



CALIFORNIA INSTITUTE OF TECHNOLOGY

**LIGO Project
(Laser Interferometer Gravitational-Wave Observatory)**

INVITATION TO BID (ITB) NO. LP-12b

FOR

LIGO HANFORD OBSERVATORY

FACILITIES RE-ROOFING PROJECT

LVEA/OSB, MID AND END STATIONS

BIDS TO BE RECEIVED AT LIGO HANFORD OBSERVATORY NO LATER THAN:

Date: June 4, 2013

2:00 P.M., Local Time

COMMUNICATIONS IN REFERENCE TO THIS ITB

Any communication in reference to this ITB must be in writing
and directed to the attention of:

Administrative Contact: Rudy Arvizu email: rarvizu@ligo.caltech.edu

Technical Manager: John Worden email: worden_j@ligo-wa.caltech.edu

California Institute of Technology
LIGO Project, MC 100-36
1200 E. California Blvd.
Pasadena, CA 91125-0600

Date of Issuance: May 10 2013

Invitation to Bid Contents

Project Manual

Part A. Bidding Requirements & Conditions of the Contract for Construction

Part B. Construction Specifications

General Conditions of the Contract for Construction of a Small Project, A105-2007

LASER Interferometer Gravitational Wave Observatory (LIGO) Commercial Items or Services Contract, General Provisions California Institute of Technology ("Institute"), LIGO Rev 12/12/08 (Reference LIGO-[C080185-v1](#))

Specification for the LHO Roofing Task [E1300301-v2](#)

Drawing Package for LHO Roofing Task [D1300361-v2](#)

LIGO Contractor-Vendor Safety Requirements - [M080401-v4](#)

LIGO Contractor Safety Evaluation - [F080010-v2](#)

The Memorandum of Understanding Between the California Institute of Technology and the Central Washington Building and Construction Trade Counsel, AFL-CIO for the Laser Interferometer Gravitational Wave Observatory at Hanford [C1001971-v1](#). Note – The Davis Bacon Act no longer applies.



LIGO HANFORD OBSERVATORY FACILITIES RE-ROOFING PROJECT

For

CALIFORNIA INSTITUTE OF TECHNOLOGY
LIGO HANFORD OBSERVATORY
PO BOX 159
Richland, Washington 99352

PROJECT MANUAL

by

HIBBS ENGINEERING, INC.
4308 S Gum St

Kennewick, Washington 99337

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PART A

BIDDING REQUIREMENTS AND CONDITIONS OF THE
CONTRACT FOR CONSTRUCTION

PART A BIDDING REQUIREMENTS AND CONDITIONS OF THE CONTRACT FOR CONSTRUCTION

Conditions Of The Contract

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INSTRUCTIONS TO BIDDERS

ARTICLE 1 DEFINITIONS

- 1.1 Bidding Documents include the Invitation to Bid, Instructions to Bidders, the Bid Form, other sample bidding and contract forms and the Contract Documents including any Addenda issued prior to receipt of bids. The Contract Documents proposed for the Work consist of the Owner-Contractor Agreement, the Conditions of the Contract (General, Supplementary and other Conditions), the Drawings, the Specifications, the General Notes and all Addenda issued prior to and all Modifications issued after execution of the Contract.
- 1.2 Addenda are written or graphic instruments issued by the Architect prior to the execution of the Contract which modify or interpret the Bidding Documents by additions, deletions, clarifications or corrections.
- 1.3 A Bid is a complete and properly signed proposal to do the Work or designated portion thereof for the sums stipulated therein, submitted in accordance with the Bidding Documents.

ARTICLE 2 BIDDER'S REPRESENTATIONS

- 2.1 Each Bidder by making his Bid represents that:
 - 2.1.1 He has read and understands the Bidding Documents and his Bid is made in accordance therewith.
 - 2.1.2 He has visited the sites, has familiarized himself with the local conditions under which the Work is to be performed and has correlated his observations with the requirements of the proposed Contract Documents.
 - 2.1.2.1 **The job walk begins promptly on Thursday, May 23, 2013, 10:00 am local time.**
 - 2.1.3 His Bid is based upon the materials, systems and equipment required by the Bidding Documents without exception.

