SKAGIT COUNTY
"FIRE ALARM REPLACEMENTS"

Courthouse
205 W Kincaid Street
Mount Vernon, WA 98273

Administration Building
700 S 2nd Street
Mount Vernon, WA 98273

PROJECT MANUAL

ENGINEER

Interface Engineering
100 SW Main Street, Suite 1600
Portland, OR 97204
Contact: Jarod Myrick
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Project 2022-0463

Phone (503) 382-2266
www.interfaceeningeering.com

May 01, 2023

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NOTICE OF CALL FOR BIDS

Skagit County Fire Alarm Replacements

Courthouse, 205 W Kincaid Street, Mount Vernon, WA 98273
Administration Building, 700 S 2nd Street, Mount Vernon, WA 98273

NOTICE IS HEREBY GIVEN that sealed bids will be received on May 23, 2023 until 12:30 pm at the Skagit County Commissioners Administrative Building, 1800 Continental Place, Mount Vernon, Washington 98273. Bids must be received at the County Commissioners' Office prior to the bid opening time. Bid Proposals will be recorded as to time and date received and secured until the time set for the opening. All bids must be *plainly marked on the outside*;

Skagit County Fire Alarm Replacements

OPENING OF THE BID PROPOSALS:

At 12:30 pm or as soon as possible thereafter on May 23, 2023, Bid Proposals will be opened and publicly read aloud in the Commissioners Hearing Room #100, 1800 Continental Place, Mount Vernon, WA. 98273. This event will be televised for remote viewing on Skagit 21 or online at https://www.skagitcounty.net/Departments/TV21/main.htm.

ITEM FOR BID:

The Project consists of furnishing all labor, materials, and other incidentals for replacement of two fire alarm systems in the 33,000 sf Courthouse and 57,000 sf Administration Building, as described in the contract documents and specifications. The project includes replacement of pull stations at all exits, detection throughout the interior spaces, and notification devices. All work in the courtrooms or private offices will need to be performed outside the normal working hours, and the Architect's estimate is $360,000. The Project site is two adjacent facilities: the Skagit County Courthouse and Administration Building.

BID DOCUMENTS:
Free-of-charge access to project bid documents (plans, specifications, addenda, and Bidders List) is provided to Prime Bidders, Subcontractors, and Vendors through Builders Exchange of Washington by going to **www.bxwa.com, and clicking on "Posted Projects", "Public works", and "Skagit County"** or calling (425) 258-1303. "Harvesting" (downloading, copying, and transmitting) of any project information and/or project documents for purposes of reselling and/or redistributing information by any other party is not allowed by BXWA.

Plans and specifications may also be obtained from WCR Publications, Inc. (Western Construction Resources) www.wcrinc.com (info@wcrinc.com). Drawings can be obtained through Lithtex NW Printing Solutions, 2226 Market Street, Mount Vernon, WA, (info@lithtexnw.com / 360-424-5945) or Office Depot, 201-A E. College Way, Mount Vernon, WA (360-416-4979).

Bidders shall register to be automatically notified of addenda and will need to periodically check the on-line plan room for addenda issued on this project.

BXWA is the official plan center for the project.

A non-mandatory pre-bid conference for prospective bidders will be held onsite at 11:00 AM on May 10, 2023. Group will meet on front steps of the Courthouse at 205 W Kincaid St, Mount Vernon. A summary of questions and answers will be shared as a bid addendum.

Questions regarding the project must be submitted to Jarod Myrick email: JarodM@InterfaceEng.com. Questions must be received by May 15, 2023, 3:00pm. The County will provide a confirmation of the question(s) receipt within 48 hours; if a bidder does not receive such confirmation it is solely responsible to re-send the question(s). County's responses will be provided to all bidders by addendum with final no later than May 17, 2023. No oral responses from the Owner or its representatives may be relied upon by bidders.

The Successful Bidder will be required to furnish the necessary additional Bond(s) for the faithful performance of the Work, as prescribed in the Bidding Document.

CONTRACTOR REGISTRATION:

Pursuant to RCW 39.06, the Bidder shall be registered and licensed as required by the laws of the State of Washington, including but not limited to RCW 18.27. In order to perform public work, the successful Bidder and Subcontractors, prior to Contract award, shall hold or obtain such licenses and registrations as required by State Statutes and Codes, and Federal and local laws and regulations and a City of Mount Vernon business license.

BID SECURITY:

Certified check, bank cashier's check or bid bond congruent with the Form of Bid Bond as identified in the "Instructions to Bidders" is required to be submitted with each proposal, in the amount equal to five percent (5%) of the total basic bid plus additive alternate bids (if applicable). Make bid security payable to the Skagit County, a Municipal Corporation, furnish bond executed by a licensed bonding agency authorized to do business in the locality of the Project.

RIGHT TO ACCEPT OR REJECT:

The Owner shall reserve the right to reject any or all proposals and the right to waive any irregularities or informalities in any proposal, subject to the Laws of the State of Washington as pertinent to Public Works and congruent with requirements and policies of Skagit County, and as may be deemed in the best interest of the Owner. In particular, the Owner reserves the right to reject a proposal which is not accompanied by the required bid security or subcontractors listing as described heretofore, and incomplete or irregular proposals which may exclude any item(s) as may be required by the Bid Documents. NO PROPOSALS WILL BE ACCEPTED AFTER THE TIME SET FOR RECEIPT OF BID PROPOSALS.

Skagit County is an Equal Opportunity and Affirmative Action Employer.
Small, Minority and Women-Owned firms are encouraged to submit bids.

WITHDRAWAL OF BID:

No proposal may be withdrawn after the time set for the opening thereof, unless the Award of the Contract is delayed for a period of forty-five (45) calendar days.

NOTICE GIVEN BY ORDER OF THE BOARD OF COUNTY COMMISSIONERS THIS

_____day of _____2023.

_____

Clerk of the Board
Skagit County Commissioners

Published in the Skagit Valley Herald: May 4 and 11, 2023

END OF SECTION

SECTION 00 21 00

INSTRUCTION TO BIDDERS

A. EXAMINATION OF SITE AND CONSTRUCTION DOCUMENTS

1. Before submitting a proposal, the bidder shall:

   a. Carefully examine the drawings and specifications,

   b. Visit the site of the work,

   c. Fully inform itself of existing conditions and limitation, relating to the construction of the project and the employment of labor thereon. Failure to do so will not relieve a successful bidder of its obligation to furnish all material and labor necessary to carry out the provisions of this contract.

   d. Rely entirely upon its own judgment in making its proposal,

   e. Include in its bid a sum sufficient to cover all items required by the contract including all labor, materials, and services necessary to complete this project.

B. ADDENDA AND INTERPRETATIONS

No interpretation of the meaning of the plans, specifications, or other pre-bid documents will be made to any bidder verbally. Every request for such interpretation should be in writing addressed to the Architect, and to be given consideration, must be received at least 7 days prior to date fixed for opening of bids. Any and all such interpretations and any supplemental instructions will be in the form of written addenda to the specifications. Failure of any bidder to receive addenda shall not relieve any such bidder from any obligation under its bid as submitted. All addenda so issued shall become part of the contract documents. Approval of requested substitutions or proposed equals will be by Addenda as above.

C. PRODUCT SUBSTITUTIONS

1. Substitutions: Bids must be based upon the specific articles and materials named in the Drawings and Specification. Substitution may be made only under the following conditions:

   a. Prior to Bid Opening: Not less than eight calendar days prior to bid opening, prime bidders may submit to the Architect written requests for approval of articles or materials, accompanied by complete descriptions, technical data and samples. Approval or rejection of the proposed substitutions will be made by addenda issued to all bidders. Submit material / product requests as specified in Section 01 60 00.

2. After Award of Contract: Approval of substitution will be made only in exceptional cases where the Contractor submits satisfactory evidence to the

Architect that through no fault of its own, specified or otherwise approved items cannot be obtained in time to avoid delay to the work. Approval in such cases shall conform to the other requirements above.

D. INTERPRETATIONS AND CORRECTIONS TO BIDDING DOCUMENTS

Bidders and Sub-bidders shall promptly notify the Architect of any ambiguity, inconsistency or error which they may discover upon examination of the Bidding Documents or of the site and local conditions. Bidders and Sub-bidders requiring clarification or interpretation of the Bidding Documents shall make a written request which shall reach the Architect at least three days prior to the date for receipt of Bids. Any interpretation, correction or change of the Bidding Documents made in any other manner will not be binding, and Bidders shall not rely upon such interpretations, corrections and changes.

E. FORM OF BID

A Bid Form is attached to these Drawings and Specifications. Make Bid according to Form. Fill in all spaces. Bids shall not contain any recapitulation of work done. State numbers in writing and in figures. Completed form must be without interlineation, alteration or erasure. Signatures must be in longhand.

F. POWER OF ATTORNEY

Attorneys-in-fact who sign bid bonds or contract bonds must file with each bond a certified and effectively dated copy of the power of attorney.

G. ORAL AND TELEPHONIC BIDS

Oral and telephonic modifications of bids cannot be considered.

H. SUBMISSION OF BID

Enclose all items on Bid Submittal Checklist, Section 00 43 93, in opaque sealed envelope. Address to: Skagit County Board of Commissioners. Particulars are in the Advertisement for Bid. Deliver in person or by post. Bidder is responsible for delivery of bid at or before the time set for bid opening. The Owner may consider informal any bid not prepared and submitted in accordance with the provisions hereof and may waive any informalities or reject any and all bids. The Owner reserves the right to reject any bid of the evidence submitted by, or investigation of, such bidder fails to satisfy the Owner that such bidder is properly qualified to carry out the obligation of the contract and to complete the work contemplated therein. Conditional bids will not be accepted.

I. BID BOND

Each bidder agrees to furnish a bid bond AIA Document A310 or a certified check amounting to five percent (5%) of the bid, included with its proposal. When left in escrow with the Owner its amount or penalty sum is the measure of damages which the Owner will sustain by the failure of the bidder to execute the Form of Agreement and furnish a 100 percent Performance and Payment Bond, AIA Document A312, and if the

bidder fails to deliver said documents within 10 days after written notice, notice of the award of the contract to him, then the check shall become the property of the Owner or the Bid Bond shall remain in full effect. But if the bid is not accepted within 45 days after the time set for opening bids, or if the bidder delivers said contract and the bonds, then the check shall be returned to him, or the bid bond shall become void. The right is reserved to hold the bid bonds of the three lowest bidders until the award of the contract or for a period of 45 days, whichever is the shorter time. Bids of all unsuccessful bidders will be returned as soon as feasible after the bid opening.

J. **WITHDRAWAL OF BIDS**

Any bidder may withdraw its bid either personally or by written request at any time prior to the hour set for the bid opening. No bid may be withdrawn or modified after the time set for opening unless and until the award of the contract is delayed for period exceeding (45) forty-five days.

K. **TIME OF COMPLETION**

Bidder must agree to commence work within 60 days of contract execution, Substantially Complete the Work within (180) one hundred eighty consecutive calendar days from the date of execution and reach Final Completion of the Work within (60) sixty consecutive calendar days thereafter. Time is of the essence and contractor shall make every reasonable effort to adhere to the established schedule.

L. **SECURITY FOR FAITHFUL PERFORMANCE**

Simultaneously with its delivery of the executed contract, the Contractor shall furnish a surety bond or bonds as security for faithful performance of the Contract and for payment of all persons performing labor under the Contract and furnishing material or services in connection with the Contract as described in the Contract Documents. The surety on such bond or bonds shall be a duly authorized surety company satisfactory to the Owner, registered in the State of Washington, Insurance Commissioner's Office. List Bonding Agent and address of same.

M. **CONTRACTOR'S AND SUBCONTRACTOR'S PUBLIC LIABILITY**

Vehicle Liability and Property Damage Insurance shall be furnished as required by the Supplementary General Conditions.

N. **BUILDER'S RISK INSURANCE**

Property Damage Insurance shall be as required by the Bonds and Certificates Section 00 61 00, Section 00 62 00, and the County Vendor Services Agreement.

LAWS AND REGULATIONS, PREVAILING WAGES

The Bidder's attention is directed to the fact that all applicable State laws, municipal ordinances, and rules and regulations of all authorities having jurisdiction over construction of the project shall apply to the Contract throughout, and they shall be deemed to be included in the Contract the same as though written out in full therein. All

persons or firms performing on public service or construction contracts shall submit to the State, in advance of the work of all trades, a completed Form SF 9882, "Statement of Intent to Pay Prevailing Wages," accompanied by the filing fees for each Statement (Statements are available at Offices of Washington State Department of Labor and Industries). Refer to Supplementary General Conditions for Prevailing Wage information applicable to this project required by law.

O. **QUALIFICATIONS OF BIDDERS**

1. The Architect and / or the Owner may make such investigations as necessary to determine the ability of a Bidder to perform the work, and the Bidder shall furnish all such information and date as may be requested prior to bidding. The Owner reserves the right to reject any bid if the evidence submitted by, or if investigation of, such Bidder fails to satisfy the Owner that such Bidder is properly qualified to perform the obligations of the Contract and to complete the work contemplated therein. Conditional Bids will not be accepted.

2. To enable the Owner to evaluate the competency and financial responsibility of a Contractor, when requested by the Owner, furnish the following information, which shall be sworn to under oath by him or by a properly authorized representative of the Bidder.

    a. The address and description of the Bidder's plan and place of business.

    b. The name and/or Articles of Co-Partnership or Incorporation.

    c. A list of present contracts, including dollar values, percentage of completion and the names of all Owners involved.

    d. A statement regarding any past, present, and pending litigation with an Owner.

    e. Such additional information as may be required that will satisfy the Owner that the Bidder is adequately prepared, in technical experience or otherwise, to fulfill the contract.

    f. Sufficient documentation to ensure that the Contractor is in compliance with the current Fair Employment Practice requirements of the Owner.

P. **Prior to award of Bid the Owner shall verify all items listed under Bidder's Responsibility Criteria. If criteria cannot be verified bidder will be deemed non-responsive.**

Q. POST-BID INFORMATION

1. The successful bidder shall submit to the Architect, within ten calendar days of the notifications of selection for award of the Contract, the following:

    a. Statement of Cost for each major item of work or subcontract included in the Bid, equaling the total Contract award, and such other data as are required by the General Conditions, including Article 5.2.

R. LAWS AND REGULATIONS

The bidder's attention is directed to the fact that all applicable State laws, municipal ordinances, and rules and regulations of all authorities having jurisdiction over construction of the project shall apply to the Contract throughout, and they shall be deemed to be included in the Contract the same as though written out in full therein. Bidders are advised that if successful, they will be required to meet all applicable federal, state, and local laws pertaining to permits, licenses, fees, and taxes, as well as laws pertaining to employment and wages. Bidders are responsible for determining the extent and applicability of such laws.

S. DEFINITIONS

1. Bid Documents include the Instructions to Bidders, the Bid Form, and the contract Documents, including any Addenda.

2. Contract Documents consist of the Owner-contractor Agreement, the Conditions of the Contract (General, Supplementary, and other Conditions), the Drawings, the Specifications, and all Addenda issued prior to, and all Modifications issued after the execution of the Contract.

3. Addenda are written or graphic instruments issued prior to the execution of the contract which modify or interpret the Bidding Documents, including the drawings and specifications, by addition, deletion, clarification, or correction. Addenda issued prior to the receipt of Bids will be mailed, faxed, or delivered to each person or firm recorded by the Engineer as having received the Bid Documents.

T. AWARD OF THE CONTRACT(S) / REJECTION OF BIDS

1. The Contract will be awarded to the responsible bidder(s) submitting the lowest proposal complying with the condition of the Advertisement for Bid and these contract documents provided the bid is reasonable and in the best interest of Skagit County. Items in this bid, approved for contract by the Board of Commissioners, shall be awarded by Skagit County.

2. Skagit County reserves the right to reject any and all bids and to waive any informality in bids received whenever such rejection or waiver is in the interest of the County. Skagit County reserve the right to select all or individual alternate bid items whichever is determined to be in the best interest of the County.

3. The bidder to whom the award is made will be notified at the earliest practicable date.

U. DISQUALIFICATION OF BIDDERS

1. Any one or more of the following causes may be considered sufficient for the disqualification of a Bidder and the rejection of its bid or bids:

   a. Evidence of collusion among Bidders.

   b. Lack of expertise as shown by past work and judged from the standpoint of workmanship and performance history.

   c. Uncompleted work under other contracts which, in the judgment of the Skagit County, might hinder or prevent the prompt completion of additional work if awarded.

   d. Being in arrears on existing contracts, in litigation with an Owner, or having defaulted on a previous contract.

   e. Delinquent taxes due to State and Federal Government including B&O, L&I, payroll, social security and Medicare.

   f. Contractor's naming oneself as a Subcontractor for which they have no expertise and working knowledge directly within the firm.

   g. Federal or State debarment from contracts.

END OF SECTION

SECTION 00 31 00

INFORMATION AVAILABLE TO BIDDERS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General Conditions, Supplementary Conditions and Divisions 00 and 01 Specification Sections, apply to work of this section.

1.02 REPORTS

A. The following reports are included in Appendix B for the Courthouse:

1. Asbestos Testing, Courthouse, Mount Vernon, WA, dated December 2, 1992, prepared by Prezant Associates, Inc.; 4 pages total.

2. TEM Results, Courthouse, Mount Vernon, WA, dated December 11, 1992, prepared by Lab/Cor, Inc.; 5 pages total.

3. Crawlspace Chipping Operations, Courthouse, Mount Vernon, WA, dated November 8, 1996, prepared by Certified Industrial Hygiene Services, Inc.; 7 pages total.

4. Crawlspace Asbestos Abatement, Courthouse, Mount Vernon, WA, dated November 25, 1996, prepared by Certified Industrial Hygiene Services, Inc.; 2 pages total.

5. Limited Asbestos Survey, Courthouse, Mount Vernon, WA, dated November 10, 1999, prepared by Phillips Environmental Services; 5 pages total.

6. Asbestos Sampling, Courthouse, Mount Vernon, WA, dated July 19, 2000, prepared by Phillips Environmental Services; 4 pages total.

7. Asbestos Sampling, Courthouse, Mount Vernon, WA, dated January 22, 2001, prepared by Phillips Environmental Services; 5 pages total.

8. Limited Asbestos Survey, Courthouse, Mount Vernon, WA, dated November 24, 2003, prepared by Phillips Environmental Services; 2 pages total.

9. Limited Asbestos & Lead Paint Survey, Courthouse, Mount Vernon, WA, dated March 13, 2009, prepared by Phillips Environmental Services; 6 pages total.

10. Limited Hazardous Materials Survey, Courthouse, Mount Vernon, WA, dated June 8, 2018, prepared by PBS Engineering & Environmental;

16 pages total.

11. PLM Asbestos Identification, Courthouse - Courtroom 2, Mount Vernon, WA, dated February 19, 2021, prepared by Kapak Inc.; 3 pages total.

B. The following reports are included in Appendix C for the Administration Building:

1. Asbestos Testing, Administration Building, Mount Vernon, WA, dated December 21, 2010, prepared by Phillips Environmental Services; 2 pages total.

2. Hazardous Materials Investigation Summary, Administration Building, Mount Vernon, WA, dated October 18, 2016, prepared by PBS Engineering and Environmental, Inc.; 17 pages total.

3. Limited Hazardous Materials Survey, Administration Building, Mount Vernon, WA, dated August 24, 2017, prepared by PBS Engineering & Environmental, Inc.; 14 pages total.

1.03 PURPOSE

A. Reports are for information and reference purposes only and do not contain Contract Work.

PART 2 - PRODUCTS – NOT USED

PART 3 - EXECUTION – NOT USED

END OF SECTION

SECTION 00 41 00

BID FORM

Bidder's Firm Name: _____ Date: _____

Address: _____

_____

Telephone No.: _____

TO: Skagit County
Board of Commissioners
1800 Continental Place, Suite 100
Mount Vernon, WA 98273

Gentlemen and Ladies:

The undersigned having carefully examined the Bid Documents entitled "Skagit County Fire Alarm Replacements", dated May 01, 2023, and having visited the site and examined the conditions affecting the Work, hereby submits the following proposal:

The Undersigned proposes to furnish all labor, materials, services, and incidentals to perform all work necessary for the completion of the Work described in the Call for Bids and associated specifications for the following Stipulated Sum for each bid item:

BASE BID:

The Bidder further proposes to accept as full payment for the work proposed herein the amounts computed under the provisions of the contract documents and based upon the bid price for fully completed work as included in the proposal and the Lump Sum Bid Price represents a true measure of the labor and materials required to perform the work, including all allowances for overhead and profit for each type of work called for in these contract documents.

The following prices shall include all materials, labor, tools, and equipment without sales tax where shown. The bidders shall include the cost of the mobilization and general conditions within each separate bid item. The amounts shall be shown in both words and figures. In case of discrepancy, the amount shown in words shall govern.

Bid Item: Skagit County Fire Alarm Replacements Base Bid

Courthouse	$_____
Administration Building	$_____
Total	**$**_____

_____DOLLARS
(Please print dollar amount in words in space above for base bid not including sales tax.)

SALES TAX

The Undersigned certifies that the above-named construction costs do not include Washington State and Local Sales Taxes applicable to Skagit County as applied to materials and labor which will become a permanent part of the Work. All other Sales and Use Taxes properly levied by the State of Washington and Local Agencies on labor, materials, and equipment utilized on a temporary basis shall be included in the proposed amounts.

CONTRACT PROVISIONS

If the Undersigned is notified of the acceptance of this proposal within 45 days from the date set for the opening thereof, or at any time thereafter before this proposal is withdrawn, the undersigned agrees to execute a contract for the above Work for the above-named compensation in the required Form of Agreement containing the following provisions and to furnish the required bonds.

1. Time of Completion: The Undersigned agrees if awarded the Contract, to mobilize on site within 60 consecutive days of contract execution, be Substantially Complete within 180 consecutive calendar days after the contract execution and reach Final Completion of the Work within 60 consecutive calendar days thereafter.

2. Liquidated Damages: The Undersigned agrees that time is of the essence of this Contract and acknowledges that the amounts of damages specified are a measure of the damages which the Owner will sustain should the Undersigned fail to complete the Work within the Contract Time. Liquidated damages shall be Five Hundred Dollars ($500.00) per calendar day for failure to substantially complete the work within the time specified and ($500.00) per day thereafter for each consecutive calendar day that final completion is delayed.

BID GUARANTEE

The Undersigned agrees that the check or bid bond accompanying this proposal which amount is not less than 5 percent of the bid proposed, is left in escrow with the Owner, that the amount of the check, or penal sum of the bond, is the measure of damages which the Owner will sustain by failure of the Undersigned to execute said Contract and furnish required bonds, and that if the Undersigned fails to deliver said documents within 10 days after receipt of notice of award to him, the check shall become the property of the Owner and the bond shall remain in full effect. But if this proposal is not accepted within 45 days after the time set for the opening of bids, then the check shall be returned, and the bond shall become void.

NON-COLLUSION CERTIFICATE

The Undersigned, being duly sworn, deposes and says that the person, firm, associated, co-partnership or corporation herein named, has not, either directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken any action in restraint of free competitive bidding in the preparation and submission of this proposal to the Skagit County Board of County Commissioners for consideration in the award of the contract.

ADDENDA

Receipt of Addenda numbered ___ ___ ___ is hereby acknowledged.

PREVAILING WAGES

The bidder hereby certifies that, within the three-year period immediately preceding the bid solicitation date (May 1, 2023), the bidder is not a "willful" violator, as defined in RCW 49.48.082, of any provision of chapters 49.46, 49.48, or 49.52 RCW, as determined by a final and binding citation and notice of assessment issued by the Department of Labor and Industries or through a civil judgment entered by a court of limited or general jurisdiction.

I certify under penalty of perjury under the laws of the State of Washington that the foregoing is true and correct.

_____
Bidder's Business Name

_____
Signature of Authorized Official*

_____
Printed Name

_____
Title

_____ _____ _____
Date City State

Check One:

Sole Proprietorship ☐ Partnership ☐ Joint Venture ☐ Corporation ☐

State of Incorporation, or if not a corporation, State where business entity was formed:

_____

If a co-partnership, give firm name under which business is transacted:

_____

** If a corporation, proposal must be executed in the corporate name by the president or vice-president (or any other corporate officer accompanied by evidence of authority to sign). If a co-partnership, proposal must be executed by a partner.*

Subscribed and sworn to before me this_____day of_____, 2023

_____
Notary Public in and for the State of Washington, residing in Washington.

END OF SECTION

SECTION 00 43 00

BID SECURITY FORM

PART 1 - GENERAL

A. The "Bid Bond", AIA Document A310, 2010 Edition, is a part of these Contract Documents and is incorporated as fully as if bound herein.

B. The Bid Bond Form may be obtained from the Architect's office, or from the American Institute of Architects, 1735 New York Avenue NW, Washington D.C. 20006 as follows:

1. https://aiacontracts.com

C. Contractor may use their standard bid security form as acceptable substitution.

PART 2 - PRODUCTS – NOT USED

PART 3 - EXECUTION – NOT USED

END OF SECTION

SECTION 00 43 36

PROPOSED SUBCONTRACTOR FORM

Bidder's Name: _____ Date: _____

Project Name: _____

Named subcontractors must have a reputation of competency in their respective fields of work. Contractor assumes responsibility for quality of work performed by their selected subcontractors. If a category of work will not be subcontracted bidder must list themselves. Subcontractor listings shall be due no later than (1) one hour after bid opening.

Designated Work	**Firm Name**
1. Fire Sprinkler:	_____
2. HVAC:	_____
3. Electrical:	_____
4. Other:	

_____ _____
Bidder's Signature Date

END OF SECTION

SECTION 00 43 93

BID SUBMITTAL CHECKLIST

The bidder's attention is called to this list of submittals, which is provided for the convenience of the bidders. This checklist and does not include full details for submittals or bidder responsibilities that can be found in other sections of this project manual.

A. BID FORM: The bid prices must be shown in the spaces provided, and any addenda must be acknowledged on the Bid Form where space is provided. Filled in its entirety, signed by the bidder, and submitted at time of bid submission.

B. BID SECURITY FORM: This form is to be executed by the bidder and the surety company unless bid is accompanied by a certified check. The amount of this bond shall not be less than five percent (5%) of the total amount of the bid and may be shown in dollars or on a percentage basis. To be submitted with bid proposal.

C. BIDDERS' QUALIFICATIONS: To be filled out in its entirety and submitted with the bid form at time of bid submission.

D. BIDDERS' RESPONSIBILITY CRITERIA **SUBMIT WITH BID**: **There are numerous forms and information contained within this section. Special attention is called to the Bidder to fill out, sign and provide all forms and information requested at the time of bid submission.**

1. Documentation confirming Contractor has been in business at least 5 years in WA
2. Certification Regarding Debarment Suspension or Ineligibility
3. Supplemental Bidder Responsibility (notarized)
4. Copy of standard subcontract form for Owner review
5. A list of prevailing wage complaints filed against Contractor within 5 years
6. List of any willful and/or serious safety violations
7. Details on at least one project of similar size and scope completed within 5 years

<u>Submitted no later than 10 days after bid opening by two lowest bidders</u>:

1. Public Works Projects completed within 3 years with specified details
    a. At least 3 projects for a Federal, State, or local governmental agency

E. SUBCONTRACTOR LISTING: Submit all subcontractors, and work categories listed on form attached, **within (1) one hour after specified time of bid opening.** Names of subcontractors performing structural steel installation and rebar installation may be submitted within 48 hours after bid opening.

The following forms are to be executed after the contract is awarded:

A. CONTRACT: This agreement to be signed by the successful bidder.

B. PERFORMANCE BOND: One hundred percent of the Contract Price to be executed by the successful bidder and their surety company. The surety on such bonds shall be a duly authorized surety company satisfactory of the Owner.

C. PAYMENT (LABOR MATERIALS AND TAXES) BOND: One hundred percent of the Contract Price to be executed by the successful bidder and their surety company. The surety on such bonds shall be a duly authorized surety company satisfactory of the Owner.

D. RETAINAGE INVESTMENT OPTION: This agreement to be executed by the successful bidder.

E. CONTRACTOR'S CERTIFICATION: Concerning Labor Standards and Prevailing Wage Requirements. Submit Statement of Intent to Pay Prevailing Wages. (Form F 700-029-000, available at Offices of Washington State Department of Labor and Industries).

END OF SECTION

SECTION 00 45 00

BIDDER'S QUALIFICATIONS

Each bidder submitting a proposal for this Project shall submit, as part of its bid, the following information:

1. Name of Bidder: _____

2. Business Address: _____

   _____

   _____

3. Telephone Number and Area Code: _____

4. IRS Federal Employer's Identification Number: _____

5. Current State Unified Business Identification Number: _____

6. Number of years engaged in the contraction business under the present firm name: _____

7. Total value of contracts in force: _____

8. General description of work for which Bidder is qualified: _____

   _____

   _____

   _____

9. Recent significant project completed by Bidder including owner's name, approximate cost, and completion date:

   1. _____

   2. _____

   3. _____

   4. _____

10. Major equipment owned by the Bidder:

    1. _____

    2. _____

    3. _____

    4. _____

11. Bank Reference: _____

    _____

    _____

12. Washington State Contractor Registration Number: _____

13. Bonding Reference: _____

    _____

    _____

14. Bonding Capacity: _____

Bidder:

By: _____ Title: _____ Date: _____

END OF SECTION

SECTION 00 45 49

BIDDER RESPONSIBILITY CRITERIA

Low Responsible Bidder

It is the intent of the Owner to award a contract to the low responsible bidder. In determining the bidder's responsibility, the Owner shall consider an overall accounting of the items listed below. The bidder must submit the following information, demonstrating that they meet the listed criteria:

1-02 Bid Procedures and Conditions

1-02.1 Qualifications of Bidder

A. Bidders must meet the minimum qualifications of RCW 39.04.350, as amended:

"Before award of a public works contract, a bidder must meet the following responsibility criteria to be considered a responsible bidder and qualified to be awarded a public works project. The bidder must:

(a) At the time of bid submittal, have a certificate of registration in compliance with chapter 18.27 RCW.

(b) Have a current State unified business identifier number.

(c) If applicable, have industrial insurance coverage for the bidder's employees working in Washington as required in Title 51 RCW; an employment security department number as required in Title 50 RCW; and a State excise tax registration number as required in Title 82 RCW; and

(d) Not be disqualified from bidding on any public works contract under RCW 39.06.010 or 39.12.065(3).

(e) If bidding on a public works project subject to the apprenticeship utilization requirements in RCW 39.04.320, not have been found out of compliance by the Washington state apprenticeship and training council for working apprentices out of ratio, without appropriate supervision, or outside their approved work processes as outlined in their standards of apprenticeship under chapter 49.04 RCW for the one-year period immediately preceding the date of the bid solicitation; and

(f) Until December 31, 2019, not have violated RCW 39.04.370 more than one time as determined by the department of labor and industries.

B. In addition to the bidder responsibility criteria above, the bidder must also meet the following relevant supplemental bidder responsibility criteria applicable to the project:

a. The Bidder shall not currently be debarred or suspended by the Federal government. The Bidder shall not be listed as a current debarred or suspended bidder on the U.S. General Services Administration's "Excluded Parties List

System" website. Bidder debarment or suspension status may be verified through this website: http://www.epls.gov/. The Owner may also use other sources of information that may be available to otherwise determine whether the Bidder is in compliance with these criteria.

b. The Bidder shall not owe delinquent taxes to the Washington State Department of Revenue, without a payment plan approved by the Washington State Department of Revenue. The Bidder shall not be listed on the Washington State Department of Revenue's "Delinquent Taxpayer List", which may be verified at the following website: http://dor.wa.gov/content/fileandpataxes/latefiling/dtlwest.aspx. The Owner may also use other sources of information that may be available to otherwise determine whether the Bidder is in compliance with this supplemental criteria.

c. The Bidder shall not have been convicted of a crime involving bidding on a public works contract within five (5) years prior to the bid submittal deadline. The Bidder shall provide a duly executed sworn statement (on the included form, or on a form otherwise determined to be acceptable by the Owner), that the Bidder has not been convicted of a crime involving bidding on a public works contract. The Owner may also use independent sources of information that may be available to otherwise determine whether the Bidder is in compliance with these supplemental criteria.

d. The Bidder's standard subcontract form shall include the subcontractor responsibility language required by RCW 39.06.020, and the Bidder shall have an established written procedure which the Bidder uses to validate the responsibility of each of its subcontractors. The Bidder's subcontract form shall also include a requirement that each of its subcontractors shall have and document a similar procedure to determine whether the sub-tier subcontractors with whom it contracts are also "responsible" contractors as defined per RCW 39.06.020. The Bidder shall submit a copy of its standard subcontract form for review by the Owner, a written description of the Bidder's procedure for validating the responsibility of the subcontractors with which the Bidder contracts, and a duly executed sworn statement (on the included form, or in a form otherwise determined to be acceptable by the Owner) that the Bidder has properly decided of responsibility for all subcontractors for the project. The Owner may also use independent sources of information that may be available to otherwise determine whether the Bidder is in compliance with these supplemental criteria.

e. The Bidder shall not have a record of prevailing wage complaints filed against the Bidder within five (5) years prior to the bid submittal date that demonstrates a pattern of failing to pay workers prevailing wages, unless there are extenuating circumstances that are acceptable to the Owner. The Bidder shall submit a list of prevailing wage complaints filed against it within five (5) years of the bid submittal date along with a written explanation of each complaint, and how it was resolved. The Owner shall evaluate the explanations provided by the Bidder (and the resolution of each complaint) to determine whether the complaints demonstrate a

pattern of the Bidder failing to pay its workers prevailing wages as required. The Owner may also evaluate complaints filed within the time period specified that were not reported by the Bidder. The Owner may also use independent sources of information that may be available to otherwise determine whether the Bidder is in compliance with these supplemental criteria.

f. The Bidder shall not have had any public works contract terminated for cause by a government agency during the five (5) year period immediately preceding the bid submittal deadline for the project unless there are extenuating circumstances acceptable to the Owner. The Bidder shall provide a duly executed sworn statement (on the included form, or in a form otherwise determined to be acceptable by the Owner), that the Bidder has not had any public works contract terminated for cause by a government agency during the five (5) year period immediately preceding the bid submittal deadline for the project. The Owner may also use independent sources of information that may be available to otherwise determine whether the Bidder is in compliance with these supplemental criteria.

g. The Bidder shall not have a record of excessive claims filed against the retainage or payment bonds for public works projects within three (3) years of the bid submittal date, that demonstrate a lack of effective management by the Bidder of making timely and appropriate payments to its subcontractors, suppliers, and workers, unless there are extenuating circumstances which are acceptable to the Owner. The Bidder shall submit a list of all public works projects that the Bidder has completed within the previous three (3) years prior to the bid submittal date, and include for each project the following information:

    i. The owner for each public works project, and contact information for each owner.

    ii. A list of claims filed against the retainage and/or payment bond(s) for each of the public works project.

    iii. A written explanation of the circumstances surrounding each claim against the retainage and/or payment bond(s), and an explanation as to the ultimate resolution of each claim.

    The Owner may contact other previous owners to validate the information provided by the Bidder. The Owner may also use independent sources of information that may be available to otherwise determine whether the Bidder is in compliance with these supplemental criteria.

h. Within five (5) years prior to the bid submittal date the Bidder must have completed a minimum of at least three (3) other projects for a Federal, State, or local governmental agency. The Bidder shall provide the following information pertaining to these three (3) projects:

    i. The contact information for the Federal, State, or local contracting agency for whom the project was completed.

ii. Description of the project;

iii. Start and completion dates for the project;

iv. Awarded contract amount;

v. Final contract amount;

vi. Other additional information or documentation pertaining to the projects as may be requested by the Owner.

The Owner may contact other previous owners to validate the information provided by the Bidder. The Owner may also use independent sources of information that may be available to otherwise determine whether the Bidder is in compliance with this supplemental criteria.

i. **The Bidder shall have been duly incorporated and actively doing business in the State of Washington for a minimum of at least five (5) years prior to the bid submittal date. The Bidder shall provide the Owner with a adequate documentation confirming that the Bidder has been duly incorporated and actively doing business in the State of Washington for a minimum of at least five (5) years prior to the bid submittal date, including, but not necessarily limited to, documentation from the Washington State Secretary of State's Office.** Such documentation shall include, but is not necessarily limited to, a copy of the Bidder's Certificate of Existence / Authorization, a copy of the Bidder's Certificate of Incorporation / Formation / Authority, a certified copy of the Bidder's Original Registration Document (i.e., Articles of Incorporation, Certificate of Authority, Certificate of Formation, or Foreign Limited Liability Registration), and any other supporting information or documentation as may otherwise be requested by the Owner (including, but not necessarily limited to, copies of the Bidder's business licenses and contractor's licenses for the previous five [5] years prior to the bid submittal date). The Owner may also use other sources of information that may be available to otherwise determine whether the Bidder is in compliance with this supplemental criteria.

j. Within two (2) years prior to the bid submittal date the Bidder shall not have received any willful safety violations, and the Bidder shall not have received more than two (2) serious safety violations (i.e., WISHA / OSHA written citations) from the Washington State Department Labor & Industries or analogous agency with jurisdiction in the location the work was performed, regardless of whether such willful and/or serious safety violations have been abated or not. The Bidder shall provide Owner with a list of any and all willful and/or serious safety violations (i.e., WISHA / OSHA written citations) from the Washington State Department Labor & Industries (or analogous agency with jurisdiction in the location the work was performed), regardless of whether such willful and/or serious safety violations have been abated or not. The Owner may verify such information provided with the Washington State Department Labor & Industries or analogous agency with jurisdiction in the location the work was performed. The Owner may also use other sources of information

that may be available to otherwise determine whether the Bidder is in compliance with this supplemental criteria.

k. Within five (5) years prior to the bid submittal date the Bidder shall have successfully completed at least one (1) other project of a similar size and scope as required by the contract documents for this project. The project must have had a total construction cost of at least $100,000. In evaluating whether the other project(s) was/were "successfully completed," the Owner may verify previous owner references for the previous project(s), and may evaluate the previous owner's assessment of the Bidder performance, including but not limited to the following areas:

   i. Quality control;

   ii. Safety record;

   iii. Timeliness of performance;

   iv. Use of skilled personnel;

   v. Management of subcontractors;

   vi. Availability of and use of appropriate equipment;

   vii. Compliance with contract documents;

   viii. Management of submittals process, change orders, and close-out.

   ix. Construction within occupied area.

   For the purposes of meeting this criterion, the Owner has determined that "similar size and scope" to this project means project(s) that have the following characteristics: (i) The awarded project(s) contract amount must have been of not less than $100,000; (ii) The project(s) must have included the renovation in excess of 3,000 square feet; and (iii) The project(s) must have included construction of within the occupied business spaces. The Bidder shall submit a list of other project(s) of similar size and scope to this project or larger, including information on a minimum of at least one (1) project of similar size and scope to this project or larger completed within five (5) years prior to the bid submittal date. The information about each project shall include the following:

      1. Owner's name and contact information for the owner's representative;

      2. Awarded contract amount;

      3. Final contract amount;

      4. A description of the scope of the project and how the project

is similar to this project;

5. The Bidder's assessment of its performance of each project, including but not limited to the following:

    a. Quality control;

    b. Safety record;

    c. Timeliness of performance;

    d. Use of skilled personnel;

    e. Management of subcontractors;

    f. Availability of and use of appropriate equipment;

    g. Compliance with contract documents;

    h. Management of submittals process and change orders.

    i. Construction within occupied areas.

C. All Bidders must supply and provide the forgoing described bidder responsibility information, documentation, and materials to the satisfaction of the Owner. If a Bidder fails to supply the required bidder responsibility documentation, information, or materials, then Bidder may be determined by the Owner to be non-responsive, and the bid may be rejected on this basis. If the Owner determines the bidder does not meet the bidder responsibility criteria above and is therefore not a responsible bidder, the Owner shall notify the bidder in writing with the reasons for its determination. If the bidder disagrees with this determination, it may appeal the determination within twenty-four (24) hours of receipt of the Owner's determination by presenting additional written information to the Owner. The Owner will consider the additional information before issuing its final determination. If the Owner's final determination affirms that the bidder is not responsible, the Owner will not execute a contract with any other bidder until two (2) business days after the bidder determined to be not responsible has received the final determination. Please note that the above-described information, materials, and documentation requested by the Owner for purposes of determining Bidder responsibility is not necessarily exclusive, and the Owner expressly reserves the right to request additional information, materials, and documentation as may be determined to be necessary or desirable by the Owner in order to evaluate and determine Bidder's compliance with the above-described bidder responsibility criteria. At all times, the Owner may also use other sources of information that may be available to otherwise determine whether the Bidder is in compliance with the forgoing bidder responsibility criteria.

D. Certification Regarding Debarment Suspension or Ineligibility:

The Contractor certifies by signing this Agreement that Contractor is not presently debarred, suspended, proposed for debarment, declared ineligible or voluntarily excluded from participating in this contract by any federal department or agency. Further, Contractor agrees not to enter into any arrangements or contracts related to this contract with any party that is on the "General Service Administration List of Parties Excluded from Federal Procurement or Non-procurement Programs" at http://epls.arnet.gov/.

CONTRACTOR:

_____

Authorizing Signature

_____

Date

Federal Tax ID#: _____

Contractor Lic.#: _____

This form is to be submitted by the bidder with his bid.

SUPPLEMENTAL BIDDER RESPONSIBILITY - DECLARATION OF BIDDER

In accordance with the Contract Provisions and Plans the Bidder must provide the following sworn statement relevant to the supplemental bidder responsibility applicable to the project.

Name of Bidder: _____

Address: _____

Telephone No.: _____

E-Mail: _____

I, _____, the undersigned declarant, as the duly authorized representative on behalf of _____ (herein the "Bidder") hereby make this declaration on the basis of facts within the scope of my firsthand knowledge and authority to which I am competent to testify:

1. I hereby certify, swear, and affirm under penalty of perjury, that the Bidder has not been convicted of a crime involving bidding on a public works contract within the five (5) year period immediately preceding the bid submittal deadline for the project; and

2. I hereby certify, swear and affirm under penalty of perjury, that as of the date of this declaration (below), that the Bidder has hereby made a proper determination of bidder responsibility for all subcontractors for the project in accordance with the terms of RCW 39.06, RCW 39.04.350, and in accordance with the terms of the Bidder's written procedure for validating the responsibility of all subcontractors for the project with which the Bidder contracts; and

3. I hereby certify, swear and affirm under penalty of perjury, that the Bidder, has not had any public works contract terminated for cause by any State, Federal, or local government agency during the five (5) year period immediately preceding the bid submittal deadline for the project.

This form is to be submitted by the bidder with his bid.

Signed under penalty of perjury under the laws of the State of Washington this _____ day of _____, 2023, at _____, Washington.

Name of Bidder: _____

By: _____

Print Name: _____

Title: _____

STATE OF WASHINGTON

ss.

COUNTY OF _____

I certify that I know or have satisfactory evidence that _____ is the person who appeared before me, and said person acknowledged that he/she signed this instrument, on oath stated that he/she was duly authorized execute the instrument and acknowledged it as the _____ of _____, to be the free and voluntary act of such party for the uses and purposes herein mentioned.

DATED this _____ day of _____, 2023.

(SEAL)

_____
Notary Public
print name: _____
Residing at _____
My commission expires _____

END OF SECTION

This form is to be submitted by the bidder with his bid.

Summary of Required Submittals with Bid

1-02.1, B., d.

….."The Bidder shall **submit a copy of its standard subcontract form for review by the Owner, a written description of the Bidder's procedure for validating the responsibility of the subcontractors with which the Bidder contracts**, and a duly executed sworn statement (on the included form, or in a form otherwise determined to be acceptable by the Owner) that the Bidder has properly made a determination of responsibility for all subcontractors for the project…."

The information above is to be submitted by the bidder with his bid.

1-02.1, B., e.

"…..The Bidder shall submit a list of prevailing wage complaints filed against it within five (5) years of the bid submittal date along with a written explanation of each complaint, and how it was resolved…."

The information above is to be submitted by the bidder with his bid if applicable. If no complaints have been filed against the bidder, so state on paper, reference this section and submit with bid.

1-02.1, B., g.

"…..The Bidder shall submit a list of all public works projects that the Bidder has completed within the previous three (3) years prior to the bid submittal date, and include for each project the following information:

i. The owner for each public works project, and contact information for each owner.

ii. A list of claims filed against the retainage and/or payment bond(s) for each of the public works project.

iii. A written explanation of the circumstances surrounding each claim against the retainage and/or payment bond(s), and an explanation as to the ultimate resolution of each claim…"

The information above is to be submitted by the bidder with his bid.

1-02.1, B., h.

"….Within five (5) years prior to the bid submittal date the Bidder must have completed a minimum of at least three (3) other projects for a Federal, State, or local governmental agency. The Bidder shall provide the following information pertaining to these three (3) projects:

iv. The contact information for the Federal, State, or local contracting agency for whom the project was completed;

v. Description of the project;
vi. Start and completion dates for the project;
vii. Awarded contract amount;
viii. Final contract amount;
ix. Other additional information or documentation pertaining to the projects as may be requested by the Owner…."

The information above is to be submitted by the bidder with his bid.

1-02.1, B., i.

"…..The Bidder shall provide the Owner with adequate documentation confirming that the Bidder has been duly incorporated and actively doing business in the State of Washington for a minimum of at least five (5) years prior to the bid submittal date, including, but not necessarily limited to, documentation from the Washington State Secretary of State's Office. Such documentation shall include, but is not necessarily limited to, a copy of the Bidder's Certificate of Existence / Authorization, a copy of the Bidder's Certificate of Incorporation / Formation / Authority, a certified copy of the Bidder's Original Registration Document (i.e., Articles of Incorporation, Certificate of Authority, Certificate of Formation, or Foreign Limited Liability Registration), and any other supporting information or documentation as may otherwise be requested by the Owner (including, but not necessarily limited to, copies of the Bidder's business licenses and contractor's licenses for the previous five [5] years prior to the bid submittal date)…"

The information above is to be submitted after the bid opening by the (2) two low bidders within 10 days of the bid opening.

1-02.1, B., j.

"…..The Bidder shall provide Owner with a list of any and all willful and/or serious safety violations (i.e., WISHA / OSHA written citations) from the Washington State Department Labor & Industries (or analogous agency with jurisdiction in the location the work was performed), regardless of whether such willful and/or serious safety violations have been abated or not…"

The information above is to be submitted by the bidder with his bid if applicable. If no safety violations have been filed against the bidder, so state on paper, reference this section and submit with bid.

1-02.1, B., k.

"….The Bidder shall submit a list of other project(s) of similar size and scope to this project, including information on a minimum of at least one (1) project of similar size and scope to this project completed within five (5) years prior to the bid submittal date. The information about each project shall include the following:

1. Owner's name and contact information for the owner's representative;
2. Awarded contract amount;
3. Final contract amount;

4. A description of the scope of the project and how the project is similar to this project;
5. The Bidder's assessment of its performance of each project, including but not limited to the following:
    a. Quality control;
    b. Safety record;
    c. Timeliness of performance;
    d. Use of skilled personnel;
    e. Management of subcontractors;
    f. Availability of and use of appropriate equipment;
    g. Compliance with contract documents; Management of submittals process and change orders…."

1-02.1, D.

A. Certification Regarding Debarment Suspension or Ineligibility:

The information above is to be submitted by the bidder with his bid.

SECTION 00 52 00

AGREEMENT FORM

PART 1 - GENERAL

A. The Skagit County Vendor Services Agreement

B. Document sample provided for informational purposes only in Appendix A of this project manual.

PART 2 - PRODUCTS – NOT USED

PART 3 - EXECUTION – NOT USED

END OF SECTION

SECTION 00 61 00

BONDS AND CERTIFICATES

The bond and insurance requirements set forth on the following pages are required of the successful bidder.

1.01 **GENERAL:** In addition to the Bid Guarantee required in the advertisement, Skagit County requires the Contractor to furnish the following bonds and insurance. The inception date of the insurance coverage shall be the date the Contractor is ordered by Skagit County to proceed with the work and shall be maintained during the life of the Contract and for not less than one year thereafter.

1.02 **EVIDENCE OF COMPLIANCE:**

A. Performance, Labor and material Payment Bonds: Submitted at time of execution of the Contract and attached thereto.

B. Insurance: A Certificate of Insurance shall be filed with "Skagit County." This Certificate shall be reflective of all Insurance Coverage required by the County's contract documents. Any Certificate filed with the County found to be incomplete or not according to Form, will be returned as not satisfactory. Rejected Certificates shall be corrected as necessary and resubmitted to the county for approval. Certificates of Insurance shall indicate the following to be Additional Named Insureds:

In addition to the foregoing, the Certificate of Insurance must include a Cancellation Notification of not less than thirty (30) days. The Certificate should also contain the Contract Number and a "concise verbal definition" of the Contract to which the Certificate applies.

1.03 **INSURANCE GENERALLY:** The Contractor shall not commence work under this contract until he has obtained the insurance required hereunder and such insurance has been approved by the County. In like manner, the General Contractor shall not allow any subcontractor to commence work on any subcontract until the subcontractor has submitted to the General Contractor a Certificate of Insurance reflective of the coverage required by Skagit County. Skagit County's approval of insurance shall not relieve or decrease the Contractor's liability hereunder. Each policy shall contain an endorsement stating that the insurance company will not, prior to the completion of the Work or any expiration date shown on the policy and certificate, whichever occurs first, terminate the policy or change any coverage therein without first mailing, by registered mail, written notice of such action at least 30 days prior to the termination or change, to Skagit County.

1.04 **CONTRACTOR'S LIABILITY INSURANCE**: The insurance required, by Skagit County, is as specified below and in the amounts indicated:

A. Worker's Compensation and Employer's Liability Insurance: All employees of the Contractor and subcontractors shall be insured under Washington State Industrial Insurance. Employees not subject to the State Act shall be insured under Employer's

Liability with a $2,000,000.00 limit of liability. A separate Certificate of Insurance shall be furnished to Skagit County of any of the Contractor's payroll is not reported to the Washington State Industrial Insurance. The contractor shall be responsible for confirming compliance of all subcontractors with the above requirements.

B. Comprehensive General Liability and Comprehensive Automobile Liability Insurance: The Contractor shall obtain and retain Bodily Injury and Property Damage Liability Insurance providing the following:

1. Additional Insured: Skagit County, its employees, and Interface Engineering. shall be named as additional insured for liability arising out of the work of this Contract as a result of the negligence, real or alleged, on the part of the contractor and his subcontractors.

2. Limits of Liability: Limits shall equal or exceed the combination or primary and excess limits for bodily injury and property damage liability of $2,000,000.00 annual aggregate.

3. Coverage: Coverage shall be as is usual to the practice of the Insurance Industry; included but not limited to the following coverages:

   a. Premises and Operations including Explosion, Collapse and Underground Liability;

   b. Products and completed Operations;

   c. Owners and Contractors Protective Liability;

   d. Broad form Property Damage Liability;

   e. Blanket Contractual Liability;

   f. Personal Injury Liability, including coverage's A, B, and C;

   g. Employers "Stop-Gap" Liability;

   h. Automobile Liability for All Owned, Non-Owned, Hired Leased or Borrowed Vehicles:

   i. Un-insured and Under-insured Motorist Coverage should also be in effect.

4. Products and Completed Operations Insurance: This coverage must be maintained for a period of not less than two years after the final acceptance of the work performed.

1.05 **PROPERTY INSURANCE:** Unless otherwise provided, the Contractor shall purchase and maintain property insurance upon the entire Work at the site to 115 percent of the full value thereof. This insurance shall include the interests of Skagit County, the Contractor and all subcontractors in the Work being performed. The coverage should be written on a "Builder's Risk" basis. All materials which are to be made part of the

construction project are to be so insured while being stored at or off the job site(s) and / or while being transported to and from the job site(s). Insurance against loss of tools, equipment, construction, or otherwise not to be incorporated into the Work is the responsibility of the Contractor and the cost of such insurance shall not be included in the cost of insurance required herein before.

A. Endorsements: The policy shall be specifically endorsed as follows:

1. Payments: It is agreed that loss payments under the policy shall be made payable to Skagit County as trustee for each of the interests named in the policy.

B. Waiver: Skagit County and the contractor waive all rights against (1) each other and the subcontractors, sub-subcontractors, agents and employees each of the other, and (2) the Owner for damages caused by fire or other perils to the extent covered by insurance obtained pursuant to this Article or any other property insurance applicable to the Work, except such rights as they may have to the proceeds of such insurance held by Skagit County, as trustee.

1.06 BONDS

A. Performance and Payment Bonds: Furnish surety bond in the form of AIA Document A312 in an amount equal to 100 percent of the Contract Sum covering faithful performance of the work and payment of labor and materials. Furnish bonds issued by a bonding company licensed to transact business in the locality of the Work and approved by the Owner.

END OF SECTION

SECTION 00 61 13

PERFORMANCE BOND AND PAYMENT BOND

PART 1 - GENERAL

A. The "Performance Bond and Payment Bond", AIA Document A312, 2010 Edition, is a part of these Contract Documents and is incorporated as fully as if bound herein.

B. The Performance Bond and Payment Bond Form may be obtained from the Architect's office, or from the American Institute of Architects, 1735 New York Avenue NW, Washington D.C. 20006; Seattle Chapter, American Institute of Architects, 1911 First Avenue, Seattle, WA 98101; and Northwest Washington Chapter, American Institute of Architects as follows:

1. https://aiacontracts.org

C. Contractor may use their standard bid security form as acceptable substitution.

PART 2 - PRODUCTS – NOT USED

PART 3 - EXECUTION – NOT USED

END OF SECTION

SECTION 00 62 00

CERTIFICATES OF INSURANCE

Certificates of Insurance Requirements:

1. Certificate shall be issued on an ACORD Form, or a form that meets with Skagit County's approval.

2. The Insuring Company shall have a Best Rating of A+ or meet with Skagit County's approval.

3. The minimum acceptable General Liability Limit shall be $2,000,000 Aggregate / $2,000,000 Occurrence. Coverage shall include owners & Contractors Protective Liability and Employers Liability (Stop-Gap) Coverage.

   Coverage shall be written on an "Occurrence" Basis or meet with Skagit County's approval.

4. Automobile Coverage shall include "Any Auto" or "Scheduled Autos" and shall include Hired and Non-Owned Auto Liability.

   The minimum acceptable Automobile Liability Limit shall be $2,000,000.

5. Skagit County, it's Commissioners and Employees, and Interface Engineering., shall be added as Additional Insureds on the Certificate, and a separate endorsement shall be issued by the Company adding Skagit County, it's Commissioners and Employees, and Interface Engineering as Additional Insured to the General Liability and Automobile Policy and the Umbrellas Excess Policy, where required to meet minimum limits outlined in #3 and #4 above.

6. The "Cancellation" Block shall be altered to include the wording "Should any of the above described policies be canceled or materially reduced before expiration date thereof, the issuing company will mail 30 days written notice to the certificate holder named to the left."

If there are any questions regarding these requirements please contact Skagit County's Risk Manager, Mary Houben, 360-416-1384.

END OF SECTION

SECTION 00 62 91

RETAINAGE INVESTMENT OPTION

Contractor: _____ Project Name: _____

Date: _____ Project Number: _____

Pursuant to RCW 60.28.010, as amended, you may exercise an option as to how retainage under this contract will be invested. Please complete and sign this form indicating your preference; if you fail to do so, the Owner will deposit funds in a Guarantee Deposit account, and you will miss the benefit of any interest earned. Select one of the following options:

[ ] 1. Savings Account: Money will be placed in an interest-bearing account. The interest will be paid to you directly, rather than kept on deposit. If you prefer a particular bank, state its name:

[ ] 2. Escrow / Investments: The Owner will deliver retainage checks to a selected bank, pursuant to an escrow agreement. The bank will then invest the funds in securities or bonds selected by you, and interest will be paid to you as it accrues.

Preferred Bank: _____

Securities / Bonds: _____

[ ] 3. Guarantee Deposit: Retainage will be deposited in a manner selected by the Owner. No interest is payable to the Contractor.

Retainage is normally released 30 days after final acceptance of the work, or following receipt of Labor and Industries/Department of Revenue clearance, whichever date is the later. Retainage on landscaping work may be retained longer, due to its seasonal nature. State law allows for limited early release in certain circumstances.

_____
(Contractor's Signature)

_____
Title

END OF SECTION

SECTION 00 73 43

WAGE RATE REQUIREMENTS

PART 1 - GENERAL

1.01 SUMMARY

A. This schedule of prevailing wage rates for the locality or localities of the Work, as described by the Industrial Statistician of the Department of Labor and Industries, is included for ease of reference. Contractor remains solely responsible for verifying that the rates shown within this Section are accurate, current, and inclusive for all parts of this Work. Contractor is responsible for notifying the Architect, in writing, of any problems, errors, or discrepancies in this Section no later than 7 working days prior to Bid opening. Any off-site prefabrication may also require prevailing wages and the Contractor should contact the Department of Labor and Industries to ascertain those rates.

B. Contractor to provide the "Notice of Intent to Pay Prevailing Wage Rates", as required by RCW 39.04, 39.12, 43.19, and 49.28 as amended. All paperwork regarding "Notice of Intent to Pay Prevailing Wage Rates" shall be sent directly to the owner. The rules and regulations of the Department of Labor and Industries and the schedule of prevailing wage rates for the locality or localities where this Contract will be performed as determined by the Industrial Statistician of the Department of Labor and Industries, are by reference made a part of this Contract as though fully set forth herein.

Current prevailing wage data are available online or at the following:

ADDRESS: Department of Labor and Industries
Prevailing Wage Section
P.O. Box 44540
Olympia, Washington 98504-4540

https://lni.wa.gov/licensing-permits/public-works-projects/prevailing-wage-rates/

The General Contractor and his sub-contractors are to pay for all filing fees for Statements of Intent to Pay Prevailing Wages and Affidavits at $40.00 each document submitted. Pay for any change in rate during the course of construction.

Submit forms to: Department of Labor and Industries
Prevailing Wage Section
P.O. Box 44540
Olympia, Washington 98504-4540

PART 2 - PRODUCTS – NOT USED

PART 3 - EXECUTION – NOT USED

END OF SECTION

SECTION 00 82 50

SPECIAL CONDITIONS

The Project consists of furnishing all labor, materials, and other incidentals for the replacement of fire alarms in the Skagit County Courthouse and Administration Building as per the Special Provisions, the Standard Specifications including the amendments thereto, and Contract Documents hereunder. The Architect's estimate is $360,000 for the project. The Project site includes adjacent buildings at 205 W Kincaid St and 700 S 2nd St, Mount Vernon, WA 98273.

1. A non-mandatory pre-bid conference for prospective bidders will be held onsite at 11:00 AM on May 10, 2023. Group will meet on front steps of the Courthouse, 205 W Kincaid St, Mount Vernon, WA 98273

2. The General Contractor will make application for the building permits. The Owner shall pickup and pay for the building permit. Contractor shall be responsible to pay for and procure separate electrical permit.

A. ACCESS TO WORK

The Owner's designated project Coordinator shall have full access to the site after normal working hours. Access during normal working hours to courtrooms, judges' chambers, private offices, and occupied cubicle spaces may be requested ahead of time by the Contractor, although there is no guaranteed access due to staff and court obligations.

B. PREVAILING WAGES

Contractor and subcontractors shall submit a "Statement of Intent to Pay Prevailing Wages" prior to submitting first application for payment. Each statement of intent to pay prevailing wages must be approved by the Industrial Statistician of the Department of Labor and Industries before it is submitted to the County. Unless otherwise authorized by the Department of labor and Industries, each voucher claim submitted by a Contractor for payment on a project estimate shall state that the prevailing wages have been paid in accordance with the pre-filed statement or statements of Intent to Pay prevailing Wages on file with the public agency.

C. AFFIDAVIT OF WAGES PAID

Following the final acceptance of a Public Works project, the Contractor and each and every subcontractor shall submit "Affidavit of Wages Paid" before the funds retained according to the provisions of RCW 60.28.010 are released to the Contractor. Each Affidavit of Wages Paid must be certified by the Industrial Statistician of the Department of Labor and Industries before it is submitted.

D. SUBMITTAL FEES

"Intent to Pay Prevailing Wages" and "Affidavit of Wages Paid" must be submitted to the Industrial Statistician of the Washington State Department of Labor and Industries accompanied by current rate for each individual form. This fee is to be paid by the Contractor. All bidders are advised to consider these charges when tabulating their bids.

E. **RETAINED PERCENTAGE**

The Contractor shall comply with Title 39 RCW and Ch. 60.28 RCW.

F. **SPECIAL REPORTS**

General: Submit special reports directly to the Owner within one day of an occurrence. Submit a copy of the report to the Architect and other entities that are affected by the occurrence.

Reporting Unusual Events: When an event of an unusual and significant nature occurs at the site, prepare and submit a special report. List chain of events, persons participating, response by the Contractor's personnel, and evaluation of the results or effects and similar pertinent information.

Reporting Accidents: Prepare and submit reports of significant accidents, at site and anywhere else work is in progress. Record and document data and actions. For this purpose, a significant accident is defined to include events where personal injury is sustained, or property loss of substance is sustained, or where the event posed a significant threat of loss or personal injury.

G. **PAYMENT REQUESTS**

Based upon Applications for Payment submitted to the Architect by the Contractor and Certificates for Payment issues by the Architect, the Owner shall make progress payments on account of the Contract Sums to the Contractor as provided in the Contract Documents for the period ending the twenty-fifth (25) day of the month as follows:

1. The Contractor shall submit Applications for Payment for the preceding month by the first day of each month. The Owner shall make progress payments to the Contractor not later than thirty (30) days following the Architect's receipt of the Application for Payment from the Contractor.

2. The Owner shall pay to the Contractor, on each application for Payment, materials, equipment incorporated in the Work and to materials and equipment suitably stored at the site or at some other location agreed upon in writing, for the period covered by the application for Payment, less the aggregate of previous payments made by the Owners.

The Owner will not be liable for interest or penalties charged by the Contractor on any Payments delayed due to Contractor's failure to inform himself of the Owner's normal procedures or to submit payment requests timely.

The Contract Sum and any agreed variations thereof, shall include all Federal, State and Local taxes imposed by laws, and properly chargeable to the project except the State of Washington Sales Tax. Washington State and Local Sales Taxes as applied to the materials and labor or equipment which becomes part of the Work will be paid by the Owner; a proportionate amount of the tax will be added to each payment voucher issued to the Contractor. The Contractor shall pay all other sales, consumer, use and similar taxes properly levied by Washington State and Local Agencies for the Work, or portions thereof provided by the Contractor which are legally enacted at the time bids are received, whether or

not yet effective. For payment requests, recommend AIA Form G702 or equivalent, fully completed, executed, and notarized. Submit the forms in triplicate, including attachment of waivers and similar documentation with one copy. Prior to the initial payment request, submit:

1. List of principal subcontractors and suppliers, including contact persons and their addresses and telephone numbers.

2. List of principal staff assignments with addresses and telephone numbers.

3. Schedule of Values.

4. Construction Schedule.

Following issuance by Architect of Certificate of Substantial completion, Contractor may submit special payment request, provided the following have been completed:

1. Obtain permits, certificates of inspection and other approval and releases by governing authorities, required for Owner's operational / maintenance personnel.

2. Complete final cleaning of work.

3. Submit as-built documents.

4. Submit listing of work to be completed before final acceptance.

Following completion of the following requirements, final payment request may be submitted:

1. Complete work listed as incomplete at time of substantial completion, or otherwise assure Owner of subsequent completion of individual incomplete items.

2. Settle liens and other claims or assure Owner of subsequent settlement.

3. Submit proof of payment on fees, taxes and similar obligations.

4. Transfer operational, access, security and similar provisions to Owner; and remove temporary facilities, tools and similar items.

5. Affidavits of Wages Paid from all entities who worked at the site.

6. Completion of requirements specified in "Contract Closeout" section.

7. Obtain consent of surety for final payment.

8. Provide evidence of full payment of all industrial insurance premiums as required by RCW 51.12.050 and / or RCW 51.12.070.

Payments will be mailed to Contractor's business and cannot be picked up personally.

END OF SECTION

SECTION 01 10 00

SUMMARY OF WORK

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General Conditions, Supplementary Conditions and Divisions 00 and 01 Specification Sections, apply to work of this section.

1.02 SECTION INCLUDES

A. Summary of Work, including:

1. Project Description.
2. Contract Method.
3. Owner Furnished Products.
4. Permit Conditions.
5. Existing Utilities.
6. Objection to Application of Products.
7. Existing Information.
8. Time of Completion.
9. Contractor Use of Site.
10. Material Safety Data Sheets.
11. Construction Documents.
12. Permits.

1.03 PROJECT DESCRIPTION

A. Briefly and without force and effect upon the Contract Documents, the Work of this Contract can be summarized as follows:

1. Replace fire alarm system in the Skagit County Courthouse and adjacent Administration Building, located in Mount Vernon, Washington as shown on the Contract Drawings and Specifications.

B. Provide materials, labor, equipment, temporary facilities, and construction expertise

as required to complete the Project as shown in the Contract Documents.

C. Contractor represents that he has carefully examined prior to bidding, all Contract Documents and site conditions, and understands the character, quality and quantity of work called for and all conditions affecting the Contract Work.

1.04 CONTRACT METHOD

A. Construct the Work under a single Prime Contract Stipulated Sum.

B. The General Contractor is responsible for coordinating, understanding, and directing the work of all trades involved in the Project.

C. General Contractor is responsible for coordinating and scheduling work of each subcontractor to expedite progress of the Project. Cooperate and coordinate with any other separate Contractors under contract with the Owner.

1.05 OWNER FURNISHED PRODUCTS

A. Owner Furnished, Contractor Installed Items: Coordinate with Owner on delivery of items, any mechanical / electrical rough-in or backing required and any special installation requirements.

1. Notify Owner of required delivery schedule.

2. Obtain dimensions, installation instructions and any other information required for proper installation from manufacturer.

3. Coordinate installation with work sequence and work of other trades.

B. Owner Furnished, Owner Installed Items: Coordinate with Owner on any mechanical / electrical rough-in or backing required.

1. Notify Owner of required installation schedule to allow installation in the proper work sequence and maintain Project schedule.

2. Coordinate with Owner's separate Contractors and suppliers to accommodate their work on site and / or installation of their items.

1.06 PERMIT CONDITIONS

A. Conform to permit conditions and requirements imposed by authority(s) having jurisdiction.

1.07 EXISTING UTILITIES

A. The Drawings indicate existing above and below grade structures, drainage lines, storm drains, sewers, water, gas, electrical, and other similar items and utilities which are known to the Owner.

1.08 OBJECTIONS TO APPLICATION OF PRODUCTS

A. Subcontractors and suppliers submitting a bid for this Project shall thoroughly familiarize themselves with specified products and installation procedures and submit to Architect any objections (in writing) no later than ten days prior to Bid Date. Any response by the Architect shall be by addendum. Submittal of Bid constitutes acceptance of products and procedures specified.

1.09 EXISTING INFORMATION

A. Subcontractors and suppliers shall verify existing site conditions prior to bidding. Submit any discrepancies between the Contract Documents and existing conditions no later than ten days prior to Bid Date. Any response by the Architect shall be by addendum. Submittal of bid constitutes acceptance of existing conditions.

1.10 MISCELLANEOUS

A. Items include, but are not limited to:

1. Maintain pedestrian and vehicular access to and around site.

2. Do not encumber site access with materials or equipment.

3. Do not overload structure with weight endangering structure.

4. Obtain and pay for use of additional storage or work areas needed for operations.

1.11 COMPLETION TIMES

A. Time is of the essence; the Owner needs the Work completed within the times listed so that they can fully utilize the building. Provide the necessary management, equipment, and manpower, including any overtime, double-shifting or special work schedules, required to achieve completion of the Project within the times listed in the following Completion Schedule and Milestone Dates.

B. Completion Schedule and Milestone Dates:

1. Contract Award: On or about May 23, 2023 (as soon as possible after receipt of bids acceptable to the Owner, Contractor Qualification Statement and Post Bid Submittals and the execution of the Contract award approval process).

2. Construction Start / Notice to Proceed: As soon as possible after the award of the contract and once all Construction Contract requirements are completed.

3. Substantial Completion Date: 120 calendar days after contract execution.

4. Final Completion: 60 days after Substantial Completion.

1.12 CONTRACTOR'S USE OF SITE

A. The Contractor has direct responsibility for and control of the construction site for the duration of the Project, subject to the following:

1. Contractor's Use of Site: Limit use of the site for work, storage and access only as required to achieve work of this contract.

2. Emergency Vehicle Access: Maintain access roadway and fire lanes on site for use by emergency vehicles. Coordinate requirements with local authority having jurisdiction.

3. Contractor’s Materials / Equipment Staging Area: Limit storage of materials and equipment to within the staging area and Contractor occupied construction areas.

4. Access Routes to Construction Areas: Contractor shall maintain site access routes in a clean and safe manner free of construction materials, debris and dirt.

5. Public Safety: Contractor is responsible for performing a safety analysis and implementing conclusions from their analysis and, for maintaining site in a manner which prevents any unsafe or potentially unsafe condition.

    a. Implement and enforce conclusions from safety analysis for duration of Project.

    b. Maintain site in a manner that prevents any unsafe or potentially unsafe condition.

6. Protection of Existing: Protect existing roadways, utilities, etc. from damage or defacement; repair / replace any damage.

7. Construction Areas: Monitor to prevent unauthorized vehicles and persons from entering site. After work hours leave Contractor’s work area locked and all tools in locked toolboxes. Post "DANGER - KEEP OUT - CONSTRUCTION AREA" signs at building entries and around perimeter of construction areas.

    a. Assume full responsibility for the protection and safekeeping of products under this Contract, stored on the site.

1.13 MATERIAL SAFETY DATA SHEETS

A. Post Material Safety Data Sheets (MSDS) for hazardous materials on site in accordance with the Hazard Communications Standard, WAC 296-62-054 through -05427 (available from the State Department of Labor and Industries).

B. Provide a bulletin board for hazard communications program in location accessible 24 hours a day and convenient to employees, subcontractors and their employees and representatives for Owner, Architect and other agencies that may visit Project

site and cone into contact with hazardous chemical substances.

1.14 CONSTRUCTION DOCUMENTS

A. Contractor is responsible for posting any addendums in the Contract Drawings and Project Manual.

1.15 PERMITS

A. Contractor shall abide by provisions of the authorities having jurisdiction (AHJ).

PART 2 - PRODUCTS – NOT USED

PART 3 - EXECUTION – NOT USED

END OF SECTION

SECTION 01 26 00

CONTRACT MODIFICATION PROCEDURES

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General Conditions, Supplementary Conditions and Divisions 00 and 01 Specification Sections, apply to work of this section.

1.02 SECTION INCLUDES

A. Contract Modification Procedures, including:

1. Supplemental Instructions.
2. Construction Change Authorization.
3. Documentation of Proposals and Claims.
4. Change Orders.
5. Distribution.

1.03 SUMMARY

A. Requirements Include:

1. Promptly implement change order and field order procedures.
    a. Provide full written data required to evaluate changes.
    b. Maintain detailed records of work done on a time-and-material/force account basis.
    c. Provide full documentation to Architect on request.

B. Related Requirements:

1. Coordinate related requirements specified in other parts of Project Manual including but not limited to the following:
    a. Change Orders / General Conditions (Vender Service Agreement), Article 7; Applications for Payment; Construction Schedules; Schedule of Values; Substitutions and Product Options; Project Record Documents.

2. Designate in writing the names of authorized members of Contractor's organizations who accept changes in the work and are responsible for informing other workers of the authorized changes.

3. Contractor agrees; Architect approves; Owner authorizes.

C. Definitions:

1. Change Order: County will provide a C hange Order form or Contractor can use Change Order Document AIA G701.

2. Architect's Supplemental Instructions: Work order, instructions, or interpretations, signed by Architect making minor changes in the work not involving a change in Contract Sum or Contract Time.

3. Construction Change Authorization: Written order to the Contractor, signed by Owner, Architect and Contractor amending Contract Documents as described. This order authorizes Contractor to proceed with a change altering Contract Sum or Contract Time and is to be included in a subsequent Change Order.

D. Preliminary Initiation / Changes:

1. Changes may be initiated by Owner and Architect through a Proposal Request submitted to Contractor. Request will include:

a. Detailed description of Change, Products, and location of change in Project.

b. Supplementary or revised Drawings and Specifications.

c. Projected time span for making change.

