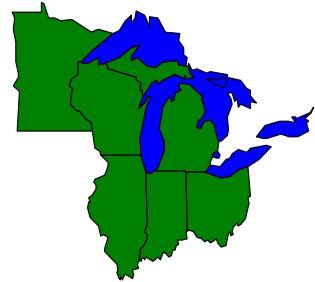




REQUEST FOR PROPOSAL
Request for Proposal (RFP)
U.S. GENERAL SERVICES
ADMINISTRATION
GREAT LAKES REGION
PUBLIC BUILDINGS SERVICE

Acquisition Management Division
230 S. Dearborn, Room 3500
Chicago, IL. 60604



PROJECT: **New Transaction Windows For US
Bankruptcy Court and US District Court**
Hammond U.S. Courthouse, 5400 Federal Plaza,
Hammond, IN 46320

SOLICITATION NO: 47PF0023R0022

ISSUE DATE: February 17, 2023

CLOSING DATE & TIME: March 17, 2023
4:00 PM (Central Time)

CONTRACT NO:

DATE OF AWARD:

ISSUED BY: U.S. General Services Administration
Great Lakes Region
Public Buildings Service
Southern Contracting Team
230 S. Dearborn, Room 3500
Chicago, IL. 60604

**Construction Contract for New Transaction Windows for US Bankruptcy Court
and US District Court - Hammond, IN**

The Solicitation

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I. General Information

I.A. The Solicitation and Contract

(1) This Solicitation is set-aside for Small Business Set Asides, in accordance with FAR 19. This Solicitation sets forth requirements for proposals for a Contract to construct the Project described in the attached Agreement. Proposals conforming to the Solicitation requirements will be evaluated in accordance with the Method of Award set forth herein. The Government will award the Contract to the selected Offeror, subject to the conditions set forth herein.

(2) Neither the Solicitation nor any part of an Offeror's proposal shall be part of the Contract except to the extent expressly incorporated therein by the Contracting Officer.

(3) The Offeror's proposal submitted in response to this Solicitation shall constitute a firm offer. No contract shall be formed unless and until the Contracting Officer has countersigned the SF 1442 submitted by an Offeror, and delivered to the Contractor a copy of the SF 1442 with original signatures together with the Agreement reflecting the Offeror's proposed prices.

I.B. List of Solicitation Documents

The Solicitation Documents are comprised of:

- (1) The Solicitation
- (2) Offeror Representations and Certifications Form
- (3) Standard Form (SF) 1442 – Solicitation Offer and Award
- (4) The Agreement and Attachments to the Agreement
- (5) Other Forms Required For Submission with Proposals

I.C. Authorized Representatives

The following individuals are designated as the authorized GSA representatives under this Solicitation:

| Authorized Representative Information: | |
|---|---|
| Contracting Officer's Information | |
| Name: | Aneesah Muhammad |
| Address: | 230 S. Dearborn, Chicago, IL 60604, Room 3500 |
| Telephone: | 312-590-3555 |
| Email: | Aneesah.Muhammad@gsa.gov |

I.D. Pre-Proposal Conference

| |
|---|
| Date: Wednesday, March 1, 2023 |
| Time: 2:00pm - 3:00pm (CST) 3:00pm to 4:00pm (EST) |
| Location: U.S. Courthouse, 5400 Federal Plaza, Hammond, IN 46320. |
| Note: Any Request for Information (RFI's) can be sent to the attention of Aneesah Muhammad, at aneesah.muhammad@gsa.gov |

I.E. Estimated Price Range

The estimated price range for the Project is between \$25,000 and \$100,000.

I.F. FAR 52.228-1 Bid Guarantee (Sep 96)

(a) Failure to furnish a bid guarantee in the proper form and amount, by the time set for opening of bids, may be cause for rejection of the bid.

(b) The bidder shall furnish a bid guarantee in the form of a firm commitment, e.g., bid bond supported by good and sufficient surety or sureties acceptable to the Government, postal money order, certified check, cashier's check, irrevocable letter of credit, or, under Treasury Department regulations, certain bonds or notes of the United States. The Contracting Officer will return bid guarantees, other than bid bonds—

(1) To unsuccessful bidders as soon as practicable after the opening of bids; and

(2) To the successful bidder upon execution of contractual documents and bonds (including any necessary coinsurance or reinsurance agreements), as required by the bid as accepted.

(c) The amount of the bid guarantee shall be 20 percent of the bid price or \$3,000,000, whichever is less.

(d) If the successful bidder, upon acceptance of its bid by the Government within the period specified for acceptance, fails to execute all contractual documents or furnish executed bond(s) within 10 days after receipt of the forms by the bidder, the Contracting Officer may terminate the contract for default.

(e) In the event the contract is terminated for default, the bidder is liable for any cost of acquiring the work that exceeds the amount of its bid, and the bid guarantee is available to offset the difference.

I.G. FAR 52.236-27 Site Visit – Construction (Feb 95)

(1) The clauses at FAR [52.236-2](#), Differing Site Conditions, and FAR [52.236-3](#), Site Investigations and Conditions Affecting the Work, will be included in any contract

awarded as a result of this solicitation. Accordingly, Offerors are urged and expected to inspect the site where the work will be performed.

(2) Site visits will be held at the following dates and times:

| |
|---|
| Date: Tuesday, February 28, 2023 |
| Time: 11:00am - 12:00pm Eastern Standard Time (EST) |

All interested parties wishing to attend the site visit should send an email to the Project Manager listed below:

| |
|---|
| Name: Cary Kubiak |
| Email: cary.kubiak@gsa.gov |

I.H. Receipt of Offers

(1) In order to be considered for award, offers conforming to the requirements of the Solicitation must be received at the following office no later than **4:00 pm Central Standard Time (CST)** on the following date and at the following address.

| |
|--|
| Date: March 17, 2023 |
| Email Address: Aneesah.Muhammad@gsa.gov |

(2) Offerors are responsible for submitting offers, and any modifications, revisions, or withdrawals, so as to reach the Government office designated in the solicitation by the time specified in the solicitation. See FAR 52.215-1(c)(3) for regulations regarding timely submissions received electronically

II. Proposals

II.A. Proposal Contents

Proposals shall consist of the following documents, completed and executed in accordance with this Solicitation:

1. Price Proposal
2. Technical Proposal
3. Representations and Certifications
4. Standard Form 24, Bid Bond
5. Other Documents as Required

II.B. Proposal Format

The price proposal shall include the following:

- Standard Form 1442
- Price Breakdown
- Offeror's Representations and Certifications
- Standard Form 24

Please email your proposal to aneesah.muhammad@gsa.gov to be received no later than March 17, 2023, at 4:00pm CST. Hard copy submissions are NOT acceptable, and no other means of transmission are acceptable except email submissions.

The email subject line must use the following format "PROPOSAL: Firm Name, Solicitation number."

II.C. Price Proposal

(1) Contents

The Price Proposal shall consist of the SF 1442 and the Agreement, with prices and/or rates indicated for each price element shown on the pricing form included in Section II of the Agreement. Indicate the Base Contract Price, or if no such distinction is made, the Contract Price, in Block 17 of the SF 1442, which must be fully executed by the Offeror.

(2) Qualifications, Exclusions and Conditions

If the Offeror communicates in its proposal any qualifications, exclusions, or conditions to the proposed prices not provided for in the Contract Documents, the Contracting Officer may reject the proposal and exclude the Offeror from further discussions.

(3) Additional Proposal Requirements: N/A

II.D. Technical Proposal

The Technical Proposal shall include the information requested below for the non-price factors described in Section VI.

1) Past Performance of Offeror

This factor considers the past performance of the Offeror. The Offeror shall submit references (a person or persons who may be contacted regarding the quality of the Offeror's past performance) for comparable projects substantially completed within the last five (5) years. The Offeror must provide a GC Reference Form for each reference. The name, title, company name, current address, current phone number, and current fax number for each reference must appear on the form.

This factor will be evaluated based upon the written responses to the RFP by the Offeror and by the evaluation of responses of references recommended by the Offeror. The Government also reserves the right to use other government data available in its assessment of the offeror. The quality of the reference information supplied will be considered. In accordance with FAR 15.306, If award will be made without conducting discussions, offerors may be given the opportunity to clarify certain aspects of proposals (e.g., the relevance of an offeror's past performance information and adverse past performance information to which the offeror has not previously had an opportunity to respond) or to resolve minor or clerical.

(2) Experience on Comparable Projects

This factor considers the extent of the Offeror's past experience as a firm in providing similar construction services.

The Offeror must demonstrate successful experience as a General Construction (GC) Contractor responsible for the construction of at least two (2) "similarly complex" projects substantially completed within the past eight (8) years. A similarly complex project is defined as a project that is comparable in nature, type, and complexity as defined by all of the following characteristics:

- The project involved new building construction and/or the renovation of a comparably sized structure;
- The project was performed in an occupied and functioning office building;
- The project involved all of the following disciplines - architectural, civil, structural, HVAC, plumbing, electrical, fire alarm, elevator, and telecommunications;
- The project included historic restoration and repair of a building listed or eligible to be listed on the National Register of Historic Buildings;
- The project included Hazardous Material abatement.
- The project included requirements for noise control
- The total project construction cost at award of the construction contract(s)

The Offeror may also present not more than 5 additional comparable projects substantially completed within the last eight (8) years.

A Comparable project could include the any combination of the above listed characteristics and the following characteristics:

Project involved construction of office and related facilities

Project involved the restoration of historic finishes

Project required close coordination with occupants/owners security regulations

Project involved substantial night and/or weekend work

Project involved work on a historic site and/or building

For each project presented in relation to this factor (two minimum to seven maximum), the Offeror must explain how the characteristics of the project relate to the characteristics of this project. The similarity to this project is more important than the quantity of projects presented. In addition, for each project presented, the Offeror shall submit a GC Past Performance Reference Form:

This factor will be evaluated based upon the written response to the RFP by the Offeror and the past experience demonstrated by the presented projects.

The Offeror must submit a Past Performance Questionnaire (PPQ) (included in the solicitation as (Attachment B), completed by the applicable client, for each project included in its proposal for Factor 1. Completed PPQs should be submitted with the proposal. Ensure correct phone numbers and email addresses are provided for the client point of contact. Offerors should follow-up with clients/references to ensure timely submittal of questionnaires. If the Offeror is unable to obtain a completed PPQ from a client for a project before proposal closing date, the Offeror should complete and submit with the proposal the first page of the PPQ, which will provide contract and client information for the project. If the client requests, the client may submit a questionnaire directly to the Government's point of contact, via email at Aneesah.Muhammad@gsa.gov prior to proposal closing date. Offerors may resubmit questionnaires previously submitted with other proposals or may obtain an updated/new PPQ from a client for any submission. Offerors shall not incorporate by reference into their proposal PPQs previously submitted for other RFPs.

Also include performance recognition documents received within the last 5 such as awards, award fee determinations, customer letters of commendation, and any other forms of performance recognition. In addition to the above, the Government may review any other sources of information for evaluating past performance. Other sources may include, but are not limited to, past performance information retrieved through the Contractor Performance Assessment Reporting System (CPARS), using all CAGE/DUNS numbers of team members (partnership, joint venture, teaming arrangement, or parent company/subsidiary/affiliate) identified in the Offeror's proposal, inquiries of owner representative(s), Federal Awardee Performance and Integrity Information System (FAPIIS), Electronic Subcontract Reporting System (eSRS), previously submitted PPQ information, and any other known sources not provided by the Offeror. While the Government may elect to consider data from a variety of sources, the burden of providing detailed, current, accurate and complete past performance information rests with the Offeror. GSA will not maintain database of PPQs submitted by Offerors.

II.E. Other Information to Submit with Proposal

(1) Representations and Certifications

Offerors are reminded their SAM registration status must be “Active”, at the time their offer is submitted, to be considered for award (see 52.204-7). Offerors submitting a proposal in response to this Solicitation shall complete electronic Annual Representations and Certifications in conjunction with required Entity registration in System for Award Management (SAM), accessed via [System for Award Management](#). Offerors shall also submit with their proposal, the Annual Representations and Certifications (FAR 52.204-8), using the attached Offeror’s Representations and Certifications (C301).

III. General Provisions

III.A. Availability of Funds

Issuance of this Solicitation does not warrant that funds are presently available for award of a Contract. Award of the contract shall be subject to the availability of appropriated funds, and the Government shall incur no obligation under this Solicitation in advance of such time as funds are made available to the Contracting Officer for the purpose of contract award.

III.B. Requests for Clarification or Interpretation

The Government will attempt to answer all requests for clarifications or interpretations of the Solicitation Documents prior to the date set for receipt of offers, but do not warrant that all such requests will be answered within 10 calendar days. Prospective Offerors should make such requests not less than 15 calendar days prior to the date set for receipt of offers.

III.C. Notice to Small Business Firms

A program for the purpose of assisting qualified small business concerns in obtaining certain bid, payment, or performance bonds that are otherwise not obtainable is available through the Small Business Administration (SBA) ([Small Business Administration](#)). For information concerning SBA's surety bond guarantee assistance, contact your SBA District Office.

III.D. Information Concerning the Disclosure of Solicitation Results

This acquisition is being conducted under the provisions of FAR Part 15 as a negotiated procurement. In accordance with FAR 3.104 and FAR 15.207, after receipt of proposals, no information regarding the identity of those submitting offers, the number of offers received, or the information contained in such offers will be made available until after award except as provided by FAR 15.503.

III.E. Affirmative Procurement Program

GSA has implemented an Affirmative Procurement Program (APP) intended to maximize the use of recovered materials, environmentally preferable, and bio-based products. Offerors should familiarize themselves with the requirements for using and reporting on the use of such materials in performance as set forth in the Agreement. Refer to Clause FAR 52.223-10 encouraging vendors to practice waste reduction.

III.F. Notice Concerning Preparation of Proposals

Offerors are cautioned to carefully read the entire Solicitation and the Agreement to be included in the Contract contemplated by the Solicitation in order to be fully aware of all requirements and clauses in the contemplated Contract. Verify that all blanks requiring information to be supplied in an Offer have been properly filled out, that all pricing and other numerical data is accurately calculated, and that all copies of the Offer contain the same information.

III.G. Bond Requirements

If a bid guarantee is required to be submitted with your offer, any contract awarded will require a performance bond and payment bond as specified in the Agreement. Offerors who utilize individual sureties should note the requirement for a certified, audited, financial statement for each person acting as an individual surety under clause FAR 52.228-1 Bid Guarantee and the requirements of clause FAR 52.228-11 Pledge of Assets.

III.H. Contractor Performance Information

(1) *Evaluating Contractor Performance:* The General Services Administration is using the Contractor Performance Assessment Reporting System (CPARS) module as the secure, confidential, information management tool to facilitate the performance evaluation process. CPARS enables a comprehensive evaluation by capturing comments from both GSA and the contractor. The website for CPARS is [Contractor Performance Assessment](#)

Completed CPARS evaluations may then be used by Federal acquisition community for use in making source selection decisions. CPARS assists acquisition officials by serving as the single source for contractor past performance data.

(2) *CPARS Registration:* Each award requiring an evaluation must be registered in CPARS. The contractor will receive several automated emails. Within thirty days of award, the contractor will receive an e-mail that contains user account information, as well as the applicable contract and order number(s) assigned. Contractors will be granted one user account to access all evaluations.

(3) *Contractor CPARS Training:* Contractors may sign up for CPARS training. A schedule of classes will be posted to the CPARS training site ([CPARS Training](#)) and updated as needed.

(4) *Contractor Representative (CR) Role:* All evaluations will be sent the Contractor Representative (CR) named on your award. The CR

will be able to access CPARS to review and comment on the evaluation. If your CR is not already in the CPARS system, the contracting officer will request the name and email address of the person that will be responsible for the CR role on your award.

Once an evaluation is ready to be released the CR will receive an email alerting them the evaluation is ready for their review and comment. The email will indicate the time frame the CR has to respond to the evaluation; however, the CR may return the evaluation earlier than this date.

GSA shall provide for review at a level above the contracting officer (i.e., contracting director) to consider any disagreement between GSA and the contractor regarding GSA's evaluation of the contractor. Based on the review, the individual at a level above the contracting officer will issue the ultimate conclusion on the performance evaluation.

Copies of the evaluations, contractor responses, and review comments, if any, will be retained as part of the contract file.

III.I. Safeguarding and Dissemination of Controlled Unclassified Information (CUI) Building Information

Certain information contained in the Solicitation Documents may have been designated as Controlled Unclassified Information (CUI) building information. With respect to such information, Offerors shall agree to the terms for receipt of such information, as set forth in the provision "Administrative Matters" in Section III of the Agreement, as a condition of receipt of such information.

IV. FAR/GSAR Solicitation Provisions

IV.A. FAR 52.211-1 Availability of Specifications Listed in the GSA Index of Federal Specifications, Standards and Commercial Item Descriptions, FPMR Part 101-29 (AUG 98)

(a) The GSA Index of Federal Specifications, Standards and Commercial Item Descriptions, FPMR Part 101-29, and copies of specifications, standards, and commercial item descriptions cited in this solicitation may be obtained for a fee by submitting a request to—

GSA Federal Supply Service
Specifications Section, Suite 8100
470 East L'Enfant Plaza, SW
Washington, DC 20407

Telephone (202) 619-8925
Facsimile (202) 619-8978

(b) If the General Services Administration, Department of Agriculture, or Department of Veterans Affairs issued this solicitation, a single copy of specifications, standards, and commercial item descriptions cited in this solicitation may be obtained

free of charge by submitting a request to the addressee in paragraph (a) of this provision. Additional copies will be issued for a fee.

IV.C. FAR 52.216-1 Type of Contract (APR 84)

The Government contemplates award of a Firm-Fixed-Price contract resulting from this solicitation.

IV.D. FAR 52.222-5 Construction Wage Rate Requirements—Secondary Site of the Work (MAY 14)

(a)(1) The offeror shall notify the Government if the offeror intends to perform work at any secondary site of the work, as defined in paragraph (a)(1)(ii) of the FAR clause at 52.222-6, Construction Wage Rate Requirements, of this solicitation.

(2) If the offeror is unsure if a planned work site satisfies the criteria for a secondary site of the work, the offeror shall request a determination from the Contracting Officer.

(b)(1) If the wage determination provided by the Government for work at the primary site of the work is not applicable to the secondary site of the work, the offeror shall request a wage determination from the Contracting Officer.

(2) The due date for receipt of offers will not be extended as a result of an offeror's request for a wage determination for a secondary site of the work.

IV.E. FAR 52.222-23 Notice of Requirement for Affirmative Action to Ensure Equal Employment Opportunity for Construction (FEB 1999)

(a) The offeror's attention is called to the Equal Opportunity clause and the Affirmative Action Compliance Requirements for Construction clause of this solicitation.

(b) The goals for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

| Goals for Minority Participation for Each Trade | Goals for Female Participation for Each Trade |
|---|---|
| 4.4% | 6.9% |

These goals are applicable to all of the Contractor's construction work performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, the Contractor shall apply the goals established for the geographical area where the work is actually performed. Goals are published periodically in the Federal Register in notice form, and these notices may be obtained from any Office of Federal Contract Compliance Programs office.

(c) The Contractor's compliance with Executive Order 11246, as amended, and the regulations in 41 CFR 60-4 shall be based on (1) its implementation of the Equal Opportunity clause, (2) specific affirmative action obligations required by the clause entitled "Affirmative Action Compliance Requirements for Construction," and (3) its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade. The Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor, or from project to project, for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, Executive Order 11246, as amended, and the regulations in 41 CFR 60-4. Compliance with the goals will be measured against the total work hours performed.

(d) The Contractor shall provide written notification to the Deputy Assistant Secretary for Federal Contract Compliance, U.S. Department of Labor, within 10 working days following award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the--

- (1) Name, address, and telephone number of the subcontractor;
- (2) Employer's identification number of the subcontractor;
- (3) Estimated dollar amount of the subcontract;
- (4) Estimated starting and completion dates of the subcontract; and
- (5) Geographical area in which the subcontract is to be performed.

(e) As used in this Notice, and in any contract resulting from this solicitation, the "covered area" is: *Lake County, Hammond, IN*.

IV.F. Buy American Requirements

FAR 52.225-10 Notice of Buy American Requirement-Construction Materials (MAY 2014)

(a) *Definitions*. "Commercially available off-the-shelf (COTS) item," "construction material," "domestic construction material," and "foreign construction material," as used in this provision, are defined in the clause of this solicitation entitled "Buy American-Construction Materials" (Federal Acquisition Regulation (FAR) clause [52.225-9](#)).

(b) *Requests for determinations of inapplicability*. An offeror requesting a determination regarding the inapplicability of the Buy American statute should submit the request to the Contracting Officer in time to allow a determination before submission of offers. The offeror shall include the information and applicable supporting data required by paragraphs (c) and (d) of the clause at FAR [52.225-9](#) in the request. If an offeror has not requested a determination regarding the inapplicability of the Buy American statute before submitting its offer, or has not received a response to a previous request, the offeror shall include the information and supporting data in the offer.

(c) Evaluation of offers.

(1) The Government will evaluate an offer requesting exception to the requirements of the Buy American statute, based on claimed unreasonable cost of domestic construction material, by adding to the offered price the appropriate percentage of the cost of such foreign construction material, as specified in paragraph (b)(3)(i) of the clause at FAR [52.225-9](#).

(2) If evaluation results in a tie between an offeror that requested the substitution of foreign construction material based on unreasonable cost and an offeror that did not request an exception, the Contracting Officer will award to the offeror that did not request an exception based on unreasonable cost.

(d) Alternate offers.

(1) When an offer includes foreign construction material not listed by the Government in this solicitation in paragraph (b)(2) of the clause at FAR [52.225-9](#), the offeror also may submit an alternate offer based on use of equivalent domestic construction material.

(2) If an alternate offer is submitted, the offeror shall submit a separate [Standard Form 1442](#) for the alternate offer, and a separate price comparison table prepared in accordance with paragraphs (c) and (d) of the clause at FAR [52.225-9](#) for the offer that is based on the use of any foreign construction material for which the Government has not yet determined an exception applies.

(3) If the Government determines that a particular exception requested in accordance with paragraph (c) of the clause at FAR [52.225-9](#) does not apply, the Government will evaluate only those offers based on use of the equivalent domestic construction material, and the offeror shall be required to furnish such domestic construction material. An offer based on use of the foreign construction material for which an exception was requested-

(i) Will be rejected as nonresponsive if this acquisition is conducted by sealed bidding; or

(ii) May be accepted if revised during negotiations.

(End of Provision)

IV.G. Buy American Exceptions

For Buy American exceptions, if any, see the applicable Buy American clause in Section IV of the Agreement

IV.H. FAR 52.233-2 Service of Protest (SEP 06)

(a) Protests, as defined in section 31.101 of the Federal Acquisition Regulation, that are filed directly with an agency, and copies of any protests that are filed with the Government Accountability Office (GAO), shall be served on the Contracting Officer (addressed as follows) by obtaining written and dated acknowledgment of receipt from the Contracting Officer at the address provided in the provision "Receipt of Offers" in Section I (General Information).

(b) The copy of any protest shall be received in the office designated above within one day of filing a protest with the GAO.

IV.I. FAR 52.252-1 Solicitation Provisions Incorporated by Reference (FEB 98)

This solicitation incorporates one or more solicitation provisions by reference, with the same force and effect as if they were given in full text. Upon request, the Contracting Officer will make their full text available. The offeror is cautioned that the listed provisions may include blocks that must be completed by the offeror and submitted with its quotation or offer. In lieu of submitting the full text of those provisions, the offeror may identify the provision by paragraph identifier and provide the appropriate information with its quotation or offer. Also, the full text of a solicitation provision may be accessed electronically at this address:

[Federal Acquisition Regulation](#)

| NUMBER | TITLE | DATE |
|-----------|--|--------|
| 52.204-22 | Alternative Line-Item Proposal | JAN 17 |
| 52.214-34 | Submission of Offers in the English Language | APR 91 |
| 52.215-16 | Facilities Capital Cost of Money | JUN 03 |
| 52.236-28 | Preparation of Proposals - Construction | OCT 97 |

IV.J. GSAR Clause 552.102 Incorporating Provisions and Clauses

This solicitation incorporates one or more solicitation provisions by reference, with the same force and effect as if they were given in full text. Upon request, the Contracting Officer will make their full text available.

IV.M. Requiring Certified Cost or Pricing Data [15.403-4]

V. Instructions and Clauses

V.A. FAR 52.215-1 Instructions to Offerors – Competitive Acquisition (NOV 2021)

(a) *Definitions.* As used in this provision-

Discussions are negotiations that occur after establishment of the competitive range that may, at the Contracting Officer's discretion, result in the offeror being allowed to revise its proposal.

In writing, "writing," or "written" means any worded or numbered expression that can be read, reproduced, and later communicated, and includes electronically transmitted and stored information.

Proposal modification is a change made to a proposal before the solicitation's closing date and time, or made in response to an amendment, or made to correct a mistake at any time before award.

Proposal revision is a change to a proposal made after the solicitation closing date, at the request of or as allowed by a Contracting Officer as the result of negotiations.

Time, if stated as a number of days, is calculated using calendar days, unless otherwise specified, and will include Saturdays, Sundays, and legal holidays. However, if the last day falls on a Saturday, Sunday, or legal holiday, then the period shall include the next working day.

(b) *Amendments to solicitations*. If this solicitation is amended, all terms and conditions that are not amended remain unchanged. Offerors shall acknowledge receipt of any amendment to this solicitation by the date and time specified in the amendment(s).

(c) Submission, modification, revision, and withdrawal of proposals. (1) Unless other methods (e.g., electronic commerce or facsimile) are permitted in the solicitation, proposals and modifications to proposals shall be submitted in paper media in sealed envelopes or packages (i) addressed to the office specified in the solicitation, and (ii) showing the time and date specified for receipt, the solicitation number, and the name and address of the offeror. Offerors using commercial carriers should ensure that the proposal is marked on the outermost wrapper with the information in paragraphs (c)(1)(i) and (c)(1)(ii) of this provision.

(2) The first page of the proposal must show—

(i) The solicitation number;

(ii) The name, address, and telephone and facsimile numbers of the offeror (and electronic address if available);

(iii) A statement specifying the extent of agreement with all terms, conditions, and provisions included in the solicitation and agreement to furnish any or all items upon which prices are offered at the price set opposite each item;

(iv) Names, titles, and telephone and facsimile numbers (and electronic addresses if available) of persons authorized to negotiate on the offeror's behalf with the Government in connection with this solicitation; and

(v) Name, title, and signature of person authorized to sign the proposal. Proposals signed by an agent shall be accompanied by evidence of that agent's authority, unless that evidence has been previously furnished to the issuing office.

(3) Submission, modification, revision, and withdrawal of proposals. (i) Offerors are responsible for submitting proposals, and any modifications or revisions, so as to reach the Government office designated in the solicitation by the time specified in the solicitation. If no time is specified in the solicitation, the time for receipt is 4:30 p.m., local time, for the designated Government office on the date that proposal or revision is due.

(ii) (A) Any proposal, modification, or revision received at the Government office designated in the solicitation after the exact time specified for receipt of offers is "late" and will not be considered unless it is received before award is made, the Contracting Officer determines that accepting the late offer would not unduly delay the acquisition; and-

(1) If it was transmitted through an electronic commerce method authorized by the solicitation, it was received at the initial point of entry to the Government infrastructure not later than 5:00 p.m. one working day prior to the date specified for receipt of proposals; or

(2) There is acceptable evidence to establish that it was received at the Government installation designated for receipt of offers and was under the Government's control prior to the time set for receipt of offers; or

(3) It is the only proposal received.

(B) However, a late modification of an otherwise successful proposal that makes its terms more favorable to the Government, will be considered at any time it is received and may be accepted.

(iii) Acceptable evidence to establish the time of receipt at the Government installation includes the time/date stamp of that installation on the proposal wrapper, other documentary evidence of receipt maintained by the installation, or oral testimony or statements of Government personnel.

(iv) If an emergency or unanticipated event interrupts normal Government processes so that proposals cannot be received at the office designated for receipt of proposals by the exact time specified in the solicitation, and urgent Government requirements preclude amendment of the solicitation, the time specified for receipt of

proposals will be deemed to be extended to the same time of day specified in the solicitation on the first work day on which normal Government processes resume.

(v) Proposals may be withdrawn by written notice received at any time before award. Oral proposals in response to oral solicitations may be withdrawn orally. If the solicitation authorizes facsimile proposals, proposals may be withdrawn via facsimile received at any time before award, subject to the conditions specified in the provision at [52.215-5](#), Facsimile Proposals. Proposals may be withdrawn in person by an offeror or an authorized representative, if the identity of the person requesting withdrawal is established and the person signs a receipt for the proposal before award.

(4) Unless otherwise specified in the solicitation, the offeror may propose to provide any item or combination of items.

(5) Offerors shall submit proposals in response to this solicitation in English, unless otherwise permitted by the solicitation, and in U.S. dollars, unless the provision at FAR [52.225-17](#), Evaluation of Foreign Currency Offers, is included in the solicitation.

(6) Offerors may submit modifications to their proposals at any time before the solicitation closing date and time, and may submit modifications in response to an amendment, or to correct a mistake at any time before award.

(7) Offerors may submit revised proposals only if requested or allowed by the Contracting Officer.

(8) Proposals may be withdrawn at any time before award. Withdrawals are effective upon receipt of notice by the Contracting Officer.

(d) *Offer expiration date.* Proposals in response to this solicitation will be valid for the number of days specified on the solicitation cover sheet (unless a different period is proposed by the offeror).

(e) *Restriction on disclosure and use of data.* Offerors that include in their proposals data that they do not want disclosed to the public for any purpose, or used by the Government except for evaluation purposes, shall-

(1) Mark the title page with the following legend:

This proposal includes data that shall not be disclosed outside the Government and shall not be duplicated, used, or disclosed-in whole or in part-for any purpose other than to evaluate this proposal. If, however, a contract is awarded to this offeror as a result of-or in connection with-the submission of this data, the Government shall have the right to duplicate, use, or disclose the data to the extent provided in the resulting

contract. This restriction does not limit the Government's right to use information contained in this data if it is obtained from another source without restriction. The data subject to this restriction are contained in sheets [*insert numbers or other identification of sheets*]; and

(2) Mark each sheet of data it wishes to restrict with the following legend:

Use or disclosure of data contained on this sheet is subject to the restriction on the title page of this proposal.

(f) Contract award. (1) The Government intends to award a contract or contracts resulting from this solicitation to the responsible offeror(s) whose proposal(s) represents the best value after evaluation in accordance with the factors and subfactors in the solicitation.

(2) The Government may reject any or all proposals if such action is in the Government's interest.

(3) The Government may waive informalities and minor irregularities in proposals received.

(4) The Government intends to evaluate proposals and award a contract without discussions with offerors (except clarifications as described in FAR [15.306\(a\)](#)). Therefore, the offeror's initial proposal should contain the offeror's best terms from a cost or price and technical standpoint. The Government reserves the right to conduct discussions if the Contracting Officer later determines them to be necessary. If the Contracting Officer determines that the number of proposals that would otherwise be in the competitive range exceeds the number at which an efficient competition can be conducted, the Contracting Officer may limit the number of proposals in the competitive range to the greatest number that will permit an efficient competition among the most highly rated proposals.

(5) The Government reserves the right to make an award on any item for a quantity less than the quantity offered, at the unit cost or prices offered, unless the offeror specifies otherwise in the proposal.

(6) The Government reserves the right to make multiple awards if, after considering the additional administrative costs, it is in the Government's best interest to do so.

(7) Exchanges with offerors after receipt of a proposal do not constitute a rejection or counteroffer by the Government.

(8) The Government may determine that a proposal is unacceptable if the prices proposed are materially unbalanced between line items or subline items. Unbalanced pricing exists when, despite an acceptable total evaluated price, the price of one or more line items is significantly overstated or understated as indicated by the application of cost or price analysis techniques. A proposal may be rejected if the Contracting Officer determines that the lack of balance poses an unacceptable risk to the Government.

(9) If a cost realism analysis is performed, cost realism may be considered by the source selection authority in evaluating performance or schedule risk.

(10) A written award or acceptance of proposal mailed or otherwise furnished to the successful offeror within the time specified in the proposal shall result in a binding contract without further action by either party.

(11) If a post-award debriefing is given to requesting offerors, the Government shall disclose the following information, if applicable:

(i) The agency's evaluation of the significant weak or deficient factors in the debriefed offeror's offer.

(ii) The overall evaluated cost or price and technical rating of the successful and the debriefed offeror and past performance information on the debriefed offeror.

(iii) The overall ranking of all offerors, when any ranking was developed by the agency during source selection.

(iv) A summary of the rationale for award.

(v) For acquisitions of commercial products, the make and model of the product to be delivered by the successful offeror.

(vi) Reasonable responses to relevant questions posed by the debriefed offeror as to whether source selection procedures set forth in the solicitation, applicable regulations, and other applicable authorities were followed by the agency.

VI. Method of Award

VI.A. Evaluation of Offers

(1) The Government will award a contract resulting from this Solicitation to the responsible Offeror whose offer conforming to the Solicitation will be the best value to the Government, Total Evaluated Price and other factors considered. In addition to Total Evaluated Price, the following non-price factors shall be used to evaluate offers:

- (a) Past Performance on Similar Projects
- (b) Experience on Similar Projects

(2) Non-Price Factors, when combined, are significantly more important than/significantly less important than/equal in importance to Total Evaluated Price.

VI.B. Determination of Responsibility

In order to be considered responsible, an Offeror must demonstrate that it meets the requirements of FAR 9.104-1. The Contracting Officer's determination of an Offeror's responsibility or non-responsibility may be based upon any information obtained by the Contracting Officer, and is independent of the evaluation of offers set forth herein.

VI.C. Price Reasonableness

The proposed prices will be evaluated for reasonableness. Price reasonableness determines whether an Offeror's price is too high. Analysis of price proposals will be performed using one or more of the techniques defined in FAR 15.404 in order to determine price reasonableness. Normally, price reasonableness is established through adequate price competition, but may also be determined through price analysis techniques as described in FAR 15.404-1. Notwithstanding anything to the contrary in this solicitation and for the avoidance of doubt, the Government will **not** perform a price realism analysis of the Offeror's proposal.

VI.D. Unbalanced Prices

Offers must include balanced prices. Unbalanced pricing may increase performance risk and could result in payment of unreasonably high prices. Unbalanced pricing exists when, despite an acceptable total evaluated price, the price of one or more contract line items is significantly over or understated as indicated by the application of price analysis techniques. All offers with separately priced line items or subline items shall be analyzed to determine if the prices are unbalanced. If price analysis techniques indicate that an offer is unbalanced, the contracting officer shall: (i) Consider the risks to the Government associated with the unbalanced pricing in determining the competitive range and in making the source selection decision; and (ii) Consider whether award of

the contract will result in paying unreasonably high prices for contract performance. An offer may be rejected if the contracting officer determines that the lack of balance poses an unacceptable risk to the Government.

VI.E. Total Evaluated Price

The Government will evaluate offers for award purposes by adding the total price for all options to the total price for the basic requirement. Evaluation of options will not obligate the Government to exercise the option(s). Total Evaluated Price shall be calculated using the prices indicated in the Price Proposal, using the following formula:

VI.F. Non-Price Factors

(1) Past Performance on Similar Projects

(a) Past performance will be evaluated as a predictor of the Offeror's compliance with contract requirements and overall quality of performance.

(b) Past performance will be evaluated on the basis of information received by the Contracting Officer concerning the Offeror's performance on other contracts, including information not submitted by the Offeror. If the Contracting Officer becomes aware of required past performance information omitted from the Offeror's proposal, the Contracting Officer may draw a negative inference from the omission of such information.

(2) Experience on Similar Projects

(a) Experience will be evaluated as an indicator of the Offeror's capacity to perform the Contract contemplated by this Solicitation.

(b) Experience will be evaluated on the basis of information submitted by the Offeror indicating completion of projects of similar size, complexity, and scope. If the Offeror materially misrepresents information relating to its experience, the Contracting Officer may reject the proposal.

| | | | | |
|---|------------------------|---|----------------|---------------|
| SOLICITATION, OFFER, AND AWARD (Construction, Alteration, or Repair) | 1. SOLICITATION NUMBER | 2. TYPE OF SOLICITATION | 3. DATE ISSUED | PAGE OF PAGES |
| | 47PF0023R0022 | <input type="checkbox"/> SEALED BID (IFB) <input checked="" type="checkbox"/> NEGOTIATED (RFP) | 2/17/2023 | 1 2 |

IMPORTANT - The "offer" section on the reverse must be fully completed by offeror.

| | | |
|--|--|--|
| 4. CONTRACT NUMBER | 5. REQUISITION/PURCHASE REQUEST NUMBER | 6. PROJECT NUMBER |
| | PR EQ5P1SEB-23-0006 | |
| 7. ISSUED BY | CODE | 8. ADDRESS OFFER TO |
| R5 AMD Repair & Alterations Contracting Branch Southern Team 230 S Dearborn St Chicago, IL 60604 USA | 5P2QCB | 5P2QCB R5 AMD Repair & Alterations Contracting Branch Southern Team 230 S Dearborn St Chicago, IL 60604 USA |

| | | |
|--------------------------|------------------|--|
| 9. FOR INFORMATION CALL: | a. NAME | b. TELEPHONE NUMBER (Include area code) (NO COLLECT CALLS) |
| | Aneesah Muhammad | 312-590-3555 |

SOLICITATION

NOTE: In sealed bid solicitations "offer" and "offeror" mean "bid and "bidder".

10. THE GOVERNMENT REQUIRES PERFORMANCE OF THE WORK DESCRIBED IN THESE DOCUMENTS (Title, identifying number, date)

New Transaction Windows for the US Bankruptcy Court and US District Court at the Hammond US Courthouse in Hammond, IN

| | |
|---|--------------------|
| 11. The contractor shall begin performance within <u>1</u> calendar days and complete it within <u>40</u> calendar days after receiving <input type="checkbox"/> award, <input checked="" type="checkbox"/> notice to proceed. This performance period is <input checked="" type="checkbox"/> mandatory <input type="checkbox"/> negotiable. (See <u>The Agreement Page</u>). | 12b. CALENDAR DAYS |
| 12a. THE CONTRACTOR MUST FURNISH ANY REQUIRED PERFORMANCE AND PAYMENT BONDS? (If "YES", indicate within how many calendar days after award in Item 12b.) <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO | 10 |

13. ADDITIONAL SOLICITATION REQUIREMENTS:

- a. Sealed offers in original and _____ copies to perform the work required are due at the place specified in Item 8 by 4:00 PM (CST) (hour) local time 3/17/2023 (date). If this is a sealed bid solicitation, offers will be publicly opened at that time. Sealed envelopes containing offers shall be marked to show the offeror's name and address, the solicitation number, and the date and time offers are due.
- b. An offer guarantee ☒ is, ☐ is not required.
- c. All offers are subject to the (1) work requirements, and (2) other provisions and clauses incorporated in the solicitation in full text or by reference.
- d. Offers providing less than 120 calendar days for Government acceptance after the date offers are due will not be considered and will be rejected.

OFFER (Must be fully completed by offeror)

| | | | |
|--|---------------|--|--|
| 14. NAME AND ADDRESS OF OFFEROR (Include ZIP Code) | | 15. TELEPHONE NUMBER (Include area code) | |
| | | 16. REMITTANCE ADDRESS (Include only if different than Item 14.) | |
| | | | |
| CODE | FACILITY CODE | | |

17. The offeror agrees to perform the work required at the prices specified below in strict accordance with the terms of this solicitation, if this offer is accepted by the Government in writing within _____ calendar days after the date offers are due. (Insert any number equal to or greater than the minimum requirement stated in Item 13d. Failure to insert any number means the offeror accepts the minimum in Item 13d.)

AMOUNTS



18. The offeror agrees to furnish any required performance and payment bonds.

19. ACKNOWLEDGMENT OF AMENDMENTS

(The offeror acknowledges receipt of amendments to the solicitation -- give number and date of each)

| AMENDMENT NUMBER | | | | | | | | | | |
|---------------------|--|--|--|--|--|--|--|--|--|--|
| DATE. | | | | | | | | | | |

| | | |
|--|----------------|-----------------|
| 20a. NAME AND TITLE OF PERSON AUTHORIZED TO SIGN OFFER (Type or print) | 20b. SIGNATURE | 20c. OFFER DATE |
| | | |

AWARD (To be completed by Government)

21. ITEMS ACCEPTED:

| | |
|---|---|
| 22. AMOUNT | 23. ACCOUNTING AND APPROPRIATION DATA |
| | |
| 24. SUBMIT INVOICES TO ADDRESS SHOWN IN (4 copies unless otherwise specified) | 25. OTHER THAN FULL AND OPEN COMPETITION PURSUANT TO <input type="checkbox"/> 10 U.S.C. 2304(c) () <input type="checkbox"/> 41 U.S.C. 3304(a) () |
| 26. ADMINISTERED BY | 27. PAYMENT WILL BE MADE BY |
| | |

CONTRACTING OFFICER WILL COMPLETE ITEM 28 OR 29 AS APPLICABLE

| | |
|---|---|
| <input type="checkbox"/> 28. NEGOTIATED AGREEMENT (Contractor is required to sign this document and return _____ copies to issuing office.) Contractor agrees to furnish and deliver all items or perform all work requirements identified on this form and any continuation sheets for the consideration stated in this contract. The rights and obligations of the parties to this contract shall be governed by (a) this contract award, (b) the solicitation, and (c) the clauses, representations, certifications, and specifications incorporated by reference in or attached to this contract. | <input type="checkbox"/> 29. AWARD (Contractor is not required to sign this document.) Your offer on this solicitation is hereby accepted as to the items listed. This award consummates the contract, which consists of (a) the Government solicitation and your offer, and (b) this contract award. No further contractual document is necessary. |
| 30a. NAME AND TITLE OF CONTRACTOR OR PERSON AUTHORIZED TO SIGN (Type or print) | 31a. NAME OF CONTRACTING OFFICER (Type or print) Aneesah Muhammad |
| 30b. SIGNATURE | 31b. UNITED STATES OF AMERICA |
| 30c. DATE | 31c. DATE |
| | BY |

| Pricing Breakdown Form | | | | |
|--|---|--------------------------------------|----|---|
| PROJECT TITLE: | | New Transaction Windows, Hammond, IN | | Solicitation # 47PF0023R0022 |
| PROJECT COST | | | | |
| DIVISION | | COST | | NOTES |
| 0001 - General Requirements | | | | |
| 0002 - Existing Conditions | | | | |
| 0006 - Wood | | | | |
| 0007 - Thermal and Moisture Protection | | | | |
| 0008 - Openings | | | | |
| 0009 - Finishes | | | | |
| 0010 - Specialties | | | | |
| 0011 - Equipment | | | | |
| 0013 - Special Construction | | | | |
| 0026 - Electrical | | | | |
| 0027- Communications | | | | |
| 0028 - Electronic Safety And Security | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| SUB-TOTAL | | | \$ | The Contractor having examined the scope of work, plans, specifications and site conditions of the proposed work, hereby proposes to furnish all materials, labor, supplies and supervision to complete the proposed project per contract documents for the total sum stated. |
| O/H | % | \$ | | |
| Profit | % | \$ | | |
| Total Base Bid | | \$ | | |
| BONDING | | \$ | | |
| Total Project Cost | | | | |
| | | | | |
| CONTRACTOR INFORMATION | | | | |
| Company Name: | | | | |
| Authorized Signature: | | | | |
| Date: | | | | |

| | | |
|---|---|--|
| BID BOND <i>(See instructions on reverse)</i> | DATE BOND EXECUTED <i>(Must not be later than bid opening date)</i> | OMB Control Number: 9000-0045 Expiration Date: 8/31/2025 |
| Paperwork Reduction Act Statement - This information collection meets the requirements of 44 USC § 3507, as amended by section 2 of the Paperwork Reduction Act of 1995. You do not need to answer these questions unless we display a valid Office of Management and Budget (OMB) control number. The OMB control number for this collection is 9000-0045. We estimate that it will take 1 hour to read the instructions, gather the facts, and answer the questions. Send only comments relating to our time estimate, including suggestions for reducing this burden, or any other aspects of this collection of information to: General Services Administration, Regulatory Secretariat Division (M1V1CB), 1800 F Street, NW, Washington, DC 20405. | | |
| PRINCIPAL <i>(Legal name and business address)</i> | | TYPE OF ORGANIZATION <i>("X" one)</i> <input type="checkbox"/> INDIVIDUAL <input type="checkbox"/> PARTNERSHIP <input type="checkbox"/> JOINT VENTURE <input type="checkbox"/> CORPORATION <input type="checkbox"/> OTHER <i>(Specify)</i> |
| | | STATE OF INCORPORATION |

SURETY(IES) *(Name and business address)*

| PENAL SUM OF BOND | | | | BID IDENTIFICATION | | |
|----------------------|----------------------|-------------|------------|--------------------|---|-------------------|
| PERCENT OF BID PRICE | AMOUNT NOT TO EXCEED | | | | BID DATE | INVITATION NUMBER |
| | MILLION(S) | THOUSAND(S) | HUNDRED(S) | CENTS | FOR <i>(Construction, Supplies or Services)</i> | |

OBLIGATION:

We, the Principal and Surety(ies) are firmly bound to the United States of America (hereinafter called the Government) in the above penal sum. For payment of the penal sum, we bind ourselves, our heirs, executors, administrators, and successors, jointly and severally. However, where the Sureties are corporations acting as co-sureties, we, the Sureties, bind ourselves in such sum "jointly and severally" as well as "severally" only for the purpose of allowing a joint action or actions against any or all of us. For all other purposes, each Surety binds itself, jointly and severally with the Principal, for the payment of the sum shown opposite the name of the Surety. If no limit of liability is indicated, the limit of liability is the full amount of the penal sum.

CONDITIONS:

The Principal has submitted the bid identified above.

THEREFORE:

The above obligation is void if the Principal - (a) upon acceptance by the Government of the bid identified above, within the period specified therein for acceptance (sixty (60) days if no period is specified), executes the further contractual documents and gives the bond(s) required by the terms of the bid as accepted within the time specified (ten (10) days if no period is specified) after receipt of the forms by the principal; or (b) in the event of failure to execute such further contractual documents and give such bonds, pays the Government for any cost of procuring the work which exceeds the amount of the bid.

Each Surety executing this instrument agrees that its obligation is not impaired by any extension(s) of the time for acceptance of the bid that the Principal may grant to the Government. Notice to the surety(ies) of extension(s) is waived. However, waiver of the notice applies only to extensions aggregating not more than sixty (60) calendar days in addition to the period originally allowed for acceptance of the bid.

WITNESS:

The Principal and Surety(ies) executed this bid bond and affixed their seals on the above date.

| PRINCIPAL | | | | |
|--------------------------------------|--------|--------|--------|----------------|
| SIGNATURE(S) | 1. | 2. | 3. | Corporate Seal |
| | (Seal) | (Seal) | (Seal) | |
| NAME(S) & TITLE(S) <i>(Typed)</i> | 1. | 2. | 3. | |

| INDIVIDUAL SURETY(IES) | | |
|---------------------------|--------|--------|
| SIGNATURE(S) | 1. | 2. |
| | (Seal) | (Seal) |
| NAME(S) <i>(Typed)</i> | 1. | 2. |

| CORPORATE SURETY(IES) | | | | |
|-----------------------|--------------------------------------|------------------------|----------------------|----------------|
| SURETY A | NAME & ADDRESS | STATE OF INCORPORATION | LIABILITY LIMIT (\$) | Corporate Seal |
| | SIGNATURE(S) | 1. | 2. | |
| | NAME(S) & TITLE(S) <i>(Typed)</i> | 1. | 2. | |

| | | | | | |
|----------|-------------------------------|----|------------------------|----------------------|----------------|
| SURETY B | NAME & ADDRESS | | STATE OF INCORPORATION | LIABILITY LIMIT (\$) | Corporate Seal |
| | SIGNATURE(S) | 1. | 2. | | |
| | NAME(S) & TITLE(S) (Typed) | 1. | 2. | | |
| SURETY C | NAME & ADDRESS | | STATE OF INCORPORATION | LIABILITY LIMIT (\$) | Corporate Seal |
| | SIGNATURE(S) | 1. | 2. | | |
| | NAME(S) & TITLE(S) (Typed) | 1. | 2. | | |
| SURETY D | NAME & ADDRESS | | STATE OF INCORPORATION | LIABILITY LIMIT (\$) | Corporate Seal |
| | SIGNATURE(S) | 1. | 2. | | |
| | NAME(S) & TITLE(S) (Typed) | 1. | 2. | | |
| SURETY E | NAME & ADDRESS | | STATE OF INCORPORATION | LIABILITY LIMIT (\$) | Corporate Seal |
| | SIGNATURE(S) | 1. | 2. | | |
| | NAME(S) & TITLE(S) (Typed) | 1. | 2. | | |
| SURETY F | NAME & ADDRESS | | STATE OF INCORPORATION | LIABILITY LIMIT (\$) | Corporate Seal |
| | SIGNATURE(S) | 1. | 2. | | |
| | NAME(S) & TITLE(S) (Typed) | 1. | 2. | | |
| SURETY G | NAME & ADDRESS | | STATE OF INCORPORATION | LIABILITY LIMIT (\$) | Corporate Seal |
| | SIGNATURE(S) | 1. | 2. | | |
| | NAME(S) & TITLE(S) (Typed) | 1. | 2. | | |

INSTRUCTIONS

1. This form is authorized for use when a bid guaranty is required. Any deviation from this form will require the written approval of the Administrator of General Services.
2. Insert the full legal name and business address of the Principal in the space designated "Principal" on the face of the form. An authorized person shall sign the bond. Any person signing in a representative capacity (e.g., an attorney-in-fact) must furnish evidence of authority if that representative is not a member of the firm, partnership, or joint venture, or an officer of the corporation involved.
3. The bond may express penal sum as a percentage of the bid price. In these cases, the bond may state a maximum dollar limitation (e.g., 20% of the bid price but the amount not to exceed _____ dollars).
4. (a) Corporations executing the bond as sureties must appear on the Department of the Treasury's list of approved sureties and must act within the limitations listed therein. The value put into the LIABILITY LIMIT block is the penal sum (i.e., the face value) of the bond, unless a co-surety arrangement is proposed.

(b) When multiple corporate sureties are involved, their names and addresses shall appear in the spaces (Surety A, Surety B, etc.) headed "CORPORATE SURETY(IES)." In the space designated "SURETY(IES)" on the face of the form, insert only the letter identifier corresponding to each of the sureties. Moreover, when co-surety arrangements exist, the parties may allocate their respective limitations of liability under the bond, provided that the sum total of their liability equals 100% of the bond penal sum.

(c) When individual sureties are involved, a completed Affidavit of Individual Surety (Standard Form 28) for each individual surety, shall accompany the bond. The Government may require the surety to furnish additional substantiating information concerning its financial capability.
5. Corporations executing the bond shall affix their corporate seals. Individuals shall execute the bond opposite the word "Corporate Seal"; and shall affix an adhesive seal if executed in Maine, New Hampshire, or any other jurisdiction requiring adhesive seals.
6. Type the name and title of each person signing this bond in the space provided.
7. In its application to negotiated contracts, the terms "bid" and "bidder" shall include "proposal" and "offeror."

ATTACHMENT A
GC Experience Summary
(Complete this form for each project example)

1. PROJECT NAME & LOCATION

2. REFERENCE *(Owner, Contact Person, Phone Number, Email Address)*

3. WAS THE PROJECT PERFORMED IN AN OCCUPIED BUILDING?

☐ YES ☐ NO

4. SIZE OF PROJECT (SQUARE FOOTAGE)

5. DID THE PROJECT INVOLVE A HISTORIC SITE/BUILDING?

☐ YES ☐ NO

6A. INITIAL \$ VALUE
OF THE PROJECT

6B. FINAL \$ VALUE OF
THE PROJECT

7A. WAS THE PROJECT COMPLETED ON
TIME?

☐ YES ☐ NO

7B. START DATE

7C. ORIGINAL
COMPLETION DATE

7D. ACTUAL/FINAL
COMPLETION DATE

8. Provide an explanation for any difference in the initial and final value of the project and/or the original and actual completion dates:

9. Describe the amount and type of work you performed with in-house forces and the work that was accomplished by subcontractors:

10. Provide a detailed description of the project:

11. Describe any problems encountered and the corrective actions taken:

ATTACHMENT B: PAST PERFORMANCE QUESTIONNAIRE

Please complete and submit this reference directly to the GSA Contracting Office, Aneesah Muhammad at aneesah.muhammad@gsa.gov **no later than Friday, March 17, 2023, 4:00 PM CST.**

Section 1 – To be completed by the Contractor

| | |
|---|-------|
| Contractor's Name: | _____ |
| Address: | _____ |
| Contractor's Phone Number: | _____ |
| Point of Contact (POC): | _____ |
| Role of the POC: | _____ |
| POC E-mail Address: | _____ |
| POC Phone Number: | _____ |
| Project Title or Brief Description of the Work: | _____ |
| Dates of Performance: | _____ |

Section 2 – To be completed by the Reference

Please complete the following questionnaire on behalf of the contractor listed in Section 1. Only the project listed in Section 1 shall be considered for this evaluation. For each question below, select the rating that best describes the Contractor's performance. Please provide a narrative explanation where appropriate; narrative comments are greatly appreciated. If the contractor has completed other work for your agency/organization in the last eight years, you may note that as additional comments.

The completed questionnaire should be **emailed directly to the Contracting Office** to ensure the confidentiality of your responses. Your responses will be reviewed solely for the purposes of a past performance evaluation and no one other than the selection committee will see your response.

| | |
|---|-------|
| Name of Respondent: | _____ |
| Title/Company Name: | _____ |
| Role of Respondent on the Project being Referenced: | _____ |
| Telephone: | _____ |
| Email: | _____ |

If you have additional comments to provide, please add them at the end of the attached questionnaire. Thank you, in advance, for your time and providing GSA with this valuable feedback.

QUALITY

1. Overall, how well did the quality of the work conform to the contract requirements?

Excellent - 5 4 3 2 1 - Poor

BUDGET

2. Overall, how was the contractor's performance with regards to budget?

Excellent - 5 4 3 2 1 - Poor

3. Was the project completed within the original contract budget? Yes No
If not, please provide the reason for actual cost differences. (e.g. owner driven changes, differing site conditions, errors and omissions, etc...)

4. Was change order work pricing determined fair and responsible? Yes No
If there were issues with change order pricing, please explain.

SCHEDULE

5. Overall, how was the contractor's performance with regards to schedule?

Excellent - 5 4 3 2 1 - Poor

6. Did the contractor complete the project within the original contract schedule? Yes No
If not, what were the reasons for changes to the schedule?

MANAGEMENT & STAFFING

7. Did the Contractor staff the job adequately? (PM, Superintendent, etc.) Yes No
8. Were key personnel adequately qualified for their positions? Yes No

9. How well did the prime contractor manage his subcontractors? (e.g. Coordinating trades, updating subs on changes to the SOW, prompt payment, performance issues, etc...)

Excellent - 5 4 3 2 1 - Poor

10. How effective was the Contractor at communicating with key project stakeholders?

Excellent - 5 4 3 2 1 - Poor

11. How well did the Contractor demonstrate sensitivity to client/tenant concerns? (e. g. Coordination issues, site cleanliness, noise, etc...)

Excellent - 5 4 3 2 1 - Poor

ADMINISTRATION

12. How responsive and responsible was the contractor in administrative areas? (e.g. Documenting progress, responding to RFI's, processing payments, tracking changes, etc.)

Excellent - 5 4 3 2 1 - Poor

OVERALL

13. How would you rate this Contractor's overall performance?

Excellent - 5 4 3 2 1 - Poor

Offeror Representations and Certifications

1. FAR 52.204-8 Annual Representations and Certifications (MAY 2022)

(a) (1) The North American Industry Classification System (NAICS) code for this acquisition is 236220 (Commercial and Institutional Building Construction).

(2) The small business size standard is \$45.0 million average annual receipts.

(3) The small business size standard for a concern that submits an offer, other than on a construction or service acquisition, but proposes to furnish an end item that it did not itself manufacture, process, or produce is 500 employees if the acquisition—

(i) Is set aside for small business and has a value above the simplified acquisition threshold;

(ii) Uses the HUBZone price evaluation preference regardless of dollar value, unless the offeror waives the price evaluation preference; or

(iii) Is an 8(a), HUBZone, service-disabled veteran-owned, economically disadvantaged women-owned, or women-owned small business set-aside or sole-source award regardless of dollar value.

(b) (1) If the provision at [52.204-7](#), System for Award Management, is included in this solicitation, paragraph (d) of this provision applies.

(2) If the provision at [52.204-7](#), System for Award Management, is not included in this solicitation, and the Offeror has an active registration in the System for Award Management (SAM), the Offeror may choose to use paragraph (d) of this provision instead of completing the corresponding individual representations and certifications in the solicitation. The Offeror shall indicate which option applies by checking one of the following boxes:

☐ (i) Paragraph (d) applies.

☐ (ii) Paragraph (d) does not apply and the offeror has completed the individual representations and certifications in the solicitation.

(c) (1) The following representations or certifications in SAM are applicable to this solicitation as indicated:

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(i) [52.203-2](#), Certificate of Independent Price Determination. This provision applies to solicitations when a firm-fixed-price contract or fixed-price contract with economic price adjustment is contemplated, unless—

(A) The acquisition is to be made under the simplified acquisition procedures in [part 13](#);

(B) The solicitation is a request for technical proposals under two-step sealed bidding procedures; or

(C) The solicitation is for utility services for which rates are set by law or regulation.

(ii) [52.203-11](#), Certification and Disclosure Regarding Payments to Influence Certain Federal Transactions. This provision applies to solicitations expected to exceed \$150,000.

(iii) [52.203-18](#), Prohibition on Contracting with Entities that Require Certain Internal Confidentiality Agreements or Statements-Representation. This provision applies to all solicitations.

(iv) [52.204-3](#), Taxpayer Identification. This provision applies to solicitations that do not include the provision at [52.204-7](#), System for Award Management.

(v) [52.204-5](#), Women-Owned Business (Other Than Small Business). This provision applies to solicitations that—

(A) Are not set aside for small business concerns;

(B) Exceed the simplified acquisition threshold; and

(C) Are for contracts that will be performed in the United States or its outlying areas.

(vi) [52.204-26](#), Covered Telecommunications Equipment or Services-Representation. This provision applies to all solicitations.

(vii) [52.209-2](#), Prohibition on Contracting with Inverted Domestic Corporations-Representation.

(viii) [52.209-5](#), Certification Regarding Responsibility Matters. This provision applies to solicitations where the contract value is expected to exceed the simplified acquisition threshold.

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(ix) [52.209-11](#), Representation by Corporations Regarding Delinquent Tax Liability or a Felony Conviction under any Federal Law. This provision applies to all solicitations.

(x) [52.214-14](#), Place of Performance-Sealed Bidding. This provision applies to invitations for bids except those in which the place of performance is specified by the Government.

(xi) [52.215-6](#), Place of Performance. This provision applies to solicitations unless the place of performance is specified by the Government.

(xii) [52.219-1](#), Small Business Program Representations (Basic, Alternates I, and II). This provision applies to solicitations when the contract is for supplies to be delivered or services to be performed in the United States or its outlying areas, or when the contracting officer has applied [part 19](#) in accordance with [19.000\(b\)\(1\)\(ii\)](#).

(A) The basic provision applies when the solicitations are issued by other than DoD, NASA, and the Coast Guard.

(B) The provision with its Alternate I applies to solicitations issued by DoD, NASA, or the Coast Guard.

(C) The provision with its Alternate II applies to solicitations that will result in a multiple-award contract with more than one NAICS code assigned.

(xiii) [52.219-2](#), Equal Low Bids. This provision applies to solicitations when contracting by sealed bidding and the contract is for supplies to be delivered or services to be performed in the United States or its outlying areas, or when the contracting officer has applied [part 19](#) in accordance with [19.000\(b\)\(1\)\(ii\)](#).

(xiv) [52.222-22](#), Previous Contracts and Compliance Reports. This provision applies to solicitations that include the clause at [52.222-26](#), Equal Opportunity.

(xv) [52.222-25](#), Affirmative Action Compliance. This provision applies to solicitations, other than those for construction, when the solicitation includes the clause at [52.222-26](#), Equal Opportunity.

(xvi) [52.222-38](#), Compliance with Veterans' Employment Reporting Requirements. This provision applies to solicitations when it is anticipated the contract award will exceed the simplified acquisition threshold and the contract is not for acquisition of commercial products or commercial services.

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(xvii) [52.223-1](#), Biobased Product Certification. This provision applies to solicitations that require the delivery or specify the use of USDA–designated items; or include the clause at [52.223-2](#), Affirmative Procurement of Biobased Products Under Service and Construction Contracts.

(xviii) [52.223-4](#), Recovered Material Certification. This provision applies to solicitations that are for, or specify the use of, EPA–designated items.

(xix) [52.223-22](#), Public Disclosure of Greenhouse Gas Emissions and Reduction Goals-Representation. This provision applies to solicitations that include the clause at [52.204-7](#).)

(xx) [52.225-2](#), Buy American Certificate. This provision applies to solicitations containing the clause at [52.225-1](#).

(xxi) [52.225-4](#), Buy American-Free Trade Agreements-Israeli Trade Act Certificate. (Basic, Alternates I, II, and III.) This provision applies to solicitations containing the clause at [52.225-3](#).

(A) If the acquisition value is less than \$25,000, the basic provision applies.

(B) If the acquisition value is \$25,000 or more but is less than \$50,000, the provision with its Alternate I applies.

(C) If the acquisition value is \$50,000 or more but is less than \$92,319, the provision with its Alternate II applies.

(D) If the acquisition value is \$92,319 or more but is less than \$100,000, the provision with its Alternate III applies.

(xxii) [52.225-6](#), Trade Agreements Certificate. This provision applies to solicitations containing the clause at [52.225-5](#).

(xxiii) [52.225-20](#), Prohibition on Conducting Restricted Business Operations in Sudan-Certification. This provision applies to all solicitations.

(xxiv) [52.225-25](#), Prohibition on Contracting with Entities Engaging in Certain Activities or Transactions Relating to Iran-Representation and Certifications. This provision applies to all solicitations.

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(xxv) [52.226-2](#), Historically Black College or University and Minority Institution Representation. This provision applies to solicitations for research, studies, supplies, or services of the type normally acquired from higher educational institutions.

(2) The following representations or certifications are applicable as indicated by the Contracting Officer:

- ☐ (i) [52.204-17](#), Ownership or Control of Offeror.
- ☐ (ii) [52.204-20](#), Predecessor of Offeror.
- ☐ (iii) [52.222-18](#), Certification Regarding Knowledge of Child Labor for Listed End Products.
- ☐ (iv) [52.222-48](#), Exemption from Application of the Service Contract Labor Standards to Contracts for Maintenance, Calibration, or Repair of Certain Equipment- Certification.
- ☐ (v) [52.222-52](#), Exemption from Application of the Service Contract Labor Standards to Contracts for Certain Services-Certification.
- ☐ (vi) [52.223-9](#), with its Alternate I, Estimate of Percentage of Recovered Material Content for EPA-Designated Products (Alternate I only).
- ☐ (vii) [52.227-6](#), Royalty Information.
 - ☐ (A) Basic.
 - ☐ (B) Alternate I.
- ☐ (viii) [52.227-15](#), Representation of Limited Rights Data and Restricted Computer Software.

(d) The offeror has completed the annual representations and certifications electronically in SAM website accessed through <https://www.sam.gov>. After reviewing the SAM information, the offeror verifies by submission of the offer that the representations and certifications currently posted electronically that apply to this solicitation as indicated in paragraph (c) of this provision have been entered or updated within the last 12 months, are current, accurate, complete, and applicable to this solicitation (including the business size standard applicable to the NAICS code referenced for this solicitation), as of the date of this offer and are incorporated in this offer by reference (see FAR [4.1201](#)); except for the changes identified below [*offeror to insert changes, identifying change by clause number, title, date*]. These amended representation(s) and/or certification(s) are also incorporated in this offer and are current, accurate, and complete as of the date of this offer.

| FAR Clause | Title | Date | Change |
|------------|-------|------|--------|
|------------|-------|------|--------|

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Any changes provided by the offeror are applicable to this solicitation only, and do not result in an update to the representations and certifications posted on SAM.

(End of provision)

2. FAR 52.204-16 COMMERCIAL AND GOVERNMENT ENTITY CODE REPORTING (AUG 2020)

(a) *Definition.* As used in this provision –

“Commercial and Government Entity (CAGE) code” means–

- (1) An identifier assigned to entities located in the United States or its outlying areas by the Defense Logistics Agency (DLA) Commercial and Government Entity (CAGE) Branch to identify a commercial or government entity by unique location; or
- (2) An identifier assigned by a member of the North Atlantic Treaty Organization (NATO) or by the NATO Support and Procurement Agency (NSPA) to entities located outside the United States and its outlying areas that the DLA Commercial and Government Entity (CAGE) Branch records and maintains in the CAGE master file. This type of code is known as a NATO CAGE (NCAGE) code.

(b) The Offeror shall provide its CAGE code with its offer with its name and location address or otherwise include it prominently in its proposal. The CAGE code must be for that name and location address. Insert the word “CAGE” before the number. The CAGE code is required prior to award.

(c) CAGE codes may be obtained via–

- (1) Registration in the System for Award Management (SAM) at <https://www.sam.gov/SAM/>. If the Offeror is located in the United States or its outlying areas and does not already have a CAGE code assigned, the DLA Commercial and Government Entity (CAGE) Branch will assign a CAGE code as a part of the SAM registration process. SAM registrants located outside the United States and its outlying areas shall obtain a NCAGE code prior to registration in SAM (see paragraph (c)(3) of this provision).

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- (2) *The DLA Contractor and Government Entity (CAGE) Branch.* If registration in SAM is not required for the subject procurement, and the Offeror does not otherwise register in SAM, an Offeror located in the United States or its outlying areas may request that a CAGE code be assigned by submitting a request at <https://cage.dla.mil>.
- (3) The appropriate country codification bureau. Entities located outside the United States and its outlying areas may obtain an NCAGE code by contacting the Codification Bureau in the foreign entity's country if that country is a member of NATO or a sponsored nation. NCAGE codes may be obtained from the NSPA at <https://eportal.nspa.nato.int/AC135Public/scage/CageList.aspx> if the foreign entity's country is not a member of NATO or a sponsored nation. Points of contact for codification bureaus, as well as additional information on obtaining NCAGE codes, are available at <http://www.nato.int/structur/AC/135/main/links/contacts.htm>.
- (d) Additional guidance for establishing and maintaining CAGE codes is available at <https://cage.dla.mil>.
- (e) When a CAGE code is required for the immediate owner and/or the highest-level owner by Federal Acquisition Regulation (FAR) 52.204–17 or 52.212–3(p), the Offeror shall obtain the respective CAGE code from that entity to supply the CAGE code to the Government.
- (f) Do not delay submission of the offer pending receipt of a CAGE code.
- (g) If the solicitation includes FAR clause 52.204–2, Security Requirements, a subcontractor requiring access to classified information under a contract shall be identified with a CAGE code on the DD Form 254. The Contractor shall require a subcontractor requiring access to classified information to provide its CAGE code with its name and location address or otherwise include it prominently in the proposal. Each location of subcontractor performance listed on the DD Form 254 is required to reflect a corresponding unique CAGE code for each listed location unless the work is being performed at a Government facility, in which case the agency location code shall be used. The CAGE code must be for that name and location address. Insert the word “CAGE” before the number. The CAGE code is required prior to award.

(End of provision)

3. FAR 52.204-24, Representation Regarding Certain Telecommunications and Video Surveillance Services or Equipment (NOV 2021)

The Offeror shall not complete the representation at paragraph (d)(1) of this provision if the Offeror has represented that it "does not provide covered telecommunications

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equipment or services as a part of its offered products or services to the Government in the performance of any contract, subcontract, or other contractual instrument" in paragraph (c)(1) in the provision at [52.204-26](#), Covered Telecommunications Equipment or Services—Representation, or in paragraph (v)(2)(i) of the provision at [52.212-3](#), Offeror Representations and Certifications-Commercial Products or Commercial Services. The Offeror shall not complete the representation in paragraph (d)(2) of this provision if the Offeror has represented that it "does not use covered telecommunications equipment or services, or any equipment, system, or service that uses covered telecommunications equipment or services" in paragraph (c)(2) of the provision at [52.204-26](#), or in paragraph (v)(2)(ii) of the provision at [52.212-3](#).

(a) *Definitions.* As used in this provision—

Backhaul, covered telecommunications equipment or services, critical technology, interconnection arrangements, reasonable inquiry, roaming, and substantial or essential component have the meanings provided in the clause [52.204-25](#), Prohibition on Contracting for Certain Telecommunications and Video Surveillance Services or Equipment.

(b) *Prohibition.* (1) Section 889(a)(1)(A) of the John S. McCain National Defense Authorization Act for Fiscal Year 2019 (Pub. L. 115-232) prohibits the head of an executive agency on or after August 13, 2019, from procuring or obtaining, or extending or renewing a contract to procure or obtain, any equipment, system, or service that uses covered telecommunications equipment or services as a substantial or essential component of any system, or as critical technology as part of any system. Nothing in the prohibition shall be construed to—

(i) Prohibit the head of an executive agency from procuring with an entity to provide a service that connects to the facilities of a third-party, such as backhaul, roaming, or interconnection arrangements; or

(ii) Cover telecommunications equipment that cannot route or redirect user data traffic or cannot permit visibility into any user data or packets that such equipment transmits or otherwise handles.

(2) Section 889(a)(1)(B) of the John S. McCain National Defense Authorization Act for Fiscal Year 2019 (Pub. L. 115-232) prohibits the head of an executive agency on or after August 13, 2020, from entering into a contract or extending or renewing a contract with an entity that uses any equipment, system, or service that uses covered telecommunications equipment or services as a substantial or essential component of any system, or as critical technology as part of any system. This prohibition applies to the use of covered telecommunications equipment or services, regardless of whether

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that use is in performance of work under a Federal contract. Nothing in the prohibition shall be construed to—

(i) Prohibit the head of an executive agency from procuring with an entity to provide a service that connects to the facilities of a third-party, such as backhaul, roaming, or interconnection arrangements; or

(ii) Cover telecommunications equipment that cannot route or redirect user data traffic or cannot permit visibility into any user data or packets that such equipment transmits or otherwise handles.

(c) *Procedures.* The Offeror shall review the list of excluded parties in the System for Award Management (SAM) (<https://www.sam.gov>) for entities excluded from receiving federal awards for "covered telecommunications equipment or services".

(d) *Representation.* The Offeror represents that—

(1) It ☐ will, ☐ will not provide covered telecommunications equipment or services to the Government in the performance of any contract, subcontract or other contractual instrument resulting from this solicitation. The Offeror shall provide the additional disclosure information required at paragraph (e)(1) of this section if the Offeror responds "will" in paragraph (d)(1) of this section; and

(2) After conducting a reasonable inquiry, for purposes of this representation, the Offeror represents that—

It ☐ does, ☐ does not use covered telecommunications equipment or services, or use any equipment, system, or service that uses covered telecommunications equipment or services. The Offeror shall provide the additional disclosure information required at paragraph (e)(2) of this section if the Offeror responds "does" in paragraph (d)(2) of this section.

(e) *Disclosures.* (1) Disclosure for the representation in paragraph (d)(1) of this provision. If the Offeror has responded "will" in the representation in paragraph (d)(1) of this provision, the Offeror shall provide the following information as part of the offer:

(i) For covered equipment—

(A) The entity that produced the covered telecommunications equipment (include entity name, unique entity identifier, CAGE code, and whether the entity was the original equipment manufacturer (OEM) or a distributor, if known);

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(B) A description of all covered telecommunications equipment offered (include brand; model number, such as OEM number, manufacturer part number, or wholesaler number; and item description, as applicable); and

(C) Explanation of the proposed use of covered telecommunications equipment and any factors relevant to determining if such use would be permissible under the prohibition in paragraph (b)(1) of this provision.