ARTICLE 3 BIDDING DOCUMENTS

- 3.1 COPIES
 - 3.1.1 Bidders may obtain complete sets of bidding documents from the Owner, **through their online document system.**
 - 3.1.2 Bidders shall use complete sets of Bidding Documents in preparing Bids;

neither the Owner nor the Engineer assume any responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bidding Documents.

3.1.3 The Owner or the Engineer in making copies of the Bidding Documents available on the above terms do so only for the purpose of obtaining Bids on the Work and do not confer a license or grant for any other use.

3.2 INTERPRETATION OR CORRECTION OF BIDDING DOCUMENTS

3.2.1 Bidders and Sub-bidders shall promptly notify the Engineer of any ambiguity, inconsistency or error which they may discover upon examination of the Bidding Documents or of the site and local conditions.

3.2.2 Bidders and Sub-bidders requiring clarification or interpretation of the Bidding Documents shall address an inquiry to the Engineer at least five working days prior to the date for receipt of Bids.

3.2.3 Any interpretation, correction or change of the Bidding Documents will be made by Addendum. Interpretations, corrections or changes of the Bidding Documents made in any other manner will not be binding, and Bidders shall not rely upon such interpretations, corrections and changes.

3.3 SUBSTITUTIONS

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

3.3.2 A substitution request will be considered prior to receipt of Bids.

3.4 ADDENDA

3.4.1 Addenda will be transmitted to all who are known by the Engineer to have received a complete set of Bidding Documents.

3.4.2 Each Bidder shall ascertain prior to submitting his bid that he has received all Addenda issued, and he shall acknowledge their receipt in his Bid.

ARTICLE 4 BIDDING PROCEDURE

4.1 FORM AND STYLE OF BIDS

4.1.1 Bids shall be submitted on forms identical to the form included with the Bidding Documents.

4.1.2 All blanks on the bid form shall be filled in by typewriter or manually in ink.

4.1.3 Where so indicated by the makeup of the bid form, sums shall be expressed in both words and figures, and in case of discrepancy between the two, the

amount written in words shall govern.

4.2 SUBMISSION OF BIDS

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

4.2.2 Bids shall be deposited at the designated location prior to the time and date for receipt of Bids indicated in the Advertisement or Invitation to Bid, or any extension thereof made by Addendum.

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

4.3 MODIFICATION OR WITHDRAWAL OF BID

4.4.1 A Bid may not be modified, withdrawn or canceled by the Bidder during the stipulated time period following the time and date designated for the receipt of Bids, and each Bidder so agrees in submitting his Bid.

4.4.2 Prior to the time and date designated for receipt of Bids, any Bid submitted may be modified or withdrawn by notice to the party receiving Bids at the place designated for receipt of Bids. Such notice shall be in writing over the signature of the Bidder or electronically by e-mail attachment sent to the Owners Representative. If electronically, written confirmation over the signature of the Bidder shall be mailed and postmarked on or before the date and time set for receipt of Bids, and it shall be so worded as not to reveal the amount of the original Bid.

4.4.3 Withdrawn Bids may be resubmitted up to the time designated for the receipt of Bids provided that they are then fully in conformance with these Instructions to Bidders.