1) Statement as to whether overtime work is, or is not, authorized.

d. A specific period of time during which requested price will be considered valid.

e. Documentation supporting any change in Contract Sum or Contract Time, as appropriate.

E. Construction Change Authorization:

1. In lieu of Proposal Request, Architect may issue a construction change authorization for Contractor to proceed with a change for subsequent inclusion in Change Order.

2. Authorization describes work change additions and deletions, with attachments of revised Contract Documents to define details and designate any change in Contract Sum and Contract Time.

3. Owner and Architect will sign and date as authorization to proceed with changes. General Contractor cannot be paid for the work until it is incorporated into a change order and signed by all parties.

4. Contractor signs and dates to indicate agreement with terms.

F. Documentation of Proposals and Claims:

1. Support each lump sum proposal quotation, and each unit price (not previously established) with sufficient substantiating data.

2. On request provide additional data to support time and cost computations:

a. Labor Required; Hours, Hourly Rate.

b. Equipment Required.

c. Products Required.

1) Recommended source of purchase and unit cost.

2) Quantities required of each material.

3) Material unit costs and extended price.

d. Taxes, Insurance, and Bonds.

e. Documented credit for work deleted from Contract.

f. Overhead and Profit. Article 7 Supplementary Conditions.

g. Justification for any change in Contract Time.

3. Support each claim for additional costs, and time and material/force account work with documentation, as required for lump sum proposal. Include additional information:

a. Name of Owner's authorized agent who ordered work, and date of order.

b. Dates and times work was performed, and by whom.

c. Time record, summary of hours worked, and hourly rates paid.

d. Receipts and invoices for:

1) Equipment used, listing dates and times of use.

2) Products used, listing of quantities.

3) Subcontracts.

4. Document requests for substitutions for Products as specified.

G. Preparation of Change Orders:

1. Contractor will prepare Change Orders for Architect review.

2. Change Order Form: County provided or AIA Document G701.

3. Change Order provides accounting of any Contract Sum and Contract Time adjustment.

H. Lump Sum / Fixed Price Change Order:

1. Content of Change Orders will be based on, either:

a. Architect's Proposal Request and Contractor's responsible Proposal as mutually agreed between Owner and Contractor.

b. Contractor's Change Proposal, as recommended by Architect.

2. Proper signatures (dated) authorize you to proceed with changes.

3. Sign and date Change Order if you agree with terms.

I. Unit Price Change Order:

1. Content of Change Orders will be based on, either:

a. Definition of extent of required changes.

b. Contractor's Proposal for change, as approved with appropriate signatures.

c. Survey of completed work.

2. The amount of unit prices is to be:

a. Any stated in the Bid Form / Agreement.

b. Those mutually agreed upon between Owner and Contractor.

3. When Change Order quantities can be determined prior to start of work:

a. Appropriate listed persons will sign and date as authorization for you to proceed.

b. Sign and date Change Order to indicate your agreement with terms.

4. When quantities cannot be determined prior to start of work the following procedures will be followed:

a. Appropriately signed and issued construction Modification Proposal will authorize you to proceed on unit price basis and cite applicable unit prices.

b. At completion of change, Architect will determine cost of work based on unit prices and quantities used.

1) Submit documentation establishing any claims for Contract Time change.

c. Architect signs and dates the Change Order establishing change in Contract Sum and Contract Time.

d. All pertinent listed parties sign and date Change Order indicating their agreement.

J. Time and Material / Force Account Change Order / Construction Change Authorization:

1. Appropriately executed and signed Change Order authorizes you to proceed.

2. At completion of change, submit itemized accounting and supporting data as provided in Article "Documentation of Proposals and Claims" of this Section.

3. All concerned sign and date Change Order and/or Construction change authorization establishing change in Contract Sum and Contract Time.

4. Contractor signs and dates indicating his agreement.

K. Correlation with Contractor's Submittals:

1. Quarterly revise Schedule of Values and Request for Payment forms to record each change as a separate item of work. Record adjusted Contract Sum.

2. Monthly revise Construction Schedule reflecting each change in Contract Time.

a. Revise sub schedules to show changes for other items of work affected by changes.

b. Upon completion of work under Change Order, enter pertinent changes in Record Documents.

L. Distribution:

1. Send copies to all concerned parties.

a. Change Orders:

1) Upon authorization, Owner transmits one signed copy each to Contractor and Architect.

PART 2 - PRODUCTS – NOT USED

PART 3 - EXECUTION – NOT USED

END OF SECTION

SECTION 01 29 00

SCHEDULE OF VALUES AND PAYMENT PROCEDURES

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General Conditions, Supplementary Conditions and Divisions 00 and 01 Specification Sections, apply to work of this section.

1.02 SECTION INCLUDES

A. Administrative and Procedural Requirements for the Schedule of Values and Payment Applications.

1.03 SUBMITTAL

A. Submit the Schedule of Values in PDF format via email to the Architect for review.

1. Transmit under transmittal letter. Identify Project by title and by contract number.

1.04 FORMAT

A. Schedule of Values: Submit on AIA Document G703 or accepted equivalent.

B. For Specification Divisions 02 through 33 of the Project Manual follow the Table of Contents for minimum listing of schedule of values. Identify each line item by number and title of each specification section. Complex line items may be required to be listed in component parts of the line item.

1. List material and labor costs on separate line items.

C. For Specification Division 01 as a minimum include one line item for each of the following: mobilization, General Conditions, bonds and insurance, submittals, punch list correction, "record" drawings, O and M manuals, operation instructions and demobilization.

1. Refer to the General Conditions of the Contract for limitations on mobilization and closeout line items

1.05 REQUIREMENTS

A. These requirements are in addition to the requirements found in the General Conditions of the Contract.

B. Two weeks prior to submission of first Application and Certificate for Payment,

submit schedule of values for each project to Architect and Owner for review.

C. List installed value of each major item of Work and each subcontracted item of Work as a separate line item to serve as a basis for computing values for Progress Payments; as a minimum, provide at least one line item for each specification section. Round off values to nearest dollar.

D. List guarantees / warranties as separate line items for each type of work, such as roofing, painting, etc. Show the value of each of these on the Schedule of Values.

E. For each major subcontract or work of a specification section, list materials and installation as separate line items.

F. Where the value of a line item exceeds $50,000, break down item by major products or operations as separate line items.

G. Line-item listings shall each include a directly proportional amount of Contractor's overhead and profit.

H. For items on which payments will be requested for stored products, list subcontractor values for cost of stored products.

I. Include separate line item for Project Closeout. Cost for this item shall be either one-half of the Contractor’s mobilization cost or 5 percent of the total Contract Amount, whichever amount is greater.

1.06 APPLICATIONS FOR PAYMENT

A. Applications for Payment: Submit on AIA Document G702 or accepted equivalent.

B. Preparation of Application for Each Progress Payment:

1. Application Form:

a. Fill in required information.

1) Include Change Orders approved prior to Application Submittal date.

2) Fill in summary of dollar values to agree with respective total indicated on any continuation sheets.

3) Sign by responsible officer of Contract firm.

4) Sign all copies; no photocopies of signatures permitted.

5) Indicate for each line item, the percentage of completion as reflected in the dollar value of completed work.

2. Continuation Sheets:

a. Totally fill in all scheduled component work items. Show item number / scheduled dollar value / item / Schedule of Values.

b. Fill in dollar value in each column for each scheduled line item.

1) Round off values to nearest dollar. Tally Sheet.

2) If no work has been performed enter zero.

c. At end of continuation sheets, list each Change Order approved prior to submission date.

1) List by Change Order Number, and description, as for an original component item of work.

C. Post Addendums in field Specifications prior to first Progress Payment.

D. Substantiating Data for Final Payment:

1. When Owner or Architect requires substantiating data, submit suitable information, with cover letter.

2. Submit one copy of data and cover letter for each copy of Application.

E. Preparation of Application for Final Payment:

1. Fill in application form, as specified, for progress payment.

2. Use continuation-sheet for presenting final accounting statement, as specified: Project Closeout.

F. Submittal Procedure:

1. Submit Application for Payment at times stipulated in Agreement. Allow stipulated time for processing.

2. Number: One (1) copy of each Application, unless otherwise directed at Pre-construction Meeting.

3. When Architect finds Application properly completed and correct, they will transmit Payment Certificate to Owner.

4. If Architect finds application improperly or incorrectly executed, an annotated copy is returned for NEW SUBMITTAL.

5. Submit revised Progress Schedule with each Application for Payment.

PART 2 - PRODUCTS – NOT USED

PART 3 - EXECUTION – NOT USED

END OF SECTION

SECTION 01 31 00

PROJECT MANAGEMENT AND COORDINATION

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General Conditions, Supplementary Conditions and Divisions 00 and 01 Specification Sections, apply to work of this section.

1.02 SECTION INCLUDES

A. Administrative and Procedural Requirements for:

1. Project Management.
2. Coordination.
3. Variations, Revisions and Clarifications.
4. Preconstruction Conferences.
5. Preinstallation Conferences.
6. Progress Meetings.
7. Coordination Meetings.

1.03 PROJECT MANAGEMENT

A. General: Provide direct, effective, experienced, cooperative, team-oriented, hands-on management of the Work including the daily construction operations on the Project site and that part of the Work that the Contractor chooses to delegate to Subcontractors / Suppliers.

1. Project management personnel shall be employees of the Contractor and shall not be subcontracted or delegated to others.
2. Project requires a fulltime project manager, superintendent, and project engineer.

B. Submittals:

1. Refer to Section 01 33 00 for submittal procedures.

C. Superintendent: Employ a Project Superintendent (different person than the Project Manager) housed in a temporary office on the Project site to oversee, direct, and manage the construction of the Work and including, but not limited to, the following minimum characteristics and

responsibilities:

1. A good communicator, organized, effective and capable of managing multiple tasks, difficult personalities, and tight deadlines without losing self- control or management effectiveness.

2. Trained, knowledgeable and experienced in job site safety and shall be responsible for managing safety issues on site in conformance with Federal, State and Local regulations.

3. Superintendent shall become thoroughly familiar with the requirements of the Contract Documents before work is started.

4. Responsible for executing the Work in conformance with the adopted Construction Schedule so that Project is completed on time.

5. Oversee and direct the work of Subcontractors and suppliers and confirm they are conforming to the requirements of the Contract Documents.

6. Jointly with the Project Manager, coordinate the Work of this Project as specified under “Coordination” in this section.

7. Responsible for determining the means and methods used to execute the Work.

8. Responsible for coordinating Work requiring independent inspection with the testing agency(s).

9. Responsible for managing and controlling the quality of the Work (including work by Subcontractors) in conformance with the Contract Documents and good construction practice.

10. Responsible for coordinating with the Authority having jurisdiction and Building Inspector(s) inspections and requirements.

11. Responsible for coordinating with utility providers.

12. Responsible for coordinating the final inspections required by Authorities having jurisdiction required for issuance of the Certificate of Occupancy.

13. Responsible for inspecting the work jointly with the Project manager and preparing the Contractor’s Punch List specified in Section 01 78 00.

14. Provide a Daily Report for each day on which work is performed on the job site on the Daily Report Form included at the end of this section and submit to the Owner and Architect the next day.

D. Project Engineer: Employ a Project Engineer to support the work in the field including, but not limited to, the following minimum project management tasks:

1. Provide any task(s) required to support the construction of the Work and facilitate a planned, orderly and timely management of the Work.

2. Computer Skills: Experienced in using Microsoft Word, Excel, Adobe Acrobat (PDF files) e-mail, and whatever scheduling software is employed.

3. Submittal Review: Manage the submittal process specified in Section 01 33 00 so that submittals are reviewed and materials / equipment ordered and delivered so as to avoid delay in the Project Schedule.

   a. Review each submittal package for accuracy, completeness and conformance to the requirements of the Contract Documents.

   b. Review submittals for the quantity of items, field dimensions, coordination with adjacent work, and coordination of information.

   c. Apply Contractor's approval stamp to submittals before sending to Architect for review.

   d. Pick up and deliver submittals when required to meet ordering deadlines.

   e. Distribute submittals to Subcontractors and suppliers that have work that is affected by or requires coordination with the submittal.

4. Coordination: Jointly with the Project Superintendent, coordinate the Work of this Project as specified under "Coordination" in this section.

5. Field Engineering: Provide coordination drawing, field engineering and detailing services as required convert the design concept shown on the Drawings and specified into installation drawings required to construct the Work.

   a. Drawings may be hand drafted or drafted in AutoCAD / Revit.

   b. Maintain a file of completed drawings; enter pertinent data onto as- built drawings.

c. Provide copy of drawings to Architect upon request.

6. Field Quality Control: Manage the various aspects of quality control for the Project including the following:

   a. Inspect materials and equipment daily as they are delivered on site for conformance to the requirements of the Contract Documents and reviewed submittals; provide written notification of any non- conforming items to Subcontractor / Supplier responsible with copy to the Architect.

   b. Inspect, monitor and document the work in progress for compliance with the Contract Documents; provide written notification of any non-conforming Work to Subcontractor / Supplier responsible with copy to the Architect.

   c. Monitor geotechnical engineer and testing agency inspections and reports, take appropriate action to resolve any non-conforming work.

   d. Coordinate and monitor site visits and inspections by manufacturer's representatives; take appropriate action to resolve any non-conforming work or coordination issues.

7. RFI Coordination: Manage the preparation and distribution of RFI including the following:

   a. Review field questions to determine if they require an RFI or field engineering / coordination by Contractor

   b. Assign consecutive number to each RFI issued.

   c. Maintain up to date log of each RFI issued, listing date sent, date answer received and who RFI was distributed to.

8. Preinstallation Conferences: Schedule and lead pre-installation conferences specified in various sections of the Specifications and any other work category that requires coordination or review of technical requirements.

   a. Keep minutes of the conference and send out meeting minutes to attendees.

   b. Document any decisions made that modify or amend the requirements of the Contract Documents.

9. As-Built Drawings: Manage the preparation of the as-built drawings specified in Section 01 78 00.

   a. Coordinate Subcontractor as-built data incorporation into

the as- built drawing set.

b. Maintain up-to-date as-built drawing set in the field office for review by Architect and Engineers upon request or at monthly payment request review.

10. Operation and Maintenance Manual Coordination: Manage the information collection and preparation of the operation and maintenance manuals specified in Section 01 78 00.

11. Systems Start-Up / Shakedown: Coordinate the connection and testing of equipment / systems installed in the Project.

a. Confirm each Subcontractor's work is completed and final connections / adjustments made.

b. Coordinate connection and testing by Subcontractor responsible for equipment / system.

c. Confirm proper operation of equipment / system including each different option, accessory and feature after start-up.

d. Prepare a list of deficiencies and uncompleted items for equipment / systems and distribute to the Subcontractors responsible with copy to the Architect; manage completion / correction in timely manner.

12. Punch List Review: Together with the Project Superintendent, inspect the completed Work and prepare the Contractor's Punch List of deficiencies in the Work specified in Section 01 78 00.

a. Manage the timely completion of Contractor's Punch List items.

b. Submit copy of Contractor's Punch List showing that items have been satisfactorily completed when notifying Architect that work is substantially complete and ready for Architect's punch list review.

c. Manage the timely completion of Architect / Consultant Punch List items.

d. Provide written notification to Architect when deficiencies noted in Architect / Consultant Punch List have been completed.

1.04 COORDINATION

A. General Coordination:

1. Coordinate the Work of trades and other sections to ensure that elements of the work are installed in their proper sequence,

without the need for unplanned modifications to the structure, building systems or work already installed.

2. Provide direct coordination of the Work; do not delegate coordination responsibility to any subcontractor.

3. Plan out the Work in advance and anticipate the interrelationships between each subcontractor and their relationship to the overall Project.

4. Provide the leadership, direction and decisions necessary to prevent subcontractor and supplier problems and disputes from affecting the Project Schedule or the quality of the work.

5. Coordinate scheduling, submittals and work of the various sections of Specifications to assure proper, efficient and orderly sequence of preparation and installation of interdependent construction elements, with provisions for accommodating items installed later.

6. Verify that utility requirement characteristics of operating equipment are compatible with building utilities. Coordinate work of various sections having interdependent responsibilities for installing, connecting to, and placing in service, such equipment.

7. Coordinate completion and cleanup of Work of separate sections in preparation for Completion and for portions of the work designated for Owner's occupancy or use.

8. After Owner occupancy of premises, coordinate access to site for correction of defective Work and Work not in accordance with Contract Documents, to minimize disruption of Owner's activities.

B. Site Utilities Coordination:

1. Coordinate utility connection work with each utility provider, including schedule, layout and any special requirements of the utility provider.

2. Coordinate the work of trades to assure proper fit and the proper operation of systems and equipment.

3. Coordinate space requirements and installation of utility work. Utilize spaces efficiently to maximize accessibility for other installations, for maintenance and for repairs.

4. Lay out, work through and resolve any conflicts or problems involving site utility work that share the same space or require a special sequence of installation prior to starting any fabrication or installation. Provide coordination drawings wherever needed to maintain control of the installation in areas involving numerous

trades.

5. Leave adequate space for maintenance access, by a normal size maintenance man, to equipment and items without the need for special equipment or removal of items that block access.

1.05 VARIATIONS, REVISIONS AND CLARIFICATIONS

A. Variations, revisions and clarifications to the work not involving an adjustment to the Contract Sum or Contract Time will be confirmed in writing. These written confirmations may be included in the Project minutes, memos to the Contractor and Owner, e-mail correspondence, or in answers to written Requests for Information (RFI).

B. Requests for Information (RFI) shall be submitted on the RFI form attached at the end of this Section. This form must be completely filled out as applicable by the Contractor prior to submission. Submit RFI via e-mail.

C. Requests For Information (RFI) shall be limited to a single subject and discipline, do not submit RFI with multiple unrelated questions.

D. Adhere to the requirements of the General Conditions of the Contract for any variations, revisions and / or clarification to the work that the Contractor believes will involve a change in the Contract Sum or Contract Time.

E. For Shop Drawing variations conform to requirements of the General Conditions of the Contract and Section 01 33 00.

1.06 PRECONSTRUCTION CONFERENCE

A. Refer to Section 01 31 19.

1.07 PROGRESS MEETINGS

A. Refer to Section 01 31 19.

1.08 PREINSTALLATION CONFERENCES

A. Refer to Section 01 31 19.

1.09 COORDINATION MEETINGS

A. Refer to Section 01 31 19.

PART 2 - PRODUCTS – NOT USED

PART 3 - EXECUTION – NOT USED

0.0 CUTTING AND PATCHING

.Execute cutting and patching Work and structural reinforcing in a manner to prevent damage to other Work and to provide proper surfaces for installation of repairs, penetrations through surfaces, or other items.

A. For all new Work employ original installer or fabricator to perform cutting and patching for weather exposed or moisture resistance elements, fireproofing, and finished surfaces exposed to view.

B. Provide cutting and patching for all existing work, where mechanical and electrical utilities or similar services extend beyond limits of work for new construction, to match existing.

C. General: Provide and be responsible for all cutting, fitting, and patching required to complete the Work, or to:

1. Make its several parts fit together and to provide for installation of ill-timed Work.
2. Uncover portions of Work to provide for installation of ill-timed Work.
3. Remove and replace defective Work.
4. Remove and replace Work not conforming to Contract Document requirements.
5. Remove samples of installed Work as specified for testing.
6. Provide routine penetrations on non-structural surfaces for installation of piping.

D. Project Conditions:
1. Inspect existing conditions including elements subject to damage or movement during cutting and patching.
2. After uncovering Work, inspect conditions affecting installation of products or performance of Work.
3. Report unsatisfactory or questionable conditions to Architect in writing. Do not proceed with Work until Architect provides further instructions.

END OF SECTION

SKAGIT COUNTY
FIRE ALARM REPLACEMENTS

REQUEST FOR INFORMATION

TO: Interface Engineering
100 SW Main Street, Suite 1600
Portland, OR 97204

ATTN: _____ RFI # _____

PROJECT NAME: _____PROJECT NUMBER: _____

REFERENCE DRAWING OR SPEC: _____

SUBJECT OF RFI: _____

DESCRIPTION:

CONTRACTOR: _____ RESPONSE REQUESTED BY (DATE): _____

BY: _____ DATE: _____

RESPONSE:

A/E: _____ BY: _____ DATE: _____

This is not an authorization to proceed with work involving additional cost and / or time. Contractor shall obtain approval / authorization *prior to* proceeding with this work if the response in this RFI will result in additional cost and / or time.

SECTION 01 31 19

PROJECT MEETINGS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General Conditions, Supplementary Conditions and Divisions 00 and 01 Specification Sections, apply to work of this section.

1.02 SECTION INCLUDES

A. Project Meetings, including:

1. Preconstruction Conferences.

2. Progress Meetings.

3. Preinstallation Conferences.

4. Coordination Meetings.

1.03 PRECONSTRUCTION CONFERENCE

A. Schedule a preconstruction conference before starting construction, at a time convenient to the Owner and the Architect, but no later than 10 days after execution of the Agreement. Hold the conference at the Project Site or another convenient location. Conduct the meeting to review responsibilities and personnel assignments.

B. Attendees: Authorized representatives of the Owner, Architect, and their consultants; the Contractor and its superintendent; major subcontractors; manufacturers; suppliers; and other concerned parties shall attend the conference. All participants at the conference shall be familiar with the Project and authorized to conclude matters relating to the Work.

C. Agenda: Discuss items of significance that could affect progress, including the following:

1. Designation of personnel representing the parties in Contract and the Architect.

2. Discussion of list of Subcontractors, list of Products, schedule of values and progress schedule.

3. Procedures and processing of field decisions, submittals, substitutions, applications for payments, proposal request, Change Orders and

Contract closeout procedures.

4. Scheduling.

5. Coordination with Owner.

6. Testing and inspection coordination.

7. Procedures for maintaining record documents.

8. Requirements for start-up of equipment.

9. Inspection and acceptance of equipment put into service during construction period.

10. Contractor Safety.

1.04 PROGRESS MEETINGS

A. Conduct progress meetings at the Project Sites at regular intervals. Notify the Owner and the Architect of scheduled meeting dates. Coordinate dates of meetings with preparation of the payment request.

B. Attendees: In addition to representatives of the Owner and the Architect, each subcontractor, supplier, or other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the conference shall be familiar with the Project and authorized to conclude matters relating to the Work.

C. 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.

1. Contractor's Construction Schedule: Review progress since the last 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 insure that current and subsequent activities will be completed within the Contract Time.

2. Review the present and future needs of each entity present, including the following:

a. Approval of minutes of previous meetings.

b. Review of Work progress since previous meeting.

c. Review work planned.

d. Review Project Schedule (4-week and Master CPM Schedule).

e. Review submittal schedules; expedite as required.

f. Review of Request for Information (RFI).

g. Review deliveries.

h. Review proposed changes.

i. Review technical and administrative questions / concerns from Contractor, Owner, Architect, Consultants.

j. Review As-Built Drawings.

k. Field Observations.

D. Four-Week Schedule:

1. Prior to each meeting, prepare a four (4) week schedule showing work completed during the previous week, work that is in progress for the current week and work planned for the following two weeks. This four week schedule, which is revised weekly by the Contractor, will be presented by the Contractor at the progress meeting and a copy will be given to the Architect and to the Owner at that time.

2. In the event that a progress meeting is not scheduled for the current week, prepare the 4 week schedule and forward it to the Architect in the same week.

E. Reporting:

1. Architect will administer the meeting, record decisions and actions from the meeting and send copies of meeting notes to Owner and Contractor.

2. The Contractor will be responsible to distribute copies to his field representative and to Subcontractors.

3. Schedule Updating: Revise the Contractor's Construction Schedule after each progress meeting where revisions to the schedule have been made or recognized. Issue the revised schedule concurrently with the report of each meeting.

1.05 PREINSTALLATION CONFERENCES

A. When required in individual specification section or when Owner, Architect or Contractor determines the need, the Contractor shall convene a pre-installation conference at work site prior to commencing work of the section.

B. Require attendance of parties directly affecting, or affected by, work of the specific section.

C. Notify Owner and Architect seven calendar days in advance of meeting date.

D. Prepare agenda, preside at conference, record minutes and distribute copies within two days after conference to participants.

E. Review conditions of installation, preparation and installation procedures, and coordination with related work.

F. Schedule pre-installation conferences to occur immediately before or after the agreed on day / time for progress meetings.

1.06 COORDINATION MEETINGS

A. Conduct project coordination meetings at regular intervals convenient for all parties involved. Project coordination meetings are in addition to specific meetings held for other purposes, such as regular progress meetings and special preinstallation meetings.

B. Request representation at each meeting by every party currently involved in coordination or planning for the construction activities involved.

C. Record meeting results and distribute copies to everyone in attendance and to others affected by decisions or actions resulting from each meeting.

PART 2 - PRODUCTS – NOT USED

PART 3 - EXECUTION – NOT USED

END OF SECTION

SECTION 01 32 00

CONSTRUCTION SCHEDULES AND REPORTS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General Conditions, Supplementary Conditions and Divisions 00 and 01 Specification Sections, apply to work of this section.

1.02 SECTION INCLUDES

A. Progress Schedules and Reports, including:

1. Submittal Procedures.

2. Contractor's Construction Schedule.

3. Submittal Schedule.

4. Special Reports.

1.03 SUBMITTALS

A. Prepare and submit proposed Construction Schedule to Owner and Architect as soon as possible after Notice to Proceed and prior to first Application for Payment.

1. Submit schedule in both paper and digital computer formats acceptable to the Owner.

B. Submit updated schedule with each Application for Payment or more frequent if required.

C. Applications for Payment will not be processed until schedule is in conformance with requirements of the specifications.

1.04 DISTRIBUTION

A. Distribute copies of Construction Schedule to project site file, subcontractors, suppliers, Owner, Architect and other concerned parties.

B. Instruct recipients to promptly report, in writing, problems anticipated by projections shown in schedules.

C. Construction Office: Post a copy of the current Construction Schedule on the wall in the construction office where the job meetings will be held; suspend a moveable vertical line on the current date to facilitate review and discussion of schedule progress and issues at weekly job meetings.

1.05 GENERAL

A. The intent of the Construction Schedule is to assist the Contractor in planning and execution of the Work in a timely manner and assist the Contractor, Architect and Owner in monitoring the construction progress for the purpose of coordination, communication, evaluation of Applications and Certificates for Payment, and evaluation of time extension requests.

B. This section supplements the General Conditions and Special Conditions with additional schedule requirements, where conflicts exist, the most restrictive requirement shall govern.

C. Any plan by the Contractor to complete the Work or any part of the Work earlier than any contract required milestone or specific completion date shall not be construed as creating any responsibility or liability for the Owner or Architect should their actions, or lack thereof, prevent the Contractor from achieving the planned early completion. The Owner and Architect shall not be liable to the Contractor for any costs or other damages if the Contractor is unable to achieve early completion of the Work before a milestone or completion date.

D. Float Time: Float time is the amount of time between the earliest start date and the latest start date, or between the earliest finish date and the latest finish date of a chain of activities on the CPM Schedule. Float time belongs to the Project and is not for the exclusive use or benefit of either the Contractor or the Owner; float time may be used by either the Contractor or Owner for offsetting delays. Use of float suppression techniques such as preferential sequencing, special lead / lag logic restraints, zero total or free float constraints, extended activity times or imposed dates shall be cause for rejection of the Construction Schedule or any revisions or updates.

E. Scheduling Personnel: Contractor’s shall employ scheduling personnel or consultant with a minimum of 5 years of experience using the proposed scheduling software on projects of similar size and scope. If requested, provide a list of scheduling experience with copies of the schedules.

F. Schedule shall anticipate and include sufficient float time for weather dependent work tasks to allow for any delays due to normal inclement weather (defined as any inclement weather within the ten-year average of accumulated record mean values from climatological data compiled by the National Oceanic and Atmospheric Administration (NOAA), for the locale of the Project, over the full duration of the Contract Time).

1.06 CONTRACTOR'S CONSTRUCTION SCHEDULE

A. Construction Schedule:

1. Schedule Methodology: Critical Path Method (CPM) for the planning, scheduling and reporting of the work required by this contract.

2. Schedule Type: Precedence Diagramming Method (PDM).

3. Acceptable Software Programs:

   a. Microsoft Project.

   b. Primavera Project Planner.

4. Schedule Sheet Size: 11-inches x 17-inches preferred if readable, no larger than 24-inches x 36-inches.

5. Schedule Contents: Schedule shall contain the following information:

   a. Task ID number (numbered in ascending order, (e.g. *1, 2, 3, 4,* etc.)

   b. Task Name (activity), provide a two or three word description of each activity; identify each activity with the applicable Specification Section number (e.g. *Carpet – 09 68 00)*.

   c. Task Duration (e.g. *10 days*).

   d. Early Task Start Date (e.g. *Mon 7/22/20*).

   e. Late Task Start Date (e.g. *Mon 7/29/20*).

   f. Early Task Finish Date (e.g. *Mon 7/22/20*).

   g. Late Task Finish Date (e.g. *Mon 7/29/20*).

   h. Float Time (e.g. *7 days).*

   i. Predecessor Tasks.

   j. Successor Tasks.

   k. Calendar: List the Weeks, Months and Year(s) across top of each page of the schedule. Show a graphic task duration bar indicating the start and finish date corresponding to the calendar for each task.

B. Schedule Requirements: Include the following requirements:

1. List every work activity required to complete the Work in the Task Name column and include the following:

   a. Task Name shall describe individual work activities in a defined area of the Project, not multiple work activities for the entire project, e.g. *underslab plumbing rough-in – west wing* instead of *plumbing* for the entire project. Provide as many activities as necessary to clearly show how the Project will be constructed within the time allowed.

b. Include completion and milestone dates as specified in Section 01 10 00.

c. Include dates for submission of each submittal to Architect for review as required to assure materials / products / systems will be on site when required to allow conformance to the Project completion and milestone dates. When Architect's review time is critical to the Project completion schedule, identify the review return dates in the schedule.

d. Indicate date required for selection of colors and finishes as applicable.

e. Include product delivery dates, including those furnished and / or installed by separate contractors or the Owner.

f. Show dates when application for separate permits (i.e. fire alarm, fire sprinkler, etc.) will be made and when permit will be received.

g. Include dates for Contractor's Punch List review and Contractor's completion of punchlist items.

h. Include dates for Architect's Punch List review and Contractor's completion of punchlist items.

i. Show dates for pre-cover inspections and final inspections required by authorities having jurisdiction.

j. Include dates for preparation and submission of operation and maintenance manuals and project record drawings (minimum of 30 days before final completion). Show Architect's review time and resubmittal of corrected manuals and drawings.

2. Keep individual tasks listed to short durations with limited scope of work (one to two weeks maximum) unless the task is dependent on several activities of longer duration.

3. Each task shall have a corresponding time duration bar to the right of the columns graphically showing the duration of each activity on the calendar.

4. Show complete sequence of construction by activity, identifying work of separate contractors or Owner required to complete the Work.

5. Graphically indicate each task that is on the critical path for completion (by color or pattern) on the task duration bar. Show the interrelationship of each critical path task to other critical path tasks by drawing arrows between the task duration bar finish and start points.

6. Include sufficient additional float time in the duration of those specific

activities that are weather dependent (such as: underground utilities, pavement, painting, etc.) to prevent delaying critical path activities due to normal inclement weather based on the time of year the tasks are being accomplished and the corresponding historic weather data averages for those dates.

a. Weather related float time shall be calculated after late task finish date and shall be included in the critical path time calculation.

b. Identify additional weather-related time allowed in the duration or include as a separate task directly under the affected work task.

1.07 UPDATING SCHEDULES

A. Update the Construction Schedules monthly to reflect actual work activity dates accomplished and any revised work activity dates.

B. Maintain Construction Schedules to record actual start and finish dates of activities as they are completed.

C. Indicate progress of each activity at the time of the revision date. Update diagrams to graphically depict current status of Work.

D. Indicate revision date on revised schedule.

E. Show changes occurring since previous Schedule submission such as:

1. Any major changes in scope;

2. Activities modified since previous submission;

3. Revised projections for progress and completion, as applicable;

4. Any other identifiable changes.

F. Provide narrative report as needed to define:

1. Problem areas; anticipated delays; and impact on schedule.

2. Corrective action to be taken by the Contractor to get the Project back on schedule. This report will define how and when the Contractor will accomplish this.

1.08 RECOVERY SCHEDULE

A. Whenever completion of any critical path activity(s) extends beyond its late finish date or in any way jeopardizes timely completion of a Contract milestone date or completion date the Contractor shall prepare a recovery schedule showing how work activity start and finish dates will be revised to allow the completion of milestone and completion dates on schedule.

B. Recovery schedule shall be prepared as soon as possible after discovery of any delay affecting critical path activity(s), but not longer than 7 days.

1.09 SUBMITTAL SCHEDULE

A. After development and acceptance of the Contractor's Construction Schedule, prepare a complete schedule of submittals. Submit the schedule within 2 days of the date required for submittal of the Contractor's Construction Schedule.

1. Coordinate Submittal Schedule with the list of subcontracts, Schedule of Values and the list of products as well as the Contractor's Construction Schedule.

B. Prepare the schedule in chronological order. Provide the following information:

1. Scheduled date for the first submittal.

2. Related Section number.

3. Submittal category.

4. Name of the subcontractor.

5. Description of the part of the Work covered.

6. Scheduled date for resubmittal.

7. Scheduled date for the Architect final release or approval.

C. Distribution: Following the Architect’s response to the initial submittal, print and distribute copies to the Architect, Owner’s representatives, subcontractors, and other parties required to comply with submittal dates indicated.

1. Post copies in the Project meeting room and temporary field office.

2. When revisions are made, distribute to the same parties and post in the same locations. Delete parties from distribution when they have completed their assigned part of the Work and are no longer involved in construction activities.

D. Schedule Updating: Revise the schedule after each meeting or other activity where revisions have been recognized or made. Issue the updated schedule concurrently with the report of each meeting.

E. Field Correction Reports: When the need to take corrective action that requires a departure from the Contract Documents arises, prepare a detailed report. Include a statement describing the problem and recommended changes. Indicate reasons the Contract Documents cannot be followed. Submit a copy to the Architect immediately.

1.10 SPECIAL REPORTS

A. General: Submit special reports directly to the Owner's representatives within one day of an occurrence. Submit a copy to the Architect and other parties affected by the occurrence.

B. Reporting Unusual Events: When an event of an unusual and significant nature occurs at the site, prepare, and submit a special report. List the chain of events, persons participating, response by the Contractor's personnel, an evaluation of the results or effects and similar pertinent information. Advise the Owner's representatives in advance when such events are known or predictable.

PART 2 - PRODUCTS – NOT USED

PART 3 - EXECUTION – NOT USED

END OF SECTION

SECTION 01 33 00

SUBMITTALS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General Conditions, Supplementary Conditions and Divisions 00 and 01 Specification Sections, apply to work of this section.

1.02 SECTION INCLUDES

A. Administrative and Procedural Requirements for Project Submittals.

1.03 ADMINISTRATIVE SUBMITTALS

A. Administrative Submittals: Refer to other Division 1 Sections and other Contract Documents for requirements for administrative submittals. Such submittals include, but are not limited to, the following:

1. Permits.
2. Applications for Payment.
3. Performance and Payment Bonds.
4. Insurance Certificates.
5. List of Subcontractors.

1.04 SUBMITTAL PROCEDURES

A. Schedule submittals to expedite the Project. Transmit submittals in accordance with Construction Schedule and in such sequence to avoid delay in the Work. Coordinate submission of related items with schedule.

B. Electronic Submittals – Format: Shop Drawings, Product Data, Certificates, Warranties and any similar submittals, other than physical samples, shall be provided as digital submittals in PDF format suitable for sending via electronic mail or downloaded from internet file transfer website.

1. Submittal shall be submitted as one PDF and each item bookmarked to allow for efficient review.
2. Organize submittals per specification section. Include all items listed in each specification section to facilitate one review by the Design team per specification section.
3. PDF security permissions shall be formatted to allow printing, reviewing

and editing functions by Architect and Owner using any PDF compatible computer program.

4. When electronic submittals are required to be accompanied by a physical sample, the submittal will not be returned until both the electronic submittal and physical sample are reviewed.

C. Contractor Shall:

1. Review submittal for completeness before sending to Architect for review. Submittal shall have each of the items noted under the Submittals section in each specification section (Product Data, Drawings, Samples, Certifications, etc.).

   a. Incomplete submittals will be returned “Not Reviewed” by Architect.

2. Review and approve each submittal prior to submission to Architect.

3. Include a review priority for Architect if multiple and / or large submittals are transmitted to Architect in the same week.

4. Reproduce and distribute copies of reviewed submittals to concerned parties. Instruct parties to promptly report any inability to comply with provisions. Pay all costs for reproduction, distribution, and materials.

5. Coordinate submittals into logical groupings to facilitate inter-relation of the several items:

   a. Finishes which involve Architect selection of colors, textures, or patterns.

   b. Associated items which require correlation for efficient function or for installation.

6. Identify, in writing, variations from Contract Documents and product or system limitations which may be detrimental to successful performance of the completed Work.

7. Accompany submittals with transmittal letter containing:

   a. Date.

   b. Project title and number.

   c. Contractor's name and address.

   d. Number of copies of Shop Drawings, Product Data and Samples submitted.

   e. Identification of submittal as it relates to:

1) Subcontractor / Supplier / Manufacturer:

Name.

Address.

Telephone number. Representative's name.

2) Detail number and location in Construction Documents.

3) Specification reference number and paragraph.

4) Applicable Standards.

5) Finishes.

6) Identification of deviations from Contract Documents.

D. Additional Information Required:

1. Relation to adjacent structure or materials.

2. Fabrication methods, assembly, special installation requirements, accessories, fasteners and other pertinent information.

3. Field dimensions, clearly identified.

4. Coordination with other trades. Stamped and signed by affected trades.

E. Distribution:

1. Send submittals to Architect via electronic mail or from internet file transfer website.

2. Architect will return reviewed submittals to Contractor and Owner via electronic mail or Architect's internet file transfer system.

3. Send copy of Architect reviewed submittal to Subcontractors / Suppliers.

1.05 SUBCONTRACTOR AND SUPPLIER LIST

A. Prior to submission of First Application for Payment, submit complete list of subcontractors and suppliers to be used for the Work. Provide specification section identification number, addresses and telephone numbers for each listed subcontractor and supplier providing materials.

1.06 SHOP DRAWINGS

A. Present in clear and thorough manner. Title each drawing with Project name and number; identify each element of drawings by reference to sheet number and detail, schedule, or room number of Contract Documents.

B. Identify field dimensions; show relation to adjacent or critical features or Work or products.

C. Do not submit freehand drawings or hand drafted drawings.

D. Shop Drawings requiring Code Agency Approval: Submit on format and media required by Approval Agency. Include information required by Project Documents and Approval Agency.

1.07 PRODUCT DATA

A. Submit only pages which are pertinent; mark each copy of standard printed data to identify pertinent products, referenced to Specification Section and Article number. Show reference standards, performance characteristics and capacities; wiring and piping diagrams and controls; component parts; finishes; dimensions; and required clearances.

B. Modify manufacturer's standard schematic drawings and diagrams to supplement standard information and to provide information specifically applicable to the Work. Delete information not applicable.

1.08 SAMPLES

A. Submit two samples of the specified color and texture for each product unless specified otherwise in individual specification sections; samples will be retained by Architect.

B. Where a specific color has not been specified, submit full range of manufacturer's standard and special finishes except when more restrictive requirements are specified, indicating colors, textures and patterns, for Architect selection.

C. Label each sample with identification required for transmittal letter.

D. Field samples are to be maintained at the site of the Work and are to be removed after substantial completion unless directed otherwise.

1.09 MANUFACTURER'S CERTIFICATES

A. When specified in individual specification sections, submit manufacturer's certificate to Architect for review.

B. Indicate material / product conforms to or exceeds specified requirements. Submit supporting reference date, affidavits and certifications as appropriate.

C. Certificates may be recent or previous test results on material / product, but must be acceptable to Architect / Engineer.

1.10 CALCULATIONS

A. When specified in individual specification sections, submit calculations to

Architect for review.

1.11 CONTRACTOR REVIEW

A. Coordinate submittals with requirements of the Work and Contract Documents.

B. Apply Contractor's stamp with signature. The submittal signed by the Contractor certifies that the Contractor has reviewed the submittal for accuracy, completeness and compliance with the Contract Documents. It also certifies that the Contractor has verified products required, field dimensions, adjacent construction work, and coordination of information, in accordance with the requirements of the Work and Contract Documents. Submittals without Contractor's stamp and signature are rejected. Notify Architect in writing at time of submittal, of any deviations from requirements of Contract Documents.

1.12 RESUBMITTALS

A. Revise and resubmit submittals as required, identify changes made since previous submittal.

B. Shop Drawings, Product Data and Calculations:

1. Revise initial drawings, data or calculations and resubmit as specified for the initial submittal.

2. Indicate any changes which have been made including those requested by the Architect.

C. Samples: Submit new samples as required.

D. Architect reserves the right to charge the Contractor for reviewing non-responsive resubmittals.

1.13 ARCHITECT REVIEW

A. Architect or their consultant(s) will review shop drawings, product data, calculations and samples and return submittals to Contractor.

B. Architect’s review is qualified by the following language included on the review stamp: “This review is only for general conformance with design concept of the Project and general compliance with the information given in the Contract Documents. Corrections or comments made on the shop drawings during this review do not relieve the Contractor from compliance with the requirements of the plans and specifications. Approval of a specific item shall not include approval of an assembly of which the item is a component. Contractor is responsible for: dimensions to be confirmed and correlated at the jobsite; information that pertains solely to the fabrication processes or to the means, methods, techniques, sequences and procedures of construction; coordination of his or her Work with that of all other trades; and for performing all work in a safe and satisfactory manner”.

1. Any action shown is subject to Contract Document's requirements.

Architect will mark the review submittal in one of the following boxes on review stamp:

- ❑ Reviewed
- ❑ Furnish as Corrected
- ❑ Rejected
- ❑ Revise and Resubmit
- ❑ Submit Specified Item

C. Architect / Engineer review of individual or separate items does not constitute review of assembly in which it functions.

PART 2 - PRODUCTS – NOT USED

PART 3 - EXECUTION – NOT USED

END OF SECTION

SECTION 01 41 00

REGULATORY REQUIREMENTS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General Conditions, Supplementary Conditions and Divisions 00 and 01 Specification Sections, apply to work of this section.

1.02 SECTION INCLUDES

A. Regulatory Requirements.

1.03 APPLICABLE CODES AND STANDARDS

A. Any specific reference in the Specifications to codes, regulations, reference standards, manufacturer's instructions or requirements of regulatory agencies shall mean the latest printed edition of each in effect at the date of submission of bids unless the document is shown dated.

B. Perform the Work in conformance with the applicable requirements of all regulatory agencies including, but not limited to, the following:

1. International Building Code (IBC).
2. National Electrical Code (NEC).
3. Uniform Plumbing Code (UPC).
4. International Mechanical Code (IMC).
5. Washington State Non-Residential Energy Code.
6. Washington State Ventilation and Indoor Air Quality Code.
7. Washington State Regulations for Barrier-Free Facilities.
8. Americans with Disabilities Act (ADA).

PART 2 - PRODUCTS – NOT USED

PART 3 - EXECUTION – NOT USED

END OF SECTION

SECTION 01 42 00

REFERENCES

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General Conditions, Supplementary Conditions and Divisions 00 and 01 Specification Sections, apply to work of this section.

1.02 SECTION INCLUDES

A. References, including:

1. Abbreviations.

2. Symbols.

3. Definitions.

1.03 ABBREVIATIONS

A. The following abbreviations of organizations may be used in the Contract Documents.

AAMA	Architectural Aluminum Manufacturer's Association
ACI	American Concrete Institute
AGC	Associated General Contractors of America
AIA	American Institute of Architects
AISC	American Institute of Steel Construction
AITC	American Institute of Timber Construction
ANSI	American National Standards Institute
APA	American Plywood Association
ASTM	American Society for Testing and Materials
AWPA	American Wood Preservers Association
AWS	American Welding Society

AWI	Architectural Woodwork Institute
BHMA	Builder's Hardware Manufacturers Association
CLFMI	Chain Link Fence Manufacturers Institute
CRSI	Concrete Reinforcing Steel Institute
CS	U.S. Commercial Standard
DHI	Door and Hardware Institute
FGMA	Flat Glass Marketing Association
FM	Factory Mutual System
FS	Federal Specification
GA	Gypsum Association
IBC	International Building Code
ICC	International Code Council
MLSFA	Metal Lath / Steel Framing Association
NAAMM	National Association of Architectural Metal Manufacturers
NEC	National Electrical Code
NEMA	National Electrical Manufacturers Association
NFPA	National Fire Protection Association; National Forest Products Association
NWMA	National Woodwork Manufacturers' Association
NWWDA	National Wood Window and Door Association
PCI	Prestressed Concrete Institute
PDCA	Painting and Decorating Contractors of America
PS	U.S. Product Standard
SDI	Steel Deck Institute; Steel Door Institute
SMACNA	Sheet Metal and Air Conditioning Contractors National Association, Inc.

SSPC	Steel Structures Painting Council
TCA	Tile Council of America
TPI	Truss Plate Institute
UL	Underwriters' Laboratories, Inc.
UMC	Uniform Mechanical Code
UPC	Uniform Plumbing Code
WABO	Washington Association of Building Officials
WAC	Washington Administrative Code
WSDOT	Washington State Department of Transportation
WWPA	Western Wood Products Association

1. Additional abbreviations, used only on the Drawings, are listed thereon.

1.04 SYMBOLS

A. Symbols, used only on the Drawings, are shown thereon.

1.05 DEFINITIONS

A. Terms used on the Drawings or in the Specifications in addition to those shown in General Conditions shall have the following meanings:

TERM	MEANING
As Directed	"By the Architect"
As Required	"By Code; by good building practice; by the condition prevailing; by Contract Documents; by Owner, or by Architect"
As Selected	"By Architect"
Equal	In the opinion of the Architect. The burden of proof of equality is the responsibility of the Contractor.
Furnish	"Supply and deliver to the Project ready for installation and in operable condition."
Install	"Incorporate in the Work in final position, complete, anchored, connected, and in operable condition."
NIC	Not in Contract

Project	Total construction of which Work performed under the Contract Documents may be the whole or a part.
Provide	"Furnish and install complete." When neither "furnish", "install", nor "provide" is stated, "provide" is implied.
Shown	"As indicated on the Drawings"
Specified	"As written in the Project Manual"

PART 2 - PRODUCTS – NOT USED

PART 3 - EXECUTION – NOT USED

END OF SECTION

SECTION 01 45 00

QUALITY CONTROL

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General Conditions, Supplementary Conditions and Divisions 00 and 01 Specification Sections, apply to work of this section.

1.02 SECTION INCLUDES

A. Administrative and Procedural Requirements for Project Quality Control.

1.03 REFERENCES

A. Conform to the requirements of the referenced standards referred to in individual specification sections. Reference standards shall be the edition current as of the date of the Contract Documents.

B. Obtain copies of reference standards that govern work performed on site.

C. Should specified reference standards conflict with Contract Documents, the most stringent and restrictive requirement shall prevail except where Architect / Engineer provides other direction; request clarification from Architect before proceeding.

D. The contractual relationship of the parties to the Contract shall not be altered from the Contract Documents by mention or inference otherwise in any reference document.

E. Americans with Disabilities Act (ADA).

F. ICC / ANSI A117.1 – Accessible and Usable Buildings and Facilities.

1.04 CONTRACTOR'S QUALITY ASSURANCE / CONTROL OF CONSTRUCTION

A. Employ / assign quality control personnel to monitor the work of this project for conformance to the requirements of the Contract Documents and to good construction practices.

1. Prior to starting their work, review the scope of work, performance requirements, materials and workmanship requirements with each trade and subcontractor.

2. Review materials when delivered to the site for conformance to the Contract Documents and submittals.

3. Monitor work in progress for conformance to the Contract Documents

and submittals.

B. Contractor is solely responsible for managing and controlling the quality of the work and conformance with the requirements of the Contract Documents.

C. Monitor quality control over suppliers, manufacturers, products, services, site conditions and workmanship, to produce Work of specified quality.

D. Comply with specified standards as a minimum quality for the Work except when more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.

E. Work shall be performed by trained and experienced workers qualified to produce workmanship of specified quality.

F. Secure Products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion, and disfigurement.

G. Inspections and reports issued by special inspector or testing laboratory do not relieve the Contractor from his responsibility to construct Work in conformance with the requirements of the Contract Documents.

H. Contractor is responsible to review and confirm that substrate construction, site conditions and work by others complies with requirements of Contract Documents and manufacturer's requirements for subsequent work prior to installation or cover.

1.05 ACCESSIBILITY REQUIREMENTS

A. Accessibility Requirements: The accessibility requirements shown on the Drawings are required for conformance with the Americans with Disabilities Act (ADA) and ICC / ANSI A117.1. Strict conformance with the accessibility requirements shown on the Drawings is required for this project; non-conforming work will require correction at Contractor's expense.

1. A copy of ICC / ANSI A117.1 shall be kept on the jobsite for reference during construction and reviewed to provide a full understanding of each accessible design requirement.

2. Construction Tolerances: Typical construction tolerances common to the construction industry are not acknowledged or permitted by the Americans with Disabilities Act (ADA) and ICC / ANSI A117.1. Therefore, Work must be constructed within the strict accessibility requirements without any allowable construction tolerances.

B. Submittal Review: Review submittals for conformance with the accessibility requirements of ICC / ANSI A117.1 shown on the Drawings; mark up submittals that have incorrect or missing accessibility requirements.

C. Review with Workers: Review the accessibility requirements of ICC / ANSI A117.1 and the Drawings with workers performing work that is required to conform to the accessibility requirements of ICC / ANSI A117.1.

D. Monitoring: Monitor the work of this project for compliance with the accessibility requirements of ICC / ANSI A117 shown on the Drawings.

E. Inspection: Inspect the completed work that is required to conform to accessibility requirements for conformance with ICC / ANSI A117.1. Inspection shall require accurate measurements to confirm that dimensions, slopes, and relationships shown on the Drawings have been constructed in accordance with accessibility requirements.

1.06 FIELD SAMPLES

A. Install field samples at the site as required by individual specifications sections for review.

B. Acceptable samples represent the quality level of the Work.

1.07 MOCK-UP

A. Provide where specified.

B. Assemble and install specified items, with specified attachment and anchorage devices, flashings, seals, and finishes. Install complete full-scale mock-up of assembly at project site.

C. Where mock-up is not a permanent part of the construction, remove at agreed upon time. Do not remove mock-up without Architect's approval.

1.08 INSPECTION AND TESTING AGENCY SERVICES

A. Owner will appoint, employ, and pay for services of an independent inspection and testing agency to perform inspection and testing.

B. The inspection and testing agency will perform inspections, tests and other services specified in individual specification sections, as noted on the Structural Drawings, and as required by the Owner or Architect.

C. Reports will be submitted by the inspection and testing agency to the Authority Having Jurisdiction, Architect, Engineer, Contractor, and Owner, indicating observations and results of tests and indicating compliance or non-compliance with Contract Documents.

D. Contractor's Responsibilities:

1. Cooperate with inspection and testing agency personnel and facilitate their inspection / testing work on the project site.
2. Coordinate the work and inspection / testing schedule directly with inspection and testing agency.
3. Notify inspection and testing agency and Architect 24 hours minimum prior to expected time for operations requiring inspection / testing.

4. Furnish inspection and testing agency with reviewed submittals, including concrete design mix, etc.

5. Furnish safe access to the work requiring testing / inspection, samples of materials, equipment, tools, storage, electrical power, and assistance as requested.

6. Make arrangements with inspection and testing agency and pay for additional samples and tests required for Contractor's use.

7. Correct / replace any work found by the inspection and testing agency to be not in conformance with the Contract Documents.

E. Site visits and retesting required because of scheduling problems caused by the Contractor and / or non-conformance to specified requirements shall be performed by the same inspection and testing agency. Payment for retesting will be charged to the Contractor by deducting inspection or testing charges from the Contract Sum
/ Price.

1.09 MANUFACTURER'S FIELD SERVICES AND REPORTS

A. When specified in individual specification sections or when required by field installation problems, questions or concerns, require material or product suppliers or manufacturers to provide qualified staff personnel to visit the jobsite and provide technical consultation, observe site conditions, conditions of surfaces and installation, quality of workmanship, start-up of equipment, test, adjust, and balance of equipment as applicable, and to initiate instructions.

B. Representative to submit written report to Architect describing testing observations and recommendations. Site decisions or instructions given to applicators or installers that are supplemental or contrary to manufacturer's written instructions shall also be included.

C. Submit report in duplicate within 30 calendar days of observation to Architect for review.

1.10 MANUFACTURER'S INSTRUCTIONS

A. Comply with manufacturer's installation / assembly instructions in full detail, including each step-in sequence.

B. Substrates, Site Conditions and Work By Others shall conform to manufacturer's requirements:

1. Inspect substrate, site conditions and work by others for conformance to manufacturer's requirements for material and condition prior to starting any work.

2. Do not start work if substrate construction, site conditions or work by others does not comply with manufacturer's recommendations; report any

problems to Contractor and Architect.

3. Start of work / installation indicates installer's acceptance of substrate, site conditions and work by others as meeting manufacturer's requirements.

C. Should manufacturer's instructions conflict with Contract Documents, request clarification from Architect before proceeding.

1.11 MANUFACTURER'S CERTIFICATES

A. When required in individual specification sections, submit manufacturer's certificate. Refer to Section 01 33 00, paragraph entitled "Manufacturer's Certificates."

PART 2 - PRODUCTS – NOT USED

PART 3 - EXECUTION – NOT USED

END OF SECTION

SECTION 01 60 00

PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General Conditions, Supplementary Conditions and Divisions 00 and 01 Specification Sections, apply to work of this section.

1.02 SECTION INCLUDES

A. Administrative and Procedural Requirements for Materials and Equipment related to:

1. Transportation and Handling.

2. Storage and Protection.

3. Product Options.

4. Substitutions.

1.03 PRODUCTS

A. Products: Means new material, machinery, components, equipment, fixtures, and systems forming the work. Does not include machinery and equipment used for preparation, fabrication, conveying and erection of the work. Products may also include existing materials or components required for reuse.

B. Provide interchangeable components of the same manufacturer, for similar components.

C. Do not use materials and equipment removed from existing premises, except as specifically permitted by the Contract Documents.

1.04 TRANSPORTATION AND HANDLING

A. Transport and handle products in accordance with manufacturer's instructions.

B. Promptly inspect shipments to assure that products comply with requirements, quantities are correct, and products are undamaged.

C. Provide equipment and personnel to handle products by methods to prevent soiling, disfigurement or damage.

1.05 STORAGE AND PROTECTION

A. Store and protect products in accordance with manufacturer's instructions, with seals and labels intact and legible. Store sensitive products in weather-tight, climate controlled enclosures.

B. For exterior storage of fabricated products, place on sloped supports, above ground.

C. Provide and pay for off-site storage and protection when site does not permit on- site storage or protection.

D. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to avoid condensation.

E. Store loose granular materials on solid flat surfaces in a well-drained area. Prevent mixing with foreign matter.

F. Provide equipment and personnel to store products by methods to prevent soiling, disfigurement or damage.

G. Arrange storage of products to permit access for inspection. Periodically inspect to assure products are undamaged and are maintained under specified conditions.

1.06 PRODUCT OPTIONS

A. Products Specified by Reference Standards or by Description Only: Any product meeting those standards or description.

B. Products Specified by Naming One or More Manufacturers: Products of manufacturers named and meeting specifications, no options or substitutions allowed.

C. Products Specified by naming a Manufacturer “or approved equal”, or with a provision for Substitution Request: Submit a request for substitution for any manufacturer not named.

D. Products Specified by "or approved equal" to a Listed Manufacturer: Products with same function and similar quality and features to listed manufacturer.

E. Products Specified by "Similar To" a Listed Manufacturer: Products with same function and similar quality and features to listed manufacturer.

1.07 SUBSTITUTIONS

A. Architect will consider requests for Substitutions up to 8 calendar days prior to bid opening date.

B. Substitutions may be considered after contract award only when a product becomes unavailable through no fault of the Contractor, or when the Owner

deems it to be in the Owner's best interest to do so.

1. Substitutions proposed to allow timely delivery due to Contractor's failure to order material / equipment on time will not be considered.

C. Document each request with complete data substantiating compliance of proposed substitution with Contract Documents.

D. A request constitutes a representation that the Bidder / Contractor:

1. Has investigated proposed product and determined that it meets or exceeds the quality level of the specified product.

2. Will provide the same warranty for the Substitution as for the specified product.

3. Will coordinate installation and make changes to other Work that may be required for the Work to be complete with no additional cost to Owner.

4. Waives claims for additional costs or time extension that may subsequently become apparent.

5. Will reimburse Owner for review or redesign services associated with re- approval by authorities.

6. Has investigated and determined that the proposed substitution will meet code requirements.

E. Substitutions will not be considered when they are indicated or implied on shop drawing or product data submittals, if they have not been previously approved.

F. Substitution Submittal Procedure:

1. All substitution requests shall be accompanied with the Substitution Request Form completely filled out. Substitution Request Forms are bound in the Project Manual in Section 01 60 01. Limit each request form to one proposed substitution.

2. Submit one complete set of substitution request forms and supporting data via mail or e-mail.

3. Clearly indicate with red arrows on the supporting data the proposed substitution and accessories.

G. Substitution Review Procedure: Because of the number of substitution requests typically received before bidding and the coordination required to review these, the following procedures will apply:

1. Substitution requests received after the time specified in paragraph 1.07 A. will not be reviewed or listed in addenda.

2. Substitution requests will be evaluated and the request form will be annotated in the column marked "For Use by Architect." It will then be retained in the A / E's file.

3. The Substitution Request Form and submitted data will not be returned to the submitter. These forms are for the A / E's in-house use only.

4. Only approved substitutions will be listed on addenda. All proposed substitutions not listed on addenda shall be considered by the submitter and the Contractor as a non-acceptable substitution and shall not be used.

PART 2 - PRODUCTS – NOT USED

PART 3 - EXECUTION – NOT USED

END OF SECTION

SECTION 01 60 01

SUBSTITUTION REQUEST FORM

SUBMITTED TO: Skagit County

PROJECT: Fire Alarm Replacements

SPECIFIED ITEM:

Section No.	Paragraph No.	Description of Specified Item

The Undersigned requests consideration for the following substitution to that specified:

PROPOSED SUBSTITUTION:

ATTACHED DATA:

Include product description, specifications, drawings, photographs, performance, and test data as necessary for evaluation. Clearly identify proposed substitution and portions of data from other items where more than one item is described. Include description of changes to Contract Documents required by proposed substitution.

CERTIFICATION:

The Undersigned certifies that the following paragraphs are correct:

1. Proposed substitution does not affect dimensions shown on Drawings.

2. The Undersigned will pay for changes to building design, including engineering design, detailing, and construction costs, caused by requested substitution.

3. Proposed substitution will have no adverse effect on other trades, Construction Schedule, or specified warranty requirements.

4. Maintenance and service parts will be locally available for proposed substitution.

Undersigned further states that function, appearance, and quality of proposed substitution are equivalent or superior to specified item.

SUBMITTED BY:

Signature _____

Firm _____

Address _____

Date _____

Telephone ( ) _____

FAX ( ) _____

FOR USE BY ARCHITECT:

☐ Approved ☐ Approved as Noted

☐ Not Approved ☐ Received too Late

By _____

Date _____

Remarks _____

END OF SECTION

SECTION 01 78 00

CONTRACT CLOSEOUT

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General Conditions, Supplementary Conditions and Divisions 00 and 01 Specification Sections, apply to work of this section.

1.02 SECTION INCLUDES

A. Administrative and Procedural Requirements for the Contract Closeout including:

1. Closeout Procedures and Documents.
2. Final Cleaning.
3. Adjusting.
4. Extra Stock.
5. Spare Parts and Maintenance Materials.
6. AHJ Approved Permit Drawing Set.
7. As-Built Documents.
8. Operation and Maintenance Data and Bonds and Warranties.
9. Punch List.
10. Final Adjustment of Accounts.

1.03 CLOSEOUT PROCEDURES AND DOCUMENTS

A. Comply with the General Conditions of the Contract.

B. Submit draft As-Built Documents and draft Operations and Maintenance Data and Warranty documents prior to Substantial Completion.

C. Submit final closeout documents as required for Project closeout.

1.04 FINAL CLEANING

A. Execute final cleaning prior to Substantial Completion review and during the period between Substantial and Final Completion where punch list work causes waste, rubbish or debris.

B. Clean surfaces exposed to view, remove temporary labels, stains and foreign substances. Follow manufacturer's recommendations for cleaning installed products.

C. Clean equipment and fixtures to sanitary condition.

D. Clean dirt and debris from drainage systems.

E. Clean site; sweep paved areas, rake clean landscaped surfaces.

F. Remove waste and surplus materials, rubbish, and construction facilities from the site.

1.05 ADJUSTING

A. Adjust operating products and equipment in accordance with manufacturer's recommendations and specification section to ensure smooth and unhindered operation.

1.06 EXTRA STOCK

A. Provide extra stock in quantities specified in individual specification sections.

B. Make arrangements with the Owner’s representative to deliver extra stock items, prior to final payment.

C. Document receipt of extra stock by Owner's representative by listing each extra stock item and obtaining the signature of the Owner's representative for it. Include this document in Part 1 of the O and M Manual.

1.07 SPARE PARTS AND MAINTENANCE MATERIALS

A. Provide products, spare parts, maintenance and extra materials in quantities specified in individual specification sections.

B. Make arrangements with the Owner’s representative to deliver products, spare parts, maintenance and extra materials, prior to final payment.

C. Document receipt of products, spare parts, maintenance and extra materials by Owner's representative by listing each product, spare part, maintenance and extra material item and obtaining the signature of the Owner's representative for it. Include this document in Part 1 of the O and M Manual.

1.08 AHJ APPROVED PERMIT DRAWING SET

A. During construction, maintain Permit Set of drawings in good, clean condition and protect from damage or marks.

B. After obtaining the Certificate of Occupancy, make arrangements with the Owner’s representative to deliver AHJ approved Permit Set of drawings to the

Owner for their permanent record, prior to final payment.

C. Document receipt of Permit Set of drawings by Owner's representative by obtaining the signature of the Owner's representative for it. Include this document in Part 1 of the O and M Manual.

1.09 AS-BUILT DOCUMENTS

A. As-Built Documents shall consist of the following:

1. Contract Documents:

a. Contract Drawings with As-Built Revisions noted.

b. Reviewed Shop Drawings, Product Data and Samples.

2. Drawings of Contractor designed systems, (i.e. joists, trusses, fire sprinkler system, fire alarm system, controls system, etc.).

B. During Construction:

1. Maintain on-site throughout the construction period, one set of As-Built Documents and record actual revisions to the work on these documents. As-Built Documents and records specified below may be kept in electronic format with on-site access and with off-site weekly backup.

a. Store As-Built Documents separate from documents used for construction.

b. Record information concurrent with construction progress.

c. Contract Drawings: Legibly mark, cloud and flag each item to record actual construction including:

1) Surveyed as-built conditions.

2) Measured horizontal and vertical locations of underground utilities referenced to permanent surface improvements.

3) Measured location of internal utilities concealed in construction, referenced to visible and accessible features of the work.

4) Field changes of dimensions and detail.

5) Details not on original Contract Drawings.

C. Prior to Contract Closeout: Prepare and submit As-Built Documents to the Architect as follows:

1. As-Built Document Content:

    a. As-Built Utility Survey: Provide survey of site utility piping and structures with location and elevation, performed by a professional surveyor. Survey information shall be recorded on the Contract Drawings for inclusion in the As-Built Drawings.

    b. As-Built Project Drawings: Drawings shall be in good, clean condition and legibly marked in red ink (red text) to show revisions and changes made during construction and as-built conditions. Mark or stamp bottom of each sheet “As-Built Drawings, Name of Construction Company, Date”.

    c. Contractor Designed Systems: Electronically update the contractor designed system drawings with as-built conditions. Mark or stamp bottom of each sheet “As-Built Drawings, Name of Construction Company, Date”.

2. Draft Submittal:

    a. Submittals shall be submitted in the following packages:

        1) Civil.

        2) Landscape.

        3) Architectural.

        4) Structural.

        5) Plumbing.

        6) HVAC.

        7) Electrical.

    b. Digital Copy: Submit a digital draft copy in with the content described below in PDF format for review by Architect / Engineer and Owner. The digital copy will be returned to Contractor with Architect / Engineer and Owner comments. Revise content of documents as required by Architect / Engineer and Owner comments prior to submitting final documents. Organize the submittal as follows:

        1) As-Built Survey: Provide one PDF file and label the file “As- Built Utility Survey”.

        2) As-Built Project Drawings: Provide a separate PDF file for each discipline and label the file “As-Built_*Discipline*”. Each file shall have each page bookmarked and labeled to match the sheet numbers.

3) Contractor Designed Systems: Provide one PDF file for each set of system Drawings and label each file per its content.

3. Final Submittal:

a. Printed Copy (Hard Copy): Submit two (2) sets of revised documents. Organize the submittal as follows:

1) As-Built Survey: Provide printed copy on 20 lbs. white paper.

2) As-Built Project Drawings: Provide printed copy on 20 lbs. white paper in color so red ink (red text) is in color.

3) Contractor Designed Systems: Provide printed copy of each set on 20 lbs. white paper.

b. Digital Copy: Submit a digital copy of the revised documents in PDF format. Digital copy shall be in color so red ink (red text) is in color and matches the format of the draft submittal.

1.10 OPERATION AND MAINTENANCE DATA AND BONDS AND WARRANTIES

A. Operation and Maintenance Data: Refer to Section 01 78 23.

B. Bonds and Warranties: Refer to Section 01 78 33.

1.11 PUNCH LIST

A. Contractor Punch List: Upon completion of the Work, the Contractor shall walk- through each room / area in the building and around the entire exterior and site and prepare a punch list of each item of work that is not completed or does not conform to the requirements of the Contract Documents.

B. Architect's Punch List: After completion of the punch list by the Contractor, provide written notice that the Work has been substantially completed and schedule a room by room punch list walk-though with the Architect and Owner to review the finished work and Contractor's punch list items.

1. On receipt of a request for inspection, the Architect will either proceed with inspection or advise the Contractor of unfilled requirements.
2. Any additional items of uncompleted or unacceptable work that are found during this walk-through shall be added onto the Punch List for completion / correction.

3. The Architect will prepare the Certificate of Substantial Completion following inspection or advise the Contractor of construction that must be completed or corrected before the certificate will be issued.

C. The project budget provides for two final visits to the project site by the Architect / Engineer for performing a punch list review of the work. The first visit will be in response to the Contractor's notice of substantial completion of the Work and if necessary, the second will be after notification by the Contractor that punch list items and deficiencies noted during punch list review have been corrected.

D. Should additional reviews by the Architect / Engineer be required due to the Contractor's failure to correct deficient work, the Owner will deduct the amount of Architect / Engineer compensation for re-review services from final payment to Contractor.

1.12 FINAL ADJUSTMENT OF ACCOUNTS

A. Submit a final statement of accounting to Architect.

B. Reflect all adjustments to Contract Sum. Indicate following:

1. The Original Contract Sum;

2. Additions and deductions resulting from:

a. Previous change orders;

b. Alternates;

c. Unit price adjustments;

d. Deductions for uncorrected work;

e. Deductions for liquidated damages;

f. Deductions for additional review services;

g. Other adjustments;

3. Total Contract Sum, as adjusted;

4. Previous Payments; and

5. Sums remaining due.

C. Prior to processing of Final Application and Certificate for Payment, all Closeout Documents including Project Record Documents, Operations and Maintenance Manuals and Warranty Binders must be submitted, reviewed and accepted by the Architect.

PART 2 - PRODUCTS

2.01 BINDERS

A. Binders: Binders shall be black and have heavy-duty durable vinyl covers on front, back and spine, and have heavy duty metal D-rings.

B. Dividers: Similar to Avery *Print-On Dividers, 8 Tab*.

PART 3 - EXECUTION – NOT USED

END OF SECTION

SECTION 01 78 23

OPERATION AND MAINTENANCE DATA

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General Conditions, Supplementary Conditions and Divisions 00 and 01 Specification Sections, apply to work of this section.

1.02 SECTION INCLUDES

A. Operation and Maintenance Data.

1.03 SCOPE OF WORK

A. To aid the continued instruction of operating and maintenance personnel, and to provide a positive source of information regarding the products incorporated into the Work, furnish and deliver the data described in this Section and in pertinent other Sections.

B. Related Work:

1. Required contents of submittals also may be amplified in pertinent other Sections.

1.04 SUBMITTALS

A. Comply with applicable provisions of Section 01 33 00.

B. Submit one electronic (PDF) copy of a preliminary draft of the proposed Manual or Manuals to the Architect for review and comments.

C. Unless otherwise directed in other Sections, or in writing by the Architect, submit two printed copies of the final Manuals and one electronic (PDF) copy to the Architect prior to instruction of operation and maintenance personnel.

1.05 QUALITY ASSURANCE

A. In preparing data required by this Section, use only personnel who are thoroughly trained and experienced in operation and maintenance of the described items, completely familiar with the requirements of this Section, and skilled in technical writing to the extent needed for communicating the essential data.

PART 2 - PRODUCTS

2.01 INSTRUCTIONS

A. Where instruction Manuals are required to be submitted under other Sections of these Specifications, prepare in accordance with the provisions of this Section.

B. Format:

1. Size: 8-1/2-inch x 11-inch.

2. Paper: White bond, at least 20 lb wt.

3. Text: Neatly written or printed.

4. Drawings: 11-inch height (11x17) preferable; bind in with text; foldout acceptable; larger drawings acceptable but fold to fit within the Manual and provide a drawing pocket inside rear cover or bind in with text.

5. Flysheets: Separate each portion of the Manual, by Specification Section, with neatly prepared flysheets briefly describing contents of the ensuing portion; flysheets may be in color.

6. Measurements: Provide all measurements in U. S. standard units such as feet-and-inches, lbs, and cfm.

7. Manuals shall be clearly identified on the cover with at least the following information:

2.02 OPERATING AND MAINTENANCE INSTRUCTIONS

( )
(name and address of work)
_____

( )
(name of contractor)
_____

( )
(general subject of this Manual)
_____

( )
(space for approval signature of)
_____

( )
(the Architect and approval date)
_____

A. Contents: Include at least the following:

1. Neatly typewritten index near the front of the Manual, giving immediate information as to location within the Manual of all emergency information regarding the installation.

2. Complete instructions regarding operation and maintenance of all equipment involved including lubrication, disassembly, and re-assembly.

3. Complete nomenclature of all parts of all equipment.

4. Copy of all guarantees and warranties issued.

5. Manufacturers' bulletins, cuts, and descriptive data, where pertinent, clearly indication the precise items included in this installation and deleting, or otherwise clearly indicating, all manufacturers' data with which this installation is not concerned.

6. Such other data as required in pertinent Sections of these Specifications.

PART 3 - EXECUTION

3.01 INSTRUCTION MANUALS

A. Preliminary:

1. Prepare a preliminary draft of each proposed Manual.

2. Show general arrangement, nature of contents in each portion, probable number of drawings and their size, and proposed method of binding and covering.

3. Secure the Architect's approval prior to proceeding.

B. Final: Complete the Manuals in strict accordance with the approved preliminary drafts and the Architect's review comments.

C. Revisions:

1. Following the indoctrination and instruction of operation and maintenance personnel, review all proposed revisions of the Manual with the Architect.

2. If the Contractor is required by the Architect to revise previously approved Manuals, compensation will be made as provided for under "Changes" in the General Conditions.

END OF SECTION

SECTION 01 78 33

BONDS AND WARRANTIES

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General Conditions, Supplementary Conditions and Divisions 00 and 01 Specification Sections, apply to work of this section.

1.02 SECTION INCLUDES

A. Bonds and Warranties.

1.03 SCOPE OF WORK

A. Compile specified certificates, bonds, and similar certification.

B. Compile specified services and maintenance contracts.

C. Co-execute submittals when so specified.

D. Review submittals to verify compliance with Contract Documents.

1. Submit to Architect on Contractor's letterhead. Architect reviews and transmits to Owner.

E. Related Requirements:

1. Coordinate related requirements specified in other parts of the Project Manual, including but not limited to following.

a. Operating and Maintenance Data with Section 01 78 23.

b. Each respective Section as required.