(ii) For covered services—

(A) If the service is related to item maintenance: A description of all covered telecommunications services offered (include on the item being maintained: Brand; model number, such as OEM number, manufacturer part number, or wholesaler number; and item description, as applicable); or

(B) If not associated with maintenance, the Product Service Code (PSC) of the service being provided; and explanation of the proposed use of covered telecommunications services and any factors relevant to determining if such use would be permissible under the prohibition in paragraph (b)(1) of this provision.

(2) Disclosure for the representation in paragraph (d)(2) of this provision. If the Offeror has responded "does" in the representation in paragraph (d)(2) of this provision, the Offeror shall provide the following information as part of the offer:

(i) For covered equipment—

(A) The entity that produced the covered telecommunications equipment (include entity name, unique entity identifier, CAGE code, and whether the entity was the OEM or a distributor, if known);

(B) A description of all covered telecommunications equipment offered (include brand; model number, such as OEM number, manufacturer part number, or wholesaler number; and item description, as applicable); and

(C) Explanation of the proposed use of covered telecommunications equipment and any factors relevant to determining if such use would be permissible under the prohibition in paragraph (b)(2) of this provision.

(ii) For covered services—

(A) If the service is related to item maintenance: A description of all covered telecommunications services offered (include on the item being maintained:

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Brand; model number, such as OEM number, manufacturer part number, or wholesaler number; and item description, as applicable); or

(B) If not associated with maintenance, the PSC of the service being provided; and explanation of the proposed use of covered telecommunications services and any factors relevant to determining if such use would be permissible under the prohibition in paragraph (b)(2) of this provision.

(End of provision)

Solicitation Number: 47PF0023R0022

**Simplified Acquisition Construction Contract for New Transaction Windows for
US Bankruptcy Court and US District Court – Hammond, IN**

The Agreement

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B. Clauses Incorporated by Reference

I. Project Information

I.A. Project Summary

Provide and Install Break Resistant Transaction Windows for the U.S. Bankruptcy Clerk's Office Reception Desk and U.S. District Court Clerk's Office Reception Desk, located Hammond Federal Building & U.S. Courthouse, 5400 Federal Plaza, Hammond, IN 46320

I.B. The Contract

(1) The Contract consists of the SF1442, the Agreement, the Statement of Work, Specifications, Drawings, Exhibits, Amendments, Modifications, and other Attachments identified herein (collectively, the Contract Documents). The Contract contains the entire agreement of the Parties, and no prior written or oral agreement, express or implied, shall be admissible to contradict or modify any part of the Contract.

(2) The Contractor shall provide and pay for all labor, materials, equipment, tools, water, heat, utilities, transportation, and other facilities and services necessary for the proper execution of the work described in and reasonably inferable from the Contract Documents (the Work), whether temporary or permanent. In consideration for, and upon condition of, the Contractor's completion of the Work, GSA shall pay the Contractor the price or prices established in Section II, subject to the terms and conditions set forth in this Contract.

I.C. Period of Performance

(1) Commencement. The Contractor shall commence performance of the Work within 1 calendar day after the Contractor receives the Notice to Proceed (NTP).

(2) Substantial Completion. The Contractor shall achieve Substantial Completion of the Work, as that term is defined in this Agreement, no later than 20 calendar days from issuance of Notice to Proceed (NTP).

(3) Contract Completion. The Contractor shall achieve Contract Completion, as the term is defined in this Agreement, within 40 calendar days of Substantial Completion.

I.D. Work Conditions/Site Requirements

Refer to Division 1 specification for further guidance

I.E. Authorized Representatives

(1) This Contract is between the United States of America, acting by and through the Administrator of General Services (GSA), and the Contractor (the Parties). References in this Contract to "the Owner" or "the Government" shall be understood to refer to GSA.

Solicitation Number: 47PF0023R0022

The following individual is designated as the only authorized GSA representative under this Contract, unless other warranted contracting officers are designated in writing:

| Authorized Representative Information: |
|---|
| Contracting Officer's Information |
| Name: Aneesah Muhammad |
| Address: 230 S. Dearborn, Chicago, IL 60604, Suite 3500 |
| Telephone: 312-590-3555 |
| Email: Aneesah.Muhammad@gsa.gov |

(2) For the applicable authorities and limitations see Section IV of this Agreement, GSAR 552.236-70.

I.F. Contract Liquidated Damages Rate

In accordance with GSAR 552.211-12, Liquidated Damages – Construction, in Section IV of this Agreement, liquidated damages shall be calculated at the rate of \$350.00 per calendar day.

I.G. Buy American Exceptions

For the applicable Buy American clause and any exceptions, see Section IV of this Agreement.

I.H. Statement of Work, Specifications, Drawings, Exhibits, and Other Attachments

The following documents are incorporated by reference into this Contract.

- (1) Specifications
- (2) Construction Drawings
- (3) Wage Determination IN20230001, Dated 01/20/2023

II. Prices

II.A. Basis of Pricing

(1) *Contract Prices.* All Contract prices set forth in this Section include all costs necessary to complete the work for which the price is established (e.g., Base Contract, Unit Price, Options) in accordance with the Contract Documents, including, but not limited to, the cost of work performed by subcontractors and consultants, indirect costs, fees, expenses, taxes, and profit.

(2) *Knowledge of Conditions Affecting Price.* FAR 52.236-3, Site Investigations and Conditions Affecting the Work, is incorporated by reference in this Contract. The Contractor shall be presumed to have established all prices with knowledge of general and local conditions that may affect the cost of Contract performance at the site where the Work is to be performed, to the extent that such information is reasonably obtainable.

(3) *Unit Prices and Allowances.* If any portion of the Work is to be performed on a unit price basis, the Unit Price shall include all costs of coordinating and incorporating the unit-priced portion of the Work into the Base Contract Work. The Contractor shall only be obligated to perform unit-priced work to the extent that an Allowance has been established. The Contractor shall be obligated to perform such work in excess of a unit quantity for which an Allowance is established only if directed by the Contracting Officer in writing. The Contractor shall be bound to the unit price or prices set forth herein in all equitable adjustments for changes including unit priced work, and no markups shall be applied to such unit prices.

(4) *Options.* If any portion of the Work is to be performed upon the timely exercise of an Option, the Option Price shall include all costs of coordinating and incorporating the Option-priced portion of the Work into the Base Contract Work. An adjustment to the Contract price for such additional work shall be computed solely on the basis of the Option price or prices set forth herein. Unless otherwise specified, all options may be exercised within 90 days of Contract award.

(5) *Bid Rates.* If this Contract includes Bid Rates to be used in determination of equitable adjustments (e.g., overhead, profit, daily rates for time-related costs), such rates shall be deemed to include all costs recoverable as components of an equitable adjustment consistent with the requirements, definitions, and exclusions applicable to equitable adjustments set forth in this Contract, and consistent with the Contractor's cost accounting practices. Unless otherwise specified, the bid rates shall be deemed to include only the Contractor's costs, and not the costs of any subcontractors.

II.B. Contract Price Form

Price form will be attached to SF1442.

III. Terms and Conditions

III.A. Commencement, Prosecution, and Completion of Work

FAR 52.211-10, Commencement, Prosecution, and Completion of Work and GSAR 552.211-10, Commencement, Prosecution and Completion of Work is supplemented as follows:

The Contractor shall diligently prosecute the Work so as to achieve Substantial Completion of the Work, as defined in GSAR 552.211-70 Substantial Completion (Mar 2019) and the time specified in Section I (Project Information), "Period of Performance" clause. If the Contract specifies different completion dates for different phases or

portions of the Work, the Contractor shall diligently prosecute the Work so as to achieve Substantial Completion of such phases or portions of the Work within the times specified.

III.B. Contractor Responsibilities

GSAR 552.236-71, Contractor Responsibilities is located in Section IV.A. of this Agreement and is supplemented as follows:

(1) The Contractor shall secure and pay for all necessary permits and governmental fees, licenses, and inspections that are customarily secured after award of the Contract and that are legally required at the time of award. The Contractor shall provide a copy of the permits required for execution of the work to the Contracting Officer prior to commencement of any related work.

III.C. Material and Workmanship

All equipment, material, and articles incorporated into the Work shall be new and of the most suitable grade for the purpose intended, unless otherwise specified in this Contract. References in the specifications to equipment, material, articles, or patented processes by trade name, make, or catalog number shall be regarded as establishing a standard of quality and performance and shall not be construed as limiting competition. Unless specifically directed by the Contracting Officer, the Contractor may use any equipment, material, article, or process that is equal to that named in the specifications, so long as it is of comparable quality and meets specified characteristics, or, if no such characteristics are specified, the relevant performance characteristics of the specified item.

III.D. Project Schedule

- (1) The Project Schedule shall be a rational, reasonable and realistic plan for completing the Work, and conform to requirements specified in this clause and elsewhere in this Contract.
- (2) The Contractor understands and acknowledges that the preparation and proper management of the Project Schedule is a material component of the Work, and that the Contract price includes all costs of compliance with Project Schedule requirements.
- (3) The Project Schedule shall depict all major activities necessary to complete the Work.
- (4) Prior to NTP, the Contractor shall submit its Project Schedule to the Contracting Officer. The Contractor shall submit the Project Schedule in PDF and hardcopy print format.
- (5) The Project Schedule shall incorporate both major tasks as well as milestone events specified in the Contract, including, as applicable, NTP, Substantial Completion, and milestones related to specified work phases and site restrictions. The Project Schedule shall also include Contractor-defined milestones to identify target dates for

critical events, based upon the Contractor's chosen sequence of work and be linked to the tasks that drive those milestones.

(6) Unless a shorter period for updates is specified elsewhere, the Contractor shall update the Project Schedule weekly to reflect its actual progress in completing the Work, and submit the updated Project Schedule to the Contracting Officer.

(7) If the Contractor revises the Project Schedule after initial submission, the Contractor shall provide in writing to the Contracting Officer a narrative describing the substance of the revision, the rationale for the revision, and the impact of the revision on the projected substantial completion date.

(8) If at any time the Contracting Officer finds that the Project Schedule does not comply with any Contract requirement, the Contractor shall, upon written notice of exceptions taken by the Contracting Officer, revise the Project Schedule, adjust activity progress, or provide sufficient information demonstrating compliance.

(9) If the Contractor fails to sufficiently address the Contracting Officer's exceptions to the Project Schedule within 30 calendar days of written notice of same, the Contracting Officer may withhold retainage until the Project is Substantially Complete or until such time as the Contractor has complied with Project Schedule requirements.

(10) The Contracting Officer shall be entitled, but not required, to rely upon the Project Schedule to evaluate the Contractor's progress, evaluate entitlement to extensions of time, and determine the criticality or float of any activities described in such Project Schedule.

III.E. Interpretation of Specifications and Drawings

(1) The specifications and drawings shall be interpreted to complement each other. Requirements set forth in the specifications and not shown on the drawings, or shown on the drawings and not set forth in the specifications, shall be of like effect as if shown or set forth in both.

(2) Different requirements within the Contract Documents shall be deemed inconsistent only if compliance with both cannot be achieved.

(3) If a requirement set forth in one location is more restrictive than that set forth elsewhere in the Contract Documents, requirements set forth in specifications shall govern over requirements set forth in drawings; otherwise, the more restrictive shall govern.

(4) In case of inconsistent requirements within the drawings, the following order of precedence shall apply:

(a) Requirements indicated in large-scale drawings shall govern over inconsistent requirements indicated in small-scale drawings.

(b) Requirements indicated in schedules shall govern over inconsistent information shown in drawings.

(5) Unless otherwise noted, the drawings shall be interpreted to provide for a complete construction, assembly, or installation of the Work, without regard to the detail with which material components are shown in the drawings.

(6) If any inconsistency within the drawings or specifications cannot be reconciled by reference to this clause, the Contractor shall promptly request a determination from the Contracting Officer as to which requirement shall govern. Election by the Contractor to follow either requirement without a determination from the Contracting Officer shall be at the Contractor's risk; should the Contracting Officer subsequently determine that the requirement not followed by the Contractor governs, the Contractor shall be responsible for all cost and time required to comply with the Contracting Officer's determination.

III.F. Submittals

(1) The Contractor shall prepare and submit to the Contracting Officer shop drawings, samples, calculations, product information, mockups, and other submittals (collectively, "submittals") demonstrating compliance with Contract requirements for all Work components as specified elsewhere in this Contract. If particular submittal requirements are not specified for a component of the Work, the Contractor shall prepare submittals for such Work as directed by the Contracting Officer.

(2) Prior to submission, the Contractor shall review all submittals for accuracy, completeness, compliance with Contract requirements, and coordination between different trades and subcontractors. The Contractor shall indicate its approval on all submittals as evidence of such review and coordination. Submittals submitted to the Contracting Officer without evidence of the Contractor's approval may be rejected without further review.

(3) The Contractor shall not proceed with work or procure products or materials described or shown in submittals until the Contracting Officer has indicated approval of the submittal. If the Contracting Officer disapproves of a submittal, the Contractor shall be entitled to an explanation of the reasons for disapproval.

Any work or activity undertaken prior to approval shall be at the Contractor's risk; should the Contracting Officer subsequently determine that the work or activity does not comply with the Contract, the Contractor shall be responsible for all cost and time required to comply with the Contracting Officer's determination. The Contracting Officer shall have the right to order the Contractor to cease execution of work for which submittals have not been approved. The Government shall not be liable for any cost or delay incurred by the Contractor attributable to the proper exercise of this right.

(4) Approval by the Contracting Officer of any submittal required under this Contract shall not relieve the Contractor from responsibility for any errors or omissions in such submittals, or from responsibility for complying with the requirements of this Contract, except with respect to variations described and approved as changes in accordance with the following Paragraph (5).

(5) The Contractor shall be entitled to rely upon approval of submittals containing variations from the requirements of the Contract as a change to the Contract only if the

Contractor separately requests approval of the variation at the time of submission and the Contracting Officer has approved the request for variation. Such requests shall fully describe the substance of the variation reflected in the Contractor's submittal. This provision shall not be interpreted as limiting the right of the Government to treat non-conforming work as a change where the Contractor has failed to request a variation in accordance with this paragraph.

(6) The Contractor shall be entitled to receive notice of action on submittals within a reasonable time, given the volume or complexity of the submittals and the criticality of the affected activities to Substantial Completion. The Contractor shall not be entitled to receive notice of action on submittals containing variations from Contract requirements in less than twenty working days for all Work components as specified elsewhere in this Contract.

III.G. Government's Right to Stop Work for Non-Compliance

If the Contractor, after receiving written notice from the Contracting Officer of non-compliance with any requirement of this Contract, fails to promptly initiate action to achieve compliance within a reasonable time, the Contracting Officer shall have the right to order the Contractor to stop work under the Contract until the Contractor has complied. The Contractor shall not be entitled to any extension of Contract time or payment for any costs incurred as a result of being ordered to stop work for such cause. Possession of this right by the Contracting Officer shall not relieve the Contractor of its obligation to comply with the Contract, regardless of whether this right is exercised.

III.H. Other Contracts

The Government may enter into other contracts to be performed at the Project site including, but not limited to, construction management services. The Contractor shall not impede site access for these other contractors and shall notify GSA immediately if the activities of other contractors interfere with performance of the Contract.

III.I. Use and Possession Prior to Substantial Completion

Upon notice by the Contracting Officer, the Government shall have the right to take possession of, use, or operate with Government employees or other contractors, any completed or partially completed part of the Work prior to Substantial Completion. Exercise by the Government of the right shall not relieve the Contractor of responsibility for completing any unfinished components of the Work.

III.J. Finality of Contract Modifications

As set forth elsewhere in this Contract, the Contractor is entitled to additional consideration under certain conditions, including the issuance of change orders. It is the Contractor's duty to include in proposals for equitable adjustment or other consideration all compensation to which it may be entitled, including cost and time. Unless otherwise explicitly stated in a modification to the Contract providing such

consideration, adjustments to the Contract price or time agreed upon therein shall be deemed to provide all compensation to which the Contractor is entitled, and shall constitute final settlement of the Contractor's entitlement to compensation on account of the change or other condition giving rise to the modification.

III.K. Liquidated Damages

The Contractor acknowledges that time is of the essence for the performance of the Work, and that determining actual damages from delay would be extremely difficult and impractical. If the Contractor fails to achieve Substantial Completion of the Work in accordance with FAR 52.211-12, Liquidated Damages and GSAR 552.211-12, Liquidated Damages and the time specified in this Contract, the Contractor shall be liable to the Government for liquidated damages at the rate specified in Section I (Project Information), paragraph entitled, "Liquidated Damages Rate," for each calendar day following the required completion date that the Work is not Substantially Complete.

III.L. Insurance Requirements

(1) The Contractor shall obtain and maintain for the entire life of the Contract, in addition to any insurance required by law, the following minimum kinds and amounts of insurance required pursuant to FAR clause 52.228-5, Insurance – Work on a Government Installation, and GSAR 552.228-5, Government as Additional Insured.

(a) Workers' compensation insurance in the amount required by the jurisdiction in which the Contract is performed. The Contractor shall obtain Employers' liability coverage of at least \$100,000. If occupational diseases are not covered by workers' compensation insurance, Employers' liability coverage shall include occupational diseases.

(b) Broad form comprehensive commercial general liability insurance in the amount of at least \$500,000 per occurrence. Such insurance shall include, but not be limited to, contractual liability, bodily injury and property damage.

(c) Comprehensive automobile liability covering the operation of all automobiles used in connection with performing the Contract in the amount of at least \$200,000 per person and \$500,000 per occurrence for bodily injury and \$20,000 per occurrence for property damage.

(2) The Contractor shall promptly provide to the Contracting Officer proof that it has obtained insurance required by the Contract in the form of certificates of insurance. The Contractor shall submit to the Contracting Officer all renewal certificates issued during the life of this Contract immediately upon issuance.

III.M. Administrative Matters

(1) *Project Meetings.* The Contractor shall attend a preconstruction conference and shall participate in regularly scheduled Project meetings.

(2) *Payments.* FAR clause 52.232-5, Payments under Fixed-Price Construction Contracts, is supplemented by GSAR 552.232-5 Payments under Fixed-Price Construction Contracts located in Section IV.A. of this Agreement. In accordance with

the relevant FAR and GSAR clauses, GSA requires the following data be included with each invoice:

(a) Invoices shall be submitted electronically to the designated billing office specified in this Contract or in individual delivery/work orders. An electronic copy of the invoice shall be sent to the CO and COR as designated after award.

(b) Invoices must include the Account Document Number (ADN) assigned at award.

(c) The Contractor shall submit the following information or documentation with each invoice:

(i) Updated Schedule of Values upon which the payment request is based;

(ii) GSA Form 2419 - Certification of Progress Payments Under Fixed-Price Construction Contract;

(iii) The payment terms that apply for the particular services rendered

(iv) Additional documentation: N/A

(3) *Prompt Payment.* In accordance with FAR clause 52.232-27, the period for payments is as follows:

(a) Progress Payments: 14 days

(b) Subsequent Subcontractor Payments: 7 days

(4) *Payment Information.* The General Services Administration (GSA) makes information on contract payments available electronically at [Office of the Chief Financial Officer](#). The Contractor may register at the site and review its record of payments. This site provides information only on payments made by GSA, not by other agencies.

(5) *Security Clearances.* Contractor shall comply with the following requirements pertaining to security clearances.

(a) All personnel performing work under the Contract on the Project site must obtain an Enter on Duty (EOD) determination before they will be granted access to the site.

(b) To obtain an EOD determination, Contractor shall submit for all such personnel fingerprints on Form SF87 and a completed Contractor Information Worksheet (CIW). Detailed information is available at [GSA Access Card](#). USAccess Credentialing Centers can be located at [US Access Centers](#).

(c) In addition, all such personnel who will be on site 6 months or longer must apply for and receive clearance in accordance with Homeland Security Presidential Directive 12 (HSPD-12). See Section IV, *Contract Clauses*, GSAR 552.204-9.

(6) Safeguarding and Dissemination of Controlled Unclassified Information (CUI) Building Information

This clause applies to all recipients of CUI building information (which falls within the CUI Physical Security category), including offerors, bidders, awardees, contractors, subcontractors, lessors, suppliers and manufacturers.

Marking CUI. Contractors must submit any contractor-generated documents that contain building information to GSA for review and identification of any CUI building information that may be included. In addition, any documents GSA identifies as containing CUI building information must be marked in accordance with the Order and the Marking Controlled Unclassified Information Handbook (the current version may be found at <https://www.archives.gov/files/cui/20161206-cui-marking-handbook-v1-1.pdf>) before the original or any copies are disseminated to any other parties. If CUI content is identified, the CO may direct the contractor, as specified elsewhere in this contract, to imprint or affix CUI document markings (CUI) to the original documents and all copies, before any dissemination, or authorized GSA employees may mark the documents.

1. Authorized recipients.

a. Building information designated as CUI must be protected with access strictly controlled and limited to those individuals having a Lawful Government Purpose to access such information, as defined in 32 C.F.R. § 2002.4(bb). Those with such a Lawful Government Purpose may include Federal, state and local government entities, and non-governmental entities engaged in the conduct of business on behalf of or with GSA. Non-governmental entities may include architects, engineers, consultants, contractors, subcontractors, suppliers, utilities, and others submitting an offer or bid to GSA, or performing work under a GSA contract or subcontract. Recipient contractors must be registered as “active” in the System for Award Management (SAM) database at www.sam.gov, and have a Lawful Government Purpose to access such information. If a subcontractor is not registered in the SAM database and has a Lawful Government Purpose to possess CUI building information in furtherance of the contract, the subcontractor must provide to the contractor its DUNS number or its tax ID number and a copy of its business license. The contractor must keep this information related to the subcontractor for the duration of the contract and subcontract.

b. All GSA personnel and contractors must be provided CUI building information when needed for the performance of official Federal, state, and local government functions, such as for code compliance reviews and the issuance of building permits. Public safety entities such as fire and utility departments may have a Lawful Government Purpose to access CUI building information on a case-by-case basis. This clause must not prevent or encumber the necessary dissemination of CUI building information to public safety entities.

2. Dissemination of CUI building information:

a. By electronic transmission. Electronic transmission of CUI information outside of the GSA network must use session encryption (or alternatively, file encryption) consistent with National Institute of Standards and Technology (NIST) SP 800- 171. Encryption must be through an approved NIST algorithm with a valid certification, such as Advanced Encryption Standard or Triple Data Encryption Standard, in accordance with Federal Information Processing Standards Publication 140-2, Security Requirements for Cryptographic Modules, as required by GSA policy.

b. By nonelectronic form or on portable electronic data storage devices. Portable electronic data storage devices include CDs, DVDs, and USB drives. Nonelectronic forms of CUI building information include paper documents, photographs, and film, among other formats.

i. By mail. Contractors must only use methods of shipping that provide services for monitoring receipt such as track and confirm, proof of delivery, signature confirmation, or return receipt. CUI markings must not appear on the exterior of packages.

ii. In person. Contractors must provide CUI building information only to authorized recipients with a Lawful Government Purpose to access such information. Further information on authorized recipients is found in section 1 of this clause.

3. Record keeping. Contractors must maintain a list of all entities to which CUI is disseminated, in accordance with sections 2 and 3 of this clauses. This list must include, at a minimum: (1) the name of the state, Federal, or local government entity, utility, or firm to which CUI has been disseminated; (2) the name of the individual at the entity or firm who is responsible for protecting the CUI building information, with access strictly controlled and limited to those individuals having a Lawful Government Purpose to access such information; (3) contact information for the named individual; and (4) a description of the CUI building information provided. Once “as built” drawings are submitted, the contractor must collect all lists maintained in accordance with this clause, including those maintained by any subcontractors and suppliers, and submit them to the CO. For Federal buildings, final payment may be withheld until the lists are received.

4. Safeguarding CUI documents. CUI building information (both electronic and paper formats) must be stored within controlled environments that prevent unauthorized access. GSA contractors and subcontractors must not take CUI building information outside of GSA or their own facilities or network, except as necessary for the performance of that contract. Access to the information must be limited to those with a Lawful Government Purpose for access.

5. Destroying CUI building information. When no longer needed, CUI building information must either be returned to the CO or destroyed in accordance with guidelines in NIST Special Publication 800-88, Guidelines for Media Sanitization.

6. Notice of disposal. The contractor must notify the CO that all CUI building information has been returned or destroyed by the contractor and its subcontractors or suppliers in accordance with paragraphs 4 and 5 of this clause, with the exception of the contractor's record copy. This notice must be submitted to the CO at the completion of the contract to receive final payment. For leases, this notice must be submitted to the CO at the completion of the lease term.

7. CUI security incidents. All improper disclosures or receipt of CUI building information must be immediately reported to the CO and the GSA Incident Response Team Center at gsa-ir@gsa.gov. If the contract provides for progress payments, the CO may withhold approval of progress payments until the contractor provides a corrective action plan explaining how the contractor will prevent future improper disclosures of CUI building information. Progress payments may also be withheld for failure to comply with any provision in this clause until the contractor provides a corrective action plan explaining how the contractor will rectify any noncompliance and comply with the clause in the future.

8. Subcontracts. The contractor and subcontractors must insert the substance of this clause in all subcontracts.

[End of clause]

III.N. Bonds

Upon the request of a prospective subcontractor or supplier offering to furnish labor or material for the performance of this contract for which a payment bond has been furnished to the Government, the Contractor shall promptly provide a copy of such payment bond to the requester.

III.O. Requirements for GSA Information Systems

(a) CIO Coordination. The contracting officer shall ensure the requirements office has coordinated and identified possible CIO policy inclusions with the GSA IT prior to publication of a Statement of Work, or equivalent as well as the Security Considerations section of the acquisition plan to determine if the CIO policies apply. The CIO policies and GSA IT points of contact are available on the Acquisition Portal at <https://insite.gsa.gov/itprocurement>.

(b) GSA Requirements. For GSA procurements (contracts, actions, or orders) that may involve GSA Information Systems, excluding GSA's government-wide contracts

e.g. Federal Supply Schedules and Governmentwide Acquisition Contracts, the contracting officer shall incorporate the coordinated Statement of Work or equivalent including the applicable sections of the following policies into solicitations and contracts:

(1) CIO 09-48, IT Security Procedural Guide: Security and Privacy IT Acquisition Requirements; and

(2) CIO 12-2018, IT Policy Requirements Guide.

(c) Waivers.

(1) In cases where it is not effective in terms of cost or time or where it is unreasonably burdensome to include CIO 09-48, IT Security Procedural Guide: Security and Privacy IT Acquisition Requirements or CIO 12-2018, IT Policy Requirements Guide in a contract or order, a waiver may be granted by the Acquisition Approving Official in accordance with the thresholds listed at [507.103](#)(b), the Information System Authorizing Official, and the GSA IT Approving Official.

(2) The waiver request must provide the following information-

(A) The description of the procurement and GSA Information Systems;

(B) Identification of requirement requested for waiver;

(C) Sufficient justification for why the requirements should be waived; and

(D) Any residual risks that will be encountered by waiving the requirements.

(3) Waivers must be documented in the contract file.

(d) Classified Information. For any procurements that may involve access to classified information or a classified information system, see subpart [504.4](#) for additional requirements.]

III.P. Options and Allowances

III.Q. Additional Terms and Conditions

IV. Contract Clauses

IV.A. Clauses Incorporated in Full Text

(1) (FAR 52.223-2 Affirmative Procurement of Biobased Products Under Service and Construction Contracts (SEPT 2013))

(a) In the performance of this contract, the contractor shall make maximum use of biobased products that are United States Department of Agriculture (USDA)-designated items unless—

(1) The product cannot be acquired—

(i) Competitively within a time frame providing for compliance with the contract performance schedule.

(ii) Meeting contract performance requirements; or

(iii) At a reasonable price.

(2) The product is to be used in an application covered by a USDA categorical exemption (see 7 CFR 3201.3(e)). For example, all USDA-designated items are exempt from the preferred procurement requirement for the following:

- (i) Spacecraft system and launch support equipment.
- (ii) Military equipment, i.e., a product or system designed or procured for combat or combat-related missions.

(b) Information about this requirement and these products is available at [USDA BioPreferred](#).

(c) In the performance of this contract, the Contractor shall—

(1) Report to [System for Award Management](#), with a copy to the Contracting Officer, on the product types and dollar value of any USDA-designated biobased products purchased by the Contractor during the previous Government fiscal year, between October 1 and September 30; and

(2) Submit this report no later than—

- (i) October 31 of each year during contract performance; and
- (ii) At the end of contract performance.

(2) FAR 52.223-9 Estimate of Percentage of Recovered Material Content for EPA-Designated Items (MAY 08)

(a) *Definitions.* As used in this clause—

“Postconsumer material” means a material or finished product that has served its intended use and has been discarded for disposal or recovery, having completed its life as a consumer item. Postconsumer material is a part of the broader category of “recovered material.”

“Recovered material” means waste materials and by-products recovered or diverted from solid waste, but the term does not include those materials and by-products generated from, and commonly reused within, an original manufacturing process.

(b) The Contractor, on completion of this Contract, shall—

(1) Estimate the percentage of the total recovered material content for EPA-designated item(s) delivered and/or used in contract performance, including, if applicable, the percentage of post-consumer material content; and

(2) Submit this estimate to the Contracting Officer.

3. FAR 52.225-9 Buy American—Construction Materials (OCT 2022)

(a) *Definitions.* As used in this clause—

Commercially available off-the-shelf (COTS) item—

(1) Means any item of supply (including construction material) that is—

(i) A commercial product (as defined in paragraph (1) of the definition of “commercial product” at Federal Acquisition Regulation (FAR) [2.101](#));

(ii) Sold in substantial quantities in the commercial marketplace; and

(iii) Offered to the Government, under a contract or subcontract at any tier, without modification, in the same form in which it is sold in the commercial marketplace; and

(2) Does not include bulk cargo, as defined in 46 U.S.C. 40102(4), such as agricultural products and petroleum products.

“Construction material” means an article, material, or supply brought to the construction site by the Contractor or a subcontractor for incorporation into the building or work. The term also includes an item brought to the site preassembled from articles, materials, or supplies. However, emergency life safety systems, such as emergency lighting, fire alarm, and audio evacuation systems, that are discrete systems incorporated into a public building or work and that are produced as complete systems, are evaluated as a single and distinct construction material regardless of when or how the individual parts or components of those systems are delivered to the construction site. Materials purchased directly by the Government are supplies, not construction material.

Cost of components means—

(1) For components purchased by the Contractor, the acquisition cost, including transportation costs to the place of incorporation into the construction material (whether or not such costs are paid to a domestic firm), and any applicable duty (whether or not a duty-free entry certificate is issued); or

(2) For components manufactured by the Contractor, all costs associated with the manufacture of the component, including transportation costs as described in paragraph (1) of this definition, plus allocable overhead costs, but excluding profit. Cost of components does not include any costs associated with the manufacture of the construction material.

Critical component means a component that is mined, produced, or manufactured in the United States and deemed critical to the U.S. supply chain. The list of critical components is at FAR [25.105](#).

Critical item means a domestic construction material or domestic end product that is deemed critical to U.S. supply chain resiliency. The list of critical items is at FAR [25.105](#).

Domestic construction material means—

(1) For construction material that does not consist wholly or predominantly of iron or steel or a combination of both-

(i) An unmanufactured construction material mined or produced in the United States; or

(ii) A construction material manufactured in the United States, if–

(A) The cost of its components mined, produced, or manufactured in the United States exceeds 60 percent of the cost of all its components, except that the percentage will be 65 percent for items delivered in calendar years 2024 through 2028 and 75 percent for items delivered starting in calendar year 2029. Components of foreign origin of the same class or kind for which nonavailability determinations have been made are treated as domestic. Components of unknown origin are treated as foreign; or

(B) The construction material is a COTS item; or

(2) For construction material that consists wholly or predominantly of iron or steel or a combination of both, a construction material manufactured in the United States if the cost of foreign iron and steel constitutes less than 5 percent of the cost of all components used in such construction material. The cost of foreign iron and steel includes but is not limited to the cost of foreign iron or steel mill products (such as bar, billet, slab, wire, plate, or sheet), castings, or forgings utilized in the manufacture of the construction material and a good faith estimate of the cost of all foreign iron or steel components excluding COTS fasteners. Iron or steel components of unknown origin are treated as foreign. If the construction material contains multiple components, the cost of all the materials used in such construction material is calculated in accordance with the definition of "cost of components".

Fastener means a hardware device that mechanically joins or affixes two or more objects together. Examples of fasteners are nuts, bolts, pins, rivets, nails, clips, and screws.

Foreign construction material means a construction material other than a domestic construction material.

Foreign iron and steel means iron or steel products not produced in the United States. Produced in the United States means that all manufacturing processes of the iron or steel must take place in the United States, from the initial melting stage through the application of coatings, except metallurgical processes involving refinement of steel additives. The origin of the elements of the iron or steel is not relevant to the determination of whether it is domestic or foreign.

Predominantly of iron or steel or a combination of both means that the cost of the iron and steel content exceeds 50 percent of the total cost of all its components. The cost of iron and steel is the cost of the iron or steel mill products (such as bar, billet, slab, wire, plate, or sheet), castings, or forgings utilized in the manufacture of the product and a good faith estimate of the cost of iron or steel components excluding COTS fasteners.

Steel means an alloy that includes at least 50 percent iron, between 0.02 and 2 percent carbon, and may include other elements.

"United States" means the 50 States, the District of Columbia, and outlying areas.

(b) Domestic preference. (1) This clause implements [41 U.S.C. chapter 83](#), Buy American, by providing a preference for domestic construction material. In accordance with [41 U.S.C. 1907](#), the domestic content test of the Buy American statute is waived for construction material that is a COTS item, except that for construction material that consists wholly or predominantly of iron or steel or a combination of both, the domestic content test is applied only to the iron and steel content of the construction materials, excluding COTS fasteners. (See FAR [12.505\(a\)\(2\)](#)). The Contractor shall use only domestic construction material in performing this contract, except as provided in paragraphs (b)(2) and (b)(3) of this clause.

(2) This requirement does not apply to information technology that is a commercial product or to the construction materials or components listed by the Government as follows:

none

(3) The Contracting Officer may add other foreign construction material to the list in paragraph (b)(2) of this clause if the Government determines that-

(i)The cost of domestic construction material would be unreasonable.

(A) For domestic construction material that is not a critical item or does not contain critical components.

(1)The cost of a particular domestic construction material subject to the requirements of the Buy American statute is unreasonable when the cost of such material exceeds the cost of foreign material by more than 20 percent;

(2)For construction material that is not a COTS item and does not consist wholly or predominantly of iron or steel or a combination of both, if the cost of a particular domestic construction material is determined to be unreasonable or there is no domestic offer received, and the low offer is for foreign construction material that is manufactured in the United States and does not exceed 55 percent domestic content, the Contracting Officer will treat the lowest offer of foreign construction material that exceeds 55 percent domestic content as a domestic offer and determine whether the cost of that offer is unreasonable by applying the evaluation factor listed in paragraph (b)(3)(i)(A)(1) of this clause.

(3)The procedures in paragraph (b)(3)(i)(A)(2) of this clause will no longer apply as of January 1, 2030.

(B) For domestic construction material that is a critical item or contains critical components. (1)The cost of a particular domestic construction material that is a critical item or contains critical components, subject to the requirements of the Buy American statute, is unreasonable when the cost of such material exceeds the cost of foreign material by more than

20 percent plus the additional preference factor identified for the critical item or construction material containing critical components listed at FAR [25.105](#).

(2) For construction material that does not consist wholly or predominantly of iron or steel or a combination of both, if the cost of a particular domestic construction material is determined to be unreasonable or there is no domestic offer received, and the low offer is for foreign construction material that does not exceed 55 percent domestic content, the Contracting Officer will treat the lowest foreign offer of construction material that is manufactured in the United States and exceeds 55 percent domestic content as a domestic offer, and determine whether the cost of that offer is unreasonable by applying the evaluation factor listed in paragraph (b)(3)(i)(B)(1) of this clause.

(3) The procedures in paragraph (b)(3)(i)(B)(2) of this clause will no longer apply as of January 1, 2030.

(ii) The application of the restriction of the Buy American statute to a particular construction material would be impracticable or inconsistent with the public interest; or

(iii) The construction material is not mined, produced, or manufactured in the United States in sufficient and reasonably available commercial quantities of a satisfactory quality.

(c) Request for determination of inapplicability of the Buy American statute. (1) (i) Any Contractor request to use foreign construction material in accordance with paragraph (b)(3) of this clause shall include adequate information for Government evaluation of the request, including-

(A) A description of the foreign and domestic construction materials;

(B) Unit of measure;

(C) Quantity;

(D) Price;

(E) Time of delivery or availability;

(F) Location of the construction project;

(G) Name and address of the proposed supplier; and

(H) A detailed justification of the reason for use of foreign construction materials cited in accordance with paragraph (b)(3) of this clause.

(ii) A request based on unreasonable cost shall include a reasonable survey of the market and a completed price comparison table in the format in paragraph (d) of this clause.

(iii) The price of construction material shall include all delivery costs to the construction site and any applicable duty (whether or not a duty-free certificate may be issued).

(iv) Any Contractor request for a determination submitted after contract award shall explain why the Contractor could not reasonably foresee the need for such determination and could not have requested the determination before contract award. If the Contractor does not submit a satisfactory explanation, the Contracting Officer need not make a determination.

(2) If the Government determines after contract award that an exception to the Buy American statute applies and the Contracting Officer and the Contractor negotiate adequate consideration, the Contracting Officer will modify the contract to allow use of the foreign construction material. However, when the basis for the exception is the unreasonable price of a domestic construction material, adequate consideration is not less than the differential established in paragraph (b)(3)(i) of this clause.

(3) Unless the Government determines that an exception to the Buy American statute applies, use of foreign construction material is noncompliant with the Buy American statute.

(d) *Data*. To permit evaluation of requests under paragraph (c) of this clause based on unreasonable cost, the Contractor shall include the following information and any applicable supporting data based on the survey of suppliers:

Foreign and Domestic Construction Materials Price Comparison

| Construction Material Description | Unit of Measure | Quantity | Price (Dollars)* |
|-----------------------------------|-----------------|----------|------------------|
| Item 1: | | | |
| Foreign Construction Material | | | |
| Domestic Construction Material | | | |
| Item 2: | | | |
| Foreign Construction Material | | | |
| Domestic Construction Material | | | |

Solicitation Number: 47PF0023R0022

[Include all delivery costs to the construction site and any applicable duty (whether or not a duty-free entry certificate is issued)].*

[List name, address, telephone number, and contact for suppliers surveyed. Attach copy of response; if oral, attach summary.]

[Include other applicable supporting information.]

(4) FAR 52.228-13 Alternative Payment Protections (July 2000)

(a) The Contractor shall submit one of the following payment protections:

- (i) Payment Bond or
- (ii) An Irrevocable Letter of Credit

(b) The amount of the payment protection shall be 100 percent of the contract price.

(c) The submission of the payment protection is required within 10 days of contract award.

(d) The payment protection shall provide protection for the full contract performance period plus a one-year period.

(e) Except for escrow agreements and payment bonds, which provide their own protection procedures, the Contracting Officer is authorized to access funds under the payment protection when it has been alleged in writing by a supplier of labor or material that a nonpayment has occurred, and to withhold such funds pending resolution by administrative or judicial proceedings or mutual agreement of the parties.

(f) When a tripartite escrow agreement is used, the Contractor shall utilize only suppliers of labor and material that signed the escrow agreement.

(5) GSAR 552.204-9 Personal Identity Verification Requirements (JUL 2021)

(a) The contractor shall comply with GSA personal identity verification requirements, identified in the CIO P 2181.1 GSA HSPD-12 Personal Identity Verification and Credentialing Handbook, if contractor employees require access to GSA controlled facilities or information systems to perform contract requirements. The contractor can find the CIO policy and additional information at <http://www.gsa.gov/hspd12>.

(b) The Contractor shall insert this clause in all subcontracts when the subcontractor is required to have access to a GSA-controlled facility or access to a GSA-controlled information system.

7. FAR 52.204-25, Prohibition on Contracting for Certain Telecommunications and Video Surveillance Services or Equipment (NOV 2021)

(a) Definitions. As used in this clause—

Backhaul means intermediate links between the core network, or backbone network, and the small subnetworks at the edge of the network (e.g., connecting cell phones/towers to the core telephone network). Backhaul can be wireless (e.g., microwave) or wired (e.g., fiber optic, coaxial cable, Ethernet).

Covered foreign country means The People's Republic of China.

Covered telecommunications equipment or services means—

(1) Telecommunications equipment produced by Huawei Technologies Company or ZTE Corporation (or any subsidiary or affiliate of such entities);

(2) For the purpose of public safety, security of Government facilities, physical security surveillance of critical infrastructure, and other national security purposes, video surveillance and telecommunications equipment produced by Hytera Communications Corporation, Hangzhou Hikvision Digital Technology Company, or Dahua Technology Company (or any subsidiary or affiliate of such entities);

(3) Telecommunications or video surveillance services provided by such entities or using such equipment; or

(4) Telecommunications or video surveillance equipment or services produced or provided by an entity that the Secretary of Defense, in consultation with the Director of National Intelligence or the Director of the Federal Bureau of Investigation, reasonably believes to be an entity owned or controlled by, or otherwise connected to, the government of a covered foreign country.

Critical technology means—

(1) Defense articles or defense services included on the United States Munitions List set forth in the International Traffic in Arms Regulations under subchapter M of chapter I of title 22, Code of Federal Regulations;

(2) Items included on the Commerce Control List set forth in Supplement No. 1 to part 774 of the Export Administration Regulations under subchapter C of chapter VII of title 15, Code of Federal Regulations, and controlled-

(i) Pursuant to multilateral regimes, including for reasons relating to national security, chemical and biological weapons proliferation, nuclear nonproliferation, or missile technology; or

(ii) For reasons relating to regional stability or surreptitious listening;

(3) Specially designed and prepared nuclear equipment, parts and components, materials, software, and technology covered by part 810 of title 10, Code of Federal Regulations (relating to assistance to foreign atomic energy activities);

(4) Nuclear facilities, equipment, and material covered by part 110 of title 10, Code of Federal Regulations (relating to export and import of nuclear equipment and material);

(5) Select agents and toxins covered by part 331 of title 7, Code of Federal Regulations, part 121 of title 9 of such Code, or part 73 of title 42 of such Code; or

(6) Emerging and foundational technologies controlled pursuant to section 1758 of the Export Control Reform Act of 2018 (50 U.S.C. 4817).

Interconnection arrangements means arrangements governing the physical connection of two or more networks to allow the use of another's network to hand off traffic where it is ultimately delivered (e.g., connection of a customer of telephone provider A to a customer of telephone company B) or sharing data and other information resources.

Reasonable inquiry means an inquiry designed to uncover any information in the entity's possession about the identity of the producer or provider of covered telecommunications equipment or services used by the entity that excludes the need to include an internal or third-party audit.

Roaming means cellular communications services (e.g., voice, video, data) received from a visited network when unable to connect to the facilities of the home network either because signal coverage is too weak or because traffic is too high.

Substantial or essential component means any component necessary for the proper function or performance of a piece of equipment, system, or service.

(b) Prohibition. (1) Section 889(a)(1)(A) of the John S. McCain National Defense Authorization Act for Fiscal Year 2019 (Pub. L. 115-232) prohibits the head of an executive agency on or after August 13, 2019, from procuring or obtaining, or extending or renewing a contract to procure or obtain, any equipment, system, or service that uses covered telecommunications equipment or services as a substantial or essential component of any system, or as critical technology as part of any system. The Contractor is prohibited from providing to the Government any equipment, system, or service that uses covered telecommunications equipment or services as a substantial or essential component of any system, or as critical technology as part of any system, unless an exception at paragraph (c) of this clause applies or the covered telecommunication equipment or services are covered by a waiver described in FAR 4.2104.

(2) Section 889(a)(1)(B) of the John S. McCain National Defense Authorization Act for Fiscal Year 2019 (Pub. L. 115-232) prohibits the head of an executive agency on or after August 13, 2020, from entering into a contract, or extending or renewing a contract, with an entity that uses any equipment, system, or service that uses covered telecommunications equipment or services as a substantial or essential component of any system, or as critical technology as part of any system, unless an exception at paragraph (c) of this clause applies or the covered telecommunication equipment or services are covered by a waiver described in FAR 4.2104. This prohibition applies to the use of covered telecommunications equipment or services, regardless of whether that use is in performance of work under a Federal contract.

(c) Exceptions. This clause does not prohibit contractors from providing—

(1) A service that connects to the facilities of a third-party, such as backhaul, roaming, or interconnection arrangements; or

(2) Telecommunications equipment that cannot route or redirect user data traffic or permit visibility into any user data or packets that such equipment transmits or otherwise handles.

(d) Reporting requirement. (1) In the event the Contractor identifies covered telecommunications equipment or services used as a substantial or essential component of any system, or as critical technology as part of any system, during contract performance, or the Contractor is notified of such by a subcontractor at any tier or by any other source, the Contractor shall report the information in paragraph (d)(2) of this clause to the Contracting Officer, unless elsewhere in this contract are established procedures for reporting the information; in the case of the Department of Defense, the Contractor shall report to the website at <https://dibnet.dod.mil>. For indefinite delivery contracts, the Contractor shall report to the Contracting Officer for the indefinite delivery contract and the Contracting Officer(s) for any affected order or, in the case of the Department of Defense, identify both the indefinite delivery contract and any affected orders in the report provided at <https://dibnet.dod.mil>.

(2) The Contractor shall report the following information pursuant to paragraph (d)(1) of this clause

(i) Within one business day from the date of such identification or notification: the contract number; the order number(s), if applicable; supplier name; supplier unique entity identifier (if known); supplier Commercial and Government Entity (CAGE) code (if known); brand; model number (original equipment manufacturer number, manufacturer part number, or wholesaler number); item description; and any readily available information about mitigation actions undertaken or recommended.

(ii) Within 10 business days of submitting the information in paragraph (d)(2)(i) of this clause: any further available information about mitigation actions undertaken or recommended. In addition, the Contractor shall describe the efforts it

undertook to prevent use or submission of covered telecommunications equipment or services, and any additional efforts that will be incorporated to prevent future use or submission of covered telecommunications equipment or services.

(e) Subcontracts. The Contractor shall insert the substance of this clause, including this paragraph (e) and excluding paragraph (b)(2), in all subcontracts and other contractual instruments, including subcontracts for the acquisition of commercial products or commercial services.

(End of clause)

(8) FAR 52.232-40 Providing Accelerated Payments to Small Business Subcontractors. (NOV 2021)(DEVIATION APR 2020)

(a) (1) In accordance with 31 U.S.C. 3903 and 10 U.S.C. 2307, upon receipt of accelerated payments from the Government, the Contractor shall make accelerated payments to its small business subcontractors under this contract in accordance with the accelerated payment date established], to the maximum extent practicable and prior to when such payment is otherwise required under the applicable contract or subcontract, with a goal of 15 days after receipt of a proper invoice and all other required documentation from the small business subcontractor if a specific payment date is not established by contract.

(2) The Contractor agrees to make such payments to its small business subcontractors without any further consideration from or fees charged to the subcontractor.

(b) The acceleration of payments under this clause does not provide any new rights under the Prompt Payment Act.

(c) Include the substance of this clause, including this paragraph (c), in all subcontracts with small business concerns, including subcontracts with small business concerns for the acquisition of commercial products or commercial services.

(End of clause)

9. FAR 52.228-11, Pledges of Assets (FEB 2021) (DEVIATION APR 2020)

(a) Offerors shall obtain from each person acting as an individual surety on a bid guarantee, a performance bond, or a payment bond-

(1) Pledge of assets; and

(2) A signed affidavit containing the information set out in [Standard Form 28](#), Affidavit of Individual Surety, except that the Standard Form 28 is not required to be sworn and notarized.

(b) Pledges of assets from each person acting as an individual surety shall be in the form of-

(1) Evidence of an escrow account containing cash, certificates of deposit, commercial or Government securities, or other assets described in FAR 28.203-2 (except see 28.203-2(b)(2) with respect to Government securities held in book entry form); and/or

(2) A recorded lien on real estate. The offeror will be required to provide-

(i) A mortgagee title insurance policy, in an insurance amount equal to the amount of the lien, or other evidence of title that is consistent with the requirements of Section 2 of the United States Department of Justice Title Standards at <https://www.justice.gov/enrd/page/file/922431/download>. This title evidence must show fee simple title vested in the surety along with any concurrent owners; whether any real estate taxes are due and payable; and any recorded encumbrances against the property, including the lien filed in favor of the Government as required by FAR 28.203-3(d);

(ii) Evidence of the amount due under any encumbrance shown in the evidence of title.

(iii) A copy of the current real estate tax assessment of the property or a current appraisal dated no earlier than 6 months prior to the date of the bond, prepared by a professional appraiser who certifies that the appraisal has been conducted in accordance with the generally accepted appraisal standards as reflected in the Uniform Standards of Professional Appraisal Practice, as promulgated by the Appraisal Foundation.

(End of clause)

10. FAR 52.219-14 Limitations on Subcontracting (OCT 2022)

(a) This clause does not apply to the unrestricted portion of a partial set-aside.

(b) Definition. Similarly situated entity, as used in this clause, means a first-tier subcontractor, including an independent contractor, that—

(1) Has the same small business program status as that which qualified the prime contractor for the award (e.g., for a small business set-aside contract, any small business concern, without regard to its socioeconomic status); and

(2) Is considered small for the size standard under the North American Industry Classification System (NAICS) code the prime contractor assigned to the subcontract.

(c) Applicability. This clause applies only to—

(1) Contracts that have been set aside for any of the small business concerns identified in 19.000(a)(3);

(2) Part or parts of a multiple-award contract that have been set aside for any of the small business concerns identified in 19.000(a)(3);

(3) Contracts that have been awarded on a sole-source basis in accordance with subparts 19.8, 19.13, 19.14, and 19.15;

(4) Orders expected to exceed the simplified acquisition threshold and that are—

(i) Set aside for small business concerns under multiple-award contracts, as described in 8.405-5 and 16.505(b)(2)(i)(F); or

(ii) Issued directly to small business concerns under multiple-award contracts as described in 19.504(c)(1)(ii);

(5) Orders, regardless of dollar value, that are—

(i) Set aside in accordance with subparts 19.8, 19.13, 19.14, or 19.15 under multiple-award contracts, as described in 8.405-5 and 16.505(b)(2)(i)(F); or

(ii) Issued directly to concerns that qualify for the programs described in subparts 19.8, 19.13, 19.14, or 19.15 under multiple-award contracts, as described in 19.504(c)(1)(ii); and

(6) Contracts using the HUBZone price evaluation preference to award to a HUBZone small business concern unless the concern waived the evaluation preference.

(d) Independent contractors. An independent contractor shall be considered a subcontractor.

(e) Limitations on subcontracting. By submission of an offer and execution of a contract, the Contractor agrees that in performance of a contract assigned a North American Industry Classification System (NAICS) code for—

(1) Services (except construction), it will not pay more than 50 percent of the amount paid by the Government for contract performance to subcontractors that are not similarly situated entities. Any work that a similarly situated entity further subcontracts will count towards the prime contractor's 50 percent subcontract amount that cannot be exceeded. When a contract includes both services and supplies, the 50 percent limitation shall apply only to the service portion of the contract;

(2) Supplies (other than procurement from a nonmanufacturer of such supplies), it will not pay more than 50 percent of the amount paid by the Government for contract

performance, excluding the cost of materials, to subcontractors that are not similarly situated entities. Any work that a similarly situated entity further subcontracts will count towards the prime contractor's 50 percent subcontract amount that cannot be exceeded. When a contract includes both supplies and services, the 50 percent limitation shall apply only to the supply portion of the contract;

(3) General construction, it will not pay more than 85 percent of the amount paid by the Government for contract performance, excluding the cost of materials, to subcontractors that are not similarly situated entities. Any work that a similarly situated entity further subcontracts will count towards the prime contractor's 85 percent subcontract amount that cannot be exceeded; or

(4) Construction by special trade contractors, it will not pay more than 75 percent of the amount paid by the Government for contract performance, excluding the cost of materials, to subcontractors that are not similarly situated entities. Any work that a similarly situated entity further subcontracts will count towards the prime contractor's 75 percent subcontract amount that cannot be exceeded.

(f) The Contractor shall comply with the limitations on subcontracting as follows:

(1) For contracts, in accordance with paragraphs (c)(1), (2), (3) and (6) of this clause—
[Contracting Officer check as appropriate.]

____ By the end of the base term of the contract and then by the end of each subsequent option period; or

___X___ By the end of the performance period for each order issued under the contract.

(2) For orders, in accordance with paragraphs (c)(4) and (5) of this clause, by the end of the performance period for the order.

(g) A joint venture agrees that, in the performance of the contract, the applicable percentage specified in paragraph (e) of this clause will be performed by the aggregate of the joint venture participants.

(1) In a joint venture comprised of a small business protégé and its mentor approved by the Small Business Administration, the small business protégé shall perform at least 40 percent of the work performed by the joint venture. Work performed by the small business protégé in the joint venture must be more than administrative functions.

(2) In an 8(a) joint venture, the 8(a) participant(s) shall perform at least 40 percent of the work performed by the joint venture. Work performed by the 8(a) participants in the joint venture must be more than administrative functions.

(End of clause)

IV.B. Clauses Incorporated by Reference

This contract incorporates one or more clauses by reference, with the same force and effect as if they were given in full text. Upon request, the Contracting Officer will make their full text available. The full text of a clause may also be accessed electronically at this address:

[Federal Acquisition Regulation](#)

(2) Federal Acquisition Regulation (FAR) clauses:

| NUMBER | TITLE | DATE |
|---------------|--|-------------|
| 52.204-2 | Security Requirements | MAR 21 |
| 52.204-7 | System for Award Management | OCT 18 |
| 52.204-9 | Personal Identity Verification of Contractor Personnel | JAN 11 |
| 52.204-10 | Reporting Executive Compensation and First-Tier Subcontract Awards | JUN 20 |
| 52.204-13 | System for Award Management Maintenance | OCT 18 |
| 52.204-19 | Incorporation by Reference of Representations and Certifications | DEC 14 |
| 52.204-21 | Basic Safeguarding of Covered Contractor Information Systems | NOV 21 |
| 52.204-23 | Prohibition on Contracting for Hardware, Software and Services Developed or Provided by Kaspersky Lab and Other Covered Entities | NOV 21 |
| 52.209-6 | Protecting the Government's Interest When Subcontracting with Contractors Debarred, Suspended, or Proposed for Debarment | NOV 21 |
| 52.209-10 | Prohibition on Contracting with Inverted Domestic Corporations | NOV 15 |
| 52.211-18 | Variation in Estimated Quantity | APR 84 |
| 52.219-28 | Post-Award Small Business Program Representation | OCT 22 |
| 52.222-3 | Convict Labor | JUN 03 |
| 52.222-6 | Construction Wage Rate Requirements | AUG 18 |

| NUMBER | TITLE | DATE |
|-----------|--|--------|
| 52.222-7 | Withholding of Funds | MAY 14 |
| 52.222-8 | Payrolls & Basic Records | JUL 21 |
| 52.222-9 | Apprentices And Trainees | JUL 05 |
| 52.222-10 | Compliance With Copeland Act Requirements | FEB 88 |
| 52.222-11 | Subcontracts (Labor Standards) | MAY 14 |
| 52.222-12 | Contract Termination—Debarment | MAY 14 |
| 52.222-13 | Compliance With Construction Wage Rate Requirements And Related Regulations | MAY 14 |
| 52.222-14 | Disputes Concerning Labor Standards | FEB 88 |
| 52.222-15 | Certification of Eligibility | MAY 14 |
| 52.222-21 | Prohibition of Segregated Facilities | APR 15 |
| 52.222-26 | Equal Opportunity | SEP 15 |
| 52.222-27 | Affirmative Action Compliance Requirements for Construction (Applies if over \$10,000) | APR 15 |
| 52.222-35 | Equal Opportunity for Veterans | JUN 20 |
| 52.222-36 | Equal Opportunity for Workers with Disabilities | JUN 20 |
| 52.222-37 | Employment Reports on Veterans | JUN 20 |
| 52.222-50 | Combating Trafficking in Persons | NOV 21 |
| 52.222-55 | Minimum Wages for Contractor Workers Under Executive Order 14026 | JAN 22 |
| 52.222-62 | Paid Sick Leave Under Executive Order 13706 | JAN 22 |
| 52.223-3 | Hazardous Material Identification and Material Safety Data - Alternate I (JUL 95) | FEB 21 |
| 52.223-5 | Pollution Prevention and Right-to-Know Information | MAY 11 |
| 52.223-15 | Energy Efficiency in Energy-Consuming Products | MAY 20 |
| 52.223-17 | Affirmative Procurement of EPA-designated Items in Service and Construction Contracts | AUG 18 |
| 52.223-18 | Encouraging Contractor Policies to Ban Text Messaging While Driving | JUN 20 |
| 52.223-21 | Foams | JUN 16 |
| 52.224-1 | Privacy Act Notification | APR 84 |
| 52.224-2 | Privacy Act | APR 84 |

| NUMBER | TITLE | DATE |
|-----------|--|--------|
| 52.225-13 | Restrictions on Certain Foreign Purchases | FEB 21 |
| 52.227-1 | Authorization and Consent | JUN 20 |
| 52.227-2 | Notice and Assistance Regarding Patent and Copyright | JUN 20 |
| 52.227-4 | Patent Indemnity—Construction Contracts | DEC 07 |
| 52.228-2 | Additional Bond Security | OCT 97 |
| 52.228-5 | Insurance - Work on a Government Installation | JAN 97 |
| 52.232-5 | Payments Under Fixed Price Construction Contracts | MAY 14 |
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| 52.232-33 | Payment by Electronic Funds Transfer – System for Award Management | OCT 18 |
| 52.233-1 | Disputes | MAY 14 |
| 52.233-1 | Alternate I | DEC 91 |
| 52.233-3 | Protest after Award | AUG 96 |
| 52.233-4 | Applicable Law for Breach of Contract Claim | OCT 04 |
| 52.236-2 | Differing Site Conditions | APR 84 |
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(3) GSA Acquisition Regulation (GSAR) clauses:

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| 552.228-5 | Government As Additional Insured | JAN 16 |
| 552.229-70 | Federal, State, and Local Taxes | APR 84 |
| 552.232-5 | Payments Under Fixed-Price Construction Contracts | MAR 19 |
| 552.236-6 | Superintendence by the Contractor | MAR 19 |
| 552.232-39 | Unenforceability of Unauthorized Obligations. (FEB 2018) (DEVIATION FAR 52.232-39) | FEB 18 |
| 552.236-11 | Use and Possession Prior to Completion | MAR 19 |
| 552.236-15 | Schedules for Construction Contracts | MAR 19 |
| 552.236-21 | Specifications and Drawings for Construction | MAR 19 |
| 552.236-70 | Authorities and Limitations | MAR 19 |
| 552.236-71 | Contractor Responsibilities | MAR 19 |
| 552.236-72 | Submittals | MAR 19 |
| 552.236-73 | Subcontracts | APR 84 |
| 552.243-71 | Equitable Adjustments | MAR 19 |

(4) Total Small Business Set-Aside

This contract is Total Small Business Set-Aside; the following clause is incorporated by reference:

| NUMBER | TITLE | DATE |
|----------|--|--------|
| 52.219-6 | Notice of Total Small Business Set-Aside | NOV 20 |



United States General Services Administration

100% Design Submittal

Date of Order: August 13, 2020

Order No. 47PF0020F0874

Contract No. GS-05-P-17-GC-D-0002

Work Order: 308

USDC & USBC TRANSACTION WINDOWS U.S. Courthouse 5400 Federal Plaza, Hammond, IN

BY: ARCHITECT
Bailey Edward Design
35 E Wacker Drive
Suite 2800
Chicago, IL 60601
312-440-2300

BED Project No. 17005-20019
DATE: October 28, 2022

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SECTION 01 10 00 - SUMMARY

PART 1 GENERAL

1.01 PROJECT INFORMATION

- A. Project Name and Location:
1. U.S. Courthouse, 5400 Federal Plaza, Hammond, IN 46320-1839 (IN0300ZZ)
- B. Project Summary Description:
1. Project Scope: Provide and install break resistant transaction windows for the U.S. Bankruptcy Clerk's Office Reception Desk and the U.S. District Court Clerk's Office Reception Desk
- C. Architect: The term Architect refers to the project designer. The Architect's status relative to the construction will be stated in writing by the Contracting Officer prior to the pre-construction conference. The project was designed by:

Bailey Edward Design
35 East Wacker Drive, Suite 2800
Chicago, IL 60601-2308
Contact: Susan Hickey
Email: shickey@baileyedward.com
Phone: 312-440-2300

- D. The Contracting Officer for the project is:

Aneesah Muhammad
US General Services Administration
230 S. Dearborn St, Suite 3500
Chicago, IL 60604
Email: aneesah.muhammad@gsa.gov
Phone: 312-590-3555

- E. The Project Manager and Contracting Officers Representative (COR) for the project is:

Cary Kubiak
US General Services Administration
230 S. Dearborn St, Suite 3600
Chicago, IL 60604
Email: cary.kubiak@gsa.gov
Phone: 312-661-2094

SUMMARY

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F. The Property Manager for the project is:

Tom Rogic
U.S. General Services Administration
5400 Federal Plaza, Suite 2100
Hammond, IN 46320
Email: tomislav.rogic@gsa.gov
Phone: 219-629-8113

1.02 WORK SEQUENCE

- A. The work shall be substantially complete, ready for occupancy, within 40 calendar days after notice to proceed. Interpretation of the schedule is up to the General Contractor, and as a time-saver the project work at multiple locations may be done at the same time.

1.03 WORK BY OTHER CONTRACTORS

- A. The Contractor shall cooperate with other contractors performing related work, including providing labor, materials and other costs necessary to satisfactorily coordinate the Contract work with work performed under other contracts.

1.04 SCHEDULE OF GOVERNMENT-FURNISHED PROPERTY

- A. The project includes the following Government furnished property to be installed by the Contractor. The contractor shall advise GSA at least 30 days in advance of when the property should be delivered.

1.05 MISCELLANEOUS PROVISIONS

- A. Work in existing facilities shall correspond in all respects with the existing conditions to which it connects, or to similar existing conditions, in materials, workmanship and finish.
- B. Alterations to Existing Conditions: Existing conditions shall be cut, drilled, removed, temporarily removed, or removed and replaced, as necessary for performance of Work under the Contract. Work out of alignment where exposed by removal of existing work shall be called to the attention of GSA. Necessary corrective work shall be as directed.
1. Replacements of existing conditions that are removed shall match similar existing conditions.
 2. Unless otherwise indicated, existing structural members shall not be cut or altered without authorization by the Contracting Officer.
 3. Conditions remaining in place, which are damaged or defaced during the Work, shall be restored to the condition existing at time of award of Contract.
 4. Discolored or unfinished surfaces exposed by removal of existing conditions, that are indicated to be final exposed surfaces, shall be refinished or replaced as necessary to produce uniform and harmonious contiguous surfaces.
- C. Existing structures will remain in place.

SUMMARY

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- D. Existing utility services with related meters and equipment will remain in place.
- E. Removed items indicated to remain the property of the Government shall be stored on site where directed by the Contracting Officer.

PART 2 - PRODUCTS (NOT APPLICABLE)

PART 3 - EXECUTION (NOT APPLICABLE)

END OF SECTION 01 10 00

SUMMARY

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SECTION 01 14 00 - WORK RESTRICTIONS

PART 1 – GENERAL

1.1 CONTRACTOR USE OF PREMISES

- A. The Contractor will review and document the existing conditions surrounding the project premises. Provide documentation to the Government prior to the commencement of any construction activity.
- B. The Contractor shall limit use of the premises to the work in areas indicated, and to allow for Government occupancy and public use.
 - 1. Confine operations at the site to areas indicated. Do not disturb portions of the site beyond the areas in which Work is indicated.
 - 2. Keep driveways and entrances serving the premises clear and available at all times to the Government, Government employees and to visitors. Do not use these areas for parking or storage of materials.
 - 4. Schedule deliveries to minimize space and time requirements for storage of material and equipment on site.
 - 5. Maintain existing building in a safe and weather-tight condition throughout the construction period. Repair damage caused by construction operations to the satisfaction of the government. Take precautions to protect the building, its occupants and the public during the construction period. A representative of the Contractor shall be available to arrive on site within one (1) hour of notice should an emergency occur.
 - 6. Keep public areas, such as hallways, stairs, lobbies and toilet rooms, free from accumulation of waste material, rubbish, construction debris and construction materials.
 - 7. Space on the premises will be made available for the Contractor's storage and related activities, provided that its use will not interfere with operations of the Government. Arrange and gain approval for use of this space through the Contracting Officer.
 - 8. Use of the existing loading dock facilities will be shared with Government activities on a first-come-first-served, wait-your-turn basis. The loading dock is available for the delivery of materials, tools, and supplies between the hours of 7:00 a.m. to 6:00 p.m.
 - 9. Existing materials and equipment that are removed as part of the construction operations, and that are not reused or designated to be salvaged as Government property, shall become the property of the Contractor and shall be removed from the site. Storage or sale of excess salvageable materials and equipment is not permitted on site.
 - 10. Pollution producing equipment shall not be located near air intakes where airborne smoke or fumes could be drawn into the building. When not required for powering unloading operations, turn off engines when docked.
 - 11. Smoking is not permitted in or around the building, see Facilities Management Regulation (FMR) Case 2008-102—3. Also see Code of Federal Regulations (CFR) 41 CFR Part 102-74.
 - 12. No parking will be available on site during working hours for building occupants. The Contractor and Contractor's employees shall make their own arrangements for vehicle parking off site.

WORK RESTRICTIONS

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13. Cell Phones: Contractor is to provide company cell phone during this contract. All cell phones to be "on vibrate" at all times. If a telephone begins audibly ringing, the building guards will take the cell phone and hold until the end of the working day prior to the contractor leaving the property. Cell phones are only permitted in construction area and contractor's office space.
14. No apparatus with an open flame is allowed to be used within the facility without the prior receipt of a burn permit. Contact the Field Office to obtain burn permits. Burn permits are required for each separate occurrence.
15. Permits: Refer to FAR 52.236-7
16. The work shall be sequenced to minimize disruption to building occupants, visitors, and maintenance activities. To the greatest extent feasible, demolition work should not take place until supplies are on hand to perform new work.
17. Coordinate with the GSA Building Manager and the COR for site access.
18. Coordinate with the GSA Building Manager and the COR on correct response procedures for any building system alarms occurring during or resulting from the construction process.
19. All building systems outside the immediate construction area shall be kept fully operational during normal working hours.
20. Protect building site from flying debris.
21. Building does not have space for a dumpster during business hours. Dumpster must be removed from site by the start of each business day.
22. Coordinate with your building manager and/or security office as to the use of cameras in the building.

1.2 GOVERNMENT OCCUPANCY

- A. The Government will occupy the site and the existing building during the entire period of construction. Cooperate with the Government's representatives during construction operations to minimize conflicts, mitigate noise, and facilitate Government usage. Perform the Work in a manner that does not interfere with the Government's operations.
- B. The Government reserves the right to occupy, place, and install equipment in completed areas of the building prior to Substantial Completion, provided such occupancy does not interfere with completion of the Work. The Government's installation of equipment and partial occupancy shall not constitute acceptance of the total Work.
 1. Prior to partial Government occupancy, mechanical and electrical systems for the space shall be fully operational, and required inspections and tests shall be successfully completed. Upon occupancy, the Government will operate and maintain mechanical and electrical systems serving the occupied portions of the building.
 2. Upon occupancy, the Government will assume responsibility for maintenance and custodial service for the occupied portions of the building.

1.3 WORKING HOURS

- A. Government Occupied Hours: Government personnel are scheduled to occupy the building during the following hours on weekdays, Monday through Friday, except for established Government Holidays.
7:00-AM to 5:00-PM.

WORK RESTRICTIONS

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- B. Government Unoccupied Hours: Government personnel are not scheduled to occupy the building during times not indicated as Government Occupied Hours.
- C. Contractor's General Working Hours: The Contractor working hours shall be generally established to occur during Government Occupied Hours.
- D. The following work shall be performed during Government Unoccupied Hours:
 - 1. Noisy and/or odor-producing work that may disrupt tenant operations in adjacent spaces.
 - 2. Any work in building or tenant spaces outside the delineated construction area.
 - 3. Cutting and Patching
 - 4. Hot Work
 - 5. Work on Fire Alarm and Fire Sprinkler Systems including test
 - 6. Building shutdowns
- E. Work accomplished during Government Unoccupied Hours shall be performed at no additional cost to the Government. Contractor shall submit a proposed schedule and gain the Contracting Officer's approval at least 48 hours before proceeding with any work during Government Unoccupied Hours.

PART 2 - PRODUCTS (NOT APPLICABLE)

PART 3 - EXECUTION (NOT APPLICABLE)

END OF SECTION 01 14 00

WORK RESTRICTIONS

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SECTION 01 25 00 - SUBSTITUTION PROCEDURES

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

- A. The Government is providing the references included in this sub-section for information purposes only and is not intended to provide a comprehensive, all-inclusive list of any and all potentially relevant portions of the Contract Documents. Drawings and general provisions of the Contract and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for substitutions.
- B. Related Sections:
 - 1. Division 01 60 00 Section "Product Requirements" for requirements for submitting comparable product submittals for products by listed manufacturers.
 - 2. Divisions 02 through 28 Sections for specific requirements and limitations for substitutions.

1.3 DEFINITIONS

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

1.4 SUBMITTALS FOR CAUSE OR CONVENIENCE:

- A. Substitution Requests: Per Submittal Procedures Section 01 33 00 submit electronic copies of each request for consideration. Identify product or fabrication or installation method to be replaced.
 - 1. Documentation: Show compliance with requirements for substitutions and the following, as applicable:
 - a. Coordination information, including a list of changes or modifications needed to other parts of the Work and to construction performed by the Government and separate contractors that will be necessary to accommodate proposed substitution.
 - b. 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, energy and resource performance goals, warranties, and specific features and requirements indicated. Indicate deviations, if any, from the Work specified.

SUBSTITUTION PROCEDURES

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- c. Product Data, including drawings and descriptions of products and fabrication and installation procedures.
 - d. Samples, where applicable or requested.
 - e. Certificates and qualification data, where applicable or requested.
 - f. List of similar installations for completed projects with project name, location and contact information of owner and architect/engineer of record.
 - g. Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.
 - h. Research reports evidencing compliance with building code in effect for project, when applicable for the proposed substitution.
 - i. Detailed comparison of Contractor's construction schedule using proposed substitution with products specified for the Work. 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. Provide a schedule fragnet with a time impact analysis to allow the Government to consider the proposed substitution.
 - j. Cost information, including a proposal of change, if any, in the Contract Sum.
 - k. 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.
 - l. The Contracting Officer may require the Contractor to provide a 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.
2. The Contracting Officer or Contracting Officer's Representative (CO) or (COR) Action: If necessary, the Contracting Officer or COR will request additional information or documentation for evaluation. The Contractor shall be entitled to receive notice of action on submittals within a reasonable time, given the volume or complexity of the submittals and the criticality of the affected activities to Substantial Completion as may be indicated in the Project Schedule. The Contractor shall not be entitled to receive notice of action on submittals containing variations from Contract requirements in less than twenty working days.
3. FAILURE BY THE GOVERNMENT TO RESPOND DOES NOT CONSTITUTE ACCEPTANCE OF THE PROPOSED SUBSTITUTION.

