBRANCE CERTIFICATION

DATE:

ELECTRONIC SIGNATURE ON FILE

Date Printed: Sep 20, 2022

Order Number: CPO 0211 4001 GSD2300000005 1

Page: 1

FORM ID: WV-PRC-CPO-002 2020/05

#### **Extended Description:**

One-Time Purchase CONSTRUCTION

The Vendor, SpecialtyGroups, Inc., of Bridgeport, WV agree to enter this One-time Purchase contract with the WV Department of Administration, General Services Division ("Agency" and "Owner") for Lighting Upgrades on the West Lawn of the Capitol Building in Charleston, WV, per the Specifications, Project Manual, Bid requirements and Terms and Conditions. Addendum no. 1 dated 08/16/2022 and the Vendors submitted and accepted bid dated 09/13/2022 incorporated herein by reference and made a part hereof.

Silling Associates, Inc., is serving as the Engineer on this project.

Line	Commodity Code	Quantity	Unit	Unit Price	Total Price
1	72151501	0.00000		0.000000	799600.00
Service From	Service To	Manufacturer		Model No	
2022-09-26	2023-03-25			·	<u> </u>

Commodity Line Description:

Lighting installation services

Extended Description: Lighting installation services

 Date Printed:
 Sep 20, 2022
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 FORM ID: WV-PRC-CPO-002 2020/05

#### **GENERAL TERMS AND CONDITIONS:**

- 1. CONTRACTUAL AGREEMENT: Issuance of an Award Document signed by the Purchasing Division Director, or his designee, and approved as to form by the Attorney General's office constitutes acceptance by the State of this Contract made by and between the State of West Virginia and the Vendor. Vendor's signature on its bid, or on the Contract if the Contract is not the result of a bid solicitation, signifies Vendor's agreement to be bound by and accept the terms and conditions contained in this Contract.
- **2. DEFINITIONS:** As used in this Solicitation/Contract, the following terms shall have the meanings attributed to them below. Additional definitions may be found in the specifications included with this Solicitation/Contract.
- **2.1. "Agency"** or "**Agencies"** means the agency, board, commission, or other entity of the State of West Virginia that is identified on the first page of the Solicitation or any other public entity seeking to procure goods or services under this Contract.
- 2.2. "Bid" or "Proposal" means the vendors submitted response to this solicitation.
- **2.3.** "Contract" means the binding agreement that is entered into between the State and the Vendor to provide the goods or services requested in the Solicitation.
- **2.4. "Director"** means the Director of the West Virginia Department of Administration, Purchasing Division.
- **2.5. "Purchasing Division"** means the West Virginia Department of Administration, Purchasing Division.
- **2.6. "Award Document"** means the document signed by the Agency and the Purchasing Division, and approved as to form by the Attorney General, that identifies the Vendor as the contract holder.
- **2.7. "Solicitation"** means the official notice of an opportunity to supply the State with goods or services that is published by the Purchasing Division.
- 2.8. "State" means the State of West Virginia and/or any of its agencies, commissions, boards, etc. as context requires.
- **2.9. "Vendor"** or **"Vendors"** means any entity submitting a bid in response to the Solicitation, the entity that has been selected as the lowest responsible bidder, or the entity that has been awarded the Contract as context requires.

<b>3. CONTRACT TERM; RENEWAL; EXTENSION:</b> The term of this Contract shall be determined in accordance with the category that has been identified as applicable to this Contract below:
☐ Term Contract
Initial Contract Term: The Initial Contract Term will be for a period of The Initial Contract Term becomes effective on the effective start date listed on the first page of this Contract, identified as the State of West Virginia contract cover page containing the signatures of the Purchasing Division, Attorney General, and Encumbrance clerk (or another page identified as), and the Initial Contract Term ends on the effective end date also shown on the first page of this Contract.
Renewal Term: This Contract may be renewed upon the mutual written consent of the Agency, and the Vendor, with approval of the Purchasing Division and the Attorney General's office (Attorney General approval is as to form only). Any request for renewal should be delivered to the Agency and then submitted to the Purchasing Division thirty (30) days prior to the expiration date of the initial contract term or appropriate renewal term. A Contract renewal shall be in accordance with the terms and conditions of the original contract. Unless otherwise specified below, renewal of this Contract is limited to successive one (1) year periods or multiple renewal periods of less than one year, provided that the multiple renewal periods do not exceed the total number of months available in all renewal years combined. Automatic renewal of this Contract is prohibited. Renewals must be approved by the Vendor, Agency, Purchasing Division and Attorney General's office (Attorney General approval is as to form only)
Alternate Renewal Term – This contract may be renewed for successive year periods or shorter periods provided that they do not exceed the total number of months contained in all available renewals. Automatic renewal of this Contract is prohibited. Renewals must be approved by the Vendor, Agency, Purchasing Division and Attorney General's office (Attorney General approval is as to form only)
<b>Delivery Order Limitations:</b> In the event that this contract permits delivery orders, a delivery order may only be issued during the time this Contract is in effect. Any delivery order issued within one year of the expiration of this Contract shall be effective for one year from the date the delivery order is issued. No delivery order may be extended beyond one year after this Contract has expired.
Fixed Period Contract: This Contract becomes effective upon Vendor's receipt of the notice to proceed and must be completed within One-Hundred and Eighty (180) days.
Fixed Period Contract with Renewals: This Contract becomes effective upon Vendor's receipt of the notice to proceed and part of the Contract more fully described in the attached specifications must be completed within days. Upon completion of the work covered by the preceding sentence, the vendor agrees that:
the contract will continue for years;

the contract may be renewed for successive
year periods or shorter periods provided that they do not exceed the total number of
months contained in all available renewals. Automatic renewal of this Contract is
prohibited. Renewals must be approved by the Vendor, Agency, Purchasing Division
and Attorney General's Office (Attorney General approval is as to form only).
One-Time Purchase: The term of this Contract shall run from the issuance of the Award Document until all of the goods contracted for have been delivered, but in no event will this Contract extend for more than one fiscal year.
Construction/Project Oversight: This Contract becomes effective on the effective start
date listed on the first page of this Contract, identified as the State of West Virginia contract
cover page containing the signatures of the Purchasing Division, Attorney General, and
Encumbrance clerk (or another page identified as
, and continues until the project for which the
vendor is providing oversight is complete.
Other: Contract Term specified in
4. AUTHORITY TO PROCEED: Vendor is authorized to begin performance of this contract on the date of encumbrance listed on the front page of the Award Document unless either the box for "Fixed Period Contract" or "Fixed Period Contract with Renewals" has been checked in Section 3 above. If either "Fixed Period Contract" or "Fixed Period Contract with Renewals" has been checked, Vendor must not begin work until it receives a separate notice to proceed from the State. The notice to proceed will then be incorporated into the Contract via change order to memorialize the official date that work commenced.
<b>5. QUANTITIES:</b> The quantities required under this Contract shall be determined in accordance with the category that has been identified as applicable to this Contract below.
Open End Contract: Quantities listed in this Solicitation/Award Document are approximations only, based on estimates supplied by the Agency. It is understood and agreed that the Contract shall cover the quantities actually ordered for delivery during the term of the Contract, whether more or less than the quantities shown.
Service: The scope of the service to be provided will be more clearly defined in the specifications included herewith.
Combined Service and Goods: The scope of the service and deliverable goods to be provided will be more clearly defined in the specifications included herewith.
One-Time Purchase: This Contract is for the purchase of a set quantity of goods that are identified in the specifications included herewith. Once those items have been delivered, no additional goods may be procured under this Contract without an appropriate change order approved by the Vendor, Agency, Purchasing Division, and Attorney General's office.

- 6. EMERGENCY PURCHASES: The Purchasing Division Director may authorize the Agency to purchase goods or services in the open market that Vendor would otherwise provide under this Contract if those goods or services are for immediate or expedited delivery in an emergency. Emergencies shall include, but are not limited to, delays in transportation or an unanticipated increase in the volume of work. An emergency purchase in the open market, approved by the Purchasing Division Director, shall not constitute of breach of this Contract and shall not entitle the Vendor to any form of compensation or damages. This provision does not excuse the State from fulfilling its obligations under a One-Time Purchase contract.
- 7. **REQUIRED DOCUMENTS:** All of the items checked in this section must be provided to the Purchasing Division by the Vendor as specified:
- ☑ BID BOND (Construction Only): Pursuant to the requirements contained in W. Va. Code § 5-22-1(c), All Vendors submitting a bid on a construction project shall furnish a valid bid bond in the amount of five percent (5%) of the total amount of the bid protecting the State of West Virginia. The bid bond must be submitted with the bid.
- PERFORMANCE BOND: The apparent successful Vendor shall provide a performance bond in the amount of 100% of the contract. The performance bond must be received by the Purchasing Division prior to Contract award.
- ✓ LABOR/MATERIAL PAYMENT BOND: The apparent successful Vendor shall provide a labor/material payment bond in the amount of 100% of the Contract value. The labor/material payment bond must be delivered to the Purchasing Division prior to Contract award.

In lieu of the Bid Bond, Performance Bond, and Labor/Material Payment Bond, the Vendor may provide certified checks, cashier's checks, or irrevocable letters of credit. Any certified check, cashier's check, or irrevocable letter of credit provided in lieu of a bond must be of the same amount and delivered on the same schedule as the bond it replaces. A letter of credit submitted in lieu of a performance and labor/material payment bond will only be allowed for projects under \$100,000. Personal or business checks are not acceptable. Notwithstanding the foregoing, West Virginia Code § 5-22-1 (d) mandates that a vendor provide a performance and labor/material payment bond for construction projects. Accordingly, substitutions for the performance and labor/material payment bonds for construction projects is not permitted.

MAINTENANCE BOND: The apparent successful Vendor shall provide a two (2) year	r
maintenance bond covering the roofing system. The maintenance bond must be issued and	
delivered to the Purchasing Division prior to Contract award.	

LICENSE(S) / CERTIFICATIONS / PERMITS: In addition to anything required under the Section of the General Terms and Conditions entitled Licensing, the apparent successful Vendor shall furnish proof of the following licenses, certifications, and/or permits upon request and in a form acceptable to the State. The request may be prior to or after contract award at the State's sole discretion.

The apparent successful Vendor shall also furnish proof of any additional licenses or certifications contained in the specifications regardless of whether or not that requirement is listed above.

8. INSURANCE: The apparent successful Vendor shall furnish proof of the insurance identified by a checkmark below and must include the State as an additional insured on each policy prior to Contract award. The insurance coverages identified below must be maintained throughout the life of this contract. Thirty (30) days prior to the expiration of the insurance policies, Vendor shall provide the Agency with proof that the insurance mandated herein has been continued. Vendor must also provide Agency with immediate notice of any changes in its insurance policies, including but not limited to, policy cancelation, policy reduction, or change in insurers. The apparent successful Vendor shall also furnish proof of any additional insurance requirements contained in the specifications prior to Contract award regardless of whether that insurance requirement is listed in this section.

Vendor must maintain:	
Commercial General Liability Insurance in at least an amount of:  \$1,000,000.0  occurrence.	o per
Automobile Liability Insurance in at least an amount of: \$1,000,000.00 occurrence.	_per
Professional/Malpractice/Errors and Omission Insurance in at least an amore per occurrence. Notwithstanding the forgoing, Vendor's at to list the State as an additional insured for this type of policy.	
Commercial Crime and Third Party Fidelity Insurance in an amount of: per occurrence.	
Cyber Liability Insurance in an amount of:occurrence.	per
Builders Risk Insurance in an amount equal to 100% of the amount of the	
Contract.	
Pollution Insurance in an amount of: per occurrence.	
Aircraft Liability in an amount of: per occurrence.	

Notwithstanding anything contained in this section to the contrary, the Director of the Purchasing Division reserves the right to waive the requirement that the State be named as an additional insured on one or more of the Vendor's insurance policies if the Director finds that doing so is in the State's best interest.

**9. WORKERS' COMPENSATION INSURANCE:** Vendor shall comply with laws relating to workers compensation, shall maintain workers' compensation insurance when required, and shall furnish proof of workers' compensation insurance upon request.

#### 10. [Reserved]

not limit the State or Ag	MAGES: This clause shall in no way be considered exclusive and shency's right to pursue any other available remedy. Vendor shall pay a amount specified below or as described in the specifications:	all
	for	
✓ Liquidated Da	nages Contained in the Specifications.	
Liquidated Da	nages Are Not Included in this Contract.	

- 12. ACCEPTANCE: Vendor's signature on its bid, or on the certification and signature page, constitutes an offer to the State that cannot be unilaterally withdrawn, signifies that the product or service proposed by vendor meets the mandatory requirements contained in the Solicitation for that product or service, unless otherwise indicated, and signifies acceptance of the terms and conditions contained in the Solicitation unless otherwise indicated.
- 13. PRICING: The pricing set forth herein is firm for the life of the Contract, unless specified elsewhere within this Solicitation/Contract by the State. A Vendor's inclusion of price adjustment provisions in its bid, without an express authorization from the State in the Solicitation to do so, may result in bid disqualification. Notwithstanding the foregoing, Vendor must extend any publicly advertised sale price to the State and invoice at the lower of the contract price or the publicly advertised sale price.
- 14. PAYMENT IN ARREARS: Payments for goods/services will be made in arrears only upon receipt of a proper invoice, detailing the goods/services provided or receipt of the goods/services, whichever is later. Notwithstanding the foregoing, payments for software maintenance, licenses, or subscriptions may be paid annually in advance.
- 15. PAYMENT METHODS: Vendor must accept payment by electronic funds transfer and P-Card. (The State of West Virginia's Purchasing Card program, administered under contract by a banking institution, processes payment for goods and services through state designated credit cards.)
- 16. TAXES: The Vendor shall pay any applicable sales, use, personal property or any other taxes arising out of this Contract and the transactions contemplated thereby. The State of West Virginia is exempt from federal and state taxes and will not pay or reimburse such taxes.

- 17. ADDITIONAL FEES: Vendor is not permitted to charge additional fees or assess additional charges that were not either expressly provided for in the solicitation published by the State of West Virginia, included in the Contract, or included in the unit price or lump sum bid amount that Vendor is required by the solicitation to provide. Including such fees or charges as notes to the solicitation may result in rejection of vendor's bid. Requesting such fees or charges be paid after the contract has been awarded may result in cancellation of the contract.
- **18. FUNDING:** This Contract shall continue for the term stated herein, contingent upon funds being appropriated by the Legislature or otherwise being made available. In the event funds are not appropriated or otherwise made available, this Contract becomes void and of no effect beginning on July 1 of the fiscal year for which funding has not been appropriated or otherwise made available. If that occurs, the State may notify the Vendor that an alternative source of funding has been obtained and thereby avoid the automatic termination. Non-appropriation or non-funding shall not be considered an event of default.
- 19. CANCELLATION: The Purchasing Division Director reserves the right to cancel this Contract immediately upon written notice to the vendor if the materials or workmanship supplied do not conform to the specifications contained in the Contract. The Purchasing Division Director may also cancel any purchase or Contract upon 30 days written notice to the Vendor in accordance with West Virginia Code of State Rules § 148-1-5.2.b.
- **20. TIME:** Time is of the essence regarding all matters of time and performance in this Contract.
- 21. APPLICABLE LAW: This Contract is governed by and interpreted under West Virginia law without giving effect to its choice of law principles. Any information provided in specification manuals, or any other source, verbal or written, which contradicts or violates the West Virginia Constitution, West Virginia Code, or West Virginia Code of State Rules is void and of no effect.
- **22. COMPLIANCE WITH LAWS:** Vendor shall comply with all applicable federal, state, and local laws, regulations and ordinances. By submitting a bid, Vendor acknowledges that it has reviewed, understands, and will comply with all applicable laws, regulations, and ordinances.
  - **SUBCONTRACTOR COMPLIANCE:** Vendor shall notify all subcontractors providing commodities or services related to this Contract that as subcontractors, they too are required to comply with all applicable laws, regulations, and ordinances. Notification under this provision must occur prior to the performance of any work under the contract by the subcontractor.
- 23. ARBITRATION: Any references made to arbitration contained in this Contract, Vendor's bid, or in any American Institute of Architects documents pertaining to this Contract are hereby deleted, void, and of no effect.

- 24. MODIFICATIONS: This writing is the parties' final expression of intent.

  Notwithstanding anything contained in this Contract to the contrary no modification of this Contract shall be binding without mutual written consent of the Agency, and the Vendor, with approval of the Purchasing Division and the Attorney General's office (Attorney General approval is as to form only). Any change to existing contracts that adds work or changes contract cost, and were not included in the original contract, must be approved by the Purchasing Division and the Attorney General's Office (as to form) prior to the implementation of the change or commencement of work affected by the change.
- 25. WAIVER: The failure of either party to insist upon a strict performance of any of the terms or provision of this Contract, or to exercise any option, right, or remedy herein contained, shall not be construed as a waiver or a relinquishment for the future of such term, provision, option, right, or remedy, but the same shall continue in full force and effect. Any waiver must be expressly stated in writing and signed by the waiving party.
- 26. SUBSEQUENT FORMS: The terms and conditions contained in this Contract shall supersede any and all subsequent terms and conditions which may appear on any form documents submitted by Vendor to the Agency or Purchasing Division such as price lists, order forms, invoices, sales agreements, or maintenance agreements, and includes internet websites or other electronic documents. Acceptance or use of Vendor's forms does not constitute acceptance of the terms and conditions contained thereon.
- 27. ASSIGNMENT: Neither this Contract nor any monies due, or to become due hereunder, may be assigned by the Vendor without the express written consent of the Agency, the Purchasing Division, the Attorney General's office (as to form only), and any other government agency or office that may be required to approve such assignments.
- 28. WARRANTY: The Vendor expressly warrants that the goods and/or services covered by this Contract will: (a) conform to the specifications, drawings, samples, or other description furnished or specified by the Agency; (b) be merchantable and fit for the purpose intended; and (c) be free from defect in material and workmanship.
- **29. STATE EMPLOYEES:** State employees are not permitted to utilize this Contract for personal use and the Vendor is prohibited from permitting or facilitating the same.
- **30. PRIVACY, SECURITY, AND CONFIDENTIALITY:** The Vendor agrees that it will not disclose to anyone, directly or indirectly, any such personally identifiable information or other confidential information gained from the Agency, unless the individual who is the subject of the information consents to the disclosure in writing or the disclosure is made pursuant to the Agency's policies, procedures, and rules. Vendor further agrees to comply with the Confidentiality Policies and Information Security Accountability Requirements, set forth in <a href="http://www.state.wv.us/admin/purchase/privacy/default.html">http://www.state.wv.us/admin/purchase/privacy/default.html</a>.

31. YOUR SUBMISSION IS A PUBLIC DOCUMENT: Vendor's entire response to the Solicitation and the resulting Contract are public documents. As public documents, they will be disclosed to the public following the bid/proposal opening or award of the contract, as required by the competitive bidding laws of West Virginia Code §§ 5A-3-1 et seq., 5-22-1 et seq., and 5G-1-1 et seq. and the Freedom of Information Act West Virginia Code §§ 29B-1-1 et seq.

DO NOT SUBMIT MATERIAL YOU CONSIDER TO BE CONFIDENTIAL, A TRADE SECRET, OR OTHERWISE NOT SUBJECT TO PUBLIC DISCLOSURE.

Submission of any bid, proposal, or other document to the Purchasing Division constitutes your explicit consent to the subsequent public disclosure of the bid, proposal, or document. The Purchasing Division will disclose any document labeled "confidential," "proprietary," "trade secret," "private," or labeled with any other claim against public disclosure of the documents, to include any "trade secrets" as defined by West Virginia Code § 47-22-1 et seq. All submissions are subject to public disclosure without notice.

32. LICENSING: In accordance with West Virginia Code of State Rules § 148-1-6.1.e, Vendor must be licensed and in good standing in accordance with any and all state and local laws and requirements by any state or local agency of West Virginia, including, but not limited to, the West Virginia Secretary of State's Office, the West Virginia Tax Department, West Virginia Insurance Commission, or any other state agency or political subdivision. Obligations related to political subdivisions may include, but are not limited to, business licensing, business and occupation taxes, inspection compliance, permitting, etc. Upon request, the Vendor must provide all necessary releases to obtain information to enable the Purchasing Division Director or the Agency to verify that the Vendor is licensed and in good standing with the above entities.

SUBCONTRACTOR COMPLIANCE: Vendor shall notify all subcontractors providing commodities or services related to this Contract that as subcontractors, they too are required to be licensed, in good standing, and up-to-date on all state and local obligations as described in this section. Obligations related to political subdivisions may include, but are not limited to, business licensing, business and occupation taxes, inspection compliance, permitting, etc. Notification under this provision must occur prior to the performance of any work under the contract by the subcontractor.

33. ANTITRUST: In submitting a bid to, signing a contract with, or accepting a Award Document from any agency of the State of West Virginia, the Vendor agrees to convey, sell, assign, or transfer to the State of West Virginia all rights, title, and interest in and to all causes of action it may now or hereafter acquire under the antitrust laws of the United States and the State of West Virginia for price fixing and/or unreasonable restraints of trade relating to the particular commodities or services purchased or acquired by the State of West Virginia. Such assignment shall be made and become effective at the time the purchasing agency tenders the initial payment to Vendor.

**34. VENDOR CERTIFICATIONS:** By signing its bid or entering into this Contract, Vendor certifies (1) that its bid or offer was made without prior understanding, agreement, or connection with any corporation, firm, limited liability company, partnership, person or entity submitting a bid or offer for the same material, supplies, equipment or services; (2) that its bid or offer is in all respects fair and without collusion or fraud; (3) that this Contract is accepted or entered into without any prior understanding, agreement, or connection to any other entity that could be considered a violation of law; and (4) that it has reviewed this Solicitation in its entirety; understands the requirements, terms and conditions, and other information contained herein.

Vendor's signature on its bid or offer also affirms that neither it nor its representatives have any interest, nor shall acquire any interest, direct or indirect, which would compromise the performance of its services hereunder. Any such interests shall be promptly presented in detail to the Agency. The individual signing this bid or offer on behalf of Vendor certifies that he or she is authorized by the Vendor to execute this bid or offer or any documents related thereto on Vendor's behalf; that he or she is authorized to bind the Vendor in a contractual relationship; and that, to the best of his or her knowledge, the Vendor has properly registered with any State agency that may require registration.

35. VENDOR RELATIONSHIP: The relationship of the Vendor to the State shall be that of an independent contractor and no principal-agent relationship or employer-employee relationship is contemplated or created by this Contract. The Vendor as an independent contractor is solely liable for the acts and omissions of its employees and agents. Vendor shall be responsible for selecting, supervising, and compensating any and all individuals employed pursuant to the terms of this Solicitation and resulting contract. Neither the Vendor, nor any employees or subcontractors of the Vendor, shall be deemed to be employees of the State for any purpose whatsoever. Vendor shall be exclusively responsible for payment of employees and contractors for all wages and salaries, taxes, withholding payments, penalties, fees, fringe benefits, professional liability insurance premiums, contributions to insurance and pension, or other deferred compensation plans, including but not limited to, Workers' Compensation and Social Security obligations, licensing fees, etc. and the filing of all necessary documents, forms, and returns pertinent to all of the foregoing.

Vendor shall hold harmless the State, and shall provide the State and Agency with a defense against any and all claims including, but not limited to, the foregoing payments, withholdings, contributions, taxes, Social Security taxes, and employer income tax returns.

- 36. INDEMNIFICATION: The Vendor agrees to indemnify, defend, and hold harmless the State and the Agency, their officers, and employees from and against: (1) Any claims or losses for services rendered by any subcontractor, person, or firm performing or supplying services, materials, or supplies in connection with the performance of the Contract; (2) Any claims or losses resulting to any person or entity injured or damaged by the Vendor, its officers, employees, or subcontractors by the publication, translation, reproduction, delivery, performance, use, or disposition of any data used under the Contract in a manner not authorized by the Contract, or by Federal or State statutes or regulations; and (3) Any failure of the Vendor, its officers, employees, or subcontractors to observe State and Federal laws including, but not limited to, labor and wage and hour laws.
- 37. NO DEBT CERTIFICATION: In accordance with West Virginia Code §§ 5A-3-10a and 5-22-1(i), the State is prohibited from awarding a contract to any bidder that owes a debt to the State or a political subdivision of the State. By submitting a bid, or entering into a contract with the State, Vendor is affirming that (1) for construction contracts, the Vendor is not in default on any monetary obligation owed to the state or a political subdivision of the state, and (2) for all other contracts, neither the Vendor nor any related party owe a debt as defined above, and neither the Vendor nor any related party are in employer default as defined in the statute cited above unless the debt or employer default is permitted under the statute.
- **38. CONFLICT OF INTEREST:** Vendor, its officers or members or employees, shall not presently have or acquire an interest, direct or indirect, which would conflict with or compromise the performance of its obligations hereunder. Vendor shall periodically inquire of its officers, members and employees to ensure that a conflict of interest does not arise. Any conflict of interest discovered shall be promptly presented in detail to the Agency.
- **39. REPORTS:** Vendor shall provide the Agency and/or the Purchasing Division with the following reports identified by a checked box below:

Such reports as the Agency and/or the Purchasing Division may request. Requested reports
may include, but are not limited to, quantities purchased, agencies utilizing the contract, total
contract expenditures by agency, etc.

- Quarterly reports detailing the total quantity of purchases in units and dollars, along with a listing of purchases by agency. Quarterly reports should be delivered to the Purchasing Division via email at <a href="mailto:purchasing.division@wv.gov">purchasing.division@wv.gov</a>.
- **40. BACKGROUND CHECK:** In accordance with W. Va. Code § 15-2D-3, the State reserves the right to prohibit a service provider's employees from accessing sensitive or critical information or to be present at the Capitol complex based upon results addressed from a criminal background check. Service providers should contact the West Virginia Division of Protective Services by phone at (304) 558-9911 for more information.

- 41. PREFERENCE FOR USE OF DOMESTIC STEEL PRODUCTS: Except when authorized by the Director of the Purchasing Division pursuant to W. Va. Code § 5A-3-56, no contractor may use or supply steel products for a State Contract Project other than those steel products made in the United States. A contractor who uses steel products in violation of this section may be subject to civil penalties pursuant to W. Va. Code § 5A-3-56. As used in this section:
  - a. "State Contract Project" means any erection or construction of, or any addition to, alteration of or other improvement to any building or structure, including, but not limited to, roads or highways, or the installation of any heating or cooling or ventilating plants or other equipment, or the supply of and materials for such projects, pursuant to a contract with the State of West Virginia for which bids were solicited on or after June 6, 2001.
  - b. "Steel Products" means products rolled, formed, shaped, drawn, extruded, forged, cast, fabricated or otherwise similarly processed, or processed by a combination of two or more or such operations, from steel made by the open heath, basic oxygen, electric furnace, Bessemer or other steel making process.
  - c. The Purchasing Division Director may, in writing, authorize the use of foreign steel products if:
    - 1. The cost for each contract item used does not exceed one tenth of one percent (.1%) of the total contract cost or two thousand five hundred dollars (\$2,500.00), whichever is greater. For the purposes of this section, the cost is the value of the steel product as delivered to the project; or
    - 2. The Director of the Purchasing Division determines that specified steel materials are not produced in the United States in sufficient quantity or otherwise are not reasonably available to meet contract requirements.
- 42. PREFERENCE FOR USE OF DOMESTIC ALUMINUM, GLASS, AND STEEL: In Accordance with W. Va. Code § 5-19-1 et seq., and W. Va. CSR § 148-10-1 et seq., for every contract or subcontract, subject to the limitations contained herein, for the construction, reconstruction, alteration, repair, improvement or maintenance of public works or for the purchase of any item of machinery or equipment to be used at sites of public works, only domestic aluminum, glass or steel products shall be supplied unless the spending officer determines, in writing, after the receipt of offers or bids, (1) that the cost of domestic aluminum, glass or steel products is unreasonable or inconsistent with the public interest of the State of West Virginia, (2) that domestic aluminum, glass or steel products are not produced in sufficient quantities to meet the contract requirements, or (3) the available domestic aluminum, glass, or steel do not meet the contract specifications. This provision only applies to public works contracts awarded in an amount more than fifty thousand dollars (\$50,000) or public works contracts that require more than ten thousand pounds of steel products.

The cost of domestic aluminum, glass, or steel products may be unreasonable if the cost is more than twenty percent (20%) of the bid or offered price for foreign made aluminum, glass, or steel products. If the domestic aluminum, glass or steel products to be supplied or produced in a "substantial labor surplus area", as defined by the United States Department of Labor, the cost of domestic aluminum, glass, or steel products may be unreasonable if the cost is more than thirty percent (30%) of the bid or offered price for foreign made aluminum, glass, or steel Revised 07/01/2022

products. This preference shall be applied to an item of machinery or equipment, as indicated above, when the item is a single unit of equipment or machinery manufactured primarily of aluminum, glass or steel, is part of a public works contract and has the sole purpose or of being a permanent part of a single public works project. This provision does not apply to equipment or machinery purchased by a spending unit for use by that spending unit and not as part of a single public works project.

All bids and offers including domestic aluminum, glass or steel products that exceed bid or offer prices including foreign aluminum, glass or steel products after application of the preferences provided in this provision may be reduced to a price equal to or lower than the lowest bid or offer price for foreign aluminum, glass or steel products plus the applicable preference. If the reduced bid or offer prices are made in writing and supersede the prior bid or offer prices, all bids or offers, including the reduced bid or offer prices, will be reevaluated in accordance with this rule.

- 43. INTERESTED PARTY SUPPLEMENTAL DISCLOSURE: W. Va. Code § 6D-1-2 requires that for contracts with an actual or estimated value of at least \$1 million, the Vendor must submit to the Agency a disclosure of interested parties prior to beginning work under this Contract. Additionally, the Vendor must submit a supplemental disclosure of interested parties reflecting any new or differing interested parties to the contract, which were not included in the original pre-work interested party disclosure, within 30 days following the completion or termination of the contract. A copy of that form is included with this solicitation or can be obtained from the WV Ethics Commission. This requirement does not apply to publicly traded companies listed on a national or international stock exchange. A more detailed definition of interested parties can be obtained from the form referenced above.
- **44. PROHIBITION AGAINST USED OR REFURBISHED:** Unless expressly permitted in the solicitation published by the State, Vendor must provide new, unused commodities, and is prohibited from supplying used or refurbished commodities, in fulfilling its responsibilities under this Contract.
- **45. VOID CONTRACT CLAUSES** This Contract is subject to the provisions of West Virginia Code § 5A-3-62, which automatically voids certain contract clauses that violate State law.
- **46. ISRAEL BOYCOTT:** Bidder understands and agrees that, pursuant to W. Va. Code § 5A-3-63, it is prohibited from engaging in a boycott of Israel during the term of this contract.

#### ADDITIONAL TERMS AND CONDITIONS (Construction Contracts Only)

1. CONTRACTOR'S LICENSE: Until June 15, 2021, West Virginia Code § 21-11-2, and after that date, § 30-42-2, requires that all persons desiring to perform contracting work in this state be licensed. The West Virginia Contractors Licensing Board is empowered to issue the contractor's license. Applications for a contractor's license may be made by contacting the West Virginia Contractor Licensing Board.

The apparent successful Vendor must furnish a copy of its contractor's license prior to the issuance of a contract award document.

- 2. DRUG-FREE WORKPLACE AFFIDAVIT: W. Va. Code § 21-1D-5 provides that any solicitation for a public improvement contract requires each Vendor that submits a bid for the work to submit an affidavit that the Vendor has a written plan for a drug-free workplace policy. If the affidavit is not submitted with the bid submission, the Purchasing Division shall promptly request by telephone and electronic mail that the low bidder and second low bidder provide the affidavit within one business day of the request. Failure to submit the affidavit within one business day of receiving the request shall result in disqualification of the bid. To comply with this law, Vendor should complete the enclosed drug-free workplace affidavit and submit the same with its bid. Failure to submit the signed and notarized drugfree workplace affidavit or a similar affidavit that fully complies with the requirements of the applicable code, within one business day of being requested to do so shall result in disqualification of Vendor's bid. Pursuant to W. Va. Code 21-1D-2(b) and (k), this provision does not apply to public improvement contracts the value of which is \$100,000 or less or temporary or emergency repairs.
- 2.1. DRUG-FREE WORKPLACE POLICY: Pursuant to W. Va. Code § 21-1D-4, Vendor and its subcontractors must implement and maintain a written drug-free workplace policy that complies with said article. The awarding public authority shall cancel this contract if: (1) Vendor fails to implement and maintain a written drug-free workplace policy described in the preceding paragraph, (2) Vendor fails to provide information regarding implementation of its drug-free workplace policy at the request of the public authority; or (3) Vendor provides to the public authority false information regarding the contractor's drug-free workplace policy.

Pursuant to W. Va. Code 21-1D-2(b) and (k), this provision does not apply to public improvement contracts the value of which is \$100,000 or less or temporary or emergency repairs.

- 3. DRUG FREE WORKPLACE REPORT: Pursuant to W. Va. Code § 21-1D-7b, no less than once per year, or upon completion of the project, every contractor shall provide a certified report to the public authority which let the contract. For contracts over \$25,000, the public authority shall be the West Virginia Purchasing Division. For contracts of \$25,000 or less, the public authority shall be the agency issuing the contract. The report shall include:
- (1) Information to show that the education and training service to the requirements of West Virginia Code § 21-1D-5 was provided;
- (2) The name of the laboratory certified by the United States Department of Health and Human Services or its successor that performs the drug tests;

- (3) The average number of employees in connection with the construction on the public improvement;
- (4) Drug test results for the following categories including the number of positive tests and the number of negative tests: (A) Pre-employment and new hires; (B) Reasonable suspicion; (C) Postaccident; and (D) Random.

Vendor should utilize the attached Certified Drug Free Workplace Report Coversheet when submitting the report required hereunder. Pursuant to W. Va. Code 21-1D-2(b) and (k), this provision does not apply to public improvement contracts the value of which is \$100,000 or less or temporary or emergency repairs.

- **4. AIA DOCUMENTS:** All construction contracts that will be completed in conjunction with architectural services procured under Chapter 5G of the West Virginia Code will be governed by the attached AIA documents, as amended by the Supplementary Conditions for the State of West Virginia, in addition to the terms and conditions contained herein.
- **4A. PROHIBITION AGAINST GENERAL CONDITIONS:** Notwithstanding anything contained in the AIA Documents or the Supplementary Conditions, the State of West Virginia will not pay for general conditions, or winter conditions, or any other condition representing a delay in the contracts. The Vendor is expected to mitigate delay costs to the greatest extent possible and any costs associated with Delays must be specifically and concretely identified. The state will not consider an average daily rate multiplied by the number of days extended to be an acceptable charge.
- 5. GREEN BUILDINGS MINIMUM ENERGY STANDARDS: In accordance with § 22-29-4, all new building construction projects of public agencies that have not entered the schematic design phase prior to July 1, 2012, or any building construction project receiving state grant funds and appropriations, including public schools, that have not entered the schematic design phase prior to July 1, 2012, shall be designed and constructed complying with the ICC International Energy Conservation Code, adopted by the State Fire Commission, and the ANSI/ASHRAE/IESNA Standard 90.1-2007: Provided, That if any construction project has a commitment of federal funds to pay for a portion of such project, this provision shall only apply to the extent such standards are consistent with the federal standards.
- **6. LOCAL LABOR MARKET HIRING REQUIREMENT:** Pursuant to West Virginia Code §21-1C-1 et seq., Employers shall hire at least seventy-five percent of employees for public improvement construction projects from the local labor market, to be rounded off, with at least two

employees from outside the local labor market permissible for each employer per project.

Any employer unable to employ the minimum number of employees from the local labor market shall inform the nearest office of Workforce West Virginia of the number of qualified employees needed and provide a job description of the positions to be filled.

If, within three business days following the placing of a job order, Workforce West Virginia is unable to refer any qualified job applicants to the employer or refers less qualified job applicants than the number requested, then Workforce West Virginia shall issue a waiver to the employer

stating the unavailability of applicant and shall permit the employer to fill any positions covered by the waiver from outside the local labor market. The waiver shall be in writing and shall be issued within the prescribed three days. A waiver certificate shall be sent to both the employer for its permanent project records and to the public authority.

Any employer who violates this requirement is subject to a civil penalty of \$250 per each employee less than the required threshold of seventy-five percent per day of violation after receipt of a notice of violation.

Any employer that continues to violate any provision of this article more than fourteen calendar days after receipt of a notice of violation is subject to a civil penalty of \$500 per each employee less than the required threshold of seventy-five percent per day of violation.

The following terms used in this section have the meaning shown below.

- (1) The term "construction project" means any construction, reconstruction, improvement, enlargement, painting, decorating or repair of any public improvement let to contract in an amount equal to or greater than \$500,000. The term "construction project" does not include temporary or emergency repairs;
- (2) The term "employee" means any person hired or permitted to perform hourly work for wages by a person, firm or corporation in the construction industry; The term "employee" does not include:(i) Bona fide employees of a public authority or individuals engaged in making temporary or emergency repairs;(ii) Bona fide independent contractors; or(iii) Salaried supervisory personnel necessary to assure efficient execution of the employee's work;
- (3) The term "employer" means any person, firm or corporation employing one or more employees on any public improvement and includes all contractors and subcontractors;
- (4) The term "local labor market" means every county in West Virginia and any county outside of West Virginia if any portion of that county is within fifty miles of the border of West Virginia;
- (5) The term "public improvement" includes the construction of all buildings, roads, highways, bridges, streets, alleys, sewers, ditches, sewage disposal plants, waterworks, airports and all other structures that may be let to contract by a public authority, excluding improvements funded, in whole or in part, by federal funds.

#### 7. DAVIS-BACON AND RELATED ACT WAGE RATES:

	The work performed under this contract is federally funded in whole, or in part. Pursuant to
_	, Vendors are required to pay applicable Davis-Bacon
wa	ge rates.
<b>V</b>	The work performed under this contract is not subject to Davis-Bacon wage rates.

8. SUBCONTRACTOR LIST SUBMISSION: In accordance with W. Va. Code § 5-22-1, the apparent low bidder on a contract valued at more than \$250,000.00 for the construction, alteration, decoration, painting or improvement of a new or existing building or structure shall submit a list of all subcontractors who will perform more than \$25,000.00 of work on the project including labor and materials. (This section does not apply to any other construction projects, such as highway, mine reclamation, water or sewer projects.) The subcontractor list shall be provided to the Purchasing Division within one business day of the opening of bids for review. If the apparent low bidder fails to submit the subcontractor list, the Purchasing Division shall promptly request by telephone and electronic mail that the low bidder and second low bidder provide the subcontractor list within one business day of the request. Failure to submit the subcontractor list within one business day of receiving the request shall result in disqualification of the bid.

If no subcontractors who will perform more than \$25,000.00 of work are to be used to complete the project, the apparent low bidder must make this clear on the subcontractor list, in the bid itself, or in response to the Purchasing Division's request for the subcontractor list.

- a. Required Information. The subcontractor list must contain the following information:
  - i. Bidder's name
  - ii. Name of each subcontractor performing more than \$25,000 of work on the project.
  - iii. The license number of each subcontractor, as required by W. Va. Code § 21-11-1 et. seq.
  - iv. If applicable, a notation that no subcontractor will be used to perform more than \$25,000.00 of work. (This item iv. is not required if the vendor makes this clear in the bid itself or in documentation following the request for the subcontractor list.)
- b. Subcontractor List Submission Form: The subcontractor list may be submitted in any form, including the attached form, as long as the required information noted above is included. If any information is missing from the bidder's subcontractor list submission, it may be obtained from other documents such as bids, emails, letters, etc. that accompany the subcontractor list submission.
- c. Substitution of Subcontractor. Written approval must be obtained from the State Spending Unit before any subcontractor substitution is permitted. Substitutions are not permitted unless:
  - i. The subcontractor listed in the original bid has filed for bankruptcy;
  - ii. The subcontractor in the original bid has been debarred or suspended; or
  - iii. The contractor certifies in writing that the subcontractor listed in the original bid fails, is unable, or refuses to perform his subcontract.

#### Subcontractor List Submission (Construction Contracts Only)

Bidder's Name:	Specialty Groups, Inc.	
Check this bo	ox if no subcontractors will perfo	rm more than \$25,000.00 of work to complete the
project.		
Subcontractor Name		License Number if Required by W. Va. Code § 21-11-1 et. seq.
Trane	Technologies	

Attach additional pages if necessary

**DESIGNATED CONTACT:** Vendor appoints the individual identified in this Section as the Contract Administrator and the initial point of contact for matters relating to this Contract.

(Name, Title) Adam Martin, Project Manager
(Printed Name and Title)Adam Martin, Project Manager
(Address) PO Box 96 Bridgeport, WV 26330
(Phone Number) / (Fax Number)304-623-3844 / 304-623-3843
(email address) AMartin@SGIWV.com
TIFICATION AND SIGNATURE: By signing below, or submitting documentat

CERTIFICATION AND SIGNATURE: By signing below, or submitting documentation through wvOASIS, I certify that: I have reviewed this Solicitation/Contract in its entirety; that I understand the requirements, terms and conditions, and other information contained herein; that this bid, offer or proposal constitutes an offer to the State that cannot be unilaterally withdrawn; that the product or service proposed meets the mandatory requirements contained in the Solicitation/Contract for that product or service, unless otherwise stated herein; that the Vendor accepts the terms and conditions contained in the Solicitation, unless otherwise stated herein; that I am submitting this bid, offer or proposal for review and consideration; that I am authorized by the vendor to execute and submit this bid, offer, or proposal, or any documents related thereto on vendor's behalf; that I am authorized to bind the vendor in a contractual relationship; and that to the best of my knowledge, the vendor has properly registered with any State agency that may require registration.

By signing below, I further certify that I understand this Contract is subject to the provisions of West Virginia Code § 5A-3-62, which automatically voids certain contract clauses that violate State law; and that pursuant to W. Va. Code 5A-3-63, the entity entering into this contract is prohibited from engaging in a boycott against Israel.

Specialty Groups, Inc.	
(Company) Last 1. Last	
(Authorized Signature) (Representative Name, Title)	
Robert S. Hamilton, Sr. Project Manager	
(Printed Name and Title of Authorized Representative) (Date)	
304-623-3844 / 304-623-3843	
(Phone Number) (Fax Number)	-
RHamilton@SGIWV.com	

(Email Address)

### REQUEST FOR QUOTATION WV Capitol Lighting Upgrades West Lawn

#### **GENERAL CONSTRUCTION SPECIFICATIONS**

- 1. PURPOSE AND SCOPE: The West Virginia Purchasing Division is soliciting bids on behalf of the WV Department of Administration, General Services Division ("Agency" and "Owner") to establish a contract for Lighting Upgrades on the West Lawn of the Capitol Building in Charleston, WV, per the attached Specifications and Project Manual. The Project involves new exterior subgrade light fixtures, pole mounted light fixtures, and construction of new concrete pole bases to accept relocation of existing poles. Electrical power wiring for light fixtures and controls are included. The existing Lutron lighting control system will be utilized. Refer to drawings and specifications for complete scope of work. Silling Associates, Inc., is serving as the Engineer on this project.
- 2. **DEFINITIONS:** The terms listed below shall have the meanings assigned to them below. Additional definitions can be found in section 2 of the General Terms and Conditions and in the Specification's Manual as defined below.
  - **2.1 "Construction Services"** means the installation of new exterior subgrade light fixtures, the installation of pole mounted light fixtures, and construction of new concrete pole bases, as more fully described in these specifications and the Project Manual.
  - **2.2 "Pricing Page"** means the pages contained in wvOASIS, attached hereto as Exhibit A, upon which Vendor should list its proposed price for the Construction Services.
  - **2.3 "Solicitation"** means the official notice of an opportunity to supply the State with Construction Services that is published by the Purchasing Division.
  - **2.4 "Specifications/Project Manual"** means the American Institute of Architect forms, specifications, plans, drawings, and related documents developed by the architect, engineer, or Agency that provide detailed instructions on how the Construction Services are to be performed along with any American Institute of Architects documents ("AIA documents") attached thereto.
- 3. ORDER OF PRECEDENCE: This General Construction Specifications document will have priority over, and supersede, anything contained in the Specifications/Project Manual.
- **4. QUALIFICATIONS:** Vendor, or Vendor's staff if requirements are inherently limited to individuals rather than corporate entities, shall have the following minimum qualifications:
  - **4.1 Experience:** Vendor, or Vendor's supervisory staff assigned to this project, must have successfully completed at least Three (3) projects that involved work similar to that described in the Specifications/Project Manual. Compliance with this experience requirement will be determined prior to contract award by the

### REQUEST FOR QUOTATION WV Capitol Lighting Upgrades West Lawn

State through references provided by the Vendor upon request, through knowledge or documentation of the Vendor's past projects, through confirmation of experience requirements from the architect assisting the State in this project, or some other method that the State determines to be acceptable. Vendor must provide any documentation requested by the State to assist in confirmation of compliance with this provision. References, documentation, or other information to confirm compliance with this experience requirement may be requested after bid opening and prior to contract award.

- 5. CONTRACT AWARD: The Contract is intended to provide Agency with a purchase price for the Construction Services. The Contract will be awarded to the lowest qualified responsible bidder meeting the required specifications. If the Pricing Pages contain alternates/add-ons, the Contract will be awarded based on the grand total of the base bid and any alternates/add-ons selected. All bidders are required to provide a copy of the completed Exhibit A pricing page with their bid.
- 6. SELECTION OF ALTERNATES: Pursuant to W. Va. Code § 5-22-1(f), any solicitation of bids shall include no more than five alternates. Alternates, if accepted, shall be accepted in the order in which they are listed on the bid form. Any unaccepted alternate contained within a bid shall expire 90 days after the date of the opening of bids for review. Determination of the lowest qualified responsible bidder shall be based on the sum of the base bid and any alternates accepted. Alternate selection will be identified in the Purchase Order.
- 7. PROGRESS PAYMENTS: The Vendor will be paid in the form of periodic progress payments for work completed. Payment requests along with documentation supporting the request will be submitted to and reviewed by the Architect. If approved, the Architect will communicate approval to the Owner and Owner will process payment. The Owner reserves the right to withhold liquidated damages from progress payments. Progress payments will be made no more than monthly.

Approval and payment of progress payments will be based on Contractor's submission of a payment allocation schedule which allocates the entire contract sum to payment milestones. Architect and Owner will review the payment allocation and may mandate changes that they believe are necessary.

- 8. **RETAINAGE:** Agency is entitled to withhold Ten Percent (10%) from each progress payment made as retainage. Agency will partially release retainage upon certification of substantial completion by the Architect in accordance with this Contract but will continue to retain amounts sufficient to cover activities needed to reach final completion.
- 9. **PERFORMANCE:** Vendor shall perform the Construction Services in accordance with this document and the Specifications/Project Manual.
- 10. SUBSTANTIAL AND FINAL COMPLETION: Vendor shall achieve Substantial Completion by One-Hundred and Fifty (150) calendar days and Final Completion by One-

#### REQUEST FOR QUOTATION

#### WV Capitol Lighting Upgrades West Lawn

Hundred and Eighty (180) calendar days after the Contract start date established by the issuance of the Notice to Proceed. Failure to meet the deadlines established herein, unless extended by change order authorizing additional time free of liquidated damages, will result in liquidated damages being applied.

- 11. LIQUIDATED DAMAGES: Vendor shall pay Liquidated Damages in the amount of \$500.00 per calendar day for every calendar day beyond the date for Substantial Completion of the overall contract, as established by the issuance of the Notice to Proceed, for which Substantial Completion of the overall project has not been achieved.
- **12. PROJECT PLANS:** Copies of the project plans can be obtained by contacting the entity identified below.

Hard Copies of the plans and specifications may be obtained from:

Silling Associates, Inc. 405 Capitol Street, Upper Atrium Charleston, WV, 25301 Phone: 304-541-8365

Email: maliff@silling.com

Vendors may also obtain copies from Charleston Blueprint at their own expense.

- 13. SUBSTITUTIONS: Any substitution requests must be submitted in accordance with the official question and answer period described in the INSTRUCTIONS TO VENDORS SUBMITTING BIDS, Paragraph 4. Vendor Question Deadline. Bidders are encouraged to include sufficient information with any technical question requesting review of a potential substitution. The Agency reserves the right to not provide approval or rejection of a substitution request by technical question if the bidder does not submit sufficient documentation with their question for the Agency to conclude compliance of the requested substitution with all applicable specifications.
- 14. FACILITIES ACCESS: Performance of Contract Services may require access cards and/or keys to gain entrance to Agency's facilities. In the event that access cards and/or keys are required:
  - 14.1 Vendor must identify principal service personnel which will be issued access cards and/or keys to perform service.
  - 14.2 Vendor will be responsible for controlling cards and keys and will pay replacement fee if the cards or keys become lost or stolen.
  - 14.3 Vendor will be responsible for controlling cards and keys and will pay replacement fee if the cards or keys become lost or stolen.

## REQUEST FOR QUOTATION WV Capitol Lighting Upgrades West Lawn CRFQ GSD2300000113

- 14.3 Vendor will be responsible for controlling cards and keys and will pay replacement fee if the cards or keys become lost or stolen.
- 14.4 Vendor shall notify Agency immediately of any lost, stolen, or missing card or key.
- 14.5 Anyone performing under this Contract will be subject to Agency's security protocol and procedures.
- 14.6 Vendor shall inform all staff of Agency's security protocol and procedures.

#### 15. MISCELLANEOUS:

**15.1 Contract Manager:** During its performance of this Contract, Vendor must designate and maintain a primary contract manager responsible for overseeing Vendor's responsibilities under this Contract. The Contract manager must be available during normal business hours to address any customer service or other issues related to this Contract. Vendor should list its Contract manager and his or her contact information below.

Contract Manager: \_\_\_\_\_Adam Martin

Telephone Number: \_\_\_\_304-623-3844

Fax Number: \_\_\_\_304-623-3843

Email Address: \_\_\_\_AMartin@SGIWV.com

Owner's Representative: Owner's representative for notice purposes is

Name: David K. Parsons

**Telephone Number:** (304)352-5486

Fax Number: (304)558-1475

Email Address: david.k.parsons@wv.gov

16 Initial Decision Maker: Silling Associates, Inc., the Engineer, shall serve as the Initial Decision Maker in matters relating to this contract.

## REQUEST FOR QUOTATION WV Capitol Lighting Upgrades West Lawn CRFQ GSD2300000113

#### **EXHIBIT A - Pricing Page**

Name of Bidder:
Specialty Groups, Inc.
The Bidder, being familiar with and understanding the Bidding Documents and also having examined the site and being familiar with all local conditions affecting the project hereby proposes to furnish all labor, material, equipment, supplies for WV Capitol Exterior Lighting West Lawn Project in accordance with the Bidding Documents within the time set forth for the sum of:
Commodity Line 1 (Lump sum for all work):
\$ 799,600.00
Seven Hundred Ninety-Nine Thousand Six Hundred and Zero Cents
(Show TOTAL amount in both words and numbers.)



Vendor Signature X Department of Administration Purchasing Division 2019 Washington Street East Post Office Box 50130 Charleston, WV 25305-0130

## State of West Virginia Centralized Request for Quote Construction

D E !!	1001007		
Proc Folder:	1081287	Reason for Modification:	
	WV State Capitol Exterior L  Central Purchase Order	ighting Upgrades West Lawn	Addendum No. 1 is issued to extend the bid opening date to 09/13/2022, to provide responses to vendo See Page 2 for complete info
Date Issued	Solicitation Closes	Solicitation No	Version
2022-09-06	2022-09-13 13:30	CRFQ 0211 GSD2300000013	2
BID RECEIVING LO	DCATION		
BID CLERK			
DEPARTMENT OF	ADMINISTRATION		
PURCHASING DIV	SION		
2019 WASHINGTO			
CHARLESTON	WV 25305		
US			
VENDOR			
Vendor Customer	Code:		
Vendor Name :	oode.		
Address :			
Street :			
City:			
State :		Country: Z	ip:
Principal Contact	5		
Vendor Contact Pl	none:	Extension:	
FOR INFORMATIO Melissa Pettrey	N CONTACT THE BUYER		
(304) 558-0094			
melissa.k.pettrey@v	vv.gov		

All offers subject to all terms and conditions contained in this solicitation

 Date Printed:
 Sep 6, 2022
 Page: 1
 FORM ID: WV-PRC-CRFQ-002 2020/05

**DATE** 

FEIN#

#### Reason for Modification:

Addendum No. 1 is issued to extend the bid opening date to 09/13/2022, to provide responses to vendor questions and additional information per hte attached documents.

#### ADDITIONAL INFORMATION

Addendum No. 1 is issued to publish and distribute the attached information to the vendor community.

#### Request for Quotation CONSTRUCTION

The West Virginia Purchasing Division is soliciting bids on behalf of the WV Department of Administration, General Services Division ("Agency" and "Owner") to establish a contract for Lighting Upgrades on the West Lawn of the Capitol Building in Charleston, WV, per the attached Specifications, Project Manual, Bid requirements and Terms and Conditions as attached hereto.

Silling Associates, Inc., is serving as the Engineer on this project.

\*\*\*\*\*\*The project manual and drawings are not attached to this solicitation. See Section 12 of the General Construction Specifications for more information.\*\*\*

INVOICE TO		SHIP TO		
DEPARTMENT OF ADMINISTRATION		DEPARTMENT OF ADMINISTRATION		
GENERAL SERVICES DIVISION		GENERAL SERVICES DIVISION BLDG 1		
103 MICHIGAN AVENUE	≣	1900 KANAWHA BLVD E		
CHARLESTON WV		CHARLESTON WV		
us		US		

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	<b>Total Price</b>
1	Lighting installation services				

Comm Code	Manufacturer	Specification	Model #	
72151501				

#### **Extended Description:**

Lighting installation services

#### SCHEDULE OF EVENTS

Line	Event	Event Date
1	Mandatory Pre-bid Meeting @ 10 AM	2022-08-16
2	Vendor Question deadline @ 3 PM	2022-08-29

Date Printed: Sep 6, 2022 Page: 2 FORM ID: WV-PRC-CRFQ-002 2020/05

## SOLICITATION NUMBER: CRFQ GSD2300000013 Addendum Number: 1

The purpose of this addendum is to modify the solicitation identified as ("Solicitation") to reflect the change(s) identified and described below.

#### **Applicable Addendum Category:**

[ 🗸 ]	Modify bid opening date and time
[ <b>\</b> ]	Modify specifications of product or service being sought
[ ]	Attachment of vendor questions and responses
[ 🗸 ]	Attachment of pre-bid sign-in sheet
[ ]	Correction of error
[ 🗸 ]	Other

#### **Description of Modification to Solicitation:**

- 1. Attaching additional supporting document for specification clarification.
- 2. Attaching pre-bid sign-in sheet.
- 3. Extending bid opening date to Tuesday, 09/13/2022 @ 1:30 PM

**Additional Documentation:** Documentation related to this Addendum (if any) has been included herewith as Attachment A and is specifically incorporated herein by reference.

#### **Terms and Conditions:**

- 1. All provisions of the Solicitation and other addenda not modified herein shall remain in full force and effect.
- 2. Vendor should acknowledge receipt of all addenda issued for this Solicitation by completing an Addendum Acknowledgment, a copy of which is included herewith. Failure to acknowledge addenda may result in bid disqualification. The addendum acknowledgement should be submitted with the bid to expedite document processing.

#### ATTACHMENT A



(304) 346-0565

e info@silling.com

w silling.com

#### ADDENDUM #1

Date:

August 16, 2022

Project:

WV State Capitol West Lawn Exterior Lighting Upgrades

Location:

Charleston, West Virginia

Architect:

Silling Architects

Owner:

WV General Services Division

The following amendments, addenda, additions and deletions shall be made to the contract documents titled as above. This Addendum is issued to modify the original Project Manual and Drawings as prepared by Silling Associates/Architects for the above referenced project dated July 7, 2022 and is hereby made a part of the Contract Documents. Insofar as the contract documents are at variance with Addendum 1, this Addendum shall govern. Bidders shall review changes to all portions of the work, as changes to one portion may affect the work of another. IT IS THE RESPONSIBILITY OF EACH BIDDER TO VERIFY THAT ALL SUBCONTRACTORS AND SUPPLIERS HAVE ADDRESSED ADDENDUM ITEMS.

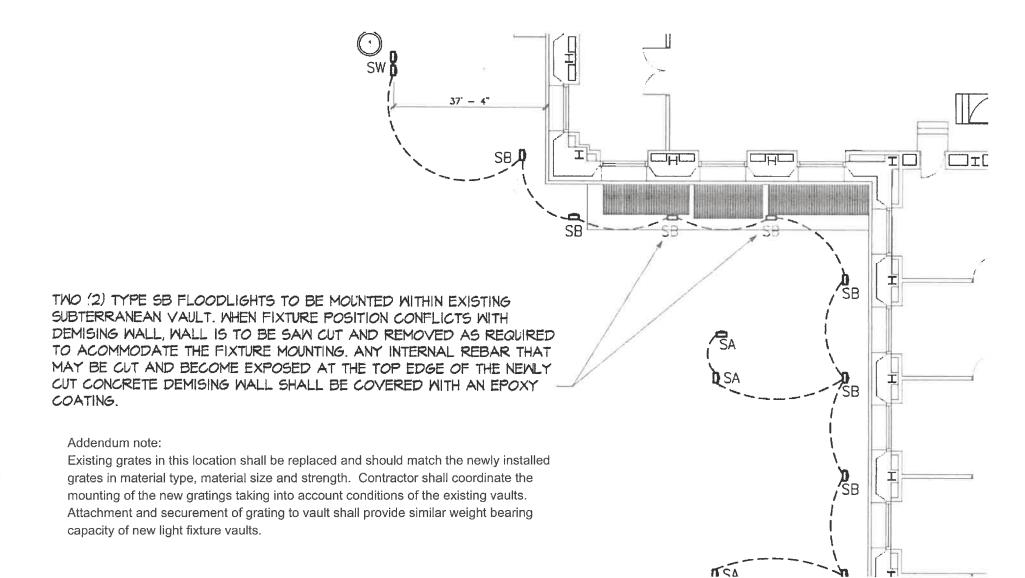
#### **DRAWINGS**

- 1. Refer to drawing E2.1 See attached sketch revising the note for existing grates.
- 2. Refer to drawing E3.1 See attached sketch for revised type SA vaults.