1.04 SUBMITTALS

A. Assemble executed certificates, warranties, bonds, and any required service and maintenance contracts from the respective manufacturers, suppliers, and subcontractors.

B. Number of original signed copies required: One printed copy of each and one electronic copy (PDF) of each.

C. Contents: Neatly type Table of Contents in orderly sequence. Furnish complete information for each item as follows:

1. Product or work item;

2. Firm, with name of principal, address, and telephone number;

3. Scope;

4. Date of beginning of warranty or service and maintenance contract;

5. Duration of warranty or service maintenance contract;

6. Information for Owner's personnel, including:

   a. Proper procedure in case of failure;

7. Instances which might affect validity of warranty or bond.

8. Contractor, name of responsible principal, address, and telephone number.

1.05 FORM OF SUBMITTALS

A. Prepare in duplicate, packets conforming to following requirements.

1. Size: 8-1/2-inch X 11-inch punched sheets for 3-ring binder. Fold larger sheets to fit into binders.

2. Binders: Commercial quality heavy-duty plastic or fiberboard 3-ring D-ring binders. All binding is subject to the Architect's approval.

3. Covers: Identify each packet with typed or printed title "WARRANTIES AND BONDS" and showing:

   a. Title of Project.

   b. Name of Contractor.

B. Format / Warranties / Guarantees:

1. In addition to guarantees required by "General Conditions of Contract", furnish written guarantees warranting certain portions of work for longer periods.

2. Address them to Owner.

3. Submit through Architect on Contractor's letterhead before final payment and acceptance of work by Owner.

4. Where more than one subcontractor is involved, submit guarantee for each.

C. Form of Guarantee for other specified installation:

1. I (We), (insert name of contractor), certify (insert name of trade or portion of work being guaranteed) installed by (insert name of appropriate subcontractor) on (insert name of job) located at (insert building/site name and address) is performed in strict accordance with Contract Documents. Further, I (We) guarantee this work to be (watertight, and without leaks) (other) caused by defects in materials and workmanship, for (fill in specific required guarantee period) years from (date of acceptance of work), and will repair, or replace, without delay, any defects in materials and workmanship discovered within guarantee period.

   Sincerely,

   (Name of Contractor / responsible principal / address/telephone number). Signed by Owner, Partner, or other person authorized to commit firm.)

1.06 TIME OF SUBMITTALS

A. For equipment or component parts of equipment put into service during progress of construction:

   1. Submit documents within ten days after final inspection and acceptance; or:

      a. Otherwise make submittals within ten days after Date of Substantial Completion, prior to final request for payment.

B. For items of work, where acceptance is delayed materially beyond the date of Substantial Completion, provide updated submittal within ten days after acceptance. List the date of acceptance as the start of the warranty period.

1.07 WARRANTY LENGTHS AND START DATES

A. All materials, parts, and labor shall be warranted for a minimum period of (1) one year; unless greater lengths for specific sections are specified elsewhere within the Project Manual.

B. Warranty periods shall begin on the date established as Substantial Completion.

PART 2 - PRODUCTS – NOT USED

PART 3 - EXECUTION – NOT USED

END OF SECTION

SECTION 01 79 00

DEMONSTRATION AND TRAINING

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General Conditions, Supplementary Conditions and Divisions 00 and 01 Specification Sections, apply to work of this section.

1.02 SECTION INCLUDES

A. Demonstration and Training.

1.03 SUMMARY

A. Work requiring instruction of Owner's personnel is specified in individual Sections.

B. Related Sections:

1. Operation and Maintenance Data: Section 01 78 23.

1.04 COMMISSIONING

A. Schedule instructional meeting or meetings within 2 weeks after Operation and Maintenance manuals have been accepted by the Architect.

B. Prior to final inspection, fully qualified manufacturers' representatives shall fully instruct Owner's designated operating and maintenance personnel in operation, adjustment, and maintenance of equipment and systems.

C. Basis of Instruction: Operation and maintenance manuals. Review contents of manuals with Owner's designated personnel, in full detail, to explain all aspects of operation and maintenance.

PART 2 - PRODUCTS – NOT USED

PART 3 - EXECUTION – NOT USED

END OF SECTION

Skagit County Administration Building

Divisions 26 & 28

SECTION 26 00 00
ELECTRICAL BASIC REQUIREMENTS

PART 1 - GENERAL

1.01 DESIGN-BUILD SUMMARY

A. Work included in 26 00 00 applies to Division 26, Electrical work to provide materials, labor, tools, permits and incidentals to make electrical systems ready for Owner's use for proposed project

1.02 DESIGN-BUILD INSTRUCTIONS

A. This document is issued to give Bidders a basis for preparing a proposal to design and install a complete fire alarm system for this project.

B. Alternates to this Document may be offered as a separate proposal.

C. Bidder to submit the following information with the Proposal:
   1. Preliminary schematic drawing indicating power distribution system (one-line diagram) to include proposed system capacity and expansion capacity, expected available fault current at the service equipment, fault duty ratings of proposed equipment, load survey and maximum voltage drop at distribution equipment.
   2. Description of lighting system, indicating luminaire types and manufacturer and method of control.
   3. List of wiring materials proposed for systems which are applicable to this project, e.g., switchgear, panels, motor control centers, transformers, generators and transfer switches, life safety and signal system equipment, and the like.
   4. Any other information which the bidder considers pertinent in evaluating the proposal.

1.03 DESIGN-BUILD APPROACH

A. Use this Specification as a guide for design/engineering requirements, workmanship and materials or construction. Utilize design-build concept throughout construction phase of project.

B. Investigate and be apprised of applicable codes, rules, and regulations as enforced by Authority Having Jurisdiction (AHJ).

C. Visit the Site of the proposed construction. Verify and inspect the existing site to determine conditions that affect this work.

1.04 DESIGN-BUILD CRITERIA/CALCULATIONS

A. Related Work Specified Elsewhere: Contents of Section apply to Division 26 Specifications. Requirements of Section are a minimum for Division 26 Sections, unless otherwise stated in each Section, in which case that Section's requirements take precedence.

B. Design Criteria:
   1. Fire Life Safety Systems: Provide system complete as necessary to meet requirements of code authorities.

1.05 SECTION INCLUDES

A. Work included in 26 00 00, Electrical Basic Requirements applies to Division 26, Electrical work to provide materials, labor, tools, permits, incidentals, and other services to provide and make ready for Owner's use of electrical systems for proposed project.

B. Contract Documents include, but are not limited to, Specifications including Division 00, Procurement and Contracting Requirements and Division 01, General Requirements, Drawings, Addenda, and Owner/Contractor Agreement. Confirm requirements before commencement of work.

C. Definitions:
   1. Provide: To furnish and install, complete and ready for intended use.
   2. Furnish: Supply and deliver to project site, ready for unpacking, assembly and installation.
   3. Install: Includes unloading, unpacking, assembling, erecting, installation, applying, finishing, protecting, cleaning and similar operations at project site as required to complete items of work furnished.

4. Approved or Approved Equivalent: To possess the same performance qualities and characteristics and fulfill the utilitarian function without any decrease in quality, durability or longevity. For equipment/products defined by the Contractor as "equivalent", substitution requests must be submitted to Engineer for consideration, in accordance with Division 01, General Requirements, and approved by the Engineer prior to submitting bids for substituted items.
5. Authority Having Jurisdiction (AHJ): Indicates reviewing authorities, including local fire marshal, Owner's insurance underwriter, Owner's Authorized Representative, and other reviewing entity whose approval is required to obtain systems acceptance.

1.06 RELATED SECTIONS

A. Contents of Section applies to Division 26, Electrical Contract Documents.

B. Related Work:
   1. Additional conditions apply to this Division including, but not limited to:
      a. Specifications including Division 00, Procurement and Contracting Requirements and Division 01, General Requirements.
      b. Divison 28, Eectronic Safety
      c. Drawings
      d. Addenda
      e. Owner/Contractor Agreement
      f. Codes, Standards, Public Ordinances and Permits

1.07 REFERENCES AND STANDARDS

A. References and Standards per Division 00, Procurement and Contracting Requirements and Division 01, General Requirements, individual Division 26, Electrical Sections and those listed in this Section.

B. Codes to include latest adopted editions, including current amendments, supplements and local jurisdiction requirements in effect as of the date of the Contract Documents, of/from:
   1. State of Washington:
      a. IBC - International Building Code
      b. IFC - International Fire Code
      c. IMC - International Mechanical Code
      d. NEC - National Electrical Code
      e. UPC - Uniform Plumbing Code
      f. WAC - Washington Administrative Code
      g. WSEC - Washington State Energy Code

C. Reference standards and guidelines include but are not limited to the latest adopted editions from:
   1. ABA - Architectural Barriers Act
   2. ADA - Americans with Disabilities Act
   3. ANSI - American National Standards Institute
   4. ASCE - American Society of Civil Engineers
   5. ASTM - ASTM International
   6. CFR - Code of Federal Regulations
   7. EPA - Environmental Protection Agency
   8. FM - FM Global
   9. IBC - International Building Code
   10. IEC - International Electrotechnical Commission
   11. IEEE - Institute of Electrical and Electronics Engineers
   12. MSS - Manufacturers Standardization Society
   13. NEC - National Electric Code
   14. NECA - National Electrical Contractors Association
   15. NEMA - National Electrical Manufacturers Association
   16. NETA - National Electrical Testing Association
   17. NFPA - National Fire Protection Association

18. OSHA - Occupational Safety and Health Administration
19. UL - Underwriters Laboratories Inc.

D. See Division 26, Electrical individual Sections for additional references.

1.08 SUBMITTALS

A. See Division 01, General Requirements for Submittal Procedures as well as individual Division 26, Electrical Sections.

B. Provide drawings in format and software release equal to the design documents. Drawings to be the same sheet size and scale as the Contract Documents.

C. "No Exception Taken" constitutes that review is for general conformance with the design concept expressed in the Contract Documents for the limited purpose of checking for conformance with information given. Any action is subject to the requirements of the Contract Documents. Contractor is responsible for the dimensions and quantity and will confirm and correlate at the job site, fabrication processes and techniques of construction, coordination of the work with that of all other trades, and the satisfactory performance of the work.

D. Provide product submittals and shop drawings in electronic format only. Electronic format must be submitted via zip file via e-mail. For electronic format, provide one file per division containing one bookmarked PDF file with each bookmark corresponding to each Specification Section. Arrange bookmarks in ascending order of Specification Section number. Individual submittals sent piecemeal in a per Specification Section method will be returned without review or comment. All transmissions/submissions to be submitted to Owner. Deviations will be returned without review.

E. Product Data: Provide manufacturer's descriptive literature for products specified in Division 26, Electrical Sections.

F. Identify/mark each submittal in detail. Note what differences, if any, exist between the submitted item and the specified item. Failure to identify the differences will be considered cause for disapproval. If differences are not identified and/or not discovered during the submittal review process, Contractor remains responsible for providing equipment and materials that meet the specifications and drawings.
   1. Label submittal to match numbering/references as shown in Contract Documents. Highlight and label applicable information to individual equipment or cross out/remove extraneous data not applicable to submitted model. Clearly note options and accessories to be provided, including field installed items. Highlight connections by/to other trades.
   2. Include technical data, installation instructions and dimensioned drawings for products, fixtures, equipment and devices installed, furnished or provided. Reference individual Division 26, Electrical specification Sections for specific items required in product data submittal outside of these requirements.
   3. See Division 26, Electrical individual Sections for additional submittal requirements outside of these requirements.

G. Maximum of two reviews of complete submittal package. Arrange for additional reviews and/or early review of long-lead items; Bear costs of these additional reviews at Engineer's hourly rates. Incomplete submittal packages/submittals will be returned to contractor without review.

H. Resubmission Requirements: Make corrections or changes in submittals as required, and in consideration of Engineer’s comments. Identify Engineer’s comments and provide an individual response to each of the Engineer’s comments. Cloud changes in the submittals and further identify changes which are in response to Engineer’s comments.

I. Trade Coordination: Include physical characteristics, electrical characteristics, device layout plans, wiring diagrams, and connections as required per Division 26, Electrical Coordination Documents. For equipment with electrical connections, furnish copy of approved submittal for inclusion in Division 26, Electrical submittals.

J. Substitutions and Variation from Basis of Design:
   1. The Basis of Design designated product establishes the qualities and characteristics for the evaluation of any comparable products by other listed acceptable manufacturers if

included in this Specification or included in an approved Substitution Request as judged by the Design Professional.

2. If substitutions and/or equivalent equipment/products are being proposed, it is the responsibility of parties concerned, involved in, and furnishing the substitute and/or equivalent equipment to verify and compare the characteristics and requirements of that furnished to that specified and/or shown. If greater capacity and/or more materials and/or more labor is required for the rough-in, circuitry or connections than for the item specified and provided for, then provide compensation for additional charges required for the proper rough-in, circuitry and connections for the equipment being furnished. No additional charges above the Base Bid, including resulting charges for work performed under other Divisions, will be allowed for such revisions. Coordinate with the requirements of "Submittals". For any product marked "or approved equivalent", a substitution request must be submitted to Engineer for approval prior to purchase, delivery or installation.

K. Samples: Provide samples when requested by individual Sections.

L. Resubmission Requirements:
   1. Make any corrections or change in submittals when required. Provide submittals as specified. The engineer will not be required to edit and/or interpret the Contractor's submittals. Indicate changes for the resubmittal in a cover letter with reference to page(s) changed and reference response to comment. Cloud changes in the submittals.
   2. Resubmit for review until review indicates no exception taken or "make corrections as noted".

M. Operation and Maintenance Manuals, Owner's Instructions:
   1. Submit, at one time, electronic files (PDF format) of manufacturer's operation and maintenance instruction manuals and parts lists for equipment or items requiring servicing. Submit data when work is substantially complete and in same order format as submittals. Include name and location of source parts and service for each piece of equipment.
      a. Include copy of approved submittal data along with submittal review letters received from Engineer. Data to clearly indicate installed equipment model numbers. Delete or cross out data pertaining to other equipment not specific to this project.
      b. Include copy of manufacturer's standard Operations and Maintenance for equipment. At front of each tab, provide routine maintenance documentation for scheduled equipment. Include manufacturer's recommended maintenance schedule and highlight maintenance required to maintain warranty. Furnish list of routine maintenance parts, including part numbers, sizes, quantities, relevant to each piece of equipment.
      c. Include Warranty per Division 00, Procurement and Contracting Requirements and Division 01, General Requirements, Section 26 00 00, Electrical Basic Requirements and individual Division 26, Electrical Sections.
      d. Include product certificates of warranties and guarantees.
      e. Include copy of complete parts list for equipment. Include available exploded views of assemblies and sub assemblies.
      f. Include commissioning reports.
      g. Include copy of startup and test reports specific to each piece of equipment.
      h. Engineer will return incomplete documentation without review. Engineer will provide one set of review comments in Submittal Review format. Contractor must arrange for additional reviews; Contractor to bear costs for additional reviews at Engineer's hourly rates.
   2. Thoroughly instruct Owner in proper operation of equipment and systems. Where noted in individual Sections, training will include classroom instruction with applicable training aids and systems demonstrations. Field instruction per Section 26 00 00, Electrical Basic Requirements, Demonstration.
   3. Copies of certificates of code authority inspections, acceptance, code required acceptance tests, letter of conformance and other special guarantees, certificates of warranties, specified elsewhere or indicated on Drawings.

N. Record Drawings:

1. Maintain at site at least one set of drawings for recording “As-constructed” conditions. Indicate on drawings changes to original documents by referencing revision document, and include buried elements, location of conduit, and location of concealed electrical items. Include items changed by field orders, supplemental instructions, and constructed conditions.
2. Record Drawings are to include equipment and fixture/connection schedules that accurately reflect "as constructed or installed" for project.
3. At completion of project, input changes to original project on CAD Drawings and make one set of black-line drawings created from CAD Files in version/release equal to contract drawings. Submit CAD Files and drawings upon substantial completion.
4. See Division 26, Electrical individual Sections for additional items to include in record drawings.

1.09 QUALITY ASSURANCE

A. Regulatory Requirements: Work and materials installed to conform with all local, State and Federal codes, and other applicable laws and regulations. Where code requirements are at variance with Contract Documents, meet code requirements as a minimum requirement and include costs necessary to meet these in Contract. Machinery and equipment are to comply with OSHA requirements, as currently revised and interpreted for equipment manufacturer requirements. Install equipment provided per manufacturer recommendations.

B. Whenever this Specification calls for material, workmanship, arrangement or construction of higher quality and/or capacity than that required by governing codes, higher quality and/or capacity take precedence.

C. Manufacturer's Instructions: Follow manufacturer's written instructions. If in conflict with Contract Documents, obtain clarification. Notify Owner in writing before starting work.

D. Items shown on Drawings are not necessarily included in Specifications or vice versa. Confirm requirements in all Contract Documents.

E. Provide products that are UL listed.

1.10 WARRANTY

A. Provide written warranty covering the work for a period of one year from date of Substantial Completion in accordance with Division 00, Procurement and Contracting Requirements and Division 01, General Requirements, Section 26 00 00, Electrical Basic Requirements and individual Division 26, Electrical Sections.

B. Sections under this Division can require additional and/or extended warranties that apply beyond basic warranty under Division 01, General Requirements and the General Conditions. Confirm requirements in all Contract Documents.

1.11 COORDINATION DOCUMENTS

A. Prior to construction, prepare and submit coordinated layout drawings (composite drawings), to coordinate installation with location of HVAC equipment, ductwork, grilles, diffusers, piping, plumbing equipment/fixtures, fire sprinklers, plumbing, lights, cable tray and electrical services. Provide maintenance access requirements.

B. Prepare Drawings as follows:
1. Drawings in CAD Format. CAD format release equal to design documents. Drawings to be same sheet size and scale as Contract Drawings and indicate location, size and elevation above finished floor of equipment and distribution systems.
2. Review and revise, as necessary, section cuts in Contract Drawings after verification of field conditions.
3. Incorporate Addenda items and change orders.
4. Provide additional coordination as requested by other trades.

C. Advise Owner in event conflict occurs in location or connection of equipment. Bear costs resulting from failure to properly coordinate installation or failure to advise Owner of conflict.

D. Submit final Coordination Drawings with changes as Record Drawings at completion of project.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Articles, fixtures, and equipment of a kind to be standard product of one manufacturer.

2.02 STANDARDS OF MATERIALS AND WORKMANSHIP

A. Base contract upon furnishing materials as specified. Materials, equipment, and fixtures used for construction are to be new, latest products as listed in manufacturer's printed catalog data and are to be UL or ETL listed and labeled or be approved by State, County, and City authorities prior to procurement and installation.

B. Names and manufacturer's names denote character and quality of equipment desired and are not to be construed as limiting competition.

C. Hazardous Materials:
   1. Comply with local, State of Washington, and Federal regulations relating to hazardous materials.
   2. Comply with Division 00, Procurement and Contracting Requirements and Division 01, General Requirements for this project relating to hazardous materials.
   3. Do not use any materials containing a hazardous substance. If hazardous materials are encountered, do not disturb; immediately notify Owner. Hazardous materials will be removed by Owner under separate contract.

2.03 ACCESS PANELS

A. See Division 01, General Requirements and Division 08, Openings for products and installation requirements.

B. Confirm Access Panel requirements in Division 01, General Requirements, and individual Division 26, Electrical Sections. In the absence of specific requirements, comply with the following:
   1. Provide flush mounting access panels for service of systems and individual components requiring maintenance or inspection. Where access panels are located in fire-rated assemblies of building, rate access panels accordingly.
      a. Ceiling access panels to be minimum of 24-inch by 24-inch.
      b. Wall access panels to be minimum of 12-inch by 12-inch.
      c. Provide screwdriver operated catch.
      d. Manufacturers and Models:
         1) Drywall: Karp KDW.
         2) Plaster: Karp DSC-214PL.
         3) Masonry: Karp DSC-214M.
         4) 2 hour rated: Karp KPF-350FR.
         5) Manufacturers: Milcor, Elmdor, Acudor, or approved equivalent.

PART 3 - EXECUTION

3.01 ACCESSIBILITY AND INSTALLATION

A. Confirm Accessibility and Installation requirements in Division 00, Procurement and Contracting Requirements, Division 01, General Requirements, Section 26 00 00, Electrical Basic Requirements and individual Division 26, Electrical Sections.

B. Install equipment requiring access (i.e., junction boxes, light fixtures, power supplies, motors, etc.) so that they may be serviced, reset, replaced or recalibrated by service people with normal service tools and equipment. Do not install equipment in passageways, doorways, scuttles or crawlspaces which would impede or block the intended usage.

C. Install equipment and products complete as directed by manufacturer's installation instructions. Obtain installation instructions from manufacturer prior to rough-in of equipment and examine instructions thoroughly. When requirements of installation instructions conflict with Contract Documents, request clarification from Architect prior to proceeding with installation. This includes proper installation methods, sequencing, and coordination with other trades and disciplines.

D. Firestopping: Comply with individual Division 26, Electrical Sections and coordinate location and protection level of fire and/or smoke rated walls, ceilings, and floors. When these assemblies are penetrated, seal around piping and equipment with approved firestopping material. Install firestopping material complete as directed by manufacturer's installation instructions. Meet requirements of ASTM E814, Standard Test Method for Fire Tests of Through-Penetration Fire Stops.

E. Plenums: In plenums, provide plenum rated materials that meet the requirements to be installed in plenums. Immediately notify Owner of discrepancy.

F. Start up equipment, in accordance with manufacturer's start-up instructions, and in presence of manufacturer's representative. Test controls and demonstrate compliance with requirements. Replace damaged or malfunctioning controls and equipment.

G. Provide miscellaneous supports/metals required for installation of equipment and conduit.

3.02 SEISMIC CONTROL

A. Confirm Seismic Control requirements in Division 01, General Requirements, Structural documents, and individual Division 26 Electrical Sections.

B. Restraints which are used to prevent disruption of function of piece of equipment because of application of horizontal force to be such that forces are carried to frame of structure in such a way that frame will not be deflected when apparatus is attached to a mounting base and equipment pad, or to structure in normal way, utilizing attachments provided. Secure equipment and distribution systems to withstand a force in direction equal to value defined by jurisdiction having authority.

C. Provide means to prohibit excessive motion of electrical equipment during earthquake.

3.03 REVIEW AND OBSERVATION

A. Confirm Review and Observation requirements in Division 00, Procurement and Contracting Requirements, Division 01, General Requirements, Section 26 00 00, Electrical Basic Requirements and individual Division 26, Electrical Sections.

B. Notify Architect, in writing, at following stages of construction so that they may, at their option, visit site for review and construction observation:
   1. Prior to ceiling cover/installation.
   2. When main systems, or portions of, are being tested and ready for inspection by AHJ.

C. Final Punch: Costs incurred by additional trips required due to incomplete systems will be the responsibility of the Contractor.

3.04 CUTTING AND PATCHING

A. Confirm requirements in Division 00, Procurement and Contracting Requirements and Division 01, General Requirements. In the absence of specific requirements in Division 01, General Requirements, comply with individual Division 26, Electrical Sections and the following:
   1. Proposed floor cutting/core drilling/sleeve locations to be approved by Project Structural Engineer. Submit proposed locations to Owner/Project Structural Engineer. Where slabs are of post tension construction, perform x-ray scan of proposed penetration locations and submit scan results including proposed penetration locations to Project Structural Engineer/Owner for approval. Where slabs are of waffle type construction, show column cap extent and cell locations relative to proposed penetration(s).
   2. Cutting, patching and repairing for work specified in this Division including plastering, masonry work, concrete work, carpentry work, and painting included under this Section will be performed by skilled craftsmen of each respective trade in conformance with appropriate Division of Work.
   3. Additional openings required in building construction to be made by drilling or cutting. Use of jack hammer is specifically prohibited. Patch openings in and through concrete and masonry with grout.
   4. Restore new or existing work that is cut and/or damaged to original condition. Patch and repair specifically where existing items have been removed. This includes repairing and painting walls, ceilings, etc. where existing conduit and devices are removed as part of

this project. Where alterations disturb lawns, paving, and/or walks, surfaces to be repaired, refinished and left in condition matching existing prior to commencement of work.

5. Additional work required by lack of proper coordination will be provided at no additional cost to the Owner.

3.05 EQUIPMENT SELECTION AND SERVICEABILITY

A. Replace or reposition equipment which is too large or located incorrectly to permit servicing, at no additional cost to Owner.

3.06 DELIVERY, STORAGE AND HANDLING

A. Confirm requirements in Division 00, Procurement and Contracting Requirements and Division 01, General Requirements. In the absence of specific requirements, comply with individual Division 26, Electrical Sections and the following:

1. Handle materials delivered to project site with care to avoid damage. Store materials on site inside building or protected from weather, dirt and construction dust. Products and/or materials that become damaged due to water, dirt, and/or dust as a result of improper storage and handling to be replaced before installation.
2. Protect equipment to avoid damage. Close conduit openings with caps or plugs. Keep motors and bearings in watertight and dustproof covers during entire course of installation.
3. Protect bus duct and similar items until in service.

3.07 DEMONSTRATION

A. Confirm Demonstration requirements in Division 00, Procurement and Contracting Requirements, Division 01, General Requirements, and individual Division 26, Electrical Sections.

B. Upon completion of work and adjustment of equipment, test systems and demonstrate to Owner's Authorized Representative, Owner, and Engineer that equipment furnished and installed or connected under provisions of these Specifications functions in manner required. Provide field instruction to Owner's Maintenance Staff as specified in Division 01, General Requirements, Section 26 00 00, Electrical Basic Requirements and individual Division 26, Electrical Sections.

C. Manufacturer's Field Services: Furnish services of a qualified person at time approved by Owner, to instruct maintenance personnel, correct defects or deficiencies, and demonstrate to satisfaction of Owner that entire system is operating in satisfactory manner and complies with requirements of other trades that may be required to complete work. Complete instruction and demonstration prior to final job site observations.

3.08 CLEANING

A. Confirm Cleaning requirements in Division 01, General Requirements, Section 26 00 00, Electrical Basic Requirements and individual Division 26, Electrical Sections.

B. Upon completion of installation, thoroughly clean electrical equipment, removing dirt, debris, dust, temporary labels and traces of foreign substances. Throughout work, remove construction debris and surplus materials accumulated during work.

3.09 INSTALLATION

A. Confirm Installation requirements in Division 00, Procurement and Contracting Requirements and Division 01, General Requirements, Section 26 00 00, Electrical Basic Requirements and individual Division 26, Electrical Sections.

B. Install equipment and fixtures in accordance with manufacturer's installation instructions, plumb and level and firmly anchored to vibration isolators. Maintain manufacturer's recommended clearances.

C. Start up equipment, in accordance with manufacturer's start-up instructions, and in presence of manufacturer's representative. Test controls and demonstrate compliance with requirements. Replace damaged or malfunctioning controls and equipment.

D. Provide miscellaneous supports/metals required for installation of equipment.

3.10 PAINTING

A. Confirm requirements in Division 01, General Requirements and Division 09, Finishes. In the absence of specific requirements, comply with individual Division 26, Electrical Sections and the following:
   1. Ferrous Metal: After completion of work, thoroughly clean and paint exposed supports constructed of ferrous metal surfaces (i.e., hangers, hanger rods, equipment stands, etc.) with one coat of black asphalt varnish for exterior or black enamel for interior, suitable for hot surfaces.
   2. In Electrical Room, on roof or other exposed areas, equipment not painted with enamel to receive two coats of primer and one coat of rustproof enamel, colors as selected by Owner.
   3. See individual equipment Specifications for other painting.
   4. Structural Steel: Repair damage to structural steel finishes or finishes of other materials damaged by cutting, welding or patching to match original.
   5. Conduit: Clean, primer coat and paint interior/exterior conduit exposed in public areas with two coats paint suitable for metallic surfaces. Color to match adjacent surfaces.

3.11 ACCESS PANELS

A. Confirm Access Panel requirements in Division 01, General Requirements. In the absence of specific requirements in Division 01, General Requirements, comply with individual Division 26, Electrical Sections and coordinate locations/sizes of access panels with Owner prior to work.

3.12 DEMOLITION

A. Confirm requirements in Division 01, General Requirements and Division 02, Existing Conditions. In the absence of specific requirements, comply with individual Division 26, Electrical Sections and the following:
   1. It is the intent of these documents to provide necessary information and adjustments to electrical system required to meet code, and accommodate installation of new work.
   2. Coordinate with Owner so that work can be scheduled not to interrupt operations, normal activities, building access or access to different areas. Owner will cooperate to best of their ability to assist in coordinated schedule, but will remain final authority as to time of work permitted.
   3. Examination:
      a. Determine exact location of existing utilities and equipment before commencing work, compensate Owner for damages caused by failure to locate and preserve utilities. Replace damaged items with new material to match existing.
      b. Verify that abandoned wiring and equipment serve only abandoned facilities.
      c. Report discrepancies to Owner before disturbing existing installation.
   4. Execution:
      a. Remove fire alarm wiring and conduit systems not reused for new fire alarm system.
      b. Provide temporary wiring and connections to maintain electrical continuity of existing systems during construction.
      c. Remove and restore wiring which serves usable existing outlets clear of construction or demolition.
      d. Extend circuiting and devices in existing walls to be furred out.
      e. Remove abandoned wiring to source of supply.
      f. Remove exposed abandoned conduit, including abandoned conduit above accessible ceiling finishes. Cut conduit flush with walls and floors, and patch surfaces.
      g. Repair adjacent construction and finishes damaged during demolition work.
      h. Maintain access to existing electrical installations which remain active. Modify installation or provide access panel as appropriate.

3.13 ACCEPTANCE

A. Confirm requirements in Division 00, Procurement and Contracting Requirements and Division 01, General Requirements. In the absence of specific requirements, comply with individual Division 26, Electrical Sections and the following:

1. System cannot be considered for acceptance until work is completed and demonstrated to Owner that installation is in strict compliance with Specifications, Drawings and manufacturer's installation instructions, particularly in reference to following:
    a. Cleaning
    b. Operation and Maintenance Manuals
    c. Training of Operating Personnel
    d. Record Drawings
    e. Warranty and Guaranty Certificates

3.14 FIELD QUALITY CONTROL

A. Confirm Field Quality Control requirements in Division 01, General Requirements, Section 26 00 00, Electrical Basic Requirements and individual Division 26, Electrical Sections.

B. Tests:
    1. Conduct tests of equipment and systems to demonstrate compliance with requirements specified. Reference individual Specification Sections for required tests. Document tests and include in operation and maintenance manuals.
    2. During site evaluations by Owner or Engineer, provide appropriate personnel with tools to remove and replace trims, covers, and devices so that proper evaluation of installation can be performed.

3.15 LETTER OF CONFORMANCE

A. Provide Letter of Conformance, copies of manufacturers' warranties and extended warranties with a statement that Electrical items were installed in accordance with manufacturer's recommendations, UL listings and FM Global approvals. Include Letter of Conformance, copies of manufacturers' warranties and extended warranties in Operation and Maintenance Manuals.

END OF SECTION

SECTION 26 05 09
EQUIPMENT WIRING

PART 1 - GENERAL

1.01 SUMMARY

A. Work Included: Equipment connections, whether furnished by Owner or other Divisions of the Contract.

1.02 RELATED SECTIONS

A. Contents of Division 26, Electrical and Division 01, General Requirements apply to this Section.

B. In addition, reference Division 28, Electronic Safety.

1.03 REFERENCES AND STANDARDS

A. References and Standards as required by Section 26 00 00, Electrical Basic Requirements and Division 01, General Requirements.

1.04 SUBMITTALS

A. Submittals as required by Section 26 00 00, Electrical Basic Requirements and Division 01, General Requirements.

B. In addition, verify equipment electrical characteristics with Drawings and equipment submittals prior to ordering equipment.

1.05 QUALITY ASSURANCE

A. Quality assurance as required by Section 26 00 00, Electrical Basic Requirements and Division 01, General Requirements apply to this Section.

1.06 WARRANTY

A. Warranty of materials and workmanship as required by Section 26 00 00, Electrical Basic Requirements and Division 01, General Requirements.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Materials and Equipment for Equipment Wiring: As specified in individual Sections.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Prior to submittal of product data for electrical distribution equipment, obtain and examine product data and shop drawings for equipment furnished by the Owner and by other trades on the project. Update the schedule of equipment electrical connections accordingly, noting proper ratings for overcurrent devices, fuses, safety disconnect switches, conduit and wiring, and the like. As a minimum, this requirement applies to equipment furnished by Owner and equipment furnished under the following divisions of work under this contract:
   1. Division 28, Electronic Safety

3.02 INSTALLATION

A. Do not install unrelated electrical equipment or wiring on mechanical equipment without prior approval of Engineer.

B. Provide moisture tight equipment wiring and switches in ducts or plenums used for environmental air.

3.03 FIELD QUALITY CONTROL

A. Perform field inspection and testing in accordance with Division 01, General Requirements.

3.04 SYSTEMS STARTUP

A. Adjust for proper operation within manufacturer's published tolerances.

B. Demonstrate proper operation of equipment to Owner's Authorized Representative.

END OF SECTION

SECTION 26 05 19
LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES

PART 1 - GENERAL

1.01 SUMMARY

A. Work Included:
   1. Lugs and Pads
   2. Wires and Cables
   3. Connectors

1.02 RELATED SECTIONS

A. Contents of Division 26, Electrical and Division 01, General Requirements apply to this Section.

B. In addition, reference Divison 28, Electronic Safety.

1.03 REFERENCES AND STANDARDS

A. References and Standards as required by Section 26 00 00, Electrical Basic Requirements and Division 01, General Requirements.

1.04 SUBMITTALS

A. Submittals as required by Section 26 00 00, Electrical Basic Requirements and Division 01, General Requirements.

B. In addition, provide cable insulation test reports in project closeout documentation.

1.05 QUALITY ASSURANCE

A. Quality assurance as required by Section 26 00 00, Electrical Basic Requirements and Division 01, General Requirements.

1.06 WARRANTY

A. Warranty of materials and workmanship as required by Section 26 00 00, Electrical Basic Requirements and Division 01, General Requirements.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Lugs and Pads:
   1. Anderson
   2. Ilsco
   3. Panduit
   4. Thomas & Betts
   5. 3M
   6. Or approved equivalent.

B. Wires and Cables:
   1. General:
      a. General Cable
      b. Okonite
      c. Southwire
      d. Encore Wire
      e. Or approved equivalent.
   2. Metal Clad Cable - Type MC:
      a. Alflex
      b. AFC
      c. General Cable
      d. Southwire
      e. Encore Wire
      f. Or approved equivalent.

C. Connectors:

1. Anderson Power Products
2. Burndy
3. Ilsco
4. 3M
5. Thomas & Betts
6. Or approved equivalent.

2.02 LUGS AND PADS

A. Ampacity: Cross-sectional area of pad for multiple conductor terminations to match ampere rating of panelboard bus or equipment line terminals.

B. Copper Pads: Drilled and tapped for multiple conductor terminals.

C. Lugs: Compression type for use with stranded branch circuit or control conductors; mechanical type for use with solid branch and feeder circuit conductors.

2.03 WIRES AND CABLES

A. Building Wires: Copper; soft-drawn with conductivity of not less than 98 percent IACS at 20 degrees C (68 degrees F). 600 volt rated throughout. Conductors 12 AWG and 10 AWG, solid or stranded. Conductors 8 AWG and larger, stranded. 12 AWG minimum conductor size. Minimum insulation rating of 90 degrees C. Insulation Type: THHN/THWN-2.

B. Phase color to be consistent at feeder terminations; A-B-C, top to bottom, left to right, front to back.

C. MC Cable: High strength galvanized steel flexible armor. Full length minimum size No. 12 copper ground wire, copper dual rated THHN/THWN-2, full length tape marker phase/circuit identification on cable armor. Short circuit throat insulators, mechanical compression termination.

D. AC Cable (Armored Cable): Not allowed.

E. NMB Cable: Not allowed.

2.04 CONNECTORS

A. Split bolt connectors not allowed.

B. Conductor Branch Circuits: Wire nuts with integral spring connectors for conductors 12 AWG through 8 AWG. Push-in type connectors where conductors are not required to be twisted together are not acceptable.

PART 3 - EXECUTION

3.01 GENERAL INSTALLATION REQUIREMENTS

A. Install per manufacturer instructions and the National Electrical Code (NEC).

3.02 LUGS AND PADS

A. Thoroughly clean surfaces to remove all dirt, oil, great or paint.

B. Use torque wrench to tighten per manufacturer's directions.

3.03 WIRES AND CABLES

A. General:
   1. Do not install or handle thermoplastic insulated wire and cable in temperatures below 14 degrees F. Do not handle thermoset insulated wire and cable in temperatures below -40 degrees F. All wire and cable must be acclimated to temperatures above freezing for no less than 24 hours prior to installation.
   2. Install conductors in raceways having adequate, code size cross-sectional area for wires indicated.
   3. Install conductors with care to avoid damage to insulation.
   4. Do not apply greater tension on conductors than recommended by manufacturer during installation.
   5. Use of pulling compounds is permitted. Clean residue from exposed conductors and raceway entrances after conductor installation. Do not use pulling compounds for

installation of conductors connected to GFCI circuit breakers or GFCI receptacles.

6. Conductor Size and Quantity:
    a. Install no conductors smaller than 12 AWG unless otherwise shown.
    b. Provide required conductors for a fully operable system.
    c. Power Circuits: No. 12 AWG minimum, except as follows:
        1) No. 10 AWG for 15A, 120V circuits longer than 100 ft.
        2) No. 8 AWG for 15A, 120V circuits longer than 150 ft.
        3) No. 10 AWG for 20A, 120V circuits longer than 70 ft.
        4) No. 8 AWG for 20A, 120V circuits longer than 100 ft.
    d. When exact run lengths are determined for all branch circuits, and prior to installation of the conductors, ensure that the maximum voltage drop, based on 80 percent of the circuit protective device, does not exceed 3 percent. Increase wire size from #12AWG, if necessary, to ensure that the 3 percent voltage drop is not exceeded.
7. Provide dedicated neutrals (one neutral conductor for each phase conductor) in all 120V circuits.

B. Conductors in Cabinets:
1. Cable and tree wires in panels and cabinets for power and control. Use plastic ties in panels and cabinets.
2. Tie and bundle feeder conductors in wireways of panelboards.
3. Hold conductors away from sharp metal edges.

C. Homeruns:
1. Do not change intent of branch circuit homeruns without approval. Homeruns for 20A branch circuits may be combined to a maximum of six current carrying conductors including neutral conductors in homeruns. Apply derating factors as required per NEC. Increase conductor size as needed.
2. MC cable homeruns are not allowed unless indicated on drawings.

D. Identify wire and cable under the provisions of Section 26 05 53, Identification for Electrical Systems. Identify each conductor with its panel and circuit number as indicated.

E. Exposed cable is not allowed.

F. All cable must be run parallel or perpendicular to building lines and hidden from view when possible. Where installed in tray each power cable is to be identified with Lamacoid nametag engraved with identification of equipment being fed. Tag to be fastened to cable using tie-wraps. Provide nametag at each floor level.

G. Do not install PVC jacketed cables in return air plenums, unless they are specially rated plenum cables.

H. Use of MC Cable is limited to the following conditions. Installations that do not comply with the following conditions are to be removed and replaced with no additional expense to the Owner.
1. 15 and 20 amp branch wiring where following conditions apply:
    a. Use MC cable for final flexible connections from junction or outlet boxes to recessed fixtures. Do not use MC cables to loop between fixtures, except where it is not practical to provide conduit connections between boxes or where existing inaccessible ceilings prevent installation of conduit runs. Each individual luminaire is to be serviced by an individual cable drop from the associated junction box in the ceiling space. Maximum length 6-feet of MC cable. Luminaire drops secured to, and supported by, the building structure with nylon tie wraps. The use of the ceiling suspension system for support of any type of cabling is not permitted.
    b. MC cable may be routed in the void space above hard lid ceilings, and routed within wall cavities below glazing, provided NEC requirements are otherwise met, and a minimum one 0.75-inch conduit is routed from nearest accessible ceiling space to inaccessible location, terminating in a j-box with blank faceplate, for future circuits.

3.04 CONNECTORS

A. Install to assure a solid and safe connection.

B. Select hand twist connectors for wire size and install tightly on conductors.

C. Install compression connectors using methods and tools recommended by the manufacturer.

D. Do not install stranded conductors under screw terminals unless compression lugs are installed.

E. Do not connect wiring without UL listed connectors that are listed for the purposes.

END OF SECTION

SECTION 26 05 26
GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.01 SUMMARY

A. Work Included:
   1. Grounding Conductor

1.02 RELATED SECTIONS

A. Contents of Division 26, Electrical and Division 01, General Requirements apply to this Section.

B. In addition, reference Division 28, Electronic Safety.

1.03 REFERENCES AND STANDARDS

A. References and Standards as required by Section 26 00 00, Electrical Basic Requirements and Division 01, General Requirements.

1.04 SUBMITTALS

A. Submittals as required by Section 26 00 00, Electrical Basic Requirements and Division 01, General Requirements.

1.05 QUALITY ASSURANCE

A. Quality assurance as required by Section 26 00 00, Electrical Basic Requirements and Division 01, General Requirements.

B. In addition, meet the following:
   1. Comply with the requirements of ANSI/NFPA 70.

1.06 WARRANTY

A. Warranty of materials and workmanship as required by Section 26 00 00, Electrical Basic Requirements and Division 01, General Requirements.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Grounding Conductor
   1. General Cable
   2. Okonite
   3. Southwire
   4. Or approved equivalent

2.02 GROUNDING CONDUCTOR

A. Grounding Electrode Conductor: Soft-draw bare stranded copper for wire sizes larger than #10 AWG Bare. Solid copper for wire sizes #10 AWG and smaller.

B. Equipment Grounding Conductor: Green insulated, insulation type to match that of associated feeder or branch circuit wiring, size as indicated on drawings.

PART 3 - EXECUTION

3.01 GENERAL INSTALLATION REQUIREMENTS

A. Verify site conditions prior to beginning work.

B. Corrosion inhibitors: Apply a corrosion inhibitor to contact surfaces when making grounding and bonding connections. Use corrosion inhibitor appropriate for protecting a connection between metals used.

C. Grounding system resistance to ground not to exceed 5 ohms. Make necessary modifications or additions to grounding electrode system for compliance. Submit final tests to assure that this requirement is met.

3.02 GROUNDING CONDUCTOR INSTALLATION

A. Raceways:

1. Ground metallic raceway systems. Bond to ground terminal with code size jumper except where code size or larger equipment grounding conductor is included with circuit, use grounding bushing with lay-in lug.
2. Connect metal raceways, which terminate within an enclosure but without mechanical connection to enclosure, by grounding bushings and ground conductor to grounding bus.
3. Where equipment supply conductors are in flexible metallic conduit, install stranded copper equipment grounding conductor from outlet box to equipment frame.
4. Install equipment grounding conductor, code size minimum unless noted on drawings, in metallic and nonmetallic raceway systems.

B. Feeders and Branch Circuits:
1. Provide continuous green insulated copper equipment grounding conductors for feeders and branch circuits.
2. Where installed in a continuous solid metallic raceway system and larger sizes are not detailed, provide insulated equipment grounding conductors for feeders and branch circuits sized in accordance with the latest adopted edition of NEC Article 250, Table 250-122.

C. Bond boxes, cabinets, enclosures and panelboard equipment grounding conductors to enclosure with specified conductors and lugs. Install lugs only on thoroughly cleaned contact surfaces.

D. Receptacles: Connect ground terminal of receptacle and associated outlet box to equipment grounding conductor. Self grounding nature of receptacle devices does not eliminate equipment grounding conductor bolted to outlet box.

END OF SECTION

SECTION 26 05 29
HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS AND EQUIPMENT

PART 1 - GENERAL

1.01 SUMMARY

A. Work Included:
   1. Anchors, Threaded Rod and Fasteners
   2. Support Channel, Hangers and Supports
   3. Rooftop Conduit Supports

1.02 RELATED SECTIONS

A. Contents of Division 26, Electrical and Division 01, General Requirements apply to this Section.

B. In addition, reference Division 28, Electronic Safety.

1.03 REFERENCES AND STANDARDS

A. References and Standards as required by Section 26 00 00, Electrical Basic Requirements and Division 01, General Requirements.

1.04 SUBMITTALS

A. Submittals not required for this Section.

1.05 QUALITY ASSURANCE

A. Quality assurance as required by Section 26 00 00, Electrical Basic Requirements and Division 01, General Requirements.

B. In addition, meet the following:
   1. Manufacturers regularly engaged in the manufacture of bolted metal framing support systems, whose products have been in satisfactory use in similar service for not less than 10 years.
   2. Support systems to be supplied by a single manufacturer.
   3. Engineering Responsibility: Design and preparation of Shop Drawings and calculations for each multiple pipe support, trapeze, equipment hangers/supports, and seismic restraint by a qualified Structural Professional Engineer.
      a. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of hangers and supports that are similar to those indicated for this Project in material, design, and extent.

1.06 WARRANTY

A. Warranty of materials and workmanship as required by Section 26 00 00, Electrical Basic Requirements and Division 01, General Requirements.

1.07 PERFORMANCE REQUIREMENTS

A. General: Provide conduit and equipment hangers and supports in accordance with the following:
   1. When supports, anchorages, and seismic restraints for equipment and supports, anchorages and seismic restraints for conduit, cable tray and equipment are not shown on the Drawings, the Contractor is responsible for their design.
   2. Connections to structural framing shall not introduce twisting, torsion, or lateral bending in the framing members. Provide supplementary steel as required.

B. Engineered Support Systems: The following support systems to be designed, detailed, and bear the seal of a professional engineer registered in the State of Oregon.
   1. Support frames such as conduit racks or stanchions for conduit and equipment which provide support from below.
   2. Equipment and piping support frame anchorage to supporting slab or structure.

C. Provide channel support systems, for conduits to support multiple conduits capable of supporting combined weight of support systems and system contents.

D. Provide heavy-duty steel trapezes for piping to support multiple conduit capable of supporting combined weight of supported systems and system contents.

E. Provide seismic restraint hangers and supports for conduit and equipment.

F. Obtain approval from AHJ for seismic restraint hanger and support system to be installed for piping and equipment.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Anchors, Threaded Rod and Fasteners:
   1. Anchor It
   2. Epcon System
   3. Hilti-Hit System
   4. Power Fast System
   5. Or approved equivalent.

B. Support Channel, Hangers and Supports:
   1. B-Line
   2. Kindorf
   3. Superstrut
   4. Unistrut
   5. Or approved equivalent.

C. Rooftop Conduit Supports:
   1. Cooper B-Line Dura-Block Rooftop Support Base
   2. Or approved equivalent.

2.02 ANCHORS, THREADED ROD AND FASTENERS

A. Anchors, Threaded Rod and Fasteners - General: Corrosion-resistant materials of size and type adequate to carry the loads of equipment and conduit, including weight of wire in conduit.

B. Concrete Inserts: Cast in concrete for support fasteners for loads up to 800 lbs.

C. Anchors and Fasteners:
   1. Do not use powder-actuated anchors.
   2. Steel Structural Elements: Use beam clamps.
   3. Concrete Surfaces: Use self-drilling anchors.
   4. Hollow Masonry, Plaster, and Gypsum Board Partitions: Use toggle bolts.
   5. Solid Masonry Walls: Use expansion anchors.
   6. Sheet Metal: Use sheet metal screws.
   7. Wood Elements: Use wood screws.

D. Fasteners: Provide fasteners of types as required for assembly and installation of fabricated items; surface-applied fasteners are specified elsewhere.

E. Bolts: Low carbon steel externally and internally threaded fasteners conforming with requirements of ASTM A307; include necessary nuts and plain hardened washers. For structural steel elements supporting mechanical material or equipment from building structural members or connection thereto, use fasteners conforming to ASTM A325.

F. Miscellaneous Materials: Provide incidental accessory materials, tools, methods, and equipment required for fabrication.

2.03 SUPPORT CHANNEL, HANGERS AND SUPPORTS

A. Hangers and Supports - General: Corrosion-resistant materials of size and type adequate to carry the loads of equipment and conduit, including weight of wire in conduit.
   1. Channel Material: Carbon steel.
   2. Coating: Hot dip galvanized.

B. Pipe Straps: Two-hole galvanized or malleable iron.

C. Miscellaneous Metal:
   1. Provide miscellaneous metal items specified hereunder, including materials, fabrication, fastenings and accessories required for finished installation, where indicated on Drawings or otherwise not shown on drawings that are necessary for completion of the project. The Contractor is responsible for their design.
   2. Fabricate miscellaneous units to size shapes and profiles indicated or, if not indicated, of required dimensions to receive adjacent other work to be retained by framing. Except as otherwise shown, fabricate from structural steel shapes and plates and steel bars, of welded construction using mitered joints for field connection. Cut, drill and tap units to receive hardware and similar items.

D. Structural Shapes: Where miscellaneous metal items are needed to be fabricated from structural steel shapes and plates, provide members constructed of steel conforming with requirements of ASTM A36 or approved equivalent.

E. Steel Pipe: Provide seamless steel pipe conforming to requirements of ASTM A53, Type S, Grade A, or Grade B. Weight and size required as specified.

F. Miscellaneous Materials: Provide incidental accessory materials, tools, methods, and equipment required for fabrication.

2.04 ROOFTOP CONDUIT SUPPORTS

A. Curb base made of 100 percent recycled rubber and polyurethane prepolymer with a uniform load

B. Capacity of 500 pounds per linear foot of support.

C. UV resistant.

D. Steel Frame: Steel, 14 gauge strut galvanized per ASTM A653 or 12 gauge strut galvanized per ASTM A653 for bridge series.

E. Continuous block channel supports with 1-inch gaps to allow water flow, bridge channel supports, extendable height channel supports and elevated single conduit supports.

F. Attaching Hardware: Zinc-plated threaded rod, nuts and attaching hardware per ASTM B633 fastened directly into rubber material with weather resistant Type 12 lag screws.

G. Provide load distribution plates when required for heavy loads.

H. Finish: Black with safety yellow striping.

I. Provide hot dipped galvanized components for items exposed to weather.

PART 3 - EXECUTION

3.01 GENERAL INSTALLATION REQUIREMENTS

A. Fabrication - Miscellaneous Metals
   1. General: Verify dimensions prior to fabrication. Form metal items to accurate sizes and configurations required for proper installation; make with lines straight and angles sharp, clean and true; drill, countersink, tap, and otherwise prepare items for connections with work of other trades, as required. Fabricate to detail of structural shapes, plates and bars; weld joints where practicable; provide bolts and other connection devices required. Include anchorages; clip angles, sleeves, anchor plates, and similar devices. Hot dipped galvanize after fabrication items installed in exterior locations. Set accurately in position as required and anchor securely to building construction. Construct items with joints formed for strength and rigidity, accurately machining for proper fit; where exposed to weather, form to exclude water.
   2. Finishes:
      a. Ferrous Metal: After fabrication, but before erection, clean surfaces by mechanical or chemical methods to remove rust, scale, oil, corrosion, or other substances detrimental to bonding of subsequently applied protective coatings. For metal items exposed to weather or moisture, galvanize in manner to obtain G90 zinc coating in

accordance with ASTM A123. Provide other non-galvanized ferrous metal with one coat of approved rust-resisting paint primer, in manner to obtain not less than 1.0 mil dry film thickness. Touch-up damaged areas in primer with same material, before installation. Apply zinc coatings and paint primers uniformly and smoothly; leave ready for finish painting as specified elsewhere.

b. Metal in contact with Concrete, Masonry and Other Dissimilar Materials: Where metal items are to be erected in contact with dissimilar materials, provide contact surfaces with coating of an approved zinc-chromate primer in manner to obtain not less than 1.0 mil dry film thickness, in addition to other coatings specified in these specifications.

c. For Galvanized Surfaces: Clean field welds, bolted connections, and abraded areas and apply galvanizing repair paint to comply with ASTM A780.

3.02 ANCHORS, THREADED ROD AND FASTENERS INSTALLATION

A. Safety factor of 4 required for every fastening device or support for equipment installed. Supports to withstand four times the weight of equipment it supports.

B. Do not use other trade's fastening devices as supporting means for luminaires, equipment or materials.

C. Do not fasten supports to pipes, ducts, mechanical equipment, or conduit.

D. Do not use supports or fastening devices to support other than one particular item.

E. Securely suspend junction boxes, pull boxes or other conduit terminating housings located above suspended ceiling from floor above or roof structure to prevent sagging and swaying.

F. Provide seismic bracing per the International Building Code (IBC) requirements.

G. Install surface-mounted cabinets and panelboards with minimum of four anchors.

H. Use spring lock washers under fastener nuts for strut.

I. Cutting and Drilling: Do not drill or cut structural members without prior permission from Owner.

3.03 SUPPORT CHANNEL, HANGERS AND SUPPORTS INSTALLATION

A. Install hangers and supports as required to adequately and securely support electrical system components, in a neat and workmanlike manner, as specified in NECA 1.

B. Safety factor of 4 required for every fastening device or support for equipment installed. Supports to withstand four times the weight of equipment it supports.

C. Verify mounting height of luminaires prior to installation when heights are not detailed.

D. Install horizontal support members straight and parallel to ceilings or finished floor unless otherwise noted.

E. Provide independent supports to structural member for luminaires, materials, or equipment installed in or on ceiling, walls or in void spaces or over suspended ceilings.

F. Do not use other trade's fastening devices as supporting means for luminaires, equipment or materials.

G. Do not fasten supports to pipes, ducts, mechanical equipment, or conduit.

H. Do not use supports or fastening devices to support other than one particular item.

I. Support conduits within 18-inches of outlets, boxes, panels, cabinets and deflections unless more stringently required by the International Building Code (IBC).

J. Maximum distance between supports not to exceed 8-foot spacing unless otherwise required by the International Building Code (IBC).

K. Support flexible conduits and metal clad cable within 12-inches of outlets, boxes, panels, cabinets and deflections unless otherwise required by the International Building Code (IBC).

L. Maximum distance between supports for flexible conduits and metal clad cable not to exceed 48-inches spacing unless otherwise required by the International Building Code (IBC).

M. Maximum distance between supports for rigid PVC conduits unless otherwise required by the International Building Code (IBC). is as follows:
   1. 1/2-inch or 3/4-inch and 1-inch conduit, 3-feet apart.
   2. 1-1/4-inch or 1-1/2-inch and 2-inch conduit, 4-feet apart.
   3. 2-1/2-inch and 3-inch conduit, 5-feet apart.
   4. 4-inch and 5-inch conduit, 6-feet apart.
   5. 6-inch conduit, 7-feet apart.

N. Maximum distance between supports for auxiliary gutters and wireways unless otherwise required by the International Building Code (IBC) is as follows:
   1. Sheet metal auxiliary gutters and wireways - 4-feet apart horizontally and 10-feet vertically.
   2. Non-metallic auxiliary gutters and wireways - 30-inches apart horizontally and 3-feet vertically.

O. Install strut hangers as instructed by strut manufacturer. Suspend strut hangers as instructed by strut manufacturer for the load, with a maximum spacing of 8-feet on center and within 2-feet of outlet box, cabinet, junction box or other channel raceway termination unless otherwise required by the International Building Code (IBC).

P. Coordinate routing of conduit racks with materials and equipment installed by other trades. Where conduit racks are exposed to view, coordinate location and installation with Owner for optimal appearance.

Q. Securely suspend junction boxes, pull boxes or other conduit terminating housings located above suspended ceiling from floor above or roof structure to prevent sagging and swaying.

R. Provide seismic bracing per IBC requirements.

S. Where service disconnects are mounted on building exterior, physically attach service disconnect to the building or structure served.

T. Install surface-mounted cabinets and panelboards with minimum of four anchors.

U. Use sheet metal channel to bridge studs above and below cabinets and panelboards recessed in hollow partitions.

V. In wet and damp locations use steel channel supports to stand cabinets and panelboards 1-inch off wall.

3.04 ROOFTOP CONDUIT SUPPORTS INSTALLATION

A. Consult roofing manufacturer for roof membrane compression capacities. If necessary, provide a compatible sheet of roofing material (rubber pad) under rooftop support to disperse concentrated loads and add further membrane protection.

B. Do not use supports that will void roof warranty.

C. Install supports per manufacturer's instructions and recommendations.

D. Use properly sized clamps to suit conduit sizes.

E. Install supports for rooftop raceways to raise raceways a minimum of 7/8-inches above the roof structure unless otherwise noted.

END OF SECTION

SECTION 26 05 33
RACEWAYS

PART 1 - GENERAL

1.01 SUMMARY

A. Work Included:
   1. Rigid Metal Conduit (RMC)
   2. Electrical Metallic Tubing (EMT)
   3. Flexible Metal Conduit (FMC)
   4. Liquidtight Flexible Metal Conduit (LFMC)
   5. Conduit Fittings
   6. Surface Raceway Systems

B. Provide a complete system of conduit and fittings, with associated couplings, connectors, and fittings, as shown on Drawings and described in these Specifications.

1.02 RELATED SECTIONS

A. Contents of Division 26, Electrical and Division 01, General Requirements apply to this Section.

B. In addition, reference the following:
   1. Section 26 05 29, Hangers and Supports for Electrical Systems and Equipment
   2. Section 26 05 34, Boxes
   3. Division 28, Electronic Safety

1.03 REFERENCES AND STANDARDS

A. References and Standards as required by Section 26 00 00, Electrical Basic Requirements and Division 01, General Requirements.

1.04 SUBMITTALS

A. Submittals as required by Section 26 00 00, Electrical Basic Requirements and Division 01, General Requirements.

1.05 QUALITY ASSURANCE

A. Quality assurance as required by Section 26 00 00, Electrical Basic Requirements and Division 01, General Requirements.

1.06 WARRANTY

A. Warranty of materials and workmanship as required by Section 26 00 00, Electrical Basic Requirements and Division 01, General Requirements.

1.07 DEFINITIONS

A. Raceway system is defined as consisting of conduit, tubing, duct, and fittings including but not limited to connectors, couplings, offsets, elbows, bushings, expansion/deflection fittings, and other components and accessories. Complete electrical raceway installation before starting the installation of conductors and cables.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Rigid Metal Conduit (RMC):
   1. Allied Tube & Conduit
   2. Beck Manufacturing Inc.
   3. Picoma
   4. Wheatland Tube Company
   5. Or approved equivalent.

B. Electrical Metallic Tubing (EMT):
   1. Allied Tube & Conduit
   2. Beck Manufacturing WL
   3. Picoma

4. Wheatland Tube Company
5. Or approved equivalent.

C. Flexible Metal Conduit (FMC):
1. AFC Cable Systems Inc.
2. Electri-Flex Company
3. International Metal Hose
4. Or approved equivalent.

D. Liquidtight Flexible Metal Conduit (LFMC):
1. AFC Cable Systems Inc.
2. Electri-Flex Company
3. International Metal Hose
4. Or approved equivalent.

E. Conduit Fittings:
1. Bushings:
a. Insulated Type for Threaded Raceway Without Factory Installed Plastic Throat Conductor Protection:
1) Thomas & Betts 1222 Series
2) O-Z Gedney B Series
3) Or approved Equivalent.
2. Raceway Connectors and Couplings:
a. Thomas & Betts Series
b. O-Z Gedney Series
c. Or approved Equivalent.
3. Expansion/Deflection Fittings:
a. EMT: O-Z Gedney Type TX
b. RMC: O-Z Gedney Type AX, DX and AXDX, Crouse & Hinds XD
c. PVC: O-Z Gedney Type DX with PVC adapters, Carlon E945 Series, Kraloy OPEJ Series
d. Or approved equivalent.

F. Surface Raceway Systems:
1. Single Channel Surface Raceway and Signal:
a. Legrand (Wiremold) 3000 Series
b. MonoSystems SMS 3000 Series
c. Panduit T-70 System
d. Or approved equivalent.
2. Two Channel Surface Raceway:
a. Legrand (Wiremold) 4000 Series
b. MonoSystems SMS 4200 Series
c. Panduit T-70 System
d. Panduit TG-70 System
e. Or approved equivalent.

2.02 RIGID METAL CONDUIT (RMC)

A. UL 6, ANSI C80.1. Hot dipped galvanized steel conduit after thread cutting.

B. Fittings: NEMA FB2.10.

2.03 ELECTRICAL METALLIC TUBING (EMT)

A. Description: UL 797, ANSI C80.3; steel galvanized tubing.

B. Fittings: NEMA FB 1; steel, compression type.

2.04 FLEXIBLE METAL CONDUIT (FMC)

A. Description: UL 1, interlocked steel construction.

B. Fittings: NEMA FB 2.20.

2.05 LIQUIDTIGHT FLEXIBLE METAL CONDUIT (LFMC)

A. Description: UL 360, inner core made from spiral wound strip of heavy gauge, hot dipped galvanized low carbon steel. 3/4-inch through 1-1/4-inch trade sizes to have a square lock core and contain an integral bonding strip of copper. 1-1/2-inch and larger to have fully interlocked core. Jacket material to be moisture, oil and sunlight resistant flexible PVC.

B. Fittings: NEMA FB 2.20.

2.06 CONDUIT FITTINGS

A. Bushings:
   1. Insulated type for threaded raceway connectors without factory-installed plastic throat conductor protection.
   2. Insulated grounding type for threaded raceway connectors.

B. Raceway Connectors and Couplings:
   1. Steel connectors, couplings, and conduit bodies, hot-dip galvanized.
   2. Connector locknuts to be steel, with threads meeting ASTM tolerances. Locknuts to be hot-dip galvanized.
   3. Connector throats (EMT, flexible conduit, metal clad cable and cordset connectors) to have factory installed plastic inserts permanently installed. For normal cable or conductor exiting angles from raceway, the cable jacket or conductor insulation to bear only on plastic throat insert.
   4. Steel gland, Tomic or Breagle connectors and couplings are recognized for this Contract as having acceptable raceway to fitting electrical conductance.
   5. Set screw connectors and couplings, without integral compression glands, are recognized for this Contract as not having acceptable raceway to fitting electrical conductance. A ground conductor sized per this Specification must be included and bonded within raceway assembly utilizing this type connector or coupling.

C. Provide expansion/deflection fittings for EMT.

2.07 SURFACE RACEWAY SYSTEMS

A. Provide end caps, corner joints, tees, transition fittings, device brackets and like items for complete installation.

B. Finish: Owner to specify.

PART 3 - EXECUTION

3.01 GENERAL INSTALLATION REQUIREMENTS

A. Finished Surfaces: Schedule raceway installation to avoid conflict with installed wall and ceiling surfaces. If unavoidable, coordinate work and repairs with Owner.

B. Minimum Conduit Size: 3/4-inch for power and control, unless otherwise noted. 3/4-inch for communication/data, unless otherwise noted. 3/4-inch for signal systems, unless otherwise noted.

C. Elbow for Low Energy Signal Systems: Use long radius factory ells where linking sections of raceway for installation of signal cable.

D. Plan locations of conduit runs in advance of the installation and coordinate with ductwork, plumbing, ceiling and wall construction in the same areas.

E. Penetrations and holes in the structural sections such as footings, beams, and walls are not permitted.

F. Verify routing and termination locations of conduit prior to rough-in.

G. Conduit routing is shown on drawings in approximate locations unless dimensioned. Route as required to complete wiring system.

H. Install raceways securely, in neat and workmanlike manner, as specified in NECA 1, Standard Practices for Good Workmanship in Electrical Construction.

I. Install steel conduit as specified in NECA 101, Standard for Installing Steel Conduits.

J. Conduit Supports:
   1. Arrange supports to prevent misalignment during wiring installation.
   2. Support conduit using coated steel or malleable iron straps, lay-in adjustable hangers, clevis hangers, and split hangers.
   3. Group related conduits; support using conduit rack. Construct rack using steel channel. Provide space on each for 25 percent additional conduits.
   4. Do not support conduit with wire or perforated pipe straps. Remove wire used for temporary supports.
   5. Do not attach conduit to ceiling support wires.

K. Flexible metal conduit length not-to-exceed 6-feet, 3-feet in concealed walls. Provide sufficient slack to reduce the effect of vibration.

L. Install conduit seals at boundaries where ambient temperatures differ by 10 degrees F or more as shown on the drawings. Install seals on warm side of partition.

M. Seal raceways stubbing up into electrical equipment. Plug raceways with conductors with duct-seal. Cap spare raceways and plug PVC raceway products with plastic plugs as made by Underground Products, or equal, shaped to fit snugly into the stubup.

N. Seal raceways penetrating an exterior building wall to prevent moisture and vermin from entering into the electrical equipment.

O. Use suitable caps on spare and empty conduits to protect installed conduit against entrance of dirt and moisture.

P. Keep 277/480 volt wiring independent of 120/208 volt wiring. Keep power wiring independent of communication system wiring.

Q. Keep emergency system wiring independent of other wiring systems per NEC 700.

R. Arrange conduit to maintain headroom and present neat appearance.

S. Do not install conduits on surface of building exterior, along vapor barrier, across roof, on top of parapet walls, or across floors, unless otherwise noted on drawings.

T. Exposed conduits are permitted only in following areas:
   1. Mechanical rooms, electrical rooms or spaces where walls, ceilings and floors will not be covered with finished material.
   2. Existing walls that are concrete or block construction.
   3. Where specifically noted on Drawings.
   4. Route exposed conduit parallel and perpendicular to walls, tight to finished surfaces and neatly offset into boxes.

U. Do not install conduits or other electrical equipment in obvious passages, doorways, scuttles or crawl spaces which would impede or block area passage's intended usage.

V. Install continuous conduit and raceways for electrical power wiring and signal systems wiring.

W. Route conduit installed above accessible ceilings parallel and perpendicular to walls.

X. Maintain adequate clearance between conduit and piping.

Y. Keep conduits a minimum of 12-inches away from steam or hot water radiant heating lines (at or above 104 degrees F) or 3-inches away from waste or water lines.

Z. Cut conduit square using saw or pipecutter; deburr cut ends.

AA. Bring conduit to shoulder of fittings; fasten securely.

BB. Use conduit hubs to fasten conduit to cast boxes in damp and wet locations.

CC. Install no more than the equivalent of three 90 degree bends between boxes. Use conduit bodies to make sharp changes in direction, as around beams.

DD. Use hydraulic one shot bender to fabricate elbows for bends in metal conduit larger than 2-inch size.

EE. Avoid moisture traps; provide junction box with drain fitting at low points in conduit system.

FF. Provide suitable fittings to accommodate expansion and deflection where conduit crosses seismic, control, and expansion joints.

GG. Conduit Terminations for Signal Systems: Provide a plastic bushing on the end of conduit used for signal system wiring.

HH. Install conduit to preserve fire resistance rating of partitions and other elements, using materials and methods specified in Division 07, Thermal and Moisture Protection.

II. Route conduit through roof openings for piping and ductwork wherever possible.

3.02 RIGID METAL CONDUIT (RMC) INSTALLATION

A. Outdoor Locations Above Grade: RMC.

B. Damp Locations: RMC.

C. In areas exposed to mechanical damage: RMC.

D. For security conduits installed exposed and subject to tampering: RMC.

3.03 ELECTRICAL METALLIC TUBING (EMT) INSTALLATION

A. Locations:
   1. Dry, Concealed: EMT.
   2. Dry, Exposed: EMT.
   3. Dry, Protected: EMT.

3.04 FLEXIBLE METAL CONDUIT (FMC) INSTALLATION

A. Dry Locations: Motors, recessed luminaires and equipment connections subject to movement or vibration, use flexible metallic conduit.

B. Install 12-inch minimum slack loop on flexible metallic conduit.

3.05 LIQUIDTIGHT FLEXIBLE METAL CONDUIT (LFMC) INSTALLATION

A. Use PVC coated liquidtight flexible metallic conduit for motors and equipment connections subject to movement or vibration and subjected to any of following conditions: Exterior location, moist or humid atmosphere, corrosive environments, water spray, oil, or grease.

B. Install 12-inch minimum slack loop on liquidtight flexible metallic conduit.

3.06 CONDUIT FITTINGS INSTALLATION

A. Conduit Joints: Assemble conduits continuous and secure to boxes, panels, luminaires and equipment with fittings to maintain continuity. Provide watertight joints where embedded in concrete, below grade or in damp locations. Seal metal conduit with metal thread primer. Rigid conduit connections to be threaded, clean and tight (metal to metal). Threadless connections are not permitted for RMC.

B. Use compression fittings in dry locations, damp and rain-exposed locations. Maximum size permitted in damp locations and locations exposed to rain is 2-inches in diameter.

C. Use threaded type fittings in wet locations, hazardous locations, and damp or rain-exposed locations where conduit size is greater than 2-inches.

D. Use PVC coated, threaded type fittings in corrosive environments.

E. Use insulated type bushings with ground provision at switchboards, panelboards, safety disconnect switches, junction boxes that have feeders 60 amperes and greater.

F. Condulets and Conduit Bodies: Do not use condulets and conduit bodies in conduits for signal wiring, in feeders 100 amp and larger, or for conductor splicing.

G. Sleeves and Chases; Floor, Ceiling and Wall Penetrations: Provide necessary rigid conduit sleeves, openings and chases where conduits or cables are required to pass through floors, ceilings or walls.

H. Expansion Joints:
   1. Provide conduits crossing expansion joints where cast in concrete with expansion-deflection fittings, installed per manufacturer's recommendations.

2. Secure conduits 3-inches and larger to building structure on opposite sides of a building expansion joint with an expansion-deflection fitting across joint installed per manufacturer's recommendations.
3. Provide conduits less than 3-inches where not cast in concrete with junction boxes securely fastened on both sides of expansion joint, connected together with 15-inches of slack (minimum of 15-inches longer than straight line length) flexible conduit and copper green ground bonding jumper. In lieu of this flexible conduit, an expansion-deflection fitting, as indicated for conduits 3-inch and larger may be installed.
4. Verify expansion/deflection requirements with Structural Engineer prior to installation.

I. Seismic Joints:
1. No conduits cast in concrete allowed to cross seismic joint.
2. Provide conduits with junction boxes securely fastened on both sides of seismic joint, connected together with 15-inches of slack (minimum of 15-inches longer than straight line length) flexible conduit and copper green ground bonding jumper. Prior to installation, verify with Owner that 15-inches is adequate for designed movement, and if not, increase this length as required.
3. Provide conduits less than 3-inches where not cast in concrete with junction boxes securely fastened on both sides of expansion joint, connected together with 15-inches of slack (minimum of 15-inches longer than straight line length) flexible conduit and copper green ground bonding jumper. In lieu of this flexible conduit, an expansion-deflection fitting, as indicated for conduits 3-inches and larger may be installed.

3.07 SURFACE RACEWAY SYSTEMS INSTALLATION

A. Install per manufacturer's installation instructions, perpendicular and parallel to building lines.

B. Use flat-head screws, clips, and straps to fasten raceway channel to surfaces. Mount plumb and level.

C. Use suitable insulating bushings and inserts at connections to outlets and corner fittings.

D. Close end of wireway and unused conduit openings.

END OF SECTION

SECTION 26 05 34
BOXES

PART 1 - GENERAL

1.01 SUMMARY

A. Work Included:
   1. Outlet Boxes
   2. Pull and Junction Boxes
   3. Box Extension Adapter

B. Provide electrical boxes and fittings for a complete installation. Include but not limited to outlet boxes, junction boxes, pull boxes, bushings, locknuts and other necessary components.

1.02 RELATED SECTIONS

A. Contents of Division 26, Electrical and Division 01, General Requirements apply to this Section.

B. In addition, reference the following:
   1. Section 26 05 33, Raceways
   2. Section 26 05 53, Identification for Electrical Systems
   3. Division 28, Electronic Safety

1.03 REFERENCES AND STANDARDS

A. References and Standards as required by Section 26 00 00, Electrical Basic Requirements and Division 01, General Requirements.

1.04 SUBMITTALS

A. Submittals as required by Section 26 00 00, Electrical Basic Requirements and Division 01, General Requirements.

1.05 QUALITY ASSURANCE

A. Quality assurance as required by Section 26 00 00, Electrical Basic Requirements and Division 01, General Requirements.

1.06 WARRANTY

A. Warranty of materials and workmanship as required by Section 26 00 00, Electrical Basic Requirements and Division 01, General Requirements.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Outlet Boxes:
   1. Hubbell
   2. Thomas & Betts
   3. Eaton/Crouse-Hinds
   4. Or approved equivalent.