1.5 QUALITY ASSURANCE

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

1.6 PROCEDURES

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

SUBSTITUTION PROCEDURES

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PART 2 PRODUCTS

2.1 SUBSTITUTIONS

- A. Substitutions for Cause: Submit requests for substitution immediately upon discovery of need for change, but not later than (15) days prior to time required for preparation and review of related submittals.
1. Conditions: The Contracting Officer (CO) will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, the Contracting Officer (CO) 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. If requested substitution involves schedule impact Contractor has identified time impact and a mitigation plan. .
 - 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: The Contracting Officer (CO) will consider requests for substitution if received within (60) days after the notice of award. Requests received after that time may be considered or rejected at discretion of the Contracting Officer (CO) or the Contracting Officer Representative (COR).
1. Conditions: The Contracting Officer will consider Contractor's request for substitution when the following conditions are satisfied.
 - a. Requested substitution offers the Government a substantial advantage in cost, time, energy conservation, or other considerations, after deducting additional obligations the Government incurs..
 - 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.
 - 1) If requested substitution involves schedule impact Contractor has identified time impact and a mitigation plan.
 - 2) Requested substitution has received necessary approvals of authorities having jurisdiction.
 - 3) Requested substitution is compatible with other portions of the Work.
 - 4) Requested substitution has been coordinated with other portions of the Work.

SUBSTITUTION PROCEDURES

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- 5) Requested substitution provides specified warranty.
- 6) 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 01 25 00

SUBSTITUTION PROCEDURES

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SECTION 01 29 00 - PAYMENT PROCEDURES

PART 1 – GENERAL

1.1 SUMMARY

- A. This Section specifies administrative and procedural requirements necessary to prepare and to process Requests for Payment.

1.2 DEFINITIONS

- A. Schedule of Values: A detailed written statement (masterformat/uniformat) furnished by the Contractor outlining the portions of the contract sum, which allocates values (price & percentage) for the various parts of the work and used as the basis for payment application and reviewing progress payments. The Agreement provides further details.
- B. Request for Payment: A contractor's invoice and request for progress payment with substantiating information consistent with approved schedule of values.

1.3 SCHEDULE OF VALUES

- A. Coordination: Submit completed Schedule of Values no later than (14) calendar days after notice of award.
- B. Schedules for Phased Work: Where the work is separated into phases, provide Schedules showing values correlated with each phase using the standard format referenced below.
- C. Format and Content: Contractor shall be responsible to complete the AIA G703 Sheet and provide associated electronic baseline copy to contracting officer for record. Contractor will follow guidelines:
- D. Identification: Complete the following Project Identification fields in the Schedule of Values:
 - 1. Project Name
 - 2. Project Number
 - 3. Project Location, City, State
 - 4. Base Contract Number
 - 5. Task Order Number
 - 6. Modification Number
 - 7. GSA Project Manager
 - 8. Contractor's Name and contact information

PAYMENT PROCEDURES

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9 Date of submittal

- A. Provide a breakdown of the Contract Sum in enough detail to facilitate continued evaluation of Requests for Payment and progress reports.
 - 1. Work activity – (by division or specific work activity)
 - 2. Dollar value of each specific work activity – both with an amount in dollars and whole cents, and as a percentage of the Contract Sum to nearest one-hundredth percent. Adjust the amounts to total to the Contract Sum and the percentages to total 100 percent.
 - 3. Modifications that affect value.
 - 4. Update affected work branches and subordinate line items
 - 5. Line item for mobilization and de-mobilization
 - 6. Line item for close out (% to be negotiated with GSA COR)

E. Options: Provide a separate Schedule of Values for each exercised Option.

- F. Each item in the Schedule of Values and Requests for Payment shall be complete. 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 the government's option.
- G. Revise and update workbook with all items affecting scope, schedule or cost and resubmit within 14 calendar days as coordinated with project manager or contracting officer. Contractor shall provide a final as-built schedule at project completion.

1.4 REQUESTS FOR PAYMENT

- A. Requirements for Requests for Payment are in Section III, Terms and Conditions of the Agreement.
- B. Each Request for Payment following the initial Request for Payment shall be consistent with previous Requests.
 - 1. Initial Request for Payment, Request for Payment at time of Substantial Completion, and final Request for Payment involve additional requirements.
- C. Payment Request Times: Submit Request for Payment to GSA on a mutually agreed upon date at the pre-construction meeting. The period covered by each Request for Payment is one month.
 - 1. Submit one paper draft copy (aka pencil copy) of Request for Payment to the COR along with construction progress report seven calendar days prior to due date for review by GSA. Provide documentation evidencing the cost of work performed to be included in the Request for Payment. Resolve questions resulting from GSA review of draft Request for Payment and construction progress report prior to submitting Request for Payment.
- D. Stored Materials: Differentiate between items stored on-site and items stored off-site.
 - 1. Provide certificate of insurance, 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.

PAYMENT PROCEDURES

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3. Provide summary documentation for stored materials indicating the following:
 - a. Value of materials previously stored and remaining stored as of effective date of previous Request for Payment.
 - b. Value of previously stored materials put in place after effective date of previous Request for Payment and on or before effective date of current Request for Payment.
 - c. Value of materials stored since effective date of previous Request for Payment and remaining stored as of effective date of current Request for Payment.
- E. Initial Request for Payment: Administrative actions and submittals that must precede or coincide with submittal of first Request for Payment include the following:
 1. List of subcontractors.
 2. Schedule of values.
 3. Contractor's construction schedule per Agreement (startup if not final).
 4. Submittal schedule (preliminary if not final).
 5. List of Contractor's staff assignments.
 6. List of Contractor's principal consultants.
 7. Report of preconstruction conference.
- F. Request for Payment at Substantial Completion: After GSA issues the Notice of Substantial Completion, submit a Request for Payment less previous payments made 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 Request shall reflect Notices of Substantial Completion issued previously for GSA occupancy of designated portions of the Work.
- G. Final Payment Request: The Agreement provides further details

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION 01 29 00

PAYMENT PROCEDURES

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SECTION 01 31 00 - PROJECT MANAGEMENT AND COORDINATION

PART 1 GENERAL

1.1 SUMMARY

- A. This section includes certain administrative provisions for managing and coordinating construction operations, including but not limited to the following:
 - 1. General project coordination.
 - 2. Coordination drawings.
 - 3. Conservation.
 - 4. Administrative and supervisory personnel.
 - 5. Conferences and meetings.
 - 6. Utility service interruptions.
 - 7. Cleaning and protection.

1.2 GENERAL PROJECT COORDINATION

- A. Coordination of Trades: Coordinate construction operations included in the various sections of the Specifications to provide an efficient and orderly installation of each part of the Work. Coordinate construction operations included under different sections of the Specifications that depend on each other for proper installation, connection or operation. Keep pipes, ducts, conduit, and the like as close as possible to ceiling slab, walls, and columns to take up a minimum amount of space. Locate pipes, ducts, and equipment so that they do not interfere with the intended use of eyebolts and other lifting devices. Assure all controls can be reached and operated.
 - 1. Schedule construction operations in the sequence required to obtain the best results where the installation of one part of the Work depends on installation of other components before or after that part.
 - 2. Coordinate installation of different components to provide maximum accessibility for required maintenance, service, testing and repair.
 - 3. Minimize roof penetrations.
- B. Notification: Prepare and distribute memoranda to each party involved, outlining special procedures required for coordination. Include notices, reports and meeting minutes as part of the memoranda.
- C. Administrative Procedures: Coordinate scheduling and timing of administrative procedures with other construction activities to avoid conflicts and promote orderly progress of the Work. Administrative procedures include but are not limited to the following:
 - 1. Preparation of schedules.
 - 2. Installation and removal of temporary facilities.

PROJECT MANAGEMENT AND COORDINATION

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3. Security packages and systems by others (i.e. U.S. Marshals Service (USMS), Federal Protective Service (FPS), tenants, etc.)
4. Audio Visual (AV) and technology requirements and packages for tenants and/or end users.
5. Telecommunication, data, internet and other tele-work systems for GSA, tenants and/or end users.
6. Delivery and processing of submittals.
7. Progress meetings.
8. Project closeout activities.
9. Startup and adjustment of systems.

1.3 COORDINATION DRAWINGS

- A. Prepare coordination drawings where coordination is needed for installation of products and materials fabricated by separate entities, and prepare coordination drawings where limited space availability necessitates maximum use of the space for efficient installation of different components.
 - a. Show the relationship of components from the separate shop drawings. Indicate functional and spatial relationships of components of architectural, structural, civil, mechanical, and electrical systems
 - b. Indicate required installation sequences.
 - c. Indicate minimum access space requirements for routine maintenance and for anticipated replacement of components during the life of the installation.
 - d. Show locations and sizes of all access doors on vertical and horizontal surfaces throughout the facility.
 - e. Provide vertical and horizontal dimensions necessary to locate each component and avoid conflicts within the space.
 - f. Comply with shop drawing requirements for sheet size and submittal methods specified in Division 1 Section "Submittal Procedures."
- B. Refer to Divisions 23, and 26 Plumbing, Heating Ventilating and Air Conditioning, and Electrical for specific coordination drawing requirements for mechanical and electrical installations.
- C. Provide coordination drawings for equipment and system installations in mechanical and electrical rooms and spaces where two or more entities will provide the work and separate shop drawings are insufficient to show coordination.
- D. Work installed prior to approval of coordination drawings shall be at the Contractor's risk. Subsequent relocations required to avoid interferences shall be made without additional expense to the Government. In case interference develops, the Government will decide which work shall be relocated, regardless of which was installed first.

1.4 CONSERVATION

PROJECT MANAGEMENT AND COORDINATION

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- A. Coordinate conservation of energy, water and materials in the conduct of construction operation. Salvage materials and equipment involved in the performance of, but not incorporated into, the Work.
- B. Waste Management Plan: Establish a program to maximize recycling of waste materials. Program shall include the following:
 - 1. Designation of a waste management coordinator.
 - 2. Identification of recyclable materials.
 - 3. Identification of available local recycling firms and agencies to receive recyclable materials.
 - 4. Establishment of quantity goals for collection of each recyclable material.
 - 5. Designation of one or more locations on the project site for collection, sorting and temporary storage of recyclable materials.
 - 6. Means and schedule for transporting and delivery of recyclable materials to recycling firms and agencies.
 - 7. Implementation of the Waste Management Plan: Contractor's waste management coordinator shall provide on-site instruction of workers in the identification, separation and handling of recyclable materials, and shall manage the process for the duration of the Contract.
 - a. Contractor shall lay out and define specific areas to facilitate separation of materials for recycling, and shall maintain collection bins clearly marked to avoid contamination of the recyclable materials.
 - b. The waste management coordinator shall report monthly, in writing, the quantity of each recyclable material collected during the previous month and cumulatively to date, compared to the quantity goal, and other points of interest. Copies of each report shall be distributed to each significant stakeholder of the project, including the Government.

1.5 ADMINISTRATIVE AND SUPERVISORY PERSONNEL

- A. The Contractor shall provide administrative and supervisory personnel for proper performance of the Work.
- B. Project Coordinator: Provide a full time project coordinator, experienced in the administration and supervision of building construction, including all systems required in the project. The project coordinator shall be authorized to act as the coordinator of construction activities, including but not limited to the following:
 - 1. Scheduling and sequencing of Work.
 - 2. Sharing access to work spaces.
 - 3. Installations.
 - 4. Protection of work.
 - 5. Cutting and patching.
 - 6. Selections for compatibility.
 - 7. Preparation of coordination of drawings.
 - 8. Inspection and tests.
 - 9. Temporary services and facilities.

PROJECT MANAGEMENT AND COORDINATION

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- C. Safety and Health Officer: Provide a safety and health officer whose duties shall consist of developing and implementing safety and health programs specified in Division 1 Section "Safety and Health."
- D. Provide a waste management coordinator whose duties shall consist of developing and implementing a program for maximizing recycling of waste.

1.6 CONFERENCES AND MEETINGS

- A. Preconstruction Conference: The government shall schedule a preconstruction conference before starting construction at a time and place convenient to the Contractor. The conference shall review responsibilities and personnel assignments.
 - 1. Attendees: Participants at the conference shall be familiar with the project, shall be authorized to conclude matters relating to the Work, and shall minimally include representatives of the following parties:
 - a. Government.
 - b. Architect.
 - c. Major design consultants.
 - d. Contractor.
 - e. Major subcontractors.
 - f. Major suppliers.
 - g. Other concerned parties.
 - h. Agenda: Subjects for discussion shall include items of significance that could affect progress, including but not limited to the following:
 - 1) Tentative construction schedule.
 - 2) Critical work sequencing.
 - 3) Designation of responsible personnel.
 - 4) Procedures for processing field decisions and Change Orders.
 - 5) Procedures for processing Applications for Payment.
 - 6) Distribution of Contract Documents.
 - 7) Submittal of Shop Drawings, Product Data, and Samples.
 - 8) Preparation of Record Documents.
 - 9) Use of the premises.
 - 10) Parking availability.
 - 11) Office, work, and storage areas.
 - 12) Equipment deliveries and priorities.
 - 13) Safety procedures.
 - 14) First aid.
 - 15) Security.
 - 16) Housekeeping and progress cleaning.
 - 17) Working hours.

PROJECT MANAGEMENT AND COORDINATION

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- 18) Energy and resource efficiency / sustainability
- 19) Waste management
- B. Progress Meetings: The Government or designee shall conduct progress meetings at the Project Site at regular intervals. Dates of meetings shall be coordinated with preparation of the payment request.
 - 1. Attendees: In addition to the Contractor's and Government's representatives, each subcontractor, supplier, or other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented if requested by GSA. All participants at the conference shall be familiar with the Project and authorized to conclude matters relating to the Work.
 - 2. Agenda: Review and correct or approve minutes of the previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to the status of the Project.
 - a. Contractor's Construction Schedule: Review progress since the last progress meeting. Determine where each activity is in relation to the Contractor's Construction Schedule, whether on time or ahead or behind 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. Provide 2 week schedule look ahead.
 - b. Review the present and future needs of each entity, including but not limited to the following:
 - 1) Interface requirements.
 - 2) Time.
 - 3) Sequences of operations.
 - 4) Status of submittals.
 - 5) Deliveries.
 - 6) Off-site fabrication.
 - 7) Access.
 - 8) Site utilization.
 - 9) Temporary facilities and controls.
 - 10) Hours of work.
 - 11) Hazards and risks.
 - 12) Housekeeping and progress cleaning.
 - 13) Quality and work standards.
 - 14) Change Orders.
 - 15) Documentation of information for payment requests.
 - 16) Updating of Record Documents.
 - c. Schedule Updating: The Contractor shall revise the Contractor's Construction Schedule after each progress meeting where revisions to the schedule have been made or recognized. The revised schedule shall be issued concurrently with the report of each meeting.
- C. Project Closeout Conference: GSA will schedule and conduct a Project closeout conference, at a time convenient to Contractor, CM and Architect, but no later than 90 days prior to the scheduled date of Substantial Completion.

PROJECT MANAGEMENT AND COORDINATION

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- D. Attendees: Authorized representatives of GSA, CM, 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.
1. 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 completing sustainable design documentation.
 - e. Requirements for preparing operations and maintenance data.
 - f. Requirements for delivery of material samples, attic stock, and spare parts.
 - g. Requirements for demonstration and training.
 - h. Preparation of Contractor's punch list.
 - i. Procedures for processing Applications for Payment at Substantial Completion and for final payment.
 - j. Submittal procedures.
 - k. Coordination of separate contracts, if any.
 - l. GSA's partial occupancy requirements.
 - m. Installation of GSA's furniture, fixtures, and equipment.
 - n. Responsibility for removing temporary facilities and controls.
 - o. Minutes: A/E firm will take minutes and provide to all attendees.

1.7 UTILITY SERVICE INTERRUPTIONS

- A. Utility Service Interruption Plan: Within 14 calendar days from Notice to Proceed (NTP) Contractor shall submit a utility service interruption plan for the project. Plan shall include dates and times of each scheduled interruption, with estimated period of outage, list of existing equipment that will be affected by the interruption, proposed sequence of equipment shut-down and start-up, and responsible personnel.
1. Keep interruptions and periods of interruption to a minimum.
 2. Schedule interruptions during times when the facility is unoccupied.
 3. Plan must be approved in writing by the Building Manager and the Government or the Government's representative. If not approved, consult with the Building Manager, and revise and resubmit the plan until approved.
- B. Coordination of Interruptions: Sufficiently in advance of each scheduled utility interruption, the Contractor shall issue a notice to all affected parties, confirming each provision of the interruption, or canceling and rescheduling. Coordinate with the Building Manager and Government's representative, and confirm that the responsible personnel are prepared to execute the shut-down and start-up of affected existing equipment, prior to each interruption.

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1.8 SUBMITTALS

- A. Subcontract List: Within 7 calendar days from Notice of Award 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.
 - 4. Coordination Drawings: Comply with the shop drawing requirements specified in Division 1 Section "Submittal Procedures".
- B. Waste Management: Within 14 calendar days after Notice of Award, submit the waste management plan, followed by monthly implementation reports.
- C. Staff Names: Within 7 calendar days after Notice of Award, submit a list of principal staff assignments, including the superintendent and other primary personnel at the Project site. Identify individuals by name, duties and responsibilities, home address, and business and home telephone numbers.
- D. Utility Service Interruptions: No later than 3 calendar days prior to the first planned interruption, submit the utility service interruption plan, followed by confirmed scheduled shut-down notices at least 3 calendar days prior to each interruption.

PART 2 - PRODUCTS (NOT APPLICABLE)

PART 3 – EXECUTION

3.1 GENERAL COORDINATION PROVISIONS

- A. Inspection of Conditions: Prior to installations, require the installer of each major component to inspect both the substrate and conditions under which work is to be performed.
 - 1. Do not proceed until unsatisfactory conditions have been corrected in an acceptable manner.
 - 2. Coordinate temporary enclosures with required inspections and tests to minimize the necessity of uncovering completed construction for that purpose.
- B. Construction in Progress: Keep construction in progress, and adjoining materials in place, clean during handling and installation. Apply protective coverings where required for protection from damage or deterioration.
- C. Completed Construction: Clean completed construction, and provide maintenance, as frequently as necessary to prevent damage or soiling or other deterioration through the remainder of the construction period. Adjust and lubricate operable components as necessary to assure operability without damage.

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- D. Limiting Exposures: Supervise construction operations to prevent exposure of any part of construction, completed or in progress, to harmful, dangerous, damaging or otherwise deleterious conditions during the construction period. Such conditions include but are not limited to the following:
1. Excessive static or dynamic loading.
 2. Excessive internal or external pressures.
 3. Excessively high or low temperatures.
 4. Thermal shock.
 5. Excessively high or low humidity.
 6. Pollution and air contamination.
 7. Water or ice.
 8. Chemicals and solvents.
 9. Light.
 10. Radiation.
 11. Puncture.
 12. Abrasion.
 13. Heavy traffic.
 14. Soiling, staining, and corrosion.
 15. Bacteria.
 16. Rodent and insect infestation.
 17. Combustion.
 18. Electrical current.
 19. High-speed operation.
 20. Improper lubrication.
 21. Unusual wear or other misuse.
 22. Contact between incompatible materials.
 23. Destructive testing.
 24. Misalignment.
 25. Excessive weathering.
 26. Unprotected storage.
 27. Improper shipping or handling.
 28. Theft or vandalism.

END OF SECTION 01 31 00

PROJECT MANAGEMENT AND COORDINATION

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SECTION 01 31 20 - CRITICAL PATH METHOD

PART 1 – GENERAL

1.1 SUMMARY

- A. Develop a detailed Network Plan using electronic scheduling software, demonstrating complete fulfillment of all Work shown in the contract documents. Regularly update the Network Plan in accordance with the requirements of this Section, and use it in planning, coordinating, and performing all the Work under this contract. Schedule activities shall accurately depict the entire scope of work to be performed to complete the project including, but not limited to, all activities of subcontractors, consultants, equipment vendors and suppliers, GSA, and others, as required. Provide look ahead schedules as specified in Division 01 - Project Management & Coordination.
- B. The purpose of the Project Schedule shall be to:
 - 1. Plan the project and communicate that plan.
 - 2. Provide the status and forecast the timely completion of the work.
 - 3. Record the actual start dates, actual finish dates and actual sequence of the work.
 - 4. Ensure adequate planning, staffing, scheduling and reporting during execution of the Work by the Contractor;
 - 5. Ensure coordination of the Work among all affected parties;
 - 6. Assist the Contractor and GSA in the preparation and evaluation of the Contractor's monthly progress payments; and
 - 7. Assist the Contractor and GSA in monitoring the progress of the work, and evaluating proposed changes to the Contract and/or requests for additional time to Project Completion.

1.2 RELATED SECTIONS

- A. The Government is providing the references included in this sub-section for information purposes only and is not intended to provide a comprehensive, all-inclusive list of any and all potentially relevant portions of the Contract Documents. Drawings and provisions of the Contract including General and Supplementary Conditions apply to this Section as if repeated herein.
- B. Section 01 29 00 – Payment Procedures
- C. Section 01 32 00 – Construction Progress Documentation

1.3 DEFINITIONS

- A. Activity - An element of the Work or task performed during the course of the project. Each schedule activity shall be a clearly defined, manageable and monitorable task depicting an estimated duration and an estimated cost. Each activity shall be limited to one trade unless the GSA specifically approves otherwise on an exception basis.

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- B. Baseline Schedule - The original work plan approved by GSA as the Project Schedule depicting the contractor's plan to prosecute the work.
- C. Constraint - A scheduling restriction imposed on the start, finish or float of an activity. No constraints will be allowed. Exception: for projects with limited or no storage areas requiring "just in time" deliveries, a zero free float may be acceptable.
- D. Critical Path - The Project critical path is defined as the longest, continuous path of interrelated activities depicting project work from Notice To Proceed (NTP) to project completion. All reports and graphics indicating the Critical Path shall depict the longest path of interrelated activities. Unless otherwise approved by GSA, the Baseline Schedule Critical Path shall use all allotted Contract time. The contractor has the right to develop a schedule that forecasts an early finish. However, all time between the forecasted early finish of substantial completion and the contractual substantial completion date shall be shown as float and shall be available to the Project team.
- E. Critical Path Method (CPM) - A scheduling technique using activities, durations, and interrelationships/dependencies (logic), such that all activities are interrelated with logic ties from the beginning of the project to the completion of the project. There shall be no open ended relationships in the schedule. All activities shall have at least one successor with a finish relationship ("finish to start" or "finish to finish") except the last activity in the network.
- F. Data Date - The date to which progress is updated. In most scheduling software, the data date represents the next day of work and all progress is updated through the day prior to the data date.
- G. Float - is the difference between the forecasted early dates and the forecasted late dates; the amount of time an activity can be delayed without delaying the Substantial Completion Date. Float is considered a project commodity jointly shared between GSA and the Contractor and shall be used in the best interest of completing the Project on time. The critical path is not dependent on float. Float is calculated after the critical (longest) path has been determined.
- H. Float Suppression - the masking of available float through the use of constraints, unreasonable logical relationships or unreasonable durations. Float suppression techniques are not allowed. On an exception basis, the use of a zero free float constraint to depict "just in time" deliveries on projects with little or no storage might be acceptable.
- I. Fragnet - A subset group of interrelated activities representing only a portion of the CPM schedule.
- J. Network Plan - The Network Plan is the entire database of activities, logic, durations, and all items relating to any activity input into the scheduling software and is the complete representation of the Project Schedule prepared using the Critical Path Method and graphically shown in a time-scaled form. The network shows the sequence and interdependence of the activities, and planned and actual progress by activity, required for complete performance of the Work.
- K. Project Schedule - The Project Schedule includes the Preliminary Schedule (submitted at bid or as determined by the CO), the approved Baseline Schedule (developed based on the Preliminary Schedule), and all subsequent Schedule Updates, Schedule Revisions, Recovery Schedules, and As-Built Schedule.
- L. Recovery Schedule - A schedule depicting the Contractor's plan for recovery of time lost on the project.

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- M. Schedule Revision - A schedule in which the plan for the work is revised. A Schedule Revision is required when the current schedule no longer represents the actual or planned prosecution of the Work.
- N. Schedule Update - A schedule in which only actual start dates, actual finish dates and duration percent complete is updated from the prior data date to the current data date. No revisions will be permitted in a Schedule Update (i.e. added activities, deleted activities, logical relationships, etc.).
- O. Time Impact Analysis - A technique to demonstrate the effect of a schedule revision or proposed revision against the current approved Project Schedule.
- P. Total Float - The amount of time an activity (or chain of activities) can be delayed without affecting the Project Substantial Completion Date.
- Q. Working Day - A Working Day is a calendar day scheduled for active prosecution of the work.

1.4 CRITICAL PATH METHOD SCHEDULE

- A. Provide a detailed, time-scaled computer generated Project Schedule with activities representing each portion of the Work for the entire Contract Performance Period. The Project Schedule shall use the Critical Path Method (CPM) for the planning, scheduling and reporting of the work to be performed under the contract.
- B. No unspecified constraints, float suppression techniques, or use of activity durations, logic ties and/or sequences deemed unreasonable by GSA shall be used in the Project Schedule.
- C. As defined by the Contract, the entire project performance period shall establish the Project Substantial Completion Date which shall be used in the planning and presentation of the Contractor's Project Schedule. GSA reserves the right not to approve any schedule deemed to have an unrealistic forecasted Substantial Completion Date. Government approval of an early completion Project Schedule shall not modify the Contractual Substantial Completion Date or Project Completion Date. The time difference between the Contractor's planned Substantial Completion Date and the Contract directed Substantial Completion Date shall be considered Project Float, jointly owned and for the mutual use of both the Contractor and GSA.

1.5 SUBMITTALS AND MEETINGS

- A. The Contractor shall submit the Baseline Project Schedule within seven (7) calendar days after approval of the Preliminary Schedule. The Baseline Schedule shall be the Contractor's detailed plan for ALL work from NTP through contract completion. All punchlist work shall be completed to, or prior to, the Contract Completion Date.
- B. Unless otherwise approved by the GSA, the Project Schedule shall include, but is not limited to, the following items:

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1. Activities necessary to depict time to prepare submittals, time for the GSA to review submittals, procurement, design, construction, third party inspections, close-out, and work by separate contractors.
 2. The schedule shall include separate activities for the submittal, review, procurement or fabrication, and delivery of key and long-lead items. The Project Schedule shall indicate submittal dates, and depict the review period as defined in the Contract or Supplementary Provisions for A/E/GSA review. Procurement/submittal activities shall be assigned codes that will allow these activities to be sorted and printed separately from the construction/close-out/commissioning work activities.
 3. The Baseline Schedule shall have a Data Date no later than NTP, and no activities shall be progressed to show work completed to date without prior acceptance of the GSA.
 4. Interrelationships (logic) and sequencing for ALL activities. Each activity shall have at least one successor (except for the last activity) relationship to form a logically connected Network Plan from NTP to the Contract Completion Date. Each activity shall have at least one successor with a finish relationship (finish-to-start or finish-to-finish relationship).
 5. Activity durations shall be in units of whole work days. Except submittal and procurement activities, durations shall not exceed one reporting period unless approved by the GSA. Durations for Government submittal reviews shall meet the requirements set forth in the Contract Documents. Activity durations shall not be overly short. One day durations shall not be assigned unless specifically requested by the contractor and specifically accepted by the GSA. Activity durations are expected to be between one week and one month, however shorter or longer durations can be assigned as needed to properly plan and coordinate the work.
 6. Contractual milestone events as defined in the Contract Documents including, but not limited to, phased work, work restrictions/access/shift work, and work being performed by separate contractors shall be included in the schedule. The substantial completion and project completion tasks shall be assigned to a seven (7) day work week calendar.
- C. Baseline Schedule Review Process and Submittal Requirements
1. The GSA will review the Baseline Schedule and provide comments to the Contractor within seven (7) calendar days of receipt of submittal and, if needed, will arrange for a Baseline Schedule Review Meeting with the Contractor for discussion of the schedule. The Baseline Schedule, when approved, shall become the basis for the next monthly Schedule Update submitted by the Contractor.
 2. Baseline Schedule Review Meeting. The Contractor shall present the Baseline Schedule to GSA at the review meeting, and describe the Contractor's means and methods for accomplishing the Work.
 3. In the event that GSA provides comments or the Baseline Schedule does NOT meet the requirements of this specification, the contractor shall, within seven (7) calendar days, revise the Project Schedule to bring it into compliance with these requirements, and Contractor shall make a full Baseline Schedule submission for GSA's review and approval.
 4. Upon approval of the Baseline Schedule by the GSA, the cost-loaded values shown in the Project Schedule and progress of activities will be used as a basis for determining progress payments. Monthly progress payments shall be based upon information developed using the current monthly Schedule Update. The computer generated cost report will be used by the GSA for verification of the Application for Payment submitted by the Contractor.

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5. GSA's approval of the Baseline Project Schedule does not relieve the Contractor of responsibility whatsoever for the accuracy or feasibility of the Project Schedule, or of the Contractor's ability to meet the Substantial Completion Date. Such acceptance does not create a warranty, expressed or implied, or acknowledge or admit the reasonableness of the activities, logic, durations, manpower, cost or equipment loading of the Contractor's Project Schedule.
 6. If the Contractor fails to timely submit the Baseline Schedule, the GSA may withhold approval of progress payments until the Contractor submits the required Project Schedule.
- D. Schedule Updates
1. The Contractor shall submit a weekly or biweekly or monthly Schedule Update that indicates the progress achieved since approval of the prior monthly Project Schedule update.
 2. GSA will review and provide comments on the Schedule Update within seven (7) calendar days of receipt of the Contractor's submission.
 3. If the Contractor fails to timely submit the Schedule Update, the GSA may withhold approval of progress payments until the Contractor submits the required Project Schedule Update.
 4. In the event of change modifications:
 - a. As determined by CPM schedule analysis perform a time impact analysis during the project or as-built analysis after the project is substantially complete, only delays beyond the control of the contractor which affect the Substantial Completion Date will be considered for a time extension.
 - b. When change modifications are proposed, potential delays are anticipated, or delays are experienced, the Contractor shall submit to GSA a written Time Impact Analysis describing the affect of each modification, potential delay, delay, or Contractor request on the Substantial Completion Date. This analysis shall be developed and submitted at the earliest time the Contractor becomes aware of a delay or potential delay, or as requested by the GSA. The preparation of Time Impact Analyses is considered part of the construction process and will be performed at no additional cost to the Government.
 - c. Failure of the Contractor to timely submit a Time Impact Analysis shall mean that it is mutually agreed that the particular modification, delay, or Contractor request does not require an extension of the contract time.
 - d. Approval or rejection of each Time Impact Analysis by the GSA shall be made within one week after receipt of each Time Impact Analysis, unless subsequent meetings and negotiations are necessary. Upon approval, a copy of the Time Impact Analysis signed by the GSA shall be returned to the Contractor and incorporated into the Project Schedule, depicting a revised contractual substantial completion date, at the next Schedule Revision which will become the current approved Project Schedule.
 - e. The Contractor shall submit a Time Impact Analysis as follows:
 - 1) Within five (5) work days after receipt of a written change modification.
 - 2) Within five (5) work days after receipt of a written notice by the GSA.
 - 3) Within five (5) work days from the beginning of a delay caused by unforeseeable circumstances.

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- (a) The Time Impact Analysis shall meet the requirements for submittal of a Schedule Revision including a Fragnet (see Section 1.05.F.3.c) with sufficient supporting documentation to enable the GSA to make a determination on the Contractor's request for time extension.

1.06 RESPONSIBILITY FOR COMPLETION

- A. If, in the opinion of the GSA, the Contractor falls behind the planned progress as noted by negative float shown on the current monthly Schedule Update, the Contractor shall take any and all steps necessary to improve its progress at no additional cost to the Government. This shall not be construed as prohibiting the Contractor from increasing the number of working hours, shifts per day, working days per week, or the amount of construction equipment, or any combination of the foregoing, to eliminate the delay in the scheduled progress.
- B. Failure of the Contractor to comply with the requirements of the GSA under Paragraph 1.06.A shall be grounds for determination by the GSA that the Contractor is not prosecuting the work with such diligence as will ensure completion within the contract time. Upon such determination, the GSA may terminate the Contractor's right to proceed with the work, or any separable part thereof, in accordance with the applicable provisions of the contract.

1.07 PAYMENTS TO CONTRACTOR

- A. The GSA shall review the Contractor's monthly request for payment upon receipt and shall process the request for payment based upon the current approved Schedule Update. The GSA will consider the Contractor's overall progress toward Project Completion along with the progress for discrete activities to determine the amount to be approved for the monthly payment request.

1.08 PERFORMANCE MONITORING

- A. The GSA may elect throughout, or at any time during, the Project to record the number of workers and construction equipment working on each construction schedule activity in each area of the Project. The GSA's request for this information will be without additional cost to the Government and shall be provided within five (5) work days of receipt of the GSA's written request. This information will be used by the GSA to evaluate the adequacy of the Contractor's performance and project manpower staffing, as well as any Contractor claims.

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- B. The Contractor is required to attend construction coordination meetings. As such, the Contractor shall present a copy of the current accepted schedule depicting the work planned for the next reporting period. The bar chart should be sorted as requested by the GSA. Information to be shown on the bar chart includes: Activity ID, Activity Description, Original Duration, Remaining Duration, Percent Complete, Area Code, Responsibility Code, Early Start/Actual Start, Early Finish, and Total Float.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION (NOT USED)

END OF SECTION 01 31 20

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SECTION 01 33 00 - SUBMITTAL PROCEDURES

PART 1 GENERAL

1.1 SUMMARY

- A. This Section includes certain administrative and procedural requirements for shop drawings, coordination drawings, schedules, samples and certain other quality assurance submittals.
- B. This section does not include requirements for the following submittals that are included in their specific sections:
 - 1. Inspection and test reports specified in Division 1 Section "Quality Control."
 - 2. Warranties specified in Division 1 Section "Product Requirements."
 - 3. Closeout submittals specified in Division 1 Section "Closeout Procedures."
 - 4. Record documents specified in Division 1 Section "Project Record Documents."
 - 5. Operation, maintenance and instruction manuals specified in Division 1 Section "Operation and Maintenance Documentation."
 - 6. Reports, schedules and other submittals specified in Division 1 Section "Construction Progress Documentation".
- C. Shop drawings, coordination drawings and schedules are further categorized and defined as follows:
 - 1. Shop drawings include drawings and schedules prepared for specific parts of the project, except for coordination drawings.
 - 2. Coordination drawings are specified in Division 1 Section "Project Management and Coordination."
 - 3. Product data includes manufacturer's standard catalogs, pamphlets and other printed materials that show and describe materials and items, and includes but is not limited to the following:
 - a. Product specifications.
 - b. Installation instructions.
 - c. Color charts.
 - d. Catalog cuts.
 - e. Rough-in diagrams and templates.
 - f. Wiring diagrams.
 - g. Performance curves.
 - h. Operational range diagrams.
 - i. Mill reports.
- D. Samples of actual materials and items shall be provided at such scale to allow delivery for review, as well as for field samples or mock-ups of full-size physical examples erected on-site or elsewhere, to establish a true-scale standard by which the corresponding work will be judged or a standard for compliance testing.
- E. Other quality assurance submittals include materials specifically prepared for the project, except drawings and schedules, and include but are not limited to the following:

SUBMITTAL PROCEDURES

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1. Design data and calculations.
 2. Certifications of compliance or conformance.
 3. Manufacturer's instructions and field reports.
- F. Approvals do not supersede requirements of the contract documents.

1.2 GENERAL SUBMITTAL REQUIREMENTS

- A. Coordination: Coordinate preparation and processing of submittals with performance of construction activities and with the Submittal Schedule specified in Division 1 Section "Construction Progress Documentation". Unless otherwise specified, submittals shall be transmitted via email as PDF electronic files to GSA according to the contractor's approved construction schedule and submittal schedule. . Transmit each submittal sufficiently in advance of the scheduled performance of related construction activities to avoid delaying the Work, allowing for the review times specified for submittals.
1. Coordinate each submittal with other submittals and related activities that require sequential scheduling, to allow for testing, purchase, fabrication and product delivery in a timely manner.
 2. Schedule transmittal of different categories of submittals for the same element of Work and for different elements of related parts of the Work at the same time. Notwithstanding the foregoing sentence, the Contractor shall provide a complete submittal package for each Division of the specification so as to enable the Government to review the related sections together. Coordinate submittals to enable approvals and acceptances so as not to inhibit orderly progress of the Work.
 3. GSA will return annotated file. Annotate and retain one copy of file as an electronic project record document file.
 4. Allow sufficient time for submittal review, corrections following the initial review, and re-submittal review before activities scheduled after the submittal approval.
 5. Failure on the part of the Contractor to indicate approval or acceptance on submittals prior to submission to Contracting Officer will result in their being returned to the Contractor without being acted upon.
 6. Any resubmission required after Government review shall be made within 10 calendar days after return of the submittal, unless specifically authorized otherwise by GSA.
 7. Submittals which are determined to be incomplete or otherwise substandard will be returned to the Contractor with no further review. Delays due to incomplete or rejected submittals will not be excused.
 8. Construction will not be allowed to proceed if submittals are not received in a timely manner, and will not result in an extension to the Contractor's Construction Schedule.
 9. Failure by the Contractor to provide the required submittals in a timely manner may result in withheld payments until submittals are up-to-date.
 10. Maintain one complete set of submittals at project site.
 11. Maintain an organized submittal register at project site. This will be an agenda item for progress meetings.

SUBMITTAL PROCEDURES

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12. The contractor to schedule and allow a minimum of ten working days for the Architect/Engineer submittal review. The comment period initiates upon the receipt of the submittal by the office performing the primary review. The period commences upon issue of the submittal by the office performing the primary review. If a submittal is extremely complex, the A/E may require additional time. This will be discussed prior to the submission and included in the contractors schedule. Such submittals may include structural steel, curtain wall, or complex systems requiring coordination with other systems.
- B. Submittal Identification and Information: Identify and incorporate information in each electronic submittal file as follows:
 1. Assemble each submittal item into a single indexed file incorporating submittal requirements of a single Specification Section and transmittal form with links enabling navigation to each submittal item.
 2. Name file with submittal number or other unique identifier, including revision identifier.
 - a. File name shall use Contract number and Specification Section number followed by a decimal point and then a sequential number (e.g., LNHS-061000.01). Re-submittals 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 GSA.
 4. Transmittal Form for Electronic Submittals: Use software-generated form from electronic project management software acceptable to GSA.
 - a. Project name.
 - b. GSA project number.
 - c. Date.
 - d. Name and address of Architect.
 - e. Name of Contractor.
 - f. GSA contract number.
 - g. Name of firm or entity that prepared submittal.
 - h. Names of subcontractor, manufacturer, and supplier.
 - i. Category and type of submittal.
 - j. Submittal purpose and description.
 - k. Specification Section number and title.
 - l. Specification paragraph number or drawing designation and generic name for each of multiple items.
 - m. Drawing number and detail references, as appropriate.
 - n. Location(s) where product is to be installed, as appropriate.
 - o. Related physical samples submitted directly.
 - p. Indication of full or partial submittal.
 - q. Transmittal number, numbered consecutively.
 - r. Submittal and transmittal distribution record.
 - s. Other necessary identification.

SUBMITTAL PROCEDURES

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1.3 SHOP DRAWINGS AND COORDINATION DRAWINGS

- A. Submit originally prepared information, drawn accurately to scale. Do not reproduce Contract Documents or copy standard printed materials as the basis for Shop Drawings and Coordination Drawings.
- B. Include at minimum the following information on Shop Drawings and Coordination Drawings:
 - 1. Dimensions.
 - 2. Identification of products and materials.
 - 3. Compliance with specified standards.
 - 4. Notation of coordination requirements.
 - 5. Notation of dimensions established by field measurements.
 - 6. Highlighted or encircled deviations from the Contract Documents.
- C. Sheet size: Except for templates, patterns and similar full-size drawings, submit Shop Drawings and Coordination Drawings on sheets of at least 8-1/2 by 11 inches (215 by 280 mm) but no larger than 30 by 40 inches (750 by 1000 mm).
- D. Submittals: Unless otherwise indicated, submit one electronic file (.pdf) of each drawing submittal through email. The file will be marked with action taken and returned.
- E. Distribution: When submittal is approved or accepted, Contractor shall prepare final electronic files, for the following purposes:
 - 1. One file shall be marked and retained as a "Record Document."
 - 2. Unless otherwise requested, one file shall be provided to the Contracting Officer.
 - 3. Additional prints shall be provided to the entities involved in the construction.
 - 4. Prints will be included in the Operation and Maintenance manuals.

1.4 PRODUCT DATA

- A. Collect Product Data into a single submittal for each system or element of construction. Mark each copy to show specific product choices and options applicable to the project. Product Data shall include the following information, where applicable:
 - 1. Manufacturer's printed recommendations.
 - 2. Compliance with recognized trade association standards.
 - 3. Compliance with recognized testing standards.
 - 4. Applicability of testing agency labels and seals.
 - 5. Notation of dimensions verified for fit by field measurements.
 - 6. Notation of coordination requirements.
- B. Preliminary Submittal: Prior to submittal of complete Product Data, submit a preliminary single copy of that part of Product Data when selection of options is required, such as for color charts. Preliminary submittal will be returned, with selection noted, for the Contractor's use in subsequent submittals.

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- C. Submittals: Unless otherwise indicated, submit one electronic copy of each Product Data submittal. One original copy will be retained and a copy will be marked with action taken and returned to the contractor.
- D. Distribution: When submittal is approved or accepted, Contractor shall distribute copies for the following purposes:
 - 1. One copy shall be marked and retained as a "Record Document."
 - 2. Additional copies shall be provided to the manufacturers, subcontractors, suppliers, installers, governing authorities and others as required for performance of the applicable construction activities.
 - 3. Copies required for operation and maintenance manuals

1.5 SAMPLES

- A. Submit full-size, fully fabricated samples, cured and finished in the manner specified. Samples shall be physically identical to the material or product proposed for use.
- B. Mount, display, or package samples to facilitate review of kind, color, pattern, texture and other qualities indicated, as a final check of these characteristics with other elements and for comparison of these characteristics with those of the actual component delivered and installed.
- C. Where variation in color, pattern, texture or other characteristic is inherent in the material or product, submit at least 3 multiple units that show approximate limits of the variations.
- D. Refer to other specification sections for requirements for samples that illustrate workmanship, fabrication techniques, and details of assembly, connections, operations and similar construction characteristics.
- E. Refer to other specification sections for samples to be returned to the Contractor for incorporation in the Work. Such samples must be in undamaged condition at time of use.
- F. Preliminary Submittal: Where color, pattern, texture or similar characteristics are specified to be selected from a manufacturer's range of standard choices, submit a preliminary single set sample of available choices prior to submittal of the complete sample. Preliminary submittal will be returned, with selection noted, for the Contractor's use in subsequent submittals.
- G. Submittals: Unless otherwise indicated and except for field samples or mock-ups of full-size physical examples erected on-site or elsewhere, submit not less than 3 sets of each sample submittal. One copy will be marked with action taken and returned. Comply with requirements in the individual specification section for field samples and mockups.
- H. Distribution: Except for field samples or mockups, when submittal is approved, Contractor shall distribute approved copies for the following purposes:
 - 1. One copy shall be marked and retained as a "Record Document" at the Project Site, and shall be available for comparison throughout the course of construction activity.
 - 2. Additional copies shall be provided to manufacturers, subcontractors, suppliers, installers, governing authorities and others as required for performance of the applicable construction activities.

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1.6 OTHER QUALITY CONTROL SUBMITTALS

- A. Submit other quality control submittals in compliance with requirements in the individual specification sections, including Division 1.
- B. Certifications: Submit notarized certifications indicating compliance with specified requirements. Certifications shall be signed by an individual authorized to sign on behalf of the Contractor.

1.7 REVIEW ACTION ON SUBMITTALS

- A. For electronic submittals,
 - 1. Submit electronic submittals via email as PDF electronic files.
 - a. GSA will return annotated file. Annotate and retain one copy of file as an electronic Project record document file.
- B. Compliance with specified characteristics is the Contractor's responsibility, and is not part of the Contracting Officer's review and indication of action taken.
- C. The contract documents shall prevail in case of review action conflict.
- D. Submittals without approval or acceptance shall not be used.
- E. Action Stamp:
 - 1. For paper or non-electronic submittal: Each submittal will be stamped with a uniform action stamp. The stamp shall be marked to indicate one of the following actions taken:
 - a. For electronic submittal: Provide a digital signature with digital certificate on electronically submitted certificates and certifications where indicated. For notarized signature if required, provide paper copies for signature.
 - b. Final Unrestricted Release: Where marked "Approved" or "Accepted", the work covered by the submittal may proceed, provided it complies with the requirements of the Contract Documents.
 - c. Final But Restricted Release: Where marked "Approved " or "Accepted" "As Noted", the work covered by the submittal may proceed, provided it complies with the notations or corrections on the submittal and with the requirements of the Contract Documents.
 - d. Return for Re-submittal: Where marked "Not Approved" or "Not Accepted", Revise and Resubmit", do not proceed with the work covered by the submittal, including purchasing, fabrication, delivery or any other activity. Revise or prepare a new submittal according to the notations on the submittal or on the return transmittal. Resubmit without delay, repeating as necessary to obtain a final release action mark.
 - e. No Action: Where a submittal is for the record or for information or for another purpose not requiring review action, the submittal may not be returned or may be returned and marked "Action Not Required."
- F. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.

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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.
 - h. Availability and delivery time information.
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.

1.8 SUBSTITUTION REQUEST PROCEDURES

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

END OF SECTION 01 33 00

SUBMITTAL PROCEDURES

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SECTION 01 35 25 – FIRE PREVENTION & PROTECTION IN CONSTRUCTION, ALTERATION, AND
DEMOLITION PROJECTS

GENERAL

1.1 Scope

- A. This specification shall apply to structures in the course of construction, alteration, or demolition, including those in underground locations.

1.2 Purpose

- A. This specification is intended to prescribe minimum safeguards for construction, alteration, and demolition operations in order to provide reasonable safety to life and property from fire during such operations.

1.3 Application

- A. This specification provides measures for preventing or minimizing fire damage during construction, alteration, and demolition operations.
- B. The Regional Fire Protection Engineer shall be consulted for guidance in application of this specification. The local responding fire department shall also be actively involved in all preplanning activities. The Authority Having Jurisdiction (AHJ) for all technical aspects of this specification and application thereof shall be the GSA Regional Fire Protection Engineer.
- C. Alteration activities shall be permitted to require the use of both the demolition and construction activity requirements, as applicable.
- D. A fire safety program shall be included in all construction, alteration, or demolition projects, and the right of the government to administer and enforce this program shall be established, even if the building is entirely under the jurisdiction of the contractor.

1.4 Equivalent Technologies

- A. Nothing in this specification is intended to prevent the use of systems, methods, or devices of equivalent or superior quality, strength, fire resistance, effectiveness, durability, and safety over those prescribed in this specification. Technical documentation shall be submitted to the regional GSA fire protection engineering staff to determine equivalency. The system, method, or device shall be approved for the intended purpose by the GSA fire protection engineering staff prior to being utilized. Systems, methods, or devices that are submitted for review after construction, alteration, or demolition starts, or after the systems, methods, or devices have been used, may be summarily rejected due to contractual considerations and/or technical considerations.

FIRE PROTECTION AND PREVENTION

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PART 2 – REFERENCES

- 2.1 Applicable Publications: Perform construction, alteration, and demolition operations in a manner conforming to the requirements of the latest edition of the following publications including all amendments to these publications:

Latest edition as of October 28, 2022 for this project.

- A. International Code Council (ICC):
 - 1. International Building Code
 - 2. International Fire Code
 - 3. International Mechanical Code
- B. National Fire Protection Association (NFPA):
 - 1. 10 Standard for Portable Fire Extinguishers
 - 2. 30 Flammable and Combustible Liquids Code
 - 3. 51B Standard for Fire Prevention During Welding, Cutting, and Other Hot Work
 - 4. 54 National Fuel Gas Code
 - 5. 58 Liquefied Petroleum Gas Code
 - 6. 70 National Electrical Code (NEC)
 - 7. 72 National Fire Alarm Code
 - 8. 80 Standard for Fire Doors and Fire Windows
 - 9. 101 Life Safety Code
 - 10. 241 Standard for Safeguarding Construction, Alteration, and Demolition Operations
 - 11. 13 Standard for the Installation of Sprinkler Systems
- C. Code of Federal Regulations
 - 1. 29 CFR, Part 1910: Occupational Safety and Health Administration (OSHA) General Industry and Health Standards.
 - 2. 29 CFR, Part 1926: OSHA Construction Industry Standards.
- D. American Society of Mechanical Engineers (ANSI/ASME):
 - 1. A17.1 Safety Code for Elevators and Escalators
- E. Testing Services or Laboratories: Construction shall be done and equipment and materials used that are in accordance with the latest edition of the following publications from Underwriters Laboratories Inc. (UL), or Factory Mutual Engineering Corporation (FM):
 - 1. UL 864 - Control Units for Fire Protective Signaling Systems
 - 2. UL Building Materials Directory
 - 3. UL Fire Protection Equipment Directory
 - 4. UL Fire Resistance Directory
 - 5. UL Electrical Construction Materials Directory
 - 6. FM P7825 Approval Guide
- F. U. S. General Services Administration
 - 1. PBS-P100 Facilities Standards for the Public Buildings Service
<http://www.gsa.gov/p100>

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- 2.2 Acquisition of Publications: Referenced CFR publications may be purchased from the Superintendent of Documents, U.S. Government Printing Office, U.S. Government Bookstore Chicago, IL 60605, Milwaukee, WI 53203, Detroit, MI 48226, Cleveland, OH 44199, Columbus, OH 43215, and Washington, D.C. 20402 [1-866-512-1800 or www.gpoaccess.gov]. The National Fire Protection Association publications are available from the NFPA, Quincy, MA 02269 [1-800-344-3555 or www.nfpacatalog.org]. The International Code Council Publications are available through the ICC Store [1-800-786-4452 or www.iccsafe.org/store].

PART 3 – EXECUTION

3.1 FIRE SAFETY PROGRAM

- A. Prior to commencing construction, the contractor shall appoint an on site fire safety program manager. For projects where the government retains the services of a construction manager or on site technical representative, the fire safety program manager shall be from that oversight organization. For operations in an occupied building where the government already has the services of a fire safety program manager, the government shall have the right to extend the services of this manager to the construction, alteration, or demolition site to provide those services.
- B. The fire safety program manager shall have knowledge of the applicable fire protection standards, available fire protection systems, and fire inspection procedures.
- C. The fire safety program manager shall assure that all requirements of this specification and of referenced codes and standards are being complied with throughout. This manager shall also have the authority to enforce provisions of this specification to assure compliance herewith.
- D. The Contractor's site specific fire safety program shall be reviewed, and implementation of fire safety provisions pertinent to the work shall be discussed. For this reason, a copy of the contractor's site specific fire safety program shall be provided to the Contracting Officer at least 15 days prior to the beginning of construction, alteration, or demolition activities. Refer to paragraphs 1.3.B., 1.3.D and 3.3.A in this section for further information.
- E. In case of a conflict between applicable regulations, the more stringent requirements shall apply. Any guidance in regard to interpretation of codes and standards shall be sought from the GSA Regional Fire Protection Engineer. The GSA Regional Fire Protection Engineer shall make the final decision on the proper compliance with this specification in case of conflicts.

3.2 COMPLIANCE WITH REGULATIONS

- A. Contractor Responsibility: The Contractor shall assume full responsibility and liability for compliance with all applicable codes, standards, and regulations pertaining to the fire & life safety of persons during execution of the work, and shall hold the government harmless for any action or omission on the Contractor's part, or that of the Contractor's employees or subcontractors, that results in illness, injury, or death.

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- B. The Contractor shall have written fire safety programs in compliance with NFPA 241 and the International Fire Code.
- C. The Contractor shall provide for required fire department pre-planning, fire department notification procedures and equipment as required by this specification, training of all on site contractor personnel on fire safety procedures, provision of fire extinguishers as required, protection of existing fire protection equipment and systems, and all other required equipment, procedures, and staff required by GSA standards and codes cited therein.
- D. Any contractor found operating outside of the approved fire safety program/plan shall be identified and removed from the project for the duration of the project. The contractor shall have neither extension of schedule nor any additional payment for delays as a result of contract personnel failing to comply with the approved fire protection impairment plan.

3.3 EMERGENCY SUSPENSION OF WORK

- A. When the Contractor is notified by the Contracting Officer, or the Contracting Officer's authorized representative, of non-compliance with the fire safety provisions of the Contract, the Contractor shall immediately, unless otherwise instructed, correct the unsafe or unhealthy condition.
- B. If the Contractor fails to comply promptly, all or part of the Work will be stopped by notice from the Contracting Officer or the Contracting Officer's authorized representative.
- C. When, in the opinion of and by notice given by the Contracting Officer or the Contracting Officer's authorized representative, satisfactory corrective action has been taken by the Contractor, work shall resume.
- D. The Contractor shall not be allowed any extension of time or compensation for damages in connection with a work stoppage for an unsafe or unhealthy condition.

3.4 SUBMITTALS

- A. Fire Safety Programs: The Contractor shall submit, for approval, copies of the project fire safety program, as applicable to the work scope, or required as a result of the fire safety program review, including but not necessarily limited to the following:
 - 1. Fire Protection Systems impairment procedures.
 - a. Installation of new fire protection systems as construction progresses.
 - b. Preservation of existing systems during demolition.
 - c. Temporary impairments to work directly on the involved system.
 - 2. Hot Work procedures.
 - 3. Temporary Heating Equipment.
 - 4. Ban on Smoking in Building and provisions for smokers.
 - 5. Waste Disposal/Housekeeping

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6. Flammable and Combustible Liquids and Flammable Gases.
7. Utilities
8. On Site Security
9. Development of prefire plan with the local responding fire department.
10. Access for the local responding fire department, clear access to facility fire department connections, and access roadways where required.
11. Rapid communication with everyone within the work site of a fire and evacuation. Provisions for rapid notification of building occupants outside of the work site of a fire and evacuation.
12. Protection of existing structures and equipment from exposure fires resulting from construction, alteration, and demolition operations.
13. Life safety measures to be provided to assure adequate life safety systems of egress for building occupants affected by the construction, alteration, or demolition. (i.e. alternate egress routes, temporary emergency lighting, relocated exit signage, training of floor fire wardens, etc.)
14. The inspection/oversight program to assure that elements of the fire safety program are in place and personnel properly trained.
15. Storage procedures to assure that project fire safety systems and procedures are not overwhelmed by an unanticipated fire load.
16. Protection of tenants, visitors, and others not related to operation.

3.5 FIRE AND EXPLOSION REPORTS

- B. A copy of each loss report that the Contractor or Subcontractors submits to their insurance carriers as a result of a fire or explosion shall be submitted to the Contracting Officer Representative (COR) within seven calendar days after the date of the incident.
- C. In the event a fire or explosion results in the injury of any individual(s) or the death of any individual(s), the Contractor, shall verbally notify the Contracting Officer immediately. If the incident results in an evacuation of the facility for 1 hour or longer or if the building is deemed unsafe or uninhabitable by local authorities after an incident, the Contractor shall verbally notify the Contracting Officer immediately. A written report shall be forwarded to the GSA Regional Fire Protection Engineer no later than 48 hours following the incident.
- D. In the event a fire or explosion takes place in a construction, alteration, or demolition site, the Contractor shall cooperate with Federal, State, and Local fire investigators to determine the cause. If the incident triggers a Federal Board of Inquiry, the Contractor shall provide all information and contractor personnel required by the Board.

3.6 PROTECTION OF PERSONNEL

- A. The Contractor shall take all necessary precautions to prevent injury to the public, occupants, or damage to property of others. The public and occupants includes all persons not employed by the Contractor or a subcontractor.

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- B. Where practical, the work area shall be fenced, barricaded, or otherwise blocked off from the public or occupants to prevent unauthorized entry into the work area. Care must be taken not to eliminate the means of egress for occupants of occupied areas of the building.

3.7 OPERATIONS WITHIN GOVERNMENT BUILDINGS

- A. Disruptions to fire alarm and sprinkler systems shall be kept to a minimum or avoided. Delineate phasing of construction to ensure that installations of new systems are expedited, and existing systems are kept in service until the replacement system is operational. See GSA Facilities Standards for the Public Buildings Service, PBS – P100 for further information.
- B. Temporary storage of equipment to be installed, combustible construction materials, or combustible packing materials shall not be permitted in unprotected structures under construction or alteration unless authorized by the authority having jurisdiction.
 - 1. Storage shall not be permitted in protected structures until protection is in service.
 - 2. Yard storage of equipment to be installed or combustible construction materials shall not be stored closer than 9 m (30 ft.) from the structure under construction or alteration.
- C. Where existing sprinkler systems are in place, they shall only be turned off when work is to be done on the sprinkler system. Work shall be done in such a manner as allows for the return to service of all sprinklers at the end of the work shift. Sprinklers and standpipes shall not be removed from the construction area nor shut off for more than one shift at a time. Hot work shall be prohibited during sprinkler impairments.
- D. The Contractor shall be responsible for and liable for all damages both direct and indirect resulting from the Contractor's personnel or subcontractor's personnel damaging existing fire protection and life safety systems and equipment during any construction, alteration, or demolition. When such damage occurs, the Contractor is responsible for immediately notifying the GSA Property Manager & the Contracting Officer, immediately repairing the damage and remaining on site until all damage has been repaired.
- E. The Contractor shall phase the installation of standpipes and sprinklers in accordance with the IFC and NFPA 241.
- F. The Contractor shall perform roofing operations as required in NFPA 241.
- G. Where a fire watch is required by GSA standards or codes referenced therein, that fire watch shall be provided with at least one approved means for notification of the fire department, and their sole duty shall be to perform constant patrols and watch for the occurrence of fire. Fire watches assigned as a part of any fire safety or impairment plan shall be trained and have documentation of hands on fire extinguisher training complying with 29 CFR 1910 within the previous twelve months. Likewise, they shall be trained on how to sound the alarm within the building during any impairment and to independently notify the public fire department of a fire emergency within the building. All fire watch personnel shall have a direct means of communication with the project superintendent.

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SECTION 01 35 26 - SAFETY AND HEALTH

PART 1 - GENERAL

1.1 SUMMARY

- A. References: In addition to publications referenced in the Construction Contract Clauses, the following publications designate and define hazardous materials and conditions and establish procedures for handling these materials and conditions.
1. 29 CFR, Part 1910: Occupational Safety and Health Administration (OSHA) General Industry and Health Standards.
 2. 29 CFR, Part 1926: OSHA Construction Industry Standards.
 3. 40 CFR, Part 61: National Emission Standards for Hazardous Air Pollutants.
 4. 40 CFR, Part 261: Environmental Protection Agency (EPA) Characteristics of Hazardous Waste.
 5. 40 CFR, Part 761, EPA Polychlorinated Biphenyls (PCBs), Manufacturing, Processing, Distribution in Commerce and Use Prohibitions.
 6. 40 CFR, Part 763: EPA Asbestos.
 7. National Fire Protection Association (NFPA) 70 (National Electric Code)
- B. Hazardous Materials: Some hazardous and toxic materials and substances are specifically included in 29 CFR Part 1910, subparts H and Z, and in 29 CFR Part 1926. Commonly encountered hazardous materials at GSA facilities include but are not limited to asbestos, silica, PCBs, explosives, flammable liquids solvents, reactives, and radioactive material.
1. Asbestos may be found in spray-on fireproofing, insulation, boiler lagging, pipe coverings, floor tile, mastic and other materials.
 2. PCBs may be contained in transformers, capacitors, voltage regulators, oil switches, mechanical insulation, and other materials.
 3. Lead based paints may have been used on painted surfaces.
 4. Silica is a common mineral found in construction material such as sand, stone, concrete, drywall, brick, and mortar.
- C. Acquisition of Publications: Referenced CFR publications may be purchased from the Superintendent of Documents, U.S. Government Printing Office, U.S. Government Bookstore Chicago, IL 60605, Milwaukee, WI 53203, Detroit, MI 48226, Cleveland, OH 44199, Columbus, OH 43215, and Washington, D.C. 20402 [1-866-512-1800 or www.access.gpo.gov/su_docs]. The National Electric Code is available from the NFPA, Quincy, MA 02269 [1-800-344-3555 or www.nfpacatalog.org].

1.2 PRE-CONSTRUCTION SAFETY MEETING

SAFETY AND HEALTH

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- A. Prior to commencing construction, representatives of the Contractor, including the principal on-site project representative and one or more safety representatives, shall meet with designated representatives of the Contracting Officer for the purpose of reviewing the Contract's safety and health requirements.
- B. The Contractor's overall safety and health plan, project/scope site specific safety plan, based on the contract scope, and job hazard analyses shall be reviewed. Implementation of safety and health provisions pertinent to the work shall be discussed. For this reason, a copy of the contractor's safety and health plan that incorporates a project/scope site-specific safety and health plan and job hazard analyses shall be provided to the Contracting Officer at least 10 days prior to this meeting. For required submittals as part of this specification, refer to paragraph 1.4 for details.
- C. A copy of the Contractor's Chemical Inventory List, along with copies of all Safety Data Sheets (SDS's), shall be submitted during this meeting; refer to paragraphs 1.4.A.7. for further information.

1.3 COMPLIANCE WITH REGULATIONS

- A. The Work, including contact with or handling of hazardous materials, disturbance or dismantling of structures containing hazardous materials, and disposal of hazardous materials, shall comply with the applicable requirements of 29 CFR Parts 1910 and 1926, and 40 CFR Parts 61, 261, 761 and 763.
 - 1. Work involving disturbance or dismantling of asbestos or asbestos containing materials, demolition of structures containing asbestos and removal of asbestos, shall comply with 40 CFR Part 61, Subparts A and M, and 40 CFR Part 763, as applicable.
 - 2. Work shall additionally comply with applicable state and local safety and health regulations.
 - 3. In case of a conflict between applicable regulations, the more stringent requirements shall apply.
 - 4. Work involving the cutting, grinding, drilling, or crushing of material known to contain silica, such as sand, stone, concrete, drywall, brick and mortar must comply with 1926.1153.
- B. Contractor Responsibility: The Contractor shall assume full responsibility and liability for compliance with all applicable codes, standards, and regulations pertaining to the health and safety of their personnel and building occupants, members of the public, and emergency response personnel during execution of the work, and shall hold the government harmless for any action on the Contractor's part, or that of the Contractor's employees or subcontractors, that results in illness, injury, or death.
 - 1. The Contractor shall have written safety and health programs that are required that comply with 29 CFR Parts 1910 and 1926.
 - 2. The Contractor shall provide appropriate emergency first aid materials and equipment on site. In addition, the contractor must provide at least the following on site: a twenty-pound ABC-rated fire extinguisher; biohazard barrier tape and safety cones to isolate bloodspills; adequate absorbent materials, equipment and protective gear to collect any chemical spill that might occur. Finally, a list of emergency phone numbers and points of contact for fire, hospital, police, ambulance, and any other necessary contacts including required competent or qualified individuals required for the project scope shall be posted at the worksite.

SAFETY AND HEALTH

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1.4 SUBMITTALS FOR REVIEW

The following is a list of safety-related documentation that may need to be submitted by the contractor as part of this health and safety specification for compliance with certain OSHA standards. This list does not include all OSHA mandated plans, certifications, and notices but focuses on those plans or programs, containing policies, and procedures, that must exist in written form for projects awarded by GSA, or as part of the project scope. Submittal requirements shall be SPECIFIC to the site and the work that will be performed by the contractor(s) as dictated by the project scope.

A. Safety and Health Documents:

The contractor shall submit, for GSA review and acceptance, the following documents.

1. A copy of the company's overall safety and health plan when the plan is referenced as part of the project/scope site safety and health plan listed in 1.4.A(2)

2. A project scope site specific safety and health plan

This submission includes safety and health plan information only applicable to the work scope. General safety programs may have been discussed as part of the company's overall safety and health plan and can be referenced as part of this document, but only if the company's overall plan specifically addresses only the work that the contractor will be performing as part of the scope of this project. If the company's overall safety and health plan is too vague, or includes more details than what is performed during this project scope, the project/scope specific health and safety plan for specific programs listed in 1.4A(2) (a) through (q) needs to be developed. This plan submittal will describe only the specific work taking place as part of the project and how safety measures impact the specific program listed. The contractor shall develop and implement the project scope site specific safety and health plans as part of their work.

A project scope site specific safety and health plan shall include a discussion of the following types of activities that will be taking place as part of the project scope, but are not necessarily limited to the following:

- (a) Occupational Noise Exposure.
- (b) Fall Protection.
- (c) Personnel Protective Equipment.
- (d) Control of Hazardous Energy.(Lock Out/Tag Out)
- (e) Electrical Safety Related Work Practices.
- (f) Lead
- (g) Asbestos
- (h) Respirator Protection.
- (i) Confined Space Entry
- (j) Hazard Communication
- (k) Crane Hoisting Inspection Program
- (l) Trenching and Excavation
- (m) Hot Work

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- (n) Machine Guarding
- (o) Spill Response Plans
- (p) PCB handling/transportation
- (q) Silica (including a written exposure plan)
- (r) Other as applicable for the scope of the project

If the scope of the project does not involve work that fall into categories 1.4A(2) (a) through (r) the contractor will still include the category in his site-specific safety health and safety plan and must specify N/A (not applicable) to the project.

This plan covering all phases of operations listed in 1.4A(2) (a) through (q) above must also include.

- (i) Number, type, and experience of employees used in the work project.
- (ii) Description of how applicable safety and health regulations and standards are to be met.
- (iii) Type of protective equipment and work procedures to be used.
- (iv) Emergency procedures for accidental spills or exposures.
- (v) Procedures for disposing or storing the toxic/hazardous materials used, handled, stored, or generated on site.
- (vi) Identification of possible hazards, problems, and proposed control mechanisms.
- (v) Protection of tenants, visitors, and others not related to operation.
- (vi) Interfacing and control of any subcontractors.
- (vii) Identification of any required analyses, demonstrations, and validation requirements.
- (viii) Designation letter identifying the Contractor's Safety and Occupational Health Officer. This individual in this position shall be a trained and experienced individual responsible for the development, implementation, and oversight/enforcement of the Contractor's Safety Plan on site. Any subcontractor's activities and operations will also be addressed.

3. Site Specific Job Hazard Analysis

Included as a part of the project scope site-specific safety and health plan submittal for each applicable topic included in 1.4A(2) (a) through (q) above, will be a site-specific job hazard analysis, for each work function to be utilized in the project.

Each job hazard analysis for each specific applicable program shall include job steps, potential occupational hazards, and the action/procedure to control, minimize or eliminate the potential hazards and risks, as well as any additional information that serves to increase the safety and health of workers performing the specific job.

The project scope site-specific safety and health plans, with program specific job hazard analyses, are also required prior to the safety meeting specified in 1.2.

An example Job Safety Analysis (JSA) form is included for use at the end of this specification. A contractor may use this form or their own JSA form as long as it contains at least the minimum information set forth in the GSA example JSA form.

4. Project Contact List:

In addition to or as included with the company's overall safety and health plan or project scope site-specific safety and health plan, the Contractor shall include the firm's emergency procedures and contact persons, job title with contact telephone numbers. Any time a project specific safety program requires a competent or qualified person be utilized as part of the regulation, that individual's name, phone number and safety program in which they are competent or qualified in shall be included.

5. Permits

If hazardous materials are disposed of offsite, submit copies of shipping manifests and permits from applicable federal, state or local authorities and disposal facilities and submit certificates that the materials have been disposed of in accordance with regulations.

6. Accident Reporting:

Any accident or occupational illness which will require reporting to the Contractor's insurance carrier(s) and/or to the Occupational Safety and Health Administration (OSHA) must be reported to the Regional Fire Protection and Safety Branch no later than 48 hours following the incident. GSA Form 3620, "Report of Injury/Illness or Accident," shall be used for this requirement.

A copy of each accident report that the Contractor or Subcontractors submits to their insurance carriers shall be submitted to the Contracting Officer Representative (COR) within seven calendar days after the date of the accident.

In the event the incident results in an individual's hospitalization, amputation, loss of an eye, or death, the Contractor, shall verbally notify the Contracting Officer (CO) immediately verifying that applicable OSHA reporting timeframe provisions have been followed. A written report shall be forwarded to the CO no later than 48 hours following the incident.

This information shall be included in the project scope site-specific safety and health plan

7. Chemical Inventory List:

The Contractor shall develop and submit a complete chemical inventory list of chemicals that will be used, handled, and/or stored during the project and their associated Safety Data Sheets (SDS). This submittal would be included as part of the project scope site specific safety and health plans for 1.4A(2)(j). Hazard Communication.

A copy of the list and SDS's must also be provided to both the Contracting Officer's Representative and the GSA Property Manager's office at the Safety Meeting discussed in paragraph 1.2, above. If new chemicals are introduced over the course of the project, an updated list and SDS shall be provided to the COR and the GSA Property Manager. In addition, the Contractor and all subcontractors must assure that the SDS's for each chemical identified above must be available on site, readily accessible, and in compliance with OSHA regulations. All chemicals will be properly labeled.

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8. Other Submittals:

If agreed to in writing at the pre-construction safety meeting, other submittals may be required.

PART 2 - PRODUCTS

2.1 PERSONAL PROTECTIVE EQUIPMENT

- A. Special facilities, devices, equipment, and similar items used by the Contractor in execution of the Work shall comply with 29 CFR Part 1910, Subpart I and all other applicable regulations.

2.2 HAZARDOUS MATERIALS

- A. The Contractor shall bring to the attention of the Contracting Officer, or the Contracting Officer's authorized representative, any material encountered during execution of the work that the Contractor suspects is hazardous.
- B. The Contracting Officer shall determine whether the Contractor shall perform tests to determine if the material is hazardous.
- C. If the Contracting Officer directs the Contractor to perform tests and the material is found to be hazardous, or if the material is found to be hazardous without Contractor testing, a change to the Contract price may be provided, subject to the applicable provisions of the Contract.

2.3 UNFORESEEN HAZARDS

- A. Should any unforeseen or site-specific safety-related factor, hazard, or condition become evident during the performance of work at this site, it shall be the Contractor's responsibility to bring such to the attention of the Contracting Officer, both verbally and in writing, as quickly as possible for resolution. In the interim, the Contractor shall take prudent action to establish and maintain safe working condition, to safeguard their employees, tenants, all building tenants, the public, emergency responders and the environment.

PART 3 - EXECUTION

3.1 EMERGENCY SUSPENSION OF WORK

- A. When the Contractor is notified by the Contracting Officer, or the Contracting Officer's authorized representative, of non-compliance with the safety or health provisions of the Contract, the Contractor shall immediately, unless otherwise instructed, correct the unsafe or unhealthy condition.
 - 1. If the Contractor fails to comply promptly, all or part of the Work will be stopped by notice from the Contracting Officer or the Contracting Officer's authorized representative.

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2. When, in the opinion of and by notice given by the Contracting Officer or the Contracting Officer's authorized representative, satisfactory corrective action has been taken by the Contractor, work shall resume.
3. The Contractor shall not be allowed any extension of time or compensation for damages in connection with a work stoppage for an unsafe or unhealthy condition.