4.4.4 Bid security, if required, shall be in an amount sufficient for the Bid as modified or resubmitted.

ARTICLE 5 CONSIDERATION OF BIDS

5.1 OPENING OF BIDS

5.1.1 **Bid opening will take place publicly at 2:00 pm local time, Tuesday, June 4, 2013 at the LIGO Hanford Observatory.**

5.2 REJECTION OF BIDS

- 5.2.1 The Owner shall have the right to reject any or all Bids and to reject a Bid not accompanied by any required bid security, if required, or by other data required by the Bidding Documents, or to reject a Bid which is in any way incomplete or irregular.
- 5.2.2 It is the intent of the Owner to award a Contract to the lowest responsible Bidder provided the Bid has been submitted in accordance with the requirements of the Bidding Documents and does not exceed the funds available. The Owner shall have the right to waive any informality or irregularity in any Bid or Bids received and to accept the Bid or Bids which, in his judgment, is in his own best interest.

ARTICLE 6 FORM OF AGREEMENT BETWEEN OWNER AND CONTRACTOR

6.1 FORM TO BE USED

- 6.1.1 Unless otherwise required in the Bidding Documents, the Agreement for Work will be written on AIA Document A105, Standard Form of Agreement Between Owner and Contractor, where the basis of payment is a Stipulated Sum.

ARTICLE 7 SUPPLEMENTARY INSTRUCTIONS

- 7.1 Bidder shall guarantee his price for a period of sixty (60) days from the time of bid opening.
- 7.2 A minimum of 5% of all progress payments will be retained until final acceptance of the project.
- 7.3 The Owner will pay plan check fees, building permit costs and permanent utility connection and area charges and these costs shall not be included in the bid amount.
- 7.4 In consideration for this Contract the successful bidder shall provide a Bid Bond, Performance Bond and Payment Bond.

END OF SECTION

BID PROPOSAL FORM

DATE: _____

TO: LIGO Hanford Observatory
127124 North Route 10
Richland, Washington 99352

LEGAL NAME OF BIDDER'S FIRM: _____

The Bidder listed above in compliance with the Invitation For Bids for the construction of

**Facilities Re-Roofing Project
for
LIGO Hanford Observatory**

In having carefully examined the Plans and Specifications, as prepared by Hibbs Engineering, Inc., 4308 S Gum St., Kennewick, Washington, and other related documents and being familiar with the site of the proposed work and with all of the conditions surrounding the construction of the proposed project, including the availability of materials and labor, hereby proposes to furnish all labor, material, tools, equipment, machinery, equipment rental, transportation, superintendent, perform all work, provide all services, and to construct all work in accordance with the contract documents set forth and the prices stated below. These prices are to cover all expenses incurred in the performance of the work.

The LIGO Hanford Observatory may reject any bid not in compliance with all prescribed bidding procedures and requirements and may reject for good cause any or all bids upon a finding of LIGO that it is in their best interest to do so.

Bidder acknowledges receipt of the following Addenda:

BASE BID \$ _____

Selection of Successful Bidder

Selection of the successful Bidder or Bidders may be based on the lowest responsive Bid.

Schedule

Project substantial completion shall be **90 calendar days** from Notice to Proceed.

The Bidder agrees to commence and fully complete this work in accordance with the Schedule provided in the Contract Documents and the intermediate completion dates specified in Section 01100.1.4 in cooperation with the Owner under the provisions of the

Agreement.

Contractor Licensing

No bid for a construction contract shall be received or considered by the District unless the bidder is licensed by the Department of Licensing in the State of Washington.

Legal Name of Bidder's Firm: _____

Address: _____

Telephone Number: _____

State of Incorporation (if applicable): _____

Name of Partners (if applicable): _____

Contractor's State of Washington License Registration Number: _____

—

Signature: _____

Title: _____

**LIGO HANFORD OBSERVATORY
FACILITIES RE-ROOF PROJECT MODIFICATIONS
MODIFICATIONS TO THE GENERAL CONDITIONS**

The General Conditions of the Contract shall be modified by the additional terms and conditions set forth herein:

ARTICLE 2

2. Permits and fees are to be paid for by the Owner.

Article 3

3. Add to the end of paragraph: The Owner shall reimburse the Contractor for such fees. The cost of such fees are not included in the bid.

**LIGO HANFORD OBSERVATORY
FACILITY RE-ROOFING PROJECT
SUPPLEMENTARY CONDITIONS**

The contract shall be governed by the additional terms and conditions set forth herein:

1. The Contractor shall make payment promptly, as due, to all persons supplying to such contractor labor or materials for the prosecution of the work provided in this contract.
2. The Contractor shall provide workers' compensation insurance coverage for all individuals who perform labor under this contract.
3. The Contractor will not permit any lien or claim to be filed or prosecuted against the Owner on account of any material or labor furnished to the Contractor.
4. If the Contractor fails, neglects, or refuses to make prompt payment of any claim for labor or services furnished to the Contractor or a subcontractor by any person in connection with this contract as such claim shall become due, the proper officer or officers representing the Owner may pay such claim to the person furnishing the labor or service and charge the amount of the payment against funds due or to become due to the Contractor by reason of this contract. The payment of a claim in this manner authorized by this paragraph shall not relieve the Contractor or the Contractor's surety from obligation with respect to any unpaid claim.
5. The Contractor shall promptly, as due, make payment to any person, co-partnership, association or corporation, furnishing medical, surgical and hospital care or other needed care and attention, incident to sickness or injury, to the employees of such Contractor, all sums which the Contractor agrees to pay for such services and all monies and sums which the Contractor collected or deducted from wages of employees pursuant to any law, contract, or agreement for the purpose of providing or paying for such service.
6. Any and all employees of Contractor or its contractors while engaged or performing any work or services required by it under this agreement shall be considered its employees only and not employees of the Owner. Any claims that may arise under the Workers' Compensation Act on behalf of the said employees while so engaged, and any and all claims made by third parties as a consequence of any act or omission on the part of it or its employees while so engaged on any of the work or services provided to be rendered herein shall be the sole obligation responsibility of Contractor and/or its contractors. The parties to this agreement recognize that Contractor and its employees, officers, agents and subcontractors are providing professional services as independent contractors and are not providing services as employees of the Owner and are therefore not entitled to the benefits provided by the Owner to its employees, including but not limited to Workers' Compensation benefits, group health insurance, social security, pension plans, or any other benefit accruing to Owner employees.
7. THE CONTRACTOR AND THE CONTRACTOR'S SUBCONTRACTOR SHALL NOT DISCRIMINATE AGAINST ANY EMPLOYEE OR APPLICANT FOR EMPLOYMENT BECAUSE OF RACE, RELIGION, COLOR, SEX OR NATION ORIGIN. THE CONTRACTOR SHALL TAKE AFFIRMATIVE ACTION TO ASSURE THAT APPLICANTS ARE EMPLOYED, AND THAT EMPLOYEES ARE TREATED DURING EMPLOYMENT WITHOUT REGARD TO THEIR RACE, RELIGION, COLOR, SEX OR NATIONAL ORIGIN. SUCH ACTION SHALL INCLUDE, BUT NOT BE LIMITED TO, THE FOLLOWING: EMPLOYMENT, UPGRADING, DEMOTION OR TRANSFER; RECRUITMENT OR RECRUITMENT ADVERTISING; LAYOFF OR TERMINATION; RATES OF PAY OR OTHER FORMS OF COMPENSATION; AND SELECTION FOR TRAINING, INCLUDING APPRENTICESHIP.
8. FOR THE PURPOSES OF THIS CONTRACT THE "OWNER", "ARCHITECT", OR "ENGINEER" ARE ONE AND THE SAME AND SHALL BE THE LIGO HANFORD OBSERVATORY MANAGER.

PART B

CONSTRUCTION SPECIFICATIONS

**DIVISION 1
GENERAL REQUIREMENTS**

SECTION 01000 PROJECT REQUIREMENTS

1.1 PROJECT INTENT

- A. It is the intent of the project to re-roof 5 LHO building housing technical equipment.
- B. The existing roofing system is a [2]-ply modified bitumen built-up hot asphalt roof with a granular cap sheet. This system is adhered to a dense perlite insulation board set over two layers of rigid insulation which are mechanically fastened to the [corrugated] metal roof decking. After 14 years, this existing 20-year warranted roofing system is approaching the end of its useful life.

2.1 PROJECT REQUIREMENTS

- A. Scope of work is to install a new single-membrane white EPDM roofing system with all new flashings and related appurtenances over the existing bituminous roofing system at the LIGO facility. Scope includes the removal and replacement of all fascias, flashings, copings and other related metal accessories; the removal (relocation) and resetting of a lightning arrest network; the removal and reinstallation of other, minor roof-mounted equipment; installation of certain new gutters, downspouts, splash blocks where indicated.
- B. The LIGO facility consists of five (5) separate buildings: The corner station includes the Operational Support Building (OSB), which is contiguous with the Laser-Vacuum Equipment Area (LVEA). There are also four (4) separate out-buildings designated as Beam Tube Mid- and End-Stations. Each of these buildings is identical to the others.
- C. Roofing areas and perimeter lengths summarize as follows:

OSB	19,316 sf	1203 lf of perimeter	Elevs above Grad 17'-38'
LVEA	41,040 sf	1259 lf of perimeter	Elevs above Grad 17'-38'
MID STATION NW	6,028 sf	502 lf of perimeter	
END STATION NW	6,028 sf	502 lf of perimeter	
MID STATION SW	6,028 sf	502 lf of perimeter	
END STATION SW	6,028 sf	502 lf of perimeter	Elevs above Grad 29'-37'
Totals:	84,468 sf	4470 lf of perimeter	

SECTION 01100 ADMINISTRATIVE PROVISIONS

1.1 WORK COVERED BY CONTRACT DOCUMENTS

- A. Work of this Contract comprises some demolition of existing roofing and flashing items; and to install a new single-membrane white EPDM roofing system with all new flashings and related appurtenances over the existing bituminous roofing system at the LIGO facility. Scope includes the removal and replacement of all fascias, flashings, copings and other related metal accessories; the removal (relocation) and resetting of a lightning arrest network; the removal and reinstallation of other, minor roof-mounted equipment; installation of certain new gutters, downspouts, splash blocks where indicated.

1.2 CONTRACT METHOD

- A. Construct the Work under a single lump sum contract.
- B. Items noted "FBO" (Furnished By Owner), will be furnished by the Owner for installation by the Contractor.
- C. Owner may remove and retain possession of salvage items per Demolition Section of this Contract.

1.3 CONTRACTOR USE OF PREMISES

- A. Limit use of premises of Work for construction operations only.
- B. Maintain access to existing building exits.
- C. Coordinate utilities and space for temporary structures.

1.4 WORK SCHEDULE

- A. Total Substantial Completion – **90 calendar days after Notice to Proceed.**
100% COMPLETION – **104 calendar days after Notice to Proceed**
- B. Submit a complete construction schedule based on the general requirements in 1.4.A.

1.5 OWNER OCCUPANCY

- A. The Owner may occupy and provide normal operations in the existing buildings during construction.
- B. Notify Owner a minimum of 48 hours in advance of any utility disruption.

1.6 APPLICATIONS FOR PAYMENT

- A. Submit two copies of each application under procedures of Section 01300.
- B. Content and Format: That specified for Requests For Payment in Section 01300.

1.7 COORDINATION

- A. Coordinate work to assure efficient and orderly sequence of installation of construction elements, with provisions for accommodating items installed later.

- B. Coordinate and provide solid frame backing for all surface-mounted items, **as required**.
- C. Verify that all roof-mounted equipment that is removed is then reinstalled and connected in the manner that renders the equipment operable to the facility as before.

1.8 FIELD ENGINEERING (when required)

- A. Provide field surveying and engineering services; establish grades, lines, and levels, by use of recognized engineering survey practices.

1.9 REFERENCE STANDARDS

- A. For products specified by association or trade standards, comply with requirements of the standard, except when more rigid requirements are specified or are required by applicable codes.
- B. The date of the standard is that in effect as of the Bid date, or date of Owner-Contractor Agreement when there are not bids, except when a specific date is specified.
- C. Obtain copies of standards when required by Contract Documents. Maintain copy at job site during progress of the specific work.

SECTION 01200 PROJECT MEETINGS

1.1 PRECONSTRUCTION CONFERENCES

- A. Following the Award of the Contract and the Notice to Proceed, the Owner, Contractor and Engineer shall meet to review the construction schedule (prepared by Contractor), site and construction constraints, and clarification of Owner and Contractor responsibilities in use of site and for review of administrative procedures.

1.2 PROGRESS MEETINGS

- A. The Contractor shall schedule and help administer **bi-weekly** project meetings throughout progress of the work.
- B. Contractor shall assist with meeting minutes and distribution.
- C. Bring Plans and Specs to meetings and make record documents available for review.
- D. Attendance: Job superintendent, major subcontractors and suppliers; Owner's Representative and Engineer as appropriate to agenda topics for each meeting.
- E. Suggested Agenda: Review of work progress, status of progress schedule and adjustments thereto, delivery schedules, submittals, maintenance of quality standards, pending changes and substitutions, and other items affecting progress of work. Coordinate all items with the Owner's Representative as required for Owner's recordkeeping and reporting techniques.

SECTION 01300

SUBMITTALS

1.1 PROCEDURES

- A. Deliver submittals to Engineer.
- B. Comply with progress schedule for submittals related to work progress. Coordinate submittal of related items.
- C. After Engineer reviews of submittal, revise and resubmit as required, identifying changes made since previous submittal.
- D. Distribute copies of reviewed submittals to concerned persons. Instruct recipients to promptly report any inability to comply with provisions.

1.2 CONSTRUCTION PROGRESS SCHEDULES

- A. Submit horizontal bar chart with separate line item for each major trade of operation, identifying first work day of each week.
- B. Show complete sequence of construction by activity, identifying work of separate stages and other logically grouped activities. Show projected percentage of completion for each item of work as of time of each progress Application for Payment.
- C. Show submittal dates required for product data, and samples, and product delivery dates, including those furnished by Owner and those under allowances.

1.3 REQUESTS FOR PAYMENT

- A. Submit typed schedule on 8-1/2 x 11-inch paper.
- B. Format: Identify each line item with number and title of the major trade and/or activity.
- C. Include in each line item amount of allowances specified. In addition to retainage, provide a line item for project close-out (punchlist items' equal to a minimum of 1% of the Contract.
- E. List change orders, on a separate sheet for each application for payment.

1.4 PRODUCT DATA

- A. Mark each copy to identify applicable products, models, options, and other data; supplement manufacturers' standard data to provide information unique to the work. Include manufacturers' installation instructions.
- B. Submit three copies of product data

1.5 MANUFACTURERS' INSTRUCTION/O&M DATA (PARTIAL)

- A. Submit manufacturers' printed instructions for delivery, storage, assembly, installation, cleaning, maintenance and repair. Provide a minimum of 3 copies.

PART 3 – PRODUCT SUBMITTAL LIST

- A. Refer to specification section 07 53 23, paragraph 1.04 for submittal requirements.

SECTION 01400 QUALITY CONTROL

1.1 QUALITY CONTROL, GENERAL

- A. Maintain quality control over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce work of specified quality.
- B. At Substantial Completion, the Contractor shall certify that the project is asbestos, lead and mold free construction.

1.2 WORKMANSHIP

- A. Perform work by persons qualified to produce workmanship of specified quality.
- B. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, and racking.

1.3 MANUFACTURERS' INSTRUCTIONS

- A. Comply with instructions in full detail, including each step in sequence. Should instruction conflict with Contract Documents, request clarification from manufacturer and/or Engineer before proceeding.

1.4 FIELD TESTING BY SUBCONTRACTOR

- A. Subcontractor field testing required shall be conducted by qualified representatives using calibrated instruments.

SECTION 01500 CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS

1.1 ELECTRICITY, LIGHTING

- A. Owner shall provide electrical service required for construction operations.
- B. Permanent lighting may be used during construction.

1.2 N/A

1.3 TELEPHONE SERVICE

- A. Owners phone lines may **NOT** be used for construction activities.

1.4 WATER

- A. Coordinate with the Owner the need for water to support construction operations.

1.5 SANITARY FACILITIES

- A. Contractor to provide portable toilet facilities for the construction forces. Owners' facilities shall not be used by the contractor.

1.6 PROTECTION OF INSTALLED WORK

- A. Provide temporary protection for installed products. Control traffic in immediate area to minimize damage.

1.7 CLEANING DURING CONSTRUCTION

- A. Control and remove accumulation of waste materials and rubbish on a daily basis. Periodically dispose of off-site in a legal manner.

1.8 REMOVAL

- A. Remove temporary materials, equipment, services, and construction prior to Substantial Completion inspection.

SECTION 01600 MATERIAL, EQUIPMENT AND SUBSTITUTIONS

1.1 PRODUCTS

- A. Products include material, equipment, and systems.
- B. Comply with construction documents and referenced standards as minimum requirements.
- C. Components required to be supplied in quantity within the construction documents shall be the same, and shall be interchangeable.
- D. Do not use materials and equipment removed from existing structure, except as specifically required, or allowed, by Contract Documents.

1.2 TRANSPORTATION AND HANDLING

- A. Transport products by methods to avoid product damage; deliver in undamaged condition in manufacturer's unopened containers or packaging, dry.

- B. Provide equipment and personnel to handle products by methods to prevent soiling or damage.
- C. Promptly inspect shipments to assure that products comply with requirements, quantities are correct, and products are undamaged.

1.3 STORAGE AND PROTECTION

- A. Store products in accordance with manufacturer's instructions, with seals and labels intact and legible. Store sensitive products in weather-tight enclosures; maintain within temperature and humidity ranges required by manufacturer's instructions.
- B. For exterior storage of fabricated products, place on sloped supports above ground. Cover products subject to deterioration with impervious sheet covering; provide ventilation to avoid condensations.
- C. Arrange storage to provide access for inspection. Periodically inspect to assure products are undamaged, and are maintained under required conditions.
- D. After installation, provide coverings to protect products from damage from traffic and construction operations, remove when no longer needed.

1.4 PRODUCT OPTIONS

- A. Substitutions:
 - 1. Products specified by Description Only: Any product meeting those standards.
 - 2. Products specified by Naming One or More Manufacturers: Submit a request for substitution for any manufacturer not specifically named.
 - 3. Products Specified by Naming Only One Manufacturer and a statement of No Substitution: No options, no substitutions allowed.

1.5 SUBSTITUTIONS

- A. Prior approval is not required except for mechanical equipment.
- B. Prior to ordering of material, Engineer will consider requests from Contractor for all other "equal" substitutions.
- C. Document each request with complete data substantiating compliance of proposed substitution with Contract Documents.
- D. Request constitutes a representation that Contractor:
 - 1. Has investigated proposed product and determined that it meets or

- exceeds, in all respects, specified product.
2. Will provide the same warranty for substitution as for specified product.
 3. Will coordinate installation and make other changes which may be required for work to be complete in all respects including submittal of modified drawings showing the required changes. When necessary such drawings shall be stamped by a Washington registered architect or engineer including all required calculations or tabulations.
 4. Waives claims for additional costs which may subsequently become apparent as a result of using the substitution.
- E. Engineer, with Owner concurrence, will determine acceptability of proposed substitution, and will notify Contractor of acceptance or rejection in writing within a reasonable time. There will be no venue for appeal of substitutions rejected by the Engineer and Owner.

SECTION 01700 CONTRACT CLOSEOUT

1.3 CLOSEOUT PROCEDURES

- A. Test the water-tightness of the new roofing to the extent practicably available. No in-depth, "behind the walls" inspections are implied in this item.
- B. Provide operational training session with Owner staff including use of O & M manuals, spare parts, certificates, and warranties.
- C. Comply with procedures stated in General Conditions of the Contract for issuance of Certificate of Substantial Completion.
- E. When Contractor considers work has reached final completion, submit written certification that Contract Documents have been reviewed, work has been inspected, Certificate of Occupancy has been provided and that work is complete in accordance with Contract Documents and ready for Engineer's inspection utilizing the completely updated as-built drawing set showing all changes.
- F. In addition to submittals required by the conditions of the Contract, provide submittals required by governing authorities, and submit a final statement of accounting giving total adjusted Contract Sum, previous payments, and sum remaining due.

1.5 FINAL CLEANING

- A. Execute prior to final inspection.
- B. Clean exterior surfaces of construction debris; remove temporary labels, stains and foreign substances.

- C. Clean the surrounding site; sweep and wash down paved and concrete aprons, rake clean other surfaces; all as needed.
- D. Remove waste and surplus materials, rubbish, and construction facilities from the Project and from the site.

SECTION 01720 PROJECT RECORD DOCUMENTS

1.1 MAINTENANCE OF DOCUMENTS AND SAMPLES

- A. Maintain at the site for Owner one record copy of:
 - 1. Record Documents.
 - 2. Contract Drawings.
 - 3. Specifications.
 - 4. Addenda.
 - 5. Change Orders and other modifications to the Contract.
 - 6. Reviewed shop drawings, product data, color chips, and samples.
 - 7. Field test records.
 - 8. Inspection certificates.
 - 9. Manufacturer's certificates.
- B. Maintain Record Documents in a clean, dry and legible condition. Do not use Record Documents for construction purposes.
- C. Keep Record Documents and Samples available for inspection by **Engineer**.

1.2 RECORDING

- A. Record information on a set of drawings, and in a copy of the Specifications.
- B. Record information concurrently with construction progress. Do not conceal any work until required information is recorded.
- C. Contract Drawings and Shop Drawings: Legibly mark each item in color-coded ink to record actual construction, including:
 - 1. Field changes of dimension and detail.
 - 2. Changes made by modifications.
 - 3. Details not on original Contract Drawings.
 - 4. References to related shop drawings and modifications.

1.3 SUBMITTALS

- A. At Contract closeout, deliver Record Documents, with one complete consolidated set of originals and three (3) copies.
- B. Transmit with cover letter in listing:

1. Date.
2. Project title and number.
3. Contractor's name, address, and telephone number.
4. Signature of Contractor or authorized representative.

SECTION 01730 OPERATION AND MAINTENANCE DATA

1.1 QUALITY ASSURANCE

- A. Prepare data in the form of an instructional manual and submit one copy for approval and three sets of approved, minimum.
- B. Submit O&M for review within 30 days of product data approval. Use completed manuals for reference during Owner training session on all operating systems.

SECTION 01740 WARRANTIES AND BONDS

1.1 FORM OF SUBMITTALS

- A. Bind in commercial quality (8-1/2 X 11-inch) three-post binders.
- B. Separate each warranty or bond with index tab sheets keyed to the Table of Contents listing. Provide full information using separate typed sheets as necessary. List subcontractor, supplier, and manufacturer with name, address, and telephone number of responsible principal.

1.2 PREPARATION OF SUBMITTALS

- A. Obtain full, warranties and bonds, executed in duplicate by responsible subcontractors, suppliers, and manufacturers, within ten (10) days after completion of the applicable item of work. Except for items put into use with Owner's permission, leave date of beginning of time of warranty until the date of acceptance for continued use by the Owner is determined.

1.3 TIME OF SUBMITTALS

- A. Make other submittals prior to final Application for Payment.

END OF SECTION