B. Pull and Junction Boxes:
   1. Eaton/Crouse-Hinds
   2. Hoffman
   3. Or approved equivalent.

C. Box Extension Adapter:
   1. Hubbell
   2. Thomas & Betts
   3. Eaton/Crouse-Hinds
   4. Or approved equivalent.

2.02 OUTLET BOXES

A. Construction: For interior locations, provide galvanized steel outlet wiring boxes, of the type, shape and size, including depth of box, to suit each respective location and installation; constructed with stamped knockouts in back and sides, and with threaded holes with screws for

securing box covers or wiring devices. All surface mounted outlet boxes are to be drawn. Welded boxes are not acceptable.

B. Accessories: Provide outlet box accessories for each installation, including mounting brackets, wallboard hangers, extension rings, luminaire studs, cable clamps and metal straps for supporting outlet boxes, compatible with outlet boxes being used and meeting requirements of individual wiring situations.

C. Noise Control: Provide acoustic putty pad to back side of each outlet box installed in acoustic rated walls.

2.03 PULL AND JUNCTION BOXES

A. Construction: Provide ANSI 61 gray polyester powder painted sheet steel junction and pull boxes, with screw-on covers; of type shape and size, to suit each respective location and installation; with welded seams and equipped with stainless steel nuts, bolts, screws and washers.

B. Location:
   1. Provide junction boxes above accessible ceilings for drops into walls for receptacle outlets from overhead.
   2. Provide junction boxes and pull boxes to facilitate installation of conductors and limiting accumulated angular sum of bends between boxes, cabinets and appliances to 270 degrees.

2.04 BOX EXTENSION ADAPTER

A. Construction: Diecast aluminum.

B. Location: Install over flush wall outlet boxes to permit flexible raceway extension from flush outlet to fixed or movable equipment.

PART 3 - EXECUTION

3.01 GENERAL INSTALLATION REQUIREMENTS

A. Coordinate locations of wall mounted wiring device boxes prior to rough-in.

B. Install boxes securely, in a neat and workmanlike manner, as specified in NECA 1, Standard Practice of Good Workmanship in Electrical Construction.

C. Secure boxes rigidly to substrate upon which they are being mounted.

D. Install boxes in locations as required for splices, taps, wire pulling, equipment connections, and as required by NEC. Locate boxes and conduit bodies so as to ensure accessibility of electrical wiring.

E. Set wall mounted boxes at elevations to accommodate mounting heights.

F. Install boxes to preserve fire resistance rating of partitions and other elements.

G. Install flush mounting box without damaging wall insulation or reducing its effectiveness.

H. Support boxes independently of conduit, except cast box that is connected to two rigid metal conduits both supported within 12-inches of box.

I. Box Color Coding and Marking: Reference Section 26 05 53, Identification for Electrical Systems.

J. Adjust boxes to be parallel with building lines. Boxes not plumb to building lines are not acceptable.

K. Install knockout closures in unused box openings.

L. Clean interior of boxes to remove dust, debris, and other material.

M. Clean exposed surfaces and restore finish.

3.02 OUTLET BOXES INSTALLATION

A. Mount outlet boxes, unless otherwise required by ADA, or noted on drawings, following distances above finished floor:
   1. Other Outlets: As indicated in other sections of specifications or as detailed on drawings.

B. Inaccessible Ceiling Areas: Install outlet and junction boxes no more than 6-inches from ceiling access panel or from removable recessed luminaire.

C. Flush Outlets in Insulated Spaces: Maintain integrity of insulation and vapor barrier.

D. Coordinate electrical device locations and elevations (switches and receptacles) with architectural drawings to prevent mounting devices in mirrors, back splashes, and behind cabinets.

E. Align adjacent wall mounted outlet boxes. Adjacent boxes not aligned vertically to be adjusted at no additional cost to Owner.

F. Use flush mounting outlet box in finished areas.

G. Do not install flush mounting box back-to-back in walls; provide minimum 6-inches separation. Provide minimum 24-inches in acoustic rated walls.

H. In acoustical walls, apply acoustic putty pad on outlet box prior to installation of acoustical blanket.

I. Use adjustable steel channel fasteners for hung ceiling outlet box.

3.03 PULL AND JUNCTION BOXES INSTALLATION

A. Install pull boxes and junction boxes above accessible ceilings and in unfinished areas only.

B. Do not fasten boxes to ceiling support wires.

C. Large Pull Boxes: Use hinged enclosure in interior dry locations, surface-mounted cast metal box in other locations.

3.04 BOX EXTENSION ADAPTER INSTALLATION

A. Match material to box.

B. Install gaskets at exterior and wet locations.

END OF SECTION

SECTION 26 05 53
IDENTIFICATION FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.01 SUMMARY

A. Work Included:
   1. Device Labels
   2. Wire Markers
   3. Conduit Markers

1.02 RELATED SECTIONS

A. Contents of Division 26, Electrical and Division 01, General Requirements apply to this Section.

B. In addition, reference Division 28, Electronic Safety.

1.03 REFERENCES AND STANDARDS

A. References and Standards as required by Section 26 00 00, Electrical Basic Requirements and Division 01, General Requirements.

1.04 SUBMITTALS

A. Submittals not required for this Section.

1.05 QUALITY ASSURANCE

A. Quality assurance as required by Section 26 00 00, Electrical Basic Requirements and Division 01, General Requirements.

B. In addition, meet the following:
   1. Manufacturer's Qualifications: Firms regularly engaged in manufacture of identification devices of types and sizes required.
   2. Manufacturer's standard products of categories and types required for each application as referenced in other Division 26, Electrical Sections. Where more than a single type is specified for application, provide single selection for each product category.
   3. Codes and Standards: Comply with ANSI A13.1 for lettering size, length of color field, colors, and viewing angles of identification devices unless otherwise indicated.

1.06 WARRANTY

A. Warranty of materials and workmanship as required by Section 26 00 00, Electrical Basic Requirements and Division 01, General Requirements.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Device Labels:
   1. Kroy
   2. Brady
   3. Or approved equivalent.

B. Wire Markers:
   1. Brady
   2. Panduit
   3. Sumitomo
   4. Or approved equivalent.

C. Conduit Markers:
   1. Allen Systems
   2. Brady
   3. Or approved equivalent.

2.02 DEVICE LABELS

A. Extra strength, laminated adhesive tape with 3/16-inch black letters on clear background. Embossed tape/punch tape style labels are not acceptable.

B. Receptacles: Indicate source panel and source circuits (e.g. xxx-xx).

C. Junction Boxes: Label to show system identification, source circuit, or raceway origin. In finished areas, utilize device label. In unfinished areas or above ceilings, use of permanent ink marker is acceptable.

D. Panel and circuit designation written in permanent marker on the back of the plate and inside all back-boxes and junction boxes.

2.03 WIRE MARKERS

A. Description: Vinyl-cloth self-adhesive type wire markers.

B. Locations: Each conductor at panelboard gutters, pull boxes, outlet boxes, and junction boxes.

C. Power and Lighting Circuits: Branch circuit or feeder number as indicated on drawings and source panel.

D. Control Circuits: control wire number indicated on shop drawings.

2.04 CONDUIT MARKERS

A. Description: Self-sticking vinyl.

B. Location: Furnish markers for each conduit longer than 6-feet.

C. Spacing: 20-feet on center.

D. Color: Fire Alarm System - Red.

PART 3 - EXECUTION

3.01 GENERAL INSTALLATION REQUIREMENTS

A. Coordinate designations used on Drawings with equipment nameplates and device labels.

B. Install nameplates and labels parallel to equipment lines.

C. Identify empty conduit and boxes with intended use.

D. Provide color coded boxes as follows: Fire Alarm - Red.

3.02 DEVICE LABELS

A. Reference 3.01, General Installation Requirements.

B. Install per manufacturer's instructions and recommendations.

C. Degrease and clean surfaces to receive labels. Fingers to be regularly cleaned of grease and debris to prevent fingerprints on labels. Labels installed dirty or with fingerprints to be replaced at no cost to Owner.

3.03 WIRE MARKERS

A. Reference 3.01, General Installation Requirements.

B. Install per manufacturer's instructions and recommendations.

C. Provide wire markers on each conductor for power, control, signalling and communications circuits.

3.04 CONDUIT MARKERS

A. Reference 3.01, General Installation Requirements.

B. Install per manufacturer's instructions and recommendations.

END OF SECTION

SECTION 26 27 26
WIRING DEVICES

PART 1 - GENERAL

1.01 SUMMARY

A. Work Included:
   1. Receptacles
   2. Finish Plates
   3. Surface Covers

1.02 RELATED SECTIONS

A. Contents of Division 26, Electrical and Division 01, General Requirements apply to this Section.

B. In addition, reference Division 28, Electronic Safety.

1.03 REFERENCES AND STANDARDS

A. References and Standards as required by Section 26 00 00, Electrical Basic Requirements and Division 01, General Requirements.

1.04 SUBMITTALS

A. Submittals as required by Section 26 00 00, Electrical Basic Requirements and Division 01, General Requirements.

1.05 QUALITY ASSURANCE

A. Quality assurance as required by Section 26 00 00, Electrical Basic Requirements and Division 01, General Requirements.

1.06 WARRANTY

A. Warranty of materials and workmanship as required by Section 26 00 00, Electrical Basic Requirements and Division 01, General Requirements.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Receptacles:
   1. Commercial Grade:
      a. 20 Amp:
         1) Cooper 5362
         2) Hubbell 5362
         3) Bryant CBRS20
         4) Leviton 5362S
         5) Legrand P&S 5362
         6) Or approved equivalent.
   2. Ground Fault Circuit Interrupter (GFCI) Receptacle - 20 Amp:
      a. Cooper WRSGF20W
      b. Hubbell GFR5362SGW
      c. Legrand P&S 2097TRWR
      d. Or approved equivalent.

B. Finish Plates:
   1. Bryant
   2. Cooper
   3. Hubbell
   4. Leviton
   5. Legrand P&S
   6. Or approved equivalent.

C. Surface Covers:
   1. Aluminum with Gasket, Blanks, Single Gang:
      a. Bell 240-ALF

b. Carlon
c. Or approved equivalent.

2. 2-Gang:
a. Bell 236-ALF
b. Carlon
c. Or approved equivalent.

2.02 RECEPTACLES

A. Duplex Receptacles Characteristics:
1. Straight parallel blade, 125 volt, 2 pole, 3 wire grounding.
2. Commercial Grade: Riveted. Back and side wired. Brass ground contact on steel strap. Nylon face and nylon base. 20 amp.

B. Ground Fault Circuit Interrupter (GFCI) Receptacle: Feed through type, back-and-side wired, tamper-resistant, weather resistant self-testing, 20 amp, 125VAC.

C. Finish: Same exposed finish as switches.

2.03 FINISH PLATES

A. Finish Plates: Type 302 stainless steel with smooth satin finish.

2.04 SURFACE COVERS

A. Cast Box and Extension Adaptors: Aluminum with gasket, blanks single gang or 2-gang.

B. While-in-Use Weatherproof Cover: NEMA 3R when closed over energized plug. Vertical mount for duplex receptacle. Provide continuous use cover with cover capable of closing over energized cord cap with bottom aperture for cord exit.
1. Die cast cover with closed cell neoprene foam gasket: Capable of being locked closed to prevent tampering or unauthorized use.

PART 3 - EXECUTION

3.01 GENERAL INSTALLATION REQUIREMENTS

A. Install wiring devices and finish plates plumb with building lines, equipment cabinets and adjacent devices. Devices not plumb will be fixed at no additional cost to Owner.

B. Orientation:
1. Install wiring devices with long dimension oriented vertically at centerline height shown on drawings or as specified.
2. Vertical Alignment: When more than one device is shown on drawings in close proximity to each other, but at different elevations, align devices on a common vertical center line for best appearance. Verify with Owner.
3. Horizontal Alignment: When more than one device is shown on drawings in close proximity to each other with same elevation, align devices on a common horizontal center line for best appearance. Verify with Owner.

C. Provide labeling per Section 26 05 53, Identification for Electrical Systems.

D. Test wiring devices to ensure electrical continuity of grounding connections, and after energizing circuitry, to demonstrate compliance with requirements. Test receptacles for line to neutral, line to ground and neutral to ground faults. Correct any defective wiring.

3.02 RECEPTACLES INSTALLATION

A. Upon installation, adhere to proper and cautious use of convenience receptacles. At time of substantial completion, replace those items which have been damaged, including those burned and scored by faulty receptacles or cord caps.

3.03 FINISH PLATES INSTALLATION

A. Replace scratched finish plates and wiring devices.

3.04 SURFACE COVERS INSTALLATION

A. Replace scratched finish plates and wiring devices.

END OF SECTION

SECTION 28 00 01
ELECTRONIC SAFETY BASIC REQUIREMENTS

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Work included in 28 00 01, Electronic Safety Basic Requirements applies to Division 28, Electronic Safety work to provide materials, labor, tools, permits, incidentals, and other services to provide and make ready for Owner's use of electronic safety systems for proposed project.

B. Contract Documents include, but are not limited to, Specifications including Division 00, Procurement and Contracting Requirements and Division 01, General Requirements, Drawings, Addenda, Owner/Architect Agreement, and Owner/Contractor Agreement. Confirm requirements before commencement of work.

C. Definitions:
   1. Provide: To furnish and install, complete and ready for intended use.
   2. Furnish: Supply and deliver to project site, ready for unpacking, assembly and installation.
   3. Install: Includes unloading, unpacking, assembling, erecting, installing, applying, finishing, protecting, cleaning and similar operations at project site as required to complete items of work furnished.
   4. Approved or Approved Equivalent: To possess the same performance qualities and characteristics and fulfill the utilitarian function without any decrease in quality, durability or longevity. For equipment/products defined by the Contractor as "equivalent," substitution requests must be submitted to Engineer for consideration, in accordance with Division 01, General Requirements, and approved by the Engineer prior to submitting bids for substituted items.
   5. Authority Having Jurisdiction (AHJ): Indicates reviewing authorities having jurisdiction, including local fire marshal, Owner's insurance underwriter, Owner's Authorized Representative, and other reviewing entity whose approval is required to obtain systems acceptance.

1.02 RELATED SECTIONS

A. Contents of Section apply to Division 28, Electronic Safety Contract Documents.

B. Related Work:
   1. Additional conditions apply to this Division including, but not limited to:
      a. Specifications including Division 00, Procurement and Contracting Requirements and Division 01, General Requirements.
      b. Drawings
      c. Addenda
      d. Owner/Contractor Agreement
      e. Codes, Standards, Public Ordinances and Permits

C. Contents of Division 26, Electrical apply to this Section.

1.03 REFERENCES AND STANDARDS

A. References and Standards per Division 00, Procurement and Contracting Requirements and Division 01, General Requirements, individual Division 28, Electronic Safety Sections and those listed in this Section.

B. Codes to include latest adopted editions, including current amendments, supplements and local jurisdiction requirements in effect as of the date of the Contract Documents, of/from:
   1. State of Washington:
      a. IBC - International Building Code
      b. IFC - International Fire Code
      c. IMC - International Mechanical Code
      d. NEC - National Electrical Code
      e. UPC - Uniform Plumbing Code
      f. WAC - Washington Administrative Code

g. WSEC - Washington State Energy Code

C. Reference standards and guidelines include but are not limited to the latest adopted editions from:
1. ABA - Architectural Barriers Act
2. ADA - Americans with Disabilities Act
3. ANSI - American National Standards Institute
4. ASCE - American Society of Civil Engineers
5. ASHRAE - American Society of Heating, Refrigerating and Air-Conditioning Engineers
6. ASHRAE Guideline 0, the Commissioning Process
7. ASME - American Society of Mechanical Engineers
8. ASTM - ASTM International
9. CFR - Code of Federal Regulations
10. EPA - Environmental Protection Agency
11. ETL - Electrical Testing Laboratories
12. FM - FM Global
13. ISO - International Organization for Standardization
14. NEC - National Electric Code
15. NEMA - National Electrical Manufacturers Association
16. NFPA - National Fire Protection Association
17. OSHA - Occupational Safety and Health Administration
18. SMACNA - Sheet Metal and Air Conditioning Contractors' National Association
19. UL - Underwriters Laboratories Inc.

D. See Division 28, Electronic Safety individual Sections for additional references.

1.04 SUBMITTALS

A. See Division 01, General Requirements for Submittal Procedures.

B. Provide drawings in format and software release equal to the design documents. Drawings to be the same sheet size and scale as the Contract Documents.

C. "No Exception Taken" constitutes that review is for general conformance with the design concept expressed in the Contract Documents for the limited purpose of checking for conformance with information given. Any action is subject to the requirements of the Contract Documents. Contractor is responsible for the dimensions and quantity and will confirm and correlate at the job site, fabrication processes and techniques of construction, coordination of the work with that of all other trades, and the satisfactory performance of the work.

D. Provide product submittals and shop drawings in electronic format only. Electronic format must be submitted via zip file via e-mail. For electronic format, provide one file per division containing one bookmarked PDF file with each bookmark corresponding to each Specification Section. Arrange bookmarks in ascending order of Specification Section number. Individual submittals sent piecemeal in a per Specification Section method will be returned without review or comment. Copy Engineer on all transmissions/submissions.

E. Product Data: Provide manufacturer's descriptive literature for products specified in Division 28, Electronic Safety Sections.

F. Identify/mark each submittal in detail. Note what difference, if any, exist between the submitted item and the specified item. Failure to identify the differences will be considered cause for disapproval. If differences are not identified and/or not discovered during the submittal review process, Contractor remains responsible for providing equipment and materials that meet the specifications and drawings.
1. Label submittal to match numbering/references as shown in Contract Documents. Highlight and label applicable information to individual equipment or cross out/remove extraneous data not applicable to submitted model. Clearly note options and accessories to be provided, including field installed items. Highlight connections by/to other trades.
2. Include technical data, installation instructions and dimensioned drawings for products, equipment and devices installed, furnished or provided. Reference individual Division 28, Electronic Safety specification Sections for specific items required in product data

submittal outside of these requirements.

3. See Division 28, Electronic Safety individual Sections for additional submittal requirements outside of these requirements.

G. Maximum of two reviews of complete submittal package. Arrange for additional reviews and/or early review of long-lead items; Bear costs of additional reviews at Engineer's hourly rates. Incomplete submittal packages/submittals will be returned to contractor without review.

H. Resubmission Requirements: Make corrections or changes in submittals as required, and in consideration of Engineer’s comments. Identify Engineer’s comments and provide an individual response to each of the Engineer’s comments. Cloud changes in the submittals and further identify changes which are in response to Engineer’s comments.

I. Structural/Seismic: Provide weights, dimensions, mounting requirements and like information required for mounting, seismic bracing, and support. Indicate manufacturer's installation and support requirements to meet ASCE 7-16 requirements for non-structural components. Provide engineered seismic drawings and equipment seismic certification. Equipment Importance Factor as specified in Division 01 and in Structural documents.

J. Trade Coordination: Include physical characteristics, electrical characteristics, device layout plans, wiring diagrams, and connections as required per Division 28, Electronic Safety Coordination Documents. For equipment with electrical connections, furnish copy of approved submittal for inclusion in Division 26, Electrical and Division 28, Electronic Safety submittals.

K. Make provisions for openings in building for admittance of equipment prior to start of construction or ordering of equipment.

L. Substitutions and Variation from Basis of Design:

1. The Basis of Design designated product establishes the qualities and characteristics for the evaluation of any comparable products by other listed acceptable manufacturers if included in this Specification or included in an approved Substitution Request as judged by the Design Professional.
2. If substitutions and/or equivalent equipment/products are being proposed, it is the responsibility of parties concerned, involved in, and furnishing the substitute and/or equivalent equipment to verify and compare the characteristics and requirements of that furnished to that specified and/or shown. If greater capacity and/or more materials and/or more labor are required for the rough-in, circuitry or connections than for the item specified and provided for, then provide compensation for additional charges required for the proper rough-in, circuitry and connections for the equipment being furnished. No additional charges above the Base Bid, including resulting charges for work performed under other Divisions, will be allowed for such revisions. Coordinate with the requirements of "Submittals." For any product marked "or approved equivalent," a substitution request must be submitted to Engineer for approval prior to purchase, delivery or installation.
3. Where manufacturer equipment or model numbers are indicated with no exceptions, substitutions will be rejected.

M. Shop Drawings:

1. Provide coordinated shop drawings which include physical characteristics of all systems, device layout plans, and control wiring diagrams. Reference individual Division 28, Electronic Safety specification Sections for additional requirements for shop drawings outside of these requirements.
2. Provide Shop Drawings indicating access panel locations, size and elevation for approval prior to installation.

N. Samples: Provide samples when requested by individual Sections.

O. Resubmission Requirements:

1. Make any corrections or change in submittals when required by Engineer review comments. Provide submittals as specified. The engineer will not be required to edit and/or interpret the Contractor's submittals. Indicate changes for the resubmittal in a cover letter with reference to page(s) changed and reference response to comment. Cloud changes in the submittals.
2. Resubmit for review until review indicates no exception taken or "make corrections noted."

3. When submitting drawings for Engineer's re-review, clearly indicate changes on drawings and "cloud" any revisions. Submit a list describing each change.

P. Operation and Maintenance Manuals, Owner's Instructions:
   1. Reference individual Division 28, Electronic Safety Specification Sections for additional requirements for operations and maintenance manuals.
   2. Submit, at one time, electronic files (PDF format) of manufacturer's operation and maintenance instruction manuals and parts lists for equipment or items requiring servicing. Submit data when work is substantially complete and in same order format as submittals. Include name and location of source parts and service for each piece of equipment.
      a. Include copy of approved submittal data along with submittal review letters received from Engineer. Data to clearly indicate installed equipment model numbers. Delete or cross out data pertaining to other equipment not specific to this project.
      b. Include copy of manufacturer's standard Operations and Maintenance for equipment. At front of each tab, provide routine maintenance documentation for scheduled equipment. Include manufacturer's recommended maintenance schedule and highlight maintenance required to maintain warranty. Furnish list of routine maintenance parts, including part numbers, sizes and quantities relevant to each piece of equipment.
      c. Include copy of complete parts list for equipment. Include available exploded views of assemblies and sub-assemblies.
      d. Include Warranty per Division 00, Procurement and Contracting Requirements, Division 01, General Requirements, Section 28 00 01, Electronic Safety Basic Requirements and individual Sections.
      e. Include product certificates of warranties and guarantees.
      f. Include copy of start-up and test reports specific to each piece of equipment.
      g. Include commissioning reports.
      h. Engineer will return incomplete documentation without review.
      i. Engineer will provide one set of review comments in Submittal Review format. Arrange for additional reviews; Bear costs for additional reviews at Engineer's hourly rates.
   3. Thoroughly instruct Owner in proper operation of equipment and systems. Where noted in individual Sections, training will include classroom instruction with applicable training aids and systems demonstrations. Field instruction per Section 28 00 01, Electronic Safety Basic Requirements Article titled "Demonstration."
   4. Copies of certificates of code authority inspections, acceptance, code required acceptance tests, letter of conformance and other special guarantees, certificates of warranties, specified elsewhere or indicated on Drawings.

Q. Record Drawings:
   1. Maintain at site at least one set of drawings for recording “as-constructed” conditions. Indicate on drawings changes to original documents by referencing revision document, and include buried elements and location of concealed items. Include items changed by addenda, field orders, supplemental instructions, and constructed conditions.
   2. Record Drawings are to include equipment locations, calculations, and schedules that accurately reflect "as constructed or installed" for project.
   3. At completion of project, input changes to original project on CAD Drawings and make one set of black-line drawings created from CAD Files in version/release equal to contract drawings. Submit CAD Files and drawings upon substantial completion.
   4. See Division 28, Electronic Safety individual Sections for additional items to include in Record Drawings.

1.05 QUALITY ASSURANCE

A. Regulatory Requirements: Work and materials installed to conform with all local, State and Federal codes, and other applicable laws and regulations. Where code requirements are at variance with Contract Documents, meet code requirements as a minimum requirement and include costs necessary to meet these in Contract. Machinery and equipment are to comply with OSHA requirements, as currently revised and interpreted for equipment manufacturer

requirements. Install equipment provided per manufacturer recommendations.

B. Whenever this Specification calls for material, workmanship, arrangement or construction of higher quality and/or capacity than that required by governing codes, higher quality and/or capacity take precedence.

C. Drawings are intended to be diagrammatic and reflect the Basis of Design manufacturer's equipment. They are not intended to show every item in its exact dimensions, or details of equipment or proposed systems layout. Verify actual dimensions of systems (e.g. cable tray, panels, etc.) and equipment proposed to assure that systems and equipment will fit in available space. Contractor is responsible for design and construction costs incurred for equipment other than Basis of Design, including, but not limited to, architectural, structural, electrical, HVAC, fire sprinkler, and plumbing systems.

D. Manufacturer's Instructions: Follow manufacturer's written instructions. If in conflict with Contract Documents, obtain clarification. Notify Engineer in writing before starting work.

E. Items shown on Drawings are not necessarily included in Specifications or vice versa. Confirm requirements in all Contract Documents.

F. Provide products that are UL listed.

1.06 WARRANTY

A. Provide written warranty covering the work for a period of one year from date of Substantial Completion in accordance with Division 00, Procurement and Contracting Requirements and Division 01, General Requirements, Section 28 00 01, Electronic Safety Basic Requirements and individual Division 28, Electronic Safety Sections.

B. Sections under this Division can require additional and/or extended warranties that apply beyond basic warranty under Division 01, General Requirements and the General Conditions. Confirm requirements in all Contract Documents.

1.07 COORDINATION DOCUMENTS

A. Prior to construction, prepare and submit coordinated layout drawings (composite drawings), to coordinate installation and location of ductwork, grilles, diffusers, piping, fire sprinklers, plumbing, lights, and electrical services. Composite Drawings show services on single sheet. Key Drawings to structural column identification system. Prior to completion of Drawings, coordinate proposed installation with architectural and structural requirements, and other trades (including plumbing, HVAC, fire protection, electrical, ceiling suspension, and ceiling tile systems, etc.), and provide maintenance access requirements. Coordinate with submitted architectural systems (i.e. roofing, ceiling, finishes) and structural systems as submitted, including footings and foundation. Identify zone of influence from footings and ensure systems are not routed within the zone of influence.

B. Prepare Drawings as follows:
   1. Drawings in CAD Format. CAD format release equal to design documents. Drawings to be same sheet size and scale as Contract Drawings and indicate location, size and elevation above finished floor of equipment and distribution systems.
   2. Review and revise, as necessary, section cuts in Contract Drawings after verification of field conditions.
   3. Indicate fittings, hangers, access panels, and elevation of bottom of cable tray above finished floor.
   4. Drawings to indicate proposed ceiling grid and lighting layout as shown on electrical drawings and architectural reflected ceiling drawings and HVAC equipment, ductwork.
   5. Incorporate Addenda items and change orders.
   6. Provide additional coordination as requested by other trades.

C. Advise Engineer in event conflict occurs in location or connection of equipment. Bear costs resulting from failure to properly coordinate installation or failure to advise Engineer of conflict.

D. Submit final Coordination Drawings with changes as Record Drawings at completion of project.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Articles, fixtures, and equipment of a kind to be standard product of one manufacture, including but not limited to panels, devices and equipment unless otherwise specified in individual Division 28, Electronic Safety Sections.

2.02 STANDARDS OF MATERIALS AND WORKMANSHIP

A. Base contract upon furnishing materials as specified. Materials, equipment, and fixtures used for construction are to be new, latest products as listed in manufacturer's printed catalog data and are to be UL, ETL, or FM listed and labeled or be approved by State, County, and City authorities prior to procurement and installation.

B. Names and manufacturer's names denote character and quality of equipment desired and are not to be construed as limiting competition.

C. Hazardous Materials:
   1. Comply with local, State of Washington, and Federal regulations relating to hazardous materials.
   2. Comply with Division 00, Procurement and Contracting Requirements and Division 01, General Requirements for this project relating to hazardous materials.
   3. Do not use any materials containing a hazardous substance. If hazardous materials are encountered, do not disturb; immediately notify Owner and Engineer. Hazardous materials will be removed by Owner under separate contract.

PART 3 - EXECUTION

3.01 ACCESSIBILITY AND INSTALLATION

A. Confirm Accessibility and Installation requirements in Division 00, Procurement and Contracting Requirements, Division 01, General Requirements, Section 28 00 01, Electronic Safety Basic Requirements and individual Division 28, Electronic Safety Sections.

B. Install equipment having components requiring access (i.e., devices, equipment, electrical boxes, panels, etc.) so that they may be serviced, reset, replaced or recalibrated by service people with normal service tools and equipment. Do not install equipment in obvious passageways, doorways, scuttles or crawlspaces which would impede or block intended usage.

C. Install equipment and products complete as directed by manufacturer's installation instructions. Obtain installation instructions from manufacturer prior to rough-in of equipment and examine instructions thoroughly. When requirements of installation instructions conflict with Contract Documents, request clarification from Engineer prior to proceeding with installation. This includes proper installation methods, sequencing and coordination with other trades and disciplines.

D. Earthwork:
   1. Confirm Earthwork requirements in Contract Documents. In absence of specific requirements, comply with individual Division 28, Electronic Safety Sections and the following:
      a. Perform excavation, dewatering, shoring, bedding, and backfill required for installation of work in this Division in accordance with related earthwork divisions. Contact utilities and locate existing utilities prior to excavation. Repair any work damaged during excavation or backfilling.
      b. Excavation: Do not excavate under footings, foundation bases, or retaining walls.
      c. Provide protection of underground systems. Review the project Geotechnical Report for references to corrosive or deleterious soils which will reduce the performance or service life of underground systems materials.

E. Firestopping:
   1. Confirm Firestopping requirements in Division 07, Thermal and Moisture Protection.
   2. In absence of specific requirements, comply with individual Division 28, Electronic Safety Sections and coordinate location and protection level of fire and/or smoke rated walls, ceilings, and floors. When these assemblies are penetrated, seal around conduit, raceway

and equipment with approved firestopping material. Install firestopping material complete as directed by manufacturer's installation instructions. Meet requirements of ASTM E814, Standard Test Method for Fire Tests of Through-Penetration Fire Stops.

F. Plenums: In plenums, provide plenum rated materials that meet the requirements to be installed in plenums.

3.02 SEISMIC CONTROL

A. Confirm Seismic Control requirements in Division 01, General Requirements, Structural documents, and individual Division 28 Electronic Safety Sections.

B. Earthquake resistant designs for Electronic Safety (Division 28) systems and equipment to conform to regulations of jurisdiction having authority.

C. Restraints which are used to prevent disruption of function of piece of equipment because of application of horizontal force to be such that forces are carried to frame of structure in such a way that frame will not be deflected when apparatus is attached to a mounting base and equipment pad, or to structure in normal way, utilizing attachments provided. Secure equipment and distribution systems to withstand a force in direction equal to value defined by jurisdiction having authority.

D. Provide means to prohibit excessive motion of safety equipment during earthquake.

3.03 REVIEW AND OBSERVATION

A. Confirm Review and Observation requirements in Division 00, Procurement and Contracting Requirements, Division 01, General Requirements, Section 28 00 01, Electronic Safety Basic Requirements and individual Division 28, Electronic Safety Sections.

B. Notify Engineer, in writing, at following stages of construction so that they may, at their option, visit site for review and construction observation:
   1. Underground conduit and wire installation prior to backfilling.
   2. Prior to covering walls when electronic safety systems installation is started.
   3. Prior to ceiling cover/installation.
   4. When main systems, or portions of, are being tested and ready for inspection by AHJ.

C. Final Punch: Costs incurred by additional trips required due to incomplete systems will be the responsibility of the Contractor.

3.04 CUTTING AND PATCHING

A. Confirm Cutting and Patching Requirements in Division 00, Procurement and Contracting Requirements and Division 01, General Requirements. In absence of specific requirements, comply with individual Division 28, Electronic Safety Sections and the following:
   1. Proposed floor cutting/core drilling/sleeve locations to be approved by Project Structural Engineer. Submit proposed locations to Project Structural Engineer. Where slabs are of post tension construction, perform x-ray scan of proposed penetration locations and submit scan results including proposed penetration locations to Project Structural Engineer for approval. Where slabs are of waffle type construction, show column cap extent and cell locations relative to proposed penetration(s).
   2. Cutting, patching and repairing for work specified in this Division including plastering, masonry work, concrete work, carpentry work, and painting included under this Section will be performed by skilled craftsmen of each respective trade in conformance with appropriate Division of Work.
   3. Additional openings required in building construction to be made by drilling or cutting. Use of jack hammer is specifically prohibited. Patch openings in and through concrete and masonry with grout.
   4. Restore new or existing work that is cut and/or damaged to original condition. Patch and repair specifically where existing items have been removed. This includes repairing and painting walls, ceilings, etc. where existing conduit and devices are removed as part of this project. Where alterations disturb lawns, paving, and walks, repair, refinish and leave in condition matching existing prior to commencement of work.

5. Additional work required by lack of proper coordination will be provided at no additional cost to the Owner.

3.05 EQUIPMENT SELECTION AND SERVICEABILITY

A. Replace or reposition equipment which is too large or located incorrectly to permit servicing, at no additional cost to Owner.

3.06 DELIVERY, STORAGE AND HANDLING

A. Confirm requirements in Division 00, Procurement and Contracting Requirements and Division 01, General Requirements. In absence of specific requirements, comply with the individual Division 28, Electronic Safety Sections and the following:
   1. Handle materials delivered to project site with care to avoid damage. Store materials on site inside building or protected from weather, dirt and construction dust.
   2. Protect equipment and pipe to avoid damage. Close conduit openings with caps or plugs. Keep motors and bearings in watertight and dustproof covers during entire course of installation.
   3. Protect devices, panels and similar items until in service.
   4. Products and/or materials that become damaged due to water, dirt and/or dust as a result of improper storage to be replaced before installation.

3.07 DEMONSTRATION

A. Confirm Demonstration requirements in Division 00, Procurement and Contracting Requirements and Division 01, General Requirements, Section 28 00 01, Electronic Safety Basic Requirements and individual Division 28, Electronic Safety Sections.

B. Upon completion of work and adjustment of equipment, test systems, demonstrate to Owner's Authorized Representative and Engineer that equipment furnished and installed or connected under provisions of these Specifications functions in manner required. Provide field instruction to Owner's Staff as specified in Division 01, General Requirements, Section 28 00 01, Electronic Safety Basic Requirements and individual Division 28, Electronic Safety Sections.

C. Manufacturer's Field Services: Furnish services of a qualified factory certified instructor at time approved by Owner, to instruct maintenance personnel, correct defects or deficiencies, and demonstrate to satisfaction of Owner that entire system is operating in satisfactory manner and complies with requirements of other trades that may be required to complete work. Complete instruction and demonstration prior to final job site observations.

3.08 CLEANING

A. Confirm cleaning requirements in Division 00, Procurement and Contracting Requirements, Division 01, General Requirements, Section 28 00 01, Electronic Safety Basic Requirements and individual Division 28 Sections.

B. Upon completion of installation, thoroughly clean exposed portions of equipment, removing temporary labels and traces of foreign substances. Throughout work, remove construction debris and surplus materials accumulated during work.

3.09 INSTALLATION

A. Confirm Installation requirements in Division 00, Procurement and Contracting Requirements, Division 01, General Requirements, Section 28 00 01, Electronic Safety Basic Requirements and individual Division 28, Electronic Safety Sections.

B. Install equipment in accordance with manufacturer's installation instructions, plumb and level and firmly anchored to building structure. Maintain manufacturer's recommended clearances.

C. Start up equipment, in accordance with manufacturer's start-up instructions, and in presence of manufacturer's representative. Test controls and demonstrate compliance with requirements. Replace damaged or malfunctioning controls and equipment.

D. Provide miscellaneous supports required for installation of equipment, conduit and wiring.

3.10 PAINTING

A. Confirm Painting requirements in Division 01, General Requirements and Division 09, Finishes. In absence of specific requirements, comply with individual Division 28, Electronic Safety Sections and the following:
   1. Ferrous Metal: After completion of work, thoroughly clean and paint exposed supports constructed of ferrous metal surfaces, i.e. hangers, hanger rods, equipment stands, with one coat of black asphalt varnish for exterior or black enamel for interior, suitable for hot surfaces.
   2. In electrical and mechanical room, on roof or other exposed areas, equipment not painted with enamel to receive two coats of primer and one coat of rustproof enamel, colors as selected by Owner.
   3. See individual equipment Specifications for other painting.
   4. Structural Steel: Repair damage to structural steel finishes or finishes of other materials damaged by cutting, welding or patching to match original.
   5. Conduit: Clean, primer coat and paint interior conduit exposed in finished areas with two coats paint suitable for metallic surfaces. Color selected by Owner.

3.11 DEMOLITION

A. Confirm requirements in Division 01, General Requirements and Division 02, Existing Conditions. In the absence of specific requirements, comply with individual Division 28, Electronic Safety Sections and the following:
   1. Scope:
      a. It is the intent of these documents to provide necessary information and adjustments to electronic safety system required to meet code, and accommodate installation of new work.
      b. Existing Conditions: Determine exact location of existing utilities and equipment before commencing work, compensate Owner for damages caused by failure to exactly locate and preserve underground utilities. Replace damaged items with new material to match existing. Promptly notify Owner if utilities are found which are not shown on Drawings.
      c. Coordinate with Owner so that work can be scheduled not to interrupt operations, normal activities, building access, access to different areas. Owner will cooperate to best of their ability to assist in coordinated schedule, but will remain final authority as to time of work permitted.
   2. Examination:
      a. Determine exact location of existing utilities and equipment before commencing work, compensate Owner for damages caused by failure to locate and preserve utilities. Replace damaged items with new material to match existing.
      b. Verify that abandoned wiring and equipment serve only abandoned facilities.
      c. Demolition drawings are based on casual field observation and existing record documents.
         1) Verify accuracy of information shown prior to bidding and provide such labor and material as is necessary to accomplish work.
         2) Verify location and number of electronic safety system devices, panels, etc. in field.
      d. Report discrepancies to Engineer before disturbing existing installation.
   3. Promptly notify Owner if systems are found which are not shown on Drawings.
   4. Execution:
      a. Remove existing electronic safety equipment, devices and associated wiring from walls, ceilings, floors, and other surfaces unless shown as retained or relocated on Drawings.
      b. Provide temporary wiring and connections to maintain electrical continuity of existing systems during construction. Remove or relocate electrical boxes, conduit, wiring and equipment as encountered in removed or remodeled areas in existing construction affected by this work.

c. Remove and restore wiring which serves usable existing outlets clear of construction or demolition.
d. If existing junction boxes will be made inaccessible, or if abandoned outlets serve as feed through boxes for other existing electrical equipment which is being retained, provide new conduit and wire to bypass abandoned outlets.
e. If existing conduits pass through partitions or ceiling which are being removed or remodeled, provide new conduit and wire to reroute clear of construction or demolition and maintain service to existing load.
f. Extend circuiting and devices in existing walls to be furred out.
g. Remove abandoned wiring to source of supply.
h. Remove exposed abandoned conduit, including abandoned conduit above accessible ceiling finishes. Cut conduit flush with walls and floors, and patch surfaces.
i. Disconnect and remove electrical devices and equipment serving utilization equipment that has been removed.
j. Maintain access to existing electrical installations which remain active. Modify installation or provide access panel as appropriate.
k. Existing electronic safety system components are indicated on demolition plans. Verify exact location and number of existing devices and components in field. Only partial existing systems shown. Locations of items shown on Drawings as existing are partially based on Record and other Drawings which may contain errors. Verify accuracy of information shown prior to bidding and provide such labor and material as is necessary to accomplish intent of Contract Documents.
l. Remove abandoned wiring to leave site clean.
m. If existing electrical equipment contains PCBs (Polychlorinated Biphenyl), replace with new non-PCB equipment. Dispose of material containing PCBs as required by federal and local regulations.
n. Repair adjacent construction and finishes damaged during demolition work.
o. Maintain access to existing electrical installations which remain active. Modify installation or provide access panel as appropriate.

3.12 ACCEPTANCE

A. Confirm requirements in Division 00, Procurement and Contracting Requirements and Division 01, General Requirements. In absence of specific requirements, comply with individual Division 28, Electronic Safety Sections and the following:
   1. System cannot be considered for acceptance until work is completed and demonstrated to Engineer that installation is in strict compliance with Specifications, Drawings and manufacturer's installation instructions, particularly in reference to following:
      a. Cleaning
      b. Operation and Maintenance Manuals
      c. Training of Operating Personnel
      d. Record Drawings
      e. Warranty and Guaranty Certificates
      f. Start-up/test Documents and Commissioning Reports

3.13 FIELD QUALITY CONTROL

A. Confirm requirements in Division 00, Procurement and Contracting Requirements and Division 01, General Requirements. In absence of specific requirements, comply with individual Division 28, Electronic Safety Sections and the following:
   1. Tests:
      a. Conduct tests of equipment and systems to demonstrate compliance with requirements specified. Reference individual Specification Sections for required tests. Document tests and include in Closeout Documents.
      b. During site evaluations by Engineer, provide appropriate personnel with tools to remove and replace trims, covers, and devices so that proper evaluation of installation can be performed.

3.14 LETTER OF CONFORMANCE

A. Provide Letter of Conformance, copies of manufacturers' warranties and extended warranties with a statement in letter that electronic safety systems were installed in accordance with manufacturer's recommendations, UL listings and FM Global approvals. Include Letter of Conformance, copies of manufacturers' warranties and extended warranties in operating and maintenance manuals.

END OF SECTION

SECTION 28 31 00
FIRE DETECTION AND ALARM

PART 1 - GENERAL

1.01 SUMMARY

A. Work Included:
   1. Fire Alarm Control Panel
   2. Notification Appliance Circuit Panels
   3. Fire Alarm Transmitters
   4. Fire Alarm Annunciators
   5. Manual Pull Stations
   6. Fixed Temperature Heat Detectors
   7. Rate-of-Rise and Fixed Temperature Heat Detectors
   8. Photoelectric Type Detectors
   9. Duct-Mounted Smoke Detectors
   10. Relay Modules
   11. Control Modules
   12. Input Modules
   13. Fault Isolation Modules
   14. Combination Horn/Strobes
   15. Strobes
   16. Horns
   17. Weatherproof/Surface Backboxes
   18. Protective Guards
   19. Circuit Conductors
   20. Surge Protection
   21. Batteries
   22. Locks and Keys
   23. Document Storage Cabinet
   24. Instruction Charts
   25. Framed Floor Map

B. Scope:
   1. Provide a new fire alarm system.
   2. Provide a new fire alarm transmitter communication system.
   3. Restricted Areas: In Offices, Courtrooms, and other restricted areas, complete work during nonoperational hours, including evenings and weekends. Coordinate off-hours access to these areas with the Owner. Restricted area spaces must be made available for use by the next period of occupation.

C. In addition, provide design for the following as required in these Contract Documents:
   1. Fire Alarm System
   2. Fire Alarm Transmitter Communication System

D. In addition, remove existing fire alarm system throughout the entire building.

E. System Design:
   1. Design Criteria:
      a. Design systems utilizing equipment, appliance, and device layouts depicted in the contract documents and as required by code.
      b. Fire Alarm Sequence of Operation: Activation of manual fire alarm box, automatic fire detector, or fire extinguishing system causes system to enter “alarm” mode including the following operations:
         1) Local English language annunciation of device location, address and condition and audible and visual alarm signal at control panel and remote annunciators.
         2) Manual "acknowledge" function at control panel and remote annunciators to silence audible alarm signal, visual signal remains displayed until initiating alarm

is cleared.

3) Transmit “alarm” signal to off-premises equipment, i.e., to local fire department or Owner's selected vendor. Provide necessary connections to transmitter.
4) Activate fire alarm notification appliances.
5) Activate Emergency Control Functions as required by code.
   (a) Transmit signal to fire/smoke dampers.
   (b) Transmit signal to initiate shutdown of air handling equipment.
   (c) Transmit signal to release fire doors.

c. Supervisory Sequence of Operation: Fire sprinkler tamper or supervisory pressure switch activation, or duct-mounted smoke detector activation causes system to enter "supervisory" mode including the following operations:
1) Local English language annunciation of device location, address and condition and audible and visual supervisory signal at control panel and remote annunciators.
2) Manual "acknowledge" function at control panel and remote annunciators to silence audible supervisory signal, visual signal remains displayed until initiating supervisory is cleared.
3) Transmit "supervisory" signal to off-premises equipment.
4) Transmit signal to fire/smoke dampers (duct detector only).
5) Transmit signal to initiate shutdown of air handling equipment (duct detector only).

d. Trouble Sequence of Operation: System trouble, including single ground or open of supervised circuit, or power or system failure, causes system to enter "trouble" mode including the following operations:
1) Local English language annunciation of device location, address and condition and audible and visual trouble signal at control panel and remote annunciators.
2) Manual "acknowledge" function at control panel and remote annunciators to silence audible trouble signal, visual signal remains displayed until initiating trouble is cleared.
3) Transmit "trouble" signal to off-premises equipment.

2. Design of Fire Alarm Transmitter Communication System: Provide design of the fire alarm transmitter communication system as required by code.

1.02 RELATED SECTIONS

A. Contents of Division 28, Electronic Safety and Security and Division 01, General Requirements apply to this Section.

B. Division 26, Electrical requirements apply to this section.

1.03 REFERENCES AND STANDARDS

A. References and Standards as required by Division 28, Electronic Safety and Security and Division 01, General Requirements.

B. In addition, meet the following:
1. NFPA 72, National Fire Alarm and Signaling Code, adopted edition.
2. NFPA 70, National Electrical Code, adopted edition.

1.04 SUBMITTALS

A. Submittals as required by Division 28, Electronic Safety and Security and Division 01, General Requirements.

B. Shop Drawings:
1. Submit shop drawings which include documentation required per NFPA 72; Shop Drawings.
2. In addition, provide the following:
   a. Provide system designer NICET certification number or Engineer's signature and seal on shop drawings.
   b. Identification of system designer and evidence of qualification or certification of designer as required by AHJ.

C. Operation and Maintenance Manuals:
   1. Provide manuals containing the documentation required in NFPA 72; Complete Documentation.
   2. In addition, provide the following:
      a. One year warranty agreement including parts and labor. Warranty period begins upon date of substantial completion.
      b. Instruction chart.

1.05 QUALITY ASSURANCE

A. Quality assurance as required by Division 28, Electronic Safety and Security and Division 01, General Requirements.

B. In addition, meet City of Mt. Vernon, Washington requirements, ordinances and amendments.

C. Designer Qualifications: NICET III or IV or Fire Protection Engineer.

D. Installer Certifications: NICET II minimum.

1.06 WARRANTY

A. Warranty of materials and workmanship as required by Division 28, Electronic Safety and Security and Division 01, General Requirements.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Fire Alarm Control Panel:
   1. Potter
   2. Silent Knight
   3. Or approved equivalent.

B. Notification Appliance Circuit Panels:
   1. Same manufacturer as fire alarm control equipment.
   2. Alarmsaf
   3. Altronix
   4. Federal Signal
   5. Wheelock
   6. Or approved equivalent.

C. Fire Alarm Transmitters:
   1. Same manufacturer as fire alarm control equipment.
   2. AES Corporation
   3. DSC
   4. Telguard
   5. Or approved equivalent.

D. Fire Alarm Annunciators:
   1. Same manufacturer as fire alarm control equipment.
   2. No substitutions permitted.

E. Manual Pull Stations:
   1. Same manufacturer as fire alarm control equipment.
   2. No substitutions permitted.

F. Fixed Temperature Heat Detectors:
   1. Same manufacturer as fire alarm control equipment.
   2. No substitutions permitted.

G. Rate-of-Rise and Fixed Temperature Heat Detectors:
   1. Same manufacturer as fire alarm control equipment.
   2. No substitutions permitted.

H. Photoelectric Type Detectors:
   1. Same manufacturer as fire alarm control equipment.

2. No substitutions permitted.

I. Duct-Mounted Smoke Detectors:
   1. Same manufacturer as fire alarm control equipment.
   2. No substitutions permitted.

J. Relay Modules:
   1. Same manufacturer as fire alarm control equipment.
   2. No substitutions permitted.

K. Control Modules:
   1. Same manufacturer as fire alarm control equipment.
   2. No substitutions permitted.

L. Input Modules:
   1. Same manufacturer as fire alarm control equipment.
   2. No substitutions permitted.

M. Fault Isolation Modules:
   1. Same manufacturer as fire alarm control equipment.
   2. No substitutions permitted.

N. Combination Horn/Strobes:
   1. Same manufacturer as fire alarm control equipment.
   2. Federal Signal
   3. Gentex
   4. System Sensor
   5. Wheelock
   6. Or approved equivalent.

O. Strobes:
   1. Same manufacturer as fire alarm control equipment.
   2. Federal Signal
   3. Gentex
   4. System Sensor
   5. Wheelock
   6. Or approved equivalent.

P. Horns:
   1. Same manufacturer as fire alarm control equipment.
   2. Federal Signal
   3. Gentex
   4. System Sensor
   5. Wheelock
   6. Or approved equivalent.

Q. Weatherproof/Surface Backboxes:
   1. Same manufacturer as fire alarm detection devices or notification appliances.
   2. Or approved equivalent.

R. Protective Guards:
   1. Wire Guard:
      a. Same manufacturer as fire alarm control equipment.
      b. American Wire Guards
      c. Chase Security Systems
      d. Safety Technology International
      e. Shaw-Perkins
      f. Or approved equivalent.
   2. Protective Cover:
      a. Safety Technology International
      b. SIGCOM

c. Or approved equivalent.

S. Circuit Conductors:
1. Allied Wire and Cable
2. Belden
3. CCI
4. West Penn Wire
5. Or approved equivalent.

T. Surge Protection:
1. Ditek
2. Transtector
3. Or approved equivalent.

U. Batteries:
1. Same manufacturer as fire alarm control equipment.
2. Power-Sonic
3. Werker
4. Or approved equivalent.

V. Locks and Keys:
1. Same manufacturer as fire alarm control equipment.
2. Or approved equivalent.

W. Document Storage Cabinet:
1. Same manufacturer as fire alarm control equipment.
2. Meir Products
3. Space Age
4. Or approved equivalent.

X. Instruction Charts: Confirm make and model with Engineer prior to ordering.

Y. Framed Floor Map: Confirm make and model with Engineer prior to ordering.

Z. Substitutions:
1. For other acceptable manufacturers of specified control units, submit product data showing equivalent features and compliance with Contract Documents.
2. For substitution of products by manufacturers not listed, submit product data showing features and certification by Contractor that the design will comply with contract documents.

AA. Equipment to be supplied by a certified manufacturer representative.

2.02 FIRE ALARM CONTROL PANEL

A. Provide non-proprietary system available through unrestricted distribution.

B. Provide flush mounted units where installed in finished areas; in unfinished areas, surface mounted units are acceptable, unless otherwise noted.

C. Multiprocessor Based: Configurable as an addressable, point identified system.

D. Central Processing Unit (CPU):
1. CPU continuously monitors the communications and data processing cycles of microprocessor. CPU failure generates an audible and visual trouble signal on control panel and remote annunciators.
2. House the CPU in fire alarm cabinet with sufficient space to allow maximum system expansion and to enclose alphanumeric display.
3. Retain basic life safety software in field programmable non-volatile memory. Provide CPU with minimum capacity of 200 addressable points.
4. Equip CPU with software to provide a control-by-event feature, whereby receipt of an alarm point is programmed to operate control points within system. Provide control-by-event actions for life safety functions in programmable non-volatile memory. CPU software programming for control of systems defined in this Section is installed as part of this

Section.

E. System Capabilities:
   1. System capable of addressing and operating smoke detectors, manual pull stations, open contact devices and addressable auxiliary control relays on the same communication loop.
   2. System capable of displaying sensitivity of each smoke detector, address and condition of fire alarm monitoring points.

F. Program Software:
   1. Field configuration program provides programmable operating instructions for system. Store resident program in non-volatile memory.
   2. Devices meet criterion specified under materials.
   3. Verification and display of sensitivity of each addressable smoke detector can be read using the operating software.

G. Control Panel Display Modules:
   1. Provide keyboard display module with minimum 80-character backlit LCD. Each alarm/trouble condition appears in English language with description and location of alarm/supervisory/trouble.
   2. Alarm/supervisory/trouble may be acknowledged, silenced and system reset from control panel or remote annunciator(s).

H. Power Supply: Provide power supply(s), adequate to serve control panel modules, remote annunciators, addressable devices, notification appliances and other connected devices.

I. Power Requirements:
   1. Loss of 120VAC power automatically causes system to transfer to secondary power. Indicate battery power operation by yellow lamp and audible annunciation at control panel and remote annunciator panels. Upon return of 120VAC power, unit recharges batteries to full capacity and maintains battery on float charge. Provide trickle charge adequate capacity to maintain battery fully charged with automatic rate charge.
   2. Provide batteries in locking cabinet manufactured for purpose.

J. Auxiliary Relays: Provide sufficient SPDT auxiliary relay contacts for each function in this portion of the Specifications and for equipment interconnections required under electrical and mechanical specifications.

K. Auxiliary Switches: Provide auxiliary equipment control switches with labeled status indicating lights for each switch.

L. System Reset:
   1. Key-accessible control function returns system to normal, non-alarm state, if initiating circuits have cleared.
   2. Provide reset on both main fire alarm control panel and remote annunciators.

M. Addressing: Provide each initiating device with its own discrete address.

2.03 NOTIFICATION APPLIANCE CIRCUIT PANELS

A. Provide power supply(s), adequate to serve modules, remote annunciators, initiating devices, notification appliances and other connected devices or appliances.

B. Provide batteries in locking cabinet manufactured for purpose.

2.04 FIRE ALARM TRANSMITTERS

A. Provide flush mounted units where installed in finished areas; in unfinished areas, surface mounted units are acceptable, unless otherwise noted.

B. Electrically supervised, capable of transmitting alarm, supervisory and trouble signals over Cellular lines to off-premises receiver. Signal transmitter interfaces fully with receiver station of local fire department or Owner's selected vendor.

C. For radio and cellular transmitters, provide exterior antenna where required to facilitate communication with supervising station.

2.05 FIRE ALARM ANNUNCIATORS

A. Provide flush mounted units where installed in finished areas; in unfinished areas, surface mounted units are acceptable, unless otherwise noted.

B. Alphanumeric Remote Annunciator with Controls: Back lit LCD alphanumeric annunciator minimum 80 characters long. Provide under locking cover test switch, alarm and trouble buzzer, buzzer silence switch and buzzer silence message and reset switch, flush mount with finished cover, vandal-resistant UV stabilized Lexan (or approved equivalent) overlay and required modules, control panel, etc., to drive annunciator. Self-contained, suitable for wet location where located exterior.

2.06 MANUAL PULL STATIONS

A. Provide flush mounted units where installed in finished areas; in unfinished areas, surface mounted units are acceptable, unless otherwise noted.

B. Semi-flush, red finish, nongrasping operation; maximum pull strength as allowed per ADA criteria.

C. Stations do not allow closure without keyed reset.

2.07 FIXED TEMPERATURE HEAT DETECTORS

A. Provide flush mounted units where installed in finished areas; in unfinished areas, surface mounted units are acceptable, unless otherwise noted.

B. Rated 135 degrees F or 190 degrees F as required by space use.

C. Provide off-white, low-profile detectors.

2.08 RATE-OF-RISE AND FIXED TEMPERATURE HEAT DETECTORS

A. Provide flush mounted units where installed in finished areas; in unfinished areas, surface mounted units are acceptable, unless otherwise noted.

B. Responding to 15 degrees F temperature rise per minute and to 135 degrees F fixed temperature as required by space use.

C. Provide off-white, low-profile detectors.

2.09 PHOTOELECTRIC TYPE DETECTORS

A. Provide flush mounted units where installed in finished areas; in unfinished areas, surface mounted units are acceptable, unless otherwise noted.

B. Panel adjustable sensitivity, LED source, multiple cell, 360 degree smoke entry, visual latching operation indicator, insect screen, functional test switch, two-wire operation and vandal-resistant locking feature.

2.10 DUCT-MOUNTED SMOKE DETECTORS

A. Photoelectric type. Duct sampling tubes extending width of duct, visual indication of detector actuation, direct housing mount. Detector powered from control panel, power on indicator light. Detector rated for air velocity, humidity and temperature of duct and environment where installed.

2.11 RELAY MODULES

A. Signaling line circuit interface module that connects to other building systems for control of fire/life safety functions, e.g., air-handler shutdown, fire/smoke damper closure, elevator recall.

B. Module powered from control panel.

2.12 CONTROL MODULES

A. Signaling line circuit interface module that provides notification appliance circuits or system control outputs.

B. Module powered from control panel.

2.13 INPUT MODULES

A. Signaling line circuit interface module that provides initiating device circuits for connection to contact closure initiating devices.

B. Module powered from control panel.

2.14 FAULT ISOLATION MODULES

A. Signaling line circuit interface modules that provide isolation of wire-to-wire shorts on a signaling line circuit with automatic reconnection upon correction of short circuit.

B. Provide module with status indicator LED.

2.15 COMBINATION HORN/STROBES

A. Multi-candela, flush wall and ceiling mount, white finish, insect-proof.

B. Provide horn/strobes that meet the latest requirements of NFPA 72, ANSI 117.1 and UL 1971. Candela rating as required by NFPA 72.

C. Must be compatible with fire alarm control equipment and notification appliance circuit panels.

2.16 STROBES

A. Multi-candela, flush wall and ceiling mount, white finish, insect-proof.

B. Provide strobes that meet the latest requirements of NFPA 72, ANSI 117.1 and UL 1971. Candela rating as required by NFPA 72.

C. Must be compatible with fire alarm control equipment and notification appliance circuit panels.

2.17 HORNS

A. Flush wall and ceiling mount, white finish, insect-proof.

B. Provide horns that meet the latest requirements of NFPA 72.

C. Must be compatible with fire alarm control equipment and notification appliance circuit panels.

2.18 PROTECTIVE GUARDS

A. Wire Guard: Steel wire guard.

B. Protective Cover: Polycarbonate construction.

2.19 CIRCUIT CONDUCTORS

A. Copper or optical fiber; color code and label. Type FPL, FPLR and FPLP. Cable type as required by the NEC and the manufacturer.

B. Minimum signaling line circuit and initiating device circuit wire size: AWG18.

C. Minimum notification appliance circuit wire size: AWG14, or as approved by Engineer.

D. Fiber optic cable as required by manufacturer.

E. Provide two hour rated pathway or two hour rated circuit integrity cabling for all wiring used to activate or monitor smoke control equipment.

2.20 SURGE PROTECTION

A. Install per manufacturer's instructions and recommendations.

B. In accordance with IEEE C62.41 B3 combination waveform and NFPA 70; except for optical fiber conductors.

C. Provide for alternating current circuits powering fire alarm equipment.

D. Initiating Device Circuits, Notification Appliance Circuits and Communications Circuits: Rated to protect applicable equipment; for 24V(dc) maximum dc clamping voltage of 36V(dc), line-to-ground and 72V(dc), line-to-line.

2.21 BATTERIES

A. Provide additional cabinet, if required due to space limitations in control panels.

2.22 LOCKS AND KEYS

A. Deliver keys to Owner.

B. Provide same standard lock and key for each key operated switch and lockable panel and cabinet; provide five keys of each type.

2.23 DOCUMENT STORAGE CABINET

A. Suitable for as-built drawings, operation and maintenance manual, system data file disk and tools.

B. Constructed from steel with baked enamel finish; size adequate for full size drawings, operation and maintenance manual, spare parts and tools.

2.24 INSTRUCTION CHARTS

A. Printed instruction chart for operators, showing steps to be taken when signal is received (normal, alarm, supervisory and trouble); easily readable from normal operator's station.

B. Frame: Stainless steel or aluminum with polycarbonate or glass cover.

2.25 FRAMED FLOOR MAP

A. Provide framed floor plan of facility.

B. Frame: Stainless steel or aluminum with polycarbonate or glass cover.

PART 3 - EXECUTION

3.01 GENERAL INSTALLATION REQUIREMENTS

A. Provide a complete and operable system compliant with all applicable codes and standards.

B. Obtain Engineer's approval of locations of devices, appliances and annunciators before installation.

C. Circuits:
   1. Signaling Line Circuits (SLC): Class B
   2. Notification Appliance Circuits (NAC): Class B.

D. Spare Capacity:
   1. New Notification Appliance Circuits:
      a. Minimum 25 percent spare current capacity.
      b. Maximum 10 percent voltage drop.
      c. Utilize UL maximum current draw value for notification appliances in calculations.
   2. New Signaling Line Circuit: Minimum 25 percent spare device capacity.

E. Power Sources:
   1. Primary: Dedicated branch circuits of facility power distribution system.
   2. Secondary: Storage batteries.
   3. Capacity: Sufficient to operate fire alarm system under normal supervisory condition for 24 hours and operate alarm signals for five minutes at end of standby period.

F. Obtain approval of system design from AHJ prior to installation. Do not begin installation without approval from AHJ and submittal review comments from Engineer.

G. Install in accordance with applicable codes, NFPA 72, NFPA 70 and the Contract Documents.

H. In accordance with manufacturer's instructions, provide wiring, conduit and outlet boxes required for the erection of a complete system as described in these specifications, as shown on Drawings and as required by AHJ.

I. Conceal wiring, conduit, boxes and supports where installed in finished areas.

J. Provide raceway system for cabling concealed in walls and hard ceilings and in locations where cabling is exposed. Where exposed, provide surface raceway in finished areas and surface mounted EMT in non-finished areas. Paint exposed raceway and conduit to match the adjacent surface.

K. Provide cabling and conduits system suitable for wet locations for below grade systems.

L. At junction boxes and termination points, provide identification tags on wires and cables.

M. Route wiring to avoid blocking access to equipment requiring service, access, or adjustment.

N. Existing Components:
   1. Existing Fire Alarm System: Maintain fully operational until new equipment has been tested and accepted.
   2. Disable system only to make switchovers and connections.
      a. Notify Owner before partially or completely disabling system.
      b. Notify local fire service.
      c. Make notifications at least five working days in advance.
      d. Make temporary connections to maintain service in areas adjacent to work area.
   3. Provide fire watch in areas where the system is not functioning if required by the AHJ.
   4. Equipment Removal:
      a. Remove existing system after acceptance of new fire alarm system. Restore damaged surfaces.
      b. Package operational fire alarm and detection equipment that has been removed and offer to Owner prior to disposal.
      c. Remove from site and legally dispose of remainder of existing material.
   5. On-Premises Supervising Station: Include, as part of this work, modifications necessary to existing supervising station to accommodate new fire alarm work.

O. Fire Safety Systems Interfaces:
   1. Provide conduit, wiring, boxes and terminations from fire alarm system to monitored components. Provide a separate input module for each switch or relay to be monitored.
      a. Alarm Inputs: Provide connection in accordance with NFPA 72 for the following systems and components:
         1) Fire sprinkler water flow switches.
         2) Other alarm inputs.
      b. Supervisory Inputs: Provide connection in accordance with NFPA 72 for the following systems and components:
         1) Fire sprinkler water control valve tamper switches.
      c. Trouble Inputs: Provide connection in accordance with NFPA 72 for the following systems and components:
         1) Other trouble inputs.
   2. Fire Safety Functions: Provide power and control conduit, wiring, boxes and terminations to power devices and interface to fire alarm system.
      a. Doors:
         1) Provide smoke detectors and addressable control relays to release magnetic hold open devices and roll-down fire doors and door locks. Verify requirements and quantities prior to bidding.
         2) Smoke Barrier Door Magnetic Holders: Release upon activation of smoke detectors in smoke zone on either side of door.
         3) Electronic Locks or Electromagnetic Door Locks on Egress Doors: Unlock smoke zone egress doors upon activation of any alarm initiating device or suppression system in smoke zone.
         4) Overhead Coiling Fire Doors: Release upon activation of smoke detectors on either side of door.
      b. HVAC Systems:
         1) Fire/Smoke Dampers and Smoke Dampers:
            (a) Provide required smoke detectors, relays, wiring and the like.
            (b) Connect control and power wiring to dampers per manufacturer's instructions.
            (c) Verify quantities, location and requirements of dampers with Division 23, HVAC Drawings and Specifications and mechanical system installer.
         2) Air Moving Systems:

(a) Provide duct-mounted smoke detector for air systems with air flow rates exceeding 2000 CFM. Coordinate with Division 23, HVAC.
(b) Install duct-mounted smoke detector(s) on return side of air system.
(c) Provide control wiring from addressable relay contacts to air handling equipment controller.
(d) Provide duct-mounted smoke detectors rated for air velocity, temperature and humidity of duct. Verify quantities, locations and requirements with Division 23, HVAC Drawings and mechanical system installer.
(e) Where duct-mounted smoke detectors are mounted in inaccessible building void spaces provide access hatch. Provide access hatch with fire rating equivalent to rating of wall, ceiling, or shaft being penetrated.
(f) Provide control wiring from addressable relay contacts to HVLS fan equipment controller.

P. Inspection and Testing for Completion:
1. System testing and commissioning to be performed by a certified manufacturer representative.
2. Perform inspection and testing in accordance with NFPA 72 and requirements of local authorities; document each inspection and test.
3. Document audibility measurements and verify intelligibility for each space on record drawings.
4. Provide the services of the installer's supervisor or person with equivalent qualifications to supervise inspection and testing, correction and adjustments.
5. Provide tools, software and supplies required to accomplish inspection and testing.
6. Prepare for testing by ensuring that work is complete and correct; perform preliminary tests as required to test system.
7. Correct defective work, adjust for proper operation and retest until entire system complies with Contract Documents.
8. Notify Owner seven days prior to beginning completion inspections and tests.
9. Notify authorities having jurisdiction and comply with their requirements for scheduling inspections and tests and for observation by their personnel.
10. Diagnostic Period: After successful completion of inspections and tests, operate system in normal mode for at least 14 days without any system or equipment malfunctions.
    a. Record all system operations and malfunctions.
    b. If a malfunction occurs, start diagnostic period over after correction of malfunction.
    c. Replace devices with readings outside of allowed value at time of system check out.
    d. Owner will provide attendant operator personnel during diagnostic period; schedule training to allow Owner personnel to perform normal duties.
    e. At end of successful diagnostic period, complete and submit NFPA 72 "Inspection and Testing Form."

Q. Owner Personnel Instruction:
1. Provide the following instruction to designated Owner personnel:
    a. Hands-On Instruction: On-site, using operational system.
    b. Classroom Instruction: Owner furnished classroom, on-site or at other local facility.
2. Basic Operation: One-hour sessions for attendant personnel, security officers and engineering staff; combination of classroom and hands-on:
    a. Initial Training: One session pre-closeout.
    b. Refresher Training: One session post-occupancy.
3. Detailed Operation: Two-hour sessions for engineering and maintenance staff; combination of classroom and hands-on:
    a. Initial Training: One session pre-closeout.
    b. Refresher Training: One session post-occupancy.
4. Furnish the services of instructors and teaching aids; have copies of operation and maintenance data and record drawings available during instruction.
5. Provide means of evaluation of trainees suitable to type of training given; report results to Owner.

R. Closeout:
   1. Closeout Demonstration:
      a. Demonstrate proper operation of functions to Owner.
      b. Be prepared to conduct any of the required tests.
      c. Have at least one copy of operation and maintenance data, copy of project record drawings, input/output matrix and operator instruction chart(s) available during demonstration.
      d. Have authorized technical representative of control unit manufacturer present during demonstration.
      e. Demonstration may be combined with inspection and testing required by AHJ. Notify AHJ in time to schedule demonstration.
      f. Repeat demonstration until successful.
   2. Substantial Completion of the project cannot be achieved until inspection and testing is successful and:
      a. Specified diagnostic period without malfunction has been completed.
      b. Approved operating and maintenance data has been delivered.
      c. Spare parts, extra materials and tools have been delivered.
      d. All aspects of operation have been demonstrated to Engineer.
      e. Final acceptance of the fire alarm system has been given by authorities having jurisdiction.
      f. Occupancy permit has been granted.
      g. Specified pre-closeout instruction is complete.
   3. Perform post-occupancy instruction within three months after date of occupancy.

3.02 FIRE ALARM CONTROL PANEL

A. Reference 3.01, General Installation Requirements.

B. Install per manufacturer's instructions and recommendations.

C. Provide control panels with 120VAC dedicated circuit per NFPA requirements.

D. Do not install cabinets or equipment below the battery cabinet. Do not locate battery and charging system cabinets in ceiling space.

E. Provide instruction charts at each control panel where system operations are performed. Obtain approval from the Engineer prior to mounting.

F. Perform system programming at the fire alarm control panel. Program the system without shutting the system down. Programming is done off line. Provide copy of site-specific program on electronic storage media. Locate in document enclosure.

G. Room Name Labeling: Control panel schedules, programming and labeling for electrical equipment, to use the room names and room numbers that the Engineer adopts at the date of substantial completion of construction. This work is to be done at no added cost to the Owner.

H. Programmable Function Keys: Provide control panel accessible function keys for the notification bypass, fire drill, fire door bypass, elevator control bypass, and supervising station bypass.

I. Programmed control point activation includes selective control of HVAC, fire door release, elevator recall, elevator shunt trip, and other fire safety and auxiliary functions.

J. Provide machine printed labels on switches and indicators.

3.03 NOTIFICATION APPLIANCE CIRCUIT PANELS

A. Reference 3.01, General Installation Requirements.

B. Install per manufacturer's instructions and recommendations.

C. Provide notification appliance circuit panel power supplies with 120VAC dedicated circuit per NFPA requirements.

D. Do not install cabinets or equipment below the battery cabinet. Do not locate battery and charging system cabinets in ceiling space.

3.04 FIRE ALARM TRANSMITTERS

A. Reference 3.01, General Installation Requirements.

B. Install per manufacturer's instructions and recommendations.

C. Provide conduit and wiring for connections to the transmitter as required for fire alarm system off site supervision.

D. Verify and provide call sequence and message as directed by Owner and the AHJ.

3.05 FIRE ALARM ANNUNCIATORS

A. Reference 3.01, General Installation Requirements.

B. Install per manufacturer's instructions and recommendations.

C. When required by the manufacturer, provide fire alarm annunciator with 120VAC dedicated circuit per NFPA requirements.

D. Provide machine printed labels on switches and indicators.

E. Verify location with AHJ before installation.

3.06 MANUAL PULL STATIONS

A. Reference 3.01, General Installation Requirements.

B. Install per manufacturer's instructions and recommendations.

C. Provide machine printed address labels on addressable devices.

D. Provide protective guard where device is subject to abuse and where required by AHJ.

3.07 FIXED TEMPERATURE HEAT DETECTORS

A. Reference 3.01, General Installation Requirements.

B. Install per manufacturer's instructions and recommendations.

C. Provide machine printed address labels on addressable devices. Labels to be visible from the floor without magnification.

D. Provide protective guard where device is subject to abuse and where required by AHJ.

3.08 RATE-OF-RISE AND FIXED TEMPERATURE HEAT DETECTORS

A. Reference 3.01, General Installation Requirements.

B. Install per manufacturer's instructions and recommendations.

C. Provide machine printed address labels on addressable devices. Labels to be visible from the floor without magnification.

D. Provide protective guard where device is subject to abuse and where required by AHJ.

3.09 PHOTOELECTRIC TYPE DETECTORS

A. Reference 3.01, General Installation Requirements.

B. Install per manufacturer's instructions and recommendations.

C. Provide machine printed address labels on addressable devices. Labels to be visible from the floor without magnification.

D. Provide protective guard where device is subject to abuse and where required by AHJ.

3.10 DUCT-MOUNTED SMOKE DETECTORS

A. Reference 3.01, General Installation Requirements.

B. Install per manufacturer's instructions and recommendations.

C. Provide machine printed address labels on addressable devices. Labels to be visible from the floor without magnification.

3.11 RELAY MODULES

A. Reference 3.01, General Installation Requirements.

B. Install per manufacturer's instructions and recommendations.

C. Provide machine printed address labels on addressable devices. Labels to be visible from the floor without magnification.

3.12 CONTROL MODULES

A. Reference 3.01, General Installation Requirements.

B. Install per manufacturer's instructions and recommendations.

C. Provide machine printed address labels on addressable devices. Labels to be visible from the floor without magnification.

3.13 INPUT MODULES

A. Reference 3.01, General Installation Requirements.

B. Install per manufacturer's instructions and recommendations.

C. Provide machine printed address labels on addressable devices. Labels to be visible from the floor without magnification.