3.2 PROTECTION OF PERSONNEL

- A. The Contract shall take all necessary precautions to prevent injury to the public, occupants, or damage to property of others. The public and occupants includes all persons not employed by the Contractor or a subcontractor.
- B. Where practical, the work area shall be fenced, barricaded, or otherwise blocked off from the public or occupants to prevent unauthorized entry into the work area. Also:
 1. Provide traffic barricades and traffic control signage where construction activities occur in vehicular areas.
 2. Corridors, aisles, stairways, doors, and exits shall not be obstructed or used in a manner to encroach upon routes of ingress or egress utilized by the public or occupants, or to present an unsafe or unhealthy condition to the public or occupants.
 3. Store, position, and use equipment, tools, materials, scraps, and trash in a manner that does not present a hazard to the public or occupants by accidental shiftings, ignition, or other hazardous activity.
 4. Store and transport refuse and debris in a manner to prevent unsafe and unhealthy conditions for the public and occupants. Cover refuse containers, and remove refuse on a frequent regular basis acceptable to the Contracting Officer. Use tarpaulins or other means to prevent loose transported materials from dropping from trucks.

3.3 ENVIRONMENTAL PROTECTION

- A. Dispose of solid, liquid and gaseous contaminants in accordance with local codes, laws, ordinances, and regulations.
- B. Comply with applicable federal, state and local noise control laws, ordinances and regulations, including but not limited to 29 CFR 1910.95 and 29 CFR 1926.52.

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JOB SAFETY ANALYSIS
Safety Information for the General Services Administration

Name of Contractor: JSA Conducted by:
Title of Project: Project Location:
Task:

| Task steps | Potential Hazards | Hazard Controls |
|-------------------|-------------------|-------------------------------|
| | | |
| | | |
| | | |
| | | |
| | | |
| Required Training | | Equipment Used, including PPE |

END OF SECTION 01 35 26 (01595)

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SECTION 01 40 00 - QUALITY ASSURANCE & CONTROL REQUIREMENTS

PART 1 GENERAL

1.1 SUMMARY

- A. This section includes administrative and procedural requirements for quality assurance and quality control services.
 - 1. See Section 01 73 10 Cutting and Patching for repair of work in place.
- B. Quality Assurance & Control: The Contractor is solely responsible for developing, implementing, and providing for all quality control and related processes in the Contractor's Quality Control Plan to ensure that all parts of the project meet or exceed all of the requirements as set forth in the Contract Documents.
 - 1. The testing and inspections indicated in the Specifications (Testing) is a spot checking program identified by the AE per design or building code requirements, performed by an Independent Testing Agency (Agency), and is not intended as a portion of the Contractor's Quality Control Plan.
 - 2. The presence of the Agency shall in no way relieve the Contractor of his obligation to perform the work in accordance with the Contract Documents.
 - 3. The Testing indicated in the Specifications cannot be used to refute conditions of suspected poor quality noticed in the field.
 - 4. In order to provide for a measure of the Contractor's quality control, the Government, either with its own employees or contractors, may [continuously] monitor the Contractor's quality control and related processes. This monitoring is not a part of the Contractor's Quality Control Plan.
 - 5. To the extent that the Contractor fails or otherwise refuses or neglects to develop, implement, or provide for all quality control and related processes, the Government may, in addition to any other available remedies under the Contract, elect to perform quality assurance beyond that indicated in the Specifications and charge the Contractor for any and all costs related thereto.
- C. Quality assurance and quality control include tests, inspections and related actions, including reports, performed by the Contractor, manufacturers, independent agencies or governing authorities.
 - 1. These testing and inspection services are required for, products, customized fabrication and installation procedures as well as for items to be professionally designed by the Contractor (delegated design).
 - 2. Product testing shall be done by a Nationally Recognized Testing Laboratory (NRTL) and National Voluntary Laboratory Accreditation Program (NVLAP), or other GSA approved testing facility.
- D. The independent quality assurance testing and inspection (Testing) requirements for individual construction materials and activities are included in the Specification sections that specify those construction materials and activities.
- E. Mock-ups: Full-size physical assemblies that are constructed on-site unless otherwise directed by GSA. Mock-ups are constructed to verify selections made under Sample submittals; to demonstrate aesthetic effects as well as qualities of materials and execution; to review coordination, testing, or operation; to show interface between dissimilar materials; and to demonstrate compliance with specified installation

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tolerances. Mock-ups may be done on the interior or exterior. Mock-ups are not Samples. Approved mock-ups establish the standard by which the Work will be judged.

F. Definitions

1. Source Quality Control Testing is done at the product source.
2. Field Quality Control Testing is done on site.

1.2 TESTING AND INSPECTION REPORTS: THE CONTRACTOR THE CONTRACTOR'S TESTING AGENCY(IES) AND THE AGENCY, WHERE THEY PERFORM THE SERVICES, SHALL SUBMIT A CERTIFIED WRITTEN REPORT OF EACH TEST, INSPECTION OR OTHER QUALITY CONTROL SERVICE. MAINTAIN A LOG BOTH OF ACCEPTED AND REJECTED REPORTS INCLUDING CORRECTIVE ACTIONS TAKEN AND DATE OF RETESTING AND COMPLIANCE. PAPER COPIES: THE AGENCY SHALL SEND CERTIFIED COPIES OF TEST AND INSPECTION REPORTS AS SPECIFIED TO THE FOLLOWING PARTIES:

A. 2 copies to the Government.

B. 2 copies to the Contractor

C. 2 copies to the A/E

1. Testing and inspection reports shall include but not be limited to the following:
 - a. Date of issue.
 - b. Project title and number.
 - c. Name, address, and telephone number of testing agency.
 - d. Dates and locations of samples and tests or inspections.
 - e. Names of individuals making the test or inspection.
 - f. Designation of the work and test method.
 - g. Identifications of product and specification section.
 - h. Complete test or inspection data.
 - i. Test results and an interpretation of test results.
 - j. Ambient conditions at the time of sample taking and testing.
 - k. Certify whether tested or inspected Work complies with Contract Document requirements.
 - l. Name and signature of laboratory inspector.
 - m. Recommendations on retesting.
2. All quality operations shall within 24 hours notify, by personal contact and written notice, GSA's representative and the Contractor of irregularities or deficiencies observed in the Work during performance of their services.
3. All quality operations shall maintain a log of all their tests and inspections and a separate log of those that do not conform to the requirements of the Contract Documents. Both logs shall be published and reviewed weekly with the Contractor and the Government and/or at the weekly meeting.

1.3 RESPONSIBILITIES

- A. Contractor Responsibilities: Unless specifically indicated otherwise, the Contractor shall provide the quality control services including those required by local jurisdictions.

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1. Obtain copies of applicable codes, standards, procedures, regulations, etc. relative to materials, procedures, testing and inspection on the Project and make those available at the Project site for reference.
- B. Contractor shall submit each testing agency's firm name, and credentials to perform the specified services, to the Government for GSA's approval at least 15 calendar days before scheduled inspections or tests.
- C. Retesting: The Contractor is responsible for retesting, including repeated inspections and other services, where results of the initial quality control services indicate noncompliance. The Contractor shall be responsible for the Agency or an equally qualified agency for these services. If the Agency does not provide the retesting or inspection, the Contractor shall be responsible for having the Agency observe the testing and inspection work.
 1. Tests for Suspected Deficient Work: If in the opinion of the Government, any of the work of the Contractor that does not appear to conform to requirements, the Contractor shall make the tests that the Government deems advisable to determine its conformance to the Contract Documents.
 2. The government shall pay the costs if the tests prove the suspected work to be satisfactory.
- D. Associated Services: The Contractor shall cooperate with others, including the Agency, performing tests, inspections and other quality services, and shall provide reasonable auxiliary services as requested. Contractor shall notify the testing and inspection entities sufficiently in advance of operations to permit their timely assignment of personnel. Auxiliary services include but are not limited to the following:
 1. Provide access to the work and all documents (Contract documents, shop drawings, product data, Contractor and Sub-Contractor testing and inspections, etc.).
 2. Furnish incidental labor and facilities necessary to facilitate inspections and tests.
 3. Provide adequate quantities of representative samples of materials that require testing or assist the agency in taking samples.
 4. Provide facilities for storage and curing of test samples and equipment.
 5. Deliver samples to testing laboratories.
 6. Provide security and protection of samples and test equipment at the Project site.
- E. Duties of the Independent Testing Agency (Agency): The Agency engaged to perform tests, inspections and other quality services shall cooperate with GSA's representative and the Contractor in performance of the Agency's duties.
 1. The Agency shall provide qualified personnel to perform required inspections and tests.
 2. The Agency shall provide certifications and a list of personnel assigned to each portion of the work.
 3. The Agency is not authorized to release, revoke, alter or enlarge requirements of the Contract Documents or approve or accept any portion of the Work.
 4. The agency shall not perform any duties of the Contractor.
 5. The Testing Agency's proposal shall contain the outlined Testing based on a unit price basis for tests and inspections and on an hourly basis for personnel.
 6. The Agency shall certify the test results and observations.
 7. The Agency shall interpret whether or not their results and observations meet specified Project requirements.

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8. The Agency shall submit reports per Section: Testing and Inspection Reports, above.
 9. The Agency shall maintain logs per Section: Testing and Inspection Reports, above.
 10. The Agency shall review the applicable certificates of the Contractor's personnel to verify the validity and current status of the certificate.
 11. For construction personnel without necessary certificates, the Agency shall oversee the certification process of construction personnel to ensure their qualifications to perform the specified duties. The Contractor shall be responsible to the Agency for these services.
 12. The Agency shall obtain and review the project plans and specifications with the Government as soon as possible prior to the start of construction.
 13. The Agency shall attend preconstruction conferences to coordinate materials inspection and testing requirements with the planned construction schedule. The Agency shall participate in such conferences where the Testing is indicated throughout the course of the project.
- F. Independent Testing Agency Payment: The Contractor shall obtain and include the Agency's cost in the Contract Sum.
1. The Contractor shall submit payments for the Agency, track the Agency's budget and keep the GSA informed on projected Agency costs and remaining budget.
 2. Only the GSA can modify the Agency's scope.
- G. Coordination: The Contractor shall coordinate the sequence of activities to accommodate required services with a minimum of delay.
1. Activities shall be coordinated to avoid the necessity of removing and replacing construction to accommodate inspections and tests.
 2. The Contractor shall be responsible for scheduling times for inspections, tests, taking samples and similar activities.
- 1.4 QUALIFICATIONS OF THE INDEPENDENT TESTING AGENCY (AGENCY) AND CONTRACTOR TESTING AGENCIES
- A. A qualified independent testing agency shall be an accredited entity engaged to perform tests and inspections, both at the Project site or elsewhere and to report on and to interpret results of those tests or inspections. Testing agencies shall be acceptable to GSA and the Agency shall be authorized by authorities having jurisdiction to operate in jurisdiction where project is located.
- B. Unless other accreditation is specifically specified in the applicable individual section, each testing agency shall be prequalified as complying with the American Council of Independent Laboratories "Recommended Requirements for Independent Laboratory Qualifications", or shall be recognized by the Occupational Safety and Health Administration (OSHA) in accordance with 29 CFR Part 1910.7 to test and approve equipment or materials for their safe intended use. Each testing agency shall specialize in the types of tests and inspections to be performed.
- C. Testing agencies shall be authorized by authorities having jurisdiction to operate in the jurisdiction where the project is located. Testing agency qualifications: NRTL (Nationally Recognized Testing Laboratory) per 29 CFR 1910.7, and NVLAP (National Voluntary Laboratory Accreditation Program) per NIST., and documented per ASTM 329 and is acceptable to GSA

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1.5 CONTRACTOR QUALITY CONTROL PLAN

- A. Contractor's Quality-Control Plan: Submit within 5 days from NTP for quality-control activities and responsibilities. Submit in electronic format. Identify personnel, procedures, controls, instructions, tests, records, and forms to be used to carry out Contractor's quality-control responsibilities. Coordinate with the construction schedule. The procedures, controls, inspections, and tests shall be indicated by specification section and shall include the specific actions that the Contractor's QC team will take to verify compliance of the work with the specifications and drawings.
- 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 indicated in the Specifications.
 - 1. Provide a project quality-control manager, who may also serve as Project Superintendent.
 - 2. Submittal Procedure: Describe procedures for ensuring compliance with requirements through review and management of submittal process. Indicate qualifications of personnel responsible for submittal review.
 - 3. Describe process for continuous inspection during construction to identify and correct deficiencies in workmanship. Indicate types of corrective actions to be required to bring work into compliance with standards established by the Contract requirements and approved mock-ups.
- C. Provide reports per Section 1.2 Testing and Inspection Reports, above.
- D. Other Reports
 - 1. 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:
 - a. Name, address, and telephone number of technical representative making report.
 - b. Statement on condition of substrates and their acceptability for installation of product.
 - c. Statement that products at Project site comply with requirements.
 - d. Summary of installation procedures being followed, whether they comply with requirements and, if not, what corrective action was taken.
 - e. Results of operational and other tests and a statement of whether observed performance complies with requirements.
 - f. Statement if conditions, products, and installation will affect warranty.
 - g. Other required items indicated in individual Specification Sections.
 - 2. 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:
 - a. Name, address, and telephone number of factory-authorized service representative making report.
 - b. Statement that equipment complies with requirements.
 - c. Results of operational and other tests and a statement of whether observed performance complies with requirements.
 - d. Statement if conditions, products, and installation will affect warranty.

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- e. Other required items indicated in individual Specification Sections.
- 3. Permits, Licenses, and Certificates: For the Government'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.

PART 2 - PRODUCTS (NOT APPLICABLE)

PART 3 - EXECUTION

3.1 REPAIR AND PROTECTION

- A. Upon completion of testing, inspection, sample taking and other quality control services, repair damaged construction and restore substrates and finishes to like new conditions. Comply with the requirements of the Contract Document, including Division 1 Section "Cutting and Patching."
- B. Protect construction exposed by or for quality control service activities, and protect repaired construction. Cleaning, repair and protection of testing areas is the Contractor's responsibility, regardless of the assignment of responsibility for testing, inspection or other quality control or assurance services.

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SECTION 01 42 00 - REFERENCES

PART 1 - GENERAL

1.01 DEFINITIONS

- A. Agreement: The Agreement forms part of the Contract between the parties.
- B. "Property Manager" is the Government employee responsible for the administration, operation and maintenance of the building.
- C. Contract: see Agreement.
- D. "Cutting" refers to removal of material by cutting, sawing, drilling, breaking, chipping, grinding, excavating and similar operations.
- E. "Furnish" means to supply and deliver to the Project site, ready for unloading, unpacking, assembling, installation and similar operations.
- F. "General Terms and Conditions" are defined by the Agreement.
- G. "Government" refers to the General Service Administration, Public Buildings Service (GSA PBS).
- H. "Indicated" refers to graphic representations, notes or schedules on the Drawings, or to requirements elsewhere in the Specifications or other Contract Documents. Terms such as "shown", "noted", "scheduled" and "specified" have the same meaning as "indicated" and are used to further help locate the reference, but no limitation on location is intended.
- I. "Install" describes operations at the Project site, including unloading, temporary storage, unpacking, assembling, erecting, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning and similar operations.
- J. "Installer", unless otherwise noted or under separate contract with the Government, is the Contractor or another entity engaged by the Contractor, either directly or indirectly through subcontracting, to perform a particular construction operation at the Project site, including installation, erection, application and similar operations. Installers shall be skilled in the operations they perform. Where indicated, installers shall also be Specialists as defined in the Construction Contract Clauses.
- K. "Label": This must be provided by a National Recognized Testing Laboratory (NRTL), or other entity approved by GSA. The burden of documentation for validation shall be provided by the Contractor.
- L. "Notice to Proceed" is the Contracting Officer's notification by letter to the Contractor to proceed with the Contract. Issuance of the Notice to Proceed may activate the time period for the completion of certain work, including Substantial Completion and Contract Completion.
- M. "Owner" is the Government.
- N. "Patching" refers to restoration of a surface to its original completed condition by filling, repairing, refinishing, closing and similar operations.

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- O. "Project site" refers to the space available to the Contractor for performance of the Work, either exclusively or in conjunction with others performing other work.
- P. "Provide" means to furnish and install, complete in place and ready for full use.
- Q. "Punch List" is the entire listing of all incomplete and/or defective work including items that must be completed pursuant to Contract Completion.
- R. "Regulations" are found in the FAR, GSAM, and CFR including orders issued by the government.
- S. "Special Conditions" refer collectively to Section 00800 "Supplementary Conditions" and any other sections with numbers starting with 00
- T. "Substantial Completion" is defined in the Agreement, with additional conditions in Specification Section 01 77 00 Closeout.
- U. "Superintendent" refers to the Contractor's on site representative who is responsible for continuous field supervision, coordination, planning, scheduling, and completion of the work and, unless another person is designated by the contract specification as the safety officer, jobsite safety.
- V. "Testing Agency" or "testing laboratory" is an independent entity engaged to perform specific inspections or tests, either at the Project site or elsewhere, and to report the results of those inspections and tests.
- W. Where "directed", "authorized", "selected", "approved", or a similar term is used in conjunction with the Contractor's submittals, applications, requests and other activities, and the specifications state that an individual other than the Contracting Officer, such as the Contracting Officer's Representative (COR), shall provide this action, it is understood that only the Contracting Officer has this authority unless the Contracting Officer provides written authorization to a different individual. The Contracting Officer shall provide the written authorization to the Contractor, upon request.
 - 1. When the individual is authorized by the Contracting Officer, the Contractor may still appeal the action to the Contracting Officer.
 - 2. The Contracting Officer's decision will be final, subject to the Disputes clause.

1.02 DRAWING SYMBOLS

- A. Except as otherwise indicated, symbols used on the Drawings are those symbols recognized in the construction industry.
 - 1. These include graphic symbols defined by "Architectural Graphic Standards", published by John Wiley & Sons, Inc., as well as graphic symbols recommended by ASHRAE, ASME, ASPE, CSI, IEEE and similar technical organizations for the mechanical and electrical Drawings.
 - 2. The Contractor shall refer uncertainty or ambiguity as to meaning of symbols to the Contracting Officer for clarification before proceeding.

1.03 INDUSTRY STANDARDS

- A. Applicability of Standards: The Contract Documents require the Contractor to meet, satisfy, or otherwise follow various industry standards. Unless otherwise stated in the Contract Documents, the industry standards are incorporated into the Contract Documents as an Exhibit and Other Attachment (see Agreement, Order of Precedence) by reference and are made a part of the Exhibits and Other Attachments as if fully set forth as an Exhibit and Other Attachment.

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- B. **Conflicting Requirements.** Refer to the Agreement for the Order of Precedence clause and the latest version of GSA's P100 Facilities Standards.
- C. **Publication Date.** The publication date for any industry standard is the most recent version as of the date that the Government issues the Solicitation. When an applicable industry standard has been revised after contract award that may result in an increase in cost or time, the Contractor shall submit a change order proposal for the Government's consideration.
- D. **Specialized Work.** In certain instances, a Specification section may require that the Contractor engage a specialized company or individual to perform certain work. In such instances, the Contractor shall subcontract for such work. The Contractor may not perform any such work with its own, in-house employees.
- E. **Abbreviations and Acronyms used in the Specifications and other Contract Documents** mean the recognized name of a trade association, standards-producing organization, and authority having jurisdiction or other entity applicable to the context of the particular provision. Except as otherwise indicated, refer to the current editions of the following publications for abbreviations:
 - 1. "Encyclopedia of Associations: National Organizations of the U.S.", published by Gale Research.
 - 2. "National Trade and Professional Associations of the United States", published by Columbia Books.
 - 3. "Means Illustrated Construction Dictionary - New Unabridged Edition" published by R.S. Means Company, Inc.
 - 4. "Abbreviations and Acronyms," paragraphs A. through E. identified herein.
- F. **Abbreviation and Acronyms Listing.** The following names are subject to change and are believed, but are not assured, to be accurate and up-to-date as of the date of the Contract Documents.
 - 1. AA- Aluminum Association
 - 2. AABC - Associated Air Balance Council
 - 3. AAMA - American Architectural Manufacturers Association
 - 4. AAN - American Association of Nurserymen (See ANLA)
 - 5. AASHTO - American Association of State Highway and Transportation
 - 6. AATCC - American Association of Textile Chemists and Colorists
 - 7. ABMA - American Bearing Manufacturers Association
 - 8. ABMA - American Boiler Manufacturers Association
 - 9. ACI - American Concrete Institute
 - 10. ACIL - American Council of Independent Laboratories
 - 11. AISET - The Association of Independent Scientific, Engineering, and Testing Firms
 - 12. ACPA - American Concrete Pipe Association
 - 13. ADC - Air Diffusion Council
 - 14. AEIC - Association of Edison Illuminating Companies
 - 15. AFBMA - Anti-Friction Bearing Manufacturers Association (See ABMA)
 - 16. AFPA - American Forest and Paper Association
 - 17. AGA - American Gas Association
 - 18. AGC - Association of General Contractors
 - 19. AHA - American Hardboard Association

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20. AHAM - Association of Home Appliance Manufacturers
21. AI - Asphalt Institute
22. AIA - The American Institute of Architects
23. AIA - American Insurance Association
24. AIHA - American Industrial Hygiene Association
25. AISC - American Institute of Steel Construction
26. AISI - American Iron and Steel Institute
27. AITC - American Institute of Timber Construction
28. ALA - American Laminators Association (See LMA)
29. ALI - American Lighting Institute
30. ALCA - Associated Landscape Contractors of America
31. ALI - Associated Laboratories, Inc.
32. ALSC - American Lumber Standards Committee
33. AMCA - Air Movement and Control Association International, Inc.
34. ANLA - American Nursery and Landscape Association
35. ANSI - American National Standards Institute
36. AOAC - Association of Official Analytical Chemists International
37. AOSA - Association of Official Seed Analysts
38. APA - American Plywood Association (see EWA)
39. APA - Architectural Precast Association
40. API - American Petroleum Institute
41. ARI - Air-Conditioning and Refrigeration Institute
42. ARMA - Asphalt Roofing Manufacturers Association
43. ASA - Acoustical Society of America
44. ASC - Adhesive and Sealant Council
45. ASCA - Architectural Spray Coaters Association
46. ASCE - American Society of Civil Engineers
47. ASHES - American Society for Healthcare Environmental Services - Division of the American Hospital Association
48. ASHRAE - American Society of Heating, Refrigerating and Air Conditioning Engineers.
49. ASLA - American Society of Landscape Architects
50. ASME - American Society of Mechanical Engineers
51. ASPA - American Sod Producers Association (See TPI)
52. ASPE - American Society of Plumbing Engineers
53. ASQ - American Society for Quality
54. ASSE - American Society of Sanitary Engineering
55. ASTM - American Society for Testing and Materials
56. ATIS - Alliance for Telecommunications Industry Solutions
57. ATS - Automatic Transfer Switch
58. AWCI - Association of the Wall and Ceiling Industries International
59. AWCMA - American Window Covering Manufacturers Association (See WCMA)

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60. AWI - Architectural Woodwork Institute
- a. AWP - American Wood-Preservers' Association
 - b. AWS - American Welding Society
 - c. AWWA - American Water Works Association
 - d. BAS - Building Automation System
 - e. BHMA - Builders Hardware Manufacturers Association
 - f. BIA - Brick Industry Association
 - g. BIFMA - The Business and Institutional Furniture Manufacturer's Association International
 - h. BIM - Building Information Model
 - i. BOD - Basis of Design
 - j. CABO - Council of American Building Officials
 - k. CAGI - Compressed Air and Gas Institute
 - l. CAUS - Color Association of the United States
 - m. CBHF - State of California, Department of Consumer Affairs, Bureau of Home Furnishings and Thermal Insulation Technical Information
 - n. CBMA - Certified Ballast Manufacturers Association
 - o. CC - Construction Contractor
 - p. CE - Construction or Consulting Engineer
 - q. CEx - Contract Executive
 - r. CCC - Carpet Cushion Council
 - s. CDA - Copper Development Association Inc.
 - t. CE - Corps of Engineers (U.S. Department of the Army)
 - u. CFFA - Chemical Fabrics & Film Association, Inc.
 - v. CFR - Code of Federal Regulations (Publications available from the Government Printing Office)
 - w. CGA - Compressed Gas Association
 - x. CGSB - Canadian General Standards Board
 - y. Cisca - Ceilings and Interior Systems Construction Association
 - z. CISPI - Cast Iron Soil Pipe Institute
 - aa. CLFMI - Chain Link Fence Manufacturers Institute
 - ab. CLP - Certified Landscape Professional
 - ac. CLT-E - Certified Landscape Technician-Exterior
 - ad. CLT-I - Certified Landscape Technician - Interior
 - ae. CLPA - California Lathing and Plastering Association
 - af. CPM - CM Project Manager
 - ag. CM - Construction Manager
 - ah. CO - Contracting Officer
 - ai. COLP - Certified Ornamental Landscape Professional
 - aj. CORPS - Army Corps of Engineers
 - ak. COTR - Contracting Officer's Technical Representative
 - al. COBIE - Construction to Operations Building Information Exchange

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- am. CPA - Composite Panel Association
- an. CPPA - Corrugated Polyethylene Pipe Association
- ao. CPSC - Consumer Product Safety Commission
- ap. CRI - Carpet and Rug Institute
- aq. CRSI - Concrete Reinforcing Steel Institute
- ar. CS - Commercial Standard (U.S. Department of Commerce)
- as. CSI - Construction Specifications Institute
- at. CSSB - Cedar Shake and Shingle Bureau
- au. CTI - Ceramic Tile Institute of America
- av. CTI - Cooling Tower Institute
- aw. CTP - Certified Turfgrass Professional
- ax. DHI - Door and Hardware Institute
- ay. DIPRA - Ductile Iron Pipe Research Association
- b`. DLPA – Decorative Laminate Products Association
- ba. DOC - Department of Commerce (Publications available from the Government Printing Office)
- bb. DOJ - Department of Justice
- bc. DOT - Department of Transportation
- bd. DP - Design Professional
- be. ECSA - Exchange Carriers Standards Association (See ATIS)
- bf. EIA - Electronic Industries Association
- bg. EIMA - EIFS Industry Members Association
- bh. EJMA - Expansion Joint Manufacturers Association
- bi. EPA - Environmental Protection Agency
- bj. EAct 2005 – Energy Policy Act of 2005
- bk. EISA Energy Independence and Security Act of 2007
- bl. EWA - Engineered Wood Association
- bm. FAA - Federal Aviation Administration
- bn. FCC - Federal Communications Commission
- bo. FCI - Fluid Controls Institute
- bp. FCICA - Floor Covering Installation Contractors Association
- bq. FDA - US Food and Drug Administration
- br. FGMA - Flat Glass Marketing Association (See GANA)
- bs. FHA - Federal Housing Administration (U.S. Department of Housing and Urban Development)
- bt. FM - Factory Mutual System
- bu. FMR - Federal Management Regulation
- bv. FPE - Fire Protection Engineer
- bw. FPS - Federal Protective Service
- bx. FPT - Functional Performance Test
- by. FS - Federal Specification (Publications available from GSA)
- c`. FSC – Forest Stewardship Council
- ca. FTI – Facing Tile Institute

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- cb. GA - Gypsum Association
- cc. GANA - Glass Association of North America
- cd. GRI - Geosynthetic Research Institute
- ce. GSA - General Services Administration
- cf. HEI - Heat Exchange Institute
- cg. HFES - Human Factors and Ergonomics Society
- ch. HI - Hydraulic Institute
- ci. HI - Hydronics Institute - Division of Gas Appliance Manufacturers Association
- 61. HMA - Hardwood Manufacturers Association
- 62. HPVA - Hardwood Plywood and Veneer Association
- 63. IALD - International Association of Lighting Designers
- 64. IAS - International Approval Services - Division of Canadian Standards Association
- 65. ICEA - Insulated Cable Engineers Association
- 66. IEC - International Electrotechnical Commission (Publications available from ANSI)
- 67. IES - Illuminating Engineering Society
- 68. IEEE - Institute of Electrical and Electronics Engineers
- 69. IESNA - Illuminating Engineering Society of North America
- 70. IGCC - Insulating Glass Certification Council
- 71. IIDA - International Interior Design Association
- 72. ILI - Indiana Limestone Institute of America
- 73. IMSA - International Municipal Signal Association
- 74. INCE - Institute of Noise Control Engineering
- 75. ISA - International Society for Measurement and Control
- 76. ISC - Interagency Security Committee
- 77. ISEA - Industrial Safety Equipment Association
- 78. ISS - Iron and Steel Society
- 79. KCMA - Kitchen Cabinet Manufacturers Association
- 80. LEED - Leadership in Energy and Environmental Design
- 81. LGSI - Light Gage Structural Institute
- 82. LIA - Lead Industries Association, Inc.
- 83. LMA - Laminating Materials Association
- 84. LPI - Lightning Protection Institute
- 85. MBMA - Metal Building Manufacturers Association
- 86. MCAA - Mechanical Contractors Association of America
- 87. MFMA - Maple Flooring Manufacturers Association
- 88. MFMA - Metal Framing Manufacturers Association
- 89. MHIA - Material Handling Industry Association
- 90. MIA - Marble Institute of America
- 91. MIA - Masonry Institute of America
- 92. MIL - Military Standardization Documents (U.S. Department of Defense)
- 93. MILCON - Military Construction

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94. ML/SFA - Metal Lath/Steel Framing Association
95. MSS - Manufacturers Standardization Society of the Valve and Fittings Industry
96. NAA - National Arborist Association
97. NAAMM - National Association of Architectural Metal Manufacturers
98. NAAMM - North American Association of Mirror Manufacturers (See GANA)
99. NACE - National Association of Corrosion Engineers International
100. NAGDM - National Association of Garage Door Manufacturers (See DASMA)
101. NAIMA - North American Insulation Manufacturers Association
102. NAMI - National Accreditation & Management Institute, Inc.
103. NAPA - National Asphalt Pavement Association
104. NBHA - National Builders Hardware Association (See DHI)
105. NBIMS - National Building Information Model Standards
106. NBGQA - National Building Granite Quarries Association, Inc.
107. NBS- National Bureau of Standards
108. NIBS - National Institute of Building Sciences
109. NIST - National Institute of Standards and Technology
110. NCAC - National Council of Acoustical Consultants
111. NCCA - National Coil Coaters Association
112. NCMA - National Concrete Masonry Association
113. NCPI - National Clay Pipe Institute
114. NCRPM - National Council on Radiation Protection and Measurements
115. NCSA - National Corrugated Steel Pipe Association
116. NEBB - Natural Environmental Balancing Bureau
117. NEC - National Electrical Code
118. NECA - National Electrical Contractors Association
119. NEI - National Elevator Industry
120. NEMA - National Electrical Manufacturers Association
121. NETA - InterNational Electrical Testing Association
122. NFPA - National Fire Protection Association
123. NFPA - National Forest Products Association (See AFPA)
124. NFRC - National Fenestration Rating Council Incorporated
125. NGA - National Glass Association
126. NHLA - National Hardwood Lumber Association
127. NIA - National Insulation Association
128. NIAC - National Insulation and Abatement Contractors Association (See NIA)
129. NIST - National Institute of Standards and Technology (U.S. Department of Commerce)
130. NKCA - National Kitchen Cabinet Association (See KCMA)
131. NPCA - National Paint and Coatings Association
132. NRCA - National Roofing Contractors Association
133. NRMCA - National Ready Mixed Concrete Association
134. NRTL - Nationally Recognized Testing Laboratory

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135. NSA - National Stone Association
136. NSF - National Sanitation Foundation International
137. NTMA - National Terrazzo and Mosaic Association
138. NVLAP - National Voluntary Laboratory Accreditation Program (via NIST)
139. NUSIG - National Uniform Seismic Installation Guidelines
140. NWFA - National Wood Flooring Association
141. NWMA - National Woodwork Manufacturers Association (See NWWDA)
142. NWWDA - National Wood Window and Door Association
143. O & M - Operations & Maintenance
144. OSHA - Occupational Safety and Health Administration (U.S. Department of Labor)
145. P100 - GSA Facilities Standards for the Public Building Service (PBS)
146. PATMI - Powder Actuated Tool Manufacturers' Institute
147. PCA - Portland Cement Association
148. PCI - Precast/Prestressed Concrete Institute
149. PDCA - Painting and Decorating Contractors of America
150. PDI - Plumbing and Drainage Institute
151. PDS - Program Development Study
152. PEI - Porcelain Enamel Institute
153. PLANET - Professional Landcare Network
154. PMO - GSA PBS Program or Project Management Office?
155. POR - Program Of Requirements
156. PPFA - Plastic Pipe and Fittings Association
157. PPI - Plastics Pipe Institute (The Society of the Plastics Industry, Inc.)
158. PS Product Standards of the National Bureau of Standards (U.S. Department of Commerce)
159. QAQC - Quality Assurance Quality Control
160. RCSC - Research Council on Structural Connections
161. RFCI - Resilient Floor Covering Institute
162. RFP - Request For Proposal
163. RIEI - Roofing Industry Education Institute
164. RMA - Rubber Manufacturers Association
165. SAE - Society of Automotive Engineers International
166. SAMA - Scientific Apparatus Makers' Association
167. SDI - Steel Deck Institute
168. SDI - Steel Door Institute
169. SEFA - Scientific Equipment and Furniture Association
170. SEGD - Society for Environmental Graphic Design
171. SFPE - Senior Fire Protection Engineer
172. SGCC - Safety Glazing Certification Council
173. SHLMA - Southern Hardwood Lumber Manufacturers Association (See HMA)
174. SIGMA - Sealed Insulating Glass Manufacturers Association
175. SJI - Steel Joist Institute

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176. SMA - Screen Manufacturers Association
177. SMACNA - Sheet Metal and Air Conditioning Contractors' National Association
178. SPI - The Society of the Plastics Industry, Inc.
179. SPIB - Southern Pine Inspection Bureau
180. SSINA - Specialty Steel Industry of North America
181. SSPC - Steel Structures Painting Council - The Society for Protective Coatings
182. SSPMA - Sump and Sewage Pump Manufacturers Association
183. STI - Steel Tank Institute
184. SWI - Steel Window Institute
185. SWPA - Submersible Wastewater Pump Association
186. SWRI - Sealant, Waterproofing and Restoration Institute
187. TAB - Testing, Adjusting, and Balancing Bureau
188. TCA - Tile Council of America
189. TIMA - Thermal Insulation Manufacturers Association (See NAIMA)
190. TPI - Truss Plate Institute
191. TPI - Turfgrass Producers International
192. TRB - Transportation Research Board - National Research Council
193. UFAC - Upholstered Furniture Action Council
194. UL - Underwriters Laboratories Inc.
195. USDA - U.S. Department of Agriculture
196. USGBC - U.S. Green Building Council
197. USITT - U.S. Institute of Theater Technology - The American Association of Design and Production Professionals in the Performing Arts
198. USMS - U.S. Marshals Service
199. USP - U.S. Pharmacopeia
200. USPS - U.S. Postal Service
201. VOC - Volatile Organic Compound
202. WA - Wall-coverings Association
203. WASTEC - Waste Equipment Technology Association
204. WCMA - Window Covering Manufacturers Association
205. WEF - Water Environment Federation
206. WMMPA - Wood Moulding & Millwork Producers Association
207. WPCF - Water Pollution Control Federation (See WEF)
208. WRI - Wire Reinforcement Institute
209. WSC - Water Systems Council
210. WSFI - Wood and Synthetic Flooring Institute (See MFMA)
211. WWPA - Western Wood Products Association
212. W.W.P.A. - Woven Wire Products Association

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PART 2 - PRODUCTS (NOT APPLICABLE)

PART 3 - EXECUTION (NOT APPLICABLE)

END OF SECTION 01 42 00

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SECTION 01 59 30 – SECURITY REGULATIONS

PART 1 – GENERAL

1.01 REFER TO THE CONSTRUCTION CONTRACT AGREEMENT SECTION III, TERMS AND CONDITIONS, FOR HSPD-12 SUITABILITY INVESTIGATION REQUIREMENTS FOR CONTRACT EMPLOYEES REQUIRING ACCESS TO THE FACILITY. ALSO SEE [HTTP://WWW.GSA.GOV/HSPD12](http://www.gsa.gov/hspd12) FOR MORE SECURITY SUITABILITY REQUIREMENTS.

1.02 GENERAL SECURITY REQUIREMENTS

- A. Contractors and their staff will be required to comply with security regulations imposed by the occupying agency including any necessary clearances required for access to classified areas. Access to the project site will be limited to specific times established by the Government.
- B. After award of the Contract, all Contractor employees requiring access to classified areas shall be required to furnish information for security clearances and shall comply with security regulations as imposed by the occupying agency and defined in this section.
- C. Notification: For all contracting staff that has been successfully cleared, notify the Contracting Officer, or their designated representative, not less than 48 hours prior to performing work in a classified security area. Include the following:
 - 1. Companies: Name of each company performing the work.
 - 2. Employee names.
 - 3. Time: The exact time, date, and hours of work.
 - 4. Areas: Specific areas of the building in which work is to be performed.

1.03 GENERAL SECURITY REGULATIONS

- A. Agency Security Regulations: All persons employed within the boundaries of the restricted-access areas therein, and all persons permitted to enter such property and areas shall comply with the security regulations that have been established for this Contract.
 - 1. The Contractor agrees on behalf of themselves and all subcontractors that the following security regulations will be observed by Contractor and subcontractor personnel on the property. The Contractor shall make it a specific provision of his subcontracts that these regulations be accepted.
 - 2. At the commencement of the work under this Contract, the following security facilities and procedures will apply for classified areas within the facility:
 - a. The Contractor shall provide information about all Contractor and subcontractor personnel and others who require continuing access to the site, before access is required and when access ceases.

SECURITY REGULATIONS

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- b. Within 30 calendar days after the award of the Contract, the Contractor shall submit a list on the Contractor's letterhead stationary of all employees, subcontractors and their employees, and others who will perform work or otherwise require access to the classified area. Personnel shall be listed in alphabetical order by company. The list shall include their full.
 - c. The Contractor shall notify the Government in writing when personnel are no longer employed by the Contractor or a subcontractor that have been cleared.
 - d. In order to permit the Government to supply credentials, they shall follow the procedures for obtaining an HSPD-12 credential as outlined in the Construction Contract Agreement section of the solicitation.
 - e. The credential furnished by the Government to each Contractor employee or other person granted access to the classified area will serve to authorize the wearer to enter and leave the classified area. The credential must be worn so as to be clearly be visible at all times when on the work site. The credential will be retained by the individual as long as they require continued admittance to the classified area. The Contractor will arrange for the credentials immediate return to the Government when such need ceases. Temporary or visitor badges along with escorts will be provided for persons who are identified as having an infrequent or temporary legitimate business need for access to the classified area.
3. At the commencement of the work under this contract, the following security procedures shall apply to the Contractor and all subcontractors.
 - a. Comply with the security regulations of the building.
 - b. Cameras are not permitted without written permission from the Occupant Agency and the Contracting Officer or his designated representative. If approved, permission will be granted in writing and will provide additional guidelines.
 - c. Personnel may be subject to inspection of their personal effects when entering and leaving the facility. In addition, unscheduled inspections of personnel may be made while on site.
 - d. In any work scheduled within the classified area is canceled, notify the Contracting Officer or his designated representative.
4. The Occupant Agency reserves the right to close down the job site and order Contractor personnel off the premises in the event of a national emergency or a shut-down, for as long as security problems persist. The Contractor may only return to the site with verbal approval from the Occupant Agency and the Contracting Officer or his authorized representative.
5. The Government reserves the right to exclude or remove from the site or building any employee of the Contractor or a subcontractor whom the Government deems incompetent, careless, insubordinate or otherwise objectionable, or whose continued employment on the work is deemed by the Government to be contrary to the public interests. The Government further reserves the right to complete processing of the security documentation for personnel assigned to work within classified areas prior to access to such areas by the personnel.
6. For overtime work within the classified area, the Contractor shall give the Contracting Officer or his designated representative at least 5 calendar days notice. This notice is required so that security escorts may be provided and is separate and distinct from any notices required

SECURITY REGULATIONS

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for utility shutdown or other outages. Also, the Contractor shall notify the Government if personnel will not report to the job site on a particular day so that the security escort can be released for other duties.

7. A detailed weekly schedule shall be submitted once a week by the close of business on the last day of the previous week's work for work planned within classified areas.. The schedule shall include the following:
 - a. Specific location of work for each trade.
 - b. Description of work for each trade.
 - c. Number of persons who will be on site for each location and trade.
 - d. Specific impacts required, such as equipment or utility shutdowns.
 - e. Hours of operation.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION 01 59 30

SECURITY REGULATIONS

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SECTION 01 60 00 - PRODUCT REQUIREMENTS

PART 1 GENERAL

1.1 SUMMARY

- A. This Section includes administrative and procedural requirements governing the Contractor's selection of products for use in the Project, including manufacturers' standard warranties on products and special warranties.
- B. The following definitions are not intended to change the meaning of other terms used in the Contract Documents, such as "specialties," "systems," "structure," "finishes," "accessories," and similar terms that are self-explanatory and have well-recognized meanings in the construction industry.
 - 1. "Products" means items purchased for incorporation in the Work, whether purchased for the Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and other terms of similar intent.
 - 2. "Materials" means products substantially shaped, cut, worked, mixed, finished, refined or otherwise fabricated, processed, or installed to form a part of the Work.
 - 3. "Equipment" means products with operational parts, whether motorized or manually operated, and products that require service connections, such as wiring or piping.
- C. See 012500 Substitution Procedures for requests for substitutions:
- D. Warranties: Standard, and special warranties required by the individual sections of the Specifications shall provide guarantees in terms of time limits or rights of the Government in addition to those contained in the Construction Contract Clauses.
 - 1. Standard product warranties shall be preprinted written warranties published by individual manufacturers for particular products, and shall be specifically endorsed to the Government by the manufacturer.
 - 2. Special warranties shall be specifically written to incorporate particular requirements of the Contract Documents, and shall be endorsed to the Government by the entities responsible for the work, as stated in the individual section.

1.2 SUBMITTALS

- A. Submittals: See Section 01 33 00 Submittals
- B. Substitutions: See Section 01 25 00 Substitution Procedures.

1.3 QUALITY CONTROL

- A. Source Limitations: To the fullest extent possible, provide products of the same kind from a single source. Equipment of the same function shall be manufactured by the same entity, unless otherwise indicated.
- B. Compatibility of Options: When the Contractor is given the option of selecting between 2 or more products for use on the Project, the product selected shall be compatible with products previously selected.

PRODUCT REQUIREMENTS

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- C. Labels and nameplates: Except for required labels and operating data, do not attach or imprint manufacturer's or producer's nameplates or trademarks on surfaces of products that will be exposed to view in occupied spaces or on the exterior.
 - 1. Labels: Locate required product labels and stamps on concealed surfaces or, where required for observation after installation, on accessible surfaces that are not conspicuous. Labels indicating compliance with recognized organizations require confirmation by submitted documents.
 - 2. Equipment Nameplates: Provide a permanent nameplate on each item of service-connected or power-operated equipment. Locate nameplate on an easily accessible surface that is inconspicuous in occupied spaces. The nameplate shall contain the following information:
 - a. Name of product manufacturer.
 - b. Model and serial numbers.
 - c. Operating data such as capacity, speed and ratings.
 - d. Name and phone number of Installer.
 - 3. Protection: Labels and nameplates shall be protected from defacement and other damage during the remainder of the Work.

1.4 PRODUCT DELIVERY, STORAGE AND HANDLING

- A. Deliver, store and handle products according to the manufacturer's recommendations, using means and methods that will prevent damage, deterioration and loss, including theft.
 - 1. Schedule product delivery to minimize long-term storage at the site and to prevent overcrowding of construction spaces.
 - 2. Coordinate delivery with installation time to provide minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft and other losses.
 - 3. Deliver products to the site in an undamaged condition, in the manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting and installing.
 - 4. Inspect products upon delivery to ensure compliance with the Contract Documents and to ensure that products are undamaged and properly protected. Coordinate inspection with Government, GSA COR or designated representative (i.e Bldg. Manager, CM, etc.).
 - 5. Store products at the site in a manner that will facilitate inspection and measurement of quantity or counting of units.
 - 6. Store heavy materials away from the Project structure in a manner that will not endanger the supporting construction.
 - 7. Store products subject to damage by the elements above ground, under cover in a weather-tight enclosure, with ventilation adequate to prevent condensation. Maintain temperature and humidity within range required by manufacturer's instructions.

PRODUCT REQUIREMENTS

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PART 2 PRODUCTS

2.1 PRODUCT COMPLIANCE AND REQUIREMENTS

- A. Provide products complete with accessories, trim, finish, safety guards, devices and other items needed for a complete installation and the intended use and effect. Where specified and available, provide standard products of types that have been produced and used successfully in similar situations on other projects.
- B. Product Selection Procedures: The Contract Documents, including the Construction Contract Clauses, govern product selection. Requirements for product selection include the following:
 - 1. Where the Specifications lists manufacturers' names or product designations, the Contractor may provide any product that complies with the requirements, subject to the following conditions:
 - a. Available Manufacturers: Where a Specification paragraph or subparagraph titled "Available Manufacturers" lists a minimum of three manufacturers' names, provide a compliant product by one of the manufacturers named or by another manufacturer.
 - b. Available Products: Where a Specification paragraph or subparagraph titled "Available Products" lists minimum of three product designations, provide one of the products designated or another compliant product.
 - c. Basis of Design: Where a Specification paragraph or subparagraph titled "Basis of Design" includes a product designation, provide the product designated, or request a Substitution of a compliant product by a named or other manufacturer.
 - 2. Descriptive Requirements: Where Specifications describe a product or assembly, listing the characteristics required, provide a product or assembly that provides the characteristics and otherwise complies with Contract requirements.
 - 3. Performance Requirements: Where Specifications require compliance with performance requirements, provide products that comply with these requirements and are recommended by the manufacturer for the application indicated. Manufacturer's recommendations may be contained in published product literature or by the manufacturer's certification of performance.
 - 4. Prescriptive Requirements: Where Specifications require products that are produced using specified ingredients and components, including specific requirements for mixing, fabricating, curing, finishing, testing and similar operations in the manufacturing process, provide products produced in accordance with the prescriptive requirements that otherwise comply with Contract requirements.
 - 5. Codes, Standards and Regulations: Where Specifications require compliance with an imposed code, standard or regulation, select a product that complies with these requirements.
 - 6. Visual Matching: Where Specifications require matching an established Sample, the Government's decision will be final on whether a proposed product matches satisfactorily. Where no product available within the specified category matches satisfactorily and complies with other specified requirements, comply with provisions concerning "substitutions" for selections of a matching product in another product category.
 - 7. Visual Selection: Where specified product requirements include the phrase "as selected from manufacturer's standard colors, patterns, textures" or a similar phrase, select a product and

PRODUCT REQUIREMENTS

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manufacturer that complies with other specified requirements. The Government will select the color, pattern and texture from the manufacturer's product line.

- C. The Contractor's submittal and the Government's acceptance of Shop Drawings, Product Data, or Samples for construction activities not complying with Contract Documents do not constitute an acceptable or valid request for substitution, nor do they constitute approval.

2.2 WARRANTY REQUIREMENTS

- A. Related Damages and Losses: When correcting failed or damaged warranted construction, remove and replace construction that has been damaged as a result of such failure or must be removed and replaced to provide access for correction of warranted construction.
- B. Reinstatement of Warranty: When Work covered by a warranty has failed and been corrected by replacement or rebuilding, reinstate the warranty by written endorsement. The reinstated warranty shall be equal to the original warranty with an adjustment for depreciation.
- C. Replacement Cost: Upon determination that Work covered by a warranty has failed, replace or rebuild the Work to an acceptable condition complying with requirements of the Contract Documents. The Contractor is responsible for the cost of replacing or rebuilding defective Work.
- D. Rejection of Warranties: The Government reserves the right to reject warranties and to limit selection to products with warranties not in conflict with requirements of the Contract Documents.
- E. Where the Contract Documents require a special warranty, or similar commitment for the Work or part of the Work,, the Government reserves the right to refuse to accept the Work until the Contractor presents evidence that entities required to countersign such commitments are willing to do so.

PART 3 - EXECUTION (NOT APPLICABLE)

END OF SECTION 01 60 00

PRODUCT REQUIREMENTS

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SECTION 01 70 00 - EXECUTION REQUIREMENTS

PART 1 GENERAL

1.01 SUMMARY

- A. This section includes certain general procedural requirements governing the Contractor's execution of the Work, including, but not limited to laying out the work, general installation of products, correction of defective work, and cleaning.
- B. Substitutions: Changes in methods of construction required by the Contract Documents proposed by the Contractor after award of the Contract shall comply with the procedures and conditions specified for Substitutions in the Construction Contract Clauses and Division 1 Section 016000 "Product Requirements".

1.02 SUBMITTALS

- A. Certificates: Submit a certificate signed by the land surveyor or professional engineer certifying that the location and elevation of improvements comply with requirements indicated.
- B. Field Correction Requests: Immediately upon discovery of the need to deviate from requirements of the Contract Documents, submit a field correction request to GSA for review. Include a detailed description of the problem encountered, together with recommended changes and detailing the reasons for deviating from the Contract Documents.
- C. Manufacturer's Field Services Submissions: Where product manufacturers are required by the individual sections of the Specifications to provide qualified personnel to observe conditions of project conditions, installation or workmanship, start up or adjustment of equipment, tests or other activities, and to initiate instructions when necessary, the following shall be submitted to GSA:
 - 1. Qualifications: For approval, submit qualifications of observer at least 30 calendar days in advance of scheduled activities.
 - 2. Report: For information, submit report of activities and findings within 15 calendar days after the successful execution of the specified work. Include logs and other documented data where applicable.
- D. Landfill Receipts: Submit copy of receipts issued by a landfill facility, licensed to accept hazardous materials, for hazardous and other waste disposal. Also submit electronic copies of receipts for any items recycled or salvaged.

1.03 QUALITY CONTROL

- A. Workmanship Standards: Initiate and maintain procedures to ensure personnel performing the work are skilled and knowledgeable in the methods and craftsmanship needed to produce the required levels of workmanship. Remove and replace work that does not comply with workmanship specified and standards recognized in the construction industry for the applications indicated. Remove and replace work damaged or deteriorated by faulty workmanship or replacement of other work.

USER EXECUTION REQUIREMENTS

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1. Manufacturer's Instructions: Where installations include manufactured products, comply with manufacturer's applicable installation instructions and recommendations to the extent that those instructions and recommendations are more explicit or stringent than requirements contained in the Contract Documents.
2. Specialists: Where the individual sections of the specifications require specialists to perform the work, comply with the requirements specified in the Construction Contract Clauses. The assignment of a specialist shall not relieve the Contractor from complying with applicable regulations, union jurisdictional settlements or similar conventions, and the final responsibility for fulfillment of the entire requirements remains with the Contractor.
3. Minimum Quality and Quantity: The quality level or quantity shown or specified shall be the minimum required for the work. Except as otherwise indicated, the actual work shall comply exactly with that minimum or may be superior to that minimum within limits acceptable to GSA. Specified numeric values are either minimums or maximums as indicated or as appropriate for the context of the requirements.
4. Availability of Tradespersons and Manufacturer's Field Services Representatives: At each progress or coordination meeting, review availability of tradespersons, qualified manufacturers' representatives required in the specifications, and projected needs to accomplish work as scheduled. Require each entity employing personnel to report on events which might affect progress of work. Where possible, consider alternatives and take actions to avoid disputes and delays

PART 2 - PRODUCTS (NOT APPLICABLE)

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Examine applicable substrates and conditions under which the Work will be performed before starting construction operations.
- B. If unsafe or otherwise unsatisfactory conditions are encountered take corrective action before proceeding. Provide GSA with a written report documenting the conditions with the corrective actions taken.

3.02 PREPARATION

- A. Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Confirm dimensional requirements of the contract documents can be met.
- B. Verify space requirements of items shown diagrammatically on Drawings.

3.03 INSTALLATION

- A. Locate the Work and components of the Work accurately.
 1. Make vertical work plumb and horizontal work level.

USER EXECUTION REQUIREMENTS

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2. Where space is limited, install components to maximize space available for maintenance and to maximize ease of removal for replacement.
3. Conceal pipes, ducts, and wiring in finished areas unless construction documents have designated otherwise.
4. Maintain minimum headroom clearance of 6'-8" in both occupied and unoccupied spaces.
- B. Install products at the time and under conditions that will produce satisfactory results.
 1. Maintain temperature, humidity and other weather controls for best performance.
 2. Isolate units of non-compatible work to prevent deterioration.
- C. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.
- D. Conduct construction operations so that no part of the Work is subjected to damaging operations, or loading in excess of that structurally designed for the occupancy.
- E. Tools and Equipment: Do not use tools or equipment that produce harmful or unacceptable levels of noise.
- F. Odors and Fumes: To the greatest extent practicable, do not use products that produce harmful or noticeable odors or fumes. If necessary to use such products, coordinate ventilation requirements to produce the ambient condition required for the work and to minimize energy consumption, and to protect personnel from fumes and other harmful effects.
- G. Anchors and Fasteners: Provide anchors and fasteners that will withstand stresses, vibration and physical distortion. Anchor each component securely in place, accurately located and aligned with other Work.
 1. Mounting Heights: Where mounting heights are not indicated, mount components at heights directed by GSA.
 2. Allow for building movement, including thermal expansion and contraction.
- H. Joints: Make like joints of uniform width within contiguous surfaces. Where joint locations in exposed work are not indicated, arrange joints for a uniform and balanced visual effect.
- I. Adjust operating components for proper operation

3.04 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.

3.05 CORRECTION OF INSTALLED DEFECTIVE WORK

- A. Repair or remove and replace defective construction. Restore damaged substrates and finishes.
- B. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and proper adjustment of operating equipment.
- C. Restore permanent facilities used during construction to their specified condition.

USER EXECUTION REQUIREMENTS

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- D. Remove and replace damaged surfaces that are exposed to view if the surfaces cannot be repaired without visible evidence of repair.
- E. Repair components that do not operate properly. Remove and replace operating components that cannot be repaired to operate properly.
- F. Remove and replace chipped, scratched or broken surfaces.

3.06 CLEANING

- A. Maintain the project work areas free of waste material and debris. Comply with requirements in NFPA 241 for removal of combustible waste materials and debris.
- B. 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- or vacuum-clean the entire work area.
 - 3. Separate containers of hazardous materials from other waste, and mark containers to identify. Legally dispose of all waste in timely fashion.
- C. Keep installed work clean. Clean installed surfaces in accordance with the recommendations of the manufacturer or fabricator of the product installed, using only the cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and will not damage exposed surfaces.
- D. Remove debris from concealed spaces prior to enclosing.
- E. Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at the time of project completion.

3.07 PROTECTION

- A. Protect installed work from soiling and damage.
- B. Protective Coverings: Provide appropriate protective coverings for work that might be damaged by subsequent operations. Maintain protective coverings in place until project completion.

END OF SECTION 01 70 00

USER EXECUTION REQUIREMENTS

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SECTION 01 73 10 - CUTTING AND PATCHING

PART 1 - GENERAL

1.1 SUMMARY

- A. This section includes procedural requirements for cutting and patching in existing work.
- B. Definition: Cutting and patching includes cutting into existing construction to provide for the installation or performance of other work and subsequent fitting and repair required to restore surfaces to their original condition. Drilling holes for fasteners and similar operations are not "cutting and patching".
- C. Refer to other sections for other requirements and limitations applicable to cutting and patching individual parts of the Work.
- D. Coordinate cutting and patching with demolition requirements as specified in Section 01 73 20 Selective Demolition.

1.2 SUBMITTALS

- A. Cutting and Patching Plan: In accordance with Section 01 33 00, submit a proposal to GSA's representative, describing procedures at least 14 calendar days in advance of the time cutting and patching will initially be performed.
 - 1. Include the following information, as applicable:
 - a. Description of the extent of cutting and patching required. Show how it will be performed and indicate why it cannot be avoided.
 - b. Description of the anticipated results in terms of changes to existing construction. Include changes to structural elements and operating components as well as changes in appearance and other significant visual elements.
 - c. List of products to be used and entities that will perform work.
 - d. Dates and hours of operation when cutting and patching will be performed.
 - e. List utilities that will be disturbed or otherwise be affected by work, including those that will be relocated and those that will be out-of-service temporarily. Indicate how long utility service will be disrupted.
 - f. Compatibility and cohesion characteristics of patching compounds with adjacent materials.
 - g. Details and engineering calculations showing integration of reinforcement with the original structure, where cutting and patching involve adding reinforcement to structural elements.
 - h. Temporary protection of existing structures, surfaces, finishes, equipment, etc. to remain in place during construction.

CUTTING AND PATCHING

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- B. Approval by GSA to proceed with cutting and patching does not waive the right to later require complete removal and replacement of unsatisfactory work.
- C. Samples: Provide cutting and patching samples for the following items within [14] calendar days after notice to proceed in order that special reviews and coordination can be arranged with approval authorities
 - 1. Modified base cabinet at new ADA transaction countertop.

1.3 QUALITY CONTROL

- A. Requirements for Structural Work: Do not cut and patch structural elements in a manner that would change their load-carrying capacity or load-deflection ratio.
- B. Operational Limitations: Do not cut and patch operating elements, safety related systems, or related components in a manner that would result in reducing their capacity to perform as intended, or that would result in increased maintenance or decreased operational life or safety.
- C. Visual Requirements: Do not cut and patch construction exposed in occupied spaces in a manner that would, in GSA's opinion, reduce the building's aesthetic qualities. Do not cut and patch construction in a manner that would result in visual evidence of cutting and patching. Remove and replace construction that is cut and patched in a visually unsatisfactorily manner.
 - 1. Retain the original installer or fabricator to cut and patch exposed work if the original installer or fabricator is identified in the Contract Documents or is known to the Contractor and is available for the work.
 - 2. If it is not possible to engage the original installer or fabricator, engage a Specialist who is specifically experienced in the work.

1.4 EXISTING WARRANTIES

- A. Replace, patch, and repair material and surfaces cut or damaged by methods and with materials in such a manner as not to void any existing warranties.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Use materials identical to existing materials to the maximum extent available.
- B. For exposed surfaces, use materials that visually match existing adjacent surfaces to the fullest extent possible.
- C. Use materials whose installed performance will equal or surpass that of existing materials.

CUTTING AND PATCHING

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- D. Materials and/or products used in historic buildings must be approved by GSA Historic Preservation Staff.

PART 3 - EXECUTION

3.1 INSPECTION

- A. Before cutting, examine surfaces to be cut and patched and conditions under which cutting and patching is to be performed. If unsafe or unsatisfactory conditions are encountered, take corrective action before proceeding.
- B. Before proceeding with cutting and patching involving two or more trades, meet at the Project site with the entities providing or affected by the cutting and patching. Review areas of potential interference and conflict. Coordinate procedures and resolve potential conflicts before proceeding.

3.2 PREPARATION

- A. Provide temporary support of work to be cut.
- B. Protect existing conditions during cutting and patching to prevent damage.
- C. Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.
- D. Bypass in-service existing pipe, conduit, or ductwork scheduled to be removed or relocated before cutting.

3.3 PERFORMANCE

- A. Employ skilled workmen to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time and complete without delay. Any adverse noise or odor producing work must be performed in accordance with Section 01 14 00 Work Restrictions. Cutting: Cut existing construction using methods least likely to damage elements retained and adjoining construction. Where possible, review proposed procedures with the original installer and comply with the original installer's recommendations.
1. In general, use hand or small power tools designed for sawing or grinding, not for hammering and chopping.
 2. 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.
 3. To avoid marring existing finished surfaces, cut or drill from the exposed or finished side into concealed surfaces.
 4. Cut through concrete and masonry using silicon carbide or harder tipped tools.
 5. After utility services are bypassed, cut-off pipe or conduit in walls or partitions to be removed. Cap, valve or plug and seal the remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after by-passing and cutting.

CUTTING AND PATCHING

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- B. Patching: Patch with durable seams that are as invisible as possible. Comply with specified tolerances.
 - 1. Inspect and test patched areas to demonstrate integrity of the installation.
 - 2. Restore exposed finishes of patched areas and extend finish restoration into adjoining construction in a manner that will eliminate evidence of patching and refinishing.
 - 3. Where removed walls or partitions extends one finished area into another finished area, patch and repair floor and wall surfaces to provide an even surface of uniform color and appearance. Remove existing floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.
 - 4. Where patching occurs in a smooth painted surface, extend final paint coat over entire unbroken surface that contains the patch.
 - 5. Patch, repair or re-hang existing ceilings as necessary to provide an even-plane surface of uniform appearance.
- C. Perform cutting and patching work if listed in Division 1 "Work Restrictions" to be performed during Government Unoccupied Hours.

3.4 CLEANING

- A. Clean areas and spaces where cutting and patching are performed. Completely remove all evidence of the Work.
- B. Thoroughly clean piping, conduit, and similar features before applying paint, restored pipe coverings, or other finishing materials.

END OF SECTION 01 73 10

CUTTING AND PATCHING

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SECTION 01 73 20 - SELECTIVE DEMOLITION

PART 1 - GENERAL

1.1 SUMMARY

A. This section includes the following:

1. Demolition and removal of selected portions of an existing building.
2. Repair procedures for selective demolition operations.

B. Definitions:

1. Remove: Detach items from existing construction and legally dispose of them.
2. Remove and Salvage or Recycling: Detach items from existing construction and deliver them to Government undamaged and ready for reuse or recycling
3. Remove and Reinstall: Detach items from existing construction, prepare them for reuse, and reinstall them where indicated.
4. Existing to Remain: Existing items of construction that are not to be removed.

1.2 MATERIALS OWNERSHIP

- A. Except for items or materials indicated to be salvaged, reinstalled, or otherwise indicated to remain the Government's property, demolished materials shall become the Contractor's property and shall be removed from the site.

1.3 SUBMITTALS

- A. Qualification Data: List of demolition firm's completed projects with project addresses, and names and addresses of architects and owners.
- B. Proposed dust-control measures.
- C. Proposed noise-control measures.
- D. Schedule of Selective Demolition Activities: Indicate the following:
1. Detailed sequence of selective demolition work, with starting and ending dates for each activity.
 2. Interruption of utility services.
 3. Coordination for shutoff, capping, and continuation of utility services.
 4. Use of elevator and stairs.
 5. Locations of temporary partitions and means of egress.

SELECTIVE DEMOLITION

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6. Procedures to ensure uninterrupted progress of Government's on-site operations.
7. Coordination of Government's continuing occupancy of portions of existing building and of Government's partial occupancy of completed Work.

- E. Inventory: Items to be removed and salvaged.
- F. Photographs or Videotape: Before work begins, submit sufficiently detailed digital photographs or videotapes showing existing conditions of adjoining construction and site improvements, including finish surfaces, to record preexisting damage.
- G. Landfill Records: Indicate receipt and acceptance of all wastes, hazardous and otherwise. In accordance with EPA regulations hazardous materials must be disposed of at a landfill facility licensed to accept hazardous wastes.

1.4 QUALITY CONTROL

- A. Regulatory Requirements: Comply with governing EPA notification regulations before starting selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.
- B. Standards: Comply with NFPA 241 and ANSI A10.6.
- C. Refrigerant Recovery Technician Qualifications: Certified by an EPA-approved program.

1.5 PROJECT CONDITIONS

- A. Government will occupy portions of the building immediately adjacent to selective demolition area.
1. Conduct selective demolition so Government operations will not be disrupted.
 2. Provide GSA with not less than 72-hour notice prior to activities that will affect Government operations.
- B. Maintain access to existing walkways, corridors and other adjacent occupied or used facilities. Do not close or obstruct walkways, corridors, or other occupied or used facilities without written permission from authorities having jurisdiction.
- C. Hazardous Materials: It is not expected that hazardous materials will be encountered in the Work at the building. If any material suspected of containing hazardous materials is encountered, do not disturb the material.
1. Immediately notify GSA.
 2. At the Government's sole discretion and only upon written direction from the Contracting Officer, hazardous materials will be removed by the Contractor. A change to the Contract price may be provided, subject to the applicable clauses of the Contract.
- D. On-site storage or sale of removed items or materials is not permitted.

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- E. Utility Service: Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations.
- F. Fire Protection: Maintain fire-protection services during selective demolition operations.

1.6 WARRANTIES

- A. Existing Special Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during selective demolition, by methods and with materials that do not void existing warranties.

PART 2 - PRODUCTS

2.1 REPAIR MATERIALS

- A. Where available and appropriate for use, provide repair materials that are identical to existing materials.
- B. Where identical materials are unavailable or cannot be used for exposed surfaces, use materials that visually match existing adjacent surfaces to the fullest extent possible.
- C. Use materials whose installed performance equal or surpasses that of existing materials.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify that utilities to be removed have been disconnected and capped.
- B. Survey existing conditions and correlate with requirements indicated to determine extent of selective demolition required.
- C. Inventory and record the before and after condition of items to be removed and reinstalled, and items to be removed and salvaged. Protect any removed items during demolition.
- D. When encountering unanticipated mechanical, electrical, or structural elements that conflict with the intended function or design, investigate, and measure the nature and extent of the conflict. Promptly submit a written report to the Government's contracting officer.
- E. Survey the condition of the building to determine whether removing any element might result in a structural deficiency or unplanned collapse of any portion of the structure or adjacent structures during selective demolition. Report findings to the Government for determination.

SELECTIVE DEMOLITION

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- F. Perform surveys as the selective demolition progresses to detect hazards resulting from the activities. Report findings to GSA for determination.

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, except when authorized in writing by authorities having jurisdiction.
 - 1. Provide temporary services during interruptions to existing utilities, as acceptable to governing authorities.
 - 2. Provide at least 72 hours' notice to GSA if shutdown of service is required during changeover.
- C. Utility Requirements: Locate, identify, disconnect, and seal or cap off indicated utility services serving areas to be selectively demolished.
 - 1. Cut off pipe or conduit in partitions or millwork to be removed. Cap, valve or plug and seal the remaining portion of pipe or conduit after bypassing.
 - 2. Do not start selective demolition work until utility disconnection and sealing have been completed and verified.

3.3 PREPARATION

- A. Hazardous Materials: Drain, purge or otherwise remove, collect, and dispose of chemicals, gases, explosives, acids, flammables, or other hazardous materials before proceeding with selective demolition operations. See Section 01 35 26 Safety and Health. Advise the Government immediately if suspected hazardous materials are encountered in the course of the Work.
- B. Temporary Site Control: Remove debris and conduct demolition operations in a manner to ensure minimum interference with roads, streets, walks, walkways, corridors, and other adjacent occupied or used facilities.
 - 1. Do not close or obstruct streets, walks, walkways, corridors, or other adjacent occupied or used facilities without permission from the Government and authorities having jurisdiction.
 - 2. Provide alternate routes around closed or obstructed traffic ways if required by governing regulations.
- C. Temporary Facilities: Conduct demolition operations in a manner to prevent injury to people and damage to adjacent building and facilities to remain. Provide for safe passage of people around selective demolition area.
 - 1. Erect temporary protection, such as walks, fences, railings, canopies, and covered passageways, where required by authorities having jurisdiction.
 - 2. Protect existing site improvements, appurtenances, and landscaping to remain.
 - 3. Protect walls, ceilings, floors, and other existing finish work that are to remain and are exposed during selective demolition operations.

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4. Cover and protect furniture, furnishings and equipment that have not been removed.
- D. Temporary Enclosures: Erect and maintain dustproof partitions and temporary enclosures to limit dust and dirt migration and to separate areas from fumes and noise.
- E. Temporary Shoring: Provide and maintain shoring, bracing, or other structural support to preserve stability and prevent movement, settlement, or collapse of building to be selectively demolished. Strengthen or add new supports when required during the progress of selective demolition.

3.4 POLLUTION CONTROLS

- A. Dust Control: Use temporary enclosures and other suitable methods complying with governing environmental protection regulations to limit the spread of dust and dirt.
 1. Do not use water when it may damage existing construction or create hazardous or objectionable conditions, such as ice, flooding, or pollution.
 2. Wet mop floors to eliminate trackable dirt, and wipe down walls and doors of demolition enclosure.
- B. Disposal: Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
 1. Remove debris from upper levels of building by chute, hoist, or other device that will convey debris to grade level.
- C. Cleaning: Clean adjacent structures and site improvements of dust, dirt and debris caused by selective demolition operations. Return adjacent areas to condition existing before start of selective demolition.

3.5 SELECTIVE DEMOLITION

- A. Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete selective demolition within limitations of governing regulations and as follows:
 1. Proceed with selective demolition systematically. Conduct work in an order that avoids transporting removed items and debris through areas with completed selective demolition work, and that allows for removal of items before supports for those items are removed in another area.
 2. Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage adjoining construction to remain. Use hand or small power tools designed for sawing or grinding, not for hammering and chopping, to minimize disturbance of adjacent surfaces. Temporarily cover openings to remain.
 3. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.
 4. Before using cutting torches contractor must request a burning permit from the Government at least 48 hours before performing the work. Clear work area of flammable materials. At concealed spaces, such as duct and pipe interiors, verify condition and contents of hidden space before starting flame-cutting operations. Maintain portable fire-suppression devices during flame-cutting operations, and maintain adequate ventilation when using cutting torches.

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5. Remove decayed, vermin-infested, and other hazardous or unsuitable materials, and promptly dispose of these materials off-site.
 6. Lower removed structural framing members to ground by method suitable to avoid free fall and to prevent ground impact or dust generation.
 7. Locate selective demolition equipment throughout the structure and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
 8. Return elements of construction and surfaces to remain to condition existing before start of selective demolition operations.
- B. Existing Facilities: Comply with building manager's regulations for using and protecting elevators, stairs, walkways, loading docks, building entries and other building facilities during selective demolition operations.
- C. Repair and Storage of Salvaged Items and Items to be Reinstalled:
1. Repair: Clean and repair the materials and equipment to functional condition adequate for intended reuse. Paint damaged or deteriorated painted surfaces of equipment to match new equipment.
 2. Storage: Store the materials and equipment in a secure dry area until final reinstallation or disposal.
- D. Salvaged Items and Items to be Reinstalled:
1. Reinstallation: Where items are indicated to be removed and reinstalled, install the materials and equipment in locations indicated. Comply with installation requirements for new materials and equipment.
 2. Delivery to Government: Where items are indicated to be removed and salvaged, transport the materials and equipment to the area on-site designated by the Government or indicated on the Drawings. Properly protect all salvaged items.
- E. Protection of Salvaged Items: For items which must be reinstalled at the same removal site, mark each item indelibly in concealed fashion and codify a document such that the items can be placed back in to the place where they were removed. Pack or crate salvaged materials and equipment after removal. Identify contents of containers. Protect items from damage during transport and storage.
- F. Existing Items to Remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by GSA, items may be removed to a suitable, protected storage location during selective demolition and then cleaned and reinstalled in their original locations.
- G. Resilient Floor Coverings: Remove floor coverings and adhesive, and prepare substrate for new floor covering, according to recommendations of the Resilient Floor Covering Institute (RFCI).
- H. Air-Conditioning Equipment: Remove equipment without releasing refrigerants.
- I. Recycling: Provide separate bins or roll-offs for each material to be recycled onsite.

3.6 PATCHING AND REPAIRS

- A. The Government shall determine the acceptability of patch and repair work.

SELECTIVE DEMOLITION

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- B. Promptly patch and repair holes and damaged surfaces caused to adjacent construction by selective demolition operations.
- C. Repairs: Where repairs to existing surfaces are required, patch to produce surfaces suitable for new materials.
- D. Finishes: Restore exposed finishes of patched areas and extend finish restoration into adjoining construction to remain in a manner that eliminates evidence of patching and refinishing.
- E. Floor and Wall Surfaces: Patch and repair floor and wall surfaces in each space where demolished walls or partitions result in extending one finished area into another. Provide a flush and even surface of uniform color and appearance.
 - 1. Closely match texture and finish of existing adjacent surface.
 - 2. Patch with durable seams that are as invisible as possible. Comply with specified tolerances.
 - 3. Where patching smooth painted surfaces, extend final paint coat over entire unbroken surface containing the patch after the patched surface has received primer and other specified undercoats. Painting shall be full panels to the point where material breaks or change of texture occur.
 - 4. Remove existing floor and wall coverings and replace with new materials, if necessary to achieve uniform color and appearance.
 - 5. Where feasible, inspect and test patched areas to demonstrate integrity of the installation.
- F. Ceilings: Patch, repair or rehang existing ceilings as necessary to provide an even-plane surface of uniform appearance.