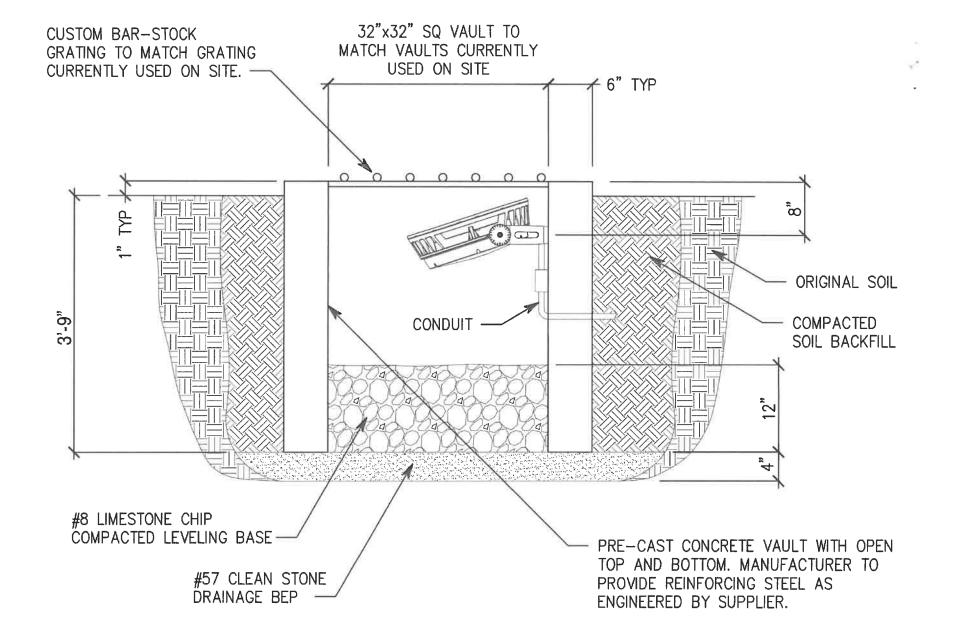
End of Addendum

**End of Addendum** 





Revisions to Sheet E2.1 8.15.22



## TYPE "SA" CONCRETE VAULT DETAIL

N.T.S.

## Pre-Bid Sign-In Sheet

Solicitation Number: CRFQ GSD2300000013

Date of Pre-Bid Meeting: August 16, 2022

Location of Prebid Meeting: Building 4, 112 California Avenue, Charleston, WV, 25311

#### Please Note:

Vendors must sign-in on this sheet to verify attendance at the Pre-Bid meeting. Failure to legibly sign in may be grounds for declaring a vendor ineligible to bid. For further verification, please also provide a business card if possible.

Firm Represented:*	Rep Name (Printed):	Firm Address:	Telephone #:	<u>Fax #:</u>	Email:
SGI	Stere Fox	Pe box 96 Briggert WU 26536	364623-3844		SFERD SETWU. COM
SGI	Adam Martin	PO Dox 96 Brilgepost W26350	3045163396		cumartinosgiw. co.
SILLING	GLEHM SAVAGE		304-3460565	3	gsavoge@silling.com
ipagressive Electric	Geoff Heater		384-345-1253		Dshurowe wew.reu.com
SBM	CALEB		330-526-2708		ckuzmana sbmce.con
Hatzel & Buchla-	Brian Christian		3 o · l 3 89 - 4258		b. christian D hatzeland Duehler com

<sup>\*</sup>One Vendor Per Representative - No one individual is permitted to represent more than one vendor at the pre-bid meeting. Any individual that does attempt to represent two or more vendors will be required to select one vendor to which the individual's attendance will be attributed. The vendors not selected will be deemed to have not attended the pre-bid meeting unless another individual attended on their behalf.

# WEST VIRGINIA STATE CAPITOL EXTERIOR LIGHTING

## WEST LAWN PROJECT CHARLESTON, WEST VIRGINIA

## CONSTRUCTION DOCUMENTS JULY 7th, 2022



## DRAWING INDEX

## ELECTRICAL

COVER - DRAWING INDEX

ELECTRICAL SYMBOLS, NOTES AND DETAILS

NEW WORK - PARTIAL BASEMENT FLOOR PLAN - ELECTRICAL

2.1 LIGHTING- PARTIAL FIRST FLOOR PLAN - ELECTRICAL

E2.2 LIGHTING- PARTIAL FIRST FLOOR PLAN - ELECTRICAL

E3.1 DETAILS

ES.1 DEMOLITION - PARTIAL SITE PLAN - ELECTRICAL

NEW WORK - PARTIAL SITE PLAN - ELECTRICAL



ABBREVIATION LEGEND			
SYMBOL	<u>DESCRIPTION</u>		
AFF	ABOVE FINISHED FLOOR		
AFG	ABOVE FINISHED GRADE		
CLG	CEILING		
DP	DISTRIBUTION PANEL		
EC	ELECTRICAL CONTRACTOR		
EMT	GALVANIZED ELECTRIC METALLIC TUBING (THINWALL), UL LISTED		
GC	GENERAL CONTRACTOR		
GFI	GROUND FAULT INTERRUPTER		
GRC	GALVANIZED, RIGID, HEAVY WALL CONDUIT, UL LISTED		
NIC	NOT IN CONTRACT		
PAN	PANELBOARD		
PVC	CARLON PLASTIC CONDUIT, HEAVY WALL TYPE, POLYVINYL CHLORIDE, UL LISTED, SCHEDULE 40 UNLESS NOTED OTHERWISE.		
SWBD	SWITCHBOARD		
TR	TAMPER RESISTANT		
WP	WEATHERPROOF		
"X"	SUBSCRIPT "X" BY SYMBOL INDICATES EXISTING ITEM TO REMAIN.		

POWER LEGEND		
SYMBOL	<u>DESCRIPTION</u>	
PAN. " "	208/120V,3ø,4W PANELBOARD.	
PAN. " "	480/277V,3ø,4W PANELBOARD.	
PAN. "RPA"	LIGHTING CONTROL PANEL.	
DIST. PAN.	DISTRIBUTION PANEL.	

<del></del>			
GENERAL LEGEND			
SYMBOL	<u>DESCRIPTION</u>		
	CONCEALED BRANCH CIRCUIT HOMERUN. FOR NORMAL BRANCH CIRCUIT WIRING, CONTRACTOR MAY COMBINE UP TO THREE HOMERUNS IN ONE RACEWAY ON A WYE SYSTEM AND TWO HOMERUNS IN ONE RACEWAY ON A DELTA SYSTEM. QUANTITY OF MARKS INDICATE NUMBER OF CONDUCTORS. #12 AWG MINIMUM SIZE CONDUCTORS UNLESS NOTED OTHERWISE. ALL RACEWAYS TO CONTAIN SEPARATE EQUIPMENT GROUNDING CONDUCTOR. ALL BRANCH CIRCUITS SHALL HAVE SEPARATE NEUTRAL CONDUCTOR. NEUTRAL CONDUCTOR SHALL NOT BE SHARED BETWEEN CIRCUITS. REFER TO SPECIFICATIONS FOR RACEWAY TYPE.		
	RACEWAY AND CONDUCTORS CONCEALED ABOVE CEILING OR IN WALL AT ELECTRICAL CONTRACTOR'S OPTION. QUANTITY OF MARKS INDICATE NUMBER OF CONDUCTORS. #12 AWG MINIMUM SIZE CONDUCTOR UNLESS OTHERWISE NOTED. ALL RACEWAYS TO CONTAIN SEPARATE EQUIPMENT GROUNDING CONDUCTOR. ALL BRANCH CIRCUITS SHALL HAVE SEPARATE NEUTRAL CONDUCTOR. NEUTRAL CONDUCTOR SHALL NOT BE SHARED BETWEEN CIRCUITS. REFER TO SPECIFICATIONS FOR RACEWAY TYPE.		
	BRANCH CIRCUIT UNDER FLOOR SLAB, UNDERGROUND OR ABOVE ACCESSIBLE CEILING OF FLOOR BELOW. QUANTITY OF MARKS INDICATES NUMBER OF CONDUCTORS. ALL BRANCH CIRCUITS SHALL HAVE SEPARATE NEUTRAL CONDUCTOR. NEUTRAL CONDUCTOR SHALL NOT BE SHARED BETWEEN CIRCUITS. ALL RACEWAYS TO CONTAIN SEPARATE EQUIPMENT GROUNDING CONDUCTORS.		
\$ \$	ALL ITEMS SHOWN DASHED ON DEMOLITION PLANS TO BE REMOVED (UNLESS OTHERWISE NOTED).		

LIGHTING FIXTURE SCHEDULE						
SYMBOL	CATALOG NO.	DESCRIPTION	MOUNTING	LAMP(S)	NOTES	APPROVED EQUALS
SA	LBXHO-277V-35K-NFL-NFL-NFL-SI-ES-SY-UL-3FT	LUMENPULSE: LUMENBEAM XLARGE HIGH OUTPUT FLOODLIGHT, 17-1/2" DIAMETER, 5-3/4" DEEP, 3500K, NARROW FLOOD 20 DEGREE OPTICS, SHORT YOKE MOUNT, 205 WATTS, AND (1) 277V LUTRON ECOSYSTEM DRIVER. WET LOCATION LISTED. WITH CUSTOM HOT ROLLED STEEL ROD GRATING WITH A FLAT BAR PERIMETER. COORDINATE FINAL GRATE DESIGN WITH LIGHTING DESIGNER.	CONCRETE VAULT. REFER TO DETAIL	INTEGRAL LED	1,2	AS SPECIFIED
SB	LBL-277V-35K-NF-SI-ES-UL-xxFT	LUMENPULSE: LUMENBEAM LARGE FLOODLIGHT, 10" DIAMETER, 4-3/4" DEEP, 3500K, NARROW FLOOD 20 DEGREE OPTICS, SHORT YOKE MOUNT, 50 WATTS, AND (1) 277V LUTRON ECOSYSTEM DRIVER. WET LOCATION LISTED. WITH CUSTOM HOT ROLLED STEEL ROD GRATING WITH A FLAT BAR PERIMETER. COORDINATE FINAL GRATE DESIGN WITH LIGHTING DESIGNER.	CONCRETE VAULT. REFER TO DETAIL	INTEGRAL LED	1,2	AS SPECIFIED
SB-1	LBL-277V-35K-NF-BK-ES-SY-UL-xxFT	SAME AS SB, EXCEPT STANCHION MOUNTED.	STANCHION ON CONCRETE BASE	INTEGRAL LED	1,2,5,6	AS SPECIFIED
SU	FLOODLIGHTS: (2)LBL-277V-35K-NS-CC-ES-UL-3FT/LBLSN-CC-BK /PMX-2 POST-TOP FIXTURE: GPD3-P30-50K-MVOLT-MS-GL3-BK POLE: DPSEDG-20-12.00-TN7.00-0.75-CW/MOD Bracket arms	LUMENPULSE: LUMENBEAM LARGE FLOODLIGHT, 10" DIAMETER, 4-3/4" DEEP, 3500K, NARROW SPOT 10 DEGREE OPTICS, SHORT YOKE MOUNT, 50 WATTS, AND (1) 277V LUTRON ECOSYSTEM DRIVER. WET LOCATION LISTED. HOLOPHANE: GRANVILLE PREMIER FIXTURE, 5000K, TYPE III OPTIC, MODERN STYLE, AND  (1) MULTI-VOLT DRIVER.  SPRING CITY ELECTRIC: 12' TALL CAST IRON POLE. PROVIDE WITH CUSTOM BRACKET ARMS FOR FLOODLIGHTS. FINISH TO MATCH EXISTING POLES.	CONCRETE BASE. REFER TO DETAILS	INTEGRAL LED	3,4	AS SPECIFIED
SW	FLOODLIGHTS: (2)-LBG-277V-35K-FL-FL-BK-ES- UL-3FT/LBGSN-CC-BK POST-TOP FIXTURE: GPD3-P30-50K-MVOLT-MS-GL3-BK POLE: DPSEDG-20-12.00-TN7.00-0.75-CW/MOD Bracket arms	LUMENPULSE: LUMENBEAM GRANDE HIGH OUTPUT FLOODLIGHTS, 13-1/2" DIAMETER, 5-3/4" DEEP, 3500K, FLOOD 40 DEGREE OPTICS, SHORT YOKE MOUNT, 100 WATTS, AND (1) 277V LUTRON ECOSYSTEM DRIVER. WET LOCATION LISTED. HOLOPHANE: GRANVILLE PREMIER FIXTURE, 5000K, TYPE III OPTIC, MODERN STYLE, AND (1) MULTI-VOLT DRIVER.  SPRING CITY ELECTRIC: 12' TALL CAST IRON POLE. PROVIDE WITH CUSTOM BRACKET ARMS FOR FLOODLIGHTS. FINISH TO MATCH EXISTING POLES.	CONCRETE BASE. REFER TO DETAILS	INTEGRAL LED	3,4	FLOODLIGHTS: GRIVEN, COLOR KINETICS. POLE: AS SPECIFIED.

# LIGHTING FIXTURE SCHEDULE NOTES

1. THIS LIGHTING FIXTURE TYPE IS TO BE MOUNTED BELOW GRADE WITHIN A CONCRETE VAULT. THE FIXTURE PROVIDES DIRECT ILLUMINATION FOR THE BUILDING'S FAÇADE. REFERENCE RELEVANT DETAILS AND ASSOCIATED SPECIFICATIONS FOUND WITHIN THIS CONSTRUCTION SET FOR FURTHER INFORMATION REGARDING THE VAULT AND FIXTURE INSTALLATION REQUIREMENTS.

2. REFER TO ARCHITECTURAL DETAILS FOR FURTHER MOUNTING DATA.

3. CONTRACTOR SHALL SUPPLY NECESSARY HARDWARE AND RELATED SUPPLEMENTAL STRUCTURAL SUPPORT MATERIALS TO ENSURE A SAFE, SECURE AND CODE COMPLIANT MOUNTING FOR THIS LUMINAIRE. WHEN REQUIRED BY SITUATION, CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING STRUCTURAL INTEGRITY OF INSTALLATION BY ENGAGING A REGISTERED STRUCTURAL ENGINEER FOR APPLICATION REVIEW. ALL MODIFICATIONS NECESSARY TO CEILING OR STRUCTURE TO WHICH THIS FIXTURE IS TO BE MOUNTED SHALL BE COORDINATED WITH APPLICABLE TRADES.

TO BE MOUNTED SHALL BE COORDINATED WITH APPLICABLE TRADES.

4. NEW HISTORIC-STYLED POLE WITH "ACORN" LUMINAIRE ASSEMBLY, TO MATCH EXISTING WVGSD UNIT, SHALL BE FURNISHED AND INSTALLED AT THIS LOCATION. POLE SHALL ALSO BE PROVIDED WITH TWO (2) ADJUSTABLE LED FLOODLIGHTS MOUNTED TO BRACKET ARM ASSEMBLIES, CONSISTENT IN APPEARANCE AND INTENT TO DRAWING PROVIDED IN THE DOCUMENTS. CONTRACTOR SHALL PROVIDE SCALED MANUFACTURERS' DRAWING OF THE ENTIRE POLE/FIXTURE ASSEMBLY, INCLUDING EACH LUMINAIRE

SHALL ALSO BE PROVIDED WITH TWO (2) ADJUSTABLE LED FLOODLIGHTS MOUNTED TO BRACKET ARM ASSEMBLIES, CONSISTENT IN APPEARANCE AND INTENT TO DRAWING PROVIDED IN THE DOCUMENTS. CONTRACTOR SHALL PROVIDE SCALED MANUFACTURERS' DRAWING OF THE ENTIRE POLE/FIXTURE ASSEMBLY, INCLUDING EACH LUMINAIRE TYPE, SUPPORT ARMS AND ALL OTHER ATTACHMENT MECHANISMS REQUIRED. CONTRACTOR SHALL ALSO PROVIDE A FULLY ENGINEERED DESIGN/BUILD SUBTERRANEAN FOOTING/FOUNDATION FOR THE POLE, CONSISTENT WITH OTHER POLES INSTALLED ON THE CAPITOL PROPERTY. REFER TO DRAWINGS FOR FURTHER INFORMATION. A DRAWING WITH PROFESSIONAL ENGINEER'S STAMP SHALL BE FURNISHED AS A PART OF THE SHOP DRAWING SUBMITTAL COMPLIANCE.

THE POLE SHALL BE FED SEPARATE POWER FOR THE "ACORN" LUMINAIRE LIGHT SOURCE. FLOODLIGHTS WILL RECEIVE A CIRCUIT DEDICATED TO FAÇADE ILLUMINATION.

5. PROVIDE SMALL FOUNDATION BASE WITH AT LEAST 6" OF CONCRETE DEPTH. PROVIDE ALL NECESSARY SUBTERRANEAN DRAINAGE AND SUPPORT IN ORDER TO ENSURE PERMANENCY OF FOUNDATION AND A STABLE POSITIONING.

6. FIXTURE MUST BE CENTERED ON ADJACENT PILASTER.

# GENERAL/SUBMITTAL PROCESS

A. THE SHOP DRAWING SUBMITTAL FOR THIS FIXTURE TYPE REQUIRES A SCALED DRAWING INDICATING THE FOLLOWING INFORMATION:

MATERIALS AND THEIR FINISHES MECHANICAL FASTENERS AND ATTACHMENTS CLEARLY INDICATED APPROXIMATE WEIGHT

SPECIAL ONSITE ASSEMBLY OR INSTALLATION REQUIREMENTS

3. CONTRACTOR SHALL CONDUCT DETAILED SURVEY OF PROJECT SITE CONDITIONS TO DETERMINE EXACT QUANTITIES OF CACH FIXTURE TYPE SHOWN ON DRAWINGS, VERIFYING SPECIFIC FIXTURE POSITIONS AND ACCESS REQUIREMENTS AS RECEDED.

C. CONTRACTOR SHALL BE RESPONSIBLE FOR FINAL TARGETING/FOCUSING OF ADJUSTABLE LIGHT FIXTURES UNDER THE OBSERVATION OF, AND ACCORDING TO, THE RECOMMENDATIONS OF THE LIGHTING DESIGNER. AIMING SHALL TAKE PLACE AFTER DARK, AT A MUTUALLY AGREED UPON TIME. ALL COSTS ASSOCIATED WITH THIS EFFORT SHALL BE INCLUDED IN THE BASE BID BY THE ELECTRICAL CONTRACTOR. ADDITIONALLY, CONTRACTOR SHALL SUPPLY ALL NECESSARY SURFACE PROTECTION FOR SURROUNDING MATERIALS, AS DICTATED BY THE OWNER AND/OR GENERAL CONTRACTOR. WHEN MADE NECESSARY BY THE PROJECT CONDITIONS, CONTRACTOR SHALL MAKE ARRANGEMENTS TO PROTECT IMPACTED MATERIALS FROM POTENTIAL DAMAGE CAUSED BY THE USE OF LIFTS AND RELATED EQUIPMENT DURING LIGHTING ADJUSTMENTS. THESE ACCOMMODATIONS MUST BE INCLUDED IN THE CONTRACTOR'S BASE BID.

# ELECTRICAL GENERAL NOTES

1. THE GENERAL NOTES LISTED HERE APPLY TO ALL ELECTRICAL DRAWINGS IN ADDITION TO ANY ADDITIONAL DRAWING NOTES ON THE INDIVIDUAL DRAWINGS.

WHOSE WIRING IS INTERRUPTED DUE TO WORK IN ADJACENT AREAS.

3. DARK, DASHED ITEMS INDICATE ELECTRICAL EQUIPMENT, DEVICES, AND/OR LIGHTING TO BE REMOVED UNDER THE DEMOLITION PHASE OF

ALL EXISTING ELECTRICAL DEVICES WITHIN HATCHED AREAS TO REMAIN IN OPERATION UNLESS SHOWN OTHERWISE. REFEED ANY ITEM

PROJECT.

4. SEE SPECIFICATIONS FOR GENERAL CUTTING AND PATCHING REQUIREMENTS REQUIRED DURING DEMOLITION AND NEW CONSTRUCTION

PHASES. REFER TO DRAWINGS FOR MORE SPECIFIC REQUIREMENTS.

5. SEE SPECIFICATIONS FOR SALVAGE RIGHTS TO ANY EQUIPMENT OR MATERIALS BEING REMOVED.

6. REMOVE ALL HANGERS AND SUPPORTS SERVING CONDUIT AND WIRE TO BE DEMOLISHED. PROVIDE AND/OR ADJUST EXISTING HANGERS TO SUPPORT ANY REMAINING CONDUIT AND WIRE, OR EQUIPMENT ADJACENT, TO REMAIN.

7. REMOVE ALL EXISTING WIRE FROM CONDUITS TO BE ABANDONED. REFER TO SPECIFICATIONS FOR REQUIREMENTS REGARDING ABANDONED

8. DARKENED WALLS INDICATE NEW WALL CONSTRUCTION.

9. EC SHALL REMOVE AND REINSTALL ALL CEILING MATERIAL AS REQUIRED FOR ELECTRICAL WORK SHOWN. REPLACE ALL MATERIAL DAMAGED BY THIS CONTRACTOR.

10. SEE CODED NOTES ON INDIVIDUAL DRAWING SHEETS FOR SPECIFIC INSTRUCTIONAL NOTES.

ADDITIONAL INFORMATION AND REQUIREMENTS.

1. FIELD VERIFY EXISTING CONDITIONS.

12. COORDINATE ELECTRICAL WORK WITH ALL CONTRACTORS ON SITE (GENERAL TRADES, PLUMBING, FIRE PROTECTION, HVAC, ETC) PRIOR TO COMMENCEMENT OF DEMOLITION/CONSTRUCTION WORK.

13. THE ELECTRICAL DESIGN DRAWINGS ARE DIAGRAMMATIC AND ARE NOT INTENDED TO SHOW EXACT LOCATION OF EQUIPMENT, LIGHTING, AND DEVICES UNLESS DIMENSIONS ARE GIVEN FOR CLEARANCES, ETC. LIGHTING, DEVICES AND ELECTRICAL EQUIPMENT ARE TO BE INSTALLED ALONG THE GENERAL PLANS SHOWN ON THE DRAWINGS, BUT KEEPING IN MIND ACTUAL BUILDING CONDITIONS WHICH MUST BE CONFIRMED WITH—IN THE ACTUAL WORK AREA. CONTRACTORS, IN THEIR BIDS, ARE REQUIRED TO INCLUDE ALL LABOR AND MATERIALS AND OTHER RELATED WORK NECESSARY TO PROVIDE MINOR OFFSETS IN ELECTRICAL INSTALLATION TO AVOID CONFLICT WITH OTHER WORK ON THIS PROJECT, OR AS REQUIRED IN ORDER TO OBTAIN MAXIMUM HEAD ROOM OR EQUIPMENT ACCESS IN SPACES.

14. PHASING — SEE DIVISION 1 PROJECT SPECIFICATION PHASING DOCUMENTS FOR SPECIFIC PHASING INSTRUCTIONS. COORDINATE SHUT—DOWN OF ANY UTILITY IN ADVANCE WITH THE OWNER.

5. MAINTAIN REQUIRED RIGGING ACCESS CLEARANCES. COORDINATE CLEARANCE REQUIREMENTS WITH OTHER TRADES.

16. E.C. IS TO COORDINATE ALL MASONRY PENETRATION LOCATIONS AND SIZES WITH G.C.

17. AN ATTEMPT HAS BEEN MADE TO SHOW ALL ELECTRICAL ITEMS TO REMAIN OR BE REMOVED. EC SHALL FIELD VERIFY EXISTING CONDITIONS AND REMOVE AND/OR RELOCATE ANY ITEM WHICH INTERFERES WITH NEW CONSTRUCTION.

FEEDER CONDUIT HAVE BENDS OF MORE THEN 270° WITHOUT THE INSTALLATION OF A PULL BOX.

19. PROVIDE FIRESEALING OF ALL OPENINGS THROUGH FIRE RATED WALLS AND ASSEMBLIES. SEE DETAIL SHEETS AND SPECIFICATIONS FOR

IB. POWER AND TELECOM RISER PULL BOXES MAY NOT BE SHOWN. PROVIDE PULL BOXES AT LOCATIONS REQUIRED. IN NO CASE SHALL A

20. EC TO COORDINATE ELECTRICAL AND TELECOMMUNICATIONS DEVICE LOCATIONS WITH ARCHITECT PRIOR TO ROUGH—IN. IF INFORMATION IS NOT PROVIDED ON DOCUMENTS, EC SHALL COORDINATE LOCATIONS AND MOUNTING HEIGHTS WITH ARCHITECT. DEVICE REQUIRED TO BE RELOCATED DUE TO LACK OF COORDINATION WILL BE DONE AT THE CONTRACTOR'S EXPENSE.



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SEAL



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1540 Corporate Woods Parkway
Uniontown, OH 44685
Phone: (330) 526-2700

WEST VIRGINIA
STATE CAPITOL
EXTERIOR LIGHTING
WEST LAWN

OWNER

STATE OF WEST VIRGINIA

LOCATION

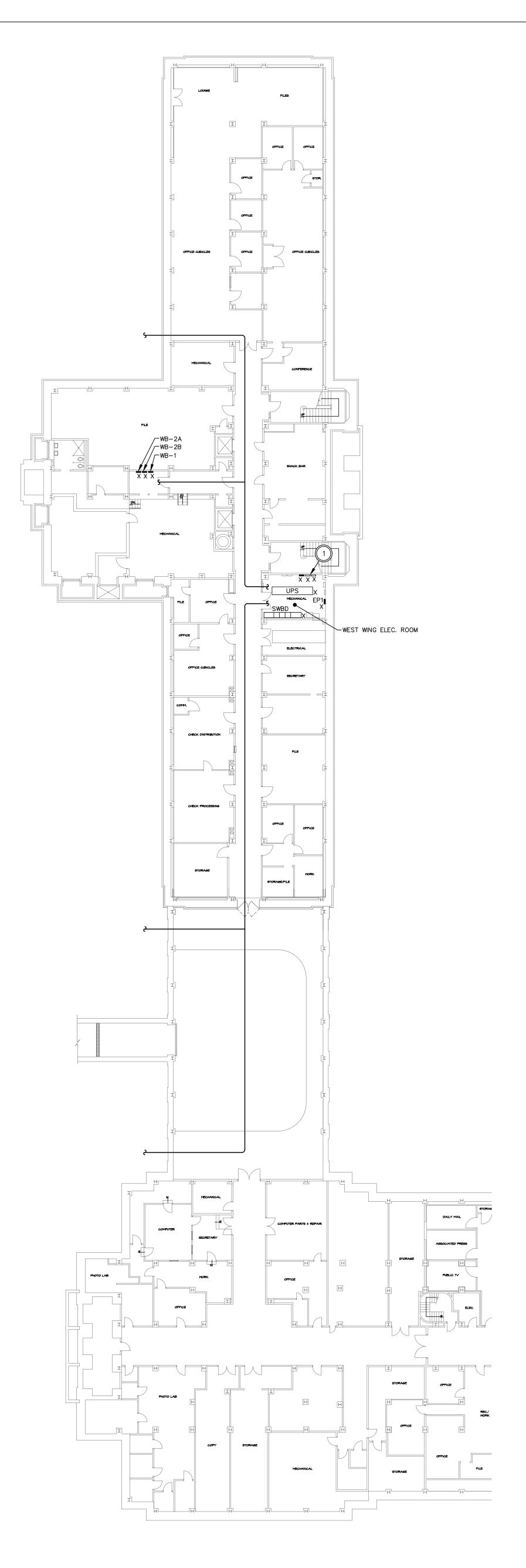
CHARLESTON, WV

REVISIONS

07.07.2022

ELECTRICAL

DRAWING NUMBER



NEW WORK - PARTIAL BASEMENT FLOOR PLAN - ELECTRICAL



# **PLAN NOTES**

A. THIS PLAN INDICATES RECOMMENDED CONDUIT PATHWAYS THROUGH THE BUILDING. THESE ARE SHOWN FOR REFERENCE ONLY. EC TO FIELD VERIFY EXACT ROUTING IN FIELD. PATHWAYS SHOWN INDICATE THE ENGINEER AND OWNER'S ACCEPTABLE PATH AND LOCATION FOR CONDUITS TO EXIT BUILDING TO SERVE GROUND MOUNTED FIXTURES. REFER TO FIRST FLOOR PLAN AND SITE PLAN FOR FIXTURE LOCATIONS.

CODED NOTES

. EXISTING LUTRON ECOSYSTEM CONTROLLER AND LUTRON XP RELAY PANEL.



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SEAL



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ELECTRICAL ENGINEER Scheeser Buckley Mayfield, LLC 1540 Corporate Woods Parkway Uniontown, OH 44685 Phone: (330) 526-2700

WEST VIRGINIA
STATE CAPITOL
EXTERIOR LIGHTING
WEST LAWN

STATE OF WEST VIRGINIA

CHARLESTON, WV

REVISIONS

07.07.2022

NEW WORK - PARTIAL BASEMENT FLOOR PLAN - ELECTRICAL

DRAWING NUMBER

A. REFER TO BASEMENT PLAN FOR LIGHTING CONTROL PANEL LOCATIONS AND PROPOSED BUILDING EXIT PATHWAYS.

B. ALL WIRING SHOWN TO BE #10AWG MINIMUM AT 36"BFG IN 3/4"C MINIMUM UNLESS SHOWN OTHERWISE.

C FIELD VERIFY ALL EXISTING SITE CONDITIONS. IT IS THE RESPONSIBILITY OF THIS CONTRACTOR TO TRENCH, BACKFILL, COMPACT SOIL, SEED AND REPAIR ANY DISTURBED

D. EXISTING WALKWAYS MAY BE TRENCHED AND REPAIRED TO MATCH EXISTING.

E. ALL FIXTURES SHOWN ON THIS PLAN ARE TO BE CONNECTED TO THE DALI CONTROL SYSTEM. EXTEND DALI CONTROL WIRING TO EACH FIXTURE PER THE DETAILS AND MANUFACTURER'S REQUIREMENTS. DALI CONTROL WIRING MAY BE INSTALLED IN THE SAME CONDUIT AS THE POWER WIRING.

CODED NOTES

1. REFER TO SITE PLAN FOR POLE LOCATION AND ADDITIONAL INFORMATION. CIRCUIT SHOWN ON THIS PLAN SHALL BE CONNECTED TO THE FLOODLIGHTS. FLOODLIGHTS
SHALL ALSO BE CONNECTED TO THE DALI CONTROL SYSTEM WIRING. REFER TO SITE
PLAN FOR CIRCUIT FOR POST—TOP LUMINAIRE.

2. CONNECT TO SPARE 20A/1P CIRCUIT BREAKER IN PANEL "WB-2A". REFER TO OVERALL BASEMENT PLAN FOR LOCATION.

PLAN NOTES

ARCHITECTS

405 Capitol Street | Upper Atrium Charleston, West Virginia 25301 Office 304.346.0565 silling.com

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WEST VIRGINIA STATE CAPITOL EXTERIOR LIGHTING WEST LAWN

STATE OF WEST VIRGINIA

CHARLESTON, WV

REVISIONS

07.07.2022

LIGHTING - PARTIAL FIRST FLOOR PLAN -ELECTRICAL

DRAWING NUMBER

KEY PLAN N.T.S.

E2.1

LIGHTING - PARTIAL FIRST FLOOR PLAN - ELECTRICAL

O B 16' 24'

SCALE

A. REFER TO BASEMENT PLAN FOR LIGHTING CONTROL PANEL LOCATIONS AND PROPOSED BUILDING EXIT PATHWAYS.

B. ALL WIRING SHOWN TO BE #10AWG MINIMUM AT 36"BFG IN 3/4"C MINIMUM UNLESS SHOWN OTHERWISE.

C FIELD VERIFY ALL EXISTING SITE CONDITIONS. IT IS THE RESPONSIBILITY OF THIS CONTRACTOR TO TRENCH, BACKFILL, COMPACT SOIL, SEED AND REPAIR ANY DISTURBED

D. EXISTING WALKWAYS MAY BE TRENCHED AND REPAIRED TO MATCH EXISTING. E. ALL FIXTURES SHOWN ON THIS PLAN ARE TO BE CONNECTED TO THE DALI CONTROL SYSTEM. EXTEND DALI CONTROL WIRING TO EACH FIXTURE PER THE DETAILS AND MANUFACTURER'S REQUIREMENTS. DALI CONTROL WIRING MAY BE INSTALLED IN THE SAME CONDUIT AS THE POWER WIRING.

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PLAN NOTES

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ARCHITECTS

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WEST VIRGINIA STATE CAPITOL EXTERIOR LIGHTING WEST LAWN

STATE OF WEST VIRGINIA

CHARLESTON, WV

07.07.2022

LIGHTING - PARTIAL FIRST FLOOR PLAN -ELECTRICAL

DRAWING NUMBER E2.2

24" ROUND

**ROUND FOOTING** 

POLE BASE DETAIL #1

EXISTING CAST IRON POLE.

UNFUSED "Y" CONNECTOR -

FUSED "Y" CONNECTOR -

OR JOY MFG. X8919-1)

(BUSSMAN #HEB-AW-RYC

(3) SETS OF TIES EQUALLY — SPACED WITHIN THE TOP 5"

CONCRETE BASE (SONOTUBE -

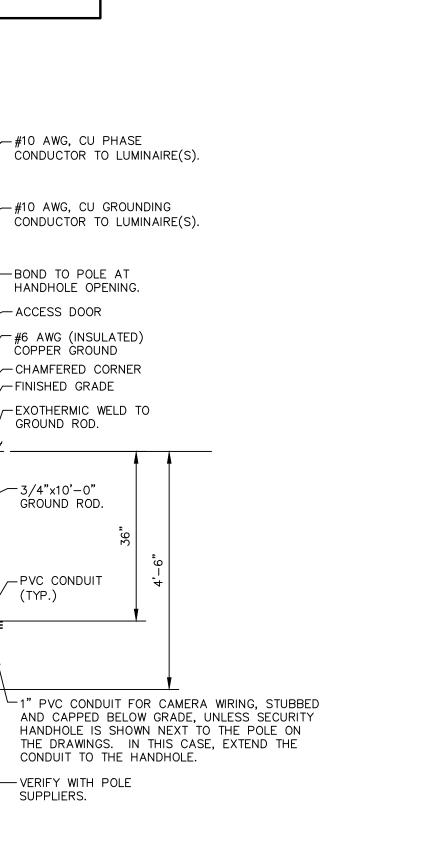
FORMED) (4000 PSI MIN.

COMPRESSION STRENGTH).

ANCHOR BOLT FURNISHED -

WITH POLE. (TYP. OF 4).

OF THE CONCRETE BASE.



CONDUCTOR TO LUMINAIRE(S).

CONDUCTOR TO LUMINAIRE(S).

- #10 AWG. CU GROUNDING

-BOND TO POLE AT

-ACCESS DOOR

HANDHOLE OPENING.

#6 AWG (INSULATED)

- CHAMFERED CORNER

-EXOTHERMIC WELD TO

COPPER GROUND

FINISHED GRADE

GROUND ROD.

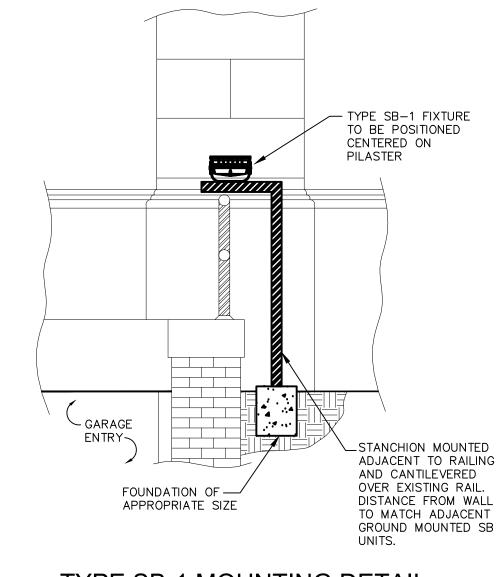
GROUND ROD.

PVC CONDUIT

CONDUIT TO THE HANDHOLE.

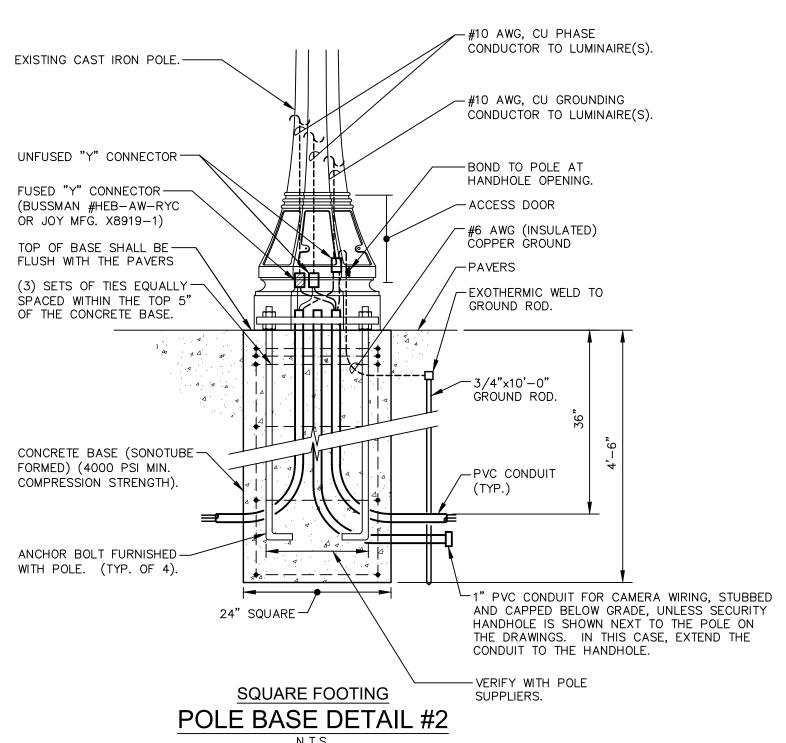
- VERIFY WITH POLE

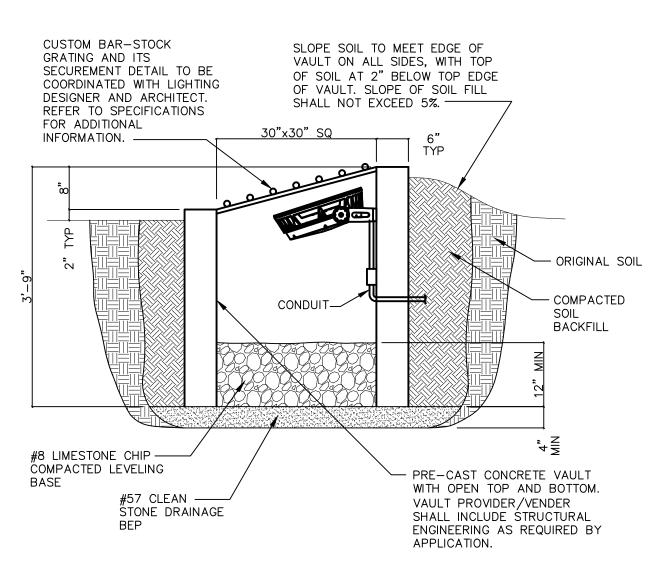
SUPPLIERS.



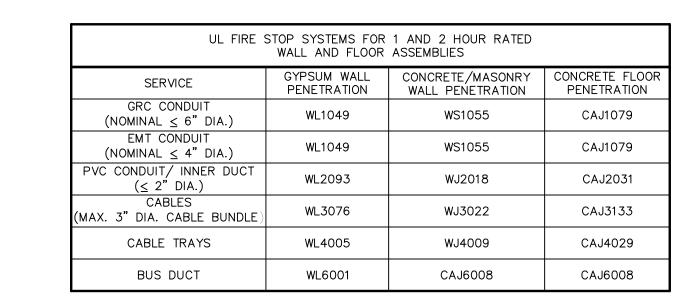
TYPE SB-1 MOUNTING DETAIL

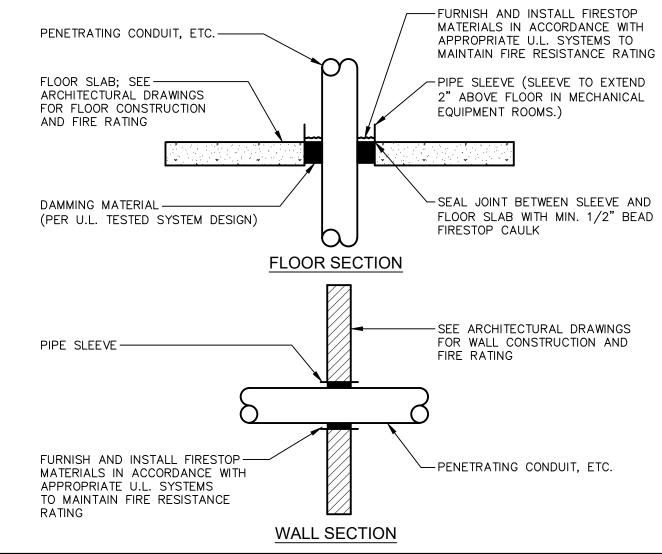
SB-1 MOUNTING DETAIL NOTES: . THE ENGINEERING OF THE FOUNDATION, STANCHION, AND ALL CONNECTIONS ARE THE RESPONSIBILITY OF THE CONTRACTOR. MATERIAL OF THE STANCHION SHALL BE METAL, COMPATIBLE WITH THE MOUNTING BRACKET OF THE LIGHT FIXTURE AND FOUNDATION ANCHORAGE, AND SHOULD RECEIVE A POWDERCOAT FINISH TO MATCH THE FIXTURÉ. 3. VERTICAL AND HORIZONTAL MEMBERS SHOULD BE SQUARE/RECTANGULAR IN SHAPE AND MINIMUM 2" X 2" UNLESS REQUIRÉD TO BE LARGER FOR STRUCTURAL REQUIREMENTS. 4. THE HORIZONTAL LEG OF THE STANCHION SHALL BE 4" CLEAR ABOVE THE EXISTING HORIZONTAL STEEL PIPE RAILING. VERIFY TOTAL HEIGHT IN FIELD.





TYPE "SA" **CONCRETE VAULT DETAIL** 





NOTES: . WHERE CONDUIT, CABLES AND OTHER COMPONENTS PASS THROUGH FIRE OR SMOKE RATED WALLS OR FLOORS, PROVIDE NON-ASBESTOS SEAL ASSEMBLIES CLASSIFIED BY U.L. TO PROVIDE FIRE BARRIERS EQUAL TO OR GREATER THAN THE TIME RATING OF THE CONSTRUCTION BEING PENETRATED, WITH APPROPRIATE MATERIALS AND SYSTEMS THAT COMPLY WITH APPLICABLE CODES AND THAT HAVE BEEN TESTED IN ACCORDANCE WITH U.L. 1479 OR ASTM E814.

- 2. GROUT, MORTAR OR GYPSUM BASED PRODUCTS SHALL NOT BE INSTALLED IN LIEU OF FIRESTOPPING MATERIALS AND U.L. SYSTEMS.
- 3. FOR SLEEVED PENETRATIONS, FIRESTOP ANNULAR SPACE, IF ANY, BETWEEN SLEEVE AND ADJACENT CONSTRUCTION TO MEET U.L. SYSTEM REQUIREMENTS. SEE NOTE 2 ABOVE.
- 4. THIS CONTRACTOR SHALL FIRESTOP ALL MISCELLANEOUS OPENINGS IN FIRE-RATED CONSTRUCTION RESULTING FROM HIS WORK.
- 5. CONTRACTOR SHALL PROVIDE SUBMITTAL DRAWINGS TO ENGINEER, INCLUDING U.L. RATED SYSTEM NUMBER AND DETAIL FOR EACH TYPE OF PENETRATION AND CONFIGURATION.
- 6. SLEEVES USED FOR CABLE RISERS THROUGH FLOORS OR WALLS SHALL BE INSTALLED PER THE ABOVE FLOOR OR WALL SECTIONS. IN ADDITION, FIRESTOP MATERIAL SHALL BE PROVIDED INSIDE SLEEVE AFTER

CABLES ARE COMPLETELY INSTALLED.

FIRESTOPPING DETAIL FOR PENETRATIONS THROUGH FIRE-RATED CONSTRUCTIONS

CUSTOM BAR-STOCK GRATING AND ITS SECUREMENT DETAIL TO BE COORDINATED WITH LIGHTING DESIGNER AND ARCHITECT. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION. ORIGINAL SOIL COMPACTED SOIL BACKFILL CONDUIT-#8 LIMESTONE CHIP ----COMPACTED LEVELING - PRE-CAST CONCRETE VAULT WITH OPEN TOP AND BOTTOM. #57 CLEAN ----VAULT PROVIDER/VENDER STONE DRAINAGE BEP SHALL INCLUDE STRUCTURAL ENGINEERING AS REQUIRED BY APPLICATION.

> TYPE "SB" **CONCRETE VAULT DETAIL**

ARCHITECTS

405 Capitol Street | Upper Atrium Charleston, West Virginia 25301 Office 304 346 0565 silling.com



CONSULTANTS

LIGHTING CONSULTANT Randy Burkett Lighting Design, Inc. 609 E. Lockwood Avenue, Suite 201 St. Louis, MO 63119 Phone: (314) 961-6650

**ELECTRICAL ENGINEER** Scheeser Buckley Mayfield, LLC 1540 Corporate Woods Parkway Uniontown, OH 44685 Phone: (330) 526-2700

**WEST VIRGINIA** STATE CAPITOL EXTERIOR LIGHTING WEST LAWN

OWNER

STATE OF WEST VIRGINIA

LOCATION

CHARLESTON, WV

REVISIONS

DATE

07.07.2022

**ELECTRICAL** 

DRAWING NUMBER

CODED NOTES

1. EXISTING POLE WITH FLOODLIGHTS AND POLE—MOUNTED RECEPTACLE ON CONCRETE BASE. REMOVE POLE, BASE, AND ALL CONDUIT AND WIRING BACK TO SOURCE. 2. EXISTING POLE WITH FLOODLIGHTS AND POLE—MOUNTED CAMERA ON CONCRETE BASE. REMOVE POLE, BASE, AND ALL CONDUIT AND WIRING BACK TO SOURCE. COORDINATE REMOVAL OF CAMERA AND ASSOCIATED WIRING WITH OWNER.

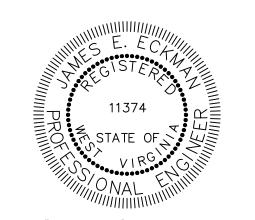
3. EXISTING PEDESTRIAN LIGHTING POLE ON CONCRETE BASE. REMOVE POLE FOR REINSTALLATION ON NEW BASE. REMOVE EXISTING BASE AND ALL CONDUIT AND WIRING BACK TO SOURCE.

4. EXISTING PEDESTRIAN LIGHTING POLE ON CONCRETE BASE. REMOVE POLE, BASE, AND ALL CONDUIT AND WIRING BACK TO SOURCE. RETURN POLE TO OWNER'S STOCK. 5. EXISTING PEDESTRIAN LIGHTING POLE ON CONCRETE BASE. "R" SUBSCRIPT INDICATES THE POLE HAS AN INTEGRAL RECEPTACLE IN THE BASE CONNECTED TO A SEPARATE CIRCUIT. REMOVE POLE, BASE, AND ALL CONDUIT AND WIRING BACK TO SOURCE. RETURN POLE TO OWNER'S STOCK.

6. EXISTING PEDESTRIAN LIGHTING POLE ON CONCRETE BASE. "CAM" SUBSCRIPT INDICATES THE POLE HAS AN POLE—MOUNTED CAMERA. REMOVE POLE, BASE, AND ALL CONDUIT AND WIRING BACK TO SOURCE. RETURN POLE TO OWNER'S STOCK. COORDINATE REMOVAL OF CAMERA AND ASSOCIATED WIRING WITH OWNER.

ARCHITECTS

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CONSULTANTS

SEAL

LIGHTING CONSULTANT Randy Burkett Lighting Design, Inc. 609 E. Lockwood Avenue, Suite 201 St. Louis, MO 63119 Phone: (314) 961-6650

ELECTRICAL ENGINEER Scheeser Buckley Mayfield, LLC 1540 Corporate Woods Parkway Uniontown, OH 44685 Phone: (330) 526-2700

WEST VIRGINIA STATE CAPITOL EXTERIOR LIGHTING WEST LAWN

STATE OF WEST VIRGINIA

CHARLESTON, WV

REVISIONS

07.07.2022

**DEMOLITION - PARTIAL** SITE PLAN - ELECTRICAL

DRAWING NUMBER ES.1



# **PLAN NOTES**

A. SITE PLAN SHOWS PEDESTRIAN POLES ONLY. REFER TO FLOOR PLANS FOR FACADE

B. THE NEW LIGHT POLE LOCATIONS SHOWN ARE APPROXIMATE. PRIOR TO PERFORMING SITE WORK, THE CONTRACTOR SHALL DO A SITE WALK—THROUGH WITH THE ARCHITECT AND OWNER TO DETERMINE AND MARK EXACT LOCATIONS. ALL NEW POLE LOCATIONS SHALL BE APPROVED BY THE ARCHITECT. C. USE DIRECTIONAL BORING WHEN INSTALLING CONDUIT UNDER EXISTING HARDSCAPE SUCH AS SIDEWALKS OR DRIVEWAYS. DO NOT DISTURB EXISTING HARDSCAPE WITHOUT PRIOR APPROVAL FROM THE OWNER AND ARCHITECT. D. ALL EXTERIOR CIRCUITS SHALL BE #10 AWG (MINIMUM) IN 3/4"C AT 36" BFG UNLES OTHERWISE NOTED.

# **CODED NOTES**

1. EXISTING POLE MOUNTED ON NEW BASE. REFER TO BASE DETAILS MAINTAIN SAME ORIENTATION TO MAINTAIN ORIGINAL LIGHT DISTRIBUTION. 2. NEW POLE WITH FLOODLIGHTS. REFER TO LIGHTING FIXTURE SCHEDULE AND BASE DETAILS. CONNECT POST—TOP LUMINAIRE TO CIRCUIT INDICATED ON THIS PLACE. REFER TO FLOOR PLANS FOR CIRCUIT AND DALI CONTROLS FOR THE FLOODLIGHTS. 3. TO SPARE 20A/1P CIRCUIT BREAKER IN PANEL "WB-2A", VIA LIGHTING CONTROL RELAY IN THE LUTRON XP LIGHTING PANEL. 4. 11"x18" HANDHOLD FOR SECURITY CAMERA CABLING. QUAZITE #GP1118BG12 WITH #PG1118HG0036. COVER TO BE LABELED "SECURITY".

5. STUB INTO BUILDING CEILING SPACE.

ARCHITECTS

405 Capitol Street | Upper Atrium Charleston, West Virginia 25301 Office 304.346.0565

silling.com

CONSULTANTS

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ELECTRICAL ENGINEER Scheeser Buckley Mayfield, LLC 1540 Corporate Woods Parkway Uniontown, OH 44685 Phone: (330) 526-2700

WEST VIRGINIA STATE CAPITOL EXTERIOR LIGHTING WEST LAWN

STATE OF WEST VIRGINIA

CHARLESTON, WV

REVISIONS

07.07.2022

**NEW WORK - PARTIAL** SITE PLAN - ELECTRICAL

DRAWING NUMBER ES.2

100+

# **Project Manual**

# WEST VIRGINIA STATE CAPITOL EXTERIOR LIGHTING UPGRADES WEST LAWN

CAPITOL CAMPUS | CHARLESTON, WV



July 7, 2022



# WEST VIRGINIA STATE CAPITOL EXTERIOR LIGHTING UPGRADES WEST LAWN

# CAPITOL CAMPUS | CHARLESTON, WV

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# General Conditions of the Contract for Construction

#### for the following PROJECT:

(Name and location or address)

West Virginia State Capitol Exterior Lighting Upgrades - West Lawn Capitol Campus, Charleston WV

#### THE OWNER:

(Name, legal status and address)

WV General Services Division Capitol Complex **Building 4** 112 California Avenue Charleston, WV 25305

#### THE ARCHITECT:

(Name, legal status and address)

Silling Associates, Inc. 405 Capitol Street, Upper Atrium Charleston, WV 25301

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#### **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.

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#### 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<sup>TM</sup>—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<sup>TM</sup>-2013, Building Information Modeling and Digital Data Exhibit, and the requisite AIA Document

G202<sup>TM</sup>—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 may not be safe, 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,
  - allowances shall cover the cost to the Contractor of materials and equipment delivered at the site and all required taxes, less applicable trade discounts;
  - 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
  - whenever costs are more than or less than allowances, the Contract Sum shall be adjusted accordingly .3 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

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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.

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#### § 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
  - 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.

§ 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.

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- § 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;

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**User Notes:** 

- .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;
- 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

- .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

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.

#### UNCOVERING AND CORRECTION OF WORK ARTICLE 12

#### § 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.

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- § 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.

#### TERMINATION OR SUSPENSION OF THE CONTRACT ARTICLE 14

## § 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:
  - Issuance of an order of a court or other public authority having jurisdiction that requires all Work to be .1 stopped;
  - An act of government, such as a declaration of national emergency, that requires all Work to be .2 stopped;
  - Because the Architect has not issued a Certificate for Payment and has not notified the Contractor of the .3 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
  - 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.

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§ 14.1.4 If the Work is stopped for a period of 60 consecutive days through no act or fault of the Contractor, 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;
  - .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

- 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
- 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.

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**User Notes:** 

## State of West Virginia

## Supplementary Conditions to AIA Document A201-2017 General Conditions of the Contract for Construction

The following Supplementary Conditions modify the General Conditions of the Contract for Construction, AIA Document A201, 2017 Edition. Where a portion of the General Conditions is modified or deleted by these Supplementary Conditions, the unaltered portions of the General Conditions shall remain in effect.

Order of Precedence: The documents contained in the contract to which this document has been attached shall be interpreted in the following order of precedence:

First Priority – Documents developed by the State or agency and utilized to provide public notice of the solicitation, along with other general terms and conditions shall be first in priority.

Second Priority – This document "Supplementary Conditions to the AIA Document A201-2017 General Conditions of the Contract for Construction" shall be second in priority.

Third Priority – all other AIA documents including, but not limited to, the AIA Document A201-2017 General Conditions of the Contract for Construction and the A101-2017 Standard Form of Agreement Between Owner and Contractor (when utilized) shall be third or lower in priority.

## ARTICLE 1 GENERAL PROVISIONS

Add the following Section to Article 1:

## §1.05 PARTY RELATIONS

§1.05 The Owner and their consultants, the Architect and their Consultants, and the Contractor and their Subcontractors agree to proceed with the Work on the basis of mutual trust, good faith and fair dealing.

#### 61.1 BASIC DEFINITIONS

## §1.1.1 THE CONTRACT DOCUMENTS

## §1.1.1 Delete the last sentence of this Section and substitute the following:

The Contract Documents also include the Bidding Documents (Advertisement or Invitation to Bid, Request for Quotations/Bids, Instructions to Bidders, Form of Proposal, Bid Bond and Sample Forms), Performance Bond, Payment Bond, Maintenance Bond (if applicable), Certificates of Insurance, Special Provisions For Disadvantaged and Women Business Enterprise Utilization (if bound herein).

### §1.1.2 THE CONTRACT

### §1.1.2 Make the following changes to Section 1.1.2:

In the last sentence, insert "and the Contractor" after "The Architect" and delete "the Architect's" and insert "their respective".

## §1.2 Correlation and Intent of Contract Documents

§1.2.1.1 In the second sentence, remove "any law" and insert "West Virginia law or any applicable federal law". In the last sentence, remove "by law" and insert "West Virginia law or any applicable federal law".

### §1.7 Digital Data Use and Transmission

§1.7 Delete the last sentence of this section in its entirety.

## §1.8 Building Information Models Use and Reliance

§ 1.8 Remove this section in its entirety and replace it with the following:

"Any use of, or reliance on, all or a portion of a building information model must be approved in advance by Owner and will only be permitted if the Parties have agreed upon and executed written documents to memorialize protocols governing the use of, and reliance on, the information contained in the model."

## ARTICLE 2 OWNER

**§2.1 GENERAL** 

§ 2.1.1 Add the following after the last sentence:

Notwithstanding the foregoing, the parties understand that since Owner is a government entity, change orders will often require approval by entitles in addition to owner. When owner is a state agency, those entitles may include, but are not limited to, the West Virginia Attorney General's Office and the West Virginia Purchasing Division.

Additionally, approval may be required by agencies providing project funding, including but not limited to, West Virginia School Building Authority and agencies of the United States federal government.

- §2.1.2 Delete Section 2.1.2 in its entirety.
- §2.1 Add the following Section to 2.1:
  - §2.1.3 The Owner and the agency funding the project reserve the right to maintain a full time or part time project representative (sometimes referred to as the "Clerk of the Works") at the project site who shall keep the Owner informed of the progress and quality of the Work and responsibilities. The Contractor shall cooperate and assist the Clerk of the Works in the performance of his/her duties. The Clerk of the Works will not interfere with or be responsible for the Contractor's supervision and direction of the Work, and the Contractor's means, methods, techniques, sequences, and procedures, and for coordinating all portions of the Work. The Clerk of the Works may facilitate communications between the Owner, Architect, and Contractor but has no authority to make decisions for the Owner, approve modifications to the Contract Documents, the Contract Time, or Contract Sum. Additionally, Contractor is not permitted to rely on or consider decisions made by the Clerk of the Works on behalf of Owner
- §2.2 Evidence of the Owner's Financial Arrangements: Delete § 2.2 and all of its subsections in its entirety.
- §2.3 Information and Services Required of Owner
- §2.3.2 Make the following changes to Section 2.3.2:

In first sentence, delete the period and add ", when required pursuant to West Virginia Code §30-12-1 et seq." Add the following sentence at the end of Section 2.3.2: "If the Owner does not retain an architect lawfully licensed to practice architecture or an entity lawfully practicing architecture in the jurisdiction where the Project is located, the Owner will appoint an individual to assume the role and obligations of the Architect pursuant to this Agreement."

§2.3.3 Delete this section in its entirety.

§2.3.4 Delete the last sentence of Section 2.3.4 and substitute the following:

The Contractor shall confirm the locations of each utility. If the Owner has provided geotechnical and other tests to determine subsurface conditions, the Owner will provide such documents to the Contractor; the Contractor acknowledges that it will make no claims for any subsurface or any other conditions revealed by these tests.

## ARTICLE 3 CONTRACTOR

- §3.2 REVIEW OF CONTRACT DOCUMENTS AND FIELD CONDITIONS BY CONTRACTOR
- §3.2.2 Add the following sentence to the end of Section 3.2.2:

Claims by Contractor resulting from its failure to familiarize itself with the site shall be deemed waived. Additionally, by submitting a bid or otherwise entering into this contract, Contractor acknowledges that it has reviewed and understands the contract documents and the work required by those documents. Any claims arising from Contractor's failure to review and understand the contract documents shall be deemed waived.

- §3.2.3 Delete Section 3.2.3 in its entirety and substitute the following:
  - §3.2.3 The Contractor acknowledges its continuing duty to review and evaluate the Construction Documents during performance of its services and shall immediately notify the Owner and the Architect about any problems, conflicts, defects, deficiencies, inconsistencies or omissions it discovers in or between the Construction Documents; and variances it discovers between the Construction Documents and applicable laws, statutes, building codes, rules and regulations.
- § 3.2.4 Add the following clauses to Section 3.2.4:
  - §3.2.4.1 If the Contractor performs any Work which it knows or should have known involves a recognized problem, conflict, defect, deficiency, inconsistency or omission in the Construction Documents; or a variance between the Construction Documents and requirements of applicable laws, statutes, building codes, rules and regulations, without notifying the Owner and the Architect prior to receiving written authorization from the Architect to proceed, the Contractor shall be responsible for the consequences of such performance.
  - §3.2.4.2 Before ordering any materials or doing any Work, the Contractor and Subcontractors shall verify all measurements at the site and shall be responsible for the correctness of same. Discrepancies shall be reported in writing to the Architect prior to proceeding with the Work. No extra charge or compensation will be

entertained due to differences between actual measurements and dimensions indicated on the drawings, if such differences do not result in a change in the scope of Work or if the Architect failed to receive written notice before the Work was performed.

## §3.4 LABOR AND MATERIALS

- §3.4.1 Vendor must review and comply with the following statutory requirements affecting public construction projects, as well as any other applicable laws that are not referenced herein:
  - W. Va. Code § 5-19-1 et seq., relating to domestic steel preference.
  - W. Va. Code § 5A-3-56 relating to domestic steel preference, provided that the Owner is a state agency subject to Chapter 5A. Article 3 of the W. Va. Code.
  - W. Va. Code § §21-1C-1 et seq., relating to local hiring preference
  - W. Va. Code §21-1D-1 et seq., relating to drug free workplace requirements.

## §3.4 Add the following Sections to 3.4:

- §3.4.4 Where materials and equipment are to be provided by the Owner under the Contract Documents, the Contractor shall notify the Owner in writing as to when materials and equipment are required on the project site in sufficient time to avoid delay in the Work.
- §3.4.5 The Contractor shall employ labor on the Project or in connection with the Work, capable of working harmoniously with all trade crafts and any other individuals associated with the Project. The Contractor shall also use its best efforts and implement policies and practices to minimize the likelihood of any strike, work stoppage or other labor disturbance. Except as specifically provided in this Agreement, Contractor shall not be entitled to any adjustment in the Contract sum or Contract time and shall be liable to the Owner for all damages suffered by the Owner occurring as a result of work stoppages, slowdowns, disputes, or strikes by the work force of or provided by Contractor or its Subcontractors.

## **§3.5 WARRANTY**

§3.5 Add the following sentence at the end of Section 3.5;

The Contractor agrees to assign to the Owner at time of Final Completion of the Work, any and all manufacturer's warranties relating to materials and labor used in the Work and further agrees to perform the Work in such a manner so as to preserve any and all such warranties.

## §3.8 ALLOWANCES

- §3.8.3 Make the following change to Section 3.8.3:
  - §3.8.3 Delete "with reasonable promptness" and insert "in sufficient time to avoid delay in the Work."

Add the following Section to 3.8:

§3.8.4 The Contractor shall promptly submit to the Owner an itemized account of any expenditure by the Contractor of the Contract allowance in sufficient detail to allow the Owner to properly account for such expenditure.

### **\$3.9 SUPERINTENDENT/PROJECT MANAGER**

§3.9.1 Add the following sentence to the end of Section 3.9.1:

The Contractor may also employ a competent project manager.

§3.9.2 Make the following changes to Section 3.9.2:

In the first sentence, add "and project manager, if applicable" after "superintendent." In the second sentence, add "or project manager, if applicable," after "superintendent."

§3.9.3 Make the following changes to Section 3.9.3:

In the first sentence, add "or project manager, if applicable," after "superintendent." in the second sentence, add "or project manager, if applicable," after "superintendent."

- §3.9 Add the following Section to 3.9:
  - §3.9.4 The Owner shall have the right, at any time, to direct a change in the Contractor's representatives if their performance is deemed unsatisfactory.

## **§3.10 CONTRACTOR'S CONSTRUCTION SCHEDULES**

§3.10.1 Make the following changes to Section 3.10.1:

in the first sentence, delete the word "promptly" and substitute "by the earliest reasonable date".

Add the following sentence to the end of Section 3.10.1: "The Contractor shall submit an updated construction schedule with each payment application, unless waived by the Owner."

Add the following Sections to 3.10:

§3.10.4 At any time after the first thirty (30) days of the Contract Time, if it is found that the project is two (2) weeks or more behind schedule, beyond approved time extensions, or if at any time during

the last thirty (30) days of the scheduled Contract Time the Contractor is one (1) week or more behind schedule, the Contractor shall immediately submit a plan to the Owner describing how the Work will be placed back on schedule within the remaining Contract Time:

\$3.10.5 If the Owner and the Architect determine that the performance of the Work during any stage of the construction schedule last approved by the Owner has not progressed or reached the level of completion required by the Contract Documents, the Owner will have the right to order the Contractor to take corrective measures (hereinafter referred to collectively as Extraordinary Measures) necessary to expedite the progress of the Work, including, without limitation: (1) working additional shifts or overtime; (2) supplying additional manpower, equipment and facilities; and (3) other similar measures. Such Extraordinary Measures shall continue until the progress of the Work complies with the last approved construction schedule. The Owner's right to require Extraordinary Measures is solely for the purpose of ensuring the Contractor's compliance with the construction schedule after allowing for approved extensions of Contract Time as provided elsewhere in this Agreement. The Contractor is not entitled to an adjustment in the Contract Sum in connection with any Extraordinary Measures required by the Owner. The Owner may exercise its rights under this Section as frequently as the Owner deems necessary to ensure that the Contractor's performance of the Work will comply with the construction schedule.

## §3.11 DOCUMENTS AND SAMPLES AT THE SITE

§3.11 Insert the following sentence at the end of Section 3.11:

The Contractor's compliance with this Section 3.11 shall be a condition precedent to any obligation of the Owner to make Final Payment pursuant to this Agreement.

## **§3.15 CLEANING UP**

§3.15.2 Delete Section 3.15.2 in its entirety and substitute the following:

§3.15.2 If the Contractor fails to clean up as provided in the Contract Documents, the Owner may do so and may withhold such reasonable costs as necessary for the fulfillment of the Contractor's obligation under this Section 3.15. If the reasonable costs of such cleaning exceed the Contract Sum then due the Contractor, the Contractor shall reimburse the Owner the difference within thirty (30) consecutive calendar days of the Owner's written request.

Any materials, tools, supplies, or other personal property left by the Contractor shall be deemed abandoned property and the Owner shall have no obligation to hold or store the property on behalf of Contractor and may dispose of the abandoned property as if it were property of the State of West Virginia. Provided however, that prior to treating property as abandoned and disposing of it, Owner must

first provide Contractor with 10 days notice of its intent to do so. If any materials, tools, supplies or other personal property belong to a subcontractor, then Contractor is obligated to communicate this notice to its subcontractor immediately.

## §3.15 Add the following Section to 3.15:

§3.15.3 In order to achieve Substantial Completion, as defined by Section 9.8, for any portion of the Work, the Contractor must have the area where the Work is located fully cleaned and all materials and/or debris removed from site. The Certificate of Substantial Completion will not be issued until the Contractor has met this obligation.

## ARTICLE 4 ARCHITECT

## **§4.1 GENERAL**

#### **64.2 ADMINISTRATION OF THE CONTRACT**

§4.2 Make the following changes to Section 4.2:

§4.2.1 In the first sentence of Section 4.2.1 after the word Architect add ", unless otherwise indicated by the Owner,".

§4.2.2 In the first sentence of Section 4.2.2 strike the word "generally."

§4.2.3 In the first sentence of Section 4.2.3 strike the word "reasonably."

\$4.2.5 Add the following sentence at the end of Section 4.2.5:

The Architect upon receipt of an Application for Payment from the Contractor shall either review and certify such amounts due for payment or return such Application for Payment to the Contractor for correction(s) within five (5) consecutive business days of receipt.

§4.2.7 Delete the first sentence of Section 4.2.7 and substitute the following:

The Architect will review and approve, or take other appropriate action upon, the Contractor's submittals such as Shop Drawings, Product Data and Samples for the purpose of checking for conformance with the Contract Documents.

Modify the second to last sentence by removing it in its entirety and replacing it with the following: The Architect's review shall not constitute approval of safety precautions or of any construction means, methods, techniques, sequences, or procedures, unless the Architect has established the required construction means, methods, techniques, sequences, or procedures, or the Contract Documents require such approval.

§4.2.8 Make the following change to Section 4.2.8:

In the first sentence, after the word Architect add ", in consultation with the Owner,".

## ARTICLE 5 SUBCONTRACTORS

- §5.2 Award of Subcontracts and Other Contracts for Portions of Work
- §5.2.1 Add the following sentence to Section 5.2.1.

This provision in no way limits the Contractor's legal obligations to report subcontractors and labor/material suppliers under W. Va. Code § 5-22-1(f) and obtain approval under W. Va. Code § 5-22-1(g) prior to any subcontractor substitution.

- §5.4 Contingent Assignment of Subcontracts: This section is removed in its entirety and replaced with the following:
- §5.4 Emergency Contracts with Subcontractors:

In the event that the general contractor fails to fulfill its contractual obligations and the performance bond has failed to provide an adequate remedy, Owner has the right to execute emergency contracts with subcontractors to ensure continuation of the work, provided that doing so is in compliance with the laws, rules, and procedures governing emergency contracting authority for Owner, and the emergency contract terms comply with all other applicable laws, rules, and procedures.

## ARTICLE 7 CHANGES IN THE WORK

#### 87.1 General

§7.1.2. In Section 7.1.2. remove the word "alone" and insert "with approval by the Owner."

## §7.2 CHANGE ORDERS

- §7.2 Add the following Section to 7.2:
  - §7.2.2 A written Change Order as defined under 7.2.1 above constitutes a final settlement of all matters relating to the change in the Work which is the subject of the Change Order, including, but not limited to general conditions, all direct or indirect costs associated with such change and any and all adjustment to the Contract Sum and Contract Time. The parties also understand and agree that if Owner is a state agency, change orders may require approval by entities in addition to Owner. Those entities may include, but are not limited to, the West Virginia Purchasing Division, and the West Virginia Attorney General's Office. Owner

and Contractor must discuss the change order approval requirements prior to executing this agreement.

Add the following section to § 7.2

- §7.2.3. Allowance for Overhead and Profit: Contractor's overhead and profit for a change order issued under this Article included in the total cost to the Owner shall not exceed based on the following schedule:
  - .1 For the Contractor, for any Work performed by the Contractor's own forces, lifteen percent (15%) of the cost.
  - .2 For the Contractor, for Work performed by the Contractor's Subcontractor, ten percent (10%) of the amount due the Subcontractor.
  - .3 For each Subcontractor or Sub-Subcontractor involved, for any Work performed by that Subcontractor's own forces, fifteen percent (15%) of the cost.
  - .4. For each Subcontractor, for Work performed by the Subcontractor's Sub-subcontractors, ten percent (10%) of the amount due the Sub-subcontractor.
  - .5 Cost to which overhead and profit is to be applied shall be determined in accordance with Section 7.3.7. Estimated labor hours shall include hours only for those workmen and working foremen directly involved in performing the Change Order work. Supervision above the level of working foremen (such as general foremen, superintendent, project manager, etc.) is considered to be included in the allowance for Overhead and Profit. Hand tools are defined as equipment with a value of \$1,000 or less. For Contractor owned equipment, the "bars" equipment rental rates allowed to be used for pricing Change Order proposals shall be not more than the monthly rate listed in the most current publication of The AED Green Book divided by 176 to arrive at a maximum hourly rate to be applied to the hours the equipment is used performing the Change Order work.
  - .6 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, material, equipment and Subcontractors. Details to be submitted will include detailed line item estimates showing detailed materials quantity take-offs, material prices by Item and related labor hour pricing information and extensions (by line Item or by drawing as applicable.) Where major cost items are Subcontracts, they shall also be Itemized as prescribed above. In no case will a change involving over \$10,000 be approved without such an itemization.
  - .7 Local Business and Occupation Taxes, if applicable, shall be calculated on the cost of the Work, overhead and profit.

- .8 Overhead and profit shall not be calculated on changes in the Work involving unit prices. Unit prices are to have overhead and profit included in the price quoted.
- .9 Under no circumstances is Contractor permitted to charge for the passage of time (often referred to as general conditions or winter conditions) without an identified, Itemized, and concretely provable cost borne by Contractor. Contractor has a duty to mitigate costs during a delay period to the fullest extent possible and Contractor will not be paid for costs that could have been mitigated. Calculating a daily delay rate without properly identifying, itemizing, and proving actual, unmitigateable costs, is prohibited. Contractor understands and accepts that it has the responsibility to prove that costs could not be mitigated prior to submitting a request for payment.

## **57.3 CONSTRUCTION CHANGE DIRECTIVES**

## §7.3.4 Make the following change in Section 7.3.4:

In the fourth line of the first sentence, delete the words "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" and substitute "an allowance for overhead and profit in accordance with clauses 7.3.11.1 through 7.3.11.9 below."

- §7.3.7 Delete the word "recorded" and replace it with "processed".
- §7.3.9 Delete Section 7.3.9 in its entirety and substitute the following:
  - §7.3.9 Pending final determination of the total cost of a Construction Change Directive to the Owner, amounts not in dispute for such changes in the Work shall be included in Applications for Payment provided these amounts have been added to the Contract by Change Order and a purchase order has been issued for the Change Order.
- §7.3.10 Add the following sentence to the end of Section 7.3.10:

The Parties will utilize their best efforts to issue a change order within 60 days of agreement being reached, but failure to do so will not give rise to grounds for contract cancellation, penalties, or any other cause of action.

Add the following Section to 7.3:

- §7.3.11 In Section 7.3.7, the allowance for overhead and profit for a change directive issued under this Article included in the total cost to the Owner shall not exceed the following schedule:
  - .1 For the Contractor, for any Work performed by the Contractor's own forces, fifteen percent (15%) of the cost.

- .2 For the Contractor, for Work performed by the Contractor's Subcontractor, ten percent (10%) of the amount due the Subcontractor.
- .3 For each Subcontractor or Sub-Subcontractor involved, for any Work performed by that Subcontractor's own forces, fifteen percent (15%) of the cost.
- .4. For each Subcontractor, for Work performed by the Subcontractor's Sub-subcontractors, ten percent (10%) of the amount due the Sub-subcontractor.
- 5 Cost to which overhead and profit is to be applied shall be determined in accordance with Section 7.3.7. Estimated labor hours shall include hours only for those workmen and working foremen directly involved in performing the Change Order work. Supervision above the level of working foremen (such as general foremen, superintendent, project manager, etc.) is considered to be included in the allowance for Overhead and Profit. Hand tools are defined as equipment with a value of \$1,000 or less. For Contractor owned equipment, the "bare" equipment rental rates allowed to be used for pricing Change Order proposals shall be not more than the monthly rate listed in the most current publication of The AED Green Book divided by 176 to arrive at a maximum hourly rate to be applied to the hours the equipment is used performing the Change Order work.
- .6 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, material, equipment and Subcontractors. Details to be submitted will include detailed line item estimates showing detailed materials quantity take-offs, material prices by item and related labor hour pricing information and extensions (by line item or by drawing as applicable.) Where major cost items are Subcontracts, they shall also be itemized as prescribed above. In no case will a change involving over \$10,000 be approved without such an itemization.
- .7 Local Business and Occupation Taxes, if applicable, shall be calculated on the cost of the Work, overhead and profit.
- .8 Overhead and profit shall not be calculated on changes in the Work involving unit prices. Unit prices are to have overhead and profit included in the price quoted.
- .9 Under no circumstances is Contractor permitted to charge for the passage of time (often referred to as general conditions or winter conditions) without an identified, itemized, and concretely provable cost borne by Contractor. Contractor has a duty to mitigate costs during a delay period to the fullest extent pessible and Contractor will not be paid for costs that could have been mitigated. Calculating a daily delay rate

without properly identifying, itemizing, and proving actual, unmitigateable costs, is prohibited. Contractor understands and accepts that it has the responsibility to prove that costs could not be mitigated prior to submitting a request for payment.

§7.4 Minor Changes in Work. Insert the following sentence at the end of section 7.4:

"Contractor may request that Architect provide written confirmation that Owner has agreed to the minor change, and if requested, Architect will provide it."

## ARTICLE 8

## \$8.3 DELAYS AND EXTENSIONS OF TIME

§8.3.1 In the first sentence, delete "unusual delay in deliveries," and add "unmitigatable costs attributable to" before the words "adverse weather conditions."

## ARTICLE 9 PAYMENTS AND COMPLETION

- 69.1 Contract Sum
- §9.1.2 Add the following sentence to the end of section 9.1.2:

"Any equitable adjustment of unit prices must be processed as a change order to the contract"

- §9.2 SCHEDULE OF VALUES
- §9.2 Make the following changes to Section 9.2:

In the first sentence add "and the Owner" after the first reference to the Architect. In the second sentence add "or the Owner" after Architect. Remove the last sentence in its entirety and replace it with the following:

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

### 89.3 APPLICATIONS FOR PAYMENT

- §9.3 Make the following changes to Section 9.3:
  - §9.3.1 In the first sentence add "and the Owner" after the first reference to the Architect and add "and other required documents" after the words "schedule of values."

- §9.3.1.1 Delete clause 9.3.1.1 in its entirety and substitute the following:
  - §9.3.1.1 Such applications may include requests for payment on account of changes in the Work authorized by Construction Change Directives and Change Orders only after a purchase order has been issued for the Work affected.
- §9.3.1 Add the following clauses to Section 9.3.1:
  - §9.3.1.3 Until the Work is fifty percent (50%) complete, the Owner will withhold as retainage 10% of the amount due the Contractor on account of progress payments. At the time the Work is fifty percent (50%) complete and thereafter, if the manner of completion of the Work and its progress are and remain satisfactory to the Owner and Architect, and in the absence of other good and sufficient reasons, the Architect will, on presentation by the Contractor of Consent of Surety, authorize any remaining partial payments to be paid in full.
  - §9.3.1.4 The full Contract retainage may be reinstated if the manner of completion of the Work and its progress do not remain satisfactory to the Owner and Architect, if the Surety withholds its consent, or for other good and sufficient reasons.

## §9.4 CERTIFICATES FOR PAYMENT

§9.4.1 After the phrase "in the full amount of the Application for Payment," Insert the phrase "less any retainage withheld pursuant to section 9.3.1.3,".

## §9.6 PROGRESS PAYMENTS

- §9.6.7 Delete Section 9.6.7 in its entirety.
- §9.6.8 Delete Section 9.6.8 in its entirety.
- §9.7 FAILURE OF PAYMENT
- §9.7 Make the following changes in Section 9.7:

In line two, change "seven days" to "sixty days." In line four, delete "binding dispute resolution" and substitute "the West Virginia Claims Commission"

#### **89.8 SUBSTANTIAL COMPLETION**

§9.8.3 Add the following clause to Section 9.8.3:

If Architect is required to perform more than one inspection under this subsection, Contractor shall be responsible for paying the Owner for the cost of the additional inspection, which will be paid by Owner to Architect, at the hourly rate established in the contract between Owner and Architect.

## \$9.8.5 Add the following clause to Section 9.8.5:

§9.8.5.1 The payment of retainage shall be sufficient to increase the total payments to ninety-five percent (95%) for the Work or designated portion thereof being accepted as Substantially Complete, less any amounts as the Architect shall determine for any Work that is not complete, not in accordance with the Contract Documents, or for unsettled claims.

## \$9.10 FINAL COMPLETION AND FINAL PAYMENT

\$9.10.1 Add the following to the end of Section 9.10.1:

If Architect is required to perform more than one inspection under this subsection. Contractor shall be responsible for paying the Owner for the cost of the additional inspection, which will be paid by Owner to Architect, at the hourly rate established in the contract between Owner and Architect.

§9.10.2 Make the following changes in Section 9.10.2:

In the first sentence, delete "for which the Owner or the Owner's property might be responsible or encumbered (less amounts withheld by Owner)."

Add the following clause to Section 9.10.2:

§9.10.2.1 Before final payment is due the Contractor, all applicable State and local taxes must be paid. If requested by the Owner, the Contractor shall present evidence that payment or satisfaction of all such tax obligations has been made.

§9.10.3 Add the following clause to Section 9.10.3:

9.10.3.1 Unless and to the extent final completion is delayed through no fault of the Contractor as provided in Section 9.10.3, the Owner shall be under no obligation to increase payments above ninety-five percent (95%) until final completion of the Work is Certified by the Architect.

§9.10.4 Make the following changes in Section 9.10.4:

In the first sentence, delete the word "the" and replace it with "Unless and until the Contractor makes a subsequent Claim against the Owner, the".

Add the following as the last sentence. "Neither the Owner's offer of a final payment nor its acceptance by the Contractor shall legally prevent or timit the Owner's right to assert any and all counterclaims in litigation filed by the Contractor as allowed in section 15.1.8."

Add the following Sections to Article 9:

## §9.11 LIQUIDATED DAMAGES

§9.11.1 The Owner will suffer financial loss if the Work is not Substantially Complete within the Contract Time as defined in Article 8, and if final completion is not achieved within the specified time frame following Substantial Completion. As liquidated damages, and not as a penalty, the Contractor and the Contractor's surety shall be liable for and shall pay the Owner the sum(s) stated in this Agreement and/or purchase order.

§9.11.2 Allowances may be made for delays due to shortages of materials and/or energy resources, subject to proof by documentation, and also for delays due to strikes or other delays beyond the control of the Contractor. All delays and any claim for extension of Contract Time must be properly documented in accordance with Section 15.1.5 by the Contractor and must be made within the time limits stated in Section 15.1.2.

## ARTICLE 10 PROTECTION OF PERSONS AND PROPERTY

## §10.2.8 INJURY OR DAMAGE TO PERSON OR PROPERTY

§10.2.8 Make the following changes to Section 10.2.8:

In the first sentence, delete "within a reasonable time not exceeding 21 days" and substitute "immediately".

### §10.3 HAZARDOUS MATERIALS

§10.3.3 Delete Section 10.3.3 in its entirety.

## ARTICLE 11 INSURANCE AND BONDS

## §11.1 CONTRACTOR'S LIABILITY INSURANCE

§11.1.2 Add the following to the end of §11.1.2.

At a minimum the Contract shall provide, at the Contractor's Expense:

§11.1.2.1. a Performance Bond and a Labor and Material Payment Bond for 100% of the Contract Sum and, if applicable, a two-year roofing Maintenance Bond for the full value of the roofing system.

§11.1.2.2 An attorney-in-fact who executes the bonds on behalf of the surety shall affix thereto a certified and current copy of power of attorney.

§11.1.2.3 The bonds shall be issued on State of West Virginia forms. The Contractor shall deliver the required bonds and all other contract documents to the Owner not later than 15 days following receipt of the Owner's notice of intent to award a Contract.

§11.2 Owner's Insurance Delete section 11.2 in its entirety.

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

§11.4 Section 11.4 is deleted in its entirety.

§11.5.1 Make the following changes in Section 11.5.1:

In the first sentence, substitute "Contractor" for "Owner" each time the latter word appears.

§11.5.2 Delete Section 11.5.2 in its entirety and substitute the following:

§11.5.2 Prior to settlement of insured loss, the Contractor shall notify the parties of the terms of the proposed settlement as well as the proposed allocation of the insurance proceeds. The parties shall have 14 days from the receipt of notice to object. If no objection is made, the Contractor shall proceed as proposed and allocate the settlement accordingly. If such objection is made, the dispute shall be resolved as provided in Section 15.4. The Contractor, in that case, shall make settlement with insurers in accordance with directions of the Court. If distribution of the insurance proceeds as directed by the Court is required, the Court will direct such distribution. Any work to repair the damage will be incorporated into the contract as a change order.

## ARTICLE 13 MISCELLANEOUS PROVISIONS

## §13.4 TESTS AND INSPECTIONS

§13.4.1 Remove the phrase "so require" and insert in its place "prohibit delegation of the test to Contractor"

## §13.6 INTEREST

§13.6 Delete Section 13.5 in its entirety and substitute the following:

Notwithstanding any other provision in the Contract Documents, West Virginia Code does not authorize the payment of interest on late payments. Accordingly, interest charges for late payment are prohibited.

Add the following Sections to Article 13:

## §13.6 WORKERS COMPENSATION

The Contractor shall provide proof of compliance with West Virginia Worker's Compensation laws and regulations.

### **§13.7 CONTRACTOR'S LICENSE**

§13.7.1 West Virginia Code §21-11-2 requires that all persons desiring to perform contractual work in West Virginia shall be duly licensed. The West Virginia Contractor's Licensing Board is empowered to issue a contractor's license.

§13.7.2 West Virginia Code §21-11-11 requires any prospective Bidder to include the Bidder's contractor's license number on its Bid. The successful Bidder will be required to furnish a copy of its contractor's license in a classification appropriate to the Work prior to issuance of a purchase order/contract.

# ARTICLE 14 TERMINATION OR SUSPENSION OF THE CONTRACT

### **§14.1 TERMINATION BY THE CONTRACTOR**

§14.1.1 Make the following changes in Section 14.1.1:

At the end of clause 14.1.1.3 delete "; or" and insert a period.

Delete clause 14.1.1.4 in its entirety.

§14.1.3 Delete Section 14.1.3 in its entirety and substitute the following:

§14.1.3 If one of the reasons described in Section 14.1.1 or 14.1.2 exist, the Contractor may, upon seven days written notice to the Owner and Architect, terminate the Contract. In such event, the Contractor shall be paid for all Work performed in accordance with the Contract Documents, for reasonable and proven termination expenses and a reasonable allowance for overhead and profit. However, such payment, exclusive of termination expenses, shall not exceed the Contract Sum as reduced by other payments made to the Contractor and further reduced by the value of Work as yet not completed. The Contractor shall be entitled to reasonable overhead, but not profit, on Work not performed.

## §14.2 TERMINATION BY THE OWNER FOR CAUSE

§14.2.4 Delete Section 14.2.4 in its entirety and substitute the following:

§14.2.4 If the unpaid balance of the Contract Sum exceeds the cost 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 not 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 Owner shall be certified by the Initial Decision Maker, upon application, and this obligation for payment shall survive termination of the Contract.

## \$14.4 TERMINATION BY THE OWNER FOR CONVENIENCE

§14.4.1 Delete Section 14.4.1 in its entirety and substitute the following:

§14.4.1 The Owner may, at any time, terminate the Contract for the Owner's convenience and without cause upon thirty days written notice.

§14.4.3 Delete Section 14.4.3 in its entirety and substitute the following:

§14.4.3 in case of such termination for the Owner's convenience, the Contractor shall be entitled to receive payment from the Owner on the same basis provided in Section 14.1.3 above.

Add the following Section to Article 14:

## §14.5 FISCAL YEAR FUNDING

§14.5 Work performed under this Contract is to continue in the succeeding fiscal year contingent upon funds being appropriated by the Legislature for this Work. In the event funds are not appropriated for this Work, this Contract becomes of no effect and is null and void after June 30.

## ARTICLE 15 CLAIMS AND DISPUTES

§15.1 Claims

## §15.1.2 TIME LIMITS ON CLAIMS

§15.1.2 Delete Section 15.1.2 in its entirety and substitute the following:

Any applicable statute of limitations shall be in accordance with West Virginia Code.

§15.1.3 NOTICE OF CLAIMS Add the following to § 15.1.3;

§15.1.3.3 All claims, and notice of claims that require an increase in contract time, contract scope, or contract sum must be made in writing.

§ 15.1.8 is added to the Contract as follows:

§ 15.1.8 Counterclaims – in the event that Contractor makes a claim, Owner reserves the right to make a counterclaim and will not be barred from doing so even if final payment has been made.

### \$15.2 INITIAL DECISION

§15.2.1 In the third sentence of Section 15.2.1, insert "or litigation" following the word "mediation" and remove the phrase "binding dispute resolution" and replace it with "or litigation".

§15.2.5 Delete the last sentence in Section 15.2.5 and substitute the following:

Approval or rejection of a claim by the Initial Decision Maker shall be final and binding on the parties unless it is pursued further by either party in accordance with Section 15.2.6.

§15.2.6 Make the following change to clause 15.2.6.1:

in the last sentence, delete "or pursue binding dispute resolution proceedings."

§15.2.8 Delete Section 15.2.8 in its entirety.

## §15.3 MEDIATION

§15.3.1 Delete "binding dispute resolution" and substitute "litigation in a court of competent jurisdiction."

§15.3.2 Delete Section 15.3.2 in its entirety and substitute the following:

§15.3.2 The parties shall endeavor to resolve their Claims by non-binding 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.

§ 15.3.3 Remove section 15.3.3 in its entirety

## §15.4 ARBITRATION

§15.4 Delete Section 15.4 in its entirety and substitute the following:

### **\$15.4 SETTLEMENT OF CLAIMS**

\$15.4.1 The Constitution of West Virginia grants the State sovereign immunity from any and all Claims against the public treasury. This immunity applies and is extended to all agencies of the State, including the Owner. It shall be in full force and effect as it relates to this Contract. The West Virginia Legislature, recognizing that certain Claims against the State may constitute a moral obligation of the State and should be heard, has established the West Virginia Claims Commission for this purpose. The Parties understand that this sovereign immunity and the Constitution of the

State of West Virginia prohibit the State and Owner, from entering into binding arbitration. Notwithstanding any provision to the contrary in the Contract Documents, all references to arbitration, regardless of whether they are included in the AIA Document A201-2017 or another related document are hereby deleted and all Claims of the Contractor for monetary relief, and only of the Contractor, arising out of or related to this Contract shall be decided by the West Virginia Claims Commission. The following Sections have been rewritten to bring them into conformance with the foregoing.

§15.4.2 Claims by the Owner may be brought against the Contractor in the Circuit Court of Kanawha County, West Virginia, or in any other court that has jurisdiction, as the Owner may elect.

§15.4.3 Any Claim arising out of or related to the Contract, except Claims relating to aesthetic effect and except those waived as provided for in Sections 15.1.6, 9.10.4 and 9.10.5, shall, within 30 days after submission of the decision by the Initial Decision Maker, be settled for the Contractor by the West Virginia Claims Commission or, for the Owner, by the Circuit Court of Kanawha County or any other court of jurisdiction as the Owner may elect.

§15.4.4 Notice of such action shall be filed in writing with the other party to the Contract, and a copy of such notice shall be filed with the Initial Decision Maker and the Architect, if applicable.

§15.4.5 During court proceedings, the Owner and the Contractor shall comply with Section 15.1.3.

§15.4.6 Claims shall be made within the time limits specified in Section 15.2.6.1.

§15.4.7 The party filing a Claim must assert in the demand all Claims then known to that party on which action is permitted.

Add the following Article:

## ARTICLE 16 EQUAL OPPORTUNITY

§16.1 COMPLIANCE WITH REGULATIONS UNDER TITLE VI OF THE FEDERAL CIVIL RIGHTS ACT OF 1984 AND EXECUTIVE ORDER 65-2 BY THE GOVERNOR OF WEST VIRGINIA DATED DECEMBER 15, 1965

§16.1.1 The Contractor agrees that it will comply with Title VI of the Federal Civil Rights Act of 1964 (P.L. 88352) and the regulations of the State of West Virginia, to the end that no person in the State, or in the United States, shall on the grounds of race, color, or national origin, be excluded from participation in, be denied the benefits of, or otherwise subjected to discrimination under any program or activity for which the Contractor receives any recompense or other consideration of value, either directly or indirectly from the State; and HEREBY GIVES ASSURANCE THAT it will immediately take any measures necessary to effectuate this Agreement.

§16.1.2 If any real property or structure thereon is provided or improved, this assurance shall obligate the Contractor, or in the case of any transfer of such property, any transferee, for the period during which the real property or structure is used for a purpose for which any State payment is extended or for another purpose involving the provision of similar services or benefits. If any other goods or services are so provided, this assurance shall obligate the Contractor for the period during which it supplies such goods or services.

§16.1.3 The Contractor recognizes and agrees that such right to provide property, goods or services to the State will be extended in reliance on the representations and agreements made in assurance, and that the State shall have the right to seek judicial enforcement of this assurance. This is binding on the Contractor, its successors, transferee, and assignee, or any authorized person on behalf of the Contractor.

END OF SUPPLEMENTARY CONDITIONS TO AIA DOCUMENT A201-2017

State	of '	West	Virgin	ia
-------	------	------	--------	----

Any provisions of the Contract Documents that conflict with these Supplementary Conditions shall be null and void unless they have been approved in writing by the applicable State purchasing officer and the Attorney General, and are clearly identified as such in the bid documents.

The Owner and Contractor hereby agree to the full performance of the covenants contained herein.

IN WITNESS WHEREOF, the Owner and Contractor have entered into this Agreement as of the effective date as stated in the A101-2017 (when utilized) or other Contract Documents.

Owner:	Contractor:	
Ву:	Ву:	
Title:	Title:	_
Date:	Date:	

This Supplementary Conditions to AIA Document A201-2017, General Conditions of the Contract for Construction, has been approved as to form on this 20th day of Yebruar ..., 2019, by the West Virginia Attorney General's office as indicated in the signature line below. Any modification of this document is void unless expressly approved in writing by the West Virginia Attorney General's Office.

PATRICK MORRISEY, ATTORNEY GENERAL

DEPUTY ATTORNEY GENERAL

Effective Date: October 1, 2018 Page 12



## Change Order

PROJECT: (Name and address) West Virginia State Capitol Exterior Lighting Upgrades - West Lawn Capitol Campus, Charleston WV

**OWNER:** (Name and address) WV General Services Division Capitol Complex

Building 4

112 California Avenue Charleston, WV 25305 CONTRACT INFORMATION:

Contract For: General Construction

Date:

ARCHITECT: (Name and address) Silling Associates, Inc. 405 Capitol Street, Upper Atrium Charleston, WV 25301

**CHANGE ORDER INFORMATION:** 

Change Order Number:

Date:

**CONTRACTOR:** (Name and address)

#### THE CONTRACT IS CHANGED AS FOLLOWS:

(Insert a detailed description of the change and, if applicable, attach or reference specific exhibits. Also include agreed upon adjustments attributable to executed Construction Change Directives.)

The original Contract Sum was	\$	0.00
The net change by previously authorized Change Orders	\$	0.00
The Contract Sum prior to this Change Order was	\$	0.00
The Contract Sum will be increased by this Change Order in the amount of	\$ ===	0.00
The new Contract Sum including this Change Order will be	\$	0.00

The Contract Time will be increased by Zero (0) days. The new date of Substantial Completion will be

NOTE: This Change Order does not include adjustments to the Contract Sum or Guaranteed Maximum Price, or the Contract Time, that have been authorized by Construction Change Directive until the cost and time have been agreed upon by both the Owner and Contractor, in which case a Change Order is executed to supersede the Construction Change Directive.

#### NOT VALID UNTIL SIGNED BY THE ARCHITECT, CONTRACTOR AND OWNER.

Silling Associates, Inc.		WV General Services Division
ARCHITECT (Firm name)	CONTRACTOR (Firm name)	OWNER (Firm name)
SIGNATURE	SIGNATURE	SIGNATURE
PRINTED NAME AND TITLE	PRINTED NAME AND TITLE	PRINTED NAME AND TITLE
DATE	DATE	DATE

PROJECT:

## Application and Certificate for Payment WV General Services Division

Capitol Complex

TO OWNER:

Capitol Complex Building 4				PERIOD TO:	OWNER:
112 California Avenue					ARCHITECT:
Charleston, WV 25305				CONTRACT FOR: General Co	onstruction CONTRACTOR:
FROM	VIA	Silling Associates, In	nc.	CONTRACT DATE:	FIELD:
CONTRACTOR:	ARCHITECT:	405 Capitol Street, U Charleston, WV 253		PROJECT NOS: Silling Assoc / State of West Virginia	ciates, inc. /
		•		/ State of West Virginia	OTHER:
<b>CONTRACTOR'S APPLICATION FO</b>	R PAYMENT		The undersign	ed Contractor certifies that to	the best of the Contractor's knowledge,
Application is made for payment, as shown below, in	connection with the Cor	ntract.	information ar	nd belief the Work covered by	this Application for Payment has been
AIA Document G703®, Continuation Sheet, is attach					cuments, that all amounts have been paid Certificates for Payment were issued and
1. ORIGINAL CONTRACT SUM	***************************************	\$0.00			rrent payment shown herein is now due.
2. NET CHANGE BY CHANGE ORDERS		\$0.00	CONTRACTOR:		
3. CONTRACT SUM TO DATE (Line $1 \pm 2$ )		\$0.00	By:		Date:
4. TOTAL COMPLETED & STORED TO DATE (Column	G on G703)	\$0.00	State of:		
5. RETAINAGE:			County of:		
a. 0 % of Completed Work			Subscribed and	sworn to before	
(Column D + E on G703)	-	\$0.00	me this	day of	
b. 0 % of Stored Material					
(Column F on G703)		\$0.00	Notary Public:	a avniragi	
Total Retainage (Lines 5a + 5b or Total in Colum	n I of G703)		My Commission		
6. TOTAL EARNED LESS RETAINAGE		\$0.00		T'S CERTIFICATE FOR P	
(Line 4 Less Line 5 Total)			In accordance	with the Contract Documents, be	ased on on-site observations and the data
7. LESS PREVIOUS CERTIFICATES FOR PAYMENT	***************************************	\$0.00	Architect's kno	is application, the Architect certification and belief t	fies to the Owner that to the best of the the Work has progressed as indicated, the
(Line 6 from prior Certificate)			quality of the	Work is in accordance with the C	Contract Documents, and the Contractor is
8. CURRENT PAYMENT DUE		\$0.00		ment of the AMOUNT CERTIFII	
9, BALANCE TO FINISH, INCLUDING RETAINAGE		\$0.00	AMOUNT CERTII	FIED	
(Line 3 less Line 6)		\$0.00			he amount applied. Initial all figures on this
(			Application and	on the Continuation Sheet that are c	hanged to conform with the amount certified.)
CHANGE ORDER SUMMARY	ADDITIONS	DEDUCTIONS	ARCHITECT:		
Total changes approved in previous months by Own			Ву:		Date:
Total approved this Month	\$0.00		This Certificate	is not negotiable. The AMOUNT O	CERTIFIED is payable only to the Contractor
TOTALS	\$0.00	\$0.00	named herein. Is	ssuance, payment and acceptance of	payment are without prejudice to any rights of
NET CHANGES by Change Order		\$0.00	the Owner or Co	ontractor under this Contract.	

West Virginia State Capitol Exterior

Lighting Upgrades - West Lawn

**APPLICATION NO: 003** 

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## Continuation Sheet

AIA Document G702®, Application and Certification for Payment, or G732™,

Application and Certificate for Payment, Construction Manager as Adviser Edition,

containing Contractor's signed certification is attached.

Use Column I on Contracts where variable retainage for line items may apply.

APPLICATION NO:

APPLICATION NO:

PERIOD TO:

ARCHITECT'S PROJECT NO:

Silling Associates, Inc.

A	В	C	D	E	F G		H	I	
ITEM NO.	DESCRIPTION OF WORK	SCHEDULED VALUE	WORK CO FROM PREVIOUS APPLICATION (D+E)	MPLETED THIS PERIOD	MATERIALS PRESENTLY STORED (NOT IN D OR E)	TOTAL COMPLETED AND STORED TO DATE (D + E + F)	% (G÷C)	BALANCE TO FINISH (C - G)	RETAINAGE (IF VARIABLE RATE)
		0.00	0.00	0.00	0.00	0.00	0.00%	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00%	0.00	
		0.00	0.00	0.00			0.00%		0.00
		0.00		0.00	0.00	0.00	0.00%	0.00	0.00
		0.00					0.00%		
		0.00					0.00%		
		0.00					0.00%		
		0.00					0.00%		
		0.00					0.00%		
		0.00		0.00			0.00%		
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		0.00					0.00%		
		0.00		0.00			0.00%		
		0.00		0.00	·		0.00%		
		0.00		0.00			0.00%		
		0.00					0.00%		
		0.00					0.00%	·	
		0.00					0.00%	ļ	
		0.00	<del>                                     </del>				0.00%		
	GRAND TOTAL	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	0.00%	\$0.00	\$0.00



## **Certificate of Substantial Completion**

**PROJECT**: (name and address) West Virginia State Capitol Exterior Lighting Upgrades - West Lawn Capitol Campus, Charleston WV

**OWNER:** (name and address) WV General Services Division Capitol Complex **Building 4** 112 California Avenue

Charleston, WV 25305

**CONTRACT INFORMATION:** 

Contract For: General Construction

ARCHITECT: (name and address) Silling Associates, Inc. 405 Capitol Street, Upper Atrium Charleston, WV 25301

CERTIFICATE INFORMATION:

Certificate Number:

Date:

**CONTRACTOR:** (name and address)

The Work identified below has been reviewed and found, to the Architect's best knowledge, information, and belief, to be substantially complete. Substantial Completion is the stage in the progress of the Work when the Work or designated portion is sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work for its intended use. The date of Substantial Completion of the Project or portion designated below is the date established by this Certificate. (Identify the Work, or portion thereof, that is substantially complete.)

Silling Associates, Inc.			
ARCHITECT (Firm Name)	SIGNATURE	PRINTED NAME AND TITLE	DATE OF SUBSTANTIAL COMPLETION

#### **WARRANTIES**

**User Notes:** 

The date of Substantial Completion of the Project or portion designated above is also the date of commencement of applicable warranties required by the Contract Documents, except as stated below:

(Identify warranties that do not commence on the date of Substantial Completion, if any, and indicate their date of commencement.)

#### WORK TO BE COMPLETED OR CORRECTED

A list of items to be completed or corrected is attached hereto, or transmitted as agreed upon by the parties, and identified as follows: (Identify the list of Work to be completed or corrected.)

The failure to include any items on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents. Unless otherwise agreed to in writing, the date of commencement of warranties for items on the attached list will be the date of issuance of the final Certificate of Payment or the date of final payment, whichever occurs first. The Contractor will complete or ) days from the above date of Substantial Completion. correct the Work on the list of items attached hereto within

Cost estimate of Work to be completed or corrected: \$

The responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work, insurance, and other items identified below shall be as follows:

(Note: Owner's and Contractor's legal and insurance counsel should review insurance requirements and coverage.)

The Owner and Contractor hereby accept the responsibilities assigned to them in this Certificate of Substantial Completion:

CONTRACTOR (Firm	SIGNATURE	PRINTED NAME AND TITLE	DATE
Name)			
WV General Services			
Division			
OWNER (Firm Name)	SIGNATURE	PRINTED NAME AND TITLE	DATE

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## Contractor's Affidavit of Payment of Debts and Claims

West V	CT: (Name and address) Firginia State Capitol r Lighting Upgrades - West	ARCHITECT'S PROJECT Silling Associates, Inc.	NUMBE	R:	OWNER:  ARCHITECT:  CONTRACTOR:  SURETY:
Capitol TO OW WV Ge Capitol Buildin 112 Ca	Campus, Charleston WV NER: (Name and address) eneral Services Division Complex ag 4 lifornia Avenue ston, WV 25305	CONTRACT FOR: General CONTRACT DATED:	al Const	ruction	OTHER:
STATE					
been sa	dersigned hereby certifies that tisfied for all materials and ed dness and claims against the of the treferenced above for which	quipment furnished, for all Contractor for damages ar	l work, l ising in	abor, and services perform any manner in connection	with the performance of the
EXCEP	TIONS:				
1.	ORTING DOCUMENTS ATT Consent of Surety to Final I Surety is involved, Consent required. AIA Document G Surety, may be used for this e Attachment	Payment. Whenever of Surety is 1707, Consent of	CONT	RACTOR: (Name and add	ress)
			BY:		
	lowing supporting documents if required by the Owner:	should be attached		(Signature of authorized	representative)
1.	Contractor's Release or Wai			(Printed name and title)	
2.	Separate Releases or Waive Subcontractors and material suppliers, to the extent requ accompanied by a list thereo	and equipment ired by the Owner,		cribed and sworn to before	me on this date:
3.	Contractor's Affidavit of Re	lease of Liens (AIA		y Public: Commission Expires:	
~.	Document G706A).	•	-	•	

## Contractor's Affidavit of Release of Liens

PROJI	ECT: (Name and address)	ARCHITECT'S PRO		: OWNER:
	Virginia State Capitol Exterior	Silling Associates,	Inc.	ARCHITECT: □
	ng Upgrades - West Lawn	CONTRACT FOR: C	Lamara1	CONTRACTOR:
Сарио	ol Campus, Charleston WV	Construction	reneral	
TO OV	VNER: (Name and address)	CONTRACT DATED	):	SURETY:
	General Services Division			OTHER: □
	ol Complex			
Buildi				
	alifornia Avenue eston, WV 25305			
0747	- 05.			
STATE	E OF: TY OF:			
below and ed assert	the Releases or Waivers of Lien nuipment, and all performers of W	attached hereto inclu fork, labor or services	de the Contrac who have or 1	ledge, information and belief, except as listed tor, all Subcontractors, all suppliers of materials may have liens or encumbrances or the right to my manner out of the performance of the Contract
EXCE	PTIONS:			
SUPP 1.	ORTING DOCUMENTS ATTAC Contractor's Release or Waive conditional upon receipt of fin	r of Liens,	CONTRAC	TOR: (Name and address)
2.	Separate Releases or Waivers	of Liens from	BY:	
۷.	Subcontractors and material ar		Dig	(Signature of authorized
	suppliers, to the extent require accompanied by a list thereof.			representative)
	accompanied by a rist moreon.			(Printed name and title)
			Subscribe	d and sworn to before me on this date:
			Notary Pu	blic:
			My Comn	nission Expires:



## Consent Of Surety to Final Payment

PROJECT: (Name and address)	ARCHITECT'S PROJECT NUMBER: Silling	OWNER:
	Associates, Inc.	ARCHITECT:
West Virginia State Capitol Exterior Lighting Upgrades - West Lawn		CONTRACTOR:
Capitol Campus, Charleston WV	CONTRACT FOR: General Construction	SURETY:
TO OMNIED. (Name and address)	CONTRACT DATED:	OTHER:
TO OWNER: (Name and address) WV General Services Division	CONTRACT DATED:	OTHER: [_]
Capitol Complex		
Building 4 112 California Avenue		
Charleston, WV 25305		
In accordance with the provisions of the Contr	act between the Owner and the Contractor as indicated above, the	
(Insert name and address of Surety)	and solved and owner and and observed as managed as one of the	
1. 1.6		, SURETY,
on bond of (Insert name and address of Contractor)		
		, CONTRACTOR,
hereby approves of the final payment to the Co not relieve the Surety of any of its obligations	ontractor, and agrees that final payment to the Contractor shall to	
(Insert name and address of Owner)		
WV General Services Division		
Capitol Complex		
Building 4 112 California Avenue		
Charleston, WV 25305		OMB IED
as set forth in said Surety's bond.		, OWNER,
as sor form in bard barbey's come.		
IN WITNESS WHEREOF, the Surety has here		
(Insert in writing the month followed by the nu	meric date and year.)	
	•	
	(Surety)	
	(Signature of authorized representa	tive)
Attest: (Seal):	(Printed name and title)	
(Deal).	1	



## Consent of Surety to Reduction in or Partial Release of Retainage

PROJECT:(Name and address)	ARCHITECT'S PROJECT NUMBER: Silling	OWNER:
West Virginia State Capitol	Associates, Inc.	ARCHITECT:
Exterior Lighting Upgrades -		CONTRACTOR:
West Lawn		SURETY:
Capitol Campus, Charleston WV	CONTRACT FOR: General Construction	OTHER:
vv v		On Etc.
TO OWNER: (Name and address) WV General Services Division	CONTRACT DATED:	
Capitol Complex Building 4		
112 California Avenue		
Charleston, WV 25305		
In accordance with the provisions of above, the	the Contract between the Owner and the Contractor as indicated	
(Insert name and address of Surety)		
on bond of		, SURETY,
(Insert name and address of Contrac	tor)	
		CONTRA CTOR
hereby approves the reduction in or p	partial release of retainage to the Contractor as follows:	, CONTRACTOR,
I I		
The Surety agrees that such reduction the Surety of any of its obligations to (Insert name and address of Owner)	n in or partial release of retainage to the Contractor shall not relieve	
WV General Services Division		
Capitol Complex		
Building 4 112 California Avenue		
Charleston, WV 25305		AUAIDE
as set forth in said Surety's bond.		, OWNER,

IN WITNESS WHEREOF, the Surety has hereunto set its hand on this date: (Insert in writing the month followed by the numeric date and year.)	
	(Surety)
	(Signature of authorized representative)
Attest: (Seal):	(Printed name and title)



# **Proposal Request**

PROJECT: (name and address)

West Virginia State Capitol Exterior Lighting Upgrades - West Lawn Capitol Campus, Charleston WV

OWNER: (name and address)
WV General Services Division
Capitol Complex

**Building 4** 

112 California Avenue Charleston, WV 25305 **CONTRACT INFORMATION:** 

Contract For: General Construction

Date:

ARCHITECT: (name and address) Silling Associates, Inc. 405 Capitol Street, Upper Atrium Charleston, WV 25301 Architect's Project Number: Silling

Associates, Inc.

Proposal Request Number:

Proposal Request Date:

**CONTRACTOR**: (name and address)

The Owner requests an itemized proposal for changes to the Contract Sum and Contract Time for proposed modifications to the Contract Documents described herein. The Contractor shall submit this proposal within Zero (0) days or notify the Architect in writing of the anticipated date of submission.

(Insert a detailed description of the proposed modifications to the Contract Documents and, if applicable, attach or reference specific exhibits.)

THIS IS NOT A CHANGE ORDER, A CONSTRUCTION CHANGE DIRECTIVE, OR A DIRECTION TO PROCEED WITH THE WORK DESCRIBED IN THE PROPOSED MODIFICATIONS.

REQUESTED BY THE ARCHITECT:

PRINTED NAME AND TITLE



# Architect's Supplemental Instructions

PROJECT: (name and address)
West Virginia State Capitol Exterior
Lighting Upgrades - West Lawn
Capitol Campus, Charleston WV

OWNER: (name and address)
WV General Services Division
Capitol Complex
Building 4
112 California Avenue

Charleston, WV 25305

exhibits.)

CONTRACT INFORMATION:

Contract For: General Construction

Date:

ARCHITECT: (name and address)
Silling Associates, Inc.
405 Capitol Street, Upper Atrium
Charleston, WV 25301

**ASI INFORMATION:** 

ASI Number:

Date:

**CONTRACTOR**: (name and address)

The Contractor shall carry out the Work in accordance with the following supplemental instructions without change in Contract Sum or Contract Time. Proceeding with the Work in accordance with these instructions indicates your acknowledgment that there will be no change in the Contract Sum or Contract Time.

(Insert a detailed description of the Architect's supplemental instructions and, if applicable, attach or reference specific

ISSUED BY THE ARCHITECT:

Silling Associates, Inc.

ARCHITECT (Firm name)

SIGNATURE

PRINTED NAME AND TITLE

DATE



# **Construction Change Directive**

**SIGNATURE** 

DATE

PRINTED NAME AND TITLE

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PROJECT: (name and address) West Virginia State Capitol Exterior Lighting Upgrades - West Lawn	CONTRACT INFORMATION: Contract For: General Construction	CCD INFORMATION: Directive Number:
Capitol Campus, Charleston WV	Date:	Date:
OWNER: (name and address) WV General Services Division Capitol Complex Building 4 112 California Avenue	ARCHITECT: (name and address) Silling Associates, Inc. 405 Capitol Street, Upper Atrium Charleston, WV 25301	CONTRACTOR: (name and address)
Charleston, WV 25305		
(Insert a detailed description of the	change and, if applicable, attach or refe	rence specific exhibits.)
PROPOSED ADJUSTMENTS  1. The proposed basis of adju  Lump Sum decrease	stment to the Contract Sum or Guarantee of \$0.00	ed Maximum Price is:
☐ Unit Price of \$	per	
Cost, as defined below (Insert a definition of	w, plus the following fee:  For method for determining, cost)	
☐ As follows:		
2. The Contract Time is propo	osed to The proposed adjustment	, if any, is
NOTE: The Owner, Architect and C Directive to the extent they agree up the change(s) described herein.	ontractor should execute a Change Ord on adjustments to the Contract Sum, Co	er to supersede this Construction Change ntract Time, or Guaranteed Maximum price fo
When signed by the Owner and Architectocomes effective IMMEDIATELY as a Contractor shall proceed with the change	et and received by the Contractor, this document Construction Change Directive (CCD), and e(s) described above.	the Contractor signature indicates agreement with the proposed adjustments in Contract Sum and Contract Time set forth in this CCD.
Silling Associates, Inc.	WV General Services Division	
ARCHITECT (Firm name)	OWNER (Firm name)	CONTRACTOR (Firm name)

PRINTED NAME AND TITLE

SIGNATURE

DATE

**SIGNATURE** 

DATE

PRINTED NAME AND TITLE

executed in accordance with the Contract Documents.

TO:	FROM:
Silling Associates, Inc. 405 Capitol Street, Upper Atrium Charleston, WV 25301 PROJECT: West Virginia State Capitol Exterior Light Upgrades - West Lawn Capitol Campus, Charleston WV	ISSUE DATE: RFI No. 001
PROJECT NUMBERS: Silling Associates, In	REQUESTED REPLY DATE: ac. / COPIES TO:
RFI DESCRIPTION: (Fully describe the quest	
REFERENCES/ATTACHMENTS: (List specify SPECIFICATIONS: DISPECTED NO. 1)	ic documents researched when seeking the information requested.)  RAWINGS: OTHER:  I concerns a site or construction condition, the sender may provide a
REFERENCES/ATTACHMENTS: (List specifications: Dispecifications: Dispecifications: (If RF	ic documents researched when seeking the information requested.)  RAWINGS: OTHER:  I concerns a site or construction condition, the sender may provide a
REFERENCES/ATTACHMENTS: (List specify SPECIFICATIONS: DISPECIFICATIONS: DISPECTIONS: (If RF) recommended solution, including cost and/or and/o	ic documents researched when seeking the information requested.)  RAWINGS: OTHER:  I concerns a site or construction condition, the sender may provide a
REFERENCES/ATTACHMENTS: (List specify SPECIFICATIONS: DISPECIFICATIONS: DISPECTIONS: SENDER'S RECOMMENDATION: (If RF recommended solution, including cost and/or an	Gic documents researched when seeking the information requested.)  RAWINGS: OTHER:  The concerns a site or construction condition, the sender may provide a sor schedule considerations.)

#### SECTION 011000 - SUMMARY

#### PART 1 - GENERAL

#### 1.1 SUMMARY

#### A. Section Includes:

- 1. Project information.
- 2. Work covered by Contract Documents.
- 3. Access to site.
- 4. Coordination with occupants.
- 5. Work restrictions.
- 6. Specification and drawing conventions.
- 7. Miscellaneous provisions.

#### 1.2 PROJECT INFORMATION

- A. Project Identification: WV Capitol Exterior Lighting Upgrades, West Lawn area
  - 1. Project Location: WV Capitol Campus, Charleston, WV.
- B. Owner: State of WV, General Services Division.
- C. Architect: Silling Associates, Inc.

#### 1.3 WORK COVERED BY CONTRACT DOCUMENTS

A. The Work of Project is defined by the Contract Documents dated July 7, 2022 and consists of the following: The project involves new exterior subgrade light fixtures, pole mounted light fixtures, and construction of new concrete pole bases to accept relocation of existing poles. The work will be performed along the west lawn of the WV Capitol Building 1. Electrical power wiring for light fixtures and controls are included. The existing Lutron lighting control system will be utilized. Refer to drawings and specifications for complete scope of work.

#### B. Type of Contract:

1. Project will be constructed via single prime, General Construction contract.

#### 1.4 ACCESS TO SITE

A. General: Contractor shall have limited use of Project site for construction operations as indicated on Drawings and as indicated by requirements of this Section. Specific use of the site for access and deliveries, contractor parking, storage and staging of materials, jobsite office/storage, waste receptacles, etc., shall be coordinated with and approved by the WV General Services Division.

- B. Use of Site: Limit use of Project site to work in areas indicated. Do not disturb portions of Project site beyond areas in which the Work is indicated, unless given approval in writing by the WV General Services Division.
  - 1. Limits: Confine construction operations to areas shown to receive work.
  - 2. Driveways, Walkways and Entrances: Keep driveways loading areas, and entrances serving premises clear and available to Owner, Owner's employees, and emergency vehicles at all times. Do not use these areas for parking or storage of materials.
    - a. Schedule deliveries to minimize use of driveways and entrances by construction operations.
    - b. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.
    - c. Coordinate delivery schedules and security concerns of delivery traffic with the WV General Services Division.

#### 1.5 WORK RESTRICTIONS

- A. Work Restrictions, General: Comply with restrictions on construction operations.
  - 1. Comply with limitations on use of public streets and with other requirements of authorities having jurisdiction which include the West Virginia State Fire Marshal and the West Virginia General Services Division.
  - 2. Relocation of existing exterior light poles to newly constructed pole bases must be phased to avoid significant lighting outages. Existing exterior lighting fixtures are to remain operational while new bases, conduit, and conductors are installed. A detailed phasing and sequencing plan, including indication of lighting outages, shall be submitted to the WV General Services Division, prior to the commencement of demolition.
- B. On-Site Work Hours: Limit work to normal business working hours of 7:00 a.m. to 6:00 p.m., seven days a week, unless otherwise indicated.
- C. Tobacco Use is Prohibited in the Building: Smoking and tobacco use is not permitted within the building or within 25 feet of entrances, operable windows, or outdoor-air intakes.
- D. Controlled Substances: Use of controlled substances on Project site is not permitted.
- E. Prior to beginning any Work, Vendor must acknowledge in writing the attached GSD Jobsite Safety Handbook.

#### 1.6 SPECIFICATION AND DRAWING CONVENTIONS

- A. Specification Content: The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:
  - 1. Imperative mood and streamlined language are generally used in the Specifications. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (:) is used within a sentence or phrase.

- 2. Specification requirements are to be performed by Contractor unless specifically stated otherwise.
- B. Division 01 General Requirements: Requirements of Sections in Division 01 apply to the Work of all Sections in the Specifications.
- C. Drawing Coordination: Requirements for materials and products identified on Drawings are described in detail in the Specifications. One or more of the following are used on Drawings to identify materials and products:
  - 1. Terminology: Materials and products are identified by the typical generic terms used in the individual Specifications Sections.
  - 2. Abbreviations: Materials and products are identified by abbreviations published as part of the U.S. National CAD Standard and scheduled on Drawings.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 011000

# **Jobsite Safety Handbook**

### **For Contractors**

# **Department of Administration (DOA)**

**General Services Division (GSD)** 

112 California Avenue Building Four, 5<sup>th</sup> Floor Charleston, WV

# THIS HANDBOOK IS TO BE POSTED IN A VISIBLE AREA AT ALL CONSTRUCTION PROJECTS AND/OR CONTRACTOR WORKSITES

Contractor Contact:	Phone #:			
EMERGENCY CONTACTS:				
Project Manager:				
Name:	Phone #:			
Emergency Services #:				
GSD Safety Section:				
112 California Ave, Bldg.4 5 <sup>th</sup> Floor. Charleston, WV 25305				
Jonathan Trout: Work# 304 957-7153	3 Cell# 304-205-2721			
Marsha Bowling Work# 304-957-7154	4 Cell# 304-951-1410			

Revision 2/6/19

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# **JOBSITE SAFETY HANDBOOK**

The following is a summary of applicable jobsite safety requirements. This handbook is intended to be used as a guide and in no way reflects all applicable safety requirements. All employees are responsible for ensuring a safe working environment. All hazards must be addressed regardless if they have been addressed in this handbook. All contractors working on GSD projects are required to follow OSHA regulations.

GSD safety and health procedures are available for review 24/7 in the Main Capitol Building basement, MB-69.

#### 1. BUILDING ALARMS

In the event of a fire, sound the alarm and/or notify other building occupants immediately. Contractor personnel shall respond appropriately to all alarms by exiting the building immediately and remaining at least 50 feet from the building to allow for emergency response access.

### 2. PERSONAL PROTECTIVE EQUIPMENT (PPE)

Workers must use personal protective equipment, such as:

- Hard hats when overhead, falling or flying hazards exist;
- Safety glasses or face shields for welding, cutting, nailing (including pneumatic), or when working with concrete and/or harmful chemicals;
- Proper shoes or boots to lessen slipping hazards and prevent toe crushing and nail punctures;
- Safety belts and/or harness systems for fall protection.

### 3. HOUSEKEEPING AND ACCESS AROUND SITE

- Keep all walkways and stairways clear of trash/debris and other materials such as tools and supplies to prevent tripping.
- Keep boxes, scrap lumber and other materials picked up and put in a dumpster or trash/debris area to prevent fire and tripping hazards.
- Provide enough light to allow workers to see and to prevent accidents.

#### 4. STAIRS AND LADDERS

- All stairs are to be equipped with standard handrails.
- Keep ladders in good condition and free of defects Do not use job made ladders.
- Inspect ladders before use for broken rungs or other defects so falls don't happen. Discard defective ladders.
- Secure ladders at the top and brace or tie off at the bottom to prevent them from slipping and causing falls.

#### 5. SCAFFOLDS AND OTHER WORK PLATFORMS

Scaffolding is to be assembled and used according to OSHA regulations.

General scaffolding guidance:

- Provide ladders or stairs to access scaffold and work platforms safely.
- Keep scaffolds and work platforms free of debris. Keep tools and materials as neat as possible on scaffolds and platforms. This will help prevent materials from falling and workers from tripping.
- Erect scaffolds on firm and level foundations.
- Scaffold legs must be placed on firm footing and secured from movement or tipping, especially on dirt or similar surfaces (a good foundation is a must).
- Erecting and dismantling scaffolds must be under the supervision of a Competent Person.
- The competent person must inspect scaffolds before each use.
- Don't use blocks, bricks, or pieces of lumber to level or stabilize the footings.
   Manufactured base plates or "mud sills" made of hardwood or equivalent can be used.

#### Planking:

- Fully plank or use manufactured decking to provide a full work platform on scaffolds.
   The platform decking and/or scaffold planks must be scaffold grade and not have any visible defects.
- Extend planks or decking material at least 6' over the edge or cleat them to prevent movement. The work platform or planks must not extend more than 12" beyond the end supports to prevent tipping when stepping or working.
- Be sure that manufactured scaffolds are the proper size and that the end hooks are attached to the scaffold frame.

#### Guardrails:

- Guard scaffold platforms that are more than 10 feet above the ground or floor surface must have a standard guardrail. If guardrails are not practical, use other fall protection devices such as safety belts/harnesses and lanyards.
- Place the top rail approximately 42" above the work platform or planking, with a midrail about half that high at 21".
- Install toe boards when other workers are below the scaffold.

#### 6. FALL PROTECTION

OSHA has specific and detailed requirements for fall protection – refer to 29 CFR 1926 Subpart M, 29 CFR 1910, 29 CFR Subpart I. A few of those requirements are listed below:

### **Guarding:**

- Install guardrails around open floors and walls when the fall distance is 4' or more.
   The top rail must withstand a 200 lb load.
- Construct guardrails with a top rail approximately 42" high with a midrail about half that high at 21".
- Install toe boards when other workers are below the work area.
- Cover floor openings larger than 2x2 (inches) with material to safely support the working load.
- Use other fall protection systems like personal fall arrest systems (harness & lanyard), slide guards, roof anchors or alternative safe work practices when a guardrail system cannot be used. Only wear proper shoes or footwear to lessen slipping hazards.
- Train workers on safe work practices before performing work on foundation walls, roofs, trusses, or where performing exterior wall erections and floor installations.
- Flagging systems can be used, where appropriate. Flagging systems must comply with OSHA guidance.

#### 7. EXCAVATION AND TRENCHING

Refer to OSHA regulations for excavation and trenching requirements, along with regulations for walking and working surfaces: 29 CFR 1926 Subpart P, 29 CFR 1910 Subpart D

Some of the Excavation and Trenching requirements are listed below:

- Find the location of all underground utilities by contacting West Virginia 811 before digging. Dial 811 or 800-245-4848.
- Keep workers away from digging equipment and never allow workers in an excavation when equipment is in use.
- Keep workers from getting between equipment in use and other obstacles and machinery that can cause crushing hazards.
- Keep equipment and the excavated dirt back 2 feet from the edge of the excavation.
- Have a competent person conduct daily inspections and correct any hazards before workers enter a trench or excavation.
- Provide workers a way to get into and out of a trench or excavation. Ladders and ramps can be used and must be within 25' of the worker.
- For excavations and utility trenches over 5 feet deep, use shoring (trench boxes), benching, or slope back the sides. Unless soil analysis has been completed, the earth's slope must be at least 1-1/2 horizontal to 1 vertical
- Keep water out of trenches with a pump or drainage system, and inspect the area for soil movement and potential cave-ins.
- Open ditches more than 24 hours or overnight must have fence protection.
- Keep drivers in the cab and workers away when dirt and other debris are being loaded into dump trucks. Workers must never be allowed under any load and must stay clear of the back of vehicles.

#### 8. TOOLS AND EQUIPMENT

- Maintain all hand tools and equipment in safe condition and check regularly for defects. Broken or damaged tools and equipment must be removed from the jobsite.
- Use double insulated tools, or ensure the tools are grounded (check for ground plug).
- Equip all power saws (circular, skill, table, etc) with blade guards. Saws must be turned off when unattended. Unplug all power tools when not in use.
- Make sure cords are not damaged. The outer insulation must not be cut or damaged.
- Pneumatic and powder-actuated tools must only be used by trained and experienced personnel. Require proper eye protection for workers.
- Never leave cartridges for pneumatic or powder-actuated tools unattended. Keep equipment in a safe place, according to manufacturer's instructions.

#### 9. VEHICLES AND MOBILE EQUIPMENT

- Inform workers verbally and provide training to stay clear of backing and turning vehicles and equipment with rotating cabs.
- Maintain back-up alarms for equipment with limited rear view or use someone to help guide them back.
- Verify experience or provide training to crane and heavy equipment operators.
- Maintain at least 10 foot clearance from overhead power lines when operating equipment.
- Block up the raised bed when inspecting or repairing dump trucks.
- Use a tag line to control materials moved by a crane.

#### 10. ELECTRICAL

- Prohibit work on new and existing energized (hot) electrical circuits until all power is shut off and a positive "Lockout/Tagout System" is in place.
- Maintain all electrical tools and equipment in safe condition and check regularly for defects.
- Broken or damaged tools and equipment must be removed from the jobsite.
- Protect all temporary power (including extension cords) with Ground Fault Circuit Interrupters (GFCI's). Plug into a GFCI protected temporary power pole, a GFCI protected generator, or use a GFCI extension cord to protect against shocks.
- Locate and identify overhead electrical power lines. Make sure that ladders, scaffolds, equipment or materials never come within 10 feet of electrical power lines.
- Exterior electrical must be approved (UL, NEMA, etc) for exterior use (no internal junction boxes).

#### 11. FIRE PREVENTION

- Provide fire extinguishers near all welding, soldering or other ignition sources.
- Avoid spraying of paint, solvents or other types of flammable materials in rooms with poor ventilation. Build up of fumes and vapors can cause explosions or fires.

• Store gasoline and other flammable materials in a safety can outdoors or in an approved storage facility. (Metal cans with self-sealing lids).

#### 12. CHEMICAL HAZARDS

All hazardous chemicals present in the workplace must have an up-to-date Material Safety Data Sheet (MSDS). All contractors shall maintain MSDS for chemicals used or stored at GSD facilities. All warnings and directions for use must be followed.

#### 13. CONFINED SPACES

By definition, a **confined space**:

- Is large enough for an employee to enter fully and perform assigned work;
- Is not designed for continuous occupancy by the employee; and
- Has a limited or restricted means of entry or exit.

These spaces may include underground vaults, tanks, storage bins, pits and diked areas, vessels, silos and other similar areas.

By definition, a **permit-required confined space** has one or more of these characteristics:

- Contains or has the potential to contain a hazardous atmosphere;
- Contains a material with the potential to engulf someone who enters the space;
- Has an internal configuration that might cause an entrant to be trapped or asphyxiated by inwardly converging walls or by a floor that slopes downward and tapers to a smaller cross section; and/or
- Contains any other recognized serious safety or health hazards.

Entry into confined spaces without an evaluation is forbidden. Entry into permitrequired confined spaces requires compliance with all OSHA requirements. Entry into non-permit spaces will require an evaluation by GSD Safety to confirm that conditions remain non-permit required.

Contractors that perform confined space entry activities are required to comply with OSHA regulations. GSD will not provide confined space rescue equipment.

#### 14. LOCK-OUT/TAG-OUT

Before working on, repairing, adjusting or replacing equipment and machinery, all appropriate safety procedures, including lockout/tagout, must be utilized to place the machinery or equipment in a neutral or zero mechanical state.

Outside contractors are expected to have knowledge of lock-out/tag-out requirements.

Contractor Acknowledgement:
I, the undersigned, have read, reviewed and acknowledge my understanding of the General Services Division safety requirements, as set forth in this handbook. I am also aware that all applicable rules and regulations are to be followed, regardless of whether they are specifically mentioned in this handbook.
Contractor Representative (Print Name):
Contractor Representative Signature: Date:
This signed acknowledgement must be signed and returned to the GSD Safety Section prior to start of project work.

#### SECTION 012500 - SUBSTITUTION PROCEDURES (Post Award)

#### PART 1 - GENERAL

#### 1.1 SUMMARY

A. Section includes administrative and procedural requirements for substitutions.

#### 1.2 DEFINITIONS

- A. Substitutions: Changes in products, materials, equipment, and methods of construction from those required by the Contract Documents and proposed by Contractor.
  - 1. Substitutions for Cause: Changes proposed by Contractor that are required due to changed Project conditions, such as unavailability of product, regulatory changes, or unavailability of required warranty terms.
  - 2. Substitutions for Convenience: Changes proposed by Contractor or Owner that are not required in order to meet other Project requirements but may offer advantage to Contractor or Owner.

#### 1.3 ACTION SUBMITTALS

- A. Substitution Requests: Submit one PDF electronic copy of each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.
  - 1. Substitution Request Form: Use approved form.
  - 2. Documentation: Show compliance with requirements for substitutions and the following, as applicable:
    - a. Statement indicating why specified product or fabrication or installation cannot be provided, if applicable.
    - b. Coordination information, including a list of changes or revisions needed to other parts of the Work and to construction performed by Owner and separate contractors, that will be necessary to accommodate proposed substitution.
    - c. Detailed comparison of significant qualities of proposed substitution with those of the Work specified. Include annotated copy of applicable Specification Section. Significant qualities may include attributes such as performance, weight, size, durability, visual effect, sustainable design characteristics, warranties, and specific features and requirements indicated. Indicate deviations, if any, from the Work specified.
    - d. Product Data, including drawings and descriptions of products and fabrication and installation procedures.
    - e. Samples, where applicable or requested.
    - f. Certificates and qualification data, where applicable or requested.

- g. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners.
- h. Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.
- i. Research reports evidencing compliance with building code in effect for Project, from ICC-ES.
- j. Detailed comparison of Contractor's construction schedule using proposed substitution with products specified for the Work, including effect on the overall Contract Time. If specified product or method of construction cannot be provided within the Contract Time, include letter from manufacturer, on manufacturer's letterhead, stating date of receipt of purchase order, lack of availability, or delays in delivery.
- k. Cost information, including a proposal of change, if any, in the Contract Sum.
- 1. Contractor's certification that proposed substitution complies with requirements in the Contract Documents except as indicated in substitution request, is compatible with related materials, and is appropriate for applications indicated.
- m. Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of failure of proposed substitution to produce indicated results.
- 3. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within seven days of receipt of a request for substitution. Architect will notify Contractor of acceptance or rejection of proposed substitution within 15 days of receipt of request, or seven days of receipt of additional information or documentation, whichever is later.
  - a. Forms of Acceptance: Change Order, Construction Change Directive, or Architect's Supplemental Instructions for minor changes in the Work.
  - b. Use product specified if Architect does not issue a decision on use of a proposed substitution within time allocated.

#### 1.4 OUALITY ASSURANCE

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

#### 1.5 PROCEDURES

A. Coordination: Revise or adjust affected work as necessary to integrate work of the approved substitutions.

#### 2.1 SUBSTITUTIONS

- A. Substitutions for Cause: Submit requests for substitution immediately on discovery of need for change, but not later than 15 days prior to time required for preparation and review of related submittals.
  - 1. Conditions: Architect will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Architect will return requests without action, except to record noncompliance with these requirements:
    - a. Requested substitution is consistent with the Contract Documents and will produce indicated results.
    - b. Substitution request is fully documented and properly submitted.
    - c. Requested substitution will not adversely affect Contractor's construction schedule.
    - d. Requested substitution has received necessary approvals of authorities having jurisdiction.
    - e. Requested substitution is compatible with other portions of the Work.
    - f. Requested substitution has been coordinated with other portions of the Work.
    - g. Requested substitution provides specified warranty.
    - h. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.
- B. Substitutions for Convenience: Architect will consider requests for substitution if received within 60 days after the Notice to Proceed. Requests received after that time may be considered or rejected at discretion of Architect.
  - 1. Conditions: Architect will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Architect will return requests without action, except to record noncompliance with these requirements:
    - a. Requested substitution offers Owner a substantial advantage in cost, time, energy conservation, or other considerations, after deducting additional responsibilities Owner must assume. Owner's additional responsibilities may include compensation to Architect for redesign and evaluation services, increased cost of other construction by Owner, and similar considerations.
    - b. Requested substitution does not require extensive revisions to the Contract Documents.
    - c. Requested substitution is consistent with the Contract Documents and will produce indicated results.
    - d. Substitution request is fully documented and properly submitted.
    - e. Requested substitution will not adversely affect Contractor's construction schedule.
    - f. Requested substitution has received necessary approvals of authorities having jurisdiction.
    - g. Requested substitution is compatible with other portions of the Work.
    - h. Requested substitution has been coordinated with other portions of the Work.

- i. Requested substitution provides specified warranty.
- j. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.

PART 3 - EXECUTION (Not Used)

END OF SECTION 012500

#### SECTION 012600 - CONTRACT MODIFICATION PROCEDURES

#### PART 1 - GENERAL

#### 1.1 SUMMARY

A. Section includes administrative and procedural requirements for handling and processing Contract modifications.

#### 1.2 MINOR CHANGES IN THE WORK

A. Architect will issue supplemental instructions authorizing minor changes in the Work, not involving adjustment to the Contract Sum or the Contract Time, on AIA Document G710, "Architect's Supplemental Instructions."

#### 1.3 PROPOSAL REQUESTS

- A. Owner-Initiated Proposal Requests: Architect will issue a detailed description of proposed changes in the Work that may require adjustment to the Contract Sum or the Contract Time. If necessary, the description will include supplemental or revised Drawings and Specifications.
  - 1. Work Change Proposal Requests issued by Architect are not instructions either to stop work in progress or to execute the proposed change.
  - 2. Within time specified in Proposal Request after receipt of Proposal Request, submit a quotation estimating cost adjustments to the Contract Sum and the Contract Time necessary to execute the change.
    - a. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
    - b. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
    - c. Include costs of labor and supervision directly attributable to the change.
    - d. Include an updated Contractor's construction schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.
    - e. Quotation Form: Use forms acceptable to Architect.
- B. Contractor-Initiated Proposals: If latent or changed conditions require modifications to the Contract, Contractor may initiate a claim by submitting a request for a change to Architect.
  - 1. Include a statement outlining reasons for the change and the effect of the change on the Work. Provide a complete description of the proposed change. Indicate the effect of the proposed change on the Contract Sum and the Contract Time.

- 2. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
- 3. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
- 4. Include costs of labor and supervision directly attributable to the change.
- 5. Include an updated Contractor's construction schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.
- 6. Comply with requirements in Section 012500 "Substitution Procedures" if the proposed change requires substitution of one product or system for product or system specified.
- 7. Proposal Request Form: Use form acceptable to Architect.

#### 1.4 CHANGE ORDER PROCEDURES

A. On Owner's approval of a Proposal Request, Architect will issue a Change Order for signatures of Owner and Contractor on AIA Document G701. Owner will submit completed AIA G701 to the WV State Purchasing Division to request formal approval of the Change Order; multiple proposal requests may be consolidated into a single AIA G701 form. Once the Change Order has been approved and processed by the WV State Purchasing Division, the Change Order shall be added to the Application for Payment. No payments can be made towards a Change Order which increases the Contract Sum until such time that the Change Order has been fully processed and approved by the State Purchasing Division.

#### 1.5 CONSTRUCTION CHANGE DIRECTIVE

- A. Construction Change Directive: Architect may issue a Construction Change Directive on AIA Document G714. Construction Change Directive instructs Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order.
  - 1. Construction Change Directive contains a complete description of change in the Work. It also designates method to be followed to determine change in the Contract Sum or the Contract Time.
- B. Documentation: Maintain detailed records on a time and material basis of work required by the Construction Change Directive.
  - 1. After completion of change, submit an itemized account and supporting data necessary to substantiate cost and time adjustments to the Contract.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 012600

#### SECTION 012900 - PAYMENT PROCEDURES

#### PART 1 - GENERAL

#### 1.1 SUMMARY

A. Section includes administrative and procedural requirements necessary to prepare and process Applications for Payment.

#### 1.2 DEFINITIONS

A. Schedule of Values: A statement furnished by Contractor allocating portions of the Contract Sum to various portions of the Work and used as the basis for reviewing Contractor's Applications for Payment.

#### 1.3 SCHEDULE OF VALUES

- A. Coordination: Coordinate preparation of the schedule of values with preparation of Contractor's construction schedule.
  - 1. Coordinate line items in the schedule of values with other required administrative forms and schedules, including the following:
    - a. Application for Payment forms with continuation sheets.
    - b. Submittal schedule.
    - c. Items required to be indicated as separate activities in Contractor's construction schedule.
  - 2. Submit the schedule of values to Architect at earliest possible date, but no later than seven days before the date scheduled for submittal of initial Applications for Payment.
- B. Format and Content: Use Project Manual table of contents as a guide to establish line items for the schedule of values. Provide at least one line item for each Specification Section.
  - 1. Identification: Include the following Project identification on the schedule of values:
    - a. Project name and location.
    - b. Name of Architect.
    - c. Contractor's name and address.
    - d. Date of submittal.
  - 2. Arrange schedule of values consistent with format of AIA Document G703.
  - 3. Arrange the schedule of values in tabular form with separate columns to indicate the following for each item listed:
    - a. Description of the Work.

- b. Change Orders (numbers) that affect value.
- c. Dollar value of the following, as a percentage of the Contract Sum to nearest one-hundredth percent, adjusted to total 100 percent.
  - 1) Labor.
  - 2) Materials.
  - 3) Equipment.
- 4. Provide a breakdown of the Contract Sum in enough detail to facilitate continued evaluation of Applications for Payment and progress reports. Coordinate with Project Manual table of contents. Provide multiple line items for principal subcontract amounts in excess of five percent of the Contract Sum.
  - a. Include separate line items under Contractor and principal subcontracts for Project closeout requirements in an amount totaling five percent of the Contract Sum and subcontract amount.
- 5. Round amounts to nearest whole dollar; total shall equal the Contract Sum.
- 6. Provide a separate line item in the schedule of values for each part of the Work where Applications for Payment may include materials or equipment purchased or fabricated and stored, but not yet installed.
  - a. Differentiate between items stored on-site and items stored off-site. If required, include evidence of insurance.
- 7. Provide separate line items in the schedule of values for initial cost of materials, for each subsequent stage of completion, and for total installed value of that part of the Work.
- 8. Purchase Contracts: Provide a separate line item in the schedule of values for each purchase contract. Show line-item value of purchase contract. Indicate owner payments or deposits, if any, and balance to be paid by Contractor.
- 9. Each item in the schedule of values and Applications for Payment shall be complete. Include total cost and proportionate share of general overhead and profit for each item.
  - a. Temporary facilities and other major cost items that are not direct cost of actual work-in-place may be shown either as separate line items in the schedule of values or distributed as general overhead expense, at Contractor's option.
- 10. Schedule Updating: Update and resubmit the schedule of values before the next Applications for Payment when Change Orders or Construction Change Directives result in a change in the Contract Sum.

#### 1.4 APPLICATIONS FOR PAYMENT

- A. Each Application for Payment following the initial Application for Payment shall be consistent with previous applications and payments as certified by Architect and paid for by Owner.
  - 1. Initial Application for Payment, Application for Payment at time of Substantial Completion, and final Application for Payment involve additional requirements.

- B. Payment Application Times: The date for each progress payment is indicated in the Agreement between Owner and Contractor. The period of construction work covered by each Application for Payment is the period indicated in the Agreement.
- C. Application for Payment Forms: Use AIA Document G702 and AIA Document G703 as form for Applications for Payment.
- D. Application Preparation: Complete every entry on form. Notarize and execute by a person authorized to sign legal documents on behalf of Contractor. Architect will return incomplete applications without action.
  - 1. Entries shall match data on the schedule of values and Contractor's construction schedule. Use updated schedules if revisions were made.
  - 2. Include amounts for work completed following previous Application for Payment, whether or not payment has been received. Include only amounts for work completed at time of Application for Payment.
  - 3. Include amounts of Change Orders and Construction Change Directives issued before last day of construction period covered by application.
  - 4. Indicate separate amounts for work being carried out under Owner-requested project acceleration.
- E. Stored Materials: Include in Application for Payment amounts applied for materials or equipment purchased or fabricated and stored, but not yet installed. Differentiate between items stored on-site and items stored off-site.
  - 1. Provide certificate of insurance, evidence of transfer of title to Owner, and consent of surety to payment, for stored materials.
  - 2. Provide supporting documentation that verifies amount requested, such as paid invoices. Match amount requested with amounts indicated on documentation; do not include overhead and profit on stored materials.
  - 3. Provide summary documentation for stored materials indicating the following:
    - a. Value of materials previously stored and remaining stored as of date of previous Applications for Payment.
    - b. Value of previously stored materials put in place after date of previous Application for Payment and on or before date of current Application for Payment.
    - c. Value of materials stored since date of previous Application for Payment and remaining stored as of date of current Application for Payment.
- F. Transmittal: Submit three signed and notarized original copies of each Application for Payment to Architect by a method ensuring receipt within 24 hours. One copy shall include waivers of lien and similar attachments if required.
  - 1. Transmit each copy with a transmittal form listing attachments and recording appropriate information about application.
- G. Waivers of Mechanic's Lien: With each Application for Payment, submit waivers of mechanic's lien from entities lawfully entitled to file a mechanic's lien arising out of the Contract and related to the Work covered by the payment.

- 1. Submit partial waivers on each item for amount requested in previous application, after deduction for retainage, on each item.
- 2. When an application shows completion of an item, submit conditional final or full waivers.
- 3. Owner reserves the right to designate which entities involved in the Work must submit waivers.
- 4. Waiver Forms: Submit executed waivers of lien on forms acceptable to Owner.
- H. Initial Application for Payment: Administrative actions and submittals that must precede or coincide with submittal of first Application for Payment include the following:
  - 1. List of subcontractors.
  - 2. Schedule of values.
  - 3. Contractor's construction schedule (preliminary if not final).
  - 4. Schedule of unit prices.
  - 5. Submittal schedule (preliminary if not final).
  - 6. List of Contractor's staff assignments.
  - 7. List of Contractor's principal consultants.
  - 8. Copies of building permits.
  - 9. Copies of authorizations and licenses from authorities having jurisdiction for performance of the Work.
  - 10. Report of preconstruction conference.
  - 11. Certificates of insurance and insurance policies.
  - 12. Performance and payment bonds.
- I. Application for Payment at Substantial Completion: After Architect issues the Certificate of Substantial Completion, submit an Application for Payment showing 100 percent completion for portion of the Work claimed as substantially complete.
  - 1. Include documentation supporting claim that the Work is substantially complete and a statement showing an accounting of changes to the Contract Sum.
  - 2. This application shall reflect Certificate(s) of Substantial Completion issued previously for Owner occupancy of designated portions of the Work.
- J. Final Payment Application: After completing Project closeout requirements, submit final Application for Payment with releases and supporting documentation not previously submitted and accepted, including, but not limited, to the following:
  - 1. Evidence of completion of Project closeout requirements.
  - 2. Insurance certificates for products and completed operations where required and proof that taxes, fees, and similar obligations were paid.
  - 3. Updated final statement, accounting for final changes to the Contract Sum.
  - 4. AIA Document G706, "Contractor's Affidavit of Payment of Debts and Claims."
  - 5. AIA Document G706A, "Contractor's Affidavit of Release of Liens."
  - 6. AIA Document G707, "Consent of Surety to Final Payment."
  - 7. Final meter readings for utilities, a measured record of stored fuel, and similar data as of date of Substantial Completion or when Owner took possession of and assumed responsibility for corresponding elements of the Work.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 012900

#### SECTION 013100 - PROJECT MANAGEMENT AND COORDINATION

#### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. Section includes administrative provisions for coordinating construction operations on Project including, but not limited to, the following:
  - 1. General coordination procedures.
  - 2. Requests for Information (RFIs).
  - 3. Project meetings.

#### 1.2 DEFINITIONS

A. RFI: Request from Owner, Architect, or Contractor seeking information required by or clarifications of the Contract Documents.

#### 1.3 INFORMATIONAL SUBMITTALS

- A. Subcontract List: Prepare a written summary identifying individuals or firms proposed for each portion of the Work, including those who are to furnish products or equipment fabricated to a special design. Include the following information in tabular form:
  - 1. Name, address, and telephone number of entity performing subcontract or supplying products.
  - 2. Number and title of related Specification Section(s) covered by subcontract.
  - 3. Drawing number and detail references, as appropriate, covered by subcontract.
- B. Key Personnel Names: Within 15 days of starting construction operations, submit a list of key personnel assignments, including superintendent and other personnel in attendance at Project site. Identify individuals and their duties and responsibilities; list addresses and telephone numbers, including home, office, and cellular telephone numbers and e-mail addresses. Provide names, addresses, and telephone numbers of individuals assigned as alternates in the absence of individuals assigned to Project.
  - 1. Post copies of list in project meeting room, in temporary field office, and by each temporary telephone. Keep list current at all times.

#### 1.4 GENERAL COORDINATION PROCEDURES

A. Coordination: Coordinate construction operations included in different Sections of the Specifications to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations, included in different Sections, that depend on each other for proper installation, connection, and operation.

- 1. Schedule construction operations in sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.
- 2. Coordinate installation of different components to ensure maximum performance and accessibility for required maintenance, service, and repair.
- 3. Make adequate provisions to accommodate items scheduled for later installation.
- B. Prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and list of attendees at meetings.
  - 1. Prepare similar memoranda for Owner and separate contractors if coordination of their Work is required.
- C. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:
  - 1. Preparation of Contractor's construction schedule.
  - 2. Preparation of the schedule of values.
  - 3. Installation and removal of temporary facilities and controls.
  - 4. Delivery and processing of submittals.
  - 5. Progress meetings.
  - 6. Preinstallation conferences.
  - 7. Project closeout activities.
  - 8. Startup and adjustment of systems.
- D. Conservation: Coordinate construction activities to ensure that operations are carried out with consideration given to conservation of energy, water, and materials. Coordinate use of temporary utilities to minimize waste.
  - 1. Salvage materials and equipment involved in performance of, but not actually incorporated into, the Work. See other Sections for disposition of salvaged materials that are designated as Owner's property.

#### 1.5 REQUESTS FOR INFORMATION (RFIs)

- A. General: Immediately on discovery of the need for additional information or interpretation of the Contract Documents, Contractor shall prepare and submit an RFI in the form specified.
  - 1. Architect will return RFIs submitted to Architect by other entities controlled by Contractor with no response.
  - 2. Coordinate and submit RFIs in a prompt manner so as to avoid delays in Contractor's work or work of subcontractors.
- B. Content of the RFI: Include a detailed, legible description of item needing information or interpretation and the following:
  - 1. Project name.
  - 2. Project number.
  - 3. Date.

- 4. Name of Contractor.
- 5. Name of Architect.
- 6. RFI number, numbered sequentially.
- 7. RFI subject.
- 8. Specification Section number and title and related paragraphs, as appropriate.
- 9. Drawing number and detail references, as appropriate.
- 10. Field dimensions and conditions, as appropriate.
- 11. Contractor's suggested resolution. If Contractor's suggested resolution impacts the Contract Time or the Contract Sum, Contractor shall state impact in the RFI.
- 12. Contractor's signature.
- 13. Attachments: Include sketches, descriptions, measurements, photos, Product Data, Shop Drawings, coordination drawings, and other information necessary to fully describe items needing interpretation.
  - a. Include dimensions, thicknesses, structural grid references, and details of affected materials, assemblies, and attachments on attached sketches.
- C. RFI Forms: Software-generated form with substantially the same content as indicated above, acceptable to Architect.
  - 1. Attachments shall be electronic files in Adobe Acrobat PDF format.
- D. Architect's Action: Architect will review each RFI, determine action required, and respond. Allow seven working days for Architect's response for each RFI. RFIs received by Architect after 1:00 p.m. will be considered as received the following working day.
  - 1. The following Contractor-generated RFIs will be returned without action:
    - a. Requests for approval of submittals.
    - b. Requests for approval of substitutions.
    - c. Requests for approval of Contractor's means and methods.
    - d. Requests for coordination information already indicated in the Contract Documents.
    - e. Requests for adjustments in the Contract Time or the Contract Sum.
    - f. Requests for interpretation of Architect's actions on submittals.
    - g. Incomplete RFIs or inaccurately prepared RFIs.
  - 2. Architect's action may include a request for additional information, in which case Architect's time for response will date from time of receipt of additional information.
  - 3. Architect's action on RFIs that may result in a change to the Contract Time or the Contract Sum may be eligible for Contractor to submit Change Proposal according to Section 012600 "Contract Modification Procedures."
    - a. If Contractor believes the RFI response warrants change in the Contract Time or the Contract Sum, notify Architect in writing within 10 days of receipt of the RFI response.
- E. RFI Log: Prepare, maintain, and submit a tabular log of RFIs organized by the RFI number. Submit log at each job meeting. Software log with not less than the following:
  - 1. Project name.

- 2. Name and address of Contractor.
- 3. Name and address of Architect.
- 4. RFI number including RFIs that were returned without action or withdrawn.
- 5. RFI description.
- 6. Date the RFI was submitted.
- 7. Date Architect's response was received.
- F. On receipt of Architect's action, update the RFI log and immediately distribute the RFI response to affected parties. Review response and notify Architect within seven days if Contractor disagrees with response.
  - 1. Identification of related Minor Change in the Work, Construction Change Directive, and Proposal Request, as appropriate.
  - 2. Identification of related Field Order, Work Change Directive, and Proposal Request, as appropriate.

#### 1.6 PROJECT MEETINGS

- A. General: Schedule and conduct meetings and conferences at Project site unless otherwise indicated.
  - 1. Attendees: Inform participants and others involved, and individuals whose presence is required, of date and time of each meeting. Notify Owner and Architect of scheduled meeting dates and times.
  - 2. Agenda: Prepare the meeting agenda. Distribute the agenda to all invited attendees.
  - 3. Minutes: Entity responsible for conducting meeting will record significant discussions and agreements achieved. Distribute the meeting minutes to everyone concerned, including Owner and Architect, within three days of the meeting.
- B. Preconstruction Conference: Schedule and conduct a preconstruction conference before starting construction, at a time convenient to Owner and Architect, but no later than 15 days after execution of the Agreement.
  - 1. Conduct the conference to review responsibilities and personnel assignments.
  - 2. Attendees: Authorized representatives of Owner, Owner's Commissioning Authority, Architect, and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the conference. Participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
  - 3. Agenda: Discuss items of significance that could affect progress, including the following:
    - a. Tentative construction schedule.
    - b. Phasing.
    - c. Critical work sequencing and long-lead items.
    - d. Designation of key personnel and their duties.
    - e. Lines of communications.
    - f. Procedures for processing field decisions and Change Orders.
    - g. Procedures for RFIs.
    - h. Procedures for testing and inspecting.
    - i. Procedures for processing Applications for Payment.

- j. Submittal procedures.
- k. Preparation of record documents.
- 1. Use of the premises and existing building.
- m. Work restrictions.
- n. Working hours.
- o. Owner's occupancy requirements.
- p. Responsibility for temporary facilities and controls.
- q. Procedures for moisture and mold control.
- r. Procedures for disruptions and shutdowns.
- s. Parking availability.
- t. Office, work, and storage areas.
- u. Equipment deliveries and priorities.
- v. First aid.
- w. Security.
- x. Progress cleaning.
- 4. Minutes: Entity responsible for conducting meeting will record and distribute meeting minutes.
- C. Pre-Installation Conferences: Conduct a pre-installation conference at Project site before each construction activity that requires coordination with other construction.
  - 1. Attendees: Installer and representatives of manufacturers and fabricators involved in or affected by the installation and its coordination or integration with other materials and installations that have preceded or will follow, shall attend the meeting. Advise Architect, and Owner's Commissioning Authority of scheduled meeting dates.
  - 2. Agenda: Review progress of other construction activities and preparations for the particular activity under consideration, including requirements for the following:
    - a. Manufacturer's written instructions.
    - b. Warranty requirements.
    - c. Compatibility of materials.
    - d. Acceptability of substrates.
    - e. Temporary facilities and controls.
    - f. Space and access limitations.
    - g. Regulations of authorities having jurisdiction.
    - h. Testing and inspecting requirements.
    - i. Installation procedures.
    - j. Coordination with other work.
    - k. Required performance results.
    - 1. Protection of adjacent work.
    - m. Protection of construction and personnel.
  - 3. Record significant conference discussions, agreements, and disagreements, including required corrective measures and actions.
  - 4. Reporting: Distribute minutes of the meeting to each party present and to other parties requiring information.
  - 5. Do not proceed with installation if the conference cannot be successfully concluded. Initiate whatever actions are necessary to resolve impediments to performance of the Work and reconvene the conference at earliest feasible date.

- D. Project Closeout Conference: Schedule and conduct a project closeout conference, at a time convenient to Owner and Architect, but no later than 90 days prior to the scheduled date of Substantial Completion.
  - 1. Conduct the conference to review requirements and responsibilities related to Project closeout.
  - 2. Attendees: Authorized representatives of Owner, Owner's Commissioning Authority, Architect, and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the meeting. Participants at the meeting shall be familiar with Project and authorized to conclude matters relating to the Work.
  - 3. Agenda: Discuss items of significance that could affect or delay Project closeout, including the following:
    - a. Preparation of record documents.
    - b. Procedures required prior to inspection for Substantial Completion and for final inspection for acceptance.
    - c. Submittal of written warranties.
    - d. Requirements for preparing operations and maintenance data.
    - e. Requirements for delivery of material samples, attic stock, and spare parts.
    - f. Requirements for demonstration and training.
    - g. Preparation of Contractor's punch list.
    - h. Procedures for processing Applications for Payment at Substantial Completion and for final payment.
    - i. Submittal procedures.
    - j. Installation of Owner's furniture, fixtures, and equipment.
    - k. Responsibility for removing temporary facilities and controls.
  - 4. Minutes: Entity conducting meeting will record and distribute meeting minutes.
- E. Progress Meetings: Conduct progress meetings at biweekly intervals.
  - 1. Coordinate dates of meetings with preparation of payment requests.
  - 2. Attendees: In addition to representatives of Owner, Owner's Commissioning Authority and Architect, each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the meeting shall be familiar with Project and authorized to conclude matters relating to the Work.
  - 3. Agenda: Review and correct or approve minutes of previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.
    - a. Contractor's Construction Schedule: Review progress since the last meeting. Determine whether each activity is on time, ahead of schedule, or behind schedule, in relation to Contractor's construction schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.
      - 1) Review schedule for next period.

- b. Review present and future needs of each entity present, including the following:
  - 1) Interface requirements.
  - 2) Sequence of operations.
  - 3) Status of submittals.
  - 4) Deliveries.
  - 5) Off-site fabrication.
  - 6) Access.
  - 7) Site utilization.
  - 8) Temporary facilities and controls.
  - 9) Progress cleaning.
  - 10) Quality and work standards.
  - 11) Status of correction of deficient items.
  - 12) Field observations.
  - 13) Status of RFIs.
  - 14) Status of proposal requests.
  - 15) Pending changes.
  - 16) Status of Change Orders.
  - 17) Pending claims and disputes.
  - 18) Documentation of information for payment requests.
- 4. Minutes: Entity responsible for conducting the meeting will record and distribute the meeting minutes to each party present and to parties requiring information.
  - a. Schedule Updating: Revise Contractor's construction schedule after each progress meeting where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with the report of each meeting.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 013100

#### SECTION 013200 - CONSTRUCTION PROGRESS DOCUMENTATION

#### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. Section includes administrative and procedural requirements for documenting the progress of construction during performance of the Work, including the following:
  - 1. Startup construction schedule.
  - 2. Contractor's construction schedule.
  - 3. Construction schedule updating reports.
  - 4. Daily construction reports.
  - 5. Site condition reports.
  - 6. Special reports.

#### 1.2 INFORMATIONAL SUBMITTALS

- A. Format for Submittals: Submit required submittals in the following format:
  - 1. PDF electronic file.
- B. Startup construction schedule.
  - 1. Approval of cost-loaded, startup construction schedule will not constitute approval of schedule of values for cost-loaded activities.
- C. Contractor's Construction Schedule: Initial schedule, of size required to display entire schedule for entire construction period.
  - 1. Submit a working electronic copy of schedule, using software indicated, and labeled to comply with requirements for submittals. Include type of schedule (initial or updated) and date on label.
- D. CPM Reports: Concurrent with CPM schedule, submit each of the following reports. Format for each activity in reports shall contain activity number, activity description, cost and resource loading, original duration, remaining duration, early start date, early finish date, late start date, late finish date, and total float in calendar days.
  - 1. Activity Report: List of all activities sorted by activity number and then early start date, or actual start date if known.
  - 2. Logic Report: List of preceding and succeeding activities for all activities, sorted in ascending order by activity number and then early start date, or actual start date if known.
  - 3. Total Float Report: List of all activities sorted in ascending order of total float.
- E. Construction Schedule Updating Reports: Submit with Applications for Payment.
- F. Daily Construction Reports: Submit at weekly intervals.

- G. Site Condition Reports: Submit at time of discovery of differing conditions.
- H. Special Reports: Submit at time of unusual event.
- I. Qualification Data: For scheduling consultant.

#### 1.3 QUALITY ASSURANCE

A. Scheduling Consultant Qualifications: An experienced specialist in CPM scheduling and reporting, with capability of producing CPM reports and diagrams within 24 hours of Architect's request.

#### 1.4 COORDINATION

- A. Coordinate preparation and processing of schedules and reports with performance of construction activities and with scheduling and reporting of separate contractors.
- B. Coordinate Contractor's construction schedule with the schedule of values, submittal schedule, progress reports, payment requests, and other required schedules and reports.
  - 1. Secure time commitments for performing critical elements of the Work from entities involved.
  - 2. Coordinate each construction activity in the network with other activities and schedule them in proper sequence.

#### PART 2 - PRODUCTS

#### 2.1 CONTRACTOR'S CONSTRUCTION SCHEDULE, GENERAL

- A. Time Frame: Extend schedule from date established for the Notice to Proceed to date of Substantial Completion.
  - 1. Contract completion date shall not be changed by submission of a schedule that shows an early completion date, unless specifically authorized by Change Order.
- B. Activities: Treat each story or separate area as a separate numbered activity for each main element of the Work. Comply with the following:
  - 1. Activity Duration: Define activities so no activity is longer than 20 days, unless specifically allowed by Architect.
  - 2. Procurement Activities: Include procurement process activities for the following long lead items and major items, requiring a cycle of more than 60 days, as separate activities in schedule. Procurement cycle activities include, but are not limited to, submittals, approvals, purchasing, fabrication, and delivery.
  - 3. Submittal Review Time: Include review and resubmittal times indicated in Section 013300 "Submittal Procedures" in schedule. Coordinate submittal review times in Contractor's construction schedule with submittal schedule.

- 4. Startup and Testing Time: Include no fewer than 15 days for startup and testing.
- 5. Substantial Completion: Indicate completion in advance of date established for Substantial Completion, and allow time for Architect's administrative procedures necessary for certification of Substantial Completion.
- 6. Punch List and Final Completion: Include not more than 30 days for completion of punch list items and final completion.
- C. Constraints: Include constraints and work restrictions indicated in the Contract Documents and as follows in schedule, and show how the sequence of the Work is affected.
  - 1. Phasing: Arrange list of activities on schedule by phase.
  - 2. Work by Owner: Include a separate activity for each portion of the Work performed by Owner.
  - 3. Owner-Furnished Products: Include a separate activity for each product. Include delivery date indicated in Section 011000 "Summary." Delivery dates indicated stipulate the earliest possible delivery date.
  - 4. Work Restrictions: Show the effect of the following items on the schedule:
    - a. Coordination with existing construction.
    - b. Limitations of continued occupancies.
    - c. Uninterruptible services.
  - 5. Work Stages: Indicate important stages of construction for each major portion of the Work, including, but not limited to, the following:
    - a. Mockups.
    - b. Installation.
    - c. Tests and inspections.
    - d. Adjusting.
    - e. Building flush-out.
    - f. Startup and placement into final use and operation.
  - 6. Construction Areas: Identify each major area of construction for each major portion of the Work. Indicate where each construction activity within a major area must be sequenced or integrated with other construction activities to provide for the following:
    - a. Temporary enclosure and space conditioning.
    - b. Permanent space enclosure.
    - c. Completion of mechanical installation.
    - d. Completion of electrical installation.
    - e. Substantial Completion.
- D. Milestones: Include milestones indicated in the Contract Documents in schedule, including, but not limited to, the Notice to Proceed, Substantial Completion, and final completion.
- E. Upcoming Work Summary: Prepare summary report indicating activities scheduled to occur or commence prior to submittal of next schedule update. Summarize the following issues:
  - 1. Unresolved issues.
  - 2. Unanswered Requests for Information.
  - 3. Rejected or unreturned submittals.

- 4. Notations on returned submittals.
- 5. Pending modifications affecting the Work and Contract Time.
- F. Recovery Schedule: When periodic update indicates the Work is 14 or more calendar days behind the current approved schedule, submit a separate recovery schedule indicating means by which Contractor intends to regain compliance with the schedule. Indicate changes to working hours, working days, crew sizes, and equipment required to achieve compliance, and date by which recovery will be accomplished.

## 2.2 STARTUP CONSTRUCTION SCHEDULE

- A. Bar-Chart Schedule: Submit startup, horizontal, bar-chart-type construction schedule within seven days of date established for the Notice to Proceed.
- B. Preparation: Indicate each significant construction activity separately. Identify first workday of each week with a continuous vertical line. Outline significant construction activities for first 90 days of construction. Include skeleton diagram for the remainder of the Work and a cash requirement prediction based on indicated activities.

# 2.3 CONTRACTOR'S CONSTRUCTION SCHEDULE (CPM SCHEDULE)

- A. General: Prepare network diagrams using AON (activity-on-node) format.
- B. CPM Schedule: Prepare Contractor's construction schedule using a time-scaled CPM network analysis diagram for the Work.
  - 1. Develop network diagram in sufficient time to submit CPM schedule so it can be accepted for use no later than 30 days after date established for the Notice to Proceed.
    - a. Failure to include any work item required for performance of this Contract shall not excuse Contractor from completing all work within applicable completion dates, regardless of Architect's approval of the schedule.
  - 2. Conduct educational workshops to train and inform key Project personnel, including subcontractors' personnel, in proper methods of providing data and using CPM schedule information.
  - 3. Establish procedures for monitoring and updating CPM schedule and for reporting progress. Coordinate procedures with progress meeting and payment request dates.
  - 4. Use "one workday" as the unit of time for individual activities. Indicate nonworking days and holidays incorporated into the schedule in order to coordinate with the Contract Time.
- C. CPM Schedule Preparation: Prepare a list of all activities required to complete the Work. Using the startup network diagram, prepare a skeleton network to identify probable critical paths.
  - 1. Activities: Indicate the estimated time duration, sequence requirements, and relationship of each activity in relation to other activities. Include estimated time frames for the following activities:

- a. Preparation and processing of submittals.
- b. Mobilization and demobilization.
- c. Utility interruptions.
- d. Installation.
- e. Work by Owner that may affect or be affected by Contractor's activities.
- f. Testing and commissioning.
- g. Punch list and final completion.
- 2. Critical Path Activities: Identify critical path activities, including those for interim completion dates. Scheduled start and completion dates shall be consistent with Contract milestone dates.
- 3. Processing: Process data to produce output data on a computer-drawn, time-scaled network. Revise data, reorganize activity sequences, and reproduce as often as necessary to produce the CPM schedule within the limitations of the Contract Time.
- 4. Format: Mark the critical path. Locate the critical path near center of network; locate paths with most float near the edges.
  - a. Subnetworks on separate sheets are permissible for activities clearly off the critical path.
- D. Contract Modifications: For each proposed contract modification and concurrent with its submission, prepare a time-impact analysis using a network fragment to demonstrate the effect of the proposed change on the overall project schedule.
- E. Initial Issue of Schedule: Prepare initial network diagram from a sorted activity list indicating straight "early start-total float." Identify critical activities. Prepare tabulated reports showing the following:
  - 1. Contractor or subcontractor and the Work or activity.
  - 2. Description of activity.
  - 3. Main events of activity.
  - 4. Immediate preceding and succeeding activities.
  - 5. Early and late start dates.
  - 6. Early and late finish dates.
  - 7. Activity duration in workdays.
  - 8. Total float or slack time.
  - 9. Average size of workforce.
  - 10. Dollar value of activity (coordinated with the schedule of values).
- F. Schedule Updating: Concurrent with making revisions to schedule, prepare tabulated reports showing the following:
  - 1. Identification of activities that have changed.
  - 2. Changes in early and late start dates.
  - 3. Changes in early and late finish dates.
  - 4. Changes in activity durations in workdays.
  - 5. Changes in the critical path.
  - 6. Changes in total float or slack time.
  - 7. Changes in the Contract Time.

# 2.4 REPORTS

- A. Daily Construction Reports: Prepare a daily construction report recording the following information concerning events at Project site:
  - 1. List of subcontractors at Project site.
  - 2. Approximate count of personnel at Project site.
  - 3. Material deliveries.
  - 4. High and low temperatures and general weather conditions, including presence of rain or snow.
  - 5. Accidents.
  - 6. Meetings and significant decisions.
  - 7. Unusual events (see special reports).
  - 8. Stoppages, delays, shortages, and losses.
  - 9. Emergency procedures.
  - 10. Orders and requests of authorities having jurisdiction.
  - 11. Services connected and disconnected.
  - 12. Equipment or system tests and startups.
  - 13. Substantial Completions authorized.
- B. Site Condition Reports: Immediately on discovery of a difference between site conditions and the Contract Documents, prepare and submit a detailed report. Submit with a Request for Information. Include a detailed description of the differing conditions, together with recommendations for changing the Contract Documents.

#### 2.5 SPECIAL REPORTS

- A. General: Submit special reports directly to Owner within one day of an occurrence. Distribute copies of report to parties affected by the occurrence.
- B. Reporting Unusual Events: When an event of an unusual and significant nature occurs at Project site, whether or not related directly to the Work, prepare and submit a special report. List chain of events, persons participating, response by Contractor's personnel, evaluation of results or effects, and similar pertinent information. Advise Owner in advance when these events are known or predictable.

# PART 3 - EXECUTION

# 3.1 CONTRACTOR'S CONSTRUCTION SCHEDULE

- A. Contractor's Construction Schedule Updating: At monthly intervals, update schedule to reflect actual construction progress and activities. Issue schedule one week before each regularly scheduled progress meeting.
  - 1. Revise schedule immediately after each meeting or other activity where revisions have been recognized or made. Issue updated schedule concurrently with the report of each such meeting.

- 2. Include a report with updated schedule that indicates every change, including, but not limited to, changes in logic, durations, actual starts and finishes, and activity durations.
- 3. As the Work progresses, indicate final completion percentage for each activity.
- B. Distribution: Distribute copies of approved schedule to Architect Owner, separate contractors, testing and inspecting agencies, and other parties identified by Contractor with a need-to-know schedule responsibility.
  - 1. Post copies in Project meeting rooms and temporary field offices.
  - 2. When revisions are made, distribute updated schedules to the same parties and post in the same locations. Delete parties from distribution when they have completed their assigned portion of the Work and are no longer involved in performance of construction activities.

END OF SECTION 013200

#### SECTION 013233 - PHOTOGRAPHIC DOCUMENTATION

## PART 1 - GENERAL

## 1.1 SUMMARY

- A. Section includes administrative and procedural requirements for the following:
  - 1. Preconstruction photographs.
  - 2. Periodic construction photographs.
  - 3. Final completion construction photographs.

# 1.2 INFORMATIONAL SUBMITTALS

- A. Key Plan: Submit key plan of Project site and building with notation of vantage points marked for location and direction of each photograph. Indicate elevation or story of construction. Include same information as corresponding photographic documentation.
- B. Digital Photographs: Submit image files within three days of taking photographs.
  - 1. Digital Camera: Minimum sensor resolution of 8 megapixels.
  - 2. Format: Minimum 3200 by 2400 pixels, in unaltered original files, with same aspect ratio as the sensor, uncropped, date and time stamped, in folder named by date of photograph, accompanied by key plan file.
  - 3. Identification: Provide the following information with each image description in file metadata tag:
    - a. Name of Project.
    - b. Name of Architect.
    - c. Name of Contractor.
    - d. Date photograph was taken.
    - e. Description of vantage point, indicating location, direction (by compass point), and elevation or story of construction.
    - f. Unique sequential identifier keyed to accompanying key plan.

## 1.3 USAGE RIGHTS

A. Obtain and transfer copyright usage rights from photographer to Owner and Architect for unlimited reproduction of photographic documentation.

## PART 2 - PRODUCTS

# 2.1 PHOTOGRAPHIC MEDIA

A. Digital Images: Provide images in JPG format, produced by a digital camera with minimum sensor size of 8 megapixels, and at an image resolution of not less than 3200 by 2400 pixels.

## PART 3 - EXECUTION

## 3.1 CONSTRUCTION PHOTOGRAPHS

- A. General: Take photographs using the maximum range of depth of field, and that are in focus, to clearly show the Work. Photographs with blurry or out-of-focus areas will not be accepted.
  - 1. Maintain key plan with each set of construction photographs that identifies each photographic location.
- B. Digital Images: Submit digital images exactly as originally recorded in the digital camera, without alteration, manipulation, editing, or modifications using image-editing software.
  - 1. Date and Time: Include date and time in file name for each image.
  - 2. Field Office Images: Maintain one set of images accessible in the field office at Project site, available at all times for reference. Identify images in the same manner as those submitted to Architect.
- C. Preconstruction Photographs: Before starting construction, take photographs of Project site and surrounding properties, including existing items to remain during construction, from different vantage points, as directed by Architect.
  - 1. Flag construction limits before taking construction photographs.
  - 2. Take photographs to show existing conditions adjacent to property before starting the Work
  - 3. Take photographs of existing buildings either on or adjoining property to accurately record physical conditions at start of construction.
  - 4. Take additional photographs as required to record settlement or cracking of adjacent structures, pavements, and improvements.
- D. Periodic Construction Photographs: Take photographs monthly, coinciding with the cutoff date associated with each Application for Payment. Select vantage points to show status of construction and progress since last photographs were taken.
- E. Final Completion Construction Photographs: Take color photographs after date of Substantial Completion for submission as project record documents. Architect will inform photographer of desired vantage points.
- F. Additional Photographs: Architect may request photographs in addition to periodic photographs specified.
  - 1. Three days' notice will be given, where feasible.

- 2. In emergency situations, take additional photographs within 24 hours of request.
- 3. Circumstances that could require additional photographs include, but are not limited to, the following:
  - a. Immediate follow-up when on-site events result in construction damage or losses.
  - b. Photographs to be taken at fabrication locations away from Project site. These photographs are not subject to unit prices or unit-cost allowances.
  - c. Substantial Completion of a major phase or component of the Work.

END OF SECTION 013233

#### SECTION 013300 - SUBMITTAL PROCEDURES

#### PART 1 - GENERAL

## 1.1 SUMMARY

A. Section includes requirements for the submittal schedule and administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, and other submittals.

# 1.2 DEFINITIONS

- A. Action Submittals: Written and graphic information and physical samples that require Architect's responsive action. Action submittals are those submittals indicated in individual Specification Sections as "action submittals."
- B. File Transfer Protocol (FTP): Communications protocol that enables transfer of files to and from another computer over a network and that serves as the basis for standard Internet protocols. An FTP site is a portion of a network located outside of network firewalls within which internal and external users are able to access files.
- C. Portable Document Format (PDF): An open standard file format licensed by Adobe Systems used for representing documents in a device-independent and display resolution-independent fixed-layout document format.

## 1.3 ACTION SUBMITTALS

- A. Submittal Schedule: Submit a schedule of submittals, arranged in chronological order by dates required by construction schedule. Include time required for review, ordering, manufacturing, fabrication, and delivery when establishing dates. Include additional time required for making corrections or revisions to submittals noted by Architect and additional time for handling and reviewing submittals required by those corrections.
  - 1. Coordinate submittal schedule with list of subcontracts, the schedule of values, and Contractor's construction schedule.
  - 2. Initial Submittal: Submit concurrently with startup construction schedule. Include submittals required during the first 60 days of construction. List those submittals required to maintain orderly progress of the Work and those required early because of long lead time for manufacture or fabrication.
  - 3. Final Submittal: Submit concurrently with the first complete submittal of Contractor's construction schedule.
    - a. Submit revised submittal schedule to reflect changes in current status and timing for submittals.

- 4. Format: Arrange the following information in a tabular format:
  - a. Scheduled date for first submittal.
  - b. Specification Section number and title.
  - c. Submittal category: Action; informational.
  - d. Name of subcontractor.
  - e. Description of the Work covered.
  - f. Scheduled date for Architect's final release or approval.
  - g. Scheduled date of fabrication.
  - h. Scheduled dates for purchasing.
  - i. Scheduled dates for installation.
  - j. Activity or event number.

# 1.4 SUBMITTAL ADMINISTRATIVE REQUIREMENTS

- A. Architect's Digital Data Files: Electronic digital data files of the Contract Drawings will be provided by Architect for Contractor's use in preparing submittals.
  - 1. Architect will not furnish Contractor digital data drawing files of the Contract Drawings.
    - a. Architect makes no representations as to the accuracy or completeness of digital data drawing files as they relate to the Contract Drawings.
    - b. Contractor shall execute a data licensing agreement in the form of Agreement form acceptable to Architect.
    - c. Contractor shall pay Architect \$ 100.00 per sheet of electronic CAD files as listed below.
    - d. If requested, the following digital data files will by furnished for each appropriate discipline at the fee listed above:
      - 1) Floor plans.
      - 2) Reflected ceiling plans.
- B. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.
  - 1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
  - 2. Submit all submittal items required for each Specification Section concurrently unless partial submittals for portions of the Work are indicated on approved submittal schedule.
  - 3. Submit action submittals and informational submittals required by the same Specification Section as separate packages under separate transmittals.
  - 4. Coordinate transmittal of different types of submittals for related parts of the Work so processing will not be delayed because of need to review submittals concurrently for coordination.
    - a. Architect reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.
- C. Processing Time: Allow time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Architect's receipt of submittal. No extension of the

Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including resubmittals.

- 1. Initial Review: Allow 15 days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. Architect will advise Contractor when a submittal being processed must be delayed for coordination.
- 2. Intermediate Review: If intermediate submittal is necessary, process it in same manner as initial submittal.
- 3. Resubmittal Review: Allow 15 days for review of each resubmittal.
- 4. Sequential Review: Where sequential review of submittals by Architect's consultants, Owner, or other parties is indicated, allow 21 days for initial review of each submittal.
- D. Electronic Submittals: Identify and incorporate information in each electronic submittal file as follows:
  - 1. Assemble complete submittal package into a single indexed file incorporating submittal requirements of a single Specification Section and transmittal form with links enabling navigation to each item.
  - 2. Name file with submittal number or other unique identifier, including revision identifier.
    - a. File name shall use project identifier and Specification Section number followed by a decimal point and then a sequential number (e.g., LNHS-061000.01). Resubmittals shall include an alphabetic suffix after another decimal point (e.g., LNHS-061000.01.A).
  - 3. Provide means for insertion to permanently record Contractor's review and approval markings and action taken by Architect.
  - 4. Transmittal Form for Electronic Submittals: Use software-generated form from electronic project management software acceptable to Owner, containing the following information:
    - a. Project name.
    - b. Date.
    - c. Name and address of Architect.
    - d. Name of Contractor.
    - e. Name of firm or entity that prepared submittal.
    - f. Names of subcontractor, manufacturer, and supplier.
    - g. Category and type of submittal.
    - h. Submittal purpose and description.
    - i. Specification Section number and title.
    - j. Specification paragraph number or drawing designation and generic name for each of multiple items.
    - k. Drawing number and detail references, as appropriate.
    - 1. Location(s) where product is to be installed, as appropriate.
    - m. Related physical samples submitted directly.
    - n. Indication of full or partial submittal.
    - o. Transmittal number, numbered consecutively.
    - p. Submittal and transmittal distribution record.
    - q. Other necessary identification.
    - r. Remarks.

- 5. Metadata: Include the following information as keywords in the electronic submittal file metadata:
  - a. Project name.
  - b. Number and title of appropriate Specification Section.
  - c. Manufacturer name.
  - d. Product name.
- E. Options: Identify options requiring selection by Architect.
- F. Deviations and Additional Information: On an attached separate sheet, prepared on Contractor's letterhead, record relevant information, requests for data, revisions other than those requested by Architect on previous submittals, and deviations from requirements in the Contract Documents, including minor variations and limitations. Include same identification information as related submittal.
- G. Resubmittals: Make resubmittals in same form and number of copies as initial submittal.
  - 1. Note date and content of previous submittal.
  - 2. Note date and content of revision in label or title block and clearly indicate extent of revision.
  - 3. Resubmit submittals until they are marked with approval notation from Architect's action stamp.
- H. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.
- I. Use for Construction: Retain complete copies of submittals on Project site. Use only final action submittals that are marked with approval notation from Architect's action stamp.

## PART 2 - PRODUCTS

# 2.1 SUBMITTAL PROCEDURES

- A. General Submittal Procedure Requirements: Prepare and submit submittals required by individual Specification Sections. Types of submittals are indicated in individual Specification Sections.
  - 1. Post electronic submittals as PDF electronic files directly to Architect's FTP site specifically established for Project.
    - a. Architect will return annotated file. Annotate and retain one copy of file as an electronic Project record document file.
  - 2. Submit electronic submittals via email as PDF electronic files.
    - a. Architect will return annotated file. Annotate and retain one copy of file as an electronic Project record document file.

- 3. Certificates and Certifications Submittals: Provide a statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity.
  - a. Provide a digital signature with digital certificate on electronically submitted certificates and certifications where indicated.
  - b. Provide a notarized statement on original paper copy certificates and certifications where indicated.
- B. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.
  - 1. If information must be specially prepared for submittal because standard published data are not suitable for use, submit as Shop Drawings, not as Product Data.
  - 2. Mark each copy of each submittal to show which products and options are applicable.
  - 3. Include the following information, as applicable:
    - a. Manufacturer's catalog cuts.
    - b. Manufacturer's product specifications.
    - c. Standard color charts.
    - d. Statement of compliance with specified referenced standards.
    - e. Testing by recognized testing agency.
    - f. Application of testing agency labels and seals.
    - g. Notation of coordination requirements.
  - 4. For equipment, include the following in addition to the above, as applicable:
    - a. Wiring diagrams showing factory-installed wiring.
    - b. Printed performance curves.
    - c. Operational range diagrams.
    - d. Clearances required to other construction, if not indicated on accompanying Shop Drawings.
  - 5. Submit Product Data before or concurrent with Samples.
  - 6. Submit Product Data in the following format:
    - a. PDF electronic file.
- C. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data, unless submittal based on Architect's digital data drawing files is otherwise permitted.
  - 1. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:
    - a. Identification of products.
    - b. Schedules.
    - c. Compliance with specified standards.
    - d. Notation of coordination requirements.
    - e. Notation of dimensions established by field measurement.

- f. Relationship and attachment to adjoining construction clearly indicated.
- g. Seal and signature of professional engineer if specified.
- 2. Sheet Size: Except for templates, patterns, and similar full-size drawings, submit Shop Drawings on sheets at least 8-1/2 by 11 inches (215 by 280 mm), but no larger than 30 by 42 inches (750 by 1067 mm).
- 3. Submit Shop Drawings in the following format:
  - a. PDF electronic file.
- D. Samples: Submit Samples for review of kind, color, pattern, and texture for a check of these characteristics with other elements and for a comparison of these characteristics between submittal and actual component as delivered and installed.
  - 1. Transmit Samples that contain multiple, related components such as accessories together in one submittal package.
  - 2. Identification: Attach label on unexposed side of Samples that includes the following:
    - a. Generic description of Sample.
    - b. Product name and name of manufacturer.
    - c. Sample source.
    - d. Number and title of applicable Specification Section.
    - e. Specification paragraph number and generic name of each item.
  - 3. For projects where electronic submittals are required, provide corresponding electronic submittal of Sample transmittal, digital image file illustrating Sample characteristics, and identification information for record.
  - 4. Disposition: Maintain sets of approved Samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.
    - a. Samples not incorporated into the Work, or otherwise designated as Owner's property, are the property of Contractor.
  - 5. Samples for Initial Selection: Submit manufacturer's color charts consisting of units or sections of units showing the full range of colors, textures, and patterns available.
    - a. Number of Samples: Submit one full set(s) of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. Architect will return submittal with options selected.
  - 6. Samples for Verification: Submit full-size units or Samples of size indicated, prepared from same material to be used for the Work, cured and finished in manner specified, and physically identical with material or product proposed for use, and that show full range of color and texture variations expected. Samples include, but are not limited to, the following: partial sections of manufactured or fabricated components; small cuts or containers of materials; complete units of repetitively used materials; swatches showing color, texture, and pattern; color range sets; and components used for independent testing and inspection.

- a. Number of Samples: Submit two sets of Samples. Architect will retain one Sample sets; remainder will be returned. Mark up and retain one returned Sample set as a project record sample.
  - 1) Submit a single Sample where assembly details, workmanship, fabrication techniques, connections, operation, and other similar characteristics are to be demonstrated.
  - 2) If variation in color, pattern, texture, or other characteristic is inherent in material or product represented by a Sample, submit at least three sets of paired units that show approximate limits of variations.
- E. Coordination Drawing Submittals: Comply with requirements specified in Section 013100 "Project Management and Coordination."
- F. Contractor's Construction Schedule: Comply with requirements specified in Section 013200 "Construction Progress Documentation."
- G. Application for Payment and Schedule of Values: Comply with requirements specified in Section 012900 "Payment Procedures."
- H. Test and Inspection Reports and Schedule of Tests and Inspections Submittals: Comply with requirements specified in Section 014000 "Quality Requirements."
- I. Closeout Submittals and Maintenance Material Submittals: Comply with requirements specified in Section 017700 "Closeout Procedures."
- J. Maintenance Data: Comply with requirements specified in Section 017823 "Operation and Maintenance Data."
- K. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements in the Contract Documents. Submit record of Welding Procedure Specification and Procedure Qualification Record on AWS forms. Include names of firms and personnel certified.
- L. Material Certificates: Submit written statements on manufacturer's letterhead certifying that material complies with requirements in the Contract Documents.
- M. Material Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements in the Contract Documents.
- N. Field Test Reports: Submit written reports indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements in the Contract Documents.
- O. Design Data: Prepare and submit written and graphic information, including, but not limited to, performance and design criteria, list of applicable codes and regulations, and calculations. Include list of assumptions and other performance and design criteria and a summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Include page numbers.

# 2.2 DELEGATED-DESIGN SERVICES

- A. Performance and Design Criteria: Where professional design services or certifications by a design professional are specifically required of Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated.
  - 1. If criteria indicated are not sufficient to perform services or certification required, submit a written request for additional information to Architect.
- B. Delegated-Design Services Certification: In addition to Shop Drawings, Product Data, and other required submittals, submit digitally signed PDF electronic file paper copies of certificate, signed and sealed by the responsible design professional, for each product and system specifically assigned to Contractor to be designed or certified by a design professional.
  - 1. Indicate that products and systems comply with performance and design criteria in the Contract Documents. Include list of codes, loads, and other factors used in performing these services.

# PART 3 - EXECUTION

#### 3.1 CONTRACTOR'S REVIEW

- A. Action and Informational Submittals: Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Architect.
- B. Project Closeout and Maintenance Material Submittals: See requirements in Section 017700 "Closeout Procedures."
- C. Approval Stamp: Stamp each submittal with a uniform, approval stamp. Include Project name and location, submittal number, Specification Section title and number, name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

## 3.2 ARCHITECT'S ACTION

- A. Action Submittals: Architect will review each submittal, make marks to indicate corrections or revisions required, and return it. Architect will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action.
- B. Informational Submittals: Architect will review each submittal and will not return it, or will return it if it does not comply with requirements. Architect will forward each submittal to appropriate party.
- C. Partial submittals prepared for a portion of the Work will be reviewed when use of partial submittals has received prior approval from Architect.
- D. Incomplete submittals are unacceptable, will be considered nonresponsive, and will be returned for resubmittal without review.

E.	Submittals not required by action.	the Contract Documents may be returned by	by the Architect without
END O	F SECTION 013300		
CAP EX	T LIGHTING	SUBMITTAL PROCEDURES	013300 - 9/9

## SECTION 014000 - QUALITY REQUIREMENTS

#### PART 1 - GENERAL

## 1.1 SUMMARY

- A. Section includes administrative and procedural requirements for quality assurance and quality control.
- B. Testing and inspecting services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.
  - 1. Specific quality-assurance and -control requirements for individual construction activities are specified in the Sections that specify those activities. Requirements in those Sections may also cover production of standard products.
  - 2. Specified tests, inspections, and related actions do not limit Contractor's other quality-assurance and -control procedures that facilitate compliance with the Contract Document requirements.
  - 3. Requirements for Contractor to provide quality-assurance and -control services required by Architect, Owner, Commissioning Authority, or authorities having jurisdiction are not limited by provisions of this Section.

#### 1.2 DEFINITIONS

- A. Quality-Assurance Services: Activities, actions, and procedures performed before and during execution of the Work to guard against defects and deficiencies and substantiate that proposed construction will comply with requirements.
- B. Quality-Control Services: Tests, inspections, procedures, and related actions during and after execution of the Work to evaluate that actual products incorporated into the Work and completed construction comply with requirements. Services do not include contract enforcement activities performed by Architect.
- C. Mockups: Full-size physical assemblies that are constructed on-site. Mockups are constructed to verify selections made under Sample submittals; to demonstrate aesthetic effects and, where indicated, qualities of materials and execution; to review coordination, testing, or operation; to show interface between dissimilar materials; and to demonstrate compliance with specified installation tolerances. Mockups are not Samples. Unless otherwise indicated, approved mockups establish the standard by which the Work will be judged.
- D. Preconstruction Testing: Tests and inspections performed specifically for Project before products and materials are incorporated into the Work, to verify performance or compliance with specified criteria.

- E. Product Testing: Tests and inspections that are performed by an NRTL, an NVLAP, or a testing agency qualified to conduct product testing and acceptable to authorities having jurisdiction, to establish product performance and compliance with specified requirements.
- F. Source Quality-Control Testing: Tests and inspections that are performed at the source, e.g., plant, mill, factory, or shop.
- G. Field Quality-Control Testing: Tests and inspections that are performed on-site for installation of the Work and for completed Work.
- H. Testing Agency: An entity engaged to perform specific tests, inspections, or both. Testing laboratory shall mean the same as testing agency.
- I. Installer/Applicator/Erector: Contractor or another entity engaged by Contractor as an employee, Subcontractor, or Sub-subcontractor, to perform a particular construction operation, including installation, erection, application, and similar operations.
  - 1. Use of trade-specific terminology in referring to a trade or entity does not require that certain construction activities be performed by accredited or unionized individuals, or that requirements specified apply exclusively to specific trade(s).
- J. Experienced: When used with an entity or individual, "experienced" means having successfully completed a minimum of five previous projects similar in nature, size, and extent to this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction.

# 1.3 CONFLICTING REQUIREMENTS

- A. Referenced Standards: If compliance with two or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer conflicting requirements that are different, but apparently equal, to Architect for a decision before proceeding.
- B. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of requirements. Refer uncertainties to Architect for a decision before proceeding.

# 1.4 INFORMATIONAL SUBMITTALS

A. Contractor's Quality-Control Plan: For quality-assurance and quality-control activities and responsibilities.

# 1.5 CONTRACTOR'S QUALITY-CONTROL PLAN

A. Quality-Control Plan, General: Submit quality-control plan within 10 days of Notice to Proceed, and not less than five days prior to preconstruction conference. Submit in format acceptable to

Architect. Identify personnel, procedures, controls, instructions, tests, records, and forms to be used to carry out Contractor's quality-assurance and quality-control responsibilities. Coordinate with Contractor's construction schedule.

- B. Quality-Control Personnel Qualifications: Engage qualified full-time personnel trained and experienced in managing and executing quality-assurance and quality-control procedures similar in nature and extent to those required for Project.
  - 1. Project quality-control manager may also serve as Project superintendent.
- C. Submittal Procedure: Describe procedures for ensuring compliance with requirements through review and management of submittal process. Indicate qualifications of personnel responsible for submittal review.
- D. Testing and Inspection: In quality-control plan, include a comprehensive schedule of Work requiring testing or inspection, including the following:
  - Contractor-performed tests and inspections including subcontractor-performed tests and inspections. Include required tests and inspections and Contractor-elected tests and inspections.
  - 2. Special inspections required by authorities having jurisdiction and indicated on the "Statement of Special Inspections."
  - 3. Owner-performed tests and inspections indicated in the Contract Documents.
- E. Continuous Inspection of Workmanship: Describe process for continuous inspection during construction to identify and correct deficiencies in workmanship in addition to testing and inspection specified. Indicate types of corrective actions to be required to bring work into compliance with standards of workmanship established by Contract requirements and approved mockups.
- F. Monitoring and Documentation: Maintain testing and inspection reports including log of approved and rejected results. Include work Architect has indicated as nonconforming or defective. Indicate corrective actions taken to bring nonconforming work into compliance with requirements. Comply with requirements of authorities having jurisdiction.

## 1.6 REPORTS AND DOCUMENTS

- A. Test and Inspection Reports: Prepare and submit certified written reports specified in other Sections. Include the following:
  - 1. Date of issue.
  - 2. Project title and number.
  - 3. Name, address, and telephone number of testing agency.
  - 4. Dates and locations of samples and tests or inspections.
  - 5. Names of individuals making tests and inspections.
  - 6. Description of the Work and test and inspection method.
  - 7. Identification of product and Specification Section.
  - 8. Complete test or inspection data.
  - 9. Test and inspection results and an interpretation of test results.

- 10. Record of temperature and weather conditions at time of sample taking and testing and inspecting.
- 11. Comments or professional opinion on whether tested or inspected Work complies with the Contract Document requirements.
- 12. Name and signature of laboratory inspector.
- 13. Recommendations on retesting and reinspecting.
- B. Manufacturer's Technical Representative's Field Reports: Prepare written information documenting manufacturer's technical representative's tests and inspections specified in other Sections. Include the following:
  - 1. Name, address, and telephone number of technical representative making report.
  - 2. Statement on condition of substrates and their acceptability for installation of product.
  - 3. Statement that products at Project site comply with requirements.
  - 4. Summary of installation procedures being followed, whether they comply with requirements and, if not, what corrective action was taken.
  - 5. Results of operational and other tests and a statement of whether observed performance complies with requirements.
  - 6. Statement whether conditions, products, and installation will affect warranty.
  - 7. Other required items indicated in individual Specification Sections.
- C. Factory-Authorized Service Representative's Reports: Prepare written information documenting manufacturer's factory-authorized service representative's tests and inspections specified in other Sections. Include the following:
  - 1. Name, address, and telephone number of factory-authorized service representative making report.
  - 2. Statement that equipment complies with requirements.
  - 3. Results of operational and other tests and a statement of whether observed performance complies with requirements.
  - 4. Statement whether conditions, products, and installation will affect warranty.
  - 5. Other required items indicated in individual Specification Sections.
- D. Permits, Licenses, and Certificates: For Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents, established for compliance with standards and regulations bearing on performance of the Work.

# 1.7 QUALITY ASSURANCE

- A. General: Qualifications paragraphs in this article establish the minimum qualification levels required; individual Specification Sections specify additional requirements.
- B. Manufacturer Qualifications: A firm experienced in manufacturing products or systems similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.
- C. Fabricator Qualifications: A firm experienced in producing products similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.

- D. Installer Qualifications: A firm or individual experienced in installing, erecting, or assembling work similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful in-service performance.
- E. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of the system, assembly, or product that are similar in material, design, and extent to those indicated for this Project.
- F. Testing Agency Qualifications: An NRTL, an NVLAP, or an independent agency with the experience and capability to conduct testing and inspecting indicated, as documented according to ASTM E 329; and with additional qualifications specified in individual Sections; and, where required by authorities having jurisdiction, that is acceptable to authorities.
  - 1. NRTL: A nationally recognized testing laboratory according to 29 CFR 1910.7.
  - 2. NVLAP: A testing agency accredited according to NIST's National Voluntary Laboratory Accreditation Program.
- G. Manufacturer's Technical Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to observe and inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.
- H. Factory-Authorized Service Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.

# 1.8 OUALITY CONTROL

- A. Owner Responsibilities: Where quality-control services are indicated as Owner's responsibility, Owner will engage a qualified testing agency to perform these services.
  - 1. Owner will furnish Contractor with names, addresses, and telephone numbers of testing agencies engaged and a description of types of testing and inspecting they are engaged to perform.
  - 2. Costs for retesting and reinspecting construction that replaces or is necessitated by work that failed to comply with the Contract Documents will be charged to Contractor, and the Contract Sum will be adjusted by Change Order.
- B. Contractor Responsibilities: Tests and inspections not explicitly assigned to Owner are Contractor's responsibility. Perform additional quality-control activities required to verify that the Work complies with requirements, whether specified or not.
  - 1. Unless otherwise indicated, provide quality-control services specified and those required by authorities having jurisdiction. Perform quality-control services required of Contractor by authorities having jurisdiction, whether specified or not.
  - 2. Where services are indicated as Contractor's responsibility, engage a qualified testing agency to perform these quality-control services.

- a. Contractor shall not employ same entity engaged by Owner, unless agreed to in writing by Owner.
- 3. Notify testing agencies at least 24 hours in advance of time when Work that requires testing or inspecting will be performed.
- 4. Where quality-control services are indicated as Contractor's responsibility, submit a certified written report, in duplicate, of each quality-control service.
- 5. Testing and inspecting requested by Contractor and not required by the Contract Documents are Contractor's responsibility.
- 6. Submit additional copies of each written report directly to authorities having jurisdiction, when they so direct.
- C. Manufacturer's Field Services: Where indicated, engage a factory-authorized service representative to inspect field-assembled components and equipment installation, including service connections. Report results in writing as specified in Section 013300 "Submittal Procedures."
- D. Manufacturer's Technical Services: Where indicated, engage a manufacturer's technical representative to observe and inspect the Work. Manufacturer's technical representative's services include participation in preinstallation conferences, examination of substrates and conditions, verification of materials, observation of Installer activities, inspection of completed portions of the Work, and submittal of written reports.
- E. Retesting/Reinspecting: Regardless of whether original tests or inspections were Contractor's responsibility, provide quality-control services, including retesting and reinspecting, for construction that replaced Work that failed to comply with the Contract Documents.
- F. Testing Agency Responsibilities: Cooperate with Architect, Commissioning Authority and Contractor in performance of duties. Provide qualified personnel to perform required tests and inspections.
  - 1. Notify Architect, Commissioning Authority, and Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.
  - 2. Determine the location from which test samples will be taken and in which in-situ tests are conducted.
  - 3. Conduct and interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from requirements.
  - 4. Submit a certified written report, in duplicate, of each test, inspection, and similar quality-control service through Contractor.
  - 5. Do not release, revoke, alter, or increase the Contract Document requirements or approve or accept any portion of the Work.
  - 6. Do not perform any duties of Contractor.
- G. Associated Services: Cooperate with agencies performing required tests, inspections, and similar quality-control services, and provide reasonable auxiliary services as requested. Notify agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:
  - 1. Access to the Work.
  - 2. Incidental labor and facilities necessary to facilitate tests and inspections.

- 3. Adequate quantities of representative samples of materials that require testing and inspecting. Assist agency in obtaining samples.
- 4. Facilities for storage and field curing of test samples.
- 5. Delivery of samples to testing agencies.
- 6. Preliminary design mix proposed for use for material mixes that require control by testing agency.
- 7. Security and protection for samples and for testing and inspecting equipment at Project site.
- H. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and -control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspecting.
  - 1. Schedule times for tests, inspections, obtaining samples, and similar activities.

## 1.9 SPECIAL TESTS AND INSPECTIONS

A. Special Tests and Inspections: Owner will engage a qualified special inspector to conduct special tests and inspections required by authorities having jurisdiction as the responsibility of Owner, as indicated in Statement of Special Inspections attached to this Section, and as follows:

# PART 2 - PRODUCTS (Not Used)

## PART 3 - EXECUTION

## 3.1 TEST AND INSPECTION LOG

- A. Test and Inspection Log: Prepare a record of tests and inspections. Include the following:
  - 1. Date test or inspection was conducted.
  - 2. Description of the Work tested or inspected.
  - 3. Date test or inspection results were transmitted to Architect.
  - 4. Identification of testing agency or special inspector conducting test or inspection.
- B. Maintain log at Project site. Post changes and revisions as they occur. Provide access to test and inspection log for Architect's, Commissioning Authority's, reference during normal working hours.

## 3.2 REPAIR AND PROTECTION

- A. General: On completion of testing, inspecting, sample taking, and similar services, repair damaged construction and restore substrates and finishes.
  - 1. Provide materials and comply with installation requirements specified in other Specification Sections or matching existing substrates and finishes. Restore patched areas and extend restoration into adjoining areas with durable seams that are as invisible as possible. Comply with the Contract Document requirements for cutting and patching in Section 017300 "Execution."
- B. Protect construction exposed by or for quality-control service activities.

Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality-control services. C. END OF SECTION 014000

#### SECTION 014200 - REFERENCES

#### PART 1 - GENERAL

# 1.1 DEFINITIONS

- A. General: Basic Contract definitions are included in the Conditions of the Contract.
- B. "Approved": When used to convey Architect's action on Contractor's submittals, applications, and requests, "approved" is limited to Architect's duties and responsibilities as stated in the Conditions of the Contract.
- C. "Directed": A command or instruction by Architect. Other terms including "requested," "authorized," "selected," "required," and "permitted" have the same meaning as "directed."
- D. "Indicated": Requirements expressed by graphic representations or in written form on Drawings, in Specifications, and in other Contract Documents. Other terms including "shown," "noted," "scheduled," and "specified" have the same meaning as "indicated."
- E. "Regulations": Laws, ordinances, statutes, and lawful orders issued by authorities having jurisdiction, and rules, conventions, and agreements within the construction industry that control performance of the Work.
- F. "Furnish": Supply and deliver to Project site, ready for unloading, unpacking, assembly, installation, and similar operations.
- G. "Install": Unload, temporarily store, unpack, assemble, erect, place, anchor, apply, work to dimension, finish, cure, protect, clean, and similar operations at Project site.
- H. "Provide": Furnish and install, complete and ready for the intended use.
- I. "Project Site": Space available for performing construction activities. The extent of Project site is shown on Drawings and may or may not be identical with the description of the land on which Project is to be built.

#### 1.2 INDUSTRY STANDARDS

- A. Applicability of Standards: Unless the Contract Documents include more stringent requirements, applicable construction industry standards have the same force and effect as if bound or copied directly into the Contract Documents to the extent referenced. Such standards are made a part of the Contract Documents by reference.
- B. Publication Dates: Comply with standards in effect as of date of the Contract Documents unless otherwise indicated.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 014200

## SECTION 016000 - PRODUCT REQUIREMENTS

#### PART 1 - GENERAL

## 1.1 SUMMARY

A. Section includes administrative and procedural requirements for selection of products for use in Project; product delivery, storage, and handling; manufacturers' standard warranties on products; special warranties; and comparable products.

## 1.2 DEFINITIONS

- A. Products: Items obtained for incorporating into the Work, whether purchased for Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.
  - 1. Named Products: Items identified by manufacturer's product name, including make or model number or other designation shown or listed in manufacturer's published product literature, that is current as of date of the Contract Documents.
  - 2. New Products: Items that have not previously been incorporated into another project or facility. Products salvaged or recycled from other projects are not considered new products.
  - 3. Comparable Product: Product that is demonstrated and approved through submittal process to have the indicated qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics that equal or exceed those of specified product.
- B. Basis-of-Design Product Specification: A specification in which a specific manufacturer's product is named and accompanied by the words "basis-of-design product," including make or model number or other designation, to establish the significant qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics for purposes of evaluating comparable products of additional manufacturers named in the specification.

#### 1.3 ACTION SUBMITTALS

- A. Comparable Product Requests: Submit request for consideration of each comparable product. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.
  - 1. Include data to indicate compliance with the requirements specified in "Comparable Products" Article.
  - 2. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within one week of receipt of a comparable product request. Architect will notify Contractor of approval or rejection of proposed comparable

product request within 15 days of receipt of request, or seven days of receipt of additional information or documentation, whichever is later.

- a. Form of Approval: As specified in Section 013300 "Submittal Procedures."
- b. Use product specified if Architect does not issue a decision on use of a comparable product request within time allocated.
- B. Basis-of-Design Product Specification Submittal: Comply with requirements in Section 013300 "Submittal Procedures." Show compliance with requirements.

# 1.4 QUALITY ASSURANCE

A. Compatibility of Options: If Contractor is given option of selecting between two or more products for use on Project, select product compatible with products previously selected, even if previously selected products were also options.

## 1.5 PRODUCT DELIVERY, STORAGE, AND HANDLING

A. Deliver, store, and handle products using means and methods that will prevent damage, deterioration, and loss, including theft and vandalism. Comply with manufacturer's written instructions.

# B. Delivery and Handling:

- 1. Schedule delivery to minimize long-term storage at Project site and to prevent overcrowding of construction spaces.
- 2. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.
- 3. Deliver products to Project site in an undamaged condition in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.
- 4. Inspect products on delivery to determine compliance with the Contract Documents and to determine that products are undamaged and properly protected.

# C. Storage:

- 1. Store products to allow for inspection and measurement of quantity or counting of units.
- 2. Store materials in a manner that will not endanger Project structure.
- 3. Store products that are subject to damage by the elements, under cover in a weathertight enclosure above ground, with ventilation adequate to prevent condensation.
- 4. Protect foam plastic from exposure to sunlight, except to extent necessary for period of installation and concealment.
- 5. Comply with product manufacturer's written instructions for temperature, humidity, ventilation, and weather-protection requirements for storage.
- 6. Protect stored products from damage and liquids from freezing.
- 7. Provide a secure location and enclosure at Project site for storage of materials and equipment by Owner's construction forces. Coordinate location with Owner.

## 1.6 PRODUCT WARRANTIES

- A. Warranties specified in other Sections shall be in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer's disclaimers and limitations on product warranties do not relieve Contractor of obligations under requirements of the Contract Documents.
  - 1. Special Warranty: Written warranty required by the Contract Documents to provide specific rights for Owner.
- B. Special Warranties: Prepare a written document that contains appropriate terms and identification, ready for execution.
  - 1. Specified Form: When specified forms are included with the Specifications, prepare a written document using indicated form properly executed.
  - 2. See other Sections for specific content requirements and particular requirements for submitting special warranties.
- C. Submittal Time: Comply with requirements in Section 017700 "Closeout Procedures."

#### PART 2 - PRODUCTS

# 2.1 PRODUCT SELECTION PROCEDURES

- A. General Product Requirements: Provide products that comply with the Contract Documents, are undamaged and, unless otherwise indicated, are new at time of installation.
  - 1. Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.
  - 2. Standard Products: If available, and unless custom products or nonstandard options are specified, provide standard products of types that have been produced and used successfully in similar situations on other projects.
  - 3. Owner reserves the right to limit selection to products with warranties not in conflict with requirements of the Contract Documents.
  - 4. Where products are accompanied by the term "as selected," Architect will make selection
  - 5. Descriptive, performance, and reference standard requirements in the Specifications establish salient characteristics of products.

## B. Product Selection Procedures:

# 1. Products:

a. Non-restricted List: Where Specifications include a list of names of both available manufacturers and products, provide one of the products listed, or an unnamed product, that complies with requirements. Comply with requirements in "Comparable Products" Article for consideration of an unnamed product.

# 2.2 COMPARABLE PRODUCTS

- A. Conditions for Consideration: Architect will consider Contractor's request for comparable product when the following conditions are satisfied. If the following conditions are not satisfied, Architect may return requests without action, except to record noncompliance with these requirements:
  - 1. Evidence that the proposed product does not require revisions to the Contract Documents, that it is consistent with the Contract Documents and will produce the indicated results, and that it is compatible with other portions of the Work.
  - 2. Detailed comparison of significant qualities of proposed product with those named in the Specifications. Significant qualities include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated.
  - 3. Evidence that proposed product provides specified warranty.
  - 4. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners, if requested.
  - 5. Samples, if requested.

PART 3 - EXECUTION (Not Used)

END OF SECTION 016000

#### SECTION 017300 - EXECUTION

#### PART 1 - GENERAL

# 1.1 SUMMARY

- A. Section includes general administrative and procedural requirements governing execution of the Work including, but not limited to, the following:
  - 1. Construction layout.
  - 2. Installation of the Work.
  - 3. Cutting and patching.
  - 4. Coordination of Owner-installed products.
  - 5. Progress cleaning.
  - 6. Starting and adjusting.
  - 7. Protection of installed construction.

#### 1.2 DEFINITIONS

- A. Cutting: Removal of in-place construction necessary to permit installation or performance of other work.
- B. Patching: Fitting and repair work required to restore construction to original conditions after installation of other work.

# 1.3 QUALITY ASSURANCE

- A. Cutting and Patching: Comply with requirements for and limitations on cutting and patching of construction elements.
  - 1. Structural Elements: When cutting and patching structural elements, notify Architect of locations and details of cutting and await directions from Architect before proceeding. Shore, brace, and support structural elements during cutting and patching. Do not cut and patch structural elements in a manner that could change their load-carrying capacity or increase deflection
  - 2. Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or that results in increased maintenance or decreased operational life or safety. Operational elements include the following:
    - a. Primary operational systems and equipment.
    - b. Fire separation assemblies.
    - c. Air or smoke barriers.
    - d. Fire-suppression systems.
    - e. Mechanical systems piping and ducts.

- f. Control systems.
- g. Communication systems.
- h. Fire-detection and -alarm systems.
- i. Conveying systems.
- j. Electrical wiring systems.
- k. Operating systems of special construction.
- 3. Other Construction Elements: Do not cut and patch other construction elements or components in a manner that could change their load-carrying capacity, that results in reducing their capacity to perform as intended, or that results in increased maintenance or decreased operational life or safety. Other construction elements include but are not limited to the following:
  - a. Water, moisture, or vapor barriers.
  - b. Membranes and flashings.
  - c. Exterior curtain-wall construction.
  - d. Sprayed fire-resistive material.
  - e. Equipment supports.
  - f. Piping, ductwork, vessels, and equipment.
  - g. Noise- and vibration-control elements and systems.
- 4. Visual Elements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch exposed construction in a manner that would, in Architect's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.
- B. Cutting and Patching Conference: Before proceeding, meet at Project site with parties involved in cutting and patching, including mechanical and electrical trades. Review areas of potential interference and conflict. Coordinate procedures and resolve potential conflicts before proceeding.
- C. Manufacturer's Installation Instructions: Obtain and maintain on-site manufacturer's written recommendations and instructions for installation of products and equipment.

# PART 2 - PRODUCTS

## 2.1 MATERIALS

- A. In-Place Materials: Use materials for patching identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible.
  - 1. If identical materials are unavailable or cannot be used, use materials that, when installed, will provide a match acceptable to Architect for the visual and functional performance of in-place materials.

## PART 3 - EXECUTION

#### 3.1 EXAMINATION

- A. Existing Conditions: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning sitework, investigate and verify the existence and location of underground utilities, mechanical and electrical systems, and other construction affecting the Work.
  - 1. Before construction, verify the location and invert elevation at points of connection of sanitary sewer, storm sewer, and water-service piping; underground electrical services, and other utilities.
  - 2. Furnish location data for work related to Project that must be performed by public utilities serving Project site.
- B. Examination and Acceptance of Conditions: Before proceeding with each component of the Work, examine substrates, areas, and conditions, with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.
  - 1. Examine roughing-in for mechanical and electrical systems to verify actual locations of connections before equipment and fixture installation.
  - 2. Examine walls, floors, and roofs for suitable conditions where products and systems are to be installed.
  - 3. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.
- C. Written Report: Where a written report listing conditions detrimental to performance of the Work is required by other Sections, include the following:
  - 1. Description of the Work.
  - 2. List of unacceptable installation tolerances.
  - 3. Recommended corrections.
- D. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.

#### 3.2 PREPARATION

- A. Existing Utility Information: Furnish information to local utility that is necessary to adjust, move, or relocate existing utility structures, utility poles, lines, services, or other utility appurtenances located in or affected by construction. Coordinate with authorities having jurisdiction.
- B. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.

- C. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.
- D. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents caused by differing field conditions outside the control of Contractor, submit a request for information to Architect according to requirements in Section 013100 "Project Management and Coordination."

#### 3.3 CONSTRUCTION LAYOUT

- A. Verification: Before proceeding to lay out the Work, verify layout information shown on Drawings, in relation to the property survey and existing benchmarks. If discrepancies are discovered, notify Architect promptly.
- B. Record Log: Maintain a log of layout control work. Record deviations from required lines and levels. Include beginning and ending dates and times of surveys, weather conditions, name and duty of each survey party member, and types of instruments and tapes used. Make the log available for reference by Architect.

## 3.4 FIELD ENGINEERING

- A. Reference Points: Locate existing permanent benchmarks, control points, and similar reference points before beginning the Work. Preserve and protect permanent benchmarks and control points during construction operations.
  - 1. Do not change or relocate existing benchmarks or control points without prior written approval of Architect. Report lost or destroyed permanent benchmarks or control points promptly. Report the need to relocate permanent benchmarks or control points to Architect before proceeding.
  - 2. Replace lost or destroyed permanent benchmarks and control points promptly. Base replacements on the original survey control points.

# 3.5 INSTALLATION

- A. General: Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.
  - 1. Make vertical work plumb and make horizontal work level.
  - 2. Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.
  - 3. Conceal pipes, ducts, and wiring in finished areas unless otherwise indicated.
  - 4. Maintain minimum headroom clearance of 96 inches (2440 mm) in occupied spaces and 90 inches (2300 mm) in unoccupied spaces.
- B. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.

- C. Install products at the time and under conditions that will ensure the best possible results. Maintain conditions required for product performance until Substantial Completion.
- D. Conduct construction operations so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy.
- E. Sequence the Work and allow adequate clearances to accommodate movement of construction items on site and placement in permanent locations.
- F. Tools and Equipment: Do not use tools or equipment that produce harmful noise levels.
- G. Templates: Obtain and distribute to the parties involved templates for work specified to be factory prepared and field installed. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing products to comply with indicated requirements.
- H. Attachment: Provide blocking and attachment plates and anchors and fasteners of adequate size and number to securely anchor each component in place, accurately located and aligned with other portions of the Work. Where size and type of attachments are not indicated, verify size and type required for load conditions.
  - 1. Mounting Heights: Where mounting heights are not indicated, mount components at heights directed by Architect.
  - 2. Allow for building movement, including thermal expansion and contraction.
  - 3. Coordinate installation of anchorages. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.
- I. Joints: Make joints of uniform width. Where joint locations in exposed work are not indicated, arrange joints for the best visual effect. Fit exposed connections together to form hairline joints.
- J. Hazardous Materials: Use products, cleaners, and installation materials that are not considered hazardous.

# 3.6 CUTTING AND PATCHING

- A. Cutting and Patching, General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.
  - 1. Cut in-place construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.
- B. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during installation or cutting and patching operations, by methods and with materials so as not to void existing warranties.
- C. Temporary Support: Provide temporary support of work to be cut.

- D. Protection: Protect in-place construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.
- E. Adjacent Occupied Areas: Where interference with use of adjoining areas or interruption of free passage to adjoining areas is unavoidable, coordinate cutting and patching according to requirements in Section 011000 "Summary."
- F. Existing Utility Services and Mechanical/Electrical Systems: Where existing services/systems are required to be removed, relocated, or abandoned, bypass such services/systems before cutting to prevent interruption to occupied areas.
- G. Cutting: Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.
  - 1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots neatly to minimum size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
  - 2. Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
  - 3. Concrete and Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
  - 4. Excavating and Backfilling: Comply with requirements in applicable Sections where required by cutting and patching operations.
  - 5. Mechanical and Electrical Services: Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after cutting.
  - 6. Proceed with patching after construction operations requiring cutting are complete.
- H. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other work. Patch with durable seams that are as invisible as practicable. Provide materials and comply with installation requirements specified in other Sections, where applicable.
  - 1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate physical integrity of installation.
  - 2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will minimize evidence of patching and refinishing.
    - a. Clean piping, conduit, and similar features before applying paint or other finishing materials
    - b. Restore damaged pipe covering to its original condition.
  - 3. Floors and Walls: Where walls or partitions that are removed extend one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform finish, color, texture, and appearance. Remove in-place floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.

- a. Where patching occurs in a painted surface, prepare substrate and apply primer and intermediate paint coats appropriate for substrate over the patch, and apply final paint coat over entire unbroken surface containing the patch. Provide additional coats until patch blends with adjacent surfaces.
- 4. Ceilings: Patch, repair, or rehang in-place ceilings as necessary to provide an even-plane surface of uniform appearance.
- 5. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weathertight condition and ensures thermal and moisture integrity of building enclosure.
- I. Cleaning: Clean areas and spaces where cutting and patching are performed. Remove paint, mortar, oils, putty, and similar materials from adjacent finished surfaces.

#### 3.7 OWNER-INSTALLED PRODUCTS

- A. Site Access: Provide access to Project site for Owner's construction personnel.
- B. Coordination: Coordinate construction and operations of the Work with work performed by Owner's construction personnel.
  - 1. Construction Schedule: Inform Owner of Contractor's preferred construction schedule for Owner's portion of the Work. Adjust construction schedule based on a mutually agreeable timetable. Notify Owner if changes to schedule are required due to differences in actual construction progress.
  - 2. Pre-Installation Conferences: Include Owner's construction personnel at pre-installation conferences covering portions of the Work that are to receive Owner's work. Attend pre-installation conferences conducted by Owner's construction personnel if portions of the Work depend on Owner's construction.

#### 3.8 PROGRESS CLEANING

- A. General: Clean Project site and work areas daily, including common areas. Enforce requirements strictly. Dispose of materials lawfully.
  - 1. Comply with requirements in NFPA 241 for removal of combustible waste materials and debris.
  - 2. Do not hold waste materials more than seven days during normal weather or three days if the temperature is expected to rise above 80 deg F (27 deg C).
  - 3. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.
    - a. Use containers intended for holding waste materials of type to be stored.
  - 4. Coordinate progress cleaning for joint-use areas where Contractor and other contractors are working concurrently.
- B. Site: Maintain Project site free of waste materials and debris.

- C. Work Areas: Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the Work.
  - 1. Remove liquid spills promptly.
  - 2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.
- D. Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.
- E. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.
- F. Exposed Surfaces in Finished Areas: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.
- G. Waste Disposal: Do not bury or burn waste materials on-site. Do not wash waste materials down sewers or into waterways. Comply with waste disposal requirements in Section 015000 "Temporary Facilities and Controls."
- H. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.
- I. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.
- J. Limiting Exposures: Supervise construction operations to assure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

#### 3.9 STARTING AND ADJUSTING

- A. Coordinate startup and adjusting of equipment and operating components with requirements in Section 019113 "General Commissioning Requirements."
- B. Start equipment and operating components to confirm proper operation. Remove malfunctioning units, replace with new units, and retest.
- C. Adjust equipment for proper operation. Adjust operating components for proper operation without binding.
- D. Test each piece of equipment to verify proper operation. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.
- E. Manufacturer's Field Service: Comply with qualification requirements in Section 014000 "Quality Requirements."

# 3.10 PROTECTION OF INSTALLED CONSTRUCTION

- A. Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.
- B. Comply with manufacturer's written instructions for temperature and relative humidity.

#### SECTION 017700 - CLOSEOUT PROCEDURES

#### PART 1 - GENERAL

# 1.1 SUMMARY

- A. Section includes administrative and procedural requirements for contract closeout, including, but not limited to, the following:
  - 1. Substantial Completion procedures.
  - 2. Final completion procedures.
  - 3. Warranties.
  - 4. Final cleaning.
  - 5. Repair of the Work.
- B. See also all Lighting and Electrical Drawings and Specifications for final completion requirements including but not limited to testing, aiming, adjusting, reporting, cleaning, and Owner training.

### 1.2 ACTION SUBMITTALS

- A. Product Data: For cleaning agents.
- B. Contractor's List of Incomplete Items: Initial submittal at Substantial Completion.
- C. Certified List of Incomplete Items: Final submittal at Final Completion.

### 1.3 CLOSEOUT SUBMITTALS

- A. Certificates of Release: From authorities having jurisdiction.
- B. Certificate of Insurance: For continuing coverage.
- C. Field Report: For pest control inspection.

### 1.4 MAINTENANCE MATERIAL SUBMITTALS

A. Schedule of Maintenance Material Items: For maintenance material submittal items specified in other Sections.

### 1.5 SUBSTANTIAL COMPLETION PROCEDURES

- A. Contractor's List of Incomplete Items: Prepare and submit a list of items to be completed and corrected (Contractor's punch list), indicating the value of each item on the list and reasons why the Work is incomplete.
- B. Submittals Prior to Substantial Completion: Complete the following a minimum of 10 days prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.
  - 1. Certificates of Release: Obtain and submit releases from authorities having jurisdiction permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
  - 2. Submit closeout submittals specified in other Division 01 Sections, including project record documents, operation and maintenance manuals, final completion construction photographic documentation, damage or settlement surveys, property surveys, and similar final record information.
  - 3. Submit closeout submittals specified in individual Sections, including specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
  - 4. Submit maintenance material submittals specified in individual Sections, including tools, spare parts, extra materials, and similar items, and deliver to location designated by Architect. Label with manufacturer's name and model number where applicable.
    - a. Schedule of Maintenance Material Items: Prepare and submit schedule of maintenance material submittal items, including name and quantity of each item and name and number of related Specification Section. Obtain Architect's signature for receipt of submittals.
  - 5. Submit test/adjust/balance records.
  - 6. Submit changeover information related to Owner's occupancy, use, operation, and maintenance.
- C. Procedures Prior to Substantial Completion: Complete the following a minimum of 10 days prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.
  - 1. Advise Owner of pending insurance changeover requirements.
  - 2. Make final changeover of permanent locks and deliver keys to Owner. Advise Owner's personnel of changeover in security provisions.
  - 3. Complete startup and testing of systems and equipment.
  - 4. Perform preventive maintenance on equipment used prior to Substantial Completion.
  - 5. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems. Submit demonstration and training video recordings specified in Section 017900 "Demonstration and Training."
  - 6. Advise Owner of changeover in heat and other utilities.
  - 7. Participate with Owner in conducting inspection and walkthrough with local emergency responders.
  - 8. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.
  - 9. Complete final cleaning requirements, including touchup painting.

- 10. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.
- D. Inspection: Submit a written request for inspection to determine Substantial Completion a minimum of 10 days prior to date the work will be completed and ready for final inspection and tests. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare the Certificate of Substantial Completion after inspection or will notify Contractor of items, either on Contractor's list or additional items identified by Architect, that must be completed or corrected before certificate will be issued.
  - 1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.
  - 2. Results of completed inspection will form the basis of requirements for final completion.

#### 1.6 FINAL COMPLETION PROCEDURES

- A. Submittals Prior to Final Completion: Before requesting final inspection for determining final completion, complete the following:
  - 1. Certified List of Incomplete Items: Submit certified copy of Architect's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Architect. Certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
  - 2. Certificate of Insurance: Submit evidence of final, continuing insurance coverage complying with insurance requirements.
  - 3. Submit pest-control final inspection report.
- B. Inspection: Submit a written request for final inspection to determine acceptance a minimum of 10 days prior to date the work will be completed and ready for final inspection and tests. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare a final Certificate for Payment after inspection or will notify Contractor of construction that must be completed or corrected before certificate will be issued.
  - 1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.

### 1.7 LIST OF INCOMPLETE ITEMS (PUNCH LIST)

- A. Organization of List: Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by Contractor that are outside the limits of construction.
  - 1. Organize list of spaces in sequential order, starting with exterior areas first and proceeding from lowest floor to highest floor.
  - 2. Organize items applying to each space by major element, including categories for ceiling, individual walls, floors, equipment, and building systems.
  - 3. Include the following information at the top of each page:
    - a. Project name.

- b. Date.
- c. Name of Architect.
- d. Name of Contractor.
- e. Page number.
- 4. Submit list of incomplete items in the following format:
  - a. MS Excel electronic file. Architect will return annotated file.

#### 1.8 SUBMITTAL OF PROJECT WARRANTIES

- A. Time of Submittal: Submit written warranties on request of Architect for designated portions of the Work where commencement of warranties other than date of Substantial Completion is indicated, or when delay in submittal of warranties might limit Owner's rights under warranty.
- B. Partial Occupancy: Submit properly executed warranties within 15 days of completion of designated portions of the Work that are completed and occupied or used by Owner during construction period by separate agreement with Contractor.
- C. Organize warranty documents into an orderly sequence based on the table of contents of Project Manual.
  - 1. Bind warranties and bonds in heavy-duty, three-ring, vinyl-covered, loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2-by-11-inch (215-by-280-mm) paper.
  - 2. Provide heavy paper dividers with plastic-covered tabs for each separate warranty. Mark tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product and the name, address, and telephone number of Installer.
  - 3. Identify each binder on the front and spine with the typed or printed title "WARRANTIES," Project name, and name of Contractor.
  - 4. Warranty Electronic File: Scan warranties and bonds and assemble complete warranty and bond submittal package into a single indexed electronic PDF file with links enabling navigation to each item. Provide bookmarked table of contents at beginning of document.
- D. Provide additional copies of each warranty to include in operation and maintenance manuals.

#### PART 2 - PRODUCTS

#### 2.1 MATERIALS

A. Cleaning Agents: Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.

#### PART 3 - EXECUTION

#### 3.1 FINAL CLEANING

- A. General: Perform final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.
- B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to condition expected in an average commercial building cleaning and maintenance program. Comply with manufacturer's written instructions.
  - 1. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a designated portion of Project:
    - a. Clean Project site, yard, and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and other foreign substances.
    - b. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.
    - c. Rake grounds that are neither planted nor paved to a smooth, even-textured surface.
    - d. Remove tools, construction equipment, machinery, and surplus material from Project site.
    - e. Remove snow and ice to provide safe access to building.
    - f. Clean exposed exterior and interior hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.
    - g. Remove debris and surface dust from limited access spaces, including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics, and similar spaces.
    - h. Sweep concrete floors broom clean in unoccupied spaces.
    - i. Vacuum carpet and similar soft surfaces, removing debris and excess nap; clean according to manufacturer's recommendations if visible soil or stains remain.
    - j. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other noticeable, vision-obscuring materials. Polish mirrors and glass, taking care not to scratch surfaces.
    - k. Remove labels that are not permanent.
    - 1. Wipe surfaces of mechanical and electrical equipment [, elevator equipment,] and similar equipment. Remove excess lubrication, paint and mortar droppings, and other foreign substances.
    - m. Clean plumbing fixtures to a sanitary condition, free of stains, including stains resulting from water exposure.
    - n. Replace disposable air filters and clean permanent air filters. Clean exposed surfaces of diffusers, registers, and grills.
    - o. Clean ducts, blowers, and coils if units were operated without filters during construction or that display contamination with particulate matter on inspection.
      - 1) Clean HVAC system in compliance with NADCA Standard 1992-01. Provide written report on completion of cleaning.

- p. Clean light fixtures, lamps, globes, and reflectors to function with full efficiency.
- q. Leave Project clean and ready for occupancy.
- C. Pest Control: Comply with pest control requirements in Section 015000 "Temporary Facilities and Controls." Prepare written report.
- D. Construction Waste Disposal: Comply with waste disposal requirements in Section 015000 "Temporary Facilities and Controls."

### 3.2 REPAIR OF THE WORK

- A. Complete repair and restoration operations before requesting inspection for determination of Substantial Completion.
- B. Repair or remove and replace defective construction. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment. Where damaged or worn items cannot be repaired or restored, provide replacements. Remove and replace operating components that cannot be repaired. Restore damaged construction and permanent facilities used during construction to specified condition.
  - 1. Remove and replace chipped, scratched, and broken glass, reflective surfaces, and other damaged transparent materials.
  - 2. Touch up and otherwise repair and restore marred or exposed finishes and surfaces. Replace finishes and surfaces that that already show evidence of repair or restoration.
    - a. Do not paint over "UL" and other required labels and identification, including mechanical and electrical nameplates. Remove paint applied to required labels and identification.
  - 3. Replace parts subject to operating conditions during construction that may impede operation or reduce longevity.
  - 4. Replace burned-out bulbs, bulbs noticeably dimmed by hours of use, and defective and noisy starters in fluorescent and mercury vapor fixtures to comply with requirements for new fixtures.

#### SECTION 017823 - OPERATION AND MAINTENANCE DATA

#### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. Section includes administrative and procedural requirements for preparing operation and maintenance manuals, including the following:
  - 1. Operation and maintenance documentation directory.
  - 2. Emergency manuals.
  - 3. Operation manuals for systems, subsystems, and equipment.
  - 4. Product maintenance manuals.
  - 5. Systems and equipment maintenance manuals.

#### 1.2 DEFINITIONS

- A. System: An organized collection of parts, equipment, or subsystems united by regular interaction.
- B. Subsystem: A portion of a system with characteristics similar to a system.

### 1.3 CLOSEOUT SUBMITTALS

- A. Manual Content: Operations and maintenance manual content is specified in individual Specification Sections to be reviewed at the time of Section submittals. Submit reviewed manual content formatted and organized as required by this Section.
  - 1. Architect will comment on whether content of operations and maintenance submittals are acceptable.
  - 2. Where applicable, clarify and update reviewed manual content to correspond to revisions and field conditions.
- B. Format: Submit operations and maintenance manuals in both of the following formats:
  - 1. PDF electronic file. Assemble each manual into a composite electronically indexed file. Submit on digital media acceptable to Architect.
    - Name each indexed document file in composite electronic index with applicable item name. Include a complete electronically linked operation and maintenance directory.
    - b. Enable inserted reviewer Comments on draft submittals.
  - 2. One paper copy. Include a complete operation and maintenance directory. Enclose title pages and directories in clear plastic sleeves. Architect will return the copy.

- C. Initial Manual Submittal: Submit draft copy of each manual at least 30 days before commencing demonstration and training. Architect will comment on whether general scope and content of manual are acceptable.
- D. Final Manual Submittal: Submit each manual in final form prior to requesting inspection for Substantial Completion and at least 15 days before commencing demonstration and training. Architect will return copy with comments.
  - 1. Correct or revise each manual to comply with Architect's comments. Submit copies of each corrected manual within 15 days of receipt of Architect's comments and prior to commencing demonstration and training.

#### PART 2 - PRODUCTS

### 2.1 OPERATION AND MAINTENANCE DOCUMENTATION DIRECTORY

- A. Directory: Prepare a single, comprehensive directory of emergency, operation, and maintenance data and materials, listing items and their location to facilitate ready access to desired information. Include a section in the directory for each of the following:
  - 1. List of documents.
  - 2. List of systems.
  - 3. List of equipment.
  - 4. Table of contents.
- B. List of Systems and Subsystems: List systems alphabetically. Include references to operation and maintenance manuals that contain information about each system.
- C. List of Equipment: List equipment for each system, organized alphabetically by system. For pieces of equipment not part of system, list alphabetically in separate list.
- D. Tables of Contents: Include a table of contents for each emergency, operation, and maintenance manual.
- E. Identification: In the documentation directory and in each operation and maintenance manual, identify each system, subsystem, and piece of equipment with same designation used in the Contract Documents. If no designation exists, assign a designation according to ASHRAE Guideline 4, "Preparation of Operating and Maintenance Documentation for Building Systems."

### 2.2 REQUIREMENTS FOR EMERGENCY, OPERATION, AND MAINTENANCE MANUALS

- A. Organization: Unless otherwise indicated, organize each manual into a separate section for each system and subsystem, and a separate section for each piece of equipment not part of a system. Each manual shall contain the following materials, in the order listed:
  - 1. Title page.
  - 2. Table of contents.
  - 3. Manual contents.
- B. Title Page: Include the following information:

- 1. Subject matter included in manual.
- 2. Name and address of Project.
- 3. Name and address of Owner.
- 4. Date of submittal.
- 5. Name and contact information for Contractor.
- C. Table of Contents: List each product included in manual, identified by product name, indexed to the content of the volume, and cross-referenced to Specification Section number in Project Manual.
  - 1. If operation or maintenance documentation requires more than one volume to accommodate data, include comprehensive table of contents for all volumes in each volume of the set.
- D. Manual Contents: Organize into sets of manageable size. Arrange contents alphabetically by system, subsystem, and equipment. If possible, assemble instructions for subsystems, equipment, and components of one system into a single binder.
- E. Manuals, Electronic Files: Submit manuals in the form of a multiple file composite electronic PDF file for each manual type required.
  - 1. Electronic Files: Use electronic files prepared by manufacturer where available. Where scanning of paper documents is required, configure scanned file for minimum readable file size.
  - 2. File Names and Bookmarks: Enable bookmarking of individual documents based on file names. Name document files to correspond to system, subsystem, and equipment names used in manual directory and table of contents. Group documents for each system and subsystem into individual composite bookmarked files, then create composite manual, so that resulting bookmarks reflect the system, subsystem, and equipment names in a readily navigated file tree. Configure electronic manual to display bookmark panel on opening file.
- F. Manuals, Paper Copy: Submit manuals in the form of hard copy, bound and labeled volumes.
  - 1. Binders: Heavy-duty, three-ring, vinyl-covered, loose-leaf binders, in thickness necessary to accommodate contents, sized to hold 8-1/2-by-11-inch (215-by-280-mm) paper; with clear plastic sleeve on spine to hold label describing contents and with pockets inside covers to hold folded oversize sheets.
    - a. If two or more binders are necessary to accommodate data of a system, organize data in each binder into groupings by subsystem and related components. Cross-reference other binders if necessary to provide essential information for proper operation or maintenance of equipment or system.
    - b. Identify each binder on front and spine, with printed title "OPERATION AND MAINTENANCE MANUAL," Project title or name, subject matter of contents, and indicate Specification Section number on bottom of spine. Indicate volume number for multiple-volume sets.
  - 2. Dividers: Heavy-paper dividers with plastic-covered tabs for each section of the manual. Mark each tab to indicate contents. Include typed list of products and major components

- of equipment included in the section on each divider, cross-referenced to Specification Section number and title of Project Manual.
- 3. Protective Plastic Sleeves: Transparent plastic sleeves designed to enclose diagnostic software storage media for computerized electronic equipment.
- 4. Supplementary Text: Prepared on 8-1/2-by-11-inch (215-by-280-mm) white bond paper.
- 5. Drawings: Attach reinforced, punched binder tabs on drawings and bind with text.
  - a. If oversize drawings are necessary, fold drawings to same size as text pages and use as foldouts.
  - b. If drawings are too large to be used as foldouts, fold and place drawings in labeled envelopes and bind envelopes in rear of manual. At appropriate locations in manual, insert typewritten pages indicating drawing titles, descriptions of contents, and drawing locations.

#### 2.3 EMERGENCY MANUALS

- A. Content: Organize manual into a separate section for each of the following:
  - 1. Type of emergency.
  - 2. Emergency instructions.
  - 3. Emergency procedures.
- B. Type of Emergency: Where applicable for each type of emergency indicated below, include instructions and procedures for each system, subsystem, piece of equipment, and component:
  - 1. Fire.
  - 2. Flood.
  - 3. Gas leak.
  - 4. Water leak.
  - 5. Power failure.
  - 6. Water outage.
  - 7. System, subsystem, or equipment failure.
- C. Emergency Instructions: Describe and explain warnings, trouble indications, error messages, and similar codes and signals. Include responsibilities of Owner's operating personnel for notification of Installer, supplier, and manufacturer to maintain warranties.
- D. Emergency Procedures: Include the following, as applicable:
  - 1. Instructions on stopping.
  - 2. Shutdown instructions for each type of emergency.
  - 3. Operating instructions for conditions outside normal operating limits.
  - 4. Required sequences for electric or electronic systems.
  - 5. Special operating instructions and procedures.

### 2.4 OPERATION MANUALS

A. Content: In addition to requirements in this Section, include operation data required in individual Specification Sections and the following information:

- 1. System, subsystem, and equipment descriptions. Use designations for systems and equipment indicated on Contract Documents.
- 2. Operating standards.
- 3. Operating procedures.
- 4. Operating logs.
- 5. Wiring diagrams.
- 6. Control diagrams.
- 7. Piped system diagrams.
- 8. Precautions against improper use.

### B. Descriptions: Include the following:

- 1. Product name and model number. Use designations for products indicated on Contract Documents.
- 2. Manufacturer's name.
- 3. Equipment identification with serial number of each component.
- 4. Equipment function.
- 5. Operating characteristics.
- 6. Limiting conditions.
- 7. Performance curves.
- 8. Engineering data and tests.
- 9. Complete nomenclature and number of replacement parts.

# C. Operating Procedures: Include the following, as applicable:

- 1. Startup procedures.
- 2. Equipment or system break-in procedures.
- 3. Routine and normal operating instructions.
- 4. Regulation and control procedures.
- 5. Instructions on stopping.
- 6. Normal shutdown instructions.
- 7. Seasonal and weekend operating instructions.
- 8. Required sequences for electric or electronic systems.
- 9. Special operating instructions and procedures.
- D. Systems and Equipment Controls: Describe the sequence of operation, and diagram controls as installed.
- E. Piped Systems: Diagram piping as installed, and identify color-coding where required for identification.

#### 2.5 PRODUCT MAINTENANCE MANUALS

- A. Content: Organize manual into a separate section for each product, material, and finish. Include source information, product information, maintenance procedures, repair materials and sources, and warranties and bonds, as described below.
- B. Source Information: List each product included in manual, identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference

Specification Section number and title in Project Manual and drawing or schedule designation or identifier where applicable.

- C. Product Information: Include the following, as applicable:
  - 1. Product name and model number.
  - 2. Manufacturer's name.
  - 3. Color, pattern, and texture.
  - 4. Material and chemical composition.
  - 5. Reordering information for specially manufactured products.
- D. Maintenance Procedures: Include manufacturer's written recommendations and the following:
  - 1. Inspection procedures.
  - 2. Types of cleaning agents to be used and methods of cleaning.
  - 3. Schedule for routine cleaning and maintenance.
  - 4. Repair instructions.
- E. Repair Materials and Sources: Include lists of materials and local sources of materials and related services.
- F. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.
  - 1. Include procedures to follow and required notifications for warranty claims.

### 2.6 SYSTEMS AND EQUIPMENT MAINTENANCE MANUALS

- A. Content: For each system, subsystem, and piece of equipment not part of a system, include source information, manufacturers' maintenance documentation, maintenance procedures, maintenance and service schedules, spare parts list and source information, maintenance service contracts, and warranty and bond information, as described below.
- B. Source Information: List each system, subsystem, and piece of equipment included in manual, identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual and drawing or schedule designation or identifier where applicable.
- C. Manufacturers' Maintenance Documentation: Manufacturers' maintenance documentation including the following information for each component part or piece of equipment:
  - 1. Standard maintenance instructions and bulletins.
  - 2. Drawings, diagrams, and instructions required for maintenance, including disassembly and component removal, replacement, and assembly.
  - 3. Identification and nomenclature of parts and components.
  - 4. List of items recommended to be stocked as spare parts.
- D. Maintenance Procedures: Include the following information and items that detail essential maintenance procedures:

- 1. Test and inspection instructions.
- Troubleshooting guide. 2.
- 3. Precautions against improper maintenance.
- Disassembly; component removal, repair, and replacement; and reassembly instructions.
- Aligning, adjusting, and checking instructions. 5.
- Demonstration and training video recording, if available. 6.
- Maintenance and Service Schedules: Include service and lubrication requirements, list of E. required lubricants for equipment, and separate schedules for preventive and routine maintenance and service with standard time allotment.
  - 1. Scheduled Maintenance and Service: Tabulate actions for daily, weekly, monthly, quarterly, semiannual, and annual frequencies.
  - Maintenance and Service Record: Include manufacturers' forms for recording 2. maintenance.
- Spare Parts List and Source Information: Include lists of replacement and repair parts, with F. parts identified and cross-referenced to manufacturers' maintenance documentation and local sources of maintenance materials and related services.
- G. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.
  - 1. Include procedures to follow and required notifications for warranty claims.

#### PART 3 - EXECUTION

#### MANUAL PREPARATION 3.1

- Operation and Maintenance Documentation Directory: Prepare a separate manual that provides A. an organized reference to emergency, operation, and maintenance manuals.
- B. Emergency Manual: Assemble a complete set of emergency information indicating procedures for use by emergency personnel and by Owner's operating personnel for types of emergencies indicated.
- C. Product Maintenance Manual: Assemble a complete set of maintenance data indicating care and maintenance of each product, material, and finish incorporated into the Work.
- D. Operation and Maintenance Manuals: Assemble a complete set of operation and maintenance data indicating operation and maintenance of each system, subsystem, and piece of equipment not part of a system.
  - 1. Engage a factory-authorized service representative to assemble and prepare information for each system, subsystem, and piece of equipment not part of a system.
  - Prepare a separate manual for each system and subsystem, in the form of an instructional 2. manual for use by Owner's operating personnel.
- E. Manufacturers' Data: Where manuals contain manufacturers' standard printed data, include only sheets pertinent to product or component installed. Mark each sheet to identify each product or component incorporated into the Work. If data include more than one item in a tabular format,

identify each item using appropriate references from the Contract Documents. Identify data applicable to the Work and delete references to information not applicable.

- 1. Prepare supplementary text if manufacturers' standard printed data are not available and where the information is necessary for proper operation and maintenance of equipment or systems.
- F. Drawings: Prepare drawings supplementing manufacturers' printed data to illustrate the relationship of component parts of equipment and systems and to illustrate control sequence and flow diagrams. Coordinate these drawings with information contained in record Drawings to ensure correct illustration of completed installation.
  - 1. Do not use original project record documents as part of operation and maintenance manuals.
  - 2. Comply with requirements of newly prepared record Drawings in Section 017839 "Project Record Documents."
- G. Comply with Section 017700 "Closeout Procedures" for schedule for submitting operation and maintenance documentation.

#### SECTION 017839 - PROJECT RECORD DOCUMENTS

#### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. Section includes administrative and procedural requirements for project record documents, including the following:
  - 1. Record Drawings.
  - 2. Record Specifications.
  - 3. Record Product Data.
  - 4. Miscellaneous record submittals.

### 1.2 CLOSEOUT SUBMITTALS

- A. Record Drawings: Comply with the following:
  - 1. Number of Copies: Submit one set(s) of marked-up record prints.
  - 2. Number of Copies: Submit copies of record Drawings as follows:
    - a. Initial Submittal:
      - 1) Submit one paper-copy set(s) of marked-up record prints.
      - 2) Submit PDF electronic files of scanned record prints and one of file prints.
      - 3) Submit record digital data files and one set(s) of plots.
      - 4) Architect will indicate whether general scope of changes, additional information recorded, and quality of drafting are acceptable.

#### b. Final Submittal:

- 1) Submit three paper-copy set(s) of marked-up record prints.
- 2) Submit PDF electronic files of scanned record prints and three set(s) of prints.
- 3) Print each drawing, whether or not changes and additional information were recorded.
- B. Record Specifications: Submit annotated PDF electronic files of Project's Specifications, including addenda and contract modifications.
- C. Record Product Data: Submit annotated PDF electronic files and directories of each submittal.
  - 1. Where record Product Data are required as part of operation and maintenance manuals, submit duplicate marked-up Product Data as a component of manual.

- D. Miscellaneous Record Submittals: See other Specification Sections for miscellaneous record-keeping requirements and submittals in connection with various construction activities. Submit annotated PDF electronic files and directories of each submittal.
- E. Reports: Submit written report weekly indicating items incorporated into project record documents concurrent with progress of the Work, including revisions, concealed conditions, field changes, product selections, and other notations incorporated.

#### PART 2 - PRODUCTS

#### 2.1 RECORD DRAWINGS

- A. Record Prints: Maintain one set of marked-up paper copies of the Contract Drawings and Shop Drawings, incorporating new and revised drawings as modifications are issued.
  - 1. Preparation: Mark record prints to show the actual installation where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, subcontractor, or similar entity, to provide information for preparation of corresponding marked-up record prints.
    - a. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later.
    - b. Accurately record information in an acceptable drawing technique.
    - c. Record data as soon as possible after obtaining it.
    - d. Record and check the markup before enclosing concealed installations.
    - e. Cross-reference record prints to corresponding archive photographic documentation.
  - 2. Content: Types of items requiring marking include, but are not limited to, the following:
    - a. Dimensional changes to Drawings.
    - b. Revisions to details shown on Drawings.
    - c. Depths of foundations below first floor.
    - d. Locations and depths of underground utilities.
    - e. Revisions to routing of piping and conduits.
    - f. Revisions to electrical circuitry.
    - g. Actual equipment locations.
    - h. Duct size and routing.
    - i. Locations of concealed internal utilities.
    - j. Changes made by Change Order or Construction Change Directive.
    - k. Changes made following Architect's written orders.
    - 1. Details not on the original Contract Drawings.
    - m. Field records for variable and concealed conditions.
    - n. Record information on the Work that is shown only schematically.
  - 3. Mark the Contract Drawings and Shop Drawings completely and accurately. Use personnel proficient at recording graphic information in production of marked-up record prints.
  - 4. Mark record sets with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at same location.

- 5. Mark important additional information that was either shown schematically or omitted from original Drawings.
- 6. Note Construction Change Directive numbers, alternate numbers, Change Order numbers, and similar identification, where applicable.
- B. Format: Identify and date each record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location.
  - 1. Record Prints: Organize record prints and newly prepared record Drawings into manageable sets. Bind each set with durable paper cover sheets. Include identification on cover sheets.
  - 2. Format: Annotated PDF electronic file with comment function enabled.
  - 3. Record Digital Data Files: Organize digital data information into separate electronic files that correspond to each sheet of the Contract Drawings. Name each file with the sheet identification. Include identification in each digital data file.
  - 4. Identification: As follows:
    - a. Project name.
    - b. Date.
    - c. Designation "PROJECT RECORD DRAWINGS."
    - d. Name of Architect.
    - e. Name of Contractor.

### 2.2 RECORD SPECIFICATIONS

- A. Preparation: Mark Specifications to indicate the actual product installation where installation varies from that indicated in Specifications, addenda, and contract modifications.
  - 1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
  - 2. Mark copy with the proprietary name and model number of products, materials, and equipment furnished, including substitutions and product options selected.
  - 3. Record the name of manufacturer, supplier, Installer, and other information necessary to provide a record of selections made.
  - 4. For each principal product, indicate whether record Product Data has been submitted in operation and maintenance manuals instead of submitted as record Product Data.
  - 5. Note related Change Orders, record Product Data, and record Drawings where applicable.
- B. Format: Submit record Specifications as annotated PDF electronic file.

### 2.3 RECORD PRODUCT DATA

- A. Preparation: Mark Product Data to indicate the actual product installation where installation varies substantially from that indicated in Product Data submittal.
  - 1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
  - 2. Include significant changes in the product delivered to Project site and changes in manufacturer's written instructions for installation.

- 3. Note related Change Orders, record Specifications, and record Drawings where applicable.
- B. Format: Submit record Product Data as annotated PDF electronic file.
  - 1. Include record Product Data directory organized by Specification Section number and title, electronically linked to each item of record Product Data.

#### 2.4 MISCELLANEOUS RECORD SUBMITTALS

- A. Assemble miscellaneous records required by other Specification Sections for miscellaneous record keeping and submittal in connection with actual performance of the Work. Bind or file miscellaneous records and identify each, ready for continued use and reference.
- B. Format: Submit miscellaneous record submittals as PDF electronic file.
  - 1. Include miscellaneous record submittals directory organized by Specification Section number and title, electronically linked to each item of miscellaneous record submittals.

#### PART 3 - EXECUTION

#### 3.1 RECORDING AND MAINTENANCE

- A. Recording: Maintain one copy of each submittal during the construction period for project record document purposes. Post changes and revisions to project record documents as they occur; do not wait until end of Project.
- B. Maintenance of Record Documents and Samples: Store record documents and Samples in the field office apart from the Contract Documents used for construction. Do not use project record documents for construction purposes. Maintain record documents in good order and in a clean, dry, legible condition, protected from deterioration and loss. Provide access to project record documents for Architect's reference during normal working hours.

#### SECTION 017900 - DEMONSTRATION AND TRAINING

#### PART 1 - GENERAL

### 1.1 SUMMARY

- A. Section includes administrative and procedural requirements for instructing Owner's personnel, including the following:
  - 1. Demonstration of operation of systems, subsystems, and equipment.
  - 2. Training in operation and maintenance of systems, subsystems, and equipment.
  - 3. Demonstration and training video recordings.

### 1.2 INFORMATIONAL SUBMITTALS

- A. Instruction Program: Submit outline of instructional program for demonstration and training, including a list of training modules and a schedule of proposed dates, times, length of instruction time, and instructors' names for each training module. Include learning objective and outline for each training module.
  - 1. Indicate proposed training modules using manufacturer-produced demonstration and training video recordings for systems, equipment, and products in lieu of video recording of live instructional module.
- B. Attendance Record: For each training module, submit list of participants and length of instruction time.

#### 1.3 CLOSEOUT SUBMITTALS

- A. Demonstration and Training Video Recordings: Submit two copies within seven days of end of each training module.
  - 1. Identification: On each copy, provide an applied label with the following information:
    - a. Name of Project.
    - b. Name and address of videographer.
    - c. Name of Architect.
    - d. Name of Contractor.
    - e. Date of video recording.
  - 2. Transcript: Prepared and bound in format matching operation and maintenance manuals. Mark appropriate identification on front and spine of each binder. Include a cover sheet with same label information as the corresponding video recording. Include name of Project and date of video recording on each page.
  - 3. Transcript: Prepared in PDF electronic format. Include a cover sheet with same label information as the corresponding video recording and a table of contents with links to

- corresponding training components. Include name of Project and date of video recording on each page.
- 4. At completion of training, submit complete training manual(s) for Owner's use in PDF electronic file format on compact disc.

### 1.4 QUALITY ASSURANCE

- A. Facilitator Qualifications: A firm or individual experienced in training or educating maintenance personnel in a training program similar in content and extent to that indicated for this Project, and whose work has resulted in training or education with a record of successful learning performance.
- B. Instructor Qualifications: A factory-authorized service representative, complying with requirements in Section 014000 "Quality Requirements," experienced in operation and maintenance procedures and training.
- C. Videographer Qualifications: A professional videographer who is experienced photographing demonstration and training events similar to those required.
- D. Pre-instruction Conference: Conduct conference at Project site to comply with requirements in Section 013100 "Project Management and Coordination." Review methods and procedures related to demonstration and training including, but not limited to, the following:
  - 1. Inspect and discuss locations and other facilities required for instruction.
  - 2. Review and finalize instruction schedule and verify availability of educational materials, instructors' personnel, audiovisual equipment, and facilities needed to avoid delays.
  - 3. Review required content of instruction.
  - 4. For instruction that must occur outside, review weather and forecasted weather conditions and procedures to follow if conditions are unfavorable.

# 1.5 COORDINATION

- A. Coordinate instruction schedule with Owner's operations. Adjust schedule as required to minimize disrupting Owner's operations and to ensure availability of Owner's personnel.
- B. Coordinate instructors, including providing notification of dates, times, length of instruction time, and course content.
- C. Coordinate content of training modules with content of approved emergency, operation, and maintenance manuals. Do not submit instruction program until operation and maintenance data has been reviewed and approved by Architect.

#### PART 2 - PRODUCTS

### 2.1 INSTRUCTION PROGRAM

- A. Program Structure: Develop an instruction program that includes individual training modules for each system and for equipment not part of a system, as required by individual Specification Sections.
- B. Training Modules: Develop a learning objective and teaching outline for each module. Include a description of specific skills and knowledge that participant is expected to master. For each module, include instruction for the following as applicable to the system, equipment, or component:
  - 1. Documentation: Review the following items in detail:
    - a. Emergency manuals.
    - b. Operations manuals.
    - c. Maintenance manuals.
    - d. Project record documents.
    - e. Identification systems.
    - f. Warranties and bonds.
    - g. Maintenance service agreements and similar continuing commitments.
  - 2. Emergencies: Include the following, as applicable:
    - a. Instructions on meaning of warnings, trouble indications, and error messages.
    - b. Instructions on stopping.
    - c. Shutdown instructions for each type of emergency.
    - d. Operating instructions for conditions outside of normal operating limits.
    - e. Sequences for electric or electronic systems.
    - f. Special operating instructions and procedures.
  - 3. Operations: Include the following, as applicable:
    - a. Startup procedures.
    - b. Equipment or system break-in procedures.
    - c. Routine and normal operating instructions.
    - d. Regulation and control procedures.
    - e. Control sequences.
    - f. Safety procedures.
    - g. Instructions on stopping.
    - h. Normal shutdown instructions.
    - i. Operating procedures for emergencies.
    - j. Operating procedures for system, subsystem, or equipment failure.
    - k. Seasonal and weekend operating instructions.
    - 1. Required sequences for electric or electronic systems.
    - m. Special operating instructions and procedures.
  - 4. Adjustments: Include the following:

- a. Alignments.
- b. Checking adjustments.
- c. Noise and vibration adjustments.
- d. Economy and efficiency adjustments.
- 5. Troubleshooting: Include the following:
  - a. Diagnostic instructions.
  - b. Test and inspection procedures.
- 6. Maintenance: Include the following:
  - a. Inspection procedures.
  - b. Types of cleaning agents to be used and methods of cleaning.
  - c. List of cleaning agents and methods of cleaning detrimental to product.
  - d. Procedures for routine cleaning
  - e. Procedures for preventive maintenance.
  - f. Procedures for routine maintenance.
  - g. Instruction on use of special tools.
- 7. Repairs: Include the following:
  - a. Diagnosis instructions.
  - b. Repair instructions.
  - c. Disassembly; component removal, repair, and replacement; and reassembly instructions.
  - d. Instructions for identifying parts and components.
  - e. Review of spare parts needed for operation and maintenance.

#### PART 3 - EXECUTION

### 3.1 PREPARATION

- A. Assemble educational materials necessary for instruction, including documentation and training module. Assemble training modules into a training manual organized in coordination with requirements in Section 017823 "Operation and Maintenance Data."
- B. Set up instructional equipment at instruction location.

#### 3.2 INSTRUCTION

- A. Facilitator: Engage a qualified facilitator to prepare instruction program and training modules, to coordinate instructors, and to coordinate between Contractor and Owner for number of participants, instruction times, and location.
- B. Engage qualified instructors to instruct Owner's personnel to adjust, operate, and maintain systems, subsystems, and equipment not part of a system.

- 1. Architect will furnish an instructor to describe basis of system design, operational requirements, criteria, and regulatory requirements.
- 2. Owner will furnish an instructor to describe Owner's operational philosophy.
- 3. Owner will furnish Contractor with names and positions of participants.
- C. Scheduling: Provide instruction at mutually agreed on times. For equipment that requires seasonal operation, provide similar instruction at start of each season.
  - 1. Schedule training with Owner, through Architect, with at least seven days' advance notice.
- D. Training Location and Reference Material: Conduct training on-site in the completed and fully operational facility using the actual equipment in-place. Conduct training using final operation and maintenance data submittals.
- E. Cleanup: Collect used and leftover educational materials and give to Owner. Remove instructional equipment. Restore systems and equipment to condition existing before initial training use.

## 3.3 DEMONSTRATION AND TRAINING VIDEO RECORDINGS

- A. General: Engage a qualified commercial videographer to record demonstration and training video recordings. Record each training module separately. Include classroom instructions and demonstrations, board diagrams, and other visual aids, but not student practice.
  - 1. At beginning of each training module, record each chart containing learning objective and lesson outline.
- B. Video: Provide minimum 640 x 480 video resolution converted to format file type acceptable to Owner, on electronic media.
  - 1. Electronic Media: Read-only format compact disc acceptable to Owner, with commercial-grade graphic label.
  - 2. File Hierarchy: Organize folder structure and file locations according to project manual table of contents. Provide complete screen-based menu.
  - 3. File Names: Utilize file names based upon name of equipment generally described in video segment, as identified in Project specifications.
  - 4. Contractor and Installer Contact File: Using appropriate software, create a file for inclusion on the Equipment Demonstration and Training DVD that describes the following for each Contractor involved on the Project, arranged according to Project table of contents:
    - a. Name of Contractor/Installer.
    - b. Business address.
    - c. Business phone number.
    - d. Point of contact.
    - e. E-mail address.
- C. Recording: Mount camera on tripod before starting recording, unless otherwise necessary to adequately cover area of demonstration and training. Display continuous running time.

- 1. Film training session(s) in segments not to exceed 15 minutes.
  - a. Produce segments to present a single significant piece of equipment per segment.
  - b. Organize segments with multiple pieces of equipment to follow order of Project Manual table of contents.
  - c. Where a training session on a particular piece of equipment exceeds 15 minutes, stop filming and pause training session. Begin training session again upon commencement of new filming segment.
- D. Light Levels: Verify light levels are adequate to properly light equipment. Verify equipment markings are clearly visible prior to recording.
  - 1. Furnish additional portable lighting as required.
- E. Narration: Describe scenes on video recording by audio narration by microphone while video recording is recorded. Include description of items being viewed.

#### SECTION 024119 - SELECTIVE DEMOLITION

#### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. This Section includes the following:
  - 1. Demolition and removal of selected site elements.

#### 1.2 DEFINITIONS

A. Remove: Detach items from existing construction and legally dispose of them off-site, unless indicated to be removed and salvaged or removed and reinstalled.

#### 1.3 MATERIALS OWNERSHIP

- A. Except for items or materials indicated to be reused, salvaged, reinstalled, or otherwise indicated to remain Owner's property, demolished materials shall become Contractor's property and shall be removed from Project site.
- B. Historic items, relics, and similar objects including, but not limited to, cornerstones and their contents, commemorative plaques and tablets, antiques, and other items of interest or value to Owner that may be encountered during selective demolition remain Owner's property. Carefully remove and salvage each item or object in a manner to prevent damage and deliver promptly to Owner.

### 1.4 SUBMITTALS

A. Qualification Data: For firms and persons specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.

### 1.5 QUALITY ASSURANCE

- A. Demolition Firm Qualifications: An experienced firm that has specialized in demolition work similar in material and extent to that indicated for this Project.
- B. Regulatory Requirements: Comply with governing EPA notification regulations before beginning selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.
- C. Standards: Comply with ANSI A10.6 and NFPA 241.

# PART 2 - PRODUCTS (Not Used)

### PART 3 - EXECUTION

#### 3.1 EXAMINATION

- A. Verify that utilities have been disconnected and capped if necessary for reroofing.
- B. Survey existing conditions and correlate with requirements indicated to determine extent of selective demolition required.
- C. When unanticipated mechanical, electrical, or structural elements that conflict with intended function or design are encountered, investigate and measure the nature and extent of conflict. Promptly submit a written report to Architect.
- D. Perform surveys as the Work progresses to detect hazards resulting from selective demolition activities.

#### 3.2 UTILITY SERVICES

- A. Existing Utilities: Maintain services indicated to remain and protect them against damage during selective demolition operations.
- B. Do not interrupt existing utilities serving occupied or operating facilities unless authorized in writing by Owner and authorities having jurisdiction. Provide temporary services during interruptions to existing utilities, as acceptable to Owner and to authorities having jurisdiction.
  - 1. Provide at least 3 days notice to Owner if shutdown of service is required during changeover.
- C. Utility Requirements: Locate, identify, disconnect, and seal or cap off indicated utilities serving areas to be selectively demolished.
  - 1. Arrange to shut off indicated utilities with utility companies.
  - 2. If utility services are required to be removed, relocated, or abandoned, before proceeding with selective demolition provide temporary utilities that bypass area of selective demolition and that maintain continuity of service to other parts of building.
  - 3. Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit after bypassing.

# 3.3 POLLUTION CONTROLS

- A. Dust Control: Use water mist, temporary enclosures, and other suitable methods to limit spread of dust and dirt. Comply with governing environmental-protection regulations.
  - 1. Do not use water when it may damage existing construction or create hazardous or objectionable conditions, such as ice, flooding, and pollution.

- B. Disposal: Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
- C. Cleaning: Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Return adjacent areas to condition existing before selective demolition operations began.

#### 3.4 DISPOSAL OF DEMOLISHED MATERIALS

- A. General: Promptly dispose of demolished materials. Do not allow demolished materials to accumulate on-site.
- B. Burning: Do not burn demolished materials.
- C. Disposal: Transport demolished materials off Owner's property and legally dispose of them.

### SECTION 024121 - CUTTING AND PATCHING

#### PART 1 - GENERAL

#### 1.1 SUMMARY

A. This Section includes procedural requirements for cutting and patching.

#### 1.2 DEFINITIONS

- A. Cutting: Removal of existing construction necessary to permit installation or performance of other Work.
- B. Patching: Fitting and repair work required to restore surfaces to original conditions after installation of other Work. General Contractor is responsible for patching all repair/demo work. Coordinate with mechanical/electrical/plumbing.

### 1.3 QUALITY ASSURANCE

- A. Structural Elements: Do not cut and patch structural elements in a manner that could change their load-carrying capacity or load-deflection ratio.
- B. Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or that results in increased maintenance or decreased operational life or safety.
- C. Visual Requirements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch construction exposed on the exterior or in occupied spaces in a manner that would, in Architect's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.

#### PART 2 - PRODUCTS

### 2.1 MATERIALS

- A. General: Comply with requirements specified in other Sections of these Specifications.
- B. Existing Materials: Use materials identical to existing materials. For exposed surfaces, use materials that visually match existing adjacent surfaces to the fullest extent possible.
  - 1. If identical materials are unavailable or cannot be used, use materials that, when installed, will match the visual and functional performance of existing materials.

#### PART 3 - EXECUTION

## 3.1 EXAMINATION

- A. Examine surfaces to be cut and patched and conditions under which cutting and patching are to be performed.
  - 1. Compatibility: Before patching, verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.
  - 2. Proceed with installation only after unsafe or unsatisfactory conditions have been corrected.

#### 3.2 PREPARATION

- A. Temporary Support: Provide temporary support of Work to be cut.
- B. Protection: Protect existing construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.
- C. Adjoining Areas: Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.
- D. Existing Services: Where existing services are required to be removed, relocated, or abandoned, bypass such services before cutting to minimize interruption of services to occupied areas.

#### 3.3 PERFORMANCE

- A. General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.
  - 1. Cut existing construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.
- B. Cutting: Cut existing construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.
  - 1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots as small as possible, neatly to size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
  - 2. Existing Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
  - 3. Concrete Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.

- 4. Mechanical and Electrical Services: Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after cutting.
- 5. Proceed with patching after construction operations requiring cutting are complete.
- C. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other Work. Patch with durable seams that are as invisible as possible. Provide materials and comply with installation requirements specified in other Sections of these Specifications.
  - 1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate integrity of installation.
  - 2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing.
  - 3. Floors and Walls: Where walls or partitions that are removed extend one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform finish, color, texture, and appearance. Remove existing floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.
    - a. Where patching occurs in a painted surface, apply primer and intermediate paint coats over the patch and apply final paint coat over entire unbroken surface containing the patch. Provide additional coats until patch blends with adjacent surfaces.
  - 4. Ceilings: Patch, repair, or rehang existing ceilings as necessary to provide an even-plane surface of uniform appearance.
  - 5. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weathertight condition.

#### SECTION 260500- COMMON WORK RESULTS FOR ELECTRICAL

#### PART 1.- GENERAL

#### 1.1. GENERAL REFERENCE:

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division-01 Specification sections, apply to work of this section.
- B. Refer to Division 01 section "Alternates" for possible alternates affecting the extent of this Section of work.
- C. This Contractor is also referred to the Architectural, Structural, Mechanical and all other drawings and specifications pertinent to this project. All of the above mentioned drawings and specifications are considered a part of the Contract Documents.
- D. This section specifies the basic requirements for electrical installations and includes requirements common to more than one section of Division 26. It expands and supplements the requirements specified in sections of Division 01.

#### 1.2. SUMMARY:

A. This Section includes general administrative and procedural requirements for electrical installations. The following administrative and procedural requirements are included in this Section to expand the requirements specified in Division 01:

Shop drawings
Definitions
Discrepancies
Record documents
Equipment
Substitutions
Codes and permits
Interferences
Delivery, storage and handling
Punchlists
Operating and maintenance
Warranties

- B. Related Sections: The following sections contain requirements that relate to this Section:
  - 1. Division 26 Section "BASIC ELECTRICAL MATERIALS AND METHODS", for materials and methods common to the remainder of Division 26.

# 1.3. SHOP DRAWINGS

A. Refer to the Conditions of the Contract (General and Supplementary) and Division 01 Section: Shop drawings, product data, and samples for submittal definitions, requirements, and procedures.

- B. Shop drawings are required on the following items, where such items are a part of the Electrical Contract:
  - 1. Distribution panels
  - 2. Lighting and appliance panelboards
  - 3. Lighting control equipment
  - 4. Exterior lighting fixtures
  - 5. Poles and standards for exterior lighting fixtures
  - 6. All communication systems equipment:
    - a. Structured Wiring
  - 7. Wiring devices
  - 8. Equipment identification nameplates
  - 9. Fire stopping materials
- C. Where distribution panels are required, submittal to include one-line diagram showing all pertinent data such as bus size, bus material, protective device size, number of sections, meters, dimensions, interrupting rating, etc. Drawings to be executed in a professional manner and subject to Engineer's approval.

### 1.4. DEFINITIONS:

- A. To achieve brevity in Specification and on Drawings, certain words and phrases not contributing to clarity have been omitted. Unless mentioned specifically as work to be done by Other Trades, all requirements contained in the Specifications and shown on the Drawings shall be performed by the Principal Contractor for this Division of the Contract. The following definitions shall apply:
  - 1. Where the word "provide" is used in connection with a system, equipment, or item, it shall be construed to mean the furnishing and installing of the system, equipment, or item
  - 2. Where the phrase "as directed" is used it shall be construed to mean as directed by the Architect or his authorized representative.
- B. The term "Contractor" as applied to work specified, shown or reasonably implied in the contract documents for Division 26 shall be defined as the subcontractor who is responsible for the work specified or indicated. All subcontracted work must be incorporated by and coordinated by the prime contractor.

#### 1.5. DISCREPANCIES:

A. Should it appear that there is a discrepancy between or within the drawings and/or specifications concerning the nature, quality or extent of materials or work to be furnished and/or installed, and such discrepancy is not clarified by Addendum during the bidding period, this Contractor shall base his bid on performing the work in the manner having the higher cost. The Architect shall have the option of selecting either of the manners shown and/or specified. In the event the lower cost manner is selected, a credit shall be due the Owner in the amount of the difference between the lower cost and higher cost manner. All discrepancies shall be called to the attention of the Architect before proceeding with work affected thereby.

- B. The design drawings, as submitted, are diagrammatic and are not intended to show exact location of equipment, electrical devices, etc. unless dimensions are given. Drawings are not to be scaled.
  - 1. Equipment shall be installed along the general arrangement indicated on the drawings, and in accordance with the manufacturer's instructions.
    - a. Provide at least the minimum manufacturer's recommended and code required clearance around the equipment for normal maintenance.
    - b. Locate and arrange equipment in relationship to other system components to assure that the equipment will be operating under the best possible conditions to meet the scheduled performance requirements.
  - 2. Raceways are to be installed along the general plans shown on the drawings keeping in mind the constraints of the available space and the need to coordinate with the work of other trades. Additional bends, pull and splice boxes shall be provided as necessary to meet space constraints and to facilitate the work of other trades.
- C. Electrical equipment, specified hereinafter as shown on the drawings shall be furnished and installed by this Contractor, unless specifically indicated to the contrary.
- D. Occasionally, certain references may be indicated on the Drawings to items which are suggested to be furnished and/or installed by various subcontractors. This is done to assist the applicable Prime Contractor in organizing his subcontractor's bids. However, no attempt has been made, nor is it implied, that this specification or plans are attempting to specifically divide all responsibilities for subcontractors. It is the Prime Contractor's responsibility that all items covered on electrical plans and Division 26 specifications are included in his bid and are coordinated with his subcontractors. No consideration will be given for Prime Contractor's failure to include all applicable electrical work in his bid.
- E. Where more than one manufacturer is named for major items of equipment, the manufacturer noted on the Drawings has been used as a basis for design. If another manufacturer is used, other than the one named on the Drawings, it shall be the responsibility of this contractor to ensure that the equipment will fit the space with all legal clearances, or bear the expense to change the space and structure to accommodate equipment used.

### 1.6. RECORD/AS-BUILT DOCUMENTS:

A. Prepare record/as-built documents in accordance with the requirements of this division, and in Division 01.

# 1.7. EQUIPMENT:

- A. Before entering into a contract, the successful bidder may be required to submit satisfactory evidence to show that an equipment manufacturer has been regularly engaged in the manufacture of such equipment for three (3) years and have not less than three (3) installations of a similar type which have been in successful operation under conditions similar to those specified for not less than two (2) years.
- B. When two or more items of same equipment are required (panelboards, transformers, etc.) they shall be of the same manufacturer.

### 1.8. SUBSTITUTIONS:

A. Refer to the Instructions to Bidders and the related Division 1 sections for requirements in selecting products and requesting substitutions.

### 1.9. CODES AND PERMITS:

- A. All equipment, materials, and installation shall comply with the National Fire Protection Association's "National Fire Codes" and "National Electrical Code". Equipment shall bear the "UL" label as required by these codes.
- B. Install work in full accordance with rules and regulations of State, County and City authorities having jurisdiction over premises. Do not construe this as relieving Contractor from compliance with any requirements of specifications which are in excess of Code requirements and not in conflict therewith.

#### 1.10. INTERFERENCES:

- A. Before installing any work, this Contractor shall see that it does not interfere with clearance required for finish on beams, columns, pilasters, walls or other structural or architectural members, as shown on Architectural Drawings. If any work is so installed and it later develops that Architectural design cannot be followed, Contractor shall, at his own expense, make such changes in his work as the Architect may direct to permit completion of Architectural work in accordance with plans and specifications.
- B. Install additional conduit, pullboxes, spliceboxes, etc. where required to obtain maximum headroom or to avoid conflict with other work without additional cost to the Owner. Where mounting heights are not detailed or dimensioned, install electrical conduit and overhead equipment to provide the maximum headroom possible.
- C. Report any interferences between work under this division and that of any other Contractors to the Architect as soon as they are discovered. The Architect will determine which equipment shall be relocated, regardless of which was first installed, and his decision shall be final.

# 1.11. DELIVERY, STORAGE, AND HANDLING:

A. The Contractor shall make provisions for the delivery and safe storage of his materials and equipment in coordination with the work of others. Materials and equipment shall be delivered at such stages of the work as will expedite the work as a whole and shall be marked and stored in such a way as to be easily checked and inspected. The arrival and placing of large equipment items shall be scheduled early enough to permit entry and setting when there is no restriction or problem due to size and weight.

# 1.12. PUNCHLISTS:

A. From time to time throughout the course of the work, or upon completion of the work the Design Professional may perform site observations resulting in written documentation of deviations in the work from the Contract Documents. In such cases the Contractor shall respond in writing to each and every item on this written documentation stating the specific action taken to remedy the deviation. A response shall be provided by the Contractor for each separate observation. This work shall not be considered complete until such satisfactory written

response is received by the Design Professional. Contractor shall submit the responses to these items as part of the closeout documentation.

#### 1.13. OPERATING AND MAINTENANCE:

- A. This Contractor shall furnish competent personal instruction to the Owner's operating personnel for a period of hours as indicated in individual Division 26 specification sections in the proper operation of the electrical equipment. He shall also supply the Owner with three (3) hardbound copies of an operation manual containing the following:
  - 1. Step-by-step procedures for start-up and operation for each system and piece of equipment.
  - 2. Performance data, curves, ratings.
  - 3. Wiring diagrams.
  - 4. Manufacturer's descriptive literature.
  - 5. Manufacturer's maintenance and service manuals.
  - 6. Spare parts and replacement parts list for each piece of equipment.
  - 7. Name of service agency and installer complete with an emergency service phone number for nights, weekends and holidays.
  - 8. Final approved shop drawings.

## 1.14. WARRANTIES:

A. Refer to the Division 01 Section: Specific Warranties for procedures and submittal requirements for warranties. Refer to individual equipment specifications for additional warranty requirements.

PART 2.- PRODUCTS (Not Applicable)

PART 3.- EXECUTION (Not Applicable)

END OF SECTION 260500

#### SECTION 260501 - BASIC ELECTRICAL MATERIALS AND METHODS

## PART 1.- GENERAL

## 1.1. RELATED DOCUMENTS:

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
- B. Division 26 Basic Electrical Requirements and Basic Electrical Materials and Methods section apply to work specified in this section.

## 1.2. DESCRIPTION OF WORK:

- A. Extent of electrical related work required by this section is indicated on drawings and/or specified in other Division-26 sections.
- B. Except as noted in this specification, this Contractor shall do all excavating and backfilling necessary to the work of this Division.
- C. See specification Division 09 for painting requirements. Coordinate all electrical painting work required. Coordinate protection requirements for electrical equipment which could be damaged by paint.
- D. Furnish and install all miscellaneous steel required for supports, hangers, anchors, etc., required for installation of equipment and materials furnished and installed under this Division. Steel used in a damp or wet environment shall be hot dipped galvanized unless otherwise noted.
- E. Furnish and install all miscellaneous lumber required for support of electrical equipment, telephone backboards, etc.
- F. This Contractor shall provide to the General Contractor, dimensions and special requirements for the concrete foundations or bases under all electrical equipment that rests on floors, and concrete encased ductbanks. He shall follow drawings and/or manufacturer's literature with regard to design and construction of same.
- G. Furnish and install fire stopping for sealing around electrical penetrations through fire or smoke barriers, and floors.
- H. This Contractor shall perform all selective Division 26 related and indicated demolition including: Nondestructive removal of materials and equipment for re-use or salvage as indicated. All equipment removed shall be offered to the Owner for his retention. If the Owner elects to retain equipment, it shall be turned over to the Owner at the site. If not, the equipment shall be removed from the premises by this Contractor. Refer to Division 02 Section "Selective Demolition" for additional requirements.

## 1.3. SUMMARY:

A. This section includes a limited scope of general construction materials and methods pertaining to Division 26 applications of the following items:

Excavation and backfilling Miscellaneous Metal

Miscellaneous Lumber Rough-ins Electrical installations Cutting and patching Fire stopping Selective demolition and alterations

### 1.4. PROJECT CONDITIONS:

- A. Conditions Affecting Demolition: The following project conditions apply:
  - 1. Protect adjacent materials to remain. Install and maintain dust and noise barriers to keep dirt, dust, and noise from being transmitted to adjacent areas. Remove protection and barriers after demolition operations are complete.
  - 2. Locate, identify, and protect electrical services passing through demolition area and serving other areas outside the demolition limits. Maintain services to areas outside demolition limits. When services must be interrupted, install temporary services for affected areas.
- B. Conditions Affecting Excavations: The following project conditions apply:
  - 1. Maintain and protect existing building services which transit the area affected by excavation.
  - 2. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by excavation operations.
  - 3. Existing Utilities: Locate existing underground utilities in excavation areas. If utilities are indicated to remain, support and protect services during excavation operations.
- C. Notify proper authorities prior to commencing excavation. Should uncharted, or incorrectly charted, piping or other utilities be encountered during excavation, consult utility owner immediately for directions. Cooperate with Owner and utility companies in keeping respective services and facilities in operation. Repair damaged utilities to satisfaction of utility owner.
- D. Do not interrupt existing utilities serving facilities occupied and used by Owner or others, during occupied hours, except when permitted in writing by Engineer and then only after acceptable temporary utility services have been provided.
  - 1. Provide minimum of 10 working days notice to Engineer, and receive written notice to proceed before interrupting any utility.
- E. Demolish and completely remove from site existing underground utilities indicated to be removed. Coordinate with utility companies for shut-off of services if lines are active.
- F. Protection of Persons and Property: Barricade open excavations occurring as part of this work and post with warning lights. Where trenches cross roads, walks, or public thoroughfares, provide suitable barricades and bridges adequately protected by signs or red flags during day and lights at night.
- G. Operate warning lights as recommended by authorities having jurisdiction.
- H. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout and other hazards created by earthwork operations.

## 1.5. SUBMITTALS:

- A. Product Data: Submit manufacturer's technical product data, including the recommended installation method, all in accordance with Division 01 and Section 260500 requirements.
- B. Electrical Penetration Seals: Submit the following:
  - 1. Shop drawings showing each condition requiring penetration seals. Indicate proposed UL systems materials, anchorage, methods of installation, and actual adjacent construction.
  - 2. A copy of UL illustration of each proposed system indicating manufacturer approved modifications.
  - 3. Manufacturer's specifications, recommendations, installation instructions and maintenance instructions.

## 1.6. SEQUENCE AND SCHEDULING:

- A. Coordinate the shut-off and disconnection of electrical service and/or power with the Owner and the utility company. All associated work to be done at Owner's convenience.
- B. Notify the Engineer at least 10 working days prior to commencing demolition operations.
- C. Perform demolition in phases as required by Engineer.

## PART 2.- PRODUCTS

#### 2.1. EXCAVATING FOR ELECTRICAL WORK:

#### A. Backfill Materials:

- 1. All backfilling within the building shall consist of a 6" layer of sand under the conduit and a 12" layer of sand over the conduit. The remainder of the backfill shall be course interlocking aggregate.
- 2. All backfilling outside the building shall be selected dirt, free of large stones.

## 2.2. MISCELLANEOUS METALS:

- A. Fasteners: Zinc-coated, type, grade, and class as required.
- B. Metal Framing: As manufactured by Unistrut or Kindorf unless noted otherwise. Provide framing of sizes required by specific application.

#### 2.3. MISCELLANEOUS LUMBER:

A. Electrical backboards to be 5/8" thick ACX-EXT, Non-Com plywood. Paint both sides and all edges with grey fire-retardant paint.

## 2.4. FIRE STOPPING MATERIALS:

A. Fire stopping materials shall be intumescent safety barriers designed to block the spread of fire and smoke through penetrations created by electrical installations in fire rated walls and floors.

Materials shall be flame, toxic fume and water resistant and shall have a minimum 3 hour fire rating. Fire rating shall be defined by tests conducted by ASTM, UL or other testing and inspection agencies acceptable to authorities having jurisdiction.

1. Acceptable Manufacturers:

Specified Technologies, Inc. (STI) Somerville, NJ Tremco, Inc. Beachwood, OH 3M Inc., Minneapolis, MN

- 2. Materials:
  - a. Firestop Mortar:

STI SpecSeal Mortar Tremco TREMstop-M 3M Fire Barrier Mortar

b. Intumescent Firestop Sealants and Caulks

SpecSeal SSP Putty Tremco TREMstop-WBM 3M Fire Barrier CP-25 WB

c. Silicone Firestop Sealants Caulks

STI SpecSeal Pensil 100 & 300 Tremco Fyre Sil Sealant 3M Fire Barrier 2000 & 2003

d. Firestop Putty:

STI SpecSeal Firestop Putty Bars & Pads Tremco TREMstop FP Flowable Putty 3M Fire Barrier Firestop Putty

e. Firestop Collars:

STI SpecSeal Firstop Collars

Tremco TREMstop D Combustible Pipe Device

3M Fire Barrier Pipe Device

f. Wrap Strip:

STI Spec Seal Wrap Strip Tremco TREMstop-WS

3M Fire Barrier WS-195 Wrap Strip

B. Sleeves shall be Schedule 40, galvanized steel with plain end. Sleeves shall be no more than two sizes larger than single penetrating conduit. For multiple cable or conduit penetrations, make sleeve as small as possible to allow for penetrating items and firestopping material.

## PART 3.- EXECUTION

# 3.1. EXAMINATION:

A. Examine area and conditions under which basic electric materials are to be installed or methods are to be performed and notify Engineer in writing of conditions detrimental to proper completion of the work. Do not proceed with the work until unsatisfactory conditions have been corrected in a manner acceptable to Engineer.

### 3.2. EXCAVATION AND BACKFILLING:

- A. Slope sides of excavations to comply with local codes and ordinances. Shore and brace as required for stability of excavation.
- B. Shoring and Bracing: Establish requirements for trench shoring and bracing to comply with local codes and authorities. Maintain shoring and bracing in excavations regardless of time period excavations will be open.
  - 1. Remove shoring and bracing when no longer required. Where sheeting is allowed to remain, cut top of sheeting at an elevation of 30 inches below finished grade elevation.
- C. Install sediment and erosion control measures in accordance with local codes and ordinances.
- D. Dewatering: Prevent surface water and subsurface or ground water from flowing into excavations and from flooding project site and surrounding area.
  - 1. Do not allow water to accumulate in excavations. Remove water to prevent softening of bearing materials. provide and maintain dewatering system components necessary to convey water away from excavations.
  - 2. Establish and maintain temporary drainage ditches and other diversions outside excavation limits to convey surface water to collecting or run-off areas. Do not use trench excavations as temporary drainage ditches.
- E. Material Storage: Stockpile satisfactory excavated materials where directed, until required for backfill or fill. Place, grade, and shape stockpiles for proper drainage.
  - 1. Locate and retain soil materials away from edge of excavations. Do not store within drip-line of trees indicated to remain.
  - 2. Remove and legally dispose of excess excavated materials and materials not acceptable for use as backfill or fill.
- F. Excavation for Underground Vaults and Electrical Structures: Conform to elevations and dimensions shown within a tolerance of plus or minus 0.10 foot; plus a sufficient distance to permit placing and removal of concrete formwork, installation of services, other construction, and for inspection.
  - 1. Excavate, by hand, areas within drip-line of large trees. Protect the root system from damage and dry-out. Maintain moist conditions for root system and cover exposed roots with burlap. Paint root cuts of 1 inch in diameter and larger with emulsified asphalt tree paint.
  - 2. Take care not to disturb bottom of excavation. Excavate by hand to final grade just before concrete reinforcement is placed.
- G. Trenching: Excavate trenches for electrical installations as follows:
  - 1. Excavate trenches to the uniform width, sufficiently wide to provide ample working room and a minimum of 6 to 9 inches clearance on both sides of raceways and equipment.
  - 2. Excavate trenches to depth as required.
  - 3. Limit the length of open trench to that in which installations can be made and the trench backfilled within the same day.

- 4. Where rock is encountered, carry excavation below required elevation and backfill with a layer of crushed stone or gravel to 6" below conduit.
- H. Cold Weather Protection: Protect excavation bottoms against freezing when atmospheric temperature is less than 35 deg F (1 deg C).
- I. Backfilling and Filling: Place soil materials in layers to required subgrade elevations for each area classification listed below, using materials specified in Part 2 of this Section.
  - 1. Under walks and pavements, use a course interlocking aggregate ODOT #6, 67, 68, 7, 78 or 8 or equivalent.
  - 2. Under building slabs, use a course interlocking aggregate ODOT #6, 67, 68, 7, 78 or 8 or equivalent.
  - 3. Under conduit and equipment, use subbase materials where required over rock bearing surface and for correction of unauthorized excavation.
  - 4. For raceways less than 30 inches below surface of roadways, provide 4-inch thick concrete base slab support. After installation of raceways, provide a 4-inch thick concrete encasement (sides and top) prior to backfilling and placement of roadway subbase.
  - 5. Other areas, use excavated or borrowed materials, free of large stones.
- J. Backfill excavations as promptly as work permits, but not until completion of the following:
  - 1. Inspection, testing, approval, and locations of underground utilities have been recorded.
  - 2. Removal of concrete formwork.
  - 3. Removal of shoring and bracing, and backfilling of voids.
  - 4. Removal of trash and debris.
- K. Placement and Compaction: Place backfill and fill materials in layers of not more than 8 inches in loose depth for material compacted by heavy equipment, and not more than 4 inches in loose depth for material compacted by hand-operated tampers.
- L. Before compaction, moisten or aerate each layer as necessary to provide optimum moisture content. Compact each layer to required percentage of maximum dry density or relative dry density for each area classification specified below. Do not place backfill or fill material on surfaces that are muddy, frozen, or contain frost or ice.
- M. Place backfill and fill materials evenly adjacent to structures, conduit, and equipment to required elevations. Prevent displacement of raceways and equipment by carrying material uniformly around them to approximately same elevation in each lift.
- N. Compaction: Control soil compaction during construction, providing minimum percentage of density specified for each area classification indicated below.
  - Percentage of Maximum Density Requirements: Compact soil to not less than the following percentages of maximum density for soils which exhibit a well-defined moisture-density relationship (cohesive soils), determined in accordance with ASTM D 1557 and not less than the following percentages of relative density, determined in accordance with ASTM D 2049, for soils which will not exhibit a well-defined moisture-density relationship (cohesionless soils).

- a. Areas Other Than Under Building or Pavement: Compact top 6 inches of subgrade and each layer of backfill or fill material to 85 percent maximum density for cohesive soils, and 90 percent relative density for cohesionless soils.
- 2. Moisture Control: Where subgrade or layer of soil material must be moisture conditioned before compaction, uniformly apply water. Apply water in minimum quantity necessary to achieve required moisture content and to prevent water appearing on surface during, or subsequent to, compaction operations.
- O. Subsidence: Where subsidence occurs at electrical installation excavations during the period 12 months after Substantial Completion, remove surface treatment (i.e., pavement, lawn, or other finish), add backfill material, compact to specified conditions, and replace surface treatment. Restore appearance, quality, and condition of surface or finish to match adjacent areas.

### 3.3. DISPOSAL OF EXCESS AND WASTE EXCAVATION MATERIALS:

A. Removal from Owner's Property: Remove excess excavated material, trash, debris and waste materials and dispose of it off Owner's property.

### 3.4. ERECTION OF METAL SUPPORTS AND ANCHORAGE:

- A. Cut, fit, and place miscellaneous metal fabrications accurately in location, alignment, and elevation to support and anchor electrical materials and equipment.
- B. Field Welding: Comply with AWS "Structural Welding Code."

# 3.5. MISCELLANEOUS LUMBER:

- A. Cut, fit and place miscellaneous lumber fabrications accurately in location, alignment, and elevation to support and anchor electrical materials and equipment.
- B. Both sides and all edges of all lumber fabrications shall be painted with two (2) coats of grey fire-retardant paint unless noted otherwise.

## 3.6. ROUGH-IN:

- A. Verify with Architect prior to rough-in, exact location of items such as switches, receptacles, speakers, fire alarm devices, surface-mounted raceways, etc., in finished areas.
- B. Verify with respective equipment supplier prior to rough-in, exact location and method of connection to respective equipment for such items as mechanical equipment, etc.

## 3.7. ELECTRICAL INSTALLATIONS:

- A. General: Sequence, coordinate, and integrate the various elements of electrical systems, materials, and equipment. Comply with the following requirements:
  - 1. Coordinate electrical systems, equipment, and materials installation with other building components.
  - 2. Verify all dimensions by field measurements.
  - 3. Arrange for chases, slots, and openings in other building components during progress of construction, to allow for electrical installations.

- 4. Coordinate the installation of required supporting devices and sleeves to be set in poured-inplace concrete and other structural components, as they are constructed.
- 5. Sequence, coordinate, and integrate installations of electrical materials and equipment for efficient flow of the Work. Give particular attention to large equipment requiring positioning prior to closing in the building.
- 6. Where mounting heights are not detailed or dimensioned, install systems, materials, and equipment to provide the maximum headroom possible.
- 7. Coordinate connection of electrical systems with exterior underground and/or overhead utilities and services. Comply with requirements of governing regulations, franchised service companies, and controlling agencies. Provide required connection for each service.
- 8. Install systems, materials, and equipment to conform with approved submittal data, to greatest extent possible. Conform to arrangements indicated by the Contract Documents, recognizing that portions of the work are shown only in diagrammatic form. Where coordination requirements conflict with individual system requirements, refer conflict to the Architect.
- 9. Install systems, materials, and equipment level and plumb, parallel, and perpendicular to other building systems and components.
- 10. Install electrical equipment to facilitate servicing, maintenance, and repair or replacement of equipment components. As much as practical, connect equipment for ease of disconnecting, with minimum of interference with other installations.
- 11. Provide access panel or doors where units are concealed behind finished surfaces such as drywall and/or plaster construction, etc. Coordinate the access panel type with the Architect.
- 12. Install systems, materials, and equipment giving right-of-way priority to systems required to be installed at a specified slope (such as for underground services, etc.).
- 13. All wiring other than within an item of equipment, to be in raceways unless shown otherwise on Drawings or covered otherwise in these Specifications.
- 14. Raceways, boxes, cables, conductors, etc., installed in plenum spaces and similar areas shall be supported from the building structure and shall be installed symmetrical with the axis of the space (do not cross room at an angle). Support wires for lay-in type grid ceilings shall not be used to support electrical equipment, raceways, cables, etc. Use J-hooks rated to support communication cables.
- 15. Wiring of Motors and/or Equipment:
  - a. Provide necessary power wiring to motors and/or equipment where shown on Drawings.
    - 1.) Make final "line" connections to respective items of equipment as shown on Drawings.
    - 2.) Provide "Control" wiring, regardless of voltage, only when shown on Electrical Drawings.
    - 3.) In general, all 120, 208, 240, 277, or 480 volt wiring to be construed as power wiring; however, line voltage control wiring shall not be construed as power wiring unless shown on Electrical Drawings.

## 3.8. CUTTING AND PATCHING:

A. General: Perform cutting and patching in accordance with Division 1 Section "CUTTING AND PATCHING". In addition to the requirements specified in Division 1, the following requirements apply:

- 1. Perform cutting, fitting, and patching of electrical equipment and materials required to:
  - a. Demolition of electrical items required to be removed from structure to remain.
  - b. Uncover work to provide for installation of ill-timed work.
  - c. Remove and replace defective work.
  - d. Remove and replace work not conforming to requirements of the Contract Documents.
  - e. Install equipment and materials in existing structures.
  - f. Upon written instructions from the Architect or Engineer, uncover and restore work to provide for Architect or Engineer observation of concealed work.
- 2. Cut, remove, and legally dispose of electrical equipment, components, and materials, including but not limited to electrical items to be removed and items made obsolete by the new work.
- 3. Protect the structure, furnishings, finishes, and adjacent materials not to be removed.
- 4. Provide and maintain temporary partitions or dust barriers adequate to prevent the spread of dust and dirt to adjacent areas.
- 5. Protection of Installed Work: During cutting and patching operations, protect adjacent installations.
- 6. Patch new and/or existing finished surfaces and building components using new materials matching existing materials and using workmen skilled in respective trade.
- 7. Where existing construction such as floors, walls, ceilings, etc., must be cut to relocate, remove or add raceways and/or equipment, such construction to be restored to original condition to satisfaction of Architect, by this Contractor using workmen skilled in respective trade.
- 8. General penetrations through walls, floors, slab, etc. will be patched with materials to match the surrounding surface (i.e. vinyl concrete patch for concrete surfaces, joint and patching compound for dry wall surfaces, etc.). If the penetrated surface is a fire or smoke barrier, refer to "Installation of Fire Stopping Materials" in this section.

### 3.9. INSTALLATION OF FIRE-STOPPING MATERIAL:

# A. General:

- 1. All fire and smoke rated walls and floors penetrated by electrical raceways, exposed conductors, etc. shall be properly sleeved and fire sealed. See Division 7 "Firestopping". All firestop system types shall be by same manufacturer to fullest extent possible.
- 2. All fire stopping will be installed in accordance to the U.L. rated system designed for the application.
- 3. Insulation types specified in other sections shall not be installed in lieu of firestopping material specified herein.
- 4. Grout, Mortar, or Gypsum products shall not be installed in lieu of firestopping material specified here.

### B. Sleeves:

1. Wall and floor opening shall be made as small as possible. Install sleeves during the erection of concrete or masonary walls. Sleeve shall be grouted in using material to match surrounding surface. Install electrical raceway, exposed conductors, etc. through sleeve and install fire stopping, intumescent material.

## C. Penetrations - Provide Firestopping:

- 1. Where penetrations including conduit, cable, wire, or other elements which pass through one or both outer surfaces of a fire rated floor or wall.
- 2. Except for floor on grade, where a penetration occurs through a structural floor or roof and a space would otherwise remain open between the surfaces of the penetration and the edge of the adjoining structural floor or roof.
- 3. Where a penetration occurs through fire-rated walls, or partitions of hollow-type construction, provide fire stopping to completely fill spaces around the penetration, on each side of the wall or partition.
- 4. These requirements for penetrations shall apply whether or not sleeves have been provided, and whether or not penetrations are to be equipped with escutcheons or other trim. If penetrations are sleeved, fire stop annular space, if any, between sleeve and wall opening.
- D. Provide fire stopping to fill miscellaneous voids and blank openings in fire-rated construction where conduit, cable, wire or equipment has been removed.

# 3.10. SELECTIVE DEMOLITION AND ALTERATION OF EXISTING ELECTRICAL SYSTEMS:

#### A. Demolition Definitions:

- 1. Under demolition notes, several words and phrases are used. These shall be interpreted to mean as follows:
  - a. Abandon: Disconnect designated equipment and remove respective conductors back to source, such as a panelboard, distribution panel, switchboard, switchgear, etc. Alter respective legend accordingly.
  - b. Disconnect: Disconnect designated equipment and remove respective branch circuit wiring and affected exposed electrical equipment, such as boxes, raceways, control, etc.
    - 1.) Remove conductors back to source such as panelboard, etc. Alter respective legend accordingly.
    - 2.) Remove exposed raceway. When in unfinished areas such as mechanical equipment rooms, remove back to source. When in finished spaces, remove only that raceway which is exposed.
    - 3.) Where raceway is above an existing suspended, accessible ceiling and that ceiling grid is being reused or replaced, remove the exposed raceway in the affected area. Concealed homeruns are to remain and may be reused at Contractor's option.
  - c. Disconnect and Reconnect: Disconnect designated items, remove and store same where necessary, and then reinstall item and reconnect to existing branch circuit and control.
  - d. Remove Branch Circuit and/or Feeder: Remove conductor and respective raceway, fittings, boxes, etc.
- B. Where existing building construction is to be altered to accommodate the planned renovations and/or an addition(s), alter existing electrical service and distribution system, communications WV CAP EXT LIGHTING

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- systems, fire alarm system, etc., as shown on the drawings and as required for proper operation of the altered system.
- C. Where existing accessible ceiling grid panels and grid support members are removed to permit the installation of new conduit, boxes, etc., it shall be the responsibility of this Contractor to reinstall the panels and grid support system to the satisfaction of the Architect. Damaged items shall be replaced at no cost to the Owner.
- D. Remove all existing affected electrical equipment, devices, fixtures, boxes, etc. which are not incorporated into or are not necessary for the operation of new and/or existing electrical systems, making sure that no remaining fixtures, devices, or appliances are left without service.
- E. Make sure that no remaining fixtures, devices, etc. within the renovated area or adjacent areas are left without service.
  - 1. Services and/or power outages and cutovers to be coordinated Engineer and Owner and done at Owner's convenience.
  - 2. Modify existing "systems" as required to accommodate added equipment.
  - 3. Remove abandoned accessible surface-mounted boxes and raceway. Abandoned accessible surface raceway shall be removed complete back to source.
  - 4. Where an abandoned raceway penetrates floor, slab, wall, etc. raceway shall be cut below the surface. Seal the opening and restore respective surface to match surrounding surface as directed.
  - 5. Where an abandoned raceway is not accessible, the raceway shall remain. Any accessible portions penetrating out of wall, floor, slab, etc. shall be cut off below the surface. Seal the opening and restore the respective surface to match the surrounding surface as directed.
    - a. Perform cutting and patching required for demolition in accordance with Division 1 and Division 2 section "Cutting and Patching".
  - 6. Flush mounted outlet boxes which are abandoned or used for junction boxes and are not concealed by new construction shall have openings covered by a blank, stainless steel plate.
  - 7. Where an existing distribution center is altered, provide a new, accurate, typed legend.
  - 8. Where work cannot be executed during normal working hours, this Contractor shall include in the Base Bid all necessary overtime pay to execute this contractors contract.
- F. All electrical equipment removed and not scheduled for reuse shall be turned over to the Owner at the construction site for salvage. All items deemed not salvageable by the Owner shall become the property of this Contractor and shall be removed from the site within 72 hours.

END OF SECTION 260501

### SECTION 260519 - LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES

## PART 1 - GENERAL

### 1.1 RELATED DOCUMENTS

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

## 1.2 SUMMARY

- A. Section Includes:
  - 1. Copper building wire rated 600 V or less.
  - 2. Connectors, splices, and terminations rated 600 V and less.

## 1.3 DEFINITIONS

A. RoHS: Restriction of Hazardous Substances.

### 1.4 SUBMITTALS

A. Product Data: For each type of product.

# 1.5 QUALITY ASSURANCE

- A. Testing Agency Qualifications: Member company of NETA.
  - 1. Testing Agency's Field Supervisor: Certified by NETA to supervise on-site testing.

## PART 2 - PRODUCTS

### 2.1 COPPER BUILDING WIRE

- A. Description: Flexible, insulated and uninsulated, drawn copper current-carrying conductor with an overall insulation layer or jacket, or both, rated 600 V or less.
- B. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
  - 1. Alpha Wire Company.
  - 2. American Bare Conductor.
  - 3. Belden Inc.
  - 4. Cerro Wire LLC.

- 5. Encore Wire Corporation.
- 6. General Cable Technologies Corporation.
- 7. Okonite Company (The).
- 8. Service Wire Co.
- 9. Southwire Company.
- 10. WESCO.
- 11. West Penn.

### C. Standards:

- 1. Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and use.
- 2. RoHS compliant.
- 3. Conductor and Cable Marking: Comply with wire and cable marking according to UL's "Wire and Cable Marking and Application Guide."
- D. Conductors: Copper, complying with ASTM B 3 for bare annealed copper and with ASTM B 8 for stranded conductors.
- E. Conductor Insulation:
  - 1. Type THHN and Type THWN-2: Comply with UL 83.

## 2.2 CONNECTORS AND SPLICES

- A. Description: Factory-fabricated connectors, splices, and lugs of size, ampacity rating, material, type, and class for application and service indicated; listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and use.
- B. Manufacturers: Subject to compliance with requirements, provide products by the following:
  - 1. 3M Electrical Products.
  - 2. AFC Cable Systems; a part of Atkore International.
  - 3. Gardner Bender.
  - 4. Hubbell Power Systems, Inc.
  - 5. Ideal Industries, Inc.
  - 6. ILSCO.
  - 7. NSi Industries LLC.
  - 8. O-Z/Gedney; a brand of Emerson Industrial Automation.
  - 9. Service Wire Co.
  - 10. TE Connectivity Ltd.
  - 11. Thomas & Betts Corporation; A Member of the ABB Group.
- C. Jacketed Cable Connectors: For steel and aluminum jacketed cables, zinc die-cast with set screws, designed to connect conductors specified in this Section.
- D. Lugs: One piece, seamless, designed to terminate conductors specified in this Section.
  - 1. Material: Copper.

- 2. Type: One hole with standard barrels.
- 3. Termination: Crimp.

## **PART 3 - EXECUTION**

## 3.1 CONDUCTOR MATERIAL APPLICATIONS

A. Feeders and Branch Circuits: Copper; solid for No. 14 AWG and smaller; stranded for No. 12 AWG and larger.

# 3.2 CONDUCTOR INSULATION AND MULTICONDUCTOR CABLE APPLICATIONS AND WIRING METHODS

- A. All Wiring: Type THHN/THWN-2, single conductors in raceway.
- B. Cord Drops and Portable Appliance Connections: Type SO, hard service cord with stainless-steel, wire-mesh, strain relief device at terminations to suit application.

### 3.3 INSTALLATION OF CONDUCTORS AND CABLES

- A. Conceal cables in finished walls, ceilings, and floors unless otherwise indicated.
- B. Complete raceway installation between conductor and cable termination points according to Section 260533 "Raceways and Boxes for Electrical Systems" prior to pulling conductors and cables.
- C. Use manufacturer-approved pulling compound or lubricant where necessary; compound used must not deteriorate conductor or insulation. Do not exceed manufacturer's recommended maximum pulling tensions and sidewall pressure values.
- D. Use pulling means, including fish tape, cable, rope, and basket-weave wire/cable grips, that will not damage cables or raceway.
- E. Install exposed cables parallel and perpendicular to surfaces of exposed structural members, and follow surface contours where possible.
- F. Support cables according to Section 260529 "Hangers and Supports for Electrical Systems."

## 3.4 CONNECTIONS

- A. Tighten electrical connectors and terminals according to manufacturer's published torquetightening values. If manufacturer's torque values are not indicated, use those specified in UL 486A-486B.
- B. Make splices, terminations, and taps that are compatible with conductor material and that possess equivalent or better mechanical strength and insulation ratings than unspliced conductors.

- 1. Use oxide inhibitor in each splice, termination, and tap for aluminum conductors.
- C. Wiring at Outlets: Install conductor at each outlet, with at least 12 inches of slack.

#### 3.5 IDENTIFICATION

- A. Identify and color-code conductors and cables according to Section 260553 "Identification for Electrical Systems."
- B. Identify each spare conductor at each end with identity number and location of other end of conductor, and identify as spare conductor.

#### 3.6 SLEEVE AND SLEEVE-SEAL INSTALLATION FOR ELECTRICAL PENETRATIONS

A. Install sleeves and sleeve seals at penetrations of exterior floor and wall assemblies. Comply with requirements in Section 260544 "Sleeves and Sleeve Seals for Electrical Raceways and Cabling."

### 3.7 FIRESTOPPING

A. Apply firestopping to electrical penetrations of fire-rated floor and wall assemblies to restore original fire-resistance rating of assembly according to Section 078413 "Penetration Firestopping."

# 3.8 FIELD QUALITY CONTROL

- A. Perform tests and inspections.
  - 1. After installing conductors and cables and before electrical circuitry has been energized, test service entrance and feeder conductors for compliance with requirements.
  - 2. Perform each of the following tests:
    - a. Inspect exposed sections of conductor and cable for physical damage and correct connection according to the single-line diagram.
    - b. Inspect compression-applied connectors for correct cable match and indentation.
    - c. Inspect for correct identification.
    - d. Inspect cable jacket and condition.
- B. Cables will be considered defective if they do not pass tests and inspections.

END OF SECTION 260519

## SECTION 260526 - GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS

### PART 1 - GENERAL

### 1.1 RELATED DOCUMENTS

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

# 1.2 SUMMARY

A. Section includes grounding and bonding systems and equipment.

## 1.3 SUBMITTALS

- A. Coordination Drawings: Plans showing dimensioned locations of grounding features specified in "Field Quality Control" Article, including the following:
  - 1. Ground rods.
  - 2. Grounding arrangements and connections for separately derived systems..
- B. Qualification Data: For testing agency and testing agency's field supervisor.
- C. Field quality-control reports.

### 1.4 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: For grounding to include in emergency, operation, and maintenance manuals.
  - 1. In addition to items specified in Section 017823 "Operation and Maintenance Data," include the following:
    - a. Plans showing as-built, dimensioned locations of grounding features specified in "Field Quality Control" Article, including the following:
      - 1) Ground rods.
      - 2) Grounding arrangements and connections for separately derived systems.

## 1.5 QUALITY ASSURANCE

A. Testing Agency Qualifications: Certified by NETA.

#### PART 2 - PRODUCTS

## 2.1 SYSTEM DESCRIPTION

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- B. Comply with UL 467 for grounding and bonding materials and equipment.

## 2.2 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
  - 1. Advanced Lightning Technology, Ltd.
  - 2. Burndy; Part of Hubbell Electrical Systems.
  - 3. Dossert; AFL Telecommunications LLC.
  - 4. ERICO; a brand of nVent.
  - 5. Fushi Copperweld Inc.
  - 6. Galvan Industries, Inc.; Electrical Products Division, LLC.
  - 7. Harger Lightning & Grounding.
  - 8. ILSCO.
  - 9. O-Z/Gedney; a brand of Emerson Industrial Automation.
  - 10. Robbins Lightning, Inc.
  - 11. Siemens Industry, Inc., Energy Management Division.
  - 12. Thomas & Betts Corporation; A Member of the ABB Group.

## 2.3 CONDUCTORS

- A. Insulated Conductors: Copper wire or cable insulated for 600 V unless otherwise required by applicable Code or authorities having jurisdiction.
- B. Bare Copper Conductors:
  - 1. Solid Conductors: ASTM B 3.
  - 2. Stranded Conductors: ASTM B 8.
  - 3. Bonding Cable: 28 kcmil, 14 strands of No. 17 AWG conductor, 1/4 inch in diameter.
  - 4. Bonding Conductor: No. 4 or No. 6 AWG, stranded conductor.
  - 5. Bonding Jumper: Copper tape, braided conductors terminated with copper ferrules; 1-5/8 inches wide and 1/16 inch thick.
  - 6. Tinned Bonding Jumper: Tinned-copper tape, braided conductors terminated with copper ferrules; 1-5/8 inches wide and 1/16 inch thick.
- C. Grounding Bus: Predrilled rectangular bars of annealed copper, 1/4 by 4 inches in cross section, with 9/32-inch holes spaced 1-1/8 inches apart. Stand-off insulators for mounting shall comply with UL 891 for use in switchboards, 600 V and shall be Lexan or PVC, impulse tested at 5000 V.

### 2.4 CONNECTORS

- A. Listed and labeled by an NRTL acceptable to authorities having jurisdiction for applications in which used and for specific types, sizes, and combinations of conductors and other items connected.
- B. Welded Connectors: Exothermic-welding kits of types recommended by kit manufacturer for materials being joined and installation conditions.
- C. Bus-Bar Connectors: Mechanical type, cast silicon bronze, solderless exothermic-type wire terminals, and long-barrel, two-bolt connection to ground bus bar.
- D. Beam Clamps: Mechanical type, terminal, ground wire access from four directions, with dual, tin-plated or silicon bronze bolts.
- E. Cable-to-Cable Connectors: Compression type, copper or copper alloy.
- F. Cable Tray Ground Clamp: Mechanical type, zinc-plated malleable iron.
- G. Conduit Hubs: Mechanical type, terminal with threaded hub.
- H. Ground Rod Clamps: Mechanical type, copper or copper alloy, terminal with hex head bolt.
- I. Ground Rod Clamps: Mechanical type, copper or copper alloy, terminal with hex head bolt.
- J. Lay-in Lug Connector: Mechanical type, copper rated for direct burial terminal with set screw.
- K. Straps: Solid copper, copper lugs. Rated for 600 A.
- L. Tower Ground Clamps: Mechanical type, copper or copper alloy, terminal onetwo-piece clamp.
- M. U-Bolt Clamps: Mechanical type, copper or copper alloy, terminal listed for direct burial.

#### 2.5 GROUNDING ELECTRODES

A. Ground Rods: Copper-clad steel; 3/4 inch by 10 feet.

## **PART 3 - EXECUTION**

#### 3.1 APPLICATIONS

- A. Conductors: Install solid conductor for No. 8 AWG and smaller, and stranded conductors for No. 6 AWG and larger unless otherwise indicated.
- B. Underground Grounding Conductors: Install bare copper conductor, No. 2/0 AWG minimum.
  - 1. Bury at least 24 inches below grade.
  - 2. Duct-Bank Grounding Conductor: Bury 12 inches above duct bank when indicated as part of duct-bank installation.

- C. Grounding Bus: Install in electrical equipment rooms, in rooms housing service equipment, and elsewhere as indicated.
  - 1. Install bus horizontally, on insulated spacers.
- D. Conductor Terminations and Connections:
  - 1. Pipe and Equipment Grounding Conductor Terminations: Bolted connectors.
  - 2. Underground Connections: Exothermic welded connectors as indicated.
  - 3. Connections to Structural Steel: Exothermic welded connectors.

## 3.2 GROUNDING UNDERGROUND DISTRIBUTION SYSTEM COMPONENTS

- A. Comply with IEEE C2 grounding requirements.
- B. Pad-Mounted Transformers and Switches: Install four ground rods and ground ring around the pad. Ground pad-mounted equipment and noncurrent-carrying metal items associated with substations by connecting them to underground cable and grounding electrodes. Install tinned-copper conductor not less than No. 2 AWG for ground ring and for taps to equipment grounding terminals. Bury ground ring not less than 6 inches from the foundation.

# 3.3 EQUIPMENT GROUNDING

- A. Install insulated equipment grounding conductors with all feeders and branch circuits.
- B. Install insulated equipment grounding conductors with the following items, in addition to those required by NFPA 70:
  - 1. Feeders and branch circuits.
  - 2. Lighting circuits.
  - 3. Receptacle circuits.
- C. Poles Supporting Outdoor Lighting Fixtures: Install grounding electrode and a separate insulated equipment grounding conductor in addition to grounding conductor installed with branch-circuit conductors.

# 3.4 INSTALLATION

- A. Grounding Conductors: Route along shortest and straightest paths possible unless otherwise indicated or required by Code. Avoid obstructing access or placing conductors where they may be subjected to strain, impact, or damage.
- B. Ground Bonding Common with Lightning Protection System: Comply with NFPA 780 and UL 96 when interconnecting with lightning protection system. Bond electrical power system ground directly to lightning protection system grounding conductor at closest point to electrical service grounding electrode. Use bonding conductor sized same as system grounding electrode conductor, and install in conduit.

- C. Ground Rods: Drive rods until tops are 2 inches below finished floor or final grade unless otherwise indicated.
  - 1. Interconnect ground rods with grounding electrode conductor below grade and as otherwise indicated. Make connections without exposing steel or damaging coating if any.
  - 2. Use exothermic welds for all below-grade connections.
  - 3. For grounding electrode system, install at least three rods spaced at least one-rod length from each other and located at least the same distance from other grounding electrodes, and connect to the service grounding electrode conductor.
- D. Bonding Straps and Jumpers: Install in locations accessible for inspection and maintenance except where routed through short lengths of conduit.
  - 1. Bonding to Structure: Bond straps directly to basic structure, taking care not to penetrate any adjacent parts.
  - 2. Bonding to Equipment Mounted on Vibration Isolation Hangers and Supports: Install bonding so vibration is not transmitted to rigidly mounted equipment.
  - 3. Use exothermic-welded connectors for outdoor locations; if a disconnect-type connection is required, use a bolted clamp.
- E. Connections: Make connections so possibility of galvanic action or electrolysis is minimized. Select connectors, connection hardware, conductors, and connection methods so metals in direct contact are galvanically compatible.
  - 1. Use electroplated or hot-tin-coated materials to ensure high conductivity and to make contact points closer in order of galvanic series.
  - 2. Make connections with clean, bare metal at points of contact.
  - 3. Make aluminum-to-steel connections with stainless-steel separators and mechanical clamps.
  - 4. Make aluminum-to-galvanized-steel connections with tin-plated copper jumpers and mechanical clamps.
  - 5. Coat and seal connections having dissimilar metals with inert material to prevent future penetration of moisture to contact surfaces.

# 3.5 FIELD QUALITY CONTROL

### A. Tests and Inspections:

- 1. After installing grounding system but before permanent electrical circuits have been energized, test for compliance with requirements.
- 2. Inspect physical and mechanical condition. Verify tightness of accessible, bolted, electrical connections with a calibrated torque wrench according to manufacturer's written instructions.
- 3. Test completed grounding system at each location where a maximum ground-resistance level is specified, at service disconnect enclosure grounding terminal, at ground test wells. Make tests at ground rods before any conductors are connected.
  - a. Measure ground resistance no fewer than two full days after last trace of precipitation and without soil being moistened by any means other than natural

- drainage or seepage and without chemical treatment or other artificial means of reducing natural ground resistance.
- b. Perform tests by fall-of-potential method according to IEEE 81.
- 4. Prepare dimensioned Drawings locating each ground rod and ground-rod assembly, and other grounding electrodes. Identify each by letter in alphabetical order, and key to the record of tests and observations. Include the number of rods driven and their depth at each location, and include observations of weather and other phenomena that may affect test results. Describe measures taken to improve test results.
- B. Grounding system will be considered defective if it does not pass tests and inspections.
- C. Prepare test and inspection reports.
- D. Report measured ground resistances that exceed the following values:
  - 1. Power and Lighting Equipment or System with Capacity of 500 kVA and Less: 10 ohms.
  - 2. Power and Lighting Equipment or System with Capacity of 500 to 1000 kVA: 5 ohms.
  - 3. Power and Lighting Equipment or System with Capacity More Than 1000 kVA: 3 ohms.
  - 4. Power Distribution Units or Panelboards Serving Electronic Equipment: 1 ohm(s).
  - 5. Substations and Pad-Mounted Equipment: 5 ohms.
- E. Excessive Ground Resistance: If resistance to ground exceeds specified values, notify Architect promptly and include recommendations to reduce ground resistance.

END OF SECTION 260526

## SECTION 260529 - HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS

## PART 1 - GENERAL

### 1.1 RELATED DOCUMENTS

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

## 1.2 SUMMARY

#### A. Section Includes:

- 1. Steel slotted support systems.
- 2. Aluminum slotted support systems.
- 3. Conduit and cable support devices.
- 4. Support for conductors in vertical conduit.
- 5. Structural steel for fabricated supports and restraints.
- 6. Mounting, anchoring, and attachment components, including powder-actuated fasteners, mechanical expansion anchors, concrete inserts, clamps, through bolts, toggle bolts, and hanger rods.
- 7. Fabricated metal equipment support assemblies.

## B. Related Requirements:

- 1. Conduit supports on roof non-penetration product specifically designed for conduit support.
- 2. Product shall be approved by roofing manufacturer to retain roofing warranty.

## 1.3 SUBMITTALS

- A. Product Data: For each type of product.
  - 1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for the following:
    - a. Slotted support systems, hardware, and accessories.
    - b. Clamps.
    - c. Hangers.
    - d. Sockets.
    - e. Eye nuts.
    - f. Fasteners.
    - g. Anchors.
    - h. Saddles.
    - Brackets.

- 2. Include rated capacities and furnished specialties and accessories.
- B. Shop Drawings: Signed and sealed by a qualified professional engineer. For fabrication and installation details for electrical hangers and support systems.
  - 1. Hangers. Include product data for components.
  - 2. Slotted support systems.
  - 3. Equipment supports.
- C. Welding certificates.

## 1.4 QUALITY ASSURANCE

A. Welding Qualifications: Qualify procedures and personnel according to AWS D1.1/D1.1M.

#### **PART 2 - PRODUCTS**

## 2.1 PERFORMANCE REQUIREMENTS

- A. Delegated Design: Engage a qualified professional engineer, as defined in Section 014000 "Quality Requirements," to design hanger and support system.
- B. Surface-Burning Characteristics: Comply with ASTM E 84; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.
  - 1. Flame Rating: Class 1.
  - 2. Self-extinguishing according to ASTM D 635.

## 2.2 SUPPORT, ANCHORAGE, AND ATTACHMENT COMPONENTS

- A. Steel Slotted Support Systems: Preformed steel channels and angles with minimum 13/32-inch-diameter holes at a maximum of 8 inches o.c. in at least one surface.
  - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
    - a. Allied Tube & Conduit; a part of Atkore International.
    - b. B-line, an Eaton business.
    - c. CADDY; a brand of nVent.
    - d. Flex-Strut Inc.
    - e. Gripple Inc.
    - f. GS Metals Corp.
    - g. G-Strut.
    - h. Haydon Corporation.
    - i. Metal Ties Innovation.
    - j. MIRO Industries.
    - k. Thomas & Betts Corporation; A Member of the ABB Group.

- 1. Unistrut; Part of Atkore International.
- m. Wesanco, Inc.
- 2. Standard: Comply with MFMA-4 factory-fabricated components for field assembly.
- 3. Material for Channel, Fittings, and Accessories: Galvanized steel.
- 4. Channel Width: 1-1/4 inches.
- 5. Metallic Coatings: Hot-dip galvanized after fabrication and applied according to MFMA-4.
- 6. Nonmetallic Coatings: Manufacturer's standard PVC, polyurethane, or polyester coating applied according to MFMA-4.
- 7. Painted Coatings: Manufacturer's standard painted coating applied according to MFMA-4.
- 8. Protect finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.
- B. Aluminum Slotted Support Systems: Extruded-aluminum channels and angles with minimum 13/32-inch-diameter holes at a maximum of 8 inches o.c. in at least one surface.
  - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
    - a. Cooper Industries, Inc.
    - b. Flex-Strut Inc.
    - c. Haydon Corporation.
    - d. MKT Metal Manufacturing.
    - e. Thomas & Betts Corporation; A Member of the ABB Group.
    - f. Unistrut; Part of Atkore International.
  - 2. Standard: Comply with MFMA-4 factory-fabricated components for field assembly.
  - 3. Channel Material: 6063-T5 aluminum alloy.
  - 4. Fittings and Accessories Material: 5052-H32 aluminum alloy.
  - 5. Channel Width: Selected for applicable load criteria.
  - 6. Nonmetallic Coatings: Manufacturer's standard PVC, polyurethane, or polyester coating applied according to MFMA-4.
  - 7. Painted Coatings: Manufacturer's standard painted coating applied according to MFMA-4.
  - 8. Protect finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.
- C. Conduit and Cable Support Devices: Steel hangers, clamps, and associated fittings, designed for types and sizes of raceway or cable to be supported.
- D. Support for Conductors in Vertical Conduit: Factory-fabricated assembly consisting of threaded body and insulating wedging plug or plugs for nonarmored electrical conductors or cables in riser conduits. Plugs shall have number, size, and shape of conductor gripping pieces as required to suit individual conductors or cables supported. Body shall be made of malleable iron.
- E. Structural Steel for Fabricated Supports and Restraints: ASTM A 36/A 36M steel plates, shapes, and bars; black and galvanized.

- F. Mounting, Anchoring, and Attachment Components: Items for fastening electrical items or their supports to building surfaces include the following:
  - 1. Powder-Actuated Fasteners: Threaded-steel stud, for use in hardened portland cement concrete, steel, or wood, with tension, shear, and pullout capacities appropriate for supported loads and building materials where used.
    - a. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
      - 1) Hilti, Inc.
      - 2) ITW Ramset/Red Head; Illinois Tool Works, Inc.
      - 3) MKT Fastening, LLC.
      - 4) Simpson Strong-Tie Co., Inc.
  - 2. Mechanical-Expansion Anchors: Insert-wedge-type, zinc-coated steel, for use in hardened portland cement concrete, with tension, shear, and pullout capacities appropriate for supported loads and building materials where used.
    - a. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
      - 1) B-line, an Eaton business.
      - 2) Empire Tool and Manufacturing Co., Inc.
      - 3) Hilti, Inc.
      - 4) ITW Ramset/Red Head; Illinois Tool Works, Inc.
      - 5) MKT Fastening, LLC.
  - 3. Concrete Inserts: Steel or malleable-iron, slotted support system units are similar to MSS Type 18 units and comply with MFMA-4 or MSS SP-58.
  - 4. Clamps for Attachment to Steel Structural Elements: MSS SP-58 units are suitable for attached structural element.
  - 5. Through Bolts: Structural type, hex head, and high strength. Comply with ASTM A 325.
  - 6. Toggle Bolts: All Stainless-steel springhead type.
  - 7. Hanger Rods: Threaded steel.

# 2.3 FABRICATED METAL EQUIPMENT SUPPORT ASSEMBLIES

- A. Description: Welded or bolted structural-steel shapes, shop or field fabricated to fit dimensions of supported equipment.
- B. Materials: Comply with requirements in Section 055000 "Metal Fabrications" for steel shapes and plates.

#### **PART 3 - EXECUTION**

## 3.1 APPLICATION

- A. Comply with the following standards for application and installation requirements of hangers and supports, except where requirements on Drawings or in this Section are stricter:
  - 1. NECA 1.
  - 2. NECA 101
  - 3. NECA 102.
  - 4. NECA 105.
  - 5. NECA 111.
- B. Comply with requirements in Section 078413 "Penetration Firestopping" for firestopping materials and installation for penetrations through fire-rated walls, ceilings, and assemblies.
- C. Comply with requirements for raceways and boxes specified in Section 260533 "Raceways and Boxes for Electrical Systems."
- D. Maximum Support Spacing and Minimum Hanger Rod Size for Raceways: Space supports for EMT and RMC as required by NFPA 70. Minimum rod size shall be 1/4 inch in diameter.
- E. Multiple Raceways or Cables: Install trapeze-type supports fabricated with steel slotted or other support system, sized so capacity can be increased by at least 50 percent in future without exceeding specified design load limits.
  - 1. Secure raceways and cables to these supports with two-bolt conduit clamps.

# 3.2 SUPPORT INSTALLATION

- A. Comply with NECA 1 and NECA 101 for installation requirements except as specified in this article.
- B. Strength of Support Assemblies: Where not indicated, select sizes of components so strength will be adequate to carry present and future static loads within specified loading limits. Minimum static design load used for strength determination shall be weight of supported components plus 200 lb.
- C. Mounting and Anchorage of Surface-Mounted Equipment and Components: Anchor and fasten electrical items and their supports to building structural elements by the following methods unless otherwise indicated by code:
  - 1. To Wood: Fasten with lag screws or through bolts.
  - 2. To New Concrete: Bolt to concrete inserts.
  - 3. To Masonry: Approved toggle-type bolts on hollow masonry units and expansion anchor fasteners on solid masonry units.
  - 4. To Existing Concrete: Expansion anchor fasteners.
  - 5. Instead of expansion anchors, powder-actuated driven threaded studs provided with lock washers and nuts may be used in existing standard-weight concrete 4 inches thick or

- greater. Do not use for anchorage to lightweight-aggregate concrete or for slabs less than 4 inches thick.
- 6. To Steel: Welded threaded studs complying with AWS D1.1/D1.1M, with lock washers and nuts.
- 7. To Light Steel: Sheet metal screws.
- 8. Items Mounted on Hollow Walls and Nonstructural Building Surfaces: Mount cabinets, panelboards, disconnect switches, control enclosures, pull and junction boxes, transformers, and other devices on slotted-channel racks attached to substrate by means that comply with seismic-restraint strength and anchorage requirements.
- D. Drill holes for expansion anchors in concrete at locations and to depths that avoid the need for reinforcing bars.

### 3.3 INSTALLATION OF FABRICATED METAL SUPPORTS

- A. Comply with installation requirements in Section 055000 "Metal Fabrications" for site-fabricated metal supports.
- B. Cut, fit, and place miscellaneous metal supports accurately in location, alignment, and elevation to support and anchor electrical materials and equipment.
- C. Field Welding: Comply with AWS D1.1/D1.1M.

## 3.4 CONCRETE BASES

- A. Construct concrete bases of dimensions indicated, but not less than 4 inches larger in both directions than supported unit, and so anchors will be a minimum of 10 bolt diameters from edge of the base.
- B. Use 3000-psi, 28-day compressive-strength concrete. Concrete materials, reinforcement, and placement requirements are specified in Section 033000 "Cast-in-Place Concrete." And/or Section 033053 "Miscellaneous Cast-in-Place Concrete."
- C. Anchor equipment to concrete base as follows:
  - 1. Place and secure anchorage devices. Use supported equipment manufacturer's setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.
  - 2. Install anchor bolts to elevations required for proper attachment to supported equipment.
  - 3. Install anchor bolts according to anchor-bolt manufacturer's written instructions.

#### 3.5 PAINTING

- A. Touchup: Clean field welds and abraded areas of shop paint. Paint exposed areas immediately after erecting hangers and supports. Use same materials as used for shop painting. Comply with SSPC-PA 1 requirements for touching up field-painted surfaces.
  - 1. Apply paint by brush or spray to provide minimum dry film thickness of 2.0 mils.

- B. Touchup: Comply with requirements in Section 099113 "Exterior Painting" Section 099123 "Interior Painting" and Section 099600 "High-Performance Coatings" for cleaning and touchup painting of field welds, bolted connections, and abraded areas of shop paint on miscellaneous metal.
- C. Galvanized Surfaces: Clean welds, bolted connections, and abraded areas and apply galvanizing-repair paint to comply with ASTM A 780.

END OF SECTION 260529

## SECTION 260533 - RACEWAYS AND BOXES FOR ELECTRICAL SYSTEMS

### PART 1 - GENERAL

### 1.1 RELATED DOCUMENTS

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

### 1.2 SUMMARY

#### A. Section Includes:

- 1. Metal conduits and fittings.
- 2. Nonmetallic conduits and fittings.
- 3. Metal wireways and auxiliary gutters.
- 4. Nonmetal wireways and auxiliary gutters.
- 5. Boxes, enclosures, and cabinets.
- 6. Handholes and boxes for exterior underground cabling.

## B. Related Requirements:

- 1. Section 078413 "Penetration Firestopping" for firestopping at conduit and box entrances.
- 2. Section 260543 "Underground Ducts and Raceways for Electrical Systems" for exterior ductbanks, and underground utility construction.
- 3. Section 270528 "Pathways for Communications Systems" for conduits, wireways, surface pathways, innerduct, boxes, faceplate adapters, enclosures, cabinets, and handholes serving communications systems.

#### 1.3 DEFINITIONS

- A. EMT: Electric Metallic Tubing
- B. FMC: Flexible Metal Conduit
- C. GRC: Galvanized rigid steel conduit.
- D. HDPE: High Density Polyethylene
- E. IMC: Intermediate metal conduit.
- F. LFMC: Liquid-tight Flexible Metal Conduit
- G. LFNC: Liquid-tight Flexible Non-metallic Conduit

### 1.4 SUBMITTALS

- A. Product Data: For wireways and fittings, floor boxes, hinged-cover enclosures, and cabinets.
- B. Shop Drawings: For custom enclosures and cabinets. Include plans, elevations, sections, and attachment details.

### PART 2 - PRODUCTS

## 2.1 METAL CONDUITS AND FITTINGS

## A. Metal Conduit:

- 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
  - a. Adalet, Inc.
  - b. AFC Cable Systems; a part of Atkore International.
  - c. Allied Tube & Conduit; a part of Atkore International.
  - d. Amp.
  - e. Anamet Electrical, Inc.
  - f. Appleton Electric Co.
  - g. Arlington Industries Inc.
  - h. Calconduit.
  - i. Electri-Flex Company.
  - j. FSR Inc.
  - k. Hubbell, Inc.
  - 1. Korkap.
  - m. NEC, Inc.
  - n. Opti-Com Manufacturing Network, Inc (OMNI).
  - o. O-Z/Gedney; a brand of Emerson Industrial Automation.
  - p. Perma-Cote.
  - q. Picoma Industries, Inc.
  - r. Plasti-Bond.
  - s. Republic Conduit.
  - t. Southwire Company.
  - u. Thomas & Betts Corporation; A Member of the ABB Group.
  - v. Western Tube and Conduit Corporation.
  - w. Wheatland Tube Company.
- 2. Listing and Labeling: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- 3. GRC: Comply with ANSI C80.1 and UL 6.
- 4. EMT: Comply with ANSI C80.3 and UL 797.
- 5. FMC: Comply with UL 1; zinc-coated steel.
- 6. LFMC: Flexible steel conduit with PVC jacket and complying with UL 360.

# B. Metal Fittings:

- 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
  - a. AFC Cable Systems; a part of Atkore International.
  - b. Allied Tube & Conduit; a part of Atkore International.
  - c. Anamet Electrical, Inc.
  - d. Calconduit.
  - e. Electri-Flex Company.
  - f. FSR Inc.
  - g. Korkap.
  - h. NEC, Inc.
  - i. NewBasis.
  - j. Opti-Com Manufacturing Network, Inc (OMNI).
  - k. O-Z/Gedney; a brand of Emerson Industrial Automation.
  - 1. Perma-Cote.
  - m. Picoma Industries, Inc.
  - n. Plasti-Bond.
  - o. Republic Conduit.
  - p. Southwire Company.
  - q. Thomas & Betts Corporation; A Member of the ABB Group.
  - r. Western Tube and Conduit Corporation.
  - s. Wheatland Tube Company.
- 2. Comply with NEMA FB 1 and UL 514B.
- 3. Listing and Labeling: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- 4. Fittings, General: Listed and labeled for type of conduit, location, and use.
- 5. Fittings for EMT:
  - a. Material: Steel.
  - b. Type: Setscrew.
- 6. Expansion Fittings: Steel to match conduit type, complying with UL 651, rated for environmental conditions where installed, and including flexible external bonding jumper.
- C. Joint Compound for GRC: Approved, as defined in NFPA 70, by authorities having jurisdiction for use in conduit assemblies, and compounded for use to lubricate and protect threaded conduit joints from corrosion and to enhance their conductivity.

### 2.2 NONMETALLIC CONDUITS AND FITTINGS

- A. Nonmetallic Conduit:
  - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
    - a. AFC Cable Systems; a part of Atkore International.
    - b. Anamet Electrical, Inc.
    - c. Arnco Corporation.

- d. CANTEX INC.
- e. CertainTeed Corporation.
- f. Condux International, Inc.
- g. Electri-Flex Company.
- h. FRE Composites.
- i. Kraloy.
- j. Lamson & Sessions.
- k. Niedax Inc.
- l. RACO; Hubbell.
- m. Thomas & Betts Corporation; A Member of the ABB Group.
- n. Topaz Electric; a division of Topaz Lighting Corp.
- 2. Listing and Labeling: Nonmetallic conduit shall be listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- 3. LFNC: Comply with UL 1660.
- 4. Rigid HDPE: Comply with UL 651A.
- 5. Continuous HDPE: Comply with UL 651A.
- 6. RTRC: Comply with UL 2515A and NEMA TC 14.

## B. Nonmetallic Fittings:

- 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
  - a. AFC Cable Systems; a part of Atkore International.
  - b. Anamet Electrical, Inc.
  - c. Arnco Corporation.
  - d. CANTEX INC.
  - e. CertainTeed Corporation.
  - f. Condux International, Inc.
  - g. Electri-Flex Company.
  - h. FRE Composites.
  - i. Kralov.
  - j. Lamson & Sessions.
  - k. Niedax Inc.
  - l. RACO; Hubbell.
  - m. Thomas & Betts Corporation; A Member of the ABB Group.
  - n. Topaz Electric; a division of Topaz Lighting Corp.
- 2. Fittings, General: Listed and labeled for type of conduit, location, and use.
- 3. Fittings for RNC: Comply with NEMA TC 3; match to conduit or tubing type and material.
  - a. Fittings for LFNC: Comply with UL 514B.
- 4. Solvents and Adhesives: As recommended by conduit manufacturer.

## 2.3 METAL WIREWAYS AND AUXILIARY GUTTERS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
  - 1. B-line, an Eaton business.
  - 2. Hoffman: a brand of nVent.
  - 3. MonoSystems, Inc.
  - 4. Square D.
- B. Description: Sheet metal, complying with UL 870 and NEMA 250, Type 1 and/or Type 3R unless otherwise indicated, and sized according to NFPA 70.
  - 1. Metal wireways installed outdoors shall be listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- C. Fittings and Accessories: Include covers, couplings, offsets, elbows, expansion joints, adapters, hold-down straps, end caps, and other fittings to match and mate with wireways as required for complete system.
- D. Wireway Covers: Hinged for type 3R, screw-cover for type 1 unless otherwise indicated.
- E. Finish: Manufacturer's standard enamel finish.

### 2.4 NONMETALLIC WIREWAYS AND AUXILIARY GUTTERS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
  - 1. Allied Moulded Products, Inc.
  - 2. Hoffman; a brand of nVent.
  - 3. Lamson & Sessions.
  - 4. Niedax Inc.
- B. Listing and Labeling: Nonmetallic wireways and auxiliary gutters shall be listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- C. Description: PVC, extruded and fabricated to required size and shape, and having snap-on cover, mechanically coupled connections, and plastic fasteners.
- D. Fittings and Accessories: Couplings, offsets, elbows, expansion joints, adapters, hold-down straps, end caps, and other fittings shall match and mate with wireways as required for complete system.

### 2.5 BOXES, ENCLOSURES, AND CABINETS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

- 1. Adalet.
- 2. Crouse-Hinds, an Eaton business.
- 3. EGS/Appleton Electric.
- 4. Erickson Electrical Equipment Company.
- 5. FSR Inc.
- 6. Hoffman; a brand of nVent.
- 7. Hubbell Incorporated.
- 8. Hubbell Incorporated; Wiring Device-Kellems.
- 9. Kraloy.
- 10. Milbank Manufacturing Co.
- 11. MonoSystems, Inc.
- 12. Oldcastle Enclosure Solutions.
- 13. O-Z/Gedney; a brand of Emerson Industrial Automation.
- 14. Plasti-Bond.
- 15. RACO; Hubbell.
- 16. Spring City Electrical Manufacturing Company.
- 17. Stahlin Non-Metallic Enclosures.
- 18. Thomas & Betts Corporation; A Member of the ABB Group.
- 19. Topaz Electric; a division of Topaz Lighting Corp.
- 20. Wiremold / Legrand.
- B. General Requirements for Boxes, Enclosures, and Cabinets: Boxes, enclosures, and cabinets installed in wet locations shall be listed for use in wet locations.
- C. Sheet Metal Outlet and Device Boxes: Comply with NEMA OS 1 and UL 514A.
- D. Cast-Metal Outlet and Device Boxes: Comply with NEMA FB 1, ferrous alloy, Type FD, with gasketed cover.
- E. Nonmetallic Outlet and Device Boxes: Comply with NEMA OS 2 and UL 514C.
- F. Metal Floor Boxes:
  - 1. Material: Cast metal or sheet metal.
  - 2. Type: Fully adjustable.
  - 3. Shape: Rectangular.
  - 4. Listing and Labeling: Metal floor boxes shall be listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- G. Luminaire Outlet Boxes: Nonadjustable, designed for attachment of luminaire weighing 50 lb. Outlet boxes designed for attachment of luminaires weighing more than 50 lb shall be listed and marked for the maximum allowable weight.
- H. Small Sheet Metal Pull and Junction Boxes: NEMA OS 1.
- I. Cast-Metal Access, Pull, and Junction Boxes: Comply with NEMA FB 1 and UL 1773, galvanized, cast iron with gasketed cover.
- J. Box extensions used to accommodate new building finishes shall be of same material as recessed box.

- K. Device Box Dimensions: 4 inches square by 2-1/8 inches deep for power 5 inches square x 2-1/8" inches deep for telecom.
- L. Gangable boxes are allowed.
- M. Hinged-Cover Enclosures: Comply with UL 50 and NEMA 250, Type 1 and/or Type 3R with continuous-hinge cover with flush latch unless otherwise indicated.
  - 1. Metal Enclosures: Steel, finished inside and out with manufacturer's standard enamel.
  - 2. Nonmetallic Enclosures: Plastic.
  - 3. Interior Panels: Steel; all sides finished with manufacturer's standard enamel.

#### N. Cabinets:

- 1. NEMA 250, Type 1 and/or Type 3R galvanized-steel box with removable interior panel and removable front, finished inside and out with manufacturer's standard enamel.
- 2. Hinged door in front cover with flush latch and concealed hinge.
- 3. Key latch to match panelboards.
- 4. Metal barriers to separate wiring of different systems and voltage.
- 5. Accessory feet where required for freestanding equipment.

# 2.6 HANDHOLES AND BOXES FOR EXTERIOR UNDERGROUND WIRING

- A. General Requirements for Handholes and Boxes:
  - 1. Boxes and handholes for use in underground systems shall be designed and identified as defined in NFPA 70, for intended location and application.
  - 2. Boxes installed in wet areas shall be listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- B. Polymer-Concrete Handholes and Boxes with Polymer-Concrete Cover: Molded of sand and aggregate, bound together with polymer resin, and reinforced with steel, fiberglass, or a combination of the two.
  - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
    - a. Armoreast Products Company.
    - b. NewBasis.
    - c. Oldcastle Enclosure Solutions.
    - d. Oldcastle Precast, Inc.
    - e. Quazite: Hubbell Power Systems, Inc.
  - 2. Standard: Comply with SCTE 77.
  - 3. Configuration: Designed for flush burial with open bottom unless otherwise indicated.
  - 4. Cover: Weatherproof, secured by tamper-resistant locking devices and having structural load rating consistent with enclosure and handhole location.
  - 5. Cover Finish: Nonskid finish shall have a minimum coefficient of friction of 0.50.
  - 6. Cover Legend: Molded lettering, "ELECTRIC.".

7. Conduit Entrance Provisions: Conduit-terminating fittings shall mate with entering ducts for secure, fixed installation in enclosure wall.

#### **PART 3 - EXECUTION**

# 3.1 RACEWAY APPLICATION

- A. Outdoors: Apply raceway products as specified below unless otherwise indicated:
  - 1. Exposed Conduit: GRC.
  - 2. Concealed Conduit, Aboveground: GRC.
  - 3. Underground Conduit: RNC, Type EPC-40-PVC or Type EPC-80-PVC,.
  - 4. Connection to Vibrating Equipment (Including Transformers and Hydraulic, Pneumatic, Electric Solenoid, or Motor-Driven Equipment): LFMC.
  - 5. Boxes and Enclosures, Aboveground: NEMA 250, Type 3R.
- B. Indoors: Apply raceway products as specified below unless otherwise indicated:
  - 1. Exposed, Not Subject to Physical Damage: EMT.
  - 2. Exposed, Not Subject to Severe Physical Damage: EMT.
  - 3. Exposed and Subject to Severe Physical Damage: GRC. Raceway locations include the following:
    - a. Loading dock.
    - b. Corridors used for traffic of mechanized carts, forklifts, and pallet-handling units.
    - c. Garages
  - 4. Concealed in Ceilings and Interior Walls and Partitions: EMT.
  - 5. Connection to Vibrating Equipment (Including Transformers and Hydraulic, Pneumatic, Electric Solenoid, or Motor-Driven Equipment): FMC, except use LFMC in damp or wet locations.
  - 6. Damp or Wet Locations: GRC.
  - 7. Boxes and Enclosures: NEMA 250, Type 1, except use NEMA 250, Type 4 stainless steel in institutional and commercial kitchens and damp or wet locations.
- C. Minimum Raceway Size: 3/4-inch trade size.
- D. Raceway Fittings: Compatible with raceways and suitable for use and location.
  - 1. Rigid Steel Conduit: Use threaded rigid steel conduit fittings unless otherwise indicated. Comply with NEMA FB 2.10.
  - 2. EMT: Use setscrew, steel fittings. Comply with NEMA FB 2.10.
  - 3. Flexible Conduit: Use only fittings listed for use with flexible conduit. Comply with NEMA FB 2.20.
- E. Do not install nonmetallic conduit where ambient temperature exceeds 90 deg F.

## 3.2 INSTALLATION

- A. Comply with requirements in Section 260529 "Hangers and Supports for Electrical Systems" for hangers and supports.
- B. Comply with NECA 1 and NECA 101 for installation requirements except where requirements on Drawings or in this article are stricter. Comply with NECA 102 for aluminum conduits. Comply with NFPA 70 limitations for types of raceways allowed in specific occupancies and number of floors.
- C. Do not install raceways or electrical items on any "explosion-relief" walls or rotating equipment.
- D. Do not fasten conduits onto the bottom side of a metal deck roof.
- E. Keep raceways at least 6 inches away from parallel runs of flues and steam or hot-water pipes. Install horizontal raceway runs above water and steam piping.
- F. Complete raceway installation before starting conductor installation.
- G. Arrange stub-ups so curved portions of bends are not visible above finished slab.
- H. Install no more than the equivalent of three 90-degree bends in any conduit run except for control wiring conduits, for which fewer bends are allowed. Support within 12 inches of changes in direction. Pull point shall be no more than 200 linear feet.
- I. Make bends in raceway using large-radius preformed ells. Field bending shall be according to NFPA 70 minimum radii requirements. Use only equipment specifically designed for material and size involved.
- J. Conceal conduit within finished walls, ceilings, and floors unless otherwise indicated. Install conduits parallel or perpendicular to building lines.
- K. Support conduit within 12 inches of enclosures to which attached.
- L. Raceways Embedded in Slabs:
  - 1. Run conduit larger than 1-inch trade size, parallel or at right angles to main reinforcement. Where at right angles to reinforcement, place conduit close to slab support. Secure raceways to reinforcement at maximum 10-foot intervals.
  - 2. Arrange raceways to cross building expansion joints at right angles with expansion fittings.
  - 3. Arrange raceways to keep a minimum of 1 inch of concrete cover in all directions.
  - 4. Do not embed threadless fittings in concrete unless specifically approved by Architect for each specific location.
- M. Stub-Ups to Above Recessed Ceilings:
  - 1. Use EMT or GRC for raceways.
  - 2. Use a conduit bushing or insulated fitting to terminate stub-ups not terminated in hubs or in an enclosure.

- N. Threaded Conduit Joints, Exposed to Wet, Damp, Corrosive, or Outdoor Conditions: Apply listed compound to threads of raceway and fittings before making up joints. Follow compound manufacturer's written instructions.
- O. Raceway Terminations at Locations Subject to Moisture or Vibration: Use insulating bushings to protect conductors including conductors smaller than No. 4 AWG.
- P. Terminate threaded conduits into threaded hubs or with locknuts on inside and outside of boxes or cabinets. Install bushings on conduits up to 1-1/4-inch trade size and insulated throat metal bushings on 1-1/2-inch trade size and larger conduits terminated with locknuts. Install insulated throat metal grounding bushings on service conduits.
- Q. Install raceways square to the enclosure and terminate at enclosures with locknuts. Install locknuts hand tight plus 1/4 turn more.
- R. Do not rely on locknuts to penetrate nonconductive coatings on enclosures. Remove coatings in the locknut area prior to assembling conduit to enclosure to assure a continuous ground path.
- S. Cut conduit perpendicular to the length and deburr. For conduits 2-inch trade size and larger, use roll cutter or a guide to make cut straight and perpendicular to the length.
- T. Install pull wires in empty raceways. Use polypropylene or monofilament plastic line with not less than 200-lb tensile strength. Leave at least 12 inches of slack at each end of pull wire. Cap underground raceways designated as spare above grade alongside raceways in use.
- U. Install raceway sealing fittings at accessible locations according to NFPA 70 and fill them with listed sealing compound. For concealed raceways, install each fitting in a flush steel box with a blank cover plate having a finish similar to that of adjacent plates or surfaces. Install raceway sealing fittings according to NFPA 70.
- V. Install devices to seal raceway interiors at accessible locations. Locate seals so no fittings or boxes are between the seal and the following changes of environments. Seal the interior of all raceways at the following points:
  - 1. Where conduits pass from warm to cold locations, such as boundaries of refrigerated spaces.
  - 2. Where an underground service raceway enters a building or structure.
  - 3. Conduit extending from interior to exterior of building.
  - 4. Conduit extending into pressurized duct and equipment.
  - 5. Conduit extending into pressurized zones that are automatically controlled to maintain different pressure set points.
  - 6. Where otherwise required by NFPA 70.
- W. Comply with manufacturer's written instructions for solvent welding RNC and fittings.
- X. Expansion-Joint Fittings:
  - Install in each run of aboveground RNC that is located where environmental temperature change may exceed 30 deg F and that has straight-run length that exceeds 25 feet. Install in each run of aboveground RMC and EMT conduit that is located where environmental

- temperature change may exceed 100 deg F and that has straight-run length that exceeds 100 feet.
- 2. Install type and quantity of fittings that accommodate temperature change listed for each of the following locations:
  - a. Outdoor Locations Not Exposed to Direct Sunlight: 125 deg F temperature change.
  - b. Outdoor Locations Exposed to Direct Sunlight: 155 deg F temperature change.
  - c. Indoor Spaces Connected with Outdoors without Physical Separation: 125 deg F temperature change.
  - d. Attics: 135 deg F temperature change.
- 3. Install fitting(s) that provide expansion and contraction for at least 0.00041 inch per foot of length of straight run per deg F of temperature change for PVC conduits. Install fitting(s) that provide expansion and contraction for at least 0.000078 inch per foot of length of straight run per deg F of temperature change for metal conduits.
- 4. Install expansion fittings at all locations where conduits cross building or structure expansion joints.
- 5. Install each expansion-joint fitting with position, mounting, and piston setting selected according to manufacturer's written instructions for conditions at specific location at time of installation. Install conduit supports to allow for expansion movement.
- Y. Flexible Conduit Connections: Comply with NEMA RV 3. Use a maximum of 36 inches72 inches of flexible conduit for recessed and semirecessed luminaires, equipment subject to vibration, noise transmission, or movement; and for transformers and motors.
  - 1. Use LFMC in damp or wet locations subject to severe physical damage.
  - 2. Use LFMC or LFNC in damp or wet locations not subject to severe physical damage.
- Z. Mount boxes at heights indicated on Drawings. If mounting heights of boxes are not individually indicated, give priority to ADA requirements. Install boxes with height measured to center of box unless otherwise indicated.
- AA. Recessed Boxes in Masonry Walls: Saw-cut opening for box in center of cell of masonry block, and install box flush with surface of wall. Prepare block surfaces to provide a flat surface for a raintight connection between box and cover plate or supported equipment and box.
- BB. Horizontally separate boxes mounted on opposite sides of walls so they are not in the same vertical channel.
- CC. Locate boxes so that cover or plate will not span different building finishes.
- DD. Support boxes of three gangs or more from more than one side by spanning two framing members or mounting on brackets specifically designed for the purpose.
- EE. Fasten junction and pull boxes to or support from building structure. Do not support boxes by conduits.
- FF. Set metal floor boxes level and flush with finished floor surface.

# 3.3 INSTALLATION OF UNDERGROUND CONDUIT

#### A. Direct-Buried Conduit:

- 1. Excavate trench bottom to provide firm and uniform support for conduit. Prepare trench bottom as specified in Section 312000 "Earth Moving" for pipe less than 6 inches in nominal diameter.
- 2. Install backfill as specified in Section 312000 "Earth Moving."
- 3. After installing conduit, backfill and compact. Start at tie-in point, and work toward end of conduit run, leaving conduit at end of run free to move with expansion and contraction as temperature changes during this process. Firmly hand tamp backfill around conduit to provide maximum supporting strength. After placing controlled backfill to within 12 inches of finished grade, make final conduit connection at end of run and complete backfilling with normal compaction as specified in Section 312000 "Earth Moving."
- 4. Install manufactured duct elbows for stub-ups at poles and equipment and at building entrances through floor unless otherwise indicated. Encase elbows for stub-up ducts throughout length of elbow.
- 5. Install manufactured rigid steel conduit elbows for stub-ups at poles and equipment and at building entrances through floor.
  - a. Couple steel conduits to ducts with adapters designed for this purpose, and encase coupling with 3 inches of concrete for a minimum of 12 inches on each side of the coupling.
  - b. For stub-ups at equipment mounted on outdoor concrete bases and where conduits penetrate building foundations, extend steel conduit horizontally a minimum of 60 inches from edge of foundation or equipment base. Install insulated grounding bushings on terminations at equipment.
- 6. Underground Warning Tape: Comply with requirements in Section 260553 "Identification for Electrical Systems."

# 3.4 INSTALLATION OF UNDERGROUND HANDHOLES AND BOXES

- A. Install handholes and boxes level and plumb and with orientation and depth coordinated with connecting conduits to minimize bends and deflections required for proper entrances.
- B. Unless otherwise indicated, support units on a level bed of limestone 57 stone, graded from and compacted to same density as adjacent undisturbed earth.
- C. Elevation: In paved areas, set so cover surface will be flush with finished grade. Set covers of other enclosures 1 inch above finished grade.
- D. Install handholes with bottom below frost line, below grade.
- E. Install removable hardware, including pulling eyes, cable stanchions, cable arms, and insulators, as required for installation and support of cables and conductors and as indicated. Select arm lengths to be long enough to provide spare space for future cables but short enough to preserve adequate working clearances in enclosure.

F. Field-cut openings for conduits according to enclosure manufacturer's written instructions. Cut wall of enclosure with a tool designed for material to be cut. Size holes for terminating fittings to be used, and seal around penetrations after fittings are installed.

# 3.5 SLEEVE AND SLEEVE-SEAL INSTALLATION FOR ELECTRICAL PENETRATIONS

A. Install sleeves and sleeve seals at penetrations of exterior floor and wall assemblies. Comply with requirements in Section 260544 "Sleeves and Sleeve Seals for Electrical Raceways and Cabling."

# 3.6 FIRESTOPPING

A. Install firestopping at penetrations of fire-rated floor and wall assemblies. Comply with requirements in Section 078413 "Penetration Firestopping."

# 3.7 PROTECTION

- A. Protect coatings, finishes, and cabinets from damage and deterioration.
  - 1. Repair damage to galvanized finishes with zinc-rich paint recommended by manufacturer.
  - 2. Repair damage to PVC coatings or paint finishes with matching touchup coating recommended by manufacturer.

END OF SECTION 260533

# SECTION 260543 - UNDERGROUND DUCTS AND RACEWAYS FOR ELECTRICAL SYSTEMS

## PART 1 - GENERAL

# 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

## A. Section Includes:

- 1. Metal conduits and fittings, including GRC.
- 2. Rigid nonmetallic duct.
- 3. Duct accessories.
- 4. Polymer concrete handholes and boxes with polymer concrete cover.

## 1.3 DEFINITIONS

- A. Direct Buried: Duct or a duct bank that is buried in the ground, without any additional casing materials such as concrete.
- B. Duct: A single duct or multiple ducts. Duct may be either installed singly or as component of a duct bank.
- C. Duct Bank:
  - 1. Two or more ducts installed in parallel, with or without additional casing materials.
  - 2. Multiple duct banks.
- D. GRC: Galvanized rigid (steel) conduit.
- E. Trafficways: Locations where vehicular or pedestrian traffic is a normal course of events.

# 1.4 SUBMITTALS

- A. Product Data: For each type of product.
  - 1. Include duct-bank materials, including spacers and miscellaneous components.
  - 2. Include duct, conduits, and their accessories, including elbows, end bells, bends, fittings, and solvent cement.
  - 3. Include accessories for handholes.
  - 4. Include underground-line warning tape.
- B. Shop Drawings:

- 1. Factory-Fabricated Handholes and Boxes:
  - a. Include dimensioned plans, sections, and elevations, and fabrication and installation details.
  - b. Include duct entry provisions, including locations and duct sizes.
  - c. Include cover design.
  - d. Include grounding details.
  - e. Include dimensioned locations of cable rack inserts, and pulling-in and lifting irons.

## 1.5 INFORMATIONAL SUBMITTALS

- A. Coordination Drawings: For duct and duct bank. Show duct profiles and coordination with other utilities and underground structures.
  - 1. Include plans and sections, drawn to scale, and show bends and locations of expansion fittings.
  - 2. Drawings shall be signed and sealed by a qualified professional engineer.
- B. Qualification Data: For professional engineer and testing agency responsible for testing nonconcrete handholes and boxes.
- C. Source quality-control reports.
- D. Field quality-control reports.

# 1.6 QUALITY ASSURANCE

A. Testing Agency Qualifications: Qualified according to ASTM E 329 for testing indicated.

# 1.7 FIELD CONDITIONS

- A. Interruption of Existing Electrical Service: Do not interrupt electrical service to facilities occupied by Owner or others unless permitted under the following conditions, and then only after arranging to provide temporary electrical service according to requirements indicated:
  - 1. Notify Architect no fewer than two weeks in advance of proposed interruption of electrical service.
  - 2. Do not proceed with interruption of electrical service without Architect's written permission.
- B. Ground Water: Assume ground-water level is at grade level unless a lower water table is noted on Drawings.

#### PART 2 - PRODUCTS

# 2.1 METAL CONDUIT AND FITTINGS

- A. GRC: Comply with ANSI C80.1 and UL 6.
- B. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
  - 1. AFC Cable Systems; a part of Atkore International.
  - 2. Allied Tube & Conduit; a part of Atkore International.
  - 3. Anamet Electrical, Inc.
  - 4. Calconduit.
  - 5. Electri-Flex Company.
  - 6. FSR Inc.
  - 7. Korkap.
  - 8. NEC, Inc.
  - 9. Opti-Com Manufacturing Network, Inc (OMNI).
  - 10. O-Z/Gedney; a brand of Emerson Industrial Automation.
  - 11. Perma-Cote.
  - 12. Picoma Industries, Inc.
  - 13. Plasti-Bond.
  - 14. Republic Conduit.
  - 15. Southwire Company.
  - 16. Thomas & Betts Corporation; A Member of the ABB Group.
  - 17. Topaz Electric; a division of Topaz Lighting Corp.
  - 18. Western Tube and Conduit Corporation.
  - 19. Wheatland Tube Company.
- C. Listed and labeled as defined in NFPA 70, by a nationally recognized testing laboratory, and marked for intended location and application.

# 2.2 RIGID NONMETALLIC DUCT

- A. Underground Plastic Utilities Duct: Type EPC-40-PVC RNC, complying with NEMA TC 2 and UL 651, with matching fittings complying with NEMA TC 3 by same manufacturer as duct.
- B. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
  - 1. ARNCO Corp.
  - 2. Beck Manufacturing.
  - 3. CANTEX INC.
  - 4. CertainTeed Corporation.
  - 5. Condux International, Inc.
  - 6. Crown Line Plastics.
  - 7. ElecSys, Inc.
  - 8. Electri-Flex Company.
  - 9. Endot Industries Inc.

- 10. IPEX USA LLC.
- 11. Lamson & Sessions.
- 12. Manhattan/CDT.
- 13. National Pipe & Plastics.
- 14. Opti-Com Manufacturing Network, Inc (OMNI).
- 15. Spiraduct/AFC Cable Systems, Inc.
- C. Listed and labeled as defined in NFPA 70, by a nationally recognized testing laboratory, and marked for intended location and application.

# 2.3 DUCT ACCESSORIES

- A. Duct Spacers: Factory-fabricated, rigid, PVC interlocking spacers; sized for type and size of duct with which used, and selected to provide minimum duct spacing indicated while supporting duct during concreting or backfilling.
  - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
    - a. Allied Tube & Conduit; a part of Atkore International.
    - b. CANTEX INC.
    - c. Carlon; a brand of Thomas & Betts Corporation.
    - d. IPEX USA LLC.
    - e. PenCell Plastics.
    - f. Underground Devices, Inc.
- B. Underground-Line Warning Tape: Comply with requirements for underground-line warning tape specified in Section 260553 "Identification for Electrical Systems."

# 2.4 POLYMER CONCRETE HANDHOLES AND BOXES WITH POLYMER CONCRETE COVER

- A. Description: Molded of sand and aggregate, bound together with a polymer resin, and reinforced with steel or fiberglass or a combination of the two.
- B. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
  - 1. Armoreast Products Company.
  - 2. MacLean Highline.
  - 3. NewBasis.
  - 4. Oldcastle Enclosure Solutions.
  - 5. Quazite: Hubbell Power Systems, Inc.
- C. Standard: Comply with SCTE 77. Comply with tier requirements in "Underground Enclosure Application" Article.
- D. Color: Gray.

- E. Configuration: Units shall be designed for flush burial and have open bottom unless otherwise indicated.
- F. Cover: Weatherproof, secured by stainless steel locking devices and having structural load rating consistent with enclosure.
- G. Cover Finish: Nonskid finish shall have a minimum coefficient of friction of 0.50 minimum 20,000 lb. rating.
- H. Cover Legend: Molded lettering, "ELECTRIC".

# 2.5 SOURCE QUALITY CONTROL

- A. Test and inspect precast concrete utility structures according to ASTM C 1037.
- B. Nonconcrete Handhole and Pull-Box Prototype Test: Test prototypes of boxes for compliance with SCTE 77. Strength tests shall be for specified tier ratings of products supplied.
  - 1. Tests of materials shall be performed by an independent testing agency.
  - 2. Strength tests of complete boxes and covers shall be by an independent testing agency or manufacturer. A qualified registered professional engineer shall certify tests by manufacturer.
  - 3. Testing machine pressure gages shall have current calibration certification, complying with ISO 9000 and ISO 10012, and traceable to NIST standards.

# PART 3 - EXECUTION

## 3.1 PREPARATION

- A. Coordinate layout and installation of duct, duct bank, handholes, and boxes with final arrangement of other utilities, site grading, and surface features as determined in the field. Notify Architect if there is a conflict between areas of excavation and existing structures or archaeological sites to remain.
- B. Coordinate elevations of duct and duct-bank entrances into, handholes, and boxes with final locations and profiles of duct and duct banks, as determined by coordination with other utilities, underground obstructions, and surface features. Revise locations and elevations as required to suit field conditions and to ensure that duct and duct bank will drain to handholes, and as approved by Architect.
- C. Clear and grub vegetation to be removed, and protect vegetation to remain according to Section 311000 "Site Clearing." Remove and stockpile topsoil for reapplication according to Section 311000 "Site Clearing."

## 3.2 UNDERGROUND DUCT APPLICATION

A. Duct for Electrical Branch Circuits: Type EPC-40-PVC RNC, direct-buried unless otherwise indicated.

## 3.3 UNDERGROUND ENCLOSURE APPLICATION

- A. Handholes and Boxes for 600 V and Less:
  - 1. Units in sidewalks, Roadways and Other Deliberate Traffic Paths: Not permitted.

#### 3.4 EARTHWORK

- A. Excavation and Backfill: Comply with Section 312000 "Earth Moving," but do not use heavy-duty, hydraulic-operated, compaction equipment.
- B. Restoration: Replace area immediately after backfilling is completed or after construction vehicle traffic in immediate area is complete.
- C. Restore surface features at areas disturbed by excavation, and re-establish original grades unless otherwise indicated. Replace removed sod immediately after backfilling is completed.
- D. Restore areas disturbed by trenching, storing of dirt, cable laying, and other work. Restore vegetation and include necessary topsoiling, fertilizing, liming, seeding, sodding, sprigging, and mulching. Comply with Section 329200 "Turf and Grasses" and Section 329300 "Plants."
- E. Cut and patch existing pavement in the path of underground duct, duct bank, and underground structures according to "Cutting and Patching" Article in Section 017300 "Execution."

# 3.5 DUCT AND DUCT-BANK INSTALLATION

- A. Where indicated on Drawings, install duct, spacers, and accessories into the duct-bank configuration shown. Duct installation requirements in this Section also apply to duct bank.
- B. Install duct according to NEMA TCB 2.
- C. Slope: Pitch duct a minimum slope of 1:300 down toward handholes and away from buildings and equipment.
- D. Curves and Bends: Use 5-degree angle couplings for small changes in direction. Use manufactured long sweep bends with a minimum radius of 48 inches, both horizontally and vertically, at other locations unless otherwise indicated.
  - 1. Duct shall have maximum of two 90 degree bends or the total of all bends shall be no more 180 degrees between pull points.
- E. Joints: Use solvent-cemented joints in duct and fittings and make watertight according to manufacturer's written instructions. Stagger couplings so those of adjacent duct do not lie in same plane.

- F. Installation Adjacent to High-Temperature Steam Lines: Where duct is installed parallel to underground steam lines, perform calculations showing the duct will not be subject to environmental temperatures above 40 deg C. Where environmental temperatures are calculated to rise above 40 deg C, and anywhere the duct crosses above an underground steam line, install insulation blankets listed for direct burial to isolate the duct bank from the steam line.
- G. End Bell Entrances to Polymer Concrete Handholes: Use end bells, spaced approximately 10 inches o.c. for 5-inch duct, and vary proportionately for other duct sizes.
  - 1. Begin change from regular spacing to end-bell spacing 10 feet from the end bell, without reducing duct slope and without forming a trap in the line.
  - 2. Expansion and Deflection Fittings: Install an expansion and deflection fitting in each duct in the area of disturbed earth adjacent to handhole. Install an expansion fitting near the center of all straight line direct-buried duct with calculated expansion of more than 3/4 inch.
  - 3. Grout end bells into structure walls from both sides to provide watertight entrances.
- H. Terminator Entrances to and Polymer Concrete Handholes: Use manufactured, cast-in-place duct terminators, with entrances into structure spaced approximately 8 inches o.c. for 4-inch duct, and vary proportionately for other duct sizes.
  - 1. Begin change from regular spacing to terminator spacing 10 feet from the terminator, without reducing duct line slope and without forming a trap in the line.
  - 2. Expansion and Deflection Fittings: Install an expansion and deflection fitting in each duct in the area of disturbed earth adjacent to handhole. Install an expansion fitting near the center of all straight line duct with calculated expansion of more than 3/4 inch.
- I. Building Wall Penetrations: Make a transition from underground duct to suitable raceway with the building wall, without reducing duct line slope away from the building and without forming a trap in the line.
- J. Sealing: Refer to 260544, Sleeves and Sleeve Seals for Electrical Raceways and Cabling
- K. Pulling Cord: Install 200-lbf-test nylon cord in empty ducts.
- L. Underground-Line Warning Tape: Bury nonconducting underground line specified in Section 260553 "Identification for Electrical Systems" no less than 12 inches above all concrete-encased duct and duct banks and approximately 12 inches below grade. Align tape parallel to and within 3 inches of centerline of duct bank. Provide an additional warning tape for each 12-inch increment of duct-bank width over a nominal 18 inches. Space additional tapes 12 inches apart, horizontally.

# 3.6 INSTALLATION OF HANDHOLES AND BOXES

A. Install handholes and boxes level and plumb and with orientation and depth coordinated with connecting duct, to minimize bends and deflections required for proper entrances. Use box extension if required to match depths of duct, and seal joint between box and extension as recommended by manufacturer.

B. Unless otherwise indicated, support units on a level bed of crushed limestone 57 stone, graded and compacted to same density as adjacent undisturbed earth, minimum 12" deep with additional 6" within handhole.

#### 3.7 GROUNDING

A. Ground underground ducts and utility structures according to Section 260526 "Grounding and Bonding for Electrical Systems."

# 3.8 FIELD QUALITY CONTROL

- A. Perform the following tests and inspections:
  - 1. Demonstrate capability and compliance with requirements on completion of installation of underground duct, duct bank, and utility structures.
  - 2. Pull solid aluminum or wood test mandrel through duct to prove joint integrity and adequate bend radii, and test for out-of-round duct. Provide a minimum 12-inch-long mandrel equal to duct size minus 1/4 inch. If obstructions are indicated, remove obstructions and retest.
- B. Correct deficiencies and retest as specified above to demonstrate compliance.
- C. Prepare test and inspection reports.

# 3.9 CLEANING

A. Pull leather-washer-type duct cleaner, with graduated washer sizes, through full length of duct until duct cleaner indicates that duct is clear of dirt and debris. Follow with rubber duct swab for final cleaning and to assist in spreading lubricant throughout ducts.

END OF SECTION 260543

SECTION 260544 - SLEEVES AND SLEEVE SEALS FOR ELECTRICAL RACEWAYS AND CABLING

## PART 1 - GENERAL

# 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

# A. Section Includes:

- 1. Sleeves for raceway and cable penetration of non-fire-rated construction walls and floors.
- 2. Sleeve-seal systems.
- 3. Sleeve-seal fittings.
- 4. Grout.
- 5. Silicone sealants.

# B. Related Requirements:

1. Section 078413 "Penetration Firestopping" for penetration firestopping installed in fireresistance-rated walls, horizontal assemblies, and smoke barriers, with and without penetrating items.

## 1.3 SUBMITTALS

A. Product Data: For each type of product.

# PART 2 - PRODUCTS

# 2.1 SLEEVES

# A. Wall Sleeves:

- 1. Steel Pipe Sleeves: ASTM A 53/A 53M, Type E, Grade B, Schedule 40, zinc coated, plain ends.
- B. Sleeves for Conduits Penetrating Non-Fire-Rated Gypsum Board Assemblies: Galvanized-steel sheet; 0.029-inch minimum thickness; round tube closed with welded longitudinal joint, with tabs for screw-fastening the sleeve to the board.
- C. Sleeves for Rectangular Openings:

- 1. Material: Galvanized sheet steel.
- 2. Minimum Metal Thickness:
  - a. For sleeve cross-section rectangle perimeter less than 50 inches and with no side larger than 16 inches, thickness shall be 0.052 inch.
  - b. For sleeve cross-section rectangle perimeter 50 inches or more and one or more sides larger than 16 inches, thickness shall be 0.138 inch.

## 2.2 SLEEVE-SEAL SYSTEMS

- A. Description: Modular sealing device, designed for field assembly, to fill annular space between sleeve and raceway or cable.
  - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
    - a. Advance Products & Systems, Inc.
    - b. CALPICO, Inc.
    - c. Metraflex Company (The).
    - d. Pipeline Seal and Insulator, Inc.
    - e. Proco Products, Inc.
    - f. GPT, Link-Seal
  - 2. Sealing Elements: EPDM rubber interlocking links shaped to fit surface of pipe. Include type and number required for pipe material and size of pipe.
  - 3. Pressure Plates: Carbon steel.
  - 4. Connecting Bolts and Nuts: Carbon steel, with corrosion-resistant coating, of length required to secure pressure plates to sealing elements.

#### 2.3 GROUT

- A. Description: Nonshrink; recommended for interior and exterior sealing openings in non-fire-rated walls or floors.
- B. Standard: ASTM C 1107/C 1107M, Grade B, post-hardening and volume-adjusting, dry, hydraulic-cement grout.
- C. Design Mix: 5000-psi, 28-day compressive strength.
- D. Packaging: Premixed and factory packaged.

## **PART 3 - EXECUTION**

- 3.1 SLEEVE INSTALLATION FOR NON-FIRE-RATED ELECTRICAL PENETRATIONS
  - A. Comply with NECA 1.

- B. Comply with NEMA VE 2 for cable tray and cable penetrations.
- C. Sleeves for Conduits Penetrating Above-Grade Non-Fire-Rated Concrete and Masonry-Unit Floors and Walls:
  - 1. Interior Penetrations of Non-Fire-Rated Walls and Floors:
    - a. Seal annular space between sleeve and raceway or cable, using joint sealant appropriate for size, depth, and location of joint. Comply with requirements in Section 079200 "Joint Sealants."
    - b. Seal space outside of sleeves with mortar or grout. Pack sealing material solidly between sleeve and wall so no voids remain. Tool exposed surfaces smooth; protect material while curing.
  - 2. Use pipe sleeves unless penetration arrangement requires rectangular sleeved opening.
  - 3. Size pipe sleeves to provide 1/4-inch annular clear space between sleeve and raceway or cable unless sleeve seal is to be installed.
  - 4. Install sleeves for wall penetrations unless core-drilled holes or formed openings are used. Install sleeves during erection of walls. Cut sleeves to length for mounting flush with both surfaces of walls. Deburr after cutting.
  - 5. Install sleeves for floor penetrations. Extend sleeves installed in floors 2 inches above finished floor level. Install sleeves during erection of floors.
- D. Sleeves for Conduits Penetrating Non-Fire-Rated Gypsum Board Assemblies:
  - 1. Use circular metal sleeves unless penetration arrangement requires rectangular sleeved opening.
  - 2. Seal space outside of sleeves with approved joint compound for gypsum board assemblies.
- E. Roof-Penetration Sleeves: Seal penetration of individual raceways and cables with flexible boot-type flashing units applied in coordination with roofing work.
- F. Aboveground, Exterior-Wall Penetrations: Seal penetrations using steel pipe sleeves and mechanical sleeve seals. Select sleeve size to allow for 1-inch annular clear space between pipe and sleeve for installing mechanical sleeve seals.
- G. Underground, Exterior-Wall and Floor Penetrations: Install cast-iron pipe sleeves. Size sleeves to allow for 1-inch annular clear space between raceway or cable and sleeve for installing sleeve-seal system.

# 3.2 SLEEVE-SEAL-SYSTEM INSTALLATION

A. Install sleeve-seal systems in sleeves in exterior concrete walls and slabs-on-grade at raceway entries into building.

B. Install type and number of sealing elements recommended by manufacturer for raceway or cable material and size. Position raceway or cable in center of sleeve. Assemble mechanical sleeve seals and install in annular space between raceway or cable and sleeve. Tighten bolts against pressure plates that cause sealing elements to expand and make watertight seal.

END OF SECTION 260544

## SECTION 260553 - IDENTIFICATION FOR ELECTRICAL SYSTEMS

# PART 1 - GENERAL

# 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

# A. Section Includes:

- 1. Color and legend requirements for raceways, conductors, and warning labels and signs.
- 2. Labels.
- 3. Bands and tubes.
- 4. Tapes and stencils.
- 5. Tags.
- 6. Signs.
- 7. Cable ties.
- 8. Paint for identification.
- 9. Fasteners for labels and signs.

#### 1.3 SUBMITTALS

- A. Product Data: For each type of product.
  - 1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for electrical identification products.
- B. Identification Schedule: For each piece of electrical equipment and electrical system components to be an index of nomenclature for electrical equipment and system components used in identification signs and labels. Use same designations indicated on Drawings.
- C. Dedicated-Design Submittal: For arc-flash hazard study.

# PART 2 - PRODUCTS

# 2.1 PERFORMANCE REQUIREMENTS

- A. Comply with ASME A13.1 and IEEE C2.
- B. Comply with NFPA 70.
- C. Comply with 29 CFR 1910.144 and 29 CFR 1910.145.

- D. Comply with ANSI Z535.4 for safety signs and labels.
- E. Comply with NFPA 70E and Section 260573.19 "Arc-Flash Hazard Analysis" requirements for arc-flash warning labels.
- F. Adhesive-attached labeling materials, including label stocks, laminating adhesives, and inks used by label printers, shall comply with UL 969.
- G. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes.
  - 1. Temperature Change: 120 deg F, ambient; 180 deg F, material surfaces.

# 2.2 COLOR AND LEGEND REQUIREMENTS

- A. Raceways and Cables Carrying Circuits at 600 V or Less:
  - 1. Black letters on white field.
  - 2. Legend: Indicate voltage and system or service type.
- B. Color-Coding for Phase- and Voltage-Level Identification, 600 V or Less: Use colors listed below for ungrounded service feeder and branch-circuit conductors.
  - 1. Color shall be factory applied.
  - 2. Colors for 208/120-V Circuits:
    - a. Phase A: Black.
    - b. Phase B: Red.
    - c. Phase C: Blue.
    - d. Neutral: White.
  - 3. Colors for 480/277-V Circuits:
    - a. Phase A: Brown.
    - b. Phase B: Orange.
    - c. Phase C: Yellow.
    - d. Neutral: White.
  - 4. Color for Equipment Grounds: Green.
- C. Warning Label Colors:
  - 1. Identify system voltage with black letters on an orange background.
- D. Warning labels and signs shall include, but are not limited to, the following legends:
  - 1. Multiple Power Source Warning: "DANGER ELECTRICAL SHOCK HAZARD EQUIPMENT HAS MULTIPLE POWER SOURCES."
  - 2. Workspace Clearance Warning: "WARNING OSHA REGULATION AREA IN FRONT OF ELECTRICAL EQUIPMENT MUST BE KEPT CLEAR FOR 36 INCHES."

- E. Equipment Identification Labels:
  - 1. Black letters on a white field.

## 2.3 LABELS

- A. Vinyl Wraparound Labels: Preprinted, flexible labels laminated with a clear, weather- and chemical-resistant coating and matching wraparound clear adhesive tape for securing label ends.
  - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
    - a. Brady Corporation.
    - b. Champion America.
    - c. emedco.
    - d. Grafoplast Wire Markers.
    - e. HellermannTyton.
    - f. LEM Products Inc.
    - g. Marking Services, Inc.
    - h. Panduit Corp.
    - i. Seton Identification Products.
- B. Self-Adhesive Wraparound Labels: Preprinted, 3-mil-thick, vinyl flexible label with acrylic pressure-sensitive adhesive.
  - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
    - a. A'n D Cable Products.
    - b. Brady Corporation.
    - c. Brother International Corporation.
    - d. emedco.
    - e. Grafoplast Wire Markers.
    - f. Ideal Industries, Inc.
    - g. LEM Products Inc.
    - h. Marking Services, Inc.
    - i. Panduit Corp.
    - j. Seton Identification Products.
  - 2. Self-Lamination: Clear; UV-, weather- and chemical-resistant; self-laminating, protective shield over the legend. Labels sized such that the clear shield overlaps the entire printed legend.
  - 3. Marker for Labels: Machine-printed, permanent, waterproof, black ink recommended by printer manufacturer.
- C. Self-Adhesive Labels: Vinyl, thermal, transfer-printed, 3-mil-thick, multicolor, weather- and UV-resistant, pressure-sensitive adhesive labels, configured for intended use and location.

- 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
  - a. A'n D Cable Products.
  - b. Brady Corporation.
  - c. Brother International Corporation.
  - d. emedco.
  - e. Grafoplast Wire Markers.
  - f. HellermannTyton.
  - g. Ideal Industries, Inc.
  - h. LEM Products Inc.
  - i. Marking Services, Inc.
  - j. Panduit Corp.
  - k. Seton Identification Products.
- 2. Minimum Nominal Size:
  - a. 1-1/2 by 6 inches for raceway and conductors.
  - b. 3-1/2 by 5 inches for equipment.
  - c. As required by authorities having jurisdiction.

## 2.4 TAPES AND STENCILS

- A. Marker Tapes: Vinyl or vinyl-cloth, self-adhesive wraparound type, with circuit identification legend machine printed by thermal transfer or equivalent process.
  - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
    - a. Carlton Industries, LP.
    - b. Champion America.
    - c. HellermannTyton.
    - d. Ideal Industries, Inc.
    - e. Marking Services, Inc.
    - f. Panduit Corp.
- B. Self-Adhesive Vinyl Tape: Colored, heavy duty, waterproof, fade resistant; not less than 3 mils thick by 1 to 2 inches wide; compounded for outdoor use.
  - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
    - a. Brady Corporation.
    - b. Carlton Industries, LP.
    - c. emedco.
    - d. Marking Services, Inc.
- C. Tape and Stencil: 4-inch-wide black stripes on 10-inch centers placed diagonally over orange background and are 12 inches wide. Stop stripes at legends.

- 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
  - a. HellermannTyton.
  - b. LEM Products Inc.
  - c. Marking Services, Inc.
  - d. Seton Identification Products.

# D. Underground-Line Warning Tape:

- 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
  - a. Brady Corporation.
  - b. Ideal Industries, Inc.
  - c. LEM Products Inc.
  - d. Marking Services, Inc.
  - e. Reef Industries, Inc.
  - f. Seton Identification Products.

# 2. Tape:

- a. Recommended by manufacturer for the method of installation and suitable to identify and locate underground electrical and communications utility lines.
- b. Printing on tape shall be permanent and shall not be damaged by burial operations.
- c. Tape material and ink shall be chemically inert and not subject to degradation when exposed to acids, alkalis, and other destructive substances commonly found in soils.

# 3. Color and Printing:

- a. Comply with ANSI Z535.1, ANSI Z535.2, ANSI Z535.3, ANSI Z535.4, and ANSI Z535.5
- b. Inscriptions for Red-Colored Tapes: "ELECTRIC LINE, HIGH VOLTAGE".
- c. Inscriptions for Orange-Colored Tapes: "TELEPHONE CABLE, CATV CABLE, COMMUNICATIONS CABLE, OPTICAL FIBER CABLE".

# 4. Tag: All maker tape shall be:

- a. Reinforced, detectable three-layer laminate, consisting of a printed pigmented woven scrim, a solid aluminum-foil core, and a clear protective film that allows inspection of the continuity of the conductive core; bright-colored, continuous-printed on one side with the inscription of the utility, compounded for direct-burial service.
- b. Width: 3 inches.
- c. Overall Thickness: 8 mils.
- d. Foil Core Thickness: 0.35 mil.
- e. Weight: 34 lb/1000 sq. ft..
- f. Tensile according to ASTM D 882: 300 lbf and 12,500 psi.

E. Stenciled Legend: In nonfading, waterproof, black ink or paint. Minimum letter height shall be 1 inch.

# 2.5 TAGS

- A. Nonmetallic Preprinted Tags: Polyethylene tags, 0.015 inch thick, color-coded for phase and voltage level, with factory printed permanent designations; punched for use with self-locking cable tie fastener.
  - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
    - a. Brady Corporation.
    - b. Carlton Industries, LP.
    - c. emedco.
    - d. Grafoplast Wire Markers.
    - e. LEM Products Inc.
    - f. Marking Services, Inc.
    - g. Panduit Corp.
    - h. Seton Identification Products.

# 2.6 SIGNS

- A. Baked-Enamel Signs:
  - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
    - a. Carlton Industries, LP.
    - b. Champion America.
    - c. emedco.
    - d. Marking Services, Inc.
  - 2. Preprinted aluminum signs, high-intensity reflective, punched or drilled for fasteners, with colors, legend, and size required for application.
  - 3. 1/4-inch grommets in corners for mounting.
  - 4. Nominal Size: 7 by 10 inches.
- B. Laminated Acrylic or Melamine Plastic Signs:
  - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
    - a. Brady Corporation.
    - b. Carlton Industries, LP.
    - c. emedco.
    - d. Marking Services, Inc.
  - 2. Engraved legend.

## 3. Thickness:

- a. For signs up to 20 sq. in., minimum 1/16 inch thick.
- b. For signs larger than 20 sq. in., 1/8 inch thick.
- c. Engraved legend with black letters on white face.
- d. Punched or drilled for mechanical fasteners with 1/4-inch grommets in corners for mounting.
- e. Framed with mitered acrylic molding and arranged for attachment at applicable equipment.

# 2.7 CABLE TIES

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
  - 1. HellermannTyton.
  - 2. Ideal Industries, Inc.
  - 3. Marking Services, Inc.
  - 4. Panduit Corp.
- B. Plenum-Rated Cable Ties: Self-extinguishing, UV stabilized, one piece, and self-locking.
  - 1. Minimum Width: 3/16 inch.
  - 2. Tensile Strength at 73 Deg F according to ASTM D 638: 7000 psi.
  - 3. UL 94 Flame Rating: 94V-0.
  - 4. Temperature Range: Minus 50 to plus 284 deg F.
  - 5. Color: Black.

# 2.8 MISCELLANEOUS IDENTIFICATION PRODUCTS

- A. Paint: Comply with requirements in painting Sections for paint materials and application requirements. Retain paint system applicable for surface material and location (exterior or interior).
- B. Fasteners for Labels and Signs: Self-tapping, stainless-steel screws or stainless-steel machine screws with nuts and flat and lock washers.

#### PART 3 - EXECUTION

# 3.1 PREPARATION

A. Self-Adhesive Identification Products: Before applying electrical identification products, clean substrates of substances that could impair bond, using materials and methods recommended by manufacturer of identification product.

## 3.2 INSTALLATION

- A. Verify and coordinate identification names, abbreviations, colors, and other features with requirements in other Sections requiring identification applications, Drawings, Shop Drawings, manufacturer's wiring diagrams, and operation and maintenance manual. Use consistent designations throughout Project.
- B. Install identifying devices before installing acoustical ceilings and similar concealment.
- C. Verify identity of each item before installing identification products.
- D. Coordinate identification with Project Drawings, manufacturer's wiring diagrams, and operation and maintenance manual.
- E. Apply identification devices to surfaces that require finish after completing finish work.
- F. Install signs with approved legend to facilitate proper identification, operation, and maintenance of electrical systems and connected items.
- G. System Identification for Raceways and Cables under 600 V: Identification shall completely encircle cable or conduit. Place identification of two-color markings in contact, side by side.
  - 1. Secure tight to surface of conductor, cable, or raceway.
- H. Auxiliary Electrical Systems Conductor Identification: Identify field-installed alarm, control, and signal connections.
- I. Emergency Operating Instruction Signs: Install instruction signs with white legend on a red background with minimum 3/8-inch-high letters for emergency instructions at equipment used for power transfer, load shedding, etc.
- J. Elevated Components: Increase sizes of labels, signs, and letters to those appropriate for viewing from the floor.
- K. Accessible Fittings for Raceways: Identify the covers of each junction and pull box of the following systems with the wiring system legend and system voltage. System legends shall be as follows:
  - 1. "EMERGENCY POWER."
  - 2. "POWER."
  - 3. "UPS."
- L. Vinyl Wraparound Labels:
  - 1. Secure tight to surface of raceway or cable at a location with high visibility and accessibility.
  - 2. Attach labels that are not self-adhesive type with clear vinyl tape, with adhesive appropriate to the location and substrate.
- M. Self-Adhesive Wraparound Labels: Secure tight to surface at a location with high visibility and accessibility.

# N. Self-Adhesive Labels:

- 1. On each item, install unique designation label that is consistent with wiring diagrams, schedules, and operation and maintenance manual.
- 2. Unless otherwise indicated, provide a single line of text with 1/2-inch-high letters on 1-1/2-inch-high label; where two lines of text are required, use labels 2 inches high.
- O. Heat-Shrink, Preprinted Tubes: Secure tight to surface at a location with high visibility and accessibility.
- P. Marker Tapes: Secure tight to surface at a location with high visibility and accessibility.
- Q. Self-Adhesive Vinyl Tape: Secure tight to surface at a location with high visibility and accessibility.
  - 1. Field-Applied, Color-Coding Conductor Tape: Apply in half-lapped turns for a minimum distance of 6 inches where splices or taps are made. Apply last two turns of tape with no tension to prevent possible unwinding.
- R. Tape and Stencil: Comply with requirements in painting Sections for surface preparation and paint application.
- S. Floor Marking Tape: Apply stripes to finished surfaces following manufacturer's written instructions.
- T. Underground Line Warning Tape:
  - 1. During backfilling of trenches, install continuous underground-line warning tape directly above cable or raceway at 6 to 8 inches below finished grade. Use multiple tapes where width of multiple lines installed in a common trench or concrete envelope exceeds 16 inches overall.
  - 2. Limit use of underground-line warning tape to direct-buried cables.
  - 3. Install underground-line warning tape for direct-buried cables and cables in raceways.
- U. Metal Tags:
  - 1. Secure using plenum-rated cable ties.
- V. Nonmetallic Preprinted Tags:
  - 1. Secure using plenum-rated cable ties.
- W. Write-on Tags:
  - 1. Place in a location with high visibility and accessibility.
  - 2. Secure using general-purpose cable ties.
- X. Baked-Enamel Signs:
  - 1. Attach signs that are not self-adhesive type with mechanical fasteners appropriate to the location and substrate.

- 2. Unless otherwise indicated, provide a single line of text with 1/2-inch-high letters on minimum 1-1/2-inch-high sign; where two lines of text are required, use signs minimum 2 inches high.
- Y. Laminated Acrylic or Melamine Plastic Signs:
  - 1. Attach signs that are not self-adhesive type with mechanical fasteners appropriate to the location and substrate.
  - 2. Unless otherwise indicated, provide a single line of text with 1/2-inch-high letters on 1-1/2-inch-high sign; where two lines of text are required, use labels 2 inches high.

#### 3.3 IDENTIFICATION SCHEDULE

- A. Install identification materials and devices at locations for most convenient viewing without interference with operation and maintenance of equipment. Install access doors or panels to provide view of identifying devices.
- B. Identify conductors, cables, and terminals in enclosures and at junctions, terminals, pull points, and locations of high visibility. Identify by system and circuit designation.
- C. Concealed Raceways, Duct Banks, More Than 600 V, within Buildings: Tape and stencil. Stencil legend "DANGER CONCEALED HIGH-VOLTAGE WIRING" with 3-inch-high, black letters on 20-inch centers.
  - 1. Locate identification at changes in direction, at penetrations of walls and floors, and at 10-foot maximum intervals.
- D. Accessible Raceways, Armored and Metal-Clad Cables, More Than 600 V: Vinyl wraparound labels.
  - 1. Locate identification at changes in direction, at penetrations of walls and floors, at 50-foot maximum intervals in straight runs, and at 25-foot maximum intervals in congested areas.
- E. Accessible Fittings for Raceways and Cables within Buildings: Identify the covers of each junction and pull box of the following systems with self-adhesive labels containing the wiring system legend and system voltage. System legends shall be as follows:
  - 1. "EMERGENCY POWER."
  - 2. "POWER."
  - 3. "UPS."
- F. Power-Circuit Conductor Identification, 600 V or Less: For conductors in vaults, pull and junction boxes and handholes, use vinyl wraparound labels to identify the phase.
  - 1. Locate identification at changes in direction, at penetrations of walls and floors, at 50-foot maximum intervals in straight runs, and at 25-foot maximum intervals in congested areas.

- G. Control-Circuit Conductor Identification: For conductors and cables in pull and junction boxes and handholes, use self-adhesive labels with the conductor or cable designation, origin, and destination.
- H. Control-Circuit Conductor Termination Identification: For identification at terminations, provide self-adhesive labels with the conductor designation.
- I. Conductors to Be Extended in the Future: Attach marker tape to conductors and list source.
- J. Locations of Underground Lines: Underground-line warning tape for power, lighting, communication, and control wiring and optical-fiber cable.
- K. Warning Labels for Indoor Cabinets, Boxes, and Enclosures for Power and Lighting: Self-adhesive labels.
  - 1. Apply to exterior of door, cover, or other access.
  - 2. For equipment with multiple power or control sources, apply to door or cover of equipment, including, but not limited to, the following:
    - a. Power-transfer switches.
    - b. Controls with external control power connections.
- L. Arc Flash Warning Labeling: Self-adhesive labels. Secure on all:
  - a. Panelboards
  - b. Switchboards
  - c. Transformers
  - d. Disconnect Switches
  - e. Motor Starters
- M. Operating Instruction Signs: Self-adhesive labels.
- N. Emergency Operating Instruction Signs: Self-adhesive labels with white legend on a red background with minimum 3/8-inch-high letters for emergency instructions at equipment used for power transfer.
- O. Equipment Identification Labels:
  - 1. Indoor Equipment: Laminated acrylic or melamine plastic sign.
  - 2. Outdoor Equipment: Laminated acrylic or melamine plastic sign.
  - 3. Equipment to Be Labeled:
    - a. Panelboards: Typewritten directory of circuits in the location provided by panelboard manufacturer. Panelboard identification shall be in the form of a self-adhesive, engraved, laminated acrylic or melamine label.
    - b. Enclosures and electrical cabinets.
    - c. Access doors and panels for concealed electrical items.
    - d. Switchboards.
    - e. Transformers: Label that includes tag designation indicated on Drawings for the transformer, feeder, and panelboards or equipment supplied by the secondary.

- Emergency system boxes and enclosures. Enclosed switches. Enclosed controllers. f.
- g.
- h.
- Variable-speed controllers. i.
- j. Push-button stations.
- Power-transfer equipment. k.
- 1. Contactors.
- m.
- Power-generating units.
  Monitoring and control equipment. n.
- UPS equipment. o.

END OF SECTION 260553

## SECTION 265619 - LED EXTERIOR LIGHTING

# PART 1 - GENERAL

# 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

## A. Section Includes:

- 1. Exterior solid-state luminaires that are designed for and exclusively use LED lamp and electronic driver technology.
- 2. Luminaire supports.

# B. Related Requirements:

1. Section 260923 "Lighting Control Devices" for automatic control of lighting, including dimming. time switches, photoelectric relays, occupancy sensors, and multipole lighting relays and contactors.

# 1.3 DEFINITIONS

- A. CCT: Correlated color temperature.
- B. CRI: Color rendering index.
- C. Fixture: See "Luminaire."
- D. IP: International Protection or Ingress Protection Rating.
- E. Lumen: Measured output of lamp and luminaire, or both.
- F. Luminaire: Complete lighting unit, including lamp or electronic diode module, driver, reflector, lens, and housing.

# 1.4 SUBMITTALS

- A. Product Data: For each type of luminaire.
  - 1. Arrange in order of luminaire designation.
  - 2. Include data on features, accessories, and finishes.
  - 3. Include physical description and dimensions of luminaire.
  - 4. Lamps, include life, output (lumens, CCT, and CRI), and energy-efficiency data.

- 5. Photometric data and adjustment factors based on laboratory tests, complying with IES Lighting Measurements Testing and Calculation Guides, of each luminaire type. The adjustment factors shall be for light sources and accessories identical to those indicated for the luminaire as applied in this Project.
  - a. Manufacturer's Certified Data: Photometric data certified by manufacturer's laboratory with a current accreditation under the NVLAP for Energy Efficient Lighting Products.
  - b. Testing Agency Certified Data: For indicated luminaires, photometric data certified by a qualified independent testing agency. Photometric data for remaining luminaires shall be certified by manufacturer.
- 6. Wiring diagrams for power, control, and signal wiring.
- 7. Photoelectric relays.
- 8. Means of attaching luminaires to supports and indication that the attachment is suitable for components involved.

## 1.5 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: For luminaires and associated devices required for operation, to include in operation and maintenance manuals.
  - 1. Provide a manufacturers cutsheets including replacement parts list, color temperature, lumen output, and optical pattern for all types used on Project. Use ANSI and manufacturers' codes.
  - 2. Include all manufacturers' warranty information including contact information, telephone and on-line access instruction.

#### 1.6 MAINTENANCE MATERIAL SUBMITTALS

- A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
  - 1. Luminaires: Provide two (2) spare Type SA and three (3) Type SB.
  - 2. Drivers: One for every 10 of each type and rating installed. Furnish at least one of each type.
  - 3. Glass, Acrylic, and Plastic Lenses, Covers, and Other Optical Parts: One for every 10 of each type and rating installed. Furnish at least one of each type.
  - 4. Vault grating: Provide two (2) spare gratings of each type/size

# 1.7 QUALITY ASSURANCE

- A. Luminaire Photometric Data Testing Laboratory Qualifications: Luminaire manufacturers' laboratory that is accredited under the NVLAP for Energy Efficient Lighting Products.
- B. Luminaire Photometric Data Testing Laboratory Qualifications: Provided by an independent agency, with the experience and capability to conduct the testing indicated, that is an NRTL as

- defined by OSHA in 29 CFR 1910.7, accredited under the NVLAP for Energy Efficient Lighting Products and complying with applicable IES testing standards.
- C. Provide luminaires from a single manufacturer for each luminaire type.
- D. Each luminaire type shall operate LED light sources that have been binned within a three-step MacAdam Ellipse to ensure color consistency among luminaires.

# 1.8 DELIVERY, STORAGE, AND HANDLING

- A. Protect finishes of exposed surfaces by applying a strippable, temporary protective covering prior to shipping.
- B. All luminaries and their accessories shall be stored in an enclosure which protects them from the weather.

# 1.9 FIELD CONDITIONS

- A. Verify existing and proposed utility structures prior to the start of work associated with luminaire installation.
- B. Mark locations of exterior luminaires for approval by Architect, Engineer and/or Lighting Designer prior to the start of luminaire installation.

#### 1.10 WARRANTY

- A. Warranty: Manufacturer and Installer agree to repair or replace components of luminaires that fail in materials or workmanship within specified warranty period.
  - 1. Failures include, but are not limited to, the following:
    - a. Structural failures, including luminaire support components.
    - b. Faulty operation of luminaires and accessories.
    - c. Deterioration of metals, metal finishes, and other materials beyond normal weathering.
  - 2. Warranty Period: 5 year(s) minimum from date of Substantial Completion.
- B. Fabricator and installer shall warranty all aspects of vault integrity for up to three (3) years.

# PART 2 - PRODUCTS

# 2.1 MANUFACTURERS

A. Products: Subject to compliance with requirements, provide product or pre-approved equivalent listed in the Lighting Fixture Schedule.

# 2.2 LUMINAIRE REQUIREMENTS

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- B. NRTL Compliance: Luminaires shall be listed and labeled for indicated class and division of hazard by an NRTL.
- C. FM Global Compliance: Luminaires for hazardous locations shall be listed and labeled for indicated class and division of hazard by FM Global.
- D. UL Compliance: Comply with UL 1598 and listed for wet location.
- E. CRI of minimum 80. CCT shall be indicated on the Lighting Fixture Schedule. .
- F. L70 lamp life of 50,000 hours.
- G. Dimmable from 100 percent to 10 percent of maximum light output, without visible flicker of color shift.
- H. Internal driver.
- I. Coordinate with the Exterior Luminaire Schedule on Drawings.
- J. In-line Fusing: Single fuse for 120V & 277V and two fuses for 208V and 480V on the primary for each luminaire, where appliable

# 2.3 MATERIALS

- A. Metal Parts: Free of burrs and sharp corners and edges.
- B. Sheet Metal Components: Corrosion-resistant aluminum. Form and support to prevent warping and sagging.
- C. Diffusers:
  - 1. Acrylic Diffusers: 100 percent virgin acrylic plastic, with high resistance to yellowing and other changes due to aging, exposure to heat, and UV radiation.
  - 2. Glass: Annealed crystal glass unless otherwise indicated.
  - 3. Lens Thickness: At least 0.125 inch minimum unless otherwise indicated.
- D. Lens and Refractor Gaskets: Use heat- and aging-resistant resilient gaskets to seal and cushion lenses and refractors in luminaire doors.
- E. Reflecting surfaces shall have minimum reflectance as follows unless otherwise indicated:
  - 1. White Surfaces: 85 percent.
  - 2. Specular Surfaces: 83 percent.
  - 3. Diffusing Specular Surfaces: 75 percent.
- F. Housings:

- 1. Rigidly formed, weather- and light-tight enclosure that will not warp, sag, or deform in use.
- 2. Provide filter/breather for enclosed luminaires.

#### 2.4 FINISHES

- A. Variations in Finishes: Noticeable variations in same piece are unacceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.
- B. Luminaire Finish: Manufacturer's standard paint applied to factory-assembled and -tested luminaire before shipping. Where indicated, match finish process and color of pole or support materials.
- C. Factory-Applied Finish for Aluminum Luminaires: Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
  - 1. Finish designations prefixed by AA comply with the system established by the Aluminum Association for designating aluminum finishes.
  - 2. Natural Satin Finish: Provide fine, directional, medium satin polish (AA-M32); buff complying with AA-M20 requirements; and seal aluminum surfaces with clear, hard-coat wax.
  - 3. Class I, Clear-Anodic Finish: AA-M32C22A41 (Mechanical Finish: Medium satin; Chemical Finish: Etched, medium matte; Anodic Coating: Architectural Class I, clear coating 0.018 mm or thicker) complying with AAMA 611.
  - 4. Class I, Color-Anodic Finish: AA-M32C22A42/A44 (Mechanical Finish: Medium satin; Chemical Finish: Etched, medium matte; Anodic Coating: Architectural Class I, integrally colored or electrolytically deposited color coating 0.018 mm or thicker), complying with AAMA 611.
    - a. Color: Determined by Architect.
- D. Factory-Applied Finish for Steel Luminaires: Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
  - 1. Surface Preparation: Clean surfaces to comply with SSPC-SP 1, to remove dirt, oil, grease, and other contaminants that could impair paint bond. Grind welds and polish surfaces to a smooth, even finish. Remove mill scale and rust, if present, from uncoated steel, complying with SSPC-SP 5/NACE No. 1 or SSPC-SP 8.
  - 2. Exterior Surfaces: Manufacturer's standard finish consisting of one or more coats of primer and two finish coats of high-gloss, high-build polyurethane enamel.
    - a. Color: As selected by Architect from manufacturer's full range.

# 2.5 LUMINAIRE SUPPORT COMPONENTS

- A. Comply with requirements in Section 260529 "Hangers and Supports for Electrical Systems" for channel and angle iron supports and nonmetallic channel and angle supports.
- B. Comply with special and atypical support requirements or needs expressed in luminaire mounting details found on drawings.

#### PART 3 - EXECUTION

# 3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
- B. Examine roughing-in for luminaire electrical conduit to verify actual locations of conduit connections before luminaire installation.
- C. Examine walls, roofs, and canopy ceilings and overhang ceilings for suitable conditions where luminaires will be installed.
- D. Examine all surface and subterranean conditions throughout site that have impact on the installation of lighting equipment and its electronical infrastructure.
- E. Proceed with installation only after unsatisfactory conditions have been corrected.

## 3.2 INSTALLATION

- A. Comply with NECA 1.
- B. Install drivers for each luminaire.
- C. Fasten luminaire to structural support.

## D. Supports:

- 1. Sized and rated for luminaire weight.
- 2. Able to maintain luminaire position, including aiming and rotation angles, after cleaning or routine maintenance.
- 3. Support luminaires without causing deflection of finished surface.
- 4. Luminaire-mounting devices shall be capable of supporting a horizontal force of 100 percent of luminaire weight and a vertical force of 400 percent of luminaire weight.

# E. Wall-Mounted Luminaire Support:

- 1. Attached to structural members in walls, including those within subterranean mounting conditions.
- F. Wiring Method: Install cables in raceways. Conceal raceways and cables.

- G. Install luminaires level, plumb, and square with finished grade unless otherwise indicated.
- H. Coordinate layout and installation of luminaires with other construction.
- I. Adjust luminaires that require field adjustment or aiming. Include adjustment of photoelectric device to prevent false operation of relay by artificial light sources, favoring a north orientation. Refer to the Project's Lighting Fixture Schedule and section 3.6 of this specification for more detailed information on requirements for aiming and adjustment.
- J. Comply with requirements in Section 260519 "Low-Voltage Electrical Power Conductors and Cables" and Section 260533 "Raceways and Boxes for Electrical Systems" for wiring connections and wiring methods.

## 3.3 CORROSION PREVENTION

- A. Aluminum: Do not use in contact with earth or concrete. When in direct contact with a dissimilar metal, protect aluminum by insulating fittings or treatment.
- B. Steel Conduits: Comply with Section 260533 "Raceways and Boxes for Electrical Systems."

## 3.4 IDENTIFICATION

A. Identify system components, wiring, cabling, and terminals. Comply with requirements for identification specified in Section 260553 "Identification for Electrical Systems."

## 3.5 FIELD QUALITY CONTROL

- A. Inspect each installed luminaire for damage. Replace damaged luminaires and components.
- B. Perform the following tests and inspections with the assistance of a factory-authorized service representative:
  - 1. Operational Test: After installing luminaires, switches, and accessories, and after electrical circuitry has been energized, test units to confirm proper operation.
  - 2. Verify operation of photoelectric controls.

# C. Illumination Tests:

- 1. Measure light intensities at night. Use photometers with calibration referenced to NIST standards. Comply with the IES testing guide(s).
- 2. Operational Test: After installing luminaires, switches, and accessories, and after electrical circuitry has been energized, test all units to confirm proper operation.
- D. Luminaire will be considered defective if it does not pass tests and inspections. Repair or replacement will be required.
- E. Prepare a written report of tests, inspections, observations, and verifications indicating and interpreting results. If adjustments are made to lighting system, retest to demonstrate compliance with standards.

# 3.6 LUMANAIRE

A. Contractor shall be responsible for final targeting/focusing of adjustable light fixtures under the observation of, and according to, the recommendations of the Lighting Designer. Aiming shall take place after dark at a mutually agreed upon time. All costs associated with this effort shall be included in the base bid by the Electrical Contractor. These measures can include, but are not necessarily limited to; scaffolding ladders and lifts. Additionally, contractor shall supply all necessary surface protection for surrounding materials, as dictated by the Owner and/or General Contractor. When made necessary by the project conditions, contractor shall make arrangements to protect flooring materials from potential damage caused by the use of lifts and related equipment during lighting adjustments. These accommodations must be included in the contractor's Base Bid.

END OF SECTION 265619

## SECTION 311000 - SITE CLEARING

## PART 1 - GENERAL

## 1.1 RELATED DOCUMENTS

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

## 1.2 SUMMARY

- A. This Section includes the following:
  - 1. Clearing and grubbing.
  - 2. Removing above- and below-grade site improvements.
  - 3. Temporary erosion and sedimentation control measures.

## 1.3 MATERIAL OWNERSHIP

A. Except for stripped topsoil or other materials indicated to remain Owner's property, cleared materials shall become Contractor's property and shall be removed from Project site.

# 1.4 SUBMITTALS

- A. Photographs or videotape, sufficiently detailed, of existing conditions of trees and plantings, adjoining construction, and site improvements that might be misconstrued as damage caused by site clearing.
- B. Record drawings, according to Division 01 Section "Project Record Documents," identifying and accurately locating capped utilities and other subsurface structural, electrical, and mechanical conditions.

# 1.5 QUALITY ASSURANCE

A. Preinstallation Conference: Conduct conference at Project site to comply with requirements in Division 01 Section "Project Management and Coordination."

# 1.6 PROJECT CONDITIONS

A. Traffic: Minimize interference with adjoining roads, streets, walks, and other adjacent occupied or used facilities during site-clearing operations.

- 1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction.
- B. Salvable Improvements: Carefully remove items indicated to be salvaged and store on Owner's premises where indicated.
- C. Do not commence site clearing operations until temporary erosion and sedimentation control measures are in place.

#### PART 2 - PRODUCTS

#### PART 3 - EXECUTION

# 3.1 PREPARATION

- A. Protect existing site improvements to remain from damage during construction.
  - 1. Restore damaged improvements to their original condition, as acceptable to Owner.

#### 3.2 UTILITIES

- A. Locate, identify, disconnect, and seal or cap off utilities indicated to be removed.
  - 1. Arrange with utility companies to shut off indicated utilities.
- B. Existing Utilities: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary utility services according to requirements indicated:
  - 1. Notify Architect not less than two days in advance of proposed utility interruptions.
  - 2. Do not proceed with utility interruptions without Architect's written permission.
- C. Excavate for and remove underground utilities indicated to be removed.

# 3.3 CLEARING AND GRUBBING

- A. Remove obstructions, trees, shrubs, grass, and other vegetation to permit installation of new construction.
- B. Fill depressions caused by clearing and grubbing operations with satisfactory soil material unless further excavation or earthwork is indicated.
  - 1. Place fill material in horizontal layers not exceeding a loose depth of 8 inches and compact each layer to a density equal to adjacent original ground.

## 3.4 SITE IMPROVEMENTS

- A. Remove existing above- and below-grade improvements as indicated and as necessary to facilitate new construction.
- B. Remove slabs, paving, curbs, gutters, and aggregate base as indicated.
  - 1. Unless existing full-depth joints coincide with line of demolition, neatly saw-cut length of existing pavement to remain before removing existing pavement. Saw-cut faces vertically.
  - 2. Paint cut ends of steel reinforcement in concrete to remain to prevent corrosion.

# 3.5 DISPOSAL

A. Disposal: Remove surplus soil material, unsuitable topsoil, obstructions, demolished materials, and waste materials including trash and debris, and legally dispose of them off Owner's property.

END OF SECTION 311000

# SECTION 329200 - LAWNS AND GRASSES

## PART 1 - GENERAL

## 1.1 RELATED DOCUMENTS

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

# 1.2 SUMMARY

- A. Section Includes:
  - 1. Seeding.
  - 2. Hydroseeding.
- B. Related Sections:
  - 1. Section 311000 "Site Clearing" for topsoil stripping and stockpiling.

# 1.3 DEFINITIONS

- A. Duff Layer: The surface layer of native topsoil that is composed of mostly decayed leaves, twigs, and detritus.
- B. Finish Grade: Elevation of finished surface of planting soil.
- C. Manufactured Topsoil: Soil produced off-site by homogeneously blending mineral soils or sand with stabilized organic soil amendments to produce topsoil or planting soil.
- D. Planting Soil: Standardized topsoil; existing, native surface topsoil; existing, in-place surface soil; imported topsoil; or manufactured topsoil that is modified with soil amendments and perhaps fertilizers to produce a soil mixture best for plant growth.
- E. Subgrade: Surface or elevation of subsoil remaining after excavation is complete, or top surface of a fill or backfill before planting soil is placed.
- F. Subsoil: All soil beneath the topsoil layer of the soil profile, and typified by the lack of organic matter and soil organisms.
- G. Surface Soil: Soil that is present at the top layer of the existing soil profile at the Project site. In undisturbed areas, the surface soil is typically topsoil, but in disturbed areas such as urban environments, the surface soil can be subsoil.

#### 1.4 ACTION SUBMITTALS

A. Product Data: For each type of product indicated.

#### 1.5 INFORMATIONAL SUBMITTALS

- A. Certification of Grass Seed: From seed vendor for each grass-seed monostand or mixture stating the botanical and common name, percentage by weight of each species and variety, and percentage of purity, germination, and weed seed. Include the year of production and date of packaging.
  - 1. Certification of each seed mixture for turfgrass and sod. Include identification of source and name and telephone number of supplier.
- B. Qualification Data: For qualified landscape Installer.
- C. Product Certificates: For soil amendments and fertilizers, from manufacturer.

# 1.6 DELIVERY, STORAGE, AND HANDLING

A. Seed and Other Packaged Materials: Deliver packaged materials in original, unopened containers showing weight, certified analysis, name and address of manufacturer, and indication of conformance with state and federal laws, as applicable.

# B. Bulk Materials:

- 1. Do not dump or store bulk materials near structures, utilities, walkways and pavements, or on existing turf areas or plants.
- 2. Provide erosion-control measures to prevent erosion or displacement of bulk materials, discharge of soil-bearing water runoff, and airborne dust reaching adjacent properties, water conveyance systems, or walkways.
- 3. Accompany each delivery of bulk fertilizers, lime, and soil amendments with appropriate certificates.

# 1.7 PROJECT CONDITIONS

- A. Planting Restrictions: Plant during one of the following periods. Coordinate planting periods with initial maintenance periods to provide required maintenance from date of planting completion.
  - 1. Spring Planting: March 15 to June 10
  - 2. Fall Planting: August 15 to October 1
- B. Weather Limitations: Proceed with planting only when existing and forecasted weather conditions permit planting to be performed when beneficial and optimum results may be obtained. Apply products during favorable weather conditions according to manufacturer's written instructions.

# PART 2 - PRODUCTS

## 2.1 SEED

- A. Grass Seed: Fresh, clean, dry, new-crop seed complying with purity and germination tolerances.
- B. Seed Species: State-certified seed of grass species as follows:
- C. Seed Species: Seed of grass species as follows, with not less than 95 percent germination, not less 85 percent pure seed, and not more than 0.5 percent weed seed:
  - a. 80 percent Turf type tall fescues 3 varieties.
  - b. 10 percent Kentucky Bluegrass.
  - c. 10 percent Perennial Ryegrass.

# 2.2 MULCH

A. Straw Mulch: Provide air-dry, clean, mildew- and seed-free, salt hay or threshed straw of wheat, rye, oats, or barley.

#### **PART 3 - EXECUTION**

# 3.1 EXAMINATION

- A. Examine areas to be planted for compliance with requirements and other conditions affecting performance.
  - 1. Verify that no foreign or deleterious material or liquid such as paint, paint washout, concrete slurry, concrete layers or chunks, cement, plaster, oils, gasoline, diesel fuel, paint thinner, turpentine, tar, roofing compound, or acid has been deposited in soil within a planting area.
  - 2. Do not mix or place soils and soil amendments in frozen, wet, or muddy conditions.
  - 3. Suspend soil spreading, grading, and tilling operations during periods of excessive soil moisture until the moisture content reaches acceptable levels to attain the required results.
  - 4. Uniformly moisten excessively dry soil that is not workable and which is too dusty.
  - 5. Planting soil / surface soil shall be suitable topsoil and shall be free of debris, rocks, and worked to a level below the seed bed into a smooth surface.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.
- C. If contamination by foreign or deleterious material or liquid is present in soil within a planting area, remove the soil and contamination as directed by Architect and replace with new planting soil.

## 3.2 PREPARATION

- A. Protect structures, utilities, sidewalks, pavements, and other facilities, trees, shrubs, and plantings from damage caused by planting operations.
- B. Install erosion-control measures to prevent erosion or displacement of soils and discharge of soilbearing water runoff or airborne dust to adjacent properties and walkways.

## 3.3 SEEDING

- A. Sow seed with spreader or seeding machine. Do not broadcast or drop seed when wind velocity exceeds 5 mph. Evenly distribute seed by sowing equal quantities in two directions at right angles to each other.
  - 1. Do not use wet seed or seed that is moldy or otherwise damaged.
  - 2. Do not seed against existing trees. Limit extent of seed to outside edge of planting saucer.
- B. Sow seed at a total rate of 9lbs/1000 sq. ft.
- C. Pretreat ground with 14-28-10 starter fertilizer @ 3.5 lbs/1000 sq. ft.
- D. Apply 40-50lbs of pelletized lime (Not pulverized or powder) per 1000 sq.ft.
- E. Rake seed lightly into top 1/8 inch of soil, roll lightly, and water with fine spray. Seed and lime shall be racked into seed bed prior to straw/mulching application.
- F. Protect seeded areas by spreading straw mulch. Spread uniformly at a minimum rate of 2 tons/acre to form a continuous blanket 1-1/2 inches in loose thickness over seeded areas. Spread by hand, blower, or other suitable equipment. Hay is not acceptable, however PennMulch is acceptable

## 3.4 TURF MAINTENANCE

A. Contractor is responsible for initial watering and shall be kept damp, not muddy for two weeks.

# 3.5 CLEANUP AND PROTECTION

- A. Promptly remove soil and debris created by turf work from paved areas. Clean wheels of vehicles before leaving site to avoid tracking soil onto roads, walks, or other paved areas.
- B. Erect temporary fencing or barricades and warning signs as required to protect newly planted areas from traffic. Maintain fencing and barricades throughout initial maintenance period and remove after plantings are established.

**END OF SECTION 329200**