3.14 FAULT ISOLATION MODULES

A. Reference 3.01, General Installation Requirements.

B. Install per manufacturer's instructions and recommendations.

C. Provide machine printed address labels on addressable devices. Labels to be visible from the floor without magnification.

D. Provide Fault Isolator Modules for signaling line circuit per code requirements and manufacturer instructions.

3.15 COMBINATION HORN/STROBES

A. Reference 3.01, General Installation Requirements.

B. Install per manufacturer's instructions and recommendations.

C. Provide machine printed labels on notification appliances with appliance circuit number and sequence. Labels to be visible from the floor without magnification.

D. Provide protective guard where device is subject to abuse and where required by AHJ.

3.16 STROBES

A. Reference 3.01, General Installation Requirements.

B. Install per manufacturer's instructions and recommendations.

C. Provide machine printed labels on notification appliances with appliance circuit number and sequence. Labels to be visible from the floor without magnification.

D. Provide protective guard where device is subject to abuse and where required by AHJ.

3.17 HORNS

A. Reference 3.01, General Installation Requirements.

B. Install per manufacturer's instructions and recommendations.

C. Provide machine printed labels on notification appliances with appliance circuit number and sequence. Labels to be visible from the floor without magnification.

D. Provide protective guard where device is subject to abuse and where required by AHJ.

3.18 WEATHERPROOF/SURFACE BACKBOXES

A. Reference 3.01, General Installation Requirements.

B. Install per manufacturer's instructions and recommendations.

C. Provide manufacturer's weatherproof backbox listed for use in areas where the device or appliance is subject to humidity in excess of listed rating. Provide manufacturer surface backboxes where devices cannot be installed recessed.

3.19 PROTECTIVE GUARDS

A. Reference 3.01, General Installation Requirements.

B. Install per manufacturer's instructions and recommendations.

C. Wire Guard.

D. Protective Cover.

3.20 CIRCUIT CONDUCTORS

A. Reference 3.01, General Installation Requirements.

B. Install per manufacturer's instructions and recommendations.

C. Provide wiring to meet the requirements of national, state and local electrical codes. Provide color coded wiring as recommended and specified by the fire alarm and detection system manufacturer. Provide Type FPLR cable when in a riser application or FPLP cable when installed in plenums.

3.21 SURGE PROTECTIONS

A. Reference 3.01, General Installation Requirements.

B. Install per manufacturer's instructions and recommendations.

3.22 BATTERIES

A. Reference 3.01, General Installation Requirements.

B. Install per manufacturer's instructions and recommendations.

C. Provide machine printed label with installation date.

3.23 LOCKS AND KEYS

A. Deliver to Owner.

3.24 DOCUMENT STORAGE CABINET

A. Reference 3.01, General Installation Requirements.

B. Install per manufacturer's instructions and recommendations.

C. Provide document storage cabinet adjacent to fire alarm control panel.

3.25 INSTRUCTION CHARTS

A. Reference 3.01, General Installation Requirements.

B. Install per manufacturer's instructions and recommendations.

C. Install chart adjacent to fire control panel.

3.26 FRAMED FLOOR MAP

A. Reference 3.01, General Installation Requirements.

B. Install per manufacturer's instructions and recommendations.

C. Provide framed floor plan of facility adjacent to the annunciator panel identifying room names/numbers, device/addresses or fire zone number and description as utilized on the annunciator panel, as required by local AHJ. Check with the local fire department for size and approved mounting location.

END OF SECTION

Skagit County Courthouse

Divisions 26 & 28

SECTION 26 00 00
ELECTRICAL BASIC REQUIREMENTS

PART 1 - GENERAL

1.01 DESIGN-BUILD SUMMARY

A. Work included in 26 00 00 applies to Division 26, Electrical work to provide materials, labor, tools, permits and incidentals to make electrical systems ready for Owner's use for proposed project

1.02 DESIGN-BUILD INSTRUCTIONS

A. This document is issued to give Bidders a basis for preparing a proposal to design and install a complete fire alarm system for this project.

B. Alternates to this Document may be offered as a separate proposal.

C. Bidder to submit the following information with the Proposal:
   1. Preliminary schematic drawing indicating power distribution system (one-line diagram) to include proposed system capacity and expansion capacity, expected available fault current at the service equipment, fault duty ratings of proposed equipment, load survey and maximum voltage drop at distribution equipment.
   2. Description of lighting system, indicating luminaire types and manufacturer and method of control.
   3. List of wiring materials proposed for systems which are applicable to this project, e.g., switchgear, panels, motor control centers, transformers, generators and transfer switches, life safety and signal system equipment, and the like.
   4. Any other information which the bidder considers pertinent in evaluating the proposal.

1.03 DESIGN-BUILD APPROACH

A. Use this Specification as a guide for design/engineering requirements, workmanship and materials or construction. Utilize design-build concept throughout construction phase of project.

B. Investigate and be apprised of applicable codes, rules, and regulations as enforced by Authority Having Jurisdiction (AHJ).

C. Visit the Site of the proposed construction. Verify and inspect the existing site to determine conditions that affect this work.

1.04 DESIGN-BUILD CRITERIA/CALCULATIONS

A. Related Work Specified Elsewhere: Contents of Section apply to Division 26 Specifications. Requirements of Section are a minimum for Division 26 Sections, unless otherwise stated in each Section, in which case that Section's requirements take precedence.

B. Design Criteria:
   1. Fire Life Safety Systems: Provide system complete as necessary to meet requirements of code authorities.

1.05 SECTION INCLUDES

A. Work included in 26 00 00, Electrical Basic Requirements applies to Division 26, Electrical work to provide materials, labor, tools, permits, incidentals, and other services to provide and make ready for Owner's use of electrical systems for proposed project.

B. Contract Documents include, but are not limited to, Specifications including Division 00, Procurement and Contracting Requirements and Division 01, General Requirements, Drawings, Addenda, and Owner/Contractor Agreement. Confirm requirements before commencement of work.

C. Definitions:
   1. Provide: To furnish and install, complete and ready for intended use.
   2. Furnish: Supply and deliver to project site, ready for unpacking, assembly and installation.
   3. Install: Includes unloading, unpacking, assembling, erecting, installation, applying, finishing, protecting, cleaning and similar operations at project site as required to complete items of work furnished.

4. Approved or Approved Equivalent: To possess the same performance qualities and characteristics and fulfill the utilitarian function without any decrease in quality, durability or longevity. For equipment/products defined by the Contractor as "equivalent", substitution requests must be submitted to Engineer for consideration, in accordance with Division 01, General Requirements, and approved by the Engineer prior to submitting bids for substituted items.
5. Authority Having Jurisdiction (AHJ): Indicates reviewing authorities, including local fire marshal, Owner's insurance underwriter, Owner's Authorized Representative, and other reviewing entity whose approval is required to obtain systems acceptance.

1.06 RELATED SECTIONS

A. Contents of Section applies to Division 26, Electrical Contract Documents.

B. Related Work:
   1. Additional conditions apply to this Division including, but not limited to:
      a. Specifications including Division 00, Procurement and Contracting Requirements and Division 01, General Requirements.
      b. Divison 28, Eectronic Safety
      c. Drawings
      d. Addenda
      e. Owner/Contractor Agreement
      f. Codes, Standards, Public Ordinances and Permits

1.07 REFERENCES AND STANDARDS

A. References and Standards per Division 00, Procurement and Contracting Requirements and Division 01, General Requirements, individual Division 26, Electrical Sections and those listed in this Section.

B. Codes to include latest adopted editions, including current amendments, supplements and local jurisdiction requirements in effect as of the date of the Contract Documents, of/from:
   1. State of Washington:
      a. IBC - International Building Code
      b. IFC - International Fire Code
      c. IMC - International Mechanical Code
      d. NEC - National Electrical Code
      e. UPC - Uniform Plumbing Code
      f. WAC - Washington Administrative Code
      g. WSEC - Washington State Energy Code

C. Reference standards and guidelines include but are not limited to the latest adopted editions from:
   1. ABA - Architectural Barriers Act
   2. ADA - Americans with Disabilities Act
   3. ANSI - American National Standards Institute
   4. ASCE - American Society of Civil Engineers
   5. ASTM - ASTM International
   6. CFR - Code of Federal Regulations
   7. EPA - Environmental Protection Agency
   8. FM - FM Global
   9. IBC - International Building Code
   10. IEC - International Electrotechnical Commission
   11. IEEE - Institute of Electrical and Electronics Engineers
   12. MSS - Manufacturers Standardization Society
   13. NEC - National Electric Code
   14. NECA - National Electrical Contractors Association
   15. NEMA - National Electrical Manufacturers Association
   16. NETA - National Electrical Testing Association
   17. NFPA - National Fire Protection Association

18. OSHA - Occupational Safety and Health Administration
19. UL - Underwriters Laboratories Inc.

D. See Division 26, Electrical individual Sections for additional references.

1.08 SUBMITTALS

A. See Division 01, General Requirements for Submittal Procedures as well as individual Division 26, Electrical Sections.

B. Provide drawings in format and software release equal to the design documents. Drawings to be the same sheet size and scale as the Contract Documents.

C. "No Exception Taken" constitutes that review is for general conformance with the design concept expressed in the Contract Documents for the limited purpose of checking for conformance with information given. Any action is subject to the requirements of the Contract Documents. Contractor is responsible for the dimensions and quantity and will confirm and correlate at the job site, fabrication processes and techniques of construction, coordination of the work with that of all other trades, and the satisfactory performance of the work.

D. Provide product submittals and shop drawings in electronic format only. Electronic format must be submitted via zip file via e-mail. For electronic format, provide one file per division containing one bookmarked PDF file with each bookmark corresponding to each Specification Section. Arrange bookmarks in ascending order of Specification Section number. Individual submittals sent piecemeal in a per Specification Section method will be returned without review or comment. All transmissions/submissions to be submitted to Owner. Deviations will be returned without review.

E. Product Data: Provide manufacturer's descriptive literature for products specified in Division 26, Electrical Sections.

F. Identify/mark each submittal in detail. Note what differences, if any, exist between the submitted item and the specified item. Failure to identify the differences will be considered cause for disapproval. If differences are not identified and/or not discovered during the submittal review process, Contractor remains responsible for providing equipment and materials that meet the specifications and drawings.
   1. Label submittal to match numbering/references as shown in Contract Documents. Highlight and label applicable information to individual equipment or cross out/remove extraneous data not applicable to submitted model. Clearly note options and accessories to be provided, including field installed items. Highlight connections by/to other trades.
   2. Include technical data, installation instructions and dimensioned drawings for products, fixtures, equipment and devices installed, furnished or provided. Reference individual Division 26, Electrical specification Sections for specific items required in product data submittal outside of these requirements.
   3. See Division 26, Electrical individual Sections for additional submittal requirements outside of these requirements.

G. Maximum of two reviews of complete submittal package. Arrange for additional reviews and/or early review of long-lead items; Bear costs of these additional reviews at Engineer's hourly rates. Incomplete submittal packages/submittals will be returned to contractor without review.

H. Resubmission Requirements: Make corrections or changes in submittals as required, and in consideration of Engineer’s comments. Identify Engineer’s comments and provide an individual response to each of the Engineer’s comments. Cloud changes in the submittals and further identify changes which are in response to Engineer’s comments.

I. Trade Coordination: Include physical characteristics, electrical characteristics, device layout plans, wiring diagrams, and connections as required per Division 26, Electrical Coordination Documents. For equipment with electrical connections, furnish copy of approved submittal for inclusion in Division 26, Electrical submittals.

J. Substitutions and Variation from Basis of Design:
   1. The Basis of Design designated product establishes the qualities and characteristics for the evaluation of any comparable products by other listed acceptable manufacturers if

included in this Specification or included in an approved Substitution Request as judged by the Design Professional.

2. If substitutions and/or equivalent equipment/products are being proposed, it is the responsibility of parties concerned, involved in, and furnishing the substitute and/or equivalent equipment to verify and compare the characteristics and requirements of that furnished to that specified and/or shown. If greater capacity and/or more materials and/or more labor is required for the rough-in, circuitry or connections than for the item specified and provided for, then provide compensation for additional charges required for the proper rough-in, circuitry and connections for the equipment being furnished. No additional charges above the Base Bid, including resulting charges for work performed under other Divisions, will be allowed for such revisions. Coordinate with the requirements of "Submittals". For any product marked "or approved equivalent", a substitution request must be submitted to Engineer for approval prior to purchase, delivery or installation.

K. Samples: Provide samples when requested by individual Sections.

L. Resubmission Requirements:
   1. Make any corrections or change in submittals when required. Provide submittals as specified. The engineer will not be required to edit and/or interpret the Contractor's submittals. Indicate changes for the resubmittal in a cover letter with reference to page(s) changed and reference response to comment. Cloud changes in the submittals.
   2. Resubmit for review until review indicates no exception taken or "make corrections as noted".

M. Operation and Maintenance Manuals, Owner's Instructions:
   1. Submit, at one time, electronic files (PDF format) of manufacturer's operation and maintenance instruction manuals and parts lists for equipment or items requiring servicing. Submit data when work is substantially complete and in same order format as submittals. Include name and location of source parts and service for each piece of equipment.
      a. Include copy of approved submittal data along with submittal review letters received from Engineer. Data to clearly indicate installed equipment model numbers. Delete or cross out data pertaining to other equipment not specific to this project.
      b. Include copy of manufacturer's standard Operations and Maintenance for equipment. At front of each tab, provide routine maintenance documentation for scheduled equipment. Include manufacturer's recommended maintenance schedule and highlight maintenance required to maintain warranty. Furnish list of routine maintenance parts, including part numbers, sizes, quantities, relevant to each piece of equipment.
      c. Include Warranty per Division 00, Procurement and Contracting Requirements and Division 01, General Requirements, Section 26 00 00, Electrical Basic Requirements and individual Division 26, Electrical Sections.
      d. Include product certificates of warranties and guarantees.
      e. Include copy of complete parts list for equipment. Include available exploded views of assemblies and sub assemblies.
      f. Include commissioning reports.
      g. Include copy of startup and test reports specific to each piece of equipment.
      h. Engineer will return incomplete documentation without review. Engineer will provide one set of review comments in Submittal Review format. Contractor must arrange for additional reviews; Contractor to bear costs for additional reviews at Engineer's hourly rates.
   2. Thoroughly instruct Owner in proper operation of equipment and systems. Where noted in individual Sections, training will include classroom instruction with applicable training aids and systems demonstrations. Field instruction per Section 26 00 00, Electrical Basic Requirements, Demonstration.
   3. Copies of certificates of code authority inspections, acceptance, code required acceptance tests, letter of conformance and other special guarantees, certificates of warranties, specified elsewhere or indicated on Drawings.

N. Record Drawings:

1. Maintain at site at least one set of drawings for recording “As-constructed” conditions. Indicate on drawings changes to original documents by referencing revision document, and include buried elements, location of conduit, and location of concealed electrical items. Include items changed by field orders, supplemental instructions, and constructed conditions.
2. Record Drawings are to include equipment and fixture/connection schedules that accurately reflect "as constructed or installed" for project.
3. At completion of project, input changes to original project on CAD Drawings and make one set of black-line drawings created from CAD Files in version/release equal to contract drawings. Submit CAD Files and drawings upon substantial completion.
4. See Division 26, Electrical individual Sections for additional items to include in record drawings.

1.09 QUALITY ASSURANCE

A. Regulatory Requirements: Work and materials installed to conform with all local, State and Federal codes, and other applicable laws and regulations. Where code requirements are at variance with Contract Documents, meet code requirements as a minimum requirement and include costs necessary to meet these in Contract. Machinery and equipment are to comply with OSHA requirements, as currently revised and interpreted for equipment manufacturer requirements. Install equipment provided per manufacturer recommendations.

B. Whenever this Specification calls for material, workmanship, arrangement or construction of higher quality and/or capacity than that required by governing codes, higher quality and/or capacity take precedence.

C. Manufacturer's Instructions: Follow manufacturer's written instructions. If in conflict with Contract Documents, obtain clarification. Notify Owner in writing before starting work.

D. Items shown on Drawings are not necessarily included in Specifications or vice versa. Confirm requirements in all Contract Documents.

E. Provide products that are UL listed.

1.10 WARRANTY

A. Provide written warranty covering the work for a period of one year from date of Substantial Completion in accordance with Division 00, Procurement and Contracting Requirements and Division 01, General Requirements, Section 26 00 00, Electrical Basic Requirements and individual Division 26, Electrical Sections.

B. Sections under this Division can require additional and/or extended warranties that apply beyond basic warranty under Division 01, General Requirements and the General Conditions. Confirm requirements in all Contract Documents.

1.11 COORDINATION DOCUMENTS

A. Prior to construction, prepare and submit coordinated layout drawings (composite drawings), to coordinate installation with location of HVAC equipment, ductwork, grilles, diffusers, piping, plumbing equipment/fixtures, fire sprinklers, plumbing, lights, cable tray and electrical services. Provide maintenance access requirements.

B. Prepare Drawings as follows:
1. Drawings in CAD Format. CAD format release equal to design documents. Drawings to be same sheet size and scale as Contract Drawings and indicate location, size and elevation above finished floor of equipment and distribution systems.
2. Review and revise, as necessary, section cuts in Contract Drawings after verification of field conditions.
3. Incorporate Addenda items and change orders.
4. Provide additional coordination as requested by other trades.

C. Advise Owner in event conflict occurs in location or connection of equipment. Bear costs resulting from failure to properly coordinate installation or failure to advise Owner of conflict.

D. Submit final Coordination Drawings with changes as Record Drawings at completion of project.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Articles, fixtures, and equipment of a kind to be standard product of one manufacturer.

2.02 STANDARDS OF MATERIALS AND WORKMANSHIP

A. Base contract upon furnishing materials as specified. Materials, equipment, and fixtures used for construction are to be new, latest products as listed in manufacturer's printed catalog data and are to be UL or ETL listed and labeled or be approved by State, County, and City authorities prior to procurement and installation.

B. Names and manufacturer's names denote character and quality of equipment desired and are not to be construed as limiting competition.

C. Hazardous Materials:
   1. Comply with local, State of Washington, and Federal regulations relating to hazardous materials.
   2. Comply with Division 00, Procurement and Contracting Requirements and Division 01, General Requirements for this project relating to hazardous materials.
   3. Do not use any materials containing a hazardous substance. If hazardous materials are encountered, do not disturb; immediately notify Owner. Hazardous materials will be removed by Owner under separate contract.

2.03 ACCESS PANELS

A. See Division 01, General Requirements and Division 08, Openings for products and installation requirements.

B. Confirm Access Panel requirements in Division 01, General Requirements, and individual Division 26, Electrical Sections. In the absence of specific requirements, comply with the following:
   1. Provide flush mounting access panels for service of systems and individual components requiring maintenance or inspection. Where access panels are located in fire-rated assemblies of building, rate access panels accordingly.
      a. Ceiling access panels to be minimum of 24-inch by 24-inch.
      b. Wall access panels to be minimum of 12-inch by 12-inch.
      c. Provide screwdriver operated catch.
      d. Manufacturers and Models:
         1) Drywall: Karp KDW.
         2) Plaster: Karp DSC-214PL.
         3) Masonry: Karp DSC-214M.
         4) 2 hour rated: Karp KPF-350FR.
         5) Manufacturers: Milcor, Elmdor, Acudor, or approved equivalent.

PART 3 - EXECUTION

3.01 ACCESSIBILITY AND INSTALLATION

A. Confirm Accessibility and Installation requirements in Division 00, Procurement and Contracting Requirements, Division 01, General Requirements, Section 26 00 00, Electrical Basic Requirements and individual Division 26, Electrical Sections.

B. Install equipment requiring access (i.e., junction boxes, light fixtures, power supplies, motors, etc.) so that they may be serviced, reset, replaced or recalibrated by service people with normal service tools and equipment. Do not install equipment in passageways, doorways, scuttles or crawlspaces which would impede or block the intended usage.

C. Install equipment and products complete as directed by manufacturer's installation instructions. Obtain installation instructions from manufacturer prior to rough-in of equipment and examine instructions thoroughly. When requirements of installation instructions conflict with Contract Documents, request clarification from Architect prior to proceeding with installation. This includes proper installation methods, sequencing, and coordination with other trades and disciplines.

D. Firestopping: Comply with individual Division 26, Electrical Sections and coordinate location and protection level of fire and/or smoke rated walls, ceilings, and floors. When these assemblies are penetrated, seal around piping and equipment with approved firestopping material. Install firestopping material complete as directed by manufacturer's installation instructions. Meet requirements of ASTM E814, Standard Test Method for Fire Tests of Through-Penetration Fire Stops.

E. Plenums: In plenums, provide plenum rated materials that meet the requirements to be installed in plenums. Immediately notify Owner of discrepancy.

F. Start up equipment, in accordance with manufacturer's start-up instructions, and in presence of manufacturer's representative. Test controls and demonstrate compliance with requirements. Replace damaged or malfunctioning controls and equipment.

G. Provide miscellaneous supports/metals required for installation of equipment and conduit.

3.02 SEISMIC CONTROL

A. Confirm Seismic Control requirements in Division 01, General Requirements, Structural documents, and individual Division 26 Electrical Sections.

B. Restraints which are used to prevent disruption of function of piece of equipment because of application of horizontal force to be such that forces are carried to frame of structure in such a way that frame will not be deflected when apparatus is attached to a mounting base and equipment pad, or to structure in normal way, utilizing attachments provided. Secure equipment and distribution systems to withstand a force in direction equal to value defined by jurisdiction having authority.

C. Provide means to prohibit excessive motion of electrical equipment during earthquake.

3.03 REVIEW AND OBSERVATION

A. Confirm Review and Observation requirements in Division 00, Procurement and Contracting Requirements, Division 01, General Requirements, Section 26 00 00, Electrical Basic Requirements and individual Division 26, Electrical Sections.

B. Notify Architect, in writing, at following stages of construction so that they may, at their option, visit site for review and construction observation:
   1. Prior to ceiling cover/installation.
   2. When main systems, or portions of, are being tested and ready for inspection by AHJ.

C. Final Punch: Costs incurred by additional trips required due to incomplete systems will be the responsibility of the Contractor.

3.04 CUTTING AND PATCHING

A. Confirm requirements in Division 00, Procurement and Contracting Requirements and Division 01, General Requirements. In the absence of specific requirements in Division 01, General Requirements, comply with individual Division 26, Electrical Sections and the following:
   1. Proposed floor cutting/core drilling/sleeve locations to be approved by Project Structural Engineer. Submit proposed locations to Owner/Project Structural Engineer. Where slabs are of post tension construction, perform x-ray scan of proposed penetration locations and submit scan results including proposed penetration locations to Project Structural Engineer/Owner for approval. Where slabs are of waffle type construction, show column cap extent and cell locations relative to proposed penetration(s).
   2. Cutting, patching and repairing for work specified in this Division including plastering, masonry work, concrete work, carpentry work, and painting included under this Section will be performed by skilled craftsmen of each respective trade in conformance with appropriate Division of Work.
   3. Additional openings required in building construction to be made by drilling or cutting. Use of jack hammer is specifically prohibited. Patch openings in and through concrete and masonry with grout.
   4. Restore new or existing work that is cut and/or damaged to original condition. Patch and repair specifically where existing items have been removed. This includes repairing and painting walls, ceilings, etc. where existing conduit and devices are removed as part of

this project. Where alterations disturb lawns, paving, and/or walks, surfaces to be repaired, refinished and left in condition matching existing prior to commencement of work.

5. Additional work required by lack of proper coordination will be provided at no additional cost to the Owner.

3.05 EQUIPMENT SELECTION AND SERVICEABILITY

A. Replace or reposition equipment which is too large or located incorrectly to permit servicing, at no additional cost to Owner.

3.06 DELIVERY, STORAGE AND HANDLING

A. Confirm requirements in Division 00, Procurement and Contracting Requirements and Division 01, General Requirements. In the absence of specific requirements, comply with individual Division 26, Electrical Sections and the following:

1. Handle materials delivered to project site with care to avoid damage. Store materials on site inside building or protected from weather, dirt and construction dust. Products and/or materials that become damaged due to water, dirt, and/or dust as a result of improper storage and handling to be replaced before installation.
2. Protect equipment to avoid damage. Close conduit openings with caps or plugs. Keep motors and bearings in watertight and dustproof covers during entire course of installation.
3. Protect bus duct and similar items until in service.

3.07 DEMONSTRATION

A. Confirm Demonstration requirements in Division 00, Procurement and Contracting Requirements, Division 01, General Requirements, and individual Division 26, Electrical Sections.

B. Upon completion of work and adjustment of equipment, test systems and demonstrate to Owner's Authorized Representative, Owner, and Engineer that equipment furnished and installed or connected under provisions of these Specifications functions in manner required. Provide field instruction to Owner's Maintenance Staff as specified in Division 01, General Requirements, Section 26 00 00, Electrical Basic Requirements and individual Division 26, Electrical Sections.

C. Manufacturer's Field Services: Furnish services of a qualified person at time approved by Owner, to instruct maintenance personnel, correct defects or deficiencies, and demonstrate to satisfaction of Owner that entire system is operating in satisfactory manner and complies with requirements of other trades that may be required to complete work. Complete instruction and demonstration prior to final job site observations.

3.08 CLEANING

A. Confirm Cleaning requirements in Division 01, General Requirements, Section 26 00 00, Electrical Basic Requirements and individual Division 26, Electrical Sections.

B. Upon completion of installation, thoroughly clean electrical equipment, removing dirt, debris, dust, temporary labels and traces of foreign substances. Throughout work, remove construction debris and surplus materials accumulated during work.

3.09 INSTALLATION

A. Confirm Installation requirements in Division 00, Procurement and Contracting Requirements and Division 01, General Requirements, Section 26 00 00, Electrical Basic Requirements and individual Division 26, Electrical Sections.

B. Install equipment and fixtures in accordance with manufacturer's installation instructions, plumb and level and firmly anchored to vibration isolators. Maintain manufacturer's recommended clearances.

C. Start up equipment, in accordance with manufacturer's start-up instructions, and in presence of manufacturer's representative. Test controls and demonstrate compliance with requirements. Replace damaged or malfunctioning controls and equipment.

D. Provide miscellaneous supports/metals required for installation of equipment.

3.10 PAINTING

A. Confirm requirements in Division 01, General Requirements and Division 09, Finishes. In the absence of specific requirements, comply with individual Division 26, Electrical Sections and the following:
   1. Ferrous Metal: After completion of work, thoroughly clean and paint exposed supports constructed of ferrous metal surfaces (i.e., hangers, hanger rods, equipment stands, etc.) with one coat of black asphalt varnish for exterior or black enamel for interior, suitable for hot surfaces.
   2. In Electrical Room, on roof or other exposed areas, equipment not painted with enamel to receive two coats of primer and one coat of rustproof enamel, colors as selected by Owner.
   3. See individual equipment Specifications for other painting.
   4. Structural Steel: Repair damage to structural steel finishes or finishes of other materials damaged by cutting, welding or patching to match original.
   5. Conduit: Clean, primer coat and paint interior/exterior conduit exposed in public areas with two coats paint suitable for metallic surfaces. Color to match adjacent surfaces.

3.11 ACCESS PANELS

A. Confirm Access Panel requirements in Division 01, General Requirements. In the absence of specific requirements in Division 01, General Requirements, comply with individual Division 26, Electrical Sections and coordinate locations/sizes of access panels with Owner prior to work.

3.12 DEMOLITION

A. Confirm requirements in Division 01, General Requirements and Division 02, Existing Conditions. In the absence of specific requirements, comply with individual Division 26, Electrical Sections and the following:
   1. It is the intent of these documents to provide necessary information and adjustments to electrical system required to meet code, and accommodate installation of new work.
   2. Coordinate with Owner so that work can be scheduled not to interrupt operations, normal activities, building access or access to different areas. Owner will cooperate to best of their ability to assist in coordinated schedule, but will remain final authority as to time of work permitted.
   3. Examination:
      a. Determine exact location of existing utilities and equipment before commencing work, compensate Owner for damages caused by failure to locate and preserve utilities. Replace damaged items with new material to match existing.
      b. Verify that abandoned wiring and equipment serve only abandoned facilities.
      c. Report discrepancies to Owner before disturbing existing installation.
   4. Execution:
      a. Remove fire alarm wiring and conduit systems not reused for new fire alarm system.
      b. Provide temporary wiring and connections to maintain electrical continuity of existing systems during construction.
      c. Remove and restore wiring which serves usable existing outlets clear of construction or demolition.
      d. Extend circuiting and devices in existing walls to be furred out.
      e. Remove abandoned wiring to source of supply.
      f. Remove exposed abandoned conduit, including abandoned conduit above accessible ceiling finishes. Cut conduit flush with walls and floors, and patch surfaces.
      g. Repair adjacent construction and finishes damaged during demolition work.
      h. Maintain access to existing electrical installations which remain active. Modify installation or provide access panel as appropriate.

3.13 ACCEPTANCE

A. Confirm requirements in Division 00, Procurement and Contracting Requirements and Division 01, General Requirements. In the absence of specific requirements, comply with individual Division 26, Electrical Sections and the following:

1. System cannot be considered for acceptance until work is completed and demonstrated to Owner that installation is in strict compliance with Specifications, Drawings and manufacturer's installation instructions, particularly in reference to following:
    a. Cleaning
    b. Operation and Maintenance Manuals
    c. Training of Operating Personnel
    d. Record Drawings
    e. Warranty and Guaranty Certificates

3.14 FIELD QUALITY CONTROL

A. Confirm Field Quality Control requirements in Division 01, General Requirements, Section 26 00 00, Electrical Basic Requirements and individual Division 26, Electrical Sections.

B. Tests:
    1. Conduct tests of equipment and systems to demonstrate compliance with requirements specified. Reference individual Specification Sections for required tests. Document tests and include in operation and maintenance manuals.
    2. During site evaluations by Owner or Engineer, provide appropriate personnel with tools to remove and replace trims, covers, and devices so that proper evaluation of installation can be performed.

3.15 LETTER OF CONFORMANCE

A. Provide Letter of Conformance, copies of manufacturers' warranties and extended warranties with a statement that Electrical items were installed in accordance with manufacturer's recommendations, UL listings and FM Global approvals. Include Letter of Conformance, copies of manufacturers' warranties and extended warranties in Operation and Maintenance Manuals.

END OF SECTION

SECTION 26 05 09
EQUIPMENT WIRING

PART 1 - GENERAL

1.01 SUMMARY

A. Work Included: Equipment connections, whether furnished by Owner or other Divisions of the Contract.

1.02 RELATED SECTIONS

A. Contents of Division 26, Electrical and Division 01, General Requirements apply to this Section.

B. In addition, reference Division 28, Electronic Safety.

1.03 REFERENCES AND STANDARDS

A. References and Standards as required by Section 26 00 00, Electrical Basic Requirements and Division 01, General Requirements.

1.04 SUBMITTALS

A. Submittals as required by Section 26 00 00, Electrical Basic Requirements and Division 01, General Requirements.

B. In addition, verify equipment electrical characteristics with Drawings and equipment submittals prior to ordering equipment.

1.05 QUALITY ASSURANCE

A. Quality assurance as required by Section 26 00 00, Electrical Basic Requirements and Division 01, General Requirements apply to this Section.

1.06 WARRANTY

A. Warranty of materials and workmanship as required by Section 26 00 00, Electrical Basic Requirements and Division 01, General Requirements.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Materials and Equipment for Equipment Wiring: As specified in individual Sections.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Prior to submittal of product data for electrical distribution equipment, obtain and examine product data and shop drawings for equipment furnished by the Owner and by other trades on the project. Update the schedule of equipment electrical connections accordingly, noting proper ratings for overcurrent devices, fuses, safety disconnect switches, conduit and wiring, and the like. As a minimum, this requirement applies to equipment furnished by Owner and equipment furnished under the following divisions of work under this contract:
   1. Division 28, Electronic Safety

3.02 INSTALLATION

A. Do not install unrelated electrical equipment or wiring on mechanical equipment without prior approval of Engineer.

B. Provide moisture tight equipment wiring and switches in ducts or plenums used for environmental air.

3.03 FIELD QUALITY CONTROL

A. Perform field inspection and testing in accordance with Division 01, General Requirements.

3.04 SYSTEMS STARTUP

A. Adjust for proper operation within manufacturer's published tolerances.

B. Demonstrate proper operation of equipment to Owner's Authorized Representative.

END OF SECTION

SECTION 26 05 19
LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES

PART 1 - GENERAL

1.01 SUMMARY

A. Work Included:
   1. Lugs and Pads
   2. Wires and Cables
   3. Connectors

1.02 RELATED SECTIONS

A. Contents of Division 26, Electrical and Division 01, General Requirements apply to this Section.

B. In addition, reference Divison 28, Electronic Safety.

1.03 REFERENCES AND STANDARDS

A. References and Standards as required by Section 26 00 00, Electrical Basic Requirements and Division 01, General Requirements.

1.04 SUBMITTALS

A. Submittals as required by Section 26 00 00, Electrical Basic Requirements and Division 01, General Requirements.

B. In addition, provide cable insulation test reports in project closeout documentation.

1.05 QUALITY ASSURANCE

A. Quality assurance as required by Section 26 00 00, Electrical Basic Requirements and Division 01, General Requirements.

1.06 WARRANTY

A. Warranty of materials and workmanship as required by Section 26 00 00, Electrical Basic Requirements and Division 01, General Requirements.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Lugs and Pads:
   1. Anderson
   2. Ilsco
   3. Panduit
   4. Thomas & Betts
   5. 3M
   6. Or approved equivalent.

B. Wires and Cables:
   1. General:
      a. General Cable
      b. Okonite
      c. Southwire
      d. Encore Wire
      e. Or approved equivalent.
   2. Metal Clad Cable - Type MC:
      a. Alflex
      b. AFC
      c. General Cable
      d. Southwire
      e. Encore Wire
      f. Or approved equivalent.

C. Connectors:

1. Anderson Power Products
2. Burndy
3. Ilsco
4. 3M
5. Thomas & Betts
6. Or approved equivalent.

2.02 LUGS AND PADS

A. Ampacity: Cross-sectional area of pad for multiple conductor terminations to match ampere rating of panelboard bus or equipment line terminals.

B. Copper Pads: Drilled and tapped for multiple conductor terminals.

C. Lugs: Compression type for use with stranded branch circuit or control conductors; mechanical type for use with solid branch and feeder circuit conductors.

2.03 WIRES AND CABLES

A. Building Wires: Copper; soft-drawn with conductivity of not less than 98 percent IACS at 20 degrees C (68 degrees F). 600 volt rated throughout. Conductors 12 AWG and 10 AWG, solid or stranded. Conductors 8 AWG and larger, stranded. 12 AWG minimum conductor size. Minimum insulation rating of 90 degrees C. Insulation Type: THHN/THWN-2.

B. Phase color to be consistent at feeder terminations; A-B-C, top to bottom, left to right, front to back.

C. MC Cable: High strength galvanized steel flexible armor. Full length minimum size No. 12 copper ground wire, copper dual rated THHN/THWN-2, full length tape marker phase/circuit identification on cable armor. Short circuit throat insulators, mechanical compression termination.

D. AC Cable (Armored Cable): Not allowed.

E. NMB Cable: Not allowed.

2.04 CONNECTORS

A. Split bolt connectors not allowed.

B. Conductor Branch Circuits: Wire nuts with integral spring connectors for conductors 12 AWG through 8 AWG. Push-in type connectors where conductors are not required to be twisted together are not acceptable.

PART 3 - EXECUTION

3.01 GENERAL INSTALLATION REQUIREMENTS

A. Install per manufacturer instructions and the National Electrical Code (NEC).

3.02 LUGS AND PADS

A. Thoroughly clean surfaces to remove all dirt, oil, great or paint.

B. Use torque wrench to tighten per manufacturer's directions.

3.03 WIRES AND CABLES

A. General:
   1. Do not install or handle thermoplastic insulated wire and cable in temperatures below 14 degrees F. Do not handle thermoset insulated wire and cable in temperatures below -40 degrees F. All wire and cable must be acclimated to temperatures above freezing for no less than 24 hours prior to installation.
   2. Install conductors in raceways having adequate, code size cross-sectional area for wires indicated.
   3. Install conductors with care to avoid damage to insulation.
   4. Do not apply greater tension on conductors than recommended by manufacturer during installation.
   5. Use of pulling compounds is permitted. Clean residue from exposed conductors and raceway entrances after conductor installation. Do not use pulling compounds for

installation of conductors connected to GFCI circuit breakers or GFCI receptacles.

6. Conductor Size and Quantity:
    a. Install no conductors smaller than 12 AWG unless otherwise shown.
    b. Provide required conductors for a fully operable system.
    c. Power Circuits: No. 12 AWG minimum, except as follows:
        1) No. 10 AWG for 15A, 120V circuits longer than 100 ft.
        2) No. 8 AWG for 15A, 120V circuits longer than 150 ft.
        3) No. 10 AWG for 20A, 120V circuits longer than 70 ft.
        4) No. 8 AWG for 20A, 120V circuits longer than 100 ft.
    d. When exact run lengths are determined for all branch circuits, and prior to installation of the conductors, ensure that the maximum voltage drop, based on 80 percent of the circuit protective device, does not exceed 3 percent. Increase wire size from #12AWG, if necessary, to ensure that the 3 percent voltage drop is not exceeded.
7. Provide dedicated neutrals (one neutral conductor for each phase conductor) in all 120V circuits.

B. Conductors in Cabinets:
1. Cable and tree wires in panels and cabinets for power and control. Use plastic ties in panels and cabinets.
2. Tie and bundle feeder conductors in wireways of panelboards.
3. Hold conductors away from sharp metal edges.

C. Homeruns:
1. Do not change intent of branch circuit homeruns without approval. Homeruns for 20A branch circuits may be combined to a maximum of six current carrying conductors including neutral conductors in homeruns. Apply derating factors as required per NEC. Increase conductor size as needed.
2. MC cable homeruns are not allowed unless indicated on drawings.

D. Identify wire and cable under the provisions of Section 26 05 53, Identification for Electrical Systems. Identify each conductor with its panel and circuit number as indicated.

E. Exposed cable is not allowed.

F. All cable must be run parallel or perpendicular to building lines and hidden from view when possible. Where installed in tray each power cable is to be identified with Lamacoid nametag engraved with identification of equipment being fed. Tag to be fastened to cable using tie-wraps. Provide nametag at each floor level.

G. Do not install PVC jacketed cables in return air plenums, unless they are specially rated plenum cables.

H. Use of MC Cable is limited to the following conditions. Installations that do not comply with the following conditions are to be removed and replaced with no additional expense to the Owner.
1. 15 and 20 amp branch wiring where following conditions apply:
    a. Use MC cable for final flexible connections from junction or outlet boxes to recessed fixtures. Do not use MC cables to loop between fixtures, except where it is not practical to provide conduit connections between boxes or where existing inaccessible ceilings prevent installation of conduit runs. Each individual luminaire is to be serviced by an individual cable drop from the associated junction box in the ceiling space. Maximum length 6-feet of MC cable. Luminaire drops secured to, and supported by, the building structure with nylon tie wraps. The use of the ceiling suspension system for support of any type of cabling is not permitted.
    b. MC cable may be routed in the void space above hard lid ceilings, and routed within wall cavities below glazing, provided NEC requirements are otherwise met, and a minimum one 0.75-inch conduit is routed from nearest accessible ceiling space to inaccessible location, terminating in a j-box with blank faceplate, for future circuits.

3.04 CONNECTORS

A. Install to assure a solid and safe connection.

B. Select hand twist connectors for wire size and install tightly on conductors.

C. Install compression connectors using methods and tools recommended by the manufacturer.

D. Do not install stranded conductors under screw terminals unless compression lugs are installed.

E. Do not connect wiring without UL listed connectors that are listed for the purposes.

END OF SECTION

SECTION 26 05 26
GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.01 SUMMARY

A. Work Included:
   1. Grounding Conductor

1.02 RELATED SECTIONS

A. Contents of Division 26, Electrical and Division 01, General Requirements apply to this Section.

B. In addition, reference Division 28, Electronic Safety.

1.03 REFERENCES AND STANDARDS

A. References and Standards as required by Section 26 00 00, Electrical Basic Requirements and Division 01, General Requirements.

1.04 SUBMITTALS

A. Submittals as required by Section 26 00 00, Electrical Basic Requirements and Division 01, General Requirements.

1.05 QUALITY ASSURANCE

A. Quality assurance as required by Section 26 00 00, Electrical Basic Requirements and Division 01, General Requirements.

B. In addition, meet the following:
   1. Comply with the requirements of ANSI/NFPA 70.

1.06 WARRANTY

A. Warranty of materials and workmanship as required by Section 26 00 00, Electrical Basic Requirements and Division 01, General Requirements.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Grounding Conductor
   1. General Cable
   2. Okonite
   3. Southwire
   4. Or approved equivalent

2.02 GROUNDING CONDUCTOR

A. Grounding Electrode Conductor: Soft-draw bare stranded copper for wire sizes larger than #10 AWG Bare. Solid copper for wire sizes #10 AWG and smaller.

B. Equipment Grounding Conductor: Green insulated, insulation type to match that of associated feeder or branch circuit wiring, size as indicated on drawings.

PART 3 - EXECUTION

3.01 GENERAL INSTALLATION REQUIREMENTS

A. Verify site conditions prior to beginning work.

B. Corrosion inhibitors: Apply a corrosion inhibitor to contact surfaces when making grounding and bonding connections. Use corrosion inhibitor appropriate for protecting a connection between metals used.

C. Grounding system resistance to ground not to exceed 5 ohms. Make necessary modifications or additions to grounding electrode system for compliance. Submit final tests to assure that this requirement is met.

3.02 GROUNDING CONDUCTOR INSTALLATION

A. Raceways:

1. Ground metallic raceway systems. Bond to ground terminal with code size jumper except where code size or larger equipment grounding conductor is included with circuit, use grounding bushing with lay-in lug.
2. Connect metal raceways, which terminate within an enclosure but without mechanical connection to enclosure, by grounding bushings and ground conductor to grounding bus.
3. Where equipment supply conductors are in flexible metallic conduit, install stranded copper equipment grounding conductor from outlet box to equipment frame.
4. Install equipment grounding conductor, code size minimum unless noted on drawings, in metallic and nonmetallic raceway systems.

B. Feeders and Branch Circuits:
1. Provide continuous green insulated copper equipment grounding conductors for feeders and branch circuits.
2. Where installed in a continuous solid metallic raceway system and larger sizes are not detailed, provide insulated equipment grounding conductors for feeders and branch circuits sized in accordance with the latest adopted edition of NEC Article 250, Table 250-122.

C. Bond boxes, cabinets, enclosures and panelboard equipment grounding conductors to enclosure with specified conductors and lugs. Install lugs only on thoroughly cleaned contact surfaces.

D. Receptacles: Connect ground terminal of receptacle and associated outlet box to equipment grounding conductor. Self grounding nature of receptacle devices does not eliminate equipment grounding conductor bolted to outlet box.

END OF SECTION

SECTION 26 05 29
HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS AND EQUIPMENT

PART 1 - GENERAL

1.01 SUMMARY

A. Work Included:
   1. Anchors, Threaded Rod and Fasteners
   2. Support Channel, Hangers and Supports
   3. Rooftop Conduit Supports

1.02 RELATED SECTIONS

A. Contents of Division 26, Electrical and Division 01, General Requirements apply to this Section.

B. In addition, reference Division 28, Electronic Safety.

1.03 REFERENCES AND STANDARDS

A. References and Standards as required by Section 26 00 00, Electrical Basic Requirements and Division 01, General Requirements.

1.04 SUBMITTALS

A. Submittals not required for this Section.

1.05 QUALITY ASSURANCE

A. Quality assurance as required by Section 26 00 00, Electrical Basic Requirements and Division 01, General Requirements.

B. In addition, meet the following:
   1. Manufacturers regularly engaged in the manufacture of bolted metal framing support systems, whose products have been in satisfactory use in similar service for not less than 10 years.
   2. Support systems to be supplied by a single manufacturer.
   3. Engineering Responsibility: Design and preparation of Shop Drawings and calculations for each multiple pipe support, trapeze, equipment hangers/supports, and seismic restraint by a qualified Structural Professional Engineer.
      a. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of hangers and supports that are similar to those indicated for this Project in material, design, and extent.

1.06 WARRANTY

A. Warranty of materials and workmanship as required by Section 26 00 00, Electrical Basic Requirements and Division 01, General Requirements.

1.07 PERFORMANCE REQUIREMENTS

A. General: Provide conduit and equipment hangers and supports in accordance with the following:
   1. When supports, anchorages, and seismic restraints for equipment and supports, anchorages and seismic restraints for conduit, cable tray and equipment are not shown on the Drawings, the Contractor is responsible for their design.
   2. Connections to structural framing shall not introduce twisting, torsion, or lateral bending in the framing members. Provide supplementary steel as required.

B. Engineered Support Systems: The following support systems to be designed, detailed, and bear the seal of a professional engineer registered in the State of Oregon.
   1. Support frames such as conduit racks or stanchions for conduit and equipment which provide support from below.
   2. Equipment and piping support frame anchorage to supporting slab or structure.

C. Provide channel support systems, for conduits to support multiple conduits capable of supporting combined weight of support systems and system contents.

D. Provide heavy-duty steel trapezes for piping to support multiple conduit capable of supporting combined weight of supported systems and system contents.

E. Provide seismic restraint hangers and supports for conduit and equipment.

F. Obtain approval from AHJ for seismic restraint hanger and support system to be installed for piping and equipment.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Anchors, Threaded Rod and Fasteners:
   1. Anchor It
   2. Epcon System
   3. Hilti-Hit System
   4. Power Fast System
   5. Or approved equivalent.

B. Support Channel, Hangers and Supports:
   1. B-Line
   2. Kindorf
   3. Superstrut
   4. Unistrut
   5. Or approved equivalent.

C. Rooftop Conduit Supports:
   1. Cooper B-Line Dura-Block Rooftop Support Base
   2. Or approved equivalent.

2.02 ANCHORS, THREADED ROD AND FASTENERS

A. Anchors, Threaded Rod and Fasteners - General: Corrosion-resistant materials of size and type adequate to carry the loads of equipment and conduit, including weight of wire in conduit.

B. Concrete Inserts: Cast in concrete for support fasteners for loads up to 800 lbs.

C. Anchors and Fasteners:
   1. Do not use powder-actuated anchors.
   2. Steel Structural Elements: Use beam clamps.
   3. Concrete Surfaces: Use self-drilling anchors.
   4. Hollow Masonry, Plaster, and Gypsum Board Partitions: Use toggle bolts.
   5. Solid Masonry Walls: Use expansion anchors.
   6. Sheet Metal: Use sheet metal screws.
   7. Wood Elements: Use wood screws.

D. Fasteners: Provide fasteners of types as required for assembly and installation of fabricated items; surface-applied fasteners are specified elsewhere.

E. Bolts: Low carbon steel externally and internally threaded fasteners conforming with requirements of ASTM A307; include necessary nuts and plain hardened washers. For structural steel elements supporting mechanical material or equipment from building structural members or connection thereto, use fasteners conforming to ASTM A325.

F. Miscellaneous Materials: Provide incidental accessory materials, tools, methods, and equipment required for fabrication.

2.03 SUPPORT CHANNEL, HANGERS AND SUPPORTS

A. Hangers and Supports - General: Corrosion-resistant materials of size and type adequate to carry the loads of equipment and conduit, including weight of wire in conduit.
   1. Channel Material: Carbon steel.
   2. Coating: Hot dip galvanized.

B. Pipe Straps: Two-hole galvanized or malleable iron.

C. Miscellaneous Metal:
   1. Provide miscellaneous metal items specified hereunder, including materials, fabrication, fastenings and accessories required for finished installation, where indicated on Drawings or otherwise not shown on drawings that are necessary for completion of the project. The Contractor is responsible for their design.
   2. Fabricate miscellaneous units to size shapes and profiles indicated or, if not indicated, of required dimensions to receive adjacent other work to be retained by framing. Except as otherwise shown, fabricate from structural steel shapes and plates and steel bars, of welded construction using mitered joints for field connection. Cut, drill and tap units to receive hardware and similar items.

D. Structural Shapes: Where miscellaneous metal items are needed to be fabricated from structural steel shapes and plates, provide members constructed of steel conforming with requirements of ASTM A36 or approved equivalent.

E. Steel Pipe: Provide seamless steel pipe conforming to requirements of ASTM A53, Type S, Grade A, or Grade B. Weight and size required as specified.

F. Miscellaneous Materials: Provide incidental accessory materials, tools, methods, and equipment required for fabrication.

2.04 ROOFTOP CONDUIT SUPPORTS

A. Curb base made of 100 percent recycled rubber and polyurethane prepolymer with a uniform load

B. Capacity of 500 pounds per linear foot of support.

C. UV resistant.

D. Steel Frame: Steel, 14 gauge strut galvanized per ASTM A653 or 12 gauge strut galvanized per ASTM A653 for bridge series.

E. Continuous block channel supports with 1-inch gaps to allow water flow, bridge channel supports, extendable height channel supports and elevated single conduit supports.

F. Attaching Hardware: Zinc-plated threaded rod, nuts and attaching hardware per ASTM B633 fastened directly into rubber material with weather resistant Type 12 lag screws.

G. Provide load distribution plates when required for heavy loads.

H. Finish: Black with safety yellow striping.

I. Provide hot dipped galvanized components for items exposed to weather.

PART 3 - EXECUTION

3.01 GENERAL INSTALLATION REQUIREMENTS

A. Fabrication - Miscellaneous Metals
   1. General: Verify dimensions prior to fabrication. Form metal items to accurate sizes and configurations required for proper installation; make with lines straight and angles sharp, clean and true; drill, countersink, tap, and otherwise prepare items for connections with work of other trades, as required. Fabricate to detail of structural shapes, plates and bars; weld joints where practicable; provide bolts and other connection devices required. Include anchorages; clip angles, sleeves, anchor plates, and similar devices. Hot dipped galvanize after fabrication items installed in exterior locations. Set accurately in position as required and anchor securely to building construction. Construct items with joints formed for strength and rigidity, accurately machining for proper fit; where exposed to weather, form to exclude water.
   2. Finishes:
      a. Ferrous Metal: After fabrication, but before erection, clean surfaces by mechanical or chemical methods to remove rust, scale, oil, corrosion, or other substances detrimental to bonding of subsequently applied protective coatings. For metal items exposed to weather or moisture, galvanize in manner to obtain G90 zinc coating in

accordance with ASTM A123. Provide other non-galvanized ferrous metal with one coat of approved rust-resisting paint primer, in manner to obtain not less than 1.0 mil dry film thickness. Touch-up damaged areas in primer with same material, before installation. Apply zinc coatings and paint primers uniformly and smoothly; leave ready for finish painting as specified elsewhere.

b. Metal in contact with Concrete, Masonry and Other Dissimilar Materials: Where metal items are to be erected in contact with dissimilar materials, provide contact surfaces with coating of an approved zinc-chromate primer in manner to obtain not less than 1.0 mil dry film thickness, in addition to other coatings specified in these specifications.

c. For Galvanized Surfaces: Clean field welds, bolted connections, and abraded areas and apply galvanizing repair paint to comply with ASTM A780.

3.02 ANCHORS, THREADED ROD AND FASTENERS INSTALLATION

A. Safety factor of 4 required for every fastening device or support for equipment installed. Supports to withstand four times the weight of equipment it supports.

B. Do not use other trade's fastening devices as supporting means for luminaires, equipment or materials.

C. Do not fasten supports to pipes, ducts, mechanical equipment, or conduit.

D. Do not use supports or fastening devices to support other than one particular item.

E. Securely suspend junction boxes, pull boxes or other conduit terminating housings located above suspended ceiling from floor above or roof structure to prevent sagging and swaying.

F. Provide seismic bracing per the International Building Code (IBC) requirements.

G. Install surface-mounted cabinets and panelboards with minimum of four anchors.

H. Use spring lock washers under fastener nuts for strut.

I. Cutting and Drilling: Do not drill or cut structural members without prior permission from Owner.

3.03 SUPPORT CHANNEL, HANGERS AND SUPPORTS INSTALLATION

A. Install hangers and supports as required to adequately and securely support electrical system components, in a neat and workmanlike manner, as specified in NECA 1.

B. Safety factor of 4 required for every fastening device or support for equipment installed. Supports to withstand four times the weight of equipment it supports.

C. Verify mounting height of luminaires prior to installation when heights are not detailed.

D. Install horizontal support members straight and parallel to ceilings or finished floor unless otherwise noted.

E. Provide independent supports to structural member for luminaires, materials, or equipment installed in or on ceiling, walls or in void spaces or over suspended ceilings.

F. Do not use other trade's fastening devices as supporting means for luminaires, equipment or materials.

G. Do not fasten supports to pipes, ducts, mechanical equipment, or conduit.

H. Do not use supports or fastening devices to support other than one particular item.

I. Support conduits within 18-inches of outlets, boxes, panels, cabinets and deflections unless more stringently required by the International Building Code (IBC).

J. Maximum distance between supports not to exceed 8-foot spacing unless otherwise required by the International Building Code (IBC).

K. Support flexible conduits and metal clad cable within 12-inches of outlets, boxes, panels, cabinets and deflections unless otherwise required by the International Building Code (IBC).

L. Maximum distance between supports for flexible conduits and metal clad cable not to exceed 48-inches spacing unless otherwise required by the International Building Code (IBC).

M. Maximum distance between supports for rigid PVC conduits unless otherwise required by the International Building Code (IBC). is as follows:
   1. 1/2-inch or 3/4-inch and 1-inch conduit, 3-feet apart.
   2. 1-1/4-inch or 1-1/2-inch and 2-inch conduit, 4-feet apart.
   3. 2-1/2-inch and 3-inch conduit, 5-feet apart.
   4. 4-inch and 5-inch conduit, 6-feet apart.
   5. 6-inch conduit, 7-feet apart.

N. Maximum distance between supports for auxiliary gutters and wireways unless otherwise required by the International Building Code (IBC) is as follows:
   1. Sheet metal auxiliary gutters and wireways - 4-feet apart horizontally and 10-feet vertically.
   2. Non-metallic auxiliary gutters and wireways - 30-inches apart horizontally and 3-feet vertically.

O. Install strut hangers as instructed by strut manufacturer. Suspend strut hangers as instructed by strut manufacturer for the load, with a maximum spacing of 8-feet on center and within 2-feet of outlet box, cabinet, junction box or other channel raceway termination unless otherwise required by the International Building Code (IBC).

P. Coordinate routing of conduit racks with materials and equipment installed by other trades. Where conduit racks are exposed to view, coordinate location and installation with Owner for optimal appearance.

Q. Securely suspend junction boxes, pull boxes or other conduit terminating housings located above suspended ceiling from floor above or roof structure to prevent sagging and swaying.

R. Provide seismic bracing per IBC requirements.

S. Where service disconnects are mounted on building exterior, physically attach service disconnect to the building or structure served.

T. Install surface-mounted cabinets and panelboards with minimum of four anchors.

U. Use sheet metal channel to bridge studs above and below cabinets and panelboards recessed in hollow partitions.

V. In wet and damp locations use steel channel supports to stand cabinets and panelboards 1-inch off wall.

3.04 ROOFTOP CONDUIT SUPPORTS INSTALLATION

A. Consult roofing manufacturer for roof membrane compression capacities. If necessary, provide a compatible sheet of roofing material (rubber pad) under rooftop support to disperse concentrated loads and add further membrane protection.

B. Do not use supports that will void roof warranty.

C. Install supports per manufacturer's instructions and recommendations.

D. Use properly sized clamps to suit conduit sizes.

E. Install supports for rooftop raceways to raise raceways a minimum of 7/8-inches above the roof structure unless otherwise noted.

END OF SECTION

SECTION 26 05 33
RACEWAYS

PART 1 - GENERAL

1.01 SUMMARY

A. Work Included:
   1. Rigid Metal Conduit (RMC)
   2. Electrical Metallic Tubing (EMT)
   3. Flexible Metal Conduit (FMC)
   4. Liquidtight Flexible Metal Conduit (LFMC)
   5. Conduit Fittings
   6. Surface Raceway Systems

B. Provide a complete system of conduit and fittings, with associated couplings, connectors, and fittings, as shown on Drawings and described in these Specifications.

1.02 RELATED SECTIONS

A. Contents of Division 26, Electrical and Division 01, General Requirements apply to this Section.

B. In addition, reference the following:
   1. Section 26 05 29, Hangers and Supports for Electrical Systems and Equipment
   2. Section 26 05 34, Boxes
   3. Division 28, Electronic Safety

1.03 REFERENCES AND STANDARDS

A. References and Standards as required by Section 26 00 00, Electrical Basic Requirements and Division 01, General Requirements.

1.04 SUBMITTALS

A. Submittals as required by Section 26 00 00, Electrical Basic Requirements and Division 01, General Requirements.

1.05 QUALITY ASSURANCE

A. Quality assurance as required by Section 26 00 00, Electrical Basic Requirements and Division 01, General Requirements.

1.06 WARRANTY

A. Warranty of materials and workmanship as required by Section 26 00 00, Electrical Basic Requirements and Division 01, General Requirements.

1.07 DEFINITIONS

A. Raceway system is defined as consisting of conduit, tubing, duct, and fittings including but not limited to connectors, couplings, offsets, elbows, bushings, expansion/deflection fittings, and other components and accessories. Complete electrical raceway installation before starting the installation of conductors and cables.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Rigid Metal Conduit (RMC):
   1. Allied Tube & Conduit
   2. Beck Manufacturing Inc.
   3. Picoma
   4. Wheatland Tube Company
   5. Or approved equivalent.

B. Electrical Metallic Tubing (EMT):
   1. Allied Tube & Conduit
   2. Beck Manufacturing WL
   3. Picoma

4. Wheatland Tube Company
5. Or approved equivalent.

C. Flexible Metal Conduit (FMC):
1. AFC Cable Systems Inc.
2. Electri-Flex Company
3. International Metal Hose
4. Or approved equivalent.

D. Liquidtight Flexible Metal Conduit (LFMC):
1. AFC Cable Systems Inc.
2. Electri-Flex Company
3. International Metal Hose
4. Or approved equivalent.

E. Conduit Fittings:
1. Bushings:
a. Insulated Type for Threaded Raceway Without Factory Installed Plastic Throat Conductor Protection:
1) Thomas & Betts 1222 Series
2) O-Z Gedney B Series
3) Or approved Equivalent.
2. Raceway Connectors and Couplings:
a. Thomas & Betts Series
b. O-Z Gedney Series
c. Or approved Equivalent.
3. Expansion/Deflection Fittings:
a. EMT: O-Z Gedney Type TX
b. RMC: O-Z Gedney Type AX, DX and AXDX, Crouse & Hinds XD
c. PVC: O-Z Gedney Type DX with PVC adapters, Carlon E945 Series, Kraloy OPEJ Series
d. Or approved equivalent.

F. Surface Raceway Systems:
1. Single Channel Surface Raceway and Signal:
a. Legrand (Wiremold) 3000 Series
b. MonoSystems SMS 3000 Series
c. Panduit T-70 System
d. Or approved equivalent.
2. Two Channel Surface Raceway:
a. Legrand (Wiremold) 4000 Series
b. MonoSystems SMS 4200 Series
c. Panduit T-70 System
d. Panduit TG-70 System
e. Or approved equivalent.

2.02 RIGID METAL CONDUIT (RMC)

A. UL 6, ANSI C80.1. Hot dipped galvanized steel conduit after thread cutting.

B. Fittings: NEMA FB2.10.

2.03 ELECTRICAL METALLIC TUBING (EMT)

A. Description: UL 797, ANSI C80.3; steel galvanized tubing.

B. Fittings: NEMA FB 1; steel, compression type.

2.04 FLEXIBLE METAL CONDUIT (FMC)

A. Description: UL 1, interlocked steel construction.

B. Fittings: NEMA FB 2.20.

2.05 LIQUIDTIGHT FLEXIBLE METAL CONDUIT (LFMC)

A. Description: UL 360, inner core made from spiral wound strip of heavy gauge, hot dipped galvanized low carbon steel. 3/4-inch through 1-1/4-inch trade sizes to have a square lock core and contain an integral bonding strip of copper. 1-1/2-inch and larger to have fully interlocked core. Jacket material to be moisture, oil and sunlight resistant flexible PVC.

B. Fittings: NEMA FB 2.20.

2.06 CONDUIT FITTINGS

A. Bushings:
   1. Insulated type for threaded raceway connectors without factory-installed plastic throat conductor protection.
   2. Insulated grounding type for threaded raceway connectors.

B. Raceway Connectors and Couplings:
   1. Steel connectors, couplings, and conduit bodies, hot-dip galvanized.
   2. Connector locknuts to be steel, with threads meeting ASTM tolerances. Locknuts to be hot-dip galvanized.
   3. Connector throats (EMT, flexible conduit, metal clad cable and cordset connectors) to have factory installed plastic inserts permanently installed. For normal cable or conductor exiting angles from raceway, the cable jacket or conductor insulation to bear only on plastic throat insert.
   4. Steel gland, Tomic or Breagle connectors and couplings are recognized for this Contract as having acceptable raceway to fitting electrical conductance.
   5. Set screw connectors and couplings, without integral compression glands, are recognized for this Contract as not having acceptable raceway to fitting electrical conductance. A ground conductor sized per this Specification must be included and bonded within raceway assembly utilizing this type connector or coupling.

C. Provide expansion/deflection fittings for EMT.

2.07 SURFACE RACEWAY SYSTEMS

A. Provide end caps, corner joints, tees, transition fittings, device brackets and like items for complete installation.

B. Finish: Owner to specify.

PART 3 - EXECUTION

3.01 GENERAL INSTALLATION REQUIREMENTS

A. Finished Surfaces: Schedule raceway installation to avoid conflict with installed wall and ceiling surfaces. If unavoidable, coordinate work and repairs with Owner.

B. Minimum Conduit Size: 3/4-inch for power and control, unless otherwise noted. 3/4-inch for communication/data, unless otherwise noted. 3/4-inch for signal systems, unless otherwise noted.

C. Elbow for Low Energy Signal Systems: Use long radius factory ells where linking sections of raceway for installation of signal cable.

D. Plan locations of conduit runs in advance of the installation and coordinate with ductwork, plumbing, ceiling and wall construction in the same areas.

E. Penetrations and holes in the structural sections such as footings, beams, and walls are not permitted.

F. Verify routing and termination locations of conduit prior to rough-in.

G. Conduit routing is shown on drawings in approximate locations unless dimensioned. Route as required to complete wiring system.

H. Install raceways securely, in neat and workmanlike manner, as specified in NECA 1, Standard Practices for Good Workmanship in Electrical Construction.

I. Install steel conduit as specified in NECA 101, Standard for Installing Steel Conduits.

J. Conduit Supports:
   1. Arrange supports to prevent misalignment during wiring installation.
   2. Support conduit using coated steel or malleable iron straps, lay-in adjustable hangers, clevis hangers, and split hangers.
   3. Group related conduits; support using conduit rack. Construct rack using steel channel. Provide space on each for 25 percent additional conduits.
   4. Do not support conduit with wire or perforated pipe straps. Remove wire used for temporary supports.
   5. Do not attach conduit to ceiling support wires.

K. Flexible metal conduit length not-to-exceed 6-feet, 3-feet in concealed walls. Provide sufficient slack to reduce the effect of vibration.

L. Install conduit seals at boundaries where ambient temperatures differ by 10 degrees F or more as shown on the drawings. Install seals on warm side of partition.

M. Seal raceways stubbing up into electrical equipment. Plug raceways with conductors with duct-seal. Cap spare raceways and plug PVC raceway products with plastic plugs as made by Underground Products, or equal, shaped to fit snugly into the stubup.

N. Seal raceways penetrating an exterior building wall to prevent moisture and vermin from entering into the electrical equipment.

O. Use suitable caps on spare and empty conduits to protect installed conduit against entrance of dirt and moisture.

P. Keep 277/480 volt wiring independent of 120/208 volt wiring. Keep power wiring independent of communication system wiring.

Q. Keep emergency system wiring independent of other wiring systems per NEC 700.

R. Arrange conduit to maintain headroom and present neat appearance.

S. Do not install conduits on surface of building exterior, along vapor barrier, across roof, on top of parapet walls, or across floors, unless otherwise noted on drawings.

T. Exposed conduits are permitted only in following areas:
   1. Mechanical rooms, electrical rooms or spaces where walls, ceilings and floors will not be covered with finished material.
   2. Existing walls that are concrete or block construction.
   3. Where specifically noted on Drawings.
   4. Route exposed conduit parallel and perpendicular to walls, tight to finished surfaces and neatly offset into boxes.

U. Do not install conduits or other electrical equipment in obvious passages, doorways, scuttles or crawl spaces which would impede or block area passage's intended usage.

V. Install continuous conduit and raceways for electrical power wiring and signal systems wiring.

W. Route conduit installed above accessible ceilings parallel and perpendicular to walls.

X. Maintain adequate clearance between conduit and piping.

Y. Keep conduits a minimum of 12-inches away from steam or hot water radiant heating lines (at or above 104 degrees F) or 3-inches away from waste or water lines.

Z. Cut conduit square using saw or pipecutter; deburr cut ends.

AA. Bring conduit to shoulder of fittings; fasten securely.

BB. Use conduit hubs to fasten conduit to cast boxes in damp and wet locations.

CC. Install no more than the equivalent of three 90 degree bends between boxes. Use conduit bodies to make sharp changes in direction, as around beams.

DD. Use hydraulic one shot bender to fabricate elbows for bends in metal conduit larger than 2-inch size.

EE. Avoid moisture traps; provide junction box with drain fitting at low points in conduit system.

FF. Provide suitable fittings to accommodate expansion and deflection where conduit crosses seismic, control, and expansion joints.

GG. Conduit Terminations for Signal Systems: Provide a plastic bushing on the end of conduit used for signal system wiring.

HH. Install conduit to preserve fire resistance rating of partitions and other elements, using materials and methods specified in Division 07, Thermal and Moisture Protection.

II. Route conduit through roof openings for piping and ductwork wherever possible.

3.02 RIGID METAL CONDUIT (RMC) INSTALLATION

A. Outdoor Locations Above Grade: RMC.

B. Damp Locations: RMC.

C. In areas exposed to mechanical damage: RMC.

D. For security conduits installed exposed and subject to tampering: RMC.

3.03 ELECTRICAL METALLIC TUBING (EMT) INSTALLATION

A. Locations:
   1. Dry, Concealed: EMT.
   2. Dry, Exposed: EMT.
   3. Dry, Protected: EMT.

3.04 FLEXIBLE METAL CONDUIT (FMC) INSTALLATION

A. Dry Locations: Motors, recessed luminaires and equipment connections subject to movement or vibration, use flexible metallic conduit.

B. Install 12-inch minimum slack loop on flexible metallic conduit.

3.05 LIQUIDTIGHT FLEXIBLE METAL CONDUIT (LFMC) INSTALLATION

A. Use PVC coated liquidtight flexible metallic conduit for motors and equipment connections subject to movement or vibration and subjected to any of following conditions: Exterior location, moist or humid atmosphere, corrosive environments, water spray, oil, or grease.

B. Install 12-inch minimum slack loop on liquidtight flexible metallic conduit.

3.06 CONDUIT FITTINGS INSTALLATION

A. Conduit Joints: Assemble conduits continuous and secure to boxes, panels, luminaires and equipment with fittings to maintain continuity. Provide watertight joints where embedded in concrete, below grade or in damp locations. Seal metal conduit with metal thread primer. Rigid conduit connections to be threaded, clean and tight (metal to metal). Threadless connections are not permitted for RMC.

B. Use compression fittings in dry locations, damp and rain-exposed locations. Maximum size permitted in damp locations and locations exposed to rain is 2-inches in diameter.

C. Use threaded type fittings in wet locations, hazardous locations, and damp or rain-exposed locations where conduit size is greater than 2-inches.

D. Use PVC coated, threaded type fittings in corrosive environments.

E. Use insulated type bushings with ground provision at switchboards, panelboards, safety disconnect switches, junction boxes that have feeders 60 amperes and greater.

F. Condulets and Conduit Bodies: Do not use condulets and conduit bodies in conduits for signal wiring, in feeders 100 amp and larger, or for conductor splicing.

G. Sleeves and Chases; Floor, Ceiling and Wall Penetrations: Provide necessary rigid conduit sleeves, openings and chases where conduits or cables are required to pass through floors, ceilings or walls.

H. Expansion Joints:
   1. Provide conduits crossing expansion joints where cast in concrete with expansion-deflection fittings, installed per manufacturer's recommendations.

2. Secure conduits 3-inches and larger to building structure on opposite sides of a building expansion joint with an expansion-deflection fitting across joint installed per manufacturer's recommendations.
3. Provide conduits less than 3-inches where not cast in concrete with junction boxes securely fastened on both sides of expansion joint, connected together with 15-inches of slack (minimum of 15-inches longer than straight line length) flexible conduit and copper green ground bonding jumper. In lieu of this flexible conduit, an expansion-deflection fitting, as indicated for conduits 3-inch and larger may be installed.
4. Verify expansion/deflection requirements with Structural Engineer prior to installation.

I. Seismic Joints:
1. No conduits cast in concrete allowed to cross seismic joint.
2. Provide conduits with junction boxes securely fastened on both sides of seismic joint, connected together with 15-inches of slack (minimum of 15-inches longer than straight line length) flexible conduit and copper green ground bonding jumper. Prior to installation, verify with Owner that 15-inches is adequate for designed movement, and if not, increase this length as required.
3. Provide conduits less than 3-inches where not cast in concrete with junction boxes securely fastened on both sides of expansion joint, connected together with 15-inches of slack (minimum of 15-inches longer than straight line length) flexible conduit and copper green ground bonding jumper. In lieu of this flexible conduit, an expansion-deflection fitting, as indicated for conduits 3-inches and larger may be installed.

3.07 SURFACE RACEWAY SYSTEMS INSTALLATION

A. Install per manufacturer's installation instructions, perpendicular and parallel to building lines.

B. Use flat-head screws, clips, and straps to fasten raceway channel to surfaces. Mount plumb and level.

C. Use suitable insulating bushings and inserts at connections to outlets and corner fittings.

D. Close end of wireway and unused conduit openings.

END OF SECTION

SECTION 26 05 34
BOXES

PART 1 - GENERAL

1.01 SUMMARY

A. Work Included:
   1. Outlet Boxes
   2. Pull and Junction Boxes
   3. Box Extension Adapter

B. Provide electrical boxes and fittings for a complete installation. Include but not limited to outlet boxes, junction boxes, pull boxes, bushings, locknuts and other necessary components.

1.02 RELATED SECTIONS

A. Contents of Division 26, Electrical and Division 01, General Requirements apply to this Section.

B. In addition, reference the following:
   1. Section 26 05 33, Raceways
   2. Section 26 05 53, Identification for Electrical Systems
   3. Division 28, Electronic Safety

1.03 REFERENCES AND STANDARDS

A. References and Standards as required by Section 26 00 00, Electrical Basic Requirements and Division 01, General Requirements.

1.04 SUBMITTALS

A. Submittals as required by Section 26 00 00, Electrical Basic Requirements and Division 01, General Requirements.

1.05 QUALITY ASSURANCE

A. Quality assurance as required by Section 26 00 00, Electrical Basic Requirements and Division 01, General Requirements.

1.06 WARRANTY

A. Warranty of materials and workmanship as required by Section 26 00 00, Electrical Basic Requirements and Division 01, General Requirements.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Outlet Boxes:
   1. Hubbell
   2. Thomas & Betts
   3. Eaton/Crouse-Hinds
   4. Or approved equivalent.

B. Pull and Junction Boxes:
   1. Eaton/Crouse-Hinds
   2. Hoffman
   3. Or approved equivalent.

C. Box Extension Adapter:
   1. Hubbell
   2. Thomas & Betts
   3. Eaton/Crouse-Hinds
   4. Or approved equivalent.

2.02 OUTLET BOXES

A. Construction: For interior locations, provide galvanized steel outlet wiring boxes, of the type, shape and size, including depth of box, to suit each respective location and installation; constructed with stamped knockouts in back and sides, and with threaded holes with screws for

securing box covers or wiring devices. All surface mounted outlet boxes are to be drawn. Welded boxes are not acceptable.

B. Accessories: Provide outlet box accessories for each installation, including mounting brackets, wallboard hangers, extension rings, luminaire studs, cable clamps and metal straps for supporting outlet boxes, compatible with outlet boxes being used and meeting requirements of individual wiring situations.