3.7 DISPOSAL OF DEMOLISHED MATERIALS

- A. Promptly dispose of demolished materials. Do not allow demolished materials to accumulate on-site.
- B. Dispose of any small refrigerant containing equipment (i.e. room air conditioners, water fountains, refrigerators, etc.) that was demolished with its charge intact in accordance with all Federal, State and local safe disposal requirements."
- C. Disposal: Transport demolished materials off Government property and legally dispose of them. Transport demolished materials to be recycled to a qualified recycling center for the specific material. Provide weight-ticket receipts for each load delivered.

END OF SECTION 01 73 20

SELECTIVE DEMOLITION

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SECTION 01 73 50 - FIRE PREVENTION PRECAUTIONS FOR HOT WORK

PART 1 GENERAL

1.01 SUMMARY

- A. This section applies to safeguards to be observed in performing hot work, including welding, soldering, brazing and other operations where open flames or implements utilizing heat are used.
- B. Hot Work Permit: Comply with NFPA 51B. Do not conduct operations involving the use of open-flame, electrical arc equipment, or flammable substances until a permit for welding, cutting, and burning has been issued by the Government.
 - 1. The Property Manager will issue the hot work permit. Permit must be signed prior to start of work; coordinate at least 48 hours in advance. Permits must be signed by the contractor and returned to property management office at the completion of work. No new permits will be issued until the current permit has been signed and returned.
 - 2. The contractor must have the signed work permit at the work site at all times when performing hot work.
- C. Hot work permit duration shall be one work shift for a specific location unless otherwise agreed to by the Government and Contractor.

1.02 SAFETY PRECAUTIONS

- A. Prior to operations, the site shall be visited and suitable locations established for the portable equipment storage during non-working hours. The Contractor and the Government shall coordinate and designate such locations.
- B. The Contractor shall ensure that operations involving the use of open-flame, electrical arc equipment or flammable substances are not conducted until a permit for welding, cutting, and burning has been completed, signed and issued by the GSA Building Manager.
- C. Prior to commencing operations, a positive determination shall be made that it is impractical to conduct the hot work in a shop area or outside of the building. Coordinate suitable locations for hot equipment operations agreeable to the Contracting Officer's Representative.

1.03 NOTIFICATION

- A. The Contractor shall notify GSA's Building Manager at least 48 hours in advance of the area of operations for each day and of all subsequent changes that occur.
- B. The Contractor shall notify the GSA Building Manager of all locations where hot work has been performed not less than 30 minutes before the work or no more than 90 minutes after work is completed or stopped for the day. The contractor shall provide a dedicated fire watch during this time for hot work.

FIRE PREVENTION PRECAUTIONS FOR HOT WORK

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PART 2 - PRODUCTS (NOT APPLICABLE)

PART 3 - EXECUTION

3.01 INSPECTION

- A. Before starting operations, the Contractor shall furnish trained personnel to provide fire watches for locations where hot work is to be performed. One fire watcher may observe no more than two (2) locations if in a relatively small contiguous area if approved by the Contracting Officer's Representative and in compliance with applicable fire codes. Contractor shall furnish suitable type, fully-charged, operable portable fire extinguisher to each fire watcher.
 - 1. The Contractor shall provide fire watchers who know how to operate the fire extinguisher, how to initiate a fire alarm and how to summon the fire department.
- B. Before starting operations, take suitable precautions to minimize the hazard of a fire communicating to the opposite side of walls, floors, ceilings and roofs from the operations.

3.02 SAFETY MEASURES

- A. Hot work shall not be done in or near rooms or areas where flammable liquids or explosive vapors are present or thought to be present. A combustible gas indicator (explosimeter) test shall be conducted to assure that each area is safe. The Contractor is responsible for arranging and paying for each test.
 - B. Insofar as possible, the Contractor shall remove and keep the area free from all combustibles, including rubbish, paper and waste within a radius of 25 feet (7.62 m) from hot operations.
 - 1. If combustible material cannot be removed, the Contractor shall furnish fireproof blankets to cover such materials. At the direction of the Building Manager or Contracting Officer's Representative, floors, walls, and ceilings of combustible material shall be wetted thoroughly with water before, during, and after operations sufficiently to afford adequate protection.
 - 2. Where possible, the Contractor shall furnish and use baffles of metal or gypsum board to prevent the spraying of sparks, hot slag and other hot particles into surrounding combustible material.
 - C. The Contractor shall prevent the spread of sparks and particles of hot metal through open windows, doors, and holes and cracks in floors, walls, ceilings and roofs.
 - D. Cylinders of gas used in hot work shall be placed a safe distance from the work. The Contractor shall provide hoses and equipment free of deterioration, malfunction and leaks. Suitable supports shall be provided to prevent accidental overturning of cylinders. All cylinder control valves shall be shut off while in use with the gas pressure regulator set at 15 psi (103 kPa) or less.
 - E. When hot work operations are completed or ended for the day, each location of the day's work shall be inspected by the Contractor 60 minutes after completion of operations to detect for hidden or smoldering fires and to ensure that proper housekeeping is maintained. Contractor shall cleanup the area of work at the end of each shift or workday. Contractor shall provide a continuous fire watch at least 24 hours after the burning work has been completed
 - F. Where sprinkler protection exists, the sprinkler system shall be maintained without interruption while operations are being performed. If operations are performed close to automatic sprinkler heads, gypsum
- FIRE PREVENTION PRECAUTIONS FOR HOT WORK 01 73 50

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board sheets or damp cloth guards may be used to shield the individual heads temporarily. The heads shall be inspected by the Contractor immediately after hot work operations cease, to ensure all materials have been removed from the heads and that the heads have not been damaged.

- G. Suitable type, fully-charged, operable portable fire extinguisher shall be available at all times during hot work operations.
- H. If any of the above safeguards are not employed or are violated, the Government may verbally stop the Work followed by written notice until compliance is obtained. Such stoppage shall not relieve the Contractor from performing his work within the Contract period for the Contract price.

END OF SECTION 01 73 50

FIRE PREVENTION PRECAUTIONS FOR HOT WORK

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SECTION 01 74 19 - CONSTRUCTION NONHAZARDOUS WASTE MANAGEMENT AND DISPOSAL

PART 1 GENERAL

1.01 GENERAL

- A. Drawings and general provisions of the Contract, including Federal Acquisition Regulation (FAR) and General Services Administration Acquisition Regulation (GSAR) contract clauses, and other Division 01 Specification Sections, apply to this Section.

1.02 SUMMARY

- A. Section includes administrative and procedural requirements for the following:
 - 1. Salvaging nonhazardous demolition and construction waste.
 - 2. Recycling nonhazardous demolition and construction waste.
 - 3. Disposing of nonhazardous demolition and construction waste.

1.03 DEFINITIONS

- A. Construction Waste: Building and site improvement materials and other waste resulting from construction, remodeling, renovation, or repair operations. Construction waste includes packaging.
- B. Demolition Waste: Building and site improvement materials resulting from demolition or selective demolition operations.
- C. Disposal: Removal off-site of demolition and construction waste and subsequent sale, recycling, reuse, or deposit in landfill or incinerator acceptable to authorities having jurisdiction.
- D. Recycle: Recovery of demolition or construction waste for subsequent processing in preparation for reuse.
- E. Salvage: Recovery of demolition or construction waste and subsequent sale or reuse in another facility.
- F. Salvage and Reuse: Recovery of demolition or construction waste and subsequent incorporation into the Work.

1.04 PERFORMANCE REQUIREMENTS

- A. General: Achieve end-of-Project rates for salvage/recycling of 50 percent minimum by weight of total waste generated by the Work unless additional rates are indicated. Practice efficient waste management in the use of materials in the course of the Work. Use all reasonable means to divert construction and demolition waste from landfills and incinerators. Facilitate recycling and salvage of materials.
 - 1. Salvage/recycling goal is 75% percent.
 - 2. Mandatory minimum salvage/recycling requirement is 50 percent.

1.05 ACTION SUBMITTALS

- A. Waste Management Plan: Submit plan within 14 calendar days of date established for the Notice of Award, prepare and submit a Waste Management Plan including, but not limited to, the following:
 - 1. List of the recycling facilities, reuse facilities, municipal waste landfills and other disposal area(s) to be used. Include:

CONSTRUCTION FOR NONHAZARDOUS WASTE MANAGEMENT AND DISPOSAL

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- a. Name, location, and phone number.
 - b. Copy of permit or license for each facility.
2. Identify materials that cannot be recycled or reused. Provide explanation or justification.
3. Revise and resubmit Plan as required by Owner.
 - a. Approval of Contractor's Plan will not relieve the Contractor of responsibility for compliance with applicable environmental regulations.

1.06 INFORMATIONAL SUBMITTALS

- A. Waste Reduction Progress Reports: Concurrent with each Application for Payment, electronically submit reports for construction waste and for demolition waste. Include the following information:
 1. Material category.
 2. Generation point of waste. (Building address)
 3. Total quantity of waste in tons.
 4. Quantity of waste salvaged, both estimated and actual in tons.
 5. Quantity of waste recycled, both estimated and actual in tons.
 6. Total quantity of waste recovered (salvaged plus recycled) in tons.
 7. List of Materials made from recycled materials/bio-based materials and their cost (not including installation costs) purchased for use on this project.
 8. Total quantity of waste recovered (salvaged plus recycled) as a percentage of total waste.
- B. Waste Reduction Calculations: Before request for Substantial Completion, submit calculated end-of-Project rates for salvage, recycling, and disposal as a percentage of total waste generated by the Work.
- C. Records of Donations: Indicate receipt and acceptance of salvageable waste donated to individuals and organizations. Indicate whether organization is tax exempt.
- D. Records of Sales: Indicate receipt and acceptance of salvageable waste sold to individuals and organizations. Indicate whether organization is tax exempt.
- E. Recycling and Processing Facility Records: Indicate receipt and acceptance of recyclable waste by recycling and processing/salvaging facilities licensed to accept them. Include manifests, weight tickets, receipts, and invoices.
- F. Landfill and Incinerator Disposal Records: Indicate receipt and acceptance of waste by landfills and incinerator facilities licensed to accept them. Include manifests, weight tickets, receipts, and invoices.

1.07 QUALITY ASSURANCE

- A. Regulatory Requirements: Comply with hauling and disposal regulations of authorities having jurisdiction.

1.08 WASTE MANAGEMENT PLAN

- A. General: Develop a waste management plan according to ASTM E 1609 and requirements of this Section. Plan shall consist of waste identification, waste reduction work plan, and cost/revenue analysis. Indicate quantities by weight or volume, but use same units of measure throughout waste management plan.
- B. Waste Identification: Indicate anticipated types and quantities of demolition and construction waste generated by the Work. Include estimated quantities and assumptions for estimates.

CONSTRUCTION FOR NONHAZARDOUS WASTE MANAGEMENT AND DISPOSAL

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- C. Waste Reduction Work Plan: List each type of waste and whether it will be salvaged, recycled, or disposed of in landfill or incinerator. Include points of waste generation, total quantity of each type of waste, quantity for each means of recovery, and handling and transportation procedures.
1. Salvaged Materials for Reuse: For materials that will be salvaged and reused in this Project, describe methods for preparing salvaged materials before incorporation into the Work.
 2. Salvaged Materials for Sale: For materials that will be sold to individuals and organizations, include list of their names, addresses, and telephone numbers.
 3. Salvaged Materials for Donation: For materials that will be donated to individuals and organizations, include list of their names, addresses, and telephone numbers.
 4. Recycled Materials: Include list of local receivers and processors and type of recycled materials each will accept. Include names, addresses, and telephone numbers.
 5. Disposed Materials: Indicate how and where materials will be disposed of. Include name, address, and telephone number of each landfill and incinerator facility.
 6. Handling and Transportation Procedures: Include method that will be used for separating recyclable waste including sizes of containers, container labeling, and designated location where materials separation will be performed.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.01 PLAN IMPLEMENTATION

- A. General: Implement approved waste management plan. Provide handling, containers, storage, signage, transportation, and other items as required to implement waste management plan during the entire duration of the Contract.
1. Comply with Division 01 Section "Temporary Facilities and Controls" for operation, termination, and removal requirements.
- B. Training: Train workers, subcontractors, and suppliers on proper waste management procedures, as appropriate for the Work.
1. Distribute waste management plan to everyone concerned within 5 calendar days of submittal return.
 2. Distribute waste management plan to entities when they first begin work on-site. Review plan procedures and locations established for salvage, recycling, and disposal. Plan is to be kept on site.
- C. Site Access and Temporary Controls: Conduct waste management operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.
1. Designate and label specific areas on Project site necessary for separating materials that are to be salvaged, recycled, reused, donated, and sold.
 2. Comply with Division 01 Section "Temporary Facilities and Controls" for controlling dust and dirt, environmental protection, and noise control.
- D. Waste Management in Historic Zones or Areas: Hauling equipment and other materials shall be of sizes that clear surfaces within historic spaces, areas, rooms, and openings, by 300 mm (12 inches) or more.

CONSTRUCTION FOR NONHAZARDOUS WASTE MANAGEMENT AND DISPOSAL

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3.02 SALVAGING DEMOLITION WASTE

- A. Salvaged Items for Reuse in the Work: Salvage items for reuse and handle as follows:
 - 1. Clean salvaged items.
 - 2. Pack or crate items after cleaning. Identify contents of containers with label indicating elements, date of removal, quantity, and location where removed.
 - 3. Store items in a secure area until installation.
 - 4. Protect items from damage during transport and storage.
 - 5. Install salvaged items to comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make items functional for use indicated.
- B. Salvaged Items for sale and/or donation is not permitted on Project site.
- C. Salvaged Items for the Government's Use: Salvage items for the Government's use and handle as follows:
 - 1. Clean salvaged items.
 - 2. Pack or crate items after cleaning. Identify contents of containers with label indicating elements, date of removal, quantity, and location where removed.
 - 3. Store items in a secure area until delivery to Owner.
 - 4. Transport items to the Government's storage area as designated by GSA.
 - 5. Protect items from damage during transport and storage.
- D. Doors and Hardware: Brace open end of door frames. Except for removing door closers, leave door hardware attached to doors.
- E. Equipment: Drain tanks, piping, and fixtures. Seal openings with caps or plugs. Protect equipment from exposure to weather.
- F. Plumbing Fixtures: Separate by type and size.
- G. Lighting Fixtures: Separate lamps by type and protect from breakage.
- H. Electrical Devices: Separate switches, receptacles, switchgear, transformers, meters, panel-boards, circuit breakers, and other devices by type.

3.03 RECYCLING DEMOLITION AND CONSTRUCTION WASTE, GENERAL

- A. General: Recycle paper (bond or newsprint) and beverage containers (glass, plastic or aluminum) used by on-site workers.
- B. Preparation of Waste: Prepare and maintain recyclable waste materials according to recycling or reuse facility requirements. Maintain materials free of dirt, adhesives, solvents, petroleum contamination, and other substances deleterious to the recycling process.
- C. Procedures: Separate recyclable waste from other waste materials, trash, and debris. Separate recyclable waste by type at Project site to the maximum extent practical according to approved construction waste management plan.
 - 1. Provide appropriately marked containers or bins for controlling recyclable waste until removed from Project site. Include list of acceptable and unacceptable materials at each container and bin.
 - a. Inspect containers and bins for contamination and remove contaminated materials if found.

CONSTRUCTION FOR NONHAZARDOUS WASTE MANAGEMENT AND DISPOSAL

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2. Stockpile processed materials on-site without intermixing with other materials. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust.
3. Stockpile materials away from construction area. Do not store within drip line of remaining trees.
4. Store components off the ground and protect from the weather.
5. Remove recyclable waste from the Government's property and transport to recycling receiver or processor.

3.04 RECYCLING DEMOLITION WASTE

- A. Concrete: Remove reinforcement and other metals from concrete and sort with other metals.
 1. Pulverize concrete to maximum 38-mm (1-1/2-inch) size.
- B. Wood Materials: Sort and stack members according to size, type, and length. Separate lumber, engineered wood products, panel products, and treated wood materials.
- C. Metals: Separate metals by type.
 1. Remove and dispose of bolts, nuts, washers, and other rough hardware.
- D. Gypsum Board: Stack large clean pieces on wood pallets or in container and store in a dry location. Remove edge trim and sort with other metals. Remove and dispose of fasteners.
- E. Acoustical Ceiling Panels and Tile: Stack large clean pieces on wood pallets and store in a dry location.
- F. Metal Suspension System: Separate metal members including trim, and other metals from acoustical panels and tile and sort with other metals.
- G. Piping: Reduce piping to straight lengths and store by type and size. Separate supports, hangers, valves, sprinklers, and other components by type and size.
- H. Conduit: Reduce conduit to straight lengths and store by type and size.

3.05 RECYCLING CONSTRUCTION WASTE

- A. Packaging:
 1. Cardboard and Boxes: Break down packaging into flat sheets. Bundle and store in a dry location.
 2. Polystyrene Packaging: Separate and bag materials.
 3. Pallets: As much as possible, require deliveries using pallets to remove pallets from Project site. For pallets that remain on-site, break down pallets into component wood pieces and comply with requirements for recycling wood.
 4. Crates: Break down crates into component wood pieces and comply with requirements for recycling wood.
- B. Wood Materials:
 1. Clean Cut-Offs of Lumber: Grind or chip into small pieces.
 2. Clean Sawdust: Bag sawdust that does not contain painted or treated wood.
- C. Gypsum Board: Stack large clean pieces on wood pallets or in container and store in a dry location.
 1. Clean Gypsum Board: Grind scraps of clean gypsum board using small mobile chipper or hammer mill. Screen out paper after grinding.

3.06 DISPOSAL OF WASTE

- A. General: Except for items or materials to be salvaged, recycled, or otherwise reused, remove waste materials from Project site and legally dispose of them in a landfill or incinerator acceptable to authorities having jurisdiction.
 - 1. Except as otherwise specified, do not allow waste materials that are to be disposed of accumulate on-site.
 - 2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
- B. Burning: Do not burn waste materials.
- C. Disposal: Transport waste materials and dispose of at designated spoil areas on the Government's property.
- D. Disposal: Remove waste materials from the Government's property and legally dispose of them.

END OF SECTION 01 74 19

CONSTRUCTION FOR NONHAZARDOUS WASTE MANAGEMENT AND DISPOSAL

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SECTION 01 78 10 - PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.01 SUMMARY

- A. This section includes administrative and procedural requirements that the Contractor must perform with regards to Project Record Documents. These include but are not limited to those defined in Part B. Electronic records that show identifiable changes shall be done. The following normally must be included, and the Contractor is required to show any other changes not listed below:
- B. All electronic project record documents shall be provided to GSA.
 - 1. Marked-up copies of Contract Drawings.
 - 2. Marked-up copies of Shop Drawings.
 - 3. Newly prepared record drawings.
 - 4. Marked-up copies of Specifications, addenda, and Change Orders.
 - 5. Marked-up Product Data submittals.
 - 6. Record Samples.
 - 7. Field records for variable and concealed conditions.
 - 8. Record information on Work that is recorded only schematically.
 - 9. Operating manuals with a schematic diagram, sequence of operation, and system operating criteria for each system installed. Training materials and videos. Equipment maintenance manuals with complete information for all major components.
- C. Maintenance of Documents and Samples: Store both electronic media and hard copy Record Documents and samples in the field office apart from the Contract Documents used for construction in clean, dry conditions. They shall be readily accessible. Do not use Project Record Documents for construction purposes

1.02 RECORD DRAWINGS

- A. Markup Procedure: During construction, the Contractor shall maintain a set of black-line white prints of Contract Drawings and Shop Drawings for Project Record Document purposes. Contractor shall mark these Drawings to show all changes that have been done. Mark record prints of Contract Drawings or Shop Drawings, whichever is most capable of showing actual physical conditions sufficient to construct the changes. Where Shop Drawings are marked, show cross-reference on Contract Drawings location. Identify each change to coordinate with accompanying, if any, Record Documents.
 - 1. Mark hard copy record sets with red erasable colored pencil. Use other colors to distinguish between changes for different categories of the Work at the same location.
 - 2. Both the bound, organized, and labeled hard copies and the electronic media shall be submitted prior to Final Acceptance.
 - 3. The Contractor is responsible for any printing costs associated with Project Record Drawings. The Contractor shall submit a preliminary set of record drawings for review and acceptance. Before

PROJECT RECORD DOCUMENTS

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copying and distributing, submit corrected documents and the original marked-up prints to the Government for review and acceptance. If acceptable, the government will return the original marked-up prints to the Contractor for organizing into sets, printing, binding, and final submittal.

- a. Newly Prepared Construction Drawings into Record Drawings: When neither the original Contract Drawings nor Shop Drawings are not suitable for converting into ion, record drawings prepare new drawings instead of following procedures specified in part A.. These new drawings will be fully developed as contract drawings. New drawings may be required when a Change Order is issued as a result of accepting an alternate, substitution, or other modification.
4. Mark hard copy record sets with red erasable colored pencil. Use other colors to distinguish between changes for different categories of the Work at the same location.
5. Both the bound, organized, and labeled hard copies and the electronic media shall be submitted prior to Final Acceptance.
6. The Contractor is responsible for any printing costs associated with Project Record Drawings. The Contractor shall submit a preliminary set of record drawings for review and acceptance. Before copying and distributing, submit corrected documents and the original marked-up prints to the Government for review and acceptance. If acceptable, the government will return the original marked-up prints to the Contractor for organizing into sets, printing, binding, and final submittal.
 - a. Provide Drawings in a scale that allows for the scope of detailing and notations required to record the actual physical installation and its relationship to other construction.
7. When completed and accepted, integrate newly prepared Drawings with procedures specified for organizing, copying, binding and submitting record drawings.

1.03 RECORD SPECIFICATIONS

- A. During the construction period, the Contractor shall maintain the Project Specifications, including addenda and other modifications issued, for Project Record Document purposes.
 1. Mark the Specifications or provide new or edited Specifications to indicate the actual installation where the installation varies from that indicated in Specifications. Provide dates and other identifying information to discriminate them from the existing Specifications. These shall be fully coordinated with the other contract documents.
 - a. In each Specification section where products, materials or units of equipment are specified or scheduled, mark the copy with the proprietary name and model number of the product furnished.
 - b. Record the name of the manufacturer, supplier, installer, and other information necessary to provide a record of selections made and to document coordination with record Product Data submittals and maintenance manuals.
 - c. Give particular attention to substitutions, selection of product options, and information on concealed installations that would be difficult to identify or measure and record later.
 2. Upon completion of markup, submit above mentioned Record Specifications to the Government in electronic and hard copy mediums.

PROJECT RECORD DOCUMENTS

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1.04 RECORD PRODUCT DATA

- A. During the construction period, maintain one copy of each Product Data submittal.
 - 1. Mark Product Data to indicate the actual product installation where the installation varies from that indicated in Product Data submitted. Include changes in the product delivered to the site and changes in manufacturer's instructions and recommendations for installation.
 - 2. Give particular attention to information about concealed products and installations that cannot be readily identified and recorded later.
 - 3. Note related Change Orders and markup of Record Drawings, where applicable.
 - 4. Upon completion of markup, submit a complete set of record Product Data to the Government. Where record Product Data is required as part of maintenance manuals, submit marked-up Product Data as an insert in the manual instead of submittal as record Product Data.

1.05 RECORD SAMPLE SUBMITTAL

- A. Immediately prior to the date of Substantial Completion, the Contractor shall meet with the Contracting Officer's Representative at the site who shall determine which of the Samples maintained during the construction period shall be transmitted to the Government for record purposes.
- B. Comply with the Government's instructions for packaging, identification marking and delivery to the Government's sample storage space. Dispose of other samples in a manner specified for disposing of surplus and waste materials.

1.06 MISCELLANEOUS RECORD SUBMITTALS

- A. Refer to other Specification sections for miscellaneous record-keeping requirements and submittals in connection with various construction activities. Prior to Final Acceptance, complete Miscellaneous Records and place in good order, properly identified and bound or otherwise organized to allow for use and reference.
- B. Submit to the Government.

PART 2 - PRODUCTS (NOT APPLICABLE)

PART 3 - EXECUTION (NOT APPLICABLE)

END OF SECTION 01 78 10

PROJECT RECORD DOCUMENTS

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SECTION 01 78 22 - OPERATION AND MAINTENANCE DOCUMENTATION

PART 1 GENERAL

1.01 SUMMARY

- A. This section includes administrative and procedural requirements for operation and maintenance electronic and hard copy manuals and instructions, including the following.
 - 1. Instruction manuals covering the care, preservation and maintenance of materials and finishes.
 - 2. Operation, maintenance, troubleshooting and parts manuals for equipment and building operating systems.
 - 3. Instruction of Government operating personnel in the operation and maintenance of building systems and equipment.
 - 4. Equipment inventories.
 - 5. Emergency manuals.
 - 6. Contractor shall provide paper 1 hard copies for and 1 electronic copy.
- B. Additional Requirements: Refer to all of the individual Specification sections for additional requirements for the care and maintenance of materials and finishes, and for the operation and maintenance of the various pieces of equipment and operating systems and for manual preparation.
 - 1. Division 01 33 00 Section for Submittal Procedures.
 - 2. Division 01 77 00 Section for Closeout Procedures.

1.02 QUALITY CONTROL

- A. Operation and Maintenance Manual Preparation: In preparation of manuals, use personnel thoroughly trained and experienced in the maintenance of the material or finish involved, or in the design, operation, maintenance and manufacturing of the equipment or system involved.
 - 1. Where manuals require written instructions, use the personnel skilled in technical writing where necessary for communication of essential data.
 - 2. Where manuals require drawings or diagrams, use draftspersons capable of preparing drawings clearly in an understandable and transferrable format.
 - 3. Instructions of Government Personnel: Use instructors thoroughly trained and experienced in the design, operation maintenance and manufacturing of the equipment or system involved to instruct Government operation and maintenance personnel.

1.03 SUBMITTALS

- A. Submittal Schedule: Comply with the following schedule for submitting the aforementioned electronic manuals:
 - 1. Submit copies of each approved manual to the Government within 21 calendar days before training of government personnel is performed and after receipt of the Government's comments.
- B. Format: Submit operations and maintenance and related electronic manuals in the following format:

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1. Assemble each manual into a composite electronically indexed file. Submit on digital media acceptable to Government.
 - a. 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.
- C. Form of Submittal: Prepare operation and maintenance and related manuals in the form of an instructional document for use by operating and maintenance personnel. Organize into suitable sets of manageable size. Where possible, assemble instructions for similar products into a single binder.
 1. For each manual, provide heavy-duty, commercial-quality, 3-ring, loose-leaf binders, in thickness necessary to accommodate contents, sized to receive 8-1/2-by-11-inch (115-by-280-mm) paper. Provide a clear plastic sleeve on the cover and spine to hold labels describing contents. Provide pockets in the covers to receive folded sheets.
 - a. Where 2 or more binders are necessary to accommodate data, collate data in each binder into related groupings according to the Specifications table of contents. Cross-reference other binders where necessary to provide essential information for proper operation or maintenance of the product.
 - b. Identify each DVD, CD or binder on front and spine, with the printed title "OPERATION AND MAINTENANCE MANUAL," Project title or name, and subject matter covered. Indicate volume number for multiple volume sets of manuals.
 2. Dividers: Provide heavy paper dividers with celluloid-covered tabs for each separate section. Mark each tab to indicate contents. Provide a typed description of the product or major parts of equipment included in the section on each divider.
 3. Protective Plastic Jackets: Provide protective, transparent, plastic jackets designed to enclose electronic diagnostic software for computerized equipment.
 4. Text Material: Where maintenance manuals require written material, use the manufacturer's standard printed materials, where available. If manufacturer's standard printed materials are not available, provide specially prepared data, printed on 8-1/2-by-11-inch (115-by-280-mm), 20-lb/sq. ft. (75-g/sq. m) white bond paper.
 5. Drawings: Where manuals require drawings or diagrams, provide reinforced, punched binder tabs on drawings and bind in with text.
 - a. Where oversize drawings are necessary, fold drawings to the same size as text pages and use as a foldout.
 - b. If drawings are too large to be used practically as a foldout, place the drawing, neatly folded, in the front or rear pocket of binder. Insert a typewritten page indicating drawing title, description of contents and reference to the applicable location in the manual.

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PART 2 PRODUCTS

2.01 MANUAL CONTENT

- 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. Table of Contents
 2. List of documents.
 3. List of systems.
 4. List of equipment.
 5. In each manual, include information specified in the individual Specification sections and the following information where applicable for each major component:
 - a. General material, finish, system or equipment description.
 - b. Design factors and assumptions
 - c. Copies of applicable Shop Drawings and Product Data.
 - d. Material, finish, system or equipment identification, including but not limited to:
 - 1) Name of manufacturer with contact information.
 - 2) Model number.
 - 3) Serial number of each component.
 - e. Equipment operating data: The data includes but is not limited to:
 - 1) Equipment Type
 - 2) Equipment Set Points as commissioned for all seasons and/or setback controls.
 - 3) Equipment Descriptions.
 - 4) Manufacturer.
 - 5) Model Number.
 - 6) Serial Number.
 - 7) Equipment Status
 - 8) Electrical Motor Start Up and Running Data including but not limited to Amps, Volts, Locked Rotor and Running
 - 9) Building Number and Location including floor # and mechanical room #.
 - 10) Operation instructions.
 - 11) Emergency instructions.
 - 12) Wiring diagrams.
 - 13) Inspection and test procedures.
 6. Maintenance procedures and schedules, including, where applicable, preventative and predictive maintenance.
 7. Parts list
 8. Troubleshooting guide
 9. Precautions against improper use and maintenance.
 10. Copies of warranties and service contracts.
 11. Repair instructions, including listings of spare parts for equipment.

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12. Sources of required maintenance materials and related services.
- B. Format: Organize each manual into separate sections for each related product or piece of equipment. Each manual shall contain a title page, table of contents, general information, copies of Product Data, written text, drawings and copies of each warranty and service contract issued.
 1. Title Page: Provide a title page in a transparent, plastic envelope as the first sheet of each manual. As a minimum, provide the following information:
 - a. Subject matter covered by the manual.
 - b. Name and address of the Project.
 - c. Name of Government user agency.
 - d. Date of submittal.
 - e. Name, address, and telephone number of the Contractor.
 - f. Cross-reference to related products in other operation and maintenance manuals, if applicable.
 2. Table of Contents: After title page, include a typewritten table of contents for each emergency, operation, and maintenance volume: arranged systematically according to the Specifications format. Include a list of each product included, identified by product name or other appropriate identifying symbol and indexed to the content of the volume. Where more than one volume is required to accommodate the data, provide a comprehensive table of contents for all volumes in each volume of the set.
 3. General Information: Provide a general information section immediately following table of contents, listing each product included in the manual, identified by product name. Under each product, list the name, address, and telephone number of the subcontractor or installer and the maintenance contractor. Clearly delineate the extent of responsibility for each of these entities. Include a local source for replacement parts for equipment.
 4. Product Data: Where the manuals include manufacturer's standard printed data, include only those sheets that are pertinent to the part or product installed. Mark each sheet to identify each part or product included in the installation. Where the Project includes more than one item contained in the product data, identify each item, using appropriate references from the Contract Documents. Identify data that is applicable to the installation, and delete references to information that is not applicable.
 5. Written Text: Prepare text to provide necessary information where manufacturer's standard printed data is not available, and the information is necessary for proper maintenance of materials or finishes, or for proper operation and maintenance of equipment or systems. Provide customized text for this project that explains the systems operation and design intent. Organize text in a consistent format under separate headings for different procedures. Where necessary, provide a logical sequence of instruction for each operation or maintenance procedure, the sequence of operation, seasonal operational changes, and night time setbacks.
 6. Drawings: Provide specially prepared drawings where necessary to supplement manufacturer's printed data to illustrate the relationship of component parts of equipment or systems or to provide control or flow diagrams. Coordinate these drawings with information contained in Project Record Drawings to assure correct illustration of the completed installation.

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7. Warranties and Service Contracts: Provide a copy of each warranty or service contract in the appropriate manual for the information of the Government's operating personnel. Provide written data outlining procedures to follow in the event of product failure. List circumstances and conditions that would affect the validity of warranty.
- C. When required for full understanding, include a copy of applicable Project Record Drawings.

2.02 INTERIOR FINISHES MAINTENANCE MANUAL

- A. Submit 1 copy of each materials and finishes manual, in final form, to GSA. Provide one section for architectural products, including applied materials and finishes. Provide a second section for products designed for moisture protection and products exposed to the weather.
- B. Architectural Products: Provide manufacturer's data and instructions for the care and maintenance of architectural products, including applied materials and finishes.
 1. Manufacturer's Data: Provide complete information on architectural products, including the following, as applicable:
 - a. Manufacturer's catalog number and contact information.
 - b. Size.
 - c. Material composition.
 - d. Color.
 - e. Texture.
 - f. Repairs to finish where applicable
 - g. Reordering information for custom manufactured products.
 2. Care and Maintenance Instructions: Provide care and maintenance information, including manufacturer's recommendations for types of cleaning agents to be used and methods of cleaning. Provide information about cleaning agents and methods that could prove detrimental to the product. Include manufacturer's recommended schedule for cleaning and maintenance.
- C. Moisture Protection and Products Exposed to the Weather: Provide complete manufacturer's data with instructions for the inspection, maintenance and repair of products exposed to the weather or designed for moisture-protection purposes.
 1. Manufacturer's Data: Provide detailed manufacturer's information, including the following, as applicable.
 - a. Applicable standards.
 - b. Chemical composition.
 - c. Installation details.
 - d. Inspection procedures.
 - e. Maintenance information.
 - f. Repair procedures.
- D. Schedule: Provide complete information in the materials and finishes manual on products specified.

2.03 EMERGENCY MANUALS

- A. Type of emergency.

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- B. Emergency instructions.
- C. Emergency procedures
- D. Start up procedures to return to normal condition after the emergency. Contractor shall provide manufacturer's emergency and help desk contacts.
- E. 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 surge and failures.
 - 6. Water outage.
 - 7. System, subsystem, or equipment failure.
 - 8. Chemical release or spill.
 - 9. Terrorism
 - 10. Biological
 - 11. Explosives
 - 12. Earthquake emergency.
 - 13. Extreme weather (hot cold, wind, hail, lightening).
- F. 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.
- G. 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.

2.04 EQUIPMENT AND SYSTEMS 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. The Title page and Table of Contents shall be as described herein above.
 - B. Submit in PDF format as per Submittals herein, and per instruction of the Government.
 - C. Submit 1 copy of each equipment and systems maintenance manual, in final form, to the Government. Provide separate manuals for each unit of equipment, each building operation system, and each electric and electronic system.
 - D. Equipment and Systems: Provide the following information for each piece of equipment, each building operation system, and each electric or electronic system, where applicable: Use designations for systems
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and equipment indicated in Contract Documents. See requirements in other mechanical, electrical, plumbing, etc. specification sections. Provide list to the GSA project manager and building manager (aka property manager) at 50% construction complete.

1. Description: Provide a complete description of each unit and related component parts, including the following, as applicable:
 - a. Equipment or system function.
 - b. Operating characteristics.
 - c. Limiting conditions.
 - d. Performance curves.
 - e. Engineering data and tests.
 - f. Line diagrams with linkages to other equipment and systems
 - g. Complete nomenclature and number of replacement parts
 - h. Equipment Type using National CAD Standard (e.g. AHU-1).
 - i. Equipment Description
 - j. Manufacturer Model & Serial Numbers
 - k. Equipment Status including building number, location, floor #, room #, narrative of location (i.e. west wall, above ceiling panel, etc.)
2. Manufacturer's Information: For each manufacturer of a component part or piece of equipment, provide the following, as applicable:
 - a. Printed operation and maintenance instructions.
 - b. Assembly drawings and diagrams required for maintenance.
 - c. List of items recommended to be stocked as spare parts.
3. Maintenance Procedures: Provide information detailing essential maintenance procedures, including the following, as applicable:
 - a. Routine operations.
 - b. Preventative maintenance
 - c. Predictive maintenance
 - d. Troubleshooting guide.
 - e. Disassembly, repair, and reassembly.
 - f. Alignment, adjusting, and checking.
4. Operating Procedures: Provide information on equipment and system operation procedures, including the following, as applicable:
 - a. Startup procedures.
 - b. Equipment or system break-in.
 - c. Routine and normal operating instructions.
 - d. Regulation and control procedures.
 - e. Instructions on stopping.
 - f. Shutdown and emergency instructions.
 - g. Summer and winter operating instructions.
 - h. Required sequences for electric or electronic systems.
 - i. Special operating instructions.

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5. Servicing Schedule: Provide a schedule of routine servicing and lubrication requirements, including a list of required lubricants for equipment with moving parts.
6. Controls: Provide a description of the sequence of operation and as-installed control diagrams by the control manufacturer for systems requiring controls.
7. Piping Identification: Provide as-installed, color-coded, piping diagrams, where required for identification.
8. Valve Tags: Provide charts of valve-tag numbers, with the location and function of each valve.
9. Circuit Directories: When another Contractor (not the O&M Contractor) adds or modifies electric circuits the O&M Contractor shall inform the CO or designee the compliance of annotating the changes to the panel and the update to the single line diagrams using the original electronic file format. For electric and electronic systems, provide complete circuit directories of panel-boards, including the following, as applicable:
 - a. Electric service.
 - b. Controls.
 - c. Communication
 - d. Single Line Diagrams updated at no additional cost.
- E. Schedule: Provide complete information in the equipment and systems manual on products specified.
- F. Provide an integrated service schedule/matrix for HVAC, Electrical, and Fire that indicates all systems daily, weekly, monthly, yearly, etc. service requirements and operational characteristic checks. Cross reference to O&M manual section for requirements.

2.05 INSTRUCTIONS FOR GOVERNMENT PERSONNEL

- A. Prior to the Substantial Completion inspection, instruct the Government's personnel in operation, adjustment, and maintenance of products, equipment, and systems. Provide instruction at mutually agreed times.
- B. Use operation and maintenance manuals for each product, piece of equipment or system as the basis of instruction. Review contents in detail to explain all aspects of operation and maintenance.
- C. Posted Logs and Instructions: Place operating logs and instructions in see-through vinyl or other weather protective sleeves or framed enclosures, and post for use by Government personnel in locations approved by the Government.
 1. Post operating log sheets with spares at or near the applicable equipment.
 2. Post flow schematics, wiring diagrams, valve lists, control sequences, start-up and shut-down instructions, and similar information and instructions in the appropriate equipment rooms.

2.06 NEW EQUIPMENT INVENTORY

- A. Update inventory list provided by GSA as requested for all newly installed equipment.

PART 3 - EXECUTION (NOT APPLICABLE)

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SECTION 06 10 00 - ROUGH CARPENTRY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes:
 - 1. Wood blocking and nailers.
- B. Related Requirements:
 - 1. Section 06 40 23 "Interior Architectural Woodwork."

1.3 DEFINITIONS

- A. Boards or Strips: Lumber of less than 2 inches nominal size in least dimension.
- B. Dimension Lumber: Lumber of 2 inches nominal size or greater but less than 5 inches nominal size in least dimension.
- C. Exposed Framing: Framing not concealed by other construction.
- D. OSB: Oriented strand board.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of process and factory-fabricated product. Indicate component materials and dimensions and include construction and application details.
 - 1. Include data for fire-retardant treatment from chemical treatment manufacturer and certification by treating plant that treated materials comply with requirements. Include physical properties of treated materials based on testing by a qualified independent testing agency.
 - 2. For products receiving a waterborne treatment, include statement that moisture content of treated materials was reduced to levels specified before shipment to Project site.

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1.5 DELIVERY, STORAGE, AND HANDLING

- A. Stack wood products flat with spacers beneath and between each bundle to provide air circulation. Protect wood products from weather by covering with waterproof sheeting, securely anchored. Provide for air circulation around stacks and under coverings.

PART 2 - PRODUCTS

2.1 WOOD PRODUCTS, GENERAL

- A. Lumber: DOC PS 20 and applicable rules of grading agencies indicated. If no grading agency is indicated, comply with the applicable rules of any rules-writing agency certified by the ALSC Board of Review. Grade lumber by an agency certified by the ALSC Board of Review to inspect and grade lumber under the rules indicated.
 - 1. Factory mark each piece of lumber with grade stamp of grading agency.
- B. Maximum Moisture Content of Lumber: 15 percent for 2-inch nominal thickness or less; 19 percent for more than 2-inch nominal thickness unless otherwise indicated.
- C. Application: Treat all rough carpentry unless otherwise indicated.

2.2 MISCELLANEOUS LUMBER

- A. General: Provide miscellaneous lumber indicated and lumber for support or attachment of other construction, including the following:
 - 1. Blocking.
 - 2. Nailers.
 - 3. Furring.
- B. Dimension Lumber Items: Construction or No. 2 grade lumber of any species.
- C. For blocking and nailers used for attachment of other construction, select and cut lumber to eliminate knots and other defects that will interfere with attachment of other work.

2.3 FASTENERS

- A. General: Fasteners shall be of size and type indicated and shall comply with requirements specified in this article for material and manufacture.
- B. Nails, Brads, and Staples: ASTM F1667.

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- C. Power-Driven Fasteners: Fastener systems with an evaluation report acceptable to authorities having jurisdiction, based on ICC-ES AC70.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. Framing Standard: Comply with AF&PA's WCD 1, "Details for Conventional Wood Frame Construction," unless otherwise indicated.
- B. Set rough carpentry to required levels and lines, with members plumb, true to line, cut, and fitted. Fit rough carpentry accurately to other construction. Locate nailers, blocking, and similar supports to comply with requirements for attaching other construction.
- C. Provide blocking and framing as indicated and as required to support facing materials, fixtures, specialty items, and trim.
- D. Sort and select lumber so that natural characteristics do not interfere with installation or with fastening other materials to lumber. Do not use materials with defects that interfere with function of member or pieces that are too small to use with minimum number of joints or optimum joint arrangement.
- E. Securely attach rough carpentry work to substrate by anchoring and fastening as indicated, complying with the following:
 - 1. Table 2304.9.1, "Fastening Schedule," in ICC's International Building Code (IBC).
 - 2. ICC-ES evaluation report for fastener.
- F. Use steel common nails unless otherwise indicated. Select fasteners of size that will not fully penetrate members where opposite side will be exposed to view or will receive finish materials. Make tight connections between members. Install fasteners without splitting wood. Drive nails snug but do not countersink nail heads unless otherwise indicated.

3.2 INSTALLATION OF WOOD BLOCKING AND NAILERS

- A. Install where indicated and where required for attaching other work. Form to shapes indicated and cut as required for true line and level of attached work. Coordinate locations with other work involved.
- B. Attach items to substrates to support applied loading. Recess bolts and nuts flush with surfaces unless otherwise indicated.

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3.3 PROTECTION

- A. Protect wood that has been treated with inorganic boron (SBX) from weather. If, despite protection, inorganic boron-treated wood becomes wet, apply EPA-registered borate treatment. Apply borate solution by spraying to comply with EPA-registered label.
- B. Protect rough carpentry from weather. If, despite protection, rough carpentry becomes wet enough that moisture content exceeds that specified, apply EPA-registered borate treatment. Apply borate solution by spraying to comply with EPA-registered label.

END OF SECTION 06 10 00

ROUGH CARPENTRY

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SECTION 07 84 13 - PENETRATION FIRESTOPPING

1.1 SUMMARY

A. Section Includes:

1. Penetration firestopping systems for the following applications:
 - a. Penetrations in fire-resistance-rated walls.
 - b. Penetrations in horizontal assemblies.
 - c. Penetrations in smoke barriers.

1.2 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Product Schedule: For each penetration firestopping system. Include location, illustration of firestopping system, and design designation of qualified testing and inspecting agency.

1.3 INFORMATIONAL SUBMITTALS

- A. Product test reports.

1.4 CLOSEOUT SUBMITTALS

- A. Installer Certificates: From Installer indicating that penetration firestopping systems have been installed in compliance with requirements and manufacturer's written instructions.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Fire-Test-Response Characteristics:
 1. Perform penetration firestopping system tests by a qualified testing agency acceptable to authorities having jurisdiction.
 2. Test per testing standards referenced in "Penetration Firestopping Systems" Article. Provide rated systems complying with the following requirements:

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- a. Penetration firestopping systems shall bear classification marking of a qualified testing agency.

2.2 PENETRATION FIRESTOPPING SYSTEMS

- A. Penetration Firestopping Systems: Systems that resist spread of fire, passage of smoke and other gases, and maintain original fire-resistance rating of construction penetrated. Penetration firestopping systems shall be compatible with one another, with the substrates forming openings, and with penetrating items if any.
 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. 3M Fire Protection Products
 - b. A/D Fire Protection Systems
 - c. Construction Solutions
 - d. Hilti, Inc.
 - e. RectorSeal Firestop, a CSW Industrials Company
 - f. Tremco, Inc.
- B. Penetrations in Fire-Resistance-Rated Walls: Penetration firestopping systems with ratings determined per ASTM E814 or UL 1479, based on testing at a positive pressure differential of 0.01-inch wg (2.49 Pa).
 1. F-Rating: Not less than the fire-resistance rating of constructions penetrated.
- C. Penetrations in Horizontal Assemblies: Penetration firestopping systems with ratings determined per ASTM E814 or UL 1479, based on testing at a positive pressure differential of 0.01-inch wg (2.49 Pa).
 1. F-Rating: At least one hour, but not less than the fire-resistance rating of constructions penetrated.
- D. Penetrations in Smoke Barriers: Penetration firestopping systems with ratings determined per UL 1479, based on testing at a positive pressure differential of 0.30-inch wg (74.7 Pa).
- E. Exposed Penetration Firestopping Systems: Flame-spread and smoke-developed indexes of less than 25 and 450, respectively, per ASTM E84.
- F. Accessories: Provide components for each penetration firestopping system that are needed to install fill materials and to maintain ratings required. Use only those components specified by penetration firestopping system manufacturer and approved by qualified testing and inspecting agency for conditions indicated.

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PART 3 - EXECUTION

3.1 INSTALLATION

- A. Examine substrates and conditions, with Installer present, for compliance with requirements for opening configurations, penetrating items, substrates, and other conditions affecting performance of the Work.
- B. General: Install penetration firestopping systems to comply with manufacturer's written installation instructions and published drawings for products and applications.
- C. Install forming materials and other accessories of types required to support fill materials during their application and in the position needed to produce cross-sectional shapes and depths required to achieve fire ratings.
 - 1. After installing fill materials and allowing them to fully cure, remove combustible forming materials and other accessories not forming permanent components of firestopping.
- D. Install fill materials by proven techniques to produce the following results:
 - 1. Fill voids and cavities formed by openings, forming materials, accessories and penetrating items to achieve required fire-resistance ratings.
 - 2. Apply materials so they contact and adhere to substrates formed by openings and penetrating items.
 - 3. For fill materials that will remain exposed after completing the Work, finish to produce smooth, uniform surfaces that are flush with adjoining finishes.

3.2 FIELD QUALITY CONTROL

- A. Where deficiencies are found or penetration firestopping system is damaged or removed because of testing, repair or replace penetration firestopping system to comply with requirements.
- B. Proceed with enclosing penetration firestopping systems with other construction only after inspection reports are issued and installations comply with requirements.

END OF SECTION 07 84 13

PENETRATION FIRESTOPPING

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SECTION 07 92 00 - JOINT SEALANTS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Interior joints in the following vertical surfaces and horizontal non-traffic surfaces:
 - a. Perimeter joints between interior wall surfaces and frames of interior doors and windows.
 - b. Any open joints created by new construction.

B. Related Sections include the following:

1. Division 7 Section "Fire-stopping" for fire-resistant building joint-sealant systems.
2. Division 8 Section "Glazing" for glazing sealants.
3. Division 9 Section "Gypsum Board Assemblies" for sealing perimeter joints of gypsum board partitions to reduce sound transmission.

1.2 ACTION SUBMITTALS

A. Product Data: For each joint-sealant product.

B. Samples: For each kind and color of joint sealant required.

C. Joint-Sealant Schedule: Include the following information:

1. Joint-sealant application, joint location, and designation.
2. Joint-sealant manufacturer and product name.
3. Joint-sealant formulation.
4. Joint-sealant color.

1.3 INFORMATIONAL SUBMITTALS

A. Product test reports.

B. Sample warranties.

JOINT SEALANTS

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1.4 QUALITY ASSURANCE

- A. Testing Agency Qualifications: Qualified according to ASTM C1021 to conduct the testing indicated.

1.5 PERFORMANCE REQUIREMENT

- A. Provide joint sealants for interior applications that establish continuous joint seals without staining or deteriorating joint substrates.

1.6 WARRANTY

- A. Special Installer's Warranty: Installer agrees to repair or replace joint sealants that do not comply with performance and other requirements specified in this Section within specified warranty period.
 - 1. Warranty Period: Two years from date of Substantial Completion.
- B. Special Manufacturer's Warranty: Manufacturer agrees to furnish joint sealants to repair or replace those joint sealants that do not comply with performance and other requirements specified in this Section within specified warranty period.
 - 1. Warranty Period: Five years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 JOINT SEALANTS, GENERAL

- A. Colors of Exposed Joint Sealants: As selected by Architect from manufacturer's full range.

2.2 ELASTOMERIC JOINT SEALANTS

- A. Elastomeric Sealant Standard: Comply with ASTM C 920 and other requirements indicated for each liquid-applied chemically curing sealant in the Elastomeric Joint-Sealant Schedule at the end of Part 3, including those referencing ASTM C 920 classifications for type, grade, class, and uses.
- B. Stain-Test-Response Characteristics: Where elastomeric sealants are specified in the Elastomeric Joint-Sealant Schedule to be non-staining to porous substrates, provide products that have undergone testing according to ASTM C 1248 and have not stained porous joint substrates indicated for Project.

JOINT SEALANTS

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2.3 LATEX JOINT SEALANTS

- A. Latex Sealant Standard: Comply with ASTM C 834 for each product of this description indicated in the Latex Joint-Sealant Schedule at the end of Part 3.

2.4 JOINT-SEALANT BACKING

- A. Cylindrical Sealant Backings: ASTM C1330, Type C (closed-cell material with a surface skin), Type O (open-cell material), Type B (bicellular material with a surface skin) or any of the preceding types, as approved in writing by joint-sealant manufacturer for joint application indicated, and of size and density to control sealant depth and otherwise contribute to producing optimum sealant performance.
 - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following
 - a. Adfast.
 - b. Alcot Plastics Ltd.
 - c. BASF Corporation.
 - d. Construction Foam Products; a division of Nomaco, Inc.
- B. Bond-Breaker Tape: Polyethylene tape or other plastic tape recommended by sealant manufacturer.

2.5 MISCELLANEOUS MATERIALS

- A. Primer: Material recommended by joint-sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint-sealant-substrate tests and field tests.
- B. Cleaners for Nonporous Surfaces: Chemical cleaners acceptable to manufacturers of sealants and sealant backing materials.
- C. Masking Tape: Nonstaining, nonabsorbent material compatible with joint sealants and surfaces adjacent to joints.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with joint-sealant manufacturer's written instructions and the following requirements:
 - 1. Remove laitance and form-release agents from concrete.
 - 2. Clean nonporous joint substrate surfaces with chemical cleaners or other means that do not stain, harm substrates, or leave residues capable of interfering with adhesion.

JOINT SEALANTS

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- B. Joint Priming: Prime joint substrates where recommended by joint-sealant manufacturer or as indicated by preconstruction joint-sealant-substrate tests or prior experience.
- C. Masking Tape: Use masking tape where required to prevent contact of sealant or primer with adjoining surfaces.

3.2 INSTALLATION OF JOINT SEALANTS

- A. General: Comply with ASTM C1193 and joint-sealant manufacturer's written installation instructions for products and applications indicated, unless more stringent requirements apply.
- B. Install sealant backings of kind indicated to support sealants during application and at position required to produce cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.
- C. Install bond-breaker tape behind sealants where sealant backings are not used between sealants and backs of joints.
- D. Install sealants using proven techniques that comply with the following and at the same time backings are installed:
 - 1. Place sealants so they directly contact and fully wet joint substrates.
 - 2. Completely fill recesses in each joint configuration.
 - 3. Produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability.
- E. Tooling of Nonsag Sealants: Immediately after sealant application and before skinning or curing begins, tool sealants to form smooth, uniform beads of configuration indicated. Use tooling agents that are approved in writing by sealant manufacturer and that do not discolor sealants or adjacent surfaces.
 - 1. Provide concave joint profile per Figure 8A in ASTM C1193 unless otherwise indicated.

3.3 JOINT-SEALANT SCHEDULE

- A. Joint-Sealant Application: Interior joints in vertical surfaces and horizontal nontraffic surfaces not subject to significant movement including in gypsum board applications, wall to frame transitions, nonmoving joints between varying substrates.
 - 1. Products:
 - a. Chem-Caulk 600: Bostik Inc..
 - b. NuFlex 330: NUCO Industries, Inc.
 - c. AC-20: Pecroa Corporation.
 - d. PSI-701: Polymeric Systems, Inc.

JOINT SEALANTS

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- e. Sonolac: Sonneborn Building Products Div., ChemRex, Inc.
 - f. Tremflex 834; Tremco.
- 2. Joint Sealant: Acrylic latex.
 - 3. Joint-Sealant Color: As selected by Architect from manufacturer's full range of colors.

END OF SECTION 07 92 00

JOINT SEALANTS

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SECTION 08 71 00 - DOOR HARDWARE

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Cylinders for door hardware specified in other Sections.
2. Electrified door hardware.

B. Related Sections:

1. Section 13 47 15 for Doors in Bullet Resistant Products for mechanical door hardware for swinging doors.

1.2 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1. Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
2. Inspect and discuss preparatory work performed by other trades.
3. Inspect and discuss electrical roughing-in for electrified door hardware.
4. Review sequence of operation for each type of electrified door hardware.
5. Review required testing, inspecting, and certifying procedures.

B. Keying Conference: Conduct conference at Project site to comply with requirements in Division 01 Section "Project Management and Coordination." In addition to Owner, Contractor, and Architect, conference participants shall also include Installer's Architectural Hardware Consultant and Owner's security consultant. Incorporate keying conference decisions into final keying schedule after reviewing door hardware keying system including, but not limited to, the following:

1. Function of building, flow of traffic, purpose of each area, degree of security required, and plans for future expansion.
2. Preliminary key system schematic diagram.
3. Requirements for key control system.
4. Requirements for access control.
5. Address for delivery of keys.

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1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product. Include construction and installation details, material descriptions, dimensions of individual components and profiles, and finishes.
- B. Shop Drawings: For electrified door hardware.
 - 1. Include diagrams for power, signal, and control wiring.
 - 2. Include details of interface of electrified door hardware and building safety and security systems.
- C. Samples: For each exposed product in each finish specified.
- D. Door hardware schedule. Prepared by or under the supervision of Installer, detailing fabrication and assembly of door hardware, as well as installation procedures and diagrams. Coordinate final door hardware schedule with doors, frames, and related work to ensure proper size, thickness, hand, function, and finish of door hardware.
 - a. Submittal Sequence: Submit door hardware schedule after submissions of Product Data, Samples, and Shop Drawings. Coordinate submission of door hardware schedule with scheduling requirements of other work to facilitate the fabrication of other work that is critical in Project construction schedule.
 - b. Format: Comply with scheduling sequence and vertical format in DHI's "Sequence and Format for the Hardware Schedule." Double space entries, and number and date each page.
 - c. Format: Use same scheduling sequence and format and use same door numbers as in the Contract Documents.
 - d. Content: Include the following information:
 - 1) Identification number, location, hand, fire rating, size, and material of each door and frame.
 - 2) Locations of each door hardware set, cross-referenced to Drawings on floor plans and to door and frame schedule.
 - 3) Complete designations, including name and manufacturer, type, style, function, size, quantity, function, and finish of each door hardware product.
 - 4) Description of electrified door hardware sequences of operation and interfaces with other building control systems.
 - 5) Fastenings and other pertinent information.
 - 6) Explanation of abbreviations, symbols, and codes contained in schedule.
 - 7) Mounting locations for door hardware.
 - 8) List of related door devices specified in other Sections for each door and frame.
- E. Keying schedule. Prepared by or under the supervision of Installer, detailing Owner's final keying instructions for locks. Include schematic keying diagram and index each key set to unique door designations that are coordinated with the Contract Documents.

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Note: It is imperative that the Keying Schedule information be finalized early in the construction process to accommodate potential long-lead times for hardware and delay of completion.

1.4 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For Installer and Architectural Hardware Consultant or someone with two years experience who is available, at reasonable times during the course of the work, for consultation about project's hardware requirements to Owner, Architect and Contractor.
- B. Warranty: Special warranty specified in this Section.

1.5 MAINTENANCE SERVICE

- A. Maintenance Tools and Instructions: Furnish a complete set of specialized tools and maintenance instructions for Owner's continued adjustment, maintenance, and removal and replacement of door hardware.
- B. Maintenance Service: Beginning at Substantial Completion, provide six months' full maintenance by skilled employees of door hardware Installer. Include quarterly preventive maintenance, repair or replacement of worn or defective components, lubrication, cleaning, and adjusting as required for proper door and door hardware operation. Provide parts and supplies that are the same as those used in the manufacture and installation of original products.

1.6 QUALITY ASSURANCE

- A. Installer Qualifications: Supplier of products and an employer of workers trained and approved by product manufacturers and of an Architectural Hardware Consultant who is available during the course of the Work to consult Contractor, Architect, and Owner about door hardware and keying.
 - 1. Scheduling Responsibility: Preparation of door hardware and keying schedule.
 - 2. Engineering Responsibility: Preparation of data for electrified door hardware, including Shop Drawings, based on testing and engineering analysis of manufacturer's standard units in assemblies similar to those indicated for this Project.
- B. Architectural Hardware Consultant Qualifications: A person who is experienced in providing consulting services for door hardware installations that are comparable in material, design, and extent to that indicated for this Project and who is currently certified by DHI as an Architectural Hardware Consultant (AHC) and an Electrified Hardware Consultant (EHC).

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1.7 WARRANTY

- A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of door hardware that fail in materials or workmanship within specified warranty period.
1. Failures include, but are not limited to, the following:
 - a. Structural failures including excessive deflection, cracking, or breakage.
 - b. Faulty operation of doors and door hardware.
 - c. Deterioration of metals, metal finishes, and other materials beyond normal weathering and use.
 2. Warranty Period: Three years from date of Substantial Completion unless otherwise indicated below:
 - a. Exit Devices: Two years from date of Substantial Completion.
 - b. Closers: 10 years from date of Substantial Completion.
 - c. Hinges: Life of the Building
 - d. Locksets: 7 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Electrified Door Hardware: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- B. Means of Egress Doors: Latches do not require more than 15 lbf (67 N) to release the latch. Locks do not require use of a key, tool, or special knowledge for operation.
- C. Accessibility Requirements: For door hardware on doors in an accessible route, comply with The U.S. Architectural & Transportation Barriers Compliance Board's ADA-ABA Accessibility Guidelines.
1. Provide operating devices that do not require tight grasping, pinching, or twisting of the wrist and that operate with a force of not more than 5 lbf (22.2 N).
 2. Comply with the following maximum opening-force requirements:
 - a. Interior, Non-Fire-Rated Hinged Doors: 5 lbf (22.2 N) applied perpendicular to door.
 3. Bevel raised thresholds with a slope of not more than 1:2. Provide thresholds not more than 1/2 inch (13 mm) high.
 4. Adjust door closer sweep periods so that, from an open position of 70 degrees, the door will take at least 3 seconds to move to a point 3 inches (75 mm) from the latch, measured to the leading edge of the door.

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2.2 MECHANICAL LOCKS AND LATCHES

- A. Lock Functions: As indicated in door hardware schedule.
- B. Lock Throw: Comply with testing requirements for length of bolts required for labeled fire doors, and as follows:
 - 1. Bored Locks: Minimum 1/2-inch (13-mm) latchbolt throw.
 - 2. Mortise Locks: Minimum 3/4-inch (19-mm) latchbolt throw.
 - 3. Deadbolts: Minimum 1-inch (25-mm) bolt throw.
- C. Lock Backset: 2-3/4 inches (70 mm) unless otherwise indicated.
- D. Lock Trim:
 - 1. Description: As indicated in Door Hardware Schedule.
 - 2. Levers: Forged or Cast.
 - 3. Escutcheons (Roses): Forged or Cast.
 - 4. Dummy Trim: Match lever lock trim and escutcheons.
- E. Strikes: Provide manufacturer's standard strike for each lock bolt or latchbolt complying with requirements indicated for applicable lock or latch and with strike box and curved lip extended to protect frame; finished to match lock or latch.
 - 1. Flat-Lip Strikes: For locks with three-piece antifriction latchbolts, as recommended by manufacturer.
 - 2. Extra-Long-Lip Strikes: For locks used on frames with applied wood casing trim.
 - 3. Aluminum-Frame Strike Box: Manufacturer's special strike box fabricated for aluminum framing.
 - 4. Rabbet Front and Strike: Provide on locksets for rabbeted meeting stiles.
- F. Mortise Locks: BHMA A156.13; Operational Grade 1; stamped steel case with steel or brass parts; Series 1000.
 - 1. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on schedule and "As Specified":
 - a. Corbin Russwin ML 2000 Series or equal to match existing and building standard.
 - b. Or Government Approved equal.

2.3 ELECTRIC STRIKES

- A. Electric Strikes: BHMA A156.31; Grade 1; with faceplate to suit lock and frame.

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2.4 LOCK CYLINDERS

- A. Lock Cylinders: Tumbler type, constructed from brass or bronze, stainless steel, or nickel silver UL437 Listed and compliant with ANSI/BHMAA 156 standards. Provide cylinder from same manufacturer of locking devices.
- B. Standard Lock Cylinders: BHMA A156.5; Grade 1 permanent cores; face finished to match lockset.
 - 1. Core Type: Removable.
- C. Construction Master Keys: Provide cylinders with feature that permits voiding of construction keys without cylinder removal. Provide 10 construction master keys.
- D. Construction Cores: Provide construction cores that are replaceable by permanent cores. Provide 10 construction master keys.

2.5 KEYING

- A. Keying System: Factory registered, complying with guidelines in BHMA A156.28, Appendix A. Provide one extra key blank for each lock. Incorporate decisions made in keying conference.
 - 1. Existing System:
 - a. Master key or grand master key locks to Owner's existing system.
 - b. Re-key Owner's existing master key system into new keying system.
- B. Keys: Brass.
 - 1. Stamping: Permanently inscribe each key with a visual key control number and include the following notation:
 - a. Notation: Information to be furnished by Owner.
 - 2. Quantity: In addition to one extra key blank for each lock, provide the following:
 - a. Cylinder Change Keys: Two (2).
 - b. Master Keys: Two (2).

2.6 OPERATING TRIM

- A. Operating Trim: BHMA A156.6; US10B bronze unless otherwise indicated.

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2.7 MECHANICAL STOPS AND HOLDERS

- A. Wall- and Floor-Mounted Stops: BHMA A156.16.
 - 1. Hager
 - 2. Ives
 - 3. Rockwood
 - 4. Or government approved equal.

2.8 AUXILIARY DOOR HARDWARE

- A. Auxiliary Hardware: BHMA A156.16.
 - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Don-Jo Mfg., Inc.
 - b. Hager Companies.
 - c. Rockwood Manufacturing Company.
 - d. Trimco.
 - e. Or government approved equal.

2.9 AUXILIARY ELECTRIFIED DOOR HARDWARE

- A. Auxiliary Electrified Door Hardware:
 - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. GE Security, Inc.
 - b. SARGENT Manufacturing Company; an ASSA ABLOY Group company.
 - c. Schlage Commercial Lock Division; an Allegion company.
 - d. Securitron Magnalock Corporation; an ASSA ABLOY Group company.
 - e. Security Door Controls.

2.10 FINISHES

- A. Provide finishes complying with BHMA A156.18 as indicated in door hardware schedule.
- B. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.
- C. Appearance of Finished Work: Variations in appearance of abutting or adjacent pieces are acceptable if they are within one-half of the range of approved Samples. Noticeable variations in the same piece are not acceptable. Variations in appearance of other components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

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PART 3 - EXECUTION

3.1 INSTALLATION

- A. Mounting Heights: Mount door hardware units at heights indicated on Drawings unless otherwise indicated or required to comply with governing regulations.
 - 1. Wood Doors: DHI's "Recommended Locations for Architectural Hardware for Wood Flush Doors."
- B. Install each door hardware item to comply with manufacturer's written instructions. Where cutting and fitting are required to install door hardware onto or into surfaces that are later to be painted or finished in another way, coordinate removal, storage, and reinstallation of surface protective trim units with finishing work. Do not install surface-mounted items until finishes have been completed on substrates involved.
- C. Door Closer: Install on secure side.
- D. Hinges: Install types and in quantities indicated in door hardware schedule, but not fewer than the number recommended by manufacturer for application indicated or one hinge for every 30 inches (750 mm) of door height, whichever is more stringent, unless other equivalent means of support for door, such as spring hinges or pivots, are provided.
- E. Lock Cylinders: Install construction cores to secure building and areas during construction period.
 - 1. Replace construction cores with permanent cores as directed by Owner.
 - 2. Furnish permanent cores to Owner for installation.
- F. Key Control Cabinet: Tag keys and place them on markers and hooks in key control system cabinet, as determined by final keying schedule.
- G. Boxed Power Supplies: Locate power supplies as indicated or, if not indicated, above accessible ceilings. Verify location with Architect.
- H. Stops: Provide floor stops for doors unless wall or other type stops are indicated in door hardware schedule. Do not mount floor stops where they will impede traffic.
- I. Perimeter Gasketing: Apply to head and jamb, forming seal between door and frame.
 - 1. Do not notch perimeter gasketing to install other surface-applied hardware.
- J. Door Bottoms: Apply to bottom of door, forming seal when door is closed.

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3.2 ADJUSTING

- A. Adjust and check each operating item of door hardware and each door to ensure proper operation or function of every unit. Replace units that cannot be adjusted to operate as intended. Adjust door control devices to compensate for final operation of heating and ventilating equipment and to comply with referenced accessibility requirements.

3.3 DOOR HARDWARE SCHEDULE.

HARDWARE SET for all doors

| | | | |
|------|-------------------|----------------------|--------------|
| 1 EA | CONTINUOUS HINGES | by door manufacturer | |
| 1 EA | LOCKSET | by door manufacturer | |
| 1 EA | CLOSER | by door manufacturer | |
| 1 EA | WALL STOP | 409 | 630 ROCKWOOD |
| 1 EA | ELECTRIC STRIKE | 1600CDB | 630 HES |

CARD READER BY OTHERS

OPERATIONAL DESCRIPTION: DOOR ALWAYS LOCKED FROM THE OUTSIDE, WITH DEADBOLT RETRACTED. AUTHORIZED USE OF THE CARD READER SHALL UNLOCK ELECTRIC STRIKE AND RELEASE LOCK. UPON ENTRY, END-USER SHALL THROW DEADBOLT. WHEN THE DEADBOLT IS THROWN, THE ELECTRIC STRIKE WILL NOT RELEASE THE LOCK, PROVIDING PRIVACY FOR THE END USER. EGRESS FROM THE ROOM IS ALLOWED AT ALL TIMES USING THE INSIDE LEVER. AN EMERGENCY KEY SHALL ALLOW EMERGENCY ENTRY FROM THE OUTSIDE.

END OF SECTION 08 71 00

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SECTION 09 22 16 - NON-STRUCTURAL METAL FRAMING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes:
 - 1. Suspension systems for interior ceilings and soffits.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.
 - 1. Studs and Runners: Provide documentation that framing members' certification is according to SIFA's "Code Compliance Certification Program for Cold-Formed Steel Structural and Non-Structural Framing Members."

PART 2 - PRODUCTS

2.1 FRAMING SYSTEMS

- A. Framing Members, General: Comply with ASTM C 754 for conditions indicated.
 - 1. Steel Sheet Components: Comply with ASTM C 645 requirements for metal unless otherwise indicated.
- B. Studs and Runners: ASTM C 645. Use either steel studs and runners or embossed steel studs and runners.
 - 1. Steel Studs and Runners:
 - a. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

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- 1) CEMCO; California Expanded Metal Products Co.
 - 2) ClarkDietrich.
 - 3) Custom Stud.
 - 4) Jaimes Industries.
 - 5) MarinoWARE.
 - 6) MBA Building Supplies.
 - 7) MRI Steel Framing, LLC.
 - 8) Phillips Manufacturing Co.
 - 9) SCAFCO Steel Stud Company.
 - 10) Steel Construction Systems.
 - 11) Telling Industries.
 - 12) The Steel Network, Inc.
- b. Minimum Base-Metal Thickness: As required by performance requirements for horizontal deflection or 0.0179 inch
- c. Depth: As indicated on Drawings.
- C. Slip-Type Head Joints: Where indicated, provide one of the following:
1. Clip System: Clips designed for use in head-of-wall deflection conditions that provide a positive attachment of studs to runners while allowing 1-1/2-inch minimum vertical movement.
 - a. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1) CEMCO; California Expanded Metal Products Co.
 - 2) ClarkDietrich.
 - 3) Fire Trak Corp.
 - 4) MarinoWARE.
 - 5) SCAFCO Steel Stud Company.
 - 6) Steel Construction Systems.
 - 7) Super Stud Building Products Inc.
 - 8) The Steel Network, Inc.
 2. Single Long-Leg Runner System: ASTM C 645 top runner with 2-inch-deep flanges in thickness not less than indicated for studs, installed with studs friction fit into top runner and with continuous bridging located within 12 inches of the top of studs to provide lateral bracing.
 3. Double-Runner System: ASTM C 645 top runners, inside runner with 2-inch-deep flanges in thickness not less than indicated for studs and fastened to studs, and outer runner sized to friction fit inside runner.
 4. Deflection Track: Steel sheet top runner manufactured to prevent cracking of finishes applied to interior partition framing resulting from deflection of structure above; in thickness not less than indicated for studs and in width to accommodate depth of studs.
 - a. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

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- 1) CEMCO; California Expanded Metal Products Co.
- 2) ClarkDietrich.
- 3) MarinoWARE.
- 4) MBA Building Supplies.
- 5) Metal-Lite.
- 6) Perfect Wall, Inc.
- 7) SCAFCO Steel Stud Company.
- 8) Steel Construction Systems.
- 9) Telling Industries.
- 10) The Steel Network, Inc.

D. Flat Strap and Backing Plate: Steel sheet for blocking and bracing in length and width indicated.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. ClarkDietrich.
 - b. MarinoWARE.
 - c. MBA Building Supplies.
 - d. MRI Steel Framing, LLC.
 - e. SCAFCO Steel Stud Company.
 - f. Steel Construction Systems.
2. Minimum Base-Metal Thickness: 0.0296 inch

E. Cold-Rolled Channel Bridging: Steel, 0.0538-inch minimum base-metal thickness, with minimum 1/2-inch-wide flanges.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. ClarkDietrich.
 - b. MarinoWARE.
 - c. MBA Building Supplies.
 - d. MRI Steel Framing, LLC.
 - e. SCAFCO Steel Stud Company.
 - f. Steel Construction Systems.
2. Depth: 1-1/2 inches.
3. Clip Angle: Not less than 1-1/2 by 1-1/2 inches.

F. Hat-Shaped, Rigid Furring Channels: ASTM C 645.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. ClarkDietrich.
 - b. Jaimes Industries.
 - c. MarinoWARE.
 - d. MBA Building Supplies.
 - e. MRI Steel Framing, LLC.