C. Noise Control: Provide acoustic putty pad to back side of each outlet box installed in acoustic rated walls.

2.03 PULL AND JUNCTION BOXES

A. Construction: Provide ANSI 61 gray polyester powder painted sheet steel junction and pull boxes, with screw-on covers; of type shape and size, to suit each respective location and installation; with welded seams and equipped with stainless steel nuts, bolts, screws and washers.

B. Location:
   1. Provide junction boxes above accessible ceilings for drops into walls for receptacle outlets from overhead.
   2. Provide junction boxes and pull boxes to facilitate installation of conductors and limiting accumulated angular sum of bends between boxes, cabinets and appliances to 270 degrees.

2.04 BOX EXTENSION ADAPTER

A. Construction: Diecast aluminum.

B. Location: Install over flush wall outlet boxes to permit flexible raceway extension from flush outlet to fixed or movable equipment.

PART 3 - EXECUTION

3.01 GENERAL INSTALLATION REQUIREMENTS

A. Coordinate locations of wall mounted wiring device boxes prior to rough-in.

B. Install boxes securely, in a neat and workmanlike manner, as specified in NECA 1, Standard Practice of Good Workmanship in Electrical Construction.

C. Secure boxes rigidly to substrate upon which they are being mounted.

D. Install boxes in locations as required for splices, taps, wire pulling, equipment connections, and as required by NEC. Locate boxes and conduit bodies so as to ensure accessibility of electrical wiring.

E. Set wall mounted boxes at elevations to accommodate mounting heights.

F. Install boxes to preserve fire resistance rating of partitions and other elements.

G. Install flush mounting box without damaging wall insulation or reducing its effectiveness.

H. Support boxes independently of conduit, except cast box that is connected to two rigid metal conduits both supported within 12-inches of box.

I. Box Color Coding and Marking: Reference Section 26 05 53, Identification for Electrical Systems.

J. Adjust boxes to be parallel with building lines. Boxes not plumb to building lines are not acceptable.

K. Install knockout closures in unused box openings.

L. Clean interior of boxes to remove dust, debris, and other material.

M. Clean exposed surfaces and restore finish.

3.02 OUTLET BOXES INSTALLATION

A. Mount outlet boxes, unless otherwise required by ADA, or noted on drawings, following distances above finished floor:
   1. Other Outlets: As indicated in other sections of specifications or as detailed on drawings.

B. Inaccessible Ceiling Areas: Install outlet and junction boxes no more than 6-inches from ceiling access panel or from removable recessed luminaire.

C. Flush Outlets in Insulated Spaces: Maintain integrity of insulation and vapor barrier.

D. Coordinate electrical device locations and elevations (switches and receptacles) with architectural drawings to prevent mounting devices in mirrors, back splashes, and behind cabinets.

E. Align adjacent wall mounted outlet boxes. Adjacent boxes not aligned vertically to be adjusted at no additional cost to Owner.

F. Use flush mounting outlet box in finished areas.

G. Do not install flush mounting box back-to-back in walls; provide minimum 6-inches separation. Provide minimum 24-inches in acoustic rated walls.

H. In acoustical walls, apply acoustic putty pad on outlet box prior to installation of acoustical blanket.

I. Use adjustable steel channel fasteners for hung ceiling outlet box.

3.03 PULL AND JUNCTION BOXES INSTALLATION

A. Install pull boxes and junction boxes above accessible ceilings and in unfinished areas only.

B. Do not fasten boxes to ceiling support wires.

C. Large Pull Boxes: Use hinged enclosure in interior dry locations, surface-mounted cast metal box in other locations.

3.04 BOX EXTENSION ADAPTER INSTALLATION

A. Match material to box.

B. Install gaskets at exterior and wet locations.

END OF SECTION

SECTION 26 05 53
IDENTIFICATION FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.01 SUMMARY

A. Work Included:
   1. Device Labels
   2. Wire Markers
   3. Conduit Markers

1.02 RELATED SECTIONS

A. Contents of Division 26, Electrical and Division 01, General Requirements apply to this Section.

B. In addition, reference Division 28, Electronic Safety.

1.03 REFERENCES AND STANDARDS

A. References and Standards as required by Section 26 00 00, Electrical Basic Requirements and Division 01, General Requirements.

1.04 SUBMITTALS

A. Submittals not required for this Section.

1.05 QUALITY ASSURANCE

A. Quality assurance as required by Section 26 00 00, Electrical Basic Requirements and Division 01, General Requirements.

B. In addition, meet the following:
   1. Manufacturer's Qualifications: Firms regularly engaged in manufacture of identification devices of types and sizes required.
   2. Manufacturer's standard products of categories and types required for each application as referenced in other Division 26, Electrical Sections. Where more than a single type is specified for application, provide single selection for each product category.
   3. Codes and Standards: Comply with ANSI A13.1 for lettering size, length of color field, colors, and viewing angles of identification devices unless otherwise indicated.

1.06 WARRANTY

A. Warranty of materials and workmanship as required by Section 26 00 00, Electrical Basic Requirements and Division 01, General Requirements.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Device Labels:
   1. Kroy
   2. Brady
   3. Or approved equivalent.

B. Wire Markers:
   1. Brady
   2. Panduit
   3. Sumitomo
   4. Or approved equivalent.

C. Conduit Markers:
   1. Allen Systems
   2. Brady
   3. Or approved equivalent.

2.02 DEVICE LABELS

A. Extra strength, laminated adhesive tape with 3/16-inch black letters on clear background. Embossed tape/punch tape style labels are not acceptable.

B. Receptacles: Indicate source panel and source circuits (e.g. xxx-xx).

C. Junction Boxes: Label to show system identification, source circuit, or raceway origin. In finished areas, utilize device label. In unfinished areas or above ceilings, use of permanent ink marker is acceptable.

D. Panel and circuit designation written in permanent marker on the back of the plate and inside all back-boxes and junction boxes.

2.03 WIRE MARKERS

A. Description: Vinyl-cloth self-adhesive type wire markers.

B. Locations: Each conductor at panelboard gutters, pull boxes, outlet boxes, and junction boxes.

C. Power and Lighting Circuits: Branch circuit or feeder number as indicated on drawings and source panel.

D. Control Circuits: control wire number indicated on shop drawings.

2.04 CONDUIT MARKERS

A. Description: Self-sticking vinyl.

B. Location: Furnish markers for each conduit longer than 6-feet.

C. Spacing: 20-feet on center.

D. Color: Fire Alarm System - Red.

PART 3 - EXECUTION

3.01 GENERAL INSTALLATION REQUIREMENTS

A. Coordinate designations used on Drawings with equipment nameplates and device labels.

B. Install nameplates and labels parallel to equipment lines.

C. Identify empty conduit and boxes with intended use.

D. Provide color coded boxes as follows: Fire Alarm - Red.

3.02 DEVICE LABELS

A. Reference 3.01, General Installation Requirements.

B. Install per manufacturer's instructions and recommendations.

C. Degrease and clean surfaces to receive labels. Fingers to be regularly cleaned of grease and debris to prevent fingerprints on labels. Labels installed dirty or with fingerprints to be replaced at no cost to Owner.

3.03 WIRE MARKERS

A. Reference 3.01, General Installation Requirements.

B. Install per manufacturer's instructions and recommendations.

C. Provide wire markers on each conductor for power, control, signalling and communications circuits.

3.04 CONDUIT MARKERS

A. Reference 3.01, General Installation Requirements.

B. Install per manufacturer's instructions and recommendations.

END OF SECTION

SECTION 26 27 26
WIRING DEVICES

PART 1 - GENERAL

1.01 SUMMARY

A. Work Included:
   1. Receptacles
   2. Finish Plates
   3. Surface Covers

1.02 RELATED SECTIONS

A. Contents of Division 26, Electrical and Division 01, General Requirements apply to this Section.

B. In addition, reference Division 28, Electronic Safety.

1.03 REFERENCES AND STANDARDS

A. References and Standards as required by Section 26 00 00, Electrical Basic Requirements and Division 01, General Requirements.

1.04 SUBMITTALS

A. Submittals as required by Section 26 00 00, Electrical Basic Requirements and Division 01, General Requirements.

1.05 QUALITY ASSURANCE

A. Quality assurance as required by Section 26 00 00, Electrical Basic Requirements and Division 01, General Requirements.

1.06 WARRANTY

A. Warranty of materials and workmanship as required by Section 26 00 00, Electrical Basic Requirements and Division 01, General Requirements.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Receptacles:
   1. Commercial Grade:
      a. 20 Amp:
         1) Cooper 5362
         2) Hubbell 5362
         3) Bryant CBRS20
         4) Leviton 5362S
         5) Legrand P&S 5362
         6) Or approved equivalent.
   2. Ground Fault Circuit Interrupter (GFCI) Receptacle - 20 Amp:
      a. Cooper WRSGF20W
      b. Hubbell GFR5362SGW
      c. Legrand P&S 2097TRWR
      d. Or approved equivalent.

B. Finish Plates:
   1. Bryant
   2. Cooper
   3. Hubbell
   4. Leviton
   5. Legrand P&S
   6. Or approved equivalent.

C. Surface Covers:
   1. Aluminum with Gasket, Blanks, Single Gang:
      a. Bell 240-ALF

b. Carlon
c. Or approved equivalent.

2. 2-Gang:
a. Bell 236-ALF
b. Carlon
c. Or approved equivalent.

2.02 RECEPTACLES

A. Duplex Receptacles Characteristics:
1. Straight parallel blade, 125 volt, 2 pole, 3 wire grounding.
2. Commercial Grade: Riveted. Back and side wired. Brass ground contact on steel strap. Nylon face and nylon base. 20 amp.

B. Ground Fault Circuit Interrupter (GFCI) Receptacle: Feed through type, back-and-side wired, tamper-resistant, weather resistant self-testing, 20 amp, 125VAC.

C. Finish: Same exposed finish as switches.

2.03 FINISH PLATES

A. Finish Plates: Type 302 stainless steel with smooth satin finish.

2.04 SURFACE COVERS

A. Cast Box and Extension Adaptors: Aluminum with gasket, blanks single gang or 2-gang.

B. While-in-Use Weatherproof Cover: NEMA 3R when closed over energized plug. Vertical mount for duplex receptacle. Provide continuous use cover with cover capable of closing over energized cord cap with bottom aperture for cord exit.
1. Die cast cover with closed cell neoprene foam gasket: Capable of being locked closed to prevent tampering or unauthorized use.

PART 3 - EXECUTION

3.01 GENERAL INSTALLATION REQUIREMENTS

A. Install wiring devices and finish plates plumb with building lines, equipment cabinets and adjacent devices. Devices not plumb will be fixed at no additional cost to Owner.

B. Orientation:
1. Install wiring devices with long dimension oriented vertically at centerline height shown on drawings or as specified.
2. Vertical Alignment: When more than one device is shown on drawings in close proximity to each other, but at different elevations, align devices on a common vertical center line for best appearance. Verify with Owner.
3. Horizontal Alignment: When more than one device is shown on drawings in close proximity to each other with same elevation, align devices on a common horizontal center line for best appearance. Verify with Owner.

C. Provide labeling per Section 26 05 53, Identification for Electrical Systems.

D. Test wiring devices to ensure electrical continuity of grounding connections, and after energizing circuitry, to demonstrate compliance with requirements. Test receptacles for line to neutral, line to ground and neutral to ground faults. Correct any defective wiring.

3.02 RECEPTACLES INSTALLATION

A. Upon installation, adhere to proper and cautious use of convenience receptacles. At time of substantial completion, replace those items which have been damaged, including those burned and scored by faulty receptacles or cord caps.

3.03 FINISH PLATES INSTALLATION

A. Replace scratched finish plates and wiring devices.

3.04 SURFACE COVERS INSTALLATION

A. Replace scratched finish plates and wiring devices.

END OF SECTION

SECTION 28 00 01
ELECTRONIC SAFETY BASIC REQUIREMENTS

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Work included in 28 00 01, Electronic Safety Basic Requirements applies to Division 28, Electronic Safety work to provide materials, labor, tools, permits, incidentals, and other services to provide and make ready for Owner's use of electronic safety systems for proposed project.

B. Contract Documents include, but are not limited to, Specifications including Division 00, Procurement and Contracting Requirements and Division 01, General Requirements, Drawings, Addenda, Owner/Architect Agreement, and Owner/Contractor Agreement. Confirm requirements before commencement of work.

C. Definitions:
   1. Provide: To furnish and install, complete and ready for intended use.
   2. Furnish: Supply and deliver to project site, ready for unpacking, assembly and installation.
   3. Install: Includes unloading, unpacking, assembling, erecting, installing, applying, finishing, protecting, cleaning and similar operations at project site as required to complete items of work furnished.
   4. Approved or Approved Equivalent: To possess the same performance qualities and characteristics and fulfill the utilitarian function without any decrease in quality, durability or longevity. For equipment/products defined by the Contractor as "equivalent," substitution requests must be submitted to Engineer for consideration, in accordance with Division 01, General Requirements, and approved by the Engineer prior to submitting bids for substituted items.
   5. Authority Having Jurisdiction (AHJ): Indicates reviewing authorities having jurisdiction, including local fire marshal, Owner's insurance underwriter, Owner's Authorized Representative, and other reviewing entity whose approval is required to obtain systems acceptance.

1.02 RELATED SECTIONS

A. Contents of Section apply to Division 28, Electronic Safety Contract Documents.

B. Related Work:
   1. Additional conditions apply to this Division including, but not limited to:
      a. Specifications including Division 00, Procurement and Contracting Requirements and Division 01, General Requirements.
      b. Drawings
      c. Addenda
      d. Owner/Contractor Agreement
      e. Codes, Standards, Public Ordinances and Permits

C. Contents of Division 26, Electrical apply to this Section.

1.03 REFERENCES AND STANDARDS

A. References and Standards per Division 00, Procurement and Contracting Requirements and Division 01, General Requirements, individual Division 28, Electronic Safety Sections and those listed in this Section.

B. Codes to include latest adopted editions, including current amendments, supplements and local jurisdiction requirements in effect as of the date of the Contract Documents, of/from:
   1. State of Washington:
      a. IBC - International Building Code
      b. IFC - International Fire Code
      c. IMC - International Mechanical Code
      d. NEC - National Electrical Code
      e. UPC - Uniform Plumbing Code
      f. WAC - Washington Administrative Code

g. WSEC - Washington State Energy Code

C. Reference standards and guidelines include but are not limited to the latest adopted editions from:
1. ABA - Architectural Barriers Act
2. ADA - Americans with Disabilities Act
3. ANSI - American National Standards Institute
4. ASCE - American Society of Civil Engineers
5. ASHRAE - American Society of Heating, Refrigerating and Air-Conditioning Engineers
6. ASHRAE Guideline 0, the Commissioning Process
7. ASME - American Society of Mechanical Engineers
8. ASTM - ASTM International
9. CFR - Code of Federal Regulations
10. EPA - Environmental Protection Agency
11. ETL - Electrical Testing Laboratories
12. FM - FM Global
13. ISO - International Organization for Standardization
14. NEC - National Electric Code
15. NEMA - National Electrical Manufacturers Association
16. NFPA - National Fire Protection Association
17. OSHA - Occupational Safety and Health Administration
18. SMACNA - Sheet Metal and Air Conditioning Contractors' National Association
19. UL - Underwriters Laboratories Inc.

D. See Division 28, Electronic Safety individual Sections for additional references.

1.04 SUBMITTALS

A. See Division 01, General Requirements for Submittal Procedures.

B. Provide drawings in format and software release equal to the design documents. Drawings to be the same sheet size and scale as the Contract Documents.

C. "No Exception Taken" constitutes that review is for general conformance with the design concept expressed in the Contract Documents for the limited purpose of checking for conformance with information given. Any action is subject to the requirements of the Contract Documents. Contractor is responsible for the dimensions and quantity and will confirm and correlate at the job site, fabrication processes and techniques of construction, coordination of the work with that of all other trades, and the satisfactory performance of the work.

D. Provide product submittals and shop drawings in electronic format only. Electronic format must be submitted via zip file via e-mail. For electronic format, provide one file per division containing one bookmarked PDF file with each bookmark corresponding to each Specification Section. Arrange bookmarks in ascending order of Specification Section number. Individual submittals sent piecemeal in a per Specification Section method will be returned without review or comment. Copy Engineer on all transmissions/submissions.

E. Product Data: Provide manufacturer's descriptive literature for products specified in Division 28, Electronic Safety Sections.

F. Identify/mark each submittal in detail. Note what difference, if any, exist between the submitted item and the specified item. Failure to identify the differences will be considered cause for disapproval. If differences are not identified and/or not discovered during the submittal review process, Contractor remains responsible for providing equipment and materials that meet the specifications and drawings.
1. Label submittal to match numbering/references as shown in Contract Documents. Highlight and label applicable information to individual equipment or cross out/remove extraneous data not applicable to submitted model. Clearly note options and accessories to be provided, including field installed items. Highlight connections by/to other trades.
2. Include technical data, installation instructions and dimensioned drawings for products, equipment and devices installed, furnished or provided. Reference individual Division 28, Electronic Safety specification Sections for specific items required in product data

submittal outside of these requirements.

3. See Division 28, Electronic Safety individual Sections for additional submittal requirements outside of these requirements.

G. Maximum of two reviews of complete submittal package. Arrange for additional reviews and/or early review of long-lead items; Bear costs of additional reviews at Engineer's hourly rates. Incomplete submittal packages/submittals will be returned to contractor without review.

H. Resubmission Requirements: Make corrections or changes in submittals as required, and in consideration of Engineer’s comments. Identify Engineer’s comments and provide an individual response to each of the Engineer’s comments. Cloud changes in the submittals and further identify changes which are in response to Engineer’s comments.

I. Structural/Seismic: Provide weights, dimensions, mounting requirements and like information required for mounting, seismic bracing, and support. Indicate manufacturer's installation and support requirements to meet ASCE 7-16 requirements for non-structural components. Provide engineered seismic drawings and equipment seismic certification. Equipment Importance Factor as specified in Division 01 and in Structural documents.

J. Trade Coordination: Include physical characteristics, electrical characteristics, device layout plans, wiring diagrams, and connections as required per Division 28, Electronic Safety Coordination Documents. For equipment with electrical connections, furnish copy of approved submittal for inclusion in Division 26, Electrical and Division 28, Electronic Safety submittals.

K. Make provisions for openings in building for admittance of equipment prior to start of construction or ordering of equipment.

L. Substitutions and Variation from Basis of Design:

1. The Basis of Design designated product establishes the qualities and characteristics for the evaluation of any comparable products by other listed acceptable manufacturers if included in this Specification or included in an approved Substitution Request as judged by the Design Professional.
2. If substitutions and/or equivalent equipment/products are being proposed, it is the responsibility of parties concerned, involved in, and furnishing the substitute and/or equivalent equipment to verify and compare the characteristics and requirements of that furnished to that specified and/or shown. If greater capacity and/or more materials and/or more labor are required for the rough-in, circuitry or connections than for the item specified and provided for, then provide compensation for additional charges required for the proper rough-in, circuitry and connections for the equipment being furnished. No additional charges above the Base Bid, including resulting charges for work performed under other Divisions, will be allowed for such revisions. Coordinate with the requirements of "Submittals." For any product marked "or approved equivalent," a substitution request must be submitted to Engineer for approval prior to purchase, delivery or installation.
3. Where manufacturer equipment or model numbers are indicated with no exceptions, substitutions will be rejected.

M. Shop Drawings:

1. Provide coordinated shop drawings which include physical characteristics of all systems, device layout plans, and control wiring diagrams. Reference individual Division 28, Electronic Safety specification Sections for additional requirements for shop drawings outside of these requirements.
2. Provide Shop Drawings indicating access panel locations, size and elevation for approval prior to installation.

N. Samples: Provide samples when requested by individual Sections.

O. Resubmission Requirements:

1. Make any corrections or change in submittals when required by Engineer review comments. Provide submittals as specified. The engineer will not be required to edit and/or interpret the Contractor's submittals. Indicate changes for the resubmittal in a cover letter with reference to page(s) changed and reference response to comment. Cloud changes in the submittals.
2. Resubmit for review until review indicates no exception taken or "make corrections noted."

3. When submitting drawings for Engineer's re-review, clearly indicate changes on drawings and "cloud" any revisions. Submit a list describing each change.

P. Operation and Maintenance Manuals, Owner's Instructions:
   1. Reference individual Division 28, Electronic Safety Specification Sections for additional requirements for operations and maintenance manuals.
   2. Submit, at one time, electronic files (PDF format) of manufacturer's operation and maintenance instruction manuals and parts lists for equipment or items requiring servicing. Submit data when work is substantially complete and in same order format as submittals. Include name and location of source parts and service for each piece of equipment.
      a. Include copy of approved submittal data along with submittal review letters received from Engineer. Data to clearly indicate installed equipment model numbers. Delete or cross out data pertaining to other equipment not specific to this project.
      b. Include copy of manufacturer's standard Operations and Maintenance for equipment. At front of each tab, provide routine maintenance documentation for scheduled equipment. Include manufacturer's recommended maintenance schedule and highlight maintenance required to maintain warranty. Furnish list of routine maintenance parts, including part numbers, sizes and quantities relevant to each piece of equipment.
      c. Include copy of complete parts list for equipment. Include available exploded views of assemblies and sub-assemblies.
      d. Include Warranty per Division 00, Procurement and Contracting Requirements, Division 01, General Requirements, Section 28 00 01, Electronic Safety Basic Requirements and individual Sections.
      e. Include product certificates of warranties and guarantees.
      f. Include copy of start-up and test reports specific to each piece of equipment.
      g. Include commissioning reports.
      h. Engineer will return incomplete documentation without review.
      i. Engineer will provide one set of review comments in Submittal Review format. Arrange for additional reviews; Bear costs for additional reviews at Engineer's hourly rates.
   3. Thoroughly instruct Owner in proper operation of equipment and systems. Where noted in individual Sections, training will include classroom instruction with applicable training aids and systems demonstrations. Field instruction per Section 28 00 01, Electronic Safety Basic Requirements Article titled "Demonstration."
   4. Copies of certificates of code authority inspections, acceptance, code required acceptance tests, letter of conformance and other special guarantees, certificates of warranties, specified elsewhere or indicated on Drawings.

Q. Record Drawings:
   1. Maintain at site at least one set of drawings for recording “as-constructed” conditions. Indicate on drawings changes to original documents by referencing revision document, and include buried elements and location of concealed items. Include items changed by addenda, field orders, supplemental instructions, and constructed conditions.
   2. Record Drawings are to include equipment locations, calculations, and schedules that accurately reflect "as constructed or installed" for project.
   3. At completion of project, input changes to original project on CAD Drawings and make one set of black-line drawings created from CAD Files in version/release equal to contract drawings. Submit CAD Files and drawings upon substantial completion.
   4. See Division 28, Electronic Safety individual Sections for additional items to include in Record Drawings.

1.05 QUALITY ASSURANCE

A. Regulatory Requirements: Work and materials installed to conform with all local, State and Federal codes, and other applicable laws and regulations. Where code requirements are at variance with Contract Documents, meet code requirements as a minimum requirement and include costs necessary to meet these in Contract. Machinery and equipment are to comply with OSHA requirements, as currently revised and interpreted for equipment manufacturer

requirements. Install equipment provided per manufacturer recommendations.

B. Whenever this Specification calls for material, workmanship, arrangement or construction of higher quality and/or capacity than that required by governing codes, higher quality and/or capacity take precedence.

C. Drawings are intended to be diagrammatic and reflect the Basis of Design manufacturer's equipment. They are not intended to show every item in its exact dimensions, or details of equipment or proposed systems layout. Verify actual dimensions of systems (e.g. cable tray, panels, etc.) and equipment proposed to assure that systems and equipment will fit in available space. Contractor is responsible for design and construction costs incurred for equipment other than Basis of Design, including, but not limited to, architectural, structural, electrical, HVAC, fire sprinkler, and plumbing systems.

D. Manufacturer's Instructions: Follow manufacturer's written instructions. If in conflict with Contract Documents, obtain clarification. Notify Engineer in writing before starting work.

E. Items shown on Drawings are not necessarily included in Specifications or vice versa. Confirm requirements in all Contract Documents.

F. Provide products that are UL listed.

1.06 WARRANTY

A. Provide written warranty covering the work for a period of one year from date of Substantial Completion in accordance with Division 00, Procurement and Contracting Requirements and Division 01, General Requirements, Section 28 00 01, Electronic Safety Basic Requirements and individual Division 28, Electronic Safety Sections.

B. Sections under this Division can require additional and/or extended warranties that apply beyond basic warranty under Division 01, General Requirements and the General Conditions. Confirm requirements in all Contract Documents.

1.07 COORDINATION DOCUMENTS

A. Prior to construction, prepare and submit coordinated layout drawings (composite drawings), to coordinate installation and location of ductwork, grilles, diffusers, piping, fire sprinklers, plumbing, lights, and electrical services. Composite Drawings show services on single sheet. Key Drawings to structural column identification system. Prior to completion of Drawings, coordinate proposed installation with architectural and structural requirements, and other trades (including plumbing, HVAC, fire protection, electrical, ceiling suspension, and ceiling tile systems, etc.), and provide maintenance access requirements. Coordinate with submitted architectural systems (i.e. roofing, ceiling, finishes) and structural systems as submitted, including footings and foundation. Identify zone of influence from footings and ensure systems are not routed within the zone of influence.

B. Prepare Drawings as follows:
   1. Drawings in CAD Format. CAD format release equal to design documents. Drawings to be same sheet size and scale as Contract Drawings and indicate location, size and elevation above finished floor of equipment and distribution systems.
   2. Review and revise, as necessary, section cuts in Contract Drawings after verification of field conditions.
   3. Indicate fittings, hangers, access panels, and elevation of bottom of cable tray above finished floor.
   4. Drawings to indicate proposed ceiling grid and lighting layout as shown on electrical drawings and architectural reflected ceiling drawings and HVAC equipment, ductwork.
   5. Incorporate Addenda items and change orders.
   6. Provide additional coordination as requested by other trades.

C. Advise Engineer in event conflict occurs in location or connection of equipment. Bear costs resulting from failure to properly coordinate installation or failure to advise Engineer of conflict.

D. Submit final Coordination Drawings with changes as Record Drawings at completion of project.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Articles, fixtures, and equipment of a kind to be standard product of one manufacture, including but not limited to panels, devices and equipment unless otherwise specified in individual Division 28, Electronic Safety Sections.

2.02 STANDARDS OF MATERIALS AND WORKMANSHIP

A. Base contract upon furnishing materials as specified. Materials, equipment, and fixtures used for construction are to be new, latest products as listed in manufacturer's printed catalog data and are to be UL, ETL, or FM listed and labeled or be approved by State, County, and City authorities prior to procurement and installation.

B. Names and manufacturer's names denote character and quality of equipment desired and are not to be construed as limiting competition.

C. Hazardous Materials:
   1. Comply with local, State of Washington, and Federal regulations relating to hazardous materials.
   2. Comply with Division 00, Procurement and Contracting Requirements and Division 01, General Requirements for this project relating to hazardous materials.
   3. Do not use any materials containing a hazardous substance. If hazardous materials are encountered, do not disturb; immediately notify Owner and Engineer. Hazardous materials will be removed by Owner under separate contract.

PART 3 - EXECUTION

3.01 ACCESSIBILITY AND INSTALLATION

A. Confirm Accessibility and Installation requirements in Division 00, Procurement and Contracting Requirements, Division 01, General Requirements, Section 28 00 01, Electronic Safety Basic Requirements and individual Division 28, Electronic Safety Sections.

B. Install equipment having components requiring access (i.e., devices, equipment, electrical boxes, panels, etc.) so that they may be serviced, reset, replaced or recalibrated by service people with normal service tools and equipment. Do not install equipment in obvious passageways, doorways, scuttles or crawlspaces which would impede or block intended usage.

C. Install equipment and products complete as directed by manufacturer's installation instructions. Obtain installation instructions from manufacturer prior to rough-in of equipment and examine instructions thoroughly. When requirements of installation instructions conflict with Contract Documents, request clarification from Engineer prior to proceeding with installation. This includes proper installation methods, sequencing and coordination with other trades and disciplines.

D. Earthwork:
   1. Confirm Earthwork requirements in Contract Documents. In absence of specific requirements, comply with individual Division 28, Electronic Safety Sections and the following:
      a. Perform excavation, dewatering, shoring, bedding, and backfill required for installation of work in this Division in accordance with related earthwork divisions. Contact utilities and locate existing utilities prior to excavation. Repair any work damaged during excavation or backfilling.
      b. Excavation: Do not excavate under footings, foundation bases, or retaining walls.
      c. Provide protection of underground systems. Review the project Geotechnical Report for references to corrosive or deleterious soils which will reduce the performance or service life of underground systems materials.

E. Firestopping:
   1. Confirm Firestopping requirements in Division 07, Thermal and Moisture Protection.
   2. In absence of specific requirements, comply with individual Division 28, Electronic Safety Sections and coordinate location and protection level of fire and/or smoke rated walls, ceilings, and floors. When these assemblies are penetrated, seal around conduit, raceway

and equipment with approved firestopping material. Install firestopping material complete as directed by manufacturer's installation instructions. Meet requirements of ASTM E814, Standard Test Method for Fire Tests of Through-Penetration Fire Stops.

F. Plenums: In plenums, provide plenum rated materials that meet the requirements to be installed in plenums.

3.02 SEISMIC CONTROL

A. Confirm Seismic Control requirements in Division 01, General Requirements, Structural documents, and individual Division 28 Electronic Safety Sections.

B. Earthquake resistant designs for Electronic Safety (Division 28) systems and equipment to conform to regulations of jurisdiction having authority.

C. Restraints which are used to prevent disruption of function of piece of equipment because of application of horizontal force to be such that forces are carried to frame of structure in such a way that frame will not be deflected when apparatus is attached to a mounting base and equipment pad, or to structure in normal way, utilizing attachments provided. Secure equipment and distribution systems to withstand a force in direction equal to value defined by jurisdiction having authority.

D. Provide means to prohibit excessive motion of safety equipment during earthquake.

3.03 REVIEW AND OBSERVATION

A. Confirm Review and Observation requirements in Division 00, Procurement and Contracting Requirements, Division 01, General Requirements, Section 28 00 01, Electronic Safety Basic Requirements and individual Division 28, Electronic Safety Sections.

B. Notify Engineer, in writing, at following stages of construction so that they may, at their option, visit site for review and construction observation:
   1. Underground conduit and wire installation prior to backfilling.
   2. Prior to covering walls when electronic safety systems installation is started.
   3. Prior to ceiling cover/installation.
   4. When main systems, or portions of, are being tested and ready for inspection by AHJ.

C. Final Punch: Costs incurred by additional trips required due to incomplete systems will be the responsibility of the Contractor.

3.04 CUTTING AND PATCHING

A. Confirm Cutting and Patching Requirements in Division 00, Procurement and Contracting Requirements and Division 01, General Requirements. In absence of specific requirements, comply with individual Division 28, Electronic Safety Sections and the following:
   1. Proposed floor cutting/core drilling/sleeve locations to be approved by Project Structural Engineer. Submit proposed locations to Project Structural Engineer. Where slabs are of post tension construction, perform x-ray scan of proposed penetration locations and submit scan results including proposed penetration locations to Project Structural Engineer for approval. Where slabs are of waffle type construction, show column cap extent and cell locations relative to proposed penetration(s).
   2. Cutting, patching and repairing for work specified in this Division including plastering, masonry work, concrete work, carpentry work, and painting included under this Section will be performed by skilled craftsmen of each respective trade in conformance with appropriate Division of Work.
   3. Additional openings required in building construction to be made by drilling or cutting. Use of jack hammer is specifically prohibited. Patch openings in and through concrete and masonry with grout.
   4. Restore new or existing work that is cut and/or damaged to original condition. Patch and repair specifically where existing items have been removed. This includes repairing and painting walls, ceilings, etc. where existing conduit and devices are removed as part of this project. Where alterations disturb lawns, paving, and walks, repair, refinish and leave in condition matching existing prior to commencement of work.

5. Additional work required by lack of proper coordination will be provided at no additional cost to the Owner.

3.05 EQUIPMENT SELECTION AND SERVICEABILITY

A. Replace or reposition equipment which is too large or located incorrectly to permit servicing, at no additional cost to Owner.

3.06 DELIVERY, STORAGE AND HANDLING

A. Confirm requirements in Division 00, Procurement and Contracting Requirements and Division 01, General Requirements. In absence of specific requirements, comply with the individual Division 28, Electronic Safety Sections and the following:
   1. Handle materials delivered to project site with care to avoid damage. Store materials on site inside building or protected from weather, dirt and construction dust.
   2. Protect equipment and pipe to avoid damage. Close conduit openings with caps or plugs. Keep motors and bearings in watertight and dustproof covers during entire course of installation.
   3. Protect devices, panels and similar items until in service.
   4. Products and/or materials that become damaged due to water, dirt and/or dust as a result of improper storage to be replaced before installation.

3.07 DEMONSTRATION

A. Confirm Demonstration requirements in Division 00, Procurement and Contracting Requirements and Division 01, General Requirements, Section 28 00 01, Electronic Safety Basic Requirements and individual Division 28, Electronic Safety Sections.

B. Upon completion of work and adjustment of equipment, test systems, demonstrate to Owner's Authorized Representative and Engineer that equipment furnished and installed or connected under provisions of these Specifications functions in manner required. Provide field instruction to Owner's Staff as specified in Division 01, General Requirements, Section 28 00 01, Electronic Safety Basic Requirements and individual Division 28, Electronic Safety Sections.

C. Manufacturer's Field Services: Furnish services of a qualified factory certified instructor at time approved by Owner, to instruct maintenance personnel, correct defects or deficiencies, and demonstrate to satisfaction of Owner that entire system is operating in satisfactory manner and complies with requirements of other trades that may be required to complete work. Complete instruction and demonstration prior to final job site observations.

3.08 CLEANING

A. Confirm cleaning requirements in Division 00, Procurement and Contracting Requirements, Division 01, General Requirements, Section 28 00 01, Electronic Safety Basic Requirements and individual Division 28 Sections.

B. Upon completion of installation, thoroughly clean exposed portions of equipment, removing temporary labels and traces of foreign substances. Throughout work, remove construction debris and surplus materials accumulated during work.

3.09 INSTALLATION

A. Confirm Installation requirements in Division 00, Procurement and Contracting Requirements, Division 01, General Requirements, Section 28 00 01, Electronic Safety Basic Requirements and individual Division 28, Electronic Safety Sections.

B. Install equipment in accordance with manufacturer's installation instructions, plumb and level and firmly anchored to building structure. Maintain manufacturer's recommended clearances.

C. Start up equipment, in accordance with manufacturer's start-up instructions, and in presence of manufacturer's representative. Test controls and demonstrate compliance with requirements. Replace damaged or malfunctioning controls and equipment.

D. Provide miscellaneous supports required for installation of equipment, conduit and wiring.

3.10 PAINTING

A. Confirm Painting requirements in Division 01, General Requirements and Division 09, Finishes. In absence of specific requirements, comply with individual Division 28, Electronic Safety Sections and the following:
   1. Ferrous Metal: After completion of work, thoroughly clean and paint exposed supports constructed of ferrous metal surfaces, i.e. hangers, hanger rods, equipment stands, with one coat of black asphalt varnish for exterior or black enamel for interior, suitable for hot surfaces.
   2. In electrical and mechanical room, on roof or other exposed areas, equipment not painted with enamel to receive two coats of primer and one coat of rustproof enamel, colors as selected by Owner.
   3. See individual equipment Specifications for other painting.
   4. Structural Steel: Repair damage to structural steel finishes or finishes of other materials damaged by cutting, welding or patching to match original.
   5. Conduit: Clean, primer coat and paint interior conduit exposed in finished areas with two coats paint suitable for metallic surfaces. Color selected by Owner.

3.11 DEMOLITION

A. Confirm requirements in Division 01, General Requirements and Division 02, Existing Conditions. In the absence of specific requirements, comply with individual Division 28, Electronic Safety Sections and the following:
   1. Scope:
      a. It is the intent of these documents to provide necessary information and adjustments to electronic safety system required to meet code, and accommodate installation of new work.
      b. Existing Conditions: Determine exact location of existing utilities and equipment before commencing work, compensate Owner for damages caused by failure to exactly locate and preserve underground utilities. Replace damaged items with new material to match existing. Promptly notify Owner if utilities are found which are not shown on Drawings.
      c. Coordinate with Owner so that work can be scheduled not to interrupt operations, normal activities, building access, access to different areas. Owner will cooperate to best of their ability to assist in coordinated schedule, but will remain final authority as to time of work permitted.
   2. Examination:
      a. Determine exact location of existing utilities and equipment before commencing work, compensate Owner for damages caused by failure to locate and preserve utilities. Replace damaged items with new material to match existing.
      b. Verify that abandoned wiring and equipment serve only abandoned facilities.
      c. Demolition drawings are based on casual field observation and existing record documents.
         1) Verify accuracy of information shown prior to bidding and provide such labor and material as is necessary to accomplish work.
         2) Verify location and number of electronic safety system devices, panels, etc. in field.
      d. Report discrepancies to Engineer before disturbing existing installation.
   3. Promptly notify Owner if systems are found which are not shown on Drawings.
   4. Execution:
      a. Remove existing electronic safety equipment, devices and associated wiring from walls, ceilings, floors, and other surfaces unless shown as retained or relocated on Drawings.
      b. Provide temporary wiring and connections to maintain electrical continuity of existing systems during construction. Remove or relocate electrical boxes, conduit, wiring and equipment as encountered in removed or remodeled areas in existing construction affected by this work.

c. Remove and restore wiring which serves usable existing outlets clear of construction or demolition.
d. If existing junction boxes will be made inaccessible, or if abandoned outlets serve as feed through boxes for other existing electrical equipment which is being retained, provide new conduit and wire to bypass abandoned outlets.
e. If existing conduits pass through partitions or ceiling which are being removed or remodeled, provide new conduit and wire to reroute clear of construction or demolition and maintain service to existing load.
f. Extend circuiting and devices in existing walls to be furred out.
g. Remove abandoned wiring to source of supply.
h. Remove exposed abandoned conduit, including abandoned conduit above accessible ceiling finishes. Cut conduit flush with walls and floors, and patch surfaces.
i. Disconnect and remove electrical devices and equipment serving utilization equipment that has been removed.
j. Maintain access to existing electrical installations which remain active. Modify installation or provide access panel as appropriate.
k. Existing electronic safety system components are indicated on demolition plans. Verify exact location and number of existing devices and components in field. Only partial existing systems shown. Locations of items shown on Drawings as existing are partially based on Record and other Drawings which may contain errors. Verify accuracy of information shown prior to bidding and provide such labor and material as is necessary to accomplish intent of Contract Documents.
l. Remove abandoned wiring to leave site clean.
m. If existing electrical equipment contains PCBs (Polychlorinated Biphenyl), replace with new non-PCB equipment. Dispose of material containing PCBs as required by federal and local regulations.
n. Repair adjacent construction and finishes damaged during demolition work.
o. Maintain access to existing electrical installations which remain active. Modify installation or provide access panel as appropriate.

3.12 ACCEPTANCE

A. Confirm requirements in Division 00, Procurement and Contracting Requirements and Division 01, General Requirements. In absence of specific requirements, comply with individual Division 28, Electronic Safety Sections and the following:
   1. System cannot be considered for acceptance until work is completed and demonstrated to Engineer that installation is in strict compliance with Specifications, Drawings and manufacturer's installation instructions, particularly in reference to following:
      a. Cleaning
      b. Operation and Maintenance Manuals
      c. Training of Operating Personnel
      d. Record Drawings
      e. Warranty and Guaranty Certificates
      f. Start-up/test Documents and Commissioning Reports

3.13 FIELD QUALITY CONTROL

A. Confirm requirements in Division 00, Procurement and Contracting Requirements and Division 01, General Requirements. In absence of specific requirements, comply with individual Division 28, Electronic Safety Sections and the following:
   1. Tests:
      a. Conduct tests of equipment and systems to demonstrate compliance with requirements specified. Reference individual Specification Sections for required tests. Document tests and include in Closeout Documents.
      b. During site evaluations by Engineer, provide appropriate personnel with tools to remove and replace trims, covers, and devices so that proper evaluation of installation can be performed.

3.14 LETTER OF CONFORMANCE

A. Provide Letter of Conformance, copies of manufacturers' warranties and extended warranties with a statement in letter that electronic safety systems were installed in accordance with manufacturer's recommendations, UL listings and FM Global approvals. Include Letter of Conformance, copies of manufacturers' warranties and extended warranties in operating and maintenance manuals.

END OF SECTION

SECTION 28 31 00
FIRE DETECTION AND ALARM

PART 1 - GENERAL

1.01 SUMMARY

A. Work Included:
   1. Fire Alarm Control Panel
   2. Notification Appliance Circuit Panels
   3. Fire Alarm Transmitters
   4. Fire Alarm Annunciators
   5. Manual Pull Stations
   6. Fixed Temperature Heat Detectors
   7. Rate-of-Rise and Fixed Temperature Heat Detectors
   8. Photoelectric Type Detectors
   9. Projected Beam Type Smoke Detectors
   10. Duct-Mounted Smoke Detectors
   11. Relay Modules
   12. Control Modules
   13. Input Modules
   14. Fault Isolation Modules
   15. Combination Horn/Strobes
   16. Strobes
   17. Horns
   18. Weatherproof/Surface Backboxes
   19. Protective Guards
   20. Circuit Conductors
   21. Surge Protection
   22. Batteries
   23. Locks and Keys
   24. Document Storage Cabinet
   25. Instruction Charts
   26. Framed Floor Map

B. Scope:
   1. Provide a new fire alarm system.
   2. Provide a new fire alarm transmitter communication system.
   3. Restricted Areas: In Offices, Courtrooms, and other restricted areas, complete work during nonoperational hours, including evenings and weekends. Coordinate off-hours access to these areas with the Owner. Restricted area spaces must be made available for use by the next period of occupation.

C. In addition, provide design for the following as required in these Contract Documents:
   1. Fire Alarm System
   2. Fire Alarm Transmitter Communication System

D. In addition, remove existing fire alarm system throughout the entire building.

E. System Design:
   1. Design Criteria:
      a. Design systems utilizing equipment, appliance, and device layouts depicted in the contract documents and as required by code.
      b. Fire Alarm Sequence of Operation: Activation of manual fire alarm box, automatic fire detector, or fire extinguishing system causes system to enter “alarm” mode including the following operations:
         1) Local English language annunciation of device location, address and condition and audible and visual alarm signal at control panel and remote annunciators.

2) Manual "acknowledge" function at control panel and remote annunciators to silence audible alarm signal, visual signal remains displayed until initiating alarm is cleared.
3) Transmit “alarm” signal to off-premises equipment, i.e., to local fire department or Owner's selected vendor. Provide necessary connections to transmitter.
4) Activate fire alarm notification appliances.
5) Activate Emergency Control Functions as required by code.
(a) Transmit signal to fire/smoke dampers.
(b) Transmit signal to initiate shutdown of air handling equipment.
(c) Transmit signal to release fire doors.

c. Supervisory Sequence of Operation: Fire sprinkler tamper or supervisory pressure switch activation, or duct-mounted smoke detector activation causes system to enter "supervisory" mode including the following operations:
1) Local English language annunciation of device location, address and condition and audible and visual supervisory signal at control panel and remote annunciators.
2) Manual "acknowledge" function at control panel and remote annunciators to silence audible supervisory signal, visual signal remains displayed until initiating supervisory is cleared.
3) Transmit "supervisory" signal to off-premises equipment.
4) Transmit signal to fire/smoke dampers (duct detector only).
5) Transmit signal to initiate shutdown of air handling equipment (duct detector only).

d. Trouble Sequence of Operation: System trouble, including single ground or open of supervised circuit, or power or system failure, causes system to enter "trouble" mode including the following operations:
1) Local English language annunciation of device location, address and condition and audible and visual trouble signal at control panel and remote annunciators.
2) Manual "acknowledge" function at control panel and remote annunciators to silence audible trouble signal, visual signal remains displayed until initiating trouble is cleared.
3) Transmit "trouble" signal to off-premises equipment.

2. Design of Fire Alarm Transmitter Communication System: Provide design of the fire alarm transmitter communication system as required by code.

1.02 RELATED SECTIONS

A. Contents of Division 28, Electronic Safety and Security and Division 01, General Requirements apply to this Section.

B. Division 26, Electrical requirements apply to this section.

1.03 REFERENCES AND STANDARDS

A. References and Standards as required by Division 28, Electronic Safety and Security and Division 01, General Requirements.

B. In addition, meet the following:
1. NFPA 72, National Fire Alarm and Signaling Code, adopted edition.
2. NFPA 70, National Electrical Code, adopted edition.

1.04 SUBMITTALS

A. Submittals as required by Division 28, Electronic Safety and Security and Division 01, General Requirements.

B. Shop Drawings:
1. Submit shop drawings which include documentation required per NFPA 72; Shop Drawings.
2. In addition, provide the following:
a. Provide system designer NICET certification number or Engineer's signature and seal on shop drawings.

b. Identification of system designer and evidence of qualification or certification of designer as required by AHJ.

C. Operation and Maintenance Manuals:
1. Provide manuals containing the documentation required in NFPA 72; Complete Documentation.
2. In addition, provide the following:
a. One year warranty agreement including parts and labor. Warranty period begins upon date of substantial completion.
b. Instruction chart.

1.05 QUALITY ASSURANCE

A. Quality assurance as required by Division 28, Electronic Safety and Security and Division 01, General Requirements.

B. In addition, meet City of Mt. Vernon, Washington requirements, ordinances and amendments.

C. Designer Qualifications: NICET III or IV or Fire Protection Engineer.

D. Installer Certifications: NICET II minimum.

1.06 WARRANTY

A. Warranty of materials and workmanship as required by Division 28, Electronic Safety and Security and Division 01, General Requirements.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Fire Alarm Control Panel:
1. Potter
2. Silent Knight
3. Or approved equivalent.

B. Notification Appliance Circuit Panels:
1. Same manufacturer as fire alarm control equipment.
2. Alarmsaf
3. Altronix
4. Federal Signal
5. Wheelock
6. Or approved equivalent.

C. Fire Alarm Transmitters:
1. Same manufacturer as fire alarm control equipment.
2. AES Corporation
3. DSC
4. Telguard
5. Or approved equivalent.

D. Fire Alarm Annunciators:
1. Same manufacturer as fire alarm control equipment.
2. No substitutions permitted.

E. Manual Pull Stations:
1. Same manufacturer as fire alarm control equipment.
2. No substitutions permitted.

F. Fixed Temperature Heat Detectors:
1. Same manufacturer as fire alarm control equipment.
2. No substitutions permitted.

G. Rate-of-Rise and Fixed Temperature Heat Detectors:
1. Same manufacturer as fire alarm control equipment.
2. No substitutions permitted.

H. Photoelectric Type Detectors:
   1. Same manufacturer as fire alarm control equipment.
   2. No substitutions permitted.

I. Projected Beam Type Smoke Detectors:
   1. Same manufacturer as fire alarm control equipment.
   2. System Sensor
   3. Xtralis
   4. Fireray
   5. Or approved equivalent.

J. Duct-Mounted Smoke Detectors:
   1. Same manufacturer as fire alarm control equipment.
   2. No substitutions permitted.

K. Relay Modules:
   1. Same manufacturer as fire alarm control equipment.
   2. No substitutions permitted.

L. Control Modules:
   1. Same manufacturer as fire alarm control equipment.
   2. No substitutions permitted.

M. Input Modules:
   1. Same manufacturer as fire alarm control equipment.
   2. No substitutions permitted.

N. Fault Isolation Modules:
   1. Same manufacturer as fire alarm control equipment.
   2. No substitutions permitted.

O. Combination Horn/Strobes:
   1. Same manufacturer as fire alarm control equipment.
   2. Federal Signal
   3. Gentex
   4. System Sensor
   5. Wheelock
   6. Or approved equivalent.

P. Strobes:
   1. Same manufacturer as fire alarm control equipment.
   2. Federal Signal
   3. Gentex
   4. System Sensor
   5. Wheelock
   6. Or approved equivalent.

Q. Horns:
   1. Same manufacturer as fire alarm control equipment.
   2. Federal Signal
   3. Gentex
   4. System Sensor
   5. Wheelock
   6. Or approved equivalent.

R. Weatherproof/Surface Backboxes:
   1. Same manufacturer as fire alarm detection devices or notification appliances.
   2. Or approved equivalent.

S. Protective Guards:
   1. Wire Guard:

a. Same manufacturer as fire alarm control equipment.
b. American Wire Guards
c. Chase Security Systems
d. Safety Technology International
e. Shaw-Perkins
f. Or approved equivalent.

2. Protective Cover:
a. Safety Technology International
b. SIGCOM
c. Or approved equivalent.

T. Circuit Conductors:
1. Allied Wire and Cable
2. Belden
3. CCI
4. West Penn Wire
5. Or approved equivalent.

U. Surge Protection:
1. Ditek
2. Transtector
3. Or approved equivalent.

V. Batteries:
1. Same manufacturer as fire alarm control equipment.
2. Power-Sonic
3. Werker
4. Or approved equivalent.

W. Locks and Keys:
1. Same manufacturer as fire alarm control equipment.
2. Or approved equivalent.

X. Document Storage Cabinet:
1. Same manufacturer as fire alarm control equipment.
2. Meir Products
3. Space Age
4. Or approved equivalent.

Y. Instruction Charts: Confirm make and model with Engineer prior to ordering.

Z. Framed Floor Map: Confirm make and model with Engineer prior to ordering.

AA. Substitutions:
1. For other acceptable manufacturers of specified control units, submit product data showing equivalent features and compliance with Contract Documents.
2. For substitution of products by manufacturers not listed, submit product data showing features and certification by Contractor that the design will comply with contract documents.

BB. Equipment to be supplied by a certified manufacturer representative.

2.02 FIRE ALARM CONTROL PANEL

A. Provide non-proprietary system available through unrestricted distribution.

B. Provide flush mounted units where installed in finished areas; in unfinished areas, surface mounted units are acceptable, unless otherwise noted.

C. Multiprocessor Based: Configurable as an addressable, point identified system.

D. Central Processing Unit (CPU):
1. CPU continuously monitors the communications and data processing cycles of microprocessor. CPU failure generates an audible and visual trouble signal on control

panel and remote annunciators.
2. House the CPU in fire alarm cabinet with sufficient space to allow maximum system expansion and to enclose alphanumeric display.
3. Retain basic life safety software in field programmable non-volatile memory. Provide CPU with minimum capacity of 200 addressable points.
4. Equip CPU with software to provide a control-by-event feature, whereby receipt of an alarm point is programmed to operate control points within system. Provide control-by-event actions for life safety functions in programmable non-volatile memory. CPU software programming for control of systems defined in this Section is installed as part of this Section.

E. System Capabilities:
1. System capable of addressing and operating smoke detectors, manual pull stations, open contact devices and addressable auxiliary control relays on the same communication loop.
2. System capable of displaying sensitivity of each smoke detector, address and condition of fire alarm monitoring points.

F. Program Software:
1. Field configuration program provides programmable operating instructions for system. Store resident program in non-volatile memory.
2. Devices meet criterion specified under materials.
3. Verification and display of sensitivity of each addressable smoke detector can be read using the operating software.

G. Control Panel Display Modules:
1. Provide keyboard display module with minimum 80-character backlit LCD. Each alarm/trouble condition appears in English language with description and location of alarm/supervisory/trouble.
2. Alarm/supervisory/trouble may be acknowledged, silenced and system reset from control panel or remote annunciator(s).

H. Power Supply: Provide power supply(s), adequate to serve control panel modules, remote annunciators, addressable devices, notification appliances and other connected devices.

I. Power Requirements:
1. Loss of 120VAC power automatically causes system to transfer to secondary power. Indicate battery power operation by yellow lamp and audible annunciation at control panel and remote annunciator panels. Upon return of 120VAC power, unit recharges batteries to full capacity and maintains battery on float charge. Provide trickle charge adequate capacity to maintain battery fully charged with automatic rate charge.
2. Provide batteries in locking cabinet manufactured for purpose.

J. Auxiliary Relays: Provide sufficient SPDT auxiliary relay contacts for each function in this portion of the Specifications and for equipment interconnections required under electrical and mechanical specifications.

K. Auxiliary Switches: Provide auxiliary equipment control switches with labeled status indicating lights for each switch.

L. System Reset:
1. Key-accessible control function returns system to normal, non-alarm state, if initiating circuits have cleared.
2. Provide reset on both main fire alarm control panel and remote annunciators.

M. Addressing: Provide each initiating device with its own discrete address.

2.03 NOTIFICATION APPLIANCE CIRCUIT PANELS

A. Provide power supply(s), adequate to serve modules, remote annunciators, initiating devices, notification appliances and other connected devices or appliances.

B. Provide batteries in locking cabinet manufactured for purpose.

2.04 FIRE ALARM TRANSMITTERS

A. Provide flush mounted units where installed in finished areas; in unfinished areas, surface mounted units are acceptable, unless otherwise noted.

B. Electrically supervised, capable of transmitting alarm, supervisory and trouble signals over Cellular lines to off-premises receiver. Signal transmitter interfaces fully with receiver station of local fire department or Owner's selected vendor.

C. For radio and cellular transmitters, provide exterior antenna where required to facilitate communication with supervising station.

2.05 FIRE ALARM ANNUNCIATORS

A. Provide flush mounted units where installed in finished areas; in unfinished areas, surface mounted units are acceptable, unless otherwise noted.

B. Alphanumeric Remote Annunciator with Controls: Back lit LCD alphanumeric annunciator minimum 80 characters long. Provide under locking cover test switch, alarm and trouble buzzer, buzzer silence switch and buzzer silence message and reset switch, flush mount with finished cover, vandal-resistant UV stabilized Lexan (or approved equivalent) overlay and required modules, control panel, etc., to drive annunciator. Self-contained, suitable for wet location where located exterior.

2.06 MANUAL PULL STATIONS

A. Provide flush mounted units where installed in finished areas; in unfinished areas, surface mounted units are acceptable, unless otherwise noted.

B. Semi-flush, red finish, nongrasping operation; maximum pull strength as allowed per ADA criteria.

C. Stations do not allow closure without keyed reset.

2.07 FIXED TEMPERATURE HEAT DETECTORS

A. Provide flush mounted units where installed in finished areas; in unfinished areas, surface mounted units are acceptable, unless otherwise noted.

B. Rated 135 degrees F or 190 degrees F as required by space use.

C. Provide off-white, low-profile detectors.

2.08 RATE-OF-RISE AND FIXED TEMPERATURE HEAT DETECTORS

A. Provide flush mounted units where installed in finished areas; in unfinished areas, surface mounted units are acceptable, unless otherwise noted.

B. Responding to 15 degrees F temperature rise per minute and to 135 degrees F fixed temperature as required by space use.

C. Provide off-white, low-profile detectors.

2.09 PHOTOELECTRIC TYPE DETECTORS

A. Provide flush mounted units where installed in finished areas; in unfinished areas, surface mounted units are acceptable, unless otherwise noted.

B. Panel adjustable sensitivity, LED source, multiple cell, 360 degree smoke entry, visual latching operation indicator, insect screen, functional test switch, two-wire operation and vandal-resistant locking feature.

2.10 PROJECTED BEAM TYPE SMOKE DETECTORS

A. Infrared emitter and receiver, adjustable reception threshold, microprocessor self-adjusting compensation for optic contamination, acrylic anti threshold, fog infrared filter, green power indicating LED, red alarm LED and yellow trouble LED. Voltage and RF suppression, compensating circuitry for vibration and temporary obscuration. Auxiliary contacts. Integral sensitivity test feature.

B. Provide each detector with an addressable module and a remote LED/test switch.

2.11 DUCT-MOUNTED SMOKE DETECTORS

A. Photoelectric type. Duct sampling tubes extending width of duct, visual indication of detector actuation, direct housing mount. Detector powered from control panel, power on indicator light. Detector rated for air velocity, humidity and temperature of duct and environment where installed.

2.12 RELAY MODULES

A. Signaling line circuit interface module that connects to other building systems for control of fire/life safety functions, e.g., air-handler shutdown, fire/smoke damper closure, elevator recall.

B. Module powered from control panel.

2.13 CONTROL MODULES

A. Signaling line circuit interface module that provides notification appliance circuits or system control outputs.

B. Module powered from control panel.

2.14 INPUT MODULES

A. Signaling line circuit interface module that provides initiating device circuits for connection to contact closure initiating devices.

B. Module powered from control panel.

2.15 FAULT ISOLATION MODULES

A. Signaling line circuit interface modules that provide isolation of wire-to-wire shorts on a signaling line circuit with automatic reconnection upon correction of short circuit.

B. Provide module with status indicator LED.

2.16 COMBINATION HORN/STROBES

A. Multi-candela, flush wall and ceiling mount, white finish, insect-proof.

B. Provide horn/strobes that meet the latest requirements of NFPA 72, ANSI 117.1 and UL 1971. Candela rating as required by NFPA 72.

C. Must be compatible with fire alarm control equipment and notification appliance circuit panels.

2.17 STROBES

A. Multi-candela, flush wall and ceiling mount, white finish, insect-proof.

B. Provide strobes that meet the latest requirements of NFPA 72, ANSI 117.1 and UL 1971. Candela rating as required by NFPA 72.

C. Must be compatible with fire alarm control equipment and notification appliance circuit panels.

2.18 HORNS

A. Flush wall and ceiling mount, white finish, insect-proof.

B. Provide horns that meet the latest requirements of NFPA 72.

C. Must be compatible with fire alarm control equipment and notification appliance circuit panels.

2.19 PROTECTIVE GUARDS

A. Wire Guard: Steel wire guard.

B. Protective Cover: Polycarbonate construction.

2.20 CIRCUIT CONDUCTORS

A. Copper or optical fiber; color code and label. Type FPL, FPLR and FPLP. Cable type as required by the NEC and the manufacturer.

B. Minimum signaling line circuit and initiating device circuit wire size: AWG18.

C. Minimum notification appliance circuit wire size: AWG14, or as approved by Engineer.

D. Fiber optic cable as required by manufacturer.

E. Provide two hour rated pathway or two hour rated circuit integrity cabling for all wiring used to activate or monitor smoke control equipment.

2.21 SURGE PROTECTION

A. Install per manufacturer's instructions and recommendations.

B. In accordance with IEEE C62.41 B3 combination waveform and NFPA 70; except for optical fiber conductors.

C. Provide for alternating current circuits powering fire alarm equipment.

D. Initiating Device Circuits, Notification Appliance Circuits and Communications Circuits: Rated to protect applicable equipment; for 24V(dc) maximum dc clamping voltage of 36V(dc), line-to-ground and 72V(dc), line-to-line.

2.22 BATTERIES

A. Provide additional cabinet, if required due to space limitations in control panels.

2.23 LOCKS AND KEYS

A. Deliver keys to Owner.

B. Provide same standard lock and key for each key operated switch and lockable panel and cabinet; provide five keys of each type.

2.24 DOCUMENT STORAGE CABINET

A. Suitable for as-built drawings, operation and maintenance manual, system data file disk and tools.

B. Constructed from steel with baked enamel finish; size adequate for full size drawings, operation and maintenance manual, spare parts and tools.

2.25 INSTRUCTION CHARTS

A. Printed instruction chart for operators, showing steps to be taken when signal is received (normal, alarm, supervisory and trouble); easily readable from normal operator's station.

B. Frame: Stainless steel or aluminum with polycarbonate or glass cover.

2.26 FRAMED FLOOR MAP

A. Provide framed floor plan of facility.

B. Frame: Stainless steel or aluminum with polycarbonate or glass cover.

PART 3 - EXECUTION

3.01 GENERAL INSTALLATION REQUIREMENTS

A. Provide a complete and operable system compliant with all applicable codes and standards.

B. Obtain Engineer's approval of locations of devices, appliances and annunciators before installation.

C. Circuits:
   1. Signaling Line Circuits (SLC): Class B
   2. Notification Appliance Circuits (NAC): Class B.

D. Spare Capacity:
   1. New Notification Appliance Circuits:
      a. Minimum 25 percent spare current capacity.
      b. Maximum 10 percent voltage drop.
      c. Utilize UL maximum current draw value for notification appliances in calculations.
   2. New Signaling Line Circuit: Minimum 25 percent spare device capacity.

E. Power Sources:
   1. Primary: Dedicated branch circuits of facility power distribution system.
   2. Secondary: Storage batteries.

3. Capacity: Sufficient to operate fire alarm system under normal supervisory condition for 24 hours and operate alarm signals for five minutes at end of standby period.

F. Obtain approval of system design from AHJ prior to installation. Do not begin installation without approval from AHJ and submittal review comments from Engineer.

G. Install in accordance with applicable codes, NFPA 72, NFPA 70 and the Contract Documents.

H. In accordance with manufacturer's instructions, provide wiring, conduit and outlet boxes required for the erection of a complete system as described in these specifications, as shown on Drawings and as required by AHJ.

I. Conceal wiring, conduit, boxes and supports where installed in finished areas.

J. Provide raceway system for cabling concealed in walls and hard ceilings and in locations where cabling is exposed. Where exposed, provide surface raceway in finished areas and surface mounted EMT in non-finished areas. Paint exposed raceway and conduit to match the adjacent surface.

K. Provide cabling and conduits system suitable for wet locations for below grade systems.

L. At junction boxes and termination points, provide identification tags on wires and cables.

M. Route wiring to avoid blocking access to equipment requiring service, access, or adjustment.

N. Existing Components:
   1. Existing Fire Alarm System: Maintain fully operational until new equipment has been tested and accepted.
   2. Disable system only to make switchovers and connections.
      a. Notify Owner before partially or completely disabling system.
      b. Notify local fire service.
      c. Make notifications at least five working days in advance.
      d. Make temporary connections to maintain service in areas adjacent to work area.
   3. Provide fire watch in areas where the system is not functioning if required by the AHJ.
   4. Equipment Removal:
      a. Remove existing system after acceptance of new fire alarm system. Restore damaged surfaces.
      b. Package operational fire alarm and detection equipment that has been removed and offer to Owner prior to disposal.
      c. Remove from site and legally dispose of remainder of existing material.
   5. On-Premises Supervising Station: Include, as part of this work, modifications necessary to existing supervising station to accommodate new fire alarm work.

O. Fire Safety Systems Interfaces:
   1. Provide conduit, wiring, boxes and terminations from fire alarm system to monitored components. Provide a separate input module for each switch or relay to be monitored.
      a. Alarm Inputs: Provide connection in accordance with NFPA 72 for the following systems and components:
         1) Fire sprinkler water flow switches.
         2) Other alarm inputs.
      b. Supervisory Inputs: Provide connection in accordance with NFPA 72 for the following systems and components:
         1) Fire sprinkler water control valve tamper switches.
      c. Trouble Inputs: Provide connection in accordance with NFPA 72 for the following systems and components:
         1) Other trouble inputs.
   2. Fire Safety Functions: Provide power and control conduit, wiring, boxes and terminations to power devices and interface to fire alarm system.
      a. HVAC Systems:
         1) Fire/Smoke Dampers and Smoke Dampers:
            (a) Provide required smoke detectors, relays, wiring and the like.

(b) Connect control and power wiring to dampers per manufacturer's instructions.
(c) Verify quantities, location and requirements of dampers with Division 23, HVAC Drawings and Specifications and mechanical system installer.

2) Air Moving Systems:
(a) Provide duct-mounted smoke detector for air systems with air flow rates exceeding 2000 CFM. Coordinate with Division 23, HVAC.
(b) Install duct-mounted smoke detector(s) on return side of air system.
(c) Provide control wiring from addressable relay contacts to air handling equipment controller.
(d) Provide duct-mounted smoke detectors rated for air velocity, temperature and humidity of duct. Verify quantities, locations and requirements with Division 23, HVAC Drawings and mechanical system installer.
(e) Where duct-mounted smoke detectors are mounted in inaccessible building void spaces provide access hatch. Provide access hatch with fire rating equivalent to rating of wall, ceiling, or shaft being penetrated.
(f) Provide control wiring from addressable relay contacts to HVLS fan equipment controller.

P. Inspection and Testing for Completion:
1. System testing and commissioning to be performed by a certified manufacturer representative.
2. Perform inspection and testing in accordance with NFPA 72 and requirements of local authorities; document each inspection and test.
3. Document audibility measurements and verify intelligibility for each space on record drawings.
4. Provide the services of the installer's supervisor or person with equivalent qualifications to supervise inspection and testing, correction and adjustments.
5. Provide tools, software and supplies required to accomplish inspection and testing.
6. Prepare for testing by ensuring that work is complete and correct; perform preliminary tests as required to test system.
7. Correct defective work, adjust for proper operation and retest until entire system complies with Contract Documents.
8. Notify Owner seven days prior to beginning completion inspections and tests.
9. Notify authorities having jurisdiction and comply with their requirements for scheduling inspections and tests and for observation by their personnel.
10. Diagnostic Period: After successful completion of inspections and tests, operate system in normal mode for at least 14 days without any system or equipment malfunctions.
a. Record all system operations and malfunctions.
b. If a malfunction occurs, start diagnostic period over after correction of malfunction.
c. Replace devices with readings outside of allowed value at time of system check out.
d. Owner will provide attendant operator personnel during diagnostic period; schedule training to allow Owner personnel to perform normal duties.
e. At end of successful diagnostic period, complete and submit NFPA 72 "Inspection and Testing Form."

Q. Owner Personnel Instruction:
1. Provide the following instruction to designated Owner personnel:
a. Hands-On Instruction: On-site, using operational system.
b. Classroom Instruction: Owner furnished classroom, on-site or at other local facility.
2. Basic Operation: One-hour sessions for attendant personnel, security officers and engineering staff; combination of classroom and hands-on:
a. Initial Training: One session pre-closeout.
b. Refresher Training: One session post-occupancy.
3. Detailed Operation: Two-hour sessions for engineering and maintenance staff; combination of classroom and hands-on:
a. Initial Training: One session pre-closeout.

b. Refresher Training: One session post-occupancy.

4. Furnish the services of instructors and teaching aids; have copies of operation and maintenance data and record drawings available during instruction.
5. Provide means of evaluation of trainees suitable to type of training given; report results to Owner.

R. Closeout:

1. Closeout Demonstration:
   a. Demonstrate proper operation of functions to Owner.
   b. Be prepared to conduct any of the required tests.
   c. Have at least one copy of operation and maintenance data, copy of project record drawings, input/output matrix and operator instruction chart(s) available during demonstration.
   d. Have authorized technical representative of control unit manufacturer present during demonstration.
   e. Demonstration may be combined with inspection and testing required by AHJ. Notify AHJ in time to schedule demonstration.
   f. Repeat demonstration until successful.
2. Substantial Completion of the project cannot be achieved until inspection and testing is successful and:
   a. Specified diagnostic period without malfunction has been completed.
   b. Approved operating and maintenance data has been delivered.
   c. Spare parts, extra materials and tools have been delivered.
   d. All aspects of operation have been demonstrated to Engineer.
   e. Final acceptance of the fire alarm system has been given by authorities having jurisdiction.
   f. Occupancy permit has been granted.
   g. Specified pre-closeout instruction is complete.
3. Perform post-occupancy instruction within three months after date of occupancy.

3.02 FIRE ALARM CONTROL PANEL

A. Reference 3.01, General Installation Requirements.

B. Install per manufacturer's instructions and recommendations.

C. Provide control panels with 120VAC dedicated circuit per NFPA requirements.

D. Do not install cabinets or equipment below the battery cabinet. Do not locate battery and charging system cabinets in ceiling space.

E. Provide instruction charts at each control panel where system operations are performed. Obtain approval from the Engineer prior to mounting.

F. Perform system programming at the fire alarm control panel. Program the system without shutting the system down. Programming is done off line. Provide copy of site-specific program on electronic storage media. Locate in document enclosure.

G. Room Name Labeling: Control panel schedules, programming and labeling for electrical equipment, to use the room names and room numbers that the Engineer adopts at the date of substantial completion of construction. This work is to be done at no added cost to the Owner.

H. Programmable Function Keys: Provide control panel accessible function keys for the notification bypass, fire drill, fire door bypass, elevator control bypass, and supervising station bypass.

I. Programmed control point activation includes selective control of HVAC, fire door release, elevator recall, elevator shunt trip, and other fire safety and auxiliary functions.

J. Provide machine printed labels on switches and indicators.

3.03 NOTIFICATION APPLIANCE CIRCUIT PANELS

A. Reference 3.01, General Installation Requirements.

B. Install per manufacturer's instructions and recommendations.

C. Provide notification appliance circuit panel power supplies with 120VAC dedicated circuit per NFPA requirements.

D. Do not install cabinets or equipment below the battery cabinet. Do not locate battery and charging system cabinets in ceiling space.

3.04 FIRE ALARM TRANSMITTERS

A. Reference 3.01, General Installation Requirements.

B. Install per manufacturer's instructions and recommendations.

C. Provide conduit and wiring for connections to the transmitter as required for fire alarm system off site supervision.

D. Verify and provide call sequence and message as directed by Owner and the AHJ.

3.05 FIRE ALARM ANNUNCIATORS

A. Reference 3.01, General Installation Requirements.

B. Install per manufacturer's instructions and recommendations.

C. When required by the manufacturer, provide fire alarm annunciator with 120VAC dedicated circuit per NFPA requirements.

D. Provide machine printed labels on switches and indicators.

E. Verify location with AHJ before installation.

3.06 MANUAL PULL STATIONS

A. Reference 3.01, General Installation Requirements.

B. Install per manufacturer's instructions and recommendations.

C. Provide machine printed address labels on addressable devices.

D. Provide protective guard where device is subject to abuse and where required by AHJ.

3.07 FIXED TEMPERATURE HEAT DETECTORS

A. Reference 3.01, General Installation Requirements.

B. Install per manufacturer's instructions and recommendations.

C. Provide machine printed address labels on addressable devices. Labels to be visible from the floor without magnification.

D. Provide protective guard where device is subject to abuse and where required by AHJ.

3.08 RATE-OF-RISE AND FIXED TEMPERATURE HEAT DETECTORS

A. Reference 3.01, General Installation Requirements.

B. Install per manufacturer's instructions and recommendations.

C. Provide machine printed address labels on addressable devices. Labels to be visible from the floor without magnification.

D. Provide protective guard where device is subject to abuse and where required by AHJ.

3.09 PHOTOELECTRIC TYPE DETECTORS

A. Reference 3.01, General Installation Requirements.

B. Install per manufacturer's instructions and recommendations.

C. Provide machine printed address labels on addressable devices. Labels to be visible from the floor without magnification.

D. Provide protective guard where device is subject to abuse and where required by AHJ.

3.10 PROJECTED BEAM TYPE SMOKE DETECTORS

A. Reference 3.01, General Installation Requirements.

B. Install per manufacturer's instructions and recommendations.

C. Provide machine printed address labels on addressable devices. Labels to be visible from the floor without magnification.

D. Provide protective guard where device is subject to abuse and where required by AHJ.

3.11 DUCT-MOUNTED SMOKE DETECTORS

A. Reference 3.01, General Installation Requirements.

B. Install per manufacturer's instructions and recommendations.

C. Provide machine printed address labels on addressable devices. Labels to be visible from the floor without magnification.

3.12 RELAY MODULES

A. Reference 3.01, General Installation Requirements.

B. Install per manufacturer's instructions and recommendations.

C. Provide machine printed address labels on addressable devices. Labels to be visible from the floor without magnification.

3.13 CONTROL MODULES

A. Reference 3.01, General Installation Requirements.

B. Install per manufacturer's instructions and recommendations.

C. Provide machine printed address labels on addressable devices. Labels to be visible from the floor without magnification.

3.14 INPUT MODULES

A. Reference 3.01, General Installation Requirements.

B. Install per manufacturer's instructions and recommendations.

C. Provide machine printed address labels on addressable devices. Labels to be visible from the floor without magnification.

3.15 FAULT ISOLATION MODULES

A. Reference 3.01, General Installation Requirements.

B. Install per manufacturer's instructions and recommendations.

C. Provide machine printed address labels on addressable devices. Labels to be visible from the floor without magnification.

D. Provide Fault Isolator Modules for signaling line circuit per code requirements and manufacturer instructions.

3.16 COMBINATION HORN/STROBES

A. Reference 3.01, General Installation Requirements.

B. Install per manufacturer's instructions and recommendations.

C. Provide machine printed labels on notification appliances with appliance circuit number and sequence. Labels to be visible from the floor without magnification.

D. Provide protective guard where device is subject to abuse and where required by AHJ.

3.17 STROBES

A. Reference 3.01, General Installation Requirements.

B. Install per manufacturer's instructions and recommendations.

C. Provide machine printed labels on notification appliances with appliance circuit number and sequence. Labels to be visible from the floor without magnification.

D. Provide protective guard where device is subject to abuse and where required by AHJ.

3.18 HORNS

A. Reference 3.01, General Installation Requirements.

B. Install per manufacturer's instructions and recommendations.

C. Provide machine printed labels on notification appliances with appliance circuit number and sequence. Labels to be visible from the floor without magnification.

D. Provide protective guard where device is subject to abuse and where required by AHJ.

3.19 WEATHERPROOF/SURFACE BACKBOXES

A. Reference 3.01, General Installation Requirements.

B. Install per manufacturer's instructions and recommendations.

C. Provide manufacturer's weatherproof backbox listed for use in areas where the device or appliance is subject to humidity in excess of listed rating. Provide manufacturer surface backboxes where devices cannot be installed recessed.

3.20 PROTECTIVE GUARDS

A. Reference 3.01, General Installation Requirements.

B. Install per manufacturer's instructions and recommendations.

C. Wire Guard.

D. Protective Cover.

3.21 CIRCUIT CONDUCTORS

A. Reference 3.01, General Installation Requirements.

B. Install per manufacturer's instructions and recommendations.

C. Provide wiring to meet the requirements of national, state and local electrical codes. Provide color coded wiring as recommended and specified by the fire alarm and detection system manufacturer. Provide Type FPLR cable when in a riser application or FPLP cable when installed in plenums.

3.22 SURGE PROTECTIONS

A. Reference 3.01, General Installation Requirements.

B. Install per manufacturer's instructions and recommendations.

3.23 BATTERIES

A. Reference 3.01, General Installation Requirements.

B. Install per manufacturer's instructions and recommendations.

C. Provide machine printed label with installation date.

3.24 LOCKS AND KEYS

A. Deliver to Owner.

3.25 DOCUMENT STORAGE CABINET

A. Reference 3.01, General Installation Requirements.

B. Install per manufacturer's instructions and recommendations.

C. Provide document storage cabinet adjacent to fire alarm control panel.

3.26 INSTRUCTION CHARTS

A. Reference 3.01, General Installation Requirements.

B. Install per manufacturer's instructions and recommendations.

C. Install chart adjacent to fire control panel.

3.27 FRAMED FLOOR MAP

A. Reference 3.01, General Installation Requirements.

B. Install per manufacturer's instructions and recommendations.

C. Provide framed floor plan of facility adjacent to the annunciator panel identifying room names/numbers, device/addresses or fire zone number and description as utilized on the annunciator panel, as required by local AHJ. Check with the local fire department for size and approved mounting location.

END OF SECTION

Appendix A

Vendor Services Agreement

(For Information Only)

VENDOR SERVICES AGREEMENT

Skagit County, through the Department of Facilities Management (hereinafter referred to as County) and _____ (hereinafter referred to as Contractor), for and in consideration of the mutual benefits do hereby agree as follows:

1. Contractor will provide the following service/products at such time and in such manner as described in **"Exhibit A".** In the event of any inconsistency or ambiguity in the Bid and Contract Documents, the higher quality, quantity or cost shall prevail and govern.

2. County will compensate Contractor a maximum of $_____ plus any applicable taxes, chargeable to GL expenditure code #340 56438106220, or any others that may apply.

3. The parties agree that Contractor is an independent contractor, and not an employee nor agent of Skagit County. Contractor hereby agrees not to make any representations to any third party, nor to allow such third party to remain under the misimpression that Contractor is an employee of Skagit County. All payments made hereunder and all services performed shall be made and performed pursuant to this Agreement by the Contractor as an independent contractor. Contractor will defend, indemnify and hold harmless the County, its officers, agents or employees from any loss or expense, including but not limited to settlements, judgments, setoffs, attorneys' fees or costs incurred by reason of claims or demands because of breach of the provisions of this paragraph. Further the Contractor represents that all employees and sub-contractors are covered under Industrial Insurance in compliance with R.C.W. Title 51.

4. Defense & Indemnity Agreement:
The Contractor agrees to defend, indemnify and save harmless the County, its appointed and elective officers and employees, from and against all loss or expense, including but not limited to judgments, settlements, attorney's fees and costs by reason of any and all claims and demands upon the County, its elected or appointed officials or employees for damages because of personal or bodily injury, including death at any time resulting therefrom, sustained by any person or persons and on account of damage to property including loss of use thereof, whether such injury to persons or damage to property is due to the negligence of the Contractor, its subcontractors, its elected officers, employees or their agents, except only such injury or damage as shall have been occasioned by the sole negligence of the County, its appointed or elected officials or employees. It is further provided that no liability shall attach to the County by reason of entering into this contract, except as expressly provided herein.

5. This Contract shall commence on date of execution and continue until either party terminates by giving 30 days notice in writing either personally delivered or mailed postage prepaid by certified mail, return receipt requested to the party's last known address, but in no event shall the contract continue for more than one year from date of execution.

6. The Contractor shall not assign any interest in this Contract and shall not transfer any interest in same without prior written County consent.

7. The Contractor will secure, at his own expense, all personnel required in performing said services under this Contract. Contractor shall be personally liable for applicable payroll, labor and industries premiums and all applicable taxes and shall hold County harmless therefrom.

8. The Contractor shall provide proof of insurance for general comprehensive liability in the amount of $2,000,000 to cover Contractor's activities during the term of this Contract. Proof of insurance shall be in a form acceptable and approved by the County. A certificate of insurance naming the County, its elected officials, and employees as additional insured's and naming the County as a certificate holder shall accompany this Contract for signing. Thirty (30) days' written notice to the County of cancellation of the insurance policy is required. No contract shall form until and unless a copy of the certificate of insurance, in the amount required, is attached hereto as set forth in **"Exhibit "B"**. The contractors insurance shall be primary. Any insurance or self-insurance maintained by the County, its officers, officials, employees or volunteers shall be excess of Contractors insurance and shall not contribute to it.

9. Prevailing Wages:
Contractor and subcontractor shall submit a "Statement of Intent to Pay Prevailing Wages" prior to submitting first application for payment. Each statement of intent to pay prevailing wages must be approved by the Industrial Statistician of the Department of Labor and Industries before it is submitted to the County. Unless otherwise authorized by the Department of Labor and Industries, each voucher claim submitted by a Contractor for payment on a project estimate shall state that the prevailing wages have been paid in accordance with the pre-filed statement or statements of Intent to Pay Prevailing Wages on file with the public agency.

10. Termination for Public Convenience:
The County may terminate the contract in whole or in part whenever the County determines, in its sole discretion that such termination is in the best interests of the County. Whenever the contract is terminated in accordance with this paragraph, the Contractor shall be entitled to payment for actual work performed at unit contract prices for completed items of work. An equitable adjustment in the contract price for partially completed items of work will be made, but such adjustment shall not include provision for loss of anticipated profit on deleted or uncompleted work. Termination of this contract by the County at any time during the term, whether for default or convenience, shall not constitute a breach of contract by the County. If sufficient funds are not appropriated or allocated for payment under this contract for any future fiscal period, the County will not be obligated to make payments for services or amounts incurred after the end of the current fiscal period. No penalty or expense shall accrue to the County in the event this provision applies.

CONTRACTOR:

_____
Signature & Title of Signatory
(Date _____)

_____
Print Name

_____
Title

Mailing Address:
_____
_____

Telephone No. _____
Fed. Tax ID # _____
Contractor Lic. #. _____

DATED this _____ day of _____, 2023.

BOARD OF COUNTY COMMISSIONERS
SKAGIT COUNTY, WASHINGTON

Ron Wesen, Chair

Lisa Janicki, Commissioner

Attest:

Peter Browning, Commissioner

Clerk of the Board

For contracts under $5,000:
Authorization per Resolution R20030146

Recommended:

County Administrator

Department Head

Approved as to form:

Civil Deputy Prosecuting Attorney

Approved as to indemnification:

Risk Manager

Approved as to budget:

Budget & Finance Director

EXHIBIT "A"

SCOPE OF SERVICES

Project Title: Fire Alarm Replacements
Location: Courthouse, 205 W Kincaid Street, Mount Vernon, WA 98273
Administration Building, 700 S 2nd Street, Mount Vernon, WA 98273

Vendor will supply all labor, demolition, materials, equipment, and supervision for a prevailing wage project to replace the fire alarm and detection systems inside the Administration Building and Courthouse. All work must be completed after normal business hours (8:00 am – 4:30 pm) or on weekends / holidays. No noisy work or drilling is allowed during the day. Vendor may request ability to complete nondisruptive work in common areas at least 24 hours ahead with the Facilities Management Department but cannot proceed until coordination with other departments and approval is received.

Full scope of this Agreement is included in the following drawings and specifications:

1. Administration Building Drawings dated October 10, 2022 (14 pages)
2. Courthouse Drawings dated October 10, 2022 (10 pages)
3. Fire Alarm Replacements Project Manual dated May 1, 2023 (340 pages)

Contractor shall not start work until a schedule has been provided to County Facilities Management and an official Notice to Proceed has been issued.

COMPENSATION

Total compensation shall not exceed $_____

Notes:

- Any invoice may be submitted to the following Skagit County Facilities Management email address scfacilities@co.skagit.wa.us.
- An Intent to Pay Prevailing Wages will need to be filed with the Department of Labor and Industries for value and duration of the contract prior to any work, with Affidavits filed prior to the County submitting a Notice of Completion. Intent and affidavit instructions can be located at https://lni.wa.gov/licensing-permits/public-works-projects/contractors-employers/.
- Prevailing wage rates may be found at https://lni.wa.gov/licensing-permits/public-works-projects/prevailing-wage-rates/.
- Washington State Sales Tax Rate: https://webgis.dor.wa.gov/taxratelookup/SalesTax.aspx shall be added to the contract based on location of services.
- All identified deficiencies shall be shared with Skagit County Facilities Management for option to correct with County technicians or to authorize Contractor to make repairs.
- All applicable city, county, state permits, inspections will be the responsibility to procure or be onsite by the selected contractor and be present for all required inspections.

EXHIBIT "B"

PROOF OF INSURANCE

The Contractor shall provide proof of insurance for Commercial General Liability or Professional Liability in the amount of $2,000,000.00 to cover Contractor's activities during the term of this Contract. Proof of insurance shall be in a form acceptable and approved by the County. Contractors insurance shall be primary.

The type of insurance required by this Agreement is marked below.

✓ 1) Commercial General Liability Insurance
Certificate Holder – Skagit County
The Certificate must name the County as additional insured: Skagit County, its elected officials, officers and employees are named as additional insured.
Thirty (30) days written notice to the County of cancellation of the insurance policy.

☐ 2) Professional Liability
Certificate Holder – Skagit County
Thirty (30) days written notice to the County of cancellation of the insurance policy

NOTE: No contract shall form until and unless a copy of the Certificate of Insurance, properly completed and in the amount required, is attached hereto.

☐ 3) Insurance is waived

Date:_____
Risk Manager

Appendix B

Previously Conducted Hazardous Materials Test Results

Skagit County Courthouse

Lab/Cor, Inc.

A Professional Service Corporation in the Northwest

December 11, 1992

Prezant Associates, Inc.
711 6th Avenue North Suite 200
Seattle, WA 98109-4213

ATTENTION: MUNAF KHAN

RE: TEM RESULTS FOR PROJECT #92-1705 - SKAGIT COUNTY COURTHOUSE

Enclosed are results for the TEM samples which were submitted to our office for analysis on November 18, 1992. Your sample numbers BS 1116-S and BS 1116-O were assigned our laboratory sample numbers 92087-01 through 92087-02, respectively.

Preparation of the above samples was conducted in accordance with the Yamate Level 2 protocol for the identification of asbestos. Briefly, the samples were collapsed with acetone, then etched in a low temperature plasma etcher to remove the top surface of the filter and other organics. The samples were carbon coated at high vacuum with a thin layer of carbon, placed on 200 mesh copper grids and allowed to dissolve in acetone until cleared of filter debris.

TEM analysis was performed using a Philips 410 transmission electron microscope equipped with an EDAX PV9800 X-ray analyzer. The air samples were analyzed at a screen magnification of approximately 17,621X using an accelerating voltage of 100 KV. The sizing of grid openings was performed on the microscope at a magnification of approximately 550X.

If further clarification of these results is required, please do not hesitate to call me.

Thank you for allowing the staff at Lab/Cor, Inc. the opportunity to provide you with analytical services.

Yours truly,

John Harris
Lab/Cor, Inc.

7619 6th Avenue NW, Seattle WA 98117 (206) 781-0155 (206) 789-8424 (Fax)

NVLAP lab code #1920

Certified by the National Institute of Standards & Technology under the NVLAP program for TEM analysis of airborne asbestos. This does not constitute endorsement of results by NIST but successful participation in the proficiency testing program and fulfillment of all requirements established by NIST.

Lab/Cor, Inc.
Report Number: 92087
December 12, 1992

TEM-ASBESTOS FIBER COUNT - RAW DATA

SAMPLE: Sample #92087-01
#BS1116-S, Microfilm Department, NW Storage room

Grid Opening	Structure No.	Identification	Structure Type	Length (microns)	Width (microns)	Aspect Ratio
1	NSD**					
2	1	Asbestos (Chrysotile)	Fiber	34	.08	425
	2	Asbestos (Chrysotile)	Fiber	23	.08	288
3	NSD					
4	NSD					
5	1	Asbestos (Chrysotile)	Matrix* - 1	7	4	
			*(avg fibrit size)	.70	.09	8
6	1	Nonasbestos	Fiber	1.20	.40	3
7	1	Nonasbestos	Matrix* - 1	2.50	1.50	
			*(avg fibrit size)	1	.09	11
8	NSD					
9	NSD					
10	1	Nonasbestos	Fiber	1	.10	10
	2	Nonasbestos	Fiber	.90	.05	18

NSD** - No Structures Detected

Lab/Cor, Inc.
Report Number: 92087
Job Location: Skagit Co. Courthouse
December 12, 1992

Table 1

FINAL SUMMARY OF TRANSMISSION ELECTRON MICROSCOPY ANALYSIS FOR AIRBORNE ASBESTOS

ASBESTOS STRUCTURES OF ALL LENGTHS

SAMPLE NO.	CLIENT NO.	DESCRIPTION	FIBER TYPE	CONCENT. (S/CC)	95% CONFIDENCE INTERVAL (STRUC. / CC)	ANALYTICAL SENSITIVITY (STRUC. / CC)	CONCENT. (S/MM2)	VOLUME (LITRES)	STRUC. COUNT	NUMBER OF GRID OPENINGS	FILTER AREA (MM2)	GRID OPENING AREA (MM2)
92087-01	BS1116-S	MICROFILM DEPARTMENT	AMPHIBOLE	<.004	0 - .01	.004	<13.2	1380	0	10	385	.007584
		NW STORAGE ROOM	CHRYSOTILE	.011	.002 - .03	.004	39.6	1380	3	10	385	.007584
			TOTAL	.011	.002 - .03		39.6		3			
92087-02	BS1116-O	MICROFILM DEPARTMENT	AMPHIBOLE	<.004	0 - .01	.004	<13.6	1320	0	10	385	.007376
		NE OFFICE	CHRYSOTILE	<.004	0 - .01	.004	<13.6	1320	0	10	385	.007376
			TOTAL	<.004	0 - .01		<13.6		0			

Lab/Cor, Inc.
Report Number: 92087
Job Location: Skagit Co. Courthouse
December 12, 1992

TABLE 2

FINAL SUMMARY OF TRANSMISSION ELECTRON MICROSCOPY ANALYSIS FOR AIRBORNE ASBESTOS

ASBESTOS STRUCTURES GREATER THAN FIVE MICRONS IN LENGTH

SAMPLE NO.	CLIENT NO.	DESCRIPTION	FIBER TYPE	CONCENT. (S/CC)	95% CONFIDENCE INTERVAL (STRUC. / CC)	ANALYTICAL SENSITIVITY (STRUC. / CC)	CONCENT. (S/MM2)	VOLUME (LITRES)	STRUC. COUNT	NUMBER OF GRID OPENINGS	FILTER GRID AREA (MM2)	GRID OPENING AREA (MM2)
92087-01	BS1116-S	MICROFILM DEPARTMENT NW STORAGE ROOM	AMPHIBOLE	<.004	0 - .01	.004	<13.2	1380	0	10	385	.007584
			CHRYSOTILE	.007	.001 - .03	.004	26.4	1380	2	10	385	.007584
			TOTAL	.007	.001 - .03		26.4		2			
92087-02	BS1116-Q	MICROFILM DEPARTMENT NE OFFICE	AMPHIBOLE	<.004	0 - .01	.004	<13.6	1320	0	10	385	.007376
			CHRYSOTILE	<.004	0 - .01	.004	<13.6	1320	0	10	385	.007376
			TOTAL	<.004	0 - .01		<13.6		0			

Lab/Cor, Inc.
Report Number: 92087
December 12, 1992

TEM ASBESTOS FIBER COUNT - RAW DATA

SAMPLE: Sample #92087-02
#BS1116-O, Microfilm Department, NE Office

Grid Opening	Structure No.	Identification	Structure Type	Length (microns)	Width (microns)	Aspect Ratio
1	1	Nonasbestos	Fiber	10	2	5
2	NSD**					
3	NSD					
4	1	Nonasbestos	Fiber	3.50	.15	23
	2	Nonasbestos	Fiber	2	.06	33
5	1	Nonasbestos	Bundle* - 3	2.50	.40	6
			*(avg fibril size)	2.50	.06	42
	2	Nonasbestos	Fiber	4	.15	27
	3	Nonasbestos	Fiber	1.50	.09	17
6	NSD					
7	NSD					
8	1	Nonasbestos	Fiber	.80	.06	13
9	NSD					
10	NSD					

NSD** - No Structures Detected

* FACSIMILE TRANSMISSION *

TO: Skagit County Facility Mgmt. Att: Roger Howard

FROM: Bill Schroeder

DATE: 12-2-92

PAGES: 4 including cover

Here are the materials and air test results you requested.

In regards to the air tests :

The far right hand column lists the calculated airborne fiber concentrations of any and all forms of fibers present. According to applicable statutes, respiratory protection of the most minimal kind is not required until SIX TIMES the numbers listed here. Unfortunately, every room always has some normal dusts present.

Concerning the materials tests, no asbestos was detected in either test.

AFFORDABLE ABATEMENT, INC. P.O. BOX 1572, WOODINVILLE, WA. 98072

Prezant Associates, Inc.
Environmental Health Sciences and Engineering
711 6th Ave. North, Suite 200, Seattle, WA 98109
OFFICE: (206) 281-8858 FAX: (206) 281-8922

BULK SAMPLE DATA SHEET - ASBESTOS

NVLAP #1886

PAI Job Number: **92 - 1706.00**

Client: **Affordable Abatement, Inc.**
Address: **Post Office Box - 1572**
Woodinville, WA 98072
Attn: Mr. Bill Schroeder

Number of samples: 2
RUSH

Project: **Skagit county courthouse**

Project #: **xxxx**

Sample Location: 3rd floor, microfilm storage (NW room), ceiling texture

Sample #: BS1116-BS
Lab #: 9211435

Sample Description: Beige/white soft matrix.

NON-ASBESTOS NON-FIBROUS COMPONENTS

TOTAL: 95 %

35% Synthetic foam
60% Fine particles/binder

% NON-ASBESTOS FIBROUS COMPONENTS

TOTAL: 5 %

5% Cellulose fibers

% ASBESTOS FIBROUS COMPONENTS

TOTAL: ND %

No detectable asbestos

TOTAL ASBESTOS: ND %

Sampled by: Client
Analyzed by: Asya Oganyan Date: 11/17/92
Reviewed By: Munaf Khan Date: 11/17/92

Munaf Khan

* Munaf Khan, Laboratory Director

* If samples are not homogeneous, then subsamples of the components were analyzed separately.
All bulk samples are analyzed using test method 40 CFR ch. I (1-1-87 edition) Pt 763, Subpt. F App. A, pages 293-299.
This report relates only to the items tested.
If samples were not collected by Prezant Assoc. personnel, then accuracy of the results is limited by the methodology and acuity of the sample collector.
Analyses are cross-checked with other technicians in-house and other laboratories for quality assurance and verification.

Prezant Associates, Inc.
Environmental Health Sciences and Engineering
711 6th Ave. North, Suite 200, Seattle, WA 98109
OFFICE: (206) 281-8858 FAX: (206) 281-8922

BULK SAMPLE DATA SHEET - ASBESTOS

NVLAP #1686

PAI Job Number: **92 - 1706.00**

Client: **Affordable Abatement, Inc.**
Address: **Post Office Box - 1572**
Woodinville, WA 98072
Attn: Mr. Bill Schroeder

Number of samples: 2
RUSH

Project: **Skagit county courthouse**

Project #: **xxxx**

Sample Location: 3rd floor, microfilm office (NE room), ceiling plaster (homogenous)

Sample #: BS1116-BO
Lab #: 9211436

Sample Description: Brown/grey matrix.

NON-ASBESTOS NON-FIBROUS COMPONENTS

TOTAL: 98 %

35% Mineral grains
63% Fine particles/binder

% NON-ASBESTOS FIBROUS COMPONENTS

TOTAL: 2 %

2% Cellulose fibers

% ASBESTOS FIBROUS COMPONENTS
No detectable asbestos

TOTAL: ND %

TOTAL ASBESTOS: ND %

Sampled by: Client
Analyzed by: Asya Oganyan Date: 11/17/92
Reviewed By: Munaf Khan Date: 11/17/92

* Munaf Khan, Laboratory Director

* If samples are not homogeneous, then subsamples of the components were analyzed separately.
All bulk samples are analyzed using test method 40 CFR ch. I (1-1-87 edition) Pt 763, Subpt. F App. A, pages 293-299.
This report relates only to the items tested.
If samples were not collected by Prezant Assoc. personnel, then accuracy of the results is limited by the methodology and acuity of the sample collector.
Analyses are cross-checked with other technicians in-house and other laboratories for quality assurance and verification.

Prezant Associates, Inc.
Environmental Health Sciences and Engineering
711 6th Avenue N. Suite 200, Seattle, WA 98109

AIR MONITORING DATA SHEET

Client: **Affordable Abatement, Inc.**
Contractor: **Affordable Abatement, Inc.**
Job location: **Skagit Co. courthouse**

PAI Job #92-1705.00
Air Samples 2
Client Project #:
xxxxx

Start 04:28 Start 15.00 End 06:00 End 15.00 Minutes= 92 Avg= 15.00 LOD= .001 Liters= 1380.00 LOQ maximum 0.36 f/cc LOQ minimum 0.02 f/cc	Location: Microfilm dept., NW storage room, center, 3' high Activities: Pre abatement Controls: N/A Date 11/16/92	Lab #: **9211132** Client #: **BS1116-S** Type: **Pre abatement** Fibers/Fld 47.5/100 Fibers/CC **0.017**
Start 04:31 Start 15.00 End 05:59 End 15.00 Minutes= 88 Avg= 15.00 LOD= .002 Liters= 1320.00 LOQ maximum 0.37 f/cc LOQ minimum 0.02 f/cc	Location: Microfilm dept., NE office room, center, 3' high Activities: Pre abatement Controls: N/A Date 11/16/92	Lab #: **9211133** Client #: **BS1116-O** Type: **Pre abatement** Fibers/Fld 35.5/100 Fibers/CC **0.013**
Start : End : Minutes= LOD= LOQ maximum f/cc LOQ minimum f/cc	Start End Avg= Liters= Location: Activities: Controls: Date	Lab #: Client #: Type: Fibers/Fld / Fibers/CC
Start : End : Minutes= LOD= LOQ maximum f/cc LOQ minimum f/cc	Start End Avg= Liters= Location: Activities: Controls: Date	Lab #: Client #: Type: Fibers/Fld / Fibers/CC

Filter size: 385 Microscope field area: 0.008 Blank cassettes: No Blank Cassettes Blank count average= 0.0

Sampled by: Bill Schroeder of Affordable Abatement, Inc

Received by: Michele Lindsey Date received: 11/17/92

Analyzed by: Nichole Gladu Date analyzed: 11/17/92

SIGNED

PAI Job #92-1705.00

* Samples were analyzed in accordance with the NIOSH 7400 or OSHA Reference Methods. All analysts are NIOSH PAT participants. We are unable to verify the accuracy of air sampling data collected by customers. The LOQ, Limits of Quantification, are the fiber concentrations, for the given volume of sampled air, above and below which results may be unreliable. The LOD, Limit of Detection, is the fibers/cc below which the results may not be confidently distinguished from background levels.

Certified
Industrial
Hygiene
Services, Inc.

420 Maritime Bldg.
911 Western Avenue
Seattle, WA 98104
(206)622-1096 / FAX (206)343-3966

CIHS

November 8, 1996

Roger Howard
Skagit County
FAX: 360-336-9497

Subject: Air Monitoring Results, Chipping Operations, Courthouse Crawl Space

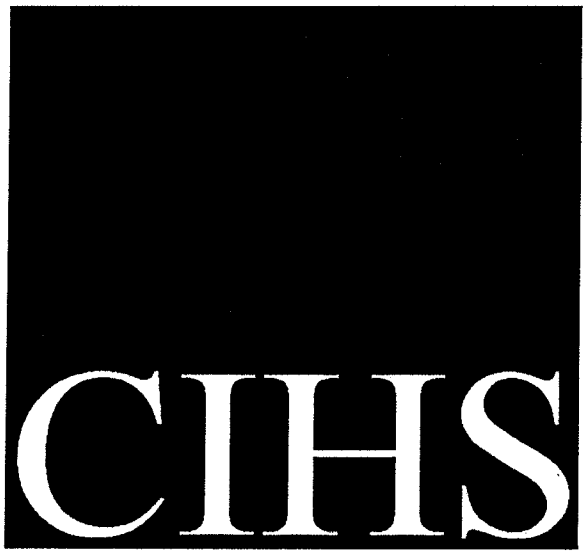
On October 31, 1996 air sampling was performed during foundation work in the Skagit County Courthouse building. The work involves excavating soil and demolishing portions of the building foundation for construction of a new foundation. The air sampling was conducted in order to evaluate any health threats from dust in the building for county employees and clients using the building during the day. Samples were collected in the building as well as in the crawl space on the contractor employees performing the work.

The samples collected in the crawl space included two personnel breathing zone samples, one for total dust and one for respirable silica. Also collected were two area samples, again for total dust and for respirable silica. The total dust samples indicated concentrations of 55 mg/m^3 in the worker's breathing zone and 6 mg/m^3 in the general area. The Permissible Exposure Level (PEL) for total dust is 10 mg/m^3. Samples for respirable silica indicated 1.0 mg/m^3 for the worker's breathing zone and 0.10 mg/m^3 in the general area. The (PEL) for respirable silica is 0.10 mg/m^3. The workers in the crawl space were provided with dust masks which limit their actual exposure, however these levels are greater than what is recommended for this type of respirator. The contractor should take measures to reduce the dust concentrations in the crawl space. The contractor should also evaluate his respiratory protection plan and upgrade the respirator selection. Additional sampling should also be performed by the contractor to evaluate conditions with new work practices and respirators.

Additional sampling was conducted inside the building on the first, second and third floors. Some dust is entering the building, but the sampling indicates that concentrations in the building are well below those in the crawl space. The primary concern for silica and general nuisance dust is associated with very heavy exposures to the dust such as those found in the crawl space during work. Although there is some dust entering the building, its not at sufficient levels to pose a direct health threat to occupants of the building.

Report by:

John G. Stebbins, CSP



Certified Industrial
Hygiene Services, Inc.

420 Maritime Building
911 Western Avenue
Seattle, WA 98104

(206)622-1096 voice
(206)343-3966 fax

FACSIMILE COVER PAGE

To: Roger Howard	From: C.I.H.S. Inc.
Time: 09:49:39	Date: 11/4/96
Pages (including cover): 4	

Please check this transmission for accuracy and completeness.
If any discrepancies are found contact the sender at (206)622-1096.

Roger,

This is a draft work description for the asbestos cleanup work under the courthouse. Look it over and let me know if there are any changes you want made. The quantities given are intended to be a bit high, to ensure they do cover everything, but I didn't get a chance to make accurate measurements last thursday, look at them and see if you think they are appropriate.

I'm not sure of my schedule for this week, I'll either be in the office, (206)622-1096, or at home, (206)232-2114. Call me if you have any questions.

--John Stebbins

Certified Industrial Hygiene Services, Inc.
420 Maritime Bldg.
911 Western Avenue
Seattle, WA 98104
(206)622-1096 / FAX (206)343-3966

CIHS

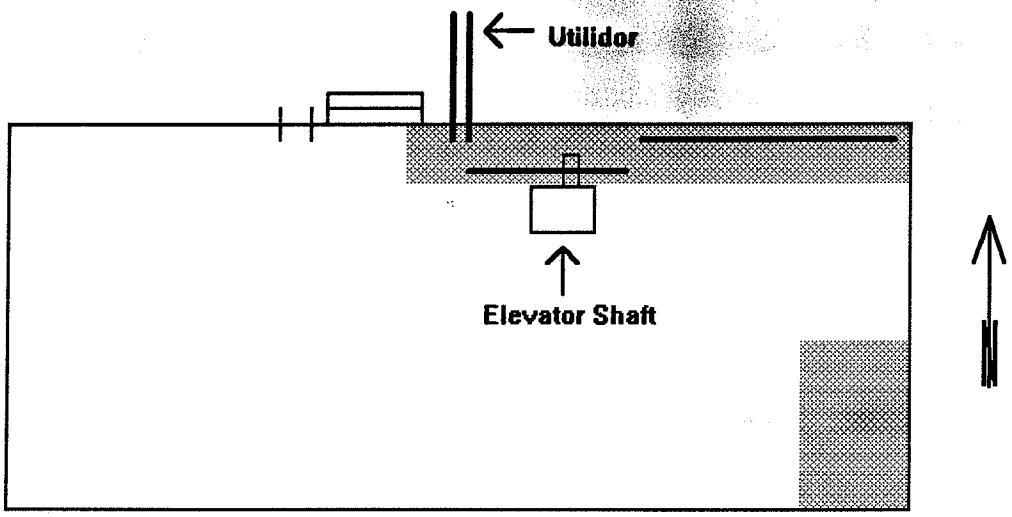
DESCRIPTION OF WORK
ASBESTOS ABATEMENT FROM SKAGIT COUNTY COURTHOUSE
MATERIALS AND DEBRIS IN BUILDING CRAWL SPACE

1. Purpose--During other construction activities asbestos pipe insulation and debris has been found. This material must be removed prior to continuation of the current project. The purpose of the abatement work is to clear the asbestos containing materials from the area to allow the project to continue.

2 Asbestos Containing Materials--The asbestos is preformed plaster pipe insulation from an abandoned pipe system located in the crawl space of the building. There are two pipes entering the building from a utilidor that crosses under the courtyard on the north side of the building. These two pipes remain insulated. There are also two sections of piping remaining in the crawl space running from about the region of the utilidor to the northeast corner of the building. Insulation has been removed from these pipes, though they are still contaminated with asbestos debris. There is also scattered debris on top of the soil along the north side of the building in the vicinity of the piping. In the southeast corner of the building there is an area in which piping had been stored where debris remains on top of the soil.

3. Non-Asbestos Materials--Other pipe insulations in the crawl space are considered to be non-asbestos. These pipes are insulated with fiberglass and have some mudded fittings. Analysis of the mudding material indicates that it does not contain asbestos.

Asbestos Materials found in Skagit County Courthouse Crawlspace



Asbestos Lagged or Contaminated Piping

Areas of Contaminated Soil Surface

Not to scale

4. Material Analysis

Sample Number	Description	Content
10-31-731	Insulation from pipe in utilidor	60% chrysotile
10-31-732	Mudded elbow from 1" pipe with fiberglass insulation above contaminated pipe in NE corner	no asbestos detected
10-31-733	Debris in SE corner	60% chrysotile
10-31-734	Debris in NE corner	60% chrysotile

5. Regulations--All work is to be conducted under the applicable regulations provided by the Washington State Department of Labor and Industries, Northwest Air Pollution Control Authority, and Skagit County Department of Health.

6. Preparation of Work Area--Provide critical barriers at all openings in the foundation and first floor slab within 25 feet of any abatement work. Post and maintain the crawl space as a regulated area during work. Mist the work area with water as necessary to minimize airborne dust.

7. Removal of Piping in Utilidor--The piping in the utilidor must be removed back 10 feet from the perimeter of the building. The insulation may be removed prior to removing the pipe using glove bagging procedures or the pipes can be wrapped and removed with the insulation intact. Note: access to the utilidor entrance is limited and the pipes may have to be cut into

smaller pieces for removal. The piping is approximately 4" in diameter and 30 linear feet of piping are included in this part of the work.

Completion of Utilidor Work--After removal of the pipes, vacuum and/or wet wipe surfaces in the utilidor. Also install a barrier of plastic sheeting ten feet back in the utilidor to separate the cleaned area from the remaining asbestos materials deeper in the utilidor. The utilidor is approximately three feet square.

9. Cleanup of Piping in the Crawl Space--The abandoned piping in the crawl space may either be cleaned in place by glove bagging or wrapped and removed. There is approximately 60 feet of four inch diameter piping. This piping does not have to be removed if it is cleaned.

10. Cleanup of Debris on Ground--The debris on the ground consists of pieces of plaster insulation. Most of this material is no more than six inches in size. Large pieces of material should be collected into disposal bags as practical. The area shall then be vacuumed or skimmed with a shovel to remove all visible asbestos material. It is expected that all of the asbestos rests on the surface of the soil and is visible. None of the material is thought to be buried. Debris is spread over approximately 1000 square feet of area.

11. Air Sampling During Work--The contractor is responsible for sampling as required by regulations. Some work area, personnel and outside area samples will be collected by CIHS and the results will be given to the contractor.

12. Final Inspection--At the completion of work all work areas will be inspected by CIHS. Work will be accepted if all visible asbestos materials are removed.

13. Clearance Sampling--CIHS will collect samples in the work area and in the building at the completion of work. Acceptance standard is 0.01 fibers per cc.

COPY

FOR AGENCY USE ONLY

Northwest Air Pollution Authority
302 Pine Street #207, Mount Vernon, WA 98273
(360) 428-1617 • Fax (360) 428-1620

AGENCY USE ONLY

FAXED 11/6/96 CM

Please type or print clearly. Check all applicable boxes.

For revisions to this information use Amendment...to Perform an Asbestos Project, (NWAPA Form No. 570.5)

AAS #17001

Notice of Intent to Perform an Asbestos Project

Type of Project	Project Category (Check only one.)	Advance Notification Period	NWAPA Fee ($)
A. ☒ Emergency	1. ☐ Residential (any amount/owner-occupied)	Prior Notification	0.00
B. ☐ Demolition	2. ☐ Less than 10 linear feet Less than 11 square feet	Prior Notification	25.00
C. ☐ Renovation	3. ☒ 10 to less than 260 linear feet 11 to less than 160 square feet	10 Working Days	100.00
D. ☐ Maintenance	4. ☐ Greater than 260 linear feet Greater than 160 square feet	10 Working Days	250.00
E. ☐ Encapsulation			
F. ☐ Enclosure			
G. ☐ Other (specify):			

Quantity to be removed/encapsulated: _____ square ft. 50 linear ft.

Workshift Days: M T (W) (Th) F Sa Su

Project starting date: 11/6/96 Completion date: 11/7/96

Workshift Hours: 5:00 pm - 8:00 am

Site address: Courthouse 205 Kincaid Street, (Street) Mt. Vernon (City) 98273 (Zip code) Skagit (County)

Location of asbestos: Under building in tunnel.

Project description: School? ☐ Yes ☒ No Federal facility or marine vessel? ☐ Yes ☒ No

Complete demolition of structure? ☐ Yes ☒ No Asbestos Survey Conducted? ☐ Yes ☒ No

Facility type: County Courthouse Age: 7 1/2 yrs Size: 30,000 sf # Floors: 3

Type of material to be removed/encapsulated:

☐ Fireproofing ☐ P.C. ceiling ☐ CAB ☐ Sheet vinyl ☐ Boiler insulation ☐ Duct tape
☐ Duct paper ☒ Mag. pipe insulation ☒ Air cell ☐ CA pipe ☐ VAT ☐ Other (specify) _____

Is removal: ☒ Indoors ☒ Outdoors

Control measures & Personal Protection Equipment:

☐ N.P. enclosure ☒ Glove bag ☐ Mini enclosure ☒ Wrap & cut ☒ Water ☒ HEPA Vac ☐ Type C cont. flow
☒ 1/2 mask APR ☐ Full face APR ☐ PAPR ☐ Type C P. demand ☐ Other (specify) _____

Asbestos contractor: A. A. Services, Inc. Contractor #: AASERI*044BT L&I #1203

Mailing address: P.O. Box 3278 (Street) Arlington (City) 98223 (Zip) Snohomish (County)

Supervisor: Jim Dolan Certificate #: 7407 Phone: (360) 435-6682

Owner/CEO: Sara T. Knebel Title: President FAX: (360) 435-7246

Property owner: Skagit County - Courthouse Contractor Job #: 17001 Phone: (360) 336-9776

Mailing address: 700 So. 2nd, Room 202 (Street) Mt. Vernon (City) 98273 (Zip) Skagit (County)

Site contact: Roger Howard Title: Facilities Maintenance Phone: (360) 336-9776

Asbestos disposal site: Rabanco Regional Landfill

Estimated cost of asbestos abatement project: $750.00

I DO HEREBY CERTIFY THAT THE INFORMATION CONTAINED IN THIS APPLICATION IS, TO THE BEST OF MY KNOWLEDGE, ACCURATE AND COMPLETE.

Cindy D. Wittman 11/6/96

Signature / Cindy D. Wittman, Estimator/P.M. Date

Project Manager A. A. Services, Inc.

Title Representing

AGENCY USE ONLY

THIS IS NOT AN APPROVAL

NOTICE OF INTENT TO REMOVE OR ENCAPSULATE ASBESTOS

Department of Labor and Industries
300 W. Harrison Street
Seattle, WA 98119
Phone: (206) 281-5473
FAX: To Regional Offices

COPY

AAS JOB # 17001

FAXED 11/6/96 cw

THIS NOTICE MUST BE RECEIVED NO LATER THAN 10 DAYS PRIOR TO THE START DATE
COMPLETE ALL APPLICABLE BOXES-INCOMPLETE NOTICES WILL NOT BE ACCEPTED

ASBESTOS ABATEMENT PROJECT

Start Date: 11/6/96
Completion: 11/7/96

Amended? ___ Yes / X No
Emergency? X Yes / ___ No
On Hold? ___ Yes

Work Shift:	M	T	W	Th	F	Sa	Su
7am-4pm	—	—	—	—	—	—	—
3pm-12am	—	—	—	—	—	—	—
11pm-8am	—	—	—	—	—	—	—
(other) 5 pm - 8 am	—	—	X	X	—	—	—

WORK SHIFT AND PROJECT DATES MUST BE EXACT

CONTRACTOR INFORMATION

COMPANY NAME: A. A. Services, Inc.
CONTRACTOR CERT.#: 1203
SIGNATURE: Cindy D. Wittman
(PRINT NAME): Cindy D. Wittman
PHONE #: (360) 435-6682
JOB SITE C.A.S.: Jim Dolan

PROPERTY OWNER INFORMATION

NAME: Skagit County - Courthouse
ADDRESS: 700 So. 2nd, Room 202, Mt. Vernon, WA
PHONE #: (360) 336-9776
OWNER'S REP.: Roger Howard
ADDRESS: same
PHONE #:

PROJECT INFORMATION

JOB SITE

ADDRESS: Courthouse - 205 Kincaid St.
CITY: Mt. Vernon, WA
ZIP CODE: 98273
COUNTY: Skagit

FACILITY

TYPE: County Courthouse
AGE: 7 1/2 years
SIZE: 30,000 sf
X INDOOR? X OUTDOOR?

QUANTITY OF ASBESTOS

TO X REMOVED, OR ___ ENCAPSULATED

#_____ sq.ft. #50 ln.ft.

CONTROL MEASURES AND PPE

☑ each box below	☑ each box below	☑ each box below	☑ each box below
☐ fireproofing	☒ mag. pipe insulation	☐ neg. p. enclosure	☒ 1/2 mask APR
☐ popcorn ceiling	☒ air cell pipe insulation	☒ glove bag	☐ full face APR
☐ CAB	☐ cement asbestos pipe	☐ mini enclosure	☐ PAPR
☐ sheet vinyl	☐ _____	☒ wrap & cut	☐ Type C continuous flow
☐ boiler insulation	☐ _____	☒ wet methods	☐ Type C pressure demand
☐ duct paper	☐ _____	☒ HEPA vacuum	☐ _____
☐ duct tape	☐ _____	☐ _____	☐ _____
☐ _____	☐ _____	☐ _____	☐ _____
☐ _____	☐ _____	☐ _____	☐ _____

CIHS

Certified Industrial
Hygiene Services, Inc.

420 Maritime Building
911 Western Avenue
Seattle, WA 98104

(206)622-1096 voice
(206)343-3966 fax

FACSIMILE COVER PAGE

To: Roger Howard	From: C.I.H.S. Inc.
Time: 14:22:29	Date: 11/25/96
Pages (including cover): 2	

Please check this transmission for accuracy and completeness.
If any discrepancies are found contact the sender at (206)622-1096.

Roger,

I sent this to John Griffin for use in notifing the contractor about conditions under the Courthouse. I now have the final data from the lab for a full report and will have that to you next week.

-John Stebbins

Certified Industrial Hygiene Services, Inc.
420 Maritime Bldg.
911 Western Avenue
Seattle, WA 98104
(206)622-1096 / FAX (206)343-3966

CIHS

November 25, 1996

John Griffin
John D. Griffin Engineers
11680 Slater Avenue NE
Kirkland, WA 98034
FAX Transmission: 821-9408

Subject: Asbestos Abatement in Skagit County Courthouse Crawlspace

Asbestos debris was discovered in the crawlspace under the Skagit County Courthouse on October 31st, 1996. This material consisted of pipe insulation materials from an abandoned pipe system and included intact materials on the piping, debris on the soil under the piping and debris remaining on sections of piping. AA Contractors, a certified asbestos abatement firm, was brought in to remove these materials and performed this work on November 6 through 8, 1996. They removed piping with asbestos insulation or debris and collected all gross debris that could be found from the soil and material piles.

At this time all asbestos materials which would impact the foundation renovation work has been eliminated, to the best of our knowledge. This work, including removal of soil, can continue at this time. As always, the contractor should be alert to the possibility of other materials in the area and notify the County immediately if any significant suspect asbestos material is found.

Report by:

John G. Stebbins, C.S.P.
AHERA Inspector

cc: Roger Howard, Skagit County

PHILLIPS ENVIRONMENTAL SERVICES

29354 BACUS RD.
SEDRO WOOLLEY, WA 98284

360-854-7900 FAX 360-854-7731

November 10, 1999 Survey No. 99084

Marc L. Estvold, Inc. PS AIA
3110 Commercial Ave.
Anacortes, WA 98221
360-293-5500

RE: **Limited Asbestos Survey: Skagit County Courthouse, Mt. Vernon, WA 98273**

On November 8, 1999, our firm inspected a portion of the Skagit County Courthouse located at the above referenced address for the purpose of determining the presence or absence of building materials that might contain asbestos. This inspection was limited to the west end of the first floor renovation 'critical path' and is not intended to represent any other materials or areas of this building.

Title 40 Code of Federal Regulations (40 CFR), subpart M, section 61.141, established the allowable limit of asbestos in building materials at 1% by weight. Materials containing more than 1% asbestos are regulated and must be handled in accordance with Federal, State, and Local regulations.

Surveys are based on 'visible and accessible materials' and although every effort was made to locate and test all suspect materials, some suspect materials may remain hidden in walls or below floor underlayment or other areas until demolition or renovation work makes them accessible. Should other suspect materials be discovered during the course of demolition or remodel activities they will require testing prior to continuing work.

Fourteen bulk samples were collected and twelve samples were subsequently analyzed for asbestos content by Polarized Light Microscopy with Stain Dispersion. Samples representing materials # 3, 5, 6, and 7 were found to contain more than 1% asbestos. These materials will require handling/removal by trained asbestos workers prior to any remodeling, renovation, or demolition that will lead to the disturbance or removal of asbestos. Prior to removal of these materials, ten-day notices must be filed with the local Air Pollution Authority and the State Department of Labor & Industries.

This letter and attached material list, site sketch and lab report will comprise the 'Limited Asbestos Survey'. Please call us if you have any questions.

Sincerely,

Dave B. Phillips
AHERA Bldg. Insp.
Cert.# WEST-BIR-99-002 (expires 1-10-2000)

enclosure

FC: Reuter
336-9497

PHILLIPS ENVIRONMENTAL SERVICES

29354 BACUS RD.
SEDRO WOOLLEY, WA 98284

360-854-7900

FAX 360-854-7731

ASBESTOS BULK SAMPLE ANALYSIS

Client Name: **Marc L. Estvold, Inc. PS AIA**
3110 Commercial Ave.
Anacortes, WA 98221
360-293-5500

Survey #: 99084

Source of Samples: **Skagit Co. Courthouse, Mt. Vernon, WA 98273** Date Rec'd: 11-8-99

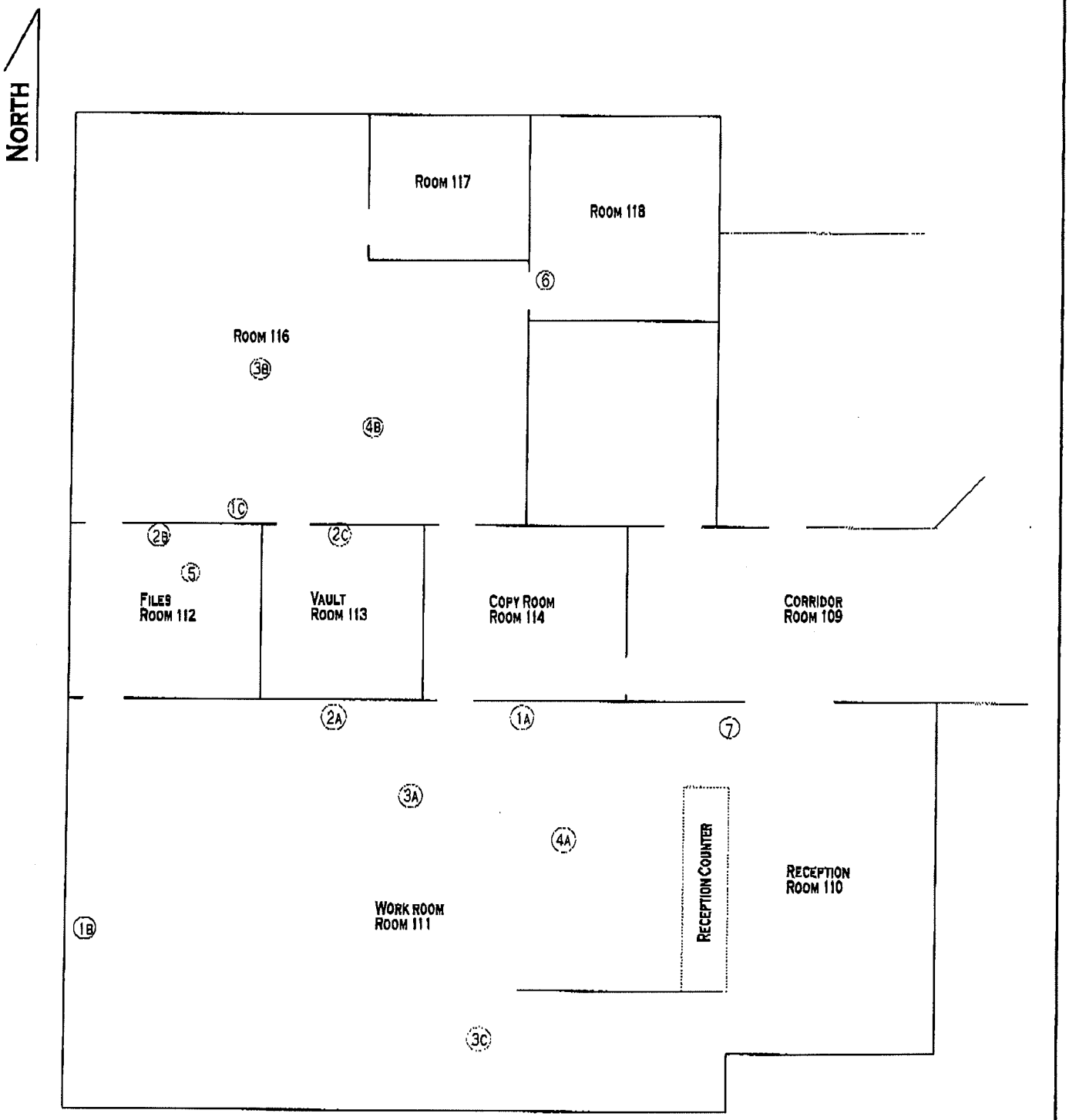
Analytical Method: Polarized Light Microscopy with Dispersion Staining (PLM-DS Method)

Sample No.: 1a	**Analysis:**	**Asbestos:**	None detected
Lab No.: 4285B			
Location: North wall, room 111		**Other fibers:**	Cellulose
Description: Sheetrock w/texture			
Sample No.: 1b	**Analysis:**	**Asbestos:**	None detected
Lab No.: 4286B			
Location: West wall, room 111		**Other fibers:**	Cellulose
Description: Sheetrock w/texture			
Sample No.: 1c	**Analysis:**	**Asbestos:**	None detected
Lab No.: 4287B			
Location: South wall, room 111		**Other fibers:**	Cellulose
Description: Sheetrock w/texture			
Sample No.: 2a	**Analysis:**	**Asbestos:**	None detected
Lab No.: 4288B			
Location: North wall, room 111 (behind sheetrock)		**Other fibers:**	Cellulose
Description: Grey plaster w/white skim coat			
Sample No.: 2b	**Analysis:**	**Asbestos:**	None detected
Lab No.: 4289B			
Location: North wall, room 112		**Other fibers:**	Cellulose
Description: Grey plaster w/white skim coat			
Sample No.: 2c	**Analysis:**	**Asbestos:**	None detected
Lab No.: 4290B			
Location: North wall, room 113		**Other fibers:**	Cellulose
Description: Grey plaster w/white skim coat			
Sample No.: 3a	**Analysis:**	**Asbestos:**	**Chrysotile 8-10%**
Lab No.: 4291B			
Location: North side, room 111 (above drop ceiling)		**Other fibers:**	Cellulose
Description: 'Popcorn' ceiling texture			

Analyst: D B P Date: 11-10-99
Dave B. Phillips

Samples retained for 2 weeks unless otherwise requested in writing.

Lab results are completely confidential. Written permission is required to release results to another party.



WEST END OF FIRST FLOOR

Ⓧ = SAMPLE LOCATIONS

PHILLIPS ENVIRONMENTAL SERVICES 29354 BACUS ROAD SEDRO WOOLLEY, WA 98284	**SKAGIT COUNTY COURTHOUSE** **MT. VERNON, WA 98273**	DRAWN BY: DBP DATE: 11-10-99 SCALE: NONE DRAWING NO. 99084-1

PHILLIPS ENVIRONMENTAL SERVICES

29534 BACUS RD.
SEDRO WOOLLEY, WA 98284

360-854-7900 FAX 360-854-7731

Client: Marc L. Estvold, Inc. PS AIA
3110 Commercial Ave.
Anacortes, WA 98221
360-293-5500

Asbestos Survey - Skagit Co. Courthouse
Mt. Vernon, WA 98273

Survey #: 99084

Survey date: 11-8-99

Homogeneous Material List

Material # & Description	Location (homog. area)	Type	Friab	Cond	Qty.	Sample # & Location (see dwg.)		Asbestos
1 Sheetrock w/texture	Walls throughout	surf	n	f		1a	N. wall room 111	N/D
						1b	W. wall room 111	N/D
						1c	S. wall room 116	N/D
2 Plaster (original)	Walls throughout	surf	n	f		2a	N. wall room 111	N/D
						2b	N. wall room 112	N/D
						2c	N wall room 113	N/D
3 Popcorn ceiling texture	Room 111 & 116 ceilings (above drop ceilings)	surf	y	f	2200sf	3a	N. side room 111	Chry. 10%
						3b	Center room 116	N/T
						3c	S side room 111	N/T
4 Acoustical drop ceiling tiles	Ceilings throughout	misc	n	g		4a	Room 111	N/D
						4b	Room 116	N/D
5 Vinyl sheet	Room 112 (under carpet)	misc	n	g	140sf	5	Room 112	Chry. 25%
6 Vinyl tile & mastic	Room 118	misc	n	g	180sf	6	Room 118	Chry. 10%*
* Note: Asbestos found in both tile and mastic								
7 Vinyl tile & mastic	Room 110	misc	n	g	270sf	7	Room 110	Chry. 10%*
* Note: Asbestos found in mastic only, none found in tile								

N/D = None Detected
N/T = Not Tested - previous sample tested positive
Quantities shown are approximate - field verification recommended

Note: Friability assessments were made on these materials in their present undisturbed condition, damage or disturbance of any kind may cause some non-friable materials to become friable.

PHILLIPS ENVIRONMENTAL SERVICES

29354 BACUS RD.
SEDRO WOOLLEY, WA 98284

360-854-7900

FAX 360-854-7731

ASBESTOS BULK SAMPLE ANALYSIS

Sample No.: 4a **Lab No.:** 4294B **Location:** Room 111 **Description:** Grey acoustical tile	**Analysis:**	**Asbestos:** **Other fibers:**	None detected Cellulose & Glass
Sample No.: 4b **Lab No.:** 4295B **Location:** Room 116 **Description:** Grey acoustical tile	**Analysis:**	**Asbestos:** **Other fibers:**	None detected Cellulose & Glass
Sample No.: 5 **Lab No.:** 4296B **Location:** Room 112 (under carpet) **Description:** Off white vinyl sheet w/grey fibrous backing	**Analysis:**	**Asbestos:** **Other fibers:**	**Chrysotile 20-25%** Cellulose
Sample No.: 6 **Lab No.:** 4297B **Location:** Room 118 **Description:** Off white vinyl tile w/black mastic • **Note: Asbestos found in <u>both tile and mastic</u> at ~10%.**	**Analysis:**	**Asbestos:** **Other fibers:**	**Chrysotile 8-10% (both)** Cellulose
Sample No.: 7 **Lab No.:** 4298B **Location:** Room 110 **Description:** Off white vinyl tile w/black mastic • **Note: Asbestos found in <u>mastic only</u> at ~10%, none found in vinyl tile.**	**Analysis:**	**Asbestos:** **Other fibers:**	**Chrysotile 8-10% (mast.)** Cellulose

Analyst: _____ Date: 11-10-99

Dave B. Phillips

Samples retained for 2 weeks unless otherwise requested in writing.

Lab results are completely confidential. Written permission is required to release results to another party.

PHILLIPS ENVIRONMENTAL SERVICES

29354 BACUS RD.
SEDRO WOOLLEY, WA 98284

360-854-7900 FAX 360-854-7731

July 19, 2000 Survey No. 00063

Mr. Roger Howard, Director
Skagit County Facility Management
700 S. Second St., #202
Mt. Vernon, WA 98273
360-336-9376

RE: **Asbestos Sampling: 205 Kincaid Street, Mt. Vernon, WA 98273**

On July 18, 2000, I collected samples of ceiling texture from room 306 in the Skagit County Court House located at the above referenced address for the purpose of determining the presence or absence of building materials that might contain asbestos.

Although previous sampling of ceiling texture elsewhere in the building had shown asbestos to be present, it was unclear whether the texture in room 306 is the same material. Therefore, three samples were collected from room 306 and subsequently analyzed for asbestos content by Polarized Light Microscopy with Stain Dispersion. **All three samples were found to be asbestos free.**

This letter and attached lab report will comprise the 'Asbestos Sampling'. Please call us if you have any questions.

Sincerely,

Dave B. Phillips
AHERA Bldg. Insp.
Cert.# WEST-BIR-00-8 (expires 1-7-2001)

enclosure

PHILLIPS ENVIRONMENTAL SERVICES

29354 BACUS RD.
SEDRO WOOLLEY, WA 98284

360-854-7900

FAX 360-854-7731

ASBESTOS BULK SAMPLE ANALYSIS

Client Name: **Skagit County Facility Mgmt.**
700 S. Second St., #202
Mt. Vernon, WA 98273
360-336-9376

Survey #: 00063

Source of Samples: 205 Kincaid Street, Mt. Vernon, WA 98273

Date Rec'd: 7-18-00

Analytical Method: Polarized Light Microscopy with Dispersion Staining (PLM-DS Method)

Sample No.:	1a	**Analysis:**	**Asbestos:**	None detected
Lab No.:	7882B			
Location:	Room 306 ceiling		**Other fibers:**	Cellulose
Description:	'Popcorn' ceiling texture			
Sample No.:	1b	**Analysis:**	**Asbestos:**	None detected
Lab No.:	7883B			
Location:	Room 306 ceiling		**Other fibers:**	Cellulose
Description:	'Popcorn' ceiling texture			
Sample No.:	1c	**Analysis:**	**Asbestos:**	None detected
Lab No.:	7884B			
Location:	Room 306 ceiling		**Other fibers:**	Cellulose
Description:	'Popcorn' ceiling texture			

Analyst: Dave B. Phillips Date: 7-19-00

Dave B. Phillips

Samples retained for 2 weeks unless otherwise requested in writing.

Lab results are completely confidential. Written permission is required to release results to another party.

PHILLIPS ENVIRONMENTAL SERVICES

29354 BACUS RD.
SEDRO WOOLLEY, WA 98284

360-854-7900 FAX 360-854-7731

May 6, 2000 Survey No. 00041

Mr. Roger Howard, Director
Skagit County Facility Management.
700 S. Second St., #202
Mt. Vernon, WA 98273
360-336-9376

RE: **Asbestos Sampling: 205 Kincaid Street, Mt. Vernon, WA 98273**

On May 5, 2000, I collected a sample of ceiling plaster from the Skagit County Court House located at the above referenced address for the purpose of determining the presence or absence of asbestos.

Several plaster samples had been analyzed previously from other locations in this building and all were found to be asbestos free, however it was decided to collect a sample from this location in order to confirm the absence of asbestos in this particular ceiling as part of a planned renovation project. The sample was found to be asbestos free.

During this same site visit, several areas of carpeting were lifted to look for vinyl flooring materials but none were observed. It is important to note that if vinyl flooring or any other 'suspect' materials are discovered during the course of renovation activities, they will require testing prior to being disturbed.

This letter and attached lab report will comprise the 'Asbestos Sampling'. Please call us if you have any questions.

Sincerely,

Dave B. Phillips
AHERA Bldg. Insp.
Cert.# WEST-BIR-00-8 (expires 1-7-2001)

enclosure

PHILLIPS ENVIRONMENTAL SERVICES

29354 BACUS RD.
SEDRO WOOLLEY, WA 98284

360-854-7900

FAX 360-854-7731

ASBESTOS BULK SAMPLE ANALYSIS

Client Name: **Skagit County Facility Mgmt.**
700 S. Second St., #202
Mt. Vernon, WA 98273
360-336-9376

Survey #: 00041

Source of Samples: **205 Kincaid Street, Mt. Vernon, WA 98273**

Date Rec'd: 5-5-00

Analytical Method: Polarized Light Microscopy with Dispersion Staining (PLM-DS Method)

Sample No.: 1
Lab No.: 7227B
Location: 3rd floor, SW office ceiling
Description: Plaster w/paint

Analysis: **Asbestos:** None detected
Other fibers: Cellulose

Analyst: Dave B. Phillips Date: 5-6-00

Dave B. Phillips

Samples retained for 2 weeks unless otherwise requested in writing.

Lab results are completely confidential. Written permission is required to release results to another party.

PHILLIPS ENVIRONMENTAL SERVICES

29354 BACUS RD.
SEDRO WOOLLEY, WA 98284

360-854-7900 FAX 360-854-7731

January 22, 2001

Survey No. 01005

Mr. Roger Howard, Director
Skagit Co. Facility Management
700 S. Second St., #202
Mt. Vernon, WA 98273
360-336-9376

RE: **Asbestos Sampling: 205 Kincaid Street, , Mt. Vernon, WA 98273**

On January 18, 2001, I collected a sample of ceiling texture from the east end of the first floor of the Skagit County Courthouse located at the above referenced address for the purpose of determining the presence or absence of asbestos.

Although previous sampling of ceiling texture at the west end of the first floor had indicated the presence of asbestos, it was unclear whether the texture at the east end of the first floor was the same material. Therefore, it was decided to collect a sample of the materials at the east end of the first floor which was subsequently analyzed for asbestos content by Polarized Light Microscopy with Stain Dispersion. **This sample was found to contain more than 1% asbestos.**

This material will require handling/removal by trained asbestos workers prior to any remodeling, renovation, or demolition that will lead to the disturbance or removal of asbestos. Prior to removal of this material, ten-day notices must be filed with the local Air Pollution Authority and the State Department of Labor & Industries.

This letter and attached lab report will comprise the 'Asbestos Sampling'. Please call us if you have any questions.

Sincerely,

Dave B. Phillips
AHERA Bldg. Insp.
Cert.# WEST-BIR-2001-1 (expires 1-5-2002)

enclosure

PHILLIPS ENVIRONMENTAL SERVICES

29354 BACUS RD.
SEDRO WOOLLEY, WA 98284

360-854-7900

FAX 360-854-7731

ASBESTOS BULK SAMPLE ANALYSIS

Client Name: **Skagit Co. Facility Management**
700 S. Second St., #202
Mt. Vernon, WA 98273
360-336-9376

Survey #: 01005

Source of Samples: **205 Kincaid Street, , Mt. Vernon, WA 98273**

Date Rec'd: 1-18-01

Analytical Method: Polarized Light Microscopy with Dispersion Staining (PLM-DS Method)

Sample No.: 1
Lab No.: 9846B
Location: First floor, east end, ceiling (above drop ceiling)
Description: 'Popcorn' ceiling texture

Analysis: **Asbestos:** **Chrysotile 8-10%**
Other fibers: Cellulose

Analyst: Dave B. Phillips Date: 1-22-01

Samples retained for 2 weeks unless otherwise requested in writing.

Lab results are completely confidential. Written permission is required to release results to another party.

PHILLIPS ENVIRONMENTAL SERVICES

29354 BACUS RD.
SEDRO WOOLLEY, WA 98284

360-854-7900 FAX 360-854-7731

November 24, 2003 Survey No. 03110

Carletti Architects, P. S.
1404 E. College Way, Suite 103
Mt. Vernon, WA 98273
360-424-0394

RE: **Limited Asbestos Survey: 205 Kincaid St., Mt. Vernon, WA**

On November 21, 2003, I inspected a commercial building located at the above referenced address for the purpose of determining the presence or absence of building materials that might contain asbestos. This inspection was limited to the 'critical path' of a planned new HVAC system for the third floor east courtroom and is not intended to represent any other materials or areas within this building. Because ducting for the new system will be in the same location as the existing, it appears that the only materials to be disturbed are roofing materials where the new HVAC unit is to be mounted and penetrate the roof. Previous testing on this building has shown the wall and ceiling plasters to be asbestos free should they require any disturbance for this project.

Title 40 Code of Federal Regulations (40 CFR), subpart M, section 61.141, established the allowable limit of asbestos in building materials at 1% by weight. Materials containing more than 1% asbestos are regulated and must be handled in accordance with Federal, State, and Local regulations.

Surveys are based on 'visible and accessible materials' and although reasonable effort was made to locate and test all suspect materials, some suspect materials may remain hidden in walls or below floor underlayment or other areas until demolition or renovation work makes them accessible. If other suspect materials are discovered during the course of demolition or remodel activities they will require testing prior to continuing work.

One bulk sample was collected and subsequently analyzed for asbestos content by Polarized Light Microscopy with Stain Dispersion. **No asbestos was detected within this sample.**

This letter along with the attached lab report will comprise the 'Limited Asbestos Survey'. Please call us if you have any questions.

Sincerely,

Dave B. Phillips
AHERA Bldg. Insp.
Cert.# 03-2687 (expires 4-23-04)

enclosure

PHILLIPS ENVIRONMENTAL SERVICES

29354 BACUS RD.
SEDRO WOOLLEY, WA 98284
360-854-7900 American Industrial Hygiene Association Lab I.D. # 102950 FAX 360-854-7731

ASBESTOS BULK SAMPLE ANALYSIS

Client Name: **Carletti Architects, P. S.**
1404 E. College Way, Suite 103
Mt. Vernon, WA 98273
360-424-0394

Survey #: 03110

Source of Samples: 205 Kincaid St., Mt. Vernon, WA

Date Rec'd: 11-21-03

Analytical Method: Polarized Light Microscopy with Dispersion Staining (PLM-DS Method)

Sample #: 1	**Lab No.:** 19794	Location: 3rd floor roof, east side		
Description:		Non-Fibrous Material:	Other Fibrous Mat'l: %	**Asbestos Type: %**
Layer 1 of 3	Asphalt roof felt w/sand	Asphalt/binder/sand	Glass 20%	**None detected**
Layer 2 of 3	Asphalt felt & tar (multiple layers)	Asphalt/binder	Glass, 20%	**None detected**
Layer 3 of 3	Grey soft fibrous material	Binder/perlite	Cellulose 30%	**None detected**

Analyst:_____Date:_____
Dave B. Phillips

Samples retained for 2 weeks unless otherwise requested in writing.

Lab results are completely confidential. Written permission is required to release results to another party.

PHILLIPS ENVIRONMENTAL SERVICES

29354 BACUS RD.
SEDRO WOOLLEY, WA 98284

360-854-7900 FAX 360-854-7731

March 13, 2009

Survey No. 09050

Mr. Alan Jongsma
Skagit Co. Facility Mgmt.
1730 Continental Pl.
Mr. Vernon, WA 98273
360-419-7643

RE: **Limited Asbestos & Lead Paint Survey: Skagit Co. Courthouse, Mt. Vernon, WA**

On March 10, 2009, I inspected a commercial building located at the above referenced address for the purpose of determining the presence or absence of building materials that might contain asbestos. This inspection was limited to materials affected by upcoming renovation/repair work involving cracks in the brick façade and sealing of parapet caps and is not intended to represent any other materials or areas within this building.

Title 40 Code of Federal Regulations (40 CFR), subpart M, section 61.141, established the allowable limit of asbestos in building materials at 1% by weight. Materials containing more than 1% asbestos are regulated and must be handled in accordance with Federal, State, and Local regulations. Paints containing more than 0.5% lead are defined as 'lead based paint' and disposal is regulated.

Surveys are based on 'visible and accessible materials' and although reasonable effort was made to locate and test all suspect materials, some suspect materials may remain hidden in walls or below floor underlayment or other areas until demolition or renovation work makes them accessible. If other suspect materials are discovered during the course of demolition or remodel activities they will require testing prior to continuing work.

Two asbestos bulk samples were collected and subsequently analyzed for asbestos content by Polarized Light Microscopy with Stain Dispersion. **None of the samples were found to contain more than 1% asbestos.**

Two paint samples were collected and subsequently analyzed for lead content by EPA 7000B Method. **None of the paint samples were found to contain more than 0.5% lead.**

This letter along with the attached material list and lab reports will comprise the 'Limited Asbestos & Lead Paint Survey'. Please call us if you have any questions.

Sincerely,

Dave B. Phillips
AHERA Bldg. Insp.
Cert.# 09-0037 (expires 1-7-10)

PHILLIPS ENVIRONMENTAL SERVICES

29354 BACUS RD.
SEDRO WOOLLEY, WA 98284

360-854-7900 FAX 360-854-7731

Client: Skagit Co. Facility Mgmt.
1730 Continental Pl.
Mr. Vernon, WA 98273
360-419-7643

Asbestos Survey - Skagit Co. Courthouse
Mt. Vernon, WA

Survey #: 09050

Survey date: 3-10-09

Asbestos Sample/Material List

Material # & Description		Location (homog. area)	Type	Friab	Cond	Qty.	Sample # & Location (see dwg.)		Asbestos
1	Mortar	Exterior brick, N side	Misc	N	F		1	N. side brick mortar	N/D
2	Sealant/caulk & mortar	Parapet wall cap joints, N. side	Misc	N	F		2	N. side parapet wall cap	N/D

Lead Based Paint Sample/Material List

Sample # & Location (see dwg.)		Paint Location (homog. area)	Lead Content in percent*
L-1	N. side parapet wall cap, W. end of center parapet	Exterior parapets	<0.0068%
L-2	N. side parapet wall cap, middle of center parapet	Exterior parapets	<0.0045%

* Paints containing more than 0.5% lead are defined by EPA as Lead Based Paint and disposal is regulated. Any paints containing more than 0.5% lead will require TCLP (leachate) testing to determine if the material will be accepted at a landfill as ordinary construction debris or require disposal as hazardous waste. If the material is to be recycled, contact the recycler for their specific requirements.

N/D = None Detected
N/T = Not Tested - previous sample tested positive
Quantities shown are approximate - field verification recommended

Note: Friability assessments were made on these materials in their present undisturbed condition, damage or disturbance of any kind may cause some non-friable materials to become friable.

PHILLIPS ENVIRONMENTAL SERVICES

29354 BACUS RD.
SEDRO WOOLLEY, WA 98284
360-854-7900 American Industrial Hygiene Association Lab I.D. # 102950 FAX 360-854-7731

ASBESTOS BULK SAMPLE ANALYSIS

Client Name: **Skagit Co. Facility Mgmt.**
1730 Continental Pl.
Mr. Vernon, WA 98273
360-419-7643

Survey #: 09050

Source of Samples: Skagit Co. Courthouse, Mt. Vernon, WA

Date Rec'd: 3-10-09

Analytical Method: Polarized Light Microscopy with Dispersion Staining (PLM-DS Method)

Sample #: 1	**Lab No.:** 44465	Location: North side exterior brick mortar		
Layers	Description:	Non-Fibrous Material:	Other Fibrous Mat'l: %	**Asbestos Type: %**
Layer 1 of 1	Grey cement-like material	Binder/fine particles/granules	Cellulose trace	**None detected**

Sample #: 2	**Lab No.:** 44466	Location: North side parapet wall cap joint sealant & mortar		
Layers	Description:	Non-Fibrous Material:	Other Fibrous Mat'l: %	**Asbestos Type: %**
Layer 1 of 3	Tan rubbery caulk/sealant	Binder	Cellulose trace	**None detected**
Layer 2 of 3	White rubbery caulk/sealant	Binder	Cellulose 2%	**None detected**
Layer 3 of 3	Grey cement-like material	Binder/fine particles/granules	Cellulose trace	**None detected**

Analyst: Dave B. Phillips Date: 3-13-09

Dave B. Phillips

Samples retained for 2 weeks unless otherwise requested in writing.

Lab results are completely confidential. Written permission is required to release results to another party.

March 13, 2009

Dave Phillips
Phillips Environmental Services
29354 Bacus Road
Sedro Wooley, WA 98284

NVL LABS & HAZARDOUS MATERIALS SERVICES

RE: Metals Analysis; NVL Batch # 2902679.00

Dear Mr. Phillips,

Enclosed please find the test results for samples submitted to our laboratory for analysis. Examination of these samples was conducted using analytical instruments in accordance to U.S. EPA, NIOSH, OSHA and other ASTM methods.

For matrix materials submitted as paint, dust wipe, soil or TCLP samples, analysis for the presence of total metals is conducted using published U.S. EPA Methods. Paint and soil results are usually expressed in mg/Kg which is equivalent to parts per million (ppm). Lead (Pb) in paint is usually expressed in mg/Kg (ppm) , Percent (%) or mg/cm^2 by area. Dust wipe sample results are usually expressed in ug/wipe and ug/ft^2. TCLP samples are reported in mg/L (ppm). For air filter samples, analyses are conducted using NIOSH and OSHA Methods. Results are expressed in ug/filter and ug/m^3. Other matrix materials are analyzed accordingly using published methods or specified by client. The reported test results pertain only to items tested. Lead test results are not blank corrected.

NVLAP # 102063

AIHA Environmental Lead and Industrial Hygiene ACCREDITED LABORATORY
AIHA - IH #101861

For recent regulation updates pertaining to current regulatory levels or permissible exposure levels, please call your local regulatory agencies for more details.

This report is considered highly confidential and will not be released without your approval. Samples are archived for two weeks following analysis. Samples that are not retrieved by the client are discarded after two weeks.

Thank you for using our laboratory services. if you need further assistance please feel free to call us at 206-547-0100 or 1-888-NVLLABS.

Sincerely,

Nick Ly, Technical Director

Enclosure:

NVL LABORATORIES, INC
4708 AURORA AVE N
SEATTLE, WA 98103.6516
TEL **206.547.0100**
FAX 206.634.1936
nvllabs@nvllabs.com

NVL Laboratories, Inc.

4708 Aurora Ave. N., Seattle, WA 98103
Tel: 206.547.0100, Fax: 206.634.1936
www.nvllabs.com

Analysis Report

AIHA - IH # 101861
WA - DOE # C1765

AIHA Environmental Lead and Industrial Hygiene ACCREDITED LABORATORY

Total Lead (Pb)

Client: Phillips Environmental Services
Address: 29354 Bacus Road
Sedro Wooley, WA 98284

Attention: **Mr. Dave Phillips**
Project Location: N/A

Batch #: 2902679.00
Matrix: Paint Chips
Method: EPA 7000B
Client Project #: 09050
Date Received: 03/12/2009
Samples Received: 2
Samples Analyzed: 2

Lab ID	Client Sample #	Sample Weight	RL in mg/Kg	Results in mg/Kg	Results in percent
29018048	L-1	0.1425	68.0	< 68.0	< 0.0068
29018049	L-2	0.2135	45.0	< 45.0	< 0.0045

Sampled by: Client
Analyzed by: Tanveer Khan
Reviewed by: Nick Ly

Date Analyzed: 03/13/2009
Date Issued: 03/13/2009

Nick Ly, Technical Director

mg/ Kg =Milligrams per kilogram
Percent = Milligrams per kilogram / 10000
Note : Method QC results are acceptable unless stated otherwise.
Unless otherwise indicated, the condition of all samples was acceptable at time of receipt.

RL = Reporting Limit
'<' = Below the reporting Limit

Bench Run No: 29-0313-4

NVL Laboratories, Inc.
4708 Aurora Ave N, Seattle, WA 98103
Tel: 206.547.0100 Emerg.Cell: 206.914.4646
Fax: 206.634.1936 1.888.NVL.LABS (685.5227)

CHAIN of CUSTODY SAMPLE LOG

BATCH ID
2902679.00
HAZARDOUS MATERIALS SERVICES

Client: Phillips Environmental Services
Street: 29354 Bacus Road
Sedro Wooley, WA 98284
Project Manager: N/A
Project Number:

NVL Batch Number:
Client Job Number: 09050
Total Samples: 2
Turn Around Time: ☐ 1-Hr ☐ 8-Hrs ☒ 2 Days ☐ 5 Days ☐ 2-Hrs ☐ 12-Hrs ☐ 3 Days ☐ 6-10 Day ☐ 4-Hrs ☐ 24-Hrs ☐ 4 Days
Please call for TAT less than 24 Hrs

Email address: ASBESTOS@FIDALGO.NET

Phone: (360) 854-7900 Fax: (360) 854-7731 (360) 507-7774

☐ Asbestos Air	☐ PCM (NIOSH 7400)	☐ TEM (NIOSH 7402)	☐ TEM (AHERA)	☐ TEM (EPA Level II)	☐ Other
☐ Asbestos Bulk	☐ PLM (EPA/600/R-93/116)	☐ PLM (EPA Point Count)	☐ PLM (EPA Gravimetry)	☐ TEM BULK	
☐ Mold/Fungus	☐ Mold Air	☐ Mold Bulk	☐ Rotometer Calibration		

METALS	Det. Limit	Matrix		RCRA		Other Metals
☐ Total Metals	☐ FAA (ppm)	☐ Air Filter	☐ Soil	☐ Arsenic (As)	☐ All 8	☐ All 3
☐ TCLP	☐ ICP (ppm)	☐ Drinking water	☒ Paint Chips in %	☐ Barium (Ba)	☐ Chromium (Cr	☐ Copper (Cu)
☒ LEAD	☐ GFAA (ppb	☐ Dust/wipe (Area)	☐ Paint Chips in cm	☐ Cadmium (Cd)	☐ Lead (Pb)	☐ Nickel (Ni)
					☐ Mercury (Hg)	☐ Zinc (Zn)

☐ Other Types of Analysis: ☐ Fiberglass ☐ Silica ☐ Nuisance Dust ☐ Respirable Dust ☐ Other (Specify) _____

Condition of Package: ☐ Good ☐ Damaged (no spillage) ☐ Severe damage (spillage)

Seq. #	Lab ID	Client Sample Number	Comments (e.g Sample are, Sample Volume, etc)	A/R
1		L-1		
2		L-2		
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				

	Print Below	Sign Below	Company	Date	Time
Sampled by	DAVE PHILLIPS		PES	3/10/09	PM
Relinquished by				3/11/09	AM
Received by	GretaSpeir		NVL	3/12/09	10:55 AM
Analyzed by	TANVEER KHAN	Tanveer Khan	NVL	3/13/09	3:30 PM
Results Called by	Greta Speir (Msg)		NVL	3/16/09	09:50
Results Faxed by					

Special Instructions:

Limited Hazardous Materials Survey Report

Skagit County Courthouse, Administration and Annex Buildings

Mount Vernon, Washington

Prepared for:
Ken Hansen
Skagit County Facilities Management

June 8, 2018
PBS Project No. 41341.006

PBS
2517 EASTLAKE AVENUE EAST
SUITE 100
SEATTLE, WA 98102
206.233.9639 MAIN
866.727.0140 FAX
PBSUSA.COM

TABLE OF CONTENTS

APPENDICES

1 INTRODUCTION

1.1 Project Background

PBS Engineering and Environmental, Inc. (PBS) performed a limited hazardous materials survey for asbestos-containing materials and lead-containing paints at the Skagit County Courthouse, Administration Building, and Annex, located at 205 West Kincaid Street in Mount Vernon, Washington, in conjunction with planned renovations. An intent of this investigation is to ensure that Skagit County Facilities Management follows applicable regulatory requirements that a "good faith inspection" for ACMs be performed prior to renovation activities.

At the request of the Skagit County Facilities Management, all exterior accessible areas to be impacted by the renovation were inspected for the presence of Asbestos-Containing Materials (ACMs) and Lead-Containing Paints (LCP).

The scope of our survey included window replacements, door painting, and stair and handrail painting.

1.2 Survey Process

Accessible areas included in the project scope were inspected by AHERA Certified Building Inspector Filmon Embaye (Cert. No. 167084 Exp. 4/25/2019) on May 16, 2018. PBS endeavored to inspect all accessible areas of the scope of work. Inaccessible areas consist of those requiring selective demolition, fall protection, or confined space entry protocols to gain access.

When observed, suspect materials were sampled, assigned a unique identification number, and transmitted for analysis to EMSL Laboratories (NVLAP #200613-0) under chain-of-custody protocols. Samples were analyzed according to EPA Method 600R-93/116 using Polarized Light Microscopy (PLM), which has a reliable limit of quantification of 1% asbestos by volume. Information regarding the type and location of sampled materials can be found on the attached PLM Sample Inventory.

Suspect ACMs may exist in inaccessible areas. PBS endeavored to determine the presence and estimate the condition of suspect materials in all accessible areas included in the scope of work. While PBS has endeavored to identify the ACM that may be found in concealed locations, additional unidentified ACM may exist.

2 FINDINGS

2.1 Asbestos-Containing Materials (ACMs)

Three (3) samples were collected of suspect asbestos-containing materials. The materials listed below were found to be asbestos-containing:

- Brown caulking (Painted Beige)—Courthouse, north elevation, between window and rough opening

For a complete listing of representative bulk sampling and associated laboratory analysis, refer to the Attachments.

The materials listed below were found *not* to be asbestos-containing.

- White caulking
- Grey window glazing compound

2.2 Lead-Containing Paint (LCP)

Nine (9) representative painted coatings were sampled for lead content from the exteriors of the Courthouse, Administration Building, and the Annex Building. The samples were assigned unique identification numbers and transmitted to EMSL Laboratories (CA-Metals #2733) in Seattle, Washington under chain-of-custody protocols for analysis using Flame Atomic Absorption.

Lead was detected in five (5) of the nine (9) paint chip samples collected in concentrations ranging from 0.018% to 14%. Refer to the attached AA Lead Paint Sample Inventory for additional information on materials sampled as part of this investigation.

The following paints were found to contain lead:

• Red / Metal / Hand Rail and Door	Courthouse Annex	0.0140%
• Beige / Wood / Window Frame	Courthouse, North Elevation	14.0000%
• Beige / Wood / Window Trim	Courthouse, Northeast Elevation	0.0180%
• Gray / Metal / Hand Rail	Courthouse, North Elevation	0.0530%
• Beige / Metal / Window	Courthouse, North Elevation	11.0000%

3 RECOMMENDATIONS

3.1 Asbestos-Containing Materials (ACMs)

Survey of the renovation areas found an asbestos-containing brown caulking (painted beige) located on the north elevation of the Courthouse between the window frame and rough opening. All brown caulking around window framing on this building is presumed asbestos-containing.

PBS recommends that ACMs to be impacted by renovation activities only be impacted by properly trained and protected personnel in accordance with applicable local, state, and federal regulations. A qualified asbestos abatement contractor licensed in the State of Washington should be employed for any removal and proper disposal of ACM in accordance with all applicable local, state, and federal regulations.

The possibility exists that suspect ACM may be present in equipment, wall and ceiling cavities, and in select areas of the roofs included in the scope of renovations. These may include, but are not limited to waterproofing membrane, internal gaskets, caulking and sealants of HVAC equipment, and construction adhesives and wall mastics. In the event that suspect ACM is uncovered during construction, contractor should stop work immediately and inform the owner promptly for confirmation testing. All untested materials should be presumed asbestos-containing or tested for asbestos content prior to impact.

3.2 Lead-Containing Paint (LCP)

Representative painted coatings from the project locations were found to contain lead by laboratory analysis. Impact of painted surfaces with detectable concentrations of lead requires construction activities to be performed according to Washington Labor and Industries regulations for Lead in Construction (WAC 296-62-

155). Workers impacting LCP should be provided the proper personal protective equipment and use proper work methods to limit occupational and environmental exposure to lead until an initial exposure assessment has been conducted.

Painted coatings may exist in inaccessible areas of the work area or in secondary coatings. Any previously unidentified painted coatings should be considered lead containing until sampled and proven otherwise.

Report prepared by:

Digitally signed by Kaitlin Soukup
Date: 2018.06.08 15:44:42 -07'00'

Kaitlin Soukup
AHERA Building Inspector
Cert. # IN-17-5550B, expiration 8/30/18

Report reviewed by:

Digitally signed by Gregg Middaugh
Date: 2018.06.08 15:30:18 -07'00'

Gregg Middaugh
Senior Project Manager

APPENDIX A

PLM Bulk Sampling Information

PLM Bulk Sample Inventory

PLM Bulk Sample Laboratory Data Sheets

PLM Bulk Sample Chain of Custody Documentation

PLM ASBESTOS SAMPLE INVENTORY

PBS Sample #	Material Type	Sample Location	Lab Description	Lab Result	Lab
41341.006 -1	White Caulking	Courthouse exterior, between wood window frame and wall on NE elevation	White, non-fibrous, homogeneous	NAD	EMSL
41341.006 -2	Brown Caulking (Painted Beige)	Courthouse exterior, between window and rough opening on north elevation	Gray/beige, non-fibrous, homogeneous	3% Chrysotile	EMSL
41341.006 -3	Grey Window Glazing Compound	Courthouse exterior between window glass and frame	Gray, non-fibrous, homogeneous	NAD	EMSL

EMSL Analytical, Inc.

3317 3rd Ave S, Suite D 2nd floor Seattle, WA 98134

Tel/Fax: (206) 269-6310 / (206) 900-8789

http://www.emsl.com / seattlelab@emsl.com

EMSL Order:	511801388
Customer ID:	PBSE51
Customer PO:	
Project ID:	

Attention: Greg Middaugh
PBS Engineering & Environmental, Inc.
2517 Eastlake Ave. East Ste. 100
Seattle, WA 98102

Project: 041341.006/ Skagit County Court House Paint testing

Phone:	(206) 233-9639
Fax:	(206) 762-4780
Received Date:	05/17/2018 2:30 PM
Analysis Date:	05/23/2018
Collected Date:	

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
41341.006-1 *511801388-0001*	White caulking: Exterior court house between window wood frame and wall on NE side of building	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
41341.006-2 *511801388-0002*	Beige painted brown caulking: Exterior court house between window and rough opening on N face side of building	Gray/Beige Non-Fibrous Homogeneous		97% Non-fibrous (Other)	3% Chrysotile
41341.006-3 *511801388-0003*	Grey window glazing compound: Exterior court house between window glass and frame	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected

Analyst(s)
Jason Stuhr (3)

Lauren Kerber, Laboratory Manager
or Other Approved Signatory

Initial report from: 05/23/2018 14:37:56

APPENDIX B

AA Lead Paint Chip Sampling Information

AA Lead Paint Chip Sample Inventory

AA Lead Paint Chip Laboratory Data Sheets

AA Lead Paint Chip Chain of Custody Documentation

AA LEAD PAINT CHIP SAMPLE INVENTORY

PBS Sample #	Paint Color / Component or Substrate	Sample Location	Results (%)	Lab
41341.006 -Pb01	Green / Metal / Roof Flashing	Courthouse Annex	<0.010	EMSL
41341.006 -Pb02	Grey / Metal / Stairs	Courthouse Annex	<0.010	EMSL
41341.006 -Pb03	Red / Metal / Hand Rail and Door	Courthouse Annex	0.0140	EMSL
41341.006 -Pb04	Beige / Wood / Window Frame	Courthouse, North Elevation	14.0000	EMSL
41341.006 -Pb05	Beige / Wood / Window Trim	Courthouse, Northeast Elevation	0.0180	EMSL
41341.006 -Pb06	Gray / Metal / Hand Rail	Courthouse, North Elevation	0.0530	EMSL
41341.006 -Pb07	Beige / Metal / Window	Courthouse, North Elevation	11.0000	EMSL
41341.006 -Pb08	Brown / Wood / Exterior Window Screen	Courthouse Admin Building	<0.010	EMSL
41341.006 -Pb09	Grey / Concrete / Exterior Stair Tread	Courthouse Admin Building	<0.010	EMSL

mg/kg = Milligrams per kilogram
< = Less than the Limit of Detection

EMSL Analytical, Inc.
3317 3rd Ave S, Suite D 2nd floor, Seattle, WA 98134
Phone/Fax: (206) 269-6310 / (206) 900-8789
http://www.emsl.com seattlelab@emsl.com

EMSL Order:	511801361
CustomerID:	PBSE51
CustomerPO:	
ProjectID:	

Attn: **Greg Middaugh**
PBS Engineering & Environmental, Inc.
2517 Eastlake Ave. East Ste. 100
Seattle, WA 98102

Phone:	(206) 233-9639
Fax:	(206) 762-4780
Received:	05/17/18 2:30 PM
Collected:	

Project: **041341.006, Skagit County Courthouse Annex Paint Testing**

Test Report: Lead in Paint Chips by Flame AAS (SW 846 3050B/7000B)*

Client Sample Description	*Lab ID*	*Collected*	*Analyzed*	*Lead Concentration*
41341.006-PB01	*511801361-0001*		5/18/2018	<0.010 % wt
	Site: Green paint on metal, Courthouse annex roof flashing			
41341.006-PB02	*511801361-0002*		5/18/2018	<0.010 % wt
	Site: Grey paint metal, Exterior court house annex metal stairs			
41341.006-PB03	*511801361-0003*		5/18/2018	0.014 % wt
	Site: Red paint on metal, Exterior courthouse annex hand rail and door			

Lauren Kerber, Laboratory Manager
or other approved signatory

*Analysis following Lead in Paint by EMSL SOP/Determination of Environmental Lead by FLAA. Reporting limit is 0.010 % wt based on the minimum sample weight per our SOP. Unless noted, results in this report are not blank corrected. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities. Samples received in good condition unless otherwise noted. "<" (less than) result signifies that the analyte was not detected at or above the reporting limit. Measurement of uncertainty is available upon request. The QC data associated with the sample results included in this report meet the recovery and precision requirements unless specifically indicated otherwise. Definitions of modifications are available upon request.

Samples analyzed by EMSL Analytical, Inc. Seattle, WA

Initial report from 05/22/2018 08:45:26

EMSL Analytical, Inc.
3317 3rd Ave S, Suite D 2nd floor, Seattle, WA 98134
Phone/Fax: (206) 269-6310 / (206) 900-8789
http://www.emsl.com seattlelab@emsl.com

EMSL Order:	511801362
CustomerID:	PBSE51
CustomerPO:	
ProjectID:	

Attn: **Greg Middaugh**
PBS Engineering & Environmental, Inc.
2517 Eastlake Ave. East Ste. 100
Seattle, WA 98102

Phone:	(206) 233-9639
Fax:	(206) 762-4780
Received:	05/17/18 2:30 PM
Collected:	

Project: **041341.006, Skagit County Courthouse Paint Testing**

Test Report: Lead in Paint Chips by Flame AAS (SW 846 3050B/7000B)*

Client Sample Description	*Lab ID*	*Collected*	*Analyzed*	*Lead Concentration*
41341.006-Pb04	*511801362-0001*		5/18/2018	14 % wt
	Site: Beige paint on wood, Exterior courthouse window frame on north side of building			
41341.006-Pb05	*511801362-0002*		5/18/2018	0.018 % wt
	Site: Beige paint on wood, Exterior courthouse window trim on NE side of building			
41341.006-Pb06	*511801362-0003*		5/18/2018	0.053 % wt
	Site: Grey paint on metal, Exterior courthouse hand rail on the north face of the building			
41341.006-Pb07	*511801362-0004*		5/18/2018	11 % wt
	Site: Beige paint on metal, Exterior courthouse window on the north face of the building			

Lauren Kerber, Laboratory Manager
or other approved signatory

*Analysis following Lead in Paint by EMSL SOP/Determination of Environmental Lead by FLAA. Reporting limit is 0.010 % wt based on the minimum sample weight per our SOP. Unless noted, results in this report are not blank corrected. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities. Samples received in good condition unless otherwise noted. "<" (less than) result signifies that the analyte was not detected at or above the reporting limit. Measurement of uncertainty is available upon request. The QC data associated with the sample results included in this report meet the recovery and precision requirements unless specifically indicated otherwise. Definitions of modifications are available upon request.

Samples analyzed by EMSL Analytical, Inc. Seattle, WA

Initial report from 05/22/2018 08:46:32

EMSL Analytical, Inc.
3317 3rd Ave S, Suite D 2nd floor, Seattle, WA 98134
Phone/Fax: (206) 269-6310 / (206) 900-8789
http://www.emsl.com seattlelab@emsl.com

EMSL Order:	511801363
CustomerID:	PBSE51
CustomerPO:	
ProjectID:	

Attn: **Greg Middaugh**
PBS Engineering & Environmental, Inc.
2517 Eastlake Ave. East Ste. 100
Seattle, WA 98102

Phone:	(206) 233-9639
Fax:	(206) 762-4780
Received:	05/17/18 2:30 PM
Collected:	

Project: **041341.006, Skagit County Courthouse Admin Building Paint Testing**

Test Report: Lead in Paint Chips by Flame AAS (SW 846 3050B/7000B)*

Client Sample Description	*Lab ID*	*Collected*	*Analyzed*	*Lead Concentration*
41341.006-Pb08	*511801363-0001*		5/18/2018	<0.010 % wt
	Site: Brown paint on wood, Exterior window screen			
41341.006-Pb09	*511801363-0002*		5/18/2018	<0.010 % wt
	Site: Grey paint on concrete, Exterior admin bldg stair tread			

Lauren Kerber, Laboratory Manager
or other approved signatory

*Analysis following Lead in Paint by EMSL SOP/Determination of Environmental Lead by FLAA. Reporting limit is 0.010 % wt based on the minimum sample weight per our SOP. Unless noted, results in this report are not blank corrected. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities. Samples received in good condition unless otherwise noted. "<" (less than) result signifies that the analyte was not detected at or above the reporting limit. Measurement of uncertainty is available upon request. The QC data associated with the sample results included in this report meet the recovery and precision requirements unless specifically indicated otherwise. Definitions of modifications are available upon request.

Samples analyzed by EMSL Analytical, Inc. Seattle, WA

Initial report from 05/22/2018 08:47:45

APPENDIX C

PBS Certifications

Certificate of Completion

This is to certify that

Filmon A. Embaye

has satisfactorily completed
4 hours of refresher training as an

AHERA Building Inspector

to comply with the training requirements of
TSCA Title II, 40 CFR 763 (AHERA)

EPA Provider # 1085

167084
Certificate Number

Instructor

ARGUS PACIFIC
TRAINING • CONSULTING
A Terracon COMPANY

Apr 25, 2018 Expires in 1 year.
Date(s) of Training

Exam Score: N/A
If appropriate:

ARGUS PACIFIC, INC / 1900 WEST NICKERSON ST, SUITE 315 / SEATTLE, WASHINGTON 98119 / 206.285.3373 / ARGUSPACIFIC.COM

THIS IS TO CERTIFY THAT

KAITLIN SOUKUP

HAS SUCCESSFULLY COMPLETED THE TRAINING COURSE

for

ASBESTOS INSPECTOR INITIAL COURSE

In accordance with TSCA Title II, Part 763, Subpart E, Appendix C of 40 CFR

Course Date: 8/28/2017 - 8/30/2017

Course Location: Portland, OR

Certificate: IN-17-5550B

PBS

AHERA is the Asbestos Hazard Emergency Response Act enacting Title II of Toxic Substance Control Act (TSCA)

Expiration Date: 08/30/2018

For verification of the authenticity of this certificate contact:
PBS Environmental
4412 SW Corbett Avenue
Portland, OR 97239
(503) 248-1939

Greg Baker, Instructor

Certificate of Analysis
PLM Asbestos Identification

Kapak Inc
Environmental Laboratory Services
info@kapaklabs.com
www.kapaklabs.com
3510 E Enterprise Dr,
Anaheim, CA 92807
NVLAP Code: 600280-0

Lab Number : 7981
Collected By : Eric Peterson
Project Number :
Project Name : Eric Peterson
Project Location: **205 West Kincaid St, Mount Vernon, WA 98273**

Date Collected : 2/11/2021
Date Received : 2/16/2021
Date Analyzed : 2/19/2021
Date Reported : 2/19/2021
Number of Samples: 1

Sample ID	Sample Location	Description	Color	Composition	Asbestos Result
7981-01 1	Court Room Wall	Wall Board	Brown	100% Cellulose	**None Detected**

Certificate of Analysis
PLM Asbestos Identification

Kapak Inc
Environmental Laboratory Services
info@kapaklabs.com
www.kapaklabs.com
3510 E Enterprise Dr,
Anaheim, CA 92807
NVLAP Code: 600280-0

Lab Number : 7981
Collected By : Eric Peterson
Project Number :
Project Name : Eric Peterson
Project Location: **205 West Kincaid St, Mount Vernon, WA 98273**

Date Collected : 2/11/2021
Date Received : 2/16/2021
Date Analyzed : 2/19/2021
Date Reported : 2/19/2021
Number of Samples: 1

Sample ID	Sample Location	Description	Color	Composition	Asbestos Result

Raul Lanuza- Analyst

Sina Heydari - Approved By

The above analyses were performed in accordance with the procedure outlined in the Us Federal register 40 CFR 763, subpart F, Appendix A; EPA-600/R-93/116 (Method for Determination of Asbestos in Building Materials), and EPA – Appendix E to Subpart E of 40 CFR Part 763 (US EPA Interim Method for the Determin action of Asbestos in Bulk Insulation Samples). Samples were analyzed using Calibrated Visual Estimations (CVES); therefore, results may not be reliable for samples of low asbestos concentration levels. Samples of wall systems containing discrete and separable layers are analyzed separately and reported as composite unless specifically requested by the customer analytical results for individual layers. This report applies only to the items tested. Results are representative of the samples submitted and may not represent the entire material from which the samples were collected. "None Detected" means that no asbestos in the sample. "<1%" (less than one percent) means that asbestos was observed in the sample but the concentration is below the quantifiable level of 1%. This report was issued by a NIST/NVLAP Accredited Laboratory (Lab Code #600280-0) and may not be reproduced, expect in full without the expressed written consent of Kapak Environmental Laboratories (Kapak Inc). Kapak Recommends gravimetric reduction for all Non-Fibrous organically bound materials prior to Analysis. This report may not be used to claim product certification, approval or endorsement by NIST, BVLAP, ELAP or any government agency.

N11902

Nirtue Labs

Asbestos Analysis

CHAIN OF CUSTODY

Sampling Date	
Lab No. (lab use only)	
7981	
Turnaround Requested*	
Standard	3TAT

Company/Client: Skagit County Contact Name: Eric Peterson

Phone: 360. 416. 1176 Project address: 205 West Kincaid ST Mount Vernon, WA 98273

E-mail: EPeterson@CO.Skagit.WA.US

IMPORTANT: Results will be e-mailed. Failure to write your e-mail address will result in significant delays!

Sample ID	Sample Date	Sample Description/Area e.g. bedroom, etc.	Sample Type**	Analysis Type***	Regulation	Average(LPM)	Total Min	Note
#1	2/11/2021	COURTRM 2 WALL		PLM	EPA 600/R-93/116	NA	NA	
				PLM	EPA 600/R-93/116	NA	NA	
				PLM	EPA 600/R-93/116	NA	NA	

Note: One kit is for one sample only. Visit www.nirtuelabs.com for any questions or concerns. You may send in additional sample:

10. **Payment of additional sample must be included and mailed in-Please pay either by check (Payable to Kapak Inc), cash, or request an online link for payment by emailing us at contact@nirtuelabs.com**
11. **Separate each sample by using a Ziploc bag. Do not contaminate by placing all samples in one bag!**
12. **All turn-around time will be based on the Chain of Custody!**

Submitted by (print): _____ Date/Time: _____ Signature: _____

Received by (print): AL Date/Time: 2.16.21 Signature: _____

**Sample Types:
- Drywall, DMT, Joint Compound, Popcorn Ceiling
- Tile, Vinyle Tile, Ceramic Tile, Linoleum Tile,
- Insulation, TSI, Cement Pipe
- Mastic, Glue, Adhesive

***Analysis Types: A Asbestos
- PCM(Niosh 7400A)
- PLM(EPA 600/R-93/116
- Point Count 400
- Point Count 1000

For Laboratory Use

✓

Holding time for all samples is 30 days unless otherwise noted. Sample(s) arrived in good condition unless otherwise noted.

Page 1 of 1

Appendix C

Previously Conducted Hazardous Materials Test Results

Skagit County Administration Building

PHILLIPS ENVIRONMENTAL SERVICES

29354 BACUS RD.
SEDRO WOOLLEY, WA 98284

360-854-7900 FAX 360-854-7731

December 21, 2010

Survey No. 10133

Ms. Kelly Merritt
Skagit Co. Facility Mgmt.
1730 Continental Pl.
Mr. Vernon, WA 98273
360-419-7643

RE: **Asbestos Testing: Skagit Co. Admin. Bldg., Mt. Vernon, WA**

On December 21, 2010, I collected a sample of plaster/drywall from a commercial building located at the above referenced address for the purpose of determining the presence or absence of building materials that might contain asbestos. This sample was collected to confirm the 'wall system' in this building is asbestos free prior to minor remodel work commencing.

Title 40 Code of Federal Regulations (40 CFR), subpart M, section 61.141, established the allowable limit of asbestos in building materials at 1% by weight. Materials containing more than 1% asbestos are regulated and must be handled in accordance with Federal, State, and Local regulations.

Surveys are based on 'visible and accessible materials' and although reasonable effort was made to locate and test all suspect materials, some suspect materials may remain hidden in walls or below floor underlayment or other areas until demolition or renovation work makes them accessible. If other suspect materials are discovered during the course of demolition or remodel activities they will require testing prior to continuing work.

One bulk sample was collected and subsequently analyzed for asbestos content by Polarized Light Microscopy with Stain Dispersion. **No asbestos was detected within this sample.**

This letter along with the attached lab report will comprise the 'Asbestos Testing'. Please call us if you have any questions.

Sincerely,

Dave B. Phillips
AHERA Bldg. Insp.
Cert.# 10-0024 (expires 1-6-11)

enclosure

PHILLIPS ENVIRONMENTAL SERVICES

29354 BACUS RD.
SEDRO WOOLLEY, WA 98284
360-854-7900
American Industrial Hygiene Association Lab I.D. # 102950
FAX 360-854-7731

ASBESTOS BULK SAMPLE ANALYSIS

Client Name: **Skagit Co. Facility Mgmt.**
1730 Continental Pl.
Mr. Vernon, WA 98273
360-419-7643

Survey #: 10133

Source of Samples: **Skagit Co. Admin. Bldg., Mt. Vernon, WA**

Date Rec'd: 12-21-10

Analytical Method: Polarized Light Microscopy with Dispersion Staining (PLM-DS Method)

Sample #: 1	**Lab No.:** 51170	Location: 1st floor wall by hearing rooms		
Layers	Description:	Non-Fibrous Material:	Other Fibrous Mat'l: %	**Asbestos Type: %**
Layer 1 of 2	Off white plaster	Binder/fine particles/granules	Cellulose trace	**None detected**
Layer 2 of 2	Drywall	Gypsum/fine particles	Cellulose 20%	**None detected**

Analyst: _____ Date: 12-21-10
Dave B. Phillips

Samples retained for 2 weeks unless otherwise requested in writing.

Lab results are completely confidential. Written permission is required to release results to another party.

PBS | Engineering + Environmental

October 18, 2016

Mr. Andrew Williamson
McKinstry Energy Services
5005 3rd Ave. S.
Silverdale, WA 98134

Re: Hazardous Materials Investigation Summary
Skagit County Administration Building – Mechanical Improvements Project
Mount Vernon, WA
PBS Project No.: 40610.025

Dear Mr. Williamson:

PBS Engineering and Environmental, Inc. (PBS) performed an inspection of the above referenced property to determine the presence of asbestos-containing materials (ACM) and lead-containing paints (LCP). An intent of this letter report is to ensure that a "good faith inspection" for ACMs be performed in accordance with Washington Administrative Code prior to renovation activities. In addition, PBS performed testing of paints for lead content for worker protection measures.

Work Scope

PBS inspected all accessible spaces to be impacted by the planned air conditioning and ductwork upgrades. Areas inspected were based on drawings produced by McKinstry. The scope of work is replacement of some heating units to dual air-conditioning units and to route various duct work attached to ceilings and penetrating through walls throughout. They will also be attaching to existing ductwork. Materials present in the planned work areas generally include: gypsum wallboard assemblies, hard mudded piping insulation, yellow fiberglass sound insulation, acoustical ceiling tiles, carpet squares, and concrete flooring in various areas.

Building Description

The property contains a three-story office building. The building was built in 1974. The building inspected consists of a three-story concrete structure with a partial crawlspace in various areas. Flooring is comprised of concrete with vinyl floor tiles, sheet flooring, and carpeting. Walls consist of textured gypsum wallboard throughout. The exteriors of the structure consist of concrete. The roofs are covered with a rubber membrane.

Survey Process

Accessible areas included in the project scope were inspected by AHERA Certified Building Inspector Cel Alvarez (Cert. # 155219, Exp. 1/27/2017) on October 11, 2016. Inaccessible spaces are defined as those requiring selective demolition, fall protection or confined-space entry protocols to gain access.

2517 Eastlake Avenue East, Suite 100, Seattle, WA 98102
206.233.9639 Main
866.727.0140 Fax
www.pbsenv.com

When observed suspect-ACMs were either presumed to contain asbestos or were sampled. All samples were assigned a unique identification number and transmitted for analysis to Seattle Asbestos Test, LLC, (NVLAP Accreditation Code 200768-0) under chain-of-custody protocols. Samples were analyzed according to EPA Method 600R-93/116 using Polarized Light Microscopy (PLM), which has a reliable limit of quantification of 1% asbestos by volume.

Suspect materials may exist in inaccessible areas, such as in ceiling or wall cavities, or in interstitial spaces. PBS endeavors to determine the presence and estimate the condition of suspect materials in all accessible areas included in the scope of work. Prior survey reports or as-built drawings were not available to be reviewed.

FINDINGS

Asbestos-Containing Materials

The following materials were found to contain asbestos:

> Black sealant on seams of non-ACM yellow fiberglass wall mounted acoustical panels – mechanical spaces with air handler units on the 1st, 2nd, and 3rd floors and in the 3rd floor boiler room – Approx. 6,550 SF
> ACM Joint compound associated with non-ACM gypsum wallboard located throughout building

Refer to the attached PLM Asbestos Sample Inventory which list materials sampled and determined to be non-asbestos.

Lead Containing Paint (LCP)

Two (2) representative painted coatings were sampled for lead content. The samples were assigned a unique identification number and transmitted to EMSL Laboratories, Inc. under chain-of-custody protocols for analysis using Flame Atomic Absorption.

The samples were found not to contain detectable lead. Analytical results of the interior paint coatings were <0.0010% lead. See Attachments for locations and results of paint sampling.

Recommendations

ACMs

Black sealant on seams of non-ACM yellow fiberglass wall mounted panels and joint compound associated with non-ACM gypsum wallboard were found to be asbestos-containing in the planned work scope areas.

Prior to impact by renovation or demolition, all ACMs should be removed and properly disposed of by a qualified State of Washington licensed asbestos abatement contractor in accordance with all applicable local, state and federal regulations. Any ACMs that may be impacted by demolition activities should only be impacted by properly trained and protected personnel using appropriate work practices.

The possibility exists that suspect ACM may be present in concealed areas of the residence. Any suspect ACMs that may be encountered should be considered asbestos-containing until properly sampled by an AHERA Certified Building Inspector. Any ACMs that are to be impacted should be

removed prior to construction activities, or be impacted by properly trained and protected personnel in accordance with all applicable local, state and federal regulations. A qualified asbestos abatement contractor licensed in the State of Washington should be employed for any removal and proper disposal of ACM in accordance with all applicable local, state and federal regulations.

LCP

Representative painted coatings from the project locations were not found to contain lead by laboratory analysis.

Impact of painted surfaces with detectable concentrations of lead requires construction activities to be performed according to Washington Labor and Industries regulations for Lead in Construction (WAC 296-62-155). Workers impacting LCP should be provided the proper personal protective equipment and use proper work methods to limit occupational and environmental exposure to lead until an initial exposure assessment has been conducted.

Concealed painted coatings may exist in inaccessible areas of the building or in secondary coatings on building components. These may consist of standard interior paint on walls, floors and ceilings, in wall and ceiling cavities, or coatings on door or window frames or exterior components. Any previously unidentified painted coatings should be considered lead containing until sampled and proven otherwise.

Please do not hesitate to contact me if you have any questions regarding this letter report or require additional information.

Report prepared by:

Cel Alvarez
AHERA Building Inspector
Cert. # 155219, expiration 1/27/17

Report reviewed by:

Gregg Middaugh
Senior Project Manager

Attachments: PLM Asbestos Sample Inventory, Lab Data Sheets and Chain of Custody
AA Lead Sample Inventory, Lab Data Sheets and Chain of Custody
PBS Inspector Certification

PLM ASBESTOS SAMPLE INVENTORY

PBS Sample #	Material Type	Sample Location	Laboratory Description	Lab Result	Lab
40610.025 -01	Hard mudded pipe fittings	3rd floor, North Mechanical Room	Layer 1: Gray powdery material with woven fibrous material	NAD	SAT
40610.025 -02	Hard mudded pipe fittings	3rd floor, North Mechanical Room	Layer 1: Gray powdery material with woven fibrous material	NAD	SAT
40610.025 -03	Hard mudded pipe fittings	3rd floor, North Mechanical Room	Layer 1: Gray powdery material with woven fibrous material	NAD	SAT
40610.025 -04	Yellow fiberglass panels Black seam sealant	3rd floor, North Mechanical Room	Layer 1: Yellow fibrous material Layer 2: Black mastic	NAD 2% Chrysotile	SAT
40610.025 -05	Hard mudded pipe fittings	2nd floor, north hallway above hatch	Layer 1: Gray powdery material with woven fibrous material	NAD	SAT
40610.025 -06	Hard mudded pipe fittings	2nd floor, south hallway above hatch	Layer 1: Gray powdery material with woven fibrous material	NAD	SAT
40610.025 -07	Hard mudded pipe fittings	2nd floor, south hallway above hatch	Layer 1: Gray powdery material with woven fibrous material	NAD	SAT
40610.025 -08	Joint compound Yellow mesh Gypsum wallboard	2nd floor, south hallway above hatch	Layer 1: White powdery material Layer 2: Yellow fibrous material Layer 3: White chalky material with paper	2% Chrysotile NAD NAD	SAT
40610.025 -09	Joint compound Yellow mesh Gypsum wallboard	2nd floor, south hallway above hatch	Layer 1: Trace white powdery material Layer 2: Yellow fibrous material Layer 3: White chalky material with paper	2% Chrysotile NAD NAD	SAT
40610.025 -10	Hard mudded pipe fittings	1st floor, central mechanical room	Layer 1: Gray powdery material with woven fibrous material	NAD	SAT
40610.025 -11	Hard mudded pipe fittings	1st floor, central mechanical room	Layer 1: Gray powdery material with woven fibrous material	NAD	SAT

PBS Sample #	Material Type	Sample Location	Laboratory Description	Lab Result	Lab
40610.025 -12	Hard mudded pipe fittings	1st floor, south end mechanical room	Layer 1: Gray powdery material with woven fibrous material	NAD	SAT
40610.025 -13	Yellow fiberglass panels Black seam sealant	1st floor, south end mechanical room	Layer 1: Yellow fibrous material Layer 2: Black mastic	NAD 2% Chrysotile	SAT
40610.025 -14	Sandy textured surface	1st floor, Hearing Room A	Layer 1: White powdery material with paint and sand	NAD	SAT
	Gypsum wallboard		Layer 2: Trace white chalky material	NAD	
40610.025 -15	Sandy textured surface	3rd floor, north area	Layer 1: White powdery material with paint and sand	NAD	SAT
	Gypsum wallboard		Layer 2: Trace white chalky material	NAD	
40610.025 -16	Sandy textured surface Gypsum wallboard	3rd floor, north area, hallway	Layer 1: White sandy/brittle material with paint Layer 2: White chalky material with paper	NAD NAD	SAT
40610.025 -17	Sandy textured surface Gypsum wallboard	3rd floor, exam room	Layer 1: White sandy/brittle material with paint Layer 2: White chalky material with paper	NAD NAD	SAT
40610.025 -18	Sandy textured surface	1st floor, north area	Layer 1: White sandy/brittle material with paint and woven fibrous material	NAD	SAT
	Gypsum wallboard		Layer 2: White chalky material with paper	NAD	
40610.025 -19	Sandy textured surface Gypsum wallboard	3rd floor, south area Room 351	Layer 1: White sandy/brittle material with paint Layer 2: White chalky material with paper	NAD NAD	SAT
40610.025 -20	Sandy textured surface Gypsum wallboard	2nd floor, hallway	Layer 1: White sandy/brittle material with paint Layer 2: White chalky material with paper	NAD NAD	SAT
40610.025 -21	Sandy textured surface Gypsum wallboard	2nd floor, Election Office	Layer 1: White sandy/brittle material with paint Layer 2: White chalky material with paper	NAD NAD	SAT
40610.025 -22	Sandy textured surface Gypsum wallboard	2nd floor, hallway ceiling	Layer 1: White sandy/brittle material with paint Layer 2: White chalky material with paper	NAD NAD	SAT
40610.025 -23	2'x 4' suspended ceiling tile fissure pattern	2nd floor, Treasurer's Office, ceiling	Layer 1: Gray fibrous material with paint	NAD	SAT

PBS Sample #	Material Type	Sample Location	Laboratory Description	Lab Result	Lab
40610.025 -24	Hard mudded pipe fittings	3rd floor, Women's rest room, south end	Layer 1: Gray powdery material with woven fibrous material	NAD	SAT
40610.025 -25	Hard mudded pipe fittings	3rd floor, Women's rest room, south end	Layer 1: Gray powdery material with woven fibrous material	NAD	SAT
40610.025 -26	Hard mudded pipe fittings	3rd floor, Women's rest room, south end	Layer 1: Gray powdery material with woven fibrous material	NAD	SAT
40610.025 -27	2'x 4' suspended ceiling tile fissure pattern	2nd floor, County Treasurer	Layer 1: Brown fibrous material with paint	NAD	SAT
40610.025 -28	Joint compound	2nd floor, former elevator shaft	Layer 1: White powdery material with paint and paper	NAD	SAT
	Joint tape		Layer 2: White powdery material with woven fibrous material	NAD	
	Gypsum wallboard		Layer 3: White chalky material with paper	NAD	
40610.025 -29	Joint compound	2nd floor, former elevator shaft	Layer 1: White powdery material with paint and paper	NAD	SAT
	Joint tape		Layer 2: White powdery material with woven fibrous material	NAD	
	Gypsum wallboard		Layer 3: White chalky material with paper	NAD	
40610.025 -30	Joint tape	2nd floor, former elevator shaft	Layer 1: White powdery material with paint woven fibrous material	NAD	SAT
			Layer 2: White chalky material with paper	NAD	

AA LEAD PAINT CHIP SAMPLE INVENTORY

PBS Sample #	Paint Color / Component or Substrate	Sample Location	Results (mg/kg)	Results (%)	Lab
40610.025 L01	White/gypsum wallboard/wall	1st floor, Hearing Room A	10.0	<0.010	EMSL
40610.025 L02	White/gypsum wallboard/wall	3rd floor, Exam Room	10.0	<0.010	EMSL

mg/kg = Milligrams per kilogram
< = Less than the Limit of Detection

201613435

PBS

Project: Skagit County Admin Bldg - Mech. Improvements Project #: 40610.025

Analysis requested: PLM Date: 10/12/16

Relinq'd by/Signature: C. Alvarez Date/Time: 10/12/16 10:30 AM

Received by/Signature: Carolyn Yee Carolyn Yee Date/Time: 10/12/16 14:21

Fax results to:

☐	Brian Stanford	☐	Prudy Stoudt-McRae	☐	Ferman Fletcher
☐	Ernest Edwards	☒	Cel Alvarez	☐	Tim Ogden
☒	Gregg Middaugh	☐	Janet Murphy	☐	Mike Smith
☐	Mark Hiley	☐	Willem Mager	☐	Chuck Greeb

TURN AROUND TIME:

☐	1 Hour	☒	24 Hours	☐	3-5 Days
☐	2 Hours	☐	48 Hours	☐	Other_____
☐	4 Hours				

BULK SAMPLE DATA FORM

Lab #	Sample #	Material	Location	Lab
	40610.025 -01	Hard Mudded Fitting - 4"	3rd Fl, N. Mech Rm.	SAT
	-02	↓	↓	
	-03	↓	↓	
	-04	Yellow FC w/black mastic	↓ North	
	-05	2" Mudded Fittings	2nd Fl Hallway Above Hatch	
	-06	↓	2nd Fl South Hallway above hatch	
	-07	↓	↓	
	-08	JC/GWB (Bare)	2d Fl S. Hallway above hatch	
	-09	↓	↓	
	-10	Mudded Fitting	1st Fl Central	
	-11	↓	↓ ↓	
	-12	↓	1st Fl. South End	
	-13	Black sound insulation	↓	
	-14	~~Plaster~~/Texture/GWB	1st Fl Hearing Rm A	
	-15	↓	3rd Fl North Area	↓

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20161343 5

PBS

Project: Skagit County Admin Bldg - Mech. Improvements Project #: 40610.025

Analysis requested: PLM Date: 10/12/16

Relinq'd by/Signature: C. Alvarez Date/Time: 10/12/16 10:30AM

Received by/Signature: Carolyn Yeo Carolyn Yeo Date/Time: 10/12/16 14:21

Fax results to:

- ☐ Brian Stanford
- ☐ Ernest Edwards
- ☒ Gregg Middaugh
- ☐ Mark Hiley
- ☐ Prudy Stoudt-McRae
- ☒ Cel Alvarez
- ☐ Janet Murphy
- ☐ Willem Mager
- ☐ Ferman Fletcher
- ☐ Tim Ogden
- ☐ Mike Smith
- ☐ Chuck Greeb

TURN AROUND TIME:

- ☐ 1 Hour
- ☐ 2 Hours
- ☐ 4 Hours
- ☒ 24 Hours
- ☐ 48 Hours
- ☐ 3-5 Days
- ☐ Other_____

BULK SAMPLE DATA FORM

Lab #	Sample #	Material	Location	Lab
	40610.025-16	Texture/GWB	3rd Fl North Area HLD.	SAT
	-17	Texture/GWB	3rd Fl Exam Rm	
	-18	Texture/GWB	1st Fl, North Area	
	-19	Texture/GWB	3rd Fl, South Rm 351	
	-20	Texture/GWB	2nd Fl, Hallway	
	-21	Texture/GWB	2nd Fl, Electrons office	
	-22	Texture/GWB	2nd Fl, Hallway, Ceiling	
	23	2x4 SACT Fissure	2nd Fl, Treasurer, Ceiling	
	24	Hard mudded fittings	3rd Fl Women RR	
	25	↓	↓	
	26	↓	↓	
	27	~~2x2~~ SACT Fissure	2nd Fl County Treasurer	
	28	TC/GWB	2nd Fl, Former Elevator Shaft	
	29	↓	↓	↓
	30	↓	↓	

S:\Masters\Office\Tech Forms & Templates\Lab Chain-of-Custody.doc

SEATTLE ASBESTOS TEST

Seattle Laboratory: 4500 9th Ave. NE, Suite 300, Seattle, WA 98105, Tel: 206.633.1111, Fax: 206.633.4747, NVLAP Lab Code: 201057-0

ANALYTICAL LABORATORY REPORT

PLM by Method EPA/600/R-93/116

Attn.:	Mr. Gregg Middaugh/Mr. Cel Alvarez	**Client:**	PBS Engineering and Environmental, Seattle	**Address:**	2517 Eastlake Ave. E., Suite 100, Seattle, WA 98102
Job#:	40610.025	**Batch#:**	201613435	**Date Received:**	10/12/2016
Samples Rec'd:	30	**Date Analyzed:**	10/13/2016	**Samples Analyzed:**	30
Project Loc.:	Skagit County Administration Building-Mechanical Improvements				

Analyzed by: Carolyn Yeo/Warren Osborn

Reviewed by: Steve (Fanyao) Zhang, President

Lab ID	Client Sample ID	Layer	Description	%	Asbestos Fibers	Non-fibrous Components	%	Non-asbestos Fibers
1	40610.025-01	1	Gray powdery material with wovenfibrous material		**None detected**	Filler, Fine particles	36	Cellulose, Glass fibers
2	40610.025-02	1	Gray powdery material with wovenfibrous material		**None detected**	Filler, Fine particles	35	Cellulose, Glass fibers
3	40610.025-03	1	Gray powdery material with wovenfibrous material		**None detected**	Filler, Fine particles	32	Cellulose, Glass fibers
4	40610.025-04	1	Yellow fibrous material		**None detected**	Filler	84	Glass fibers
		2	Black mastic	2	**Chrysotile**	Mastic/binder	3	Cellulose
5	40610.025-05	1	Gray powdery material with wovenfibrous material		**None detected**	Filler, Fine particles	33	Cellulose, Glass fibers
6	40610.025-06	1	Gray powdery material with wovenfibrous material		**None detected**	Filler, Fine particles	35	Cellulose, Glass fibers
7	40610.025-07	1	Gray powdery material with wovenfibrous material		**None detected**	Filler, Fine particles	39	Cellulose, Glass fibers
8	40610.025-08	1	White powdery material	2	**Chrysotile**	Filler, Binder	3	Cellulose
		2	Yellow fibrous material		**None detected**	Filler	65	Glass fibers
		3	White chalky material with paper		**None detected**	Binder/filler, Gypsum/binder	23	Cellulose, Glass fibers
9	40610.025-09	1	Trace white powdery material	2	**Chrysotile**	Filler, Binder	3	Cellulose
		2	Yellow fibrous material		**None detected**	Filler	65	Glass fibers
		3	White chalky material with paper		**None detected**	Binder/filler, Gypsum/binder	23	Cellulose, Glass fibers
10	40610.025-10	1	Gray powdery material with wovenfibrous material		**None detected**	Filler, Fine particles	34	Cellulose, Glass fibers
11	40610.025-11	1	Gray powdery material with wovenfibrous material		**None detected**	Filler, Fine particles	36	Cellulose, Glass fibers

12	40610.025-12	1	Gray powdery material with wovenfibrous material		**None detected**	Filler, Fine particles	34	Cellulose, Glass fibers
13	40610.025-13	1	Yellow fibrous material		**None detected**	Filler	82	Glass fibers
		2	Black mastic	**2**	**Chrysotile**	Mastic/binder	2	Cellulose
14	40610.025-14	1	White powdery material with paint and sand		**None detected**	Binder/filler, Paint, Sand	3	Cellulose
		2	Trace white chalky material		**None detected**	Gypsum/binder	12	Cellulose, Glass fibers
15	40610.025-15	1	White powdery material with paint and sand		**None detected**	Binder/filler, Paint, Sand	4	Cellulose
		2	White chalky material with paper		**None detected**	Binder/filler, Gypsum/binder	25	Cellulose, Glass fibers
16	40610.025-16	1	White sandy/brittle material with paint		**None detected**	Sand, Filler, Binder, Paint	3	Cellulose
		2	White chalky material with paper		**None detected**	Binder/filler, Gypsum/binder	28	Cellulose, Glass fibers
17	40610.025-17	1	White sandy/brittle material with paint		**None detected**	Sand, Filler, Binder, Paint	4	Cellulose
		2	White chalky material with paper		**None detected**	Binder/filler, Gypsum/binder	26	Cellulose, Glass fibers
18	40610.025-18	1	White sandy/brittle material with paint and woven fibrous material		**None detected**	Sand, Filler, Binder, Paint	17	Glass fibers, Cellulose
		2	White chalky material with paper		**None detected**	Binder/filler, Gypsum/binder	24	Cellulose, Glass fibers
19	40610.025-19	1	White sandy/brittle material with paint		**None detected**	Sand, Filler, Binder, Paint	3	Cellulose
		2	White chalky material with paper		**None detected**	Binder/filler, Gypsum/binder	23	Cellulose, Glass fibers
20	40610.025-20	1	White sandy/brittle material with paint		**None detected**	Sand, Filler, Binder, Paint	3	Cellulose
		2	White chalky material with paper		**None detected**	Binder/filler, Gypsum/binder	26	Cellulose, Glass fibers
21	40610.025-21	1	White sandy/brittle material with paint		**None detected**	Sand, Filler, Binder, Paint	2	Cellulose
		2	White chalky material with paper		**None detected**	Binder/filler, Gypsum/binder	24	Cellulose, Glass fibers
22	40610.025-22	1	White sandy/brittle material with paint		**None detected**	Sand, Filler, Binder, Paint	4	Cellulose
		2	White chalky material with paper		**None detected**	Binder/filler, Gypsum/binder	27	Cellulose, Glass fibers
23	40610.025-23	1	Gray fibrous material with paint		**None detected**	Paint, Filler, Perlite, Glass beads	65	Cellulose, Glass fibers
24	40610.025-24	1	Gray powdery material with wovenfibrous material		**None detected**	Filler, Fine particles	38	Cellulose, Glass fibers
25	40610.025-25	1	Gray powdery material with wovenfibrous material		**None detected**	Filler, Fine particles	33	Cellulose, Glass fibers

26	40610.025-26	1	Gray powdery material with wovenfibrous material		**None detected**	Filler, Fine particles	35	Cellulose, Glass fibers
27	40610.025-27	1	Brown fibrous material with paint		**None detected**	Paint, Filler, Perlite	69	Cellulose
28	40610.025-28	1	White powdery material with paint and paper		**None detected**	Binder/filler, Paint	37	Cellulose
		2	White powdery material with woven fibrous material		**None detected**	Binder/filler	24	Glass fibers
		3	White chalky material with paper		**None detected**	Binder/filler, Gypsum/binder	25	Cellulose, Glass fibers
29	40610.025-29	1	White powdery material with paint and paper		**None detected**	Binder/filler, Paint	35	Cellulose
		2	White powdery material with woven fibrous material		**None detected**	Binder/filler	23	Glass fibers
		3	White chalky material with paper		**None detected**	Binder/filler, Gypsum/binder	26	Cellulose, Glass fibers
30	40610.025-30	1	White powdery material with paint woven fibrous material		**None detected**	Binder/filler, Paint	21	Glass fibers, Cellulose
		2	White chalky material with paper		**None detected**	Binder/filler, Gypsum/binder	24	Cellulose, Glass fibers

EMSL Analytical, Inc
464 McCormick Street, San Leandro, CA 94577
Phone/Fax: (510) 895-3675 / (510) 895-3680
http://www.EMSL.com sanleandrolab@emsl.com

EMSL Order:	091619633
CustomerID:	PBSE51
CustomerPO:	
ProjectID:	

Attn: **Greg Middaugh**
PBS Engineering & Environmental, Inc.
2517 Eastlake Ave. East Ste. 100
Seattle, WA 98102

Phone:	(206) 233-9639
Fax:	(206) 762-4780
Received:	10/13/16 9:00 AM
Collected:	

Project: **Sluget County Admin Bldg - Mech Improvements. 40610.025**

Test Report: Lead in Paint Chips by Flame AAS (SW 846 3050B/7000B)*

Client Sample Description	*Lab ID*	*Collected*	*Analyzed*	*Lead Concentration*
40610.025-L01	*091619633-0001*		10/13/2016	<0.010 % wt
	Site: 1ST FLOOR HEARING RM A			
40610.025-L02	*091619633-0002*		10/13/2016	<0.010 % wt
	Site: 3RD FL EXAM RM			

Chris Dojlidko, Laboratory Manager
or other approved signatory

*Analysis following Lead in Paint by EMSL SOP/Determination of Environmental Lead by FLAA. Reporting limit is 0.010 % wt based on the minimum sample weight per our SOP. Unless noted, results in this report are not blank corrected. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities. Samples received in good condition unless otherwise noted. "<" (less than) result signifies that the analyte was not detected at or above the reporting limit. Measurement of uncertainty is available upon request. The QC data associated with the sample results included in this report meet the recovery and precision requirements unless specifically indicated otherwise. Definitions of modifications are available upon request.

Samples analyzed by EMSL Analytical, Inc San Leandro, CA A2LA Accredited Environmental Testing Cert #2845.09

Initial report from 10/13/2016 16:55:28

PBS

Project: Skagit County Admin Bldg - Mech. Improvements **Project #:** 40610.025

Analysis requested: PLM **Date:** 10/12/16

Relinq'd by/Signature: C. Alvarez **Date/Time:** 10/12/16 10:30 AM

Received by/Signature: _____ **Date/Time:** _____

Fax results to:

☐	Brian Stanford	☐	Prudy Stoudt-McRae	☐	Ferman Fletcher
☐	Ernest Edwards	☒	Cel Alvarez	☐	Tim Ogden
☒	Gregg Middaugh	☐	Janet Murphy	☐	Mike Smith
☐	Mark Hiley	☐	Willem Mager	☐	Chuck Greeb

TURN AROUND TIME:

☐	1 Hour	☒	24 Hours	☐	3-5 Days
☐	2 Hours	☐	48 Hours	☐	Other_____
☐	4 Hours				

BULK SAMPLE DATA FORM

Lab #	Sample #	Material	Location	Lab
	40610.025 -01	Hard Mudded Fitting - 4"	3rd Fl, N. Mech Rm.	SAT
	-02	↓	↓	↓
	-03	↓	↓	
	-04	Yellow FC w/black mastic	↓	
	-05	2nd Mudded Fittings	2nd Fl North Hallway Above Hatch	
	-06	↓	2nd Fl South Hallway above hatch	
	-07	↓	↓	
	-08	SC/GWB (Bare)	2nd Fl S. Hallway above hatch	
	-09	↓	↓	
	-10	Mudded Fitting	1st Fl Central	
	-11	↓	↓ ↓	
	-12	↓	1st Fl. South End	
	-13	Black sound insulation	↓	
	-14	~~Plaster~~/Texture/GWB	1st Fl Hearing Rm A	
	-15	↓	3rd Fl North Area	↓

S:\Masters\Office\Tech Forms & Templates\Lab Chain-of-Custody.doc

PBS

Project: Skagit County Admin Bldg - Mech. Improvements **Project #:** 40610.025

Analysis requested: PLM **Date:** 10/12/16

Relinq'd by/Signature: C. Alvarez **Date/Time:** 10/12/16 10:30 AM

Received by/Signature: _____ **Date/Time:** _____

Fax results to:

☐	Brian Stanford	☐	Prudy Stoudt-McRae	☐	Ferman Fletcher
☐	Ernest Edwards	☑	Cel Alvarez	☐	Tim Ogden
☑	Gregg Middaugh	☐	Janet Murphy	☐	Mike Smith
☐	Mark Hiley	☐	Willem Mager	☐	Chuck Greeb

TURN AROUND TIME:

☐	1 Hour	☑	24 Hours	☐	3-5 Days
☐	2 Hours	☐	48 Hours	☐	Other_____
☐	4 Hours				

BULK SAMPLE DATA FORM

Lab #	Sample #	Material	Location	Lab
	40610.025-16	Texture/GWB	3rd Fl North Area H.W.	SAT
	-17	Texture/GWB	3rd Fl Exam Rm	
	-18	Texture/GWB	1st Fl North Area	
	-19	Texture/GWB	3rd Fl, South Rm 351	
	-20	Texture/GWB	2nd Fl, Hallway	
	-21	Texture/GWB	2nd Fl, Elections office	
	-22	Texture/GWB	2nd Fl, Hallway, Ceiling	
	23	2x4 SACT Fissure	2nd Fl, Treasurer, Ceiling	
	24	Hard mudded fittings	3rd Fl Women RR	
	25	↓	↓	
	26	↓	↓	
	27	~~2x2~~ SACT Fissure	2nd Fl County Treasurer	
	28	TC/GWB	2nd Fl, Former Elevator Shaft	
	29	↓	↓	
	30	↓	↓	

S:\Masters\Office\Tech Forms & Templates\Lab Chain-of-Custody.doc

PBS

Project: Skagit County Admin Bldg - Mech Improvements **Project #:** 40610.025

Analysis requested: Paint Chips: 0/0 **Date:** 10/12/16

Relinq'd by/Signature: C. Alvarez / **Date/Time:** 10/12/16 10:30 AM

Received by/Signature: _____ **Date/Time:** _____

Fax results to:

☐	Brian Stanford	☐	Prudy Stoudt-McRae	☐	Ferman Fletcher
☐	Ernest Edwards	☒	Cel Alvarez	☐	Tim Ogden
☒	Gregg Middaugh	☐	Janet Murphy	☐	Mike Smith
☐	Mark Hiley	☐	Willem Mager	☐	Chuck Greeb

TURN AROUND TIME:

☐	1 Hour	☑	24 Hours	☐	3-5 Days
☐	2 Hours	☐	48 Hours	☐	Other_____
☐	4 Hours				

BULK SAMPLE DATA FORM

Lab #	Sample #	Material	Location	Lab
	40610.025-L01	White Paint/GWB/Wall	1st Floor Hearing Rm A	EMSL
	↓ -L02	↓	3rd Fl Exam Rm	↓

S:\Masters\Office\Tech Forms & Templates\Lab Chain-of-Custody.doc

Certificate of Completion

This is to certify that

Celerino A. Alvarez

has satisfactorily completed
4 hours of refresher training as an

Asbestos Building Inspector

to comply with the training requirements of
TSCA Title II / 40 CFR 763 (AHERA)

155219
Certificate #

Instructor
EPA Provider Certificate #1085

ARGUS PACIFIC
TRAINING • CONSULTING
A Terracon COMPANY

Jan 27, 2016
Date(s) of Training
Exam Score:
Expiration Date: Jan 26, 2017

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Limited Hazardous Materials Survey Report

Administrative Building 700 North Stairwell & East Exterior Railings

Mount Vernon, Washington

Prepared for:
Mr. Ken Hansen
Skagit County Facilities Management

August 24, 2017
PBS Project No. 41341.004

PBS
2517 EASTLAKE AVENUE EAST
SUITE 100
SEATTLE, WA 98102
206.233.9639 MAIN
866.727.0140 FAX
PBSUSA.COM

TABLE OF CONTENTS

APPENDICES

1 INTRODUCTION

1.1 Project Background

PBS Engineering and Environmental, Inc. (PBS) performed a limited hazardous materials survey for the Administrative North Stairwell and Exterior Railings repainting project at the Administrative building, located at 700 2nd Street in Mt. Vernon, Washington, in conjunction with planned renovations. The intent of this investigation is to ensure that Skagit County Facilities Management follows applicable regulatory requirements that a "good faith inspection" for ACMs be performed prior to renovation activities.

At the request of the Skagit County Facilities Management, all accessible areas of the north stairwell and the exterior railings was inspected for the presence of Asbestos-Containing Materials (ACMs) and Lead Containing Paint (LCP).

The Administrative Building stairwell is constructed of concrete walls and steps. The walls have fabric covered fiberglass panels glued to the wall for sound insulation. The exterior metal railings on the east side are painted. These locations are anticipated to be impacted by planned renovations.

1.2 Survey Process

Accessible areas included in the project scope were inspected by AHERA Certified Building Inspector Cel Alvarez (Cert. No. 160792 Exp. 1/25/2017) on August 16, 2017. PBS endeavored to inspect all accessible areas of the scope of work. Inaccessible areas consist of those requiring selective demolition, fall protection, or confined space entry protocols to gain access.

When observed, suspect materials were sampled. All samples were assigned a unique identification number and transmitted for analysis to Seattle Asbestos Test (NVLAP #201057-0) under chain-of-custody protocols. Samples were analyzed according to EPA Method 600R-93/116 using Polarized Light Microscopy (PLM), which has a reliable limit of quantification of 1% asbestos by volume. Information regarding the type and location of sampled materials can be found on the attached PLM Sample Inventory.

Suspect ACMs may exist in inaccessible areas of the Administrative Building north stairwell. PBS endeavored to determine the presence and estimate the condition of suspect materials in all accessible areas included in the scope of work. While PBS has endeavored to identify the ACM that may be found in concealed locations, additional unidentified ACM may exist.

2 FINDINGS

2.1 Asbestos-Containing Materials (ACMs)

Two (2) bulk samples were collected of suspect asbestos-containing materials.

- None of the materials sampled were found to contain detectable asbestos.

For a complete listing of representative bulk sampling and associated laboratory analysis, refer to the Attachments.

2.2 Lead-Containing Paint (LCP)

Three (3) representative painted coatings were sampled for lead content. The samples were assigned a unique identification number and transmitted to EMSL Laboratories (CA-Metals #2733) in Seattle, Washington under chain-of-custody protocols for analysis using Flame Atomic Absorption.

Lead was detected in one of the samples collected at concentrations of 1.4%. Refer to the attached AA Lead Paint Sample Inventory for additional information on materials sampled as part of this investigation.

3 RECOMMENDATIONS

3.1 ACMs

The possibility exist that suspect ACM may be present in equipment, wall and ceiling cavities, and in select areas of the stairwell included in the scope of renovations. If suspect ACM is uncovered during construction, contractor should stop work immediately and inform the owner promptly for confirmation testing. All untested materials should be presumed asbestos-containing or tested for asbestos content prior to impact.

3.2 LCP

Representative painted coatings from the project locations were found to contain lead by laboratory analysis. Impact of painted surfaces with detectable concentrations of lead requires construction activities to be performed according to Washington Labor and Industries regulations for Lead in Construction (WAC 296-62-155). Workers impacting LCP should be provided the proper personal protective equipment and use proper work methods to limit occupational and environmental exposure to lead until an initial exposure assessment has been conducted.

Painted coatings may exist in inaccessible areas of the work area or in secondary coatings. Any previously unidentified painted coatings should be considered lead containing until sampled and proven otherwise.

Report prepared by:

Cel Alvarez
AHERA Building Inspector
Cert. # 160792, expiration 1/25/18

Report reviewed by:

Gregg Middaugh
Senior Project Manager

APPENDIX A

PLM Bulk Sampling Information

PLM Bulk Sample Inventory

PLM Bulk Sample Laboratory Data Sheets

PLM Bulk Sample Chain of Custody Documentation

PBS Sample #	Material Type	Sample Location	Lab Description	Lab Result	Lab
41341.004- 01	Fabric and yellow insulation	North stairwell 3rd floor	Layer 1: Orange woven fibrous material	ND	SAT
			Layer 2: Yellow fibrous material with mastic	ND	
41341.004- 02	Tan Mastic	North stairwell 3rd floor	Layer 1: Tan mastic with paint	ND	SAT
			Layer 2: Gray sandy/brittle material	ND	

20171312S

PBS

Project: Skagit County - Bldg 700 N. Stairwell **Project #:** 41341.004

Analysis requested: PLM **Date:** 8/16/17

Relinq'd by/Signature: [signature] **Date/Time:** 8/16/17 2:00 pm

Received by/Signature: Brady Timbol **Date/Time:** 8/16/2017 17:20

Fax results to:

☐	Brian Stanford	☐	Prudy Stoudt-McRae	☐	Chuck Greeb
☐	Willem Mager	☒	Cel Alvarez	☐	Mike Smith
☒	Gregg Middaugh	☐	Janet Murphy	☐	Ferman Fletcher
☐	Mark Hiley	☐	David Toy	☐	Melissa Mearn
☐	Tim Ogden				

TURN AROUND TIME:

☐	1 Hour`	☒	24 Hours	☐	3-5 Days
☐	2 Hours	☐	48 Hours	☐	Other_____
☐	4 Hours				

SAMPLE DATA FORM

Sample #	Material	Location	Lab
41341.004 -01	Clothe, Yellow Insulation	700 2nd St, N. Stairwell	SAT
↓ -02	Tan mastic	↓	↓

SEATTLE ASBESTOS TEST

Seattle Laboratory: 4500 9th Ave. NE, Suite 300, Seattle, WA 98105, Tel: 206.633.1111, Fax: 206.633.4747, NVLAP Lab Code: 201057-0

ANALYTICAL LABORATORY REPORT

PLM by Method EPA/600/R-93/116

Attn.:	Mr. Gregg Middaugh, Mr. Cel Alvarez	**Client:**	PBS Engineering and Environmental, Seattle	**Address:**	2517 Eastlake Ave. E., Suite 100, Seattle, WA 98102
Job#:	41341.004	**Batch#:**	201713125	**Date Received:**	8/16/2017
Samples Rec'd:	2	**Date Analyzed:**	8/17/2017	**Samples Analyzed:**	2
Project Loc.:	Skagit County- Bldg 700 N. Stairwell				

Analyzed by: Cassie Huang

Reviewed by: Steve (Fanyao) Zhang, President

Lab ID	Client Sample ID	Layer	Description	%	Asbestos Fibers	Non-fibrous Components	%	Non-asbestos Fibers
1	41341.004-01	1	Orange woven fibrous material		**None detected**	Filler, Binder	87	Synthetic fibers
		2	Yellow fibrous material with mastic		**None detected**	Filler, Mastic/binder	85	Glass fibers, Cellulose
2	41341.004-02	1	Tan mastic with paint		**None detected**	Mastic/binder, Paint	3	Cellulose
		2	Gray sandy/brittle material		**None detected**	Sand, Filler, Binder	2	Cellulose

APPENDIX B

AA Lead Paint Chip Sampling Information

AA Lead Paint Chip Sample Inventory

AA Lead Paint Chip Laboratory Data Sheets

AA Lead Paint Chip Chain of Custody Documentation

AA LEAD PAINT CHIP SAMPLE INVENTORY

PBS Sample #	Paint Color / Component or Substrate	Sample Location	RDL % wt	Results (%)	Lab
41341.004 -L01	Light brown/concrete/cove base	North stairwell	0.0100	<0.010%	EMSL
41341.004 -L02	Brown/concrete/stair steps	North stairwell	0.0100	<0.010%	EMSL
41341.004 -L03	Maroon/metal/railing	North stairwell	0.1	0.0140	EMSL

mg/kg = Milligrams per kilogram
< = Less than the Limit of Detection

EMSL Analytical, Inc.
3317 3rd Ave S, Suite D 2nd floor, Seattle, WA 98134
Phone/Fax: 2062696310 / (206) 900-8789
http://www.emsl.com seattlelab@emsl.com

EMSL Order:	511702235
CustomerID:	PBSE51
CustomerPO:	
ProjectID:	

Attn: **Cel Alvarez**
PBS Engineering & Environmental, Inc.
2517 Eastlake Ave. East Ste. 100
Seattle, WA 98102

Phone:	(206) 233-9639
Fax:	(206) 762-4780
Received:	08/16/17 4:00 PM
Collected:	

Project: **Skagit County - Bldg 300 N Stairwell, 41341.004**

Test Report: Lead in Paint Chips by Flame AAS (SW 846 3050B/7000B)*

Client SampleDescription	*Collected*	*Analyzed*	*RDL*	*Lead Concentration*
41341.004-L01		8/17/2017	0.010 % wt	<0.010 % wt
511702235-0001	Site: Lt Brown/concrete/cove base, 300 2nd St North stairwell			
41341.004-L02		8/17/2017	0.010 % wt	<0.010 % wt
511702235-0002	Site: Brown/concrete/stairs step, 300 2nd St North stairwell			
41341.004-L03		8/17/2017	0.10 % wt	1.4 % wt
511702235-0003	Site: Maroon/metal/railing, 300 2nd St Ext eastside			

Lauren Kerber

Lauren Kerber, Laboratory Manager
or other approved signatory

*Analysis following Lead in Paint by EMSL SOP/Determination of Environmental Lead by FLAA. Reporting limit is 0.010 % wt based on the minimum sample weight per our SOP. Unless noted, results in this report are not blank corrected. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities. Samples received in good condition unless otherwise noted. "<" (less than) result signifies that the analyte was not detected at or above the reporting limit. Measurement of uncertainty is available upon request. The QC data associated with the sample results included in this report meet the recovery and precision requirements unless specifically indicated otherwise. Definitions of modifications are available upon request.

Samples analyzed by EMSL Analytical, Inc. Seattle, WA

Initial report from 08/17/2017 16:53:27

OrderID: 511702235

#511702235

PBS

Project: Skagit County - Bldg 700 N. Starwell **Project #:** 41341.004

Analysis requested: AA - Lead **Date:** 8/16/17

Relinq'd by/Signature: [signature] **Date/Time:** 8/16/17 2:00pm

Received by/Signature: [signature] **Date/Time:** 8/16/17 4:00

Fax results to:

☐	Brian Stanford	☐	Prudy Stoudt-McRae	☐	Chuck Greeb
☐	Willem Mager	☒	Cel Alvarez	☐	Mike Smith
☒	Gregg Middaugh	☐	Janet Murphy	☐	Ferman Fletcher
☐	Mark Hiley	☐	David Toy	☐	Melissa Mearn
☐	Tim Ogden				

TURN AROUND TIME:

☐	1 Hour	☐	24 Hours	☒	3-5 Days
☐	2 Hours	☐	48 Hours	☐	Other_____
☐	4 Hours				

SAMPLE DATA FORM

Sample #	Material	Location	Lab
41341.004 -L01	Lt Brown/Concrete/Core base	700 2nd St, North Starwell	EMSL
↓ -L02	Brown/Concrete/Stair Step	↓	↓
↓ -L03	Maroon/metal/railing	↓ Ext. Eastside	↓

APPENDIX C

PBS Certifications

Certificate of Completion

This is to certify that

Celerino A. Alvarez

has satisfactorily completed
4 hours of refresher training as an

Asbestos Building Inspector

to comply with the training requirements of
TSCA Title II / 40 CFR 763 (AHERA)

Certificate #
160792

Instructor
EPA Provider Certificate #1085

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TRAINING • CONSULTING
A Terracon COMPANY

Jan 25, 2017
Date(s) of Training
Exam Score: NA
Expiration Date: Jan 25, 2018

ARGUS PACIFIC, INC / 1900 WEST NICKERSON ST, SUITE 315 / SEATTLE, WASHINGTON 98119 / 206.285.3373 / ARGUSPACIFIC.COM