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- f. SCAFCO Steel Stud Company.
 - g. Steel Construction Systems.
 - 2. Minimum Base-Metal Thickness: 0.0296
 - 3. Depth: 1-1/2 inches.
- G. Resilient Furring Channels: 1/2-inch deep, steel sheet members designed to reduce sound transmission.
 - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. ClarkDietrich.
 - b. MarinoWARE.
 - c. MBA Building Supplies.
 - d. MRI Steel Framing, LLC.
 - e. SCAFCO Steel Stud Company.
 - f. Steel Construction Systems.
 - 2. Configuration: hat shaped.
- H. Cold-Rolled Furring Channels: 0.053-inch uncoated-steel thickness, with minimum 1/2-inch-wide flanges.
 - 1. Depth: As indicated on Drawings.
 - 2. Furring Brackets: Adjustable, corrugated-edge-type steel sheet with minimum uncoated-steel thickness of 0.0329 inch.
 - 3. Tie Wire: ASTM A 641/A 641M, Class 1 zinc coating, soft temper, 0.062-inch-diameter wire, or double strand of 0.048-inch-diameter wire.

2.2 SUSPENSION SYSTEMS

- A. Tie Wire: ASTM A 641/A 641M, Class 1 zinc coating, soft temper, 0.062-inch-diameter wire, or double strand of 0.048-inch-diameter wire.
- B. Hanger Attachments to Concrete:
 - 1. Expansion Anchors: Fabricated from corrosion-resistant materials, with allowable load or strength design capacities calculated according to ICC-ES AC193 and ACI 318 greater than or equal to the design load, as determined by testing per ASTM E 488/E 488M conducted by a qualified testing agency.
 - 2. Power-Actuated Anchors: Fastener system of type suitable for application indicated, fabricated from corrosion-resistant materials, with allowable load capacities calculated according to ICC-ES AC70, greater than or equal to the design load, as determined by testing per ASTM E 1190 conducted by a qualified testing agency.
- C. Wire Hangers: ASTM A 641/A 641M, Class 1 zinc coating, soft temper, 0.16 inch in diameter.

NON STRUCTURAL METAL FRAMING

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- D. Flat Hangers: Steel sheet, in size indicated on Drawings.
- E. Furring Channels (Furring Members):
 - 1. Cold-Rolled Channels: 0.0538-inch uncoated-steel thickness, with minimum 1/2-inch-wide flanges, 3/4 inch deep.
 - 2. Steel Studs and Runners: ASTM C 645.
 - a. Minimum Base-Metal Thickness: 0.0269 inch.
 - b. Depth: 2-1/2 inches.
 - 3. Embossed Steel Studs and Runners: ASTM C 645.
 - a. Minimum Base-Metal Thickness: 0.0190 inch.
 - b. Depth: 2-1/2 inches.
 - 4. Hat-Shaped, Rigid Furring Channels: ASTM C 645, 7/8 inch deep.
 - a. Minimum Base-Metal Thickness: 0.0296 inch.
 - 5. Resilient Furring Channels: 1/2-inch-deep members designed to reduce sound transmission.
 - a. Configuration: hat shaped.

2.3 AUXILIARY MATERIALS

- A. General: Provide auxiliary materials that comply with referenced installation standards.
 - 1. Fasteners for Metal Framing: Of type, material, size, corrosion resistance, holding power, and other properties required to fasten steel members to substrates.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine areas and substrates, with Installer present, and including welded hollow-metal frames, cast-in anchors, and structural framing, for compliance with requirements and other conditions affecting performance of the Work.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

NON STRUCTURAL METAL FRAMING

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3.2 PREPARATION

- A. Suspended Assemblies: Coordinate installation of suspension systems with installation of overhead structure to ensure that inserts and other provisions for anchorages to building structure have been installed to receive hangers at spacing required to support the Work and that hangers will develop their full strength.
 - 1. Furnish concrete inserts and other devices indicated to other trades for installation in advance of time needed for coordination and construction.

3.3 INSTALLATION, GENERAL

- A. Installation Standard: ASTM C 754.
 - 1. Gypsum Board Assemblies: Also comply with requirements in ASTM C 840 that apply to framing installation.
- B. Install framing and accessories plumb, square, and true to line, with connections securely fastened.
- C. Install supplementary framing, and blocking to support fixtures, equipment services, heavy trim, furnishings, or similar construction.
- D. Install bracing at terminations in assemblies.
- E. Do not bridge building control and expansion joints with non-load-bearing steel framing members. Frame both sides of joints independently.

3.4 INSTALLING FRAMED ASSEMBLIES

- A. Install framing system components according to spacings indicated, but not greater than spacings required by referenced installation standards for assembly types.
 - 1. Single-Layer Application: As required by horizontal deflection performance requirements unless otherwise indicated.
- B. Install studs so flanges within framing system point in same direction.
- C. Install tracks (runners) at floors and overhead supports. Extend framing full height to structural supports or substrates above suspended ceilings except where partitions are indicated to terminate at suspended ceilings. Continue framing around ducts that penetrate partitions above ceiling.
 - 1. Slip-Type Head Joints: Where framing extends to overhead structural supports, install to produce joints at tops of framing systems that prevent axial loading of finished assemblies.

NON STRUCTURAL METAL FRAMING

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2. Other Framed Openings: Frame openings other than door openings the same as required for door openings unless otherwise indicated. Install framing below sills of openings to match framing required above door heads.
- D. Installation Tolerance: Install each framing member so fastening surfaces vary not more than 1/8 inch from the plane formed by faces of adjacent framing.

END OF SECTION 09 22 16

NON STRUCTURAL METAL FRAMING

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SECTION 09 29 00 - GYPSUM BOARD

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Interior gypsum board.

1.2 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Samples: For each texture finish indicated on same backing indicated for Work.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Sustainable Design: Greenguard Gold certification for gypsum products.

2.2 GYPSUM BOARD, GENERAL

- A. Recycled Content of Gypsum Panel Products: Postconsumer recycled content plus one-half of preconsumer recycled content not less than 20 percent.
- B. Size: Provide maximum lengths and widths available that will minimize joints in each area and that correspond with support system indicated.

2.3 INTERIOR GYPSUM BOARD

- A. Gypsum Wallboard: ASTM C1396/C1396M.
 - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. American Gypsum.
 - b. CertainTeed Gypsum.

GYPSUM BOARD

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- c. Continental Building Products, LLC.
 - d. Georgia-Pacific Gypsum LLC.
 - e. National Gypsum Company.
 - f. PABCO Gypsum.
 - g. USG Corporation.
 - 2. Thickness: 5/8 inch.
 - 3. Long Edges: Tapered
- B. Gypsum Board, Type X: ASTM C1396/C1396M.
- 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. American Gypsum.
 - b. CertainTeed Gypsum.
 - c. Continental Building Products, LLC.
 - d. Georgia-Pacific Gypsum LLC.
 - e. National Gypsum Company.
 - f. PABCO Gypsum.
 - g. USG Corporation.
 - 2. Thickness: 5/8 inch.
 - 3. Long Edges: Tapered.

2.4 TRIM ACCESSORIES

- A. Interior Trim: ASTM C1047.
- 1. Material: Galvanized or aluminum-coated steel sheet or rolled zinc.
 - 2. Shapes:
 - a. Cornerbead.
 - b. LC-Bead: J-shaped; exposed long flange receives joint compound.
 - c. L-Bead: L-shaped; exposed long flange receives joint compound.
 - d. U-Bead: J-shaped; exposed short flange does not receive joint compound.
 - e. Expansion (control) joint.

2.5 JOINT TREATMENT MATERIALS

- A. General: Comply with ASTM C475/C475M.
- B. Joint Tape:

- 1. Interior Gypsum Board: Paper.

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- C. Joint Compound for Interior Gypsum Board: For each coat, use formulation that is compatible with other compounds applied on previous or for successive coats.
 - 1. Prefilling: At open joints, beveled panel edges, and damaged surface areas, use setting-type taping compound.
 - 2. Embedding and First Coat: For embedding tape and first coat on joints, fasteners, and trim flanges, use drying-type, all-purpose compound.
 - a. Use setting-type compound for installing paper-faced metal trim accessories.
 - 3. Fill Coat: For second coat, use drying-type, all-purpose compound.
 - 4. Finish Coat: For third coat, use setting-type, sandable topping compound.

2.6 AUXILIARY MATERIALS

- A. Provide auxiliary materials that comply with referenced installation standards and manufacturer's written instructions.
- B. Laminating Adhesive: Adhesive or joint compound recommended for directly adhering gypsum panels to continuous substrate.
 - 1. Laminating adhesive shall have a VOC content of 50 g/L or less).
 - 2. Laminating adhesive shall comply with the testing and product requirements of the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."
- C. Steel Drill Screws: ASTM C1002 unless otherwise indicated.
 - 1. Use screws complying with ASTM C954 for fastening panels to steel members from 0.033 to 0.112 inch thick.
 - 2. For fastening cementitious backer units, use screws of type and size recommended by panel manufacturer.

PART 3 - EXECUTION

3.1 INSTALLATION AND FINISHING OF PANELS

- A. Examine panels before installation. Reject panels that are wet, moisture damaged, and mold damaged.
- B. Comply with ASTM C840.

GYPSUM BOARD

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- C. General: Treat gypsum board joints, interior angles, edge trim, control joints, penetrations, fastener heads, surface defects, and elsewhere as required to prepare gypsum board surfaces for decoration. Promptly remove residual joint compound from adjacent surfaces
- D. Control Joints: Install control joints at locations indicated on Drawings or according to ASTM C 840 and in specific locations approved by Architect for visual effect.
- E. Interior Trim: Install in the following locations:
 - 1. Cornerbead: Use at outside corners unless otherwise indicated.
 - 2. LC-Bead: Use at exposed panel edges.
 - 3. L-Bead: Use where indicated.
 - 4. U-Bead: Use at exposed panel edges.
- F. For trim with back flanges intended for fasteners, attach to framing with same fasteners used for panels. Otherwise, attach trim according to manufacturer's written instructions.
- G. Prefill open joints, beveled edges, and damaged surface areas.
- H. Apply joint tape over gypsum board joints, except for trim products specifically indicated as not intended to receive tape.
- I. Gypsum Board Finish Levels: Finish panels to levels indicated below and according to ASTM C840:
 - 1. Level 1: Ceiling plenum areas, concealed areas, and where indicated.
 - 2. Level 4: At panel surfaces that will be exposed to view unless otherwise indicated.
 - a. Primer and its application to surfaces are specified in Section 099123 "Interior Painting."

3.2 PROTECTION

- A. Protect installed products from damage from weather, condensation, direct sunlight, construction, and other causes during remainder of the construction period.
- B. Remove and replace panels that are wet, moisture damaged, and mold damaged.

END OF SECTION 09 29 00

GYPSUM BOARD

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SECTION 09 91 23 - INTERIOR PAINTING

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes surface preparation and the application of paint systems on the following interior substrates:
 - 1. Steel and iron.
 - 2. Galvanized metal.
 - 3. Gypsum board.
 - 4. Plaster.
 - 5. Wood.

1.2 DEFINITIONS

- A. MPI Gloss Level 1: Not more than five units at 60 degrees and 10 units at 85 degrees, according to ASTM D523.
- B. MPI Gloss Level 2: Not more than 10 units at 60 degrees and 10 to 35 units at 85 degrees, according to ASTM D523.
- C. MPI Gloss Level 3: 10 to 25 units at 60 degrees and 10 to 35 units at 85 degrees, according to ASTM D523.
- D. MPI Gloss Level 4: 20 to 35 units at 60 degrees and not less than 35 units at 85 degrees, according to ASTM D523.
- E. MPI Gloss Level 5: 35 to 70 units at 60 degrees, according to ASTM D523.
- F. MPI Gloss Level 6: 70 to 85 units at 60 degrees, according to ASTM D523.
- G. MPI Gloss Level 7: More than 85 units at 60 degrees, according to ASTM D523.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product. Include preparation requirements and application instructions.
 - 1. Include Printout of current "MPI Approved Products List" for each product category specified, with the proposed product highlighted.

INTERIOR PAINTING

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- B. Sustainable Design Submittals:
 - 1. Indicate VOC content.
- C. Samples: For each type of paint system and in each color and gloss of topcoat.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Basis-of-Design Manufacturers: Subject to compliance with requirements, provide Benjamin Moore & Co paint as indicated on schedule and "As Specified", or one of the following if approved by the Government:
 - 1. Behr Paint Company; Behr Process Corporation.
 - 2. California Paints.
 - 3. Conco Paints.
 - 4. Coronado Paint; Benjamin Moore & Co.
 - 5. Diamond Vogel Paints.
 - 6. Dulux Canada; a licensed product of PPG Architectural Coatings.
 - 7. Dunn-Edwards Corporation (a Nippon Paint Holdings Co. Ltd. company).
 - 8. HEMPEL A/S.
 - 9. Insl-X Products; Benjamin Moore & Co.
 - 10. Kelly-Moore Paint Company Inc.
 - 11. McCormick Paints.
 - 12. PPG Paints.
 - 13. Pratt & Lambert.
 - 14. Rodda Paint Co.
 - 15. Rust-Oleum Corporation; a subsidiary of RPM International, Inc.
 - 16. Sherwin-Williams Company (The).
 - 17. Valspar Corporation (The).
 - 18. Vista Paint Corporation.
 - 19. Zinsser; Rust-Oleum Corporation.
- B. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to products listed in the Interior Painting Schedule for the paint category indicated.

2.2 PAINT, GENERAL

- A. MPI Standards: Products shall comply with MPI standards indicated and shall be listed in its "MPI Approved Products Lists."

INTERIOR PAINTING

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- B. Material Compatibility:
 - 1. Materials for use within each paint system shall be compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.
 - 2. For each coat in a paint system, products shall be recommended in writing by topcoat manufacturers for use in paint system and on substrate indicated.
- C. VOC Content: Products shall comply with VOC limits of authorities having jurisdiction and, for interior paints and coatings applied at Project site, the following VOC limits, exclusive of colorants added to a tint base:
 - 1. Flat Paints and Coatings: 50 g/L.
 - 2. Nonflat Paints and Coatings: 150 g/L.
 - 3. Primers, Sealers, and Undercoaters: 200 g/L.
 - 4. Anticorrosive and Antirust Paints Applied to Ferrous Metals: 250 g/L.
- D. Low-Emitting Materials: Interior paints and coatings shall comply with the testing and product requirements of the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers
- E. Colors: As indicated in a color schedule.
- F. Sheens:
 - 1. Eggshell for walls.
 - 2. Semigloss for frames.
- G. Unless noted otherwise by Architect, provide the paint colors and sheens listed above.
- H. All paint to be applied with minimum one coat of primer followed by one coat of paint, followed by another coat of paint with time to dry in between.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.
- B. Maximum Moisture Content of Substrates: When measured with an electronic moisture meter as follows:
 - 1. Wood: 15 percent.
 - 2. Gypsum Board: 12 percent.
 - 3. Plaster: 12 percent.

INTERIOR PAINTING

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- C. Verify suitability of substrates, including surface conditions and compatibility with existing finishes and primers.
- D. Proceed with coating application only after unsatisfactory conditions have been corrected.
 - 1. Application of coating indicates acceptance of surfaces and conditions.

3.2 PREPARATION

- A. Comply with manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual" applicable to substrates and paint systems indicated.
- B. Remove hardware, covers, plates, and similar items already in place that are removable and are not to be painted. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and painting.
 - 1. After completing painting operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface-applied protection if any.

3.3 APPLICATION

- A. Apply paints according to manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual."
- B. Apply paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller tracking, runs, sags, ropiness, or other surface imperfections. Cut in sharp lines and color breaks.
- C. Painting Fire Suppression, Plumbing, HVAC, Electrical, Communication, and Electronic Safety and Security Work:
 - 1. Paint the following work where exposed in equipment rooms:
 - a. Uninsulated metal piping.
 - b. Uninsulated plastic piping.
 - c. Pipe hangers and supports.
 - d. Metal conduit.
 - e. Plastic conduit.
- D. Paint portions of internal surfaces of metal ducts, without liner, behind air inlets and outlets that are visible from occupied spaces.

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3.4 INTERIOR PAINTING SCHEDULE

- A. Gypsum Board and Wood Substrates:
 - 1. Low Odor/VOC Latex System
 - a. Prime Coat: Low Odor / Zero VOC interior latex matching topcoat
 - b. Intermediate Coat: Low Odor / zero VOC interior latex matching topcoat.
 - c. Topcoat: Institutional low-odor / zero VOC interior latex.
 - 1) Color: Per Finish Schedule / Drawings
 - 2) Sheen: Eggshell or Semi-gloss, as noted on the Finish Schedule / Drawings.
- B. Steel Substrates:
 - 1. Low-Odor / VOC Latex System:
 - a. Prime Coat: Low-odor/VOC interior Latex matching topcoat.
 - b. Intermediate Coat: Low odor / VOC interior Latex matching topcoat
 - c. Topcoat: Low-odor / VOC interior Latex paint.
 - 1) Color: Per Finish Schedule / Drawings
 - 2) Sheen: Semi-gloss

END OF SECTION 09 91 23

INTERIOR PAINTING

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SECTION 10 14 23 - PANEL SIGNAGE

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Window decal.

B. Related Requirements:

1. Section 26 52 19 "Emergency and Exit Lighting" for illuminated, self-luminous, and photoluminescent exit sign units.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Shop Drawings: For panel signs.

1. Include fabrication and installation details and attachments to other work.
2. Show sign mounting heights, locations of supplementary supports to be provided by other installers, and accessories.
3. Show message list, typestyles, graphic and layout for each sign at least half size.

C. Samples: For each exposed product and for each color and texture specified.

1.3 INFORMATIONAL SUBMITTALS

A. Sample warranty.

1.4 CLOSEOUT SUBMITTALS

A. Maintenance data.

1.5 WARRANTY

- A. Special Warranty: Manufacturer agrees to repair or replace components of signs that fail in materials or workmanship within specified warranty period.

PANEL SIGNAGE

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1. Warranty Period: Five years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PANEL SIGNS

- A. Panel Sign: Sign with smooth, uniform surfaces; with message and characters having uniform faces, sharp corners, and precisely formed lines and profiles; and as follows:
 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. APCO Graphics, Inc.
 - b. Cosco
 - c. Diskey Architectural Signage Inc.
 - d. Fossil Industries, Inc.
 - e. Signs & Decal Corp.
 - f. Or Government-approved equal.
 2. Solid-Sheet Sign PVC sheet with finish specified in "Surface Finish and Applied Graphics" Subparagraph and as follows:
 - a. Surface-Applied, Flat Graphics: Applied vinyl film.
 3. Mounting: Surface mounted to window with adhesive.

2.2 PANEL-SIGN MATERIALS

- A. Acrylic Sheet: ASTM D4802, Type UVF (UV filtering).
- B. Polycarbonate Sheet: Coated, mar-resistant, UV-stabilized polycarbonate, with coating on both sides.
- C. Vinyl Film: UV-resistant vinyl film of nominal thickness indicated, with pressure-sensitive, permanent adhesive on back; die cut to form characters or images as indicated on Drawings and suitable for exterior applications.

2.3 ACCESSORIES

- A. Adhesive: As recommended by sign manufacturer.

PANEL SIGNAGE

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2.4 FABRICATION

- A. Shop- and Subsurface-Applied Vinyl: Align vinyl film in final position and apply to surface. Firmly press film from the middle outward to obtain good bond without blisters or fishmouths.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. General: Install signs using mounting methods indicated and according to manufacturer's written instructions.
 - 1. Install signs level, plumb, true to line, and at locations and heights indicated, with sign surfaces free of distortion and other defects in appearance.
 - 2. Before installation, verify that sign surfaces are clean and free of materials or debris that would impair installation.
- B. Mounting Methods:
 - 1. Adhesive: Clean bond-breaking materials from substrate surface and remove loose debris. Apply linear beads or spots of adhesive symmetrically to back of sign and of suitable quantity to support weight of sign after cure without slippage. Keep adhesive away from edges to prevent adhesive extrusion as sign is applied and to prevent visibility of cured adhesive at sign edges. Place sign in position, and push to engage adhesive. Temporarily support sign in position until adhesive fully sets.
- C. Remove temporary protective coverings and strippable films as signs are installed.

END OF SECTION 10 14 23

PANEL SIGNAGE

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SECTION 12 36 23.13 - PLASTIC-LAMINATE-CLAD COUNTERTOPS

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 plastic-laminate countertops.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product, including high-pressure decorative laminate and adhesive for bonding plastic laminate.
 - 1. Include data for fire-retardant treatment from chemical-treatment manufacturer and certification by treating plant that treated materials comply with requirements.
- B. Shop Drawings: Show location of each item, dimensioned plans and elevations, large-scale details, attachment devices, and other components.
 - 1. Show locations and sizes of cutouts and holes for electrical switches and outlets and other items installed in plastic-laminate countertops.
 - 2. Apply WI Certified Compliance Program label to Shop Drawings.
- C. Samples for Initial Selection:
 - 1. Plastic laminates.
- D. Samples for Verification:
 - 1. Plastic laminates, 8 by 10 inches for each type, color, pattern, and surface finish.

1.4 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For Installer.
- B. Product Certificates: For each type of product.

PLASTIC-LAMINATE-CLAD COUNTERTOPS

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- C. Woodwork Quality Standard Compliance Certificates: AWI Quality Certification Program certificates or WI Certified Compliance Program certificates.
- D. Evaluation Reports: For fire-retardant-treated materials, from ICC-ES.

1.5 QUALITY ASSURANCE

- A. Installer Qualifications: Certified participant in AWI's Quality Certification Program or Licensee of WI's Certified Compliance Program.
- B. Testing Agency Qualifications: For testing agency providing classification marking for fire-retardant-treated material, an inspection agency acceptable to authorities having jurisdiction that periodically performs inspections to verify that the material bearing the classification marking is representative of the material tested.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Do not deliver countertops until painting and similar operations that could damage countertops have been completed in installation areas. If countertops must be stored in other than installation areas, store only in areas where environmental conditions comply with requirements specified in "Field Conditions" Article.

1.7 FIELD CONDITIONS

- A. Environmental Limitations: Do not deliver or install countertops until wet work is complete, and HVAC system is operating and maintaining temperature and relative humidity at occupancy levels during the remainder of the construction period.
- B. Field Measurements: Where countertops are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication, and indicate measurements on Shop Drawings. Coordinate fabrication schedule with construction progress to avoid delaying the Work.
- C. Established Dimensions: Where countertops are indicated to fit to other construction, establish dimensions for areas where countertops are to fit. Provide allowance for trimming at site, and coordinate construction to ensure that actual dimensions correspond to established dimensions.

PART 2 - PRODUCTS

2.1 PLASTIC-LAMINATE COUNTERTOPS

- A. Quality Standard: Unless otherwise indicated, comply with the "Architectural Woodwork Standards" for grades indicated for construction, installation, and other requirements.

PLASTIC-LAMINATE-CLAD COUNTERTOPS

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1. Provide labels from AWI and WI certification program indicating that countertops, including installation, comply with requirements of grades specified.
 2. The Contract Documents contain selections chosen from options in the quality standard and additional requirements beyond those of the quality standard. Comply with those selections and requirements in addition to the quality standard.
- B. Grade: Premium.
- C. Certified Wood: Plastic-laminate countertops shall be made from wood products certified as "FSC Pure" or "FSC Mixed Credit" according to FSC STD-01-001, "FSC Principles and Criteria for Forest Stewardship," and FSC STD-40-004, "FSC Standard for Chain of Custody Certification."
- D. High-Pressure Decorative Laminate: NEMA LD 3, Grade HGS.
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Abet Laminati Inc.
 - b. Formica Corporation.
 - c. Lamin-Art, Inc.
 - d. Nevamar; a Panolam Industries International, Inc. brand.
 - e. Pionite; a Panolam Industries International, Inc. brand.
 - f. Wilsonart LLC.
- E. Colors, Patterns, and Finishes: Provide materials and products that result in colors and textures of exposed laminate surfaces complying with the following requirements:
1. To match existing countertop.
 2. Grain Direction: To match existing cabinet fronts.
- F. Edge Treatment: Same as laminate cladding on horizontal surfaces.
- G. Core Material: Particleboard or medium-density fiberboard.
- H. Core Material at Sinks: Particleboard made with exterior glue.
- I. Core Thickness: 1-1/8 inch.
1. Build up countertop thickness to 1-1/2 inches at front, back, and ends with additional layers of core material laminated to top.
- J. Backer Sheet: Provide plastic-laminate backer sheet, NEMA LD 3, Grade BKL, on underside of countertop substrate.
- K. Paper Backing: Provide paper backing on underside of countertop substrate.

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2.2 WOOD MATERIALS

- A. Wood Products: Provide materials that comply with requirements of referenced quality standard unless otherwise indicated.
 - 1. Wood Moisture Content: 5 to 10 percent.
- B. Composite Wood and Agrifiber Products: Provide materials that comply with requirements of referenced quality standard for each type of woodwork and quality grade specified unless otherwise indicated.
 - 1. Recycled Content of Medium-Density Fiberboard and Particleboard: Postconsumer recycled content plus one-half of preconsumer recycled content not less than 25 percent.
 - 2. Composite Wood and Agrifiber Products: Products shall comply with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."
 - 3. Medium-Density Fiberboard: ANSI A208.2, Grade 130, made with binder containing no urea formaldehyde.
 - 4. Particleboard: ANSI A208.1, Grade M-2, made with binder containing no urea formaldehyde.
 - 5. Softwood Plywood: DOC PS 1.

2.3 ACCESSORIES

- A. Grommets for Cable Passage through Countertops: 1-1/4-inch OD, black molded-plastic grommets and matching plastic caps with slot for wire passage.
 - 1. Manufacturers: Subject to compliance with requirements, provide products by the following:
 - a. Doug Mockett & Company, Inc.

2.4 MISCELLANEOUS MATERIALS

- A. Adhesives: Use adhesives that meet the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."
- B. VOC Limits for Installation Adhesives and Sealants: Use products that comply with the following limits for VOC content when calculated according to 40 CFR 59, Subpart D (EPA Method 24):
 - 1. Wood Glues: 30 g/L.
 - 2. Multipurpose Construction Adhesives: 70 g/L.
 - 3. Structural Wood Member Adhesive: 140 g/L.
 - 4. Architectural Sealants: 250 g/L.

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2.5 FABRICATION

- A. Sand fire-retardant-treated wood lightly to remove raised grain on exposed surfaces before fabrication.
- B. Fabricate countertops to dimensions, profiles, and details indicated. Provide front and end overhang of 1 inch over base cabinets. Ease edges to radius indicated for the following:
 - 1. Solid-Wood (Lumber) Members: 1/16 inch unless otherwise indicated.
- C. Complete fabrication, including assembly, to maximum extent possible before shipment to Project site. Disassemble components only as necessary for shipment and installation. Where necessary for fitting at site, provide ample allowance for scribing, trimming, and fitting.
 - 1. Notify Architect seven days in advance of the dates and times woodwork fabrication will be complete.
 - 2. Trial fit assemblies at fabrication shop that cannot be shipped completely assembled. Install dowels, screws, bolted connectors, and other fastening devices that can be removed after trial fitting. Verify that various parts fit as intended and check measurements of assemblies against field measurements before disassembling for shipment.
- D. Shop cut openings to maximum extent possible to receive appliances, plumbing fixtures, electrical work, and similar items. Locate openings accurately and use templates or roughing-in diagrams to produce accurately sized and shaped openings. Sand edges of cutouts to remove splinters and burrs.
 - 1. Seal edges of openings in countertops with a coat of varnish.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Before installation, condition countertops to average prevailing humidity conditions in installation areas.
- B. Before installing countertops, examine shop-fabricated work for completion and complete work as required, including removal of packing and backpriming.

3.2 INSTALLATION

- A. Grade: Install countertops to comply with same grade as item to be installed.
- B. Assemble countertops and complete fabrication at Project site to the extent that it was not completed in the shop.
 - 1. Provide cutouts for appliances, plumbing fixtures, electrical work, and similar items.

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2. Seal edges of cutouts by saturating with varnish.
- C. Field Jointing: Where possible, make in the same manner as shop jointing, using dowels, splines, adhesives, and fasteners recommended by manufacturer. Prepare edges to be joined in shop so Project-site processing of top and edge surfaces is not required. Locate field joints where shown on Shop Drawings.
 1. Secure field joints in plastic-laminate countertops with concealed clamping devices located within 6 inches of front and back edges and at intervals not exceeding 24 inches. Tighten according to manufacturer's written instructions to exert a constant, heavy-clamping pressure at joints.
- D. Install countertops level, plumb, true, and straight. Shim as required with concealed shims. Install level and plumb to a tolerance of 1/8 inch in 96 inches.
- E. Scribe and cut countertops to fit adjoining work, refinish cut surfaces, and repair damaged finish at cuts.
- F. Fire-Retardant-Treated Wood: Handle, store, and install fire-retardant-treated wood to comply with chemical treatment manufacturer's written instructions, including those for adhesives used to install woodwork.
- G. Countertops: Anchor securely by screwing through corner blocks of base cabinets or other supports into underside of countertop.
 1. Install countertops with no more than 1/8 inch in 96-inch sag, bow, or other variation from a straight line.
 2. Secure backsplashes to walls with adhesive.
 3. Seal junctures of tops, splashes, and walls with mildew-resistant silicone sealant or another permanently elastic sealing compound recommended by countertop material manufacturer.

3.3 ADJUSTING AND CLEANING

- A. Repair damaged and defective countertops, where possible, to eliminate functional and visual defects; where not possible to repair, replace woodwork. Adjust joinery for uniform appearance.
- B. Clean countertops on exposed and semi exposed surfaces. Touch up shop-applied finishes to restore damaged or soiled areas.

END OF SECTION 12 36 23.13

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SECTION 13 47 15 - BULLET RESISTANT PRODUCTS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Bullet resistant products of the following types:
 - 1. Transaction windows.
 - 2. Interior wood doors and aluminum frames with door hardware.
 - 3. Detention glazing.
 - 4. Accessories including speakers and dealer trays.

1.2 RELATED SECTIONS

- A. Section 06 10 00 - Rough Carpentry.
- B. Section 06 40 23 – Interior Architectural Woodwork
- C. Section 08 71 00 – Door Hardware
- D. Section 09 22 16 – Non-Structural Metal Framing
- E. Section 09 91 23 – Interior Painting.

1.3 REFERENCES

- A. ASTM International (ASTM):
 - 1. ASTM C920 - Standard Specification for Elastomeric Joint Sealants.
 - 2. ASTM C1036 - Standard Specification for Flat Glass.
 - 3. ASTM C1172 - Standard Specification for Laminated Architectural Flat Glass.
 - 4. ASTM C1349 - Standard Specification for Architectural Flat Glass Clad Polycarbonate.
 - 5. ASTM D2000 - Standard Classification System for Rubber Products in Automotive Applications.
 - 6. ASTM E84 - Test method for the Surface Burning Characteristics of Building Materials.
 - 7. ASTM E119 - Standard Test Methods for Fire Tests of Building Construction and Materials.
 - 8. ASTM B221, aluminum framing with alloy and temper required to suit structural and finish requirements, and not less than 0.062-inch thick.
- B. American Welding Society (AWS): AWS D1.1 - Structural Welding Code - Steel.
- C. National Institute of Justice (NIJ): NIJ Standard 0108.01 - Standard for Ballistic Resistant Protective Materials.
- D. Underwriters Laboratories (UL):
 - 1. UL 752 - Standard for Bullet Resisting Equipment. (September 5th, 2005)

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2. UL 972 - Standard for Burglary Resisting Glazing Material.

1.4 SUBMITTALS

- A. Submit under provisions of Section 01 33 00 – Submittal Procedures.
- B. Product Data:
 1. Manufacturer's data sheets on each product to be used.
 2. Preparation instructions and recommendations.
 3. Storage and handling requirements and recommendations.
 4. Installation methods.
- C. Shop Drawings:
 1. Submit shop drawings prepared by the manufacturer showing plans, sections, elevations, layouts, profiles and product component locations, including anchorage, bracing, fasteners, accessories and finishes.
 2. Include dimensioned elevation of each type opening assembly in project; indicate sizes and locations of hardware, and lites if specified.
 3. Schedule: Indicate each opening assembly in project; cross-referenced to plans, elevations, and details.
- D. Design Data: Bullet resistance analysis design calculations for specific project conditions, certifying system conformance to specified performance requirements.
- E. Verification Samples: For each finish product specified, two samples, minimum size 6 inches (150 mm) square representing actual product, color, and patterns.
- F. Test Reports: Certified test reports showing compliance with specified performance characteristics and physical properties.
- G. Closeout submittals: Warranty documents, issued and executed by manufacturer of systems, countersigned by Contractor.

1.5 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing products of the type specified with a minimum documented experience of five years.
- B. Installer Qualifications: Company specializing in installation of products specified with minimum three years documented experience.
 1. Supplier of products and an employer of workers trained and approved by product manufacturers who is available during the course of the Work to consult Contractor, Architect, and Government about door hardware and keying.
 - a. Scheduling Responsibility: Preparation of door hardware and keying schedule.
 - b. Engineering Responsibility: Preparation of data for electrified door hardware, including Shop Drawings, based on testing and engineering analysis of manufacturer's standard units in assemblies similar to those indicated for this Project.

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- C. Coordination of Work:
 - 1. Coordinate layout and installation of components with other construction supported by, or penetrating through, ceilings, including light fixtures, HVAC equipment, fire-suppression system, and partitions.
 - 2. Coordinate doors with electrified door hardware.
- D. Coordination: Bullet resistant protection shall be provided in the sizes and in the configuration indicated on the Drawings. Furnish hardware necessary for the joining of the components specified. Provide components complete with adhesives, fasteners, and other devices required for complete assembly.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials in manufacturer's unopened, undamaged packaging, with manufacturer's labels intact.
- B. Remove wraps or covers from doors and frames upon delivery at the building site. Clean and touch-up scratches or disfigurement caused by shipping or handling promptly.
- C. Store products in manufacturer's unopened packaging until ready for installation. Store assemblies, off the ground and on end, to prevent damage to face corners and edges. Store assemblies covered to protect them from damage but permitting air circulation.

1.7 SEQUENCING

- A. Ensure that locating templates and other information required for installation of products of this section are furnished to affected trades in time to prevent interruption of construction progress.

1.8 PROJECT CONDITIONS

- A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's recommended limits.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Basis of Design: Total Security Solutions, 935 Garden Ln.; Fowlerville, MI 48836; Tel: 866-304-5070; https://tssbulletproof.com/?utm_source=arcat&utm_medium=referral&utm_campaign=digital-outbound
- B. Other Government-approved equal.

2.2 BULLET RESISTANT TRANSACTION WINDOWS

- A. Non-rated Aluminum U Channel, Model LP 750 BR.
 - 1. Finish: Custom paint.
 - 2. Exposed Fasteners: None.
- B. Natural Voice Transmission Window: Model #NVRTW with speaker hole and backer
 - 1. Preassembled with two way "natural voice" communication permitted by the design of the vertical

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- side frames and neoprene spacer glazing technique.
- 2. Overall Size and Configuration: As indicated on the Drawings.
- 3. Aluminum U-channel frame conforms to UL 752 of the following protection level.
 - a. No protection level.
- 4. Glazing:
 - a. Glazing Type: Model #LP750, polycarbonate/acrylic combination.
 - b. Glazing to conform to UL 752 of the following protection level.
 - a. Protection Level: 1.
 - c. Deal Tray: Model TSSDT1610. 16 by 10 inches (406 by 254 mm) from the outside edge of flanges with a clear open depth under the glazing no less than 1-1/2 inches (38 mm). Fabricate of a minimum 16 gauge (1.5 mm) stainless steel, with a No. 4 finish.

2.3 BULLET RESISTANT WOOD DOORS AND ALUMINUM FRAMES

- A. Bullet Resistant Wood Doors and Aluminum Frames: Provide swing door and frame.
 - 1. Door, Sizes and Configurations: As indicated on the Drawings.
 - 2. Wood Doors: Full-Vision
 - a. Thickness: 1-3/4 inches (44 mm) minimum.
 - a. Face Sheet: Custom veneer plastic laminate to match existing adjacent casework.
 - b. Core: Fill spaces between face sheets with foamed in place rigid urethane foam and fiberglass core
 - c. Hardware preparation (See Door Hardware below):
 - a. Mortise, reinforce, drill, and tap doors at factory for fully templated mortised hardware only, in accordance with approved hardware schedule and supplied templates.
 - b. Cylindrical hardware, in accordance with approved hardware schedule and supplied templates.
 - c. Exit devices, in accordance with approved hardware schedule and supplied templates.
 - d. Provide reinforcing plates at surface-mounted or non-templated hardware locations.
 - d. Glazing Moldings and stops:
 - a. Wood moldings fastened to door on security side.
 - b. Loose stops, countersunk for fasteners.
 - c. Form moldings with mitered corner joints.
 - e. Glazed Lites: Factory-assemble lites in doors indicated to have lites, using glazing materials of the same ballistic level specified for the door and frame.
 - 3. Aluminum Door Frames
 - a. Frame Sizes and Configuration: As indicated on the Drawings.
 - b. Frames for interior use reinforced for hinges, strikes and closers.
 - c. Pack frames with fiberglass.
 - d. Stops: Minimum 5/8 inch (15.8 mm) in depth.
 - e. Provide concealed corner reinforcement and alignment clips for accurately fitted hairline joints at butted and mitered connections.
 - f. Hardware Preparation (See Door Hardware below):
 - a. Mortise, reinforce, drill, and tap frames at factory for fully templated mortised hardware, in accordance with approved hardware schedule.

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- b. Cylindrical hardware, in accordance with approved hardware schedule and supplied templates.
 - c. Provide reinforcing plates at surface-mounted hardware locations.
 - d. Weld anchors inside each jamb for floor anchorage.
- B. Door Hardware. See Section 08
 - 1. Hinge: Select SL-11 Heavy Duty Continuous Hinge
 - 2. Closer: LSDA Heavy Duty Closer
 - 3. Lockset: Schlage ND 80 Series Lockset with Storeroom Function

2.4 FABRICATION

- A. Joints and connections shall be tight, providing hairline joints and true alignment of adjacent members.
- B. Fabricate components to allow secure installation without exposed fasteners.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Do not begin installation until openings and installing surfaces have been properly prepared.
 - 1. Verify openings are in accordance with approved shop drawings.
 - 2. Verify that supports have been installed in accordance with the Drawings.
- B. If preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.2 PREPARATION

- A. Clean surfaces thoroughly prior to installation.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

3.3 INSTALLATION

- A. Install products in accordance with approved submittals, manufacturer's instructions, and requirements of UL 752.
 - 1. Install equipment plumb, level, rigid and in true alignment.
 - 2. Use proper anchoring devices. Exposed anchor holes shall be used for anchors.
 - 3. Install hardware as required for a complete installation.
 - 4. Adjust operating parts for proper operation, non-binding.
- B. Installation Tolerances: Do not exceed the following installation tolerances:
 - 1. Squareness: Plus or minus 1/16 inch (1.6 mm) measured on a line, 90 degrees from one jamb, at the upper corner of the frame at the other jamb.
 - 2. Alignment: Plus or minus 1/16 inch (1.6 mm) measured on jambs on a horizontal line parallel to the plane of the wall.

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3. Twist: Plus or minus 1/16 inch (1.6 mm) measured at face corners of jambs on parallel lines perpendicular to the plane of the wall.
4. Plumb: Plus or minus 1/16 inch (1.6 mm) measured on the jamb at the floor.

3.4 PROTECTION

- A. Protect installed products until completion of project.
- B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION 13 47 15

BULLET RESISTANT PRODUCTS

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SECTION 26 05 19 - LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Copper building wire rated 600 V or less.
2. Connectors, splices, and terminations rated 600 V and less.

1.2 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Product Schedule: Indicate type, use, location, and termination locations.

1.3 INFORMATIONAL SUBMITTALS

- A. Field quality-control reports.

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.

LOW VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES

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7. Okonite Company (The).
8. Service Wire Co.
9. Southwire Company.
10. WESCO.

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: 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. Lugs: One piece, seamless, designed to terminate conductors specified in this Section.

1. Material: Copper
2. Type: One Standard barrels.
3. Termination: Compression.

PART 3 - EXECUTION

3.1 CONDUCTOR MATERIAL APPLICATIONS

A. Feeders: Copper; solid for No. 10 AWG and smaller; stranded for No. 8 AWG and larger.

LOW VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES

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- B. Feeders: Copper for feeders smaller than No. 4 AWG; copper or aluminum for feeders No. 4 AWG and larger. Conductors shall be solid for No. 10 AWG and smaller; stranded for No. 8 AWG and larger.
- C. Branch Circuits: Copper. Solid for No. 10 AWG and smaller; stranded for No. 8 AWG and larger.
- D. Branch Circuits: Copper. Solid for No. 12 AWG and smaller; stranded for No. 10 AWG and larger.
- E. Power-Limited Fire Alarm and Control: Solid for No. 12 AWG and smaller.

3.2 CONDUCTOR INSULATION AND MULTICONDUCTOR CABLE APPLICATIONS AND WIRING METHODS

- A. Feeders Concealed in Ceilings, Walls, and partitions: Type THHN/THWN-2, single conductors in raceway.
- B. Exposed Branch Circuits: Type THHN/THWN-2, single conductors in raceway.
- C. Branch Circuits Concealed in Ceilings, Walls, and Partitions: Type THHN/THWN-2, single conductors in raceway.

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."

LOW VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES

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3.4 CONNECTIONS

- A. Tighten electrical connectors and terminals according to manufacturer's published torque-tightening 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 un-spliced conductors.
- C. Wiring at Outlets: Install conductor at each outlet, with at least 6 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."

END OF SECTION 26 05 19

LOW VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES

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SECTION 26 05 26 - 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 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated.

1.4 QUALITY ASSURANCE

- 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.

PART 2 - PRODUCTS

2.1 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 International Corporation.
 - 5. Fushi Copperweld Inc.
 - 6. Galvan Industries, Inc.; Electrical Products Division, LLC.
 - 7. Harger Lightning & Grounding.

GROUNDING AND BONDING FOR ELECTRICAL

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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.

2.2 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.

2.3 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. Tinned Conductors: ASTM B 33.
 4. Bonding Cable: 28 kcmil, 14 strands of No. 17 AWG conductor, 1/4 inch in diameter.
 5. Bonding Conductor: No. 4 or No. 6 AWG, stranded conductor.
 6. Bonding Jumper: Copper tape, braided conductors terminated with copper ferrules; 1-5/8 inches wide and 1/16 inch thick.
 7. Tinned Bonding Jumper: Tinned-copper tape, braided conductors terminated with copper ferrules; 1-5/8 inches wide and 1/16 inch thick.

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. Bolted Connectors for Conductors and Pipes: Copper or copper alloy.

GROUNDING AND BONDING FOR ELECTRICAL

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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. Isolated Grounding Conductors: Green-colored insulation with continuous yellow stripe. On feeders with isolated ground, identify grounding conductor where visible to normal inspection, with alternating bands of green and yellow tape, with at least three bands of green and two bands of yellow.
- C. Conductor Terminations and Connections:
 - 1. Pipe and Equipment Grounding Conductor Terminations: Bolted connectors.

3.2 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.
 - 4. Single-phase motor and appliance branch circuits.
 - 5. Three-phase motor and appliance branch circuits.
 - 6. Flexible raceway runs.
- C. Isolated Grounding Receptacle Circuits: Install an insulated equipment grounding conductor connected to the receptacle grounding terminal. Isolate conductor from raceway and from panelboard grounding terminals. Terminate at equipment grounding conductor terminal of the applicable derived system or service unless otherwise indicated.
- D. Isolated Equipment Enclosure Circuits: For designated equipment supplied by a branch circuit or feeder, isolate equipment enclosure from supply circuit raceway with a nonmetallic raceway fitting listed for the purpose. Install fitting where raceway enters enclosure, and install a separate insulated equipment grounding conductor. Isolate conductor from raceway and from panelboard grounding terminals. Terminate at equipment grounding conductor terminal of the applicable derived system or service unless otherwise indicated.

GROUNDING AND BONDING FOR ELECTRICAL

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3.3 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. 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.
- C. Bonding Interior Metal Ducts: Bond metal air ducts to equipment grounding conductors of associated fans, blowers, electric heaters, and air cleaners. Install bonding jumper to bond across flexible duct connections to achieve continuity.
 - a. Perform tests by fall-of-potential method according to IEEE 81.
 - 2. Prepare dimensioned Drawings locating each test well, 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.

END OF SECTION 26 05 26

GROUNDING AND BONDING FOR ELECTRICAL

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SECTION 26 05 29 - 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. Hangers and supports for electrical equipment and systems.
 - 2. Construction requirements for concrete bases.

1.3 ACTION 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. Hangers.
 - b. Steel slotted support systems.
 - c. Nonmetallic support systems.
 - d. Trapeze hangers.
 - e. Clamps.
 - f. Turnbuckles.
 - g. Sockets.
 - h. Eye nuts.
 - i. Saddles.
 - j. Brackets.
 - 2. Include rated capacities and furnished specialties and accessories.
- B. Shop Drawings for fabrication and installation details for electrical hangers and support systems.
 - 1. Trapeze hangers. Include product data for components.
 - 2. Steel slotted-channel systems.
 - 3. Nonmetallic slotted-channel systems.
 - 4. Equipment supports.

HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS

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1.4 INFORMATIONAL SUBMITTALS

- A. Coordination Drawings: Reflected ceiling plan(s) and other details, drawn to scale, on which the following items are shown and coordinated with each other, using input from installers of the items involved:
1. Suspended ceiling components.
 2. Structural members to which hangers and supports will be attached.
 3. Size and location of initial access modules for acoustical tile.
 4. Items penetrating finished ceiling, including the following:
 - a. Lighting fixtures.
 - b. Air outlets and inlets.
 - c. Speakers.
 - d. Sprinklers.
 - e. Access panels.
 - f. Projectors.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Seismic Performance: Hangers and supports shall withstand the effects of earthquake motions determined according to ASCE/SEI 7.
1. The term "withstand" means "the supported equipment and systems will remain in place without separation of any parts when subjected to the seismic forces specified and the system will be fully operational after the seismic event."
 2. Component Importance Factor: 1.5.
- 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: Comply with MFMA-4 factory-fabricated components for field assembly.
1. Material: Galvanized steel.
 2. Channel Width: 1-5/8 inches.
 3. Metallic Coatings: Hot-dip galvanized after fabrication and applied according to MFMA-4.

HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS

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4. Nonmetallic Coatings: Manufacturer's standard PVC, polyurethane, or polyester coating applied according to MFMA-4.
 5. Painted Coatings: Manufacturer's standard painted coating applied according to MFMA-4.
 6. Protect finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.
 7. Channel Dimensions: Selected for applicable load criteria.
- B. Conduit and Cable Support Devices: Steel hangers, clamps, and associated fittings, designed for types and sizes of raceway or cable to be supported.
- C. 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.
- D. Structural Steel for Fabricated Supports and Restraints: ASTM A 36/A 36M steel plates, shapes, and bars; black and galvanized.
- E. 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.
 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.
 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-steel springhead type.
 7. Hanger Rods: Threaded steel.

PART 3 - EXECUTION

3.1 APPLICATION

- A. Comply with NECA 1 and NECA 101 for application of hangers and supports for electrical equipment and systems unless requirements in this Section are stricter.
- B. Comply with requirements for raceways and boxes specified in Section 260533 "Raceways and Boxes for Electrical Systems."

HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS

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- C. Maximum Support Spacing and Minimum Hanger Rod Size for Raceway: Space supports for EMTs, IMCs, and RMCs as required by NFPA 70. Minimum rod size shall be 1/4 inch in diameter.
- D. Multiple Raceways or Cables: Install trapeze-type supports fabricated with steel slotted support system, sized so capacity can be increased by at least 25 percent in future without exceeding specified design load limits.
 - 1. Secure raceways and cables to these supports with two-bolt conduit clamps.
- E. Spring-steel clamps designed for supporting single conduits without bolts may be used for 1-1/2-inch and smaller raceways serving branch circuits and communication systems above suspended ceilings and for fastening raceways to trapeze supports.

3.2 SUPPORT INSTALLATION

- A. Comply with NECA 1 and NECA 101 for installation requirements except as specified in this article.
- B. Raceway Support Methods: In addition to methods described in NECA 1, EMTs may be supported by openings through structure members, according to NFPA 70.
- C. 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.
- D. 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 Masonry: Approved toggle-type bolts on hollow masonry units and expansion anchor fasteners on solid masonry units.
 - 3. To Existing Concrete: Expansion anchor fasteners.
 - 4. 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.
 - 5. To Steel: Beam clamps, complying with MSS SP-69 Spring-tension clamps.
 - 6. To Light Steel: Sheet metal screws.
 - 7. 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.
- E. Drill holes for expansion anchors in concrete at locations and to depths that avoid the need for reinforcing bars.

HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS

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3.3 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 architects 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 26 05 29

HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS

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SECTION 26 05 33 - RACEWAYS AND BOXES FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Metal conduits and fittings.
2. Surface raceways.
3. Boxes, enclosures, and cabinets.

B. Related Requirements:

1. Section 270528 "Pathways for Communications Systems" for conduits, wireways, surface pathways, innerduct, boxes, faceplate adapters, enclosures, cabinets, and handholes serving communications systems.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of product.

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. Listing and Labeling: Metal conduits, tubing, and fittings shall be listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
2. GRC: Comply with ANSI C80.1 and UL 6.
3. IMC: Comply with ANSI C80.6 and UL 1242.
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.

RACEWAYS AND BOXES FOR ELECTRICAL SYSTEMS

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- B. Metal Fittings: Comply with NEMA FB 1 and UL 514B.
 - 1. Listing and Labeling: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
 - 2. Fittings, General: Listed and labeled for type of conduit, location, and use.
 - 3. Fittings for EMT:
 - a. Material: Steel.
 - b. Type: Compression.
- C. Joint Compound for IMC, 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 BOXES, ENCLOSURES, AND CABINETS

- A. Sheet Metal Outlet and Device Boxes: Comply with NEMA OS 1 and UL 514A.
- B. Cast-Metal Outlet and Device Boxes: Comply with NEMA FB 1, ferrous alloy, Type FD, with gasketed cover.
- C. Small Sheet Metal Pull and Junction Boxes: NEMA OS 1.
- D. Cast-Metal Access, Pull, and Junction Boxes: Comply with NEMA FB 1 and UL 1773, galvanized, cast iron with gasketed cover.
- E. Box extensions used to accommodate new building finishes shall be of same material as recessed box.
- F. Device Box Dimensions: 4 inches square by 2-1/8 inches deep.
- G. Gangable boxes are prohibited.

PART 3 - EXECUTION

3.1 RACEWAY APPLICATION

- A. 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: IMC. Raceway locations include the following:
 - 4. Concealed in Ceilings and Interior Walls and Partitions: EMT.
 - 5. Damp or Wet Locations: IMC.
 - 6. 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.

RACEWAYS AND BOXES FOR ELECTRICAL SYSTEMS

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- B. Minimum Raceway Size: 3/4-inch trade size.
- C. Raceway Fittings: Compatible with raceways and suitable for use and location.
 - 1. Rigid and Intermediate Steel Conduit: Use threaded rigid steel conduit fittings unless otherwise indicated. Comply with NEMA FB 2.10.
 - 2. EMT: Use compression, 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.
- D. Install surface raceways only where indicated on Drawings.
- E. Do not install nonmetallic conduit where ambient temperature exceeds 120 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. Comply with requirements in Section 260529 "Hangers and Supports for Electrical Systems" for hangers and supports.
- 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.
- 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 and EMT 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. Stub-ups to Above Recessed Ceilings:

RACEWAYS AND BOXES FOR ELECTRICAL SYSTEMS

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1. Use EMT, for raceways.
 2. Use a conduit bushing or insulated fitting to terminate stub-ups not terminated in hubs or in an enclosure.
- M. 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.
- N. 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.
- O. 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.
- P. Surface Raceways:
1. Install surface raceway with a minimum 2-inch radius control at bend points.
 2. Secure surface raceway with screws or other anchor-type devices at intervals not exceeding 48 inches and with no less than two supports per straight raceway section. Support surface raceway according to manufacturer's written instructions. Tape and glue are not acceptable support methods.
- Q. 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.
- R. Install devices to seal raceway interiors at accessible locations.
- S. Flexible Conduit Connections: Comply with NEMA RV 3. Use a maximum of 72 inches of flexible conduit for recessed and semirecessed luminaires, equipment subject to vibration, noise transmission, or movement.
- T. 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.
- U. Horizontally separate boxes mounted on opposite sides of walls so they are not in the same vertical channel.
- V. Locate boxes so that cover or plate will not span different building finishes.
- W. 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.

RACEWAYS AND BOXES FOR ELECTRICAL SYSTEMS

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- X. Fasten junction and pull boxes to or support from building structure. Do not support boxes by conduits.

3.3 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."

3.4 FIRESTOPPING

- A. Install firestopping at penetrations of fire-rated floor and wall assemblies. Comply with requirements in Section 078413 "Penetration Firestopping."

3.5 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 26 05 33

RACEWAYS AND BOXES FOR ELECTRICAL SYSTEMS

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SECTION 26 05 44 - 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.

1.3 ACTION 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; 0.0239-inch minimum thickness; round tube closed with welded longitudinal joint, with tabs for screw-fastening the sleeve to the board.
- C. PVC-Pipe Sleeves: ASTM D 1785, Schedule 40.
- D. Molded-PVC Sleeves: With nailing flange for attaching to wooden forms.
- E. Molded-PE or -PP Sleeves: Removable, tapered-cup shaped, and smooth outer surface with nailing flange for attaching to wooden forms.

SLEEVES AND SLEEVE SEALS FOR ELECTRICAL SYSTEMS

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F. 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.
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 SLEEVE-SEAL FITTINGS

- A. Description: Manufactured plastic, sleeve-type, waterstop assembly made for embedding in concrete slab or wall. Unit shall have plastic or rubber waterstop collar with center opening to match piping OD.

2.4 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.

SLEEVES AND SLEEVE SEALS FOR ELECTRICAL SYSTEMS

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- C. Design Mix: 5000-psi, 28-day compressive strength.
- D. Packaging: Premixed and factory packaged.

2.5 SILICONE SEALANTS

- A. Silicone Sealants: Single-component, silicone-based, neutral-curing elastomeric sealants of grade indicated below.
 - 1. Grade: Pourable (self-leveling) formulation for openings in floors and other horizontal surfaces that are not fire rated.
 - 2. Sealant shall have VOC content of 50 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).
 - 3. Sealant shall comply with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."
- B. Silicone Foams: Multicomponent, silicone-based liquid elastomers that, when mixed, expand and cure in place to produce a flexible, nonshrinking foam.

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.

SLEEVES AND SLEEVE SEALS FOR ELECTRICAL SYSTEMS

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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.

3.2 SLEEVE-SEAL-SYSTEM INSTALLATION

- A. 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.

3.3 SLEEVE-SEAL-FITTING INSTALLATION

- A. Install sleeve-seal fittings in new walls and slabs as they are constructed.
- B. Assemble fitting components of length to be flush with both surfaces of concrete slabs and walls. Position waterstop flange to be centered in concrete slab or wall.
- C. Secure nailing flanges to concrete forms.
- D. Using grout, seal the space around outside of sleeve-seal fittings.

END OF SECTION 26 05 44

SLEEVES AND SLEEVE SEALS FOR ELECTRICAL SYSTEMS

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SECTION 26 05 53 - 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. Identification for raceways.
 - 2. Identification of power and control cables.
 - 3. Identification for conductors.
 - 4. Instruction signs.
 - 5. Equipment identification labels.
 - 6. Miscellaneous identification products.

1.3 ACTION 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.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Comply with ASME A13.1 and IEEE C2.
- B. Comply with NFPA 70.

IDENTIFICATION FOR ELECTRICAL SYSTEMS

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- C. Comply with 29 CFR 1910.144 and 29 CFR 1910.145.
- D. Comply with ANSI Z535.4 for safety signs and labels.
- E. Adhesive-attached labeling materials, including label stocks, laminating adhesives, and inks used by label printers, shall comply with UL 969.

2.2 COLOR AND LEGEND REQUIREMENTS

- A. Raceways and Cables Carrying Circuits at 600 V or Less:
 - 1. Black letters on an orange field.
 - 2. Legend: Indicate voltage and system or service type.

2.3 LABELS

- A. Vinyl Labels for Raceways Carrying Circuits at 600 V or Less: 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. Snap-Around Labels for Raceways and Cables Carrying Circuits at 600 V or Less: Slit, pretensioned, flexible, preprinted, color-coded acrylic sleeves, with diameters sized to suit diameters of raceways they identify, and that stay in place by gripping action.
 - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Brady Corporation.
 - b. HellermannTyton.
 - c. Marking Services, Inc.
 - d. Panduit Corp.
 - e. Seton Identification Products.

IDENTIFICATION FOR ELECTRICAL SYSTEMS

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C. Self-Adhesive Labels:

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. Preprinted, 3-mil-thick, polyester flexible label with acrylic pressure-sensitive adhesive.
3. Polyester, thermal, transfer-printed, 3-mil-thick, multicolor, weather- and UV-resistant, pressure-sensitive adhesive labels, configured for display on front cover, door, or other access to equipment unless otherwise indicated.
 - a. Nominal Size: 3.5-by-5-inch.

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.

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- c. emedco.
 - d. Marking Services, Inc.
- C. Floor Marking Tape: 2-inch-wide, 5-mil pressure-sensitive vinyl tape, with black and white stripes and clear vinyl overlay.
 - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Carlton Industries, LP.
 - b. Seton Identification Products.

2.5 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.
- B. General-Purpose Cable Ties: Fungus inert, self-extinguishing, one piece, self-locking, Type 6/6 nylon.
 - 1. Minimum Width: 3/16 inch.
 - 2. Tensile Strength at 73 deg F according to ASTM D 638: 12,000 psi.
 - 3. Temperature Range: Minus 40 to plus 185 deg F.
 - 4. Color: Black, except where used for color-coding.
- C. Plenum-Rated Cable Ties: Self-extinguishing, UV stabilized, one piece, 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.

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.

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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 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.
- C. Apply identification devices to surfaces that require finish after completing finish work.
- D. Attach signs and plastic labels that are not self-adhesive type with mechanical fasteners appropriate to the location and substrate.
- E. Cable Ties: For attaching tags. Use general-purpose type, except as listed below:
 - 1. In Spaces Handling Environmental Air: Plenum rated.

3.3 IDENTIFICATION SCHEDULE

- A. Accessible Raceways and Cables within Buildings: Identify the covers of each junction and pull box of the following systems with self-adhesive vinyl labels containing the wiring system legend and system voltage. System legends shall be as follows:
 - 1. "EMERGENCY POWER."
 - 2. "POWER."
- B. Power-Circuit Conductor Identification, 600 V or Less: For conductors, pull and junction boxes, use color-coding conductor tape to identify the phase.
 - 1. Color-Coding for Phase- and Voltage-Level Identification, 600 V or Less: Use colors listed below for ungrounded feeder and branch-circuit conductors.
 - a. Colors for 208/120-V Circuits:
 - 1) Phase A: Black.
 - 2) Phase B: Red.
 - 3) Phase C: Blue.
 - b. Colors for 480/277-V Circuits:
 - 1) Phase A: Brown.
 - 2) Phase B: Orange.
 - 3) Phase C: Yellow.

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- c. Field-Applied, Color-Coding Conductor Tape: Apply in half-lapped turns for a minimum distance of 6 inches from terminal points and in boxes where splices or taps are made. Apply last two turns of tape with no tension to prevent possible unwinding. Locate bands to avoid obscuring factory cable markings.
- C. Control-Circuit Conductor Identification: For conductors and cables in pull and junction boxes, use write-on tags with the conductor or cable designation, origin, and destination.
- D. Control-Circuit Conductor Termination Identification: For identification at terminations, provide self-adhesive, self-laminating polyester labels with the conductor designation.
- E. Conductors To Be Extended in the Future: Attach write-on tags to conductors and list source.
- F. Auxiliary Electrical Systems Conductor Identification: Identify field-installed alarm, control, and signal connections.
 1. Identify conductors, cables, and terminals in enclosures and at junctions, terminals, and pull points. Identify by system and circuit designation.
 2. Use system of marker-tape designations that is uniform and consistent with system used by manufacturer for factory-installed connections.
 3. Coordinate identification with Project Drawings, manufacturer's wiring diagrams, and operation and maintenance manual.
- G. Warning Labels for Indoor Cabinets, Boxes, and Enclosures for Power and Lighting: Self-adhesive warning labels.
 1. Comply with 29 CFR 1910.145.
 2. Identify system voltage with black letters on an orange background.
 3. Apply to exterior of door, cover, or other access.
- H. Equipment Identification Labels: On each unit of equipment, install unique designation label that is consistent with wiring diagrams, schedules, and operation and maintenance manual. Apply labels to disconnect switches and protection equipment, central or master units, control panels, control stations, terminal cabinets, and racks of each system. Systems include power, lighting, control, communication, signal, monitoring, and alarm unless equipment is provided with its own identification.
 1. Labeling Instructions:
 - a. Indoor Equipment: Self-adhesive label Self-adhesive, engraved, laminated acrylic or melamine plastic label. 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.
 - b. Elevated Components: Increase sizes of labels and letters to those appropriate for viewing from the floor.

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- c. Unless labels are provided with self-adhesive means of attachment, fasten them with appropriate mechanical fasteners that do not change the NEMA or NRTL rating of the enclosure.

END OF SECTION 26 05 53

IDENTIFICATION FOR ELECTRICAL SYSTEMS

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SECTION 26 27 26 - WIRING DEVICES

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. Isolated-ground receptacles.
 - 2. Communications outlets.
 - 3. Cord and plug sets.

1.3 DEFINITIONS

- A. EMI: Electromagnetic interference.
- B. Pigtail: Short lead used to connect a device to a branch-circuit conductor.
- C. RFI: Radio-frequency interference.
- D. TVSS: Transient voltage surge suppressor.
- E. UTP: Unshielded twisted pair.

1.4 ADMINISTRATIVE REQUIREMENTS

- A. Coordination:
 - 1. Receptacles for Owner-Furnished Equipment: Match plug configurations.
 - 2. Cord and Plug Sets: Match equipment requirements.

1.5 ACTION SUBMITTALS

- A. Product Data: For each type of product.

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1.6 INFORMATIONAL SUBMITTALS

- A. Field quality-control reports.

1.7 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: For wiring devices to include in all manufacturers' packing-label warnings and instruction manuals that include labeling conditions.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
1. Eaton (Arrow Hart).
 2. Hubbell Incorporated; Wiring Device-Kellems.
 3. Leviton Manufacturing Co., Inc.
 4. Pass & Seymour/Legrand (Pass & Seymour).
 5. STC Sound Control.
- B. Source Limitations: Obtain each type of wiring device and associated wall plate from single source from single manufacturer.

2.2 GENERAL WIRING-DEVICE REQUIREMENTS

- A. Wiring Devices, Components, 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 NFPA 70.
- C. Devices that are manufactured for use with modular plug-in connectors may be substituted under the following conditions:
1. Connectors shall comply with UL 2459 and shall be made with stranding building wire.
 2. Devices shall comply with the requirements in this Section.

2.3 STRAIGHT-BLADE RECEPTACLES

- A. Convenience Receptacles, 125 V, 20 A: Comply with NEMA WD 1, NEMA WD 6 Configuration 5-20R, UL 498, and FS W-C-596.

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1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Eaton (Arrow Hart).
 - b. Hubbell Incorporated; Wiring Device-Kellems.
 - c. Leviton Manufacturing Co., Inc.
 - d. Pass & Seymour/LeGrand (Pass & Seymour).
 - B. Isolated-Ground, Duplex Convenience Receptacles, 125 V, 20 A: Comply with NEMA WD 1, NEMA WD 6 Configuration 5-20R, UL 498, and FS W-C-596.
 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Eaton (Arrow Hart).
 - b. Hubbell Incorporated; Wiring Device-Kellems.
 - c. Leviton Manufacturing Co., Inc.
 - d. Pass & Seymour/LeGrand (Pass & Seymour).
 2. Description: Straight blade; equipment grounding contacts shall be connected only to the green grounding screw terminal of the device and with inherent electrical isolation from mounting strap. Isolation shall be integral to receptacle construction and not dependent on removable parts.
 - C. Isolated-Ground, Single Convenience Receptacles, 125 V, 20 A:
 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Eaton (Arrow Hart).
 - b. Hubbell Incorporated; Wiring Device-Kellems.
 - c. Leviton Manufacturing Co., Inc.
 - d. Pass & Seymour/LeGrand (Pass & Seymour).
 2. Description:
 - a. Comply with NEMA WD 1, NEMA WD 6 Configuration L5-20R, and UL 498.
 - b. Equipment grounding contacts shall be connected only to the green grounding screw terminal of the device and with inherent electrical isolation from mounting strap. Isolation shall be integral to receptacle construction and not dependent on removable parts.
- 2.4 CORD AND PLUG SETS
- A. Description:
 1. Match voltage and current ratings and number of conductors to requirements of equipment being connected.
 2. Cord: Rubber-insulated, stranded-copper conductors, with Type SOW-A jacket; with green-insulated grounding conductor and ampacity of at least 130 percent of the equipment rating.

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3. Plug: Nylon body and integral cable-clamping jaws. Match cord and receptacle type for connection.

2.5 TOGGLE SWITCHES

- A. Comply with NEMA WD 1, UL 20, and FS W-S-896.
- B. Switches, 120/277 V, 20 A:
 1. Single Pole:
 - a. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1) Eaton (Arrow Hart).
 - 2) Hubbell Incorporated; Wiring Device-Kellems.
 - 3) Leviton Manufacturing Co., Inc.
 - 4) Pass & Seymour/Legrand (Pass & Seymour).

2.6 WALL PLATES

- A. Single and combination types shall match corresponding wiring devices.
 1. Plate-Securing Screws: Metal with head color to match plate finish.
 2. Material for Finished Spaces: Smooth, high-impact thermoplastic.

2.7 FINISHES

- A. Device Color:
 1. Wiring Devices Connected to Normal Power System: As selected by Architect unless otherwise indicated or required by NFPA 70 or device listing.
 2. Wiring Devices Connected to Emergency Power System: Red.
 3. Isolated-Ground Receptacles: Orange.
- B. Wall Plate Color: For plastic covers, match device color.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Comply with NECA 1, including mounting heights listed in that standard, unless otherwise indicated.

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B. Coordination with Other Trades:

1. Protect installed devices and their boxes. Do not place wall finish materials over device boxes and do not cut holes for boxes with routers that are guided by riding against outside of boxes.
2. Keep outlet boxes free of plaster, drywall joint compound, mortar, cement, concrete, dust, paint, and other material that may contaminate the raceway system, conductors, and cables.
3. Install wiring devices after all wall preparation, including painting, is complete.

C. Conductors:

1. Do not strip insulation from conductors until right before they are spliced or terminated on devices.
2. Strip insulation evenly around the conductor using tools designed for the purpose. Avoid scoring or nicking of solid wire or cutting strands from stranded wire.
3. The length of free conductors at outlets for devices shall meet provisions of NFPA 70, Article 300, without pigtails.
4. Existing Conductors:
 - a. Cut back and pigtail, or replace all damaged conductors.
 - b. Straighten conductors that remain and remove corrosion and foreign matter.
 - c. Pigtailing existing conductors is permitted, provided the outlet box is large enough.

D. Device Installation:

1. Replace devices that have been in temporary use during construction and that were installed before building finishing operations were complete.
2. Keep each wiring device in its package or otherwise protected until it is time to connect conductors.
3. Do not remove surface protection, such as plastic film and smudge covers, until the last possible moment.
4. Connect devices to branch circuits using pigtails that are not less than 6 inches in length.
5. When there is a choice, use side wiring with binding-head screw terminals. Wrap solid conductor tightly clockwise, two-thirds to three-fourths of the way around terminal screw.
6. Use a torque screwdriver when a torque is recommended or required by manufacturer.
7. When conductors larger than No. 12 AWG are installed on 15- or 20-A circuits, splice No. 12 AWG pigtails for device connections.
8. Tighten unused terminal screws on the device.
9. When mounting into metal boxes, remove the fiber or plastic washers used to hold device-mounting screws in yokes, allowing metal-to-metal contact.

E. Receptacle Orientation:

1. Install ground pin of vertically mounted receptacles up, and on horizontally mounted receptacles to the left.

F. Device Plates: Do not use oversized or extra-deep plates. Repair wall finishes and remount outlet boxes when standard device plates do not fit flush or do not cover rough wall opening.

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- G. Arrangement of Devices: Unless otherwise indicated, mount flush, with long dimension vertical and with grounding terminal of receptacles on top. Group adjacent switches under single, multigang wall plates.
- H. Adjust locations of floor service outlets and service poles to suit arrangement of partitions and furnishings.

3.2 IDENTIFICATION

- A. Comply with Section 260553 "Identification for Electrical Systems."
- B. Identify each receptacle with panelboard identification and circuit number. Use hot, stamped, adhesive type or engraved machine printing with black letters on white or transparent background on face of plate, and durable wire markers or tags inside outlet boxes.

3.3 FIELD QUALITY CONTROL

- A. Test Instruments: Use instruments that comply with UL 1436.
- B. Test Instrument for Convenience Receptacles: Digital wiring analyzer with digital readout or illuminated digital-display indicators of measurement.
- C. Tests for Convenience Receptacles:
 - 1. Line Voltage: Acceptable range is 105 to 132 V.
 - 2. Percent Voltage Drop under 15-A Load: A value of 6 percent or higher is unacceptable.
 - 3. Ground Impedance: Values of up to 2 ohms are acceptable.
 - 4. Using the test plug, verify that the device and its outlet box are securely mounted.
 - 5. Tests shall be diagnostic, indicating damaged conductors, high resistance at the circuit breaker, poor connections, inadequate fault current path, defective devices, or similar problems. Correct circuit conditions, remove malfunctioning units and replace with new ones, and retest as specified above.
- D. Wiring device will be considered defective if it does not pass tests and inspections.
- E. Prepare test and inspection reports.

END OF SECTION 26 27 26

WIRING DEVICES

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SECTION 27 05 28 - PATHWAYS FOR COMMUNICATIONS 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. Surface pathways.
- 3. Boxes and enclosures.

B. Related Requirements:

- 1. Section 260533 "Raceways and Boxes for Electrical Systems" for conduits, wireways, surface raceways, boxes, enclosures, cabinets, handholes, and faceplate adapters serving electrical systems.
- 2. Section 280528 "Pathways for Electronic Safety and Security" for conduits, surface pathways, innerduct, boxes, and faceplate adapters serving electronic safety and security.

1.3 DEFINITIONS

- A. GRC: Galvanized rigid steel conduit.
- B. IMC: Intermediate metal conduit.

1.4 ACTION SUBMITTALS

- A. Product Data: For surface pathways, wireways and fittings, floor boxes, hinged-cover enclosures, and cabinets.

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PART 2 - PRODUCTS

2.1 METAL CONDUITS AND FITTINGS

A. 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. Alpha Wire.
4. Anamet Electrical, Inc.
5. Electri-Flex Company.
6. O-Z/Gedney; a brand of Emerson Industrial Automation.
7. Picoma Industries, Inc.
8. Plasti-Bond.
9. Republic Conduit.
10. Southwire Company.
11. Thomas & Betts Corporation; A Member of the ABB Group.
12. Western Tube and Conduit Corporation.
13. Wheatland Tube Company.

B. General Requirements for Metal Conduits and Fittings:

1. Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
2. Comply with TIA-569-B.

C. GRC: Comply with ANSI C80.1 and UL 6.

D. IMC: Comply with ANSI C80.6 and UL 1242.

1. Comply with NEMA RN 1.
2. Coating Thickness: 0.040 inch, minimum.

E. EMT: Comply with ANSI C80.3 and UL 797.

F. Fittings for Metal Conduit: Comply with NEMA FB 1 and UL 514B.

1. Fittings for EMT:

- a. Material: Steel.
- b. Type: Compression.

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- G. Joint Compound for IMC, 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 SURFACE PATHWAYS

A. General Requirements for Surface Pathways:

- 1. Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- 2. Comply with TIA-569-B.

B. Surface Metal Pathways: Galvanized steel with snap-on covers complying with UL 5. Manufacturer's standard enamel finish in color selected by Architect.

- 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. MonoSystems, Inc.
 - b. Niedax Inc.
 - c. Panduit Corp.
 - d. Wiremold / Legrand.

C. Surface Nonmetallic Pathways: Two- or three-piece construction, complying with UL 5A, and manufactured of rigid PVC with texture and color selected by Architect from manufacturer's standard colors. Product shall comply with UL-94 V-0 requirements for self-extinguishing characteristics.

- 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Carlon; a brand of Thomas & Betts Corporation.
 - b. MonoSystems, Inc.
 - c. Panduit Corp.
 - d. Quazite: Hubbell Power Systems, Inc.
 - e. Wiremold / Legrand.

2.3 BOXES AND ENCLOSURES

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

- 1. Adalet.
- 2. Carlon; a brand of Thomas & Betts Corporation.
- 3. Crouse-Hinds, an Eaton business.

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4. EGS/Appleton Electric.
5. Erickson Electrical Equipment Company.
6. FSR Inc.
7. Hoffman; a brand of Pentair Equipment Protection.
8. Milbank Manufacturing Co.
9. Molex Industrial Products Group; Woodhead Brand.
10. MonoSystems, Inc.
11. Oldcastle Enclosure Solutions.
12. O-Z/Gedney; a brand of Emerson Industrial Automation.
13. Plasti-Bond.
14. Quazite: Hubbell Power Systems, Inc.
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. Wiremold / Legrand.

B. General Requirements for Boxes, and Enclosures:

1. Comply with TIA-569-B.
2. 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. Box extensions used to accommodate new building finishes shall be of same material as recessed box.

F. Small Sheet Metal Pull and Junction Boxes: NEMA OS 1.

G. Cast-Metal Access, Pull, and Junction Boxes: Comply with NEMA FB 1 and UL 1773, galvanized, cast iron with gasketed cover.

H. Device Box Dimensions: 4 inches square by 2-1/8 inches deep.

I. Gangable boxes are prohibited.

PART 3 - EXECUTION

3.1 PATHWAY APPLICATION

- A. Indoors: Apply pathway products as specified below unless otherwise indicated:
 - 1. Exposed, Not Subject to Physical Damage: EMT.
 - 2. Exposed, Not Subject to Severe Physical Damage: RNC.
 - 3. Exposed and Subject to Severe Physical Damage: IMC
 - 4. Concealed in Ceilings and Interior Walls and Partitions: EMT unless otherwise noted.
 - 5. Pathways for Communications Cable in Spaces Used for Environmental Air: Plenum-type, optical-fiber-cable pathway
 - 6. Pathways for Communications-Cable Risers in Vertical Shafts: Riser-type, optical-fiber-cable pathway.
 - 7. Pathways for Concealed General-Purpose Distribution of Communications Cable: General-use, cable pathway.
 - 8. Boxes and Enclosures: NEMA 250 Type 1.
- B. Minimum Pathway Size: 3/4-inch trade size. Minimum size for optical-fiber cables is 1 inch.
- C. Pathway Fittings: Compatible with pathways and suitable for use and location.
 - 1. Rigid and Intermediate Steel Conduit: Use threaded rigid steel conduit fittings unless otherwise indicated. Comply with NEMA FB 2.10.
 - 2. EMT: Use compression, steel fittings. Comply with NEMA FB 2.10.
- D. Install surface pathways only where indicated on Drawings.

3.2 INSTALLATION

- A. Comply with NECA 1, NECA 101, and TIA-569-B for installation requirements except where requirements on Drawings or in this article are stricter. Comply with NECA 102 for aluminum pathways. Comply with NFPA 70 limitations for types of pathways allowed in specific occupancies and number of floors.
- B. Keep pathways at least 6 inches away from parallel runs of flues and steam or hot-water pipes. Install horizontal pathway runs above water and steam piping.
- C. Complete pathway installation before starting conductor installation.
- D. Comply with requirements in Section 260529 "Hangers and Supports for Electrical Systems" for hangers and supports.

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- E. Arrange stub-ups so curved portions of bends are not visible above finished slab.
- F. Install no more than the equivalent of two 90-degree bends in any pathway run. Support within 12 inches of changes in direction. Utilize long radius ells for all optical-fiber cables.
- G. Conceal conduit and EMT within finished walls, ceilings, and floors unless otherwise indicated. Install conduits parallel or perpendicular to building lines.
- H. Support conduit within 12 inches of enclosures to which attached.
- I. Stub-ups to Above Recessed Ceilings:
 - 1. Use EMT, IMC, or RMC for pathways.
 - 2. Use a conduit bushing or insulated fitting to terminate stub-ups not terminated in hubs or in an enclosure.
- J. Terminate threaded conduits into threaded hubs or with locknuts on inside and outside of boxes or cabinets. Install insulated bushings on conduits terminated with locknuts.
- K. Install pathways square to the enclosure and terminate at enclosures with locknuts. Install locknuts hand tight plus 1/4 turn more.
- L. 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.
- M. Cut conduit perpendicular to the length. For conduits of 2-inch trade size and larger, use roll cutter or a guide to ensure cut is straight and perpendicular to the length.
- N. Install pull wires in empty pathways. Use polypropylene or monofilament plastic line with not less than 200-lbtensile strength. Leave at least 12 inches of slack at each end of pull wire. Cap underground pathways designated as spare above grade alongside pathways in use.
- O. Surface Pathways:
 - 1. Install surface pathway for surface telecommunications outlet boxes only where indicated on Drawings.
 - 2. Install surface pathway with a minimum 2-inch radius control at bend points.
 - 3. Secure surface pathway with screws or other anchor-type devices at intervals not exceeding 48 inches and with no less than two supports per straight pathway section. Support surface pathway according to manufacturer's written instructions. Tape and glue are not acceptable support methods.

PATHWAYS FOR COMMUNICATIONS SYSTEMS

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- P. Pathways for Communications Cable: Install pathways, metal and nonmetallic, rigid and flexible, as follows:
 - 1. 3/4-Inch Trade Size and Smaller: Install pathways in maximum lengths of 50 feet.
 - 2. 1-Inch Trade Size and Larger: Install pathways in maximum lengths of 75 feet.
 - 3. Install with a maximum of two 90-degree bends or equivalent for each length of pathway unless Drawings show stricter requirements. Separate lengths with pull or junction boxes or terminations at distribution frames or cabinets where necessary to comply with these requirements.
- Q. Install devices to seal pathway interiors at accessible locations.
- R. Comply with manufacturer's written instructions for solvent welding PVC conduit and fittings.
- S. 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 top of box unless otherwise indicated.
- T. Horizontally separate boxes mounted on opposite sides of walls so they are not in the same vertical channel.
- U. 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.
- V. Fasten junction and pull boxes to or support from building structure. Do not support boxes by conduits.

3.3 SLEEVE AND SLEEVE-SEAL INSTALLATION FOR COMMUNICATIONS PENETRATIONS

- A. Install sleeves and sleeve seals at penetrations of floor and wall assemblies. Comply with requirements in Section 270544 "Sleeves and Sleeve Seals for Communications Pathways and Cabling."

3.4 FIRESTOPPING

- A. Install firestopping at penetrations of fire-rated floor and wall assemblies. Comply with requirements in Section 078413 "Penetration Firestopping."

END OF SECTION 27 05 28

PATHWAYS FOR COMMUNICATIONS SYSTEMS

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SECTION 27 05 44 - SLEEVES AND SLEEVE SEALS FOR COMMUNICATIONS PATHWAYS 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 pathway 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 fire-resistance-rated walls, horizontal assemblies, and smoke barriers, with and without penetrating items.

1.3 ACTION 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.
 - 2. Cast-Iron Pipe Sleeves: Cast or fabricated "wall pipe," equivalent to ductile-iron pressure pipe, with plain ends and integral waterstop unless otherwise indicated.

SLEEVES AND SLEEVES SEALS FOR COMMUNICATION SYSTEMS

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- B. Sleeves for Conduits Penetrating Non-Fire-Rated Gypsum Board Assemblies: Galvanized-steel sheet; 0.0239-inch minimum thickness; round tube closed with welded longitudinal joint, with tabs for screw-fastening the sleeve to the board.
- C. PVC-Pipe Sleeves: ASTM D 1785, Schedule 40.
- D. Molded-PVC Sleeves: With nailing flange for attaching to wooden forms.
- E. Molded-PE or -PP Sleeves: Removable, tapered-cup shaped, and smooth outer surface with nailing flange for attaching to wooden forms.
- F. Sleeves for Rectangular Openings:
 - 1. Material: Galvanized-steel sheet.
 - 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 pathway 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. HOLDRITE.
 - d. Metraflex Company (The).
 - e. Pipeline Seal and Insulator, Inc.
 - f. Proco Products, Inc.
 - 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.

SLEEVES AND SLEEVES SEALS FOR COMMUNICATION SYSTEMS

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2.3 SLEEVE-SEAL FITTINGS

- A. Description: Manufactured plastic, sleeve-type, waterstop assembly made for embedding in concrete slab or wall. Unit shall have plastic or rubber waterstop collar with center opening to match piping OD.
 - 1. Manufacturers: Subject to compliance with requirements, provide products by the following:
 - a. HOLDRITE.

2.4 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.

2.5 SILICONE SEALANTS

- A. Silicone Sealants: Single-component, silicone-based, neutral-curing elastomeric sealants of grade indicated below.
 - 1. Grade: Pourable (self-leveling) formulation for openings in floors and other horizontal surfaces that are not fire rated.
 - 2. Sealant shall have VOC content of 250 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).
 - 3. Sealant shall comply with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."
- B. Silicone Foams: Multicomponent, silicone-based liquid elastomers that, when mixed, expand and cure in place to produce a flexible, nonshrinking foam.

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.

SLEEVES AND SLEEVES SEALS FOR COMMUNICATION SYSTEMS

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- 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 pathway 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 pathway 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.

3.2 SLEEVE-SEAL-SYSTEM INSTALLATION

- A. Install sleeve-seal systems in sleeves in exterior concrete walls and slabs-on-grade at pathway entries into building.
- B. Install type and number of sealing elements recommended by manufacturer for pathway or cable material and size. Position pathway or cable in center of sleeve. Assemble mechanical sleeve seals and install in annular space between pathway or cable and sleeve. Tighten bolts against pressure plates that cause sealing elements to expand and make watertight seal.

3.3 SLEEVE-SEAL-FITTING INSTALLATION

- A. Assemble fitting components of length to be flush with both surfaces of concrete slabs and walls. Position waterstop flange to be centered in concrete slab or wall.
- B. Secure nailing flanges to concrete forms.
- C. Using grout, seal the space around outside of sleeve-seal fittings.

SLEEVES AND SLEEVES SEALS FOR COMMUNICATION SYSTEMS

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END OF SECTION 27 05 44

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SECTION 27 05 53 - IDENTIFICATION FOR COMMUNICATIONS SYSTEMS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Color and legend requirements for labels and signs.
2. Labels.
3. Bands and tubes.
4. Tapes.
5. Signs.
6. Cable ties.
7. Fasteners for labels and signs.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Identification Schedule:

1. Outlets: Scaled drawings indicating location and proposed designation.
2. Racks: Scaled drawings indicating location and proposed designation.
3. Patch Panels: Enlarged scaled drawings showing rack row, number, and proposed designations.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Comply with NFPA 70 and TIA 606-B.
- B. Comply with ANSI Z535.4 for safety signs and labels.
- C. Adhesive-attached labeling materials, including label stocks, laminating adhesives, and inks used by label printers, shall comply with UL 969.
- D. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes.

IDENTIFICATION FOR COMMUNICATIONS SYSTEMS

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1. Temperature Change: 120 deg F, ambient; 180 deg F, material surfaces.

2.2 COLOR AND LEGEND REQUIREMENTS

A. 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. Snap-Around Labels: Slit, pretensioned, flexible, preprinted, color-coded acrylic sleeves, with diameters sized to suit diameters of raceway or cable they identify, that stay in place by gripping action.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Brady Corporation.
 - b. HellermannTyton.
 - c. Marking Services, Inc.
 - d. Panduit Corp.
 - e. Seton Identification Products.

C. Self-Adhesive Wraparound Labels: Preprinted, 3-mil-thick, vinyl flexible labels 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.

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- 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 shields over the legend. Labels sized such that the clear shield overlaps the entire printed legend.
 - 3. Marker for Labels: Permanent, waterproof black ink marker recommended by tag manufacturer.
 - 4. Marker for Labels: Machine-printed, permanent, waterproof black ink recommended by printer manufacturer.
- D. 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.
 - 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 SIGNS

A. Baked-Enamel Signs:

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

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- 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.

2.5 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. General-Purpose Cable Ties: Fungus inert, self-extinguishing, one piece, self-locking, and Type 6/6 nylon.
1. Minimum Width: 3/16 inch.
 2. Tensile Strength at 73 deg F according to ASTM D 638: 12,000 psi.
 3. Temperature Range: Minus 40 to plus 185 deg F.
 4. Color: Black, except where used for color-coding.

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C. 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.

2.6 MISCELLANEOUS IDENTIFICATION PRODUCTS

- A. 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 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. Verify identity of each item before installing identification products.
- C. Coordinate identification with Project Drawings, manufacturer's wiring diagrams, and operation and maintenance manual.
- D. Apply identification devices to surfaces that require finish after completing finish work.
- E. Install signs with approved legend to facilitate proper identification, operation, and maintenance of communications systems and connected items.
- F. Elevated Components: Increase sizes of labels, signs, and letters to those appropriate for viewing from the floor.
- G. 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.
 3. Provide label 6 inches from cable end.

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H. Snap-Around Labels:

1. Secure tight to surface at a location with high visibility and accessibility.
2. Provide label 6 inches from cable end.

I. Self-Adhesive Wraparound Labels:

1. Secure tight to surface at a location with high visibility and accessibility.
2. Provide label 6 inches from cable end.

J. 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.

K. Cable Ties: General purpose, except as listed below:

1. Outdoors: UV-stabilized nylon.
2. In Spaces Handling Environmental Air: Plenum rated.

3.2 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 with high visibility. Identify by system and circuit designation.

C. Accessible Fittings for Raceways and Cables within Buildings: Identify covers of each junction and pull box with self-adhesive labels containing wiring system legend.

1. System legends shall be as follows:

a. Telecommunications.

D. Faceplates: Label individual faceplates with self-adhesive labels. Place label at top of faceplate. Each faceplate shall be labeled with its individual, sequential designation, numbered clockwise when entering room from primary egress, composed of the following, in the order listed:

1. Wiring closet designation.

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2. Colon.
 3. Faceplate number.
- E. Equipment Room Labeling:
1. Racks, Frames, and Enclosures: Identify front and rear of each with self-adhesive labels containing equipment designation.
 2. Patch Panels: Label individual rows in each rack, starting at top and working down, with self-adhesive labels unless directed otherwise by the using agency.
 3. Data Outlets: Label each outlet with a self-adhesive label indicating the following, in the order listed:
 - a. Room number being served.
 - b. Colon.
 - c. Faceplate number.
- F. Horizontal Cables: Label each cable with a self-adhesive wraparound label indicating the following, in the order listed:
1. Room number.
 2. Colon.
 3. Faceplate number.
- G. Instructional Signs: Self-adhesive labels.
- H. Warning Labels for Indoor Cabinets, Boxes, and Enclosures: Self-adhesive labels.
1. Apply to exterior of door, cover, or other access.
- I. Equipment Identification Labels:
1. Indoor Equipment: Self-adhesive label.
 2. Equipment to Be Labeled:
 - a. Communications cabinets.
 - b. Uninterruptible power supplies.
 - c. Computer room air conditioners.
 - d. Fire-alarm and suppression equipment.
 - e. Egress points.
 - f. Power distribution components.

END OF SECTION 27 05 53

IDENTIFICATION FOR COMMUNICATIONS SYSTEMS

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SECTION 28 05 28 - PATHWAYS FOR ELECTRONIC SAFETY AND SECURITY

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, tubing, and fittings.
- 2. Surface pathways.
- 3. Boxes and enclosures.

B. Related Requirements:

- 1. Section 260533 "Raceways and Boxes for Electrical Systems" for conduits, wireways, surface raceways, boxes, enclosures, cabinets, handholes, and faceplate adapters serving electrical systems.
- 2. Section 270528 "Pathways for Communications Systems" for conduits, surface pathways, innerduct, boxes, and faceplate adapters serving communications systems.

1.3 DEFINITIONS

- A. GRC: Galvanized rigid steel conduit.
- B. IMC: Intermediate metal conduit.

1.4 ACTION SUBMITTALS

- A. Product Data: For surface pathways, wireways and fittings, and hinged-cover enclosures.

PATHWAYS FOR ELECTRONIC SAFETY AND SECURITY

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PART 2 - PRODUCTS

2.1 METAL CONDUITS, TUBING, AND FITTINGS

A. 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. Alpha Wire.
4. Anamet Electrical, Inc.
5. Electri-Flex Company.
6. O-Z/Gedney; a brand of Emerson Industrial Automation.
7. Picoma Industries, Inc.
8. Plasti-Bond.
9. Republic Conduit.
10. Southwire Company.
11. Thomas & Betts Corporation; A Member of the ABB Group.
12. Western Tube and Conduit Corporation.
13. Wheatland Tube Company.

B. General Requirements for Metal Conduits and Fittings:

1. Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
2. Comply with TIA-569-B.

C. GRC: Comply with ANSI C80.1 and UL 6.

D. MC: Comply with ANSI C80.6 and UL 1242.

E. EMT: Comply with ANSI C80.3 and UL 797.

F. FMC: Comply with UL 1; zinc-coated steel.

G. LFMC: Flexible steel conduit with PVC jacket and complying with UL 360.

H. Fittings for Metal Conduit: Comply with NEMA FB 1 and UL 514B.

1. Fittings for EMT:

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- a. Material: Steel.
 - b. Type: Compression.
- I. Joint Compound for IMC, 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 SURFACE PATHWAYS

- A. General Requirements for Surface Pathways:
 - 1. Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
 - 2. Comply with TIA-569-B.
- B. Surface Metal Pathways: Galvanized steel with snap-on covers complying with UL 5. Manufacturer's standard enamel finish in color selected by Architect.
 - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. MonoSystems, Inc.
 - b. Niedax Inc.
 - c. Panduit Corp.
 - d. Wiremold / Legrand.
- C. Surface Nonmetallic Pathways: Two- or three-piece construction, complying with UL 5A, and manufactured of rigid PVC with texture and color selected by Architect from anufacturer's standard colors. Product shall comply with UL 94 V-0 requirements for self-extinguishing characteristics.
 - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Lamson & Sessions.
 - b. MonoSystems, Inc.
 - c. Panduit Corp.
 - d. Quazite: Hubbell Power Systems, Inc.
 - e. Wiremold / Legrand.

2.3 BOXES AND ENCLOSURES.

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

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1. Adalet.
2. Crouse-Hinds, an Eaton business.
3. EGS/Appleton Electric.
4. Erickson Electrical Equipment Company.
5. Hoffman; a brand of Pentair Equipment Protection.
6. Lamson & Sessions.
7. Milbank Manufacturing Co.
8. Molex Premise Networks.
9. MonoSystems, Inc.
10. O-Z/Gedney; a brand of Emerson Industrial Automation.
11. Plasti-Bond.
12. Quazite: Hubbell Power Systems, Inc.
13. RACO; Hubbell.
14. Spring City Electrical Manufacturing Company.
15. Stahlin Non-Metallic Enclosures.
16. Thomas & Betts Corporation; A Member of the ABB Group.
17. Wiremold / Legrand.

B. General Requirements for Boxes, Enclosures, and Cabinets:

1. Comply with TIA-569-B.

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. Box extensions used to accommodate new building finishes shall be of same material as recessed box.

F. Small Sheet Metal Pull and Junction Boxes: NEMA OS 1.

G. Cast-Metal Access, Pull, and Junction Boxes: Comply with NEMA FB 1 and UL 1773, galvanized, cast iron] with gasketed cover.

H. Device Box Dimensions: 4-inches square by 2-1/8 inches deep.

I. Gangable boxes are prohibited.

J. Hinged-Cover Enclosures: Comply with UL 50 and NEMA 250, Type 1 with continuous-hinge cover with flush latch unless otherwise indicated.

1. Metal Enclosures: Steel, finished inside and out with manufacturer's standard enamel.

PATHWAYS FOR ELECTRONIC SAFETY AND SECURITY

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2. Interior Panels: Steel; all sides finished with manufacturer's standard enamel.

PART 3 - EXECUTION

3.1 PATHWAY APPLICATION

- A. Indoors: Apply pathway 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: IMC. Pathway locations include the following:
 4. Concealed in Ceilings and Interior Walls and Partitions: EMT.
 5. Boxes and Enclosures: NEMA 250, Type 1.
- B. Minimum Pathway Size: 3/4-inch trade size.
- C. Pathway Fittings: Compatible with pathways and suitable for use and location.
 1. Rigid and Intermediate Steel Conduit: Use threaded rigid steel conduit fittings unless otherwise indicated. Comply with NEMA FB 2.10.
 2. EMT: Use compression, 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.
- D. Install surface pathways only where indicated on Drawings.

3.2 INSTALLATION

- A. Comply with NECA 1, NECA 101, and TIA-569-B for installation requirements except where requirements on Drawings or in this article are stricter. Comply with NECA 102 for aluminum pathways. Comply with NFPA 70 limitations for types of pathways allowed in specific occupancies and number of floors.
- B. Keep pathways at least 6 inches away from parallel runs of flues and steam or hot-water pipes. Install horizontal pathway runs above water and steam piping.
- C. Complete pathway installation before starting conductor installation.
- D. Comply with requirements in Section 260529 "Hangers and Supports for Electrical Systems" for hangers and supports.
- E. Arrange stub-ups so curved portions of bends are not visible above finished slab.

PATHWAYS FOR ELECTRONIC SAFETY AND SECURITY

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- F. Install no more than the equivalent of three 90-degree bends in any conduit run except for communications wiring conduits for which only two 90-degree bends are allowed. Support within 12 inches of changes in direction.
- G. Conceal conduit and EMT within finished walls, ceilings, and floors unless otherwise indicated. Install conduits parallel or perpendicular to building lines.
- H. Support conduit within 12 inches of enclosures to which attached.
- I. Stub-ups to Above Recessed Ceilings:
 - 1. Use EMT, IMC, or RMC for pathways.
 - 2. Use a conduit bushing or insulated fitting to terminate stub-ups not terminated in hubs or in an enclosure.
- J. Terminate threaded conduits into threaded hubs or with locknuts on inside and outside of boxes or cabinets. Install insulated bushings on conduits terminated with locknuts.
- K. Install pathways square to the enclosure and terminate at enclosures with locknuts. Install locknuts hand tight plus 1/4 turn more.
- L. Do not rely on locknuts to penetrate nonconductive coatings on enclosures. Remove coatings in the locknut area prior to conduit assembly to assure a continuous ground path.
- M. Cut conduit perpendicular to the length. For conduits of 2-inch trade size and larger, use roll cutter or a guide to ensure cut is straight and perpendicular to the length.
- N. Install pull wires in empty pathways. 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 pathways designated as spare above grade alongside pathways in use.
- O. Surface Pathways:
 - 1. Install surface pathway for surface electrical outlet boxes only where indicated on Drawings.
 - 2. Install surface pathway with a minimum 2-inch radius control at bend points.
 - 3. Secure surface pathway with screws or other anchor-type devices at intervals not exceeding 48 inches and with no less than two supports per straight pathway section. Support surface pathway according to manufacturer's written instructions. Tape and glue are not acceptable support methods.
- P. Install pathway sealing fittings at accessible locations according to NFPA 70 and fill them with listed sealing compound. For concealed pathways, install each fitting in a flush steel box with a blank cover plate

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having a finish similar to that of adjacent plates or surfaces. Install pathway sealing fittings according to NFPA 70.

- Q. Install devices to seal pathway interiors at accessible locations.
- R. Flexible Conduit Connections: Comply with NEMA RV 3. Use maximum of 72 inches of flexible conduit for recessed and semi-recessed luminaires, equipment subject to vibration, noise transmission, or movement.
 - 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.
- S. 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 top of box unless otherwise indicated.
- T. 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 surface to provide a flat surface for a raintight connection between box and cover plate or supported equipment and box.
- U. Horizontally separate boxes mounted on opposite sides of walls so they are not in the same vertical channel.
- V. 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.
- W. Fasten junction and pull boxes to or support from building structure. Do not support boxes by conduits.

3.3 SLEEVE AND SLEEVE-SEAL INSTALLATION FOR ELECTRONIC SAFETY AND SECURITY 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 Electronic Safety and Security Pathways and Cabling."

3.4 FIRESTOPPING

- A. Install firestopping at penetrations of fire-rated floor and wall assemblies.

3.5 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 28 05 28

PATHWAYS FOR ELECTRONIC SAFETY AND SECURITY

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SECTION 28 05 44 - SLEEVES AND SLEEVE SEALS FOR ELECTRONIC SAFETY AND SECURITY PATHWAYS
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 pathway 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 07 84 13 "Penetration Firestopping" for penetration firestopping installed in fire-resistance-rated walls, horizontal assemblies, and smoke barriers, with and without penetrating items.
2. penetration firestopping installed in fire-resistance-rated walls, horizontal assemblies, and smoke barriers, with and without penetrating items.

1.3 ACTION 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.
2. Cast-Iron Pipe Sleeves: Cast or fabricated "wall pipe," equivalent to ductile-iron pressure pipe, with plain ends and integral waterstop unless otherwise indicated.

SLEEVES AND SLEEVE S SEALS FOR ELECTRONIC SAFETY

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- B. Sleeves for Conduits Penetrating Non-Fire-Rated Gypsum Board Assemblies: Galvanized-steel sheet; 0.0239-inch minimum thickness; round tube closed with welded longitudinal joint, with tabs for screw-fastening the sleeve to the board.
- C. PVC-Pipe Sleeves: ASTM D 1785, Schedule 40.
- D. Molded-PVC Sleeves: With nailing flange for attaching to wooden forms.
- E. Molded-PE or -PP Sleeves: Removable, tapered-cup shaped, and smooth outer surface with nailing flange for attaching to wooden forms.
- F. Sleeves for Rectangular Openings:
 - 1. Material: Galvanized-steel sheet.
 - 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 pathway 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.
 - 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 SLEEVE-SEAL FITTINGS

- A. Description: Manufactured plastic, sleeve-type, waterstop assembly made for embedding in concrete slab or wall. Unit shall have plastic or rubber waterstop collar with center opening to match piping OD.
 - 1. Manufacturers: Subject to compliance with requirements, provide products by the following:

SLEEVES AND SLEEVE S SEALS FOR ELECTRONIC SAFETY

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a. HOLDRITE.

2.4 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.

2.5 SILICONE SEALANTS

- A. Silicone Sealants: Single-component, silicone-based, neutral-curing elastomeric sealants of grade indicated below.
 - 1. Grade: Pourable (self-leveling) formulation for openings in floors and other horizontal surfaces that are not fire rated.
 - 2. Sealant shall have VOC content of 250 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).
 - 3. Sealant shall comply with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."
- B. Silicone Foams: Multicomponent, silicone-based, liquid elastomers that, when mixed, expand and cure in place to produce a flexible, nonshrinking foam.

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:

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- a. Seal annular space between sleeve and pathway 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 pathway 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.

3.2 SLEEVE-SEAL-SYSTEM INSTALLATION

- A. Install sleeve-seal systems in sleeves in exterior concrete walls and slabs-on-grade at pathway entries into building.
- B. Install type and number of sealing elements recommended by manufacturer for pathway or cable material and size. Position pathway or cable in center of sleeve. Assemble mechanical sleeve seals and install in annular space between pathway or cable and sleeve. Tighten bolts against pressure plates that cause sealing elements to expand and make watertight seal.

3.3 SLEEVE-SEAL-FITTING INSTALLATION

- A. Assemble fitting components of length to be flush with both surfaces of concrete slabs and walls. Position waterstop flange to be centered in concrete slab or wall.
- B. Secure nailing flanges to concrete forms.
- C. Using grout, seal the space around outside of sleeve-seal fittings.

END OF SECTION 28 05 44

SLEEVES AND SLEEVE S SEALS FOR ELECTRONIC SAFETY

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SECTION 28 31 01- MULTIPLEX/ADDRESSABLE VOICE EVACUATION FIRE ALARM SYSTEM MODIFCATION
SYSTEMS

PART 1 - GENERAL

1.1 DESCRIPTION OF WORK

- A. Scope: This work includes designing and providing modifications and additions, as required, to the existing addressable voice evacuation fire alarm system as described herein and on the contract drawings for the following building:

Robert Grant Federal Bldg & U.S. Courthouse, 204 S Main St, South Bend, IN 46601-2122
(IN0096ZZ)

E. Ross Adair Federal Bldg & U.S. Courthouse , 1300 S Harrison St, Fort
Wayne, IN 46802-3495 (IN0031ZZ)

Charles A Halleck Federal Bldg, 230 N 4th St, Lafayette, IN 47901-1339
(IN0057ZZ)

U.S. Courthouse, 5400 Federal Plz, Hammond, IN 46320-1839 (IN0300ZZ)

The system shall include all wiring, raceways, pull boxes, terminal cabinets, outlet and mounting boxes, control equipment, alarm, and supervisory signal initiating devices, alarm notification appliances, and all other accessories and miscellaneous items required for a complete operating system even though each item is not specifically mentioned or described for the area of modification. Where remote fire alarm control units are needed, they shall be provided at a terminal cabinet location. Each remote fire alarm control unit shall be powered from a wiring riser specifically for that use or from a local emergency power panel located on the same floor as the remote fire alarm control unit providing a separate circuit breaker enclosure, power conditioning, and surge suppression identical to that provided for the main fire alarm control panel. Where remote fire control units are provided, equipment for notification appliances may be located in the remote fire alarm control units.

- B. Extent of the Work: The system shall be installed in accordance with the drawings, specifications and referenced publications. Any conflicts between these documents shall be brought to the attention of the design professional responsible for the job, the GSA Project Manager, and the GSA Regional Fire Protection Engineer. It is assumed that the contractor is bidding the full scope of work in the drawings, specifications, and publications unless otherwise noted as an exclusion. The government shall not be charged additionally for work already contained within these contract documents. It remains the contractor's responsibility to read and understand the drawings, specifications, and referenced publications, and where questions persist, to resolve same before entering into the contract to perform this work. There shall be no extension of contract for work to be done as a part of this design package due to contractor's failure to implement the scope of work, plan the cost of such work, or the failure to verify field conditions.

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- C. Completion of Work. Upon final acceptance by the Government all fire alarm equipment shall be immediately placed in service and the system shall be monitored by a UL listed remote supervising station service.
- D. Existing Fire Alarm Equipment:
 - 1. Existing fire alarm system shall be maintained fully operational throughout the duration of construction.
 - a. Where existing speakers and strobes are being kept in service and the ceiling in which they are mounted is removed, the existing horns and strobes shall be removed from the ceiling and suspended from the structure above to allow those devices to provide warning throughout the construction space.
 - 2. As new equipment is installed, it shall be tagged "NOT IN SERVICE" until the new equipment is accepted by the Government.
 - 3. All new equipment that has been placed in service, shall have tags removed immediately and tags stating "NOT IN SERVICE" shall be placed on existing equipment that is no longer in service until such equipment is removed from the building. The switchover from the existing equipment to the new equipment shall be sequenced as indicated on the drawings and in the specifications.
 - 4. "NOT IN SERVICE" tags shall be of such a material and installed in such a way as to not leave adhesive residue on the new equipment nor impair the new equipment in any way.]
- E. Equipment Removal: After acceptance of the new system by the Government, all existing equipment not retained by the Government (including conduit and wire) not connected to the new system shall be removed. All damaged surfaces shall be restored. The material shall be removed from the site and disposed of by the Contractor. The only exception to this requirement is when removal of existing equipment will damage historic fabric. This exception may only be exercised with the written permission of both the GSA Regional Fire Protection Engineer and the GSA Regional Historic Preservation Officer.
- F. Repair Service/Replacement Parts:
 - 1. Repair services and replacement parts for the system within the scope of this contract shall be furnished under this contract and be available for a period of 15 years after the date of final acceptance of this work by the Government. If exact replacement parts are not available during this period, backward compatible devices will be acceptable.
 - 2. On-site service during the warranty and guarantee period shall be provided within two (2) hours after notification. All repairs shall be completed within 48 hours after notification.

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- G. Related Sections: Refer to other Division 26-28 sections for:
1. Cable
 2. Wire
 3. Raceways
 4. Connectors
- I. Other Divisions:
1. Refer to Division 01, Section 01 35 25 – Fire Prevention and Protection in Construction, Alteration, and Demolition Projects
 2. Refer to Division 01, Section 01 35 26 – Health & Safety
 3. Refer to Division 07, Section 07 84 13 – Firestopping
 4. Refer to Division 08 – Door release, door unlocking, hardware and related appurtenances.
- J. In any case where another Division or Section conflicts with Section 28 31 01, Section 28 31 01 will supersede all other sections in regard to fire alarm system components, wiring, raceway, raceway fittings, junction boxes, cabinets, cabinet locks & keys, panel signage, connectors, cables and overcurrent devices.

1.2 QUALITY ASSURANCE

- A. Manufacturer Qualifications: All components of each system shall be furnished by a single manufacturer, shall be of current design and shall be in regular and recurrent production. All equipment supplied shall be first quality and the manufacturer's best type and latest model capable of complying with all requirements of this specification and shall have been in continuous production and in continuous service in commercial applications for at least one year. Obsolete equipment shall not be used. All components and equipment provided shall be new and unused.
- B. Provide design layout, materials and devices for a protected premises fire alarm system, complete, conforming to National Fire Protection Association (NFPA) Standard 72, latest edition, except as otherwise or additionally specified herein.
- C. Approved Equipment: Provide materials, equipment and devices that have been tested by a nationally recognized testing laboratory, such as Underwriters' Laboratories, Factory Mutual, Intertek or ICC Evaluation Services and listed or approved for fire protection service when so required by NFPA 72 or this specification.
- D. Prior to performing any work, the Contractor responsible for the voice evacuation fire alarm system installation shall include the following documentation in addition to those documents required elsewhere in this specification:
1. Sufficient information to describe their qualifications, the work efforts to be performed, and the materials to be provided, including the names and qualifications of the Contractor's and

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the equipment supplier's project manager and project engineer who shall be in responsible charge during the entire project installation. Contractor's qualifications shall include years in business and prior experience with installations that include the type of equipment that is to be supplied.

2. The manufacturer's technical representative's name and qualifications. Once approved, the representative shall not be changed without approval in writing by GSA.
3. A schedule indicating the delivery dates of the equipment or devices to be supplied; installation sequence; time frame and the total amount of on-site technical assistance time (in man-hours per phase) that the supplier of the equipment has included in their bid to comply with the requirements of this specification and GSA's requirements; and projected demonstration test and final test/acceptance dates to meet GSA's scheduled project completion dates.
4. Written confirmation of how the manufacturer/supplier plans to comply with the performance operational design of the system and all pertinent information regarding the reliability and operation of the equipment to be supplied.
5. A letter from the equipment manufacturer stating that the equipment or devices to be supplied is not at or near the end of its life cycle and that replacement components for all control equipment shall be available from the manufacturer for a minimum of 15 years from the date of installation.

E. Shop Drawings and Calculations: The shop drawings and calculations shall be prepared by a technician that is certified NICET level III or IV for fire alarms, or a registered fire protection engineer. This individual shall have an established office, which has been in existence for at least three years. The Contracting Officer shall reject shop drawings and calculations if the individual cannot show evidence of such qualifications. The person preparing these documents shall be responsible for compliance with applicable codes as cited in this specification as well as compliance with the contract.

F. Installation Requirements:

1. Installation shall be accomplished by a fire alarm contractor with a minimum of five years of experience in the installation of fire alarm systems.
2. The supervision of installation and all testing shall be provided by a technician that is certified NICET level III or IV for fire alarms, or a registered fire protection engineer. This individual shall have an established office, which has been in existence for a minimum of five years and is so located where the response to the project site can occur within two (2) hours or less. This individual shall be available or have installation staff available 24 hours a day, 7 days a week for repairs during the construction and subsequent warranty period.

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This individual shall be on site to direct and watch over the work, and performance thereof during installation and testing of the system.

3. The installer shall respond to fire alarm service calls throughout the warranty period as a part of this contract. The installer shall provide required inspection, testing and maintenance as a part of this contract to maintain the system warranty. Inspection, testing and maintenance as well as service calls during the warranty period will be performed at no additional expense to the government. Where a service call is a result of actions by persons in the building, vandalism, or circumstances beyond the control of the fire alarm system to protect itself, the contractor may request payment for such service call.
 4. Factory engineers from the equipment manufacturer, thoroughly familiar and knowledgeable with all equipment utilized, shall provide additional technical support for this project at the project site as required by the Contracting Officer's Representative. There shall be no additional cost to the Government nor extension of schedule should the Government require a factory engineer on site.
 5. The Contracting Officer shall reject any proposed installer who cannot show evidence of all aforementioned qualifications.
- G. Project Superintendent: The Contractor, or Subcontractor, shall provide one full-time, on-site staff member designated as the "Project Superintendent". The duties of the Project Superintendent are to supervise execution of all aspects of this specification, including safety on the job site as described in the "Accident Prevention Clause" of the general provisions of the Occupational Safety and Health (OSH) Act of 1970. That clause incorporates into the contract, by reference, the Secretary of Labor's OSH Standards (29 CFR Part 1926). Refer to Section 01 35 26 – Safety & Health for additional requirements. The Project Superintendent shall be thoroughly familiar with all contract obligations and shall have authority to make all contractual decisions within the scope of the contract. The Project Superintendent shall be responsible for making sure that quality control review has been performed on all submittals prior to the submission to the GSA Project Manager. The Project Superintendent shall also be responsible for ensuring that all submittals are accurate, complete and fully coordinated. Delegation of these duties does not remove the project superintendent from these responsibilities.
- H. The Contractor shall submit the following at time of proposed submission for verification of qualifications:
- Submit documentation, to the Contracting Officer's Representative, showing that the Contractor has successfully installed addressable automatic voice evacuation fire alarm systems of comparable size, type and design as specified herein or that the Contractor has a firm contractual agreement with a Subcontractor having such experience. If the work will be performed by a Subcontractor, the Contractor shall submit a copy of the subcontract to the Contracting Officer. The data shall include the names and locations of at least five installations where the Contractor, or if the work will be performed by a Subcontractor, the Subcontractor, installed such systems. The Contractor, or Subcontractor, shall certify that each system has performed satisfactorily for a period of not less than one year.

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- I. Service Organization: The contractor shall furnish evidence that the fire alarm equipment supplier has an experienced and effective service organization which carries a stock of repair parts for the system to be furnished. Should the contractor fail to comply with the service requirements of this section, the government will then have the option to make the necessary repairs and back charge the contractor without any loss of warranty or guarantee as provided by the contract documents.
- J. Warranty and Guarantees: The Contractor shall comply with the requirements of FAR 52.246-21 Warranty of Construction and GSAR 552.246-75 Guarantees. Final Acceptance by the Government includes, but is not limited to, successful final acceptance testing, the receipt of approved as-built drawings, the receipt of approved operation and maintenance manuals, and receipt of any required training videos.
- K. Codes and Standards: Provide a fire alarm system conforming to the requirements of the latest edition of the following codes and standards as of date of NTP for design including all amendments to these publications:
 - 1. American National Standards Institute
 - a. S3.41 Audible Emergency Evacuation Signal
 - 2. American Society for Testing and Materials (ASTM):
 - a. E 84 Standard Test Method for Surface Burning Characteristics of Building Materials.
 - b. E 119 Standard Test Methods for Fire Tests of Building Construction and Materials.
 - 3. American Society of Mechanical Engineers (ANSI/ASME):
 - a. A17.1 Safety Code for Elevators and Escalators
 - b. C62.41 Guide for Surge Voltages in Low Voltage A.C. Power Circuits
 - 4. International Code Council (ICC):
 - a. International Building Code
 - b. International Fire Code
 - c. International Mechanical Code
 - 5. National Fire Protection Association (NFPA):
 - a. 4 Standard for Integrated Fire Protection and Life Safety System Testing
 - b. 70 National Electrical Code (NEC)
 - c. 72 National Fire Alarm and Signaling Code
 - d. 101 Life Safety Code

VOICE EVACUATION FIRE ALARM SYSTEMS

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6. Testing Services or Laboratories: Provide all fire alarm and fire detection equipment in accordance with the latest edition of the following publications from Underwriters Laboratories Inc. (UL), or Factory Mutual Engineering Corporation (FM):
 - a. UL 228 – Door Holding Devices
 - b. UL 268 – Smoke-automatic Fire Detectors
 - c. UL 268A – Smoke-automatic Fire Detectors – Duct type
 - d. UL 464 - Audible Signal Appliances
 - e. UL 521 – Heat Detectors for Fire Protective Signaling Systems
 - f. UL 864 - Control Units for Fire Protective Signaling Systems
 - g. UL 1480 – Speakers for Fire Alarm, Emergency, and Commercial and Professional Use
 - h. UL 1481 – Power Supplies for Fire Protective Signaling Systems
 - i. UL 1638 - Visual Signaling Appliances Standard
 - j. UL 1711 – Amplifiers for Fire Protective Signaling Systems
 - k. UL 1971 - Signaling Devices for the Hearing Impaired
 - l. UL 2572 – Mass Notification Systems
 - m. UL Fire Protection Equipment Directory
 - n. UL Electrical Construction Materials Directory
 - o. FM P7825 Approval Guide
7. U. S. General Services Administration
 - a. PBS-P100 Facilities Standards for the Public Buildings Service
<https://www.gsa.gov/cdnstatic/2018%20P100%20Final%20Updated%207-26-18.pdf>
 - b. PBS Standard for PBS Cad Deliverables
[Great Lakes CAD Policy](#)

1.3 EQUIVALENT TECHNOLOGIES

- A. Nothing in this specification is intended to prevent the use of systems, methods, or devices of equivalent or superior quality, strength, fire resistance, effectiveness, durability, and safety over those prescribed in this specification. Technical documentation shall be submitted to the regional GSA Fire Protection Engineering staff to determine equivalency. The system, method, or device shall be reviewed by the GSA Fire Protection Engineering staff for the intended purpose and approval is required prior to being utilized. Systems, methods, or devices that are submitted for review after construction of the fire alarm system begins, may be summarily rejected due to contractual considerations and/or technical considerations.

1.4 SYSTEM DESIGN / OPERATION

VOICE EVACUATION FIRE ALARM SYSTEMS

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- A. General: The system shall be a complete, supervised, noncoded, addressable, voice evacuation fire alarm system conforming to NFPA 72.

Cable with the approved fire protection rating, if used, shall be installed in EMT, IMC or rigid metal conduit for mechanical protection. MI cable, if used, shall be installed per the manufacturer's listed installation instructions and shall be clearly and permanently labelled as "Fire Alarm."

No more than one-half of the addressable devices and modules on each floor shall be served by a single Class B Signaling Line Circuit (SLC). The floor SLCs shall be electrically/optically isolated from the SLC risers and network at the connection of each circuit to the network in terminal cabinets or remote fire alarm control panels on each floor. The SLC riser shall also be electrically/optically isolated from connections to NAC power supply panels.

All circuits necessary for the operation of the notification appliances shall be protected until they enter the evacuation signaling zone that they serve in accordance with part 1.4.A of this specification. Notification appliance circuits running from the floor terminal cabinet, a remote fire alarm control panel, or a notification appliance circuit panel to individual devices on the floor are not required to be protected.

A minimum of two (2) distinct fire alarm audible notification appliance circuits and a minimum of two (2) distinct visible notification appliance circuits shall be provided on each floor. No single Notification Appliance Circuit shall serve more than a 20,000 square feet area. In Acoustically Distinguishable Space (ADS), provide speakers that achieve intelligibility performance throughout the space. Where speakers are not the standard fire alarm speakers, install them on a separate circuit from other fire alarm speakers and supervise the circuit.

The system must be designed and installed so that a single wire to wire short on a SLC does not affect more than one half of one single floor. Any single impairment of any notification appliance circuit shall not affect the system on more than one half of any single floor. The system shall operate in the alarm mode upon actuation of any alarm-initiating device. The system shall remain in the alarm mode until all initiating device(s) are restored to a normal condition and the fire alarm control panel is manually reset and restored to normal. The system shall provide the following functions and operating features:

1.5 SUBMITTALS

- A. Refer to Division 1 Section "SUBMITTALS" for basic information relating to submittal requirements. Submit 6 complete sets of submittals. Partial submittals will not be accepted and will be returned without review. Before any work is commenced, the GSA Regional Fire Protection Engineering staff must approve the submittal. The submittal shall: 1.) Provide a complete description of the system operation, 2.) Provide a complete list of device addresses and corresponding English language descriptors, and 3.) Provide annotated catalog data showing manufacturer's name,

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model, voltage, and catalog numbers for all equipment and components to be used in this project. Catalog data sheets without proper annotation will be returned without review.

- B. Shop Drawings and Submittals: Submit full size shop drawings not smaller than 1:1/8 in (100 mm) scale, to the Contracting Officer's Representative for review and approval. As a minimum, the shop drawing submittal shall include the following:
1. Provide point-to-point-wiring diagrams showing the points of connection and terminals used for all electrical field connections in the system, including all interconnections between the equipment or systems that are supervised or controlled by the system. Diagrams shall show all connections from field devices to the FACP and remote fire alarm control units, initiating circuits, switches, relays and terminals. Receptacle and lighting types of drawings used to show fire alarm circuits and layouts are not acceptable and will be returned without review.
 2. Provide drawings showing device locations, terminal cabinet locations, and all circuit layouts for all floors on the floor plan drawings. All addressable devices shall have their digital addresses indicated on the shop drawing at the appropriate location. The digital addresses shown shall be in the identical format as the fire alarm panel display and the displays on remote annunciators.
 3. Provide detailed drawings showing the layout of the Fire Alarm Control Panel including power supply, battery location, CPU, displays, modules, circuit boards, tone generators, amplifiers, NAC output devices including synchronization modules, terminal wiring scheme, add on terminals and any other functional component of the Fire Alarm Control Panel. All internal wiring details of the panel, including jumper positions must be shown. Each terminal connection shall be identified as it is in the panel and related directly to the wire by circuit number that is supposed to connect thereto.
 4. Provide complete riser diagrams indicating the wiring sequence of all devices and their connections to the control equipment. Provide a color code schedule for the wiring. Provide floor plans showing the location of all devices and equipment.
 5. Provide detailed drawings of the remote control annunciator including power supply, terminal connections, circuit boards, modules, and communication scheme to the FACP. Annunciator drawings shall include a scale representation of the annunciator display layout and all components of the annunciator to be utilized by the end user. Function keys on the main annunciator shall be identical to the function keys on the main fire alarm control panel.
 6. Provide detailed drawings of the NAC power supply panels including power supply, battery charger, batteries, synchronization modules, terminal connections, circuit boards, modules, and communication scheme to the FACP. Each terminal connection shall be

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identified as it is in the panel and related directly to the wire by circuit number that is supposed to connect thereto.

C. Calculations

1. Battery Calculations

- a. Provide complete battery calculations for both the alarm and supervisory power requirements. Ampere-hour requirements for each system component shall be submitted with the calculations.
- b. Calculate standby battery requirements for new batteries per manufacturer's installation requirements including all factors for aging, etc.
- c. Provide batteries with capacity rated at 150% of above calculated value.

2. Notification Circuit Calculations

- a. Provide calculations on each circuit to indicate that there is at least 25% spare power capacity for visual notification appliances, 25% spare capacity for audible notification appliances, and 25% spare capacity for notification device circuits. Please note that this is spare power capacity and not spare programming capacity.
- b. Provide calculations that show that the total load for each remote power supply or FACP power supply is 75% or less of its full load capacity.
- c. Where space is available on each fire alarm floor plan, provide these calculations for the circuits on that floor plan.

3. Voice Evacuation Speaker Calculations

- a. Provide calculations to indicate that the system has sufficient capacity to simultaneously drive all fire alarm speakers at their required sound output plus 25% spare capacity.
- b. Provide calculations such that the total losses for each individual circuit are no more than 1 dBA with all devices assumed at the end of the circuit.
- c. Provide calculations that show that no individual speaker circuit is loaded beyond 75% of its capacity. A speaker circuit's capacity is defined as no more than 1 dBA loss or the wattage limitation of the speaker notification module, whichever is less.
- d. Provide calculations that show that the total load for each amplifier is 75% or less of its full load capacity.

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- e. Where space is available on each fire alarm floor plan, provide speaker loading matrix for the devices on each floor plan. This information shall indicate the number of speakers on each tap setting for each audio circuit with the total wattage used for the circuits on each floor plan.

4. Voltage Drop Calculations

- a. Provide voltage drop calculations by the use of either a lumped load calculation (all devices assumed at the end of the circuit) or by the distributive load calculation method whereby voltage drops are calculated for each device. If the distributive method is chosen then use the UL max current rating of the device at its lowest voltage rating. If the lumped load method is chosen then use the UL average RMS current rating of the device at 24 volts.
- b. Provide calculations such that with a supply voltage of 24.0 volts, the last device shall have no less than 22.2 volts (7.5% maximum) measured across its terminals.

5. Updated Calculations

- a. If changes are made to the system anytime after calculations are submitted, then new calculations showing those changes shall be performed and submitted. Spare capacity required in this specification shall not be used to make changes to this system during the project. Spare capacity shall still be required for future modifications after this project is completed.

1.8 DOCUMENT SECURITY

- A. Labeling of information. All Sensitive But Unclassified (SBU) building information, either in electronic or paper formats, shall have imprinted on *each* page of the information:

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- B. The following paragraph will be included on the *cover* page of the information (such as the cover page on the set of construction drawings and on the cover page of the specifications) and on the label of all magnetic media:

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- C. The previous two statements shall be prominently labeled in bold type in a size appropriate for the document. On a set of construction drawings, for example, the statements should be in a minimum of 14-point bold type.

PART 2 - PRODUCTS

2.1 ADDRESSABLE INTERFACE DEVICES

- A. The addressable interface device (AID) shall provide an addressable input interface to the FACP for monitoring normally-open or normally-closed contact devices such as waterflow switches, tamper switches, fire pump monitoring, essential electronics room fire detection subsystems, kitchen hood fire suppression systems, relays for output function actuation, etc. Addressable interface devices shall have (an) integral LED(s) that indicate(s) an easily detectable change of state at the device. A status indication for the device shall be visible and plainly identifiable for normal condition, trouble condition, and alarm condition. This visible indication shall be detectable with the naked eye, and shall not require any tools or devices to be seen or to be made visible. Addressable interface devices with relays for control functions shall be sized and specified for the anticipated electrical demand for those relays.

2.2 NOTIFICATION APPLIANCES

- A. Fire Alarm Speakers:
1. Provide speaker appliances listed under UL Standard 1480. Speakers which are used for Emergency Communications Systems (MNS) shall be labelled "ALERT" instead of "FIRE."
 2. Provide fire alarm speakers that exceed the requirements of UL 1480 as a minimum. 4 inch speakers shall be able to provide a minimum frequency response of 300 Hz to 8000 Hz. Larger speakers used for acoustically challenging locations shall be able to reproduce frequencies between 200 Hz and 12,000 Hz. Testing of these speakers shall show appropriate frequency responses in product literature submitted.
 3. Fire alarm speakers shall have a minimum of four (4) tap settings and separate terminations for each "in" and "out" connection. At a minimum, tap settings shall include taps of 1/4, 1/2, 1 and 2 watts. Where speaker output produces sound levels in excess of the maximum listed in paragraph 2.3.A.4, consider using speakers with a 1/8 watt tap setting. Speakers shall have an output rating of 84 dBA at 10 ft (3 meters) as determined by the reverberant room test; data on peak output as determined in an anechoic chamber is not suitable.

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4. All speakers shall be capable of installation on standard 4 inch (100 mm) square electrical boxes or where smaller units are available they may be mounted on 2 inch (50 mm) by 4 inch (100 mm) electrical boxes. Where speakers and strobes are provided in the same location, they may be combined into a single wall mounted unit or ceiling mounted unit where approved. Where acoustically distinguishable spaces require larger speakers, they shall be compatible with the fire alarm system, blend with the architecture, and have superior audio response characteristics to the standard speakers. Larger speakers shall be equipped with any necessary capacitors, resistors, or any other component to make them operational as required by the design.
5. To ensure audible signals are clearly heard, the sound level shall be at least 70 dBA throughout the office spaces, courtrooms, common building areas (lobbies, rest rooms, break areas, auditoriums, atria, conference rooms, etc) and corridors measured 5 feet (1.5 meters) above the floor. The sound level in other areas shall be at least 15 dBA above the average sound level or 5 dBA above any noise source lasting 60 seconds or longer. Sound level measurements shall be taken with room doors closed. Where sound levels in occupied offices, courtrooms, corridors, and general building areas exceed 90 dBA due to use of existing tap levels and existing acoustic characteristics of the building, retap the speakers to reduce the sound levels below 90 dBA while maintaining the 70 dBA minimum levels throughout these areas. Carefully document any changes from the approved working drawings on the red line and as-built drawings and insert those changes into circuit calculations and update the calculations.
6. Quantities of fire alarm speakers shown on the contract drawings are for cost estimating purposes only. In addition to the quantities of speakers shown on the drawings, provide two (2) additional speakers, complete, installed and operational for every 20,000 square feet of floor space or remaining fraction thereof at no additional expense to the government for the purpose of addressing audibility deficiencies.
7. To ensure that audible signals are clearly heard and intelligible in atria, large spaces with ceilings in excess of 14 feet (4.3 meters) above finished floor, or other acoustically distinguishable spaces, the Contractor shall install enough speakers and adjust same to minimize the effects of reverberation and other interference. This may include utilizing approved high fidelity speakers, increasing the number of speakers in the space with reduced tap settings, assuring that speakers are placed no higher than 14 feet (4.3 meters) in these spaces, or other means by which to improve intelligibility. It is required that in spaces that are acoustically distinguishable, that the Contractor physically test speaker layout with demonstration speaker systems or mockups of the speaker systems to validate the design prior to installation. Mockups shall comply with 28-31-01, Par. 3.5. Apply the definition of acoustically distinguishable spaces as found in NFPA 72, National Fire Alarm and Signaling Code. Meeting the required decibel levels without providing a clearly intelligible messaging system will not be considered to be in compliance with this specification.
8. Speakers shall be of one single consistent color throughout the building. The color of devices used shall be white in accordance with the design documents with the exception

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that where re-entrant cone loudspeakers are used they shall be red.

B. Visual Notification Appliances

1. Provide visual notification appliances (strobes) that operate on a supervised twenty-four (24) volt D.C. circuit. The strobe lens shall comply with UL 1971 and conform to the Americans with Disabilities Act. Provide strobe appliances listed under UL Standard 1971. Speaker/strobes which are used for Emergency Communications Systems (MNS) shall be labelled "ALERT" instead of "FIRE."
2. All strobes shall incorporate circuitry for synchronized strobe flash. Strobes shall be listed or approved for use with the synchronizing devices used. The strobes shall not drift out of synchronization at any time during operation.
3. The strobe intensity shall have a minimum of four field selectable settings and shall be rated per UL Standard 1971 with a flash rate of one flash per second minimum across the listed voltage range. The strobe shall have a Xenon flash tube.
4. Quantities of fire alarm strobes shown on the contract drawings are for cost estimating purposes only. In addition to the quantities of strobes shown on the drawings, provide one (1) additional strobe, complete, installed and operational for every 20,000 square feet of floor space or remaining fraction thereof at no additional expense to the government for the purpose of addressing visual notification deficiencies.
5. Where strobes are used in historically important areas, they shall be of the smallest model available approved for use in this fire alarm system and shall be approved by the GSA Regional Historic Preservation Officer.
6. Strobes shall be of one single consistent color throughout the building. The color of devices used shall be white in accordance with the design documents and shall be the same as that for speakers.

C. Multi-Candela Combination Speaker/Strobe Appliances:

1. Provide multi-candela combination speaker/strobe appliances listed under UL Standard 1971 and UL Standard 1480. The strobe lens shall comply with UL 1971 and conform to the Americans with Disabilities Act. Speaker/strobes which are used for Emergency Communications Systems (MNS) shall be labelled "ALERT" instead of "FIRE."
2. All strobes shall incorporate circuitry for synchronized strobe flash. Strobes shall be listed or approved for use with the synchronizing devices used. The strobes shall not drift out of synchronization at any time during operation.
3. The strobe intensity shall have a minimum of four field selectable settings and shall be rated per UL Standard 1971 with a flash rate of one flash per second minimum across the listed voltage range. The strobe shall have a Xenon flash tube.

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4. Provide fire alarm speakers that exceed the requirements of UL 1480 as a minimum. 4 inch speakers shall be able to provide a minimum frequency response of 300 Hz to 8000 Hz. Larger speakers used for acoustically challenging locations shall be able to reproduce frequencies between 200 Hz and 12,000 Hz. Testing of these speakers shall show appropriate frequency responses in product literature submitted.
5. Fire alarm speakers shall have a minimum of four (4) tap settings and separate terminations for each "in" and "out" connection. At a minimum, tap settings shall include taps of 1/4, 1/2, 1 and 2 watts. Speakers shall have an output rating of 84 dBA at 10 feet (3 meters) as determined by the reverberant room test; data on peak output as determined in an anechoic chamber is not suitable.
6. All speaker/strobes shall be capable of installation on standard 4 inch (100 mm) square electrical boxes or where smaller units are used, on a standard 2 inch (50 mm) by 4 inch (100 mm) electrical box. Where speakers and strobes are provided in the same location, they may be combined into a single wall mounted unit or ceiling mounted unit where approved. Where acoustically distinguishable spaces require larger speakers, they shall be compatible with the fire alarm system, blend with the architecture, and have superior audio response characteristics to the standard speakers.
7. To ensure audible signals are clearly heard, the sound level shall be at least 70 dBA throughout the office spaces, courtrooms, general building areas, and corridors measured 5 feet above the floor. The sound level in other areas shall be at least 15 dBA above the average sound level or 5 dBA above any noise source lasting 60 seconds or longer. Sound level measurements shall be taken with room doors closed. Where sound levels in occupied offices, courtrooms, corridors, and general building areas exceed 90 dBA due to use of existing tap levels and existing acoustic characteristics of the building, retap the speakers to reduce the sound levels below 90 dBA while maintaining the 70 dBA minimum levels throughout these areas. Carefully document any changes from the approved working drawings on the as-built drawings and insert those changes into circuit calculations and update the calculations.
8. Quantities of fire alarm speaker/strobes shown on the contract drawings are for cost estimating purposes only. In addition to the quantities of speaker/strobes shown on the drawings, provide two (2) additional speaker/strobes complete, installed and operational for every 20,000 square feet of floor space or remaining fraction thereof at no additional expense to the government for the purpose of addressing audibility and visual notification deficiencies.
9. Speakers and strobes shall be of one single consistent color throughout the building. The color of devices used shall be white in accordance with the design documents with the exception that where re-entrant cone loudspeakers are used they shall be red.

D. Self Amplified speakers (SAS) and speaker/strobes
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1. Provide multi-candela combination speaker/strobe appliances listed under UL Standard 1971 and UL Standard 1480. All strobes shall incorporate circuitry for synchronized strobe flash. The strobes shall not drift out of synchronization at any time during operation. The strobe intensity shall have a minimum of four field selectable settings and shall be rated per UL Standard 1971 with a flash rate of one flash per second minimum across the listed voltage range. The strobe shall incorporate a Xenon flash tube. Provide fire alarm speakers conforming to UL 1480 having a minimum of four (4) tap settings and separate terminations for each "in" and "out" connection. The speaker portion of the device shall have an integral transformer/amplifier. Speakers shall be initially set at the 1 watt tap setting, however, the speaker setting shall be adjusted to meet sound pressure requirements. Speakers shall have an output rating of 84 dBA at 3 meters (9.9 feet) as determined by the reverberant room test; data on peak output as determined in an anechoic chamber is not suitable. Speakers shall have a minimum frequency response of 300Hz – 8000 Hz.
2. The contractor shall supply (at minimum) the following equipment required for a complete operating system: Remote Power Supplies for 24VDC power to the speaker amplifiers. – This requires minimum 14 AWG pair wire that can be run in the same conduit as the audio (speaker) wiring. The power supplies shall be designed to accommodate the entire load of devices plus an additional 25% spare for future expansion. The auxiliary 24 VDC power must be supervised. Usually monitor/control modules and end of line relays are needed for proper supervision of the 24VDC power. Emergency power is required for power supplies designed and installed to the same criteria as the rest of the fire alarm system.
3. Power supplies and any additional isolation equipment used shall be permanently mounted in a fire alarm system cabinet and so located so that it may be reached and serviced by a person standing on the floor. Placement of the cabinet shall be coordinated with the Property Manager, the Contracting Officer's Representative.

E. Remote Signal Module (RSM)

1. Provide an addressable Signal Module inside the secure area that will use an existing speaker circuit as the audio input to the module. The module shall physically isolate the secure area speakers from the existing speaker circuits when the voice fire alarm system is not in alarm. The module must provide supervision of the secure area speakers and report any abnormal conditions to the fire alarm control unit via the SLC. When an Alarm condition or voice paging event occurs, the signal module shall connect the speaker/audio circuit secure area speakers and an led shall light on the remote signal module (indicating that the secure speaker circuit has been activated). The signal module shall be rated and designed to accommodate the load of the secure area speakers plus 25% specified spare capacity.
2. Each intelligent single input signal module shall provide one (1) supervised Class B

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speaker circuit. The single input signal module shall support the following operations: Audible/Visible Signal Power Selector (Polarized 24 Vdc @ 2Amps; or 25 Volt audio (50 watts) or 70 volt audio (35 watts).

3. No more than two RSM's may be installed on any one audio (speaker circuit). No more than 16 speakers shall be permitted on each RSM circuit. Fire alarm speakers conforming to paragraph 2.3A shall be used on the RSM circuits.

2.3 NOTIFICATION APPLIANCE CIRCUIT (NAC) POWER SUPPLY PANELS:

- A. Provide complete NAC power supply panels fully enclosed in a lockable steel enclosure as specified herein. All operations required for testing or for normal care and maintenance of the control units shall be performed from the front of the enclosure. If more than a single unit is required at a location to provide the required NAC functions, the unit enclosures shall match exactly. Each NAC power supply panel shall provide power, supervision, control and logic for its portion of the entire system, utilizing solid state, modular components, internally mounted and arranged for easy access. Each NAC power supply panel shall be suitable for operation on a 120-volt, 60 hertz, building power supply. Where emergency power is provided for the building, these panels shall be connected to emergency power. Battery backup shall be provided for all NAC panels. Provide each unit with supervisory functions for power failure, internal component placement, and operation.
- B. Cabinet: Install control panel components in cabinets large enough to accommodate all components and also to allow ample gutter space for interconnection of all panels as well as all field wiring. An engraved laminated phenolic resin nameplate shall identify the enclosure. Lettering on the nameplate shall say "Fire Alarm NAC Panel (give number)" and shall not be less than 3/4 inch high. Provide prominent rigid plastic or metal identification plates for all lamps, circuits, meters, fuses and switches. The cabinet shall be provided in a sturdy steel housing, complete with back box, hinged steel door with cylinder lock, and surface mounting provisions. All NAC Panel cylinder door locks shall be keyed the same as the fire alarm control panel.
- C. Control Modules: Provide power and control modules to perform all functions of the NAC power supply panel. Connect all circuit conductors entering or leaving the panel to screw-type terminals with each terminal marked for identification. Locate diodes and relays, if any, on screw terminals in the NAC panel. Circuits operating at any voltage shall not have a voltage drop exceeding 10% of nominal voltage. Circuits shall be arranged so that there is 25% spare capacity for any circuit.
- D. The NAC power supply panels shall have individual addressable interface devices that activate the NAC circuits upon command from the FACP or RFACU.
- E. The NAC power supply panels shall have individual addressable interface devices that monitor the panel for trouble conditions and report them through unique digital address to the FACP directly or via a RFACU.

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PART 3 - EXECUTION

3.1 SYSTEM FIELD WIRING

- A. Wiring Within Cabinets, Enclosures, Boxes, Junction Boxes and Fittings: Provide wiring installed in a neat and workmanlike manner and installed parallel with or at right angles to the sides and back of any box, enclosure or cabinet. All conductors that are terminated, spliced, or otherwise interrupted in any enclosure, cabinet, mounting or junction box shall be connected to terminal blocks. Mark each terminal in accordance with the wiring diagrams of the system. Make all connections with approved pressure type terminal blocks, which are securely mounted. The use of wire nuts or similar devices shall be prohibited.
- A. Terminal Cabinets: Provide steel terminal cabinets with locking, hinged mounted door in which terminal strips are securely mounted. Minimum size shall be 8" x 8" (200 mm x 200 mm). Terminal cabinets shall be installed at the base of any circuit riser, on each floor at the supply riser, and where indicated on the drawings. Terminal size shall be appropriate for the size of the wiring to be connected. All conductor terminations shall be labeled and a laminated drawing containing all conductors, their labels, their circuits and their interconnection shall be permanently mounted in the terminal cabinet.
- B. Conduit: Install all conductors in rigid metal conduit or electrical-metallic tubing with a minimum diameter of ¾ inch (19 mm). Provide all new conduit unless specifically noted otherwise on the drawings. Electrical metallic tubing shall use compression type fittings and couplings. The use of flexible metal conduit not exceeding a 6 foot (1.8 meter) length shall be permitted in initiating device circuits. Run conduit or tubing concealed in finished areas unless specifically shown otherwise on the drawings. Conduit may be exposed in unfinished mechanical/electrical rooms, basement, mezzanine, and penthouse levels. Junction box covers shall be painted red. Conduit shall be approved red conduit. While a highly unusual circumstance, where conduit is required to be exposed in finished areas, it may be painted to match the background to which it is installed.
- C. Alarm Wiring: Signaling line circuits and initiating device circuit field wiring shall be copper, No. 18 AWG size conductors at a minimum. Visual notification appliance circuits shall be copper No. 14 AWG size conductors at a minimum. Audible notification appliance circuits shall be copper No. 16 AWG size conductors at a minimum. Use larger wire sizes when recommended by the manufacturer, based on actual system configurations. Wire size shall be sufficient to prevent voltage drop problems. Circuits operating at any voltage shall not have a voltage drop exceeding 10% of nominal voltage. Power wiring, operating at 120 VAC minimum, shall be No. 12 AWG solid copper having insulation rated for 600 volts. Install all conductors in rigid metal conduit or electrical-metallic tubing with a minimum diameter of ¾ inch (19 mm). Shielded wiring shall be utilized where recommended or required by the manufacturer. For shielded wiring, the shield shall be grounded at only one point, which shall be in or adjacent to the FACP. T-taps are permitted in Class B

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signaling line circuits with interconnections occurring on terminal strips. Circuits to fan shutdown systems shall terminate with addressable relay modules within 3 feet (0.9 meters) of the controllers for those systems. The completion of those circuits from the addressable relay modules to the appropriate system shall be provided under this section.

- D. Conductor Terminations: No specific color coding is required for any circuit; however, labeling of any circuit at terminal blocks in terminal cabinets, junction boxes, FACP, remote fire alarm control units and NAC panels shall be provided at each conductor connection. Each conductor or cable shall have a shrink-wrap label to provide a unique and specific designation. Temporary labels and tape with markings shall not be acceptable. Each terminal cabinet, NAC panel, FACP and remote fire alarm control unit shall contain a laminated drawing that indicates each conductor, its label, circuit and terminal. The laminated drawing shall be neat, using 12 point lettering minimum size, and mounted within each cabinet, panel or unit so that it does not interfere with the wiring or terminals.
- E. End Of Line Devices: End of line (EOL) devices shall be provided as required by the manufacturer's wiring installation manual. End of line devices shall reside with the last device on each circuit and shall not be extended to some other junction box. The last device on each circuit and the end of line device shall not be installed in secure spaces or difficult to access space such as vaults, judge's chambers, court rooms, confined spaces, private offices, detention facilities, commercial kitchens, or secured office spaces. End of line devices shall be located in public spaces accessible to fire alarm technicians. Each fire alarm device housing an end of line device shall be marked with approved labeling to show "EOL" and the circuit for the EOL.

3.2 FIRESTOPPING & FIREPROOFING

- A. General: Firestop all holes for conduit, piping, or other penetrations which pass through floor slabs, fire-rated walls, partitions with fire-rated doors, vertical service shafts, or any fire-rated assemblies in accordance with Section 07 84 00, Firestopping. Existing holes through which new conduit for this project passes shall be totally firestopped in a manner that restores the fire protection rating of the penetrated wall, floor, ceiling or other structure.
- B. Where structural fire proofing is disturbed, damaged, or destroyed as a result of the fire alarm installation, the contractor shall be responsible for restoring the fire proofing to the required fire resistance rating in an approved manner. This restoration shall be done in accordance with the UL listing or FM approval of the fireproofing materials, requirements of the building, fire, and life safety codes in effect for the project, and in accordance with Section 07 81 00 – Applied Fireproofing.

3.3 INSTALLATION OF FIRE ALARM DEVICES

- A. Notification Appliances: Locate notification appliance devices where shown on the drawings. Mount assemblies as follows:

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1. Fire Alarm Speakers shall be flush mounted and meet the requirements of NFPA 72. Speaker appliances installed outdoors shall be UL or Intertek listed for outdoor use shall match existing installations in adjacent rooms..
 2. Multi-Candela Combination Speaker/Strobe Appliances shall be flush mounted and meet the requirements of NFPA 72. Speaker/strobe appliances installed outdoors shall be UL or Intertek listed for outdoor use shall match existing installations in adjacent rooms..
 3. Visible Strobe Appliances shall be wall mounted and meet the requirements of NFPA 72. Strobe appliances installed outdoors shall be UL or Intertek listed for outdoor use.
 4. These appliances may be surface mounted in unfinished areas such as mechanical rooms, mechanical penthouses, switchgear rooms, etc. Surface mounted appliances shall have smooth back boxes without knockouts, except as necessary for conduit connection, matching the appliance in fit and finish. Appliances mounted in finished areas shall not have a visible back box, leaving the appliance itself as the only exposed component.
- B. Terminal Cabinets, NAC Power Supplies, and auxiliary fire alarm panels: Locate the panel or cabinet with the top of the panel 6 feet (1.8 meters) above the finished floor or center the panel at 5.25 feet (1.6 meters), whichever is lower. Do not locate these panels above ceilings or where inaccessible by a person standing on the finished floor of the space.

3.4 COORDINATION OF WORK

- A. The Contractor shall coordinate this fire alarm system work with other trades to avoid conflicts, assure system completion and testing within the project schedule and to assure a quality, workmanlike finished product. In occupied buildings the Contractor shall coordinate all work with the GSA Property Manager to limit the disruptions to government business and activities. This may mean altered scheduling, after hours work, and/or sequencing construction activities to avoid disruptions to occupants of the building.
- B. Disruptions to existing fire alarm systems shall be kept to a minimum or avoided. Fire alarm systems outside of the construction project shall be kept in service at all times in a method approved by the GSA Regional Fire Protection Engineer.
- C. Delineate phasing of construction to ensure that installations of new systems are expedited, and existing systems are kept in service until the replacement system is operational.
- D. If fire protection systems are to be disrupted, procedures compliant with Section 01 35 25 – Fire Prevention and Protection in Construction, Alteration, and Demolition Projects shall be incorporated into the design and execution to maintain equivalent levels of fire protection and provide formal notification to the facility while systems are down. The determination of equivalency shall rest with the GSA Regional Fire Protection Engineer.

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3.5 ADDRESSABLE DEVICE LABELING

- A. Each addressable device shall be labeled with permanent labels indicating the device's digital address. Labels shall have a font size of 22 point letters (Brother Size 4) with the following color scheme: red devices shall have red letters on a white background; devices of other colors shall have black letters on a white or clear background providing adequate contrast so as to be read easily. Ceiling mounted devices shall be labeled on two sides of the base. Labels shall be in accordance with the following requirements:
1. Manual pull stations shall have a single ½ inch (12 mm) label stating the digital address of the device. Mount the label at the top of the pull station.
 2. Detector bases shall be labeled on two sides with ½ inch (12 mm) labels so persons traversing corridors or spaces searching for the device can see labels. Labels shall have the digital address on each. Where a single detector is located in a room with 10 feet or less of depth from the door to the opposite wall and 100 square feet or less of floor area, only one label shall be required on the detector in the most visible location from the floor.
 3. Duct detector housings shall each be labeled with a single ½ inch (12 mm) label so persons traversing spaces searching for the device can see the label. Labels shall have the digital address on each.
 4. Addressable Interface Devices shall be labeled with a single ½ inch (12 mm) labels with each device's digital address.
 5. Devices with end of line devices shall additionally have the term "EOL" on their label if the digital address indicates the circuit the EOL is on. Should the digital address not indicate the circuit for the EOL, then a separate label with "EOL" and the circuit designator shall be applied to the device exclusive of the device's digital address label.
 6. Remote alarm indicators shall have the location of the detector and the area protected by the detector prominently indicated at the remote alarm indicator by a permanently attached placard or other approved means. Remote supervisory indicators shall be clearly labeled to indicate both their function and any device or equipment associated with each detector.

3.6 TESTS

- A. Loop Resistance Tests: Measure and record the resistance of each circuit with each pair of conductors in the circuit short-circuited at the farthest point from the circuit origin. Also record the manufacturer's maximum acceptable resistance for each type of circuit on the test sheet. The tests shall be witnessed by the Contracting Officer's Representative and test results recorded for use at the final acceptance test.
- B. Loop Capacitance Tests: Measure and record the capacitance of each signaling line circuit. Measure capacitance between +loop and -loop, between +loop and chassis, and between -loop and chassis. Record the manufacturer's maximum acceptable capacitance for signaling line circuits on the test sheet. The tests shall be witnessed by the Contracting Officer's Representative and test results recorded for use at the final acceptance test.
- C. Sound Pressure Levels:

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1. Measure and record the sound level readings in all spaces within the project to verify audibility. Record the readings on a set of red line drawings to be used for the final acceptance testing.
 2. Make repairs, retap speakers, or add speakers to correct any deficiencies in audibility found.
 3. Measure sound pressure levels for signals with a sound level meter meeting ANSI S1.4a, Specifications for Sound Level Meters, Type 2 requirements. Meter shall measure sound pressure levels in decibels on the "A" weighted scale using the "Slow" setting. Sound level meters that do not meet these criteria shall not be used.
- D. Preliminary Testing: Conduct preliminary tests to ensure that all devices and circuits are functioning properly. Tests shall meet the requirements of Paragraph 3.8 of this section and the manufacturer's recommendations. Correct any deficiencies, omissions or anomalies and retest the affected devices to assure proper function per the specification. After all preliminary testing is complete; provide a letter certifying that the installation is complete and fully operable. The letter shall state that each initiating and notification device was tested in place and functioned properly. The letter shall also state that all panel functions were tested and operated properly. The letter shall also state that all required tests listed in 3.8 were performed and the system performs as required. The letter shall include the names and titles of the witnesses to the preliminary tests. Required Records of Completion shall be completed and on site for the final acceptance test and should be completed prior to requesting a final acceptance test. The Contractor and an authorized representative from each supplier of equipment shall be in attendance at the preliminary testing to make necessary adjustments. Any and all adjustments necessary for the system to comply with these specifications, approved drawings, and nationally recognized codes must be done and subjected to preliminary testing. Any pattern of system or component failures shall be cause for cancelling the final acceptance testing due to failure to properly perform preliminary testing.
- E. Final Acceptance Testing: Notify the Contracting Officer's Representative in writing when preliminary testing is complete and the system is ready for final acceptance testing. Submit request for test at least 15 calendar days prior to the test date. A final acceptance test will not be scheduled until the O&M Manuals are provided to and approved by the Contracting Officer's Representative, the preliminary test certification letter is received by the Contracting Officer's Representative, and the following are provided at the job site:
- (1) Marked-up red line drawings of the system as actually installed and including dB readings for all areas of the project recorded during preliminary testing. Manometer readings for each duct detector shall also be included on these red line drawings.
 - (2) Loop resistance test results and loop capacitance test results

The contractor shall assure that representatives of all installing contractors, manufacturers, designers, GSA associates, and tenants necessary to perform any and all testing are present for the final acceptance testing. Any delays or additional costs in testing or repeated testing necessary

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to complete this requirement because representatives were not on site for testing shall not be the responsibility of the Government.

A member of the GSA Regional Fire Protection Team (FPT) shall witness the final tests. At this time, any and all tests required to confirm system operation in compliance with the contract documents shall be repeated at the discretion of the Government. Should the fire alarm system or any of its components or interfaces thereto not operate as required, the Fire Protection Team representative may cancel the final test and require the final test to be repeated when deficiencies are resolved to the satisfaction of the FPT representative. Any such repeated tests as required by the Government shall be done at no additional expense to the Government. Repeated testing expenses shall be borne by the contractor and shall include but not be limited to, contractor's direct and indirect expenses for repeating the testing, travel and professional expenses for project Architects and Engineers related to final acceptance testing, travel and professional expenses for GSA fire protection engineers, technicians, contracting officers, contracting officer's representatives, project managers and property managers and any other expense necessary to repeat final acceptance testing as required by this contract.

- F. The contractor shall perform all testing in occupied facilities at times of day that present the lowest impact and disruption to government business and activities. Coordinate all testing in occupied buildings with the Property Manager to assure that fire alarm system testing does not interrupt government operations. This may require extensive after hours work to perform such testing.
- G. The Contractor shall provide all personnel, equipment, tools, meters, ladders, and communication devices necessary for the performance of all tests. Materials such as simulated smoke, heat-producing devices for heat detectors, extension poles for introducing smoke into detectors, etc shall be provided entirely by the Contractor. Government representatives are present to observe the testing and will not bring any equipment to perform testing.
- H. The Contractor shall provide three (3) copies of accurate red line drawings of the completed fire alarm system including decibel readings and manometer readings from preliminary testing to the government for their use during the final acceptance testing. The Contractor shall provide communications devices for Government representatives observing the testing so that they may communicate with the members of the testing team. Cell phones are not acceptable for testing communications.
- I. The contractor shall not use open flame, burning materials, smoke bombs, pyrotechnic devices, or smoking materials at any time to conduct the required tests. Damage done to the facility from improper testing shall be the responsibility of the contractor and shall not be an acceptable reason for schedule delays or additional costs to the government.

3.7 MINIMUM SYSTEM TESTS

- A. General: Test the system in accordance with the procedures outlined in NFPA 72 and NFPA 4. The required tests are as follows:

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1. Verify the absence of unwanted voltages between circuit conductors and ground. The tests shall be accomplished at the preliminary test with results available at the final acceptance test.
2. Verify that the control unit is in the normal condition as detailed in the manufacturer's operating and maintenance manual. There shall be no troubles on the system at final acceptance testing.
3. Test each initiating and notification device and circuit for proper operation. Check for proper response to each at the control unit. This shall include all alarm signals, supervisory signals, and trouble signals from these devices. Simply performing a status check from the fire alarm control panel does NOT accomplish the required task.
4. Measure and record loop resistance of all circuits. Measure and record loop capacitance of all data circuits. Record the manufacturer's maximum permitted loop resistance and loop capacitance on the same form.
5. Test sound pressure levels (dBA slow) throughout the space being remodeled to assure specified decibel levels are achieved by the speakers. Measure sound levels at 5 feet (1.5 m) above finished floor with the room doors closed. Measurements are to be recorded during the three pulse tone portion of the audible notification message. Provide sound level measurements on updated red line drawings.
6. Test the system for all specified functions in accordance with the contract drawings and specifications and the manufacturer's operating and maintenance manual.
7. Determine that the system is operable under trouble conditions as specified.
8. Visually inspect all wiring.
9. Verify that redline drawings are accurate.
10. Measure the current in circuits to assure there is the calculated spare capacity for the circuits.
11. Measure voltage readings for all circuits to assure that voltage drop is not excessive. Measure the voltage drop at the most remote appliance on each circuit.

3.8 SPARE PARTS AND TOOLS

- A. Interchangeable Parts: All spare parts furnished shall be directly interchangeable with the corresponding components of the installed system. Spare parts shall be suitably packaged and identified by nameplate, tagging, or stamping. Spare parts shall be delivered to the GSA Contracting Officer's Representative.

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B. Spare Parts: Provide the following spare parts and accessories:

- [4] Combination speaker/strobe appliances
- [4] Independent Speaker appliances
- [4] Independent strobe appliances
- [4] Fuses for each fused circuit

3.9 OPERATION AND MAINTENANCE MANUALS

- A. General: Provide operation and maintenance manuals not less than fifteen days prior to the final acceptance testing of the entire system. Provide complete installation manuals for the system installed as a part of the O&M manual. The manuals shall be used during the instruction period hereinafter specified. Provide six bound copies of an Operation and Maintenance Manual. The manual shall include an index, copies of all approved shop drawings and submittal materials, and a complete parts list of all components. The manual shall also include, for each item, the manufacturer's name, the serial number of the part, an ordering number, if appropriate, and a physical and electrical description of the part. Following the final acceptance test, all copies of the drawings and submittal materials shall be updated as necessary to reflect as-built conditions. The O&M Manuals shall have devices that are required to be inspected and/or tested listed individually by digital address, physical location, and type of device. These listings are required for integration with the GSA maintenance system.

3.10 AS-BUILT DRAWINGS/DOCUMENTATION

1. Prepare and submit to the Contracting Officer's Representative three (3) sets of detailed "As Built Drawings." The drawings shall provide the installed representation of all equipment in the format required for submittal shop drawings as a minimum. The drawings shall show the system as installed including all deviations from both the project drawings and the approved shop drawings. The drawings shall also include all information as required by NFPA 72 (See Annex A). The as built drawings shall also include the recorded decibel readings for each space taken during the final acceptance test and the manometer readings for each duct detector. The drawings shall be prepared on uniform sized sheets with no smaller than a 1:1/8 in (100 mm) scale. Submit these drawings within two weeks after the final acceptance of the system.
2. Provide three (3) sets of all As-Built CAD based electronic drawings; each set shall include AutoCAD DWG file format, including all associated externally referenced electronic files (Xref's). These As-Built electronic files shall contain externally referenced files that have been

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inserted (do not Bind the Xref's). Provide AutoCAD DWG file format on three (3) separate thumb drives or portable hard drives with complete USB connections for use with computers. In addition, provide in each set a read only PDF copy of each As-Built drawing for archiving purposes. PDF files shall be created using the PDF Creator utility. These three (3) thumb drives or portable hard drives shall be formatted, written to, and the recording session closed in such a manner as to prevent additional electronic file transfers to the recordable thumb drives or portable hard drives. Refer to Division 1 for any additional requirements.

3. Provide three (3) electronic sets of the fire alarm system programming software as installed and amended during testing. The fire alarm system program is to be in the format of the fire alarm system so that these copies may be used as "back up" for the fire alarm system program. Any and all software necessary for the programming of this fire alarm system shall be provided in these sets.
4. One complete set of documents for the fire alarm system shall be provided for the fire alarm system records cabinet as required by NFPA 72, National Fire Alarm and Signaling Code. At a minimum, those documents shall include one set of as-built drawings, electronic storage of the complete fire alarm system program as a backup for emergency reproduction of the programming, the NFPA Record of Completion including all Supplementary Records of Completion showing all of the information on the system software and hardware provided, and a listing of all devices in the fire alarm system program by device number, device type, and device location.

ANNEX A

This minimum information is required for all drawing sets specified:

1. The minimum drawing scale shall be 1/8. Larger scale is permitted, but in no case shall drawings be of a scale less than 1/8.
2. All fire alarm drawings shall use symbols described in NFPA 170. Drawings utilizing nonstandard symbols will be returned without review.
3. The name and contact information for the fire alarm system designer shall be included in the drawings. In addition, the designers PE stamp or the NICET 3 or 4 information shall also be included with the designer's name and contact information.
4. An input/output matrix shall be provided for the system sequence of operation. An input/output matrix shall also be provided for provision of multiple messaging in the building as required in this specification.
5. Mounting height elevations for wall mounted devices shall be provided in the drawing sets.

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6. Pathway diagrams between the control unit and supervising station equipment. Pathway diagrams shall show the pathways for reporting events at this facility to the remote supervising station.
7. Shop drawings shall be drawn to scale, on sheets of uniform size with a plan of each floor. They shall include the following information:
 - a. Name of Protected premises, owner, and occupant (where applicable)
 - b. Name of installer or contractor
 - c. Location of protected premises
 - d. Device legend and symbols in accordance with NFPA 170.
 - e. Date of issue and revision dates.
8. Floor plan drawings shall be drawn to scale, and shall include the following information:
 - a. Floor or level identification
 - b. Point of compass (North arrow)
 - c. Graphic scale
 - d. All walls and doors
 - e. All partitions extending to within 15 percent of the ceiling height
 - f. Room and area descriptions
 - g. System devices/component locations
 - h. Locations of fire alarm primary power disconnecting means
 - i. Location of monitor/control interfaces to other systems
 - j. System riser locations
 - k. Type and number of system components/devices on each circuit, on each floor level
 - l. Type and quantity of conductors and conduit for each circuit
 - m. Identification of any ceiling over 10 feet (3.0 m) in height where automatic fire detection is being proposed
 - n. Details of ceiling geometries, including beams and solid joists, where automatic fire detection is being proposed.
 - o. Where known, acoustic properties of spaces.
9. All drawing sets shall have riser diagrams as required in this specification. All devices shall be included in the riser diagram. System riser diagrams shall be coordinated with the floor plans and shall include the following information:
 - a. General arrangement of the system in building cross section.
 - b. Number of risers
 - c. Type and number of circuits in each riser
 - d. Type and number of system components/devices on each circuit, on each floor or level
 - e. Number of conductors for each circuit
10. Control unit diagrams shall be provided for all control equipment, power supplies, battery chargers, and annunciators and shall include the following information:
 - a. Identification of the control equipment depicted

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- b. Location(s) of control equipment
 - c. All field wiring terminals and terminal identification
 - d. All circuits connected to field wiring terminals and circuit indentifications
 - e. All indicators and manual controls
 - f. Field connections to supervising station signaling equipment, releasing equipment, or emergency safety control interfaces, where provided.
11. Typical wiring diagrams shall be provided for all initiating devices, notification appliances, remote indicators, annunciators, remote test stations, and end-of-line and power supervisory devices.
12. System calculations shall be included as follows:
- a. Battery calculations shall be provided in the drawing set utilizing the derating factors provided in this specification.
 - b. Voltage drop calculations shall be provided for notification appliance circuits as required in this specification.
 - c. Line resistance and SLC circuit capacitance figures shall also be provided.
13. These requirements are the minimum requirements for drawing sets. Compliance with this Annex does not assure approval; rather it improves the drawing set and eliminates common problems seen with drawing sets we have reviewed. The specification along with this Annex provide the complete requirements for any drawing set submitted for review as a part of this contract specification.

END OF SECTION 28 31 01

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"General Decision Number: IN20230001 01/20/2023

Superseded General Decision Number: IN20220001

State: Indiana

Construction Types: Building, Heavy and Highway

Counties: La Porte, Lake, Porter and St Joseph Counties in Indiana.

BUILDING CONSTRUCTION PROJECTS (does not include single family homes and apartments up to and including 4 stories, HEAVY AND HIGHWAY CONSTRUCTION PROJECTS

Note: Contracts subject to the Davis-Bacon Act are generally required to pay at least the applicable minimum wage rate required under Executive Order 14026 or Executive Order 13658. Please note that these Executive Orders apply to covered contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but do not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(2)-(60).

| | |
|---|--|
| If the contract is entered into on or after January 30, 2022, or the contract is renewed or extended (e.g., an option is exercised) on or after January 30, 2022: | <ul style="list-style-type: none">. Executive Order 14026 generally applies to the contract.. The contractor must pay all covered workers at least \$16.20 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in 2023. |
| If the contract was awarded on or between January 1, 2015 and January 29, 2022, and the contract is not renewed or extended on or after January 30, 2022: | <ul style="list-style-type: none">. Executive Order 13658 generally applies to the contract.. The contractor must pay all covered workers at least \$12.15 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on that contract in 2023. |

The applicable Executive Order minimum wage rate will be adjusted annually. If this contract is covered by one of the Executive Orders and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must still submit a conformance request.

Additional information on contractor requirements and worker protections under the Executive Orders is available at <http://www.dol.gov/whd/govcontracts>.

| | |
|---------------------|------------------|
| Modification Number | Publication Date |
| 0 | 01/06/2023 |
| 1 | 01/20/2023 |

ASBE0017-002 06/01/2022

LAKE AND PORTER COUNTIES

| | Rates | Fringes |
|--|----------|---------|
| ASBESTOS WORKER/HEAT & FROST INSULATOR..... | \$ 52.80 | 32.39 |
| HAZARDOUS MATERIAL HANDLER (INCLUDES PREPARATION, WETTING, STRIPPING REMOVAL SCRAPPING, VACUUMING, BAGGING AND DISPOSAL OF ALL INSULATION MATERIALS, WHETHER THEY CONTAIN ASBESTOS OR NOT, FROM MECHANICAL SYSTEMS)..... | \$ 38.85 | 24.60 |

ASBE0075-001 06/01/2020

REMAINING COUNTIES

| | Rates | Fringes |
|---|----------|---------|
| ASBESTOS WORKER/HEAT & FROST INSULATOR..... | \$ 32.00 | 26.04 |
| HAZARDOUS MATERIAL HANDLER (includes preparation, wetting, stripping, removal, scrapping, vaccuming, bagging, and disposal of all insulation materials, whether they contain asbestos or not, from mechanical systems)..... | \$ 23.00 | 14.40 |

BOIL0001-005 05/01/2017

LAKE COUNTY, City of Hammond; North of 114th Street

| | Rates | Fringes |
|------------------|----------|---------|
| BOILERMAKER..... | \$ 46.18 | 29.58 |

BOIL0374-003 01/01/2021

| | Rates | Fringes |
|------------------|----------|---------|
| BOILERMAKER..... | \$ 38.53 | 32.20 |

BRIN0004-011 09/21/2021

LAKE, LAPORTE AND PORTER COUNTIES

| | Rates | Fringes |
|---|----------|---------|
| BRICKLAYER | | |
| Bricklayer; Stone Mason; Pointer, Cleaner, Caulker... | \$ 38.85 | 27.17 |
| Marble Finisher; Tile Finisher..... | \$ 31.00 | 19.16 |
| Marble Mason; Terrazzo Worker; Tile Layer..... | \$ 37.05 | 21.64 |

| | | |
|------------------------|----------|-------|
| Terrazzo Finisher..... | \$ 31.00 | 19.16 |
|------------------------|----------|-------|

BRIN0004-018 09/21/2021

SOUTH BEND: ST. JOSEPH COUNTY

| | Rates | Fringes |
|------------------------------|----------|---------|
| BRICKLAYER | | |
| BRICKLAYER; STONE MASON; | | |
| POINTER, CAULKER, CLEANER... | \$ 31.11 | 18.40 |
| MARBLE AND TILE FINISHER.... | \$ 31.00 | 19.16 |
| MARBLE AND TILE LAYER..... | \$ 31.71 | 20.88 |
| TERRAZZO FINISHER..... | \$ 31.00 | 19.16 |
| TERRAZZO WORKER..... | \$ 33.00 | 22.33 |

CARP0413-002 04/01/2022

St. Joseph County

| | Rates | Fringes |
|----------------|----------|---------|
| CARPENTER..... | \$ 28.95 | 22.66 |

CARP0765-001 06/01/2022

LAKE, LAPORTE AND PORTER COUNTIES

| | Rates | Fringes |
|-----------------|----------|---------|
| CARPENTER..... | \$ 41.38 | 32.26 |
| MILLWRIGHT..... | \$ 39.88 | 29.20 |

CARP1029-001 06/01/2022

ADAMS, ALLEN, CASS, DEKALB, ELKHART, FULTON, GRANT, HOWARD,
HUNTINGTON, KOSCIUSKO, LAGRANGE, MARSHALL, MIAMI, NOBLE, ST.
JOSEPH, STEUBEN, TIPTON, WABASH, WELLS and WHITLEY COUNTIES

| | Rates | Fringes |
|-----------------|----------|---------|
| MILLWRIGHT..... | \$ 31.20 | 26.80 |

ELEC0153-001 06/03/2021

ST JOSEPH COUNTY

| | Rates | Fringes |
|-------------------------------|----------|---------|
| Communication Technician..... | \$ 26.50 | 18.33 |
| ELECTRICIAN..... | \$ 36.50 | 25.98 |

Includes the installation, operation, inspection, modification, maintenance and repair of systems used for the transmission and reception of signals of any nature, for any purpose, including but not limited to, sound and voice transmission/transference systems, communication systems that transmit or receive information and/or control systems, television and video systems, micro-processor controlled fire alarm systems, and security systems and the performance of any task directly related to such installation or service. The scope of work shall exclude the installation of electrical power wiring and the installation of conduit raceways exceeding fifteen (15)

feet in length.

ELEC0531-001 05/31/2021

LAPORTE and PORTER COUNTIES

| | Rates | Fringes |
|------------------|----------|---------|
| ELECTRICIAN..... | \$ 41.50 | 28.26 |

ELEC0697-001 06/01/2022

LAKE COUNTY

| | Rates | Fringes |
|------------------|----------|---------|
| ELECTRICIAN..... | \$ 45.25 | 30.13 |

ELEC0697-004 08/31/2021

LAKE COUNTY

| | Rates | Fringes |
|-----------------------------------|----------|---------|
| Telecommunication Technician..... | \$ 35.75 | 28.77 |

Work covers low voltage installation, maintenance and removal of telecommunication facilities (voice, sound, data and video) including, telephone and data inside wire, interconnect, terminal equipment, central offices, PABX, fiber optic cable and equipment, micro waves, V/SAT, bypass, CATV, WAN (WIDE AREA NETWORKS), LAN (local area networks), and ISDN (integrated system digital network). Does not cover any work which properly comes under the work description of Inside JW (Journeyman Wireman), but shall cover the pulling of wire in raceways, but not the installation of raceways.

ELEC1393-003 12/02/2020

LAKE & PORTER COUNTIES

(Calumet Area, North of U.S. Hwy 30)

| | Rates | Fringes |
|--|----------|----------|
| Line Construction: | | |
| EQUIPMENT OPERATOR 1: (Diggers 5th wheel type trucks, crawler type, D-4 and smaller, bucket trucks and live boom type line trucks)..... | \$ 32.91 | 29%+6.75 |
| EQUIPMENT OPERATOR 3 (Backhoe over 1/2 yard bucket capacity, cranes rated at 15 ton or more capacity) 95% of J.L. Rate.. | \$ 40.60 | 29%+6.75 |
| GROUNDMAN..... | \$ 27.08 | 29%+6.75 |
| GROUNDMAN-TRUCK DRIVER..... | \$ 27.08 | 29%+6.75 |
| LINEMAN..... | \$ 43.11 | 29%+6.75 |

* ELEV0002-005 01/01/2023

ELEVATOR CONSTRUCTION

LAKE AND PORTER COUNTIES

| | Rates | Fringes |
|------------------------|----------|------------|
| ELEVATOR MECHANIC..... | \$ 65.12 | 37.335+a+b |

FOOTNOTES:

a) Eight Paid Holidays: New Year's Day; Veterans Day, Memorial Day; Independence Day; Labor Day; Thanksgiving Day; Friday after Thanksgiving and Christmas Day.

b) Employer contributes 8% of regular hourly rate to vacation pay credit for employee with more than 5 years of service, and 6% of regular hourly rate for less than 5 years of service.

* ELEV0044-001 01/01/2023

LA PORTE and ST. JOSEPH COUNTIES

| | Rates | Fringes |
|------------------------|----------|------------|
| ELEVATOR MECHANIC..... | \$ 57.26 | 37.335+a+b |

a) PAID HOLIDAYS: New Year's Day, Memorial Day, Independence Day, Labor Day, Veterans' Day, Thanksgiving Day, the Friday after Thanksgiving, and Christmas Day.

b) Employer contributes 8% of regular hourly rate to vacation pay credit for employee with more than 5 years of service; 6% for less than 5 years' service.

ENGI0150-001 06/01/2021

BUILDING CONSTRUCTION POWER EQUIPMENT OPERATORS:

LAKE, LAPORTE, and PORTER COUNTIES

| | Rates | Fringes |
|--------------------------|----------|---------|
| POWER EQUIPMENT OPERATOR | | |
| GROUP 1..... | \$ 42.00 | 39.68 |
| GROUP 2..... | \$ 41.20 | 39.68 |
| GROUP 3..... | \$ 36.90 | 39.68 |
| GROUP 4..... | \$ 34.70 | 39.68 |
| GROUP 5..... | \$ 29.25 | 39.68 |

POWER EQUIPMENT OPERATOR CLASSIFICATIONS:

GROUP 1: Asphalt Plant; Autograde; Batch Plant); Benoto (requires 2 engineers; Boiler & throttle valve; Boring machine (mining machine); Caisson Rigs; Central redi-mix plant; Combination Backhoe Endloader with backhoe bucket over 1/2 cu. yd. or with attachments; Combination tugger hoist & air compressor; Compressor & throttle; Concrete Breaker (truck mounted); Concrete conveyor; Concrete conveyor (truck mounted); Concrete paver over 27E cu.ft.; Concrete paver 27E cu. ft. & under; Concrete placing boom; Concrete pump/grout pump with boom (truck mounted); Concrete pump with boom (truck mounted); concrete tower; Cranes and Backhoes (All Attachments); Cranes, Hammerhead

Tower; Creter Crane; Derricks (all); Derricks (traveling); Forklift lull type; Forklift, 10 ton & over; Gradall, Hoist 1, 2, and 3 drums; Hoist (2 tugger 1 floor), Hydraulic Boom truck, Laser Screed, Locomotive (all), Motor patrol, Mucking Machine; Pile Driving and Skid rig, Pit machine, Prestress Machines, Pump cretes (and similar types), Rock Drill (self-propelled), Rock Drill Truck mounted; Slip form paver, Straddle buggies, Tractor with boom and side boom, Trenching Machine; Winch Tractors, Welding machines (6-9),

GROUP 2: Air Compressor (3) (feeding a common receiver); Asphalt Spreader; boilers; bulldozers; Combination Backhoe end loader with Backhoe bucket 1/2 cu. yd. and under or with attachments; Corboy drilling machine; Grader, Elevating; Grouting machines; Guard rail post driver; Highlift Shovel or frontend loader; Hoist (automatic), Hoist (all elevators); Hoist (tugger and single drum); Post hole digger; rollers (all); Scoop (tractor drawn); Stone crushers; Tournapull; Winch trucks

GROUP 3: Air compressor - small 210 and under (1 to 5 not to exceed a total of 300 feet); Air compressor - large over 210; Air compressor (2) feeding a common receiver; Combination - small equipment operator; Concrete mixer (two bag & over); Conveyor, portable; Forklift-under 10 ton; Generator; Pumps (1 to 3 not to exceed a total of 300 feet); Pumps, well points; Steam generators; Tractors, farm & similar type; Welding machines (2 thru 5); Winches, 4 electric drillo winches

GROUP 4: Bull gang (crane erection crew); Heaters, mechanical (1 to 5); Oilers; Switchmen

GROUP 5: Fork lifts (Housing and commercial only)

 ENGI0150-012 06/01/2022

BUILDING CONSTRUCTION

ST. JOSEPH COUNTY

| | Rates | Fringes |
|--------------------------|----------|---------|
| POWER EQUIPMENT OPERATOR | | |
| GROUP 1..... | \$ 30.75 | 34.25 |
| GROUP 2..... | \$ 29.40 | 34.25 |
| GROUP 3..... | \$ 28.60 | 34.25 |
| GROUP 4..... | \$ 27.80 | 34.25 |
| GROUP 5..... | \$ 25.20 | 34.25 |

POWER EQUIPMENT OPERATOR CLASSIFICATIONS:

GROUP 1: Mechanic, Asphalt Plant, Asphalt Spreader, Auto Grader; Batch Plant, Benoto (requires 2 Engineers), Boiler and Throttle Valve, Boring Machine (road), Bulldozers (with engines of 140 net horse power or more) Caisson Rigs, Central Redi-mix Plant, Concrete Conveyor Systems, Concrete Power (over 27E cu. ft.), Concrete Paver (27E cu. ft. and under), Concrete Pumps/Grout concrete placer (Truck Mounted), Concrete Tower, Cranes and backhoes (all), Cranes, Hammerhead Tower, Creter Crane, Derricks (all), Forklift (capble of hoisting and mechanically moving forks horizontally), Grader, Elevating, Highlift Shovels or Front End Loaders (over 3 yd bucket), Hoists (2 or more drums),

Locomotives (all), Laser screed, Motor Patrol, Pile Drivers and Skid Rig, Pre-Stress Machines, Pump Cretes & Similar Types, Rock Drill (Self-Propelled), Rock Drill (self propelled Truck Mounted), Scoops (tractor drawn), Slip-Form Paver, Tournapull, Tractor with Boom & Side Boom, Trenching Machine (12 or more inches in width), Combination Backhoe Front End Loader Machine with backhoe 1/2 yd bucket or attachments.

GROUP 2: Air Compressor (600 cu. ft. and over), Bob Cat (over 3/4 cu. yd.), Boilers, Broom (all powered propelled), Bull Dozers with engines of less than 140 net horsepower, combination backhoe front end loader 1/2 yf bskhhoe or under, Compressor and Throttle Valve, Concrete Breaker (truck mounted), Concrete Mixer (of moore than 21 cu. ft. capacity), Forklift (with fixed or tilt mast), Greaser Engineer, Highlift shovel or front endloader 3 yd bucket and under, Hoists (1 drum), Hydraulic Boom Truck, Post Hole Digger (vehicle mounted), Pump Cretes (squeeze crete type pumps, Gypsum, bulker , Rollers(all), Steam Generators, Stone Crushers, Stradddle Buggies, Tractors, Winch Trucks (with ""a"" frame.

GROUP 3: Buck Hoist, Combination (small equipment operator), .Conveyor (portable), Grouting Machine, Hoist Elevators (material and personnel), Hydraulic Power Units, Grouting and Pile Driving, Stud Welder, Trenching Machines less than 12 inches in width, Welding Machines (8 through 15).

GROUP 4: Bobcat (up to and including 3/4 cu. yd.). Compressor (over 210 cu. ft. and less than 600 cu. ft.), Generator (over 50 kw.), Heaters, Mechanical, Hoists (all elevator, permanent installation), Hoist (automatic), Hoist (tugger single drum), Oilers, Pumps, Well Points and electric submersible, Small Rubber Tired End Loaders (1/4 cu. yd. and under), Tractors (farm type) Welding Machines (2 through 8).

GROUP 5: Bobcats and forklifts (commercial or residential).

 ENGI0150-014 05/01/2021

POWER EQUIPMENT OPERATOR HEAVY/HIGHWAY

LAKE, LAPORTE, PORTER AND ST. JOSEPH COUNTIES

| | Rates | Fringes |
|--------------------------|----------|---------|
| POWER EQUIPMENT OPERATOR | | |
| GROUP 1..... | \$ 42.15 | 37.20 |
| GROUP 2..... | \$ 41.70 | 37.20 |
| GROUP 3..... | \$ 41.25 | 37.20 |
| GROUP 4..... | \$ 40.05 | 37.20 |
| GROUP 5..... | \$ 39.00 | 37.20 |

POWER EQUITMENT OPERATOR CLASSIFICATIONS

GROUP 1: Asphalt plants (construction), Asphalt plant (permanent), Auto Patrol (Maintainer), Automatic Dry Batch Plant, Automated Concrete Placer, Automated Sub-Grader, Automated Slip Form Paver, Automated Finish Machine, Combination Backhoe Front, End Loader Machine (1/2 cu. yd.), Backhoe bucket or over or with attachments), Combination backhoe 1 cu yd, Backhoe bucket or over or with

attachments, Ballast Regulator (RR), Belt Loader (stationary), Boring Machine (road), Bulldozer, Concrete Mixer (27 cu. ft. or over), Concrete Pump (truck mounted), Concrete Breaker (truck mounted and self-propelled), Core Drilling Machine, Cranes and Backhoes (all attachments), Cranes, Hammerhead, Cretor Crane, Crushers (concrete, rock, recycling, etc.), Derricks, Derricks (traveling), Dredge Operator, Formless Curb and Gutter Machine (36 inches and over), Formless Curb and Gutter Machine under 36 inches, Gradall and Machines (of a like nature), Guardrail Post Driver (truck mounted), Lead Greaser, Helicopter, Highlift Shovel (3 yd. and over), Hoist (1 drum), Hoist (2, and 3 drums), Hydraulic Power Units (grouting, piledriving and extracting) Hydro or water blaster (self-propelled), Locomotive Operators, Mechanic, Welder, Mucking Machine, Panelboard Concrete Plant (central mix type), Paver (Hetherington), Pile Driver (Skid or Crawler), Road Paving Mixer, Rock Drill Crawler or Skid Rig, Rock Drill (truck Mounted), Ross Carrier, Roto Mill Grinder (36" and over), Roto mill grinder (less than 36"), Throttle Valve and Compressor or Clever Brooks Type Combination, Throttle Valve and Fireman Combination or Horizontal or Upright Boiler, Tournapull or similar type equipment, Tractor (boom), Tractor Drawn Belt Loader with attached Pusher (requires two engineers), Trench Machine, Tug Boat Operator, Wheel Excavator, Winch Tractor with "a" frame, Scoops, Turnapull or similar types machine used in Tandem (add \$1.00 to class 1 hourly rate for each machine attached there to).

GROUP 2: Combination Backhoe Front End Loader Machine with less than 1/2 cu. yd., Backhoe Bucket or with attachments, Bituminous Mixer, Bituminous Paver, Bridge Deck Finisher, Concrete Mixer (less than 27 cu. ft.), Compressor and throttle valve, Compressor (common receiver 3), Greaser, Highlift Shovels (under 3 cu. yds.), Jersey Spreader or Base Paver, Pavement Bump Grinder (self-propelled), Roller (Asphalt, waterbound, Macadam, Bituminous Macadam, Brick Surface, Sheepfoot Roller (self-propelled with blade), Surface Heater and Planer, Tamper (multiple vibrating, asphalt waterbound macadam, bituminous macadam, brick surface), Tractor (push), Tractor with scoop, Widener, Apsco or similar type.

GROUP 3: Back Filler, Bituminous Distributor, Broom and Belt Machine, Bull Float, Compressor (common receiver 2), Concrete cutter wheel type (rockwell), Concrete Finishing Machine, Concrete Spreader (power driven), Digger, Post Hole (power driven), Finishing Machine and Bull Float, Forklift, Form Grader, Form Tamper (motor driven), Hydraulic (boom truck) when used for hauling materials, Laser screed, Multiple Tamping Machine, Paving Breaker, Roller (earth and subbase material), Roller sheepfoot (self-propelled), Sub-grader, Tamper, Multiple Vibrating (earth and subbase material), Tractaire with Drill, Tractor (with all drawn attachments except backhoe and including Highlift, Endloader of 1 cu. yd. capacity and less.

GROUP 4: Air Compressors, Conveyor (all), Fireman on Boiler, Generator, Grout Machine, Power curing Spraying Machine (self-propelled), Broom (self-propelled), Seaman Tiller, Skid steer loaders, Spike Machine (RR), Stripping Machine (paint, self-propelled), Throttle Valve, Welding Machine, Well Points System.

GROUP 5: Deck Hand, Hetherington Driver, Mechanical Heater (1 to 5), Outboard or Inboard Motor Boat, Oiler, Power Saw (Concrete Power Driven), Water Pump, Grasscutter.

 IRON0292-001 06/01/2022

ST. JOSEPH and LAPORTE (Remainder of County) COUNTIES

| | Rates | Fringes |
|-----------------|----------|---------|
| IRONWORKER..... | \$ 33.62 | 24.25 |

 IRON0395-001 06/01/2021

LAKE, PORTER AND LAPORTE (FROM LAKE MICHIGAN ON NORTH TO 50 MILES S. OF LAKE MICHIGAN ON THE S. AND FROM IN/IL STATE LINE ON W. TO 3 MILES E. OF IN. COUNTIES

| | Rates | Fringes |
|------------------------------|----------|---------|
| IRONWORKER | | |
| SHEETER..... | \$ 41.75 | 34.54 |
| STRUCTURAL & ORNAMENTAL..... | \$ 41.75 | 34.54 |

 LAB00041-001 06/01/2020

BUILDING CONSTRUCTION

LAKE COUNTY (Western Half)

| | Rates | Fringes |
|------------------------------|----------|---------|
| Laborers: | | |
| CAISSON AND TUNNEL WORK | | |
| (Compressed & Free Air)..... | \$ 37.90 | 23.93 |
| GROUP 1..... | \$ 36.40 | 23.93 |
| GROUP 2..... | \$ 37.15 | 23.93 |
| GROUP 3..... | \$ 37.40 | 23.93 |

LABORER CLASSIFICATIONS:

GROUP 1: Building and Construction Laborers; Scaffold Builders (other than for Mason or Plasterers); Railroad Workers, Masonry Wall Workers, (interior & exterior); Portable Water, Pumps with discharge up to 3 indches; Handling of Creosote Lumber or Like Treated Material (excluding railroad material); Asphalt Rakers and Lutemen; Earth compactors; Jackmen and Sheetmen Working Ditches Deeper than Six (6) Feet in Depth; Laborers Working Ditches Six (6) Feet in Depth or Deeper; Assembly of Unicrete Pump; Tile Layers (sewer or field) and Sewer Pipe Layers (metallic or non-metallic); Motor Driven Wheelbarrows and Concrete Buggies; Hyster Operators; Pump Crete Assemblers; Core Drill Operators; Cement, Lime or Silica Clay Handler (bulk or bag); Handling of Toxic Materail Damaging to Clothing; Pneumatic Spikers; Deck Engine and Winch Operators; Water main and Cable Ducking (metallic and non-metallic); Screed Man or Screw Operator on Asphalt Paver; Chain Saw and Demolition Saw Operators; Concrete Saw; Concrete Conveyor Assemblers; Applying of Curing Compound; Sinking of Wellpoints; Dewatering Header Systems

GROUP 2: Plaster Tenders, Masons Tenders; Mortar Mixers;

Welders (acetylene or electric); Cutting Torch or Burner; Cement Nozzle Laborers; Cement Gun Operators; Scaffold Builders for Plasterers; Scaffold Builders for Masons; Water Blast Machine Operators; Air Tool Operators and all Pneumatic Tool Operators, Air and Electric Vibrators and Chpping Hammer Operators; Asbestos Removal; Hazardous Waste Removal; All Boiler Setters Laborers, including expediters, bottom men, bell men, and Mason Tenders

GROUP 3: Dynamite Men; Drillers, Air Track or Wagon Drilling for explosives.

CAISSON AND TUNNEL WORK (Compressed & Free Air)

GROUP 1: Cage Tenders, Dump Men, Flagman, Signalman, Top Laborers, Rod Men, Concrete Repairmen, Motor Men, Muckers, Grout Machine, Track Layers, Air Hoist, Key Board, Agitator Car, Car Pushers, Concrete Laborers, Grout Laborers, Sttl Setters, Tuggers, Switchmen, Mucking Machine, Laser Beam, Liner Plate & Ring Setter, Shield Drivers, Power Knife, Burners, Pipe Jacking Machine, Skinners, Maintenance Technician, Miner, Bricklayer Tenders, Concrete Blowers, Drillers, Erectors, Form Men, Jackhammermen, Mining Machine, Dynamite Men, Drillers-air track or wagon drilling for explosives.

Premium for all employees working in compressed air shall be as follows:

| | |
|--------------|-----------------|
| 0 - 15 lbs. | \$1.00 per hour |
| 16 - 20 lbs. | 1.50 per hour |
| 21 - 26 lbs. | 2.00 per hour |
| 27 - 33 lbs. | 3.00 per hour |
| 34 & over | 4.00 per hour |

LAB00041-004 04/01/2022

UTILITY CONSTRUCTION

LAKE COUNTY

| | Rates | Fringes |
|--------------|----------|---------|
| LABORERS | | |
| Group 1..... | \$ 31.74 | 23.63 |
| Group 2..... | \$ 32.04 | 23.63 |
| Group 3..... | \$ 32.74 | 23.63 |

LABORERS CLASSIFICATIONS (HEAVY AND HIGHWAY)

GROUP 1: Construction Laborer, Carpenter Tender, Fence Erector, Grade Checker, Guard Rail Erector, Continuous Steel Rod or Mat Installer, Wire Mesh Layer, Joint Man (Mortar, Mastic, and all other types), Lighting Installer (Permanent or Temporary), Lineman for Automatic Grade Maker on Paving Machines, Mortar Man, Multi-Plant Erector, Rip-rap Installer (all Products and Materials), Road Marking and Delineation Laborer, Setting and Placing of all Precast Concrete Products, Sing Installation including supporting structure, Spraying of all Epoxy, Curing Compound, or Like Material, Flagperson, Air Tool, Power Tool Operator, Asphalt Raker Man, Batch Truck Dumper, Bridge Hand Rail ERector, Handler (bulk or bag cement), Chain Saw Man, Concrete Puddler, Concrete Rubber, Concrete

Saw Operator, Core Drill Operator, Eye Level, Hand Blade Operator Hydro Seeder Man, Motor Driven Georgia Buggy Operator, Power Driven Compactor or Taper Operator, Power Saw Operator, Pump Crete Assembly Man, Sreed Man or Screw Man on Asphalt Paver, Regar Installer, Sandblaster Man, Sealer Applicator for Asphalt (toxic), Setting and Placing pre-stressed on Pre-cast Concrete Structural Members, Side Rail Setters (for Sidewalk, Side Ditches, Radii, and Pavement), Spreader Box Tender (manua or power driven), Straw Blower Man, Subsureface Drain and Culvert Pipe Layer, Concrete Conveyor, Horizonal Boring and Jackman and Sheetman, Pipe Greade Man, Winch and Windless Operator Conduit Installer, Sod Layer

GROUP 2: Cutting Torch Burner, Laser Beam Aligner, Manhole Erector, Sewer Pipe Layer, Water Line Installer, Temporary or Permanent Welders (electric or Oxy Acetylene)

GROUP 3: Air Track and Wagon Drillman, Dynamite and Powder Man, Concrete Barrier Rail Form Setter, Concrete Saw Joint Control Cutting

LAB00081-001 04/01/2022

HEAVY and HIGHWAY CONSTRUCTION:

LAKE, LA PORTE, and PORTER COUNTIES

| | Rates | Fringes |
|--------------|----------|---------|
| Laborers: | | |
| GROUP 1..... | \$ 31.74 | 23.63 |
| GROUP 2..... | \$ 32.04 | 23.63 |
| GROUP 3..... | \$ 32.74 | 23.63 |

LABORERS CLASSIFICATIONS (HEAVY AND HIGHWAY)

GROUP 1: Construction Laborer; Carpenter Tender; Fence Erector; Grade Checker; Guard Rail Erector; Continuous Steel Rod or Mat Installer; Wire Mesh Layer; Joint Man (Mortar, Mastic, and all other types); Lighting Installer (Permanent or Temporary); Lineman for Automatic Grade Maker on Paving Machines; Mortar Man; Multi-Plant Erector; Rip-rap Installer (all Products and Materials); Road Marking and Delineation Laborer; Setting and Placeing of all Precast Concrete Products; Sing Installation including Supporting Structure; Spraying of all Epoxy, Curing Compound, or Like Material; Flagperson; Air Tool, Power Tool Operator; Asphalt Raker Man; Batch Truck Dumper; Bridge Hand Rail Erector; Handler (bulk or bag cement); Chain Saw Man; Concrete Puddler; Concrete Rubber; Concrete Saw Operator; Core Drill Operator, Eye Level; Hand Blade Operator Hydro Seeder Man; Motor Driven Georgia Buggy Operator; Power Driven Compactor or Tamper Operator; Power Saw Operator; Pump Crete Assembly Man; Screed Man or Screw Man on Asphalt Paver; Rebar Installer; Sandblaster Man; Sealer Applicator for Asphalt (toxic); Setting and Placeing Prestressed on Precast Concrete Structural Members; Side Rail Setters (for Sidewalk, Side Ditches, Radii, and Pavement); Spreader Box Tender (manual or power driven); Straw Blower Man; Subsurface Drain and Culvert Pipe Layer; Concrete Conveyor; Horizonal Boring and Jackman and Sheetman; Pipe Grade Man; Winch and Windlass Operator Conduit Installer, Sod Layer.

GROUP 2: Cutting Torch Burner; Laser Beam Aligner; Manhole Erector; Sewer Pipe Layer; Water Line Installer, Temporary or Permanent; Welders (electric or Oxy-Acetylene).

GROUP 3: Air Track and Wagon Drillman; Dynamite and Powder Man; Concrete Barrier Rail Form Setter; General Laborer; concrete saw, joint control cutting

LAB00081-002 04/01/2022

UTILITY CONSTRUCTION

LA PORTE & PORTER COUNTIES

| | Rates | Fringes |
|--------------|----------|---------|
| Laborers: | | |
| GROUP 1..... | \$ 31.74 | 23.63 |
| GROUP 2..... | \$ 32.04 | 23.63 |
| GROUP 3..... | \$ 32.74 | 23.63 |

LABORERS CLASSIFICATIONS (UTILITY CONSTRUCTION)

GROUP 1: Construction laborer; Fence erector; Flagger; Grade checker; Guard rail erector; Wire mesh layer; Joint man (mortar, mastic and all other types); Lighting installer (permanent or temporary); Lineman for automatic grade maker on paving machines; Mortar man; Multi-plate erector; Rip-rap installer (all products and materials); Road marking and delineation laborer; Setting and placing of all precast concrete products; Sign installation including supporting structure; Spraying of all epoxy, curing compound, or like material; sod layer; Air tool, power tool, and power equipment operator; Asphalt lute man; Asphalt raker man; Batch truck dumper; Bridge handrail erector; Handler (bulk or bag cement); Chain saw man; concrete puddler; concrete rubber; Concrete saw operator; Core drill operator, eye level; Hand blade operator; Hydro seeder man; Motor-driven Georgia buggy operator; Power-driven compactor or tamper operator; Power saw operator; Pumpcrete assembly man; Screed man or screw man on asphalt paver; Rebar installer; Sandblaster man; Sealer applicator for asphalt (toxic); Setting and placing prestressed or precast concrete structural members; Side rail setter (for sidewalks, side ditches, radii, and pavements); Spreader box tender (manual or power-driven); Straw blower man; Subsurface drain and culvert pipe layer; Transverse and longitudinal hand bull float man; Concrete conveyor assembly man; Horizontal boring and jacking man; Jackman and sheetman; Pipe grade man; Winch and windlass operator

GROUP 2: Cutting torch burner; Laser beam aligner; Manhole erector; Sewer pipe layer; Water line installer, temporary or permanent; Welder (electric or oxy-acetylene) in connection with waterline and sewer work, Hod Carrier (tending bricklayers); TVing and associated grouting of utility lines

GROUP 3: Air track and wagon drillman; Concrete barrier rail form setter; Dynamite and powder man; General leadman; Concrete Saw Joint Control cutting

LAB00081-004 06/01/2022

LAKE (Eastern Half), LA PORTE, and PORTER COUNTIES

| | Rates | Fringes |
|--------------|----------|---------|
| Laborers | | |
| GROUP 1..... | \$ 37.34 | 26.03 |
| GROUP 2..... | \$ 38.09 | 26.03 |
| GROUP 3..... | \$ 38.34 | 26.03 |

LABORER CLASSIFICATIONS (Building Construction)

GROUP 1: Building and Construction Laborers; Scaffold Builders (other than for Mason or Plasterers); Mechanic Tenders; Rodmen and Chainmen, Railroad Workers, Masonry Wall Workers, (interior & exterior); Roofer Tenders, Cement Finisher Tenders, Carpenter Tenders, Portable Water, Pumps with discharge up to 3 inches; Waterproofing; Hauling of Creosote Lumber or Lutemen; Asphalt Rakers; Kettlem, Earth Compactors; Jackman and Sheetmen in Ditches more than 6 ft. deep; Laborers in ditches 6' deep or deeper; Assembly of Uncrete Pump; Tile Layers (sewer or field); Sewer Pipe Layers; Motor driven Wheelbarrows and Concrete Buggies; Hyster Operator; Pump Crete Assemblers; Core Drill Operator; Cement, Line or Silica Clay Handers; Handling of Toxic Materials damaging to clothing; Pneumatic Spikers; Deck Engine and Winch Operator; Water Main and Cable Ducking; Screed Man or Screw Operator on Asphalt Paver; Chain Saw and Demolition Saw Operator; Concrete Conveyor Assembler

GROUP 2: Plaster Tenders, Masons Tenders; Mortar Mixers; Welders (acetylene or electric); Cutting Torch or Burner; Cement Nozzle; Cement Gun; Scaffold Builders when working for Plasterers, and Mason; Water Blast Machine Operator; Air Tool Operators and all Pheumatic Tool Operators; Air and Electric Vibrators and Chipping Hammer Operators; Asbestos Removal; Hazardous Waste Removal

GROUP 3: Dynamite Men; Drillers, Air Track or Wagon Drilling for explosives; Laborer Specialist

LAB00645-001 06/01/2022

BUILDING CONSTRUCTION

ST JOSEPH COUNTY

| | Rates | Fringes |
|--------------|----------|---------|
| Laborers: | | |
| GROUP 1..... | \$ 25.73 | 17.15 |
| GROUP 2..... | \$ 26.48 | 17.15 |
| GROUP 3..... | \$ 26.73 | 17.15 |

BUILDING CONSTRUCTION

GROUP 1: Building and Construction Laborers; Scaffold Builders (other than for Plasterers); Mechanic Tenders; Window Washers and cleaners; Waterboys and Toolhousemen; Roofers Tenders; Railroad Workers; Masonry Wall Washers (interior and exterior); Cement Finisher Tenders; Carpenter

Tenders; All Portable Water pumps with discharge up to (3) inches; Plaster Tenders; Mason Tenders; Flag & Signal Person.

GROUP 2: Waterproofing; Handling of Creosot Lumber or like treated material (excluding railroad material); Asphalt Rakers and Lutemen; Kettlemen; Air Tool Operators and all Pneumatic Tool Operators; Air and Electric Vibrators and Chipping Hammer Operators; Earth Compactors Jackmen and Sheetmen working Ditches deeper than (6) ft.in depth; Laborers working in ditches (6) ft.in depth or deeper; Assembly of Unicrete Pump; Tile Layers (sewer or field) and Sewer Pipe Layer (metallic or non-metallic); Motor driven Wheelbarrows and Concrete Buggies; Hyster Operators; Pump Crete Assemblers; Core Drill Operators; Cement, Lime or Silica Clay Handlers (bulk or bag); Handling of Toxic Materials damaging to clothing; Pneumatic Spikers; Deck Engine and Winch Operators; Water Main and Cable Ducking (metallic and non-metallic); Screed Man or Screw Operator on Asphalt Paver; Chain and Demolition Saw Operators; Concrete Conveyor Assemblers.

GROUP 3: Water Blast Machine Operator; Mortar Mixers; Welders (Acetylene or electric); Cutting Torch or Burner; Cement Nozzle. Laborers; Cement Gun Operator; Scaffold Builders when Working for Plasterers. Dynamite Men; Drillers - Air Track or Wagon Drilling for explosives Hazardous and Toxic material handler, asbestos removal or handler.

LAB00645-002 04/01/2022

UTILITY CONSTRUCTION

ST JOSEPH COUNTY

| | Rates | Fringes |
|--------------|----------|---------|
| Laborers: | | |
| GROUP 1..... | \$ 27.40 | 17.22 |
| GROUP 2..... | \$ 27.90 | 17.22 |
| GROUP 3..... | \$ 28.40 | 17.22 |

LABORER CLASSIFICATIONS (UTILITY CONSTRUCTION)

GROUP 1: Construction laborer; Fence erector; Flagger; Grade checker; Guard rail erector; Wire mesh layer; Joint man (mortar, mastic and all other types); Lighting installer (permanent or temporary); Lineman for automatic grade maker on paving machines; Mortar man; Multi-plateerector; Rip-rap installer (all products and materials); Road markin and delineation laborer; Setting and placing of all precast concrete products; Sign installation including supporting structure; Spraying of all epoxy, curing compound, or like material; sod layer; Air tool, power tool, and power equipment operator; Asphalt lute man; Asphalt raker man; Batch truck dumper; Bridge handrail erector; Handler (bulk or bag cement); Chain saw man; concrete puddler; concrete rubber; Concrete saw operator; Core drill operator, eye level; Hand blade operator; Hydro seeder man; Motor-driven Georgia buggy operator; Power-driven cmpactor or tamper operator; Power saw operator; Pumpcrete assembly man; Screed man or screw man or asphalt paver; Rebar installer; Sandblaster man; Sealer applicator for asphalt (toxic); Setting and placing prestressed or precast concrete

structural members; Side rail setter (for sidewalks, side ditches, radii, and pavements); Spreader box tender (manual or power-driven); Straw blower man; Subsurface drain and culvert pipe layer; Concrete conveyor assembly man; Horizontal boring and jacking man; Jackman and sheetman; Pipe grade man; winch and windlass operator.

GROUP 2: Cutting torch burner; Laser beam aligner; Manhole erector; Sewer pipe layer; Water line installer, temporary or permanent; Welder (electric or oxy-acetylene) in connection with waterline and sewer work, Hod Carrier (tending bricklayers); TVing and associated grouting of utility lines.

GROUP 3: Air track and wage drillman; Concrete barrier rail form setter; Dynamite and powder man; General leadman; Concrete Saw Joint Cutting.

LAB00645-004 04/01/2022

HEAVY AND HIGHWAY

ST. JOSEPH COUNTY

| | Rates | Fringes |
|--------------|----------|---------|
| LABORERS | | |
| GROUP 1..... | \$ 27.40 | 17.22 |
| GROUP 2..... | \$ 27.90 | 17.22 |
| GROUP 3..... | \$ 28.40 | 17.22 |

LABORER CLASSIFICATIONS (HEAVY AND HIGHWAY CONSTRUCTION)

GROUP 1: Construction laborer; Fence erector; Flagger; Grade checker; Guard rail erector; Wire mesh layer; Joint man (mortar, mastic and all other types); Lighting installer (permanent or temporary); Lineman for automatic grade maker on paving machines; Mortar man; Multi-plateerector; Rip-rap installer (all products and materials); Road markin and delineation laborer; Setting and placing of all precast concrete products; Sign installation including supporting structure; Spraying of all epoxy, curing compound, or like material; sod layer; Air tool, power tool, and power equipment operator; Asphalt lute man; Asphalt raker man; Batch truck dumper; Bridge handrail erector; Handler (bulk or bag cement); Chain saw man; concrete puddler; concrete rubber; Concrete saw operator; Core drill operator, eye level; Hand blade operator; Hydro seeder man; Motor-driven Georgia buggy operator; Power-driven cmpactor or tamper operator; Power saw operator; Pumpcrete assembly man; Screed man or screw man or asphalt paver; Rebar installer; Sandblaster man; Sealer applicator for asphalt (toxic); Setting and placing prestressed or precast concrete structural members; Side rail setter (for sidewalks, side ditches, radii, and pavements); Spreader box tender (manual or power-driven); Straw blower man; Subsurface drain and culvert pipe layer; Concrete conveyor assembly man; Horizontal boring and jacking man; Jackman and sheetman; Pipe grade man; winch and windlass operator

GROUP 2: Cutting torch burner; Laser beam aligner; Manhole erector; Sewer pipe layer; Water line installer, temporary or permanent; Welder (electric or oxy-acetylene) in connection with waterline and sewer work, Hod Carrier

(tending bricklayers); TVing and associated grouting of utility lines.

GROUP 3: Air track and wage drillman; Concrete barrier rail form setter; Dynamite and powder man; General leadman; Concrete Saw Joint Cutting

PAIN0027-004 06/01/2021

LAKE COUNTY, West of Highway #41, including HAMMOND area

| | Rates | Fringes |
|--------------|----------|---------|
| GLAZIER..... | \$ 47.73 | 39.84 |

PAIN0091-004 06/01/2022

LA PORTE (Everything East of Hwy 39 and North of Hwy 20, including the Cities of LaPorte and Michigan City); ST. JOSEPH COUNTIES

| | Rates | Fringes |
|--------------------------|----------|---------|
| PAINTER | | |
| Brush & Roller, Drywall | | |
| Taping & Finishing, | | |
| Vinyl/Paper Hanging..... | \$ 28.75 | 16.36 |
| Spray..... | \$ 29.25 | 17.00 |

PAIN0460-003 06/01/2022

PORTER, LAKE and the remainder of LA PORTE COUNTY)

| | Rates | Fringes |
|------------------------|----------|---------|
| Painters: | | |
| DRYWALL FINISHING..... | \$ 37.98 | 27.68 |
| PAINTER..... | \$ 37.10 | 27.68 |

PAIN1165-005 07/01/2022

LAKE (EAST OF HIGHWAY #41 EXCLUDING HAMMOND AREA), LAPORTE and PORTER COUNTIES

| | Rates | Fringes |
|--------------|----------|---------|
| GLAZIER..... | \$ 39.38 | 26.90 |

PAIN1165-009 07/01/2021

ST. JOSEPH COUNTY

| | Rates | Fringes |
|--------------|----------|---------|
| GLAZIER..... | \$ 29.81 | 18.48 |

PLAS0101-006 06/01/2018

HEAVY/HIGHWAY

ST. JOSEPH COUNTY

| | Rates | Fringes |
|-----------------------------------|----------|---------|
| CEMENT MASON/CONCRETE FINISHER... | \$ 31.50 | 14.30 |
| ----- | | |
| PLAS0101-007 06/01/2018 | | |

BUILDING CONSTRUCTION

ST. JOSEPH COUNTY

| | Rates | Fringes |
|-----------------------------------|----------|---------|
| CEMENT MASON/CONCRETE FINISHER... | \$ 28.84 | 14.48 |
| PLASTERER..... | \$ 26.81 | 12.40 |
| ----- | | |
| PLAS0165-001 07/01/2018 | | |

LAKE COUNTY (EXCEPT BY THE NORTHEAST SECTION LYING NORTH OF CROWN POINT AND EAST OF GRIFFITH)

| | Rates | Fringes |
|--------------------------------|----------|---------|
| CEMENT MASON/CONCRETE FINISHER | | |
| BUILDING CONSTRUCTION..... | \$ 37.28 | 18.53 |
| HEAVY & HIGHWAY | | |
| CONSTRUCTION..... | \$ 33.94 | 13.80 |
| PLASTERER..... | \$ 32.70 | 17.70 |
| ----- | | |
| PLAS0406-001 07/01/2018 | | |

LAKE COUNTY (NORTHWARD ON LAKE COUNTY LINE TO AND INCLUDING THE CITY OF MERRILLVILLE, BUT NOT THE CITY LIMITS OF CROWN POINT) and PORTER COUNTIES

| | Rates | Fringes |
|--------------------------------|----------|---------|
| CEMENT MASON/CONCRETE FINISHER | | |
| BUILDING CONSTRUCTION..... | \$ 35.48 | 21.68 |
| HEAVY & HIGHWAY | | |
| CONSTRUCTION..... | \$ 32.00 | 15.74 |
| PLASTERER..... | \$ 33.28 | 17.32 |
| ----- | | |
| PLAS0438-001 06/01/2018 | | |

LAPORTE COUNTY, EASTERN PORTION OF PORTER COUNTY WEST TO BUT NOT INCLUDING CHESTERTON IN THE NORTH AND WEST TO AND INCLUDING KOUTS IN THE SOUTH

| | Rates | Fringes |
|--------------------------------|----------|---------|
| CEMENT MASON/CONCRETE FINISHER | | |
| BUILDING CONSTRUCTION | | |
| Cement Mason..... | \$ 36.01 | 25.40 |
| HEAVY & HIGHWAY | | |
| CONSTRUCTION | | |
| Cement Mason..... | \$ 30.89 | 17.34 |
| ----- | | |
| PLUM0172-006 06/01/2022 | | |

LA PORTE COUNTY (CITY OF LAPORTE) and ST. JOSEPH COUNTIES

| Rates | Fringes |
|-------|---------|
|-------|---------|

| | | |
|--|----------|-------|
| Plumber, Pipefitter, Steamfitter..... | \$ 38.54 | 21.79 |
|--|----------|-------|

PLUM0210-001 09/01/2022

LAKE, LAPORTE (Excluding the City of LaPorte) and PORTER
COUNTIES

| | | |
|--------------|----------|---------|
| | Rates | Fringes |
| PLUMBER..... | \$ 44.42 | 26.06 |

PLUM0597-003 06/01/2018

LAKE (Entire County), LA PORTE (Excluding the city of La
Porte), PORTER (Entire County)

| | | |
|-----------------|----------|---------|
| | Rates | Fringes |
| PIPEFITTER..... | \$ 48.50 | 31.12 |

ROOF0023-006 06/01/2021

LA PORTE and ST. JOSEPH COUNTIES

| | | |
|-------------------|----------|---------|
| | Rates | Fringes |
| ROOFER | | |
| COMPOSITION..... | \$ 30.50 | 19.03 |
| SLATE & TILE..... | \$ 32.00 | 19.03 |

ROOF0026-003 06/01/2022

LAKE AND PORTER COUNTIES

| | | |
|-------------|----------|---------|
| | Rates | Fringes |
| ROOFER..... | \$ 40.79 | 24.47 |

SFIN0281-001 01/01/2018

PORTER COUNTY (North of U.S. Route 30)

| | | |
|------------------------|----------|---------|
| | Rates | Fringes |
| Sprinkler Fitters..... | \$ 48.10 | 27.05 |

SFIN0669-002 04/01/2022

| | | |
|-----------------------|----------|---------|
| | Rates | Fringes |
| SPRINKLER FITTER..... | \$ 41.40 | 26.61 |

SHEE0020-013 07/01/2022

ST. JOSEPH COUNTY

| | | |
|-------------------------|----------|---------|
| | Rates | Fringes |
| Sheet metal worker..... | \$ 36.71 | 27.78 |

SHEE0020-015 07/01/2022

LAKE, LAPORTE, and PORTER COUNTIES

| | Rates | Fringes |
|-------------------------|----------|---------|
| Sheet metal worker..... | \$ 45.55 | 28.75 |
| ----- | | |
| TEAM0135-004 04/01/2021 | | |

LA PORTE COUNTY

| | Rates | Fringes |
|--|----------|---------|
| TRUCK DRIVER (BUILDING CONSTRUCTION ONLY) | | |
| GROUP 1..... | \$ 30.40 | .37+A |
| GROUP 2..... | \$ 30.90 | .37+A |
| GROUP 3..... | \$ 31.10 | .37+A |
| GROUP 4..... | \$ 31.25 | .37+A |
| GROUP 5..... | \$ 31.75 | .37+A |

A: \$37.90 PER DAY & 460.00 PER WEEK.

TRUCK DRIVER CLASSIFICATIONS

GROUP 1: Single Axle Trucks, seven (7) cu. yds. or less than ten and one-half (10 1/2) tons, dumpsters, scoop-mobiles five (5) cu.yds. and under or less than seven and one-half (7 1/2) tons, mixer trucks three (3) cu.yds. and under, air compressors and welding machines, including those pulled by separate units, batch trucks-wet or dry- 2""34-E"" batches or less, truck driver helpers, warehousemen, mechanic's helpers, greasers and tiremen, all pick-up trucks and other vehicles. Drivers on dumpsters or similar dumpsters, mounted on four (4) wheel truck rated two (2) cu.yds. or less, and small pallet type fork-lift operator and drivers on pallet jacks or similar type equipment.

GROUP 2: Drivers on tandem axle eighteen (18) cu.yds. or twenty- four (24) tons gross, six (6) wheel trucks, Koehring or similar dumpsters, tract trucks, Euclids, hug bottom dumps, tournapulls, tounatrailers, tournarockers, or similar equipment when used for transportation purposes under nine (9) cu.yds. or less than thirteen and one-half (13 1/2) tons, tandems and semi-trailer service trucks, mixer trucks over three (3) cu.yds. and including six and one-half (6 1/2) cu.yds., fork lift, four (4) wheel A-frame trucks when used for transportation purposes, four (4) wheel winch trucks, pavement breakers, batch trucks-wet or dry- over 2 up to and including 4-""34-E"" batches two (2) men oil distributors, fork-lift under four (4) ton and vacuum trucks.

GROUP 3: Koehring or similar dumpsters, tract trucks, semi-trailer water trucks, Euclids, hug bottom dumps, tournapulls, tournatrailers, tournarockers, tractor trailers, tandems, Q- frame winch trucks, hydrolift trucks or similar equipment when used for transportation purposes, mixer trucks over six and one- half (6 1/2) cu.yds, batch trucks wet or dry over 4 - ""34-E"" batches single equipment operated by employees withing this Bargaining unit. Six (6) wheel pole trailers and one (1) man oil distributors, fork-lift over four (4) ton and mobile mixers.

GROUP 4: Drivers on heavy equipment over sixteen (16) cu.yds.

or twenty-four (24) ton, such as Koehring or similar dumpsters, tract trucks, Euclids, hug bottom dumps, tournapulls, tournarockers or similar equipment when used for transportation purposes, pole trailers over six (6) wheels, water pulls, low-boy trailers tandem axles, quad axle or more no-weight limitation, diesel and/or heavy equipment mechanics.

GROUP 5: Mechanic furnishing his own tools.

TEAM0135-011 04/01/2021

| | Rates | Fringes |
|---|----------|---------|
| TRUCK DRIVER (HEAVY AND HIGHWAY CONSTRUCTION (LaPorte & St. Joseph Counties)) | | |
| GROUP 1..... | \$ 31.16 | 17.27 |
| GROUP 2..... | \$ 31.21 | 17.27 |
| GROUP 3..... | \$ 31.26 | 17.27 |
| GROUP 4..... | \$ 31.31 | 17.27 |
| GROUP 5..... | \$ 31.36 | 17.27 |
| GROUP 6..... | \$ 31.26 | 17.27 |
| GROUP 7..... | \$ 31.46 | 17.27 |
| GROUP 8..... | \$ 31.46 | 17.27 |
| GROUP 9..... | \$ 31.56 | 17.27 |
| GROUP10..... | \$ 31.01 | 17.27 |
| GROUP11..... | \$ 31.56 | 17.27 |
| GROUP12..... | \$ 31.66 | 17.27 |

TRUCK DRIVER CLASSIFICATIONS

GROUP 1: Single/batches axle straight trucks; Batch trucks, wet or dry 3 (34E) axle or less; Single axle Grease and maintenance truck

GROUP 2: Single axle fuel and water trucks

GROUP 3: Single axle ""dog-legs"", and tandem truck or dog-legs; Winch trucks or A-frames when used for transportation purposes; Drivers on batch trucks, wet or dry over 3 (34E) batches and tandem axle grease and maintenance truck

GROUP 4: Tandem axle fuel trucks; tandem axle water trucks; butuminous distributors (two-man)

GROUP 5: Tandem trucks over 15 tons payload; Single axle semi trucks; Farm tractors hauling material; Mixer trucks (all types); Trucks pulling tilt-top trailer single axle; Single axle low- boys; Truck-mounted pavement breakers

GROUP 6: Tandem trucks or ""dog-legs""; Semi-water Truck; Sprinkler Truck; Heavy equipment-type water wagons, 5,000 gallons and under; butuminous distributors (one-man)

GROUP 7: Tri-axle trucks; Tandem axle semi trucks; Equipment when not self-loaded or pusher loaded, such as Koehring or similar dumpsters, track trucks, Euclid bottom dump and hug bottom dump, tournatrailers, tournarockers, Acey wagons or for similar equipment (12 cu yds or less); Mobile mixer truck; Tandem Axle trucks pulling tilt-top trailer; Tandem - Axle lowboy; Tri- Axle batch Truck; Tri-Axle grease and maintenance truck

GROUP 8: Tandem-tandem semi trucks; Truck mechanics and welders; Heavy equipment-type water wagon over 5,000 gallons; Tri-Axle Trucks pulling tilt-top trailer; Low-boys, tandem-tandem axle

GROUP 9: Low-boys, tandem tri-axle; Acey wagons up to and including 3 buckets; Equipment when not self-loaded or pusher loaded, such as koehring or similar dumpsters, Track Trucks, Euclid bottom dump and hug bottom dump, Tournatrailers, Tournarockers, Acey wagons or for similar equipment (over 12 cu yds.)

GROUP 10: Pick-up trucks

GROUP 11: Helpers; Greasers; Tire men; Batch board tenders; Warehouseman

GROUP 12: Acey wagon (over 3 buckets); Quad Axle Trucks; Articulating Dump

TEAM0142-002 06/01/2020

| | Rates | Fringes |
|--|----------|---------|
| TRUCK DRIVER (BUILDING, HEAVY AND HIGHWAY CONSTRUCTION (INCLUDING ASPHALT PAVING WORK)) | | |
| LAKE AND PORTER COUNTIES | | |
| GROUP 1..... | \$ 33.29 | 29.38 |
| GROUP 2..... | \$ 33.49 | 29.38 |
| GROUP 3..... | \$ 33.69 | 29.38 |
| GROUP 4..... | \$ 33.89 | 29.38 |
| GROUP 5..... | \$ 34.24 | 29.38 |
| GROUP 6..... | \$ 35.89 | 29.38 |

BUILDING, HEAVY & HIGHWAY AND ASPHALT PAVING
LAKE AND PORTER COUNTIES

GROUP 1: 2 and 3 Axle
GROUP 2: 4 Axle
GROUP 3: 5 Axle
GROUP 4: 6 Axle
GROUP 5: Over 6 Axles
GROUP 6: Articulated Dumps

TEAM0364-004 06/01/2020

| | Rates | Fringes |
|--|----------|---------|
| TRUCK DRIVER BUILDING CONSTRUCTION (St. Joseph County) | | |
| GROUP 1..... | \$ 28.95 | a+b |
| GROUP 2..... | \$ 29.15 | a+b |
| GROUP 3..... | \$ 29.35 | a+b |
| GROUP 4..... | \$ 29.75 | a+b |

FOOTNOTE:

a. FRINGE BENEFITS: \$422.50 per week

b. HOLIDAYS: New Year's Day, Memorial Day, Fourth of July,

Labor Day, Thanksgiving Day and Christmas Day.

TRUCK DRIVERS BUILDING CLASSIFICATIONS

GROUP 1: Pickup Trucks
GROUP 2: Single Axle Trucks
GROUP 3: Tandem, Triaxle and Fuel Trucks
GROUP 4: Semi Trailer Trucks

WELDERS - Receive rate prescribed for craft performing
operation to which welding is incidental.

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Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at <https://www.dol.gov/agencies/whd/government-contracts>.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of "identifiers" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than "SU" or "UAVG" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing

the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

Survey Rate Identifiers

Classifications listed under the ""SU"" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a position on a wage determination matter
- * a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour National Office because National Office has responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described

in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISION"