



**STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION  
HONOLULU, HAWAII**

**SPECIAL PROVISIONS  
PROPOSAL  
CONTRACT AND BOND**

**FOR**

**INTERSTATE ROUTE H-3  
HALAWA-LULUKU INTERPRETIVE DEVELOPMENT  
LULUKU PROJECT AREA  
FEDERAL-AID PROJECT NO. I-H3-1(75)  
DISTRICT OF KOOLAUPOKO  
ISLAND OF OAHU  
FY 2024**

**NOTICE TO BIDDERS**  
Hawaii Revised Statutes (HRS),  
Chapter 103D

The receiving of bids for INTERSTATE ROUTE H-3, HALAWA-LULUKU INTERPRETIVE DEVELOPMENT, LULUKU PROJECT AREA, DISTRICT OF KOOLAUPOKO, ISLAND OF OAHU, FEDERAL-AID PROJECT NO. I-H3-1(75), will begin as of the HIePRO Release Date. Bidders shall register and submit complete bids through HIePRO only. Refer to the following HIePRO link for important information on Vendor Registration: <https://hiepro.ehawaii.gov/welcome.html>.

The solicitation plans, specifications, proposal, and additional documents designated or incorporated by reference shall be available in HIePRO.

HIePRO OFFER DUE DATE & TIME is August 14, 2024, at 2:00 p.m., Hawaii Standard Time (HST). **Bidders shall submit and upload the complete proposal to HIePRO prior to the offer due date and time. Proposals received after said due date and time shall not be considered. Any additional support documents explicitly designated as confidential and/or proprietary shall be uploaded as a separate file to HIePRO. Bidders shall not include confidential and/or proprietary documents as part of their proposal. The record of each bidder and their respective proposal shall be open to public inspection. FAILURE TO UPLOAD THE PROPOSAL TO HIePRO SHALL BE GROUNDS FOR REJECTION.**

Scope of work consists of sewer line and water line installation, site grading, installation of permeable pavement, and construction of support facility structures. The estimated cost of construction is \$3,770,000.

To be eligible for award, bidders shall possess a valid State of Hawaii General Engineering "A" license **prior to the award of contract.**

A virtual pre-bid conference is scheduled for July 24, 2024, at 10:30 a.m., HST. Interested bidders shall contact Evan Kimoto, Project Manager, directly at [evan.kimoto@hawaii.gov](mailto:evan.kimoto@hawaii.gov), no later than five working days prior to the scheduled pre-bid conference to receive the meeting invitation. All prospective bidders and/or their respective representatives are encouraged to attend; however, attendance is not mandatory. All information presented at the pre-bid conference shall be provided for clarification and information only. Any amendments to the solicitation shall be made by formal addendum and posted in HIePRO.

All Request for Information (RFI) questions and Substitution Requests shall be submitted in HIePRO **no later than July 31, 2024, at 2:00 p.m., HST.** RFI questions received after the stated deadline shall not be addressed. Substitution Requests received after the stated deadline shall not be considered. Verbal RFI(s) shall not receive a response. All responses to RFI questions shall be provided for clarification and information only and issued by formal addendum. Any amendments to the solicitation shall be made by formal addendum and posted in HIePRO.

If there is a conflict between the solicitation and information stated in the pre-bid conference, the meeting minutes, and/or the responses to RFI questions, the solicitation shall govern and control, unless as amended by formal addendum.

Campaign contributions by State and County Contractors. Contractors are hereby notified of the applicability of HRS § 11-355 which states that campaign contributions are prohibited from specified State or county government contractors during the term of the contract if the contractors are paid with funds appropriated by a legislative body. For more information, contact the Campaign Spending Commission at (808) 586-0285.

Protests. Any protest of this solicitation shall be submitted in writing to the Director of

Transportation, in accordance with HRS § 103D-701 and Hawaii Administrative Rules § 3-126.

The Equal Employment Opportunity Regulations of the Secretary of Labor implementing Executive Order 11246, as amended, shall be complied with on this project.

The U.S. Department of Transportation Regulation entitled “Nondiscrimination in Federally Assisted Programs of the U.S. Department of Transportation”, Title 49, Code of Federal Regulations (CFR), Part 21, is applicable to this project. Bidders are hereby notified that the Department of Transportation shall affirmatively ensure that the contract entered into pursuant to this advertisement shall be awarded to the lowest responsible bidder without discrimination on the grounds of race, color, national origin, or sex (as directed by 23 CFR Part 200).

The U.S. Department of Transportation Regulations entitled "Participation by Disadvantaged Business Enterprise in Department of Transportation Financial Assistance Programs", Title 49, CFR, Part 26, is applicable to this project. Bidders are hereby notified that the Department of Transportation shall strictly enforce full compliance with all the requirements of the Disadvantaged Business Enterprise (DBE) program with respect to this project.

Bidders shall read the DBE Requirements, included in this solicitation, which establishes the program requirements pursuant to Title 49, CFR, Part 26, and includes the requirements of certification, method of award, and evidence of good faith. All Bidders shall email Evan Kimoto, Project Manager, at [evan.kimoto@hawaii.gov](mailto:evan.kimoto@hawaii.gov), the following: “Disadvantaged Business Enterprise (DBE) Contract Goal Verification and Good Faith Efforts Documentation for Construction”; “Disadvantaged Business Enterprise (DBE) Confirmation and Commitment Agreement – Trucking Company”; and “Disadvantaged Business Enterprise (DBE) Confirmation and Commitment Agreement – Subcontractor, Manufacturer, or Supplier”,

**no later than August 19, 2024, at 4:30 p.m., HST.** Failure to provide the respective documents shall be grounds for rejection of bid.

Driving While Impaired (DWI) Education. The Hawaii Department of Transportation (HDOT) encourages all organizations contracted with HDOT to have an employee education program preventing DWI. DWI is defined as operating a motor vehicle while impaired by alcohol or other legal or illegal substances. HDOT promotes this type of program to accomplish our mission to provide a safe environment for motorists, bicyclists, and pedestrians utilizing our State highways, and expects its contractors to do so as well.

For additional information, contact Evan Kimoto, Project Manager, by phone at (808) 692-7551, or by email at [evan.kimoto@hawaii.gov](mailto:evan.kimoto@hawaii.gov).

The State reserves the right to reject any or all proposals and to waive any defects in said proposals in the best interest of the public.



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ROBIN K. SHISHIDO  
Deputy Director of Transportation for Highways

HIePRO RELEASE DATE: July 15, 2024

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## **INSTRUCTIONS FOR CONTRACTOR'S LICENSING**

"A" general engineering contractors and "B" general building contractors are reminded that due to the Hawaii Supreme Court's January 28, 2002 decision in Okada Trucking Co., Ltd. v. Board of Water Supply, et al., 97 Haw. 450 (2002), they are prohibited from undertaking any work, solely or as part of a larger project, which would require the general contractor to act as a specialty contractor in any area where the general contractor has no license. Although the "A" and "B" contractor may still bid on and act as the "prime" contractor on an "A" or "B" project (*See, HRS § 444-7 for the definitions of an "A" and "B" project.*), respectively, the "A" and "B" contractor may only perform work in the areas in which they have the appropriate contractor's license (*An "A" or "B" contractor obtains "C" specialty contractor's licenses either on its own, or automatically under HAR § 16-77-32.*). The remaining work must be performed by appropriately licensed entities. It is the sole responsibility of the contractor to review the requirements of this project and determine the appropriate licenses that are required to complete the project.

**NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL  
EMPLOYMENT OPPORTUNITY (EXECUTIVE ORDER 11246)**

1. The Bidder's attention is called to the "Equal Opportunity" and the "Specific Equal Employment Opportunity Responsibilities" set forth in the "Required Federal Aid Construction Contract Provisions."

2. The goals and timetables for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work on this project are as follows:

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CATEGORY	TIMETABLE	GOAL
Female participation in each trade	Indefinite	6.9%
Minority participation in each	None	69.1% (Oahu)
Trade (female included)	None	70.4% (Hawaii, Maui, Kauai)

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These goals are applicable to all the Contractor's aggregate on-site construction workforce whether or not part of that workforce is performing work on a Federal or Federally assisted construction contract or subcontract.

The Contractor's compliance with the Executive Order shall be based on its implementation of the Equal Opportunity Clause, and its efforts to meet the goals established for the contract resulting from this solicitation. The hours of female and minority employment and training must be substantially uniform throughout the length of the contract, and in trade and the Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor or from project to project for the sole purpose of meeting the Contractor's goals shall be a violation of the contract and Executive Order. Compliance with the goals will be measured against the total work hours performed.

3. The Contractor shall provide written notification to the Area Director, Hawaii Area Office, Office of Federal Contract Compliance Programs, U.S. Department of Labor, 300 Ala Moana Blvd., P.O. Box 50149, Honolulu, Hawaii 96850, within 10 working days of award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the name, address, and telephone number of the subcontractor; employer identification number; estimated dollar amount of the subcontract; and estimated starting and completion dates of the subcontract. The Contractor shall indicate which are minority group subcontractors and the ethnic identity and sex of the owner(s) and policy-making official(s).

# DISADVANTAGED BUSINESS ENTERPRISE REQUIREMENTS

## I. GENERAL

This project is subject to Title 49, Code of Federal Regulations, Part 26, entitled "Participation by Disadvantaged Business Enterprise in Department of Transportation Financial Assistance Programs," hereinafter referred to as the ("DBE Regulations") and is incorporated and made a part of this contract herein by this reference. The following shall be incorporated as part of the contract documents for compliance. If any requirements herein are in conflict with the general provisions or special provisions applicable to this project, the requirements herein shall prevail unless specifically superseded or amended in the special provisions or by addendum.

## II. POLICY

It is the policy of the U.S. Department of Transportation ("USDOT") and the State of Hawaii, Department of Transportation and its political subdivisions ("Department") that Disadvantaged Business Enterprises ("DBE"), as defined in the DBE Regulations, have an equal opportunity to receive and participate in federally assisted contracts.

## III. DBE ASSURANCES

Each contract signed with a prime contractor (and each subcontract the prime contractor signs with a subcontractor) shall include the following assurance:

"The contractor, sub-recipient, or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of USDOT assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the recipient deems appropriate which may include, but is not limited to; 1) withholding monthly progress payments; 2) assessing sanctions; 3) liquidated damages; and/or 4) disqualifying the contractor from future bidding as non-responsible."

The prime contractor agrees to include the above statements in any subsequent contracts that it enters into with other contractors and shall require those contractors to include similar statements in further agreements.

## IV. BIDDER/OFFEROR RESPONSIBILITIES

All bidders/offerors are required to register with the Department's OCR, DBE Section, using the Bidder Registration Form, which can be downloaded from the Department's website at <http://hidot.hawaii.gov/administration/ocr/dbe/dbe-program-forms/>. Certified DBEs are considered registered with the Department and are not required to submit a

Bidder Registration Form. All other bidders/offerors are required to complete this form which may be faxed to (808) 831-7944, e-mailed to HDOT-DBE@hawaii.gov, or mailed to the HDOT DBE Section at 200 Rodgers Boulevard, Honolulu, Hawaii, 96819. Registered bidders/offerors are posted on the website listed above.

Bidders/offerors, subcontractors, manufacturers, vendors or suppliers, and trucking companies shall fully inform themselves with respect to the requirements of the DBE Regulations. Particular attention is directed to the following matters:

- A. Bidders/offerors shall take all necessary steps to ensure that DBEs have an opportunity to participate in this contract.
- B. DBEs may participate as a consultant, prime contractor, subcontractor, trucking company, or vendor of materials or supplies. DBEs may also team with other DBEs or non-DBE firms as part of a joint venture or partnership.
- C. Agreements between a bidder/offeror and a DBE in which an DBE promises not to provide subcontracting quotations to other bidders/offerors are strictly prohibited.
- D. A DBE shall be certified by the Department under the appropriate North American Industry Classification System (NAICS) code and work in their registered field of work in order for credit to be allowed.
- E. Information regarding the current certification status of DBEs is available on the internet at <https://hdot.dbesystem.com/>.
- F. Commercially Useful Function (“CUF”). An DBE must perform a CUF. This means that an DBE must be responsible for the execution of a distinct element of the work, must carry out its responsibility by actually performing, managing, and supervising at least 30% of the work involved by using its own employees and equipment, must negotiate price, determine quality and quantity, order and install material (when applicable), and must pay for the material itself.<sup>1</sup>

To determine whether an DBE is performing a CUF, the Department must evaluate the amount of work subcontracted, industry practices, whether the amount the firm is to be paid under the contract is commensurate with the work it is actually performing, the DBE credit claimed for performance of the work, and other relevant factors. The prime contractor is responsible to ensure that the DBE performs a CUF.

## V. PROPOSAL REQUIREMENTS

- A. DBEs must be certified by the bid opening date.

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<sup>1</sup> The use of joint checks payable to an DBE subcontractor and supplier may be allowed to purchase materials and supplies under limited circumstances. See VII USE OF JOINT CHECKS UNDER THE DBE PROGRAM

- B. DBE subcontractors, manufacturers, suppliers, trucking companies, and any second tier subcontractors shall be listed on the respective DBE forms as specified below in order to receive credit.
- C. The following forms are due to the Department's Project Manager or designee **by the close of business, 4:30 P.M. Hawaii Standard Time (HST), five (5) days after bid opening:**<sup>2</sup>
1. DBE Confirmation and Commitment Agreement. This form must be signed by the bidder/offeror and each DBE subcontractor, manufacturer, supplier, or trucking company. Information to be provided on the form shall include, among other things, the project number, the DBE's NAICS codes, description of work, bid items with corresponding price information, prime contractor name and contact information DBE name and contact information and subcontractor name and contact information if the DBE is a second tier subcontractor.
  2. DBE Contract Goal Verification and Good Faith Efforts (GFE) Documentation for Construction. List the dollar amount of all subcontractors, manufacturers, suppliers, and trucking companies (both DBE and non-DBE firms). Bidder/offeror must also list the DBE project goal on this form (See paragraph D below regarding goal calculation). The bidder/offeror must submit documentation demonstrating how the DBE goal was met or how the bidder/offeror attempted to meet the goal if the goal was not met. This documentation shall include quotations for both DBE and non-DBE subcontractors when a non-DBE is selected over a DBE for the project. **Documentation of good faith efforts is required irrespective of whether the bidder/offeror met the DBE project goal.**
- The above forms must be complete and provide the necessary information to properly evaluate bids/proposals. Failure to provide any of the above shall be cause for bid/proposal rejection.**
- D. Calculation of the DBE contract goal for this project is the proportionate contract dollar value of work performed, materials, and goods to be supplied by DBEs. DBE credit shall not be given for mobilization, force account items and allowance items. This DBE contract goal is applicable to all the contract work performed for this project and is calculated as follows:
1. DBE contract goal percentage = Contract Dollar Value of the work to be performed by DBE subcontractors and manufacturers, plus 60% of the contract dollar value of DBE suppliers, divided by the sum of all contract items (sum of all contract items is the total amount for comparison of bids less mobilization, force account items, and allowance items).

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<sup>2</sup> In computing calendar days, the day from which the period begins to run is not counted, and when the last day of the period is a Saturday, Sunday, or Federal or State holiday, the period extends to the next day that is not a Saturday, Sunday, or holiday.

2. The Department shall adjust the bidder's/offeror's DBE contract goal to the amount of the project goal if it finds that the bidder/offeror met the goal but erroneously calculated a lower percentage. If the amount the bidder/offeror submits as its contract goal exceeds the project goal, the bidder/offeror shall be held to the higher goal.

**VI. COUNTING DBE PARTICIPATION TOWARDS CONTRACT GOAL**

- A. Count the entire amount of the portion of a contract (or other contract not covered by paragraph B below) that is performed by the DBE's own forces. Include the cost of supplies and materials obtained by the DBE for the work on the contract, including supplies purchased or equipment leased by the DBE (except supplies and equipment the DBE subcontractor purchases or leases from the prime contractor or its affiliate).
- B. Count the entire amount of fees or commissions charged by an DBE firm for providing a bona fide service, such as professional, technical, consultant, or managerial services, or for providing bonds or insurance specifically required for the performance of a USDOT-assisted contract, toward DBE goals, provided the Department determines the fee to be reasonable and not excessive as compared with fees customarily allowed for similar services.
- C. When an DBE subcontracts part of the work of its contract to another firm, the value of the subcontracted work may be counted toward DBE goals only if the DBE's subcontractor is itself an DBE. Work that an DBE subcontracts to a non-DBE firm does not count toward DBE goals.
- D. When an DBE performs as a participant in a joint venture, count a portion of the total dollar value of the contract equal to the distinct, clearly defined portion of the work of the contract that the DBE performs with its own forces toward DBE goals.
- E. Count expenditures to an DBE contractor toward DBE goals only if the DBE is performing a CUF on that contract.
- F. The following is a list of appropriate DBE credit to be allowed for work to be performed by an DBE subcontractor. Count expenditures with DBEs for materials or supplies toward DBE goals as provided in the following:
  1. If the materials or supplies are obtained from an DBE manufacturer, count 100 percent of the cost of the materials or supplies toward DBE goals;
  2. For purposes of determining DBE goal credit, a manufacturer is a firm that operates or maintains a factory or establishment that produces (on the premises) the materials, supplies, articles, or equipment required under the contract and of the general character described by the specifications;

3. If the materials or supplies are purchased from an DBE regular dealer, count 60 percent of the cost of the materials or supplies toward DBE goals;
4. For purposes of determining DBE goal credit, a regular dealer is a firm that owns, operates, or maintains a store, warehouse, or other establishment in which the materials, supplies, articles or equipment of the general character described by the specifications and required under the contract are bought, kept in stock, and regularly sold or leased to the public in the usual course of business;
5. To be a regular dealer, the firm must be an established, regular business that engages, as its principal business and under its own name, in the purchase and sale or lease of the products in question;
6. A person may be a regular dealer in such bulk items as petroleum products, steel, cement, gravel, stone, or asphalt without owning, operating, or maintaining a place of business as provided in the DBE Regulations, if the person both owns and operates distribution equipment for the products. Any supplementing of a regular dealers' own distribution equipment shall be by a long-term lease agreement and not on an ad hoc or contract-by-contract basis;
7. Packagers, brokers, manufacturers' representatives, or other persons who arrange or expedite transactions are not regular dealers;
8. With respect to materials or supplies purchased from an DBE, which is neither a manufacturer nor a regular dealer, count the entire amount of fees or commissions charged for assistance in the procurement of the materials and supplies, or fees or transportation charges for the delivery of materials or supplies required on a job site, toward DBE goals, provided that the Department determines the fees to be reasonable and not excessive as compared with fees customarily allowed for similar services. Do not count any portion of the cost of the materials and supplies themselves toward DBE goals; however,
9. If a firm is not currently certified as an DBE in accordance with standards of this part at the time of the execution of the contract, do not count the firm's participation toward any DBE goals, except as provided for in §26.87(i);
10. Do not count the dollar value of work performed under a contract with a firm after it has ceased to be certified toward the Department's overall goal; and
11. Do not count the participation of an DBE subcontractor toward a contractor's final compliance with its DBE obligations on a contract until the amount being counted has actually been paid to the DBE.

G. The following factors are used in counting DBE participation for trucking companies:

1. The DBE must be responsible for the management and supervision of the entire trucking operation for which it is responsible on a particular



contract, and there cannot be a contrived arrangement for the purpose of meeting DBE goals;

2. The DBE must itself own and operate at least one (1) fully licensed, insured, and operational truck used on the contract;
3. The DBE receives credit for the total value of the transportation services it provides on the contract using trucks it owns, insures, and operates using drivers it employs;
4. The DBE may lease trucks from another DBE firm, including an owner-operator who is certified as an DBE. The DBE who leases trucks from another DBE receives credit for the total value of the transportation services the lessee DBE provides on the contract;
5. The DBE may also lease trucks from a non-DBE firm, including from an owner-operator. The DBE that leases trucks equipped with drivers from a non-DBE is entitled to credit for the total value of transportation services provided by non-DBE leased trucks equipped with drivers not to exceed the value of transportation services on the contract provided by DBE-owned trucks or leased trucks with DBE employee drivers. Additional participation by non-DBE owned trucks equipped with drivers receives credit only for the fee or commission it receives as a result of the lease arrangement. If a recipient chooses this approach, it must obtain written consent from the appropriate Department operating administration.  
EXAMPLE: DBE firm X uses two (2) of its own trucks on a contract, leases two (2) trucks from DBE Firm Y and six (6) trucks from non-DBE Firm Z. DBE credit would be awarded for the total value of transportation services provided by Firm X and Firm Y, and may also be awarded for the total value of transportation services provided by four (4) of the six (6) trucks provided by Firm Z. In all, full credit would be allowed for the participation of eight (8) trucks. With respect to the other two (2) trucks provided by Firm Z, DBE credit could be awarded only for the fees or commissions pertaining to those trucks Firm X receives as a result of the lease with Firm Z;
6. The DBE may lease trucks without drivers from a non-DBE truck leasing company. If the DBE leases trucks from a non-DBE truck leasing company and uses its own employees as drivers, it is entitled to credit for the total value of these hauling services.  
EXAMPLE: DBE Firm X uses two (2) of its own trucks on a contract. It leases two (2) additional trucks from non-DBE Firm Z. Firm X uses its own employees to drive the trucks leased from Firm Z. DBE credit would be awarded for the total value of the transportation services provided by all four (4) trucks; and
7. For purposes of determining whether a trucking firm performs a CUF, a lease must indicate that the DBE has exclusive use of and control over the truck. This does not preclude the leased truck from working for others during the term of the lease with the consent of the DBE, so long as the lease gives the DBE absolute priority for use of the leased truck. Leased trucks must display the name and identification number of the DBE.

- H. The bidder/offeror may be a joint venture or partnership that has a certified DBE as a partner. A “Joint Venture” means an association between an DBE firm and one (1) or more other firms to carry out a single, for-profit, business enterprise for which the parties combine their property, capital, efforts, skills and knowledge, and in which the DBE is responsible for a distinct, clearly defined portion of the work of the contract, and whose share in the capital contribution, control, management, risks and profits are commensurate with its ownership interest.
- I. Effects of a Summary Suspension of an DBE. When an DBE’s certification is suspended, the DBE may not be considered to meet a contract goal on a new contract and any work it does on a contract received during the suspension shall not be counted towards the overall goal. The DBE may continue to perform work under an existing contract executed before the DBE received a Notice of Suspension and may be counted towards the contract goal during the period of suspension as long as the DBE is performing a CUF under the existing contract.
- J. Effects of Decertification of an DBE. Should an DBE become decertified during the term of the subcontract for reasons beyond the control of and with no fault or negligence on the part of the contractor, the work remaining under the subcontract may be credited towards the contract goal, but are not included in the overall accomplishments.

Should the DBE be decertified after contract award and before notice to proceed, the contractor must still meet the DBE goal by either: a) withdrawing the subcontract from the DBE and expending good faith efforts to replace it with an DBE that is currently certified for that same work; or b) continuing with the subcontract with the decertified firm and expending good faith efforts to find other work not already subcontracted out to DBEs in an amount to meet the DBE goal either by; 1) increasing the participation of other DBEs on the project; 2) documenting good faith efforts; or 3) by a combination of the above.

## **VII. USE OF JOINT CHECKS UNDER THE DBE PROGRAM**

- A. The following guidelines apply to the use of joint checks:
1. The second party (typically the prime contractor) acts solely as a guarantor;
  2. The DBE must release the check to the supplier;
  3. The use of joint checks is a commonly recognized business practice;
  4. The Department must approve the use of joint checks prior to use by contractors and/or DBEs. As part of this approval process the Department will analyze industry practice to confirm that the use of joint checks is commonly employed outside of the DBE program for non-DBE subcontractors on both federal and state funded contracts. Using joint checks shall not be approved if it conflicts with other aspects of the DBE Regulations regarding CUF; and
  5. The Department will monitor the use of joint checks closely to avoid abuse.

- B. Contractors and DBEs should review the following general guidelines when determining whether to use joint checks closely to avoid abuse:
1. That standard industry practice applies to all contractors (federal and state contracts);
  2. Use of joint checks must be available to all subcontractors;
  3. Material industry sets the standard industry practice, not prime contractors;
  4. Short term, not to exceed reasonable time (i.e., one (1) year, two (2) years) to establish/increase a credit line with the material supplier;
  5. No exclusive arrangement between one (1) prime and one (1) DBE in the use of joint checks that might bring the independence of the DBE into question;
  6. Non-proportionate ratio of DBE's normal capacity to size of contract and quantity of material to be provided under the contract;
  7. The DBE is normally responsible to install and furnish the work item; and
  8. The DBE must be more than an extra participant in releasing the check to the material supplier.
- C. The Department shall allow the use of joint checks if the following general conditions are met:
1. DBE submits request to the Department for action;
  2. There is a formalized agreement between all parties that specify the conditions under which the arrangement shall be permitted;
  3. There is a full and prompt disclosure of the expected use of joint checks;
  4. The Department will provide prior approval;
  5. DBE remains responsible for all other elements of 49 CFR 26.55(c)(1);
  6. The agreement states clearly and determines that independence is not threatened because the DBE retains final decision making responsibility;
  7. The Department will determine that the request is not an attempt to artificially inflate DBE participation;
  8. Standard industry practice is only one (1) factor;
  9. The Department will monitor and maintain oversight of the arrangement by reviewing cancelled checks and/or certification statement of payment; and
  10. The Department will verify there is no requirement by prime contractor that the DBE is to use a specific supplier nor the prime contractor's negotiated unit price.

## **VIII. DEMONSTRATION OF GOOD FAITH EFFORTS FOR CONTRACT AWARD**

- A. When a project goal is not met, the Department shall conduct the initial review of GFE submitted by the bidder/offeror and shall determine whether the bidder/offeror has performed the quality, quantity, and intensity of efforts that demonstrate a reasonably active and aggressive attempt to meet the contract goal in accordance with 49 CFR Part 26, Appendix A.

- B. The bidder/offeror bears the responsibility of demonstrating that it met the contract goal, or if the contract goal was not met, by documenting the GFE it made in an attempt to meet the goal. It is the sole responsibility of the bidder/offeror to submit any and all documents, logs, correspondence, and any other records or information to the Department that will demonstrate that the bidder/offeror made good faith efforts to meet the DBE goal.
- C. In its good faith evaluation, the Department shall perform the following as part of its evaluation: a) compare the bidder's/offeror's bid against the bids/offers of other bidders/offerors, and compare the DBEs and DBE work areas utilized by the bidder/offeror with the DBEs listed in other bids/offers submitted for this contract (If other bidders obtained DBEs in a particular work area in which the low bidder did not, the Department shall take this into consideration in its evaluation); b) verify contacts by bidders/offerors with DBEs; and c) compare the DBE and the categories of DBE work targeted by the bidder/offeror for participation in the contract, with the total pool of available DBEs ready, willing and able to perform work on each particular subcontract targeted by the bidder/offeror.
- D. Actions on the part of the bidder/offeror that will be considered demonstrative of good faith efforts include, but are not limited to, the following:
1. Whether the bidder/offeror submitted the required information (i.e., DBE name, address, NAICS code, description of work, project name, and number), and dollar amounts for all subcontractors, within five (5) days of bid opening;
  2. Whether the bidder/offeror solicited through all reasonable and available means (e.g., attendance at pre-bid meetings, advertising and/or written notices) the interest of all certified DBEs who have the capability to perform part or all of the work to be included under the contract. The Department will also consider whether the bidder/offeror solicited the participation of potential DBEs as early in the procurement process as practicable, and allowed sufficient time for the DBEs to properly inquire about the project and respond to the solicitation. The Department will also review whether the bidder/offeror took appropriate steps to follow up with interested DBEs in a timely manner to facilitate participation by DBEs in this project;
  3. Whether the bidder/offeror identified and broke up portions of work that can be performed by DBEs in order to increase the likelihood that an DBE will be able to participate, and that the DBE goal could be achieved (e.g., breaking out contract items into economically feasible units to facilitate DBE participation even when the bidder/offeror might otherwise prefer to self-perform these work items with its own forces);
  4. Whether the bidder/offeror made available or provided interested DBEs with adequate information about the plans, specifications, and requirements of the project in a timely manner, and assisted them in responding to the bidder's/offeror's solicitation;

5. Whether the bidder/offeror negotiated in good faith with interested DBEs. Evidence of such negotiations includes documenting: a) the names, addresses and telephone numbers of DBEs that were contacted; b) a description of the information that was provided to DBEs regarding the plans and specifications; and c) detailed explanation for not utilizing individual DBEs on the project;
6. Whether the bidder/offeror solely relied on price in determining whether to use an DBE. The fact that there may be additional or higher costs associated with finding and utilizing DBEs are not, by itself, sufficient reasons for a bidder's/offeror's refusal to utilize an DBE, or the failure to meet the DBE goal, provided that such additional costs are not unreasonable. Also, the ability or desire of a bidder/offeror to perform a portion of the work with its own forces, that could have been undertaken by an available DBE, does not relieve the bidder/offeror of the responsibility to make good faith efforts to meet the DBE goal, and to make available and solicit DBE participation in other areas of the project to meet the DBE goal;
7. Whether the bidder/offeror rejected DBEs as being unqualified without sound reasons based on a thorough investigation of their capabilities. The DBEs standing within the industry, membership in specific groups, organizations or associations, and political or social affiliation are not legitimate basis for the rejection or non-solicitation of bids from particular DBEs;
8. Whether the bidder/offeror made efforts to assist interested DBEs in obtaining bonding, lines of credit, or insurance;
9. Whether the bidder/offeror made efforts to assist interested DBEs in obtaining necessary equipment, supplies, materials or related assistance or services;
10. Whether the bidder/offeror effectively used the services of available minority/women community organizations, minority/women business groups, contractors' groups, and local, state and federal minority/women business assistance offices or other organizations to provide assistance in recruitment and placement of DBEs;
11. Whether the bidder/offeror, who selects a non-DBE over an DBE subcontractor, has quotes of each DBE and non-DBE subcontractor submitted to the bidder for work on the contract; and for each DBE that was contacted but not utilized by the bidder/offeror for a contract, the bidder/offeror has a detailed written explanation for each DBE detailing the reasons for the bidder's/offeror's failure or inability to utilize, or to allow the DBE to participate in the contract; and
12. Whether other bidders/offerors met the goal and whether the apparent successful bidder/offeror could have met the goal with additional efforts. The Department may determine that an apparent successful bidder/offeror who fell short of meeting the goal, made good faith efforts when it met or exceeded the average DBE participation obtained by other bidders/offerors.

**IX. ADMINISTRATIVE RECONSIDERATION.**

If it is determined by the Department that the apparent successful bidder/offeror has failed to meet the provisions of 49 CFR Section 26.53(a), the bidder/offeror may submit a request for administrative reconsideration. If under the provisions of 49 CFR, Section 26.53(d), it is determined by the Department that the apparent successful bidder/offeror has failed to meet the provisions of this subsection, the bidder/offeror may submit a written request for administrative reconsideration.

- A. Within five (5) working days of being informed in writing by the Department that the bidder/offeror has not documented sufficient GFE, a bidder/offeror may request administrative reconsideration. Bidders/offerors should make this request in writing to the following official:

Director of Transportation  
Hawaii Department of Transportation  
869 Punchbowl Street, Room 509  
Honolulu, Hawaii 96813

- B. The reconsideration official, or his or her designee (referred to as “reconsideration official”), shall not have played any role in the original determination that the bidder/offeror failed to meet the goal or make adequate good faith efforts to do so.
- C. As part of this reconsideration, the bidder/offeror will have the opportunity to provide written documentation or argument concerning the issue of whether it met the goal or made adequate GFE to do so. The bidder/offeror will have the opportunity to meet in person with the reconsideration official to discuss the issue of whether it met the goal or made adequate GFE to do so.
- D. In an administrative reconsideration, the reconsideration official will review all previously submitted documents, oral and written arguments, and other evidence presented in the reconsideration, in making the decision.
- E. The Department shall inform the bidder/offeror of the decision within thirty (30) days of the proceeding. The decision will state the Department’s findings, and explain the basis of those findings, with respect to whether or not the bidder/offeror met the contract goal, or whether or not the bidder/offeror made adequate GFE to achieve the contract goal.
- F. The reconsideration decision is not administratively appealable to USDOT but is appealable under HRS 103D-709.

**X. AWARD OF CONTRACT**

- A. In a sealed bid procurement, the Department reserves the right to reject any or all bids. The award of contract, if it is awarded, will be to the lowest responsive and responsible bidder who meets or exceeds the DBE project goal, or who makes

good faith efforts to meet or exceed the DBE project goal, as determined by the Department.

- B. If the lowest responsible bidder does not meet the DBE project goal and does not demonstrate to the satisfaction of the Department that it made good faith efforts to meet the DBE project goal, such bid shall be rejected as non-responsive. The Department will then consider the next lowest responsive and responsible bidder for award in accordance with paragraph A above.

## **XI. REPLACEMENT OF AN DBE ON A PROJECT WITH A CONTRACT GOAL**

Under this contract, the prime contractor shall utilize the specific DBE listed to perform the work and supply the materials for which each is listed unless the contractor obtains written consent from the Department to replace an DBE. If the Department's consent is not provided, the contractor shall not be entitled to any payment for work or material unless it is performed or supplied by the listed DBE. The Department reserves the right to request copies of all DBE subcontracts.

The Department will require a contractor to make good faith efforts to replace an DBE that is terminated or has otherwise failed to complete its work on a contract with another certified DBE, to the extent needed to meet the contract goal. A prime contractor's inability to find a replacement DBE at the original price is not sufficient to demonstrate that good faith efforts have been made to replace the original DBE. The fact that the contractor has the ability and/or desire to perform the contract work with its own forces does not relieve the contractor of the obligation to make good faith efforts to find a replacement DBE, and it is not a sound basis for rejecting a prospective replacement DBE's reasonable quote.

The Department will require the prime contractor to promptly provide written notice to the project manager of the DBE's inability or unwillingness to perform and provide reasonable documentation.

The written notice by the contractor must include the following:

1. The date the contractor determined the certified DBE to be unwilling, unable or ineligible to perform work on the contract;
2. The projected date that the contractor shall require a substitution or replacement DBE to commence work if consent is granted by the Department;
3. Documentation of facts that describe and cite specific actions or inactions on the part of the affected DBE that led to the contractor's conclusion that the DBE is unwilling, unable, or ineligible to perform work on the contract;
4. A brief statement of the affected DBE's capacity and ability or inability to perform the work as determined by the contractor;
5. Documentation of contractor's good faith efforts to enable affected DBE to perform the work;
6. The current percentage of work completed on each bid item by the affected DBE;

7. The total dollar amount currently paid per bid item for work performed by the affected DBE;
8. The total dollar amount per bid item remaining to be paid to the DBE for work completed but for which the DBE has not received payment, and with which the contractor has no dispute; and
9. The total dollar amount per bid item remaining to be paid to the DBE for work completed, for which the DBE has not received payment, and with which the contractor and DBE have a dispute.

The prime contractor shall send a copy of the written notice to replace a certified DBE on a contract to the affected DBE. The affected DBE may submit a written response within five (5) calendar days to the Department to explain its position on its performance on the committed work. The Department shall consider both the prime contractor's request and DBE's stated position before approving the termination or substitution request, or determining if any action shall be taken against the contractor.

There shall be no substitution or termination of an DBE subcontractor at any time without the prior written consent of the Department. The Department will provide written consent only if the contractor has good cause, as determined by the Department, to terminate the DBE. Good cause may include, but is not limited to the following circumstances:

1. The DBE subcontractor fails or refuses to execute a written contract;
2. The listed DBE subcontractor fails or refuses to perform the work of its subcontract in a way consistent with normal industry standards;
3. The listed DBE subcontractor fails or refuses to meet the prime contractor's reasonable, nondiscriminatory bond requirements;
4. The listed DBE subcontractor becomes bankrupt, insolvent, or exhibits credit unworthiness;
5. The listed DBE subcontractor is ineligible to work on public works projects because of suspension and debarment proceedings pursuant to 2 CFR Parts 180, 215 and 1200 or applicable state law;
6. The Department has determined that the listed DBE subcontractor is not a responsible contractor;
7. The listed DBE subcontractor voluntarily withdraws from the project and provides to the Department written notice of its withdrawal;
8. The listed DBE is ineligible to receive DBE credit for the type of work required; and
9. An DBE owner dies or becomes disabled with the result that the listed DBE contractor is unable to complete its work on the contract.

Upon approval from the Department to replace an DBE, the contractor's good faith efforts shall be documented and submitted to the Department within seven (7) calendar days. This time period may be extended for another seven (7) calendar days upon request by the prime contractor.

If an DBE subcontractor is unable to perform work under the contract, and is to be



replaced, the contractor's failure to obtain a substitute certified DBE or to make good faith efforts to obtain such a substitute DBE subcontractor to perform said work, may constitute a breach of this contract for which the Department may terminate the contract or pursue such remedy as deemed appropriate by the Department.

## **XII. CONTRACT COMPLIANCE**

This contract is subject to contract compliance tracking, and the prime contractor and all subcontractors are required to report payments electronically in the HDOT online Certification and Contract Compliance Management System (hereafter referred to as "online tracking system"). The prime contractor shall report the date payment was made by the Department and shall report payment to all subcontractors for the audit period. The prime contractor and all subcontractors are responsible for responding by any noted response date or due date to any instructions or request for information, and to check the online tracking system on a regular basis to manage contact information and contract records.

The prime contractor is responsible for ensuring all subcontractors have completed all requested items and that their contact information is accurate and up-to-date. HDOT may require additional information related to the contract to be provided electronically through the online tracking system at any time before, during, or after contract award. Information related to contractor access of the online tracking system will be provided to designated point of contact with each contractor upon award of the contract. The online tracking system is web-based and can be accessed at the following Internet address: <https://hdot.dbesystem.com/>.

## **XIII. PAYMENT**

- A. The Department will make an estimate in writing each month based on the items of work performed and materials incorporated in the work and the value therefore at the unit prices or lump sum prices set forth in the contract. All progress estimates and payments will be approximate only and shall be subject to correction at any time prior to or in the final estimate and payment. The Department will not withhold any amount from any payment to the contractor, including retainage.
- B. The contractor shall pay all subcontractors within ten (10) calendar days after receipt of any progress payments from the Department. This clause applies to both DBE and non-DBE subcontractors, and all tiers of subcontracts.
- C. The contractor will verify that payment or retainage has been released to the subcontractors or its suppliers within the specified time through entries in the Department's online tracking system during the corresponding monthly audits. Prompt payment will be monitored and enforced through the contractor's reporting of payments to its subcontractors and suppliers in the online tracking system.

Subcontractors, including lower tier subcontractors and/or suppliers will confirm the timeliness and the payment amounts received utilizing the online tracking system. Discrepancies will be investigated by the DBE Program Office and the project engineer. Payments to the subcontractors, including lower tier subcontractors, and including retainage released after the subcontractor or lower tier subcontractor's work has been completed to the Department's satisfaction, will be reported by the Contractor or the subcontractor.

- D. When any subcontractor has satisfactorily completed its work as specified in the subcontract, and there are no bona fide disputes, the contractor shall make prompt and full payment to the subcontractor of all monies due, including retainage, within ten (10) calendar days after the subcontractor's work is satisfactorily completed. A subcontractor's work is satisfactorily completed when all the tasks called for in the subcontract have been accomplished and documented, as required by the Department. The contractor must obtain the prior written approval from the Department before it can continue to withhold retainage from any subcontractor who has completed its portion of the work. This clause applies to both DBE and non-DBE subcontractors, and all tiers of subcontracts.

#### **XIV. RECORDS**

The contractor shall maintain and keep all records necessary for the Department to determine compliance with the contractor's DBE obligations. The records shall be available at reasonable times and places for inspection by the Department and appropriate Federal agencies. The records to be kept by the contractor shall include:

1. The names, race/ethnicity, gender, address, phone number, and contact person of all DBE and non-DBE consultants, subcontractors, manufacturers, suppliers, truckers and vendors identified as DBEs;
2. The nature of work of each DBE and non-DBE consultant, subcontractor, manufacturer, supplier, trucker and vendor;
3. The dollar amount contracted with each DBE and non-DBE consultant, subcontractor, manufacturer, supplier, trucker and vendor; and
4. Cumulative dollar amount of all change orders to the subcontract.

#### **XV. FAILURE TO COMPLY WITH DBE REQUIREMENTS**

The contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of USDOT assisted contracts. All contractors, subcontractors, manufacturers and suppliers are hereby advised that failure to carry out all DBE requirements specified herein shall constitute a material breach of contract that may result in termination of the contract or such other remedy as deemed appropriate by the Department including but not limited to: 1) withholding monthly progress payments; 2) assessing sanctions; 3) liquidated damages; and/or 4) disqualifying the contractor from future bidding as non-responsible.



## Summary of Good Faith Efforts (GFE)

As required by the specifications “*Disadvantaged Business Enterprise Requirements*,” documentation of GFE shall be submitted by the close of business, 4:30 P.M. HST five (5) days of bid opening. **The bidder/offeror shall respond to the following questions and describe efforts to obtain DBE participation whether or not the DBE project goal is met.** Responses must be sufficient to properly evaluate the bidder’s/offeror’s good faith efforts. Copies of correspondence return receipts, telephone logs, or other documentation will be required to support GFE. Attach additional sheets, if necessary. Based on responses given, HDOT shall make a determination of the bidders’ GFE. **Failure to provide required information sufficient to evaluate the bid/proposal shall be cause for bid/proposal rejection.**

1. Did you submit the required information by the close of business, 4:30 P.M. HST, five (5) days after bid opening (i.e. DBE name, address, NAICS code, description of work, project name, and number)?
2. Explain your GFE if any, to solicit through all reasonable and available means (e.g. attendance at pre-bid meetings, advertising and/or written notices) the interest of all certified DBEs who have the capability to perform part or all of the work to be included under the contract.
  - a. Explain your GFE if any, to solicit the participation of potential DBEs as early in the procurement process as practicable.
  - b. Explain your GFE if any, to allow sufficient time for the DBEs to properly inquire about the project and respond to the solicitation.
  - c. Explain your GFE if any, to take appropriate steps to follow up with interested DBEs in a timely manner to facilitate participation by DBEs in this project.
3. Explain your GFE if any, to identify and break up portions of work that can be performed by DBEs in order to increase the likelihood that a DBE will be able to participate, and that the DBE goal could be achieved (e.g. breaking out contract items into economically feasible units to facilitate DBE participation even when you might otherwise prefer to self-perform these work items).
4. Explain your GFE if any, to make available or provide interested DBEs with adequate information about the plans, specifications, and requirements of the project in a timely manner, and assist them in responding to your solicitation.
5. Explain your GFE if any, to negotiate in good faith with interested DBEs. Evidence of such negotiations includes documenting:
  - a) the names, addresses and telephone numbers of DBEs that were contacted; b) a description of the information that was provided to DBEs regarding the plans and specifications; and c) detailed explanation for not utilizing individual DBEs on the project.
6. Did you solely rely on price in determining whether to use a DBE? If yes please explain. The fact that there may be additional or higher costs associated with finding and utilizing DBEs are not, by themselves, sufficient reasons for your refusal to utilize a DBE or

NAME and SIGNATURE of AUTHORIZED REPRESENTATIVE of PRIME CONTRACTOR:

DATE:

failure to meet the DBE goal, provided that such additional costs are not unreasonable. Also, the ability or desire to perform a portion of the work with your own forces, that could have been undertaken by an available DBE, does not relieve you of the responsibility to make good faith efforts to meet the DBE goal, and to make available and solicit DBE participation in other areas of the project to meet the DBE goal.

7. Did you reject DBEs as being unqualified without sound reasons based on a thorough investigation of their capabilities? If yes, please explain. The DBEs standing within the industry, membership in specific groups, organizations or associates, and political or social affiliation are not legitimate basis for the rejection or non-solicitation of bids from particular DBEs.
8. Explain your GFE to assist interested DBEs in obtaining bonding, lines of credit, or insurance.
9. Explain your GFE if any, to assist interested DBEs in obtaining necessary equipment, supplies, materials or related assistance or services.
10. If you selected a non-DBE over a DBE subcontractor, please provide the quotes of each DBE and non-DBE subcontractor submitted to you for work on the contract; and for each DBE that was contacted but not utilized for a contract, provide a detailed written explanation for each DBE detailing the reasons for not utilizing or allowing the DBE to participate in the contract.
11. Explain your GFE if any, to effectively use the services of available minority/women community organizations, minority/women business groups, contractors' groups, and local, state and federal minority/women business assistance offices or other organizations to provide assistance in recruitment and placement of DBEs.

NAME and SIGNATURE of AUTHORIZED REPRESENTATIVE of PRIME CONTRACTOR:

DATE:



**Disadvantaged Business Enterprise (DBE)  
Contract Goal Verification and Good Faith Efforts (GFE)  
Documentation For Construction  
INSTRUCTIONS**

Project #	Self-explanatory
County	County where project is located
DBE Project Goal	Indicate DBE goal listed in the proposal on P-1
Prime Contractor	Name of prime contractor
Name of Subcontractor, Supplier, Manufacturer, and Trucking Company	Company name of subcontractor, supplier, manufacturer, or trucking firm
DBE (Y/N)	Y for yes and N for no
Bid Item Number and Description	Pay item and description
Approx. Quantity/ Hours	Self-explanatory
Unit	Unit of measure
Unit Price/ Rate	Self-explanatory
Dollar Amount	Total dollar amount committed to subcontractor, supplier, manufacturer, or trucking firm
A. Dollar amount of the work to be performed by DBE subcontractors, manufacturers, and trucking companies, plus 60% of the dollar amount of DBE suppliers	Total amount of DBE participation
B. Sum of all work items less mobilization, force account items, allowance items	List total of work items minus mobilization, force accounts and allowances. DBE credit shall not be given for mobilization, force account items, and allowance items.
A/B = DBE contract goal	Self-explanatory
Name and Signature of Authorized Representative of Prime Contractor	Self-explanatory (Note: bidder must sign and date every page of form.)
Date	Date form is signed
Summary of Good Faith Efforts (GFE)	Complete by answering questions in detail and providing documentation to support how bidder demonstrated good faith efforts to meet the goal, irrespective of whether or not the goal was met.



## Disadvantaged Business Enterprise (DBE) Confirmation and Commitment Agreement Trucking Company

This commitment is subject to the award and receipt of a signed contract from the Hawaii Department of Transportation (HDOT) for the subject project. DBEs must be certified by the bid opening date.

<b>Project #:</b>	<b>County:</b>
<b>NAICS CODE/DESCRIPTION OF WORK:</b>	<b>SECONDARY NAICS CODE:</b>

\*All quantities and units should match the bid tab item whenever possible.

The prime contractor shall inform HDOT the dates when the trucking firm starts and completes all work under the subcontract.

<b>Estimated Beginning Date (Month/Year):</b>	<b>Estimated Completion Date (Month/Year):</b>
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<b>TRUCKING COMPANY:</b>	Item No.	Item Description	Unit	Unit Price / Rate	Amount
				\$	\$
				\$	\$
				\$	\$
<b>TOTAL COMMITMENT AMOUNT</b>					<b>\$</b>

1. Number of hours contracted or quantities to be hauled: \_\_\_\_\_
2. Number of fully operational trucks to be used: \_\_\_\_\_ Tractor/trailers: \_\_\_\_\_ Dump trucks: \_\_\_\_\_
3. Number of fully operational trucks owned by DBE: \_\_\_\_\_ Dump trucks: \_\_\_\_\_ Tractors/trailers: \_\_\_\_\_
4. If Owner Operators or additional trucking companies are to be used answer the following:

Name of Trucking Company	DBE Y/N	Estimated Dollar Amount to be Contracted	Number and Type of Trucks (specify)
		\$	
		\$	

The prime contractor certifies by signature on this agreement to utilize the DBE trucking company as listed on the agreement form. If a DBE trucking company is unable to perform the work as listed on this agreement form, the prime contractor will follow the substitution/replacement approval process as outlined in the contract DBE requirements. **IMPORTANT! The signatures of the DBE, prime contractor, and subcontractor (only if the DBE will be a second tier sub) confirms that all information on this Agreement is true and correct. Parties should sign Agreement in the order in which they are listed.**

<b>DBE NAME:</b>	Name/Title (please print):
Address:	Signature:
Phone:                      Fax:	
Email:	
<b>Prime Contractor:</b>	Name/Title (please print):
Address:	Signature:
Phone:                      Fax:	
Email:	
<b>Subcontractor (only if the DBE will be a second tier sub):</b>	Name/Title (please print):
Address:	Signature:
Phone:                      Fax:	
Email:	

HDOT retains the information collected through this form. With few exceptions, you are entitled on request to be informed about the information that we collect about you.



**Disadvantaged Business Enterprise (DBE)  
Confirmation and Commitment Agreement  
Trucking Company  
INSTRUCTIONS**

The purpose of this agreement is to secure the commitment of the bidder/offeror to utilize the listed DBE trucking company, and the DBE's confirmation that it will perform work for the bidder/offeror on this project. The information on this form shall be provided by the DBE.

Project #	Self-explanatory
County	County where project is located
NAICS Code/Description of Work	Primary North American Industry Classification System code under which DBE is certified to perform and description of work to be done
Secondary NAICS Code	List other NAICS codes firm is certified to perform
Estimated Beginning Date (Month/Year)	Date DBE shall begin work on the project
Estimated Completion Date (Month/Year)	Date DBE's work will be completed
Trucking Company	Name of DBE trucking company
Item No.	List pay item number
Item Description	Description of item
Unit	Unit of measure – e.g. weight or hours
Unit Price/Rate	Cost per unit or hourly rate
Amount	Total amount per pay item
Total Commitment Amount	Sum of all pay items and total commitment of bidder/offeror to DBE
Number of hours contracted or quantities to be hauled	Approximate number of hours or tonnage to be hauled
Number of fully operational trucks to be used:	Total number of trucks to be used for the project
Tractor/Trailers	Number of tractor trailers to be used
Dump Trucks	Number of dump trucks to be used
Number of fully operational trucks owned by DBE	Number of listed DBE's trucks to be used on this project
Name of Trucking Company	If other trucking companies (DBE or non-DBE) are to be leased, list name and information about type of trucks in this section
Estimated Dollar Amount to be Contracted	Provide information about estimated cost to lease trucks
Number of Dump Trucks, Tractor/Trailer	Self-explanatory
DBE NAME	DBE Company name
Name/Title	Name and title of DBE's representative
Address	Self-explanatory
Phone	Self-explanatory
Fax	Self-explanatory
Email	Self-explanatory
Signature	Signature of DBE's representative
Date	Date agreement is signed
Prime Contractor	Company name



Name/Title	Name and title of prime contractor's representative
Address	Self-explanatory
Phone	Self-explanatory
Fax	Self-explanatory
Email	Self-explanatory
Signature	Signature of prime contractor's representative
Date	Date agreement is signed
Subcontractor (only if the DBE will be a second tier sub):	Name of subcontractor only if the listed DBE trucking company will be performing work under this subcontractor
Name/Title	Name and title of the subcontractor's representative
Address	Self-explanatory
Phone	Self-explanatory
Fax	Self-explanatory
Email	Self-explanatory
Signature	Signature of subcontractor
Date	Date agreement is signed



## Disadvantaged Business Enterprise (DBE) Confirmation and Commitment Agreement Subcontractor, Manufacturer, or Supplier

This commitment is subject to the award and receipt of a signed contract from the Hawaii Department of Transportation (HDOT) for the subject project. DBEs must be certified by the bid opening date.

<b>Project #:</b>	<b>County:</b>
<b>NAICS CODE/DESCRIPTION OF WORK:</b>	<b>SECONDARY NAICS CODE:</b>

\*All quantities and units should match the bid tab item whenever possible.

The prime contractor shall inform HDOT of the dates when the subcontractor starts and completes all work under the subcontract.

<b>Estimated Beginning Date (Month/Year):</b>	<b>Estimated Completion Date (Month/Year):</b>
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<b>SUBCONTRACTOR:</b>	Item No.	Item	Approx. Quantity	Unit	Unit Price	Amount
					\$	\$
					\$	\$
					\$	\$
					\$	\$
<b>TOTAL COMMITMENT AMOUNT</b>						\$

<b>MANUFACTURER:</b>	Item No.	Item	Approx. Quantity	Unit	Unit Price	Amount
					\$	\$
					\$	\$
<b>TOTAL COMMITMENT AMOUNT</b>						\$

<b>SUPPLIER:</b>	Item No.	Item	Approx. Quantity	Unit	Unit Price	Amount
					\$	\$
					\$	\$
<b>TOTAL COMMITMENT AMOUNT</b>						\$

The prime contractor certifies by signature on this agreement that subcontracts will be executed between the prime contractor and the DBE subcontractors as listed on the agreement form. If a DBE subcontractor is unable to perform the work as listed on this agreement form, the prime contractor will follow the substitution/replacement approval process as outlined in the contract DBE requirements. **IMPORTANT! The signatures of the DBE, prime contractor, and subcontractor (only if the DBE will be a second tier sub) confirms that all information on this Agreement is true and correct. Parties should sign Agreement in the order in which they are listed.**

<b>DBE NAME:</b>	Name/Title (please print):
Address:	Signature:
Phone:                      Fax:	
Email:	Date:
<b>Prime Contractor:</b>	Name/Title (please print):
Address:	Signature:
Phone:                      Fax:	
Email:	Date:
<b>Subcontractor (only if the DBE will be a second tier sub):</b>	Name/Title (please print):
Address:	Signature:
Phone:                      Fax:	
Email:	Date:

HDOT retains the information collected through this form. With few exceptions, you are entitled on request to be informed about the information that we collect about you.



## Disadvantaged Business Enterprise (DBE) Confirmation and Commitment Agreement Subcontractor, Manufacturer, or Supplier INSTRUCTIONS

The purpose of this agreement is to secure the commitment of the bidder/offeror to utilize the listed DBE, and the DBE's confirmation that it will perform work for the bidder/offeror on this project. The information on this form shall be provided by the DBE.

Project #	Self-explanatory
County	County where project is located
NAICS Code/Description of Work	Primary North American Industry Classification System code under which DBE is certified to perform and description of work to be done
Secondary NAICS Code	List other NAICS codes firm is certified to perform
Estimated Beginning Date (Month/Year)	Date DBE shall begin work on the project
Estimated Completion Date (Month/Year)	Date DBE's work will be completed
Subcontractor	Name of DBE subcontractor (company name)
Item No.	List pay item number
Item	Description of item
Approx. Quantity	Self-explanatory
Unit	List unit of measure
Unit Price	Cost per unit
Amount	Total amount per pay item
Total Commitment Amount	Sum of all pay items and total commitment of bidder/offeror to DBE
Manufacturer	Name of DBE manufacturer
Supplier	Name of DBE supplier (aka regular dealer)
DBE NAME	DBE Company name
Name/Title	Name and title of DBE's representative
Address	Self-explanatory
Phone	Self-explanatory
Fax	Self-explanatory
Email	Self-explanatory
Signature	Signature of DBE's representative
Date	Date agreement is signed
Prime Contractor	Company name
Name/Title	Name and title of prime contractor's representative
Address	Self-explanatory
Phone	Self-explanatory
Fax	Self-explanatory
Email	Self-explanatory
Signature	Signature of prime contractor's representative
Date	Date agreement is signed
Subcontractor (only if the DBE will be a second tier sub):	Name of subcontractor only if the listed DBE will be performing work under this subcontractor as a second tier subcontractor/supplier/manufacturer

Name/Title	Name and title of the subcontractor's representative that the listed DBE will work under as a second tier subcontractor/supplier/manufacture
Address	Self-explanatory
Phone	Self-explanatory
Fax	Self-explanatory
Email	Self-explanatory
Signature	Signature of subcontractor's representative
Date	Date agreement is signed

**REQUIRED CONTRACT PROVISIONS  
FEDERAL-AID CONSTRUCTION CONTRACTS**

- I. General
- II. Nondiscrimination
- III. Non-segregated Facilities
- IV. Davis-Bacon and Related Act Provisions
- V. Contract Work Hours and Safety Standards Act Provisions
- VI. Subletting or Assigning the Contract
- VII. Safety: Accident Prevention
- VIII. False Statements Concerning Highway Projects
- IX. Implementation of Clean Air Act and Federal Water Pollution Control Act
- X. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion
- XI. Certification Regarding Use of Contract Funds for Lobbying
- XII. Use of United States-Flag Vessels:

**ATTACHMENTS**

A. Employment and Materials Preference for Appalachian Development Highway System or Appalachian Local Access Road Contracts (included in Appalachian contracts only)

**I. GENERAL**

1. Form FHWA-1273 must be physically incorporated in each construction contract funded under title 23, United States Code, as required in 23 CFR 633.102(b) (excluding emergency contracts solely intended for debris removal). The contractor (or subcontractor) must insert this form in each subcontract and further require its inclusion in all lower tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services). 23 CFR 633.102(e).

The applicable requirements of Form FHWA-1273 are incorporated by reference for work done under any purchase order, rental agreement or agreement for other services. The prime contractor shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider. 23 CFR 633.102(e).

Form FHWA-1273 must be included in all Federal-aid design-build contracts, in all subcontracts and in lower tier subcontracts (excluding subcontracts for design services, purchase orders, rental agreements and other agreements for supplies or services) in accordance with 23 CFR 633.102. The design-builder shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Contracting agencies may reference Form FHWA-1273 in solicitation-for-bids or request-for-proposals documents, however, the Form FHWA-1273 must be physically incorporated (not referenced) in all contracts, subcontracts and lower-tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services related to a construction contract). 23 CFR 633.102(b).

2. Subject to the applicability criteria noted in the following sections, these contract provisions shall apply to all work

performed on the contract by the contractor's own organization and with the assistance of workers under the contractor's immediate superintendence and to all work performed on the contract by piecework, station work, or by subcontract. 23 CFR 633.102(d).

3. A breach of any of the stipulations contained in these Required Contract Provisions may be sufficient grounds for withholding of progress payments, withholding of final payment, termination of the contract, suspension / debarment or any other action determined to be appropriate by the contracting agency and FHWA.

4. Selection of Labor: During the performance of this contract, the contractor shall not use convict labor for any purpose within the limits of a construction project on a Federal-aid highway unless it is labor performed by convicts who are on parole, supervised release, or probation. 23 U.S.C. 114(b). The term Federal-aid highway does not include roadways functionally classified as local roads or rural minor collectors. 23 U.S.C. 101(a).

**II. NONDISCRIMINATION (23 CFR 230.107(a); 23 CFR Part 230, Subpart A, Appendix A; EO 11246)**

The provisions of this section related to 23 CFR Part 230, Subpart A, Appendix A are applicable to all Federal-aid construction contracts and to all related construction subcontracts of \$10,000 or more. The provisions of 23 CFR Part 230 are not applicable to material supply, engineering, or architectural service contracts.

In addition, the contractor and all subcontractors must comply with the following policies: Executive Order 11246, 41 CFR Part 60, 29 CFR Parts 1625-1627, 23 U.S.C. 140, Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. 794), Title VI of the Civil Rights Act of 1964, as amended (42 U.S.C. 2000d et seq.), and related regulations including 49 CFR Parts 21, 26, and 27; and 23 CFR Parts 200, 230, and 633.

The contractor and all subcontractors must comply with: the requirements of the Equal Opportunity Clause in 41 CFR 60-1.4(b) and, for all construction contracts exceeding \$10,000, the Standard Federal Equal Employment Opportunity Construction Contract Specifications in 41 CFR 60-4.3.

Note: The U.S. Department of Labor has exclusive authority to determine compliance with Executive Order 11246 and the policies of the Secretary of Labor including 41 CFR Part 60, and 29 CFR Parts 1625-1627. The contracting agency and the FHWA have the authority and the responsibility to ensure compliance with 23 U.S.C. 140, Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. 794), and Title VI of the Civil Rights Act of 1964, as amended (42 U.S.C. 2000d et seq.), and related regulations including 49 CFR Parts 21, 26, and 27; and 23 CFR Parts 200, 230, and 633.

The following provision is adopted from 23 CFR Part 230, Subpart A, Appendix A, with appropriate revisions to conform to the U.S. Department of Labor (US DOL) and FHWA requirements.

**1. Equal Employment Opportunity:** Equal Employment Opportunity (EEO) requirements not to discriminate and to take affirmative action to assure equal opportunity as set forth under laws, executive orders, rules, regulations (see 28 CFR Part 35, 29 CFR Part 1630, 29 CFR Parts 1625-1627, 41 CFR Part 60 and 49 CFR Part 27) and orders of the Secretary of Labor as modified by the provisions prescribed herein, and imposed pursuant to 23 U.S.C. 140, shall constitute the EEO and specific affirmative action standards for the contractor's project activities under this contract. The provisions of the Americans with Disabilities Act of 1990 (42 U.S.C. 12101 et seq.) set forth under 28 CFR Part 35 and 29 CFR Part 1630 are incorporated by reference in this contract. In the execution of this contract, the contractor agrees to comply with the following minimum specific requirement activities of EEO:

a. The contractor will work with the contracting agency and the Federal Government to ensure that it has made every good faith effort to provide equal opportunity with respect to all of its terms and conditions of employment and in their review of activities under the contract. 23 CFR 230.409 (g)(4) & (5).

b. The contractor will accept as its operating policy the following statement:

"It is the policy of this Company to assure that applicants are employed, and that employees are treated during employment, without regard to their race, religion, sex, sexual orientation, gender identity, color, national origin, age or disability. Such action shall include: 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, pre-apprenticeship, and/or on-the-job training."

**2. EEO Officer:** The contractor will designate and make known to the contracting officers an EEO Officer who will have the responsibility for and must be capable of effectively administering and promoting an active EEO program and who must be assigned adequate authority and responsibility to do so.

**3. Dissemination of Policy:** All members of the contractor's staff who are authorized to hire, supervise, promote, and discharge employees, or who recommend such action or are substantially involved in such action, will be made fully cognizant of and will implement the contractor's EEO policy and contractual responsibilities to provide EEO in each grade and classification of employment. To ensure that the above agreement will be met, the following actions will be taken as a minimum:

a. Periodic meetings of supervisory and personnel office employees will be conducted before the start of work and then not less often than once every six months, at which time the contractor's EEO policy and its implementation will be reviewed and explained. The meetings will be conducted by the EEO Officer or other knowledgeable company official.

b. All new supervisory or personnel office employees will be given a thorough indoctrination by the EEO Officer, covering all major aspects of the contractor's EEO obligations within thirty days following their reporting for duty with the contractor.

c. All personnel who are engaged in direct recruitment for the project will be instructed by the EEO Officer in the contractor's procedures for locating and hiring minorities and women.

d. Notices and posters setting forth the contractor's EEO policy will be placed in areas readily accessible to employees, applicants for employment and potential employees.

e. The contractor's EEO policy and the procedures to implement such policy will be brought to the attention of employees by means of meetings, employee handbooks, or other appropriate means.

**4. Recruitment:** When advertising for employees, the contractor will include in all advertisements for employees the notation: "An Equal Opportunity Employer." All such advertisements will be placed in publications having a large circulation among minorities and women in the area from which the project work force would normally be derived.

a. The contractor will, unless precluded by a valid bargaining agreement, conduct systematic and direct recruitment through public and private employee referral sources likely to yield qualified minorities and women. To meet this requirement, the contractor will identify sources of potential minority group employees and establish with such identified sources procedures whereby minority and women applicants may be referred to the contractor for employment consideration.

b. In the event the contractor has a valid bargaining agreement providing for exclusive hiring hall referrals, the contractor is expected to observe the provisions of that agreement to the extent that the system meets the contractor's compliance with EEO contract provisions. Where implementation of such an agreement has the effect of discriminating against minorities or women, or obligates the contractor to do the same, such implementation violates Federal nondiscrimination provisions.

c. The contractor will encourage its present employees to refer minorities and women as applicants for employment. Information and procedures with regard to referring such applicants will be discussed with employees.

**5. Personnel Actions:** Wages, working conditions, and employee benefits shall be established and administered, and personnel actions of every type, including hiring, upgrading, promotion, transfer, demotion, layoff, and termination, shall be taken without regard to race, color, religion, sex, sexual orientation, gender identity, national origin, age or disability. The following procedures shall be followed:

a. The contractor will conduct periodic inspections of project sites to ensure that working conditions and employee facilities do not indicate discriminatory treatment of project site personnel.

b. The contractor will periodically evaluate the spread of wages paid within each classification to determine any evidence of discriminatory wage practices.

c. The contractor will periodically review selected personnel actions in depth to determine whether there is evidence of discrimination. Where evidence is found, the contractor will promptly take corrective action. If the review indicates that the discrimination may extend beyond the actions reviewed, such corrective action shall include all affected persons.

d. The contractor will promptly investigate all complaints of alleged discrimination made to the contractor in connection with its obligations under this contract, will attempt to resolve such complaints, and will take appropriate corrective action

within a reasonable time. If the investigation indicates that the discrimination may affect persons other than the complainant, such corrective action shall include such other persons. Upon completion of each investigation, the contractor will inform every complainant of all of their avenues of appeal.

#### **6. Training and Promotion:**

a. The contractor will assist in locating, qualifying, and increasing the skills of minorities and women who are applicants for employment or current employees. Such efforts should be aimed at developing full journey level status employees in the type of trade or job classification involved.

b. Consistent with the contractor's work force requirements and as permissible under Federal and State regulations, the contractor shall make full use of training programs (i.e., apprenticeship and on-the-job training programs for the geographical area of contract performance). In the event a special provision for training is provided under this contract, this subparagraph will be superseded as indicated in the special provision. The contracting agency may reserve training positions for persons who receive welfare assistance in accordance with 23 U.S.C. 140(a).

c. The contractor will advise employees and applicants for employment of available training programs and entrance requirements for each.

d. The contractor will periodically review the training and promotion potential of employees who are minorities and women and will encourage eligible employees to apply for such training and promotion.

**7. Unions:** If the contractor relies in whole or in part upon unions as a source of employees, the contractor will use good faith efforts to obtain the cooperation of such unions to increase opportunities for minorities and women. 23 CFR 230.409. Actions by the contractor, either directly or through a contractor's association acting as agent, will include the procedures set forth below:

a. The contractor will use good faith efforts to develop, in cooperation with the unions, joint training programs aimed toward qualifying more minorities and women for membership in the unions and increasing the skills of minorities and women so that they may qualify for higher paying employment.

b. The contractor will use good faith efforts to incorporate an EEO clause into each union agreement to the end that such union will be contractually bound to refer applicants without regard to their race, color, religion, sex, sexual orientation, gender identity, national origin, age, or disability.

c. The contractor is to obtain information as to the referral practices and policies of the labor union except that to the extent such information is within the exclusive possession of the labor union and such labor union refuses to furnish such information to the contractor, the contractor shall so certify to the contracting agency and shall set forth what efforts have been made to obtain such information.

d. In the event the union is unable to provide the contractor with a reasonable flow of referrals within the time limit set forth in the collective bargaining agreement, the contractor will, through independent recruitment efforts, fill the employment vacancies without regard to race, color, religion, sex, sexual orientation, gender identity, national origin, age, or disability; making full efforts to obtain qualified and/or qualifiable minorities and women. The failure of a union to provide

sufficient referrals (even though it is obligated to provide exclusive referrals under the terms of a collective bargaining agreement) does not relieve the contractor from the requirements of this paragraph. In the event the union referral practice prevents the contractor from meeting the obligations pursuant to Executive Order 11246, as amended, and these special provisions, such contractor shall immediately notify the contracting agency.

**8. Reasonable Accommodation for Applicants / Employees with Disabilities:** The contractor must be familiar with the requirements for and comply with the Americans with Disabilities Act and all rules and regulations established thereunder. Employers must provide reasonable accommodation in all employment activities unless to do so would cause an undue hardship.

**9. Selection of Subcontractors, Procurement of Materials and Leasing of Equipment:** The contractor shall not discriminate on the grounds of race, color, religion, sex, sexual orientation, gender identity, national origin, age, or disability in the selection and retention of subcontractors, including procurement of materials and leases of equipment. The contractor shall take all necessary and reasonable steps to ensure nondiscrimination in the administration of this contract.

a. The contractor shall notify all potential subcontractors, suppliers, and lessors of their EEO obligations under this contract.

b. The contractor will use good faith efforts to ensure subcontractor compliance with their EEO obligations.

#### **10. Assurances Required:**

a. The requirements of 49 CFR Part 26 and the State DOT's FHWA-approved Disadvantaged Business Enterprise (DBE) program are incorporated by reference.

b. The contractor, subrecipient or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR part 26 in the award and administration of DOT-assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the recipient deems appropriate, which may include, but is not limited to:

- (1) Withholding monthly progress payments;
- (2) Assessing sanctions;
- (3) Liquidated damages; and/or
- (4) Disqualifying the contractor from future bidding as non-responsible.

c. The Title VI and nondiscrimination provisions of U.S. DOT Order 1050.2A at Appendixes A and E are incorporated by reference. 49 CFR Part 21.

**11. Records and Reports:** The contractor shall keep such records as necessary to document compliance with the EEO requirements. Such records shall be retained for a period of three years following the date of the final payment to the contractor for all contract work and shall be available at reasonable times and places for inspection by authorized representatives of the contracting agency and the FHWA.

a. The records kept by the contractor shall document the following:

(1) The number and work hours of minority and non-minority group members and women employed in each work classification on the project;

(2) The progress and efforts being made in cooperation with unions, when applicable, to increase employment opportunities for minorities and women; and

(3) The progress and efforts being made in locating, hiring, training, qualifying, and upgrading minorities and women.

b. The contractors and subcontractors will submit an annual report to the contracting agency each July for the duration of the project indicating the number of minority, women, and non-minority group employees currently engaged in each work classification required by the contract work. This information is to be reported on [Form FHWA-1391](#). The staffing data should represent the project work force on board in all or any part of the last payroll period preceding the end of July. If on-the-job training is being required by special provision, the contractor will be required to collect and report training data. The employment data should reflect the work force on board during all or any part of the last payroll period preceding the end of July.

### III. NONSEGREGATED FACILITIES

This provision is applicable to all Federal-aid construction contracts and to all related construction subcontracts of more than \$10,000. 41 CFR 60-1.5.

As prescribed by 41 CFR 60-1.8, the contractor must ensure that facilities provided for employees are provided in such a manner that segregation on the basis of race, color, religion, sex, sexual orientation, gender identity, or national origin cannot result. The contractor may neither require such segregated use by written or oral policies nor tolerate such use by employee custom. The contractor's obligation extends further to ensure that its employees are not assigned to perform their services at any location under the contractor's control where the facilities are segregated. The term "facilities" includes waiting rooms, work areas, restaurants and other eating areas, time clocks, restrooms, washrooms, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing provided for employees. The contractor shall provide separate or single-user restrooms and necessary dressing or sleeping areas to assure privacy between sexes.

### IV. DAVIS-BACON AND RELATED ACT PROVISIONS

This section is applicable to all Federal-aid construction projects exceeding \$2,000 and to all related subcontracts and lower-tier subcontracts (regardless of subcontract size), in accordance with 29 CFR 5.5. The requirements apply to all projects located within the right-of-way of a roadway that is functionally classified as Federal-aid highway. 23 U.S.C. 113. This excludes roadways functionally classified as local roads or rural minor collectors, which are exempt. 23 U.S.C. 101. Where applicable law requires that projects be treated as a project on a Federal-aid highway, the provisions of this subpart will apply regardless of the location of the project. Examples include: Surface Transportation Block Grant Program projects funded under 23 U.S.C. 133 [excluding recreational trails projects], the Nationally Significant Freight and Highway

Projects funded under 23 U.S.C. 117, and National Highway Freight Program projects funded under 23 U.S.C. 167.

The following provisions are from the U.S. Department of Labor regulations in 29 CFR 5.5 "Contract provisions and related matters" with minor revisions to conform to the FHWA-1273 format and FHWA program requirements.

#### 1. Minimum wages (29 CFR 5.5)

a. *Wage rates and fringe benefits.* All laborers and mechanics employed or working upon the site of the work (or otherwise working in construction or development of the project under a development statute), will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act ([29 CFR part 3](#))), the full amount of basic hourly wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics. As provided in paragraphs (d) and (e) of 29 CFR 5.5, the appropriate wage determinations are effective by operation of law even if they have not been attached to the contract. Contributions made or costs reasonably anticipated for bona fide fringe benefits under the Davis-Bacon Act ([40 U.S.C. 3141\(2\)\(B\)](#)) on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph 1.e. of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics must be paid the appropriate wage rate and fringe benefits on the wage determination for the classification(s) of work actually performed, without regard to skill, except as provided in paragraph 4. of this section. Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: *Provided*, That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classifications and wage rates conformed under paragraph 1.c. of this section) and the Davis-Bacon poster (WH-1321) must be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

b. *Frequently recurring classifications.* (1) In addition to wage and fringe benefit rates that have been determined to be prevailing under the procedures set forth in [29 CFR part 1](#), a wage determination may contain, pursuant to § 1.3(f), wage and fringe benefit rates for classifications of laborers and mechanics for which conformance requests are regularly submitted pursuant to paragraph 1.c. of this section, provided that:

(i) The work performed by the classification is not performed by a classification in the wage determination for which a prevailing wage rate has been determined;



(ii) The classification is used in the area by the construction industry; and

(iii) The wage rate for the classification bears a reasonable relationship to the prevailing wage rates contained in the wage determination.

(2) The Administrator will establish wage rates for such classifications in accordance with paragraph 1.c.(1)(iii) of this section. Work performed in such a classification must be paid at no less than the wage and fringe benefit rate listed on the wage determination for such classification.

c. *Conformance.* (1) The contracting officer must require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract be classified in conformance with the wage determination. Conformance of an additional classification and wage rate and fringe benefits is appropriate only when the following criteria have been met:

(i) The work to be performed by the classification requested is not performed by a classification in the wage determination; and

(ii) The classification is used in the area by the construction industry; and

(iii) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(2) The conformance process may not be used to split, subdivide, or otherwise avoid application of classifications listed in the wage determination.

(3) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken will be sent by the contracting officer by email to [DBAconformance@dol.gov](mailto:DBAconformance@dol.gov). The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(4) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer will, by email to [DBAconformance@dol.gov](mailto:DBAconformance@dol.gov), refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Administrator for determination. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(5) The contracting officer must promptly notify the contractor of the action taken by the Wage and Hour Division

under paragraphs 1.c.(3) and (4) of this section. The contractor must furnish a written copy of such determination to each affected worker or it must be posted as a part of the wage determination. The wage rate (including fringe benefits where appropriate) determined pursuant to paragraph 1.c.(3) or (4) of this section must be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

d. *Fringe benefits not expressed as an hourly rate.* Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor may either pay the benefit as stated in the wage determination or may pay another bona fide fringe benefit or an hourly cash equivalent thereof.

e. *Unfunded plans.* If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, *Provided*, That the Secretary of Labor has found, upon the written request of the contractor, in accordance with the criteria set forth in § 5.28, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

f. *Interest.* In the event of a failure to pay all or part of the wages required by the contract, the contractor will be required to pay interest on any underpayment of wages.

## 2. Withholding (29 CFR 5.5)

a. *Withholding requirements.* The contracting agency may, upon its own action, or must, upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor so much of the accrued payments or advances as may be considered necessary to satisfy the liabilities of the prime contractor or any subcontractor for the full amount of wages and monetary relief, including interest, required by the clauses set forth in this section for violations of this contract, or to satisfy any such liabilities required by any other Federal contract, or federally assisted contract subject to Davis-Bacon labor standards, that is held by the same prime contractor (as defined in § 5.2). The necessary funds may be withheld from the contractor under this contract, any other Federal contract with the same prime contractor, or any other federally assisted contract that is subject to Davis-Bacon labor standards requirements and is held by the same prime contractor, regardless of whether the other contract was awarded or assisted by the same agency, and such funds may be used to satisfy the contractor liability for which the funds were withheld. In the event of a contractor's failure to pay any laborer or mechanic, including any apprentice or helper working on the site of the work all or part of the wages required by the contract, or upon the contractor's failure to submit the required records as discussed in paragraph 3.d. of this section, the contracting agency may on its own initiative and after written notice to the contractor, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

b. *Priority to withheld funds.* The Department has priority to funds withheld or to be withheld in accordance with paragraph

2.a. of this section or Section V, paragraph 3.a., or both, over claims to those funds by:

- (1) A contractor's surety(ies), including without limitation performance bond sureties and payment bond sureties;
- (2) A contracting agency for its procurement costs;
- (3) A trustee(s) (either a court-appointed trustee or a U.S. trustee, or both) in bankruptcy of a contractor, or a contractor's bankruptcy estate;
- (4) A contractor's assignee(s);
- (5) A contractor's successor(s); or
- (6) A claim asserted under the Prompt Payment Act, [31 U.S.C. 3901–3907](#).

### 3. Records and certified payrolls (29 CFR 5.5)

a. *Basic record requirements (1) Length of record retention.* All regular payrolls and other basic records must be maintained by the contractor and any subcontractor during the course of the work and preserved for all laborers and mechanics working at the site of the work (or otherwise working in construction or development of the project under a development statute) for a period of at least 3 years after all the work on the prime contract is completed.

(2) *Information required.* Such records must contain the name; Social Security number; last known address, telephone number, and email address of each such worker; each worker's correct classification(s) of work actually performed; hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in [40 U.S.C. 3141\(2\)\(B\)](#) of the Davis-Bacon Act); daily and weekly number of hours actually worked in total and on each covered contract; deductions made; and actual wages paid.

(3) *Additional records relating to fringe benefits.* Whenever the Secretary of Labor has found under paragraph 1.e. of this section that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in [40 U.S.C. 3141\(2\)\(B\)](#) of the Davis-Bacon Act, the contractor must maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits.

(4) *Additional records relating to apprenticeship.* Contractors with apprentices working under approved programs must maintain written evidence of the registration of apprenticeship programs, the registration of the apprentices, and the ratios and wage rates prescribed in the applicable programs.

b. *Certified payroll requirements (1) Frequency and method of submission.* The contractor or subcontractor must submit weekly, for each week in which any DBA- or Related Acts-covered work is performed, certified payrolls to the contracting

agency. The prime contractor is responsible for the submission of all certified payrolls by all subcontractors. A contracting agency or prime contractor may permit or require contractors to submit certified payrolls through an electronic system, as long as the electronic system requires a legally valid electronic signature; the system allows the contractor, the contracting agency, and the Department of Labor to access the certified payrolls upon request for at least 3 years after the work on the prime contract has been completed; and the contracting agency or prime contractor permits other methods of submission in situations where the contractor is unable or limited in its ability to use or access the electronic system.

(2) *Information required.* The certified payrolls submitted must set out accurately and completely all of the information required to be maintained under paragraph 3.a.(2) of this section, except that full Social Security numbers and last known addresses, telephone numbers, and email addresses must not be included on weekly transmittals. Instead, the certified payrolls need only include an individually identifying number for each worker ( e.g., the last four digits of the worker's Social Security number). The required weekly certified payroll information may be submitted using Optional Form WH-347 or in any other format desired. Optional Form WH-347 is available for this purpose from the Wage and Hour Division website at <https://www.dol.gov/sites/dolgov/files/WHD/legacy/files/wh347.pdf> or its successor website. It is not a violation of this section for a prime contractor to require a subcontractor to provide full Social Security numbers and last known addresses, telephone numbers, and email addresses to the prime contractor for its own records, without weekly submission by the subcontractor to the contracting agency.

(3) *Statement of Compliance.* Each certified payroll submitted must be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor, or the contractor's or subcontractor's agent who pays or supervises the payment of the persons working on the contract, and must certify the following:

(i) That the certified payroll for the payroll period contains the information required to be provided under paragraph 3.b. of this section, the appropriate information and basic records are being maintained under paragraph 3.a. of this section, and such information and records are correct and complete;

(ii) That each laborer or mechanic (including each helper and apprentice) working on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in [29 CFR part 3](#); and

(iii) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification(s) of work actually performed, as specified in the applicable wage determination incorporated into the contract.

(4) *Use of Optional Form WH-347.* The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 will satisfy the requirement for submission of the "Statement of Compliance" required by paragraph 3.b.(3) of this section.

(5) *Signature*. The signature by the contractor, subcontractor, or the contractor's or subcontractor's agent must be an original handwritten signature or a legally valid electronic signature.

(6) *Falsification*. The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under [18 U.S.C. 1001](#) and [31 U.S.C. 3729](#).

(7) *Length of certified payroll retention*. The contractor or subcontractor must preserve all certified payrolls during the course of the work and for a period of 3 years after all the work on the prime contract is completed.

c. *Contracts, subcontracts, and related documents*. The contractor or subcontractor must maintain this contract or subcontract and related documents including, without limitation, bids, proposals, amendments, modifications, and extensions. The contractor or subcontractor must preserve these contracts, subcontracts, and related documents during the course of the work and for a period of 3 years after all the work on the prime contract is completed.

d. *Required disclosures and access* (1) *Required record disclosures and access to workers*. The contractor or subcontractor must make the records required under paragraphs 3.a. through 3.c. of this section, and any other documents that the contracting agency, the State DOT, the FHWA, or the Department of Labor deems necessary to determine compliance with the labor standards provisions of any of the applicable statutes referenced by § 5.1, available for inspection, copying, or transcription by authorized representatives of the contracting agency, the State DOT, the FHWA, or the Department of Labor, and must permit such representatives to interview workers during working hours on the job.

(2) *Sanctions for non-compliance with records and worker access requirements*. If the contractor or subcontractor fails to submit the required records or to make them available, or refuses to permit worker interviews during working hours on the job, the Federal agency may, after written notice to the contractor, sponsor, applicant, owner, or other entity, as the case may be, that maintains such records or that employs such workers, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available, or to permit worker interviews during working hours on the job, may be grounds for debarment action pursuant to § 5.12. In addition, any contractor or other person that fails to submit the required records or make those records available to WHD within the time WHD requests that the records be produced will be precluded from introducing as evidence in an administrative proceeding under [29 CFR part 6](#) any of the required records that were not provided or made available to WHD. WHD will take into consideration a reasonable request from the contractor or person for an extension of the time for submission of records. WHD will determine the reasonableness of the request and may consider, among other things, the location of the records and the volume of production.

(3) *Required information disclosures*. Contractors and subcontractors must maintain the full Social Security number and last known address, telephone number, and email address

of each covered worker, and must provide them upon request to the contracting agency, the State DOT, the FHWA, the contractor, or the Wage and Hour Division of the Department of Labor for purposes of an investigation or other compliance action.

#### **4. Apprentices and equal employment opportunity (29 CFR 5.5)**

a. *Apprentices* (1) *Rate of pay*. Apprentices will be permitted to work at less than the predetermined rate for the work they perform when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship (OA), or with a State Apprenticeship Agency recognized by the OA. A person who is not individually registered in the program, but who has been certified by the OA or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice, will be permitted to work at less than the predetermined rate for the work they perform in the first 90 days of probationary employment as an apprentice in such a program. In the event the OA or a State Apprenticeship Agency recognized by the OA withdraws approval of an apprenticeship program, the contractor will no longer be permitted to use apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(2) *Fringe benefits*. Apprentices must be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringe benefits must be paid in accordance with that determination.

(3) *Apprenticeship ratio*. The allowable ratio of apprentices to journeyworkers on the job site in any craft classification must not be greater than the ratio permitted to the contractor as to the entire work force under the registered program or the ratio applicable to the locality of the project pursuant to paragraph 4.a.(4) of this section. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated in paragraph 4.a.(1) of this section, must be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under this section must be paid not less than the applicable wage rate on the wage determination for the work actually performed.

(4) *Reciprocity of ratios and wage rates*. Where a contractor is performing construction on a project in a locality other than the locality in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyworker's hourly rate) applicable within the locality in which the construction is being performed must be observed. If there is no applicable ratio or wage rate for the locality of the project, the ratio and wage rate specified in the contractor's registered program must be observed.

b. *Equal employment opportunity*. The use of apprentices and journeyworkers under this part must be in conformity with

the equal employment opportunity requirements of Executive Order 11246, as amended, and [29 CFR part 30](#).

c. Apprentices and Trainees (programs of the U.S. DOT).

Apprentices and trainees working under apprenticeship and skill training programs which have been certified by the Secretary of Transportation as promoting EEO in connection with Federal-aid highway construction programs are not subject to the requirements of paragraph 4 of this Section IV. 23 CFR 230.111(e)(2). The straight time hourly wage rates for apprentices and trainees under such programs will be established by the particular programs. The ratio of apprentices and trainees to journeyworkers shall not be greater than permitted by the terms of the particular program.

**5. Compliance with Copeland Act requirements.** The contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this contract as provided in 29 CFR 5.5.

**6. Subcontracts.** The contractor or subcontractor must insert FHWA-1273 in any subcontracts, along with the applicable wage determination(s) and such other clauses or contract modifications as the contracting agency may by appropriate instructions require, and a clause requiring the subcontractors to include these clauses and wage determination(s) in any lower tier subcontracts. The prime contractor is responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in this section. In the event of any violations of these clauses, the prime contractor and any subcontractor(s) responsible will be liable for any unpaid wages and monetary relief, including interest from the date of the underpayment or loss, due to any workers of lower-tier subcontractors, and may be subject to debarment, as appropriate. 29 CFR 5.5.

**7. Contract termination: debarment.** A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

**8. Compliance with Davis-Bacon and Related Act requirements.** All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this contract as provided in 29 CFR 5.5.

**9. Disputes concerning labor standards.** As provided in 29 CFR 5.5, disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and the contracting agency, the U.S. Department of Labor, or the employees or their representatives.

**10. Certification of eligibility.** a. By entering into this contract, the contractor certifies that neither it nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of [40 U.S.C. 3144\(b\)](#) or § 5.12(a).

b. No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of [40 U.S.C. 3144\(b\)](#) or § 5.12(a).

c. The penalty for making false statements is prescribed in the U.S. Code, Title 18 Crimes and Criminal Procedure, [18 U.S.C. 1001](#).

**11. Anti-retaliation.** It is unlawful for any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, or to cause any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, any worker or job applicant for:

a. Notifying any contractor of any conduct which the worker reasonably believes constitutes a violation of the DBA, Related Acts, this part, or [29 CFR part 1](#) or [3](#);

b. Filing any complaint, initiating or causing to be initiated any proceeding, or otherwise asserting or seeking to assert on behalf of themselves or others any right or protection under the DBA, Related Acts, this part, or [29 CFR part 1](#) or [3](#);

c. Cooperating in any investigation or other compliance action, or testifying in any proceeding under the DBA, Related Acts, this part, or [29 CFR part 1](#) or [3](#); or

d. Informing any other person about their rights under the DBA, Related Acts, this part, or [29 CFR part 1](#) or [3](#).

## V. CONTRACT WORK HOURS AND SAFETY STANDARDS ACT

Pursuant to 29 CFR 5.5(b), the following clauses apply to any Federal-aid construction contract in an amount in excess of \$100,000 and subject to the overtime provisions of the Contract Work Hours and Safety Standards Act. These clauses shall be inserted in addition to the clauses required by 29 CFR 5.5(a) or 29 CFR 4.6. As used in this paragraph, the terms laborers and mechanics include watchpersons and guards.

**1. Overtime requirements.** No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek. 29 CFR 5.5.

**2. Violation; liability for unpaid wages; liquidated damages.** In the event of any violation of the clause set forth in paragraph 1. of this section the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages and interest from the date of the underpayment. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or

mechanic, including watchpersons and guards, employed in violation of the clause set forth in paragraph 1. of this section, in the sum currently provided in 29 CFR 5.5(b)(2)\* for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph 1. of this section.

\* \$31 as of January 15, 2023 (See 88 FR 88 FR 2210) as may be adjusted annually by the Department of Labor, pursuant to the Federal Civil Penalties Inflation Adjustment Act of 1990.

### 3. Withholding for unpaid wages and liquidated damages

a. *Withholding process.* The FHWA or the contracting agency may, upon its own action, or must, upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor so much of the accrued payments or advances as may be considered necessary to satisfy the liabilities of the prime contractor or any subcontractor for any unpaid wages; monetary relief, including interest; and liquidated damages required by the clauses set forth in this section on this contract, any other Federal contract with the same prime contractor, or any other federally assisted contract subject to the Contract Work Hours and Safety Standards Act that is held by the same prime contractor (as defined in § 5.2). The necessary funds may be withheld from the contractor under this contract, any other Federal contract with the same prime contractor, or any other federally assisted contract that is subject to the Contract Work Hours and Safety Standards Act and is held by the same prime contractor, regardless of whether the other contract was awarded or assisted by the same agency, and such funds may be used to satisfy the contractor liability for which the funds were withheld.

b. *Priority to withheld funds.* The Department has priority to funds withheld or to be withheld in accordance with Section IV paragraph 2.a. or paragraph 3.a. of this section, or both, over claims to those funds by:

- (1) A contractor's surety(ies), including without limitation performance bond sureties and payment bond sureties;
- (2) A contracting agency for its procurement costs;
- (3) A trustee(s) (either a court-appointed trustee or a U.S. trustee, or both) in bankruptcy of a contractor, or a contractor's bankruptcy estate;
- (4) A contractor's assignee(s);
- (5) A contractor's successor(s); or
- (6) A claim asserted under the Prompt Payment Act, [31 U.S.C. 3901](#)–3907.

**4. Subcontracts.** The contractor or subcontractor must insert in any subcontracts the clauses set forth in paragraphs 1. through 5. of this section and a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor is responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs 1. through 5. In the

event of any violations of these clauses, the prime contractor and any subcontractor(s) responsible will be liable for any unpaid wages and monetary relief, including interest from the date of the underpayment or loss, due to any workers of lower-tier subcontractors, and associated liquidated damages and may be subject to debarment, as appropriate.

**5. Anti-retaliation.** It is unlawful for any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, or to cause any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, any worker or job applicant for:

a. Notifying any contractor of any conduct which the worker reasonably believes constitutes a violation of the Contract Work Hours and Safety Standards Act (CWHSSA) or its implementing regulations in this part;

b. Filing any complaint, initiating or causing to be initiated any proceeding, or otherwise asserting or seeking to assert on behalf of themselves or others any right or protection under CWHSSA or this part;

c. Cooperating in any investigation or other compliance action, or testifying in any proceeding under CWHSSA or this part; or

d. Informing any other person about their rights under CWHSSA or this part.

## VI. SUBLETTING OR ASSIGNING THE CONTRACT

This provision is applicable to all Federal-aid construction contracts on the National Highway System pursuant to 23 CFR 635.116.

1. The contractor shall perform with its own organization contract work amounting to not less than 30 percent (or a greater percentage if specified elsewhere in the contract) of the total original contract price, excluding any specialty items designated by the contracting agency. Specialty items may be performed by subcontract and the amount of any such specialty items performed may be deducted from the total original contract price before computing the amount of work required to be performed by the contractor's own organization (23 CFR 635.116).

a. The term "perform work with its own organization" in paragraph 1 of Section VI refers to workers employed or leased by the prime contractor, and equipment owned or rented by the prime contractor, with or without operators. Such term does not include employees or equipment of a subcontractor or lower tier subcontractor, agents of the prime contractor, or any other assignees. The term may include payments for the costs of hiring leased employees from an employee leasing firm meeting all relevant Federal and State regulatory requirements. Leased employees may only be included in this term if the prime contractor meets all of the following conditions: (based on longstanding interpretation)

- (1) the prime contractor maintains control over the supervision of the day-to-day activities of the leased employees;
- (2) the prime contractor remains responsible for the quality of the work of the leased employees;

- (3) the prime contractor retains all power to accept or exclude individual employees from work on the project; and
- (4) the prime contractor remains ultimately responsible for the payment of predetermined minimum wages, the submission of payrolls, statements of compliance and all other Federal regulatory requirements.

b. "Specialty Items" shall be construed to be limited to work that requires highly specialized knowledge, abilities, or equipment not ordinarily available in the type of contracting organizations qualified and expected to bid or propose on the contract as a whole and in general are to be limited to minor components of the overall contract. 23 CFR 635.102.

2. Pursuant to 23 CFR 635.116(a), the contract amount upon which the requirements set forth in paragraph (1) of Section VI is computed includes the cost of material and manufactured products which are to be purchased or produced by the contractor under the contract provisions.

3. Pursuant to 23 CFR 635.116(c), the contractor shall furnish (a) a competent superintendent or supervisor who is employed by the firm, has full authority to direct performance of the work in accordance with the contract requirements, and is in charge of all construction operations (regardless of who performs the work) and (b) such other of its own organizational resources (supervision, management, and engineering services) as the contracting officer determines is necessary to assure the performance of the contract.

4. No portion of the contract shall be sublet, assigned or otherwise disposed of except with the written consent of the contracting officer, or authorized representative, and such consent when given shall not be construed to relieve the contractor of any responsibility for the fulfillment of the contract. Written consent will be given only after the contracting agency has assured that each subcontract is evidenced in writing and that it contains all pertinent provisions and requirements of the prime contract. (based on long-standing interpretation of 23 CFR 635.116).

5. The 30-percent self-performance requirement of paragraph (1) is not applicable to design-build contracts; however, contracting agencies may establish their own self-performance requirements. 23 CFR 635.116(d).

## **VII. SAFETY: ACCIDENT PREVENTION**

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

1. In the performance of this contract the contractor shall comply with all applicable Federal, State, and local laws governing safety, health, and sanitation (23 CFR Part 635). The contractor shall provide all safeguards, safety devices and protective equipment and take any other needed actions as it determines, or as the contracting officer may determine, to be reasonably necessary to protect the life and health of employees on the job and the safety of the public and to protect property in connection with the performance of the work covered by the contract. 23 CFR 635.108.

2. It is a condition of this contract, and shall be made a condition of each subcontract, which the contractor enters into pursuant to this contract, that the contractor and any subcontractor shall not permit any employee, in performance of the contract, to work in surroundings or under conditions which are unsanitary, hazardous or dangerous to his/her health or safety, as determined under construction safety and

health standards (29 CFR Part 1926) promulgated by the Secretary of Labor, in accordance with Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 3704). 29 CFR 1926.10.

3. Pursuant to 29 CFR 1926.3, it is a condition of this contract that the Secretary of Labor or authorized representative thereof, shall have right of entry to any site of contract performance to inspect or investigate the matter of compliance with the construction safety and health standards and to carry out the duties of the Secretary under Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 3704).

## **VIII. FALSE STATEMENTS CONCERNING HIGHWAY PROJECTS**

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

In order to assure high quality and durable construction in conformity with approved plans and specifications and a high degree of reliability on statements and representations made by engineers, contractors, suppliers, and workers on Federal-aid highway projects, it is essential that all persons concerned with the project perform their functions as carefully, thoroughly, and honestly as possible. Willful falsification, distortion, or misrepresentation with respect to any facts related to the project is a violation of Federal law. To prevent any misunderstanding regarding the seriousness of these and similar acts, Form FHWA-1022 shall be posted on each Federal-aid highway project (23 CFR Part 635) in one or more places where it is readily available to all persons concerned with the project:

18 U.S.C. 1020 reads as follows:

"Whoever, being an officer, agent, or employee of the United States, or of any State or Territory, or whoever, whether a person, association, firm, or corporation, knowingly makes any false statement, false representation, or false report as to the character, quality, quantity, or cost of the material used or to be used, or the quantity or quality of the work performed or to be performed, or the cost thereof in connection with the submission of plans, maps, specifications, contracts, or costs of construction on any highway or related project submitted for approval to the Secretary of Transportation; or

Whoever knowingly makes any false statement, false representation, false report or false claim with respect to the character, quality, quantity, or cost of any work performed or to be performed, or materials furnished or to be furnished, in connection with the construction of any highway or related project approved by the Secretary of Transportation; or

Whoever knowingly makes any false statement or false representation as to material fact in any statement, certificate, or report submitted pursuant to provisions of the Federal-aid Roads Act approved July 11, 1916, (39 Stat. 355), as amended and supplemented;

Shall be fined under this title or imprisoned not more than 5 years or both."

**IX. IMPLEMENTATION OF CLEAN AIR ACT AND FEDERAL WATER POLLUTION CONTROL ACT (42 U.S.C. 7606; 2 CFR 200.88; EO 11738)**

This provision is applicable to all Federal-aid construction contracts in excess of \$150,000 and to all related subcontracts. 48 CFR 2.101; 2 CFR 200.327.

By submission of this bid/proposal or the execution of this contract or subcontract, as appropriate, the bidder, proposer, Federal-aid construction contractor, subcontractor, supplier, or vendor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act (42 U.S.C. 7401-7671q) and the Federal Water Pollution Control Act, as amended (33 U.S.C. 1251-1387). Violations must be reported to the Federal Highway Administration and the Regional Office of the Environmental Protection Agency. 2 CFR Part 200, Appendix II.

The contractor agrees to include or cause to be included the requirements of this Section in every subcontract, and further agrees to take such action as the contracting agency may direct as a means of enforcing such requirements. 2 CFR 200.327.

**X. CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION**

This provision is applicable to all Federal-aid construction contracts, design-build contracts, subcontracts, lower-tier subcontracts, purchase orders, lease agreements, consultant contracts or any other covered transaction requiring FHWA approval or that is estimated to cost \$25,000 or more – as defined in 2 CFR Parts 180 and 1200. 2 CFR 180.220 and 1200.220.

**1. Instructions for Certification – First Tier Participants:**

- a. By signing and submitting this proposal, the prospective first tier participant is providing the certification set out below.
- b. The inability of a person to provide the certification set out below will not necessarily result in denial of participation in this covered transaction. The prospective first tier participant shall submit an explanation of why it cannot provide the certification set out below. The certification or explanation will be considered in connection with the department or agency's determination whether to enter into this transaction. However, failure of the prospective first tier participant to furnish a certification or an explanation shall disqualify such a person from participation in this transaction. 2 CFR 180.320.
- c. The certification in this clause is a material representation of fact upon which reliance was placed when the contracting agency determined to enter into this transaction. If it is later determined that the prospective participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the contracting agency may terminate this transaction for cause of default. 2 CFR 180.325.
- d. The prospective first tier participant shall provide immediate written notice to the contracting agency to whom this proposal is submitted if any time the prospective first tier participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances. 2 CFR 180.345 and 180.350.

e. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180, Subpart I, 180.900-180.1020, and 1200. "First Tier Covered Transactions" refers to any covered transaction between a recipient or subrecipient of Federal funds and a participant (such as the prime or general contract). "Lower Tier Covered Transactions" refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). "First Tier Participant" refers to the participant who has entered into a covered transaction with a recipient or subrecipient of Federal funds (such as the prime or general contractor). "Lower Tier Participant" refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

f. The prospective first tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency entering into this transaction. 2 CFR 180.330.

g. The prospective first tier participant further agrees by submitting this proposal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transactions," provided by the department or contracting agency, entering into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the \$25,000 threshold. 2 CFR 180.220 and 180.300.

h. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. 2 CFR 180.300; 180.320, and 180.325. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. 2 CFR 180.335. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the System for Award Management website (<https://www.sam.gov/>). 2 CFR 180.300, 180.320, and 180.325.

i. Nothing contained in the foregoing shall be construed to require the establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of the prospective participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

j. Except for transactions authorized under paragraph (f) of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default. 2 CFR 180.325.

\* \* \* \* \*

**2. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion – First Tier Participants:**

a. The prospective first tier participant certifies to the best of its knowledge and belief, that it and its principals:

(1) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency, 2 CFR 180.335;.

(2) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State, or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property, 2 CFR 180.800;

(3) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (a)(2) of this certification, 2 CFR 180.700 and 180.800; and

(4) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default. 2 CFR 180.335(d).

(5) Are not a corporation that has been convicted of a felony violation under any Federal law within the two-year period preceding this proposal (USDOT Order 4200.6 implementing appropriations act requirements); and

(6) Are not a corporation with any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted, or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability (USDOT Order 4200.6 implementing appropriations act requirements).

b. Where the prospective participant is unable to certify to any of the statements in this certification, such prospective participant should attach an explanation to this proposal. 2 CFR 180.335 and 180.340.

\*\*\*\*\*

**3. Instructions for Certification - Lower Tier Participants:**

(Applicable to all subcontracts, purchase orders, and other lower tier transactions requiring prior FHWA approval or estimated to cost \$25,000 or more - 2 CFR Parts 180 and 1200). 2 CFR 180.220 and 1200.220.

a. By signing and submitting this proposal, the prospective lower tier participant is providing the certification set out below.

b. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department, or agency with which

this transaction originated may pursue available remedies, including suspension and/or debarment.

c. The prospective lower tier participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous by reason of changed circumstances. 2 CFR 180.365.

d. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180, Subpart I, 180.900 – 180.1020, and 1200. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations. "First Tier Covered Transactions" refers to any covered transaction between a recipient or subrecipient of Federal funds and a participant (such as the prime or general contract). "Lower Tier Covered Transactions" refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). "First Tier Participant" refers to the participant who has entered into a covered transaction with a recipient or subrecipient of Federal funds (such as the prime or general contractor). "Lower Tier Participant" refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

e. The prospective lower tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated. 2 CFR 1200.220 and 1200.332.

f. The prospective lower tier participant further agrees by submitting this proposal that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the \$25,000 threshold. 2 CFR 180.220 and 1200.220.

g. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the System for Award Management website (<https://www.sam.gov/>), which is compiled by the General Services Administration. 2 CFR 180.300, 180.320, 180.330, and 180.335.

h. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

i. Except for transactions authorized under paragraph e of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily



excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment. 2 CFR 180.325.

\*\*\*\*\*

#### **4. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion--Lower Tier Participants:**

a. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals:

(1) is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency, 2 CFR 180.355;

(2) is a corporation that has been convicted of a felony violation under any Federal law within the two-year period preceding this proposal (USDOT Order 4200.6 implementing appropriations act requirements); and

(3) is a corporation with any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted, or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability. (USDOT Order 4200.6 implementing appropriations act requirements)

b. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant should attach an explanation to this proposal.

\*\*\*\*\*

#### **XI. CERTIFICATION REGARDING USE OF CONTRACT FUNDS FOR LOBBYING**

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts which exceed \$100,000. 49 CFR Part 20, App. A.

1. The prospective participant certifies, by signing and submitting this bid or proposal, to the best of his or her knowledge and belief, that:

a. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

b. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or

cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

2. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31 U.S.C. 1352. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

3. The prospective participant also agrees by submitting its bid or proposal that the participant shall require that the language of this certification be included in all lower tier subcontracts, which exceed \$100,000 and that all such recipients shall certify and disclose accordingly.

#### **XII. USE OF UNITED STATES-FLAG VESSELS:**

This provision is applicable to all Federal-aid construction contracts, design-build contracts, subcontracts, lower-tier subcontracts, purchase orders, lease agreements, or any other covered transaction. 46 CFR Part 381.

This requirement applies to material or equipment that is acquired for a specific Federal-aid highway project. 46 CFR 381.7. It is not applicable to goods or materials that come into inventories independent of an FHWA funded-contract.

When oceanic shipments (or shipments across the Great Lakes) are necessary for materials or equipment acquired for a specific Federal-aid construction project, the bidder, proposer, contractor, subcontractor, or vendor agrees:

1. To utilize privately owned United States-flag commercial vessels to ship at least 50 percent of the gross tonnage (computed separately for dry bulk carriers, dry cargo liners, and tankers) involved, whenever shipping any equipment, material, or commodities pursuant to this contract, to the extent such vessels are available at fair and reasonable rates for United States-flag commercial vessels. 46 CFR 381.7.

2. To furnish within 20 days following the date of loading for shipments originating within the United States or within 30 working days following the date of loading for shipments originating outside the United States, a legible copy of a rated, 'on-board' commercial ocean bill-of-lading in English for each shipment of cargo described in paragraph (b)(1) of this section to both the Contracting Officer (through the prime contractor in the case of subcontractor bills-of-lading) and to the Office of Cargo and Commercial Sealift (MAR-620), Maritime Administration, Washington, DC 20590. (MARAD requires copies of the ocean carrier's (master) bills of lading, certified onboard, dated, with rates and charges. These bills of lading may contain business sensitive information and therefore may be submitted directly to MARAD by the Ocean Transportation Intermediary on behalf of the contractor). 46 CFR 381.7.

**ATTACHMENT A - EMPLOYMENT AND MATERIALS  
PREFERENCE FOR APPALACHIAN DEVELOPMENT  
HIGHWAY SYSTEM OR APPALACHIAN LOCAL ACCESS  
ROAD CONTRACTS (23 CFR 633, Subpart B, Appendix B)**

This provision is applicable to all Federal-aid projects funded under the Appalachian Regional Development Act of 1965.

1. During the performance of this contract, the contractor undertaking to do work which is, or reasonably may be, done as on-site work, shall give preference to qualified persons who regularly reside in the labor area as designated by the DOL wherein the contract work is situated, or the subregion, or the Appalachian counties of the State wherein the contract work is situated, except:

a. To the extent that qualified persons regularly residing in the area are not available.

b. For the reasonable needs of the contractor to employ supervisory or specially experienced personnel necessary to assure an efficient execution of the contract work.

c. For the obligation of the contractor to offer employment to present or former employees as the result of a lawful collective bargaining contract, provided that the number of nonresident persons employed under this subparagraph (1c) shall not exceed 20 percent of the total number of employees employed by the contractor on the contract work, except as provided in subparagraph (4) below.

2. The contractor shall place a job order with the State Employment Service indicating (a) the classifications of the laborers, mechanics and other employees required to perform the contract work, (b) the number of employees required in each classification, (c) the date on which the participant estimates such employees will be required, and (d) any other pertinent information required by the State Employment Service to complete the job order form. The job order may be placed with the State Employment Service in writing or by telephone. If during the course of the contract work, the information submitted by the contractor in the original job order is substantially modified, the participant shall promptly notify the State Employment Service.

3. The contractor shall give full consideration to all qualified job applicants referred to him by the State Employment Service. The contractor is not required to grant employment to any job applicants who, in his opinion, are not qualified to perform the classification of work required.

4. If, within one week following the placing of a job order by the contractor with the State Employment Service, the State Employment Service is unable to refer any qualified job applicants to the contractor, or less than the number requested, the State Employment Service will forward a certificate to the contractor indicating the unavailability of applicants. Such certificate shall be made a part of the contractor's permanent project records. Upon receipt of this certificate, the contractor may employ persons who do not normally reside in the labor area to fill positions covered by the certificate, notwithstanding the provisions of subparagraph (1c) above.

5. The provisions of 23 CFR 633.207(e) allow the contracting agency to provide a contractual preference for the use of mineral resource materials native to the Appalachian region.

6. The contractor shall include the provisions of Sections 1 through 4 of this Attachment A in every subcontract for work which is, or reasonably may be, done as on-site work.

**STATE OF HAWAII**  
**DEPARTMENT OF TRANSPORTATION**  
**HIGHWAYS DIVISION**  
**HONOLULU, OAHU, HAWAII**

**SPECIAL PROVISIONS**

These Special Provisions shall supplement and/or amend the applicable provisions of the Hawaii Standard Specification for Road and Bridge Construction, 2005, hereinafter referred to as the "Standard Specifications".

The "WATER SYSTEM STANDARDS" of the Board of Water Supply, City and County of Honolulu, dated 2002, and all subsequent amendments and additions, are by reference incorporated herein and made a part of these contract documents. The work embraced herein shall be performed by the CONTRACTOR in accordance with the "WATER SYSTEM STANDARDS", and the various sections of the Special Provisions.

1 Amend **Section 101 - TERMS, ABBREVIATIONS, AND DEFINITIONS** to read as  
2 follows:

3  
4 **“DIVISION 100 - GENERAL PROVISIONS**

5  
6  
7 **SECTION 101 - TERMS, ABBREVIATIONS, AND DEFINITIONS**

8  
9 **101.01 Meaning of Terms.** The specifications are generally written in the  
10 imperative mood. In sentences using the imperative mood, the subject, “the  
11 Contractor shall”, is implied. In the material specifications, the subject may also  
12 be the supplier, fabricator, or manufacturer supplying material, products, or  
13 equipment for use on the project. The word “will” generally pertains to decisions  
14 or actions of the State.

15  
16 When a publication is specified, it refers to the most recent date of issue,  
17 including interim publications, before the bid opening date for the project, unless a  
18 specific date or year of issue is provided.

19  
20 **101.02 Abbreviations.** Meanings of abbreviations used in the specifications,  
21 on the plans, or in other contract documents are as follows:

22

23	AAN	American Association of Nurserymen
24		
25	AASHTO	American Association of State Highway and 26 Transportation Officials
27		
28	ACI	American Concrete Institute
29		
30	ADA	Americans with Disabilities Act
31		
32	ADAAG	Americans with Disabilities Act Accessibility Guidelines
33		
34	AGC	Associated General Contractors of America
35		
36	AIA	American Institute of Architects
37		
38	AISC	American Institute of Steel Construction
39		
40	AISI	American Iron and Steel Institute
41		
42	ANSI	American National Standards Institute
43		
44	APA	American Plywood Association
45		

46	ARA	American Railway Association
47		
48	AREA	American Railway Engineering Association
49		
50	ASA	American Standards Association
51		
52	ASCE	American Society of Civil Engineers
53		
54	ASLA	American Society of Landscape Architects
55		
56	ASTM	American Society for Testing and Materials
57		
58	AWG	American Wire Gauge
59		
60	AWPA	American Wood Preserver's Association
61		
62	AWS	American Welding Society
63		
64	AWWA	American Water Works Association
65		
66	BMP	Best Management Practice
67		
68	CCO	Contract Change Order
69		
70	CFR	Code of Federal Regulations
71		
72	CRSI	Concrete Reinforcing Steel Institute
73		
74	DCAB	Disability and Communication Access Board, Department of Health, State of Hawaii
75		
76		
77	DOTAX	Department of Taxation, State of Hawaii
78		
79	EPA	U.S. Environmental Protection Agency
80		
81	FHWA	Federal Highway Administration, U.S. Department of Transportation
82		
83		
84	FSS	Federal Specifications and Standards, General Services Administration, U.S. Department of Defense
85		
86		
87	HAR	Hawaii Administrative Rules
88		
89	HDOT	Department of Transportation, State of Hawaii
90		

91	HIOSH	Occupational Safety and Health, Department of Labor and Industrial Relations, State of Hawaii
92		
93		
94	HMA	Hot Mix Asphalt
95		
96	HRS	Hawaii Revised Statutes
97		
98	ICEA	Insulated Cable Engineers Association (formerly IPCEA)
99		
100	IMSA	International Municipal Signal Association
101		
102	IRS	Internal Revenue Service
103		
104	ITE	Institute of Transportation Engineers
105		
106	MUTCD	Manual on Uniform Traffic Control Devices for Streets and Highways, FHWA, U.S. Department of Transportation
107		
108		
109	NCHRP	National Cooperative Highway Research Program
110		
111	NEC	National Electric Code
112		
113	NEMA	National Electrical Manufacturers Association
114		
115	NFPA	National Forest Products Association
116		
117	NPDES	National Pollutant Discharge Elimination System
118		
119	OSHA	Occupational Safety and Health Administration/Act, U.S. Department of Labor
120		
121		
122	SAE	Society of Automotive Engineers
123		
124	SI	International Systems of Units
125		
126	UFAS	Uniform Federal Accessibility Standards
127		
128	UL	Underwriter's Laboratory
129		
130	USGS	U.S. Geological Survey
131		
132	VECP	Value Engineering Cost Proposal
133		
134		

135 **101.03 Definitions.** Whenever the following words, terms, or pronouns are  
136 used in the contract documents, unless otherwise prescribed therein and without  
137 regards to the use or omission of uppercase letters, the intent and meaning shall  
138 be interpreted as follows:

139  
140 **Addendum (plural - Addenda)** - A written or graphic document, including  
141 drawings and specifications, issued by the Director during the bidding period. This  
142 document modifies or interprets the bidding documents by additions, deletions,  
143 clarifications or corrections.

144  
145 **Addition** (to the contract sum) - Amount added to the contract sum by change  
146 order.

147  
148 **Advertisement** - A public announcement inviting bids for work to be performed or  
149 materials to be furnished.

150  
151 **Amendment** - A written document issued to amend the existing contract between  
152 the State and Contractor and properly executed by the Contractor and Director.

153  
154 **Award** - Written notification to the bidder that the bidder has been awarded a  
155 contract.

156  
157 **Bad Weather Day (or Unworkable Day)** - A day when weather or other conditions  
158 prevent a minimum of four hours of work with the Contractor's normal work force  
159 on critical path activities at the site.

160  
161 **Bag** - 94 pounds of cement.

162  
163 **Barrel** - 376 pounds of cement.

164  
165 **Base Course** - The layer or layers of specified material or selected material of a  
166 designed thickness placed on a subbase or subgrade to support a surface course.

167  
168 **Basement Material** - The material in excavation or embankments underlying the  
169 lowest layer of subbase, base, pavement, surfacing or other specified layer.

170  
171 **Bid** - See Proposal.

172  
173 **Bidder** - An individual, partnership, corporation, joint venture or other legal entity  
174 submitting, directly or through a duly authorized representative or agent, a  
175 proposal for the work or construction contemplated.

176  
177 **Bidding Documents (or Solicitation Documents)** - The published solicitation  
178 notice, bid requirements, bid forms and the proposed contract documents including  
179 all addenda and clarifications issued prior to receipt of the bid.

180

181 **Bid Security** - The security furnished by the bidder from which the State may  
182 recover its damages in the event the bidder breaches its promise to enter into a  
183 contract with the State, or fails to execute the required bonds covering the work  
184 contemplated, if its proposal is accepted.

185  
186 **Blue Book** - EquipmentWatch Cost Recovery (formerly known as  
187 EquipmentWatch Rental Rate Blue Book), available from EquipmentWatch, a  
188 division of Penton, Inc.

189  
190 **Calendar Day** - See Day.

191  
192 **Change Order (or Contract Change Order)** - A written order signed by the  
193 Engineer issued with or without the consent of the Contractor directing changes in  
194 the work, contract time or contract price. The purposes of a change order include,  
195 but are not limited to (1) establishing a price or time adjustment for changes in the  
196 work; (2) establishing full payment for direct, indirect, and consequential costs,  
197 including costs of delay; (3) establishing price adjustment or time adjustment for  
198 work covered and affected by one or more field orders; or (4) settling Contractor's  
199 claims for direct, indirect, and consequential costs, or for additional contract time,  
200 in whole or in part.

201  
202 **Completion** - See Substantial Completion and Final Completion.

203  
204 **Completion Date** - The date specified by the contract for the completion of all  
205 work on the project or of a designated portion of the project.

206  
207 **Comptroller** - the Comptroller of the State of Hawaii, Department of Accounting  
208 and General Services.

209  
210 **Contract** - The written agreement between the Contractor and the State, by which  
211 the Contractor shall provide all labor, equipment, and materials and perform the  
212 specified work within the contract time stipulated, and by which the State of Hawaii  
213 is obligated to compensate the Contractor at the prices set forth in the contract  
214 documents.

215  
216 **Contract Certification Date** - The Date on which the Deputy Comptroller for the  
217 State of Hawaii (or authorized representative) signs the Contract Certification.

218  
219 **Contract Completion Date** - The calendar day on which all work on the project,  
220 required by the contract, must be completed. See CONTRACT TIME.

221



222 **Contract Documents** - The contract, solicitation, addenda, notice to bidders,  
223 Contractor's bid proposal (including wage schedule, list of subcontractors and  
224 other documentations accompanying the bid), notice to proceed, bonds, general  
225 provisions, special provisions, specifications, drawings, all modifications, all written  
226 amendments, change orders, field orders, orders for minor changes in the work,  
227 the Engineer's written interpretations and clarifications issued on or after the  
228 effective date of the contract.

229  
230 **Contract Item (Pay Item)** - A specific unit of work for which there is a price in the  
231 contract.

232  
233 **Contract Modification (Modification)** - A change order that is mutually agreed to  
234 and signed by the parties to the contract.

235  
236 **Contract Price** - The amount designated on the face of the contract for the  
237 performance of work.

238  
239 **Contract Time (or Contract Duration)** - The number of calendar or working days  
240 provided for completion of the contract, inclusive of authorized time extensions.  
241 Contract time shall commence on the Start Work Date and end on the Substantial  
242 Completion Date. If in lieu of providing a number of calendar or working days, the  
243 contract requires completion by a certain date, the work shall be completed by that  
244 date.

245  
246 **Contracting Officer** - See Engineer.

247  
248 **Contractor** - Any individual, partnership, firm, corporation, joint venture, or other  
249 legal entity undertaking the execution of the work under the terms of the contract  
250 with the State.

251  
252 **Critical Path** - Longest logical sequence of activities that must be completed on  
253 schedule for the entire project to be completed on schedule.

254  
255 **Day** - Any day shown on the calendar, beginning at midnight and proceeding up  
256 to, but not including, midnight the following day. If no designation of calendar or  
257 working day is made, "day" shall mean calendar day.

258  
259 **Department** - The Department of Transportation of the State of Hawaii  
260 (abbreviated HDOT).

261  
262 **Director** - The Director of the HDOT acting directly or through duly authorized  
263 representatives.

264  
265 **Plans (or Drawings)** - The contract drawings in graphic or pictorial form including  
266 the notes, tables and other notations thereon indicating the design, location,  
267 character, dimensions, and details of the work.

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**Engineer** - The Highway Administrator, Highways Division, HDOT, or the authorized person delegated to act on the Administrator’s behalf.

**Equipment** - All machinery, tools, and apparatus needed to complete the contract.

**Field Order** - A written order issued by the Engineer or the Engineer’s authorized representative to the Contractor requiring a change or changes to the contract work. A field order may (1) establish a price adjustment or time adjustment; or (2) may declare that no adjustment will be made to contract price or contract time; or (3) may request the Contractor to submit a proposal for an adjustment to the contract price or contract time.

**Final Acceptance** - The Status of the project when the Engineer finds that the Contractor has satisfactorily completed all contract work in compliance with the contract including all plant establishment requirements, and all the materials have been accepted by the State.

**Final Completion** - The date set by the Director that all work required by the contract has been completed in full compliance with the contract documents.

**Final Inspection** - Inspection where all contract items (with the exception of Planting Period and Plant Establishment Period) are accepted by the Engineer. Substantial Completion will be issued by the Engineer based on the satisfactory results of the Final Inspection.

**Float** - The amount of time between when an activity can start and when an activity must start, i.e., the time available to complete non-critical activities required for the performance of the work without affecting the critical path.

**Guarantee** - Legally enforceable assurance of the duration of satisfactory performance of quality of a product or work.

**Hawaii Administrative Rules** - Rules adopted by the State in accordance with Chapter 91 of the Hawaii Revised Statutes, as amended.

**Hawaii eProcurement System (HlePRO)** - The State of Hawaii eProcurement System for issuing solicitations, receiving proposals and responses, and issuing notices of award.

**Highway (Street, Road, or Roadway)** - A public way within a right-of-way designed, intended, and set aside for use by vehicles, bicyclists, or pedestrians.

**Highways Division** - The Highways Division of the Hawaii Department of Transportation constituted under the laws of Hawaii for the administration of highway work.

315 **Holidays** - The days of each year which are set apart and established as State  
316 holidays pursuant to Chapter 8 of the Hawaii Revised Statutes, as amended.

317  
318 **Inspector** - The Engineer's authorized representative assigned to make detailed  
319 inspections of contract performance, prescribed work, and materials supplied.

320  
321 **Laboratory** - The testing laboratory of the Highways Division or other testing  
322 laboratories that may be designated by the Engineer.

323  
324 **Laws** - All Federal, State, and local laws, executive orders and regulations having  
325 the force of law.

326  
327 **Leveling Course** - An aggregate mixture course of variable thickness used to  
328 restore horizontal and vertical uniformity to existing pavements or shoulders.

329  
330 **Liquidated Damages** - The amount prescribed in Subsection 108.08 - Liquidated  
331 Damages for Failure to Complete the Work or Portions of the Work on Time, to be  
332 paid to the State or to be deducted from any payments payable to or, which may  
333 become payable to the Contractor.

334  
335 **Lump Sum (LS)** - When used as a payment method means complete payment  
336 for the item of work described in the contract documents.

337  
338 **Material** - Any natural or manmade substance or item specified in the contract to  
339 be incorporated in the work.

340  
341 **Notice to Bidders** - The advertisement for proposals for all work or materials on  
342 which bids are required. Such advertisement will indicate the location of the work  
343 to be done or the character of the material to be furnished and the time and place  
344 for the opening of proposals.

345  
346 **Notice to Proceed** - Written notice from the Engineer to the Contractor identifying  
347 the date on which the Contractor is to begin procuring materials and required  
348 permits and adjusting work forces, equipment, schedules, etc. prior to beginning  
349 physical work.

350  
351 **Pavement** - The uppermost layer of material placed on the traveled way or  
352 shoulders or both. Pavement and surfacing may be interchangeable.

353  
354 **Pavement Structure** - The combination of subbase, base, pavement, surfacing or  
355 other specified layer of a roadway constructed on a subgrade to support the traffic  
356 load.

357  
358 **Payment Bond** - The security executed by the Contractor and surety or sureties  
359 furnished to the Department to guarantee payment by the Contractor to laborers,  
360 material suppliers and subcontractors in accordance with the terms of the contract.

361

362 **Physical Work** - Physical construction activities on the project site or at  
363 appurtenant facilities including staging areas. It includes; (i) building or installing  
364 any structures or facilities including, but not limited to sign erection; BMP  
365 installation; field office site grading and building; (ii) removal, adjustment, or  
366 demolition of physical obstructions on site; (iii) any ground breaking activities; and  
367 (iv) any utility work. It does not include pre-construction environmental testing  
368 (such as water quality baseline measurements) that may be required as part of  
369 contract.

370  
371 **Pre-Final Inspection** - Inspection scheduled when Contractor notifies Engineer  
372 that all physical work on the project, with the exception of planting period and plant  
373 establishment period, has been completed. Notice from Contractor of substantial  
374 completion will suspend contract time until Contractor receives punchlist from  
375 Engineer.

376  
377 **Profile Grade** - The elevation or gradient of a vertical plane intersecting the top  
378 surface of the proposed pavement.

379  
380 **Project Acceptance Date** - The calendar day on which the Engineer accepts the  
381 project as completed. See Final Completion.

382  
383 **Proposal (or Bid)** - The offer of a Bidder, on the prescribed HDOT form, to perform  
384 the work and to furnish the labor and materials at the prices quoted.

385  
386 **Public Traffic** - Vehicular or pedestrian movement on a public way.

387  
388 **Punchlist** - A list compiled by the Engineer specifying work yet to be completed or  
389 corrected by the Contractor in order to substantially complete the contract.

390  
391 **Questionnaire** - The specified forms on which the bidder shall furnish required  
392 information as to its ability to perform and finance the work.

393  
394 **Request for Change Proposal** - A written notice from the Engineer to the  
395 Contractor requesting that the Contractor provide a price and/or time proposal for  
396 contemplated changes preparatory to the issuance of a field order or change order.

397  
398 **Right-of-Way** - Land, property, or property interests acquired by a government  
399 agency for, or devoted to transportation purposes.

400  
401 **Roadbed** - The graded portion of a highway within top and side slopes, prepared  
402 as a foundation for the pavement structure and shoulders.

403  
404 **Roadside** - The area between the outside edges of the shoulders and the right-of-  
405 way boundaries. Unpaved median areas between inside shoulders of divided  
406 highways and infield areas of interchanges are included.

407 **Section and Subsection** - Section or subsection shall be understood to refer to  
408 these specifications unless otherwise specified.

409

410 **Shop Drawings** - All drawings, diagrams, illustrations, schedules and other data  
411 or information which are specifically prepared or assembled by or for the  
412 Contractor and submitted by the Contractor to illustrate some portion of the work.

413

414 **Shoulder** - The portion of the roadway next to the traveled way for:  
415 accommodation of stopped vehicles, placement of underground facilities,  
416 emergency use, and lateral support of base and surface courses.

417

418 **Sidewalk** - That portion of the roadway primarily constructed for use by  
419 pedestrians.

420

421 **Solicitation** - An invitation to bid or request for proposals or any other document  
422 issued by the Department to solicit bids or offers to perform a contract. The  
423 solicitation may indicate the time and place to receive the bids or offers and the  
424 location, nature and character of the work, construction or materials to be provided.

425

426 **Specifications** - Compilation of provisions and requirements to perform  
427 prescribed work.

428

429 (A) **Standard Specifications.** Specifications by the State intended for  
430 general application and repetitive use.

431

432 (B) **Special Provisions.** Revisions and additions to the standard  
433 specifications applicable to an individual project.

434

435 **Standard Plans** - Drawings provided by the State for specific items of work  
436 approved for repetitive use.

437

438 **State** - The State of Hawaii, its Departments and agencies, acting through its  
439 authorized representative(s).

440

441 **State Waters** – All waters, fresh, brackish, or salt, around and within the State,  
442 including, but not limited to, coastal waters, streams, rivers, drainage ditches,  
443 ponds, reservoirs, canals, ground waters, and lakes; provided that drainage  
444 ditches, ponds, and reservoirs required as a part of a water pollution control system  
445 are excluded.

446

447 **Start Work Date** - Date on which Contractor begins physical work on the contract.  
448 This date shall also be the beginning of Contract Time.

449

450 **Structures** - Bridges, culverts, catch basins, drop inlets, retaining walls, cribbing,  
451 manholes, endwalls, buildings, sewers, service pipes, underdrains, foundation  
452 drains, and other such features that may be encountered in the work.

453

454 **Subbase** - A layer of specified material of specified thickness between the  
455 subgrade and a base.

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**Subcontract** - Any written agreement between the Contractor and its subcontractors which contains the conditions under which the subcontractor is to perform a portion of the work for the Contractor.

**Subcontractor** - An individual, partnership, firm, corporation, joint venture or other legal entity, as licensed or required to be licensed under Chapter 444, Hawaii Revised Statutes, as amended, which enters into an agreement with the Contractor to perform a portion of the work.

**Subgrade** - The top surface of completed earthwork on which subbase, base, surfacing, pavement, or a course of other material is to be placed.

**Substantial Completion** - The Status of the project when the Contractor has completed the work, except for the planting period and plant establishment period, and each of the following requirements are met:

- (1) All traffic lanes (including shoulders, ramps, sidewalks and bike paths) are in their final configuration as designed and the final wearing surface has been installed;
- (2) All operational and safety devices have been installed in accordance with the contract documents including guardrails, end treatments, traffic barriers, required signs and pavement markings, drainage, parapet, and bridge and pavement structures;
- (3) All required illumination and lighting for normal and safe use and operation is installed and functional in accordance with the contract documents;
- (4) All utilities and services are connected and working;
- (5) The need for temporary traffic controls or lane closures at any time has ceased, except for lane closures required for routine maintenance;
- (6) The building, structure, improvement or facility can be used for its intended purpose.

**Substantial Completion Date** - The date the Substantial Completion is granted by the Engineer in Writing and Contract Time stops.

**Superintendent** - The employee of the Contractor who is responsible for all the work and is a Contractor's agent for communications to and from the State.

501 **Surety** - The qualified individual, firm or corporation other than the Contractor,  
502 which executes a bond with and for the Contractor to insure its acceptable  
503 performance of the contract.

504  
505 **Surfacing** - The uppermost layer of material placed on the traveled way or  
506 shoulders. This term is used interchangeably with pavement.

507  
508 **Traveled Way** - The portion of the roadway for the movement of vehicles,  
509 exclusive of shoulders.

510  
511 **Unsuitable Material** - Materials that contain organic matter, muck, humus, peat,  
512 sticks, debris, chemicals, toxic matter, or other deleterious materials not suitable  
513 for use in earthwork.

514  
515 **Utility** - A line, facility, or system for producing, transmitting, or distributing  
516 communications, power, electricity, heat, gas, oil, water, steam, waste, or storm  
517 water.

518  
519 **Utility Owner** - The entity, whether private or owned by a State, Federal, or County  
520 governmental body, that has the power and responsibility to grant approval for, or  
521 undertake construction work involving a particular utility.

522  
523 **Water Pollutant** - Dredged spoil, solid refuse, incinerator residue, sewage,  
524 garbage, sewage sludge, munitions, chemical waste, biological materials,  
525 radioactive materials, heat, wrecked or discarded equipment, rock, sand, soil,  
526 sediment, cellar dirt and industrial, municipal, and agricultural waste.

527  
528 **Water Pollution** - **(1)** Such contamination or other alteration of the physical,  
529 chemical, or biological properties of any state waters, including change in  
530 temperature, taste, color, turbidity, or odor of the waters, or **(2)** Such discharge of  
531 any liquid, gaseous, solid, radioactive, or other substances into any state waters,  
532 as will or is likely to create a nuisance or render such waters unreasonably harmful,  
533 detrimental, or injurious to public health, safety, or welfare, including harm,  
534 detriment, or injury to public water supplies, fish and aquatic life and wildlife,  
535 recreational purposes and agricultural and industrial research and scientific uses  
536 of such waters or as will or is likely to violate any water quality standards, effluent  
537 standards, treatment and pretreatment standards, or standards of performance for  
538 new sources adopted by the Department of Health.

539  
540 **Work** - The furnishing of all labor, material, equipment, and other incidentals  
541 necessary or convenient for the successful execution of all the duties and  
542 obligations imposed by the contract.

543  
544 **Working Day** - A calendar day in which a Contractor is capable of working four or  
545 more hours with its normal work force, exclusive of:  
546

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556

**(1)** Saturdays, Sundays, and recognized legal State holidays and such other days specified by the contract documents as non-working days,

**(2)** Day in which the Engineer suspends work for four or more hours through no fault of the Contractor.”

**END OF SECTION 101**



1 Make this section a part of the Standard Specifications:  
2

3 **“SECTION 102 - BIDDING REQUIREMENTS AND CONDITIONS**  
4  
5

6 **102.01 Prequalification of Bidders.** Prospective bidders shall be capable of  
7 performing the work for which they are bidding.  
8

9 In accordance with HRS Chapter 103D-310, the Department may require  
10 any prospective bidder to submit answers to questions contained in the 'Standard  
11 Qualification Questionnaire For Prospective Bidders On Public Works Contracts'  
12 furnished by the Department, properly executed and notarized, setting forth a  
13 complete statement of the experience of such prospective bidder and its  
14 organization in performing similar work and a statement of the equipment  
15 proposed to be used, together with adequate proof of the availability of such  
16 equipment. Whenever it appears to the Department, from answers to the  
17 questionnaire or otherwise, that the prospective bidder is not fully qualified and  
18 able to perform the intended work, the Department will, after affording the  
19 prospective bidder an opportunity to be heard and if still of the opinion that the  
20 bidder is not fully qualified to perform the work, refuse to receive or consider any  
21 bid offered by the prospective bidder. All information contained in the answers to  
22 the questionnaire shall be kept confidential. Questionnaire so submitted shall be  
23 returned to the bidders after serving their purpose.  
24

25 No person, firm or corporation may bid where (1) the person, firm, or  
26 corporation, or (2) a corporation owned substantially by the person, firm, or  
27 corporation, or (3) a substantial stockholder or an officer of the corporation, or (4)  
28 a partner or substantial investor in the firm is in arrears in payments owed to the  
29 State or its political subdivisions or is in default as a surety or failure to do  
30 faithfully and diligently previous contracts with the State.  
31

32 **102.02 Contents of Proposal Forms.** The Department will furnish  
33 prospective bidders with proposal forms posted in HlePRO stating:  
34

- 35 (1) The location,
- 36
- 37 (2) Description of the proposed work,
- 38
- 39 (3) The approximate quantities,
- 40
- 41 (4) Items of work to be done or materials to be furnished,
- 42
- 43 (5) A schedule of items, and
- 44
- 45 (6) The time in which the work shall be completed.  
46

47 Papers bound with or attached to the proposal form are part of the  
48 proposal. The bidder shall not detach or alter the papers bound with or attached  
49 to the proposal when the bidder submits its proposal through HlePRO.  
50

51 Also, the bidder shall consider other documents including the plans and  
52 specifications a part of the proposal form whether attached or not.  
53

54 **102.03 (Unassigned).**  
55

56 **102.04 Estimated Quantities.** The quantities shown in the contract are  
57 approximate and are for the comparison of bids only. The actual quantity of work  
58 may not correspond with the quantities shown in the contract. The Department  
59 will make payment to the Contractor for unit price items in accordance with the  
60 contract for only the following:  
61

62 (1) Actual quantities of work done and accepted, not the estimated  
63 quantities; or  
64

65 (2) Actual quantities of materials furnished, not the estimated  
66 quantities.  
67

68 The Department may increase, decrease, or omit each scheduled  
69 quantities of work to be done and materials to be furnished. When the  
70 Department increases or decreases the estimated quantity of a contract item by  
71 more than 15% the Department will make payment for such items in accordance  
72 with Subsection 104.06 - Methods of Price Adjustment.  
73

74 **102.05 Examination of Contract and Site of Work.** The bidder shall  
75 examine carefully the site of the proposed work and contract before submitting a  
76 proposal.  
77

78 By the act of submitting a bid for the proposed contract, the bidder  
79 warrants that:  
80

81 (1) The bidder and its Subcontractors have reviewed the contract  
82 documents and found them free from ambiguities and sufficient for the  
83 purpose intended;  
84

85 (2) The bidder and its workers, employees and subcontractors have  
86 the skills and experience in the type of work required by the contract  
87 documents bid upon;  
88

89 (3) Neither the bidder nor its employees, agents, suppliers or  
90 subcontractors have relied upon verbal representations from the  
91 Department, its employees or agents, including architects, engineers or  
92 consultants, in assembling the bid figure; and

93 (4) The basis for the bid figure are solely on the construction contract  
94 documents.

95  
96 Also, the bidder warrants that the bidder has examined the site of the  
97 work. From its investigations, the bidder acknowledges satisfaction on:  
98

- 99 (1) The nature and location of the work;
- 100
- 101 (2) The character, quality, and quantity of materials;
- 102
- 103 (3) The difficulties to be encountered; and
- 104
- 105 (4) The kind and amount of equipment and other facilities needed;
- 106

107 Subsurface information or hydrographic survey data furnished are for the  
108 bidders' convenience only. The data and information furnished are the product of  
109 the Department's interpretation gathered in investigations made at the specific  
110 locations. These conditions may not be typical of conditions at other locations  
111 within the project area or that such conditions remain unchanged. Also,  
112 conditions found at the time of the subsurface explorations may not be the same  
113 conditions when work starts. The bidder shall be solely responsible for  
114 assumptions, deductions, or conclusions the bidder may derive from the  
115 subsurface information or data furnished.  
116

117 If the Engineer determines that the natural conditions differ from that  
118 originally anticipated or contemplated by the Contractor in the items of  
119 excavation, the State may treat the difference in natural conditions, as falling  
120 within the meaning of Subsection 104.02 – Changes.  
121

122 **102.06 Preparation of Proposal.** The submittal of its proposal shall be on  
123 forms furnished by the Department. The bidder shall specify in words or figures:  
124

- 125 (1) A unit price for each pay item with a quantity given;
- 126
- 127 (2) The products of the respective unit prices and quantities
- 128
- 129 (3) The lump sum amount; and
- 130
- 131 (4) The total amount of the proposal obtained by adding the amounts  
132 of the several items.
- 133

134 The words and figures shall be in ink or typed. If a discrepancy occurs  
135 between the prices written in words and those written in figures, the prices written  
136 in words shall govern.  
137

138 When an item in the proposal contains an option to be made, the bidder  
139 shall choose in accordance with the contract for that particular item.  
140 Determination of an option will not permit the Contractor to choose again.

141  
142 The bidder shall sign the proposal properly in ink. A duly authorized  
143 representatives of the bidder or by an agent of the bidder legally qualified and  
144 acceptable to the Department shall sign, including one or more partners of the  
145 bidder and one or more representatives of each entity comprising a joint venture.

146  
147 When an agent, other than the officer(s) of a corporation authorized to  
148 sign contracts for the corporation or a partner of a partnership, signs the  
149 proposals, a 'Power of Attorney' shall be on file with the Department or submitted  
150 with the proposal. Otherwise, the Department will reject the proposal as irregular  
151 and unauthorized.

152  
153 The bidder shall submit acceptable evidence of the authority of the  
154 partner, member(s) or officer(s) to sign for the partnership, joint venture, or  
155 corporation respectively with the proposal. Otherwise, the Department will reject  
156 the proposal as irregular and unauthorized.

157  
158 **102.07 Irregular Proposals.** The Department may consider proposals  
159 irregular and may reject the proposals for the following reasons:

- 160  
161 (1) The proposal is a form not furnished by the Department, altered, or  
162 detached;
- 163  
164 (2) The proposal contains unauthorized additions, conditions, or  
165 alternates. Also, the proposal contains irregularities that may tend to  
166 make the proposal incomplete, indefinite, or ambiguous to its meaning;
- 167  
168 (3) The bidder adds provisions reserving the right to accept or reject an  
169 award. Also, the bidder adds provisions into a contract before an award;
- 170  
171 (4) The proposal does not contain a unit price for each pay item listed  
172 except authorized optional pay items; and
- 173  
174 (5) Prices for some items are out of proportion to the prices for other  
175 items.
- 176  
177 (6) If in the opinion of the Director, the bidder and its listed  
178 subcontractors do not have the Contactor's licenses or combination of  
179 Contractor's licenses necessary to complete the work.
- 180

181 Where the prospective bidder is bidding on multiple projects  
182 simultaneously and the proposal limits the maximum gross amount of awards  
183 that the bidder can accept at one bid letting, the proposal is not irregular if the  
184 limit on the gross amount of awards is clear, and the Department selects the  
185 awards that can be given.

186  
187 **102.08 Proposal Guaranty.** The Department will not consider a proposal of  
188 \$25,000 or more unless accompanied by:

189  
190 (1) A deposit of legal tender; or

191  
192 (2) A valid surety bid bond, underwritten by a company licensed to  
193 issue bonds in the State of Hawaii, in the form and composed,  
194 substantially, with the same language as provided herewith and signed by  
195 both parties; or

196  
197 (3) A certificate of deposit, share certificate, cashier's check,  
198 treasurer's check, teller's check, or official check drawn by, or a certified  
199 check accepted by and payable on demand to the State by a bank,  
200 savings institution, or credit union insured by the Federal Deposit  
201 Insurance Corporation (FDIC) or the National Credit Union Administration  
202 (NCUA).

203  
204 (a) The bidder may use these instruments only to a maximum of  
205 \$100,000.

206  
207 (b) If the required security or bond amount totals over \$100,000  
208 more than one instrument not exceeding \$100,000 each and issued  
209 by different financial institutions shall be acceptable.

210  
211 (c) The instrument shall be made payable at sight to the  
212 Department.

213  
214 (d) If bidder elects options (a) or (c) above for its bid security,  
215 said bid security shall be in its original form and shall be submitted  
216 before the bid deadline to the Contract Office, Department of  
217 Transportation, Aliiimoku Hale, 869 Punchbowl Street, Room 105,  
218 Honolulu, Hawaii 96813. Original surety bid bonds do not need to  
219 be submitted to the Contracts Office. Bidders are reminded that a  
220 copy of its surety bid bond shall be included with its bid submitted  
221 and uploaded to HlePRO.

222  
223 In accordance with HRS Chapter 103D-323, the above shall be in a sum  
224 not less than 5% of the amount bid.

226 **102.09 Delivery of Proposal.** Bidders shall submit and upload the complete  
227 proposal to HlePRO prior to the bid opening date and time. Proposals received  
228 after said due date and time shall not be considered. Any additional support  
229 documents explicitly designated as confidential and/or proprietary shall be  
230 uploaded as a separate file to HlePRO. Bidders shall not include confidential  
231 and/or proprietary documents with the proposal. The record of each bidder and  
232 respective bid shall be open to public inspection. Original (wet ink, hard copy)  
233 proposal documents are not required to be submitted. Contract award shall be  
234 based on evaluation of proposals submitted and uploaded to HlePRO.

235

236 **FAILURE TO UPLOAD THE COMPLETE PROPOSAL TO HlePRO SHALL BE**  
237 **GROUND FOR REJECTION OF THE BID.**

238

239 If there is a conflict between the specification document and the HlePRO  
240 solicitation, the specifications shall govern and control, unless otherwise  
241 specified

242

243 **102.10 Withdrawal or Revision of Proposals.** Bids may be modified or  
244 withdrawn prior to the bid opening date and time. Withdrawal or revision of  
245 proposal shall be completed, and submitted and uploaded to HlePRO prior to the  
246 bid opening date and time.

247

248 **102.11 Public Opening of Proposals.** Not applicable.

249

250 **102.12 Disqualification of Bidders.** The Department may disqualify a bidder  
251 and reject its proposal for the following reasons:

252

253 (1) Submittal of more than one proposal whether under the same or  
254 different name.

255

256 (2) Evidence of collusion among bidders. The Department will not  
257 recognize participants in collusion as bidders for any future work of the  
258 Department until such participants are reinstated as qualified bidders.

259

260 (3) Lack of proposal guaranty.

261

262 (4) Submittal of an unsigned or improperly signed proposal.

263

264 (5) Submittal of a proposal without a listing of subcontractors or  
265 containing only a partial or incomplete listing of subcontractors.

266

267 (6) Submittal of an irregular proposal in accordance with Subsection  
268 102.07 - Irregular Proposals.

269

270 (7) Evidence of assistance from a person who has been an employee  
271 of the agency within the preceding two years and who participated while in

272 State office or employment in the matter with which the contract is directly  
273 concerned, pursuant to HRS Chapter 84-15.

274  
275 (8) Suspended or debarred in accordance with HRS Chapter 104-25.

276  
277 (9) Failure to complete the prequalification questionnaire, if applicable.

278  
279 (10) Failure to attend the mandatory pre-bid meeting, if applicable.

280  
281 **102.13 Material Guaranty.** The successful bidder may be required to furnish  
282 a statement of the composition, origin, manufacture of materials, and samples.

283  
284 **102.14 Substitution of Materials and Equipment Before Bid Opening.** See  
285 Subsection 106.13 for Substitution Of Materials and Equipment After Bid  
286 Opening.

287

288 **(A) General.** When brand names of materials or equipment are  
289 specified in the contract documents, they are to indicate a quality, style,  
290 appearance, or performance and not to limit competition. The bidder shall  
291 base its bid on one of the specified brand names unless alternate brands  
292 are qualified as equal or better in an addendum. Qualification of such  
293 proposed alternate brands shall be submitted via email to the Contact  
294 person listed in HlePRO for the solicitation and also post a question in  
295 HlePRO under the question/answer tab referencing the email with the  
296 request. The request must be posted in HlePRO no later than 14  
297 calendar days before the bid opening date, not including the bid opening  
298 date.

299  
300 An addendum will be issued to inform all prospective bidders of any  
301 accepted substitution in accordance with Subsection 102.17 – Addenda.

302  
303 **(B) Statement of Variances.** The statement of variances must list all  
304 features of the proposed substitution that differ from the contract  
305 documents and must further certify that the substitution has no other  
306 variant features. The brochure and information submitted shall be clearly  
307 marked showing make, model, size, options, and any other features  
308 requested by the Engineer and must include sufficient evidence to  
309 evaluate each feature listed as a variance. A request will be denied if  
310 submitted without sufficient evidence. If after installing the substituted  
311 product, an unlisted variance is discovered, the Contractor shall  
312 immediately replace the product with a specified product at no increase in  
313 contract price and contract time.

314  
315 **(C) Substitution Denial.** Any substitution request not complying with  
316 the above requirements will be denied.

317  
318 **102.15 Preferences.** Preferences shall not apply to this project.

319  
320 **102.16 Certification for Safety and Health Program for Bids in excess of**  
321 **\$100,000.** In accordance with HRS Chapter 396-18, the bidder or offeror, by  
322 signing and submitting this proposal, certifies that a written safety and health plan  
323 for this project will be available and implemented by the notice to proceed date  
324 for this project. Details of the requirements of this plan may be obtained from the  
325 State Department of Labor and Industrial Relations, Occupational Safety and  
326 Health Division (HIOSH).

327



328 **102.17 Addenda.** Addenda issued shall become part of the contract  
329 documents. Addenda to the bid documents will be provided to all prospective  
330 bidders via HlePRO. Each addendum shall be an addition to the contract  
331 documents. The terms and requirements of the bid documents (i.e., drawings,  
332 specifications and other bid and contract documents) cannot be changed prior to  
333 the bid opening except by a duly issued addendum.”

334

335

336

**END OF SECTION 102**

1 Make this section a part of the Standard Specifications:  
2

3 **“SECTION 103 - AWARD AND EXECUTION OF CONTRACT**  
4

5  
6 **103.01 Consideration of Proposals.** The Department will compare the  
7 proposals in terms of the summation of the products of the approximate quantities  
8 and the unit bid prices after the submittal date and time established in HlePRO. If  
9 a discrepancy occurs between the unit bid price and the bid price, the unit bid price  
10 shall govern.

11  
12 The “Buy America” provisions in the Surface Transportation Assistance Act  
13 of 1982 is applicable to Federal-aid projects. Bidders may submit a bid based  
14 upon the furnishing and use of domestic steel or foreign steel. Manufacturing  
15 processes for domestic steel shall occur in the United States.

16  
17 The Department reserves the right to reject proposals, waive technicalities  
18 or advertise for new proposals, if the rejection, waiver, or new advertisement favors  
19 the Department.  
20

21 **103.02 Award of Contract.** The award of contract, if it be awarded, will be  
22 made within 60 calendar days after the opening of bids, to the lowest responsible  
23 and responsive bidder whose proposal complies with all the prescribed  
24 requirements. The Department may request the bidders to allow the Department  
25 to consider the bids for the issuance of an award beyond the 60-calendar day  
26 period. Agreement to such an extension must be made by a bidder in writing. Only  
27 bidders who have agreed to such an extension will be eligible for the award.  
28

29 **(1) Requirement for Award.** The Bidder, as proof of compliance with  
30 the requirements of section 103D-310(c), HRS, upon award of a  
31 contract made pursuant to section 103D-302, HRS, shall provide the  
32 documents listed below. The documents shall be submitted promptly  
33 to the Department. If a valid certificate/clearance is not submitted on  
34 a timely basis upon award, the Bidder may be deemed non-  
35 responsible. See also Subsection 108.03 – Preconstruction Data  
36 Submittal.

37  
38 **(A) Tax Clearance.** Pursuant to §103D-310(c), 103-53 and 103D-328,  
39 HRS, the bidder shall submit a tax clearance certificate from the State of  
40 Hawaii Department of Taxation (DOTAX) and the Internal Revenue Service  
41 (IRS), subject to section 103D-328, HRS, current within six months of  
42 issuance date.  
43

44 FORM A6, TAX CLEARANCE CERTIFICATE, is available at the  
45 following website:  
46

47 <https://tax.hawaii.gov/>

48  
49 To receive DOTAX Forms by fax or mail, phone  
50 (808) 587-4242 or 1-800-222-3229.

51  
52 The application for the Tax Clearance Certificate is the responsibility  
53 of the bidder. Bidder shall submit directly to the DOTAX or IRS. The  
54 approved certificate may then be submitted to the Department.

55  
56 **(B) DLIR Certificate of Compliance.** Pursuant to §103D-310(c), HRS,  
57 the bidder shall submit a certificate of compliance for Hawaii Employment  
58 Security Law (Chapter 383, HRS), Workers' Compensation Law (Chapter  
59 386, HRS), Temporary Disability Insurance (Chapter 392, HRS), and  
60 Prepaid Health Care Act (Chapter 393, HRS), from the State of Hawaii  
61 Department of Labor and Industrial Relations (DLIR), current within six  
62 months of issuance date.

63  
64 FORM LIR#27, APPLICATION FOR CERTIFICATE OF  
65 COMPLIANCE WITH SECTION 3-122-112, HAR, is available at the  
66 following website:

67 <http://labor.hawaii.gov/>

68  
69  
70 Contact the DLIR Unemployment Insurance Division at (808) 586-8926 for  
71 additional information.

72  
73 Inquiries regarding the status of a LIR#27 Form may be made by calling the  
74 DLIR Disability Compensation Division at (808) 586-9200.

75  
76 The application for the Certificate of Compliance is the responsibility of the  
77 bidder. Bidder shall submit directly to the DLIR. The approved certificate  
78 may then be submitted to the Department.

79  
80 **(C) DCCA Certificate of Good Standing.** Pursuant to §103D-310(c),  
81 HRS, the bidder shall submit a certificate of good standing from the  
82 business registration division (BREG) of the State of Hawaii Department of  
83 Commerce and Consumer Affairs (DCCA), current within six months of  
84 issuance date, to demonstrate it is either:

- 85  
86 **(1)** Incorporated or organized under the laws of the State; or  
87  
88 **(2)** Registered to do business in the State as a separate branch or  
89 division that is capable of fully performing under the contract.

90  
91 A Hawaii business that is a sole proprietorship, is not required to  
92 register with the BREG, and therefore not required to submit a

93 certificate of good standing. Bidders are advised of costs associated  
94 with registering and obtaining a Certificate of Good Standing from  
95 the DCCA.

96  
97 To purchase a CERTIFICATE OF GOOD STANDING, go to On-Line  
98 Services at the following website:

99  
100 <http://cca.hawaii.gov/>

101  
102 The application for the Certificate of Good Standing is the  
103 responsibility of the bidder. Bidder shall submit directly to the DCCA.  
104 The approved certificate may then be submitted to the Department.

105  
106 **(D) Hawaii Compliance Express (HCE).** In lieu of the certificates  
107 referenced in subsection A, B, and C, the bidder may make available proof  
108 of compliance through a state procurement office designated certification  
109 process.

110  
111 **103.03 Cancellation of Award.** The Department reserves the right to cancel  
112 the award of contracts before the execution of said contract by the parties. There  
113 will be no liability to the awardee and to other bidders.

114  
115 **103.04 Return of Proposal Guaranty.** The Department will return the proposal  
116 guaranties, except those of the three lowest bidders, after the Department checks  
117 the proposals. The Department will return the proposal guaranties of the remaining  
118 two lowest bidders, not awarded the contract, within five working days following  
119 the execution of the contract. The Department will return the successful bidder's  
120 proposal guaranty after the successful bidder furnishes a bond and executes the  
121 contract.

122  
123 **103.05 Requirement of Contract Bond.** At the time of execution of the  
124 contract, the successful bidder shall file a good and sufficient performance bond  
125 and a payment bond on the forms furnished by the Department conditioned for the  
126 full and faithful performance of the contract in accordance with the terms and intent  
127 thereof and for the prompt payment to all others for all labor and material furnished  
128 by them to the bidder and used in the prosecution of the work provided for in the  
129 contract. The bonds shall be of an amount equal to 100 percent of the amount of  
130 the contract price and include 5 percent of the contract amount estimated to be  
131 required for extra work. The bidder shall limit the acceptable performance and  
132 payment bonds to the following:

133  
134 **(a)** Legal tender;

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136 **(b)** Surety bond underwritten by a company licensed to issue bonds in  
137 the State of Hawaii; or

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(c) A certificate of deposit; share certificate; cashier's check; treasurer's check, teller's check drawn by or a certified check accepted by and payable on demand to the State by a bank savings institution or credit union insured by the Federal Deposit Insurance Corporation (FDIC) or the National Credit Union Administration (NCUA).

1. The bidder may use these instruments only to a maximum of \$100,000.
2. If the required security or bond amount totals over \$100,000 more than one instrument not exceeding \$100,000 each and issued by different financial institutions shall be acceptable.

Such bonds shall also by the terms insure to the benefit of any and all persons entitled to file claims for labor done or material furnished in the work so as to give them a right of action as contemplated by HRS Section 103D-324.

**103.06 Execution of the Contract.** The contract bond and HRS Chapter 104 - Compliance Certificate, similar to a copy of the same annexed hereto, shall be executed by the successful bidder and returned within ten days after the award of the contract or within such further time as the Director may allow after the bidder has received the contract for execution.

The contract shall not bind the Department unless said parties execute the contract and the Director of Finance endorses the bidder's certificate in accordance with HRS Section 103-39.

**103.07 Failure to Execute Contract.** Failure to execute the contract and file acceptable bonds shall be cause for the cancellation of the award in accordance with Subsection 103.06 - Execution of the Contract. Also, the Contractor forfeits the proposal guaranty which becomes the property of the Department. This is not a penalty, but liquidated damages sustained by the State. The Department may then make award to the next lowest responsible and responsive bidder or the Department may readvertise and construct the work under contract."

**END OF SECTION 103**

**SECTION 104 – SCOPE OF WORK**

Make the following amendment to said Section:

**(I) Amend Section 104.11(B) Contractor’s Duty to Locate and Protect Utility** by adding the following after line 291:

“(4) The Contractor shall contact the Hawaii One Call Center at 811 prior to any execution in a public right of way or on private property.”

**(II) Amend Section 104.06 Methods of Price Adjustment** as follows:

**“104.06 Methods of Price Adjustment.** Any adjustment in the contract price pursuant to a change or claim shall be made in one or more of the following ways:

(1) By written agreement on a fixed price adjustment before commencement of the pertinent performance.

(2) By unit prices or other price adjustments specified in the contract or subsequently agreed upon before commencement of the pertinent performance.

(3) The Engineer may base the adjustment for a lump sum item on a calculated proportionate unit price. The Engineer will calculate the proportionate unit price by dividing the original contract lump sum price by the actual or original estimated quantity established by the contract documents.

(4) In any other lawful manner as the parties may mutually agree upon before commencement of the pertinent performance.

(5) At the sole option of the Engineer, work may be paid for on a force account basis in accordance with Subsection 109.06 - Force Account Provisions and Compensation.

(6) By the cost variations attributable to the events or situations with adjustment of profit and fee, all as specified in the contract or subsequently agreed upon before commencement of the pertinent performance.

(7) In the absence of agreement by the parties:

**(A)** For change orders with value not exceeding \$50,000 by documented actual costs of the work, allowing for overhead and profit as set forth in Section 109.05 - Allowances for Overhead and Profit. A change order shall be issued within fifteen days of

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submission by the contractor of proper documentation of completed force account work, whether periodic (conforming to the applicable billing cycle) or final. The Engineer shall return any documentation that is defective, to the contractor within fifteen days after receipt, with a statement identifying the defect; or

**(B)** For change orders with value exceeding \$50,000 by a unilateral determination by the Engineer of the costs attributable to the events or situations with adjustment of profit and fee, all as computed by the Engineer in accordance with applicable sections of HAR Chapters 3-123 and 3-126, and Section 109.05 - Allowances for Overhead and Profit. When a unilateral determination has been made, a unilateral change order shall be issued within ten days. Upon receipt of the unilateral change order, if the contractor does not agree with any of the terms or conditions, or the adjustment or nonadjustment of the contract time or contract price, the contractor shall file a notice of intent to claim within thirty days after the receipt of the written unilateral change order. Failure to file a protest within the time specified shall constitute agreement on the part of the contractor with the terms, conditions, amounts, and adjustment or nonadjustment of the contract time or the contract price set forth in the unilateral change order.

A contractor shall be required to submit cost or pricing data if any adjustment in contract price is subject to the provisions of HAR Chapter 3-122, Subchapter 15. A fully executed change order or other document permitting billing for the adjustment in price under any method listed in Subsections 104.06(1) through 104.06(7) shall be issued within ten days after agreement on the method of adjustment."

END OF SECTION 104

1   **SECTION 105 – CONTROL OF WORK**  
2

3     Make the following amendments to said Section:  
4

5     **(I)**     Amend **105.01 – Authority** to read as follows:  
6

7     **“105.01 Authority.**  
8

9             **(A) Authority of the Engineer.** The Engineer is the representative of  
10            the Director and has all the authority of the Director with respect to the  
11            contract. The Engineer will make decisions on all questions that may  
12            arise regarding the contract, such as, but not limited to:

- 13                             **(1)**     Interpretation of the contract documents.
- 14                             **(2)**     Acceptability of the materials furnished and work performed.
- 15                             **(3)**     Manner of performance and rate of progress of the work.
- 16                             **(4)**     Acceptable fulfillment of the contract on the part of the  
17                             Contractor.
- 18                             **(5)**     Compensation under the contract.

19                             The Engineer’s decisions on questions, claims, and disputes will be  
20                             final and conclusive subject to Subsection 107.15 – Disputes and Claims.  
21

22                             The Engineer may delegate specific authority to act for the  
23                             Engineer to a specific person or persons. Such delegation of authority  
24                             shall be established in writing and shall become effective upon delivery to  
25                             the Contractor.  
26

27                             **(B) Authority of the Inspectors.** Inspectors, as a representative of  
28                             the Engineer or other agencies, will inspect the work done and materials  
29                             furnished. Such inspection may extend to the preparation, fabrication or  
30                             manufacture of the materials to be used. The Inspector does not have  
31                             authority vested in the Engineer unless specifically delegated in writing.  
32                             The Inspector may not alter or waive the provisions of the contract, issue  
33                             instructions contrary to the contract, or act as agent or representative of  
34                             the Contractor.  
35

36                             Failure of an Inspector at any time to reject non-conforming work  
37                             shall not be considered a waiver of the State’s right to require work in strict  
38                             conformity with the contract documents as a condition of final acceptance.  
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41



46 **(C) Authority of the Consultant and Construction Management.**  
47 The State may engage consultants and construction managements to  
48 perform duties in connection with the work. Unless otherwise specified in  
49 writing to the Contractor, such retained consultants and construction  
50 managements shall have no greater authority than an Inspector.”  
51

52 **(II) Amend Subsection 105.02 - Submittals** by revising the first paragraph  
53 from lines 52 to 61 to read as follows:  
54

55 **“105.02 Submittals.** The contract contains the description of various items  
56 that the Contractor must submit to the Engineer for review and acceptance. The  
57 Contractor shall review all submittals for correctness, conformance with the  
58 requirements of the contract documents and completeness before submitting  
59 them to the Engineer. The submittal shall indicate the contract items and  
60 specifications subsections for which the submittal is provided. The submittal  
61 shall be legible and clearly indicate what portion of the submittal is being  
62 submitted for review. The Contractor shall provide six copies of the required  
63 submissions at the earliest possible date.  
64

65 Any and all submittals, reports, requests, claims, notices, complaints, and  
66 concerns under the contract shall be processed through the Construction  
67 Manager, DOT Project Manager, and OHA Project Manager.”  
68

69 **(III) Amend Subsection 105.08 (A) - Furnishing Drawings and Special**  
70 **Provisions** to read as follows:  
71

72 **“(A) Furnishing Drawings and Special Provisions.** The State will  
73 furnish the Contractor an electronic set of the special provisions and  
74 plans.” The Contractor shall have and maintain at least one set of plans  
75 and specifications on the work site, at all times.”  
76

77 **(IV) Supplement Subsection 105.08 – Coordination Between the**  
78 **Contractor and the State** by adding the following paragraph after line 272:  
79

80 **“(C) Other Parties.** The Contractor shall coordinate all the necessary  
81 work for temporary utility services, permanent service, and appurtenances  
82 with the appropriate agencies, including but not limited to the Board of  
83 Water Supply, Hawaiian Electric Company, City and County of Honolulu,  
84 and Department of Transportation.  
85

86 The Contractor shall also coordinate with Hoomaluhia Botanical Garden  
87 for all appropriate work within the park including but not limited to  
88 mobilization and road closures.”  
89

90 **(V) Supplement Subsection 105.10 – Construction Stakes, Lines and**  
91 **Grades** by adding the following paragraph after line 316:  
92

93           **“(C) Surveying Services.** Upon completion, the CONTRACTOR shall  
94 prepare an as-built plan for the project site in which the finished grades  
95 are certified by a Registered Land Surveyor. Six (6) copies of the as-built  
96 plan shall be submitted to the Construction Manager and Engineer. The  
97 as-built plan shall be incidental to the contract. No separate payment shall  
98 be made.  
99

100           Any surveying services required shall be the responsibility of the  
101 CONTRACTOR and considered incidental to the scope of work under this  
102 contract and therefore covered under the terms of this contract. No  
103 separate payment shall be made”  
104

105   **(VI) Amend Subsection 105.14(D) – No Designated Storage Area** from lines  
106 421 to 432 to read as follows:  
107

108           **“(D) No Designated Storage Area.** If no storage area is designated  
109 within the contract documents, materials and equipment may be stored  
110 anywhere within the State highway right-of-way, provided such storage  
111 and access to and from such site, within the sole discretion of the  
112 Engineer, does not create a public or traffic hazard or an impediment to  
113 the movement of traffic.”  
114

115   **(VII) Amend 105.16(A) – Subcontract Requirements** by adding the following  
116 paragraph after line 483:  
117

118           The 'Specialty Items' of work for this project are as follows:  
119

120 <b>Section</b>	<b>Description</b>
121 <b>No.</b>	
122	
123           401	Contract Item No. 401.0100 under Section 401 – Hot Mix 124 Asphalt Pavement
125	
126           421	Contract Item No. 421.0100 under Section 421 – Permeable 127 Surface
128	
129           608	Contract Item No. 608.1000 under Section 608 – Modular 130 Storage Containers
131	
132           609	Contract Item No. 609.1000 under Section 609 – Precast 133 Concrete Restroom Building
134	
135           624	Contract Item No. 624.0100 under Section 624 – Water 136 System
137	

138                    625            Contract Item No. 625.0100 under Section 625 – Sewer  
139                    System

140  
141                    645            Contract Item No. 645.0100 under Section 645 – Work Zone  
142                    Traffic Control”

143  
144    **(VIII) Amend Subsection 105.16(B) – Substituting Subcontractors** from line  
145    487 to line 494 to read:

146  
147                    **“(B) Substituting Subcontractors.** Under HRS Chapter 103D-302, the  
148                    Contractor is required to list the names of persons or firms to be engaged  
149                    by the Contractor as a subcontractor or joint contractor in the performance  
150                    of the contract. No subcontractor may be added or deleted, unless  
151                    authorized by the Engineer. Substitutions will be allowed only if the  
152                    subcontractor:

153  
154    **(IX) Insert section 105.18 – Record Drawings** to read as follows:

155  
156                    **“105.018 Record Drawings.** Field Posted As-Built Drawings, the  
157                    intent of which is to record the actual in-place construction so that any future  
158                    renovations or tie-ins can be anticipated accurately, shall be prepared and  
159                    submitted by the Contractor. To accomplish this, the following procedure shall  
160                    be followed by the Contractor:

161  
162                    **(A)**A full-size set of field posted as-built drawings shall be neatly maintained  
163                    at the job site. All changes made by addenda, submittals, shop  
164                    drawings, change orders, or field adjustments to alignments, elevations  
165                    and dimensions stipulated on the drawings and authorizations by the  
166                    Construction Manager shall be clearly and accurately recorded by the  
167                    Contractor on this set of field posted as-built drawings.

168  
169                    **(B)**Changes shall be recorded immediately after they are constructed in  
170                    place to assure they are not forgotten. Record the changes using  
171                    erasable colored pencil and refer to the authorizing document (RFI,  
172                    Shop Drawing, Field Modification) or Change Order.

173  
174                    The following color codes shall be used to document these changes on  
175                    the drawings:

176                                    Additions -            RED  
177                                    Deletions -            GREEN  
178                                    Comments -            BLUE  
179                                    Dimensions-            GRAPHITE\*

180  
181                    \* Legibly mark to record actual depths, horizontal and vertical location of  
182                    utilities and structures relative to permanent surface improvements.

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184                    The field posted as-built drawings shall be made available to the  
185                    Construction Manager and Engineer during normal working hours at the

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Contractor's field office so that its clarity and accuracy can be monitored.

A monthly log of all the record changes shall be submitted with each progress payment request. The Contractor shall not be entitled to any progress payment until he has provided a completed log which accurately reflects the work that was done.

The log shall identify each revision by drawing number and a description of the revision. The Contractor and Construction Manager shall schedule a day each month to meet and review the log and drawings together.

- (C) The words "FIELD POSTED AS-BUILT" shall be labeled on the title sheet and certified by the CONTRACTOR as to accuracy and completeness as shown below:

FIELD POSTED AS-BUILT  
Certified By: \_\_\_\_\_ Date:  
\_\_\_\_\_  
Contractor (Include name and company)

- (D) The words "FIELD POSTED AS-BUILT" shall be labeled on all sheets in the margin space to the right of the sheet number written from the bottom upward.
- (E) The Index to Drawings shall be revised with the label "FIELD POSTED AS-BUILT" for each sheet. The index shall conclude with the following note: "A COMPLETE SET CONTAINS \_\_\_ SHEETS" with the total number of sheets comprising the set to be placed in the blank.
- (F) Any "FIELD POSTED AS-BUILT" drawing which the Construction Manager determines does not accurately record the deviation, or is not legible, will be rejected and returned to the Contractor for corrections. Drawings that are ripped or has excessive eraser marks from changes shall be replaced with a clean set of drawings.
- (G) Submit the set of approved "FIELD POSTED AS-BUILT" drawings to the Engineer no later than five (5) calendar days prior to the date of final inspection.
- (H) "RECORD DRAWINGS" will be prepared by the design consultant using the "FIELD POSTED AS-BUILT." Both sets of drawings will be sent to the Contractor for review and approval. The Contractor will have one (1) week to review and approve the drawings. After the Contractor is satisfied the Record Drawings are correct, the Contractor shall certify changes by signing the tracings.

**END OF SECTION 105**

1 Make the following amendment to said Section:  
2

3 **SECTION 106 – MATERIAL RESTRICTIONS AND REQUIREMENTS**  
4  
5

6 **(I)** Amend **106.05(B) – Deviation** by revising the third sentence from line 106  
7 to 108 to read as follows:  
8

9 “Any deviations will be subject to Subsection 102.14 – Substitution of  
10 Materials and Equipment Before Bid Opening.  
11

12 **(II)** Amend **Section 106 – Material Restrictions and Requirements** by  
13 adding the following after line 334  
14

15 **106.14 Construction Materials.**  
16

17 **(A)** Buy America requirements apply to the following construction  
18 materials if permanently incorporated into the project unless otherwise  
19 specified:  
20

- 21 **(1)** Non-ferrous metals.
- 22 **(2)** Plastic and polymer-based products such as:
  - 23 **(a)** High Density Polyethylene
  - 24 **(b)** Polyvinylchloride.
  - 25 **(c)** Composite building materials.
  - 26 **(d)** Polymers used in fiber optic cables.
- 27 **(3)** Glass (including optic glass).
- 28 **(4)** Fiber optic cable (including drop cable).
- 29 **(5)** Optical fiber.
- 30 **(6)** Lumber.
- 31 **(7)** Engineered wood.
- 32 **(8)** Drywall.
- 33 **(9)** Manufactured products containing steel and iron material  
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Where one or more of these construction materials have been combined by a manufacturer with other materials through a manufacturing process, Buy America requirements do not apply unless otherwise specified. Furnish construction materials to be incorporated into the work with certificates of compliance with each project delivery. Manufacturer's certificate of compliance must identify where the construction material was manufactured and attest specifically to Buy America compliance. All manufacturing processes for these materials must occur in the United States.

Non-ferrous metals, such as aluminum, copper, lead, nickel, tin, titanium, zinc, brass, and bronze, are subject to Buy America requirements if used as construction materials in various shapes, sizes, and gauges including channels, bars, pipe, couplers, fittings, bolts, nuts, and products made of 100 percent of the non-ferrous metal. If the non-ferrous metal is combined with other construction materials during a manufacturing process, the product is considered a manufactured product and not subject to Buy America requirements.

One hundred percent plastic or polymer materials are subject to Buy America requirements. This includes high-density polyethylene or polyvinyl chloride pipe and fittings. Plastics or polymers that are combined with other construction materials in a manufacturing process are considered a manufactured product and not subject to these requirements.

Glass construction materials subject to Buy America requirements are composed solely of glass. This includes glass beads incorporated into pavement striping and 100 percent Fiberglass material.

Fiber optic cable (including drop cable) and optical fiber are subject to Buy America requirements.

Lumber products including engineered lumber are subject to Buy America requirements.

Manufactured products containing steel or iron including pre-cast concrete products are subject to Buy America requirements.

**END OF SECTION 106**

1           **SECTION 107 - LEGAL RELATIONS AND RESPONSIBILITY TO PUBLIC**

2  
3           Make the following amendments to said Section:

4  
5           **(I)**       Amend **Section 107.01 Insurance Requirements** from lines 5 to 81 to  
6           read as follows:

7  
8           **“(A) Obligation of Contractor.** Contractor shall not commence any  
9           work until it obtains, at its own expense, all required insurance described  
10          herein. Such insurance shall be provided by an insurance company  
11          authorized by the laws of the State to issue such insurance in the State of  
12          Hawaii. Coverage by a “Non-Admitted” carrier is permissible provided the  
13          carrier has a Best’s Rating of “A-VII” or better. The Contractor shall  
14          maintain and ensure all insurance policies are current for the full period of  
15          the contract until final acceptance of the work by the State.

16  
17          The Certificate of Insurance shall contain: a clause that it is agreed  
18          that any insurance maintained by the State of Hawaii will apply in excess  
19          of, and not contribute with, insurance provided by this policy; and shall be  
20          accompanied by endorsement form CG2010 or equivalent naming the State  
21          as an additional insured to the policy which status shall be maintained for  
22          the full period of the contract until final acceptance of the work by State.

23  
24          The Contractor shall obtain all required insurance as part of the  
25          contract price. Where there is a requirement for the State of Hawaii and its  
26          officers and employees to be named as additional insureds under any  
27          Contractor’s insurance policy, before the State of Hawaii issues the Notice  
28          to Proceed, the Contractor shall obtain and submit to the Engineer a  
29          Certificate of Insurance and a written policy endorsement that confirms the  
30          State of Hawaii and its officers and employees are additional insureds for  
31          the specific State project number and project title under such insurance  
32          policies. The written policy endorsement must be issued by the insurance  
33          company insuring the Contractor for the specified policy type or by an agent  
34          of such insurance company who is vested with the authority to issue a  
35          written policy endorsement. The insurer’s agent shall also submit written  
36          confirmation of such authority to bind the insurer. Any delays in the  
37          issuance of the Notice to Proceed attributed to the failure to obtain the proof  
38          of the State of Hawaii and its officers and employees’ additional insured  
39          status shall be charged to the Contractor.

40  
41          A mere Certificate of Insurance issued by a broker who represents  
42          the Contractor (but not the Contractor’s insurer), or by any other party who  
43          is not authorized to contractually name the State as an additional insured  
44          under the Contractor’s insurance policy, is not sufficient to meet the  
45          Contractor’s insurance obligations.

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Certificates shall contain a provision that coverages being certified will not be cancelled or materially changed without giving the Engineer at least thirty (30) days prior written notice. Contractor will immediately provide written notice to the Director should any of the insurance policies evidenced on its Certificate of Insurance form be cancelled, reduced in scope or coverage, or not renewed upon expiration. Should any policy be canceled before final acceptance of the work by the State, and the Contractor fails to immediately procure replacement insurance as specified, the State, in addition to all other remedies it may have for such breach, reserves the right to procure such insurance and deduct the cost thereof from any money due or to become due to the Contractor.

Nothing contained in these insurance requirements is to be construed as limiting the extent of Contractor's responsibility for payment of damages resulting from its operations under this contract, including the Contractor's obligation to pay liquidated damages, nor shall it affect the Contractor's separate and independent duty to defend, indemnify and hold the State harmless pursuant to other provisions of this contract. In no instance will the State's exercise of an option to occupy and use completed portions of the work relieve the Contractor of its obligation to maintain the required insurance until the date of final acceptance of the work.

All insurance described herein shall be primary and cover the insured for all work to be performed under the contract, all work performed incidental thereto or directly or indirectly connected therewith, including but not limited to traffic detour work, barricades, warnings, diversions, lane closures, and other work performed outside the work area and all change order work.

The Contractor shall, from time to time, furnish the Engineer, when requested, satisfactory proof of coverage of each type of insurance required covering the work. Failure to comply with the Engineer's request may result in suspension of the work, and shall be sufficient grounds to withhold future payments due the Contractor and to terminate the contract for Contractor's default.

**(B) Types of Insurance.** Contractor shall purchase and maintain insurance described below which shall provide coverage against claims arising out of the Contractor's operations under the contract, whether such operations be by the Contractor itself or by any subcontractor or by anyone directly or indirectly employed by any of them or by anyone for whose acts any of them may be liable.

**(1) Workers' Compensation.** The Contractor shall obtain worker's compensation insurance for all persons whom they employ in carrying out the work under this contract. This insurance shall be in strict conformity with the requirements of the most current and



92 applicable State of Hawaii Worker's Compensation Insurance laws  
93 in effect on the date of the execution of this contract and as modified  
94 during the duration of the contract.  
95

96 **(2) Auto Liability.** The Contractor shall obtain Auto Liability  
97 Insurance covering all owned, non-owned and hired autos with a  
98 Combined single Limit of not less than \$1,000,000 per occurrence  
99 for bodily injury and property damage with the State of Hawaii named  
100 as additional insured. Refer to SPECIAL CONDITIONS for any  
101 additional requirements.  
102

103 **(3) General Liability.** The Contractor shall obtain General  
104 Liability insurance with a limit of not less than \$2,000,000 per  
105 occurrence and in the Aggregates for each of the following:  
106

- 107 (a) Products - Completed/Operations Aggregate,
- 108
- 109 (b) Personal & Advertising Injury, and
- 110
- 111 (c) Bodily Injury & Property Damage  
112

113 The General Liability insurance shall include the State as an  
114 Additional Insured. The required limit of insurance may be provided  
115 by a single policy or with a combination of primary and excess  
116 policies. Refer to SPECIAL CONDITIONS for any additional  
117 requirements.  
118

119 **(4) Builders Risk For All Work.** The Contractor shall take out  
120 a policy of builder's risk insurance for the full replacement value of  
121 the project work; from a company licensed or otherwise authorized  
122 to do business in the State of Hawaii; naming the State as an  
123 additional insured under each policy; and covering all work, labor,  
124 and materials furnished by such Contractor and all its  
125 subcontractors against loss by fire, windstorm, tsunamis,  
126 earthquakes, lightning, explosion, other perils covered by the  
127 standard Extended Coverage Endorsement, vandalism, and  
128 malicious mischief. Refer to SPECIAL CONDITIONS for any  
129 additional requirements."  
130

131 **(II) Amend Section 107.02 Permits and Licenses** to as follows:  
132

133 **"107.02 Permits and Licenses.** As part of the contract price, the  
134 Contractor shall obtain all permits and licenses required by law to  
135 perform the work and pay charges, fees, and taxes incidental to  
136 obtaining such permits and licenses. The Contractor assumes  
137 exclusive responsibility for identifying and acquiring all permits and

138 licenses necessary to perform the work, except for those permits  
139 and licenses identified in the contract documents as being the  
140 responsibility of the State. If the Contractor does not hold all of the  
141 licenses required to perform a particular item of work on this project  
142 with its own workers, when bidding, he must list subcontractors that  
143 hold the appropriate licenses in its proposal  
144

145 The terms and conditions of any permit or license required  
146 for performance of the work, whether or not issued in the name of  
147 the Contractor, are incorporated into the contract. Compliance with  
148 such terms and conditions are duties owed by the Contractor to the  
149 State under the contract. Notwithstanding the enforcement authority  
150 of the permitting or licensing agency, whether or not a State  
151 agency, non-compliance by the Contractor with any term or  
152 condition of such license or permit shall be deemed non-  
153 compliance with the contract and may constitute grounds for  
154 default.  
155

156 The Engineer may grant a time adjustment, cost adjustment,  
157 or both, to the extent the Engineer determines that the Contractor  
158 was not a contributing factor for such delay”  
159

160 **(III) Revise Section 107.13 Pollution Control and Protection of**  
161 **Archeological, Historical, and Burial Sites** from lines 378 to 388 to read as  
162 follows:  
163

164 **(B) Archaeological, Historical and Burial Sites.**  
165

166 **(1) Archaeological Sites** - The Contractor should be aware that  
167 archaeological sites may be encountered during the construction of  
168 this project. If the Contractor encounters a potential archaeological  
169 site during construction, he shall immediately cease all operations in  
170 the area and contact the Construction Manager and the State Historic  
171 Preservation Division.

172 **(2) Inadvertent Discovery of Human Burials** - Although not  
173 expected, in the event human burials are inadvertently discovered,  
174 the Contractor shall immediately stop work in the vicinity of the  
175 burial and contact the following parties and agencies immediately:  
176 State Historic Preservation Division, the Construction Manager, the  
177 Engineer, the Office of Hawaiian Affairs.  
178

179 The Department of Transportation and Office of Hawaiian affairs shall provide  
180 the Contractor with a Supplemental Agreement for additional time added to the  
181 Contractor’s performance schedule for the mitigation of any inadvertent  
182 discovery of human remains.  
183

184 **(C) Endangered Species**

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(1) Construction activity shall be restricted to daylight hours as much as practicable during the seabird breeding season (April through November) to avoid the use of nighttime lighting that could be an attraction to seabirds

(2) For any nighttime work required during construction, all outdoor lighting shall be shielded to prevent upward radiation so as to reduce the potential for interactions of nocturnally flying Hawaiian petrels and Newell's shearwaters with external lights and man-made structures.

(3) Outside lights that are not needed for security and safety shall be turned off from dusk through dawn during the fledging fallout period (September 15-December 15).

(4) To avoid potential impacts to the Hawaiian hoary bat, no trees taller than 15 feet within the project site shall be trimmed or removed between June 1 and September 15 when non-volant juvenile bats may be roosting in the trees.

(5) Any fences that are erected as part of the Project shall have a barbless top-strand wire to prevent entanglements of the Hawaiian hoary bat on barbed wire. For existing fences at the project site, the top strand of barbed wire shall be removed or replaced with barbless wire.

(6) All outdoor lighting at the Project shall be shielded to prevent upward radiation so as to reduce the potential for seabird attraction. Shielding shall conform to the County's standards for streetlights to prevent light diffusion upward into the night sky.

Contractor shall coordinate construction activities with the USFWS during construction of the Project to avoid creating standing water and other attractive nuisances that could attract protected water birds to unsafe construction conditions. The Contractor shall have a qualified biologist survey the project site prior to construction and after a delay of at least three days in construction for the presence of Hawaiian goose nests. Work shall immediately stop if a nest is discovered and the USFWS shall be contacted for further guidance.

**END OF SECTION 107**

1 Amend **Section 108 – PROSECUTION AND PROGRESS** to read as follows:  
2

3 **“SECTION 108 – PROSECUTION AND PROGRESS**  
4

5  
6 **108.01 Notice to Proceed (NTP).** A Notice To Proceed will be issued to the  
7 Contractor not more 30 calendar days after the contract certification date. The  
8 Engineer may suspend the contract before issuing the Notice To Proceed, in which  
9 case the Contractor’s remedies are exclusively those set forth in Subsection 108.10  
10 – Suspension of Work.  
11

12 The Contractor shall be allowed up to 14 calendar days after the Notice to  
13 Proceed to begin physical work. The Start Work Date will be established when this  
14 period ends or on the actual day that physical work begins, whichever is first.  
15 Charging of Contract Time will begin on the Start Work Date. The Contractor shall  
16 notify the Engineer, in writing, at least five working days before beginning physical  
17 work.  
18

19 In the event that the Contractor fails to start physical work within the time  
20 specified, the Engineer may terminate the contract in accordance with Subsection  
21 108.11 – Termination of Contract for Cause.  
22

23 During the period between the Notice to Proceed and the Start Work Date  
24 the Contractor should adjust work forces, equipment, schedules, and procure  
25 materials and required permits, prior to beginning physical work.  
26

27 Any physical work done prior to the Start Work Date will be considered  
28 unauthorized work. If the Engineer does not direct that the unauthorized work be  
29 removed, it shall be paid for after the Start Work Date and only if it is acceptable.  
30

31 In the event that the Engineer establishes, in writing, a Start Work Date that  
32 is beyond 60 calendar days from the Notice to Proceed date, the Contractor may  
33 submit a claim in accordance with, Subsection 107.15 – Disputes and Claims for  
34 increased labor and material costs which are directly attributable to the delay  
35 beyond the first 60 calendar days after the Notice to Proceed date.  
36

37 The Contractor shall notify the Engineer at least 24 hours before restarting  
38 physical work after a suspension of work pursuant to Subsection 108.10 –  
39 Suspension of Work.  
40

41 Once physical work has begun, the Contractor shall work expeditiously and  
42 pursue the work diligently to completion with the contract time. If a portion of the  
43 work is to be done in stages, the Contractor shall leave the area safe and usable for  
44 the user agency and the public at the end of each stage.  
45

46 **108.02 Prosecution of Work.** Unless otherwise permitted by the Engineer, in  
47 writing, the Contractor shall not commence with physical construction unless  
48 sufficient materials and equipment are available for either continuous construction  
49 or completion of a specified portion of the work.

50  
51 **108.03 Preconstruction Submittals.** The awardee shall submit to the Engineer  
52 for information and review the pre-construction submittals within 21 calendar days  
53 from award. Until the items listed below are received and found acceptable by the  
54 Engineer, the Contractor shall not start physical work unless otherwise authorized  
55 to do so in writing and subject to such conditions set by the Engineer. Charging of  
56 Contract Time will not be delayed, and additional contract time will not be granted  
57 due to Contractor delay in submitting acceptable preconstruction submittals. No  
58 progress payment will be made to the Contractor until the Engineer acknowledges,  
59 in writing, receipt of the following preconstruction submittals acceptable to the  
60 Engineer:

- 61  
62 (1) List of the Superintendent and other Supervisory Personnel, and their  
63 contact information.
- 64  
65 (2) Name of person(s) authorized to sign for the Contractor.
- 66  
67 (3) Work Schedule including hours of operation.
- 68  
69 (4) Initial Progress Schedule (See Subsection 108.06 – Progress  
70 Schedule).
- 71  
72 (5) Water Pollution and Siltation Control Submittals, including Site-  
73 Specific Best Management Practice Plan.
- 74  
75 (6) Solid Waste Disposal form.
- 76  
77 (7) Tax Rates.
- 78  
79 (8) Insurance Rates.
- 80  
81 (9) Certificate of Insurance, satisfactory to the Engineer, indicating that  
82 the Contractor has in place all insurance coverage required by the contract  
83 documents.
- 84  
85 (10) Schedule of agreed prices.
- 86  
87 (11) List of suppliers.
- 88  
89 (12) Traffic Control Plan, if applicable.

90 **108.04 Character and Proficiency of Workers.** The Contractor shall at all times  
91 provide adequate supervision and sufficient labor and equipment for prosecuting the  
92 work to full completion in the manner and within the time required by the contract.  
93 The superintendent and all other representatives of the Contractor shall act in a civil  
94 and honest manner in all dealings with the Engineer, all other State officials and  
95 representatives, and the public, in connection with the work.

96  
97 All workers shall possess the proper license, certification, job classification,  
98 skill, training, and experience necessary to properly perform the work assigned to  
99 them.

100  
101 The Engineer may direct the removal of any worker(s) who does not carry  
102 out the assigned work in a proper and skillful manner or who is disrespectful,  
103 intemperate, violent, or disorderly. The worker shall be removed forthwith by the  
104 Contractor and will not work again without the written permission of the Engineer.

105  
106 **108.05 Contract Time.**

107  
108 **(A) Calculation of Contract Time.** When the contract time is on a  
109 working day basis, the total contract time allowed for the performance of the  
110 work will be the number of working days shown in the contract plus any  
111 additional working days authorized in writing as provided hereinafter. The  
112 count of elapsed working days to be charged against contract time, will begin  
113 from the Start Work Date and will continue consecutively to the date of  
114 Substantial Completion. When multiple shifts are used to perform the work,  
115 the State will not consider the hours worked over the normal eight working  
116 hours per day or night as an additional working day.

117  
118 When the contract is on a calendar day basis, the total contract time  
119 allowed for the performance of the work will be the number of days shown in  
120 the contract plus any additional days authorized in writing as provided  
121 hereinafter. The count of elapsed days to be charged against contract time  
122 will begin from the Start Work Date and will continue consecutively to the  
123 date of Substantial Completion. The Engineer will exclude days elapsing  
124 between the orders of the Engineer to suspend work and resume work for  
125 suspensions not the fault of the Contractor.

126  
127 **(B) Modifications of Contract Time.** Whenever the Contractor believes  
128 that an extension of contract time is justified, the Contractor shall serve  
129 written notice on the Engineer not more than five working days after the  
130 occurrence of the event that causes a delay or justifies a contract time  
131 extension. Contract time may be adjusted for the following reasons or  
132 events, but only if and to the extent the critical path has been affected:

133  
134 **(1) Changes in the Work, Additional Work, and Delays Caused**  
135 **by the State.** If the Contractor believes that an extension of time is

136 justified on account of any act or omission by the State, and is not  
137 adequately provided for in a field order or change order, it must  
138 request the additional time as provided above. At the request of the  
139 Engineer, the Contractor must show how the critical path will be  
140 affected and must also support the time extension request with  
141 schedules, as well as statements from its subcontractors, suppliers, or  
142 manufacturers, as necessary. Claims for compensation for any  
143 altered or additional work will be determined pursuant to Subsection  
144 104.02 – Changes.

145  
146 Additional time to perform the extra work will be added to the  
147 time allowed in the contract without regard to the date the change  
148 directive was issued, even if the contract completion date has passed.  
149 A change requiring time issued after contract time has expired will not  
150 constitute an excusal or waiver of pre-existing Contractor delay.

151  
152 **(2) Delay for Permits.** For delays in the routine application and  
153 processing time required to obtain necessary permits, including  
154 permits to be obtained from State agencies, the Engineer may grant  
155 an extension provided that the permit takes longer than 30 days to  
156 acquire and the delay is not caused by the Contractor, and provided  
157 that as soon as the delay occurs, the Contractor notifies the Engineer  
158 in writing that the permits are not available. Permits required by the  
159 contract that take less than 30 days to acquire from the time which the  
160 appropriate documents are granted shall be acquired between Notice  
161 to Proceed and Start Work Date or accounted for in the contractor's  
162 progress schedule. Time extensions will be the exclusive relief  
163 granted on account of such delays.

164  
165 **(3) Delays Beyond Contractor's Control.** For delays caused by  
166 acts of God, a public enemy, fire, inclement weather days or adverse  
167 conditions resulting therefrom, earthquakes, floods, epidemics,  
168 quarantine restrictions, labor disputes impacting the Contractor or the  
169 State, freight embargoes and other reasons beyond the Contractor's  
170 control, the Contractor may be granted an extension of time provided  
171 that:

172  
173 **(a)** In the written notice of delay to the Engineer, the  
174 Contractor describes possible effects on the completion date of  
175 the contract. The description of delays shall:

176  
177 **1.** State specifically the reason or reasons for the  
178 delay and fully explain in a detailed chronology how the  
179 delay affects the critical path.

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2. Include copies of pertinent documentation to support the time extension request.

3. Cite the anticipated period of delay and the time extension requested.

4. State either that the above circumstances have been cleared and normal working conditions restored as of a certain day or that the above circumstances will continue to prevent completion of the project.

(b) The Contractor shall notify the Engineer in writing when the delay ends. Time extensions will be the exclusive relief granted and no additional compensation will be paid the Contractor for such delays.

**(4) Delays in Delivery of Materials or Equipment.** For delays in delivery of materials or equipment, which occur as a result of unforeseeable causes beyond the control and without fault of the Contractor, its subcontractor(s) or supplier(s), time extensions shall be the exclusive relief granted and no additional compensation will be paid the Contractor on account of such delay. The delay shall not exceed the difference between the originally scheduled delivery date and the actual delivery date. The Contractor may be granted an extension of time provided that it complies with the following procedures:

(a) The Contractor's written notice to the Engineer must describe the delays and state the effect such delays may have on the critical path.

(b) The Contractor, if requested, must submit to the Engineer within five days after a firm delivery date for the material and equipment is established, a written statement regarding the delay. The Contractor must justify the delay as follows:

1. State specifically all reasons for the delay. Explain in a detailed chronology the effect of the delay on the critical path.

2. Submit copies of purchase order(s), factory invoice(s), bill(s) of lading, shipping manifest(s), delivery tag(s), and any other documents to support the time extension request.



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3. Cite the start and end date of the delay and the time extension requested.

**(5) Delays for Suspension of Work.** When the performance of the work is totally suspended for one or more days (calendar or working days, as appropriate) by order of the Engineer in accordance with Subsections 108.10(A)(1), 108.10(A)(2), or 108.10(A)(5) the number of days from the effective date of the Engineer’s order to suspend operations to the effective date of the Engineer’s order to resume operations shall not be counted as contract time and the contract completion date will be adjusted. During periods of partial suspensions of the work, the Contractor will be granted a time extension only if the partial suspension affects the critical path. If the Contractor believes that an extension of time is justified for a partial suspension of work, it must request the extension in writing at least five working days before the partial suspension will affect the critical operation(s) in progress. The Contractor must show how the critical path was increased based on the status of the work and must also support its claim if requested, with statements from its subcontractors. A suspension of work will not constitute a waiver of pre-existing Contractor delay.

**(6) Contractor Caused Delays.** No time extension will be granted under the following circumstances:

- (a)** Delays within the Contractor’s control in performing the work caused by the Contractor, subcontractor, supplier, or any combination thereof.
- (b)** Delays within the Contractor’s control in arrival of materials and equipment caused by the Contractor, subcontractor, supplier, or any combination thereof, in ordering, fabricating, and delivery.
- (c)** Delays requested for changes which do not affect the critical path.

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(d) Delays caused by the failure of the Contractor to make submittals in a timely manner for review and acceptance by the Engineer, such as but not limited to shop drawings, descriptive sheets, material samples, and color samples except as covered in Subsection 108.05(B)(3) – Delays Beyond Contractor’s Control and 108.05(B)(4) – Delays in Delivery of Materials or Equipment.

(e) Delays caused by the failure to submit sufficient information and data in a timely manner in the proper form in order to obtain necessary permits related to the work.

(f) Failure to follow the procedure within the time allowed by contract to request a time extension.

(g) Failure of the Contractor to provide evidence sufficient to support the time extension request.

(7) **Reduction in Time.** If the State deletes or modifies any portion of the work, an appropriate reduction of contract time may be made in accordance with Subsection 104.02 - Changes.

**108.06 Progress Schedules.**

(A) **Forms of Schedule.** All schedules shall be submitted using the specific computer program designated in the bid documents. If no such scheduling software program is designated, then all schedules shall be submitted using the latest version of Microsoft Project by Microsoft or approved equivalent software program.

Schedule submittals shall be as follows:

(1) **For Contracts \$2,000,000 or less or For Contract Time 100 Working Days or 140 Calendar Days or Less.** For contracts of \$2,000,000 or less or for contract time of 100 working days or 140 calendar days or less, the progress schedule will be a Time Scaled Logic Diagram (TSLD). The Contractor shall submit a TSLD submittal package meeting the following requirements and having these essential and distinctive elements:

(a) The major features of work, such as but not limited to BMP installation, grubbing, roadway excavation, structure excavation, structure construction, shown in the chronological order in which the Contractor proposes to work that feature or work and its location on the project. The schedule shall account for normal inclement weather, unusual soil or other conditions

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that may influence the progress of the work, schedules, and coordination required by any utility, off or on site fabrications, and other pertinent factors that relate to progress;

**(b)** All features listed or not listed in the contract documents that the Contractor considers a controlling factor for the timely completion of the contract work.

**(c)** The time span and sequence of the activities or events for each feature, and its interrelationship and interdependencies in time and logic to other features in order to complete the project.

**(d)** The total anticipated time necessary to complete work required by the contract.

**(e)** A chronological listing of critical intermediate dates or time periods for features or milestones or phases that can affect timely completion of the project.

**(f)** Major activities related to the location on the project.

**(g)** Non-construction activities, such as submittal and acceptance periods for shop drawings and material, procurement, testing, fabrication, mobilization, and demobilization or order dates of long lead material.

**(h)** Set schedule logic for out of sequence activities to retain logic. In addition, open ends shall be non-critical.

**(i)** Show target bars for all activities.

**(j)** Vertical and horizontal sight lines both major and minor shall be used as well as a separator line between groups. The Engineer will determine frequency and style.

**(k)** The file name, print date, revision number, data and project title and number shall be included in the title block.

**(l)** Have columns with the appropriate data in them for activity ID, description, original duration, remaining duration, early start, early finish, total float, percent complete, resources. The resource column shall list who is responsible for the work to be done in the activity. These columns shall be to the left of the bar chart.

355 **(2) For Contracts Which Have A Contract Amount More Than**  
356 **\$2,000,000 Or Having A Contract Time Of More Than 100 Working**  
357 **Days Or 140 Calendar Days.** For contracts which have a contract  
358 amount more than \$2,000,000 or contract time of more than 100  
359 working days or 140 calendar days, the Contractor shall submit a  
360 Timed-Scaled Logic Diagram (TSLD) meeting the following  
361 requirements and having these essential and distinctive elements:  
362

363 **(a)** The information and requirements listed in Subsection  
364 108.06(A)(1) – For Contracts \$2,000,000 or Less or For  
365 Contract Time 100 Working Days or 140 Calendar Days or  
366 Less.

367  
368 **(b)** Additional reports and graphics available from the  
369 software as requested by the Engineer.  
370

371 **(c)** Sufficient detail to allow at least weekly monitoring of the  
372 Contractor and subcontractor's operations.  
373

374 **(d)** The time scaled schematic shall be on a calendar or  
375 working days basis. What will be used shall be determined by  
376 how the contract keeps track of time. It will be the same. Plot  
377 the critical calendar dates anticipated.  
378

379 **(e)** Breakdown of activity, such as forming, placing  
380 reinforcing steel, concrete pouring and curing, and stripping in  
381 concrete construction. Indicate location of work to be done in  
382 such detail that it would be easily determined where work would  
383 be occurring within approximately 200 feet.  
384

385 **(f)** Latest start and finish dates for critical path activities.  
386

387 **(g)** Identify responsible subcontractor, supplier, and others  
388 for their respective activity.  
389

390 **(h)** No individual activity shall have duration of more than 20  
391 calendar days unless requested and approved by the Engineer.  
392

393 **(i)** All activities shall have work breakdown structure codes  
394 and activity codes. The activity codes shall have coding that  
395 incorporates information for phase, location, who is responsible  
396 for doing work and type of operation and activity description.  
397

398 **(j)** Incorporate all physical access and availability  
399 restraints.  
400

401 **(B) Inspection and Testing.** Throughout the construction period, the  
402 work may be subject to periodic inspection by the Department of  
403 Transportation, Office of Hawaiian Affairs, Engineer, designated  
404 Construction Manager, and other applicable government agencies. All  
405 schedules shall provide reasonable time and opportunity to inspect and test  
406 each work activity.

407  
408 **(C) Engineer's Acceptance of Progress Schedule.** The submittal of,  
409 and the Engineer's receipt of any progress schedule, shall not be deemed an  
410 agreement to modify any terms or conditions of the contract. Any  
411 modifications to the contract terms and conditions that appear in or may be  
412 inferred from an acceptable schedule will not be valid or enforceable unless  
413 and until the Engineer exercises discretion to issue an appropriate change  
414 order. Nor shall any submittal or receipt imply the Engineer's approval of the  
415 schedule's breakdown, its individual elements, any critical path that may be  
416 shown, nor shall it obligate the State to make its personnel available outside  
417 normal working hours or the working hours established by the Contract in  
418 order to accommodate such schedule. The Contractor has the risk of all  
419 elements (whether or not shown) of the schedule and its execution. No claim  
420 for additional compensation, time, or both, shall be made by the Contractor  
421 or recognized by the Engineer for delays during any period for which an  
422 acceptable progress schedule or an updated progress schedule as required  
423 by Subsection 108.06(E) – Contractor's Continuing Schedule Submittal  
424 Requirements had not been submitted. Any acceptance or approval of the  
425 schedule shall be for general format only and shall not be deemed an  
426 agreement by the State that the construction means, methods, and resources  
427 shown on the schedule will result in work that conforms to the contract  
428 requirements or that the sequences or durations indicated are feasible.

429  
430 **(D) Initial Progress Schedule.** The Contractor shall submit an initial  
431 progress schedule. The initial progress schedule shall consist of the  
432 following:

- 433  
434 (1) Four sets of the TSLD schedule.  
435  
436 (2) All the software files and data to re-create the TSLD in a  
437 computerized software format as specified by the Engineer.  
438  
439 (3) A listing of equipment that is anticipated to be used on the  
440 project. Including the type, size, make, year of manufacture, and all  
441 information necessary to identify the equipment in the Rental Rate  
442 Blue Book for Construction Equipment.  
443  
444 (4) An anticipated manpower requirement graph plotting contract  
445 time and total manpower requirement. This may be superimposed  
446 over the payment graph.

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(5) A Method Statement that is a detailed narrative describing the work to be done and the method by which the work shall be accomplished for each major activity. A major activity is an activity that:

- (a) Has a duration longer than five days.
- (b) Is a milestone activity.
- (c) Is a contract item that exceeds \$10,000 on the contract cost proposal.
- (d) Is a critical path activity.
- (e) Is an activity designated as such by the Engineer.

Each Method Statement shall include the following items needed to fulfill the schedule:

- (a) Quantity, type, make, and model of equipment.
  - (b) The manpower to do the work, specifying worker classification.
  - (c) The production rate per eight hour day, or the working hours established by the contract documents needed to meet the time indicated on the schedule. If the production rate is not for eight hours, the number of working hours shall be indicated.
- (6) Two sets of color time-scaled project evaluation and review technique charts (“PERT”) using the activity box template of Logic – Early Start or such other template designated by the Engineer.

If the contract documents establish a sequence or order for the work, the initial progress schedule shall conform to such sequence or order.

**(E) Contractor’s Continuing Schedule Submittal Requirements.** After the acceptance of the initial TSLD and when construction starts, the Contractor shall submit four plotted progress schedules, two PERT charts, and reports on all construction activities every two weeks (bi-weekly). This scheduled bi-weekly submittal shall also include an updated version of the project schedule in a computerized software format as specified by the Engineer. The submittal shall have all the information needed to re-create that time period’s TSLD plot and reports. The bi-weekly submittal shall include, but not limited to, an update of activities based on actual durations,

493 all new activities and any changes in duration or start or finish dates of any  
494 activity.

495  
496 The Contractor shall submit with every update, in report form  
497 acceptable to the Engineer, a list of changes to the progress schedule since  
498 the previous schedule submittal. The Engineer may change the frequency  
499 of the submittal requirements but may not require a submittal of the schedule  
500 to be more than once a week. The Engineer may decrease the frequency of  
501 the submittal of the bi-weekly schedule.

502  
503 The Contractor shall submit updates of the anticipated work  
504 completion graph, equipment listing, manpower requirement graph or  
505 method statement when requested by the Engineer. The Contractor shall  
506 submit such updates within 4 calendar days from the date of the request by  
507 the Engineer.

508  
509 The Engineer may withhold progress payment until the Contractor is  
510 in compliance with all schedule update requirements

511  
512 **(F) Float.** All float appearing on a schedule is a shared commodity. Float  
513 does not belong to or exist for the exclusive use or benefit of either the State  
514 or the Contractor. The State or the Contractor has the opportunity to use  
515 available float until it is depleted. Float has no monetary value.

516  
517 **(G) Scheduled Meetings.** The Contractor shall meet on a bi-weekly basis  
518 with the Engineer to review the progress schedule. The Contractor shall have  
519 someone attending the meeting that can answer all questions on the TSLD  
520 and other schedule related submittals.

521  
522 **(H) Accelerated Schedule; Early Completion.** If the Contractor submits  
523 an accelerated schedule (shorter than the contract time), the Engineer's  
524 review and acceptance of an accelerated schedule does not constitute an  
525 agreement or obligation by the State to modify the contract time or completion  
526 date. The Contractor is solely responsible for and shall accept all risks and  
527 any delays, other than those that can be directly and solely attributable to the  
528 State, that may occur during the work, until the contract completion date. The  
529 contract time or completion date is established for the benefit of the State  
530 and cannot be changed without an appropriate change order or Substantial  
531 Completion granted by the State. The State may accept the work before the  
532 completion date is established, but is not obligated to do so.

533 If the TSLD indicates an early completion of the project, the Contractor  
534 shall, upon submittal of the schedule, cooperate with the Engineer in  
535 explaining how it will be achieved. In addition, the Contractor shall submit  
536 the above explanation in writing which shall include the State's part, if any, in  
537 achieving the early completion date. Early completion of the project shall not  
538 rely on changes to the Contract Documents unless approved by the  
539 Engineer.

540  
541 **(I) Contractor Responsibilities.** The Contractor shall promptly respond  
542 to any inquiries from the Engineer regarding any schedule submission. The  
543 Contractor shall adjust the schedule to address directives from the Engineer  
544 and shall resubmit the TSLD package to the Engineer until the Engineer finds  
545 it acceptable.  
546

547 The Contractor shall perform the work in accordance with the  
548 submitted TSLD. The Engineer may require the Contractor to provide  
549 additional work forces and equipment to bring the progress of the work into  
550 conformance with the TSLD at no increase in contract price or contract time  
551 whenever the Engineer determines that the progress of the work does not  
552 insure completion within the specified contract time.  
553

554 **108.07 Weekly Meeting.** In addition to the bi-weekly schedule meetings, the  
555 Contractor shall be available to meet once a week with the Engineer at the time and  
556 place as determined by the Engineer to discuss the work and its progress including  
557 but not limited to, the progress of the project, potential problems, coordination of  
558 work, submittals, erosion control reports, etc. The Contractor's personnel attending  
559 shall have the authority to make decisions and answer questions.  
560

561 The Contractor shall bring to weekly meetings a detailed work schedule  
562 showing the next three weeks' work. Number of copies of the detailed work  
563 schedule to be submitted will be determined by the Engineer. The three-week  
564 schedule is in addition to the TSLD and shall in no way be considered as a substitute  
565 for the TSLD or vice versa. The three-week schedule shall show:  
566

567 **(a)** All construction events, traffic control and BMP related activities in  
568 such detail that the Engineer will be able to determine at what location and  
569 type of work will be done for any day for the next three weeks. This is for the  
570 State to use to plan its manpower requirements for that time period.  
571

572 **(b)** The duration of all events and delays.  
573

574 **(c)** The critical path clearly marked in red or marked in a manner that  
575 makes it clearly distinguishable from other paths and is acceptable to the  
576 Engineer.  
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578 **(d)** Critical submittals and requests for information (RFI's).



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(e) The project title, project number, date created, period the schedule covers, Contractor's name and creator of the schedule on each page.

Two days prior to each weekly meeting, the Contractor shall submit a list of outstanding submittals, RFIs and issues that require discussion.

**108.08 Liquidated Damages for Failure to Complete the Work or Portions of the Work on Time.** The actual amount of damages resulting from the Contractor's failure to complete the contract in a timely manner is difficult to accurately determine. Therefore, the amount of such damages shall be liquidated damages as set forth herein and in the special provisions. The State may, at its discretion, deduct the amount from monies due or that may become due under the contract.

The Contractor shall complete all work as specified or indicated in the contract documents on or before 245 calendar days after receiving written Notice to Proceed, subject to extensions, as may be granted.

In case of failure on the part of the Contractor to complete the work within the time specified, the Contractor shall pay to DOT and OHA as liquidated damages, and not as a penalty, \$1,000.00 per calendar day for each day that the project, in its entirety, remains incomplete.

**(A) Liquidated Damages Upon Termination.** If the State terminates on account of Contractor's default, liquidated damages may be charged against the defaulting Contractor and its surety until final completion of work.

**(B) Liquidated Damages for Failure to Complete the Punchlist.** The Contractor shall complete the work on any punchlist created after the pre-final inspection, within the contract time or any extension thereof.

When the Contractor fails to complete the work on such punchlist within the contract time or any extension thereof, the Contractor shall pay liquidated damages to the State of 20 percent of the amount of liquidated damages established for failure to substantially complete the work within contract time. Liquidated damages shall not be assessed for the period between:

- (1) Notice from the Contractor that the project is substantially complete and the time the punchlist is delivered to the Contractor.
- (2) The date of the completion of punchlist as determined by the Engineer and the date of the successful final inspection, and
- (3) The date of the Final Inspection that results in Substantial Completion and the receipt by the Contractor of the written notice of Substantial Completion.

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**(C) Actual Damages Recoverable If Liquidated Damages Deemed Unenforceable.** In the event a court of competent jurisdiction holds that any liquidated damages assessed pursuant to this contract are unenforceable, the State will be entitled to recover its actual damages for Contractor’s failure to complete the work, or any designated portion of the work within the time set by the contract.

**108.09 Rental Fees for Unauthorized Lane Closure or Occupancy.** In addition to all other remedies available to the State for Contractor’s breach of the terms of the contract, the Engineer will assess the rental fees in the amount of \$500 for every one-to fifteen-minute increment for each roadway lane closed to public use or occupied beyond the time periods authorized in the contract or by the Engineer. The maximum amount assessed per day shall be \$5,000. The State may, at its discretion, deduct the amount from monies due or that may become due under the contract. The rental fee may be waived in whole or part if the Engineer determines that the unauthorized period of lane closure or occupancy was due to factors beyond the control of the Contractor. Equipment breakdown is not a cause to waive liquidated damages.

**108.10 Suspension of Work.**

**(A) Suspension of Work.** The Engineer may, by written order, suspend the performance of the work, either in whole or in part, for such periods as the Engineer may deem necessary, for any cause, including but not limited to:

- (1)** Weather or soil conditions considered unsuitable for prosecution of the work.
- (2)** Whenever a redesign that may affect the work is deemed necessary by the Engineer.
- (3)** Unacceptable noise or dust arising from the construction even if it does not violate any law or regulation.
- (4)** Failure on the part of the Contractor to:
  - (a)** Correct conditions unsafe for the general public or for the workers.
  - (b)** Carry out orders given by the Engineer.

668 (c) Perform the work in strict compliance with the provisions  
669 of the contract.

670  
671 (d) Provide adequate supervision on the jobsite.

672 (5) The convenience of the State.

673

674 (B) **Partial and Total Suspension.** Suspension of work on some but not  
675 all items of work shall be considered a “partial suspension”. Suspension of  
676 work on all items shall be considered “total suspension”. The period of  
677 suspension shall be computed from the date set out in the written order for  
678 work to cease until the date of the order for work to resume.

679

680 (C) **Reimbursement to Contractor.** In the event that the Contractor is  
681 ordered by the Engineer in writing as provided herein to suspend all work  
682 under the contract for the reasons specified in Subsections 108.10(A)(2),  
683 108.10(A)(3), or 108.10(A)(5) of the “Suspension of Work” paragraph, the  
684 Contractor may be reimbursed for actual direct costs incurred on work at the  
685 jobsite, as authorized in writing by the Engineer, including costs expended  
686 for the protection of the work. An allowance of 5 percent for indirect  
687 categories of delay costs will be paid on any reimbursed direct costs,  
688 including extended branch and home-office overhead and delay impact  
689 costs. No allowance will be made for anticipated profits. Payment for  
690 equipment which is ordered to standby during such suspension of work shall  
691 be made as described in Subsection 109.06(H) - Idle and Standby  
692 Equipment.

693

694 (D) **Cost Adjustment.** If the performance of all or part of the work is  
695 suspended for reasons beyond the control of the Contractor except an  
696 adjustment shall be made for any increase in cost of performance of this  
697 contract (excluding profit) necessarily caused by such suspension, and the  
698 contract modified in writing accordingly.

699

700 However, no adjustment to the contract price shall be made for any  
701 suspension, delay, or interruption:

702

703 (1) For weather related conditions.

704

705 (2) To the extent that performance would have been so  
706 suspended, delayed, or interrupted by any other cause, including the  
707 fault or negligence of the Contractor.

708

709 (3) Or, for which an adjustment is provided for or excluded under  
710 any other provision of this Contract.

711

712 **(E) Claims for Adjustment.** Any adjustment in contract price made shall  
713 be determined in accordance with Subsections 104.02 – Changes and  
714 104.06 – Methods of Price Adjustment.  
715

716 Any claims for such compensation shall be filed in writing with the  
717 Engineer within 30 days after the date of the order to resume work or the  
718 claim will not be considered. The claim shall conform to the requirements of  
719 Subsection 107.15(D) – Making of a Claim. The Engineer will take the claim  
720 under consideration, may make such investigations as are deemed  
721 necessary and will be the sole judge as to the equitability of the claim. The  
722 Engineer’s decision will be final.  
723

724 **(F) No Adjustment.** No provision of this clause shall entitle the  
725 Contractor to any adjustments for delays due to failure of its surety, the  
726 cancellation or expiration of any insurance coverage required by the contract  
727 documents, for suspensions made at the request of the Contractor, for any  
728 delay required under the contract, for suspensions, either partial or whole,  
729 made by the Engineer under Subsection 108.10(A)(4) of the “Suspension of  
730 work” paragraph.  
731

732 **108.11 Termination of Contract for Cause.**  
733

734 **(A) Default.** If the Contractor refuses or fails to perform the work, or any  
735 separable part thereof, with such diligence as will assure its completion within  
736 the time specified in this contract, or any extension thereof, or commits any  
737 other material breach of this contract, and further fails within seven days after  
738 receipt of written notice from the Engineer to commence and continue  
739 correction of the refusal or failure with diligence and promptness, the  
740 Engineer may, by written notice to the Contractor, declare the Contractor in  
741 breach and terminate the Contractor’s right to proceed with the work or the  
742 part of the work as to which there has been delay or other breach of contract.  
743 In such event, the State may take over the work, perform the same to  
744 completion, by contract or otherwise, and may take possession of, and utilize  
745 in completing the work, the materials, appliances, and plants as may be on  
746 the site of the work and necessary therefore. Whether or not the Contractor’s  
747 right to proceed with the work is terminated, the Contractor and the  
748 Contractor’s sureties shall be liable for any damage to the State resulting  
749 from the Contractor’s refusal or failure to complete the work within the  
750 specified time.  
751

752 **(B) Additional Rights and Remedies.** The rights and remedies of the  
753 State provided in this contract are in addition to any other rights and remedies  
754 provided by law.  
755

756 **(C) Costs and Charges.** All costs and charges incurred by the State,  
757 together with the cost of completing the work under contract, will be deducted

758 from any monies due or which would or might have become due to the  
759 Contractor had it been allowed to complete the work under the contract. If  
760 such expense exceeds the sum which would have been payable under the  
761 contract, then the Contractor and the surety shall be liable and shall pay the  
762 State the amount of the excess.  
763

764 In case of termination, the Engineer will limit any payment to the  
765 Contractor to the part of the contract satisfactorily completed at the time of  
766 termination. Payment will not be made until the work has satisfactorily been  
767 completed and all required documents, including the tax clearance required  
768 by Subsection 109.11 – Final Payment are submitted by the Contractor.  
769 Termination shall not relieve the Contractor or Surety from liability for  
770 liquidated damages.  
771

772 **(D) Erroneous Termination for Cause.** If, after notice of termination of  
773 the Contractor's right to proceed under this section, it is determined for any  
774 reason that good cause did not exist to allow the State to terminate as  
775 provided herein, the rights and obligations of the parties shall be the same  
776 as, and the relief afforded the Contractor shall be limited to, the provisions  
777 contained in Subsection 108.12 – Termination for Convenience.  
778

779 **108.12 Termination For Convenience.**  
780

781 **(A) Terminations.** The Director may, when the interests of the State so  
782 require, terminate this contract in whole or in part, for the convenience of the  
783 State. The Director will give written notice of the termination to the Contractor  
784 specifying the part of the contract terminated and when termination becomes  
785 effective.  
786

787 **(B) Contractor's Obligations.** The Contractor shall incur no further  
788 obligations in connection with the terminated work and on the date set in the  
789 notice of termination the Contractor shall stop work to the extent specified.  
790 The Contractor shall also terminate outstanding orders and subcontracts as  
791 they relate to the terminated work. The Contractor shall settle the liabilities  
792 and claims arising out of the termination of subcontracts and orders  
793 connected with the terminated work subject to the State's approval. The  
794 Engineer may direct the Contractor to assign the Contractor's right, title, and  
795 interest under terminated orders or subcontracts to the State. The Contractor  
796 must still complete the work not terminated by the notice of termination and  
797 may incur obligations as necessary to do so.  
798

799 **(C) Right to Construction and Goods.** The Engineer may require the  
800 Contractor to transfer title and to deliver to the State in the manner and to the  
801 extent directed by the Engineer, the following:

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- (1) Any completed work.
- (2) Any partially completed construction, goods, materials, parts, tools, dies, jigs, fixtures, drawings, information, and contract rights (hereinafter called "construction material") that the Contractor has specifically produced or specially acquired for the performance of the terminated part of this contract.
- (3) The Contractor shall protect and preserve all property in the possession of the Contractor in which the State has an interest. If the Engineer does not elect to retain any such property, the Contractor shall use its best efforts to sell such property and construction materials for the State's account in accordance with the standards of HRS Chapter 490:2-706.

**(D) Compensation.**

- (1) The Contractor shall submit a termination claim specifying the amounts due because of the termination for convenience together with cost or pricing data, submitted to the extent required by HAR Subchapter 15, Chapter 3-122. If the Contractor fails to file a termination claim within one year from the effective date of termination, the Engineer may pay the Contractor, if at all, an amount set in accordance with Subsection 108.12(D)(3).
- (2) The Engineer and the Contractor may agree to a settlement provided the Contractor has filed a termination claim supported by cost or pricing data submitted as required and that the settlement does not exceed the total contract price plus settlement costs reduced by payments previously made by the State, the proceeds of any sales of construction, supplies, and construction materials under Subsection 108.12(C)(3), and the proportionate contract price of the work not terminated.
- (3) Absent complete agreement, the Engineer will pay the Contractor the following amounts less any payments previously made under the contract:
  - (a) The cost of all contract work performed prior to the effective date of the notice of termination work plus a 5 percent markup on the actual direct costs, including amounts paid to subcontractor, less amounts paid or to be paid for completed portions of such work; provided, however, that if it appears that the Contractor would have sustained a loss if the entire contract would have been completed, no markup shall be allowed or included and the amount of compensation shall

848 be reduced to reflect the anticipated rate of loss. No anticipated  
849 profit or consequential damage will be due or paid.

850  
851 **(b)** Subcontractors shall be paid a markup of 10 percent on  
852 their direct job costs incurred to the date of termination. No  
853 anticipated profit or consequential damage will be due or paid  
854 to any subcontractor. These costs must not include payments  
855 made to the Contractor for subcontract work during the contract  
856 period.

857  
858 **(c)** The total sum to be paid the Contractor shall not exceed  
859 the total contract price reduced by the amount of any sales of  
860 construction supplies, and construction materials.

861  
862 **(4)** Cost claimed, agreed to, or established by the State shall be in  
863 accordance with HAR Chapter 3-123.

864  
865 **108.13 Pre-Final and Final Inspections.**

866  
867 **(A) Inspection Requirements.** Before the Engineer undertakes a final  
868 inspection of any work, a pre-final inspection must first be conducted. The  
869 Contractor shall notify the Engineer that the work has reached substantial  
870 completion and is ready for pre-final inspection.

871  
872 **(B) Pre-Final Inspection.** Before notifying the Engineer that the work has  
873 reached substantial completion, the Contractor shall inspect the project and  
874 test all installed items with all of its subcontractors as appropriate. The  
875 Contractor shall also submit the following documents as applicable to the  
876 work:

- 877  
878 **(1)** All written guarantees required by the contract.  
879  
880 **(2)** Two accepted final field-posted drawings as specified in  
881 Section 648 – Field-Posted Drawings;  
882  
883 **(3)** Complete weekly certified payroll records for the Contractor  
884 and Subcontractors.  
885  
886 **(4)** Certificate of Plumbing and Electrical Inspection.  
887  
888 **(5)** Certificate of building occupancy as required.  
889  
890 **(6)** Certificate of Soil and Wood Treatments.  
891  
892 **(7)** Certificate of Water System Chlorination.  
893

894 (8) Certificate of Elevator Inspection, Boiler and Pressure Pipe  
895 Inspection.

896  
897 (9) Maintenance Service Contract and two copies of a list of all  
898 equipment installed.

899  
900 (10) Current Tax clearance. The contractor will be required to  
901 submit an additional tax clearance certificate when the final payment  
902 is made.

903  
904 (11) And any other final items and submittals required by the  
905 contract documents.

906  
907 **(C) Procedure.** When in compliance with the above requirements, the  
908 Contractor shall notify the Engineer in writing that the project has reached  
909 substantial completion and is ready for pre-final inspection.

910  
911 The Engineer will then make a preliminary determination as to whether  
912 or not the project is substantially complete and ready for pre-final inspection.  
913 The Engineer may, in writing, postpone until after the pre-final inspection the  
914 Contractor's submittal of any of the items listed in Subsection 108.13(B) –  
915 Pre-Final Inspection, herein, if in the Engineer's discretion it is in the interest  
916 of the State to do so.

917  
918 If, in the opinion of the Engineer, the project is not substantially  
919 complete, the Engineer will provide the Contractor a punchlist of specific  
920 deficiencies in writing which must be corrected or finished before the work  
921 will be ready for a pre-final inspection. The Engineer may add to or otherwise  
922 modify this punchlist from time to time. The Contractor shall take immediate  
923 action to correct the deficiencies and must repeat all steps described above  
924 including written notification that the work is ready for pre-final inspection.

925  
926 After the Engineer is satisfied that the project appears substantially  
927 complete a final inspection shall be scheduled within ten working days after  
928 receipt of the Contractor's latest letter of notification that the project is ready  
929 for final inspection.

930  
931 If, as a result of the pre-final inspection, the Engineer determines the  
932 work is not substantially complete, the Engineer will inform the Contractor in  
933 writing as to specific deficiencies which must be corrected before the work  
934 will be ready for another pre-final inspection. If the Engineer finds the work  
935 is substantially complete but finds deficiencies that must be corrected before  
936 the work is ready for final inspection, the Engineer will prepare in writing and  
937 deliver to the Contractor a punchlist describing such deficiencies.



938 At any time before final acceptance, the Engineer may revoke the  
939 determination of substantial completion if the Engineer finds that it was not  
940 warranted and will notify the Contractor in writing the reasons therefore  
941 together with a description of the deficiencies negating the declaration.  
942

943 When the date of substantial completion has been determined by the  
944 State, liquidated damages for the failure to complete the punchlist, if due to  
945 the State will be assessed in pursuant to Subsection 108.08(B) - Liquidated  
946 Damages for Failure to Complete the Punchlist.  
947

948 **(D) Punchlist; Clean Up and Final Inspection.** Upon receiving a  
949 punchlist after pre-final inspection, the Contractor shall promptly devote all  
950 required time, labor, equipment, materials and incidentals to correct and  
951 remedy all punchlist deficiencies. The Engineer may add to or otherwise  
952 modify this punchlist until substantial completion of the project.  
953

954 Before final inspection of the work, the Contractor shall clean all  
955 ground occupied by the Contractor in connection with the work of all rubbish,  
956 excess materials temporary structures and equipment, shall remove all  
957 graffiti and defacement of the work and all parts of the work and the worksite  
958 must be left in a neat and presentable condition to the satisfaction of the  
959 Engineer.  
960

961 Final inspection will occur within ten working days after the Contractor  
962 notifies the Engineer in writing that all punchlist deficiencies remaining after  
963 the pre-final inspection have been completed and the Engineer concurs. If  
964 the Engineer determines that deficiencies still remain at the final inspection,  
965 the work will not be accepted and the Engineer will notify the Contractor, in  
966 writing, of the deficiencies which shall be corrected and the steps above  
967 repeated.  
968

969 Neither the scheduling nor the conduct of the aforementioned final  
970 inspection shall be deemed a waiver of the DOT and OHA's right to  
971 subsequently require Contractor to complete all unfinished or defective work  
972 to the satisfaction of the DOT and OHA. If the Contractor fails to correct the  
973 deficiencies and complete the work by the established or agreed date, the  
974 State may correct the deficiencies by whatever method it deems appropriate  
975 and deduct the cost from any payments due the Contractor.  
976

977 **108.14 Substantial Completion and Final Acceptance.**  
978

979 **(A) Substantial Completion.** When the Engineer finds that the  
980 Contractor has satisfactorily completed all work for the project in compliance  
981 with the contract, with the exception of the planting period and the plant  
982 establishment period, the Engineer will notify the Contractor, in writing, of the  
983 project's substantial completion, effective as of the date of the final

984 inspection. The substantial completion date shall determine end of contract  
985 time and relieve contractor of any additional accumulation of liquidated  
986 damages for failure to complete the punchlist.  
987

988 **(B) Final Acceptance.** When the Engineer finds that the Contractor has  
989 satisfactorily completed all contract work in compliance with the contract  
990 including all plant establishment requirements, and all the materials have  
991 been accepted by the State, the Engineer will issue a Final Acceptance  
992 Letter. The Final Acceptance date shall determine the commencement of all  
993 guaranty periods subject to Subsection 108.16 – Contractor’s Responsibility  
994 for Work; Risk of Loss or Damage.  
995

996 **108.15 Use of Structure or Improvement.** The State has the right to use the  
997 structure, equipment, improvement, or any part thereof, at any time after it is  
998 considered by the Engineer as available. In the event that the structure, equipment  
999 or any part thereof is used by the State before final acceptance, the Contractor is  
1000 not relieved of its responsibility to protect and preserve all the work until final  
1001 acceptance.  
1002

1003 **108.16 Contractor’s Responsibility for Work; Risk of Loss or Damage.** Until  
1004 the written notice of final acceptance has been received, the Contractor shall take  
1005 every precaution against loss or damage to any part of the work by the action of the  
1006 elements or from any other cause whatsoever, whether arising from the  
1007 performance or from the non-performance of the work. The Contractor shall rebuild,  
1008 repair, restore and make good all loss or damage to any portion of the work resulting  
1009 from any cause before its receipt of the written notice of final acceptance and shall  
1010 bear the risk and expense thereof.  
1011

1012 The risk of loss or damage to the work from any hazard or occurrence that  
1013 may or may not be covered by a builder’s risk policy is that of the Contractor and  
1014 Surety, unless such risk of loss is placed elsewhere by express language in the  
1015 contract documents.  
1016

1017 **108.17 Guarantee of Work.**  
1018

1019 **(1)** Regardless of, and in addition to, any manufacturers’ warranties, all  
1020 work and equipment shall be guaranteed by the Contractor against defects  
1021 in materials, equipment or workmanship for one year from the date of final  
1022 acceptance or as otherwise specified in the contract documents.  
1023

1024 **(2)** When the Engineer determines that repairs or replacements of any  
1025 guaranteed work and equipment is necessary due to materials, equipment,  
1026 or workmanship which are inferior, defective, or not in accordance with the  
1027 terms of the contract, the Contractor shall, at no increase in contract price or  
1028 contract time, and within five working days of receipt of written notice from  
1029 the State, commence to all of the following:

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(a) Correct all noted defects and make replacements, as directed by the Engineer, in the equipment and work.

(b) Repair or replace to new or pre-existing condition any damages resulting from such defective materials, equipment or installation thereof.

(3) The State will be entitled to the benefit of all manufacturers and installers warranties that extend beyond the terms of the Contractor's guaranty regardless of whether or not such extended warranty is required by the contract documents. The Contractor shall prepare and submit all documents required by the providers of such warranties to make them effective, and submit copies of such documents to the Engineer. If an available extended warranty cannot be transferred or assigned to the State as the ultimate user, the Contractor shall notify the Engineer who may direct that the warranted items be acquired in the name of the State as purchaser.

(4) If a defect is discovered during a guarantee period, all repairs and corrections to the defective items when corrected shall be guaranteed for a new duration equal to the original full guarantee period. The running of the guarantee period shall be suspended for all other work affected by any defect. The guarantee period for all other work affected by any such defect shall restart for its remaining duration upon confirmation by the Engineer that the deficiencies have been repaired or remedied.

(5) Nothing in this section is intended to limit or affect the State's rights and remedies arising from the discovery of latent defects in the work after the expiration of any guarantee period.

**108.18 No Waiver of Legal Rights.** The following will not operate or be considered as a waiver of any portion of the contract, or any power herein reserved, or any right to damages provided herein or by law:

- (1) Any payment for, or acceptance of, the whole or any part of the work.
- (2) Any extension of time.
- (3) Any possession taken by the Engineer.

A waiver of any notice requirement or of any noncompliance with the contract will not be held to be a waiver of any other notice requirement or any other noncompliance with the contract.

1074 **108.19 Final Settlement of Contract.**

1075

1076 **(A) Closing Requirements.** The contract will be considered settled after  
1077 the project acceptance date and when the following items have been  
1078 satisfactorily submitted, where applicable:

1079

1080

(1) All written guarantees required by the contract.

1081

1082

(2) Complete and certified weekly payrolls for the Contractor and  
its subcontractor's.

1083

1084

1085

(3) Certificate of plumbing and electrical inspection.

1086

1087

(4) Certificate of building occupancy.

1088

1089

(5) Certificate for soil treatment and wood treatment.

1090

1091

(6) Certificate of water system chlorination.

1092

1093

(7) Certificate of elevator inspection, boiler and pressure pipe  
installation.

1094

1095

1096

(8) Tax clearance.

1097

1098

(9) All other documents required by the Contract or by law.

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**(B) Failure to Meet Closing Requirements.** The Contractor shall meet  
the applicable closing requirements within 60 days from the date of Project  
Acceptance or the agreed to Punchlist complete date. Should the Contractor  
fail to comply with these requirements, the Engineer may terminate the  
contract for cause."

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**END OF SECTION 108**



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Sums necessary to meet the claims of any governmental agencies may be withheld from the sums due the Contractor until said claims have been fully and completely discharged or otherwise satisfied.”

END OF SECTION 109



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**(IV)** Amend **201.05 – Payment** by revising lines 170 to 179 to read as follows:

**“201.05 Payment.** The Engineer will pay for the accepted clearing and grubbing per acre. Payment will be full compensation for the work prescribed in this section and the contract documents.

The Engineer will pay for the following pay item when included in the proposal schedule:

<b>Pay Item</b>	<b>Pay Unit</b>
Clearing and Grubbing	Acre”

**END OF SECTION 201**



1                                   **SECTION 203 – EXCAVATION AND EMBANKMENT**

2  
3    Make the following amendments to said Section:

4  
5    **(I)**     Amend **203.03(C)(2)(a) – Maximum Dry Unit Weight** from line 245 to line  
6    255 to read as follows:

7  
8                   **“(a) Maximum Dry Unit Weight.**    Test for maximum dry unit  
9                   weight according to AASHTO T 180, and apply the correction for  
10                   fraction larger than 3/4 inch. Use Hawaii Test Method HDOT TM  
11                   5 for sample preparation of sensitive soils when so designated by  
12                   the Engineer.”

13  
14   **(II)**    Amend **203.03(C) – Embankment Construction** by adding the following  
15    after line 325:

16  
17                   **“(5) General Fill.** Prior to use of on-site material for general fill,  
18                   the material shall be tested for organic content, in accordance to  
19                   testing requirements in AASHTO T267, and contain less than 5  
20                   percent organics. Compact general fill material to relative  
21                   compaction of 90 percent for depth of 6 inches immediately  
22                   before placing subsequent material thereon.”

23  
24   **(III)**   Amend **203.03(D) – Subgrade Preparation** by revising to read as follows:

25  
26                   **“(D) Subgrade Preparation.** Prepare subgrade to required density,  
27                   cross section, and grade.

28  
29                   **(1) General.** Prepare subgrade after completing and backfilling  
30                   drainage facilities and structures and compacting earthwork.

31  
32                   Areas to receive fill shall be scarified to a depth of 8 inches and  
33                   moisture-conditioned to at least 2 percent above the optimum  
34                   moisture content. Remove rocks or lumps and fill voids with  
35                   suitable materials. Material used to fill voids shall conform to  
36                   specified material to be placed on subgrade. Soft and yielding  
37                   areas encountered during site preparation should be over-  
38                   excavated to expose firm soil surface and stabilized by backfilling  
39                   with select material.

40  
41                   **(2) Density Requirement.** Compact finish subgrade to relative  
42                   compaction of 90 percent for depth of 6 inches immediately  
43                   before placing subsequent material thereon. Relative compaction  
44                   refers to the in-place, dry density of soil expressed as percentage  
45                   of the maximum dry density of the same soil established in  
46                   accordance with ASTM Test designation D 1557. The optimum

47 moisture content is the moisture content corresponding to the  
48 maximum compacted dry density.

49  
50 Compaction should be accomplished by sheepsfoot rollers,  
51 vibratory rollers, and other types of acceptable compaction  
52 equipment. Water tamping, jetting, or ponding should not be  
53 allowed to compact the fills. Where compaction is less than  
54 required, additional compactive effort should be applied with  
55 adjustment of moisture content as necessary, to obtain the  
56 specified compaction. Excessive vibrations from compaction  
57 equipment shall be kept at a minimum to avoid softening on-site  
58 soils with high in-situ moisture contents.

59  
60 **(3) Surface Tolerances of Subgrade.** Finish subgrade upon  
61 which pavement structure is to be placed shall not vary more than  
62 0.04-foot above or below theoretical grade.

63  
64  
65 **(IV) Amend 203.04 – Measurement** by revising lines 345 to 366 to read as  
66 follows:

67  
68 **“203.04 Measurement.**

69  
70 **(A)** The Engineer will measure roadway excavation per cubic yard.  
71 The Engineer will compute quantities of roadway excavation by average  
72 end area method and centerline distances. Curvature correction will not  
73 be applied to quantities within roadway prism, as indicated in the contract  
74 documents. In computing excavation quantities from outside the roadway  
75 prism, where roadway centerline is used as a base, curvature correction  
76 will be applied when centerline radius is 1,000 feet or less.

77  
78 When roadway excavation quantities by average end area method  
79 cannot be computed due to the nature of a particular operation or changed  
80 conditions, the Engineer will determine and use computation method that  
81 will produce an accurate quantity estimate.

82  
83 **(B)** The Engineer will measure imported borrow per cubic yard in  
84 accordance with the contract documents. The Engineer will compute  
85 quantities of imported borrow incorporated into the work on a volume  
86 basis, using average end area method in place at work site.

87  
88 **(V) Amend 203.05 – Payment** by revising lines 368 to 457 to read as follows:

89  
90 **“203.05 Payment.** The Engineer will pay for the accepted pay items listed  
91 below at the contract price per pay unit, as shown in the proposal schedule.

92 Payment will be full compensation for the work prescribed in this section and the  
93 contract documents.

94  
95 The Engineer will pay for each of the following pay items when included in  
96 the proposal schedule:

97	98	99
	<b>Pay Item</b>	<b>Pay Unit</b>
100	<b>(A)</b> Site Excavation for _____	Cubic Yard

101  
102 The Engineer will pay for:

103  
104 **(1)** 10 percent of the contract bid price upon completion of staking  
105 out and cross sectioning existing condition at borrow excavated and in-  
106 place sites and establishing borrow area.

107  
108 **(2)** 5 percent of the contract bid price upon completion of providing,  
109 replacing, and maintaining temporary and permanent fencing, and  
110 confining livestock.

111  
112 **(3)** 15 percent of the contract bid price upon completion of all  
113 necessary storing and processing of borrow material.

114  
115 **(4)** 15 percent of the contract bid price upon completion of watering  
116 and hauling material to work site.

117  
118 **(5)** 20 percent of the contract bid price upon completion of placing,  
119 grading, and compacting material in accordance with contract  
120 requirements at work site.

121  
122 **(6)** 15 percent of the contract bid price upon completion of restoring  
123 and regrading borrow area.

124  
125 **(7)** 10 percent of the contract bid price upon completion of staking  
126 out and cross sectioning final condition at borrow excavated and in-  
127 place sites.

128  
129 **(8)** 10 percent of the contract bid price upon completion of  
130 removing and disposing of excess and unsuitable material from work  
131 site.

132		
133	<b>(B)</b> Imported Borrow for _____	Cubic Yard

134  
135 The Engineer will pay for accepted quantities of subexcavation, as  
136 roadway excavation at the contract unit price per cubic yard, when ordered by  
137 the Engineer, for work prescribed in Subsection 203.03(A)(4) – Subexcavation.

138 Payment will be full compensation for the work prescribed therein and in the  
139 contract documents.

140

141 The Engineer will pay for accepted quantities of unlined gutter excavation  
142 as roadway excavation at the contract unit price per cubic yard, when gutter is  
143 located as follows: within median area of a divided highway; and between  
144 roadbed shoulder and adjacent cut slope. Payment will be full compensation for  
145 removing and disposing of excavated material; backfilling and compacting; and  
146 for the work prescribed in the contract documents.

147

148 The Engineer will not pay for stockpiling selected material, placing  
149 selected material in final position, or placing selected material in windrows along  
150 tops of roadway slopes for erosion control work, separately and will consider the  
151 cost as included in the unit prices for the various excavation contract pay items.  
152 The cost is for work prescribed in this section and the contract documents.

153

154 The Engineer will not pay for overhaul separately and will consider the  
155 cost as included in the unit prices for the various excavation contract pay items.  
156 The cost is for work prescribed in this section and the contract documents.

157

158 The Engineer will not pay for embankment separately and will consider the  
159 cost as included in the unit price for roadway excavation. The cost is for work  
160 prescribed in this section and the contract documents.”

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**END OF SECTION 203**



1 Amend **Section 209 - TEMPORARY WATER POLLUTION, DUST, AND EROSION**  
2 **CONTROL** to read as follows:

3  
4  
5 **“SECTION 209 - TEMPORARY WATER POLLUTION, DUST, AND EROSION**  
6 **CONTROL**

7  
8  
9 **209.01 Description.** This section describes the following:

10  
11 **(A)** Including detailed plans, diagrams, and written Site-Specific Best  
12 Management Practices (BMP); constructing, maintaining, and repairing  
13 temporary water pollution, dust, and erosion control measures at the project  
14 site, including local material sources, work areas and haul roads; removing  
15 and disposing hazardous wastes; control of fugitive dust (defined as  
16 uncontrolled emission of solid airborne particulate matter from any source  
17 other than combustion); and complying with applicable State and Federal  
18 permit conditions.

19  
20 **(B)** Work associated with construction stormwater, dewatering, and  
21 hydrotesting activities and complying with conditions of the National Pollutant  
22 Discharge Elimination System (NPDES) permit(s) authorizing discharges  
23 associated with construction stormwater, dewatering, and hydrotesting  
24 activities.

25  
26 **(C)** Potential pollutant identification and mitigation measures are listed in  
27 Appendix A for use in the development of the Contractor’s Site-Specific BMP.

28  
29 Requirements of this section also apply to construction support  
30 activities including concrete or asphalt batch plants, rock crushing plants,  
31 equipment staging yards/areas, material storage areas, excavated material  
32 disposal areas, and borrow areas located outside the State Right-of-Way.  
33 For areas serving multiple construction projects, or operating beyond the  
34 completion of the construction project in which it supports, the Contractor  
35 shall be responsible for securing the necessary permits, clearances, and  
36 documents, and following the conditions of the permits and clearances, at no  
37 cost to the State.

38  
39 **209.02 Materials.** Comply with applicable materials described in Chapters 2 and  
40 3 of the current HDOT “Construction Best Management Practices Field Manual”. In  
41 addition, the materials shall comply with the following:

42  
43 **(A) Grass.** Grass shall be a quick growing species such as rye grass,  
44 Italian rye grass, or cereal grasses. Grass shall be suitable to the area and  
45 provide a temporary cover that will not compete later with permanent cover.  
46 Alternative grasses are allowable if acceptable to the Engineer.

47 **(B) Fertilizer and Soil Conditioners.** Fertilizer and soil conditioners shall  
48 be a standard commercial grade acceptable to the Engineer. Fertilizer shall  
49 conform to Subsection 619.02(H)(1) - Commercial Fertilizer.  
50

51 **(C) Hydro-mulching.** Hydro-mulching used as a temporary vegetative  
52 stabilization measure shall consist of materials in Subsections 209.02(A) -  
53 Grass, and 209.02(B) – Fertilizer and Soil Conditioners. Mulches shall be  
54 recycled materials including bagasse, hay, straw, wood cellulose bark, wood  
55 chips, or other material acceptable to the Engineer. Mulches shall be clean  
56 and free of noxious weeds and deleterious materials. Potable water shall  
57 meet the requirements of Subsection 712.01 - Water. Submit alternate  
58 sources of irrigation water for the Engineer’s acceptance if deviating from  
59 712.01 - Water. Installation and other requirements shall be in accordance  
60 with portions of Section 641- Hydro-Mulch Seeding including 641.02(D) - Soil  
61 and Mulch Tackifier, 641.03(A) – Seeding, and 641.03(B) - Planting Period.  
62 Install non-vegetative controls including mulch or rolled erosion control  
63 products while the vegetation is being established. Water and fertilize grass.  
64 Apply fertilizer as recommended by the manufacturer. Replace grass the  
65 Engineer considers unsuitable or sick. Remove and dispose of trash and  
66 debris. Remove invasive species. Mow as needed to prevent site or signage  
67 obstructions, fire hazard, or nuisance to the public. Do not remove down  
68 stream sediment control measures until the vegetation is uniformly  
69 established, including no large bare areas, and provides 70 percent of the  
70 density of pre-disturbance vegetation. Temporary vegetative stabilization  
71 shall not be used longer than one year.  
72

73 **(D) Silt Fences.** Comply with ASTM D6462, Standard Practice for Silt  
74 Fence Installation.  
75

76 Alternative materials or methods to control, prevent, remove and dispose  
77 pollution are allowable if acceptable to the Engineer.  
78

79 **209.03 Construction.**  
80

81 **(A) Preconstruction Requirements.** Subsurface soil investigations  
82 have been made at the project site. A copy of the complete reports entitled  
83 “Geotechnical Exploration Report for Halawa-Luluku Interpretive  
84 Development Project, Luluku Project Area, Kaneohe, Oahu, Hawaii,” dated  
85 July 16, 2019, and all supplemental revisions to these reports prepared by  
86 PSC Consultants LLC are available on the compact disc (CD) provided with  
87 these bid documents. Test pit and boring logs are shown in the soils report  
88

89 **(1) Water Pollution, Dust, and Erosion Control Meeting.**  
90 Schedule a water pollution, dust, and erosion control meeting with the  
91 Engineer after Site-Specific BMP is accepted in writing by the  
92 Engineer. Meeting shall be scheduled a minimum of 7 calendar days

93 prior to the Start Work Date. Discuss sequence of work, plans and  
94 proposals for water pollution, dust, and erosion control.

95  
96 **(2) Water Pollution, Dust, and Erosion Control Submittals.**

97 Except for specified measures which may be shown on the plans, the  
98 Contractor shall determine the appropriate erosion control measures  
99 to use. Such work may involve the construction of temporary berms,  
100 dikes, dams, sediment basins, and slope drains, and the use of  
101 temporary mulches, mats, and grassing, or the construction and use  
102 of other control devices or methods as necessary to control erosion.

103  
104 Submit a Site-Specific BMP Plan within 21 calendar days of date of  
105 award. Submission of complete and acceptable Site-Specific BMP  
106 Plan is the sole responsibility of the Contractor and additional contract  
107 time will not be issued for delays due to incompleteness. Include the  
108 following:

109  
110 **(a)** Written description of activities to minimize water  
111 pollution and soil erosion into State waters, drainage or sewer  
112 systems. BMP shall include the following:

- 113  
114 1. An identification of potential pollutants and their  
115 sources.
- 116  
117 2. A list of all materials and heavy equipment to be  
118 used during construction.
- 119  
120 3. Descriptions of the methods and devices used to  
121 minimize the discharge of pollutants into State waters,  
122 drainage or sewer systems.
- 123  
124 4. Details of the procedures used for the  
125 maintenance and subsequent removal of any erosion or  
126 siltation control devices.
- 127  
128 5. Methods of removing and disposing hazardous  
129 wastes encountered or generated during construction.
- 130  
131 6. Methods of removing and disposing concrete and  
132 asphalt pavement cutting slurry, concrete curing water,  
133 and hydrodemolition water.
- 134  
135 7. Spill Control and Prevention and Emergency Spill  
136 Response Plan.



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8. Fugitive dust control, including dust from grinding, sweeping, or brooming off operations or combination thereof.
9. Methods of storing and handling of oils, paints and other products used for the project.
10. Material storage and handling areas, and other staging areas.
11. Concrete truck washouts.
12. Concrete waste control.
13. Fueling and maintenance of vehicles and other equipment.
14. Tracking of sediment offsite from project entries and exits.
15. Litter management.
16. Toilet facilities.
17. Other factors that may cause water pollution, dust and erosion control.

**(b)** Provide plans indicating location of water pollution, dust and erosion control devices; provide plans and details of BMPs to be installed or utilized; show areas of soil disturbance in cut and fill, indicate areas used for construction staging and storage including items (1) through (17) above, storage of aggregate (indicate type of aggregate), asphalt cold mix, soil or solid waste, equipment and vehicle parking, and show areas where vegetative practices are to be implemented. Indicate intended drainage pattern on plans. Include flow arrows. Include separate drawing for each phase of construction that alters drainage patterns. Indicate approximate date when device will be installed and removed.

**(c)** Construction schedule.

**(d)** Name(s) of specific individual(s) designated responsible for water pollution, dust, and erosion controls on the project site. Include home, cellular, and business telephone numbers, fax numbers, and e-mail addresses.

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(e) Description of fill material to be used.

(f) For projects with an NPDES Permit for Construction Activities, submit information to address all sections in the Storm Water Pollution Prevention Plan (SWPPP).

(g) For projects with an NPDES Permit, information required for compliance with the conditions of the Notice of General Permit Coverage (NGPC)/NPDES Permit.

(h) Site-Specific BMP Review Checklist. The checklist may be downloaded from HDOT’s Stormwater Management website at <http://stormwaterhawaii.com>.

Date and sign Site-Specific BMP Plan. Keep accepted copy on site or at an accessible location so that it can be made available at the time of an on-site inspection or upon request by the Engineer, HDOT Third-Party Inspector, and/or DOH/EPA Representative. Amendments to the Site-Specific BMP Plan shall be included with original Site-Specific BMP Plan. Modify SWPPP if necessary to conform to revisions. Include date of installation and removal of Site-Specific BMP measures. Obtain written acceptance by the Engineer before implementing revised Site-Specific BMPs in the field.

Follow the guidelines in the current HDOT “Construction Best Management Practices Field Manual”, in developing, installing, and maintaining Site-Specific BMPs for all projects. For any conflicting requirements between the Manual and applicable bid documents, the applicable bid documents will govern. Should a requirement not be clearly described within the applicable bid documents, notify the Engineer immediately for interpretation. For the purposes of clarification “applicable bid documents” include the construction plans, standard specifications, special provisions, Permits, and the SWPPP when applicable.

Follow Honolulu’s City and County “Rules for Soil Erosion Standards and Guidelines” for all projects on Oahu. Use respective Soil Erosion Guidelines for Maui, Kauai and Hawaii projects.

**(B) Construction Requirements.** Do not begin work until submittals detailed in Subsection 209.03(A)(2) - Water Pollution, Dust, and Erosion Control Submittals are completed and accepted in writing by the Engineer.

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Address all comments received from the Engineer.

Modify and resubmit plans and construction schedules to correct conditions that develop during construction which were unforeseen during the design and pre-construction stages.

No deviation from these specifications shall be made except upon the written approval of the Geotechnical Engineer and/or other public agencies having jurisdiction.

**(1) General.** Install, maintain, monitor, repair and replace site-specific BMP measures, such as for water pollution, dust and erosion control; installation, monitoring, and operation of hydrotesting activities; removal and disposal of hazardous waste indicated on plans, concrete cutting slurry, concrete curing water; or hydrodemolition water. Site-Specific BMP measures shall be in place, functional and accepted by HDOT personnel prior to initiating any ground disturbing activities.

**(2) Geotechnical Engineering Consultant.** The services of a Geotechnical Engineering firm shall be retained by the Contractor. The Contractor shall notify the Construction Manager whenever the Geotechnical Engineering firm's presence is needed at the site. A licensed Geotechnical Engineer shall be present to observe site grading and other work concerning excavation, placing and compacting soil materials, scarification, and to take field density tests. The Geotechnical Engineer shall approve all fill material, methods of placing and compaction and perform field density tests during the grading. Also, the Geotechnical Engineer shall perform laboratory testing of all imported soils or on-site soils to determine its acceptability for its intended use as select material or general fill material. Where conditions encountered require, the Geotechnical Engineer shall direct the necessary modifications to be made. Suitable material from excavation shall be used in the fill, and unsuitable material from excavation shall be disposed of offsite. The Geotechnical Engineer shall compile the daily observations, test data, test results and recommendations into a weekly submittal to the Construction Manager. The Geotechnical Engineer shall ensure that the geotechnical work complies with the specifications and drawings.

**(3) Earth Disturbing Activities.** The Construction Manager shall be notified seven (7) days prior to the start of grading. Limit maximum surface area of earth material exposed at any time to 300,000 square feet. Do not expose or disturb surface area of earth material (including clearing and grubbing) until BMP measures are installed and accepted in writing by the Engineer. Protect temporarily or

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permanently disturbed soil surface from rainfall impact, runoff and wind before end of the work day.

The Contractor shall, at the end of each work operation in any one day, shape the earthwork in such a manner as to control and direct the runoff to minimize the erosion of soils. He shall construct earth berms along the top edges of embankments or along the property line with adjacent properties, streams and water channels, to intercept any runoff. Temporary slope drains shall be provided to carry runoff from the top of cuts and fills. Temporary facilities for controlled discharges shall be provided for runoff impounded, directed, or controlled by project activities or by any erosion control measure employed

**(4) Inspection.** Inspect disturbed areas of the construction site, areas that have not been finally stabilized used for storage of materials exposed to precipitation, stabilization practices, structural practices, other controls, and area where vehicles exit the site at least once every seven (7) calendar days and within 24 hours of the end of any storm that produces .5 inches or more rainfall at the site. Conduct inspections at least once every month where sites have been finally stabilized

Inspect disturbed areas and areas used for material storage that are exposed to precipitation for evidence of, or the potential for, pollutants entering the drainage system. Observe erosion and sediment control measures identified in the Storm Water Pollution Prevention Plan to ensure that they are operating correctly. Inspect discharge locations or points to ascertain whether erosion control measures are effective in preventing significant impacts to receiving waters. Inspect locations where vehicles exit the site for evidence of offsite sediment tracking.

For each inspection conducted, prepare a report summarizing the scope of the inspection, name(s) and qualifications of personnel making the inspection, the date(s) of the inspection, major observations relating to the implementation of the Storm Water Pollution Prevention Plan, maintenance performed, and actions taken. Furnish the report to the Contracting Officer within 24 hours of the inspection as a part of the CONTRACTORS daily CQC REPORT. A copy of the inspection report shall be maintained on the job site

**(5) Rainfall.** The project site is located in a high rainfall environment throughout the year; therefore, the in-situ soils will constantly be in a very moist to wet condition and drying or aerating the excavated materials may be necessary prior to their use as

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general fill. If necessary, furnish and install rain gage in a secure location prior to field work including installation of site-specific BMP. Provide rain gage with a tolerance of at least 0.05 inches of rainfall. Install rain gage on project site in an area that will not deter rainfall from entering the gate opening. Do not install in a location where rain water may splash into rain gage. The rain gage installation shall be stable and plumbed. Maintain rain gage and replace rain gage that is stolen, does not function properly or accurately, is worn out, or needs to be relocated. Do not begin field work until rain gage is installed and Site-Specific BMPs are in place. Rain gage data logs shall be readily available. Submit rain gage data logs weekly to the Engineer.

Care shall be exercised during grading so that areas involved will drain properly. Water shall be prevented from running over the slopes by the temporary berms or drainage swales. The Contractor shall be responsible for the protection of existing surface and subsurface utilities and poles within and abutting the project site, trench excavations and other work areas. During construction, the Contractor shall properly grade and maintain all excavated surfaces to provide positive drainage and prevent ponding of water. In the event that ponding of water caused softening of the subgrades, the Contractor shall remove the soft soils and shall backfill the excavation with compacted fill at no additional cost to DOT and OHA.

When the work is interrupted by rain, operations shall not be resumed until field tests by the Geotechnical Engineer indicate that conditions will permit satisfactory results. If unforeseen or undetected soil conditions such as soft spots, existing utility trenches, structure foundations, voids or cavities, boulders, seepage water or expansive soil pockets, etc. are encountered, the Contractor shall immediately inform the Construction Manager and determine the extent of the unforeseen anomaly, determine the resolution and negotiate cost of such resolution, whether it be positive or negative. The DOT and OHA retains the right to further negotiate if quantities are determined to be less than designed.

**(6) Stabilization.** Coordinate temporary control provisions with permanent control features throughout the construction and post-construction period.

Immediately initiate stabilizing exposed soil areas upon completion of earth disturbing activities for areas permanently or temporarily ceased on any portion of the site. Earth-disturbing activities have permanently ceased when clearing and excavation within any area of the construction site that will not include permanent structures has been completed. Earth-disturbing activities have temporarily ceased

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when clearing, grading, and excavation within any area of the site that will not include permanent structures will not resume for a period of 14 or more calendar days, but such activities will resume in the future. The term “immediately” is used in this section to define the deadline for initiating stabilization measures. “Immediately” means as soon as practicable, but no later than the end of the next work day, following the day when the earth-disturbing activities have temporarily or permanently ceased

For projects with an NPDES Permit for Construction activities:

**(a)** For construction areas discharging into waters not impaired for nutrients or sediments, complete initial stabilization within 14 calendar days after the temporary or permanent cessation of earth-disturbing activities.

**(b)** For construction areas discharging into nutrient or sediment impaired waters, complete initial stabilization within 7 calendar days after the temporary or permanent cessation of earth-disturbing activities.

For projects without an NPDES Permit for Construction activities, complete initial stabilization within 14 calendar days after the temporary or permanent cessation of earth-disturbing activities.

Any of the following types of activities constitutes initiation of stabilization:

**(a)** Prepping the soil for vegetative or non-vegetative stabilization;

**(b)** Applying mulch or other non-vegetative product to the exposed area;

**(c)** Seeding or planting the exposed area;

**(d)** Starting any of the activities in items (1) – (3) above on a portion of the area to be stabilized, but not on the entire area; and

**(e)** Finalizing arrangements to have stabilization product fully installed in compliance with the deadline for completing initial stabilization activities.

Any of the following types of activities constitutes completion of initial stabilization activities:

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**(a)** For vegetative stabilization, all activities necessary to initially seed or plant the area to be stabilized; and/or

**(b)** For non-vegetative stabilization, the installation or application of all such non-vegetative measures.

If the Contractor is unable to meet the deadlines above due to circumstances beyond the Contractor's control, and the Contractor is using vegetative cover for temporary or permanent stabilization, the Contractor may comply with the following stabilization deadlines instead as agreed to by the Engineer:

**(a)** Immediately initiate, and complete within the timeframe shown above, the installation of temporary non-vegetative stabilization measures to prevent erosion;

**(b)** Complete all soil conditioning, seeding, watering or irrigation installation, mulching, and other required activities related to the planting and initial establishment of vegetation as soon as conditions or circumstances allow it on the site; and

**(c)** Notify and provide documentation to the Engineer the circumstances that prevent the Contractor from meeting the deadlines above for stabilization and the schedule the Contractor will follow for initiating and completing initial stabilization and as agreed to by the Engineer.

Follow the applicable requirements of the specifications and special provisions including Section 619 Planting and Section 641 Hydro-Mulch Seeding.

Immediately after seeding or planting the area to be vegetatively stabilized, to the extent necessary to prevent erosion on the seeded or planted area, select, design, and install non-vegetative erosion controls that provide cover (e.g., mulch, rolled erosion control products) to the area while vegetation is becoming established.

Protect exposed or disturbed surface area with mulches, grass seeds or hydromulch. Spray mulches at a rate of 2,000 pounds per acre. Add tackifier to mix at a rate of 85 pounds per acre. Apply grass seeds at a rate of 125 pounds per acre. For hydromulch, use the ingredients and rates required for mulches and grass seeds. Submit recommendations from a licensed Landscape Architect when deviating from the application rates above.

463 Apply fertilizer to mulches, grass seed or hydromulch per  
464 manufacturer's recommendations. Submit recommendations from a  
465 licensed Landscape Architect when deviating from the manufacturer's  
466 recommendations.

467  
468 Install velocity dissipation measures when exposing erodible surfaces  
469 greater than 15 feet in height.

470  
471 BMP measures shall be in place and operational at the end of work  
472 day or as required by Section 209.03(B) Construction Requirements.

473  
474 Install and maintain either or both stabilized construction entrances  
475 and wheel washes to minimize tracking of dirt and mud onto roadways.  
476 Restrict traffic to stabilized construction areas only. Clean dirt, mud,  
477 or other material tracked onto the road, sidewalk, or other paved area  
478 by the end of the same day in which the track-out occurs. Modify  
479 stabilized construction entrances to prevent mud from being tracked  
480 onto road. Stabilize entire access roads if necessary.

481  
482 Chemicals may be used as soil stabilizers for either or both erosion  
483 and dust control if acceptable to the Engineer.

484  
485 Provide temporary slope drains of rigid or flexible conduits to carry  
486 runoff from cuts and embankments. Provide portable flume at the  
487 entrance. Shorten or extend temporary slope drains to ensure proper  
488 function.

489  
490 Protect ditches, channels, and other drainageways leading away from  
491 cuts and fills at all times by either:

492  
493 (a) Hydro-mulching the lower region of embankments in the  
494 immediate area.

495  
496 (b) Installing check dams and siltation control devices.

497  
498 (c) Other methods acceptable to the Engineer.

499  
500 Provide for controlled discharge of waters impounded, directed, or  
501 controlled by project activities or erosion control measures.

502  
503 Cover exposed surface of materials completely with tarpaulin or  
504 similar device when transporting aggregate, soil, excavated material  
505 or material that may be source of fugitive dust.

506  
507 Cleanup and remove any pollutant that can be attributed to the  
508 Contractor.



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Install or modify Site-Specific BMP measures due to change in the Contractor's means and methods, or for omitted condition that should have been allowed for in the accepted Site-Specific BMP or a Site-Specific BMP that replaces an accepted Site-Specific BMP that is not satisfactorily performing. Modifications to Site-Specific BMP measures shall be accepted in writing by the Engineer prior to implementation.

Properly maintain all Site-Specific BMP measures.

For projects with an NPDES Permit for Construction Activities:

**(a)** For construction areas discharging into nutrient or sediment impaired waters, inspect, prepare a written report, and make repairs to BMP measures at the following intervals:

**(1)** Weekly.

**(2)** Within 24 hours of any rainfall of 0.25 inch or greater which occurs in a 24-hour period.

**(3)** When existing erosion control measures are damaged or not operating properly as required by Site-Specific BMP.

**(b)** For construction areas discharging to waters not impaired for nutrients or sediments, inspect, prepare a written report, and make repairs to BMP measures at the following intervals:

**(1)** Weekly.

**(2)** When existing erosion control measures are damaged or not operating properly as required by Site-Specific BMP.

For projects without an NPDES Permit for Construction activities, inspect, prepare a written report, and make repairs to BMP measures at the following intervals:

**(a)** Weekly.

**(b)** When existing erosion control measures are damaged or not operating properly as required by Site-Specific BMP.

Temporarily remove, replace or relocate any Site-Specific BMP that

555 must be removed, replaced or relocated due to potential or actual  
556 flooding, or potential danger or damage to project or public.

557  
558 Maintain records of inspections of Site-Specific BMP work. Keep  
559 continuous records for duration of the project. Submit copy of  
560 Inspection Report to the Engineer within 24 hours after each  
561 inspection.

562  
563 The Contractor's designated representative specified in Subsection  
564 209.03(A)(2)(d) shall address any Site-Specific BMP deficiencies  
565 brought up by the Engineer immediately, including weekends and  
566 holidays, and complete work to fix the deficiencies by the close of the  
567 next work day if the problem does not require significant repair or  
568 replacement, or if the problem can be corrected through routine  
569 maintenance. Address any Site-Specific BMP deficiencies brought up  
570 by the State's Third-Party Inspector in the timeframe above or as  
571 specified in the Consent Decree or MS4 NPDES Permit, whichever is  
572 more stringent. The Consent Decree timeframe requirement applies  
573 statewide. The MS4 NPDES Permit only applies to Oahu. In this  
574 section, "immediately" means the Contractor shall take all reasonable  
575 measures to minimize or prevent discharge of pollutants until a  
576 permanent solution is installed and made operational. If a problem is  
577 identified at a time in the day in which it is too late to initiate repair,  
578 initiation of repair shall begin on the following work day. When  
579 installation of a new pollution prevention control or a significant repair  
580 is needed, complete installation or repair no later than 7 calendar days  
581 from the time of notification/Contractor discovery. Notify the Engineer  
582 and document why it is infeasible to complete the installation or repair  
583 within 7 calendar days and complete the work as soon as practicable  
584 and as agreed to by the Engineer. Address Site-Specific BMP  
585 deficiencies discovered by the Contractor within the timeframe above.  
586 The Contractor's failure to satisfactorily address these Site-Specific  
587 BMP deficiencies, the Engineer reserves the right to employ outside  
588 assistance or use the Engineer's own labor forces to provide  
589 necessary corrective measures. The Engineer will charge the  
590 Contractor such incurred costs plus any associated project  
591 engineering costs. The Engineer will make appropriate deductions  
592 from the Contractor's monthly progress estimate. Failure to apply  
593 Site-Specific BMP measures may result in one or more of the  
594 following: assessment of liquidated damages, suspension, or  
595 cancellation of Contract with the Contractor being fully responsible for  
596 all additional costs incurred by the State.

597  
598 **(C) Discharges of Storm Water Associated with Construction**  
599 **Activities.** If work includes disturbance of one acre or more, an NPDES  
600 Permit authorizing Discharges of Storm Water Associated with Construction

601 Activity (CWB-NOI Form C) or Individual Permit authorizing storm water  
602 discharges associated with construction activity is required from the  
603 Department of Health Clean Water Branch (DOH-CWB).  
604

605 Do not begin construction activities until all required conditions of the  
606 permit are met and submittals detailed in Subsection 209.03(A)(2) – Water  
607 Pollution, Dust, and Erosion Control Submittals are completed and accepted  
608 in writing by the Engineer.  
609

610 **(D) Discharges Associated with Hydrotesting Activities.** If  
611 hydrotesting activities require effluent discharge into State waters or drainage  
612 systems, an NPDES Hydrotesting Waters Permit (CWB-NOI Form F) or  
613 Individual Permit authorizing discharges associated with hydrotesting from  
614 DOH-CWB is required from the DOH-CWB.  
615

616 Do not begin hydrotesting activities until the DOH-CWB has issued an  
617 Individual NPDES Permit or Notice of General Permit Coverage (NGPC).  
618 Conduct Hydrotesting operations in accordance with the conditions of the  
619 permit or NGPC.

620 **(E) Discharges Associated with Dewatering Activities.** If dewatering  
621 activities require effluent discharge into State waters or drainage systems, an  
622 NPDES Dewatering Permit (CWB-NOI Form G) or Individual Permit  
623 authorizing discharges associated with dewatering from DOH-CWB is  
624 required from the DOH-CWB.  
625

626 Do not begin dewatering activities until the DOH-CWB has issued an  
627 Individual NPDES Permit or Notice of General Permit Coverage (NGPC).  
628 Conduct dewatering operations in accordance with the conditions of the  
629 permit or NGPC.  
630

631 **(F) Solid Waste.** Submit the Solid Waste Disclosure Form for  
632 Construction Sites to the Engineer within 21 calendar days of date of award.  
633 Provide a copy of all the disposal receipts from the facility permitted by the  
634 Department of Health to receive solid waste to the Engineer monthly. This  
635 should also include documentation from any intermediary facility where solid  
636 waste is handled or processed, or as directed by the Engineer.  
637

638 **(G) Construction BMP Training.** The Contractor's representative  
639 responsible for development of the Site-Specific BMP Plan and  
640 implementation of Site-Specific BMPs in the field shall attend the State's  
641 Construction Best Management Practices Training. The Contractor shall  
642 keep training logs updated and readily available.  
643

#### 644 **209.04 Measurement.**

645 **(A)** Installation, maintenance, monitoring, and removal of BMP will be paid  
646

647 on a lump sum basis. Measurement for payment will not apply.

648

649 **(B)** The Engineer will only measure additional water pollution, dust and  
650 erosion control required and requested by the Engineer on a force account  
651 basis in accordance with Subsection 109.06 – Force Account Provisions and  
652 Compensation.

653

654 **209.05 Payment.** The Engineer will pay for accepted pay items listed below at  
655 contract price per pay unit, as shown in the proposal schedule. Payment will be full  
656 compensation for work prescribed in this section and contract documents.

657

658 The Engineer will pay for each of the following pay items when included in  
659 proposal schedule:

660

661 <b>Pay Item</b>	662 <b>Pay Unit</b>
663 Installation, Maintenance, Monitoring, and Removal of BMP	Lump Sum
664 Additional Water Pollution, Dust, and Erosion Control	Force Account

665

666 An estimated amount for force account is allocated in proposal schedule  
667 under 'Additional Water Pollution, Dust, and Erosion Control', but actual amount to  
668 be paid will be the sum shown on accepted force account records, whether this sum  
669 be more or less than estimated amount allocated in proposal schedule. The  
670 Engineer will pay for BMP measures requested by the Engineer that are beyond  
671 scope of accepted Site-Specific BMP on a force account basis.

672

673 No progress payment will be authorized until the Engineer accepts in writing  
674 Site-Specific BMP or when the Contractor fails to maintain project site in accordance  
675 with accepted BMP.

676

677 For all citations or fines received by the Department for non-compliance,  
678 including compliance with NPDES Permit conditions, the Contractor shall reimburse  
679 State within 30 calendar days for full amount of outstanding cost State has incurred,  
680 or the Engineer will deduct cost from progress payment.

681

682 The Engineer will assess liquidated damages up to \$27,500 per day for non-  
683 compliance of each BMP requirement and all other requirements in this section.

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686 **Appendix A**

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688 The following list identifies potential pollutant sources and corresponding  
689 BMPs used to mitigate the pollutants. Each BMP is referenced to the corresponding  
690 section of the current HDOT Construction Best Management Practices Field Manual  
691 or appropriate Supplemental Sheets. The Manual may be obtained from the HDOT  
692 Statewide Stormwater Management Program Website at  
693 <http://www.stormwaterhawaii.com/resources/contractors-and-consultants/> under  
694 Construction Best Management Practices Field Manual. Supplemental BMP sheets  
695 are located at <http://www.stormwaterhawaii.com/resources/contractors-and-consultants/storm-water-pollution-prevention-plan-swppp/> under Concrete Curing  
696 and Irrigation Water.  
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<b>Pollutant Source</b>	<b>Appropriate Site-Specific BMP to be Implemented</b>	<b>BMP Requirements</b>
<p>Construction debris, green waste, general litter</p>	<ul style="list-style-type: none"> <li>• Separate contaminated clean up materials from construction and demolition (C&amp;D) wastes.</li> <li>• Provide waste containers (e.g., dumpster or trash receptacle) of sufficient size and number to contain construction and domestic wastes.</li> <li>• Inspect construction waste and recycling areas regularly.</li> <li>• Schedule solid waste collection regularly.</li> <li>• Schedule recycling activities based on construction/demolition phases.</li> <li>• Empty waste containers weekly or when they are two-thirds full, whichever is sooner.</li> <li>• Do not allow containers to overflow. Clean up immediately if they do.</li> <li>• On work days, clean up and dispose of waste in designated waste containers.</li> <li>• See Solid Waste Management Section SM-6 for additional requirements.</li> <li>• Provide Storm Drain Inlet Protection and/or Perimeter Sediment Controls as applicable.</li> <li>• Collect and dispose of all waste materials in trash dumpsters. Place dumpsters, with secure watertight lids, away from storm water conveyances and drains, in a covered materials storage area.</li> <li>• Dispose of construction and non- construction solid waste in accordance with State DOH regs.</li> <li>• Load removed non- recyclable vegetation directly onto trucks; cover and transport to a licensed facility</li> </ul>	<p>See Solid Waste Management Section SM-6. Storm Drain Inlet Protection SC-1, and Perimeter Sediment Controls where applicable.</p>

<b>Pollutant Source</b>	<b>Appropriate Site-Specific BMP to be Implemented</b>	<b>BMP Requirements</b>
<p>Materials associated with the operation and maintenance of equipment, such as oil, fuel, and hydraulic fluid leakage</p>	<ul style="list-style-type: none"> <li>• Use off-site wash racks, repair and maintenance facilities, and fueling sites when practical.</li> <li>• Designate bermed wash area if cleaning on site is necessary.</li> <li>• Place drip pans or drop cloths under vehicles and equipment to absorb spills or leaks.</li> <li>• Provide an ample supply of readily available spill cleanup materials.</li> <li>• Clean up spills immediately, using dry cleanup methods where possible, and dispose of used materials properly.</li> <li>• Do not clean surfaces or spills by hosing the area down.</li> <li>• Eliminate the source of the spill to prevent a discharge or a continuation of an ongoing discharge.</li> <li>• Inspect on-site vehicles and equipment regularly and immediately repair leaks.</li> <li>• Regularly inspect fueling areas and storage tanks.</li> <li>• Train employees on proper maintenance and spill practices and procedures and fueling and cleanup procedures.</li> <li>• Store diesel fuel, oil, hydraulic fluid, or other petroleum products or other chemicals in water-tight containers and provide cover or secondary containment.</li> <li>• Do not remove original product labels and comply with manufacturer's labels for proper disposal.</li> <li>• Dispose of containers only after all the product has been used.</li> <li>• Dispose of or recycle oil or oily wastes according to Federal, State, and Local requirements.</li> <li>• Store soaps, detergents, or solvents under cover or other means to prevent contact with rainwater.</li> <li>• See Vehicle and Equipment Cleaning, Maintenance, and Refueling, Sections SM-11, SM-12, and SM-13 and Material Storage and Handling Section SM-2 for additional requirements.</li> </ul>	<p>See Vehicle and Equipment Cleaning, Maintenance, and Refueling, Sections SM-11, SM-12, and SM-13, and Material Storage and Handling, Section SM-2, and Spill Prevention and Control SM-10.</p>

<b>Pollutant Source</b>	<b>Appropriate Site-Specific BMP to be Implemented</b>	<b>BMP Requirements</b>
Soil erosion from the disturbed areas	<ul style="list-style-type: none"> <li>• Provide Soil Stabilization, Slope Protection, Storm Drain Inlet Protection SC-1, Perimeter Controls and Sediment Barriers, Sediment Basins and Detention Ponds, Check Dams SC-3 ,Level Spreader EC-6, Paving Operations SM-20, Construction Roads and Parking Area Stabilization SC-10, Controlling Storm Water Flowing Onto and Through the Project, Post-Construction BMPs, and Non-Structural BMPs (Construction BMP Training SM-1, Scheduling SM-14, Location of Potential Sources of Sediment SM-15, Preservation of Existing Vegetation SM-17).</li> <li>• Delineate, and clearly mark off, with flags, tape, or other similar marking device all natural buffer areas defined in the SWPPP.</li> <li>• Preserve native topsoil where practicable.</li> <li>• In areas where vegetative stabilization will occur, restrict vehicle/equipment use in areas to avoid soil compaction or condition soil to promote vegetative growth.</li> <li>• For Storm Drain Inlet Protection, clean, or remove and replace, the protection measures as sediment accumulates, the filter becomes clogged, and/or performance is compromised.</li> <li>• Use “true dam” sediment filter (by Dandy Products, Inc.) or approved equal for catch basin inlet filters.</li> <li>• Where there is evidence of sediment accumulation adjacent to the inlet protection measure, remove the deposited sediment by the end of the same day in which it is found or by the end of the following work day if removal by the same day is not feasible.</li> <li>• Sediment basins shall be designed and maintained in accordance with HAR Chapter 11-55.</li> <li>• Minimize disturbance on steep slopes (Greater than 15% in grade).</li> <li>• If disturbance of steep slopes are unavoidable, phase disturbances and use stabilization techniques designed for steep grades.</li> </ul>	<p>Soil Stabilization</p> <ol style="list-style-type: none"> <li>1. SM-22 Topsoil Management</li> <li>2. EC-12 Seeding and Planting</li> <li>3. EC-14 Mulching</li> <li>4. EC-11 Geotextiles and Mats</li> </ol> <p>Slope Protection</p> <ol style="list-style-type: none"> <li>1. EC-12 Seeding and Planting</li> <li>2. EC-14 Mulching</li> <li>3. EC-11 Geotextiles and Mats</li> <li>4. EC-4 Slope Roughening, Terracing, and Rounding</li> <li>5. EC-7 Slope Drains and Subsurface Drains</li> <li>6. EC-9 Slope Interceptor or Diversion Ditches/Berms</li> </ol> <p>SC-1 Storm Drain Inlet Protection</p>



<b>Pollutant Source</b>	<b>Appropriate Site-Specific BMP to be Implemented</b>	<b>BMP Requirements</b>
	<ul style="list-style-type: none"> <li>For temporary drains and swales use velocity dissipation devices within and at the outlet to minimize erosive flow velocities.</li> </ul>	<p><i>Perimeter Controls and Sediment Barriers</i></p> <ol style="list-style-type: none"> <li>SC-7 Silt Fence or Filter Fabric Fence</li> <li>SC-2 Vegetated Filter Strips and Buffers</li> <li>SC-6 Compost Filter Berm/Sock</li> <li>SC-8 Sandbag Barrier</li> <li>SC-9 Brush or Rock Filter</li> </ol> <p><i>Sediment Basins and Detention Ponds</i></p> <ol style="list-style-type: none"> <li>SC-4 Sediment Trap</li> <li>SC-5 Sediment Basin</li> </ol> <p><i>SC-3 Check Dams</i></p> <p><i>EC-6 Level Spreader</i>  <i>SM-20 Paving Operations</i>  <i>SC-10 Construction Roads and Parking Area Stabilization</i></p>

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<b>Pollutant Source</b>	<b>Appropriate Site-Specific BMP to be Implemented</b>	<b>BMP Requirements</b>
		<p><i>Controlling Storm Water Flowing onto and Through the Project</i></p> <ol style="list-style-type: none"> <li>1. <i>EC-3 Run-On Diversion</i></li> <li>2. <i>EC-5 Earth Dike, Swales and Ditches</i></li> </ol> <p><i>Post Construction BMPs</i></p> <ol style="list-style-type: none"> <li>1. <i>EC-2 Flared Culvert End Sections</i></li> <li>2. <i>EC-10 Rip-Rap and Gabion Inflow Protection</i></li> <li>3. <i>EC-8 Outlet Protection and Velocity Dissipation Devices</i></li> <li>4. <i>SM-22 Topsoil Management</i></li> </ol> <p><i>Non-Structural BMPs</i></p> <ol style="list-style-type: none"> <li>1. <i>SM-1 Construction BMP Training</i></li> <li>2. <i>SM-14 Scheduling</i></li> <li>3. <i>SM-15 Location of Potential Sources of Sediment</i></li> <li>4. <i>SM-17 Preservation of Existing Vegetation</i></li> </ol>

<b>Pollutant Source</b>	<b>Appropriate Site-Specific BMP to be Implemented</b>	<b>BMP Requirements</b>
Sediment from soil stockpiles	<ul style="list-style-type: none"> <li>• Locate stockpiles a minimum of 50 feet or as far as practicable from concentrated runoff or outside of any natural buffers identified on the SWPPP.</li> <li>• Place bagged materials on pallets and under cover.</li> <li>• Provide physical diversion to protect stockpiles from concentrated runoff.</li> <li>• Cover stockpiles with plastic or comparable material when practicable.</li> <li>• Place silt fence, fiber filtration tubes, or straw wattles around stockpiles.</li> <li>• Do not hose down or sweep soil or sediment accumulated on pavement or other impervious surfaces into any storm water conveyance (unless connected to a sediment basin, sediment trap, or similarly effective control), storm drain inlet, or state water.</li> <li>• Unless infeasible, contain and securely protect stockpiles from the wind.</li> <li>• Provide Storm Drain Inlet Protection and/or Perimeter Sediment Controls as applicable. See Stockpile Management Section SM-3 for additional requirements.</li> </ul>	See Stockpile Management Section SM-3. Storm Drain Inlet Protection SC-1, and Perimeter Sediment Controls where applicable.
Emulsified asphalt or prime/tack coat	<ul style="list-style-type: none"> <li>• Provide training for employees and contractors on proper material delivery and storage practices and procedures.</li> <li>• Restrict paving operations during wet weather to prevent paving materials from being discharged.</li> <li>• Use asphalt emulsions such as prime coat when possible.</li> <li>• Protect drain inlet structures and manholes during application of tack coat, seal coat, slurry seal, and fog seal.</li> <li>• Keep ample supplies of drip pans and absorbent materials on site.</li> <li>• Inspect inlet protection devices.</li> <li>• See Material Storage and Handling Section SM-2 and Paving Operations Section SM-20 for additional requirements.</li> <li>• Provide Storm Drain Inlet Protection and/or Perimeter Sediment Controls as applicable.</li> </ul>	See Material Storage and Handling Section SM-2, and Stockpile Management Section SM-3, Paving Operations Section SM-20, Storm Drain Inlet Protection SC-1, and Perimeter Sediment Controls where applicable.

<b>Pollutant Source</b>	<b>Appropriate Site-Specific BMP to be Implemented</b>	<b>BMP Requirements</b>
<p><i>Materials associated with painting, such as paint and paint wash solvent</i></p>	<ul style="list-style-type: none"> <li>• <i>Hazardous chemicals shall be well-labeled and stored in original containers.</i></li> <li>• <i>Keep ample supply of cleanup materials on site.</i></li> <li>• <i>Dispose container only after all of the product has been used.</i></li> <li>• <i>Remove as much paint from brushes on painted surface.</i></li> <li>• <i>Rinse from water-based paints shall be discharged into the sanitary sewer system where possible. If not, direct all washwater into a leak-proof container or leak-proof pit. The container or pit must be designed so that no overflows can occur due to inadequate sizing or precipitation.</i></li> <li>• <i>Locate on-site wash area a minimum of 50 feet away or as far as practicable from storm drain inlets, open drainage facilities, or water bodies.</i></li> <li>• <i>Do not dump liquid wastes into the storm drainage system.</i></li> <li>• <i>Filter and re-use solvents and thinners.</i></li> <li>• <i>Dispose of oil-based paints and residue as a hazardous waste.</i></li> <li>• <i>Ensure collection, removal, and disposal of hazardous waste complies with regulations.</i></li> <li>• <i>Immediately clean up spills and leaks.</i></li> <li>• <i>Properly store paints, solvents, and epoxy compounds.</i></li> <li>• <i>Properly store and dispose waste materials generated from painting and structure repair and construction activities.</i></li> <li>• <i>Mix paints in a covered and contained area, when possible, to minimize adverse impacts from spills.</i></li> <li>• <i>Do not apply traffic paint or thermoplastic if rain is forecasted.</i></li> <li>• <i>See Material Storage and Handling Use SM-2, Hazardous Materials and Waste Management Section SM-9, Spill Prevention and Control Section SM-10, and Structure Construction and Painting Section SM-21 for additional requirements.</i></li> </ul> <p><i>Provide Storm Drain Inlet Protection and/or Perimeter Sediment Controls as applicable.</i></p>	<p><i>See Material Storage and Handling Use Section SM-2, Stockpile Management Section SM-3, Hazardous Materials and Waste Management Section SM-9, Waste Management, Spill Prevention and Control Section SM-10, and Structure Construction and Painting Section SM-21, Storm Drain Inlet Protection SC-1, and Perimeter Sediment Controls where applicable.</i></p>

<b>Pollutant Source</b>	<b>Appropriate Site-Specific BMP to be Implemented</b>	<b>BMP Requirements</b>
<p><i>Industrial chemicals, fertilizers, and/or pesticides</i></p>	<ul style="list-style-type: none"> <li>• <i>Hazardous chemicals shall be well-labeled and stored in original containers.</i></li> <li>• <i>Keep ample supply of cleanup materials on site.</i></li> <li>• <i>Clean up spills immediately, using dry clean-up methods where possible, and dispose of used materials properly.</i></li> <li>• <i>Do not clean surfaces or spills by hosing the area down.</i></li> <li>• <i>Eliminate the source of the spill to prevent a discharge or a furtherance of an ongoing discharge.</i></li> <li>• <i>Dispose container only after all of the product has been used.</i></li> <li>• <i>Retain a complete set of safety data sheets (formerly MSDS) on site.</i></li> <li>• <i>Store industrial chemicals in water-tight containers and provide either cover or secondary containment.</i></li> <li>• <i>Provide cover when storing fertilizers or pesticides to prevent these chemicals from coming into contact with rainwater.</i></li> <li>• <i>Restrict amount of pesticide prepared to quantity necessary for the current application.</i></li> <li>• <i>Do not apply fertilizers or pesticides during or just before a rain event.</i></li> <li>• <i>Do not apply to stormwater conveyance channels with flowing water.</i></li> <li>• <i>Comply with fertilizer and pesticide manufacturer's recommended usage and disposal instructions. Document departures from manufacturer's specifications in Attachment J.</i></li> <li>• <i>Apply fertilizers at the appropriate time of year for the location, and preferably timed to coincide as closely as possible to the period of maximum vegetation uptake and growth.</i></li> <li>• <i>Follow federal, state, and local laws regarding fertilizer application.</i></li> <li>• <i>Do not dispose of toxic liquid wastes (solvents, used oils, and paints) or chemicals (additives, acids, and curing compounds) in dumpsters allocated for construction debris.</i></li> </ul>	<p><i>See Material Storage and Handling Use Section SM-2, Stockpile Management Section SM-3, and Hazardous Materials and Waste Management Section SM-9, and Spill Prevention and Control SM-10</i></p>

<b>Pollutant Source</b>	<b>Appropriate Site-Specific BMP to be Implemented</b>	<b>BMP Requirements</b>
	<ul style="list-style-type: none"> <li>• <i>Ensure collection, removal, and disposal of hazardous waste complies with regulations. Hazardous waste that cannot be reused or recycled shall be disposed of by a licensed hazardous waste hauler.</i></li> <li>• <i>See Material Storage and Handling Use SM-2, and Hazardous Materials and Waste Management Section SM-9 for additional requirements.</i></li> </ul>	
<p><i>Hazardous waste (Batteries, Solvents, Treated Lumber, etc.)</i></p>	<ul style="list-style-type: none"> <li>• <i>Do not dispose of toxic materials in dumpsters allocated for construction debris.</i></li> <li>• <i>Ensure collection, removal, and disposal of hazardous waste complies with regulations.</i></li> <li>• <i>Hazardous waste that cannot be reused or recycled shall be disposed of by a licensed hazardous waste hauler.</i></li> <li>• <i>Segregate and recycle wastes from vehicle/equipment maintenance activities such as used oil or oil filters, greases, cleaning solutions, antifreeze, automotive batteries, and hydraulic and transmission fluids.</i></li> <li>• <i>Store waste in sealed containers, which are constructed of suitable materials to prevent leakage and corrosion, and which are labeled in accordance with applicable Resource Conservation and Recovery Act (RCRA) requirements and all other applicable federal, state, and local requirements.</i></li> <li>• <i>All containers stored outside shall be kept away from surface waters and within appropriately sized secondary containment (e.g., spill berms, decks, spill containment pallets). Provide cover if possible.</i></li> <li>• <i>Clean up spills immediately, using dry clean-up methods where possible, and dispose of used materials properly.</i></li> <li>• <i>Do not clean surfaces or spills by hosing the area down.</i></li> <li>• <i>Eliminate the source of the spill to prevent a discharge or a continuation of an ongoing discharge.</i></li> </ul>	<p><i>See Hazardous Materials and Waste Management Section SM-9 and Vehicle and Equipment Maintenance SM-12</i></p>

<b>Pollutant Source</b>	<b>Appropriate Site-Specific BMP to be Implemented</b>	<b>BMP Requirements</b>
	<ul style="list-style-type: none"> <li>• Ensure collection, removal, and disposal of hazardous waste complies with manufacturer's recommendations and is in compliance with federal, state, and local requirements.</li> <li>• See Hazardous Materials and Waste Management Section SM-9 and Vehicle and Equipment Management, Vehicle and Equipment Maintenance SM-12 for additional requirements.</li> </ul>	
<i>Metals and Building Materials</i>	<ul style="list-style-type: none"> <li>• Inspect construction waste and recycling areas regularly.</li> <li>• Schedule solid waste collection regularly.</li> <li>• If building materials or metals are stored on site (such as rebar or galvanized poles) store under cover under tarps or in containers.</li> <li>• Minimize the amount of material stored on site.</li> <li>• Do not stockpile uncovered metals or other building materials in close proximity to discharge points.</li> <li>• See Solid Waste Management Section SM-6 for additional requirements.</li> </ul>	<i>See Solid Waste Management Section SM-6</i>
<i>Contaminated Soil</i>	<ul style="list-style-type: none"> <li>• See Waste Management, Contaminated Soil Management Section SM-8 and/or Hazardous Materials and Waste Management Section SM-9 for additional requirements.</li> <li>• At minimum contain contaminated material soil by surrounding with impermeable lined berms or cover exposed contaminated material with plastic sheets.</li> </ul>	<i>See Waste Management, Contaminated Soil Management Section SM-8 and/or Hazardous Materials and Waste Management Section SM-9</i>

<b>Pollutant Source</b>	<b>Appropriate Site-Specific BMP to be Implemented</b>	<b>BMP Requirements</b>
<i>Fugitive Dust Control and Dust Control Water</i>	<ul style="list-style-type: none"> <li>• <i>Do not over spray water for dust control purposes which will result in runoff from the area.</i></li> <li>• <i>Apply water as conditions require.</i></li> <li>• <i>Washing down of debris or dirt into drainage, sewage systems, or State waters is not allowed.</i></li> <li>• <i>Minimize exposed areas through the schedule of construction activities.</i></li> <li>• <i>Utilize vegetation, mulching, sprinkling, and stone/gravel layering to quickly stabilize exposed soil.</i></li> <li>• <i>Direct construction vehicle traffic to stabilized roadways.</i></li> <li>• <i>Cover dump trucks hauling material from the site with a tarpaulin.</i></li> </ul> <p><i>See Dust Control Section SM-19 for additional requirements.</i></p>	<i>See Dust Control Section SM-19</i>
<i>Concrete Truck Wash Water</i>	<ul style="list-style-type: none"> <li>• <i>Disposal of concrete truck wash water via percolation is prohibited.</i></li> <li>• <i>Wash concrete-coated vehicles or equipment off-site or in the designated wash area.</i></li> <li>• <i>Locate on-site wash area a minimum of 50 feet away or as far as practicable from storm drain inlets, open drainage facilities, or water bodies.</i></li> <li>• <i>Runoff from the on-site concrete wash area shall be contained in a temporary pit or level bermed area where the concrete can set.</i></li> <li>• <i>Design the area so that no overflow can occur due to inadequate wash area sizing or precipitation.</i></li> <li>• <i>The temporary pit shall be lined with plastic to prevent seepage of wash water into the ground.</i></li> <li>• <i>Allow wash water to evaporate or collect wash water and all concrete debris in a concrete washout system bin.</i></li> <li>• <i>Do not dump liquid wastes into storm drainage system.</i></li> <li>• <i>Dispose of liquid and solid concrete wastes in compliance with federal, state, and local standards.</i></li> <li>• <i>See Waste Management, Concrete Wash and Waste Management Section SM-4 for additional requirements.</i></li> </ul>	<i>See Waste Management, Concrete Wash and Waste Management Section SM-4</i>



<b>Pollutant Source</b>	<b>Appropriate Site-Specific BMP to be Implemented</b>	<b>BMP Requirements</b>
<i>Sediment Track-Out</i>	<ul style="list-style-type: none"> <li>• <i>Include Stabilized Construction Entrance at all points that exit onto paved roads.</i></li> <li>• <i>A sediment trapping device is required if a wash rack is used in conjunction with the stabilized construction entrance/exit.</i></li> <li>• <i>The pavement shall not be cleaned by washing down the street.</i></li> <li>• <i>If sweeping is ineffective or it is necessary to wash the streets, wash water must be contained either by construction of a sump, diverting the water to an acceptable disposal area, or vacuuming the wash water.</i></li> <li>• <i>Use BMPs for adjacent drainage structures.</i></li> <li>• <i>Remove sediment tracked onto the street by the end of the day in which the track-out occurs.</i></li> <li>• <i>Restrict vehicle use to properly designated exit points.</i></li> <li>• <i>Include additional BMPs that remove sediment prior to exit when minimum dimensions cannot be met.</i></li> </ul> <p><i>See Stabilized Construction Entrance/Exit Section SC-11 for additional requirements.</i></p>	<i>See Stabilized Construction Entrance/Exit Section SC-11</i>
<i>Irrigation Water</i>	<ul style="list-style-type: none"> <li>• <i>Consider irrigation requirements.</i></li> <li>• <i>Where possible, avoid species which require irrigation.</i></li> <li>• <i>Design, timing and application methods of irrigation water to eliminate the runoff of excess irrigation water into the storm water drainage system.</i></li> </ul> <p><i>See Seeding and Planting Section EC-12 and California Stormwater BMP Handbook SD-12 Efficient Irrigation included in SWPPP Attachment A for additional requirements.</i></p>	<i>See Seeding and Planting Section EC-12 and California Stormwater BMP Handbook SD-12 Efficient Irrigation</i>
<i>Hydrotesting Effluent</i>	<ul style="list-style-type: none"> <li>• <i>If work includes removing, relocation or installing waterlines, and Contractor elects to flush waterline or discharge hydrotesting effluent into State waters or drainage systems, the Contractor shall prepare and obtain HDOT acceptance of a NOI/NPDES Permit Form F application for HDOT submittal to DOH CWB at least 30 calendar days prior to the start of Hydrotesting Activities if necessary. Site specific BMPs will be included in the NOI/NPDES Permit Form F submittal.</i></li> </ul>	<i>Site specific BMPs will be included in the NOI/NPDES Permit Form F submittal.</i>

<b>Pollutant Source</b>	<b>Appropriate Site-Specific BMP to be Implemented</b>	<b>BMP Requirements</b>
<i>Dewatering Effluent</i>	<i>If excavation or backfilling operations require dewatering, and Contractor elects to discharge dewatering effluent into State waters or existing drainage systems, Contractor shall prepare and obtain HDOT acceptance of a NOI/NPDES Permit Form G application for HDOT submittal to DOH CWB at least 30 calendar days prior to the start of Dewatering Activities if necessary. See Site Planning and General Practices, Dewatering Operations Section SM-18 for additional requirements.</i>	<i>See Dewatering Operations SM-18. Site specific BMPs will be included in the NOI/NPDES Permit Form G submittal.</i>
<i>Saw-cutting Slurry</i>	<ul style="list-style-type: none"> <li>• <i>Saw cut slurry shall be removed from the site by vacuuming.</i></li> <li>• <i>Provide storm drain protection during saw cutting. See Paving Operations Section SM-20 for additional requirements.</i></li> </ul> <i>Provide Storm Drain Inlet Protection and/or Perimeter Sediment Controls as applicable.</i>	<i>See Paving Operations Section SM-20, Storm Drain Inlet Protection SC-1, Perimeter sediment controls where applicable</i>
<i>Concrete Curing Water</i>	<ul style="list-style-type: none"> <li>• <i>Avoid overspraying of curing compounds.</i></li> <li>• <i>Apply an amount of compound that covers the surface, but does not allow any runoff of the compound.</i></li> </ul> <i>See California Stormwater BMP Handbook NS-12 Concrete Curing included in SWPPP Attachment A for additional requirements.</i>	<i>See California Stormwater BMP Handbook NS-12 Concrete Curing</i>

<b>Pollutant Source</b>	<b>Appropriate Site-Specific BMP to be Implemented</b>	<b>BMP Requirements</b>
Plaster Waste Water	<ul style="list-style-type: none"> <li>• Direct all washwater into a leak-proof container or leak-proof pit. The container or pit must be designed so that no overflows can occur due to inadequate sizing or precipitation.</li> <li>• Locate on-site wash area a minimum of 50 feet away or as far as practicable from storm drain inlets, open drainage facilities, or water bodies.</li> <li>• Any significant residual materials remaining on the ground after the completion of construction shall be removed and properly disposed. If the residual materials contaminate the soil, then the contaminated soil shall also be removed and properly disposed of.</li> <li>• Plaster waste water shall not be allowed to flow into drainage structures or State waters. See Material, Storage and Handling Use SM-2, Stockpile Management Use Section SM-3, and Hazardous Materials and Waste Management Section SM-9 for additional requirements.</li> </ul>	See Material, Storage and Handling Use Section SM-2, Stockpile Management Use Section SM-3, and Hazardous Materials and Waste Management Section SM-9
Water-Jet Wash Water	<ul style="list-style-type: none"> <li>• For Water-Jet Wash Water used to clean vehicles, use off site wash racks or commercial washing facilities when practical.</li> <li>• See Vehicle and Equipment Cleaning Section SM-11 for additional information.</li> <li>• For Water-Jet Wash Water used to clean impervious surfaces, the runoff shall not be allowed to flow into drainage structures or State Waters.</li> </ul>	See Vehicle and Equipment Cleaning Section SM-11
Sanitary/Septic Waste	<ul style="list-style-type: none"> <li>• Locate Sanitary facilities in a convenient place away from drainage facilities.</li> <li>• Position sanitary facilities so they are secure and will not be tipped over or knocked down.</li> <li>• Wastewater shall not be discharged to the ground or buried.</li> <li>• A licensed service provider shall maintain sanitary/septic facilities in good working order.</li> <li>• Schedule regular waste collection by a licensed transporter.</li> <li>• See Sanitary Waste Section SM-7 for additional requirements.</li> </ul>	See Sanitary Waste Section SM-7.

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**END OF SECTION 209**

**I-H3-1(75)  
209-30a**

**7/27/23**







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- (1) Blaw-Knox bituminous pavers shall be equipped with the Blaw-Knox Materials Management Kit (MMK).
- (2) Cedarapids bituminous pavers shall be those that were manufactured in 1989 or later.
- (3) Barber-Green/Caterpillar bituminous pavers shall be equipped with deflector plates as identified in the December 2000 Service Magazine entitled "New Asphalt Deflector Kit {6630, 6631, 6640}".

Prior to the start of using the paver for placing plant mix, the Contractor shall submit for approval a full description in writing of the means and methodologies that will be used to prevent bituminous paver segregation. Use of the paver shall not commence prior to receiving approval from the Engineer.

The Contractor shall supply a Certificate of Compliance that verifies that the approved means and methods used to prevent bituminous paver segregation have been implemented on all pavers used on the project and is working in accordance with the manufacturer's requirements."

**(VI) Amend Section 401.03(F)(1) HMA Pavement Courses One and a Half Inches Thick Or Greater**, from lines 499 to 505 to read as follows:

**"(1) HMA Pavement Courses One and a Half Inches Thick Or Greater.** Where HMA pavement compacted thickness indicated in the contract documents is 1-1/2 inches or greater, compact to not less than 93.0 percent nor greater than 97.0 percent of the maximum specific gravity determined in accordance with AASHTO T 209, modified by deletion of Supplemental Procedure for Mixtures Containing Porous Aggregate."

**(VII) Amend Section 401.03(F)(3) HMA Pavement Courses One and a Half Inches Thick or Greater In Special Areas Not Designated For Vehicular Traffic**, from lines 530 to 538 to read as follows:

**"(3) HMA Pavement Courses One and a Half Inches Thick or Greater In Special Areas Not Designated For Vehicular Traffic.** For areas such as bikeways that are not part of roadway and other

92 areas not subjected to vehicular traffic, compact to not less than  
93 90.0 percent of maximum specific gravity determined in accordance  
94 with AASHTO T 209, modified by deletion of Supplemental  
95 Procedure for Mixtures Containing Porous Aggregate. Increase  
96 asphalt content by at least 0.5 percent above that used for HMA  
97 pavements designed for vehicular traffic.”  
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100 **(VIII) Amend Section 401.04 Measurement**, from lines 597 to 603 to read as  
101 follows:

102  
103 **“401.04 Measurement.**

104  
105 **(A)** Asphalt concrete pavement will be paid on a lump sum basis.  
106 Measurement for payment will not apply.

107  
108 **(B)** The Engineer will measure asphalt concrete pavement per ton in  
109 accordance with the contract documents.

110  
111 **(C)** The Engineer will measure leveling course per ton in accordance  
112 with the contract documents.”  
113

114  
115  
116 **(IX) Amend Section 401.05 Payment**, from lines 605 to 635, to read as  
117 follows:

118  
119 **“401.05 Payment.** The Engineer will pay for the accepted pay items  
120 listed below at the contract price per pay unit, as shown in the proposal schedule.  
121 Payment will be full compensation for the work prescribed in this section and the  
122 contract documents.

123  
124 The Engineer will pay for each of the following pay items when included in  
125 the proposal schedule:

<b>Pay Item</b>	<b>Pay Unit</b>
HMA Pavement, Mix No. _____	Lump Sum

126  
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131  
132 The Engineer will pay for cold planing in accordance with and under  
133 Section 415 – Cold Planing of Existing Pavement.

134  
135 The Engineer will pay for adjusting existing frames and covers and valve  
136 boxes in accordance with and under Section 604 – Manholes, Inlets and Catch



137 Basins and Section 626 – Manholes and Valve Boxes for Water and Sewer  
138 Systems.

139

140 The Engineer may, in lieu of requiring removal and replacement, use the  
141 sliding scale factor to accept HMA pavements compacted below 93.0 percent  
142 and above 97.0 percent. The Engineer will make payment for the material in that  
143 production day at a reduced price arrived at by multiplying the contract unit price  
144 by the pay factor shown in Table 401.05-1.

145

<b>Table 401.05-1 – Sliding Scale Pay Factor for Compaction</b>	
<b>Percent Compaction</b>	<b>Percentage Payment</b>
> 98.0	Removal
97.1 - 98.0	95
93.0 - 97.0	100
90.0 - 92.9	80
<90.0	Removal

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**END OF SECTION 401**

1 Make this section a part of the Standard Specifications:

2  
3 (I) Add Section 421 – Permeable Surface

4  
5 **SECTION 421 – Permeable Surface**

6  
7  
8 **421.01 Description.** This section describes the furnishing and installation of a  
9 geocell system as a permeable surface.

10  
11 **421.02 Materials.**

12  
13 **(A) Geocell System.** The Geoweb® geocell system or an approved  
14 equal shall be used. No material will be considered as an equivalent to  
15 the geocell material specified herein unless it meets all requirements of  
16 this specification, without exception. Manufacturers seeking to supply  
17 equivalent material must submit records, data, independent test results,  
18 samples, certifications, and documentation deemed necessary by the  
19 Engineer to prove equivalency. The Engineer shall approve or  
20 disapprove other Manufacturers materials after submission and review  
21 of provided information. All substitute materials submitted shall be  
22 subject to independent lab testing at the Contractor’s expense.

23  
24 The geocell system shall be used for load support and shall meet  
25 the following requirements:

26  
27 **(1) Testing Standards.** The geocell system shall conform to  
28 the following testing standards:

29  
30 **(a) American Association of State Highway and**  
31 **Transportation Officials (AASHTO).**

32  
33 **(i) AASHTO M 218 – Steel Sheet, Zinc-Coated**  
34 **(Galvanized) for Corrugated Steel Pipe.**

35  
36 **(ii) AASHTO M 288 – Geotextile Specification for**  
37 **Highway Applications.**

38  
39 **(b) American Society of Testing and Materials**  
40 **(ASTM).**

41  
42 **(i) ASTM D 1505 – Density of Plastics by the**  
43 **Density Gradient Technique.**

44  
45 **(ii) ASTM D 1603 – Standard Test for Carbon**  
46 **Black in Olefin Plastics.**

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(iii) ASTM D 1693 – Environmental Stress-Cracking of Ethylene Plastics.

(iv) ASTM D 5199 – Measuring Nominal Thickness of Geotextiles and Geomembranes.

(v) ASTM D 5885 – Standard Test Method for Oxidative Induction Time of Polyolefin Geosynthetics by High-Pressure Differential Scanning Calorimetry.

(vi) ASTM E 41 – Terminology Relating to Conditioning.

(c) **US Army Corps of Engineers (USACE)**

(i) Technical Report GL-86-19, Appendix A.

**(2) Quality Assurance and Control.** The geocell material shall be provided from a single Manufacturer for the entire project.

The Manufacturer's Quality management system shall be certified and in accordance with ISO 9001:2015 and CE certification. Substitute materials submitted shall provide a certification that the manufacturing process is part of an ISO program. Certification is required specifically stating that their testing facility is certified and in accordance with ISO. An ISO certification for the substitute material will not be acceptable unless it is proven it pertains specifically to the geocell manufacturing operations.

The Manufacturer shall provide certification of compliance to all applicable testing procedures and related specifications upon the Engineer's written request. Request for certification shall be submitted no later than the date of order placement. The Manufacturer shall have a minimum of 20 year's experience producing geocell material.

**(3) Warranty.** The Manufacturer shall warrant each geocell section that it ships to be free from defects in materials and workmanship at the time of manufacture. The Manufacturer's exclusive liability under this warranty or otherwise will be to furnish without charge to the original f.o.b. point a replacement for any section which proves to be defective under normal use and service during the 10-year period which begins on the date of shipment. The Manufacturer reserves the right to inspect any

94 allegedly defective section in order to verify the defect and  
95 ascertain its cause.

96  
97 This warranty shall not cover defects attributable to causes  
98 or occurrences beyond the Manufacturer's control and unrelated  
99 to the manufacturing process, including, but not limited to, abuse,  
100 misuse, mishandling, neglect, improper storage, improper  
101 installation, improper alteration or improper application.

102  
103 In no event shall the Manufacturer be liable for any special,  
104 indirect, incidental or consequential damages for the breach of  
105 any express or implied warranty or for any other reason, including  
106 negligence, in connection with the geocell system.

107  
108 **(4) Base Material.** Base material shall be polyethylene  
109 stabilized with carbon black.

110  
111 **(a)** Density shall be 58.4 to 60.2 lbs/ft<sup>3</sup> (0.935 to 0.965  
112 g/cm<sup>3</sup>) in accordance with ASTM D 1505.

113  
114 **(b)** Environmental Stress Crack Resistance (ESCR)  
115 shall be 5000 hours in accordance with ASTM D 1693.

116  
117 **(c)** Ultra-violet light stabilization with carbon black.

118  
119 **(d)** Carbon black content shall be 1.5 to 2 percent by  
120 weight, through addition of a carrier with certified carbon  
121 black content, in accordance with ASTM D 1603.

122  
123 **(e)** Carbon black shall be homogeneously distributed  
124 throughout material, in accordance with ASTM D 5596.

125  
126 **(f)** The manufacturer shall have an in-place quality  
127 control to prevent irregularities in strip material.

128  
129 **(5) Cell Properties.**

130  
131 **(a)** Individual cells shall be uniform in shape and size  
132 when expanded.

133  
134 **(b)** Individual cell dimensions (nominal) shall be plus or  
135 minus 10%.

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137 **(c)** GW30V-Cell.

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139 **(i)** Length shall be 11.3 inches (287 mm).

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(ii) Width shall be 12.6 inches (320 mm).

(iii) Nominal area shall be 71.3 in<sup>2</sup> (460 cm<sup>2</sup>) plus or minus 1%.

(iv) Nominal cell depth shall be 6 inches (150 mm).

**(6) Strip Properties and Assembly.** The perforated textured strip/cell shall conform to the following:

(a) Strip sheet thickness shall be 50 mils (1.27 mm), minus 5 percent, plus 10 percent in accordance with ASTM D 5199. Determine thickness flat, before surface disruption.

(b) Polyethylene strips shall be textured surface with a multitude of rhomboidal (diamond shape) indentations.

(c) Textured sheet thickness shall be 60 mils, plus or minus 6 mils (1.52 mm plus or minus 0.15 mm).

(d) Indentation surface density shall be 140 to 200 per in<sup>2</sup> (22 to 31 per cm<sup>2</sup>).

(e) Perforated with horizontal rows of 0.4 inch (10 mm) diameter holes.

(f) Perforations within each row shall be 0.75 inches (19 mm) on-center.

(g) Horizontal rows shall be staggered and separated 0.50 inches (12 mm) relative to hole centers.

(h) Edge of strip to nearest edge of perforation shall be a minimum of 0.3 inches (8 mm).

(i) Centerline of spot weld to nearest edge of perforation shall be a minimum of 0.7 inches (18 mm).

(j) A slot with a dimension of 3/8 inch x 1-3/8 inch (10 mm x 35 mm) is standard in the center of the non-perforated areas and at the center of each weld.

**(7) Assembly of Cell Sections.**

- 186 (a) Fabricate using strips of sheet polyethylene each  
187 with a length of 142 inches (3.61 m) and a width equal to  
188 cell depth.  
189  
190 (b) Connect strips using full depth ultrasonic spot-  
191 welds aligned perpendicular to longitudinal axis of strip.  
192  
193 (c) Ultrasonic weld melt-pool width shall be 1.0 inch (25  
194 mm) maximum.  
195  
196 (d) Weld spacing for GW30V-cell sections shall be 17.5  
197 inches plus or minus 0.10 inch (445 mm plus or minus 2.5  
198 mm).  
199

200 **(8) Cell Seam Strength Tests.** Minimum seam strengths are  
201 required by design and shall be reported in test results. Materials  
202 submitted with average or typical values will not be accepted.  
203 Written certification of minimum strengths must be supplied to the  
204 Engineer at the time of submittals.  
205

206 (a) **Short-Term Seam Peel-Strength Test.**  
207

- 208 (i) Cell seam strength shall be uniform over full  
209 depth of cell.  
210  
211 (ii) Minimum seam peel strength shall be 480 lbf  
212 (2,130 N) for 6 inch (150 mm) depth.  
213

214 (b) **Long-Term Seam Peel-Strength Test.**  
215

- 216 (i) Conditions: Minimum of 7 days in a  
217 temperature-controlled environment that  
218 undergoes change on a 1 hour cycle from room  
219 temperature to 130 degrees F (54 degrees C).  
220  
221 (ii) Room temperature shall be in accordance with  
222 ASTM E41.  
223  
224 (iii) Test samples shall consist of two, 4 inch (100  
225 mm) wide strips welded together.  
226  
227 (iv) Test sample consisting of 2 carbon black  
228 stabilized strips shall support a 160 pound (72.5 kg)  
229 load for test period.  
230

231 **(B) Geocell Connecting Device.** A geocell connecting device  
232 (ATRA® Key or approved equal) shall be constructed of polyethylene

233 and provide a high strength connection with minimum pull-through of  
234 275 lbs (125 kg).

235  
236 The geocell connecting device shall be used to connect geocell  
237 panels together at each interleaf and end to end connection.

238  
239 Metal staples and zip ties are not an acceptable panel connection  
240 method.

241  
242 **(C) Infill Materials.** Infill material shall be crushed aggregate with a  
243 maximum particle size of 1/3 of the cell wall height. If drainage is desired,  
244 the fines content shall be limited to less than 10%.

245  
246 Infill material shall be free of any foreign material.

247  
248 Clays, silts and organics are not acceptable infill material.

249  
250 Infill material shall be free flowing and not frozen when placed in  
251 the geocell panels.

252  
253 **(D) Geotextile.** The geotextile separation layer shall be non-woven  
254 as specified in the Contract Documents.

255  
256 **421.03 Construction.**

257  
258 **(A) Pre-Construction Submittals.** Submit the following before  
259 construction begins:

260  
261 **(1) Shop Drawings.** Submit Manufacturer's shop drawings,  
262 which shall include Manufacturer's product data, samples, and  
263 section layout.

264  
265 **(2) Design Calculations and Drawings.** Provide a complete  
266 set of design calculations including a description of the analysis  
267 performed to determine load support requirements.

268  
269 The calculation method shall be based on computer  
270 software developed through research and testing at an  
271 accredited laboratory. Manufacturer shall provide compliance.

272  
273 Minimum overall design factor of safety shall be 1.4.

274  
275 At a minimum; include design conditions, load support  
276 calculations, calculated factors of safety and friction angles.

277  
278 Provide a description of the recommended geotextile  
279 separation layer and include in the calculations.

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Provide calculations for the recommended anchorage system.

**(3) Manufacturer’s Certificate of Analysis.** Manufacturer shall supply certificate of analysis containing the following test results for the geocell material used for project: Base Resin Lot Number(s), Resin Density per ASTM-1505, Production Lot Number(s), Material Thickness, Short Term Seam Peel Strength, and percentage of Carbon Black.

**(4) Manufacturer’s Field Representative Qualifications.** Submit qualifications of Manufacturer's field representative certifying field representative experience in the installation of the geocell system. The Manufacturer’s field representative qualifications shall include the following:

**(a)** Manufacturer shall provide a qualified field representative on site at the start of construction to ensure the geocell system is installed in accordance with the contract documents.

**(b)** Manufacturer’s field representative shall have a minimum of 5 years installation experience with the specified products in the specified application.

**(c)** Manufacturer of any substitute materials to be used shall certify that a representative can meet the above criteria and will be on site for initial construction start up. Proof of the representative meeting these requirements shall be submitted to the Engineer for approval.

**(B) Pre-Installation Meeting.** Prior to installation of any materials, conduct a pre-installation meeting to discuss the scope of work and review installation requirements. The pre-installation meeting shall be attended by all parties involved in the installation of the geocell system.

**(C) Delivery, Storage, and Handling of Materials.** Deliver materials to site in Manufacturer’s original, unopened containers and packaging, with labels clearly identifying product name and Manufacturer. The materials shall be stored in accordance with Manufacturer's instructions. The materials shall be protected from damage and out of direct sunlight. The materials shall be delivered, unloaded, and installed in a manner to prevent damage.

**(D) Site Examination.** Verify site conditions are as indicated on the drawings. Notify the Engineer if site conditions are not acceptable. Do



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not begin preparation or installation until unacceptable conditions have been corrected.

Verify layout of structure is as indicated on the drawings. Notify the Engineer if layout of structure is not acceptable. Do not begin preparation or installation until unacceptable conditions have been corrected.

**(E) Installation of Load Support Systems.**

**(1) Subgrade Preparation.** Prepare subgrade and install the geocell load support system in accordance with Manufacturer's instructions.

Excavate and shape foundation soils as indicated on the drawings.

Ensure foundation soil meets minimum strength requirements through proof rolling or other conventional method as approved by the Engineer. If unacceptable foundation soils are encountered, excavate and replace with suitable quality material as directed by the Engineer.

Install geotextile separation layer on prepared surfaces ensuring required overlaps are maintained and outer edges of the geotextile are buried in accordance with the Manufacturer's recommendations.

**(2) Geocell Section Placement and Connection.** Place geocell sections and verify all sections are expanded uniformly to required dimensions and that outer cells of each section are correctly aligned. Interleaf or overlap edges of adjacent sections. Ensure upper surfaces of adjoining geocell sections are flush at joint and adjoining cells are fully aligned at the cell wall slot.

Connect the geocell sections with geocell connecting device at each interleaf and end to end connection. Insert the geocell connecting device through the cell wall slot before inserting through the adjacent cell. Turn the geocell connecting device 90 degrees to lock the panels together.

**(3) Crushed Aggregate Infill Placement.** Place the specified infill with suitable material handling equipment.

Infill material shall be free-flowing and not frozen when placed in the geocell sections.

374 Overfill cells with infill material. Limit the drop height of infill  
375 material to avoid damage or displacement of the cell wall.

376  
377 Level surface approximately 2 inches (50 mm) above cell  
378 walls. Maintain a 2 inch wear surface over the geocell sections to  
379 prevent damage to the cell walls.

380  
381 Compact infill to a minimum of 95 percent Standard  
382 Proctor.

383  
384 Shape compacted surface to required elevation as  
385 indicated on the drawings.

386  
387 **421.04 Measurement.** The permeable surface will be paid on a lump sum  
388 basis. Measurement for payment will not apply.

389  
390 **421.05 Payment.** The Engineer will pay for the accepted pay items listed below  
391 at the contract price per pay unit, as shown in the proposal schedule. Payment will  
392 be full compensation for work prescribed in this section and the contract  
393 documents.

394  
395 The Engineer will pay for each of the following pay items when included  
396 in the proposal schedule:

	<b>Pay Item</b>	<b>Pay Unit</b>
	Permeable Surface	Lump Sum

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403 **END OF SECTION 421**

1 Amend **Section 601 - STRUCTURAL CONCRETE** to read as follows:

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3 **SECTION 601 - STRUCTURAL CONCRETE**  
4  
5

6 **601.01 Description.** This section describes structural concrete consisting of  
7 Portland Cement, fine aggregate, coarse aggregate, and water. It may also include  
8 adding admixtures for the purpose of entraining air, retarding, or accelerating set,  
9 tinting, and other purposes as required or permitted. All concrete designs for  
10 structural concrete to be placed on HDOT Highway projects must use technology to  
11 reduce the embodied carbon footprint of concrete used in the highway infrastructure.  
12 e.g., carbon dioxide mineralization or equivalent technology such as C-S-H  
13 nanoparticle-based strength-enhancing admixture (CSH-SEA), or material that  
14 allows the reduction in the size of the carbon footprint of the mix, e.g., strength  
15 improving admixtures, supplementary cementitious materials (SCMs), or other  
16 Engineer accepted methods that can reduce the embodied carbon footprint of the  
17 concrete.

18  
19 **601.02 Materials.**

20		
21	Portland Cement	701.01
22		
23	Fine Aggregate for Concrete	703.01
24		
25	Coarse Aggregate for Portland Cement Concrete	703.02
26		
27	Admixtures	711.03
28		
29	Water	712.01
30		
31	MacroSynthetic Fibers for Concrete Reinforcement	719
32		
33		

34 Use coarse aggregate for lightweight concrete conforming to ASTM C330  
35 except Sections 5, 7 and 9.

36  
37 **601.03 Construction.**

38  
39 **(A) Quality Control.** Portland Cement concrete production requires  
40 Contractor responsibility for quality control of materials during handling,  
41 blending, mixing, curing, and placement operations.

42  
43 Sample, test, and inspect concrete to ensure quality of the  
44 components, materials, and concrete. Sampling and testing for quality  
45 control must be performed by certified ACI Concrete Field Technician Grade I  
46 who must follow the requirements of the standard test methods. Perform

47 quality control tests for the slump, air content, temperature, unit weight, a Box  
48 Test for slip form concrete, or other required properties during the production  
49 of structural concrete other than concrete for incidental construction. Submit  
50 quality control test results.

51  
52 **(B) Design and Designation of Concrete.** Design concrete mixture for  
53 concrete work specified. Submit mix designs using State Highways Division  
54 form DOT 4-151 or an Engineer accepted equivalent form. Do not start work  
55 until the Engineer accepts mix design. The Engineer will accept concrete mix  
56 design using information given in Table 601.03-1 - Design of Concrete, and  
57 other pertinent requirements.

58 Whenever 28-day compressive strength,  $f'_c$ , is 4,000 psi or greater,  
59 designate concrete by required minimum 28-day compressive strength.

60  
61 The 28-day compressive strength,  $f'_c$ , less than 4,000 psi listed in  
62 Table 601.03-1 – Design of Concrete (800 Maximum Cement Content  
63 lbs./c.y.), is for design information and designation of class only.

64  
65 Proportion concrete designated by compressive strength such that  
66 concrete conforms to required strength.

67  
68 Design concrete placed in bridge decks and pavements exposed to  
69 traffic wear, with air content of 3 percent, including entrapped and entrained  
70 air. Maintain air content for plastic concrete within tolerance of 1 percent air  
71 content, plus or minus, during the work.

72  
73 Use Class BD concrete in bridge deck unless concrete is designated  
74 by compressive strength. Incorporate anti-corrosion and shrinkage  
75 reduction, water-reducing and set-retarding admixture into concrete mix  
76 design, with capability of varying degree of retardation without adversely  
77 affecting other characteristics of concrete. Submit design admixture dosage.

78  
79 When type of concrete is not indicated in the contract documents, use  
80 Class A concrete.

81  
82 Design concrete as specified in Table 601.03-1 – Design of Concrete.

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<b>TABLE 601.03-1 - DESIGN OF CONCRETE (800 Maximum Cement Content lbs./c.y.)</b>					
<b>Class of Concrete</b>	<b>28-Day Strength f<sub>c</sub>, psi.</b>	<b>Minimum Cement Content lbs./c.y.</b>	<b>Maximum Water-Cement Ratio, lb./lb.</b>	<b>Minimum Cement Content with Mineralized CO<sub>2</sub> lbs./c.y.</b>	<b>Maximum Water-Cement Ratio with Mineralized CO<sub>2</sub> lb./lb.</b>
A	3000	532	0.59	504	0.62
B	2500	475	0.66	450	0.70
C	2000	418	0.75	396	0.79
D	1500	380	0.85	360	0.87
BD	3750	610	0.49	NA	NA
SEAL	3000	610	0.55	NA	NA
Designated by Strength f <sub>c</sub> or *f <sub>r</sub>	As Specified	610	0.49	NA	NA

\*f<sub>r</sub> = Specified Modulus of Rupture

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Proportion concrete materials in accordance with requirements of concrete designated by class, cement content in pounds per cubic yards, or specified 28-day compressive strength, using absolute volume method. Use volumetric proportioning methods as outlined in the American Concrete Institute (ACI) Standard 211.1, "Recommended Practices for Selecting Proportions for Normal and Heavyweight Concrete."

Use coarse aggregate size No. 57 (one inch to No. 4) or No. 67 (3/4 inch to No. 4) for concrete. For concrete placed in bottom slabs and stems of box girders, use No. 67 size aggregate. If accepted by the Engineer in writing, smaller size aggregates are permitted when encountering limited space between forms and reinforcement.

Use the following standard methods in Table 601.03-2 – Standard Methods for determining compliance with requirements indicated in this subsection:

<b>TABLE 601.03-2 – STANDARD METHODS</b>	
Sampling Fresh Mixed Concrete	AASHTO T 141
Mass Per Cubic Meter (Cubic Foot) Yield and Air Content (Gravimetric) of Concrete	AASHTO T 121
Slump of Hydraulic Cement Concrete	AASHTO T 119
Air Content of Freshly Mixed Concrete by the Pressure Method	AASHTO T 152

Specific Gravity and Absorption of Fine Aggregate	AASHTO T 84
Specific Gravity and Absorption of Coarse Aggregate	AASHTO T 85
Temperature of Freshly Mixed Portland Cement Concrete	ASTM C1064
Making and Curing Concrete Test Specimens in the Field	AASHTO R100
Compressive Strength of Molded Concrete Cylindrical Specimens	AASHTO T 22 (4 inch by 8 inch or 6 inch by 12 inch cylinders)
Flexural Strength of Concrete (Using Simple Beam with Third-Point Loading)	AASHTO T 97

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When concrete is designated by compressive strength,  $f'_c$ , or flexural strength,  $f_r$ , or includes CO<sub>2</sub> Mineralization technology, CSH-SEA or SCMs, the Engineer will require prequalification of materials and mix proportions proposed for use before placing such concrete. The Engineer will prequalify concrete based on past performance records using statistical computations of population sizes and (n-1) weighting, or trial batch test reports in compliance with computed minimum average strength for material and mix proportions. The Engineer will determine minimum average strength on probability of not more than one in 20 tests falling below specified strength for the following conditions:

**(1)** When past performance records are available, furnish the following documented performance records:

**(a)** Minimum of 15 consecutive 28-day strength tests from projects having same materials and mix proportions.

**(b)** Two groups totaling 30 or more test results representing similar materials in which mix proportion strengths are within 20 percent of specified strength, from data obtained within one year of proposed use.

The Engineer will analyze performance records to establish standard deviation.

**(2)** When sufficient past performance records are not provided, the Engineer will assume current standard deviation to be 500 psi for compressive strength,  $f'_c$ , and 50 psi for flexural strength,  $f_r$ .

Unless sufficient performance records are available from other

141 projects at DOT Materials Testing and Research Branch, submit test  
142 performance records or trial test reports for prequalifications, based on data  
143 of most recent tests made on concrete of proposed mix design, and data  
144 obtained within one year of proposed use.

145  
146 When shrinkage reducing admixtures are used, submit test results  
147 showing compliance to the Contract Documents' requirements.

148  
149 Include the following information in test data and trial batch test  
150 reports: date of mixing; mixing equipment and procedures used; size of  
151 batch in cubic yards and weight, type, and source of ingredients used; slump  
152 of concrete; air content of concrete when using air entraining agent; age at  
153 time of testing; and strength of concrete cylinders tested.

154  
155 Show that concrete strength tests equal or exceed minimum average  
156 strength in trial test reports. Test is average 28-day test results of five  
157 consecutive concrete cylinders or concrete beams taken from single batch.  
158 No cylinder or beam shall have strength less than 85 percent of minimum  
159 average strength.

160  
161 Submit test data and trial test reports signed by official of firm that  
162 performed tests.

163  
164 The Engineer reserves the right to stop work when a series of low  
165 strength tests occur. Do not continue concrete work until cause is  
166 established and the Engineer is informed of and accepts, necessary  
167 corrective action to be taken.

168  
169 **(C) Batching.** Measure and batch materials in accordance with the  
170 following provisions:

171  
172 **(1) Portland Cement.** Either sacked or bulk cement may be used.  
173 Do not use fraction of sack of cement in concrete batch unless  
174 cement is weighed.

175  
176 Weigh bulk cement on weighing device accepted by the  
177 Engineer. Seal and vent bulk cement-weighing hopper properly to  
178 preclude dusting during operation. Do not suspend discharge chute  
179 from weighing hopper. Arrange discharge chute so that cement will  
180 not lodge in hopper or leak from hopper.

181  
182 Batching accuracy shall be within 1 percent, plus or minus, of  
183 required weight.

184  
185 **(2) Water.** Measure water by volume or by weight. Use readily  
186 adjustable device for measurement of water, with accuracy within 1

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percent, plus or minus, of quantity of water required for batch. Arrange device so that variable pressure in water supply line does not affect measurements. Equip measuring tanks with outside taps and valves or other accepted means to allow for checking calibration.

**(3) Aggregates.** When storing and stockpiling aggregates, avoid separation of coarse and fine particles within each size, and do not intermix various sizes before proportioning. Protect stored or stockpiled aggregates from dust or other foreign matter. Do not stockpile together, aggregates from different sources and of different gradations.

When transporting aggregates from stockpiles or other sources to batching plant, ensure uniform grading of material is maintained. Do not use aggregates that have become segregated or mixed with earth or foreign matter. Stockpile or bin aggregates at least 12 hours before batching. Produce or handle aggregates by hydraulic methods and wash and drain aggregates. If aggregates exhibit high or non-uniform moisture content, the Engineer will order storage or stockpiling for more than 12 hours.

Proportion aggregates by weight, with the exception that aggregates in concrete for minor structures, curbs, and sidewalks may be proportioned by either volume or weight. For volumetric proportioning, use measuring boxes of known capacity to measure quantity of each aggregate size.

Use batch weight based on dry materials plus total weight of moisture (both absorbed and surface) contained in aggregate. Measure individual aggregates to within 2 percent, plus or minus, of required weight, and total weight of aggregates to within 1 percent, plus or minus, of required weight.

**(4) Admixtures.** Store, proportion, and dispense admixtures in accordance with the following provisions:

**(a) Liquid Admixtures.** Dispense chemical admixtures, air entraining admixtures, and corrosion inhibiting admixtures in liquid form. Use mechanical dispensers for liquid admixtures with sufficient capacity to measure prescribed quantity for each batch of concrete. Include graduated measuring unit in each dispenser to measure liquid admixtures to within 5 percent, plus or minus, of prescribed quantity for each batch. Read graduations accurately from point of measuring unit, and control proportioning operations to permit visual check of batch accuracy before discharging. Mark each measuring unit clearly



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for type and quantity of admixture.

Arrange with supplier to provide sampling device consisting of valve located in safe and accessible location for sampling admixtures.

When using more than one liquid admixture for concrete mix, use separate measuring unit for each liquid admixture and dispense separately to avoid interaction that may interfere with admixture efficiency and adversely affect concrete. Dispense liquid admixture by injecting so as not to mix admixture at high concentrations.

When using liquid admixtures in concrete that is completely mixed in paving or continuous mixers, operate dispensers automatically with batching control equipment. Equip such dispensers with automatic warning system that shall provide visible or audible signals at points where proportioning operations are controlled, when the following occurs: quantity of admixture measured for each batch of concrete.

Unless liquid admixtures are added to batch with pre-measured water, discharge liquid admixtures into stream of water that disperses admixtures uniformly throughout batch. An exception is that air-entraining admixtures may be dispensed directly into moist sand in batching bins, provided adequate control of concrete air content can be maintained.

Measure and disperse special admixtures, as recommended by admixture manufacturer, and as accepted by the Engineer. Special admixtures include high-range water reducers requiring dosages greater than capacity of conventional dispensing equipment. For site-added, high-range water reducers, use calibrated, portable dispenser supplied by manufacturer.

**(b) Mineral Admixtures.** Protect mineral admixtures from exposure to moisture until used. Pile sacked material of each shipment to permit access for tally, inspection, and identification.

Provide adequate facilities to ensure that mineral admixtures meeting specified requirements are kept separate from other mineral admixtures and that only specified mineral admixtures are allowed to enter into the work. Provide safe and suitable facilities for sampling mineral admixtures at weigh

279 hopper or in feed line immediately in advance of hopper.

280

281 Incorporate mineral admixtures into concrete using  
282 equipment conforming to requirements for portland cement  
283 weigh hoppers and charging and discharging mechanisms  
284 specified in ASTM C94 and Subsection 601.03(C) - Batching.

285

286 When concrete is completely mixed in stationary paving  
287 or continuous mixers, weigh mineral admixture in separate  
288 weigh hopper. Introduce mineral admixture and cement  
289 simultaneously into mixer, proportionately with aggregate.

290

291 When interlocks are required for cement-charging  
292 mechanisms, and cement and mineral admixtures are weighed  
293 cumulatively, interlock their charging mechanisms to prevent  
294 introduction of mineral admixture until mass of cement in weigh  
295 hopper is within tolerances specified in Subsection  
296 601.03(C)(1) - Portland Cement.

297

298 In determining maximum quantity of free water that may  
299 be used in concrete, consider mineral admixture to be cement.

300

301 **(5) Bins and Scales.** At batching plant, use individual bins,  
302 hoppers, and scale for each aggregate size. Include separate bin,  
303 hopper, and scale for bulk cement and fly ash.

304

305 Except when proportioning bulk cement for pavement or  
306 structures, cement weigh hopper may be attached to separate scale  
307 for individual weighing or to aggregate scale for cumulative weighing.  
308 If cement is weighed cumulatively, weigh cement before other  
309 ingredients.

310

311 When proportioning for pavement or structures, keep bulk  
312 cement scale and weigh hopper separate and distinct from aggregate  
313 weighing equipment.

314

315 Use springless-dial or beam-type batching scales. When using  
316 beam-type scales, make provisions to show operator that required  
317 load in weighing hopper is approaching. Use devices that show  
318 condition within last 200 pounds of load and within 50 pounds of  
319 overload.

320

321 Maintain scale accuracy to 0.5 percent throughout range of  
322 use. Design poises to lock to prevent unauthorized change of  
323 position. Use scales inspected by the State Measurement Standards  
324 Branch of the Department of Agriculture to ensure their continued

325 accuracy. Provide not less than ten 50-pound weights for testing  
326 scales.

327  
328 Batching plants may be equipped to proportion aggregates and  
329 bulk cement by automatic weighing devices.

330  
331 **(6) Batching and Hauling.** When mixing is to be performed at  
332 work site, transport aggregates from batching plant to mixer in batch  
333 boxes, vehicle bodies, or other containers of adequate capacity and  
334 construction. Use partitions to separate batches and prevent spilling  
335 from one compartment to another while in transit or during dumping.

336  
337 Transport bulk cement to mixer in tight compartments carrying  
338 full quantity of cement required for batch. Once cement is placed in  
339 contact with aggregates, batches shall be mixed and placed within  
340 1-1/2 hours of contact. Cement in original shipping packages may be  
341 transported on top of aggregates. Ensure that each batch contains  
342 number of sacks required by job mix.

343  
344 Deliver batches to mixer intact. Charge each batch into mixer  
345 without loss of cement. When carrying more than one batch on truck,  
346 charge batch into mixer without spilling material from one batch  
347 compartment into another.

348  
349 **(D) Mixing.** Mix concrete in mechanically operated mixers. When  
350 accepted by the Engineer, batches not exceeding 1/3 cubic yard may be  
351 hand mixed in accordance with methods described at end of this subsection.

352  
353 Use stationary or truck mixers that distribute materials thoroughly and  
354 produce concrete uniform in color and appearance. When there is variation  
355 in mixed concrete attributable to worn pickup or throw-over blades, the  
356 Engineer will inspect mixer. If inspection reveals that blades are worn more  
357 than one inch below original height of manufacturer's design, repair or  
358 replace blades. Upon request, make copy of manufacturer's design, showing  
359 dimensions and arrangement of blades.

360  
361 Charge batches into central or truck mixers so that portion of mixing  
362 water enters ahead of cement and aggregates. Deliver uniform flow of water.  
363 Place entire amount of batch water in mixer by end of first quarter of mixing  
364 period. When mixers with multiple compartment drums are used, time  
365 required to transfer material between compartments will be included as  
366 mixing time. Use drum rotation speed as designated by manufacturer. If  
367 mixing does not produce concrete of uniform and smooth texture, provide  
368 additional revolutions at same speed until thorough mixing of each concrete  
369 batch is attained. Begin measuring mixing time from time cement,  
370 aggregates, and 60 percent of water are in drum. Do not exceed

371 manufacturer's rated capacity for volume of concrete mixed in each batch.

372

373 Equip central or truck mixers with attachment for automatically timing  
374 mixing of each concrete batch. Timing device shall include automatic feature  
375 for locking discharge chute and device for warning operator when required  
376 mixing duration has been met. If timing or locking device fails to operate,  
377 immediately furnish clock or watch that indicates seconds, to mixer operator.

378 If timing device is not repaired within three days after becoming inoperative,  
379 shut down batching operation until timing device is repaired.

380

381 For stationary mixers, use mixing time between 50 seconds and 5  
382 minutes. Select mixing time, as necessary, to produce concrete that meets  
383 uniformity criteria when tested in accordance with Section 11.3.3 of ASTM  
384 C94. The Contractor may designate mixing time for which uniformity tests  
385 are to be performed, provided mixing time is not less than 50 seconds or  
386 more than 5 minutes. Before using concrete for pavements or structures, mix  
387 concrete to meet specified uniformity requirements. The Contractor shall  
388 furnish labor, sampling equipment, and materials required for conducting  
389 uniformity tests of concrete mixture. The Engineer will furnish required  
390 testing equipment, including scales, cubic measure, and air meter; and will  
391 perform tests. The Engineer will not pay separately for labor, equipment,  
392 materials, or testing, but will consider the costs incidental to concrete. After  
393 batching and mixing operational procedures are established, the Engineer  
394 will not allow changes in procedures without the Contractor re-establishing  
395 procedures by conducting uniformity tests. Repeat mixer performance tests  
396 whenever appearance of concrete or coarse aggregate content of samples is  
397 not conforming to requirements of ASTM C94. For truck mixers, add four  
398 seconds to specified mixing time if timing starts as soon as skip reaches its  
399 maximum raised position.

400

401 Unless otherwise indicated in the contract documents or accepted by  
402 the Engineer, concrete shall be mixed at proportioning plant. Operate mixer  
403 at agitating speed while in transit. Concrete may be truck-mixed only when  
404 cement or cement and mixing water are added at point of delivery. Begin  
405 mixing truck-mixed concrete immediately after introduction of mixing water to  
406 cement and aggregates, or introduction of cement to aggregates.

407

408 Inclined-axis, revolving drum truck mixers shall conform to Truck  
409 Mixer, Agitator and Front Discharge Concrete Carrier Standards TMMB  
410 100-01, 15th Revision, published by Truck Mixer Manufacturers Bureau.  
411 Truck mixers shall produce thoroughly mixed and uniform mass of concrete  
412 and shall discharge concrete without segregation.

413

414 Manufacturer's standard metal rating plate shall be attached to each  
415 truck mixer, stating maximum rating capacity in terms of volume of mixed  
416 concrete for various uses; and maximum and minimum mixing speeds.

417 When using truck mixers for mixing, adhere to maximum capacity shown on  
418 metal rating plate for volume of concrete in each batch.

419  
420 Operate truck mixers at mixing speed designated by manufacturer, but  
421 at not less than 6 or more than 18 revolutions per minute. Mix truck-mixed  
422 concrete initially between 70 and 100 revolutions at manufacturer-designated  
423 mixing speed, after ingredients, including water, are in mixer. Water may be  
424 added to mixture not more than two times after initial mixing is completed.  
425 Each time that water is added, turn drum an additional 30 revolutions or more  
426 at mixing speed until concrete is mixed uniformly.

427 When furnishing shrink-mixed concrete, transfer partially mixed  
428 concrete at central plant to truck mixer. Apply requirements for truck-mixed  
429 concrete. The Engineer will not credit number of revolutions at mixing speed  
430 for partial mixing in central plant.

431  
432 When accepted by the Engineer, concrete batches not exceeding 1/3  
433 cubic yard may be hand mixed on a watertight, level platform. Measure  
434 proper amount of coarse aggregate in measuring boxes and spread on  
435 platform. Spread fine aggregate on that coarse aggregate layer. Limit  
436 coarse and fine aggregate layers to total depth of one foot. Spread dry  
437 cement on this mixture. Turn whole mass not less than two times dry. Add  
438 sufficient clean water, distributed evenly. Turn whole mass again, not less  
439 than three times, not including placing in carriers or forms.

440  
441 **(E) Transporting Mixed Concrete.** Transport central-mixed concrete to  
442 delivery point in truck agitators or truck mixers operating at speed designated  
443 by equipment manufacturer as agitating speed; or in non-agitating hauling  
444 equipment, provided consistency and workability of mixed concrete upon  
445 discharge at delivery point is suitable for placement and consolidation in  
446 place; and provided mixed concrete after hauling to delivery point conforms  
447 to uniformity criteria when tested as specified in Section 12.5 of ASTM C94.

448  
449 For revolving drum truck mixers transporting central-mixed concrete,  
450 limit concrete volume to manufacturer's rated capacity for agitator operation.  
451 Maintain agitating speed for both revolving drum mixers and revolving blade  
452 type agitators as designated on manufacturer's data plate. Equip truck  
453 mixers or truck agitators with electrically or mechanically actuated counters.  
454 Actuate counters after introducing cement to aggregates.

455  
456 Bodies of non-agitating hauling equipment shall be smooth, watertight,  
457 metal containers equipped with gates to permit control of concrete discharge.  
458 Protect open-topped haul vehicle against weather with cover accepted by  
459 the Engineer. When hauling concrete in non-agitating trucks, complete  
460 discharge within 30 minutes after introducing mixing water to cement and  
461 aggregates.

462

463 When truck mixer or agitator is used for transporting central-mixed  
464 concrete to delivery point, complete discharge within 1-1/2 hours, or before  
465 250 revolutions of drum or blades, whichever comes first after introduction of  
466 mixing water to cement and aggregates, or cement to aggregates. For truck-  
467 mixed concrete, complete concrete discharge within 1-1/2 hours, or before  
468 300 revolutions of drum or blades, whichever comes first. These limitations  
469 are permitted to waived if concrete is of such slump after the 1-1/2 hour time  
470 or 300-revolution limit has been reached, that it can be placed, without  
471 addition of water to the batch.

472  
473 Submit delivery tickets from manufacturers of truck-mixed concrete  
474 and central-mixed concrete with each truckload of concrete before unloading  
475 at jobsite. Printed, stamped, or written delivery ticket shall include the  
476 following information:

- 477  
478 (1) Name of concrete plants.  
479  
480 (2) Serial number of ticket.  
481  
482 (3) Date and truck number.  
483  
484 (4) Name of Contractor.  
485  
486 (5) Specific project, route, or designation of job (name and  
487 location).  
488  
489 (6) Specific class or designation of concrete in accordance with  
490 contract documents.  
491  
492 (7) Quantity of concrete in cubic yards.  
493  
494 (8) Time of loading batch or mixing of cement and aggregates.  
495  
496 (9) Water added by receiver of concrete and receiver's initials.  
497  
498 (10) Information necessary to calculate total mixing water added by  
499 producer. Total mixing water includes free water on aggregates,  
500 water, and water added by truck operator from mixer tank.  
501  
502 (11) Readings of non-resettable revolution counters of truck mixers  
503 after introduction of cement to aggregates, or introduction of mixing  
504 water to cement aggregates.  
505  
506 (12) Supplier's mix number or code.

507  
508 Furnish additional information designated by the Engineer and

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required by job specifications upon request.

**(F) Consistency.** Regulate quantity of water used in concrete mixes so that concrete consistency, as determined by AASHTO T 119 test method, is within nominal slump range specified in Table 601.03-3 - Slump for Concrete. If concrete slump exceeds nominal slump, adjust mixture of subsequent batches. If slump exceeds maximum slump, the Engineer will reject concrete unless deemed satisfactory for its use.

The Engineer will also reject harsh or unworkable concrete that cannot be properly placed. Remove rejected concrete at no increase in contract price or contract time.

Slump for concrete shall be as specified in Table 601.03-3 – Slump for Concrete.

TABLE 601.03-3 - SLUMP FOR CONCRETE		
Type of Work	Nominal Slump Inches	Maximum Slump Inches
Concrete Pavements	0 – 3	3-1/2
Reinforced Concrete Structures:		
Sections Over 12 Inches	0 – 4	5
Sections 12 Inches Thick or Less	2 – 5	6
Non-Reinforced Concrete Facilities	1 – 3	4
Concrete Placed Underwater	6 – 8	9
Bridge Decks	0 – 3	3-1/2

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In adverse or difficult conditions that may affect placement of concrete, the above slump limitations may be exceeded for placement workability, with the addition of admixture conforming to Subsection 711.03 - Admixtures, if accepted by the Engineer in writing and provided water-cement ratio is maintained. Provide additional cement and water, or admixture at no increase in contract price or contract time.

**(G) Forms.** Construct forms in accordance with applicable sections.

**(H) Placing Concrete.** Place concrete in accordance with applicable sections.

**(I) Finishing Concrete Surfaces.** Finish concrete surfaces in accordance with applicable sections.

**(J) Curing Concrete.** Cure concrete in accordance with applicable sections.

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**601.04 Measurement.** The Engineer will measure concrete in accordance with the applicable sections.

**601.05 Payment.** The Engineer will pay for the accepted concrete under the applicable sections.

**END OF SECTION 601**





1 Make the following section a part of the Standard Specifications:  
2

3 **SECTION 608 – MODULAR STORAGE CONTAINER**  
4  
5

6 **608.01 Description.** This section describes the provision and construction of a  
7 modular storage containers facility, or Administrative-Storage Building, as indicated  
8 on the drawings and specified herein.  
9

10 **608.02 Materials**  
11

12 **(A) Modular Storage Container**  
13

14 **(1)** Modular storage containers shall be typical ISO (International  
15 Standards Organization) shipping container, 40-foot length x 8- feet  
16 wide x 8-feet 6-inches high. Provide original modular storage container  
17 cargo double doors.  
18

19 **(2)** Container No. 1 - provide one (1) 3-foot x seven-foot exterior  
20 steel door and frame as located. Paint all inside and outside surfaces.  
21 Provide plywood sheathing over the existing wood floor.  
22

23 **(3)** Container No. 2 – Office Modular Container shall have a finished  
24 interior and exterior. Provide one (1) 3-foot x seven-foot exterior steel  
25 entrance door and frame; five (5) aluminum sliding windows; one (1)  
26 interior partition with interior door; perimeter doors; insulated walls at  
27 the exterior and ceiling with a gypsum board, painted finish. Provide  
28 plywood sheathing over the existing wood floor; and luxury vinyl plank  
29 finish flooring.  
30

31 **(4)** Container No. 3 – Storage Container; paint exterior as indicated  
32 in the Finish Schedule. Provide plywood sheathing over the existing  
33 wood floor.  
34

35 **(B) Storage Container Facility**  
36

37 **(1)** Materials shall conform to the following Sections:  
38

- 39 Section 607 – Chain Link Fences and Gates
- 40 Section 658 – Concrete Unit Masonry
- 41 Section 665 – Rough Carpentry
- 42 Section 667 – Shop-Fabricated Wood Trusses
- 43 Section 673 – Structural Steel Framing
- 44 Section 674 – Sheet Metal Flashing and Trim
- 45 Section 675 – Sheathing
- 46 Section 676 – Joint Sealants

47	Section 677 – Railings and Handrails
48	Section 678 – Resilient Flooring
49	Section 679 – Metal Fabrications
50	Section 681 – Aluminum Windows
51	Section 682 – Steel Doors and Frames
52	Section 683 – Door Hardware
53	Section 684 – Preformed Metal Roofing
54	Section 685 – Gypsum Board
55	Section 687 – Painting
56	Section 688 – Glazing
57	Section 689 – Termite Control
58	Section 690 – Batt Insulation

60 **608.03 Construction**

61  
62 **(A) Submittals.** Submit in accordance with **Subsection 105.02 -**  
63 **Submittals.**

64  
65 **(1) Product Data.** Submit modular storage container product  
66 literature.

67  
68 **(2) Shop Drawings.** Submit shop drawings showing door, louvers,  
69 and installation.

70  
71 **(B)** The finished build-out of Office Container No. 2 shall conform to the  
72 following sections, or it can alternatively be pre-manufactured off-site  
73 provided that it conforms to the following sections:

- 74  
75 Section 658 – Concrete Unit Masonry  
76 Section 665 – Rough Carpentry  
77 Section 673 – Structural Steel Framing  
78 Section 676 – Joint Sealants  
79 Section 678 – Resilient Flooring  
80 Section 681 – Aluminum Windows  
81 Section 682 – Steel Doors And Frames  
82 Section 683 – Door Hardware  
83 Section 685 – Gypsum Board  
84 Section 687 – Painting  
85 Section 688 – Glazing  
86 Section 690 – Batt Insulation

87  
88 **(C) Installation of Modular Storage Container**

89  
90 **(1)** Modular storage containers shall be delivered to the site and  
91 installed on unit masonry pedestals.  
92

93 (2) Set modular storage container accurately in position and secure  
94 to pedestals, plumb, and level.

95  
96 (D) Construction of the Storage Container Facility and necessary  
97 incidentals to complete the work shall be in accordance with the  
98 following Sections:

- 99
- 100 Section 607 – Chain Link Fences and Gates
- 101 Section 658 – Concrete Unit Masonry
- 102 Section 665 – Rough Carpentry
- 103 Section 667 – Shop-Fabricated Wood Trusses
- 104 Section 673 – Structural Steel Framing
- 105 Section 674 – Sheet Metal Flashing and Trim
- 106 Section 675 – Sheathing
- 107 Section 676 – Joint Sealants
- 108 Section 677 – Railings and Handrails
- 109 Section 678 – Resilient Flooring
- 110 Section 679 – Metal Fabrications
- 111 Section 681 – Aluminum Windows
- 112 Section 682 – Steel Doors and Frames
- 113 Section 683 – Door Hardware
- 114 Section 684 – Preformed Metal Roofing
- 115 Section 685 – Gypsum Board
- 116 Section 687 – Painting
- 117 Section 688 – Glazing
- 118 Section 689 – Termite Control
- 119 Section 690 – Batt Insulation

120  
121 **608.04 Measurement.** Modular storage containers and facility will be paid on a  
122 lump sum basis. Measurement for payment will not apply.

123  
124 **608.05 Payment.** The Engineer will pay for modular storage containers and facility  
125 on a contract lump sum basis. Payment will be full compensation for work prescribed  
126 in this section and contract documents.

127  
128 The price includes full compensation for submitting product data and shop  
129 drawings; complying with local laws, ordinances, rules and regulations; obtaining the  
130 necessary permits and licenses; publishing or posting the required notices; and  
131 construction of modular storage containers and incidentals necessary.

132  
133 The Engineer will pay for the following pay items when included in the proposal  
134 schedule:

135  
136  
137  
138

139	<b>Pay Item</b>	<b>Pay Unit</b>
140	Construction of Modular Storage Containers Facility and Incidentals Necessary	Lump Sum
143		
144		
145	<b>END OF SECTION 608</b>	

1 Make the following section a part of the Standard Specifications:  
2

3 **SECTION 609 – PRECAST CONCRETE RESTROOM BUILDING**  
4  
5

6 **609.01 Description.** This section describes the construction and placing of a  
7 precast concrete restroom building. The precast concrete restroom building shall  
8 be the Cortex flush precast concrete toilet building as produced by CXT  
9 Incorporated or an approved equal. The Contractor shall be responsible for  
10 obtaining all applicable permits for the installation of the precast concrete restroom  
11 building.  
12

13 All materials and work in this section shall conform to the following  
14 standards:  
15

16 **(A) American Society for Testing and Materials (ASTM).**  
17

- 18 **(1)** ASTM C33 – Concrete Aggregates
- 19
- 20 **(2)** ASTM C39 - Method of Test for Compressive Strength of  
21 Cylindrical Concrete Specimens
- 22
- 23 **(3)** ASTM C94 – Standard Specification for Read-Mixed Concrete
- 24
- 25 **(4)** ASTM C143 – Method of Test for Slump of Concrete
- 26
- 27 **(5)** ASTM C150 – Standard Specification for Portland Cement
- 28
- 29 **(6)** ASTM C172 – Standard Practice for Sampling Freshly Mixed  
30 Concrete
- 31
- 32 **(7)** ASTM A185 – Standard Specification for Steel Welded Wire  
33 Reinforcement, Plain, or Concrete
- 34
- 35 **(8)** ASTM C192 – Method of Making and Curing Test Specimens  
36 in the Laboratory
- 37
- 38 **(9)** ASTM C231 – Standard Test Method for Air Content of  
39 Freshly Mixed Concrete by the Pressure Method
- 40
- 41 **(10)** ASTM C309 – Standard Specifications for Liqui Membrane-  
42 Forming Compounds for Curing Concrete
- 43
- 44 **(11)** ASTM C494 – Standard Specification for Chemical  
45 Admixtures for Concrete  
46

47 (12) ASTM A615 - Standard Specification for Deformed and Plain  
48 Carbon-Steel Bar for Concrete Reinforcement

49  
50 (13) ASTM C618 – Standard Specification for Coal Fly Ash and  
51 Raw or Calcine Natural Pozzolan for Use in Concrete

52  
53 (14) ASTM C979 – Standard Specification for Pigments for  
54 Integrally Colored Concrete

55  
56 (15) ASTM D1557 – Standard Test Methods for Laboratory  
57 Compaction Characteristics of Soil Using Modified Effort

58  
59 (B) American Concrete Institute (ACI).

60  
61 (1) ACI 211.1 – Standard Practice for Selecting Proportions for  
62 Normal, Heavyweight, and Mass Concrete

63  
64 (2) ACI 306 – Cold Weather Concreting

65  
66 (3) ACI 318 – Building Code Requirements Structural Concrete  
67 and Commentary (includes Errata)

68  
69 (C) Precast/Prestressed Concrete Institute (PCI).

70  
71 (1) PCI MNL 116 – Quality Control for Plants and Production of  
72 Precast Prestressed Concrete Products

73  
74 **609.02 Materials.**

75  
76 (A) **Concrete – General.** The concrete mix design shall be designed to  
77 ACI 211.1 to produce concrete of good workability.

78  
79 Concrete shall contain a minimum of 675 pounds of cementitious  
80 material per yard. Cement is a low alkali type I/II or III conforming to ASTM  
81 C-150.

82  
83 Coarse aggregates used in the concrete mix design shall conform to  
84 ASTM C33 with the designated size of coarse aggregate #67.

85  
86 Maximum water/cement ratio will not exceed .45.

87  
88 Air-entraining admixtures shall conform to ASTM C260. Water  
89 reducing admixtures shall conform to ASTM C494, Type A.

90  
91 If Self Compacting Concrete (SCC) is used, it must conform to ASTM  
92 C1611.

93

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**(B) Concrete Reinforcement.** All reinforcing steel shall conform to ASTM A615. All welded wire fabric shall conform to ASTM A185.

All reinforcement shall be new, free of dirt, oil, paint, grease, loose mill scale and loose or thick rust when placed.

Details not shown on drawings or specified shall be to ACI318.

Steel reinforcement shall be centered in the cross-sectional area of the walls and shall have at least 1¼” of cover on the under surface of the floor.

The maximum allowable variation for center-center spacing of reinforcing steel shall be ½”.

Full lengths of reinforcing steel are used when possible. When splices are necessary on long runs, splices are alternated from opposite sides of the components for adjacent steel bars.

Lap bars under #4 a minimum of 12” bar diameters.

Lap bars larger than #4 a minimum of 24” bar diameters.

Reinforcing bars shall be bent cold. No bars partially embedded in concrete shall be field bent unless approved by the Engineer.

**(C) Caulking, Grout, Adhesive and Sealer.** Caulking service temperature range shall be -40°F to +194°F.

Interior and exterior joints shall be caulked with a paintable polyurethane sealant.

Grout shall be a non-shrink type and painted to match the color of surrounding concrete as nearly as possible.

Cement base coating shall be formulated with a very fine aggregate system and shall be a built-in bonding agent.

**(D) Paint.** All paints and materials shall conform to all federal specifications or be similar “top-of-the-line-components.” Type of paints for toilets shall conform to the following:

**(1) Inside concrete surfaces.** Interior floors shall be a chemical resistant urethane. The color shall be gray.



139 Interior walls and ceilings shall be a modified acrylic, water  
140 repellent penetrating stain. The color shall be white followed by a  
141 clear acrylic anti-graffiti sealer.

142  
143 **(2) Metal Surfaces.** Metal surfaces both inside and out shall be  
144 DTM ALKYD.

145  
146 **(3) Exterior concrete surfaces.** Exterior slab shall be clear  
147 sealer.

148  
149 Exterior walls and roof shall be a water repellent penetrating  
150 stain in the same color as the walls or roof followed by a clear acrylic  
151 anti-graffiti sealer.

152  
153 **(E) Grab Bars.** Grab bars shall be 18-gauge, type 304 stainless steel  
154 with 1½" clearance. Grab bars shall each be able to withstand 300-pound  
155 top loading.

156  
157 **(F) Toilet Paper Dispenser.** Dispenser shall be constructed of ¼" thick,  
158 type 304 stainless steel. Dispenser shall be capable of holding three (3)  
159 standard rolls of toilet paper. Toilet paper holder fastening system shall be  
160 able to withstand 300-pound top loading.

161  
162 **(G) Steel Doors.** Doors shall be flush panel type 1¾" thick, minimum  
163 16-gauge galvanized steel, top painted with DTM ALKYD.

164  
165 Door frames shall be knockdown or welded type, single rabbet,  
166 minimum 16-gauge prime coated steel top painted with DTM ALKYD, width  
167 to suit wall thickness. Three (3) rubber door silencers shall be provided on  
168 latch side of frame.

169  
170 **(H) Door Hinges.** Door hinges shall be three (3) per door with dull  
171 chrome plating 4½" x 4½", adjustable tension, and automatic closing for  
172 each door.

173  
174 **(I) Lockset.** Lockset shall meet ANSI A156.2 Series 4000, Grade 1  
175 cylindrical lockset for exterior door.

176  
177 Lever handles shall be used both inside and out.

178  
179 Either handle shall operate latch unless outside handle is locked by  
180 inside push-button.

181  
182 Push-button shall automatically release when inside lever handle is  
183 turned or door is closed.

184

185 Lockset shall have an emergency slot on exterior so door can be  
186 unlocked from the outside with a coin, screwdriver, etc.

187  
188 Insider lever shall always be active.

189  
190 Lockset shall be U.S. 26D finish.

191  
192 **(J) Dead Bolt.** Dead bolt shall be certified ANSI/BHMA A156.5-2001  
193 Grade 1, heavy duty tamper resistant, with a 2¾" backset and U.S. 26D  
194 finish.

195  
196 **(K) Doorstop.** Doorstop shall be a dome style stop meeting ANSI  
197 156.16.

198  
199 **(L) Double Coat Hook.** Coat hook shall be 304 stainless steel 16-  
200 gauge (1.5mm), formed construction with a satin finish and have ¾" x 7/8"  
201 nail in anchor. Upper hook shall extend at least 2½" from the wall. Lower  
202 hook shall extend at least 1¼" from the wall.

203  
204 **(M) Door Sweep.** Door sweep shall be provided at the bottom of door  
205 and shall be an adjustable brush type.

206  
207 **(N) Wall Vent.** Wall vent shall be crank operated allowing the unit to be  
208 opened or closed. Crank shall be removable. Vent cover shall be 14-gauge  
209 304 stainless steel and anchored into the concrete wall with high strength  
210 anti-rust tap con fasteners. Vent shall come with insect screen. Cover shall  
211 be recessed a minimum ¾" on exterior walls with a 45-degree bevel. Interior  
212 to be flush mounted. Wall vent shall not protrude from the wall.

213  
214 **(O) Signs.** Signs shall have raised pictograms, letters, and braille to  
215 meet ADA.

216  
217 **(P) Windows.** Window frames shall be constructed from steel. Window  
218 glazing shall be ¾" thick translucent pebble finished mar-resistant Lexan.  
219 Windows shall have ¾" recess with 45-degree bevel. Window frames shall  
220 have vandal resistant fasteners.

221  
222 **(Q) Mirrors.** Mirror shall be 18" x 36" frameless 430 18-gauge stainless  
223 steel with #8 bright polish.

224  
225 **(R) Plumbing.** All fixtures shall meet ANSI A112.19.2. Plumbing shall  
226 be concealed in the service area. Plumbing shall include a main shut-off  
227 valve and drain, and a trap primer distribution unit.

228  
229 Flush valve shall be a concealed closet flush-o-meter constructed of  
230 rough brass. Furnish valve with integral vacuum breaker and wall mounted

231 push button. Valve shall be of a water saver type with a flow of 1.6 gallons  
232 per flush.

233  
234 Hammer arrester shall be installed on water line.

235  
236 Hose bib shall be available in the chase area.

237  
238 Lavatory shall be vitreous china with back splashguard, front  
239 overflow opening, equipped with brass trap and drainpipe without stopper.  
240 Sink shall be 20" wide x 18" front to back x 5¾" deep with ADA trap cover.

241  
242 Toilet shall be constructed of vitreous china, wall hung, with siphon  
243 jet action. Toilet shall have a back spud for a concealed flush valve  
244 connection and shall be mounted with the top of the seat 18" above the  
245 finished floor. Seat shall be heavy duty solid plastic with an open front.

246  
247 Waste and vent material shall be ABS or PVC plastic and shall be  
248 plumbed to meet Uniform Building Codes.

249  
250 Water material shall be copper tubing Type L, hard drawn. A gate  
251 valve shall be provided at the inlet end of the water line. All water lines shall  
252 be of a size to provide proper flushing action based on a nominal water  
253 pressure of 40 psi.

254  
255 Water valve shall be self-closing water set with indexed push button.

256  
257 **(S) Plumbing Shower Section/Room.**

258  
259 **(1) Shower Control Unit.** Shower control unit shall be 14-gauge,  
260 type 304 stainless steel recessed shower panel with 2.5 gpm flow  
261 rate, pressure balancing valve, recessed soap dish and integral  
262 stainless steel shower head.

263  
264 **(2) ADA Shower Control Unit.** ADA shower control unit shall be  
265 14-gauge, type 304 stainless steel recessed shower panel with 2.5  
266 gpm flow rate, pressure balancing valve, recessed soap dish, high  
267 low diverter valve, and high low integral stainless steel shower  
268 heads.

269  
270 **(3)** Provide high efficiency commercial grade water heater(s) per  
271 code.

272  
273 **(T) Electrical.** All components shall be UL listed.

274  
275 Breaker panel shall be 100 amps, mounted to meet electrical code.

276

277 Interior lighting shall be vandal resistant fixtures with built-in  
278 occupancy sensor, energy efficient LED lights, and lifetime warranty.

279  
280 Exterior lighting shall be vandal resistant fixtures with built-in  
281 photoelectric switch and energy efficient LED lights.

282  
283 Exhaust fans shall be all wet location motion activated with speed  
284 control in chase area to control CFM.

285  
286 Wiring shall be conduit, surface mounted in the service area and  
287 concealed in the user compartments. All wire shall be copper.

288  
289 **609.03 Construction.**

290  
291 **(A) Manufacturer Criteria.** The manufacturer supplying the precast  
292 concrete restroom building must meet the following:

- 293  
294 (1) Manufacturer must be ISO 9001 certified at the time of bid.  
295  
296 (2) Manufacturing plant must be PCI certified at the time of bid.  
297  
298 (3) Manufacturer must not have defaulted on any contract within  
299 the last five (5) years.  
300  
301 (4) Manufacturer must provide stamped, engineered drawings  
302 prior to acceptance.  
303  
304 (5) Manufacturer must be pre-approved prior to bidding.  
305  
306 (6) Manufacturer must show four (4) examples of precast  
307 concrete flush facilities produced, installed and in use as an example  
308 of their ability to perform this contract.  
309  
310 (7) Manufacturer shall provide a one (1) year warranty on all  
311 concrete components. The warranty is valid only when concrete is  
312 used within the specified loadings. Furthermore, said warranty  
313 includes only the related material necessary for the construction and  
314 fabrication of said concrete components.  
315  
316 (8) UL 752 Bullet Resistance on 4" thick concrete samples.

317  
318 **(B) Design Criteria.** The design criteria are to ensure that the restroom  
319 building not only will withstand the forces of nature listed below, but to  
320 provide protection from vandalism and other unforeseen hazards. Building's  
321 structural and foundation design shall be relevant to the region and  
322 properties associated with its final placement. Design shall also meet all  
323 applicable accessibility and building code requirements. Buildings shall also

324 meet various structural loads such as below, but not limited to/or restricted  
325 by them.

326  
327 **(1) Floor Load.** The restroom building shall withstand 400 PSF  
328 floor load.

329  
330 **(2) Wind Load.** The restroom building shall withstand the effects  
331 of 150 miles per hour (3-second gust) wind exposure C.

332  
333 **(3) Earthquake.** The restroom building shall withstand the  
334 effects of a seismic group 1 design category E earthquake.

335  
336 **(4) Additional Design Standards.**

337  
338 **(a)** The restroom building shall meet the accessibility  
339 requirements put forth by federal, state, and local statutes.

340  
341 **(b)** The restroom building shall be an all-concrete design  
342 with a minimum 3/12 roof pitch. The restroom building shall  
343 have a minimum 4" wall, 4½" roof, and 5" floor thickness.

344  
345 **(c)** All wall to floor interior surface seams shall have a  
346 minimum 1" radius coving made of high strength grout.

347  
348 **(d)** Recycled material and LED lighting shall be used.

349  
350 **(C) Manufacture.**

351  
352 **(1) Finishing Concrete.** All exterior building walls and exterior  
353 screen walls shall be any one of the available textures. All exterior  
354 surfaces of the roof panels shall be cast to simulate any one of the  
355 available textures. The underside of the overhang shall have a  
356 smooth finish.

357  
358 **(2) Cracks and Patching.** Cracks in concrete components  
359 which are judged to affect the structural integrity of the building shall  
360 be rejected.

361  
362 Small holes, depressions, and air voids shall be patched with  
363 a suitable material. The patch shall match the finish and texture of  
364 the surrounding surface.

365  
366 Patching is not allowed on defective areas if the structural  
367 integrity of the building is affected.

368  
369 **(D) Finishing and Fabrication.**

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**(1) Structural Joints.** Wall components shall be joined together with two (2) welded plate pairs at each joint. Each weld plate shall be 6" long and located one (1) pair in the top quarter and one (1) pair in the bottom quarter of the seam. Weld plates shall be anchored into the concrete panel and welded together with a continuous weld.

The inside seams shall be a paintable caulk. The outside seams shall use a caulk in a coordinating building color or clear.

Walls and roof shall be joined with weld plates, 3" x 6" at each building corner.

The joint between the floor slab and walls shall be joined with a grout mixture on the inside, a matching colored caulk on the outside and two (2) weld plates 6" long per wall.

**(2) Painting/Staining.**

**(a)** An appropriate curing time shall be allowed before paint is applied to concrete.

**(b) Schedule of Finishes.**

**(i) Inside Concrete Surfaces.** Inside floors shall be one (1) coat of 1-part water based chemical resistant urethane.

Interior walls and ceilings shall be two (2) coats of a modified acrylic, water repellent penetrating stain, followed by one (1) coat of clear sealer.

**(ii) Metal Surfaces.** Metal surfaces both inside and out shall be two (2) coats of DTM ALKYD.

**(iii) Exterior Concrete Surfaces.** Exterior walls shall be two (2) coats of water repellent penetrating stain in the same color as the walls or roof followed by one (1) coat of clear acrylic anti-graffiti sealer.

**(E) Testing.** The following tests shall be performed on concrete used in the manufacture of toilets. All testing shall be performed in PCI certified laboratories. Testing shall only be performed by qualified individuals who have been certified ACI Technician Grade 1. Sampling shall be in accordance with ASTM C172.

416 (1) The air content of the concrete shall be checked per ASTM  
417 C231 on the first batch of concrete. The air content shall be in the  
418 range of 5.0% +/- 2.0%.

419  
420 (2) The compressive strength of the cylinders shall be tested to  
421 ASTM C39. Provide one (1) cylinder for release, one (1) for seven  
422 (7) days and one (1) for 28 days. The release must be a minimum  
423 strength of 2500 psi, the 7-day must be a minimum of 4500 psi and  
424 the 28-day must be a minimum of 5000 psi.

425  
426 (3) A copy of all test reports shall be provided as soon as 28-day  
427 test results are available.

428  
429 **(F) Installation.** The precast concrete restroom building shall be placed  
430 on a prepared foundation.

431  
432 (1) **Location.** It is the responsibility of the Contractor to provide  
433 exact location by stakes or other approved method. The site shall be  
434 level and free of overhead and/or underground obstructions.  
435 Contractor shall provide access to the site for truck delivery and  
436 sufficient area for the crane to install and the equipment to perform  
437 the contract requirements. Water, electrical, and sewage site  
438 connections to be placed according to drawings and be placed to  
439 easily connect to the building.

440  
441 (2) **Compacting.** The bottom of the installation area must be  
442 compacted after it has been dug out. After the base has been placed,  
443 it must be compacted as well. The bearing of the soil and base shall  
444 be a minimum of 1,500 pounds per square foot.

445  
446 (3) **Base.** After compacting the bottom of the installation area,  
447 the base shall be a minimum of 6" thick and consist of ¾" minus  
448 crushed rock (i.e. road base material) compacted to 95% of optimal  
449 density in accordance with ASTM D1557. Finished surface of sub-  
450 base shall be flat and level, with a maximum deviation of -½", +0"  
451 from a true horizontal plane.

452  
453 The base shall be placed for support, leveling and drainage  
454 purposes. The base must be confined so as to prevent washout,  
455 erosion, or any other undermining.

456  
457 (4) **Access to Site.** Delivery to site shall be made on normal  
458 highway trucks and trailers. If at the time of delivery conditions of  
459 access are hazardous or unsuitable for trucks and equipment due to  
460 weather, physical constraints, roadway width or grade, the  
461 Manufacturer may require an alternate site with better access  
462 provided to ensure a safe and quality installation. In any such case,

463 additional cost for cranes, trucking, etc. will be charged to the  
464 Contractor.

465  
466 **609.04 Measurement.** The precast concrete restroom building will be paid on  
467 a lump sum basis. Measurement for payment will not apply.

468  
469 **609.05 Payment.** The Engineer will pay for the accepted pay items listed below  
470 at the contract price per pay unit, as shown in the proposal schedule. Payment will  
471 be full compensation for work prescribed in this section and the contract  
472 documents.

473  
474 The Engineer will pay for each of the following pay items when included  
475 in the proposal schedule:

476	<b>Pay Item</b>	<b>Pay Unit</b>
477		
478		
479	Precast Concrete Restroom Building	Lump Sum

480  
481  
482  
483

**END OF SECTION 609**



1 Make the following section a part of the Standard Specifications:  
2

3 **SECTION 615 – CULTURAL SENSITIVITY TRAINING, MONITORING, AND**  
4 **PROTECTION OF CULTURAL SITES**  
5  
6

7 **615.01 Description.** Numerous archaeological surveys, reconnaissance studies,  
8 and data recovery within the Luluku project area were conducted over a period of  
9 decades (1970s-1990s). The boundaries of the existing construction limits are not  
10 located within proximity to any previously identified archaeological sites or features,  
11 however, the area is considered part of the larger Luluku Cultural Landscape  
12

13 This project is considered part of the mitigation actions agreed to by FHWA,  
14 HDOT, and Luluku Farmers' Association - Aloha 'Āina Health & Learning Center  
15 (LFA-AHLC), in order to mitigate some of the adverse impacts caused by the  
16 construction of the H-3 Freeway in the Luluku project area.  
17

18 The recognized steward group LFA-AHLC are the Cultural Monitors for any  
19 construction activities occurring in the Luluku project area to ensure that historic sites  
20 are not adversely affected. This work includes engaging in consultation and cultural  
21 sensitivity training/orientation with LFA-AHLC.  
22

23 **615.02 Materials.** None Specified.  
24

25 **615.03 Construction Requirements.** Working with LFA-AHLC shall be  
26 incidental; no delay claim for extended overhead, impact cost or change in work will  
27 be permitted as a result of coordination with the stewards regarding cultural sensitivity  
28 training/orientation, and inadvertent discoveries.  
29

30 Contractor shall work cooperatively with HDOT and LFA-AHLC to ensure the  
31 following requirements are met:  
32

- 33 **(A)** LFA-AHLC shall provide cultural sensitivity training/orientation for all  
34 Contractor field office and field construction personnel prior to any  
35 personnel entering the project site. A training/orientation session will be  
36 held prior to mobilization. If there are additional or new personnel  
37 during the duration of the project, the Contractor shall notify the  
38 Construction Manager (CM) two (2) weeks in advance to schedule  
39 cultural sensitivity training/orientation prior to entering the project site.  
40 The cultural sensitivity training/orientation session will include:  
41

- 42 **(1)** Overview of the Luluku Cultural Landscape including: current  
43 board of directors and members of LFA-AHLC, other organizations and  
44 community groups participating in stewardship activities, historical and  
45 cultural features, and traditional practices of Native Hawaiians of the  
46 area.

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**(2)** Guidance on proper protocol and procedures of mālama ‘āina (caring for the land).

**(3)** Types of culturally significant inadvertent finds to be aware of during land disturbance activities.

**(B)** Contractor shall certify and maintain a log of all training conducted and attendees.

**(C)** Contractor shall establish procedures and maintain records to ensure that all contractor personnel entering the project sites have been trained.

**(D)** Contractor shall follow procedures for culturally significant inadvertent finds, not recognized as a site of potential historic or archaeological significance:

**(1)** Contractor shall contact the CM and LFA-AHLC for consultation immediately to determine if discovery is either a potential or confirmed inadvertent find.

**(2)** Written reports shall be transmitted to the CM, HDOT and LFA-AHLC within two (2) working days following the potential and/or confirmed inadvertent find including:

**(a)** Digital photographs of potential and/or confirmed inadvertent finds.

**(b)** Detailed written report and actions taken to address potential and/or confirmed inadvertent finds.

**(c)** Detailed written explanations of how each potential and/or confirmed inadvertent find was made.

**(d)** Record of the final disposition of any inadvertent finds and detail the consultations and decision-making processes.

**(e)** Record of individuals who received cultural sensitivity training.

**(E)** If Contractor encounters sites of potential historic or archaeological significance such as walls, platforms, pavements and mounds, or remains such as artifacts, burials, concentration of charcoal or shells, work shall cease in the immediate vicinity of the site, and the site shall be protected from damage. The Contractor shall notify the CM

93 immediately if any such resources are encountered.  
94

95 **(1)** The CM will contact the State Historic Preservation Division  
96 (SHPD) of the Department of Land and Natural Resources (DLNR) and  
97 other agencies to evaluate such findings and decide the course of  
98 action. The Contractor shall perform work at other locations within the  
99 project site while a determination is being made. No claim for extended  
100 overhead impact costs or change in work will be permitted. Project time  
101 extension will be granted as justified. Do not count delays resulting from  
102 the Cultural Monitoring work and discoveries.  
103

104 **(2)** Do not count delays resulting from the discovery, investigation,  
105 and handling of such findings against the completion date. The CM and  
106 HDOT will govern suspension of work according to Subsection 108.10 -  
107 Suspension of Work. The Contractor shall conform to HRS Chapter 6E,  
108 Historic Preservation, and shall comply with Section 106 of 36 CFR Part  
109 800 - Protection of Historic Properties.  
110

111 **(3)** Failure or refusal to comply with the terms of this Section or  
112 Chapter 6E, HRS, may subject the Contractor to the penalties  
113 described in Section 6E-11, HRS:  
114

115 **(a)** A fine of not more than \$10,000 for each separate  
116 offense,  
117

118 **(b)** Seizure and disposition of equipment, and  
119

120 **(c)** If the Contractor knowingly fails or refuses to comply, a  
121 prohibition from participating in the construction of State or  
122 County projects for 10 years.  
123

124 The SHPD Archaeologist will decide the limits of the site. Also, the  
125 Archaeologist will decide, with the CM and HDOT, the best means for protecting the  
126 site from further disturbances which may require further investigation or salvage as  
127 determined by SHPD. Protection may include barricades, roping off, temporary  
128 fencing, chain link fence panels and other means.  
129

130 Contractor shall provide the protective measures, as specified by the SHPD,  
131 CM and HDOT. The State will bear costs for the investigation of salvage.  
132

133 **615.04 Measurement.** The Engineer will not measure cultural sensitivity training,  
134 monitoring, and protection of cultural sites for payment.  
135

136 **END OF SECTION 615**  
137

1 Amend **Section 624 – Water System** to read as follows:

2  
3 **SECTION 624 – WATER SYSTEM**  
4

5  
6 **(I) Amend Section 624.05 – Payment** by replacing lines 589 to 604 to read:

7  
8 **“624.05 Payment.** The Engineer will pay for the accepted water system on  
9 a contract lump sum basis. Payment will be full compensation for work prescribed  
10 in this section and the contract documents.

11  
12 The Engineer will pay for the following pay item when included in the  
13 proposal schedule:

Pay Item	Pay Unit
Water Systems	Lump Sum

14  
15  
16  
17  
18  
19 The Engineer will pay for excavation and backfill for water pipes under  
20 Section 204 – Excavation and Backfill for Miscellaneous Facilities.”

21  
22  
23 **END OF SECTION 624**  
24

1 Amend **Section 625 – SEWER SYSTEM** to read as follows:

2  
3 **“SECTION 625 – SEWER SYSTEM**

4  
5  
6 **625.01 Description.** This section describes the furnishing and installation of  
7 polyvinyl chloride (PVC) sewer piping. PVC pressure piping and fittings shall be  
8 utilized for both sewers and the laterals.

9  
10 All materials and work in this section shall conform to the following  
11 standards:

12  
13 **(A) American Society for Testing and Materials (ASTM).**

14  
15 **(1)** ASTM D2774 – Standard Practice for Underground  
16 Installation of Thermoplastic Pressure Piping

17  
18 **(2)** ASTM D3139 – Standard Specification for Joints for Plastic  
19 Pressure Pipes Using Flexible Elastomeric Seals

20  
21 **(3)** ASTM F477 – Standard Specification for Elastomeric Seals  
22 (Gaskets) for Joining Plastic Pipes

23  
24 **(B) American Water Works Association (AWWA).**

25  
26 **(1)** AWWA C900-16 Polyvinyl Chloride (PVC) Pressure Pipe and  
27 Fabricated Fittings, 4 in. through 60 in. (100 mm through 1500 mm),  
28 for Water Transmission and Distribution

29  
30 **(2)** AWWA C907 Injection-Molded Polyvinyl Chloride (PVC)  
31 Pressure Fittings, 4 in. through 12 in. (100 mm through 300 mm), for  
32 Water, Wastewater, and Reclaimed Water Service

33  
34 **(C) American National Standards Institute (ANSI).**

35  
36 **(1)** ANSI A21.10 Standard for Ductile-Iron and Gray-Iron Fittings,  
37 3 in. through 48 in.

38  
39 **625.02 Materials.**

40  
41 **(A) Polyvinyl Chloride (PVC) Pipe.** PVC pipe shall conform to AWWA  
42 C900. Pipe size and strength class shall be as indicated on the drawings,  
43 and with a minimum of DR18. Allowable PVC pipe sizes are 6 in. through  
44 30 in. in nominal diameter.

46 Pipe shall be clearly marked at intervals not to exceed 5 feet with  
47 name or trademark of manufacturer, nominal pipe diameter, AWWA  
48 designation, and pipe class.

49  
50 Pipe joints shall be bell and spigot type with elastomeric gaskets  
51 unless otherwise indicated by the Contract Documents. Pipe spigot ends  
52 shall have a home mark to indicate proper penetration when the joint is  
53 made.

54  
55 **(B) PVC Gasket Joints.** PVC pipe and fittings for gravity sewers shall  
56 be furnished complete with integral bells with gaskets conforming to ASTM  
57 F477, and with lubricant compatible with the plastic and gasket materials.  
58 All gaskets and lubricants shall be made from materials that are compatible  
59 with the plastic material and with each other when used together, are  
60 suitable for wastewater service, and will not support the growth of bacteria.

61  
62 **(C) PVC Fittings.** PVC fittings including wyes and caps for PVC C900  
63 pipe (12 inch and smaller) shall be injection-molded type conforming to  
64 AWWA C907 or fabricated fittings per AWWA C900.

65  
66 **(D) Sewer Pipe Connections.** PVC pipe and fittings shall conform to  
67 respective sections for those pipe types. Grouted wall fitting for PVC pipe  
68 connections shall be as indicated in the contract documents using a PVC  
69 bell X spigot gasketed manhole sand fitting of PVC pipe class matching the  
70 PVC sewer pipe and fabricated to length as required or a spigot x spigot  
71 nipple as required. Pipe connections utilizing watertight and flexible resilient  
72 connectors per ASTM C923 shall be of Manufacturer and type as approved  
73 by the Engineer. The connector shall be suitable for the sewer pipe being  
74 connected to the manhole. Metal components shall be stainless steel.  
75 Approved resilient connectors are A-LOK Premium or A-LOK X-CEL, Kor-N-  
76 Seal I EX or Kor-N-Seal II 206 Series, or PSX-Direct Drive or approved  
77 substitute. VCP or PVC wall pipe shall be as indicated in the contract  
78 documents.

79  
80 **(E) Coupling for PVC Pipe Connections.** PVC deflection couplings  
81 shall be of the same class and for the PVC sewer pipe. Couplings shall be  
82 manufactured for a minimum of 2.5-degree angle change per bell joint.  
83 Allowable field deflections shall be limited to 2.0 degrees or 80 percent of  
84 Manufacturer allowable deflection as approved by the Engineer. Transition  
85 couplings for connecting pipes of different pipe outside diameters shall be  
86 cast type conforming to AWWA C219. Transition couplings shall have  
87 ductile iron sleeves and ductile iron end rings with gasketed joints. Nuts and  
88 bolt for cast couplings shall be 316 stainless steel unless otherwise  
89 indicated by the contract documents. Ductile iron sleeves shall be epoxy  
90 coated.

91

92 **625.03 Construction.** The Contractor shall be responsible for precisely laying  
93 out the sewer line shown on the contract plans. The location shown on the contract  
94 plans of the various existing utility lines which the new lines are to cross over or  
95 under or connect to were determined on the basis of the best information available;  
96 however, no assurance can be provided that the actual locations will be precisely  
97 as shown on the contract plans. In performing all work, the Contractor shall  
98 exercise due care and caution necessary to avoid any damage to and impairment  
99 in the use of any existing utility lines. Any damage inflicted on existing lines  
100 resulting from the Contractor's operations shall be immediately repaired and  
101 restored as directed by the Engineer at the Contractor's expense.

102  
103 **(A) Submittals.** Shop drawings, brochures, installation instructions,  
104 certifications, as-built drawings, and other data shall be submitted to the  
105 Engineer.

106  
107 Certifications shall include manufacturer's certification that all PVC  
108 pipe and fittings used for the gravity sewer lines for the Project meet the  
109 minimum requirements set forth in the Contract Documents and in  
110 standards nationally adopted by the industry for C-900 PVC pipe (DR 18)  
111 and C-907 PVC fittings for characteristics which may include, but not be  
112 limited to, PVC cell classification, elastomeric gasketed bell and spigot joint,  
113 size, shape, strength, chemical resistance, and pressure rating.

114  
115 As-Built Drawings: Prior to acceptance of the work, the Contractor  
116 shall furnish the Engineer with two (2) sets of "as-built" drawings of the  
117 gravity sewer line installation, accurately drawn to scale, with all items  
118 (including, but not limited to sewer manholes and laterals) identified by  
119 name and symbol, all inverts indicated, and including any other information  
120 required by the Engineer. The work shall not be accepted until the "as-built"  
121 drawings have been approved by the Engineer. The Contractor shall be  
122 responsible for all revisions to the "as-built" drawings required by the  
123 Engineer prior to approval.

124  
125 **(B) Pipe Material Conditions.** Pipe materials shall be new and  
126 delivered in a clean and undamaged condition. Pipe shall be stored off the  
127 ground. PVC materials shall be protected from damage by sunlight.

128  
129 Pipe shall be straight and not bowed or warped so installation will not  
130 be practical to meet the lines and grades called for on the drawings, and  
131 where sewage flow/hydraulics will be inhibited.

132  
133 Contractor shall visually inspect prior to installation of each pipe  
134 section and fitting for damage to include cracks and chips. Sun faded and  
135 noticeable damaged materials including warped or bowed pipe shall be  
136 rejected and replaced. The Engineer has the right to reject damaged pipe  
137 including that which is sun faded.

139 **(C) Pipe Bedding.** The contractor shall provide a crushed rock bedding  
140 and crush rock or Controlled Low Strength Material (CLSM) subbedding for  
141 the gravity sewer lines as shown on the plans.

142  
143 **(D) Pipe Laying.** Pipe shall be laid starting from lowest point with  
144 spigots facing direction of flow. Pipes and fittings shall be fitted and matched  
145 together to provide sewer true to lines and grades with smooth and uniform  
146 invert.

147  
148 Gravity sewer pipe shall be laid to form continuous pipe sections from  
149 sewer manhole to sewer manhole with a smooth uniform invert.

150  
151 Blocks and wedges shall not be used to adjust pipe to proper line  
152 and grade, except as accepted by the Engineer for jackets and cradles. Pipe  
153 shall be supported uniformly for its entire length.

154  
155 PVC pipe shall be installed with spigot end inserted to the homing  
156 line marked on the pipe per the manufacturer's instructions. The spigot end  
157 when pipe is cut to length shall be remarked with homing line for the proper  
158 installation of the joint. Homing line marking shall be as required for PVC  
159 bell joint or for DI mechanical joint installation. Contractor shall verify each  
160 joint for proper pipe homing. Contractor shall also verify that at least one  
161 joint installed ahead of the joint being made has not subsequently moved  
162 and become over homed. Any pipe joint with the homing line not visible shall  
163 be subject to rejection by the Engineer.

164  
165 PVC pipe ends cut to length to include connections to deflection  
166 couplings shall be cut square and the end beveled per the pipe  
167 manufacturer's instructions. Contractor shall notify the Engineer of any joint  
168 to be assembled using a cut spigot end.

169  
170 Contractor shall check at the start of each workday if pipes became  
171 submerged in water. Pipes that have been displaced to include by floatation  
172 shall be reinstalled at no increase in contract cost or contract time.

173  
174 Contractor shall visually inspect and clean pipelines prior to final  
175 inspection.

176  
177 **(E) Laterals.** Lateral connections to gravity sewer mains shall be with  
178 wye fittings. Saddles shall not be allowed. Reconnections to existing sewer  
179 laterals shall be as indicated on the Drawings.

180  
181 **(F) Connections to Existing Sewers.** Connections to existing sewers  
182 shall be as indicated on the Drawings.

183  
184 **(G) Pipe Roundness and Straightness Tests.**

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**(1) General.** Contractor shall perform tests to verify that there are no sags, out of roundness or protrusions in sewer pipes. Contractor shall submit the test method or methods to be used for the Project which may vary as called for on the drawings or as specified herein.

Mandrel test shall be conducted for sewer pipes except tests are not required for laterals.

Contractor shall notify the Engineer a minimum of three (3) working days prior to conducting tests. Contractor shall be responsible to ensure that equipment, materials, and labor are ready and in working order prior to the actual tests. Trial tests with the Engineer present shall be conducted at the Contractor's discretion. Tests shall be performed in the presence of the Engineer unless otherwise indicated by the Contract Documents.

Tests shall be conducted no sooner than thirty (30) calendar days after the trench backfill is completed. For roadway areas, completion of trench backfill is to the subgrade level or within 2 feet of the finish grade, whichever is higher.

Pipe that fails to pass tests will not be accepted until the pipe is repaired or replaced and retested.

**(2) Mandrel Test Method.** A rigid nine-sled mandrel shall be pulled by hand through the pipe between adjacent manholes to detect for obstructions, deflection, out-of-roundness, joint offsets, and lateral pipe intrusions. The mandrel shall have a cross section equivalent to a circle having a diameter at least 95 percent of the specified average inside diameter of the pipe installed. The minimum length of the circular portion of the mandrel shall be equal to the nominal diameter of the pipe.

The Contractor shall be responsible for verifying the mandrel diameter and length requirements to perform the testing.

**(3) Closed Circuit Television Test Method.** Closed circuit television (CCTV) shall be used to verify that water is free draining for the entire pipe invert. No reverse grade is allowed. Prior to the CCTV inspection, the pipe interior shall be cleaned of all water, mud, and debris. Clean water shall then be introduced as needed to verify the pipe is free flowing for the entire pipe length.

**(H) Leakage and Pressure Tests for Gravity Sewers.**

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**(1) General Requirements.** Contractor shall notify the Engineer a minimum of three (3) working days in advance of any test to be conducted. Contractor shall conduct tests in the presence of the Engineer.

Contractor shall furnish all equipment, materials, appurtenances, and labor for conducting the tests.

The Contractor may schedule the tests when desired subject to approval by the Engineer, provided that the tests are made within a reasonable time considering the progress of the Project as a whole, and the need to put the section into service.

Pipelines shall be tested with acceptable results prior to the backfilling of the excavation or placing of concrete embedment. Pipeline backfilling shall not be done, and concrete jackets shall not be placed until the pipe between such adjacent manholes shall have passed the leakage test, unless otherwise approved in writing by the Engineer. Leakage tests shall be completed and approved prior to placing of permanent resurfacing.

The Contractor shall clean all pipes and manholes of mud, water, debris, and other foreign matter prior to testing. Contractor, with the presence of the Engineer, shall conduct a visual inspection of the cleaned section of the pipeline to be tested. Contractor shall replace pipe observed to be damaged, leaking, or of installation not in accordance with the Contract. Contractor shall replace the defective pipe. Contractor shall replace or repair the defective manhole using methods approved by the Engineer. The Engineer will be the sole judge in determining whether replacement or repair is warranted.

**(2) Gravity Sewer Low Pressure Leakage Test.** Contractor shall conduct low pressure air leakage tests for new gravity sewer lines. Testing of sewer laterals will not be required.

Under no circumstances shall any person be allowed in the connecting manholes while an air pressure test is being conducted.

Contractor shall provide pressure gauges which shall be capable of measuring pressure to an accuracy of 0.1 psi.

Pipe outlets shall be plugged securely with test plugs. Air shall then be added until internal pressure of the line stabilizes at approximately 4 pounds per square inch at the highest end. Pressure will normally drop as air temperature stabilizes, usually in about two

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to five minutes depending upon pipe size. Then reduce the pressure to 3-1/2 pounds per square inch before starting the test.

Test shall start when the pressure has stabilized and is at or above the test pressure of 3-1/2 pounds per square inch. The pipe shall pass the test if pressure does not drop more than 1 pound per square inch during the minimum test holding times in the following table:

Nominal Pipe Size Inches	T (Time) Seconds/100 Feet
12	160

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Ground water above the pipe will reduce air loss. When a pipe test section is under water, Contractor shall adjust increase the test pressure by the average water pressure on the pipe test section. This shall be the equivalent mid pipe diameter water pressure at the point of the pipe with the average water depth above the pipe under water. This is the water column height divided by 2.31 feet equivalent to water pressure in pounds per square inch.

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Air test may be dangerous if the line is prepared improperly and plugs are not installed and braced to prevent blowouts. Force on an 8-inch plug is 250 pounds at a test pressure of 5 pounds per square inch. Contractor shall utilize pressurizing equipment with regulator set at 10 pounds per square inch to avoid over-pressurizing and damaging the pipe being tested. Workers shall not be allowed in test pits or test manholes during testing.

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**(I) Buried Warning and Identification Tape.** Provide polyethylene plastic and metallic core or metallic-faced, acid-and-alkali-resistant, polyethylene plastic warning tape manufactured specifically for warning and identification of buried utility lines. Provide tape on rolls, 3-inch minimum width, green in color, for the intended utility with warning and identification imprinted in bold black letters continuously over the entire tape length. Warning and identification to read, "CAUTION, BURIED SEWER LINE BELOW" or similar wording. Color and printing shall be permanent, unaffected by moisture or soil.

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The polyethylene plastic tape shall have a minimum thickness of 0.004-inch. Tape shall have a minimum strength of 1500 psi lengthwise and 1250 psi crosswise. Tape shall be manufactured with integral wires, foil backing, or other means of enabling detection by a metal detector when tape is buried up to 3 feet deep. Encase metallic element of the tape in a protective jacket or provide with other means of corrosion protection.

321 Whenever a new roll of warning tape is required to be jointed to the  
322 end of an existing roll, the splice shall be made by overlapping the two ends  
323 a minimum of 6 inches and taping the entire overlapped section with duct  
324 tape.

325  
326 **(J) Closed Circuit Television Inspection.** Contractor shall perform  
327 CCTV inspection of the newly installed sewer lines. Television inspection  
328 of sewer lines shall be internal inspection by insertion of a closed circuit  
329 camera, which records colored imagery, into the sewer line for the purpose  
330 of remote visual inspection to determine the condition of the pipe and joints,  
331 the location and extent of any breaks or obstructions, the location of  
332 service connections, and presence of abnormal line and grade conditions.  
333 The Contractor shall utilize NASSCO Pipeline Assessment and  
334 Certification Program (PACP) certified personnel to perform the CCTV  
335 inspection.

336  
337 All video inspections shall utilize digital video on DVD or USB flash  
338 drive as documentation, with field logs and written reports submittal to  
339 Owner.

340  
341 **625.04 Measurement.** Sewer systems will be paid on a lump sum basis.  
342 Measurement for payment will not apply.

343  
344 All labor, equipment, materials, including buried warning and  
345 identification tape, pipe bedding and all other incidentals to complete the  
346 sewer pipe installation shall be considered included in the costs for pipes in  
347 the Proposal.

348  
349 Cleaning, mandrel testing, leakage testing, and CCTV testing and  
350 inspection will not be measured separately, and the costs will be considered  
351 included in the costs for pipes in the Proposal.

352  
353 **625.05 Payment.** The Engineer will pay for the accepted sewer systems on a  
354 contract lump sum basis. Payment will be full compensation for work prescribed in  
355 this section and the contract documents.

356  
357 The Engineer will pay for each of the following pay items when included  
358 in the proposal schedule:

359	<b>Pay Item</b>	<b>Pay Unit</b>
360		
361		
362	Sewer Systems	Lump Sum
363		

364 The Engineer will pay for excavation and backfill for sewer pipes under  
365 Section 204 – Excavation and Backfill for Miscellaneous Facilities.

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**END OF SECTION 625**

**I-H3-1(75)  
625-8a**





1 Make the following section a part of the Standard Specifications:  
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3 **SECTION 651 – CATTLE GATE**  
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6 **651.01 Description.** This section describes the provision and construction of the  
7 cattle gate as indicated on the drawings and specified herein.  
8

9 **651.02 Materials.**

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11 (A) Furnish and install new material necessary to complete this work.  
12 Materials shall conform to the following Sections:

13  
14 Section 601 – Structural Concrete  
15 Section 677 – Railings and Handrails  
16 Section 679 – Metal Fabrications  
17

18 (B) **Reflective Tape.** Tape shall have acrylic adhesive material and  
19 retroreflective microprismatic backing material, made for outdoor  
20 application. Thickness shall be minimum of 18 mil.  
21

22 **651.03 Construction**

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24 (A) **Submittals.** Submit in accordance with **Subsection 105.02 -**  
25 **Submittals.**

26  
27 (1) **Product Data.** Submit cattle gate product literature.  
28

29 (2) **Shop Drawings.** Submit shop drawings showing gate, post, and  
30 installation.  
31

32 (B) The cattle gate shall conform to the following sections, or it can  
33 alternatively be pre-manufactured off-site provided that it conforms to  
34 the following Sections:  
35

36 Section 601 – Structural Concrete  
37 Section 677 – Railings and Handrails  
38 Section 679 – Metal Fabrications  
39

40 (C) **Installation**

41  
42 (1) Cattle gate material or pre-manufactured gate shall be delivered  
43 to the site and installed as specified in contract documents.  
44

45 **651.04 Measurement.** Cattle gate will be paid on a lump sum basis. Measurement  
46 for payment will not apply.

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**651.05 Payment.** The Engineer will pay for the cattle gate on a contract lump sum basis. Payment will be full compensation for work prescribed in this section and contract documents.

The price includes full compensation for submitting product data, shop drawings; complying with local laws, ordinances, rules and regulations; obtaining the necessary permits and licenses; installation of cattle gate and incidentals necessary.

The Engineer will pay for the following pay items when included in the proposal schedule:

<b>Pay Item</b>	<b>Pay Unit</b>
Installation of Cattle Gate	Lump Sum

**END OF SECTION 651**



1 Make the following section a part of the Standard Specifications:  
2

## 3 **SECTION 657 – CAST-IN-PLACE CONCRETE** 4 5

6 **657.01 Description.** This section describes the furnishing and installation of  
7 cast-in-place concrete. This section includes formwork, reinforcement, concrete  
8 materials, mixture design, placement procedures, and finishes, for footings,  
9 foundation walls, and slabs-on-grade.  
10

11 Cementitious materials in this section are defined as Portland cement alone  
12 or in combination with one or more of the following: blended hydraulic cement, fly  
13 ash, slag cement, other pozzolans, and silica fume; materials subject to  
14 compliance with requirements.  
15

16 W/C Ratio is defined as the ratio by weight of water to cementitious  
17 materials.  
18

### 19 **657.02 Materials** 20

#### 21 **(A) Form-Facing Materials** 22

23 **(1) Smooth-Formed Finished Concrete.** Provide form-facing  
24 panels that provide continuous, true, and smooth concrete surfaces.  
25 Furnish in largest practicable sizes to minimize number of joints.  
26

27 **(a)** Panels shall be made of plywood, metal, or other  
28 approved panel materials.  
29

30 **(2) Rough-Formed Finished Concrete.** Provide plywood,  
31 lumber, metal, or another approved material. Provide lumber dressed  
32 on at least two edges and one side for tight fit.  
33

34 **(3) Pan-Type Forms.** Forms shall be glass-fiber-reinforced  
35 plastic or formed steel, stiffened to resist plastic concrete loads  
36 without detrimental deformation.  
37

38 **(4) Chamfer Strips.** Chamfer strips shall be wood, metal, PVC,  
39 or rubber strips, 3/4 by 3/4 inch, minimum.  
40

41 **(5) Rustication Strips.** Rustication strips shall be wood, metal,  
42 PVC, or rubber strips, kerfed for ease of form removal.  
43

44 **(6) Form-Release Agent.** Provide a commercially formulated  
45 form-release agent that does not bond with, stain, or adversely affect  
46 concrete surfaces and does not impair subsequent treatments of

47 concrete surfaces.

48  
49 (a) Formulate form-release agent with rust inhibitor for  
50 steel form-facing materials.

51  
52 (7) **Form Ties.** Form ties shall be factory-fabricated, removable  
53 or snap-off glass-fiber-reinforced plastic or metal form ties designed  
54 to resist lateral pressure of fresh concrete on forms and to prevent  
55 spalling of concrete on removal.

56  
57 (a) Furnish units that leave no corrodible metal closer than  
58 1 inch to the plane of exposed concrete surface.

59  
60 (b) Furnish ties that, when removed, leave holes no larger  
61 than 1 inch in diameter in concrete surface.

62  
63 (c) Furnish ties with integral water-barrier plates to walls  
64 indicated to receive dampproofing or waterproofing.

65  
66 (B) **Steel Reinforcement**

67  
68 (1) **Reinforcing Bars.** Reinforcing bars shall comply with  
69 ASTM A615/A615M, and shall be Grade 60, deformed.

70  
71 (2) **Low-Alloy-Steel Reinforcing Bars.** Low-alloy-steel  
72 reinforcing bars shall comply with ASTM A706/A706M, and shall be  
73 deformed.

74  
75 (3) **Galvanized-Steel Welded-Wire Reinforcement.**  
76 Galvanized-steel welded-wire reinforcement shall comply with  
77 ASTM A1064/A1064M, and shall be plain, fabricated from  
78 galvanized-steel wire into flat sheets.

79  
80 (C) **Reinforcement Accessories**

81  
82 (1) **Joint Dowel Bars.** Joint dowel bars shall comply with  
83 ASTM A615/A615M, and shall be Grade 60, plain-steel bars, cut true  
84 to length with ends square and free of burrs.

85  
86 (2) **Bar Supports.** Bar supports shall be bolsters, chairs,  
87 spacers, and other devices for spacing, supporting, and fastening  
88 reinforcing bars and welded-wire reinforcement in place.  
89 Manufacture bar supports from steel wire, plastic, or precast  
90 concrete according to CRSI's "Manual of Standard Practice," of  
91 greater compressive strength than concrete and as follows:  
92

93 (a) For concrete surfaces exposed to view, where legs of  
94 wire bar supports contact forms, use CRSI Class 1 plastic-  
95 protected steel wire or CRSI Class 2 stainless-steel bar  
96 supports.  
97

98 **(D) Concrete Materials**  
99

100 **(1) Cementitious Materials**  
101

102 (a) **Portland Cement.** Portland cement shall comply with  
103 ASTM C150/C150M, and shall be Type I gray.  
104

105 (2) **Normal-Weight Aggregates.** Normal-weight aggregates  
106 shall comply with ASTM C33/C33M, and shall be Class 3S coarse  
107 aggregate or better, graded. Provide aggregates from a single  
108 source.  
109

110 (a) **Maximum Coarse-Aggregate Size.** Size shall be 3/4  
111 inch nominal.  
112

113 (b) **Fine Aggregate.** Fine aggregate shall be free of  
114 materials with deleterious reactivity to alkali in cement.  
115

116 **(E) Admixtures**  
117

118 (1) **Air-Entraining Admixture.** Air-entraining admixture shall  
119 comply with ASTM C260/C260M.  
120

121 (2) **Chemical Admixtures.** Chemical admixtures shall be  
122 certified by manufacturer to be compatible with other admixtures and  
123 that do not contribute water-soluble chloride ions exceeding those  
124 permitted in hardened concrete. Do not use calcium chloride or  
125 admixtures containing calcium chloride.  
126

127 (a) **Water-Reducing Admixture.** Water-reducing  
128 admixture shall comply with ASTM C494/C494M, and shall be  
129 Type A.  
130

131 (b) **Retarding Admixture.** Retarding admixture shall  
132 comply with ASTM C494/C494M, and shall be Type B.  
133

134 (c) **Water-Reducing and Retarding Admixture.** Water-  
135 reducing and retarding admixture shall comply with  
136 ASTM C494/C494M, and shall be Type D.  
137

138 (d) **High-Range, Water-Reducing Admixture.** High-

139 range, water-reducing admixture shall comply with  
140 ASTM C494/C494M, and shall be Type F.

141  
142 **(e) High-Range, Water-Reducing and Retarding**  
143 **Admixture.** High-range, water-reducing and retarding  
144 admixture shall comply with ASTM C494/C494M, and shall be  
145 Type G.

146  
147 **(f) Plasticizing and Retarding Admixture.** Plasticizing  
148 and retarding admixture shall comply with  
149 ASTM C1017/C1017M, and shall be Type II.

150  
151 **(3) Water.** Water shall comply with ASTM C94/C94M and shall  
152 be potable.

153  
154 **(F) Vapor Retarders**

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156 **(1) Sheet Vapor Retarder.** Sheet vapor retarder shall comply  
157 with ASTM E1745, and shall be Class C. Include manufacturer's  
158 recommended adhesive or pressure-sensitive joint tape.

159  
160 **(a) Products.** Sheet vapor retarder shall be Stego  
161 Industries, LLC; Stego Wrap, 10 mils, or approved equal.

162  
163 **(G) Curing Materials**

164  
165 **(1) Evaporation Retarder.** Evaporation retarder shall be  
166 waterborne, monomolecular film forming, manufactured for  
167 application to fresh concrete.

168  
169 **(a) Products.** Evaporation retarder shall be one of the  
170 following products, or an approved equal:

171  
172 **(i)** Burke by Edoco; BurkeFilm.

173  
174 **(ii)** Dayton Superior Corporation; Sure Film.

175  
176 **(iii)** Euclid Chemical Company (The); Eucobar.

177  
178 **(2) Absorptive Cover.** Absorptive cover shall comply with  
179 AASHTO M 182, and shall be Class 2, burlap cloth made from jute or  
180 kenaf, weighing approximately 9 oz./sq. yd. when dry.

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182 **(3) Moisture-Retaining Cover.** Moisture-retaining cover shall  
183 comply with ASTM C171, and shall be polyethylene film or white  
184 burlap-polyethylene sheet.

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(4) **Water.** Water shall be potable.

(5) **Clear, Waterborne, Membrane-Forming Curing Compound.** Curing compound shall be comply with ASTM C309, and shall be Type 1, Class B, dissipating.

(a) **Products.** Curing compound shall be one of the following products, or an approved equal:

(i) Burke by Edoco; Aqua Resin Cure.

(ii) Dayton Superior Corporation; Day Chem Rez Cure (J-11-W).

(iii) Euclid Chemical Company (The); Kurez DR VOX.

**(H) Related Materials**

(1) **Expansion- and Isolation-Joint-Filler Strips.** Expansion- and isolation-joint-filler strips shall be ASTM D 1751-compliant, asphalt-saturated cellulosic fiber or ASTM D 1752-compliant, cork or self-expanding cork.

(2) **Semirigid Joint Filler.** Semirigid joint filler shall be two-component, semirigid, 100 percent solids, epoxy resin with a Type A shore durometer hardness of 80 according to ASTM D2240.

(3) **Bonding Agent.** Bonding agent shall comply with ASTM C1059/C1059M, and shall be Type II, nonredispersible, acrylic emulsion or styrene butadiene.

(4) **Epoxy Bonding Adhesive.** Epoxy bonding adhesive shall comply with ASTM C881, and shall be two-component epoxy resin, capable of humid curing and bonding to damp surfaces, of class suitable for application temperature and of grade to suit requirements, and as follows:

(a) Types IV and V, load bearing, for bonding hardened or freshly mixed concrete to hardened concrete.

(5) **Reglets.** Fabricate reglets of not less than 0.022-inch- thick, galvanized-steel sheet. Temporarily fill or cover face opening of reglet to prevent intrusion of concrete or debris.

**(I) Concrete Mixtures, General**

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**(1)** Prepare design mixtures for each type and strength of concrete, proportioned on the basis of laboratory trial mixture or field test data, or both, according to ACI 301.

**(a)** Use a qualified independent testing agency for preparing and reporting proposed mixture designs based on laboratory trial mixtures.

**(2)** Limit water-soluble, chloride-ion content in hardened concrete to 0.06 percent by weight of cement.

**(3) Admixtures.** Use admixtures according to manufacturer's written instructions.

**(a)** Use water-reducing or plasticizing admixture in concrete, as required, for placement and workability.

**(b)** Use water-reducing and -retarding admixture when required by high temperatures, low humidity, or other adverse placement conditions.

**(c)** Use water-reducing admixture in pumped concrete, concrete for heavy-use industrial slabs and parking structure slabs, concrete required to be watertight, and concrete with a w/c ratio below 0.50.

**(J) Concrete Mixtures for Building Elements**

**(1) Footings.** Footings shall be normal-weight concrete.

**(a)** Minimum Compressive Strength: 3000 psi at 28 days.

**(b)** Maximum W/C Ratio: 0.5.

**(c)** Slump Limit: 5 inches (125 mm) plus or minus 1 inch (25 mm).

**(2) Foundation Walls.** Foundation walls shall be normal-weight concrete.

**(a)** Minimum Compressive Strength: 3000 psi 28 days.

**(b)** Maximum W/C Ratio: 0.45.

**(c)** Slump Limit: 5 inches (125 mm), plus or minus 1 inch

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(25 mm).

**(3) Slabs-on-Grade.** Slabs-on-grade shall be normal-weight concrete.

**(a)** Minimum Compressive Strength: 3000 psi at 28 days.

**(b)** Maximum W/C Ratio: 0.45.

**(c)** Minimum Cementitious Materials Content: 540 lb/cu. yd.

**(d)** Slump Limit: 5 inches, plus or minus 1 inch.

**(K) Fabricating Reinforcement.** Fabricate steel reinforcement according to CRSI's "Manual of Standard Practice."

**(L) Concrete Mixing**

**(1) Ready-Mixed Concrete.** Measure, batch, mix, and deliver concrete according to ASTM C94/C94M and furnish batch ticket information.

**(a)** When air temperature is between 85 and 90 deg F, reduce mixing and delivery time from 1-1/2 hours to 75 minutes; when air temperature is above 90 deg F, reduce mixing and delivery time to 60 minutes.

**(2) Project-Site Mixing.** Measure, batch, and mix concrete materials and concrete according to ASTM C94/C94M. Mix concrete materials in appropriate drum-type batch machine mixer.

**(a)** For mixer capacity of 1 cu. yd. or smaller, continue mixing at least 1-1/2 minutes, but not more than 5 minutes after ingredients are in mixer, before any part of batch is released.

**(b)** For mixer capacity larger than 1 cu. yd., increase mixing time by 15 seconds for each additional 1 cu. yd.

**(c)** Provide batch ticket for each batch discharged and used in the Work, indicating Project identification name and number, date, mixture type, mixture time, quantity, and amount of water added. Record approximate location of final deposit in structure.

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**657.03 Construction**

**(A) Related Requirements.** Work shall conform to the specifications herein as well as to the following section:

- (1)** Section 206 – Excavation and Backfill for Drainage Facilities for drainage fill under slabs-on-grade.
- (2)** Section 411 – Portland Cement Concrete Pavement for concrete pavement and Section 634 – Portland Cement Concrete sidewalks.

**(B) Quality Assurance**

**(1) Installer Qualifications.** The installer shall employ on Project personnel qualified as ACI-certified Flatwork Technician and Finisher and a supervisor who is an ACI-certified Concrete Flatwork Technician.

**(2) Manufacturer Qualifications.** The manufacturer shall be a firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C94/C94M requirements for production facilities and equipment.

**(a)** Manufacturer shall be certified according to NRMCA's "Certification of Ready Mixed Concrete Production Facilities."

**(3) Testing Agency Qualifications.** The testing agency shall be an independent agency, acceptable to authorities having jurisdiction, qualified according to ASTM C1077 and ASTM E329 for testing indicated.

**(a)** Personnel conducting field tests shall be qualified as ACI Concrete Field Testing Technician, Grade 1, according to ACI CP-1 or an equivalent certification program.

**(b)** Personnel performing laboratory tests shall be ACI-certified Concrete Strength Testing Technician and Concrete Laboratory Testing Technician, Grade I. Testing agency laboratory supervisor shall be an ACI-certified Concrete Laboratory Testing Technician, Grade II.

**(4) Welding Qualifications.** Qualify procedures and personnel according to AWS D1.4/D 1.4M.

**(C) Submittals**



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- (1) Product Data.** Submit data for each type of product.
- (2) Design Mixtures.** Submit design mixtures for each concrete mixture. Submit alternate design mixtures when characteristics of materials, Project conditions, weather, test results, or other circumstances warrant adjustments.
  - (a)** Indicate amounts of mixing water to be withheld for later addition at Project site.
- (3) Steel Reinforcement Shop Drawings.** Submit Placing Drawings that detail fabrication, bending, and placement. Include bar sizes, lengths, material, grade, bar schedules, stirrup spacing, bent bar diagrams, bar arrangement, splices and laps, mechanical connections, tie spacing, hoop spacing, and supports for concrete reinforcement.
- (4) Construction Joint Layout.** Submit the construction joint layout. Indicate proposed construction joints required to construct the structure.
  - (a)** Location of construction joints is subject to approval of the Engineer.
- (5) Samples.** Submit samples for vapor retarder.
- (6) Qualification Data.** Submit qualification data for Installer.
- (7) Welding certificates.**
- (8) Material Certificates.** Submit certificates for each of the following, signed by manufacturers:
  - (a)** Cementitious materials.
  - (b)** Admixtures.
  - (c)** Steel reinforcement and accessories.
  - (d)** Curing compounds.
  - (e)** Floor and slab treatments.
  - (f)** Bonding agents.
  - (g)** Vapor retarders.

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(h) Semirigid joint filler.

(i) Joint-filler strips.

**(9) Material Test Reports.** Submit material test reports for the following, from a qualified testing agency:

(a) Aggregates: Include service record data indicating absence of deleterious expansion of concrete due to alkali aggregate reactivity.

**(10) Floor Surface Flatness and Levelness Measurements.** Submit measurements indicating compliance with specified tolerances.

**(11) Field Quality-Control Reports.**

**(D) Delivery, Storage, and Handling**

**(1) Steel Reinforcement.** Deliver, store, and handle steel reinforcement to prevent bending and damage.

**(E) Field Conditions**

**(1) Hot-Weather Placement.** Comply with ACI 301 (ACI 301M) and ACI 305.1 (ACI 305.1M), and as follows:

(a) Maintain concrete temperature below 90 deg F (32 deg C) at time of placement. Chilled mixing water or chopped ice may be used to control temperature, provided water equivalent of ice is calculated to total amount of mixing water. Using liquid nitrogen to cool concrete is Contractor's option.

(b) Fog-spray forms, steel reinforcement, and subgrade just before placing concrete. Keep subgrade uniformly moist without standing water, soft spots, or dry areas.

**(F) Formwork Installation**

**(1)** Design, erect, shore, brace, and maintain formwork, according to ACI 301, to support vertical, lateral, static, and dynamic loads, and construction loads that might be applied, until structure can support such loads.

**(2)** Construct formwork so concrete members and structures are

- 461 of size, shape, alignment, elevation, and position indicated, within  
462 tolerance limits of ACI 117.
- 463
- 464 **(3)** Limit concrete surface irregularities, designated by ACI 347 as  
465 abrupt or gradual, as follows:
- 466
- 467 **(a)** Class A, 1/8 inch for smooth-formed finished surfaces.
- 468
- 469 **(b)** Class B, 1/4 inch for rough-formed finished surfaces.
- 470
- 471 **(4)** Construct forms tight enough to prevent loss of concrete  
472 mortar.
- 473
- 474 **(5)** Construct forms for easy removal without hammering or  
475 prying against concrete surfaces. Provide crush or wrecking plates  
476 where stripping may damage cast-concrete surfaces. Provide top  
477 forms for inclined surfaces steeper than 1.5 horizontal to 1 vertical.
- 478
- 479 **(a)** Install keyways, reglets, recesses, and the like, for  
480 easy removal.
- 481
- 482 **(b)** Do not use rust-stained steel form-facing material.
- 483
- 484 **(6)** Set edge forms, bulkheads, and intermediate screed strips for  
485 slabs to achieve required elevations and slopes in finished concrete  
486 surfaces. Provide and secure units to support screed strips; use  
487 strike-off templates or compacting-type screeds.
- 488
- 489 **(7)** Provide temporary openings for cleanouts and inspection  
490 ports where interior area of formwork is inaccessible. Close openings  
491 with panels tightly fitted to forms and securely braced to prevent loss  
492 of concrete mortar. Locate temporary openings in forms at  
493 inconspicuous locations.
- 494
- 495 **(8)** Chamfer exterior corners and edges of permanently exposed  
496 concrete.
- 497
- 498 **(9)** Form openings, chases, offsets, sinkages, keyways, reglets,  
499 blocking, screeds, and bulkheads required in the Work. Determine  
500 sizes and locations from trades providing such items.
- 501
- 502 **(10)** Clean forms and adjacent surfaces to receive concrete.  
503 Remove chips, wood, sawdust, dirt, and other debris just before  
504 placing concrete.
- 505
- 506 **(11)** Retighten forms and bracing before placing concrete, as

507 required, to prevent mortar leaks and maintain proper alignment.

508  
509 **(12)** Coat contact surfaces of forms with form-release agent,  
510 according to manufacturer's written instructions, before placing  
511 reinforcement.

512  
513 **(G) Embedded Item Installation**

514  
515 **(1)** Place and secure anchorage devices and other embedded  
516 items required for adjoining work that is attached to or supported by  
517 cast-in-place concrete. Use setting drawings, templates, diagrams,  
518 instructions, and directions furnished with items to be embedded.

519  
520 **(a)** Install anchor rods, accurately located, to elevations  
521 required and complying with tolerances in Section 7.5 of  
522 AISC 303.

523  
524 **(b)** Install reglets to receive waterproofing and to receive  
525 through-wall flashings in outer face of concrete frame at  
526 exterior walls, where flashing is shown at lintels, shelf angles,  
527 and other conditions.

528  
529 **(H) Removing and Reusing Forms**

530  
531 **(1) General.** Formwork for sides of beams, walls, columns, and  
532 similar parts of the Work that does not support weight of concrete  
533 may be removed after cumulatively curing at not less than 50 deg F  
534 for 24 hours after placing concrete. Concrete has to be hard enough  
535 to not be damaged by form-removal operations, and curing and  
536 protection operations need to be maintained.

537  
538 **(a)** Leave formwork for beam soffits, joists, slabs, and  
539 other structural elements that support weight of concrete in  
540 place until concrete has achieved at least 70 percent of its 28-  
541 day design compressive strength.

542  
543 **(b)** Remove forms only if shores have been arranged to  
544 permit removal of forms without loosening or disturbing  
545 shores.

546  
547 **(2)** Clean and repair surfaces of forms to be reused in the Work.  
548 Split, frayed, delaminated, or otherwise damaged form-facing  
549 material are not acceptable for exposed surfaces. Apply new form-  
550 release agent.

551  
552 **(3)** When forms are reused, clean surfaces, remove fins and

553                   laitance, and tighten to close joints. Align and secure joints to avoid  
554                   offsets. Do not use patched forms for exposed concrete surfaces  
555                   unless approved by Engineer.  
556

557                   **(I)    Vapor-Retarder Installation**  
558

559                   **(1)    Sheet Vapor Retarders.** Place, protect, and repair sheet  
560                   vapor retarder according to ASTM E1643 and manufacturer's written  
561                   instructions.  
562

563                               **(a)**    Lap joints 6 inches and seal with manufacturer's  
564                               recommended tape.  
565

566                   **(J)    Steel Reinforcement Installation**  
567

568                   **(1)    General.** Comply with CRSI's "Manual of Standard Practice"  
569                   for fabricating, placing, and supporting reinforcement.  
570

571                               **(a)**    Do not cut or puncture vapor retarder. Repair damage  
572                               and reseal vapor retarder before placing concrete.  
573

574                   **(2)**    Clean reinforcement of loose rust and mill scale, earth, ice,  
575                   and other foreign materials that reduce bond to concrete.  
576

577                   **(3)**    Accurately position, support, and secure reinforcement  
578                   against displacement. Locate and support reinforcement with bar  
579                   supports to maintain minimum concrete cover. Do not tack weld  
580                   crossing reinforcing bars.  
581

582                   **(4)**    Set wire ties with ends directed into concrete, not toward  
583                   exposed concrete surfaces.  
584

585                   **(5)**    Install welded-wire reinforcement in longest practicable  
586                   lengths on bar supports spaced to minimize sagging. Lap edges and  
587                   ends of adjoining sheets at least one mesh spacing. Offset laps of  
588                   adjoining sheet widths to prevent continuous laps in either direction.  
589                   Lace overlaps with wire.  
590

591                   **(K)    Joints**  
592

593                   **(1)    General.** Construct joints true to line with faces perpendicular  
594                   to surface plane of concrete.  
595

596                   **(2)    Construction Joints.** Install so strength and appearance of  
597                   concrete are not impaired, at locations indicated or as approved by  
598                   Engineer.

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(a) Place joints perpendicular to main reinforcement. Continue reinforcement across construction joints unless otherwise indicated. Do not continue reinforcement through sides of strip placements of floors and slabs.

(b) Form keyed joints as indicated. Embed keys at least 1-1/2 inches into concrete.

(c) Locate joints for beams, slabs, joists, and girders in the middle third of spans. Offset joints in girders a minimum distance of twice the beam width from a beam-girder intersection.

(d) Locate horizontal joints in walls and columns at underside of floors, slabs, beams, and girders and at the top of footings or floor slabs.

(e) Space vertical joints in walls as indicated. Locate joints beside piers integral with walls, near corners, and in concealed locations where possible.

(f) Use a bonding agent at locations where fresh concrete is placed against hardened or partially hardened concrete surfaces.

**(3) Contraction Joints in Slabs-on-Grade.** Form weakened-plane contraction joints, sectioning concrete into areas as indicated. Construct contraction joints for a depth equal to at least one-fourth of concrete thickness as follows:

(a) **Grooved Joints.** Form contraction joints after initial floating by grooving and finishing each edge of joint to a radius of 1/8 inch (3.2 mm). Repeat grooving of contraction joints after applying surface finishes. Eliminate groover tool marks on concrete surfaces.

(b) **Sawed Joints.** Form contraction joints with power saws equipped with shatterproof abrasive or diamond-rimmed blades. Cut 1/8-inch- (3.2-mm-) wide joints into concrete when cutting action does not tear, abrade, or otherwise damage surface and before concrete develops random contraction cracks.

**(4) Isolation Joints in Slabs-on-Grade.** After removing formwork, install joint-filler strips at slab junctions with vertical

645 surfaces, such as column pedestals, foundation walls, grade beams,  
646 and other locations, as indicated.

647  
648 (a) Extend joint-filler strips full width and depth of joint,  
649 terminating flush with finished concrete surface unless  
650 otherwise indicated.

651  
652 (b) Terminate full-width joint-filler strips not less than 1/2  
653 inch (13 mm) or more than 1 inch (25 mm) below finished  
654 concrete surface where joint sealants, specified in Section  
655 676 "Joint Sealants," are indicated.

656  
657 (c) Install joint-filler strips in lengths as long as practicable.  
658 Where more than one length is required, lace or clip sections  
659 together.

660  
661 (5) **Doweled Joints.** Install dowel bars and support assemblies  
662 at joints where indicated. Lubricate or asphalt coat one-half of dowel  
663 length to prevent concrete bonding to one side of joint.

664  
665 (L) **Concrete Placement**

666  
667 (1) Before placing concrete, verify that installation of formwork,  
668 reinforcement, and embedded items is complete and that required  
669 inspections are completed.

670  
671 (2) Before test sampling and placing concrete, water may be  
672 added at Project site, subject to limitations of ACI 301.

673  
674 (a) Do not add water to concrete after adding high-range  
675 water-reducing admixtures to mixture.

676  
677 (3) Deposit concrete continuously in one layer or in horizontal  
678 layers of such thickness that no new concrete is placed on concrete  
679 that has hardened enough to cause seams or planes of weakness. If  
680 a section cannot be placed continuously, provide construction joints  
681 as indicated. Deposit concrete to avoid segregation.

682  
683 (a) Deposit concrete in horizontal layers of depth not to  
684 exceed formwork design pressures and in a manner to avoid  
685 inclined construction joints.

686  
687 (b) Consolidate placed concrete with mechanical vibrating  
688 equipment according to ACI 301.

689  
690 (c) Do not use vibrators to transport concrete inside forms.

691 Insert and withdraw vibrators vertically at uniformly spaced  
692 locations to rapidly penetrate placed layer and at least 6  
693 inches into preceding layer. Do not insert vibrators into lower  
694 layers of concrete that have begun to lose plasticity. At each  
695 insertion, limit duration of vibration to time necessary to  
696 consolidate concrete and complete embedment of  
697 reinforcement and other embedded items without causing  
698 mixture constituents to segregate.  
699

700 **(4)** Deposit and consolidate concrete for floors and slabs in a  
701 continuous operation, within limits of construction joints, until  
702 placement of a panel or section is complete.  
703

704 **(a)** Consolidate concrete during placement operations, so  
705 concrete is thoroughly worked around reinforcement and other  
706 embedded items and into corners.  
707

708 **(b)** Maintain reinforcement in position on chairs during  
709 concrete placement.  
710

711 **(c)** Screed slab surfaces with a straightedge and strike off  
712 to correct elevations.  
713

714 **(d)** Slope surfaces uniformly to drains where required.  
715

716 **(e)** Begin initial floating using bull floats or darbies to form  
717 a uniform and open-textured surface plane, before excess  
718 bleedwater appears on the surface. Do not further disturb slab  
719 surfaces before starting finishing operations.  
720

#### 721 **(M) Finishing Formed Surfaces** 722

723 **(1) Rough-Formed Finish.** As-cast concrete texture imparted by  
724 form-facing material with tie holes and defects repaired and patched.  
725 Remove fins and other projections that exceed specified limits on  
726 formed-surface irregularities.  
727

728 **(a)** Apply to concrete surfaces not exposed to public view.  
729

730 **(2) Smooth-Formed Finish.** As-cast concrete texture imparted  
731 by form-facing material, arranged in an orderly and symmetrical  
732 manner with a minimum of seams. Repair and patch tie holes and  
733 defects. Remove fins and other projections that exceed specified  
734 limits on formed-surface irregularities.  
735

736 **(a)** Apply to concrete surfaces exposed to public view.



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**(3) Rubbed Finish.** Apply the following to smooth-formed-finished as-cast concrete where indicated:

**(a) Smooth-Rubbed Finish.** Not later than one day after form removal, moisten concrete surfaces and rub with carborundum brick or another abrasive until producing a uniform color and texture. Do not apply cement grout other than that created by the rubbing process.

**(b) Grout-Cleaned Finish.** Wet concrete surfaces and apply grout of a consistency of thick paint to coat surfaces and fill small holes. Mix 1 part portland cement to 1-1/2 parts fine sand with a 1:1 mixture of bonding admixture and water. Add white portland cement in amounts determined by trial patches, so color of dry grout matches adjacent surfaces. Scrub grout into voids and remove excess grout. When grout whitens, rub surface with clean burlap and keep surface damp by fog spray for at least 36 hours.

**(c) Cork-Floated Finish.** Wet concrete surfaces and apply a stiff grout. Mix 1 part portland cement and 1 part fine sand with a 1:1 mixture of bonding agent and water. Add white portland cement in amounts determined by trial patches, so color of dry grout matches adjacent surfaces. Compress grout into voids by grinding surface. In a swirling motion, finish surface with a cork float.

**(4) Related Unformed Surfaces.** At tops of walls, horizontal offsets, and similar unformed surfaces adjacent to formed surfaces, strike off smooth and finish with a texture matching adjacent formed surfaces. Continue final surface treatment of formed surfaces uniformly across adjacent unformed surfaces unless otherwise indicated.

**(N) Finishing Floors and Slabs**

**(1) General.** Comply with ACI 302.1R recommendations for screeding, restraightening, and finishing operations for concrete surfaces. Do not wet concrete surfaces.

**(2) Scratch Finish.** While still plastic, texture concrete surface that has been screeded and bull-floated or darbied. Use stiff brushes, brooms, or rakes to produce a profile amplitude of 1/4 inch in one direction.

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(a) Apply scratch finish to surfaces indicated.

**(3) Float Finish.** Consolidate surface with power-driven floats or by hand floating if area is small or inaccessible to power-driven floats. Restraighten, cut down high spots, and fill low spots. Repeat float passes and restraightening until surface is left with a uniform, smooth, granular texture.

(a) Apply float finish to surfaces indicated.

**(4) Trowel Finish.** After applying float finish, apply first troweling and consolidate concrete by hand or power-driven trowel. Continue troweling passes and restraighten until surface is free of trowel marks and uniform in texture and appearance. Grind smooth any surface defects that would telegraph through applied coatings or floor coverings.

(a) Apply a trowel finish to surfaces indicated.

(b) Finish surfaces to the following tolerances, according to ASTM E1155 (ASTM E1155M), for a randomly trafficked floor surface:

(i) Specified overall values of flatness, F(F) 30; and of levelness, F(L) 20; with minimum local values of flatness, F(F) 24; and of levelness, F(L) 15; for suspended slabs.

**(5) Trowel and Fine-Broom Finish.** Apply a first trowel finish to surfaces indicated. While concrete is still plastic, slightly scarify surface with a fine broom.

(a) Comply with flatness and levelness tolerances for trowel-finished floor surfaces.

**(6) Broom Finish.** Apply a broom finish to exterior concrete platforms, steps, ramps, and elsewhere as indicated.

(a) Immediately after float finishing, slightly roughen trafficked surface by brooming with fiber-bristle broom perpendicular to main traffic route. Coordinate required final finish with Architect before application.

**(O) Miscellaneous Concrete Item Installation**

**(1) Filling In.** Fill in holes and openings left in concrete

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structures after work of other trades is in place unless otherwise indicated. Mix, place, and cure concrete, as specified, to blend with in-place construction. Provide other miscellaneous concrete filling indicated or required to complete the Work.

**(2) Curbs.** Provide monolithic finish to interior curbs by stripping forms while concrete is still green and by steel-troweling surfaces to a hard, dense finish with corners, intersections, and terminations slightly rounded.

**(P) Concrete Protecting and Curing**

**(1) General.** Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Comply with ACI 306.1 for cold-weather protection and ACI 305.1 (ACI 305.1M) for hot-weather protection during curing.

**(2) Evaporation Retarder.** Apply evaporation retarder to unformed concrete surfaces if hot, dry, or windy conditions cause moisture loss approaching 0.2 lb/sq. ft. x h (1 kg/sq. m x h) before and during finishing operations. Apply according to manufacturer's written instructions after placing, screeding, and bull floating or darbying concrete, but before float finishing.

**(3) Formed Surfaces.** Cure formed concrete surfaces, including underside of beams, supported slabs, and other similar surfaces. If forms remain during curing period, moist cure after loosening forms. If removing forms before end of curing period, continue curing for remainder of curing period.

**(4) Unformed Surfaces.** Begin curing immediately after finishing concrete. Cure unformed surfaces, including floors and slabs, concrete floor toppings, and other surfaces.

**(5) Curing.** Cure concrete according to ACI 308.1, by one or a combination of the following methods:

**(a) Moisture Curing.** Keep surfaces continuously moist for not less than seven days with the following materials:

- (i)** Water.
- (ii)** Continuous water-fog spray.
- (iii)** Absorptive cover, water saturated, and kept continuously wet. Cover concrete surfaces and edges

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with 12-inch (300-mm) lap over adjacent absorptive covers.

**(b) Moisture-Retaining-Cover Curing.** Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width, with sides and ends lapped at least 12 inches (300 mm), and sealed by waterproof tape or adhesive. Cure for not less than seven days. Immediately repair any holes or tears during curing period, using cover material and waterproof tape.

**(i)** Moisture cure or use moisture-retaining covers to cure concrete surfaces to receive floor coverings.

**(ii)** Moisture cure or use moisture-retaining covers to cure concrete surfaces to receive penetrating liquid floor treatments.

**(iii)** Cure concrete surfaces to receive floor coverings with either a moisture-retaining cover or a curing compound that the manufacturer certifies does not interfere with bonding of floor covering used on Project.

**(c) Curing Compound.** Apply uniformly in continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subjected to heavy rainfall within three hours after initial application. Maintain continuity of coating and repair damage during curing period.

**(i) Removal.** After curing period has elapsed, remove curing compound without damaging concrete surfaces by method recommended by curing compound manufacturer unless manufacturer certifies curing compound does not interfere with bonding of floor covering used on Project.

**(d) Curing and Sealing Compound.** Apply uniformly to floors and slabs indicated in a continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subjected to heavy rainfall within three hours after initial application. Repeat process 24 hours later and apply a second coat. Maintain continuity of coating and repair damage during curing period.

**(Q) Joint Filling**

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(1) Prepare, clean, and install joint filler according to manufacturer's written instructions.

(a) Defer joint filling until concrete has aged at least one month. Do not fill joints until construction traffic has permanently ceased.

(2) Remove dirt, debris, saw cuttings, curing compounds, and sealers from joints; leave contact faces of joints clean and dry.

(3) Install semirigid joint filler full depth in saw-cut joints and at least 2 inches (50 mm) deep in formed joints. Overfill joint and trim joint filler flush with top of joint after hardening.

**(R) Concrete Surface Repairs**

(1) **Defective Concrete.** Repair and patch defective areas when approved by Engineer. Remove and replace concrete that cannot be repaired and patched to Engineer's approval.

(2) **Patching Mortar.** Mix dry-pack patching mortar, consisting of 1 part portland cement to 2-1/2 parts fine aggregate passing a No. 16 (1.18-mm) sieve, using only enough water for handling and placing.

(3) **Repairing Formed Surfaces.** Surface defects include color and texture irregularities, cracks, spalls, air bubbles, honeycombs, rock pockets, fins and other projections on the surface, and stains and other discolorations that cannot be removed by cleaning.

(a) Immediately after form removal, cut out honeycombs, rock pockets, and voids more than 1/2 inch (13 mm) in any dimension to solid concrete. Limit cut depth to 3/4 inch (19 mm). Make edges of cuts perpendicular to concrete surface. Clean, dampen with water, and brush-coat holes and voids with bonding agent. Fill and compact with patching mortar before bonding agent has dried. Fill form-tie voids with patching mortar or cone plugs secured in place with bonding agent.

(b) Repair defects on surfaces exposed to view by blending white portland cement and standard portland cement so that, when dry, patching mortar matches surrounding color. Patch a test area at inconspicuous locations to verify mixture and color match before proceeding with patching. Compact

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mortar in place and strike off slightly higher than surrounding surface.

(c) Repair defects on concealed formed surfaces that affect concrete's durability and structural performance as determined by Engineer.

**(4) Repairing Unformed Surfaces.** Test unformed surfaces, such as floors and slabs, for finish and verify surface tolerances specified for each surface. Correct low and high areas. Test surfaces sloped to drain for trueness of slope and smoothness; use a sloped template.

(a) Repair finished surfaces containing defects. Surface defects include spalls, popouts, honeycombs, rock pockets, crazing and cracks in excess of 0.01 inch (0.25 mm) wide or that penetrate to reinforcement or completely through unreinforced sections regardless of width, and other objectionable conditions.

(b) After concrete has cured at least 14 days, correct high areas by grinding.

(c) Correct localized low areas during or immediately after completing surface finishing operations by cutting out low areas and replacing with patching mortar. Finish repaired areas to blend into adjacent concrete.

(d) Correct other low areas scheduled to receive floor coverings with a repair underlayment. Prepare, mix, and apply repair underlayment and primer according to manufacturer's written instructions to produce a smooth, uniform, plane, and level surface. Feather edges to match adjacent floor elevations.

(e) Correct other low areas scheduled to remain exposed with a repair topping. Cut out low areas to ensure a minimum repair topping depth of 1/4 inch (6 mm) to match adjacent floor elevations. Prepare, mix, and apply repair topping and primer according to manufacturer's written instructions to produce a smooth, uniform, plane, and level surface.

(f) Repair defective areas, except random cracks and single holes 1 inch (25 mm) or less in diameter, by cutting out and replacing with fresh concrete. Remove defective areas with clean, square cuts and expose steel reinforcement with at

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least a 3/4-inch (19-mm) clearance all around. Dampen concrete surfaces in contact with patching concrete and apply bonding agent. Mix patching concrete of same materials and mixture as original concrete, except without coarse aggregate. Place, compact, and finish to blend with adjacent finished concrete. Cure in same manner as adjacent concrete.

**(g)** Repair random cracks and single holes 1 inch (25 mm) or less in diameter with patching mortar. Groove top of cracks and cut out holes to sound concrete and clean off dust, dirt, and loose particles. Dampen cleaned concrete surfaces and apply bonding agent. Place patching mortar before bonding agent has dried. Compact patching mortar and finish to match adjacent concrete. Keep patched area continuously moist for at least 72 hours.

**(5)** Perform structural repairs of concrete, subject to Engineer's approval, using epoxy adhesive and patching mortar.

**(6)** Repair materials and installation not specified above may be used, subject to Engineer's approval.

**(S) Field Quality Control**

**(1) Testing Agency.** Engage a qualified testing and inspecting agency to perform tests and inspections and to submit reports.

**(2) Inspections.** The testing agency shall perform the following inspections:

**(a)** Steel reinforcement placement.

**(b)** Verification of use of required design mixture.

**(c)** Concrete placement, including conveying and depositing.

**(d)** Curing procedures and maintenance of curing temperature.

**(e)** Verification of concrete strength before removal of shores and forms from beams and slabs.

**(3) Concrete Tests.** Testing of composite samples of fresh concrete obtained according to ASTM C172/C172M shall be performed according to the following requirements:

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**(a) Testing Frequency.** Obtain at least one composite sample for each 100 cu. yd. or fraction thereof of each concrete mixture placed each day.

**(i)** When frequency of testing provides fewer than five compressive-strength tests for each concrete mixture, testing shall be conducted from at least five randomly selected batches or from each batch if fewer than five are used.

**(b) Slump.** Comply with ASTM C143/C143M; one test at point of placement for each composite sample, but not less than one test for each day's pour of each concrete mixture. Perform additional tests when concrete consistency appears to change.

**(c) Air Content.** Comply with ASTM C231/C231M, pressure method, for normal-weight concrete; ASTM C173/C173M, volumetric method, for structural lightweight concrete; one test for each composite sample, but not less than one test for each day's pour of each concrete mixture.

**(d) Concrete Temperature.** Comply with ASTM C1064/C1064M; one test hourly when air temperature is 40 deg F and below or 80 deg F and above, and one test for each composite sample.

**(e) Compression Test Specimens.** Comply with ASTM C31/C31M.

**(i)** Cast and laboratory cure two sets of two standard cylinder specimens for each composite sample.

**(ii)** Cast and field cure two sets of two standard cylinder specimens for each composite sample.

**(f) Compressive-Strength Tests.** Comply with ASTM C39/C39M; test one set of two laboratory-cured specimens at 7 days and one set of two specimens at 28 days.

**(i)** Test one set of two field-cured specimens at 7 days and one set of two specimens at 28 days.



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(ii) A compressive-strength test shall be the average compressive strength from a set of two specimens obtained from same composite sample and tested at age indicated.

(g) When strength of field-cured cylinders is less than 85 percent of companion laboratory-cured cylinders, Contractor shall evaluate operations and provide corrective procedures for protecting and curing in-place concrete.

(h) Strength of each concrete mixture will be satisfactory if every average of any three consecutive compressive-strength tests equals or exceeds specified compressive strength and no compressive-strength test value falls below specified compressive strength by more than 500 psi.

(i) Test results shall be reported in writing to Engineer, concrete manufacturer, and Contractor within 48 hours of testing. Reports of compressive-strength tests shall contain Project identification name and number, date of concrete placement, name of concrete testing and inspecting agency, location of concrete batch in Work, design compressive strength at 28 days, concrete mixture proportions and materials, compressive breaking strength, and type of break for both 7- and 28-day tests.

(j) **Nondestructive Testing.** Impact hammer, sonoscope, or other nondestructive device may be permitted by Engineer but will not be used as sole basis for approval or rejection of concrete.

(k) **Additional Tests.** Testing and inspecting agency shall make additional tests of concrete when test results indicate that slump, air entrainment, compressive strengths, or other requirements have not been met, as directed by Engineer. Testing and inspecting agency may conduct tests to determine adequacy of concrete by cored cylinders complying with ASTM C42/C42M or by other methods as directed by Engineer.

(l) Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.

(m) Correct deficiencies in the Work that test reports and

1151 inspections indicate do not comply with the Contract  
1152 Documents.

1153  
1154 **657.04 Measurement.** Cast-in-place concrete will be paid on a lump sum  
1155 basis. Measurement for payment will not apply.

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1157 **657.05 Payment.** The Engineer will pay for cast-in-place concrete on a  
1158 contract lump sum basis. Payment will be full compensation for work prescribed in  
1159 this section and contract documents.

1160  
1161 The Engineer will pay for the following pay item when included in the  
1162 proposal schedule:

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1164 **Pay Item** **Pay Unit**

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1166 Cast-In-Place Concrete Base for \_\_\_\_\_ Lump Sum

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**END OF SECTION 657**

1 Make the following section a part of the Standard Specifications:  
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3 **SECTION 658 – CONCRETE UNIT MASONRY**  
4  
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6 **658.01 Description.** This section describes the furnishing and installation of  
7 concrete masonry units (CMUs). This section includes CMUs, mortar and grout,  
8 steel reinforcing bars, masonry-joint reinforcement, miscellaneous masonry  
9 accessories, and masonry-cell fill. Products installed but not furnished under this  
10 section include cast-stone trim in concrete unit masonry. Reinforced masonry in  
11 this section is defined as masonry containing reinforcing steel in grouted cells.  
12

13 **658.02 Materials**  
14

15 **(A) Manufacturers.** The following requirements apply to product  
16 selection:  
17

18 **(1) Available Products.** Subject to compliance with  
19 requirements, products that may be incorporated into the Work  
20 include, but are not limited to, products specified.  
21

22 **(2) Available Manufacturers.** Subject to compliance with  
23 requirements, manufacturers offering products that may be  
24 incorporated into the Work include, but are not limited to,  
25 manufacturers specified.  
26

27 **(B) Unit Masonry, General**  
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29 **(1) Masonry Standard.** Comply with TMS 602/ACI 530.1/ASCE  
30 6 except as modified by requirements in the Contract Documents.  
31

32 **(2) Defective Units.** Referenced masonry unit standards may  
33 allow a certain percentage of units to exceed tolerances and to  
34 contain chips, cracks, or other defects exceeding limits stated in the  
35 standard. Do not use units where such defects, including  
36 dimensions that vary from specified dimensions by more than stated  
37 tolerances, will be exposed in the completed Work or will impair the  
38 quality of completed masonry.  
39

40 **(C) Concrete Masonry Units**  
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42 **(1) Shapes.** Provide shapes indicated and as follows:  
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44 Provide special shapes for lintels, corners, jambs, sashes,  
45 movement joints, headers, bonding, and other special  
46 conditions.

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(a) Provide square-edged units for outside corners unless otherwise indicated.

(2) **CMUs.** CMUs shall comply with ASTM C90.

(a) **Unit Compressive Strength.** Provide units with minimum average net-area compressive strength of 3000 psi.

(b) **Density Classification.** Units shall be Normal weight.

(c) **Size (Width).** Units shall be manufactured to dimensions 3/8 inch less-than-nominal dimensions.

(D) **Mortar and Grout Materials**

(1) **Portland Cement.** Portland cement shall comply with ASTM C150, and shall be Type I or II, except Type III may be used for cold-weather construction. Provide natural color or white cement as required to produce mortar color indicated.

(2) **Masonry Cement.** Masonry cement shall comply with ASTM C91/C91M.

(3) **Mortar Cement.** Mortar cement shall comply with ASTM C1329/C1329M.

(4) **Aggregate for Mortar.** Aggregate for mortar shall comply with ASTM C144.

(a) For mortar that is exposed to view, use washed aggregate consisting of natural sand or crushed stone.

(b) For joints less than 1/4 inch thick, use aggregate graded with 100 percent passing the No. 16 sieve.

(5) **Aggregate for Grout.** Aggregate for grout shall comply with ASTM C404.

(6) **Epoxy Pointing Mortar.** Epoxy pointing mortar shall comply with ASTM C395, and shall be epoxy-resin-based material formulated for use as pointing mortar for glazed or pre-faced masonry units (and approved for such use by manufacturer of units); in color indicated or, if not otherwise indicated, as selected by Engineer from manufacturer's colors.

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(7) **Water.** Water shall be potable.

**(E) Reinforcement**

(1) **Uncoated Steel Reinforcing Bars.** Uncoated steel reinforcing bars shall comply with ASTM A615 or ASTM A996, and shall be Grade 60.

(2) **Reinforcing Bar Positioners.** Reinforcing bar positioners shall be wire units designed to fit into mortar bed joints spanning masonry unit cells and to hold reinforcing bars in center of cells. Units are formed from 0.148-inch steel wire, hot-dip galvanized after fabrication. Provide units designed for number of bars indicated.

**(F) Ties and Anchors**

(1) **General.** Ties and anchors shall extend at least 1-1/2 inches into masonry but with at least a 5/8-inch cover on outside face.

(2) **Materials.** Provide ties and anchors specified in this article that are made from materials that comply with the following unless otherwise indicated:

(a) **Mill-Galvanized, Carbon-Steel Wire.** Mill-galvanized, carbon-steel wire shall comply with ASTM A82/A82M, with ASTM A641/A641M, Class 1 coating.

(b) **Hot-Dip Galvanized, Carbon-Steel Wire.** Hot-Dip galvanized, carbon-steel wire shall comply with ASTM A82/A82M, with ASTM A153/A153M, Class B-2 coating.

**(G) Mortar and Grout Mixes**

(1) **General.** Do not use admixtures, including pigments, air-entraining agents, accelerators, retarders, water-repellent agents, antifreeze compounds, or other admixtures unless otherwise indicated.

(a) Do not use calcium chloride in mortar or grout.

(2) **Mortar for Unit Masonry.** Mortar for unit masonry shall comply with ASTM C270, Proportion Specification. Provide the following types of mortar for applications stated unless another type is indicated.

(a) For masonry below grade or in contact with earth, use

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Type M.

(b) For reinforced masonry, use Type S.

(3) **Grout for Unit Masonry.** Grout for unit masonry shall comply with ASTM C476.

(a) Use grout of type indicated or, if not otherwise indicated, of type (fine or coarse) that will comply with TMS 602/ACI 530.1/ASCE 6 for dimensions of grout spaces and pour height.

(b) Provide grout with a slump of 8 to 11 inches as measured according to ASTM C143.

### 658.03 Construction

(A) **Related Requirements.** Work shall conform to the specifications herein as well as to the following sections:

(1) Section 673 “Structural Steel Framing” for installing anchor sections of adjustable masonry anchors for connecting to structural steel frame.

#### (B) Quality Assurance

(1) **Testing Agency Qualifications.** The testing agency shall be qualified according to ASTM C1093 for testing indicated.

(2) **Source Limitations for Masonry Units.** Obtain exposed masonry units of a uniform texture and color, or a uniform blend within the ranges accepted for these characteristics, through one source from a single manufacturer for each product required.

(3) **Source Limitation for Mortar Materials.** Obtain mortar ingredients of a uniform quality, including color for exposed masonry, from a single manufacturer for each cementitious component and from one source or producer for each aggregate.

#### (C) Submittals

(1) **Product Data.** Submit data for each type of product.

(2) **Shop Drawings.** Submit shop drawings for Reinforcing Steel. Detail bending, lap lengths, and placement of unit masonry reinforcing bars. Comply with ACI 315.

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**(3) Qualification Data.** Submit qualification data for testing agency.

**(4) Material Certificates.** Submit certificates for each type and size of the following:

**(a)** Masonry units. Include data on material properties.

**(b)** Cementitious materials. Include name of manufacturer, brand name, and type.

**(c)** Preblended, dry mortar mixes. Include description of type and proportions of ingredients.

**(d)** Grout mixes. Include description of type and proportions of ingredients.

**(e)** Reinforcing bars.

**(f)** Joint reinforcement.

**(g)** Anchors, ties, and metal accessories.

**(5) Mix Designs.** Submit mix designs for each type of mortar and grout. Include description of type and proportions of ingredients.

**(a)** Include test reports for mortar mixes required to comply with property specification. Test according to ASTM C109/C109M for compressive strength, ASTM C1506 for water retention, and ASTM C91/C91M for air content.

**(b)** Include test reports, according to ASTM C1019, for grout mixes required to comply with compressive strength requirement.

**(D) Delivery, Storage, and Handling**

**(1)** Store masonry units on elevated platforms in a dry location. If units are not stored in an enclosed location, cover tops and sides of stacks with waterproof sheeting, securely tied. If units become wet, do not install until they are dry.

**(2)** Store cementitious materials on elevated platforms, under cover, and in a dry location. Do not use cementitious materials that have become damp.

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(3) Store aggregates where grading and other required characteristics can be maintained and contamination avoided.

(4) Deliver preblended, dry mortar mix in moisture-resistant containers. Store preblended, dry mortar mix in delivery containers on elevated platforms in a dry location or in covered weatherproof dispensing silos.

(5) Store masonry accessories, including metal items, to prevent corrosion and accumulation of dirt and oil.

**(E) Field Conditions**

(1) **Protection of Masonry.** During construction, cover tops of walls, projections, and sills with waterproof sheeting at end of each day's work. Cover partially completed masonry when construction is not in progress.

(a) Extend cover a minimum of 24 inches down both sides of walls, and hold cover securely in place.

(2) Do not apply uniform floor or roof loads for at least 12 hours and concentrated loads for at least three days after building masonry walls or columns.

(3) **Stain Prevention.** Prevent grout, mortar, and soil from staining the face of masonry to be left exposed or painted. Immediately remove grout, mortar, and soil that come in contact with such masonry.

(a) Protect base of walls from rain-splashed mud and from mortar splatter by spreading coverings on ground and over wall surface.

(b) Protect sills, ledges, and projections from mortar droppings.

(c) Protect surfaces of window and door frames, as well as similar products with painted and integral finishes, from mortar droppings.

(d) Turn scaffold boards near the wall on edge at the end of each day to prevent rain from splashing mortar and dirt onto completed masonry.



277 (4) **Hot-Weather Requirements.** Comply with hot-weather  
278 construction requirements contained in TMS 602/ACI 530.1/ASCE 6.

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280 (F) **Examination**

281  
282 (1) Examine conditions, with Installer present, for compliance with  
283 requirements for installation tolerances and other conditions affecting  
284 performance of the Work.

285  
286 (a) Verify that foundations are within tolerances specified.

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288 (b) Verify that reinforcing dowels are properly placed.

289  
290 (c) Verify that substrates are free of substances that would  
291 impair mortar bond.

292  
293 (2) Before installation, examine rough-in and built-in construction  
294 for piping systems to verify actual locations of piping.

295  
296 (3) Proceed with installation only after unsatisfactory conditions  
297 have been corrected.

298  
299 (G) **Installation, General**

300  
301 (1) Build chases and recesses to accommodate items specified in  
302 this and other Sections.

303  
304 (2) Leave openings for equipment to be installed before  
305 completing masonry. After installing equipment, complete masonry to  
306 match construction immediately adjacent to opening.

307  
308 (3) Use full-size units without cutting if possible. If cutting is  
309 required to provide a continuous pattern or to fit adjoining  
310 construction, cut units with motor-driven saws; provide clean, sharp,  
311 unchipped edges. Allow units to dry before laying unless wetting of  
312 units is specified. Install cut units with cut surfaces and, where  
313 possible, cut edges concealed.

314  
315 (H) **Tolerances**

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317 (1) **Dimensions and Locations of Elements**

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319 (a) For dimensions in cross section or elevation, do not  
320 vary by more than plus 1/2 inch or minus 1/4 inch.

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322 (b) For location of elements in plan, do not vary from that

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indicated by more than plus or minus 1/2 inch.

(c) For location of elements in elevation, do not vary from that indicated by more than plus or minus 1/4 inch in a story height or 1/2 inch total.

**(2) Lines and Levels**

(a) For bed joints and top surfaces of bearing walls, do not vary from level by more than 1/4 inch in 10 feet, or 1/2-inch maximum.

(b) For conspicuous horizontal lines, such as lintels, sills, parapets, and reveals, do not vary from level by more than 1/8 inch in 10 feet, 1/4 inch in 20 feet, or 1/2-inch maximum.

(c) For vertical lines and surfaces do not vary from plumb by more than 1/4 inch in 10 feet, 3/8 inch in 20 feet or 1/2-inch maximum.

(d) For conspicuous vertical lines, such as external corners, door jambs, reveals, and expansion and control joints, do not vary from plumb by more than 1/8 inch in 10 feet, 1/4 inch in 20 feet, or 1/2-inch maximum.

(e) For lines and surfaces, do not vary from straight by more than 1/4 inch in 10 feet, 3/8 inch in 20 feet, or 1/2-inch maximum.

(f) For vertical alignment of exposed head joints, do not vary from plumb by more than 1/4 inch in 10 feet, or 1/2-inch maximum.

(g) For faces of adjacent exposed masonry units, do not vary from flush alignment by more than 1/16 inch.

**(3) Joints**

(a) For bed joints, do not vary from thickness indicated by more than plus or minus 1/8 inch, with a maximum thickness limited to 1/2 inch.

(b) For exposed bed joints, do not vary from bed-joint thickness of adjacent courses by more than 1/8 inch.

(c) For head and collar joints, do not vary from thickness

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indicated by more than plus 3/8 inch or minus 1/4 inch.

(d) For exposed head joints, do not vary from thickness indicated by more than plus or minus 1/8 inch.

**(I) Laying Masonry Walls**

(1) Lay out walls in advance for accurate spacing of surface bond patterns with uniform joint thicknesses and for accurate location of openings, movement-type joints, returns, and offsets. Avoid using less-than-half-size units, particularly at corners, jambs, and, where possible, at other locations.

(2) Bond Pattern for Exposed Masonry: Unless otherwise indicated, lay exposed masonry in running bond do not use units with less-than-nominal 4-inch horizontal face dimensions at corners or jambs.

(3) Lay concealed masonry with all units in a wythe in running bond or bonded by lapping not less than 4 inches. Bond and interlock each course of each wythe at corners. Do not use units with less-than-nominal 4-inch horizontal face dimensions at corners or jambs.

(4) Stopping and Resuming Work: Stop work by stepping back units in each course from those in course below; do not tooth. When resuming work, clean masonry surfaces that are to receive mortar, remove loose masonry units and mortar, and wet brick if required before laying fresh masonry.

(5) Built-in Work: As construction progresses, build in items specified in this and other Sections. Fill in solidly with masonry around built-in items.

(6) Where built-in items are to be embedded in cores of hollow masonry units, place a layer of metal lath, wire mesh, or plastic mesh in the joint below, and rod mortar or grout into core.

**(J) Mortar Bedding and Jointing**

(1) Lay solid CMUs with completely filled bed and head joints; butter ends with sufficient mortar to fill head joints and shove into place. Do not deeply furrow bed joints or slush head joints.

(2) Tool exposed joints slightly concave when thumbprint hard, using a jointer larger than joint thickness unless otherwise indicated.

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(3) Cut joints flush for masonry walls to receive plaster or other direct-applied finishes (other than paint) unless otherwise indicated.

(4) Cut joints flush where indicated to receive waterproofing unless otherwise indicated.

**(K) Anchoring Masonry to Structural Steel and Concrete**

(1) Anchor masonry to structural steel and concrete, where masonry abuts or faces structural steel or concrete, to comply with the following:

(a) Anchor masonry with anchors embedded in masonry joints and attached to structure.

**(L) Control and Expansion Joints**

(1) **General.** Install control- and expansion-joint materials in unit masonry as masonry progresses. Do not allow materials to span control and expansion joints without provision to allow for in-plane wall or partition movement.

(2) Form control joints in concrete masonry using one of the following methods:

(a) Fit bond-breaker strips into hollow contour in ends of CMUs on one side of control joint. Fill resultant core with grout, and rake out joints in exposed faces for application of sealant.

(b) Install preformed control-joint gaskets designed to fit standard sash block.

(c) Install interlocking units designed for control joints. Install bond-breaker strips at joint. Keep head joints free and clear of mortar, or rake out joint for application of sealant.

(d) Install temporary foam-plastic filler in head joints, and remove filler when unit masonry is complete for application of sealant.

**(M) Reinforced Unit Masonry Installation**

(1) **Placing Reinforcement.** Comply with requirements in TMS 602/ACI 530.1/ASCE 6.

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**(2) Grouting.** Do not place grout until entire height of masonry to be grouted has attained enough strength to resist grout pressure.

**(a)** Comply with requirements in TMS 602/ACI 530.1/ASCE 6 for cleanouts and for grout placement, including minimum grout space and maximum pour height.

**(b)** Limit height of vertical grout pours to not more than 60 inches.

**(N) Field Quality Control**

**(1) Testing and Inspecting.** Engineer will engage special inspectors to perform tests and inspections and prepare reports. Allow inspectors access to scaffolding and work areas as needed to perform tests and inspections. Retesting of materials that fail to comply with specified requirements shall be done at Contractor's expense.

**(2) Inspections.** Special inspections according to Level B in TMS 402/ACI 530/ASCE 5.

**(a)** Place grout only after inspectors have verified compliance of grout spaces and of grades, sizes, and locations of reinforcement.

**(3) Testing Agency.** Engineer will engage a qualified independent testing and inspecting agency to perform field tests and inspections indicated below and prepare test reports. Payment for these services will be made by Engineer. Retesting of materials failing to comply with specified requirements shall be done at Contractor's expense.

**(a) Concrete Masonry Unit Test.** For each type of unit provided, according to ASTM C140 for compressive strength.

**(b) Mortar Aggregate Ratio Test (Proportion Specification).** For each mix provided, according to ASTM C780.

**(c) Mortar Test (Property Specification).** For each mix provided, according to ASTM C780. Test mortar for mortar air content and compressive strength.

**(d) Grout Test (Compressive Strength).** For each mix

507 provided, according to ASTM C1019.

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509 **(O) Repairing, Pointing, and Cleaning**

510  
511 **(1)** Remove and replace masonry units that are loose, chipped,  
512 broken, stained, or otherwise damaged or that do not match  
513 adjoining units. Install new units to match adjoining units; install in  
514 fresh mortar, pointed to eliminate evidence of replacement.

515  
516 **(2) Pointing.** During the tooling of joints, enlarge voids and  
517 holes, except weep holes, and completely fill with mortar. Point up  
518 joints, including corners, openings, and adjacent construction, to  
519 provide a neat, uniform appearance. Prepare joints for sealant  
520 application, where indicated.

521  
522 **(3) In-Progress Cleaning.** Clean unit masonry as work  
523 progresses by dry brushing to remove mortar fins and smears before  
524 tooling joints.

525  
526 **(4) Final Cleaning.** After mortar is thoroughly set and cured,  
527 clean exposed masonry as follows:

528  
529 **(a)** Remove large mortar particles by hand with wooden  
530 paddles and nonmetallic scrape hoes or chisels.

531  
532 **(b)** Test cleaning methods on sample wall panel; leave  
533 one-half of panel uncleaned for comparison purposes. Obtain  
534 Engineer's approval of sample cleaning before proceeding  
535 with cleaning of masonry.

536  
537 **(c)** Protect adjacent stone and nonmasonry surfaces from  
538 contact with cleaner by covering them with liquid strippable  
539 masking agent or polyethylene film and waterproof masking  
540 tape.

541  
542 **(d)** Wet wall surfaces with water before applying cleaners;  
543 remove cleaners promptly by rinsing surfaces thoroughly with  
544 clear water.

545  
546 **(e)** Clean concrete masonry by applicable cleaning  
547 methods indicated in NCMA TEK 8-4A.

548  
549 **(P) Masonry Waste Disposal**

550  
551 **(1) Salvageable Materials.** Unless otherwise indicated, excess  
552 masonry materials are Contractor's property. At completion of unit

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masonry work, remove from Project site.

**(2) Waste Disposal as Fill Material.** Dispose of clean masonry waste, including excess or soil-contaminated sand, waste mortar, and broken masonry units, by crushing and mixing with fill material as fill is placed.

**(a)** Crush masonry waste to less than 4 inches in each dimension.

**(b)** Mix masonry waste with at least two parts of specified fill material for each part of masonry waste. Fill material is specified in Section 203 – Excavation and Embankment.

**(c)** Do not dispose of masonry waste as fill within 18 inches of finished grade.

**(3) Masonry Waste Recycling.** Return broken CMUs not used as fill to manufacturer for recycling.

**(4) Excess Masonry Waste:** Remove excess clean masonry waste that cannot be used as fill, as described above or recycled, and other masonry waste, and legally dispose of off HDOT property.

**658.04 Measurement.** The Engineer will not measure concrete unit masonry for payment.

**658.05 Payment.** The Engineer will not pay for concrete unit masonry separately. The Engineer will consider the price for concrete unit masonry included in the contract price for Section 608 – Modular Storage Containers. Payment will be full compensation for work prescribed in this section and contract documents.

The price includes full compensation for providing all submittals, furnishing labor, materials, tools, and equipment for installing concrete unit masonry, and all incidentals necessary to complete the work.

**END OF SECTION 658**

1 Make the following section a part of the Standard Specifications:  
2

### 3 **SECTION 665 – ROUGH CARPENTRY** 4

5  
6 **665.01 Description.** This section describes the furnishing and installation  
7 requirements for rough carpentry. This section includes framing with dimension  
8 lumber, and wood blocking, cants, and nailers.  
9

10 **(A) Definitions.** Terms in this section are defined as follows:  
11

12 **(1) Boards or Strips:** Lumber of less than 2 inches nominal size in  
13 least dimension.  
14

15 **(2) Dimension Lumber:** Lumber of 2 inches nominal size or  
16 greater but less than 5 inches nominal size in least dimension.  
17

18 **(3) Exposed Framing:** Framing not concealed by other  
19 construction.  
20

21 **(4) Timber:** Lumber of 5 inches nominal size or greater in least  
22 dimension.  
23

24 **(B) Abbreviations.** Lumber grading agencies, and abbreviations used  
25 to reference them, include the following:  
26

27 **(1) NeLMA:** Northeastern Lumber Manufacturers' Association.  
28

29 **(2) NLGA:** National Lumber Grades Authority.  
30

31 **(3) WCLIB:** West Coast Lumber Inspection Bureau.  
32

33 **(4) WWPA:** Western Wood Products Association.  
34

### 35 **665.02 Materials** 36

37 **(A) Wood Products, General**  
38

39 **(1) Lumber.** Comply with DOC PS 20 and applicable rules of  
40 grading agencies indicated. If no grading agency is indicated, comply  
41 with the applicable rules of any rules-writing agency certified by the  
42 ALSC Board of Review. Grade lumber by an agency certified by the  
43 ALSC Board of Review to inspect and grade lumber under the rules  
44 indicated.  
45

46 **(a)** Factory mark each piece of lumber with grade stamp of



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grading agency.

**(b)** For exposed lumber indicated to receive a stained or natural finish, mark grade stamp on end or back of each piece or omit grade stamp and provide certificates of grade compliance issued by grading agency.

**(c)** Where nominal sizes are indicated, provide actual sizes required by DOC PS 20 for moisture content specified. Where actual sizes are indicated, they are minimum dressed sizes for dry wood products.

**(d)** Dress lumber, S4S, unless otherwise indicated.

**(2) Maximum Moisture Content of Lumber.** Maximum moisture content of lumber is as follows:

**(a)** Boards: 19 percent.

**(b)** Dimension Lumber: 19 percent unless otherwise indicated.

**(c)** Timber. 19 percent.

**(B) Preservative Treatment**

**(1) Preservative Treatment by Pressure Process.** Treatment shall comply with AWWPA U1; Use Category UC2 for interior construction not in contact with ground, Use Category UC3b for exterior construction not in contact with ground, and Use Category UC4a for items in contact with ground.

**(a) Preservative Chemicals.** Preservative chemicals shall be acceptable to authorities having jurisdiction and shall not contain arsenic or chromium. Do not use inorganic boron (SBX) for sill plates.

**(b)** For exposed items indicated to receive a stained or natural finish, chemical formulations shall not require incising, contain colorants, bleed through, or otherwise adversely affect finishes.

**(c)** After treatment, redry boards and dimension lumber to 19 percent maximum moisture content.

**(2)** Kiln-dry lumber after treatment to a maximum moisture

93 content of 19 percent. Do not use material that is warped or that  
94 does not comply with requirements for untreated material.

95  
96 **(3)** Mark lumber with treatment quality mark of an inspection  
97 agency approved by the ALSC Board of Review.

98  
99 **(a)** For exposed lumber indicated to receive a stained or  
100 natural finish, mark end or back of each piece or omit marking  
101 and provide certificates of treatment compliance issued by  
102 inspection agency.

103  
104 **(4) Application.** Treat all rough carpentry unless otherwise  
105 indicated, items indicated on Drawings, and the following:

106  
107 **(a)** Wood cants, nailers, curbs, equipment support bases,  
108 blocking, stripping, and similar members in connection with  
109 roofing, flashing, vapor barriers, and waterproofing.

110  
111 **(b)** Wood sills, sleepers, blocking, furring, stripping, and  
112 similar concealed members in contact with masonry or  
113 concrete.

114  
115 **(c)** Wood framing and furring attached directly to the  
116 interior of below-grade exterior masonry or concrete walls.

117  
118 **(d)** Wood framing members that are less than 18 inches  
119 (460 mm) above the ground in crawlspaces or unexcavated  
120 areas.

121  
122 **(C) Dimension Lumber Framing**

123  
124 **(1) Joists, Rafters, Beams, and Other Framing by Grade.**  
125 Joists, rafters, beams, and other framing by grade shall be No. 1

126  
127 **(a)** Species:

128  
129 **(i)** Douglas fir-larch; WCLIB or WWPA.

130  
131 **(2) Exposed Framing Indicated to Receive a Stained or**  
132 **Natural Finish.** Hand-select material for uniformity of appearance  
133 and freedom from characteristics, on exposed surfaces and edges,  
134 that would impair finish appearance, including decay, honeycomb,  
135 knot-holes, shake, splits, torn grain, and wane.

136  
137 **(a)** Species and Grade:

139 (i) Douglas fir-larch; No. 1 grade; WCLIB or WWPA.

140  
141 **(D) Miscellaneous Lumber**

142  
143 **(1)** Provide miscellaneous lumber indicated and lumber for  
144 support or attachment of other construction, including the following:

145  
146 (a) Blocking.

147  
148 (b) Nailers.

149  
150 (c) Cants.

151  
152 (d) Furring.

153  
154 (e) Grounds.

155  
156 (f) Utility shelving.

157  
158 **(2) Dimension Lumber Items.** Dimension lumber items shall be  
159 construction or No. 2 grade lumber.

160  
161 **(3)** For blocking not used for attachment of other construction,  
162 Utility, Stud, or No. 3 grade lumber of any species may be used  
163 provided that it is cut and selected to eliminate defects that will  
164 interfere with its attachment and purpose.

165  
166 **(4)** For blocking and nailers used for attachment of other  
167 construction, select and cut lumber to eliminate knots and other  
168 defects that will interfere with attachment of other work.

169  
170 **(5)** For furring strips for installing plywood or hardboard paneling,  
171 select boards with no knots capable of producing bent-over nails and  
172 damage to paneling.

173  
174 **(E) Fasteners**

175  
176 **(1) General.** Fasteners shall be of size and type indicated and  
177 shall comply with requirements specified in this article for material  
178 and manufacture. Provide nails or screws, in sufficient length, to  
179 penetrate not less than 1-1/2 inches into wood substrate.

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181 (a) Where rough carpentry is exposed to weather, in  
182 ground contact, pressure-preservative treated, or in area of  
183 high relative humidity, provide fasteners of Type 316 stainless  
184 steel.

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(b) For pressure-preservative-treated wood, use stainless steel fasteners.

(2) **Nails, Brads, and Staples.** Nails, brads, and staples shall comply with ASTM F1667.

(3) **Power-Driven Fasteners.** Fastener systems with an evaluation report acceptable to authorities having jurisdiction, based on ICC-ES AC70, shall be used.

(4) **Post-Installed Anchors.** Fastener systems with an evaluation report acceptable to authorities having jurisdiction, based on ICC-ES AC01, ICC-ES AC58, ICC-ES AC193, or ICC-ES AC308 as appropriate for the substrate, shall be used.

**(F) Metal Framing Anchors**

(1) Allowable design loads, as published by manufacturer, shall meet or exceed those indicated. Manufacturer's published values shall be determined from empirical data or by rational engineering analysis and demonstrated by comprehensive testing performed by a qualified independent testing agency. Framing anchors shall be punched for fasteners adequate to withstand same loads as framing anchors.

(2) **Galvanized-Steel Sheet.** Galvanized-steel sheet shall be hot-dip, zinc-coated steel sheet complying with ASTM A653/A653M, G60 coating designation.

(a) Use for interior locations unless otherwise indicated.

(3) **Hot-Dip, Heavy-Galvanized Steel Sheet.** Hot-dip, heavy-galvanized steel sheet shall comply with ASTM A653/A653M; and shall be structural steel (SS), high-strength low-alloy steel Type A (HSLAS Type A), or high-strength low-alloy steel Type B (HSLAS Type B); G185 coating designation; and not less than 0.036 inch thick.

(a) Use for wood-preservative-treated lumber and where indicated.

(4) **Stainless Steel Sheet.** Stainless steel sheet shall comply with ASTM A240/A240M or ASTM A666, and shall be Type 316.

(a) Use for exterior locations and where indicated.

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**(5) Joist Hangers.** Joist hangers shall be U-shaped with 2-inch-long seat and 1-1/4-inch-wide nailing flanges at least 85 percent of joist depth.

**(a)** Thickness: 0.050 inch.

**(6) Post Bases.** Post bases shall be adjustable-socket type for bolting in place with standoff plate to raise post 1 inch above base and with 2-inch-minimum side cover, socket 0.062 inch thick, and standoff and adjustment plates 0.108 inch thick.

**(7) Rafter Tie-Downs (Hurricane or Seismic Ties).** Bent strap tie shall be used for fastening rafters or roof trusses to wall studs below, 2-1/4 inches wide by 0.062 inch thick. Tie fits over top of rafter or truss and fastens to both sides of rafter or truss, face of top plates, and side of stud below.

**(G) Miscellaneous Materials**

**(1) Sill-Sealer Gaskets**

**(a)** Glass-fiber-resilient insulation, fabricated in strip form, for use as a sill sealer; 1-inch nominal thickness, compressible to 1/32 inch ; selected from manufacturer's standard widths to suit width of sill members indicated.

**(b)** Closed-cell neoprene foam, 1/4 inch thick, selected from manufacturer's standard widths to suit width of sill members indicated.

**(c)** Self-adhering sheet consisting of 64mils of rubberized asphalt laminated on one side to a 4-mil-thick, polyethylene-film reinforcement, and with release liner on adhesive side; formulated for application with primer or surface conditioner that complies with VOC limits of authorities having jurisdiction.

**(2) Adhesives for Gluing Furring and Sleepers to Concrete or Masonry.** Adhesives shall be a formulation complying with ASTM D3498 that is approved for use indicated by adhesive manufacturer.

**(3) Water-Repellent Preservative.** Water-repellent preservative shall be an NWWDA-tested and -accepted formulation containing 3-iodo-2-propynyl butyl carbamate, combined with an insecticide

277 containing chloropyrifos as its active ingredient.

278  
279 **665.03 Construction**

280  
281 **(A) Related Requirements.** Work shall conform to the specifications  
282 herein as well as to the following sections:

283  
284 **(1)** Section 675 "Sheathing" for sheathing, subflooring, and  
285 underlayment.

286  
287 **(2)** Section 667 "Shop-Fabricated Wood Trusses" for wood  
288 trusses made from dimension lumber.

289  
290 **(3)** Section 689 "Termite Control" for site application of borate  
291 treatment to wood framing.

292  
293 **(B) Submittals**

294  
295 **(1) Action Submittals**

296  
297 **(a) Product Data.** Submit data for each type of process  
298 and factory-fabricated product. Indicate component materials  
299 and dimensions and include construction and application  
300 details.

301  
302 **(i)** Include data for wood-preservative treatment  
303 from chemical treatment manufacturer and certification  
304 by treating plant that treated materials comply with  
305 requirements. Indicate type of preservative used and  
306 net amount of preservative retained.

307  
308 **(ii)** For products receiving a waterborne treatment,  
309 include statement that moisture content of treated  
310 materials was reduced to levels specified before  
311 shipment to Project site.

312  
313 **(b) Fastener Patterns.** Submit full-size templates for  
314 fasteners in exposed framing.

315  
316 **(2) Informational Submittals**

317  
318 **(a) Material Certificates**

319  
320 **(i)** Submit certificates for dimension lumber  
321 specified to comply with minimum allowable unit  
322 stresses. Indicate species and grade selected for each

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use and design values approved by the ALSC Board of Review.

**(b) Reports.** Submit reports for the following, from ICC-ES:

- (i)** Wood-preservative-treated wood.
- (ii)** Power-driven fasteners.
- (iii)** Post-installed anchors.
- (iv)** Metal framing anchors.

**(c) Qualification Statements.** Submit qualification statements for testing agency providing classification marking for fire-retardant treated material, an inspection agency acceptable to authorities having jurisdiction that periodically performs inspections to verify that the material bearing the classification marking is representative of the material tested.

**(C) Delivery, Storage, and Handling**

**(1)** Stack wood products flat with spacers beneath and between each bundle to provide air circulation. Protect wood products from weather by covering with waterproof sheeting, securely anchored. Provide for air circulation around stacks and under coverings.

**(D) Installation, General**

- (1) Framing Standard.** Comply with AF&PA's WCD 1, "Details for Conventional Wood Frame Construction," unless otherwise indicated.
- (2)** Set work to required levels and lines, with members plumb, true to line, cut, and fitted. Fit rough carpentry accurately to other construction. Locate furring, nailers, blocking, grounds, and similar supports to comply with requirements for attaching other construction.
- (3)** Install metal framing anchors to comply with manufacturer's written instructions. Install fasteners through each fastener hole.
- (4)** Install sill sealer gasket/termite barrier in accordance with manufacturer's written instructions at the underside of wall bottom track or rim track and at the top of foundation wall or slab at stud or

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joist locations.

**(5)** Do not splice structural members between supports unless otherwise indicated.

**(6)** Provide blocking and framing as indicated and as required to support facing materials, fixtures, specialty items, and trim.

**(a)** Provide metal clips for fastening gypsum board or lath at corners and intersections where framing or blocking does not provide a surface for fastening edges of panels. Space clips not more than 16 inches o.c.

**(7)** Provide fire blocking in furred spaces, stud spaces, and other concealed cavities as indicated and as follows:

**(a)** Fire block furred spaces of walls, at each floor level, at ceiling, and at not more than 96 inches o.c. with solid wood blocking or noncombustible materials accurately fitted to close furred spaces.

**(b)** Fire block concealed spaces of wood-framed walls and partitions at each floor level, at ceiling line of top story, and at not more than 96 inches o.c. Where fire blocking is not inherent in framing system used, provide closely fitted solid wood blocks of same width as framing members and 2-inch nominal thickness.

**(c)** Fire block concealed spaces between floor sleepers with same material as sleepers to limit concealed spaces to not more than 100 sq. ft. and to solidly fill space below partitions.

**(d)** Fire block concealed spaces behind combustible cornices and exterior trim at not more than 20 feet o.c.

**(8)** Sort and select lumber so that natural characteristics do not interfere with installation or with fastening other materials to lumber. Do not use materials with defects that interfere with function of member or pieces that are too small to use with minimum number of joints or optimum joint arrangement.

**(9)** Comply with AWPA M4 for applying field treatment to cut surfaces of preservative-treated lumber.

**(a)** Use inorganic boron for items that are continuously



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protected from liquid water.

**(b)** Use copper naphthenate for items not continuously protected from liquid water.

**(10)** Securely attach rough carpentry work to substrate by anchoring and fastening as indicated, complying with the following:

**(a)** Table 2304.9.1, "Fastening Schedule," in ICC's International Building Code (IBC).

**(b)** Table R602.3(1), "Fastener Schedule for Structural Members," and Table R602.3(2), "Alternate Attachments," in ICC's International Residential Code for One- and Two-Family Dwellings.

**(c)** ICC-ES evaluation report for fastener.

**(11)** Use steel common nails unless otherwise indicated. Select fasteners of size that will not fully penetrate members where opposite side will be exposed to view or will receive finish materials. Make tight connections between members. Install fasteners without splitting wood. Drive nails snug but do not countersink nail heads unless otherwise indicated.

**(12)** For exposed work, arrange fasteners in straight rows parallel with edges of members, with fasteners evenly spaced, and with adjacent rows staggered.

**(a)** Use common nails unless otherwise indicated. Drive nails snug but do not countersink nail heads.

**(E) Installation of Wood Blocking and Nailers**

**(1)** Install where indicated and where required for screeding or attaching other work. Form to shapes indicated and cut as required for true line and level of attached work. Coordinate locations with other work involved.

**(2)** Attach items to substrates to support applied loading. Recess bolts and nuts flush with surfaces unless otherwise indicated.

**(3)** Provide permanent grounds of dressed, pressure-preservative-treated, key-beveled lumber not less than 1-1/2 inches wide and of thickness required to bring face of ground to exact thickness of finish material. Remove temporary grounds when no

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longer required.

**(F) Installation of Wood Furring**

**(1)** Install level and plumb with closure strips at edges and openings. Shim with wood as required for tolerance of finish work.

**(G) Installation of Floor Joist Framing**

**(1) General.** Install floor joists with crown edge up and support ends of each member with not less than 1-1/2 inches of bearing on wood or metal, or 3 inches on masonry. Attach floor joists as follows:

**(a)** Where supported on wood members, by toe nailing or by using metal framing anchors.

**(b)** Where framed into wood supporting members, by using wood ledgers as indicated or, if not indicated, by using metal joist hangers.

**(2)** Do not notch in middle third of joists; limit notches to one-sixth depth of joist, one-third at ends unless noted on Drawings. Do not bore holes larger than one-third depth of joist; do not locate closer than 2 inches from top or bottom.

**(3)** Provide solid blocking of 2-inch nominal thickness by depth of joist at ends of joists unless nailed to header or band.

**(4)** Anchor members paralleling masonry with 1/4-by-1-1/4-inch metal strap anchors spaced not more than 96 inches o.c., extending over and fastening to three joists. Embed anchors at least 4 inches into grouted masonry with ends bent at right angles and extending 4 inches beyond bend.

**(5)** Provide bridging of type indicated below, at intervals of 96 inches o.c., between joists.

**(a)** Diagonal wood bridging formed from bevel-cut, 1-by-3-inch nominal- size lumber, double-crossed and nailed at both ends to joists.

**(H) Protection**

**(1)** Protect wood that has been treated with inorganic boron (SBX) from weather. If, despite protection, inorganic boron-treated wood becomes wet, apply EPA-registered borate treatment. Apply

507 borate solution by spraying to comply with EPA-registered label.

508

509 (2) Protect rough carpentry from weather. If, despite protection,  
510 rough carpentry becomes wet enough that moisture content exceeds  
511 that specified, apply EPA-registered borate treatment. Apply borate  
512 solution by spraying to comply with EPA-registered label.

513

514 **665.04 Measurement.** The Engineer will not measure rough carpentry for  
515 payment.

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517 **665.05 Payment.** The Engineer will not pay for rough carpentry separately.  
518 The Engineer will consider the price for rough carpentry included in the contract  
519 price for Section 608 – Modular Storage Containers. Payment will be full  
520 compensation for work prescribed in this section and contract documents.

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522 The price includes full compensation for providing all submittals, furnishing  
523 and installing rough carpentry, and all incidentals necessary to complete the work.

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527

**END OF SECTION 665**

1 Make the following section a part of the Standard Specifications:  
2

### 3 **SECTION 667 – SHOP-FABRICATED WOOD TRUSSES** 4

5  
6 **667.01 Description.** This section describes the furnishing and installation of  
7 shop-fabricated wood trusses. This section includes wood roof trusses.  
8

9 Metal-plate-connected wood trusses in this section are defined as planar  
10 structural units consisting of metal-plate-connected members fabricated from  
11 dimension lumber and cut and assembled before delivery to the Project site.  
12

#### 13 **667.02 Materials**

##### 14 15 **(A) Performance Requirements**

16  
17 **(1) Delegated Design.** Engage a qualified structural engineer to  
18 design metal-plate-connected wood trusses.  
19

20 **(2) Structural Performance.** Metal-plate-connected wood  
21 trusses shall be capable of withstanding design loads within limits  
22 and under conditions indicated. Comply with requirements in TPI 1  
23 unless more stringent requirements are specified below.  
24

25 **(a) Design Loads.** Design loads shall be as indicated.

26  
27 **(b) Maximum Deflection under Design Loads**

28  
29 **(i) Roof Trusses.** The maximum deflection for roof  
30 trusses is a vertical deflection of 1/240 of span.  
31

32 **(3)** Comply with applicable requirements and recommendations  
33 of TPI 1, TPI DSB, and SBCA BCSI.  
34

35 **(4) Wood Structural Design Standard.** Comply with applicable  
36 requirements in AF&PA's "National Design Specifications for Wood  
37 Construction" and its "Supplement."  
38

##### 39 **(B) Dimension Lumber**

40  
41 **(1) Lumber.** Lumber shall comply with DOC PS 20 and  
42 applicable rules of any rules-writing agency certified by the American  
43 Lumber Standard Committee (ALSC) Board of Review. Provide  
44 lumber graded by an agency certified by the ALSC Board of Review  
45 to inspect and grade lumber under the rules indicated.  
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(a) Factory mark each piece of lumber with grade stamp of grading agency.

(b) For exposed lumber indicated to receive a stained or natural finish, omit grade stamp and provide certificates of grade compliance issued by grading agency.

(c) Provide dressed lumber, S4S.

(d) Provide dry lumber with 19 percent maximum moisture content at time of dressing.

**(2) Minimum Chord Size for Roof Trusses.** The minimum chord size for roof trusses shall be 2 by 6 inches nominal for top chords, 2 by 4 inches nominal for bottom chords and web members.

**(3) Minimum Specific Gravity for Top Chords.** The minimum specific gravity for top chords shall be 0.50.

**(4) Permanent Bracing.** Provide wood bracing that complies with requirements for miscellaneous lumber in Section 665 "Rough Carpentry."

**(C) Wood-Preservative-Treated Lumber**

**(1) Preservative Treatment.** Preservative Treatment shall be by Pressure Process: AWPA U1; Use Category UC2 for interior construction not in contact with the ground, Use Category UC3b for exterior construction not in contact with the ground, and Use Category UC4a for items in contact with the ground.

(a) **Preservative Chemicals.** Acceptable to authorities having jurisdiction and containing no arsenic or chromium.

(b) For exposed trusses indicated to receive a stained or natural finish, use chemical formulations that do not require incising, contain colorants, bleed through, or otherwise adversely affect finishes.

**(2)** Kiln-dry lumber after treatment to a maximum moisture content of 19 percent. Do not use material that is warped or does not comply with requirements for untreated material.

**(3)** Mark lumber with treatment quality mark of an inspection agency approved by the ALSC Board of Review.

93 (a) For exposed trusses indicated to receive a stained or  
94 natural finish, mark end or back of each piece or omit marking  
95 and provide certificates of treatment compliance issued by  
96 inspection agency.

97  
98 (4) **Application.** Treat all trusses unless otherwise indicated.  
99

100 (D) **Metal Connector Plates**

101  
102 (1) **General.** Fabricate connector plates to comply with TPI 1.

103  
104 (2) **Hot-Dip Galvanized-Steel Sheet.** Hot-dip galvanized-steel  
105 sheet shall comply with ASTM A653; and shall be Structural Steel  
106 (SS), high-strength low-alloy steel Type A (HSLAS Type A), or high-  
107 strength low-alloy steel Type B (HSLAS Type B); G60 coating  
108 designation; and not less than 0.036 inch thick.

109  
110 (a) Use for interior locations unless otherwise indicated.

111  
112 (3) **Hot-Dip Heavy-Galvanized-Steel Sheet.** Hot-dip heavy-  
113 galvanized-steel sheet shall comply with ASTM A653; and shall be  
114 Structural Steel (SS), high-strength low-alloy steel Type A (HSLAS  
115 Type A), or high-strength low-alloy steel Type B (HSLAS Type B);  
116 G185 coating designation; and not less than 0.036 inch thick.

117  
118 (a) Use for wood-preservative-treated lumber and where  
119 indicated.

120  
121 (4) **Stainless-Steel Sheet.** Stainless-steel sheet shall comply  
122 with ASTM A666, and shall be Type 316, and not less than 0.035  
123 inch thick.

124  
125 (a) Use for exterior locations and where indicated.

126  
127 (E) **Fasteners**

128  
129 (1) **General.** Provide fasteners of size and type indicated that  
130 comply with requirements specified in this article for material and  
131 manufacture.

132  
133 (a) Provide fasteners for use with metal framing anchors  
134 that comply with written recommendations of metal framing  
135 manufacturer.

136  
137 (b) Where trusses are exposed to weather, in ground  
138 contact, made from pressure-preservative treated wood, or in

139 area of high relative humidity, provide fasteners of Type 316  
140 stainless steel.

141  
142 **(2) Nails, Brads, and Staples.** Nails, brads, and staples shall  
143 comply with ASTM F1667.

144  
145 **(F) Metal Framing Anchors and Accessories**

146  
147 **(1)** Allowable design loads, as published by manufacturer, shall  
148 comply with or exceed those indicated. Manufacturer's published  
149 values shall be determined from empirical data or by rational  
150 engineering analysis and demonstrated by comprehensive testing  
151 performed by a qualified independent testing agency. Framing  
152 anchors shall be punched for fasteners adequate to withstand same  
153 loads as framing anchors.

154  
155 **(2) Galvanized-Steel Sheet.** Galvanized-steel sheet shall be  
156 hot-dip, zinc-coated steel sheet complying with ASTM A653, G60  
157 coating designation.

158  
159 **(a)** Use for interior locations unless otherwise indicated.

160  
161 **(3) Hot-Dip Heavy-Galvanized-Steel Sheet.** Hot-dip heavy-  
162 galvanized-steel sheet shall comply with ASTM A653; and shall be  
163 Structural Steel (SS), high-strength low-alloy steel Type A (HSLAS  
164 Type A), or high-strength low-alloy steel Type B (HSLAS Type B);  
165 G185 coating designation; and not less than 0.036 inch thick.

166  
167 **(a)** Use for wood-preservative-treated lumber and where  
168 indicated.

169  
170 **(4) Stainless-Steel Sheet.** Stainless-steel sheet shall comply  
171 with ASTM A666 and shall be Type 316.

172  
173 **(a)** Use for exterior locations and where indicated.

174  
175 **(5) Truss Tie-Downs.** Truss tie-downs shall be bent strap tie for  
176 fastening roof trusses to wall studs below, 1-1/2 inches wide by  
177 0.050 inch thick. Tie fastens to one side of truss, top plates, and  
178 side of stud below.

179  
180 **(6) Truss Tie-Downs (Hurricane or Seismic Ties).** Truss tie-  
181 downs (hurricane or seismic ties) shall be bent strap tie for fastening  
182 roof trusses to wall studs below, 2-1/4 inches wide by 0.062 inch  
183 thick. Tie fits over top of truss and fastens to both sides of truss, top  
184 plates, and one side of stud below.

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**(7) Roof Truss Clips.** Roof truss clips shall be angle clips for bracing bottom chord of roof trusses at non-load-bearing walls, 1-1/4 inches wide by 0.050 inch thick. Clip is fastened to truss through slotted holes to allow for truss deflection.

**(8) Roof Truss Bracing/Spacers.** Roof truss bracing/spacers shall be U-shaped channels, 1-1/2 inches wide by 1 inch deep by 0.040 inch thick, made to fit between two adjacent trusses and accurately space them apart, and with tabs having metal teeth for fastening to trusses.

**(G) Miscellaneous Materials**

**(1) Galvanizing Repair Paint.** Galvanizing repair paint shall be SSPC-Paint 20, with dry film containing a minimum of 92 percent zinc dust by weight.

**(H) Fabrication**

**(1)** Cut truss members to accurate lengths, angles, and sizes to produce close-fitting joints.

**(2)** Fabricate metal connector plates to sizes, configurations, thicknesses, and anchorage details required to withstand design loads for types of joint designs indicated.

**(3)** Assemble truss members in design configuration indicated; use jigs or other means to ensure uniformity and accuracy of assembly, with joints closely fitted to comply with tolerances in TPI 1. Position members to produce design camber indicated.

**(a)** Fabricate wood trusses within manufacturing tolerances in TPI 1.

**(4)** Connect truss members by metal connector plates located and securely embedded simultaneously in both sides of wood members by air or hydraulic press.

**(I) Source Quality Control**

**(1) Special Inspections.** Engineer will engage a qualified special inspector to perform special inspections.

**(a)** Provide special inspector with access to fabricator's documentation of detailed fabrication and quality-control



231 procedures that provide a basis for inspection control of the  
232 workmanship and the fabricator's ability to conform to  
233 approved construction documents and referenced standards.

234  
235 (b) Provide special inspector with access to places where  
236 wood trusses are being fabricated to perform inspections.

237  
238 (2) Correct deficiencies in Work that special inspections indicate  
239 do not comply with the Contract Documents.

240  
241 **667.03 Construction**

242  
243 (A) **Related Requirements.** Work shall conform to the specifications  
244 herein as well as to the following section:

245  
246 (1) Section 689 "Termite Control" for site application of borate  
247 treatment to wood trusses.

248  
249 (B) **Quality Assurance**

250  
251 (1) **Metal Connector-Plate Manufacturer Qualifications.** The  
252 metal connector-plate manufacturer shall be one that is a member of  
253 TPI and that complies with quality-control procedures in TPI 1 for  
254 manufacture of connector plates.

255  
256 (a) Manufacturer's responsibilities include providing  
257 professional engineering services needed to assume  
258 engineering responsibility.

259  
260 (b) **Engineering Responsibility.** Preparation of Shop  
261 Drawings and comprehensive engineering analysis shall be  
262 by a qualified professional engineer.

263  
264 (2) **Fabricator Qualifications.** The fabricator shall be a shop  
265 that participates in a recognized quality-assurance program,  
266 complies with quality-control procedures in TPI 1, and involves third-  
267 party inspection by an independent testing and inspecting agency  
268 acceptable to Engineer and authorities having jurisdiction and is  
269 certified for chain of custody by an FSC-accredited certification body.

270  
271 (3) **Testing Agency Qualifications.** For testing agency  
272 providing classification marking for fire-retardant-treated material, an  
273 inspection agency acceptable to authorities having jurisdiction that  
274 periodically performs inspections to verify that the material bearing  
275 the classification marking is representative of the material tested.

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**(C) Submittals**

**(1) Action Submittals**

**(a) Product Data.** Submit data for wood-preservative-treated lumber, metal-plate connectors, metal truss accessories, and fasteners.

**(i)** Include data for wood-preservative treatment from chemical treatment manufacturer and certification from treating plant that treated materials comply with requirements. Indicate type of preservative used and net amount of preservative retained.

**(ii)** For products receiving a waterborne treatment, include statement that moisture content of treated materials was reduced to levels specified before shipment to truss fabricator.

**(b) Shop Drawings.** Submit shop drawings that show fabrication and installation details for trusses.

**(i)** Show location, pitch, span, camber, configuration, and spacing for each type of truss required.

**(ii)** Indicate sizes, stress grades, and species of lumber.

**(iii)** Indicate locations of permanent bracing required to prevent buckling of individual truss members due to design loads.

**(iv)** Indicate locations, sizes, and materials for permanent bracing required to prevent buckling of individual truss members due to design loads.

**(v)** Indicate type, size, material, finish, design values, orientation, and location of metal connector plates.

**(vi)** Show splice details and bearing details.

**(c) Delegated-Design Submittal.** Provide a delegated-design submittal for metal-plate-connected wood trusses indicated to comply with performance requirements and

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design criteria, including analysis data signed and sealed by the qualified structural engineer responsible for their preparation.

**(2) Informational Submittals**

**(a) Qualification Data.** Provide qualification data for metal connector-plate manufacturer, structural engineer, and fabricator.

**(b) Material Certificates.** Provide certificates for dimension lumber specified to comply with minimum specific gravity. Indicate species and grade selected for each use and specific gravity.

**(c) Product Certificates.** Provide certificates for metal-plate-connected wood trusses, signed by officer of truss-fabricating firm.

**(d) Evaluation Reports.** Provide evaluation reports for the following, from ICC-ES:

- (i)** Wood-preservative-treated lumber.
- (ii)** Metal-plate connectors.
- (iii)** Metal truss accessories.

**(D) Delivery, Storage, and Handling**

**(1)** Handle and store trusses to comply with recommendations in SBCA BCSI, "Building Component Safety Information: Guide to Good Practice for Handling, Installing, Restraining, & Bracing Metal Plate Connected Wood Trusses."

**(a)** Store trusses flat, off of ground, and adequately supported to prevent lateral bending.

**(b)** Protect trusses from weather by covering with waterproof sheeting, securely anchored.

**(c)** Provide for air circulation around stacks and under coverings.

**(2)** Inspect trusses showing discoloration, corrosion, or other evidence of deterioration. Discard and replace trusses that are

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damaged or defective.

**(E) Installation**

**(1)** Install wood trusses only after supporting construction is in place and is braced and secured.

**(2)** If trusses are delivered to Project site in more than one piece, assemble trusses before installing.

**(3)** Hoist trusses in place by lifting equipment suited to sizes and types of trusses required, exercising care not to damage truss members or joints by out-of-plane bending or other causes.

**(4)** Install and brace trusses according to TPI recommendations and as indicated.

**(5)** Install trusses plumb, square, and true to line and securely fasten to supporting construction.

**(6)** Space trusses as indicated; adjust and align trusses in location before permanently fastening.

**(7)** Anchor trusses securely at bearing points; use metal truss tie-downs or floor truss hangers as applicable. Install fasteners through each fastener hole in metal framing anchors according to manufacturer's fastening schedules and written instructions.

**(8)** Install and fasten permanent bracing during truss erection and before construction loads are applied. Anchor ends of permanent bracing where terminating at walls or beams.

**(a)** Install bracing to comply with Section 665 "Rough Carpentry."

**(9)** Install wood trusses within installation tolerances in TPI 1.

**(10)** Do not alter trusses in field. Do not cut, drill, notch, or remove truss members.

**(11)** Replace wood trusses that are damaged or do not comply with requirements.

**(a)** Damaged trusses may be repaired according to truss repair details signed and sealed by the qualified professional engineer responsible for truss design, when approved by

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Engineer.

**(F) Repairs and Protection**

**(1)** Protect wood that has been treated with inorganic boron (SBX) from weather. If, despite protection, inorganic boron-treated wood becomes wet, apply EPA-registered borate treatment. Apply borate solution by spraying to comply with EPA-registered label.

**(2)** Protect wood trusses from weather. If, despite protection, wood trusses become wet, apply EPA-registered borate treatment. Apply borate solution by spraying to comply with EPA-registered label.

**(3)** Repair damaged galvanized coatings on exposed surfaces according to ASTM A780/A780M and manufacturer's written instructions.

**(G) Field Quality Control**

**(1) Special Inspections.** Engineer will engage a qualified special inspector to perform special inspections to verify that temporary installation restraint/bracing and the permanent individual truss member restraint/bracing are installed in accordance with the approved truss submittal package.

**667.04 Measurement.** The Engineer will not measure shop-fabricated wood trusses for payment.

**667.05 Payment.** The Engineer will not pay for shop-fabricated wood trusses separately. The Engineer will consider the price for shop-fabricated wood trusses included in the contract price for Section 608 – Modular Storage Containers. Payment will be full compensation for work prescribed in this section and contract documents.

The price includes full compensation for providing all submittals, shop drawings, furnishing and installing shop-fabricated wood trusses, and all incidentals necessary to complete the work.

**END OF SECTION 667**

1 Make the following section a part of the Standard Specifications:  
2

### 3 **SECTION 673 – STRUCTURAL STEEL FRAMING** 4 5

6 **673.01 Description.** This section describes the fabrication and installation of  
7 structural steel framing. Structural steel in this section is defined as elements of  
8 the structural frame indicated on the drawings and as described in AISC 303,  
9 “Code of Standard Practice for Steel Buildings and Bridges.”  
10

#### 11 **673.02 Materials**

##### 12 **(A) Structural Steel Materials**

13  
14  
15 **(1) Channels, Angles.** Channels and angles shall comply with  
16 ASTM A36/A36M.  
17

18 **(2) Plate and Bar.** Plate and bar shall comply with  
19 ASTM A36/A36M.  
20

21 **(3) Cold-Formed Hollow Structural Sections.** Cold-formed  
22 hollow structural sections shall comply with ASTM A500/A500M, and  
23 shall be Grade B structural tubing.  
24

25 **(4) Steel Pipe.** Steel pipe shall comply with ASTM A53/A53M,  
26 and shall be Type E or Type S, Grade B.  
27 Weight class: standard.  
28 Finish: galvanized.  
29

30 **(5) Welding Electrodes.** Welding electrodes shall comply with  
31 AWS requirements.  
32

##### 33 **(B) Bolts, Connectors, and Anchors**

34  
35 **(1) Unheaded Anchor Rods.** Unheaded anchor rods shall  
36 comply with ASTM F1554, and shall be Grade 36.  
37 Configuration: Straight.  
38 Nuts: ASTM A563 heavy hex carbon steel.  
39 Plate Washers: ASTM A36 carbon steel.  
40 Washers: ASTM F436 , Type 1, hardened carbon steel.  
41 Finish: Hot-dip zinc coating, ASTM A153/A153M, Class C.  
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##### 43 **(C) Primer**

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45 **(1) Primer.** Primer shall be fabricator's standard lead- and  
46 chromate-free, nonasphaltic, rust-inhibiting primer.

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**(2) Galvanizing Repair Paint.** Galvanizing repair paint shall be MPI#18, MPI#19, or SSPC-Paint 20.

**(D) Grout**

**(1) Cement Grout.** Cement grout shall be Portland cement, ASTM C 150, Type I; and clean, natural sand, ASTM C 404, Size No. 2. Mix at ratio of 1 part cement to 2-1/2 parts sand, by volume, with minimum water required for placement and hydration.

**(2) Nonmetallic, Shrinkage-Resistant Grout.** Nonmetallic, shrinkage-resistant grout shall comply with ASTM C1107, and shall be factory-packaged, nonmetallic aggregate grout, noncorrosive and nonstaining, mixed with water to consistency suitable for application and a 30-minute working time.

**(E) Fabrication**

**(1) Structural Steel.** Fabricate and assemble in shop to greatest extent possible. Fabricate according to AISC 303, "Code of Standard Practice for Steel Buildings and Bridges," and to AISC 360.

**(a)** Identify high-strength structural steel according to ASTM A6 and maintain markings until structural steel has been erected.

**(b)** Mark and match-mark materials for field assembly.

**(c)** Complete structural-steel assemblies, including welding of units, before starting shop-priming operations.

**(2) Thermal Cutting.** Perform thermal cutting by machine to greatest extent possible.

**(a)** Plane thermally cut edges to be welded to comply with requirements in AWS D1.1/D1.1M.

**(3) Bolt Holes.** Cut, drill, mechanically thermal cut, or punch standard bolt holes perpendicular to metal surfaces.

**(4) Finishing.** Accurately finish ends of columns and other members transmitting bearing loads.

**(5) Holes.** Provide holes required for securing other work to structural steel and for other work to pass through steel members.

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(a) Cut, drill, or punch holes perpendicular to steel surfaces. Do not thermally cut bolt holes or enlarge holes by burning.

(b) Baseplate Holes: Cut, drill, mechanically thermal cut, or punch holes perpendicular to steel surfaces.

(c) Weld threaded nuts to framing and other specialty items indicated to receive other work.

**(6) Shop Priming**

(a) Shop prime steel surfaces except the following:

(i) Surfaces embedded in concrete or mortar. Extend priming of partially embedded members to a depth of 2 inches.

(ii) Surfaces to be field welded.

(iii) Surfaces to receive sprayed fire-resistive materials.

(iv) Galvanized surfaces.

(b) **Painting.** Apply a 1-coat, nonasphaltic primer complying with SSPC-PS Guide 7.00, "Painting System Guide 7.00: Guide for Selecting One-Coat Shop Painting Systems," to provide a dry film thickness of not less than 1.5 mils.

**(7) Galvanizing**

(a) **Hot-Dip Galvanized Finish.** Apply zinc coating by the hot-dip process to structural steel according to ASTM A123.

(i) Fill vent and drain holes that are exposed in the finished Work unless they function as weep holes, by plugging with zinc solder and filing off smooth.

(ii) Galvanize items: all exposed steel and as indicated.



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**673.03 Construction**

**(A) Quality Assurance**

**(1) Fabricator Qualifications.** The fabricator shall be one that participates in the AISC Quality Certification Program and is designated an AISC-Certified Plant, Category STD, or is accredited by the IAS Fabricator Inspection Program for Structural Steel (AC 172).

**(2) Installer Qualifications.** The installer shall be one who participates in the AISC Quality Certification Program and is designated an AISC-Certified Erector, Category CSE.

**(3) Shop-Painting Applicators.** Shop-painting applicators shall be qualified according to AISC's Sophisticated Paint Endorsement P1 or to SSPC-QP 3, "Standard Procedure for Evaluating Qualifications of Shop Painting Applicators."

**(4) Welding Qualifications.** Qualify procedures and personnel according to AWS D1.1/D1.1M, "Structural Welding Code - Steel."

**(5)** Comply with applicable provisions of the following specifications and documents:

**(a)** AISC 303 "Code of Standard Practice for Steel Buildings and Bridges".

**(b)** AISC 360 "Specification for Structural Steel Buildings".

**(c)** RCSC's "Specification for Structural Joints Using ASTM A325 or A 490 Bolts".

**(B) Submittals**

**(1) Product Data.** Submit data for each type of product.

**(2) Shop Drawings.** Submit shop drawings that show fabrication of structural-steel components.

**(a)** Include details of cuts, connections, splices, camber, holes, and other pertinent data.

**(b)** Include embedment Drawings.

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(c) Indicate welds by standard AWS symbols, distinguishing between shop and field welds, and show size, length, and type of each weld. Show backing bars that are to be removed and supplemental fillet welds where backing bars are to remain.

(d) Indicate type, size, and length of bolts, distinguishing between shop and field bolts. Identify pretensioned and slip-critical, high-strength bolted connections.

(3) **Qualification Data.** Submit qualification data for Installer.

(4) **Welding certificates.**

(5) **Mill Test Reports.** Submit reports signed by manufacturers certifying that the following products comply with requirements:

(a) Structural steel including chemical and physical properties.

(b) Bolts, nuts, and washers including mechanical properties and chemical analysis.

(c) Shop primers.

(d) Nonshrink grout.

**(C) Delivery, Storage, and Handling**

(1) Store materials to permit easy access for inspection and identification. Keep steel members off ground and spaced by using pallets, dunnage, or other supports and spacers. Protect steel members and packaged materials from corrosion and deterioration.

(a) Do not store materials on structure in a manner that might cause distortion, damage, or overload to members or supporting structures. Repair or replace damaged materials or structures as directed.

(2) Store fasteners in a protected place in sealed containers with manufacturer's labels intact.

(a) Clean and relubricate bolts and nuts that become dry or rusty before use.

(b) Comply with manufacturers' written recommendations

229 for cleaning and lubricating ASTM F3125/F3125M,  
230 Grade F1852 bolt assemblies and for retesting bolt  
231 assemblies after lubrication.  
232

233 **(D) Examination.** Verify, with certified steel erector present, elevations  
234 of concrete- and masonry-bearing surfaces and locations of anchor rods,  
235 bearing plates, and other embedments for compliance with requirements.  
236

237 Proceed with installation only after unsatisfactory conditions have  
238 been corrected.  
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240 **(E) Preparation.** Provide temporary shores, guys, braces, and other  
241 supports during erection to keep structural steel secure, plumb, and in  
242 alignment against temporary construction loads and loads equal in intensity  
243 to design loads. Remove temporary supports when permanent structural  
244 steel, connections, and bracing are in place unless otherwise indicated.  
245

246 **(F) Erection**  
247

248 **(1)** Set structural steel accurately in locations and to elevations  
249 indicated and according to AISC 303 and AISC 360.  
250

251 **(2) Baseplates.** Clean concrete- and masonry-bearing surfaces  
252 of bond-reducing materials, and roughen surfaces prior to setting  
253 plates. Clean bottom surface of plates.  
254

255 **(a)** Set plates for structural members on wedges, shims, or  
256 setting nuts as required.  
257

258 **(b)** Weld plate washers to top of baseplate.  
259

260 **(c)** Snug-tighten anchor rods after supported members  
261 have been positioned and plumbed. Do not remove wedges or  
262 shims but, if protruding, cut off flush with edge of plate before  
263 packing with grout.  
264

265 **(d)** Promptly pack grout solidly between bearing surfaces  
266 and plates so no voids remain. Neatly finish exposed  
267 surfaces; protect grout and allow to cure. Comply with  
268 manufacturer's written installation instructions for shrinkage-  
269 resistant grouts.  
270

271 **(3)** Maintain erection tolerances of structural steel within  
272 AISC 303, "Code of Standard Practice for Steel Buildings and  
273 Bridges."  
274

275 (4) Align and adjust various members that form part of complete  
276 frame or structure before permanently fastening. Before assembly,  
277 clean bearing surfaces and other surfaces that are in permanent  
278 contact with members. Perform necessary adjustments to  
279 compensate for discrepancies in elevations and alignment.

280  
281 (a) Level and plumb individual members of structure.

282  
283 (5) Splice members only where indicated.

284  
285 (6) Do not use thermal cutting during erection.

286  
287 (7) Do not enlarge unfair holes in members by burning or using  
288 drift pins. Ream holes that must be enlarged to admit bolts.

289  
290 (G) **Field Connections**

291  
292 (1) **Weld Connections.** Comply with AWS D1.1/D1.1M and  
293 AWS D1.8/D1.8M for tolerances, appearances, welding procedure  
294 specifications, weld quality, and methods used in correcting welding  
295 work.

296  
297 (a) Comply with AISC 303 and AISC 360 for bearing,  
298 alignment, adequacy of temporary connections, and removal  
299 of paint on surfaces adjacent to field welds.

300  
301 (b) Assemble and weld built-up sections by methods that  
302 maintain true alignment of axes without exceeding tolerances  
303 in AISC 303, "Code of Standard Practice for Steel Buildings  
304 and Bridges," for mill material.

305  
306 (H) **Field Quality Control**

307  
308 (1) **Special Inspections.** Engineer will engage a qualified  
309 special inspector to perform the following special inspections:

310  
311 (a) Verify structural-steel materials and inspect steel frame  
312 joint details.

313  
314 (b) Verify weld materials and inspect welds.

315  
316 (c) Verify connection materials and inspect high-strength  
317 bolted connections.

318  
319 (2) **Testing Agency.** Engineer will engage a qualified testing  
320 agency to perform tests and inspections.

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**(3) Bolted Connections.** Inspect and test bolted connections according to RCSC's "Specification for Structural Joints Using ASTM A325 or A 490 Bolts."

**(4) Welded Connections.** Visually inspect field welds according to AWS D1.1/D1.1M.

**(a)** In addition to visual inspection, test and inspect field welds according to AWS D1.1/D1.1M and the following inspection procedures, at testing agency's option:

**(i)** Liquid Penetrant Inspection: ASTM E165.

**(ii)** Magnetic Particle Inspection: ASTM E709; performed on root pass and on finished weld. Cracks or zones of incomplete fusion or penetration are not accepted.

**(iii)** Ultrasonic Inspection: ASTM E164.

**(iv)** Radiographic Inspection: ASTM E94.

**(5)** Correct deficiencies in Work that test reports and inspections indicate does not comply with the Contract Documents.

**(I) Repairs and Protection**

**(1) Galvanized Surfaces.** Clean areas where galvanizing is damaged or missing and repair galvanizing to comply with ASTM A780/A780M.

**(2) Touchup Painting.** Cleaning and touchup painting are specified in Section 687 – Painting.

**673.04 Measurement.** The Engineer will not measure structural steel framing for payment.

**673.05 Payment.** The Engineer will not pay for structural steel framing separately. The Engineer will consider the price for structural steel framing included in the contract price for Section 608 – Modular Storage Containers. Payment will be full compensation for work prescribed in this section and contract documents.

The price includes full compensation for providing all submittals, furnishing

367 labor, materials, tools, and equipment for installing structural steel framing, and all  
368 incidentals necessary to complete the work.

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372

**END OF SECTION 673**

1 Make the following section a part of the Standard Specifications:  
2

3 **SECTION 674 – SHEET METAL FLASHING AND TRIM**  
4  
5

6 **674.01 Description.** This section describes the provision and installation of  
7 sheet metal flashing and trim and other related work as indicated on the drawings  
8 and as specified herein, including downspouts and leaders, window and door  
9 flashing, and miscellaneous accessories.  
10

11 **674.02 Materials**  
12

13 **(A) Downspouts and Flashing.** Downspouts and flashing shall be 24  
14 gauge unless otherwise indicated of galvanized sheet metal, ASTM A 653/A  
15 653M, G90 hot-dipped galvanized. Field applied paint finish.  
16

17 **(B) Hangers, Spacers, Brackets, and Straps.** Hangers, spacers,  
18 brackets, and straps shall be hot-dipped galvanized steel, ASTM A 653/A  
19 653M, size and shape as indicated on the drawings or if not indicated, as  
20 per requirements of Architectural Sheet Metal Manual. Paint to match  
21 adjacent downspout, conductor head, flashing etc. unless otherwise  
22 indicated.  
23

24 **(C) Fasteners.** Fasteners shall be manufacturer's standard or custom  
25 fabricated stainless steel. Exposed fasteners where occurs or where  
26 required shall be of head to match adjacent finish with composite metal and  
27 neoprene washer.  
28

29 **(D) Solder.** Solder shall comply with ASTM B 32, and shall be of grade  
30 and type required for materials to be soldered.  
31

32 **(E) Splash Block.** Splash block shall be standard 12-inch wide x 16-  
33 inch long x 4-inch deep formed concrete.  
34

35 **(F) Moisture Barrier.** Moisture barrier shall comply with ASTM D 226,  
36 and shall be Type II, No. 30, asbestos free, asphalt saturated roofing felt.  
37

38 **(G) Cleating.** Cleats for sheet metal work shall be provided where  
39 required.  
40

41 **(H) Miscellaneous Items.** Provide all miscellaneous items, including  
42 but not limited to, flashing tapes, closures, adhesives, etc. as required for  
43 total flashing system as indicated or required.  
44

45 **(I) Fabrication**  
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**(1) Sheet Metal Fabrication Standard.** Fabricate sheet metal flashing and trim to comply with recommendations of SMACNA's "Architectural Sheet Metal Manual" that apply to the design, dimensions, metal, and other characteristics of the item indicated.

**(2) Fabricating.** Comply with details shown to fabricate sheet metal flashing and trim that fit substrates and result in waterproof and weather-resistant performance once installed. Verify shapes and dimensions of surfaces to be covered before fabricating sheet metal.

**(3) Forming.** Form exposed sheet metal Work that is without excessive oil canning, buckling, and tool marks and that is true to line and levels indicated, with exposed edges folded back to form hems.

**(4) Seams.** Fabricate nonmoving seams in sheet metal with flat-lock seams. Tin edges to be seamed, form seams, and solder.

**(5) Sealed Joints.** Form non-expansion, but movable, joints in metal to accommodate elastomeric sealant to comply with SMACNA standards.

**(6) Separation.** Separate metal from non-compatible metal or corrosive substrates by coating concealed surfaces at locations of contact with asphalt mastic or other permanent separation as recommended by manufacturer.

**(7) Fasteners.** Conceal fasteners and expansion provisions where possible. Exposed fasteners are not allowed on faces of sheet metal exposed to public view unless indicated or approved.

**(8) Attachments.** Fabricate cleats and attachment devices from same material as sheet metal component being anchored or from compatible, noncorrosive metal recommended by sheet metal manufacturer. Size shall be as recommended by SMACNA manual or sheet metal manufacturer for application but never less than thickness of metal being secured.

**674.03 Construction**

**(A) Related Requirements.** Work shall conform to the specifications herein as well as to the following sections:

- (1)** Section 684 – Preformed Metal Roofing
- (2)** Section 676 – Joint Sealants: Sealant applications



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(3) Section 687 – Painting: Sheet metal painting

**(B) Submittals**

(1) **Product Data.** Submit manufacturer’s material and finish data, installation instructions, and general recommendations for each material.

(2) **Shop Drawings.** Submit shop drawings of all required flashing details showing layout, profile, methods of joining, and anchorage details.

(3) **Samples.** Submit samples of flashing, trim, and accessory items in special finishes. Submit 8-inch square samples of sheet materials and 12-inch long samples of factory-fabricated products.

(4) **Warranty.** Submit a written warranty on the sheet metal flashing and trim for a two (2) year period from the project acceptance date. The warranty shall provide for the repair of all leaks as well as repair and replacement of sheet metal flashing and trim and damage to the building and/or its finishes at Contractor’s own expense.

**(C) Quality Assurance**

(1) Engage an experienced installer who has completed sheet metal flashing and trim work similar in materials, design, and extent to that indicated for this project and with a record of successful in-service performance.

(2) All sheet metal fabrications shall conform to State and local codes, SMACNA (latest edition) and industry standards.

(3) Coordinate work with roofing work to provide required supports and fasteners to comply with roofing requirements.

**(D) Performance Requirements**

(1) Install sheet metal flashing and trim work to withstand wind loads, structural movement, thermally induced movement, and exposure to weather without falling, rattling, leaking, and fastener disengagement.

(2) Provide flashing assembly that meets requirements of 105 mph, Exposure C windloads, in accordance with current International

139 Building Code.

140  
141 **(E) Delivery, Storage, and Handling**

142  
143 **(1)** Deliver sheet metal flashing materials and fabrications  
144 undamaged. Protect sheet metal flashing and trim materials and  
145 fabrications during transportation and handling.

146  
147 **(2)** Unload, store, and install sheet metal flashing materials and  
148 fabrications in a manner to prevent bending, warping, twisting, and  
149 surface damage.

150  
151 **(3)** Stack materials on platforms or pallets, covered with suitable  
152 weather-tight and ventilated covering. Do not store sheet metal  
153 flashing and trim materials in contact with other materials that might  
154 cause staining, denting, or other surface damage.

155  
156 **(F) Coordination.** Coordinate installation of sheet metal flashing and  
157 trim with interfacing and adjoining construction to provide a leak-  
158 proof, secure, and non-corrosive installation.

159  
160 **(G) Installation and Workmanship**

161  
162 **(1) General.** Surface to which sheet metal is to be applied shall  
163 be even, smooth, sound, thoroughly clean and dry, and free from  
164 defects that might affect the application. Installer shall report any  
165 unsatisfactory surfaces to the Contractor. All such areas and/or  
166 conditions shall be corrected by the Contractor. Proceed with  
167 installation only after unsatisfactory conditions have been corrected.  
168 In the absence of such report, the Contractor shall be held  
169 responsible for the finished product.

170  
171 **(2) Accessories.** All accessories or other items essential for the  
172 completeness of the sheet metal installation, though not specifically  
173 indicated on the drawings or specified, shall be provided. All such  
174 items unless otherwise indicated on the drawings or specified, shall  
175 be of the same kind of materials as the item to be applied, unless  
176 otherwise indicated or specified herein. Nails, screws, rivets, and  
177 bolts shall be of the type best suited for the purpose intended and  
178 shall be of stainless steel or of a composition that is compatible with  
179 the metal to which it will contact.

180  
181 **(3) Workmanship.** Except as otherwise indicated on the  
182 drawings or specified, the workmanship of sheet metal work, method  
183 of forming joints, anchoring, cleating, provisions for expansion, etc.,  
184 shall conform to the standards details and recommendations of the

185 Sheet Metal and Air Conditioning Contractors National Association  
186 (SMACNA)'s "Architectural Sheet Metal Manual".  
187

188 **(4) Downspouts/Leaders.** Provide downspouts and leaders  
189 complete, including elbow and offsets. Position downspouts not less  
190 than 1/2-inch away from walls and fasten to the walls at top, bottom,  
191 and in between at not more than 5-feet on center unless otherwise  
192 noted on the drawings.  
193

194 **(5) Weather Resistance.** All sheet metal work shall be  
195 fabricated to watertight and wind-tight in compliance with the  
196 purpose intended.  
197

198 **(6) Protection from Contact of Dissimilar Materials.** Surfaces  
199 in contact with dissimilar metal shall be painted with heavy-bodied  
200 bituminous paint or shall be separated by means of moisture proof  
201 building felts.  
202

203 **(H) Protection.** Protect all sheet metal work until final project  
204 acceptance.  
205

206 **(I) Clean-Up**  
207

208 **(1)** Remove all adhesive, sealants, grease, dirt, etc. from sheet  
209 metal flashing and clean surfaces as recommended by the  
210 manufacturer and maintain in a clean condition during construction.  
211

212 **(2)** At completion of the work, clean up and remove all rubbish  
213 and debris from the premises which resulted from this work.  
214

215 **674.04 Measurement.** The Engineer will not measure sheet metal flashing and  
216 trim for payment.  
217

218 **674.05 Payment.** The Engineer will not pay for sheet metal flashing and trim  
219 separately. The Engineer will consider the price for sheet metal flashing and trim  
220 included in the contract price for Section 608 – Modular Storage Containers.  
221 Payment will be full compensation for work prescribed in this section and contract  
222 documents.  
223

224 The price includes full compensation for providing all submittals, furnishing  
225 labor, materials, tools, and equipment for installing sheet metal flashing and trim,  
226 and all incidentals necessary to complete the work.  
227

228  
229  
230 **END OF SECTION 674**

1 Make the following section a part of the Standard Specifications:  
2

### 3 SECTION 675 – SHEATHING 4 5

6 **675.01 Description.** This section describes the furnishing and installation of  
7 sheathing. This section includes roof sheathing, underlayment, and sheathing joint  
8 and penetration treatment.  
9

#### 10 **675.02 Materials**

##### 11 (A) **Wood Panel Products**

12 (1) **Thickness.** Thickness shall be as needed to comply with  
13 requirements specified, but not less than thickness indicated.  
14

15 (2) **Marking.** Factory mark panels to indicate compliance with  
16 applicable standard.  
17

##### 18 (B) **Preservative-Treated Plywood**

19 (1) **Preservative Treatment by Pressure Process.** Treatment  
20 shall comply with AWWPA U1; Use Category UC2 for interior  
21 construction not in contact with ground, Use Category UC3b for  
22 exterior construction not in contact with ground, and  
23 Use Category UC4a for items in contact with ground.  
24

25 (a) **Preservative Chemicals.** Preservative chemicals  
26 shall be acceptable to authorities having jurisdiction and  
27 containing no arsenic or chromium.  
28

29 (2) **Marking.** Mark plywood with appropriate classification  
30 marking of an inspection agency acceptable to authorities having  
31 jurisdiction.  
32

33 (3) **Application.** Treat all plywood unless otherwise indicated.  
34

##### 35 (C) **Roof Sheathing**

36 (1) **Plywood Sheathing.** Plywood sheathing shall comply with  
37 DOC PS 1, and shall be Exterior, Structural I sheathing.  
38

39 (a) **Span Rating.** Span rating shall not be less than 40/20.  
40

41 (b) **Nominal Thickness.** Nominal thickness shall not be  
42 less than 5/8 inch.  
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**(D) Fasteners**

**(1) General.** Provide fasteners of size and type indicated that comply with requirements specified in this article for material and manufacture.

**(a)** For roof sheathing, provide fasteners of Type 316 stainless steel.

**(2) Nails, Brads, and Staples.** Nails, brads, and staples shall comply with ASTM F1667.

**(3) Power-Driven Fasteners.** Fastener systems with an evaluation report acceptable to authorities having jurisdiction, based on ICC-ES AC70, shall be used.

**(4) Screws for Fastening Sheathing to Wood Framing.** Screws shall comply with ASTM C1002.

**675.03 Construction**

**(A) Submittals**

**(1) Action Submittals**

**(a) Product Data.** Submit data for each type of process and factory-fabricated product. Indicate component materials and dimensions and include construction and application details.

**(i)** Include data for wood-preservative treatment from chemical treatment manufacturer and certification by treating plant that treated plywood complies with requirements. Indicate type of preservative used and net amount of preservative retained.

**(ii)** For products receiving waterborne treatment, include statement that moisture content of treated materials was reduced to levels specified before shipment to Project site.

**(iii)** For air-barrier and water-resistant glass-mat gypsum sheathing, include manufacturer's technical data and tested physical and performance properties of products.

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**(2) Informational Submittals**

**(a) Evaluation Reports.** Submit evaluation reports for the following, from ICC-ES:

**(i)** Wood-preservative-treated plywood.

**(b) Field quality-control reports.**

**(B) Delivery, Storage, and Handling**

**(1)** Stack panels flat with spacers beneath and between each bundle to provide air circulation. Protect sheathing from weather by covering with waterproof sheeting, securely anchored. Provide for air circulation around stacks and under coverings.

**(C) Installation, General**

**(1)** Do not use materials with defects that impair quality of sheathing or pieces that are too small to use with minimum number of joints or optimum joint arrangement. Arrange joints so that pieces do not span between fewer than three support members.

**(2)** Cut panels at penetrations, edges, and other obstructions of work; fit tightly against abutting construction unless otherwise indicated.

**(3)** Securely attach to substrate by fastening as indicated, complying with the following:

**(a)** Table 2304.9.1, "Fastening Schedule," in the ICC's International Building Code.

**(b)** ICC-ES evaluation report for fastener.

**(4)** Use common wire nails unless otherwise indicated. Select fasteners of size that will not fully penetrate members where opposite side will be exposed to view or will receive finish materials. Make tight connections. Install fasteners without splitting wood.

**(5)** Coordinate roof sheathing installation with flashing and joint-sealant installation so these materials are installed in sequence and manner that prevent exterior moisture from passing through completed assembly.

139 (6) Do not bridge building expansion joints; cut and space edges  
140 of panels to match spacing of structural support elements.

141  
142 (7) Coordinate sheathing installation with installation of materials  
143 installed over sheathing so sheathing is not exposed to precipitation  
144 or left exposed at end of the workday when rain is forecast.

145  
146 **(D) Wood Structural Panel Installation**

147  
148 (1) **General.** Comply with applicable recommendations in APA  
149 Form No. E30, "Engineered Wood Construction Guide," for types of  
150 structural-use panels and applications indicated.

151  
152 (2) **Fastening Methods.** Fasten panels as indicated below:

153  
154 (a) **Roof Sheathing**

155  
156 (i) Nail to wood framing. Apply a continuous bead  
157 of glue to framing members at edges of wall sheathing  
158 panels.

159  
160 (ii) Space panels 1/8 inch apart at edges and ends.

161  
162 **(E) Field Quality Control**

163  
164 (1) **Testing and Inspecting Agency.** Engineer will engage a  
165 qualified testing agency to perform tests and inspections.

166  
167 (2) **Tests.** Tests shall be as determined by testing agency from  
168 among the following tests:

169  
170 (a) **Air-Leakage-Location Testing.** Air-barrier sheathing  
171 assemblies will be tested for evidence of air leakage  
172 according to ASTM E1186, chamber pressurization or  
173 depressurization with smoke tracers or ASTM E1186,  
174 chamber depressurization using detection liquids.

175  
176 (b) **Air-Leakage-Volume Testing.** Air-barrier assemblies  
177 will be tested for air-leakage rate according to ASTM E783 or  
178 ASTM E2357.

179  
180 (3) Air barriers will be considered defective if they do not pass  
181 tests and inspections.

182  
183 (4) Repair damage to air barriers caused by testing; follow  
184 manufacturer's written instructions.

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(5) Prepare test and inspection reports.

**675.04 Measurement.** The Engineer will not measure sheathing for payment.

**675.05 Payment.** The Engineer will not pay for sheathing separately. The Engineer will consider the price for sheathing included in the contract price for Section 608 – Modular Storage Containers. Payment will be full compensation for work prescribed in this section and contract documents.

The price includes full compensation for providing all submittals, furnishing labor, materials, tools, and equipment for installing sheathing, and all incidentals necessary to complete the work.

**END OF SECTION 675**



1 Make the following section a part of the Standard Specifications:  
2

3 **SECTION 676 – JOINT SEALANTS**  
4  
5

6 **676.01 Description.** This section describes the furnishing and installation of all  
7 joint sealants necessary to completely close all joints indicated on the drawings or  
8 specified to be sealed. This section includes exterior joints, interior joints, and  
9 silicone sealant.  
10

11 The publications cited within this specification form a part of this  
12 specification to the extent referenced. Unless otherwise indicated, the most recent  
13 edition of the publication with current revisions and amendments shall be  
14 enforced.  
15

16 **676.02 Materials**  
17

18 **(A) General.** Provide one of the products of manufactures listed herein  
19 below, or approved equals.  
20

21 Provide joint sealants, backing and other related materials that are  
22 compatible with one another and with joint substrates under conditions of  
23 service and application as approved by the sealant manufacturer. Provide  
24 all joint sealants with low volatile organic compounds (VOC).  
25

26 **(B) Performance Requirements**  
27

28 **(1)** Provide exterior joint sealant that establish and maintain  
29 watertight and airtight continuous joint seals without staining or  
30 deteriorating joint substrate.  
31

32 **(2)** Provide joint sealants for interior applications that establish  
33 and maintain airtight and water resistant continuous joint seals  
34 without staining or deteriorating joint substrates.  
35

36 **(C) Sealants**  
37

38 **(1) Sealant No. 1 at Exterior Joints.** One-component  
39 polyurethane sealant conforming to ASTM C 920, Type S, Grade  
40 NS, Use NT, Class 25 or 35 as applicable.  
41

42 **(a)** Masterseal NP-1; BASF

43 **(b)** Dymonic; Tremco

44 **(c)** Sikaflex – 1a; Sika  
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**(2) Sealant No. 2 at Interior Joints.** One component acrylic latex sealant conforming to ASTM C834.

- (a)** AC-20 Acrylic Latex; Pecora Corp.
- (b)** Acrylic Latex; DAP
- (c)** Tremfex 834; Tremco

**(3) Sealant No. 3 Silicone Sealant.** Mildew-resistant, conforming to ASTM C 920; Type S; Grade NS; Class 25; Use NT, formulated with fungicide; intended for sealing interior joints.

- (a)** 786 Mildew Resistant; Dow Corning Corp.
- (b)** 898 Silicone Sanitary Sealant; Pecora Corp.
- (c)** Tremsil 600 White; Tremco

**(D) Sealant Backer Rod.** Compressible rod stock shall be of polyethylene foam, polyurethane foam, butyl rubber foam, neoprene foam or other flexible, permanent, durable nonabsorptive material as recommended for compatibility with sealant by the sealant manufacturer to control the joint depth for sealant placement, to break bond of sealant bottom of joint, to form optimum shape of sealant bead on the back side, and to provide a highly compressible backer which will minimize the possibility of sealant extrusion when joint is compressed.

**(E) Bond-Breaker Tape.** Tape shall be polyethylene or other plastic tape as recommended by sealant manufacturer for preventing sealant from adhering to rigid, inflexible joint filler materials or joint surfaces at back of joint where such adhesion would result in sealant failure.

**(F) Primer for Sealants.** Primer shall be non-staining, as recommended by the sealant manufacturer.

**(G) Masking Tape.** Tape shall be non-staining, non-absorbent material compatible with joint sealants and surfaces adjacent to joints.

### **676.03 Construction**

**(A) Related Requirements.** Work shall conform to the specifications herein as well as to the following sections:

- 93 (1) Section 681 "Aluminum Windows" for field applied sealants.
- 94
- 95 (2) Section 682 "Steel Doors and Frames" for field applied
- 96 sealants.
- 97
- 98 (3) Section 687 "Painting" for coordinating Work.
- 99

100 (B) **Quality Assurance**

- 101
- 102 (1) **Installer Qualifications.** An experienced installer who has
- 103 specialized in installing joint sealant similar in material, design, and
- 104 extent to those indicated for this project and whose work has
- 105 resulted in joint-sealant installations with a record of successful in-
- 106 service performance shall be used.
- 107
- 108 (2) **Source Limitations.** Obtain each type of joint sealant
- 109 through one source from a single manufacturer.
- 110
- 111 (3) **Preconstruction Compatibility and Adhesion Testing.**
- 112 Use manufacturers standard test methods to determine whether
- 113 priming and other specific joint preparation techniques are required
- 114 to obtain rapid, optimum adhesion of joint sealants to joint sealants.
- 115
- 116 (4) **Compatibility.** Verify that each of the sealants are
- 117 compatible for use with joint substrates.
- 118

119 (C) **Submittals**

- 120
- 121 (1) **Product Data.** Submit manufacturer's product data and
- 122 specifications for each type of sealant.
- 123
- 124 (2) **Samples.** Submit color finish samples of each type of sealant
- 125 for approval.
- 126
- 127 (3) **Product Certificates.** Submit certificates signed by
- 128 manufacturers of joint sealants certifying that products furnished
- 129 comply with requirements and are suitable for the use indicated.
- 130
- 131 (4) **Warranty.** The Contractor shall submit a written warranty on
- 132 the sealant for a 2-year period after the project acceptance date.
- 133 The warranty shall provide for the repair of all leaks as well as repair
- 134 and replacement of sealant and damage to the building and/or its
- 135 finishes at the Contractor's won expense.
- 136

137 (D) **Delivery, Storage, and Handling**

138

139 (1) **Delivery.** Deliver sealants to the jobsite in sealed containers  
140 labeled to show the designated name, formula, or specification  
141 number, lot number, color, date of manufacture, shelf life, curing  
142 time, manufacturer's directions, and name of manufacturer.

143  
144 (2) **Storage and Handling.** Store and handle materials in  
145 compliance with manufacturer's written instructions to prevent their  
146 deterioration or damage due to moisture, high temperatures,  
147 contaminants, or other causes.

148  
149 **(E) Project Conditions**

150  
151 (1) **Inspection.** Examine joint surfaces and backing, joint widths,  
152 and their anchorage to the structure, and conditions under which  
153 joint sealer work is to be performed and notify Contractor in writing of  
154 conditions detrimental to proper completion of the work and  
155 performance of sealers. Do not proceed with joint sealer work until  
156 unsatisfactory conditions have been corrected in a manner  
157 acceptable to installer.

158  
159 (2) **Weather Conditions.** Do not proceed with installation of  
160 sealant under adverse weather conditions. Proceed with the work  
161 only when forecasted weather conditions are favorable for proper  
162 cure and development of high early bond strength.

163  
164 **(F) Manufacturer's Instructions.** Comply with manufacturer's printed  
165 instructions except where more stringent requirements are shown or  
166 specified, and except where manufacturer's technical representative directs  
167 otherwise.

168  
169 **(G) Examination.** Examine joint indicated to receive joint sealers with  
170 installer present for compliance with requirements for joint configuration,  
171 installation tolerances and other conditions affecting joint sealer  
172 performance. Do not proceed with installation of joint sealants until  
173 unsatisfactory conditions have been corrected.

174  
175 **(H) Preparation**

176  
177 (1) **Surface Cleaning of Joints.** Clean out joints immediately  
178 before installing joint sealers to comply with recommendations of  
179 joint sealer manufacturers and the following requirements:

180  
181 (a) Remove all foreign material from joint substrates which  
182 could interfere with adhesion of joint sealer, including dust;  
183 paints, except for permanent protective coatings tested and  
184 approved for sealant adhesion and compatibility by sealant

185 manufacturer; oil; grease; water; and surface dirt.

186  
187 **(b)** Clean concrete, masonry, and similar porous joint  
188 substrate surfaces by brushing, grinding, mechanically  
189 abrading, or a combination of these methods to produce a  
190 clean, sound substrate capable of developing optimum bond  
191 with joint sealers. Remove loose particles remaining from  
192 above cleaning operations by vacuuming or blowing out joints  
193 with oil-free compressed air.

194  
195 **(c)** Remove laitance and form release agents from  
196 concrete.

197  
198 **(d)** Clean metal, glass, glazed surfaces of hard tile; and  
199 other non-porous surfaces by chemical cleaners or other  
200 means which are not harmful to substrates or leave residues  
201 capable of interfering with adhesion of joint sealers.

202  
203 **(2) Joint Priming.** Prime joint substrates where indicated or  
204 where recommended by joint sealer manufacturer based on  
205 preconstruction joint sealer-substrate tests or prior experience. Apply  
206 primer to comply with joint sealer manufacturer's recommendations.  
207 Confine primers to areas of joint sealer bond, do not allow spillage or  
208 migration onto adjoining surfaces.

209  
210 **(3) Masking Tape.** Use masking tape where required to prevent  
211 contact of sealant with adjoining surfaces which otherwise would be  
212 permanently stained or damaged by such contact or by cleaning  
213 methods required to remove sealant smears. Remove tape  
214 immediately after tooling without disturbing joint seal.

215  
216 **(I) Installation of Joint Sealers**

217  
218 **(1) General.** Comply with joint sealant manufacturers' printed  
219 installation instructions applicable to products and application  
220 indicated except where more stringent requirements apply. Do not  
221 apply sealants on wet surfaces.

222  
223 **(2) Sealant Installation Standard.** Comply with  
224 recommendations of ASTM C 1193 for use of joint sealants as  
225 applicable to materials, applications, and conditions.

226  
227 **(3) Latex Sealant Installation Standard.** Comply with  
228 requirements of ASTM C 1193 for use of latex sealants.

229  
230 **(4) Installation of Sealant Backings.** Install sealant backings to

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comply with the following requirements:

**(a)** Install joint fillers of type indicated to provide support of sealants during application and at position required to produce the cross-sectional shapes and depths of installed sealants relative to joint widths which allow optimum sealant movement capability.

**(i)** Do not leave gaps between ends of joint fillers.

**(ii)** Do not stretch, twist, puncture or tear joint fillers.

**(iii)** Remove absorbent joint fillers which have become wet prior to sealant application and replace with dry material.

**(b)** Install bond breaker tape between sealants and joint fillers, compression seals, or back of joints where adhesion of sealant to surfaces at back of joint would result in failure.

**(c)** Install compressible seals serving as sealant backings to comply with requirements indicated above for joint fillers.

**(5) Primer.** Immediately prior to application of the sealant, clean out all loose particles from joints. Where recommended by sealant manufacturer, apply primer to joints in concrete, masonry units, wood, and other porous surfaces in accordance with the primer manufacturer's instructions. Do not apply primer to exposed finish surfaces.

**(6) Installation of Sealants.** Install sealants by proven techniques that result in sealants directly contacting and fully wetting joint substrates completely filling recesses provided for each joint configuration and providing uniform cross-sectional shapes and depths relative to joint widths which allow optimum sealant movement capability.

**(7) Tooling of Non-Sag Sealants.** Immediately after sealant application and prior to time skinning or curing begins, toll sealants to form smooth, uniform beads of configuration indicated, to eliminate air pockets, and to ensure contact and adhesion of sealant with sides of joint. Do not use tooling agents which discolor sealants or adjacent surfaces or are not approved by sealant manufacturer.

**(a)** Provide concave joint configuration per Figure 5A in ASTM C 1193 unless otherwise indicated.

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(b) Provide flush joint configuration per Figure 5B in ASTM C 1193 where indicated.

**(J) Joint Sealant Schedule**

**(1) Sealant and Location.** Install sealants indicated in joints fitting descriptions and locations as well as in locations where sealant is typically applied and as shown on the drawings, including but not limited to the following locations:

**(a) Sealant No. 1:**

**(i)** Exterior joints and recesses formed where frames of windows and doors adjoin wall surfaces or frames. Use sealant at both exterior and interior surfaces of exterior wall penetrations.

**(ii)** Metal-to-metal joints where sealant is required, indicated, or specified.

**(iii)** Exterior locations not otherwise indicated or specified.

**(b) Sealant No. 2:**

**(i)** Small voids between walls or partitions and door frames, built-in or surface-mounted equipment and fixtures and similar items.

**(ii)** Perimeter of frames at doors and windows which adjoin interior wall surfaces.

**(iii)** Interior locations not otherwise indicated or specified, where small voids exist between materials specified to be painted.

**(c) Sealant No. 3:**

**(i)** Interior sealing of exposed joints.

**(ii)** Interior sealing of concealed construction joints.

**(K) Cleaning.** Clean off excess sealants or sealant smears adjacent to joints as work progresses by methods and with cleaning materials approved by manufacturers of joint sealers and of products in which joints occur.

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**(L) Protection.** Protect joint sealers during and after curing period from contact with contaminating substance or from damage resulting from construction operations or other causes so that they are without deterioration or damage at time of project acceptance. If despite such protection, damage or deterioration occurs, cut out and remove joint sealers immediately and reseal joints with new materials to produce joint sealer installations with repaired areas indistinguishable from original work.

**676.04 Measurement.** The Engineer will not measure joint sealant for payment.

**676.05 Payment.** The Engineer will not pay for joint sealant separately. The Engineer will consider the price for joint sealant included in the contract price for Section 608 – Modular Storage Containers. Payment will be full compensation for work prescribed in this section and contract documents.

The price includes full compensation for providing all submittals, furnishing labor, materials, tools, and equipment for installing joint sealant, and all incidentals necessary to complete the work.

**END OF SECTION 676**



1 Make the following section a part of the Standard Specifications:  
2

### 3 **SECTION 677 – RAILINGS AND HANDRAILS** 4 5

6 **677.01 Description.** This section describes the furnishing and installation of  
7 railings and handrails. This section includes painted galvanized steel railings and  
8 handrails, and miscellaneous attachments, anchors, and fasteners as indicated on  
9 the drawings or as required to conform to current IBC as amended.  
10

#### 11 **677.02 Materials** 12

13 **(A) Structural Sheet Shapes, Plates and Bars.** Comply with ASTM A  
14 36.  
15

16 **(B) Steel Pipe.** Steel pipe shall be compliant with ASTM A 53; Type and  
17 grade as required for design load; hot-dipped galvanized, G90; Schedule 40  
18 standard weight pipe.  
19

20 **(C) Stainless Steel Handrail Bracket.** Provide Style B formed type 316  
21 SS handrail bracket with a 1 1/2" horizontal and vertical clearance to meet  
22 code requirements and the recommendations of the 2010 ADA Standards  
23 for Accessible Design (ADASAD).  
24

25 **(D) Infill Panels.** Infill panels shall be 2"x2" Square Wire Mesh, woven  
26 lock crimp, stainless steel type 304.  
27

#### 28 **(E) Welding Materials, Fasteners, and Anchors** 29

30 **(1) Welding electrodes and Filler Metal.** Provide type and alloy  
31 of filler metal and electrodes as recommended by producer of metal  
32 to be welded, complying with applicable AWS specifications, and as  
33 required for color match, strength, and compatibility in fabricated  
34 items.  
35

36 **(2) Fasteners for Anchoring Railings to Other Construction.**  
37 Select fasteners of the type, grade, and class required to produce  
38 connections that are suitable for anchoring railings to other types of  
39 construction indicated and capable of withstanding design loadings.  
40

41 **(3) Fasteners for Interconnecting Railing Components.**  
42 Select fasteners of same basic metal as fastened metal, unless  
43 otherwise indicated. Do not use metals which are corrosive or  
44 incompatible with materials joined.  
45

46 **(4) Anchors and Inserts.** Provide anchors of type, size

47 indicated in the Drawings, fabricated from corrosion-resistant  
48 materials, capable of sustaining without failure, a load equal to 6  
49 times the load imposed when installed in unit masonry and equal 4  
50 times the load imposed when installed in concrete, as determined by  
51 testing per ASTM 488, conducted by a qualified, independent testing  
52 agency. Use expansion bolt devices for drilled-in-place anchors.  
53

54 **(F) Grout and Anchoring Grout**

55  
56 **(1) Non-shrink Non-metallic Grout.** Select premixed, factory  
57 packaged, nonstaining, noncorrosive, nongaseous grout complying  
58 with ASTM C 1107. Provide grout specifically recommended by  
59 manufacturer for interior and exterior applications of type specified in  
60 this section.  
61

62 **(2) Products.** Subject to compliance with the requirements,  
63 provide one of the following or an approved equal:  
64

65 **(a)** SonogROUT 14; Sonnoeborn Building Products-  
66 ChemRex, Inc.  
67

68 **(b)** Thorogrip; Thoro System Products  
69

70 **(c)** Axpanacrete; Anit-Hydro Company  
71

72 **(G) Miscellaneous Materials**

73  
74 **(1) Galvanizing Repair Paint.** High-zinc-dust-content complying  
75 with SSPC-Paint 20 and compatible with paints specified to be used  
76 over it.  
77

78 **(H) System Performance Requirements**

79  
80 **(1) Delegated Design.** Design railings, including comprehensive  
81 engineering analysis by a qualified professional engineer, using  
82 performance requirements and design criteria.  
83

84 **(2) General.** In engineering railings to withstand structural loads  
85 indicated, determine allowable design working stresses of railing  
86 materials based on the following:  
87

88 **(a) Steel.** 72 percent of minimum yield strength  
89

90 **(3) Structural Performance of Handrails and Railings.**  
91 Provide handrails and railings capable of withstanding structural  
92 loads required by current ICBO Uniform Building Code as amended

93 and ASTM E 985 but not less than the following structural loads  
94 without exceeding allowable design working stress of materials for  
95 handrails, railings, anchors, and connections based on testing  
96 performed in accordance with ASTM E 894 and ASTM E 935.  
97

98 **(a) Top Rail of Guards.** The top rail or guards shall be  
99 capable of withstanding the following loads applied as  
100 indicated:

101  
102 **(i)** Concentrated load of 200 pounds applied at any  
103 point and in any direction.

104  
105 **(ii)** Uniform load of 50 pounds per linear foot applied  
106 horizontally and concurrently with uniform load of 100  
107 pounds per linear foot applied vertically downward.

108  
109 **(iii)** Concentrated and uniform loads above need not  
110 be assumed to act concurrently.  
111

112 **(b) Handrails Not Serving as Top Rails.** Handrails not  
113 serving as top rails shall be capable of withstanding the  
114 following loads applied as indicated:

115  
116 **(i)** Concentrated load of 200 pounds applied at any  
117 point and in any direction.

118  
119 **(ii)** Uniform loads of 50 pounds per linear foot  
120 applied in any direction.

121  
122 **(iii)** Concentrated and uniform loads above need not  
123 be assumed concurrently.  
124

125 **(c) Infill Area Guards.** Infill area guards shall be capable  
126 of withstanding a horizontal concentrated load of 200 pounds  
127 applied to 1 square foot at any point in system, including  
128 panels, intermediate rails, balusters, or other elements  
129 composing infill area.

130  
131 **(4) Thermal Movements.** Provide handrails and railings that  
132 allow for thermal movements resulting from the following maximum  
133 change (range) in ambient and surface temperatures by preventing  
134 buckling, opening of joints, overstressing of components, failure of  
135 connections, and other detrimental effects. Base engineering  
136 calculation on surface temperatures of materials due to both solar  
137 heat gain and nighttime heat loss.  
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(a) Temperature Change (Range): 40 degrees F, ambient: 120 degrees F, material surfaces.

(5) **Seismic Design Criteria.** Seismic design criteria shall be as determined by 2018 IBC and as indicated on the Structural Drawings.

(I) **Fabrication**

(1) **General.** Fabricate handrails and railing systems to design, dimensions and details shown. Provide handrail and railing members in sizes and profiles indicated, with supporting posts and brackets of size and spacing shown, but not less than required to comply with requirements indicated for structural performance.

(a) The materials shall be fabricated as indicated on the contract drawings and as specified herein unless indicated otherwise by ADAAG Section 4.26 requirements. Where there is discrepancy between the contract documents and ADAAG requirements, the Contractor shall immediately notify the Engineer for direction, clarification and/or corrective measures. Standard products for manufacturers specializing in similar work will be considered insofar as they fulfill the requirements and do not violate governing codes for building and standards for good construction work.

(2) **Shop Assembly.** Preassemble items in shop to the greatest extent possible to minimize field splicing and handling limitations. Clearly mark units for reassembly and coordinate installation.

(3) Form simple and compound curves by bending members in jigs to produce uniform curvature to each repetitive configuration required; maintain profile of member throughout entire bend without buckling twisting, or otherwise deforming exposed surfaces of handrail and railing components.

(4) **Welded Connections.** Fabricate handrails and railing systems for interconnections of membranes by welding. Use welding method which is appropriate for metal and finish indicated that develops strength required to comply with performance criteria. Finish exposed welds surfaces complying with NOMMA Joint Finishes; "Finish #1 – No Evidence of Welded Joint". Weld all around at connections, including fittings.

(5) **Non-Welded Connections.** Fabricate railings systems and handrails for interconnection of members by means of railing

185 manufacturer's standard concealed mechanical fasteners and fittings  
186 unless otherwise indicated. Fabricate members and fittings to  
187 produce smooth, flush, and blended to match adjoining surfaces  
188 smooth, flush, smooth, rigid, hairline joints.

189  
190 (a) Fabricate splice joints for field connection using epoxy  
191 structural adhesive where this represents manufacturer's  
192 standard splicing method.

193  
194 **(6) Brackets, Flanges, Fittings, and Anchors.** Provide  
195 manufacturer's wall brackets, flanges, miscellaneous fittings, and  
196 anchors for interconnection of handrail and railing members to other  
197 work, unless otherwise indicated.

198  
199 **(7)** Furnish inserts and other anchorage devices for connecting  
200 handrails and railing systems to concrete and masonry work.  
201 Fabricate anchorage devices which are capable of withstanding  
202 loadings imposed by handrails and railing systems. Coordinate  
203 anchorage devices with supporting structure.

204  
205 **(8)** Cut, reinforce, drill, and tap as indicated to receive finish  
206 hardware, screws, and similar items.

207  
208 **(9)** Provide wall returns at ends of wall-mounted handrails, unless  
209 otherwise indicated. Close ends of returns, unless clearance  
210 between end of rail and wall is ¼ inch or less.

211  
212 **(10)** Provide weep holes, or another means to evacuate entrapped  
213 water in hollow sections of railings members that are exposed to  
214 exterior or to moisture from condensation or other sources. Fill voids  
215 below weep level with self-leveling sealant to assure utility of weep  
216 holes.

217  
218 **(11)** Fabricate joints that will be exposed to weather in a manner  
219 excluded to water.

220  
221 **(12)** Use materials of size and thickness shown or, if not shown, of  
222 required size and thickness to produce strength and durability in  
223 finished product. Work to dimensions shown or accepted on shop  
224 drawings, using proven details of fabrication and support. Use type  
225 of materials shown or specified for various components of work.

226  
227 **(13) Miscellaneous Framing and Support**

228  
229 (a) Provide miscellaneous framing and supports as  
230 required to complete railing and handrail work.

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(b) Fabricate miscellaneous units to sizes, shapes and profiles shown or, if not shown, of required dimensions to receive adjacent other work to be retained by framing. Cut drill and tap units to receive hardware and similar items.

**(J) Steel Finishes**

(1) **Galvanizing.** Hot-dip galvanize items indicated to be galvanized to comply with applicable standard listed below:

(a) ASTM A 123 for galvanizing iron and steel products made from rolled, pressed, and forged steel shapes, castings, plates, bars, and strips.

(2) Fill vent and drain holes that will be exposed in finished Work, unless indicated to remain as weep holes, by plugging with zinc solder and filing off smooth.

(3) For galvanized railings, provide hot-dip galvanized fittings, brackets, fasteners, sleeves, and other ferrous components.

(4) **Preparation for Shop Priming.** Prepare uncoated ferrous-metal surfaces to comply with minimum requirements indicated below for SSPC surface preparation specifications and environmental exposure conditions of installed railings:

(a) Exterior Railings (SSPC Zone 1B): SSPC-SP 6/NACE No. 3 "Commercial Blast Cleaning."

(b) Interior Railings (SSPC Zone 1A) SSPC-SP 7/NACE No.4, "Brush-off Blast Cleaning."

(5) Apply shop primer to prepared surfaces of railings, unless otherwise indicated. Comply with requirements in SSPC-PA 1, "Paint Application Specification No. 1: Shop, Field, and Maintenance Painting of Steel," for shop painting. Primer need not be applied to surfaces to be embedded in concrete or masonry.

(a) Do not apply primer to galvanized surfaces.

(b) Stripe paint corners, crevices, bolts, welds, and sharp edges.

**677.03 Construction**

277 **(A) Related Requirements.** Work shall conform to the specifications  
278 herein as well as to the following sections:

279  
280 (1) Section 665 “Rough Carpentry”  
281

282 **(B) Codes and Standards.** In addition to referenced codes and  
283 standards within this specification, the work shall comply with the latest  
284 edition of the following standards. When conflicts arise between standards,  
285 the more stringent shall apply:

286  
287 **(1) American Society for Testing Materials (ASTM)**  
288 **Publications**

289  
290 (a) ASTM A 36 – Standard Specification for Carbon  
291 Structured Steel

292  
293 (b) ASTM A 53 – Standard Specification for Pipe, Steel,  
294 Black and Hot-Dipped, Zinc-coated, Welded, and Seamless  
295

296 **(2) American Welding Society**

297  
298 (a) AWS D1.1 – Structural Welding Code, Steel  
299

300 **(3) NAAMM Metal Finishes Manual; National Association of**  
301 **Architectural Metal Manufacturers**

302  
303 **(4) NOMMA National Ornamental and Miscellaneous Metal**  
304 **Association**

305  
306 **(5) Handrails shall comply with all provisions of Section 505 of the**  
307 **Department of Justice’s 2010 ADA Standards for Accessible Design**  
308

309 **(C) Quality Assurance**

310  
311 **(1) Product Options.** Information on Drawings and in  
312 Specifications establishes requirements for systems aesthetic effects  
313 and performance characteristics. Aesthetic effects are indicated by  
314 dimensions, arrangements, alignment, and profiles of components  
315 and assemblies as they relate to sightlines, to one another, and to  
316 adjoining construction. Performance characteristics are indicated by  
317 criteria subject to verification by one or more methods including  
318 structural analysis preconstruction testing, field testing, and in-  
319 service performance.

320  
321 (a) Do not modify intended aesthetic effects, except with  
322 the Engineer’s approval. If modifications are proposed, submit

323 comprehensively explanatory data to Engineer for review.

324  
325 **(2) Field Measurements.** Take Field measurements prior to  
326 preparation of shop drawings and fabrication, where possible. Do not  
327 delay job progress; allow for trimming and fitting where taking field  
328 measurements before fabrication might delay work.

329  
330 **(3) Shop Assembly.** Pre-assemble items in shop to greatest  
331 extent possible to minimize field splicing and assembly. Disassemble  
332 units only as necessary for shipping and handling limitations. Clearly  
333 mark units for reassembly and coordinated insulation.

334  
335 **(4) Qualifications of Welders.** Qualify procedures and  
336 personnel according to the following:

337  
338 **(a)** AWS D 1.1, Structural Welding Code – Steel.

339  
340 **(D) Submittals**

341  
342 **(1) Manufacturer's Data.** Submit manufacturer's data for all  
343 manufactured products. Include color charts for all materials exposed  
344 and requiring selection of finish color.

345  
346 **(2) Shop Drawings.** Submit complete shop drawings of all  
347 railing and handrail work to the Engineer for review and approval  
348 before fabrication. Detail all members, connection, and anchorage  
349 not specially shown but which are requiring selection of finish color.

350  
351 **(3) Structural Analysis.** Submit structural calculations shown  
352 that the guardrails meet the performance requirements set force in  
353 this section. Calculation shall be stamped and signed by a practicing  
354 engineer licensed in the state of Hawaii.

355  
356 **(4) Welder Certificates**

357  
358 **(5) Material Safety Data Sheets (MSDS).** Submit MSDS for all  
359 materials.

360  
361 **(6) Samples.** Submit samples of the following in quantity  
362 indicated:

363  
364 **(a)** Three 3 inch by 5 inch finish color

365  
366 **(b)** One assembled sample of railing systems, made from  
367 full-sized components, including top rail, post, handrail, and  
368 infill. Show method of finishing members at intersections.



369 Sample need not be full height.

370  
371 **(E) Product Handling**  
372

373 **(1) Protection.** The Contractor shall use all means necessary to  
374 protect metal handrail and railing work before, during and after  
375 installation and to protect the installed work and materials of all other  
376 trades.  
377

378 **(2) Replacement.** In the event of damage, the Contractor shall  
379 immediately make all repairs and replacements necessary to the  
380 satisfaction of the Engineer and at no additional cost to the Owner.  
381

382 **(F) Preparation**  
383

384 **(1)** Coordinate setting drawings, diagrams, templates,  
385 instructions, and directions for installation of anchorages, such as  
386 sleeves, concrete inserts, anchor bolts, and miscellaneous items  
387 having integral anchors, which are to be embedded in concrete as  
388 masonry construction. Coordinate delivery of such items to project  
389 site.  
390

391 **(2)** Prior to all work of this Section, the Contractor shall carefully  
392 inspect the installed work of all other trades and verify that all such  
393 work is complete to the point where fabrication and installation of the  
394 work of this Section may properly commence.  
395

396 **(3)** The Contractor shall make all required measurements in the  
397 field to ensure proper and adequate fit of all metal handrail and  
398 railing items.  
399

400 **(4)** Examine the areas and conditions under which metal handrail  
401 and railing items will be installed and correct conditions detrimental  
402 to the proper and timely completion of the work. Do not proceed until  
403 unsatisfactory conditions have been corrected and approved by the  
404 Engineer.  
405

406 **(G) Installation, General**  
407

408 **(1) Fastening to In-Place Construction.** Provide anchorage  
409 devices and fasteners where necessary to secure railings and  
410 handrails to in-place construction; which will develop anchorage  
411 meeting or exceeding all system performance requirements.  
412

413 **(2)** Fit exposed connections accurately together to form tight,  
414 hairline joints.

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**(3) Cutting, Fitting and Placement.** Perform cutting, drilling, and fitting required for installation of railings and handrails. Set work accurately in location, alignment and elevation, plumb, level, true and free of rack, measured from established lines and levels.

**(a)** Do not weld or abrade surfaces of handrails and railing components that have been coated or finished after fabrication and are intended for field connection by mechanical or other means without further cutting or fitting.

**(b)** Set posts plumb within a tolerance of ¼" inch in 12 feet

**(c)** Align rails so that variations from level for horizontal members, parallel for aligned members, and rake for steps, ramps, and sloped members shall not exceed ¼-inch in 12 feet.

**(4) Field Welding.** Comply with the following requirements:

**(a)** Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.

**(b)** Obtain fusion without undercut or overlap.

**(c)** Remove welding flux immediately.

**(d)** At exposed connections, finish exposed welds and surfaces smooth and blended so that no roughness shows after finishing, and welded surface match contours of adjoining surfaces.

**(i)** Finish welds to comply with NOMMA Joint Finishes; "Finish #1 – No Evidence of Welded Joint".

**(e)** Repair galvanized surfaces damaged by field welding with Galvanizing Repair Paint.

**(5)** Adjust handrails and railing systems prior to anchoring to ensure matching alignment at abutting joints. Space posts at interval but not less than that required by design loadings.

**(H) Railing Connections**

**(1) Non-welded Connections.** Use manufacturer's standard mechanical or adhesive joints for permanently connecting railing

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components. Use wood blocks and padding to prevent damage to railing members and fittings. Seal recessed holes of exposed locking screws using plastic filler cement colored to match finish or handrails and railing systems.

**(2) Welded Connections.** Use fully welded joints for permanently connecting railing components by welding. Cope or butt components to provide 100 percent contact or use manufacturer's standard fittings designed for this purpose.

**(3) Expansion Joints.** Install expansion joints at locations indicated but not further apart than required to accommodate thermal movement. Provide slip joint internal sleeve extended 2 inches beyond joint on either side; fasten internal sleeve securely to one side; locate joint within 6 inches of post.

**(I) Anchoring Posts**

**(1) Concrete-Anchored Posts in Core-Drilled Holes.** Core-drill concrete to produce holed with a diameter of at least  $\frac{3}{4}$ " larger than outside dimensions of post and not less than the depths indicated on the drawing for each type of railing. Clean holes of all loose material, insert posts, and fill annular space between post and concrete with non-shrink non-metallic grout, mixed and places to comply with grout manufacturer's directions.

**(2)** Leave anchorage joint exposed; wipe off excess grout and leave 1/8" build-up, sloped away from post. For installation exposed on exterior or to flow of water, seal grout to comply with grout manufacturer's directions.

**(3) Weld Steel Posts.** Anchor steel bars posts to steel channel fascia and stringers with full all-round weld. Finish welds to comply with NOMMA Joint Finishes; "Finish #1 – Nor Evidence of Welded Joint".

**(a)** Repair galvanized surfaces damaged by field welding with Galvanizing Repair Paint.

**(J) Attaching Handrails to Walls**

**(1)** Attach handrail to walls with wall brackets and end fittings. Provide bracket with 1- 1/2 inch clearance from inside face of handrail to finished wall.

**(2)** Locate bracket as indicated or, if not indicated at spacing

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required to support structural loads.

**(3)** Secure wall brackets and wall return fittings to building construction as follows:

**(a)** For concrete and solid masonry anchorage, use drilled-in expansion shield and either concealed hangar bolt or exposed large bolt, as applicable.

**(b)** For hollow masonry anchorage, use toggle bolts with square heads.

**(c)** For steel framed gypsum board assemblies, fasten brackets directly to steel framing or concealed anchors using self-tapping screws of size and type required to support structural loads.

**(K) Adjusting and Cleanup**

**(1) Touch-Up Painting.** Cleaning and touch-up painting of field welds, bolted connections, and abraded areas of shop paint is specified in Section 687 – Painting.

**(2)** For galvanized surfaces, clean field welds, bolted connections, and abraded areas apply galvanizing repair paint to comply with ASTM A 780.

**(L) Protection**

**(1)** Protect finishes of railing systems and handrails from damage during construction period by use of temporary protective coverings approved by railing manufacturer. Remove protective covering at time or Project Acceptance.

**(2)** Restore finishes damaged during installation and construction period so that no evidence remains of correction work. Return items which cannot be refinished in the field to the shop; make required alterations and refinish entire unit, or provide new units as required.

**(M) Clean Up**

**(1)** After installation, all surfaces shall be cleaned and ready to receive final treatment. All unused materials, tools and equipment shall be removed from the project site.

**(2)** From time to time, and as directed by the Engineer and at the

553 completion of work, rubbish, debris, fines, etc., accumulated from the  
554 work of this Section shall be removed from the project site and the  
555 area left neat and clean to the satisfaction of the Engineer.  
556

557 **677.04 Measurement.** The Engineer will not measure railings and handrails for  
558 payment.  
559

560 **677.05 Payment.** The Engineer will not pay for railings and handrails  
561 separately. The Engineer will consider the price for railings and handrails included  
562 in the contract price for Section 608 – Modular Storage Containers and Section  
563 651 – Cattle Gate. Payment will be full compensation for work prescribed in these  
564 sections and contract documents.  
565

566 The price includes full compensation for providing all submittals, furnishing  
567 labor, materials, tools, and equipment for installing railings and handrails, and all  
568 incidentals necessary to complete the work.  
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**END OF SECTION 677**

1 Make the following section a part of the Standard Specifications:  
2

3 **SECTION 678 – RESILIENT FLOORING**  
4

5  
6 **678.01 Description.** This section describes the furnishing and installation of  
7 resilient flooring. This section includes luxury vinyl tile flooring and resilient wall  
8 base.  
9

10 **678.02 Materials**

11  
12 **(A) Manufacturers and Products**

13  
14 **(1) Solid Luxury Vinyl Flooring (LVT-1).** Luxury vinyl tile  
15 flooring shall comply with ASTM F 1700.  
16

17 **(a)** Provide resilient flooring tile composed of multiple  
18 layers of polyvinyl chloride resin, plasticizers, fillers, and  
19 pigments.  
20

21 **(i)** Class: III (Printed Film Vinyl Tile)

22 **(ii)** Type: B (Embossed)

23 **(iii)** Overall Thickness: 6 mm

24 **(iv)** Wear Layer Thickness: 30 mil

25 **(v)** Size: 7.5" x 48"

26 **(vi)** Color and pattern: as scheduled  
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32  
33 **(2) Resilient Wall Base (RB).** Resilient base shall comply with  
34 ASTM F 1861.  
35

36 **(a)** Resilient base shall be thermos plastic, solid  
37 homogenous rubber, Type TP (ASTM F-1861 Type TP, Group  
38 1); traditional wall base manufactured by Johnsonite or  
39 approved equal.  
40

41 **(i)** Color and Size shall be as indicated on the  
42 Drawings. Provide in manufacturer's standard coiled  
43 lengths.  
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45 **(ii)** Provide covered toe base and pre-molded outside  
46 and inside corners.

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**(B) Installation Materials**

**(1) Adhesives.** Adhesives shall be brush-on, roll-on, or trowel on water-resistant type recommended by manufacturer to suit resilient products and substrate conditions indicated.

**(a)** Adhesive shall be solvent free with zero VOC content, low odor, no ammonia and non-flammable in wet state.

**678.03 Construction**

**(A) Related Requirements.** Work shall conform to the specifications herein as well as to the following sections:

**(1)** Section 608 "Modular Storage Container" for leveling and finishing of concrete floor slabs in preparation for resilient flooring.

**(B) Submittals**

**(1) Product Data.** Submit manufacturer's data, installation instructions, and maintenance manuals for resilient flooring.

**(2) Samples for Verification.** Submit physical samples of each different color and pattern of flooring system specified, showing the full range of variations expected in these characteristics.

**(3) Product Certification.** Submit certificates signed by manufacturers of resilient products certifying that each product furnished complies with requirements.

**(4) Warranty**

**(a)** Provide manufacturer's warranty against defects in manufacturing and workmanship of rubber sports flooring for a period of One year from the Project Acceptance date.

**(b)** Provide manufacturer's limit warranty against wear for a period of 2 years from the Project Acceptance date.

**(C) Quality Assurance**

**(1) Manufacturer.** Provide flooring by a firm with minimum 5 years' experience in the production of resilient flooring of the type equivalent to that specified.

93 **(2) Installer Qualifications.** Engage an experienced installer  
94 with a minimum of 2 years' experience to perform work of this  
95 Section who has specialized in installing resilient flooring products  
96 similar to those required for this project with a record of successful  
97 in-service performance.  
98

99 **(3) Source Limitations.** Obtain each type, color, and pattern of  
100 product specified from one source with resources to provide products  
101 of consistent quality in appearance and physical properties without  
102 delaying work.  
103

104 **(4) Fire-Test-Response Characteristics.** Provide products with  
105 the following fire-test response characteristics as determined by  
106 testing identical products per test method indicated below by a  
107 testing and inspecting agency acceptable to authorities having  
108 jurisdiction.  
109

110 **(a)** Critical Radiant Flux: 0.45 W/sq. cm. or greater per  
111 tested ASTM E 648.  
112

113 **(D) Delivery, Storage, and Handling**  
114

115 **(1)** Deliver products to Project site in manufacturer's original,  
116 unopened cartons and containers, each bearing names of product  
117 and manufacturer, Project identifications, and shipping and handling  
118 instructions.  
119

120 **(2)** Store products in dry spaces protected from the weather, with  
121 ambient temperatures maintained between 50 and 90 degrees F.  
122

123 **(3)** Store flooring on flat surfaces.  
124

125 **(4)** Move products into spaces where they will be installed at least  
126 48 hours before installation, unless longer conditioning period is  
127 recommended in writing by manufacturer.  
128

129 **(E) Project Conditions**  
130

131 **(1)** Maintain a temperature of 70 deg. F plus or minus 5 deg. F in  
132 spaces to receive products for at least 48 hours before installation,  
133 during installation, and for at least 48 hours after installation, unless  
134 manufacture's written recommendations specify longer time periods.  
135 After post-installation period, maintain a temperature of not less than  
136 55 deg. F or more than 95 deg. F.  
137

138 **(2)** Do not install products until they are at the same temperature



139 as the space where they are to be installed.

140  
141 **(3)** Close spaces to traffic during flooring installation and for time  
142 period after installation recommended in writing by manufacturer.

143  
144 **(4)** Install flooring and accessories after other finishing  
145 operations, including painting, have been completed.

146  
147 **(F) Extra Materials**

148  
149 **(1)** Furnish extra materials described below that match products  
150 installed, are packaged with protective covering for storage, and are  
151 identified with labels describing contents.

152  
153 **(a)** Furnish not less than one box for each 50 boxes or  
154 fraction thereof, or not less than 2% of total installed,  
155 whichever is less, of each type, color, pattern, of flooring tile  
156 installed.

157  
158 **(b)** Furnish not less than 10 linear feet for each 500 linear  
159 feet or fraction thereof, of each type, color, pattern, and size of  
160 resilient wall base installed.

161  
162 **(G) Examination**

163  
164 **(1)** Examine substrates, areas, and conditions where installation  
165 of vinyl products will occur, with Installer present, for compliance with  
166 manufacturer's requirements. Verify that substrates and conditions  
167 are satisfactory for resilient product installation and comply with  
168 requirements specified.

169  
170 **(2)** Do not proceed with installation until unsatisfactory conditions  
171 have been corrected.

172  
173 **(H) Preparation**

174  
175 **(1) General.** Comply with resilient product manufacturer's written  
176 installation instructions for preparing substrates indicated to receive  
177 resilient product.

178  
179 **(2)** Use trowelable leveling and patching compounds, according  
180 to the manufacturer's written instructions to fill cracks, holes, and  
181 depressions in substrates. Substrate tolerance: level to within 1/8" in  
182 10' at all locations.

183  
184 **(3)** Broom and vacuum clean substrates to be covered

185 immediately before product installation. After cleaning, examine  
186 substrates for moisture, alkaline salts, carbonation, or dust.

187  
188 **(I) Floor Installation, General**

189  
190 **(1) General.** Comply with tile manufacturer's written installation  
191 instructions.

192  
193 **(2)** Scribe cut, and fit floor covering to butt nearly and tightly to  
194 vertical surfaces and permanent fixtures, including built-in furniture,  
195 cabinets, pipes, outlets, edgings, door frames, thresholds, and  
196 nosings.

197  
198 **(3)** Extend floor covering into toe spaces, door reveals, closets,  
199 and similar openings.

200  
201 **(4)** Maintain reference markers, holes, and openings that are in  
202 place or marked for future cutting by repeating on finish flooring as  
203 marked on subfloor. Use chalk or other non-permanent, non-staining  
204 marking device.

205  
206 **(5)** Adhere Luxury Vinyl perimeter planks to substrates using a  
207 full spread of adhesive applied to substrate to produce a completed  
208 installation without open cracks, voids, raisings and puckering at  
209 joints, telegraphing of adhesive spreader marks, and other surface  
210 imperfections.

211  
212 **(J) Resilient Wall Base Installation**

213  
214 **(1)** Apply wall base to walls, columns, pilasters, casework and  
215 cabinets in toe spaces, and other permanent fixtures in rooms and  
216 areas where base is required.

217  
218 **(2)** Install wall base in lengths as long as practical without gaps at  
219 seams and with tops of adjacent pieces aligned.

220  
221 **(3)** Tightly adhere wall base to substrate throughout length of  
222 each piece, with base in continuous contact with horizontal and  
223 vertical substrates.

224  
225 **(4)** Do not stretch during installation.

226  
227 **(5)** On masonry surfaces or other similar irregular substrates, fill  
228 voids along top edge of wall base with manufacturer's recommended  
229 adhesive filler material.

230

231 (6) **Premolded Corners.** Install premolded corners before  
232 installing straight pieces.

233  
234 (7) Minimum length of resilient base shall not be less than 12-  
235 inches.

236  
237 (K) **Cleaning and Protecting**

238  
239 (1) Perform the following operations immediately after installing  
240 resilient products:

241  
242 (a) Remove adhesive and surface blemishes using cleaner  
243 recommended by resilient product manufacturers.

244  
245 (b) Sweep or vacuum thoroughly.

246  
247 (c) Do not wash floor until after time period recommended  
248 by flooring manufacturer.

249  
250 (2) Protect flooring against mars, marks, indentations, and other  
251 damage from construction operations and placement of equipment  
252 and fixtures during the remainder of construction period. Use  
253 protection methods indicated or recommended in writing by flooring  
254 manufacturer.

255  
256 (a) Cover products installed on floor surfaces with undyed,  
257 untreated building paper until inspection for Project  
258 Acceptance.

259  
260 (b) Do not move heavy and sharp objects directly over  
261 floor surfaces. Place plywood or hardboard panels over  
262 flooring and under objects while they are being moved. Slide  
263 or roll objects over panels without moving panels.

264  
265 (3) Clean floor surfaces no more than 4 days before dates  
266 scheduled for inspections intended to establish the Project  
267 Acceptance date in each area of Project. Clean products according  
268 to manufacturer's written recommendations.

269  
270 **678.04 Measurement.** The Engineer will not measure resilient flooring for  
271 payment.

272  
273 **678.05 Payment.** The Engineer will not pay for resilient flooring separately.  
274 The Engineer will consider the price for resilient flooring included in the contract  
275 price for Section 608 – Modular Storage Containers. Payment will be full  
276 compensation for work prescribed in this section and contract documents.

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The price includes full compensation for providing all submittals, furnishing labor, materials, tools, and equipment for installing resilient flooring, and all incidentals necessary to complete the work.

**END OF SECTION 678**

1 Make the following section a part of the Standard Specifications:  
2

### 3 **SECTION 679 – METAL FABRICATIONS** 4 5

6 **679.01 Description.** This section describes the furnishing, fabrication and  
7 installation of miscellaneous metal. This section includes, but is not limited to,  
8 security grates and grilles, and all anchors, angles, bolts for items, and other  
9 accessories shown in details and/or required for the complete installation of work  
10 in all sections.  
11

#### 12 **679.02 Materials**

##### 13 **(A) Materials and Components**

14  
15  
16 **(1) Metal Surfaces, General.** For metal fabrications exposed to  
17 view in the completed work, provide materials selected for their  
18 surface flatness, smoothness, and freedom from surface blemishes.  
19 Do not use materials with exposed pitting, seam marks, roller marks,  
20 rolled trade names, or roughness.  
21

22 **(2) Steel Plates, Shapes, and Bars.** Steel plates, shapes, and  
23 bars shall be ASTM A 36/A36M, hot-dip galvanized.  
24

25 **(3) Steel Tube.** Steel tube shall be ASTM A 500/A 500M or  
26 ASTM A 501/ASTM 501M, hot-dipped galvanized.  
27

28 **(4) Brackets, Flanges, and Anchors.** Brackets, flanges, and  
29 anchors shall be cast or formed metal of the same type material and  
30 finish as supported rails, unless otherwise indicated.  
31

32 **(5) Non-shrink, Non-metallic Grout.** Provide factory-packaged,  
33 non-staining, noncorrosive, nongaseous grout complying with ASTM  
34 C 1107/C 1107M. Provide grout specifically recommended by  
35 manufacturer for interior and exterior applications.  
36

##### 37 **(B) Fasteners**

38  
39 **(1) General.** Provide plated fasteners complying with ASTM B  
40 633, Class Fe/Zn 25 for electrodeposited zinc coating for exterior use  
41 or where built into exterior walls. Provide stainless steel fasteners at  
42 stainless steel materials and where dissimilar metals are joined or  
43 where indicated. Select fasteners for the type, grade, and class  
44 required or as indicated.  
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46 **(2) Steel Bolts.** Steel bolts shall be regular hexagon-head type,

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ASTM A 307, hot-dip galvanized.

**(3) Stainless Steel Bolts and Screws.** Stainless steel bolts and screws shall be ASTM F593, Type 304.

**(4) Lag Bolts and Screws.** Lag bolts and screws shall be ASME B18.2.1, hot-dip galvanized.

**(5) Washers and Nuts.** Washers and nuts shall be same materials and finish as bolts.

**(6) Expansion Anchors**

**(a) Anchor Bolt and Sleeve.** Anchor bolt and sleeve assembly of carbon steel components zinc-plated to comply with ASTM B 633, Class Fe/Zn 5 with capability to sustain without failure, a load equal to 6 times the load imposed when installed in unit masonry and equal to 4 times the load imposed when installed in concrete as determined by testing per ASTM E 488/E 488M conducted by a qualified independent testing agency.

**(b) Metal Anchor Bolts, Straps, Hangers, Brackets, and Other Inserts.** Furnish to other trades the anchor bolts, straps, hangers, brackets, and other inserts which are necessary for the final installation of work under this and other trades, where not specified to be furnished under the other sections of the specifications. This trade shall also furnish templates if required by others and shall check the installation of all bolts and inserts for accuracy. Anchor bolts and washers of the same quality as bolt. All items shall be galvanized except use stainless steel at aluminum metals.

**(C) Paint**

**(1) Shop Primer for Ferrous Metal.** Prime paint items not indicated or specified to be galvanized. Provide fast-curing, lead and chromate free, universal modified alkyd primer with good resistance to corrosion, compatible with finish paint systems, and complying with performance requirements of FS TT-P-664.

**(2) Galvanizing Repair Paint.** Provide high-zinc-dust-content paint for re-galvanizing welds in steel, complying with SSPC-Paint 20.

**(3) Finish Painting.** Paint all exposed metal fabrication items

93 except for prefabricated items as specified in Section 687 "Painting".

94  
95 **(D) Fabrication, General**

96  
97 **(1) Shop Assembly.** Preassemble items in shop to greatest  
98 existent possible to minimize field splicing and  
99 assembly. Disassemble units only as necessary for shipping and  
100 handling limitations. Clearly mark units for reassembly and  
101 coordinated installation.

102  
103 **(2) Workmanship.** Use materials of size and thickness to  
104 produce strength and durability in the finished product. Work to  
105 dimensions shown or accepted on the shop drawings, using proven  
106 details of fabrication and support. Use type of materials shown or  
107 specified for the various components of the work.

108  
109 **(3)** Form exposed work true to line and level, with accurate  
110 angles and surfaces and with straight sharp edges. Ease exposed  
111 edges to a radius of approximately 1/32-inch unless otherwise  
112 shown. Form bent-metal corners to smallest radius possible without  
113 causing grain separation or otherwise impairing work.

114  
115 **(4)** Weld corners and seams continuously, complying with AWS  
116 recommendations. At exposed connections, grind exposed welds  
117 smooth and flush to match and blend with adjoining surfaces.  
118 Provide welds behind finish surfaces without distorting or discoloring  
119 exposed side.

120  
121 **(5)** Form exposed connections with hairline joints, flush and  
122 smooth, using concealed fasteners wherever possible. Use  
123 exposed fasteners of type indicated or, if not indicated Philips  
124 flathead (counter sunk) screws or bolts.

125  
126 **(6)** Provide for anchorage of the type shown, coordinate with  
127 supporting structure. Fabricate and space anchoring devices to  
128 provide adequate support for intended use.

129  
130 **(7)** Cut, reinforce, drill, and tap miscellaneous metal work to  
131 receive finish hardware and similar items.

132  
133 **(8)** Fabricate joints which will be exposed to weather in a manner  
134 to exclude water or provide weep holes where water may  
135 accumulate.

136  
137 **(9)** Galvanizing: Provide all steel fabrications with hot-dip  
138 galvanized coating, unless otherwise indicated, as follows:

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(a) ASTM A 153/ A 153M for galvanizing iron and steel hardware.

(b) ASTM A 123/A123 M for galvanizing rolled, pressed, and forged steel shapes, plates, bars, and strip 1/8 inch thick and heavier, and assembled steel products.

**(E) Rough Hardware**

(1) Furnish bent or otherwise custom fabricated bolts, plates, anchors, hangers, dowels, and other miscellaneous steel and iron shapes as required for framing and supporting woodwork, and for anchoring or securing woodwork to concrete or other structures.

(2) Fabricate items of sizes, shapes, and dimensions required. Furnish steel washers.

**(F) Miscellaneous Framing and Supports**

(1) Provide miscellaneous steel framing and supports, as required to complete work.

(2) Fabricate miscellaneous units to sizes, 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, plates, and steel bars, for supports, of welded construction using mitered joints for field connection. Cut, drill, and tap units to receive hardware and similar items.

(3) Galvanize all miscellaneous steel framing and supports.

(4) Equip units with integrally welded anchors for casting into concrete or building into masonry. Furnish inserts if units must be installed after concrete is placed. Galvanize all miscellaneous frames and supports.

**(G) Security Gate and Grille**

(1) Fixed grillage panels and gate frames, unless otherwise indicated, shall consist of tubular steel from perimeter frames and horizontal intermediate members with vertical steel rods. Miter and weld all corners; butt weld horizontal rails to frame members and vertical pickets to tubular steel members. Grind all welds smooth. Tack weld flattened expanded metal mesh to panels as detailed.



185 Provide cutout in vertical gate frame for lockset. Provide 1-1/2 pair  
186 steel hinges welded to gate frame and jamb member, sized to  
187 support weight of gate leaf. Hot-dip galvanize gate and grille after  
188 fabrication.  
189

190 **679.03 Construction**

191  
192 **(A) Related Requirements.** Work shall conform to the specifications  
193 herein as well as to the following sections:  
194

195 **(1)** Section 657 "Cast-in-Place Concrete" for coordinating post  
196 and fastener installations.  
197

198 **(2)** Section 687 "Painting" for metal painting.  
199

200 **(B) Submittals**

201  
202 **(1) Product Data.** Submit manufacturer's product data,  
203 specifications, anchor details, and installation instructions for  
204 products used in metal fabrications, including paint products and  
205 grouts.  
206

207 **(2) Shop Drawings.** Submit shop drawings as required for all  
208 work in accordance with the contract drawings. Shop drawings,  
209 where applicable, shall be referenced to sheet and detail being  
210 depicted. Include plans, elevations, component details, and  
211 attachments to other work. Indicate materials and profiles of each  
212 metal member, fittings, joinery, fishes, fasteners, anchorages, and  
213 accessory items. Include setting drawings, templates, and directions  
214 for installing anchor bolts and other anchorages.  
215

216 **(3) Samples for Verification.** Submit samples for each profile  
217 and pattern of fabricated metal and for each type of metal finish  
218 required, prepared on metal of same thickness and alloy indicated  
219 for the work. If finishes involve normal color and texture variations,  
220 include samples sets, consisting of 2 or more units, showing the full  
221 range of variations expected. Include 6-inch long samples of linear  
222 shapes.  
223

224 **(4) Qualification Data.** Submit data for firms and person  
225 specified in item entitled "QUALITY ASSURANCE" hereinbelow to  
226 demonstrate their capabilities and experience. Include lists of  
227 completed projects with project names and addresses, names and  
228 addresses of Designers and Owners, and other information  
229 specified.  
230

231 (5) **Conformance.** Where materials or fabrications are indicated  
232 to comply with requirements for design loading and system  
233 performance, include structural computations, materials properties,  
234 and other information needed to verify conformance.

235  
236 (C) **Quality Assurance**

237  
238 (1) **Fabricator Qualifications.** Engage a firm experienced in  
239 producing metal fabrications similar to those indicated for this Project  
240 and with a record of successful in-service performance, as well as  
241 sufficient production capacity to produce required units.

242  
243 (D) **Project Conditions**

244  
245 (1) **Field Measurements.** Where metal fabrications are indicated  
246 to fit walls and other construction, verify dimensions by field  
247 measurements before fabrication and indicate measurements on  
248 Shop Drawings. Coordinate fabrication schedule with construction  
249 progress to avoid delaying the work.

250  
251 (2) **Established Dimensions.** Where field measurements  
252 cannot be made without delaying the work, establish dimensions and  
253 proceed with fabricating metal fabrications without field  
254 measurements. Coordinate construction to ensure that actual  
255 dimensions correspond to established dimensions. Allow for  
256 trimming and fitting.

257  
258 (E) **Coordination**

259  
260 (1) Coordinate installation of anchorages for metal fabrications.  
261 Furnish setting drawings, templates, and directions for installing  
262 anchorages, including sleeves, concrete inserts, anchors bolts, and  
263 items with integral anchors, that are to be embedded in concrete or  
264 masonry. Deliver such items to Project site in time for installation.

265  
266 (F) **Preparation**

267  
268 (1) Prior to all work of this Section, the Contractor shall carefully  
269 inspect the installed work of all other trades and verify that all such  
270 work is complete to the point where fabrication and installation of the  
271 work of this Section may properly commence.

272  
273 (2) The Contractor shall make all required measurements in the  
274 field to ensure proper and adequate fit of all metal fabrication items.

275  
276 (3) Installer must examine the areas and conditions under which

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metal fabrication items are to be installed and notify the Contractor in writing of conditions detrimental to the proper and timely completion of the work. Do not proceed with the work until unsatisfactory conditions have been corrected in a manner acceptable to the installer.

**(G) Installation**

**(1) General.** Install metal fabrications as per approved shop drawings and manufacturer's written instructions.

**(2) Fastening to In-Place Construction.** Provide anchorage devices and fasteners where necessary for securing miscellaneous metal fabrications to in-place construction; including threaded fasteners for concrete and masonry inserts, through-bolts, lag bolts, wood screws, and other connectors as required.

**(3) Cutting, Fitting, and Placement.** Perform cutting, drilling, and fitting, required for installation of miscellaneous metal fabrications. Set work accurately in location, alignment, and elevation, plumb, level, true, and free from rack, measured from established lines and levels. Provide temporary bracing or anchors in formwork for items which are to be built into concrete, masonry, or similar construction.

**(4) Connections.** Fit exposed connections accurately together to form tight hairline joints. Weld connections which are not to be left as exposed joints, but cannot be shop welded because of shipping size limitations. Grind exposed joints smooth, and touch-up repair paint. Do not weld, cut, or abrade the surfaces of units which have been hot-dip galvanized after fabrication and are intended for bolted or screwed field connections.

**(5) Field Welding.** Comply with AWS Code for procedures of manual shielded metal-arch welding, appearance and quality of weld made, and methods in correcting welding work.

**(6) Grouting.** Mix the specified and accepted grout with potable water and in consistency recommended by the manufacturer in a non-contaminating container. Mix the only amount of grout that will be placed within the specified pot life of the material. Any grout that has set shall be discarded. Pour the grout in small amounts from one side only, tamping between pours to eliminate air pockets. Cure grout as recommended by the manufacturer.

**(H) Clean Up**

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(1) After installation, all surfaces shall be cleaned and ready to receive final treatment. All unused materials, tools, and equipment shall be removed from the project site.

(2) All rubbish, debris, fines, etc. accumulated from the work of this Section shall be removed from the project site and the area left neat and clean.

**679.04 Measurement.** The Engineer will not measure metal fabrications for payment.

**679.05 Payment.** The Engineer will not pay for metal fabrications separately. The Engineer will consider the price for metal fabrications included in the contract price for Section 608 – Modular Storage Containers and Section 651 – Cattle Gate. Payment will be full compensation for work prescribed in these sections and contract documents.

The price includes full compensation for providing all submittals, furnishing labor, materials, tools, and equipment for installing metal fabrications, and all incidentals necessary to complete the work.

**END OF SECTION 679**

1 Make the following section a part of the Standard Specifications:  
2

3 **SECTION 681 – ALUMINUM WINDOWS**  
4

5 **681.01 Description.** This section describes the furnishing and installation of  
6 aluminum windows.  
7

8 **681.02 Materials**  
9

10 **(A) Performance Requirements**  
11

12 **(1) Fabrication.** Fabricate exterior components from  
13 manufacturers stock systems to withstand minimum wind velocity of  
14 105 mph, Exposure B in accordance with current International  
15 Building Code.  
16

17 **(2)** Each assembly shall be tested by a recognized testing  
18 laboratory or agency in accordance with specified test methods. All  
19 test reports shall have valid and current testing dates.  
20

21 **(a)** Conformance to ASTM E 1886 (Small Missile and  
22 Large Missile) and AAMA/NWWDA 101/I.S. 2/A440-8 (non-  
23 impact) – NAMI Certified and Florida Building Code  
24 registered.  
25

26 **(b)** Conformance to F-AW55, C-AW80, AP-AW80  
27 specifications in AAMA/NWWDA 101/I.S. 2/A440-8.  
28

29 **(i) Air Infiltration.** Air infiltration shall be in  
30 accordance with ASTM E 283 at a static air pressure  
31 difference of 6.24 psf. Air infiltration shall not exceed  
32 0.30 cfm per square foot.  
33

34 **(ii) Water Resistance.** Water resistance shall be in  
35 accordance with ASTM E 331 and ASTM E 547 at a  
36 static pressure difference of 12 psf. No water leakage.  
37

38 **(iii) Uniform Load Structural.** Aluminum window  
39 systems shall comply with AAMA/WDMA/CSA  
40 101/I.S.2/A440-08, voluntary specifications for  
41 Aluminum Windows; as well as with guidelines for  
42 specified AW rated product.  
43

44 **(iv) Component Testing.** Component testing shall  
45 be in accordance with procedures described in  
46 AAMA/NWWDA 101/I.S. 2/A440-08.

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**(v) Forced Entry Resistance.** The window shall conform to CAWM 301-90.

**(vi) Condensation Resistance Factor (ICRF) Test.** When tested in accordance with AAMA 1503.1-88, the condensation resistance factor shall not be less than 51.

**(vii) Thermal Transmittance Test.** In accordance with AAMA 1503.1-88, (U-Value) shall not be more than 0.59 BTU/hr/sf/degree Fahrenheit.

**(viii) Thermal Movements.** Allow thermal movement resulting from the following maximum change (range) in ambient temperature:

120 degrees Fahrenheit, ambient; 180 degrees Fahrenheit, material surfaces.

**(B) Manufacturer**

**(1)** Provide Arcadia, Inc., "ULT500IP Series"; or accepted equivalent products of Fleetwood Aluminum Products, Inc., or Kawneer Co.; or other accepted equivalents.

**(C) Materials, General**

**(1)** All windows shall be fabricated from aluminum extrusions of 6063-T6 alloy and temper with a minimum wall thickness of 0.100" for the sill member and a minimum of 0.072" for all other members, including frame, sash and optional sash dividers. The aluminum shall be free of defects which impair strength and appearance.

**(2)** Component parts and accessories shall be of aluminum alloy, stainless steel or non-metallic materials which will neither deteriorate nor promote corrosion.

**(3)** Thermal break barrier shall provide a continuous uninterrupted thermal separation around the entire perimeter of the frame and sash and shall not be bridged by any metal conductor at any point. Thermal barrier shall consist of a two-part, chemically curing, high-strength urethane.

**(4)** Sill shall have a full-length nylon track cap.

**(5)** Sash members shall have a minimum of 3/4" glass

93 penetration into the aluminum to provide extra protection against  
94 "blow out" during high wind conditions.

95  
96 (6) Operable sash shall be equipped with two steel tandem ball  
97 bearing (all stainless steel tandem rollers and housings optional).

98  
99 (7) Locking device shall be Adams-Rite MS+1847 stainless steel  
100 mortise lock operated by a custom flush pull handle set available in  
101 either black or metallic gray powder coat, or approved equal.

102  
103 (8) Horizontal member shall have two contact points incorporating  
104 silicone treated woven pile with mylar center fins. Vertical members  
105 shall have four contact points of silicone treated woven pile with  
106 mylar center fins. All shall be held in integral extruded slots and  
107 secured to prevent movement or loss while operating sash.

108  
109 (9) Fixed and/or sliding sash members shall be constructed to  
110 allow for either factory or field glazing. Sash glazing shall be  
111 accomplished using a "marine" style reusable, wraparound black  
112 flexible polyvinyl chloride material per commercial standard CS230-  
113 60 without the need for separate glazing beads or putty style bedding  
114 compounds. The glazing channel shall be provided with the unit for  
115 1" insulating glass.

116  
117 (10) All assembly and installation screws shall be 18-8 or 410  
118 stainless steel.

119  
120 (D) **Finish**

121  
122 (1) Finish all exposed areas of aluminum and components as  
123 indicated.

124  
125 (a) Standard finish shall be White PPG UC-71533 –  
126 baked-on enamel – polycron – AAMA 2603.2, or approved  
127 equal.

128  
129 (E) **Fabrication**

130  
131 (1) **General.** Fabricate aluminum windows, in sizes indicated,  
132 that comply with AAMA/WDMA/CSA 101/I.S.2/A440 (NAFS) for  
133 performance class indicated. Include a complete system for  
134 assembling components and anchoring windows.

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136 (2) Allow for erection tolerances and provide for movement of  
137 window units due to thermal expansion and building deflections.  
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**(3) Subframes.** Provide subframes with anchors for window units as shown, of profile and dimensions indicated but not less than 0.062-inch thick extruded aluminum. Miter or cope corners, weld and dress smooth with concealed mechanical joint fasteners. Finish to match window units. Provide subframes capable of withstanding performance requirements of window units.

**(4)** Primary frame must be a minimum of 4" deep.

**(5)** Frame corner joint shall be secured with two stainless steel screws and must be back caulked under the frame jambs to insure a weather-resistant seal.

**(6)** Profile of the fixed jamb and the latching jamb shall include two weather-stripped pockets to receive the fixed and latching stiles.

**(7)** Fixed and sliding panels shall have a nominal 1-1/2" depth and shall have overlapped joints as well as the mortise type to provide strong interlocking, mechanically fastened hairline joints.

**(8)** Interlockers and latching stiles shall be heavy gauge tubular sections assuring precise alignment and to resist twisting under load conditions.

**(9)** Fabricate aluminum windows that are reglazable without dismantling sash or ventilator framing.

**(10) Weather Stripping.** Provide full-perimeter weather stripping for each operable sash.

**(11) Weep Holes.** Provide weep holes and internal passages to conduct infiltrating water to exterior.

**(12) Sills.** Provide sills with sill pan and flashing with end dams.

**(13) Factory-Glazed Fabrication.** Glaze aluminum windows in the factory where practical and possible for applications indicated. Comply with requirements in Section 688 – Glazing and with AAMA/WDMA/CSA 101/I.S.2/A440 (NAFS).

**(14) Glazing Stops.** Provide snap-on glazing stops coordinated with Section 688 - Glazing and glazing system indicated. Provide glazing stops to match sash and ventilator frames.

**(F) Glazing**



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**(1) Glass Type.** Sections shall be provided with insulated glass unless otherwise indicated on the drawings and specified in Section 688 – Glazing.

**(2) Glazing System.** Glazing system shall be manufacturer’s standard factory-glazing system as required by the window manufacturer and as indicated in Section 688 – Glazing.

**(G) Insect Screens**

**(1) General.** Design windows and hardware to accommodate screens in a tight-fitting, removable arrangement, with a minimum of exposed fasteners and latches. Locate screens on the inside of window and provide for each operable exterior sash or ventilator.

**(2) Aluminum Tubular Frame Screens.** Aluminum tubular frame screens shall comply with SMA 1004, “Specifications for Aluminum Tubular Frame screens for Windows” and shall be Architectural C-24 class.

**(3) Aluminum Insect Screen Frames.** Aluminum insect screen frames shall be manufacturer’s standard aluminum alloy complying with SMA 1004. Frames shall be fabricated with mitered or coped joints, concealed fasteners, and removable PVC spline/anchor concealing edge of frame.

**(a) Extruded-Aluminum or Aluminum Tubular Framing Sections and Cross Braces.** Tubular framing screens and cross braces shall not be less than 0.040-inch wall thickness.

**(b) Finish.** Finish shall be the same as aluminum window frames.

**(4) Aluminum Wire Fabric.** Fabric shall be 18-by-16 mesh of 0.011-inch diameter, coated aluminum wire.

**681.03 Construction**

**(A) Related Requirements.** Work shall conform to the specifications herein as well as to the following sections:

**(1)** Section 688 “Glazing” for window glass.

**(2)** Section 676 “Joint Sealants”.

**(B) Submittals**

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**(1) Product Data.** Submit for information only, manufacturers product data, specifications, and instructions for handling, storing, installing, cleaning, and protecting each type of glass and glazing material.

**(2) Shop Drawings**

**(a)** Submit manufacturer's shop drawings that indicate elevations of windows, full sizes sections, thickness and gauges of metal, fastening, proposed method of anchoring, size and spacing of anchors, details of construction, method of glazing, details of operating hardware, method and materials for weather- stripping, method of attaching screens, installation details and other related items.

**(b)** Submit shop drawings to include plans, elevations, details, hardware, attachments to other Work, operational clearances and the following:

**(i)** Mullion details; including reinforcement and stiffeners.

**(ii)** Flashing and drainage details.

**(iii)** Weatherstripping details.

**(iv)** Glazing details.

**(v)** Window system operators and controls.

**(vi)** For installed products indicated to comply with design loads, include structural analysis data signed and sealed by the qualified Professional Engineer responsible for their preparation and used to determine the following:

Structural test pressures and design pressures from basic wind speeds indicated. Testing results must be current and valid.

Deflection limitations of glass framing system.

**(3) Samples for Verification.** Submit samples for aluminum window components required, prepared on samples of size indicated below.

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(a) Main framing member: Twelve-inch long, full size sections of extrusions with factory applied "Clear Anodized" finish.

(b) Hardware: Full size units with factory-applied finish.

(c) Weatherstripping: Twelve inch long sections.

(d) Insect Screen: Fabric (6-inch x 6-inch).

**(4) Installer Certificate.** Submit certificate signed by manufacturer certifying that the Contractor is an approved installer and will comply with specified requirements.

**(5) Performance Certification.** Submit certification that window comply with performance requirements specified hereinabove.

**(6) Material Certification.** Submit Certification by the manufacturer that the windows including the finish conforms to the specifications.

**(7) Maintenance Data.** Submit data for operable window sash, operating hardware, weatherstripping, window system operators, and finishes to include in maintenance manuals. Include Maintenance Schedule, acceptable cleaning products, and safety precautions to be exercised during cleaning.

**(8) Warranty**

(a) Submit manufacturer's standard form in which the manufacturer agrees to repair or replace aluminum windows that fail in materials or workmanship within specified warranty period at his own expense. Failures include but are not limited to the following:

(i) Failure to meet performance requirements.

(ii) Structural failures including excessive deflection.

(iii) Water leakage or air infiltration.

(iv) Faulty operation of movable sash and hardware.

(v) Deterioration of metals, metal finishes, and other materials beyond normal weathering.

323 (vi) Deterioration of insulating glass including the  
324 failure of the hermetic seal under normal use that is  
325 attributed to the manufacturing process and not to  
326 causes other than glass breakage and practices for  
327 maintaining and cleaning insulating glass contrary to  
328 manufacturer's written instructions. Evidence of failure  
329 is the obstruction of vision by dust, moisture, or film on  
330 interior surfaces of glass.

331  
332 (b) **Warranty Period.** Warranty period shall be two years  
333 from the project acceptance date.

334  
335 **(C) Quality Assurance**

336  
337 (1) **Installer Qualifications.** The installer shall be acceptable to  
338 aluminum window manufacturer for installation of units required for  
339 this Project.

340  
341 (2) **Source Limitations.** Obtain aluminum windows through one  
342 source from a single manufacturer unless otherwise specified herein.

343  
344 (3) **Fenestration Standard.** Comply with AAMA/WDMA/CSA  
345 101/I.S.2/A440 (NAFS), for minimum standards of performance,  
346 materials, components, accessories, and fabrication unless more  
347 stringent requirements are indicated. Provide AAMA or WDMA  
348 certified aluminum with an attached label.

349  
350 (4) **Glazing Publications.** Comply with published  
351 recommendation of glass manufacturers and GANA's "Glazing  
352 Manual" unless more stringent requirements are indicated.

353  
354 (5) **Preinstallation Preparation.** Review methods and  
355 procedures related to aluminum windows, including, but not limited to  
356 the following:

357  
358 (a) Inspect substrate and preparatory work performed by  
359 other trades.

360  
361 (b) Review and finalize construction schedule and verify  
362 availability of materials, installers personnel, equipment and  
363 facilities needed to make progress and avoid delays.

364  
365 **(D) Project Conditions**

366  
367 (1) **Field Measurements.** Verify aluminum window openings by  
368 field measurements before fabrication and indicate measurements

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on Shop Drawings.

**(2) Established Dimensions.** Where field measurements cannot be made without delaying the Work, establish opening dimensions and proceed with fabricating aluminum windows without field measurements. Coordinate wall construction to ensure that actual opening dimensions correspond to established dimensions.

**(E) Examination**

**(1)** Examine openings, substrates, structural support, anchorage, and conditions, with installer present for compliance with requirements for installation tolerances; rough opening dimensions; levelness of sill plate; coordination with wall flashings and other conditions affecting performance of work.

**(2)** Proceed with installation only after unsatisfactory conditions have been corrected.

**(F) Installation**

**(1) General.** Comply with manufacturer's written instructions for installing windows, hardware, accessories, and other components; Drawings and Shop Drawings.

**(2)** Install windows level, plumb, square, true to line, without distortion or impeding thermal movement, anchored securely to structural support, and in proper relation to wall flashing and other adjacent construction.

**(3)** Set sill members in bed of sealant or with gaskets as indicated for weathertight construction.

**(4)** Install windows and components to drain condensation, water penetrating joints, and moisture migrating within windows to the exterior.

**(5) Metal Protection.** Separate aluminum and other corrodible surfaces from sources of corrosion or electrolytic action at points of contact with other metals and materials.

**(G) Adjusting**

**(1)** Adjust operating sashes and ventilators, screens, hardware, operators, and accessories for a tight fit at contact points and weather stripping for smooth operation and weathertight closure.

415 Lubricate hardware and moving parts.

416

417 **(H) Protection and Cleaning**

418

419 **(1)** Protect window surfaces from contact with contaminating  
420 substances resulting from construction operations. In addition,  
421 monitor window surfaces adjacent to and below exterior wall  
422 surfaces during construction for presence of dirt, scum, alkaline  
423 deposits, stains, or other contaminants. If contaminating substances  
424 do contact window surfaces, remove contaminants immediately  
425 according to manufacturer's written recommendations.

426

427 **(2)** Clean aluminum surfaces immediately after installing  
428 windows. Avoid damaging protective coatings and finishes. Remove  
429 excess sealants, glazing materials, dirt and other substances.

430

431 **(3)** Clean factory-glazed glass immediately after installing  
432 windows. Comply with manufacturer's written recommendations for  
433 final cleaning and maintenance. Remove non-permanent labels and  
434 clean surfaces.

435

436 **(4)** Remove and replace glass that has been broken, chipped,  
437 cracked, abraded, or damaged during construction period.

438

439 **(I) Demonstration**

440

441 **(1)** Engage a factory-authorized service representative to train  
442 project's maintenance personnel to adjust, operate, and maintain  
443 window operating system.

444

445 **681.04 Measurement.** The Engineer will not measure aluminum windows for  
446 payment.

447

448 **681.05 Payment.** The Engineer will not pay for aluminum windows separately.  
449 The Engineer will consider the price for aluminum windows included in the contract  
450 price for Section 608 – Modular Storage Containers. Payment will be full  
451 compensation for work prescribed in this section and contract documents.

452

453 The price includes full compensation for providing all submittals, furnishing  
454 labor, materials, tools, and equipment for installing aluminum windows, and all  
455 incidentals necessary to complete the work.

456

457

458

459

**END OF SECTION 681**

1 Make the following section a part of the Standard Specifications:  
2

## 3 SECTION 682 – STEEL DOORS AND FRAMES 4

5  
6 **682.01 Description.** This section describes the furnishing and installation of  
7 steel doors and frames.  
8

### 9 **682.02 Materials**

10  
11 **(A) Metallic-Coated Steel Sheets.** Metallic-coated steel sheets shall  
12 comply with ASTM A653/A 653M, and shall be Commercial Steel (CS),  
13 Type B, with an A60 zinc-iron alloy (galvannealed) coating; stretcher-  
14 leveled standard of flatness.  
15

### 16 **(B) Doors**

17  
18 **(1) General.** Provide doors of sized, thicknesses, and designs  
19 indicated.  
20

21 **(2) Doors.** Provide doors complying with requirements indicated  
22 below by referencing ANSI A250.8 for level and model and ANSI  
23 A250.4 for physical-endurance level:  
24

25 **(a)** Level 3 and Physical Performance Level A (Extra  
26 Heavy Duty), Model 2 (Seamless), minimum 16 gauge.  
27

### 28 **(C) Frames**

29  
30 **(1) General.** Provide steel frames for doors that comply with  
31 ANSI A250.8 and with details indicated or type and profile. Conceal  
32 fastenings, unless otherwise indicated.  
33

34 **(2) Frames.** Provide minimum 16 gauge steel sheet.  
35

36 **(3) Plaster Guards.** Provide 26 gauge steel sheet plaster guards  
37 or mortar boxes to close off interior of openings; place at back of  
38 hardware cutouts where mortar or other materials might obstruct  
39 hardware openings.  
40

41 **(4) Supports and Anchors.** Supports and anchors shall be  
42 fabricated from not less than 18 gauge, electrolytic zinc-coated or  
43 metallic-coated steel sheet.  
44

45 **(5) Inserts, Bolts, and Fasteners.** Inserts, bolts, and fasteners  
46 shall be in manufacturer's standard units. Where zinc-coated items

47 are to be built into exterior walls, comply with ASTM A 153/A153M,  
48 Class C or D as applicable.

49  
50 **(D) Fabrication**

51  
52 **(1) General.** Fabricate steel door and frame units to comply with  
53 ANSI A250.8 and to be rigid, neat in appearance, and free from  
54 defects, including warp and buckle. Where practical, fit and  
55 assemble units in manufacturer's plant. Clearly identify work that  
56 cannot be permanently factory assembled before shipment, to  
57 assure proper assembly at Project Site.

58  
59 **(2) Door Construction.** Fabricate doors, panels and frames  
60 from metallic-coated steel sheet. Close top and bottom edges of  
61 doors flush as an integral part of the door construction or by addition  
62 of minimum 16 gauge, metallic-coated steel channels with channel  
63 webs place even with the top and bottom edges.

64  
65 **(3) Core Construction.** Core construction shall be  
66 manufacturer's standard core construction that produces a door  
67 complying with SDI standards.

68  
69 **(4) Clearances for Doors.** Clearances shall not be more than  
70 1/8-inch at jambs and heads, except not more than 1/4-inch between  
71 pairs of doors. Clearances shall not be more than 3/4-inch at bottom.

72  
73 **(5) Single-Acting, Door Edge Profile.** Beveled edge shall be  
74 provided, unless square edge is indicated.

75  
76 **(6) Tolerances.** Comply with SI 117, "Manufacturing Tolerances  
77 for Standard Steel Doors and Frames".

78  
79 **(7) Fabrications.** Fabricate concealed stiffeners, reinforcement,  
80 edge channels, louvers, and moldings from either cold- or hot-rolled  
81 steel sheet.

82  
83 **(8) Exposed Fasteners.** Unless otherwise indicated, provide  
84 countersunk flat or oval heads for exposed screws or bolts.

85  
86 **(9) Hardware Preparation.** Prepare doors and frames to receive  
87 mortised and concealed hardware according to final door hardware  
88 schedule and template by hardware supplier. Comply with applicable  
89 requirements in ANSI A250.6 and ANSI A115 Series specifications  
90 for door and frame preparation for hardware. For concealed  
91 overhead door closers, provide space, cutouts, reinforcement, and  
92 provisions for fastening in top rail of doors or head of frames, as



93 applicable.

94  
95 **(10) Frame Construction.** Fabricate frames with mitered or  
96 coped and continuously welded corners and seamless face joints.

97  
98 **(11) Reinforcements.** Reinforce doors and frames to receive  
99 surface applied hardware. Drilling and tapping for surface-applied  
100 hardware may be done at Project Site.

101  
102 **(12) Hardware.** Locate hardware as indicated on Shop Drawings  
103 or, if not indicated, according to ANSI A250.8.

104  
105 **(13) Insulated Frames.** Insulate where indicated as  
106 recommended by the manufacturer.

107  
108 **(E) Finishes**

109  
110 **(1) Primer.** Primer shall be manufacturer's standard, factory-  
111 applied coat of rust-inhibiting primer complying with ANSI A250.10  
112 for acceptance criteria.

113  
114 **(2) Finish.** Paint as specified in Section 687 "Painting".

115  
116 **682.03 Construction**

117  
118 **(A) Related Requirements.** Work shall conform to the specifications  
119 herein as well as to the following sections:

120  
121 **(1)** Section 683 "Door Hardware" for door hardware and weather  
122 stripping.

123  
124 **(2)** Section 687 "Painting" for field painting factory-primed doors  
125 and frames.

126  
127 **(B) Quality Assurance**

128  
129 **(1) Steel door and Frame Standard.** Comply with ANSI A  
130 250.8, unless more stringent requirements are indicated.

131  
132 **(C) Submittals**

133  
134 **(1) Product Data.** Submit product data for each type of door and  
135 frame indicated, include door designation, type, level, and model,  
136 material description, core description, construction details, label  
137 compliance, and finishes.

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**(2) Shop Drawings.** Submit shop drawings showing the following:

- (a)** Elevations of each door design.
- (b)** Details of doors, including vertical and horizontal edge details.
- (c)** Frame details for each frame type, including dimensional profiles.
- (d)** Details and locations of reinforcement and preparations for hardware.
- (e)** Details of each different wall opening condition.
- (f)** Details of anchorages, accessories, joints, and connections.

**(3) Door Schedule.** Submit door schedule using the same reference designations indicated on drawings in preparing schedule using the same reference designations indicated on drawings in preparing schedule for doors and frames.

**(D) Delivery, Storage, and Handling**

**(1) Delivery.** Deliver doors and frames cardboard-wrapped or crated to provide protection during transit and job storage. Provide additional protection to prevent damage to finish of factory finished doors and frames.

**(2) Inspection.** Inspect all doors and frames on delivery for damage, and notify shipper and supplier if damage is found. Minor damages may be repaired provided refinished items match new work. Remove and replace damaged items that cannot be repaired.

**(3) Storage.** Store doors and frames at secured site protected from the weather, under cover. Place units on minimum 4-inch high wood blocking. Avoid using non-vented plastic or canvas shelters that could create a humidity chamber. If door packaging becomes wet, remove cartons immediately. Provide minimum 1/4-inch spaces between stacked doors to permit air circulation.

**(E) Installation**

**(1) General.** Install steel doors, frames and accessories

185 according to Shop Drawings, manufacturer's data, and as specified.

186  
187 **(2) Placing Frames.** Comply with provisions in ANSI 250.11,  
188 unless otherwise indicated. Set frames accurately in position,  
189 plumbed, aligned, and braced securely until permanent anchors are  
190 set. After wall construction is completed, remove temporary braces  
191 and spreaders, leaving surfaces smooth and undamaged. Install  
192 according to the following requirements where conditions occur.

193  
194 **(a)** In concrete or masonry construction, provide at least  
195 three completed opening anchors per jamb; install adjacent to  
196 hinge location on hinge jamb and at corresponding heights on  
197 strike jamb. Set frames and secure to adjacent construction  
198 with bolts and masonry anchorage devices.

199  
200 **(3) Door Installation.** Comply with ANSI A250.8. Fit hollow-  
201 metal doors accurately in frames, within clearances specified in ANSI  
202 A250.8. Shim as necessary to comply SDI 122 and  
203 ANSI/DHIA115.1G.

204  
205 **(F) Adjusting and Cleaning**

206  
207 **(1) Prime-Coat Touch Up.** Immediately after installation, sand  
208 smooth any rusted or damaged areas of prime coat and apply touch  
209 up of compatible air-drying primer.

210  
211 **(2) Protection Removal.** Immediately before final inspection,  
212 remove protective wrappings from doors and frames.

213  
214 **682.04 Measurement.** The Engineer will not measure steel doors and frames  
215 for payment.

216  
217 **682.05 Payment.** The Engineer will not pay for steel doors and frames  
218 separately. The Engineer will consider the price for steel doors and frames  
219 included in the contract price for Section 608 – Modular Storage Containers.  
220 Payment will be full compensation for work prescribed in this section and contract  
221 documents.

222  
223 The price includes full compensation for providing all submittals, furnishing  
224 labor, materials, tools, and equipment for installing steel doors and frames, and all  
225 incidentals necessary to complete the work.

226  
227  
228 **END OF SECTION 682**

1 Make the following section a part of the Standard Specifications:  
2

3 **SECTION 683 – DOOR HARDWARE**  
4

5 **683.01 Description.** This section describes the furnishing and installation of  
6 door hardware.  
7

8 All door hardware for all doors shall be provided, whether specified or not.  
9

10 It is the intent of these specifications to cover in general the class and  
11 character of all door hardware required.  
12

13 The hardware list specified herein after has been made for the convenience  
14 of the Contractor and covers in general the necessary hardware for doors, but all  
15 other doors, etc., shown on the plan and not covered by the general  
16 characterization shall be fitted with appropriate hardware of the same standards as  
17 the hardware described throughout these specifications. Contractor shall furnish  
18 hardware schedule as herein specified.  
19

20 **683.02 Materials**  
21

22 **(A) Manufacturers**  
23

24 **(1)** Requirements for design, grade, function, finish, size, etc. are  
25 indicated in the Hardware Schedule. Products are identified by using  
26 proprietary manufacturer's numbers to establish quality and  
27 functions. Approved equal products of other manufacturers are  
28 acceptable.  
29

30 **(B) General Character**  
31

32 **(1)** All hardware shall be of the best quality in construction,  
33 design, and finish, and free from any defects. Any defective pieces  
34 shall be replaced by the Contractor at his own expense.  
35

36 **(2)** Hardware shall be of the manufacture, type, weight, function,  
37 and quality as shown by factory numbers in the Hardware Schedule  
38 herein or an approved equal.  
39

40 **(3) Mortise Locks and Latches.** Mortise locks and latches shall  
41 be in accordance with ANSI/BHMA A156.13.  
42

43 **(4) Hinges.** Hinges shall be in accordance with ANSI/BHMA  
44 A156.1.  
45

46 **(5) Closers.** Closers shall be in accordance with ANSI/BHMA

47 A156.4. Adjust door closers where provided to conform to ADAAG  
48 404.2.8.1.

49  
50 **(6) Cylinders.** All cylinders shall be as manufactured by a single  
51 manufacturer.

52  
53 **(7) Finish.** Finish shall be in accordance with ANSI/BHMA  
54 A156.18. All hardware items shall be furnished in the finish as  
55 indicated in the Hardware Schedule.

56  
57 **(C) ADAAG Requirements**

58  
59 **(1) Hardware**

60  
61 **(a)** All door hardware shall comply with the requirements of  
62 the Americans with Disability Act Accessibility Guidelines  
63 (ADAAG) 404.1.

64  
65 **(b)** Operable hardware shall have a shape that is easy to  
66 grasp with one hand and does not require tight grasping, tight  
67 pinching, or twisting of the wrist to operate in compliance with  
68 ADAAG 309.4.

69  
70 **(2) Accessible Doors.** Doors required to be accessible by  
71 ADAAG 404.1 shall comply with requirements of ADAAG 404.2.9.  
72 These forces do not apply to the force required to retract the latch  
73 bolts, or disengage other devices that may hold the door in a closed  
74 position.

75  
76 **(D) Keying**

77  
78 **(1)** Locks shall have four (4) keys each. Locks for the same  
79 rooms shall be keyed alike. During period of construction, all locks  
80 shall be operated by a special construction key. All keys shall be  
81 stamped "DO NOT DUPLICATE" at the point of manufacture. Proper  
82 certification of factory assembly of all locks and cylinders as well as  
83 factory master keying shall be furnished by the Contractor prior to  
84 final acceptance of this portion of the work.

85  
86 **(2) Keying Schedule**

87  
88 **(a)** It shall be the responsibility of the hardware supplier or  
89 hardware manufacturer's representative to meet with the  
90 Engineer to review the keying requirements and establish the  
91 final keying arrangements.  
92

93 (b) Hardware Supplier shall submit keying schedule, along  
94 with hardware schedule, clearly showing how the Owner's  
95 final instructions on keying of locks have been fulfilled.  
96

97 (E) **Fastening**  
98

99 (1) Furnish necessary screws, bolts, and other fastening for  
100 proper application of hardware. Fastening shall be of suitable size  
101 and type, and of sufficient length to secure hardware for heavy use.  
102 Fastening must harmonize with the hardware as to material and  
103 finish. Fasteners exposed to the weather shall be of non-ferrous  
104 metal or stainless steel.  
105

106 (2) Furnish necessary expansion shields, toggle bolts, machine or  
107 wood screws or other suitable approved anchoring devices where  
108 hardware is to be installed on concrete, masonry or other types of  
109 backing.  
110

111 (F) **Templates**  
112

113 (1) Furnish templates as required to the Engineer within seven  
114 days after receipt of approved hardware schedule.  
115

116 (G) **Tools and Instructions**  
117

118 (1) Furnish all tools and maintenance or installation instruction  
119 packed with the closers and locksets to the Owner when the project  
120 is completed.  
121

122 **683.03 Construction**  
123

124 (A) **Submittals**  
125

126 (1) **Product Data.** Submit Manufacturer's product data along  
127 with schedule for information only.  
128

129 (2) **Schedule.** Submit six (6) copies of the schedule of hardware  
130 in compliance with the specifications and drawings. List each  
131 opening and hardware to be applied. State material, finish, and  
132 manufacturer's number for each item. Required minimum types are  
133 listed under item entitled Hardware Schedule herein below.  
134

135 (3) **Keying Schedule.** Submit keying schedule for approval.  
136 Keying schedule shall be submitted as listed in the D.H.I. document  
137 "Keying Terminology". Door designation listed in the Keying  
138 Schedule shall be same as those used on drawings and hardware

139 schedule.

140  
141 **(4) Warranty.** All door hardware shall be supplied with a two (2)  
142 year written warranty from the manufacturer agreeing to repair or  
143 replace components of door hardware that fail in materials,  
144 workmanship, function, operation, finish, etc. commencing from the  
145 project acceptance date at his own expense.

146  
147 **(B) Delivery**

148  
149 **(1)** Examine the plans, specifications, and details in order to  
150 check all items so they will be suitable and of perfect fit and delivered  
151 where and when required.

152  
153 **(2)** All hardware shall be delivered at the site, packed separately  
154 with all trimmings, screws, etc., for the particular door, all properly  
155 labeled and numbered so that they can be checked with the  
156 hardware list which shall be furnished with the goods delivered.

157  
158 **(3)** Upon delivery of the door hardware to the job site by the  
159 hardware supplier, the General Contractor shall have a responsible  
160 person check in the material at the place for storage. The hardware  
161 shall be protected from damage at all times, both prior to and after  
162 installation.

163  
164 **(C) Representative**

165  
166 **(1)** Provide service of a competent hardware manufacturer's  
167 representative who is familiar with installation and operation of all  
168 door hardware items furnished.

169  
170 **(D) Pre-Installation Conference**

171  
172 **(1)** A pre-installation conference shall be held at the jobsite,  
173 attended by the Contractor, hardware manufacturer's representative  
174 or supplier, hardware installer, and the Engineer, to review the  
175 keying system, hardware installation instructions, installation  
176 conditions, and coordination with other work. Do not proceed with  
177 the work until unsatisfactory conditions have been corrected in a  
178 manner acceptable to the installer.

179  
180 **(E) Installation**

181  
182 **(1)** Mount hardware units at heights indicated in the following  
183 applicable publications, except as specifically indicated or required to  
184 comply with governing regulations and except as otherwise directed

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by the Engineer.

**(a)** “Recommended Locations for Architectural Hardware for Standard Steel Doors and Frames” by the Door and Hardware Institute.

**(b)** Americans with Disabilities Act Accessibility Guidelines (ADAAG) 404.2.7.

**(2)** Install each hardware item in compliance with the manufacturer’s instructions and recommendations. Where cutting and fitting is required to install hardware onto or into surfaces that are later to be painted or finished in another way, coordinate removal, storage, and reinstallation or application of surface protection with finishing work specified in Section 687 – Painting. Do not install surface-mounted items until finishes have been completed on the substrates involved.

**(3)** Set units level, plumb, and true to line and location. Adjust and reinforce the attachment substrate as necessary for proper installation and operation.

**(4)** Drill and countersink units that are not factory prepared for anchorage fasteners. Space fasteners and anchors in accordance with industry standards.

**(5)** Fit face all mortise parts snug and flush.

**(6)** Operating parts shall move freely and smoothly without binding, sticking or excessive clearance.

**(7)** Install latch and bolt to automatically engage into strike, whether activated by closer or manual push. In no case shall additional manual pressure be required to engage latch or bolt into strike.

**(8)** Protect hardware from damage or marring of finish during construction. Replace all damaged or marred hardware at no additional cost.

**(9)** Adjust closers to operate noiselessly and evenly and to conform to ADAAG 404.2.8.1 requirements.

**(10)** Set thresholds for exterior doors in full bed of sealant complying with requirements specified in Section 676 – Joint Sealants.



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**(F) Hardware Supplier's Inspection**

**(1)** Before final inspection of the work under this contract and acceptance of the project, the hardware manufacturer's representative of the hardware and other items specified in this section shall visit the site and carefully inspect all parts for conformance to this specification, adequacy for intended use, proper function appearance, finish, and successful operation, assuming joint responsibility with the Contractor. All keys shall be tested to ensure proper operation.

**(2)** The Manufacturer's representative shall also instruct the user's staff on the hardware's maintenance procedures (type of lubricant needed and frequency of maintenance).

**(G) Manufacturer Key.** The Manufacturer Key is provided for the convenience of the Contractor to establish quality and functions. Product shall meet quality and functions of manufacturer listing or approved equal.

Hinges	By McKinney Products Company Or Approved Equal	MCK
Door Bottom	By Pemko/ASSA ABBLOY Or Approved Equal	PEM
Door Seal	By Pemko/ASSA ABBLOY Or Approved Equal	PEM
Threshold	By Pemko/ASSA ABBLOY Or Approved Equal	PEM
Wall Stop	By Rockwood Manufacturing Or Approved Equal	ROC
Door Closer	By Corbin Russwin Hardware Or Approved Equal	RUS
Lockset	By Sargent Manufacturing Co. Or Approved Equal	SAR
Lock Box (Weldable)	By Keedex Inc. Or Approved Equal	KDX
Continuous Hinge	By Select Products Limited Or Approved Equal	SLT

**(H) Hardware Groups.** Hardware Groups are provided for the convenience of the Contractor to establish quality and functions. Product shall meet quality and functions of manufacturer listing or approved equal.

	<b>Group 1</b>	
3.0 EA Hinge	TA2314 SS 4.5 X 4.5 US26D NRP Or Approved Equal	MCK
1.0 EA Classroom Lockset	28-10G37 LL US26D WBX	SAR

277		Or Approved Equal	
278	1.0 EA Door Closer	351 P9 EN	SAR
279		Or Approved Equal	
280	1.0 EA Door Bottom	217A	PEM
281		Or Approved Equal	
282	1.0 EA Silicon Gasket	PK55C	PEM
283		Or Approved Equal	
284	1.0 EA Threshold	271A	PEM
285		Or Approved Equal	
286	1.0 EA Doorstop	441CU	PEM
287		Or Approved Equal	
288			
289		<b>Group 2</b>	
290	1.0 EA Continuous Hinge	SL11 BR LD 83"	SLT
291		Or Approved Equal	
292	1.0 EA Panic Exit Device	ED5200 613	RUS
293		Or Approved Equal	
294	1.0 EA Exit Device Trim	L959 C6 CT6 613	RUS
295		Or Approved Equal	
296	1.0 EA Gate Lock Box	K-BXMOR2	KDX
297		Or Approved Equal	
298	1.0 EA Door Closer	DC6210 A12 690 STOP	
299		@ 90 Degrees	RUS
300		Or Approved Equal	
301	1.0 EA Wall Stop (Convex)	406 613	ROC
302		Or Approved Equal	
303			

304 **683.04 Measurement.** The Engineer will not measure door hardware for  
305 payment.

306  
307 **683.05 Payment.** The Engineer will not pay for door hardware separately. The  
308 Engineer will consider the price for door hardware included in the contract price for  
309 Section 608 – Modular Storage Containers. Payment will be full compensation for  
310 work prescribed in this section and contract documents.

311  
312 The price includes full compensation for providing all submittals, furnishing  
313 labor, materials, tools, and equipment for installing door hardware, and all  
314 incidentals necessary to complete the work.

315  
316  
317  
318 **END OF SECTION 683**

1 Make the following section a part of the Standard Specifications:  
2

3 **SECTION 684 – PREFORMED METAL ROOFING**  
4  
5

6 **684.01 Description.** This section describes the furnishing and installation of  
7 preformed metal roofing. This section includes standing seam metal roof panels,  
8 flashings and closures, underlayment, and miscellaneous materials.  
9

10 **684.02 Materials**  
11

12 **(A) Metal and Finishes**  
13

14 **(1) Roof Panels.** Roof panels shall be formed from minimum 24  
15 gauge zincalume coated steel conforming to ASTM A 792/A 792M,  
16 Grade 33 with minimum AZ55 coating. Panel configuration shall be  
17 as specified. Panel shall be prefinished Kynar 500 as specified.  
18

19 **(2) Finish.** Apply the following organic coating in thickness  
20 indicated. Furnish appropriate air-drying spray finish in matching  
21 color to touchup.  
22

23 **(a) Fluoropolymer 2-Coat (Kynar 500) Coating System.**  
24 Manufacturer's standard 2-coat, thermocured system  
25 composed of specifically formulated inhibitive primer and  
26 fluoropolymer color topcoat containing not less than 70  
27 percent polyvinylidene fluoride resin by weight with a total  
28 minimum dry film thickness on the exposed top of one mil and  
29 30 percent reflective gloss when tested manufacturer's  
30 standard off white paint finish.  
31

32 **(i) Durability.** Provide coating field tested under  
33 normal range of weather conditions for a minimum of  
34 20 years without significant peel, blister, flake, chip,  
35 crack, or check in finish; without chalking in excess of 5  
36 Hunter units.  
37

38 **(ii) Color.** Color shall be as selected and as  
39 approved as per item entitled "SUBMITTALS"  
40 hereinbelow prior to fabrication.  
41

42 **(B) Roof Panel Assemblies**  
43

44 **(1) Deep Corrugated Metal Roof Panels.** Roof panel assembly  
45 shall be manufacturer's standard factory-formed, 7/8" Corrugated  
46 metal roof panel assembly with 7/8- inch high x 36-inch corrugated

47 panel with 32-inch cover, 0.75 thick (22 gauge), designed for  
48 exposed mechanical attachment of panels to plywood roof  
49 sheathing.  
50

51 **(C) Flashings and Closures**  
52

53 **(1)** Provide flashings, included, but not limited to, ridges, hips,  
54 valleys, closures, etc. Formed of prefinished material to match  
55 panels of manufacturer's standard and custom fabricated flashings  
56 for the panels of manufacturer's standard and custom fabricated  
57 flashings for the panels specified. Configuration of the flashings  
58 shown on the drawings are intended to indicate basic intent. Other  
59 flashings which accomplish the basic intent and is standard with the  
60 panel manufacturer may only be acceptable with the approval as per  
61 Subsection 684.03(B) "Submittals" hereinbelow. Provide metal  
62 flashings for locations indicated. Furnish sheet metal flashing items  
63 in 8-foot to 10-foot lengths. Single pieces less than 8 feet long may  
64 be used at corners and at ends of runs. Provide accessories and  
65 other items to which they are applied. Connect all pieces of linear  
66 flashing by a slip joint to permit thermal movement.  
67

68 **(D) Underlayment Materials**  
69

70 **(1) Self-Adhering Underlayment Membrane.** Minimum 40 mil  
71 self-adhering sheet membrane shall be used. The product shall be  
72 Rainproof by Protecto Wrap Company, Polyguard Deck Guard by  
73 Polyguard Products, Inc., WinterGuard by CertainTeed Corp., or  
74 accepted equivalent.  
75

76 **(E) Miscellaneous Materials**  
77

78 **(1) General.** Provide materials and accessories required for a  
79 complete panel assembly and as recommended by panel  
80 manufacturer, unless otherwise indicated.  
81

82 **(2) Fasteners.** Self-tapping screws, bolts, nuts, self-locking  
83 rivets and bolts, end-welded studs, and other suitable fasteners  
84 designed to withstand design loads shall be used. Use stainless  
85 steel fasteners for all applications. Use exposed fasteners with  
86 prefinished coated head to match panel color and with composite  
87 metal and neoprene washer.  
88

89 **(3) Accessories.** Unless otherwise specified, provide  
90 components required for a complete panel assembly, including trim,  
91 ridge closures, clips, flashings, sealants, , gaskets, fillers, closure  
92 strips, and similar items. Match materials and finish of panels.

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**(a) Closure Strips.** Closed-cell, self-extinguishing, expanded, and cellular, rubber or cross-linked, polyolefin-foam flexible closure strips shall be used. Cut or premold to match configuration of panels. Provide closure strips where indicated or necessary to ensure weathertight construction.

**(b) Sealing Tape.** Pressure-sensitive, 100 percent solids, polyisobutylene compound sealing tape with lease paper backing shall be used. Provide permanently elastic, nonsag, nontoxic, nonstaining tape.

**(c) Elastomeric Joint Sealant.** Elastomeric joint sealant shall be compliant with ASTM C 920, and of base polymer, type, grade, class, and use classifications required to seal joints in panel and remain weathertight. Provide sealant recommended by panel manufacturer.

**(d) Bituminous Coating.** Bituminous coating shall be cold-applied asphalt mastic, SSPC-Paint 12, compounded for 15-mil dry film thickness per coat, unless otherwise indicated. Provide inert-type noncorrosive compounded for 15-mil dry film thickness per coat, unless otherwise indicated. Provide inert-type noncorrosive compound free of asbestos fibers, sulfur components, and other deleterious impurities.

### **684.03 Construction**

**(A) Related Requirements.** Work shall conform to the specifications herein as well as to the following sections:

**(1)** Section 674 "Sheet Metal Flashing and Trim" for coordinating flashing installation not part of this section.

**(2)** Section 676 "Joint Sealants" for field-applied sealants.

**(B) Submittals**

**(1) Product Data.** Submit manufacturer's production data, specifications, stand details, installation instructions, and general recommendations, as applicable to materials and finishes for each component for total panel assemblies.

**(2) Test Results.** Submit manufacturer's certified product test results as applicable to materials and finishes for each component and for total panel assemblies.

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**(3) Shop Drawings.** Submit shop drawings with layout of the panels, details of the edge conditions, joints, panel profiles, supports, anchorages, trim, flashings, underlayment, closures, and special details. Distinguish between factory-assembled and field-assembled work.

**(4) Performance Certification**

**(a)** Roofing panel supplier shall submit certification that panels meet performance requirements in paragraph entitled "Performance Requirements" hereinbelow. Provide design analysis and calculations to substantiate mechanical attachments to resist wind up-drift.

**(b)** Manufacturer's technical representative shall submit certification that roofing panels have been installed according to manufacturer's instructions and is free of defects in materials and workmanship.

**(5) Samples for Initial Selection.** Submit manufacturer's full range of colors for selection.

**(6) Samples for Verification.** Submit sample panels 12-inches long by actual panel width, in the profile, style, and color selected. Include clips, caps, fasteners, closures, and other exposed panel accessories.

**(7) Contractor Certification.** Submit a signed certificate from the manufacturer of the Complete Roofing System attesting that the installation crew has been trained in the system's proper installation by the manufacturer or the technical representative of the manufacturer. The certificate shall include a listing of the location, size of project, and date of 5 successfully installations of the system by the Contractor within the previous 3 years.

**(8) Technical Representative Certification.** Submit a signed certificate from the manufacturer designating its technical representative for the project has been reviewed and attesting that this person is both qualified and authorized to act on its behalf of this position in respect to the Complete Roofing System.

**(9) Warranty Certification.** Submit a signed certification from the manufacturer or its technical representative stating that the plans and specifications for the project have been reviewed and fully comply with the manufacturer's design standards and meet the

185 requirements for warranty for the Complete Roofing System for the  
186 specified period.

187  
188 **(10) Warranty**  
189

190 **(a)** Furnish written 2 year warranty from the project  
191 acceptance date, jointly signed by the Roofing Contractor,  
192 Flashing and Sheet Metal Contractor, and General Contractor  
193 which shall provide for repairs or replacement of roofing and  
194 flashing where leaking occurs due to faulty materials and  
195 workmanship at their own expense.

196  
197 **(b)** Provide manufacturer's warranty for the coating system  
198 under Hawaiian weather conditions. Provide the following as a  
199 guide for expected warranty:  
200

201 **(i)** The roofing panels and matching flashings with  
202 a factory applied Fluoropolymer (Kynar 500) paint finish  
203 are free from material defects and shall be warranted  
204 for 20 years from the project acceptance date against  
205 peeling, blistering, chipping, cracking or color change in  
206 excess of 5 NBS units during the term of this warranty.  
207 The manufacturer/supplier shall replace or repair as  
208 necessary any panels whose factory color finish fails  
209 under normal wind and weathering conditions. The  
210 paint finish warranty commences upon project  
211 acceptance date.  
212

213 **(ii)** Additionally, the metal roofing system  
214 components for the project as identified by the Contract  
215 Drawings for this project, shall be warranted for a  
216 periods of 15 years from the project acceptance date.  
217 Manufacturer/supplier shall replace or repair as  
218 necessary any component of the roof system supplied  
219 by them, when installed and maintained according to  
220 the manufacturer's instructions, which fail to provide a  
221 watertight and weather proof system due to defective  
222 materials. All labor, materials, general condition, and  
223 equipment required to perform any repair work shall be  
224 done in a manner that will not disrupt access to the  
225 building.  
226

227 **(iii)** The Surety shall not be held liable beyond 2  
228 years from the project acceptance date.  
229

230 **(C) Quality Assurance**

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**(1) Installer Qualifications.** Engage an experienced installer who has completed metal roof panel projects similar in material, design, and extent to that indicated, and is a company specializing in performing the work in this Section, with minimum 5 years' experience and approved by the manufacturer.

**(2) Performance Requirements.** Provide roof panel assembly that meets requirements for 105 mph, exposure B wind loads, in accordance with current International Building Code. Panels shall be tested in accordance with ASTM E 1592.

**(3) Sealants.** Provide sealants under Section 676 – Joint Sealants as acceptable to the roofing manufacturer.

**(4)** Should the manufacturer's warranty requirements necessitate different drawings and details exceeding the requirements of those indicated or specified, provide shop drawings and field adjustments for approval at Contractor's own expense.

**(D) Delivery, Storage, and Handling**

**(1)** Deliver panels and other components so they will not be damaged or deformed. Package panels for protection against damage during transportation or handling.

**(2)** Exercise care in uploading, storing, and erecting panels to prevent bending, warping, twisting, and surface damage.

**(3)** Stack materials on platforms or pallets, covered with tarpaulins or other suitable weathertight ventilated covering. Store panels to ensure dryness. Do not store panels in contact with other materials that might cause staining, denting, or other surface damage.

**(E) Project Conditions**

**(1) Field Measurements.** Verify location of structural members and openings in substrates by field measurements before fabrication and indicate measurements on Shop Drawings. Coordinate fabrication schedule with construction progress to avoid delaying the work.

**(a) Establishing Dimensions.** Where field measurements cannot be made without delaying the work, either establish opening dimensions and proceed with



277 fabricating panels without field measurements or allow for  
278 trimming panel units. Coordinate construction to ensure actual  
279 locations of structural members and ensure opening  
280 dimensions correspond to established dimensions.

281  
282 **(F) Examination**

283  
284 **(1)** Examine substrates and conditions, with installer present, for  
285 compliance with requirements indicated for conditions affecting  
286 performance of metal panel.

287  
288 **(2)** Do not proceed with panel installation until unsatisfactory  
289 conditions have been corrected.

290  
291 **(G) Preparation**

292  
293 **(1)** Coordinate panel system with rain drainage work; flashing;  
294 trim; and construction of substrates, vents, and other adjoining work  
295 to provide a leak-proof, secure, and non-corrosive installation.

296  
297 **(2)** Promptly remove protective film, if any, from exposed  
298 surfaces of metal panels. Strip with care to avoid damage to the  
299 finish.

300  
301 **(H) Panel Installation**

302  
303 **(1) General.** Comply with panel manufacturer's written  
304 instructions and recommendations for installation, as applicable to  
305 project conditions and supporting substrates. Anchor panels and  
306 other components of the work securely in place, with provisions for  
307 thermal and structural movement.

308  
309 **(a)** Field cutting exterior panels by torch is not permitted.

310  
311 **(b)** Install panels with manufacturer recommended  
312 fasteners, unless otherwise indicated.

313  
314 **(c)** Install underlayment under panels as per  
315 manufacturer's recommendations and where indicated on the  
316 drawings.

317  
318 **(2)** Install in accordance with the approved erection instructions  
319 and shop drawings. Panels shall be in full and firm contact with  
320 supports and with each other at side and end laps. Correct defects or  
321 errors in the material in a manufacturer's approved manner. Replace  
322 materials which cannot be corrected in approved manner with non-

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defective material.

**(3)** Roofing units shall be applied parallel to the roof slope. Provide panel sheets in full length from ridge to eave, with no transverse joints except at the junction of ventilators, curbs, and similar openings or as indicated on drawings.

**(4)** Install components required for a complete panel assembly, including trim, copings, ridge closures, clips, flashings, sealants, fillers, closure strips, and similar items.

**(5)** Separate dissimilar metals by painting each metal surface in area of contact with a bituminous coating by applying rubberized-asphalt underlayment to each metal surface, or by permanent separation as recommended by manufacturers of dissimilar metals.

**(6)** Arrange sides' laps to leeward of prevailing wind direction.

**(7)** Install underlayment where specified and where indicated perpendicular to roof slope. Apply in shingle fashion and lap joints to a minimum of 4-inches and 6-inches at end laps.

**(8) Joint Sealers.** Install gaskets, joint fillers, and sealants where indicated and where required for weatherproof performance of panel assemblies. Provide types of gaskets, fillers, and sealants indicated or, if not otherwise indicated, types recommended by panel manufacturer.

**(a)** Install weather seal under ridge cap. Flash and seal panels at eave and rake with rubber, neoprene, or other closures to exclude weather.

**(b)** Seal panel end laps with double beads of tape or sealant, full width of panel. Seal side joints where recommended by panel manufacturer.

**(c)** Prepare joints and apply sealants to comply with requirements of Section 676 – Joint Sealants.

**(9) Installation Tolerances.** Shim and align panel units within installed tolerance of 1/4-inch in 20-feet on slope and location lines as indicated and within 1/8-inch offset of adjoining faces and alignment of matching profiles.

**(10) Inspection.** Manufacturer's technical representative shall inspect panels during installation to ensure compliance with these

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specifications and conformance to manufacturer's installation instructions. Upon completion of the panel system, manufacturer's representative shall provide a written certification that panels have been installed in accordance with manufacturer's instructions and is free of defects in material and workmanship.

**(I) Cleaning and Protecting**

**(1) Damaged Units.** Replace panels and other components of the work that have been damaged or have deteriorated beyond successful repair by finish touchup or similar minor repair procedures.

**(2) Cleaning.** Remove temporary protective coverings and strippable films, if any, as soon as each panel is installed. On completion of panel installation, clean finished surfaces as recommended by panel manufacturer and maintain in a clean condition during construction.

**684.04 Measurement.** The Engineer will not measure preformed metal roofing for payment.

**684.05 Payment.** The Engineer will not pay for preformed metal roofing separately. The Engineer will consider the price for preformed metal roofing included in the contract price for Section 608 – Modular Storage Containers. Payment will be full compensation for work prescribed in this section and contract documents.

The price includes full compensation for providing all submittals, furnishing labor, materials, tools, and equipment for installing preformed metal roofing, and all incidentals necessary to complete the work.

**END OF SECTION 684**

1 Make the following section a part of the Standard Specifications:  
2

### 3 **SECTION 685 – GYPSUM BOARD** 4

5  
6 **685.01 Description.** This section describes the furnishing and installation of  
7 gypsum board. Work shall include, but not be limited to, interior gypsum boards,  
8 non-load bearing studs, and batt insulation.  
9

#### 10 **685.02 Materials** 11

12 **(A) Gypsum Wallboard.** Gypsum wallboard shall comply with ASTM C  
13 1396/C 1396M, "Gypsum Board", and shall be 5/8-inch thick unless  
14 indicated otherwise, tapered edges, 48-inches wide, Type "X" (Special Fire-  
15 Resistant).  
16

17 **(B) Cementitious Backer Board.** Cementitious backer board shall  
18 comply with ASTM C 1325, ANSI A118.9, "Cementitious Backer Board",  
19 and shall be 5/8-inch thick for hard tile backing unless indicated otherwise,  
20 water durable, surfaced with fiberglass reinforcing mesh front and back;  
21 long edges wrapped, tapered edges. Provide tape and joint compound  
22 materials as recommended by manufacturer.  
23

24 **(C) Wallboard Fasteners.** Wallboard fasteners shall be comply with  
25 ASTM C 1002 "Steel Self-Piercing Tapping Screws for the Application of  
26 Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel  
27 Studs", and shall be standard bugle head self-drilling, self-tapping,  
28 corrosive-resistant drywall screws. Screws used in fire-resistive rated  
29 construction shall be of type approved for use by governing building code.  
30 For tile backer boards, use screws of type and size recommended by tile  
31 backer board manufacturer.  
32

33 **(D) Non-Load Bearing Studs.** Non-load bearing studs shall comply  
34 with ASTM C 645. Studs shall be rolled formed channel of minimum 20  
35 gauge galvanized steel, ASTM A 653, G60, hot-dip galvanized coating.  
36 Provide holes and notches for conduit or electrical wiring. Adjust stud to a  
37 heavier gauge where required by the manufacturer's recommendations for  
38 stud wall heights and ceiling supports.  
39

40 **(E) PVC Trim Accessories.** Provide corner bead, edge trim, etc. as  
41 indicated on the drawings or as required complying with ASTM C 1 and  
42 formed of polyvinyl chloride (PVC).  
43

44 **(F) Joint Treatment Materials.** Joint treatment materials shall comply  
45 with ASTM C 475; and shall be type recommended by wallboard  
46 manufacturer for the application indicated, except as otherwise noted.

47 Perforated tape, and joint and topping compound, or "all-purpose"  
48 compound, shall be used.

49  
50 **(G) Moisture Barrier.** Provide where indicated or required, asphalt-  
51 saturated felt, ASTM D 226/D 226M, Type II, No. 30.

52  
53 **(H) Batt Insulation in Stud Walls.** Batt insulation shall be fiberglass  
54 batt ASTM C665, Type 1, thickness to match stud size.

55  
56 **685.03 Construction**

57  
58 **(A) Related Requirements.** Work shall conform to the specifications  
59 herein as well as to the following sections:

60  
61 (1) Section 676 "Joint Sealants" for coordinating installation.

62  
63 (2) Section 687 "Painting" for painting of gypsum board.

64  
65 **(B) Quality Assurance**

66  
67 **(1) Industry Standard.** Comply with applicable requirements of  
68 GA-216 "Application and Finishing of Gypsum Board" by the  
69 Gypsum Association, except where more detailed or more stringent  
70 requirements are indicated including the recommendations of the  
71 manufacturer, and GA-214 "Recommended Specification: Levels of  
72 Gypsum Board Finish" by the Gypsum Association.

73  
74 **(2) Fire Resistance.** For walls where indicated or requiring fire-  
75 resistance-rated gypsum board assemblies, comply with the  
76 following requirements:

77  
78 **(a) Fire-Resistance Ratings.** As indicated by GA File  
79 Numbers in GA-600 "Fire Resistance Design Manual" or  
80 design designations in UL "Fire Resistance Directory" or in the  
81 listing of another testing and inspecting agency acceptable to  
82 authorities having jurisdiction.

83  
84 **(b)** Gypsum board assemblies indicated are identical to  
85 assemblies tested for fire resistance according to ASTM E  
86 119 by an independent testing and inspecting agency  
87 acceptable to authorities having jurisdiction.

88  
89 **(C) Submittals**

90  
91 **(1) Product Data.** Submit data for each type of product  
92 specified. Include manufacturer's recommended installation

93 instructions.

94

95 **(2) Shop Drawings.** Submit shop drawings showing locations,  
96 fabrication, and installation of control and expansion joints including  
97 plans, elevations, details of components, and attachments to other  
98 units of work.

99

100 **(D) Delivery, Storage, and Handling**

101

102 **(1)** Deliver gypsum board materials in sealed containers and  
103 bundles, fully identified with manufacturer's name, brand, type and  
104 grade; store in a dry, well ventilated space, protected from the  
105 weather, under cover and off the ground. Stack gypsum panels flat  
106 to prevent sagging. Joint materials shall be stored in accordance  
107 with manufacturer's printed instructions. Damaged or deteriorated  
108 materials shall be removed from jobsite.

109

110 **(2) Environmental Limitations.** Comply with GA-238,  
111 "Guidelines for the Prevention of Mold Growth on Gypsum Board",  
112 and ASTM C 840, "Application and Finishing of Gypsum Board",  
113 requirements or gypsum board manufacturer's written  
114 recommendations, whichever are more stringent.

115

116 **(E) Examination.** Examine substrates to which drywall construction  
117 attaches or abuts structural framing, with Installer present, for compliance  
118 with requirements for installation tolerances and other conditions affecting  
119 performance of drywall construction. Do not proceed with installation until  
120 unsatisfactory conditions have been corrected.

121

122 **(F) Installation of Steel Framing, General**

123

124 **(1) Steel Framing Installation Standard.** Install steel framing to  
125 comply with ASTM C 754 requirements that apply to framing  
126 installation.

127

128 **(2)** Install supplementary framing, blocking and bracing at  
129 terminations in the work and for support of fixtures, equipment  
130 services, heavy trim, bath accessories, grab bars, furnishings, and  
131 similar constructions to comply with details indicated and with  
132 recommendations of gypsum board manufacturer, or if none  
133 available, with "Gypsum Construction Handbook" published by  
134 United States Gypsum Company.

135

136 **(G) Installation of Steel Framing for Walls and Partitions**

137

138 **(1)** Install runners (tracks) at floors, ceilings, and structural walls

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and columns where gypsum drywall stud system abuts other construction. Where studs are installed directly against exterior walls, install asphalt felt strips between studs and wall.

(2) Install each steel framing and furring member so that fastening surface do not vary more than 1/8-inch from plane of face to adjacent framing. Align plumb and square.

(3) Extend partition framing full height to structural supports, unless otherwise indicated. Continue framing over frames for doors and openings to provide support for gypsum board.

(4) Install steel studs and furring in sizes and at spacing indicated but not less than that required by referenced steel framing installation standard. For single layer construction: 16-inches on center, except as otherwise indicated.

(5) Install steel studs so that flanges point in the same direction and gypsum boards can be installed in the direction opposite to that of the flange.

(6) Frame door openings to comply with details indicated, with GA-219 and applicable published recommendations of gypsum board manufacturer. Attach vertical studs at jambs with screws either directly to frames or to jamb anchor clips on door frames; install runner track section (for cripple studs) at head and secure to jamb studs.

(7) Frame openings other than door openings to comply with details indicated, or if none indicated, in same manner as required for door openings.

(8) Do not bridge building joints with steel framing or furring. Frame both sides of joints independently.

(9) Seal tracks with continuous beads of acoustical sealant along each face prior to installation of gypsum board.

**(H) Application and Finishing of Gypsum Board, General**

(1) **Gypsum Board Application and Finishing Standards.** Install and finish gypsum board to comply with ASTM C 840, GA-216, and GA-214.

(2) Locate exposed end-butt joints as far from center of walls and ceilings as possible, and stagger not less than 24-inches in alternate

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courses of board.

**(3)** Install ceiling boards in a manner which minimizes the number of end-butt joints, and which avoids end joints in the central area of each ceiling. Stagger end joints at least 24-inches.

**(4)** Install wall/partition boards in a manner which minimizes the number of end-butt joints or avoids them entirely where possible.

**(5)** Install exposed gypsum board with face side out. Do not install imperfect, damaged or damp boards. Butt boards together for a light contact at edges and ends with not more than 1/16-inch open space between boards. Do not force into place.

**(6)** Locate either edge or end joints over supports, except in horizontal applications where intermediate supports or gypsum board back-blocking is provided behind end joints. Position boards so that like edges abut, tapered edges against tapered edges and mill-cut or field-cut ends against mill-cut or field-cut ends. Do not place tapered edges against cut edges or ends. Stagger vertical joints over different studs on opposite sides of partitions. Do not make joints other than control joints at corners of framed openings.

**(7)** Attach gypsum board to studs so that leading edge or end of each board is attached to open (unsupported) edge of stud flange first.

**(8)** Attach gypsum board to supplementary framing and blocking provided for additional support at openings and cutouts.

**(9)** Space fasteners in gypsum boards in accordance with referenced gypsum board application and finishing standard and manufacturer's recommendations.

**(I) Methods of Gypsum Board Application**

**(1) Single-Layer Application.** On walls/partitions, apply gypsum board vertically (parallel to framing), unless otherwise indicated, and provide sheet lengths which will minimize end joints. Fasten with screws at 6-inch centers.

**(2) Single-Layer Fastening Method.** Apply gypsum boards to supports by fastening with screws.

**(3)** On ceilings, apply gypsum board prior to wall/partition board application, to the greatest extent possible and at right angles to



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framing, unless otherwise indicated.

**(4)** Install ceiling board panels across framing to minimize the number of abutting end joints and to avoid abutting end joints in the central area of each ceiling. Stagger abutting end joints of adjacent panels not less than one framing member.

**(J) Finishing of Drywall**

**(1) General.** Apply joint treatment at gypsum board joints (both directions); flanges of trim accessories, penetrations, fastener heads, surface defects and elsewhere as required to prepare work for decoration.

**(2)** Prefill open joints, rounded or beveled edges, and damaged surfaces using type of compound recommended by manufacturer.

**(3)** Apply joint tape at joints between gypsum boards, except where trim accessories are indicated.

**(4)** Treatment for water resistant gypsum wallboard shall be as recommended by the gypsum wallboard manufacturer.

**(5)** Finish interior gypsum wallboard by applying the following levels of gypsum board finish in accordance with GA-214:

**(a)** Level 1: Not used.

**(b)** Level 2: Not Used.

**(c)** Level 3: Not used.

**(d)** Level 4: Not used.

**(e)** Level 5: For exposed walls and ceiling surfaces receiving paints. Texture to match existing ceiling finish or change pattern for new ceiling.

**(f)** Where Level 5 gypsum board finish is specified, embed tape in joint compound and apply first, fill (second), and finish (third) coats of joint compound over joints, angles, fastener heads, and accessories; and apply a thin, uniform skim coat of joint compound over entire surface. For a skim coat, use joint compound specified for third coat, or a product specially formulated for this purpose and acceptable to gypsum board manufacturer. Touch up and sand between coats and after

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last coat as needed to produce a surface free of visual defects, tool marks, and ridges, and matching existing adjacent surface texture, and ready for decoration.

**(K) Backing Plates and Anchors.** Backing plates and anchors or blocking which are to be attached to studs or furring for anchoring items and work indicated on the drawings or specified in other sections shall be installed and secured. Plates and anchors shall be welded or fastened in place in accordance with approved setting drawings.

**(L) Cleaning and Repairing**

**(1)** After installation and before painting, correct surface damage and defects. Leave surface clean and smooth, satisfactory to the painter. No painting shall be done over gypsum board work until the joints are thoroughly dry. Joints and fastenings are to be invisible after painting.

**(2)** Remove all drywall materials from electrical boxes, hardware, fixtures, flooring, and similar items and surfaces not intended to receive drywall materials.

**(M) Protection.** Provide final protection and maintain conditions, in a manner suitable to Installer, which ensures gypsum drywall construction being without damage or deterioration at time of project acceptance.

**685.04 Measurement.** The Engineer will not measure gypsum board for payment.

**685.05 Payment.** The Engineer will not pay for gypsum board separately. The Engineer will consider the price for gypsum board included in the contract price for Section 608 – Modular Storage Containers. Payment will be full compensation for work prescribed in this section and contract documents.

The price includes full compensation for providing all submittals, furnishing labor, materials, tools, and equipment for installing gypsum board, and all incidentals necessary to complete the work.

**END OF SECTION 685**

1 Make the following section a part of the Standard Specifications:  
2

3 **SECTION 687 – PAINTING**  
4  
5

6 **687.01 Description.** This section describes the materials, labor, equipment,  
7 and tools necessary to complete painting and finishing of new and existing interior  
8 and exterior items and surfaces indicated. Surface preparation, priming and coats  
9 of paint specified are in addition to shop-priming and surface treatment specified  
10 under other sections of the work and is included in this section.  
11

12 "Paint" as used herein means all coating systems materials, including  
13 primers, enamels, sealers and fillers, and other applied materials whether used as  
14 prime, intermediate or finish coats, except as specifically noted herein.  
15

16 **687.02 Materials**  
17

18 **(A) Asbestos Prohibition.** All paints shall be asbestos free.  
19

20 **(B) Lead Prohibition.** All paints shall be lead-free.  
21

22 **(C) Mercury Prohibition.** All paint shall be mercury-free.  
23

24 **(D) Chromate Prohibition.** All paint shall be free of zinc-chromate  
25 and/or strontium-chromate.  
26

27 **(E) Cadmium Prohibition.** All paint shall be cadmium-free.  
28

29 **(F)** Material shall be equal in quality to that specified under the Schedule  
30 of finishes and any given finish shall be as labeled by one manufacturer.  
31

32 **(G)** All materials shall be delivered to the job site in undamaged original  
33 containers bearing the manufacturer's label and shall be stored in such a  
34 manner as to prevent damage. All rejected materials shall be removed from  
35 the job site immediately.  
36

37 **(H)** Paint shall be as manufactured by Benjamin Moore or approved  
38 substitute.  
39

40 **(I)** Thinning of paint shall be done using material recommended by the  
41 manufacturer. Mix proprietary products according to manufacturer's printed  
42 specifications. Compound thinner, mineral oil, kerosene, refined linseed oil,  
43 or gasoline shall not be used for thinning.  
44

45 **(J)** Except for metal primers all paint shall contain the maximum amount  
46 of mildewcide per gallon of paint permitted by the mildewcide manufacturer

47 without adversely affecting the quality of the paint.

48  
49 **(K)** The supplier shall submit a signed certificate indicating the amounts  
50 of mildewcide added by both the paint manufacturer and the paint supplier.

51  
52 **(L)** Provide all patching and repair materials compatible with paint  
53 finishes and substrates. Use weather resistant materials for exterior  
54 surfaces and surfaces exposed to moisture.

55  
56 **(M)** Provide all other materials not specified but required to achieve the  
57 finishes specified.

58  
59 **687.03 Construction**

60  
61 **(A) Quality Assurance**

62  
63 **(1) Applicator Qualifications.** A firm and individuals  
64 experienced in applying paints and coatings similar in material,  
65 design, and extent to those indicated for this Project, whose work  
66 has resulted in applications with a record of successful in-service  
67 performance, shall be used.

68  
69 **(B) Submittals**

70  
71 **(1) Schedule of Finishes.** Submit painting finish schedule. The  
72 schedule shall indicate the spread rate which the proposed  
73 paint/coating will be applied that is necessary to achieve the final dry  
74 film thickness indicated on the Schedule of Finishes herein below.

75  
76 **(2) Color Samples**

77  
78 **(a)** Submit color finish samples for review and approval.

79  
80 **(b)** Submit, after the color finish sample has been  
81 approved, one (1) set of color finish samples painted onto 8-  
82 1/2 inch x 11-inch cardboard shall be submitted. The  
83 cardboard shall be divided into four (4) horizontal strips and  
84 painted as follows:

85  
86 **(i)** Prime three (3) strips starting from the bottom.

87  
88 **(ii)** 1st coat bottom two (2) strips.

89  
90 **(iii)** 2nd coat bottom strip.

91  
92 **(3) Schedule of Operations.** Submit, before work on the project

93 commences, work schedule showing sequence of operations and  
94 dates.

95  
96 **(4) Certifications.** Submit asbestos-free, lead-free, zinc-  
97 chromate-free, strontium-chromate- free, cadmium-free and mercury-  
98 free paint certificates. Should additional copies of these certificates  
99 be required for distribution to suppliers and subcontractors, these  
100 copies shall be included in this submittal.

101  
102 **(5) Manufacturer's Product Data Sheets.** Submit  
103 Manufacturer's Product Data Sheets for the primers, paints, coatings,  
104 solvents, sealing and patching materials, sealants and caulking. Data  
105 sheets shall indicate thinning and mixing instructions, required film  
106 thickness (mil) and application instructions.

107  
108 **(6) Manufacturer's Material Safety Data Sheets.** Submit  
109 Manufacturer's Material Safety Data Sheets for coatings, solvents,  
110 and other hazardous materials. Should additional copies be required  
111 for distribution to suppliers and subcontractors, these copies shall be  
112 included in this submittal.

113  
114 **(7) Warranty.** Submit three (3) sets of written warranty.

115  
116 **(a)** The Contactor shall warrant that the work performed  
117 under this section conforms to the contract requirements and  
118 is free of any defect of material or workmanship performed by  
119 the Contractor. Such warranty shall continue for a period of  
120 two (2) years from the date of project acceptance during  
121 which period the Contractor shall remedy at his own expense  
122 any such failure to conform or any such defect.

123  
124 **(b)** Engineer shall notify the Contractor in writing within a  
125 reasonable time after discovery of any failure or defect.

126  
127 **(c)** Should the Contractor fail to remedy any failure or  
128 defect described above within ten (10) working days after  
129 receipt of notice thereof, Engineer shall have the right to  
130 repair or otherwise remedy such failure or damage at the  
131 Contractor's expense.

132  
133 **(C) Analyzing and Testing**

134  
135 **(1)** All paints and their applied thickness shall be subject to  
136 testing whenever the Engineer deems necessary to determine  
137 conformation to the requirements of these specifications. Should  
138 testing by a laboratory be required, the laboratory shall be selected

139 by Owner and the cost of testing shall be borne by the Contractor.  
140 However, should test results show that the paint is in compliance  
141 with this specification, the cost will be borne by Owner.  
142

143 **(2)** All rejected material shall be removed from the job site  
144 immediately. Surfaces painted with the rejected material shall be  
145 redone at no additional cost to Owner.  
146

147 **(3)** Where the required paint thickness is deficient, the affected  
148 surface(s) shall be recoated as necessary to provide the required  
149 paint thickness at no additional cost to Owner.  
150

151 **(D) Painting Not Included.** The following categories of work are not  
152 included as part of field applied paint and finish work.  
153

154 **(1) Pre-Finished Items.** Unless otherwise indicated, do not  
155 include painting for factory- finished or installer finished items such  
156 as, but not limited to, solid phenolic, plastic laminate, high  
157 performance organic coated metal, finished mechanical and  
158 electrical equipment, including light fixtures, switchgear, and  
159 distribution cabinets, etc.  
160

161 **(2) Finished Metal Surfaces.** Metal surfaces of anodized  
162 aluminum, chromate plate, copper, and similar finished materials will  
163 not require finish painting, unless otherwise indicated.  
164

165 **(3) Labels.** Do not paint over any code-required labels, such as  
166 Underwriters' Laboratories, or any equipment identification,  
167 performance rating, name, or nomenclature plates.  
168

169 **(E) General Requirements**  
170

171 **(1) Inspection and Approvals.** Written approval shall be  
172 obtained from the Engineer upon completion of each phase of work  
173 (phases of work are: surface preparation and spot prime, prime, first  
174 finish coat, second finish coat) before proceeding into the next phase  
175 or work. Provide the Engineer one day (24 hours minimum) advance  
176 notice of completion of any phase of work for a work area when the  
177 date of completion deviates from the previously submitted work  
178 schedule. Provide necessary access to areas to be inspected.  
179

180 Failure to obtain approval of any phase of work for a work  
181 area may result in redoing the operation at no cost to Owner.  
182

183 **(2) Right of Rejection.** The Engineer shall have the right to  
184 reject all work which is not in compliance with the plans and

185 specifications. Rejected work shall be redone at no cost to Owner.

186  
187 **(3)** In addition, the Engineer shall have the right to require the  
188 immediate removal of any paint applicator who demonstrates  
189 negligence, lack of competence or repeated non-compliance with  
190 the contract requirements.

191  
192 **(F) Delivery.** Deliver materials to Project site in manufacturer's original,  
193 unopened packages and containers bearing manufacturer's name and  
194 label.

195  
196 **(G) Special Requirements**

197  
198 **(1) Codes.** Comply with the State OSHL (Occupational Safety  
199 and Health Law) and all pollution control regulations of the State  
200 Department of Health.

201  
202 **(2) Protection**

203  
204 **(a) Persons**

205  
206 **(i)** All necessary precautions shall be taken to  
207 protect public pedestrians including tenants from injury.

208  
209 **(ii)** Provide, erect and maintain safety barricades  
210 around scaffolds, hoists and wherever Contractor's  
211 operations create hazardous conditions in order to  
212 properly protect the public and tenants.

213  
214 **(b) Completed Work.** Provide all necessary protection for  
215 wet paint surfaces.

216  
217 **(c) Protective Covering and Enclosures.** Provide and  
218 install protective covering over furniture, equipment, floor and  
219 other areas that are not scheduled for treatment. Protective  
220 covering shall be clean sanitary drop cloth or plastic sheets.  
221 Paint applied to surfaces not scheduled for treatment shall be  
222 completely removed and surfaces shall be returned to their  
223 original condition.

224  
225 **(d) Safeguarding of Property.** The Contractor shall take  
226 whatever steps may be necessary to safeguard the work and  
227 also the property of Owner and other individuals in the vicinity  
228 of the work area during the execution of this Contract.

229  
230 **(e)** The Contractor shall be responsible for and make good

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on any and all damages and for losses to work or property caused by the negligence of the Contractor or the Contractor's employees. Where the damaged property cannot be cleaned and restored to its original condition (i.e. prior to being damaged) it shall be replaced with a new product of equal quality. No proration or use of "used" products will be permitted.

**(f) Fire Safety.** Smoking shall not be permitted in the vicinity of the work and precautions against fire shall be exercised at all times. Waste rags, plastic (polyester sheets), empty cans, etc. shall be removed from the site at the end of each day.

**(3) Storage Area for Materials**

**(a)** No paint materials, empty cans, paint brushes and rollers may be stored in the building(s). They shall be stored in separate storage facilities away from the building(s).

**(b)** Should the Contractor furnish a job site storage facility, such facility shall comply with the requirements of the local Fire Department. The storage area shall be kept clean and the facility shall be locked when not in use or when no visual supervision is possible.

**(4) Sequence of Operations.** The sequence of operations shall divide the surfaces into work areas and present a schedule for:

**(a)** Surface preparation.

**(b)** Prime coat.

**(c)** First finish coat.

**(d)** Second finish coat.

**(H) Areas (Surfaces/Structures) to be Painted**

**(1) Interior.** All new and existing interior painted surfaces indicated shall be painted unless otherwise indicated on the plans and/or specifically deleted in these specifications. Interior surfaces to be painted shall be those surfaces not exposed to weather in an area enclosed by four (4) walls. Also, a surface shall be considered an interior surface and painted as such whenever the color is that of the existing interior color. Extent of treatment for special items is as



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follows:

- (a) PVC pipes, galvanized iron (G.I.) pipes and conduits, electrical boxes, and similar appurtenances.
- (b) Existing and New Concrete Masonry Unit and cement plaster walls.
- (c) All Existing and New exposed wood framed roof/ceiling, soffits.
- (d) All areas damaged or exposed during construction.
- (e) All Existing and New gypsum board walls and ceilings.

**(2) Exterior.** All new and existing exterior painted surfaces indicated shall be painted unless otherwise indicated on the plans and/or specifically deleted in these specifications. Exterior surfaces to be painted shall be any surface exposed to weather in an area not enclosed by four (4) walls and a roof. Also, a surface shall be considered and painted as an exterior surface whenever the color is that of the existing exterior color. The extent of treatment for special items is as follows:

- (a) Gutter, flashing, brackets, etc.
- (b) PVC pipes, G.I. pipes and conduits, electrical boxes, and similar appurtenances.
- (c) Metal Security Grilles and frames including anchoring plates and bolt heads.
- (d) All Exterior Concrete and Concrete Masonry walls.
- (e) All exposed wood soffits, framing, etc.

**(I) Other Incidental Work to be Performed by Contractor**

**(1) Interior.** Unless otherwise specified, the Contractor shall be responsible for protecting all the fixtures, accessories and flooring from over-painting and drips.

The Contractor shall protect these items and make good any damage to them at no cost to Owner.

**(2) Areas Inaccessible to Normal Painting.** The Contractor

323 shall remove and reinstall items as required to paint area(s) where  
324 indicated or required.

325  
326 **(J) Compatibility of Painting Systems and Substrates**

327  
328 **(1)** Ensure that painting systems specified are compatible with  
329 existing painted surfaces. Alkyd paints shall not be used directly  
330 over bare cementitious surfaces. Latex paints shall not be applied  
331 directly over alkyd paints without proper surface conditioner and  
332 approval by Engineer.

333  
334 **(2)** Ensure that specified painting systems are compatible with  
335 existing painted surfaces. Should there be any discrepancy between  
336 specified and existing paint systems, the Contractor shall notify the  
337 Engineer in writing for alternate recommendations and/or submit a  
338 revised paint system for approval by the Engineer.

339  
340 **(K) Surface Preparation of Existing Surfaces**

341  
342 **(1) General**

343  
344 **(a) Mildew Removal.** Remove all mildew and sterilize the  
345 surface to be painted. Apply a commercial mildew treatment  
346 solution such as Purex, Jomax Remover or approved  
347 substitute in strict accordance with the manufacturer's  
348 recommendations and instructions. Following treatment, the  
349 surface shall be cleaned with potable water and allowed to  
350 thoroughly dry before priming, painting or the applying of  
351 sealing and caulking compounds.

352  
353 **(b)** Cracks and openings found at joints and where  
354 different materials abut each other shall be sealed with a  
355 caulking compound compatible with the substrate and  
356 primer/paint. The caulking shall be applied and allowed to set  
357 in accordance with the manufacturer's recommendations and  
358 instructions.

359  
360 **(2) Wood and Concrete Masonry Units to be Repainted**

361  
362 **(a)** Remove from surfaces to be repainted all foreign  
363 matter such as nails, screws, staples, tape and gum.

364  
365 **(b)** Remove all loose, blistered, scaled, crazed or chalky  
366 finish to an existing tight and firm finish.

367  
368 **(c)** Remove all mildew as noted in paragraph entitled

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"Mildew Removal" hereinabove.

**(d)** Where the existing finish remains tight and firm, prepare the surface by lightly sanding. Where paint has been removed, sand the edges of scarred areas to a smooth feathered edge.

**(e)** Wash all surfaces with a solution of trisodium phosphate (T.S.P.) and water or other appropriate solution to remove any accumulated film of wax, oil, grease, smoke, dust, dirt, chalking or other foreign matter which would impair the bond of, or bleed through the new paint finish. After washing, rinse potable water and allow to thoroughly dry for a minimum of twenty-four (24) hours.

**(f)** Seal all cracks hairline to 1/8-inch in width with concrete patching compound. All cracks over 1/8-inch in width or holes 1/4-inch diameter or greater shall be sealed with latex modified or epoxy modified reinforced patching compound before paint application. All patching shall be done in accordance with the manufacturer's recommendations and instructions.

**(g)** Spot prime areas where bare surface, seal or patch material is exposed with the specified primer and feather out onto adjacent paint.

**(h)** Follow up over with primer and finish coat over entire surface.

**(i)** Remove peeling paint; do not try to re-adhere sheets of delaminating coatings.

**(3) Ferrous Metal and Galvanized Metal to be Repainted**

**(a)** Remove from surfaces to be repainted all foreign matter such as tape and gum.

**(b)** Remove all loose, blistered, scaled, crazed or chalky paint finish to an existing tight and firm finish.

**(c)** Remove all mildew as noted in the paragraph entitled "Mildew Removal" hereinabove.

**(d)** Remove all rust, loose mill scale and loose and blistering paint by power tool chipping, de-scaling, sanding,

415 wire brushing and grinding down to bare metal (only tightly  
416 adhering surface rust, mill scale and paint which cannot be  
417 removed with a dull putty knife remaining) in accordance with  
418 Steel Structures Painting Council (SSPC) Standard SP3.  
419 Care shall be taken so that the surface is not burnished during  
420 cleaning.

421  
422 **(e)** Where the existing finish remains clean, tight and firm,  
423 prepare the surface by sanding or the use of liquid sandpaper.  
424 Where paint has been removed, sand scarred areas to a  
425 smooth feathered edge.

426  
427 **(f)** Completely wipe all surfaces with mineral spirits or  
428 other appropriate solution as required to remove accumulated  
429 film of wax, oil, grease, smoke, dust, dirt, chalky or other  
430 foreign matter which would impair the bond of, or bleed  
431 through the new finish.

432  
433 **(g)** Allow the surfaces to thoroughly dry and immediately  
434 spot prime bare metal areas with the specified primer and  
435 feather out onto adjacent paint.

436  
437 **(h)** Follow up with primer and finish coats over entire  
438 surface.

439  
440 **(L) Surface Preparation of New Surfaces**

441  
442 **(1)** The Contractor shall be wholly responsible for the finish of the  
443 work and shall not commence any part of it until surfaces are in  
444 proper condition. If any surfaces are considered unsuitable for  
445 proper finish of the work, notify the Engineer of this fact in writing and  
446 do not apply any material until the unsuitable surfaces have been  
447 made satisfactory. Major defects shall be restored by the proper  
448 trades. In general, follow the manufacturer's direction for surface  
449 preparation for the paint to be applied.

450  
451 **(2)** Unprimed galvanized metal shall be washed with a solution of  
452 chemical phosphoric metal etch and allowed to dry.

453  
454 **(3)** All metal surfaces shall be made clean and free of any defects  
455 or condition that may produce unsatisfactory finish.

456  
457 **(M) Paint Application**

458  
459 **(1) General**

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**(a)** All work shall be done in a workmanlike manner by skilled and experienced mechanics and shall conform to the best painting practices.

**(b)** All materials shall be applied in strict accordance with the manufacturer's specifications, including spread rates, and the finished surfaces shall be free from runs, sags, drops, ridges, waves, laps, streaks, brush marks and variations in color, texture and finish (glossy or dull). The coverage shall be complete and each coat shall be so applied as to produce a film of uniform thickness. No paint shall be applied until the preceding coat is thoroughly dry and approved.

**(c)** Completely paint entire surface for each sequence of operation; prime coat, finish first coat, and second finish coat, unless otherwise indicated on the paint schedule hereinafter.

**(d)** No exterior painting of unprotected surfaces shall be done in rainy, damp weather. Coats shall be applied only to surfaces that are thoroughly dry and only under such combination of humidity and temperature that will ensure proper paint application.

**(e)** Any mixing shall be done outside the building.

**(2) Application.** Paint application shall be by brush and roller.

**(3) Colors.** Each coat shall be tinted a different shade from the preceding coat. Colors shall be in accordance with the schedule on the drawings. Where a color is not indicated, the color shall be selected by the Engineer.

**(4) Finish Film Thickness.** Apply primer, intermediate, and finish coats in dry film thickness, as scheduled unless recommended otherwise in writing by the manufacturer, for each coat and in accordance with the manufacturer's recommendations. Verify mil thickness by use of a suitable wet film gauge. Use a Tooke or other dry film gauge to test for total dry film thickness.

**(N) Miscellaneous**

**(1) Installation of Removed Items.** After completion of final paint coat, removed items shall be reinstalled.

**(2) Clean-Up**

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(a) During the progress of the work, all debris, empty crates, waste, drippings, etc. shall be removed by the Contractor and the grounds about the areas to be painted shall be left clean and orderly at the end of each work day.

(b) Upon completion of the work, staging, scaffolding, containers and all other debris shall be removed from the site. All paint, shellac, oil, or stains splashed or spilled upon adjacent surfaces not requiring treatment (hardware, fixture, floor, glass) shall be removed and the entire job left clean and acceptable.

**(O) Schedule of Finishes**

(1) The Schedule of Finishes is made for the convenience of the Contractor and indicates the types and quality of finishes to be applied to the surfaces.

(2) Any existing painted surfaces not specifically noted in the finish schedule shall be finished to match adjoining work.

(3) Paint schedule is based on the products of Sherwin-Williams catalog, unless otherwise called for and are so named to establish quality and standard of materials. Paint materials or approved substitute to those mentioned may be used provided they are acceptable to the Engineer.

(4) The painting schedule shall apply to new and previously painted surfaces of designated materials, unless specified otherwise, in conformity with instructions of the paint products used. Test for Alkyd or Latex paint when painting over previously painted surfaces.

(5) The following schedule represents the general character of the paint systems necessary to complete the work. Provide additional comparable systems and sheens as required. At the option of the Engineer, paint sheens may be revised at no additional cost to Owner.

(6) All surfaces shall be treated as exterior surfaces for this project.

**(P) Paint Schedule**

**(1) Exterior Primer**

(a) Galvanized Metal:

- 553 PrepRite ProBlock Latex Primer B51W620  
554 1.4 mils dry film thickness (DFT) @ 400 sf/gal.  
555  
556 (b) Wood:  
557 PrepRite ProBlock Latex Primer B51W620  
558 1.4 mils DFT @ 400 sf/gal.  
559  
560 (c) Concrete or Concrete Masonry:  
561 PrepRite ProBlock Latex Primer B51W620  
562 1.4 mils DFT @ 400 sf/gal.  
563  
564 (d) Concrete or Concrete Masonry (Bare Surfaces Only):  
565 Loxon Block Surfacers, A24W200  
566 8 mils DFT @ 50-100 sf/gal.  
567  
568 (e) PVC:  
569 PrepRite ProBlock Latex Primer B51W620  
570 1.4 mils DFT @ 400 sf/gal.  
571  
572 (2) Exterior Finish  
573  
574 (a) Semi-Gloss Two Coats:  
575 Pro Industrial HP Acrylic Semi-Gloss, B66  
576 2.5-4.0 mil DFT @ 140-225 sf/gal.  
577  
578 (3) Interior Primer  
579  
580 (a) Gypsum Board:  
581 PrepRite ProBlock Latex Primer B51W620  
582 1.4 mils DFT @ 400 sf/gal.  
583  
584 (b) Concrete or Concrete Masonry:  
585 PrepRite ProBlock Latex Primer B51W620  
586 1.4 mils DFT @ 400 sf/gal.  
587  
588 (c) Wood:  
589 PrepRite ProBlock Latex Primer B51W620  
590 1.4 mils DFT @ 400 sf/gal.  
591  
592 (4) Interior Finish  
593  
594 (a) Semi-Gloss Two Coats:  
595 ProMar 200 Zero VOC Interior Latex Semi-Gloss, B31  
596 Series  
597 1.6 mils DFT @ 350-400 sf/gal.  
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- (b) Flat Two Coats (Ceiling):  
ProMar 200 Zero VOC Interior Latex Flat, B30 Series  
1.4 mils DFT @ 350-400 sf/gal.

**687.04 Measurement.** The Engineer will not measure painting for payment.

**687.05 Payment.** The Engineer will not pay for painting separately. The Engineer will consider the price for painting included in the contract price for Section 608 – Modular Storage Containers. Payment will be full compensation for work prescribed in this section and contract documents.

The price includes full compensation for providing all submittals, furnishing labor, materials, tools, and equipment for installing painting, and all incidentals necessary to complete the work.

**END OF SECTION 687**



1 Make the following section a part of the Standard Specifications:  
2

### 3 SECTION 688 – GLAZING 4

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6 **688.01 Description.** This section describes the materials and requirements for  
7 providing glazing for all aluminum windows.  
8

9 The term “Manufacturer” in this section is defined as a Firm that produces  
10 primary glass or fabricated glass as defined in applicable glazing publications.  
11

#### 12 **688.02 Materials** 13

14 **(A) Labeling.** Each piece of glass shall be of domestic manufacture and  
15 labeled showing the name of the manufacturer and the grade of quality  
16 thereof. The labels shall be intact before and after installations. When glass  
17 is not cut to size by the manufacturer and is furnished unlabeled from local  
18 stock, the Contractor shall submit an affidavit stating the quality, thickness,  
19 type, and manufacturer of the glass furnished.  
20

#### 21 **(B) Performance Requirements** 22

23 **(1) General.** Provide glazing systems capable of withstanding  
24 normal thermal movement and wind and impact loads (where  
25 applicable) without failure including loss or glass breakage  
26 attributable to the following: defective manufacturing, fabrication, and  
27 installation; failure of sealants or gaskets to remain watertight and  
28 airtight; deterioration of glazing materials or other defects in  
29 construction.  
30

31 **(2) Glass Design.** Glass thicknesses indicated or specified are  
32 minimums and are for detailing only. Confirm glass thicknesses by  
33 analyzing Project Loads and in-service conditions. Provide glass lites  
34 for various size openings in nominal thicknesses indicated but not  
35 less than thicknesses and in strengths required to meet or exceed all  
36 applicable codes including the International Building Code and the  
37 following criteria:  
38

39 **(a) Specified Design Wind Loads.** Specified design wind  
40 loads shall be as indicated in Section 681 – Aluminum  
41 Windows.  
42

43 **(3) Thermal Movements.** Provide glazing that allows for thermal  
44 movements resulting from the following maximum change (range) in  
45 ambient and surface temperatures acting on glass framing members  
46 and glazing components. Base engineering calculation on surface

47 temperatures of materials due to both solar heat gain and nighttime-  
48 sky heat loss.

49  
50 **(a) Temperature Change (Range).** Temperature change  
51 range shall be 120 degrees Fahrenheit, ambient 180-degrees  
52 Fahrenheit on material surfaces.

53  
54 **(C) Materials**

55  
56 **(1)** All glass products shall be of the quality as manufactured by  
57 Pittsburgh Plate Glass Company, Libbey Owens Ford Company,  
58 ASG Industries, CE Glass Company, Guardian Industries,  
59 Sierracin/Sylmar or accepted equivalent.

60  
61 **(a) Insulating-Glass Units**

62  
63 **(i)** ASTM C1048, type I, class 1 q3.

64  
65 **(ii)** Laminated Preassembled units consisting of  
66 sealed lites of glass separated by a dehydrated  
67 interspace and hermetically sealed.

68  
69 **(iii)** The inner lite shall be ASTM C1048, type I, class  
70 1 q3, laminated 2-layers of 3/16-inch Clear, HS-060  
71 SGP 3/16-inch thick heat strengthened.

72  
73 **(iv)** The outer lite shall be ASTM C 1048, Type 1,  
74 Class2, q3, 1/4-inch thick, Solar Ban 70 Tempered  
75 Glass.

76  
77 **(v)** Overall thickness shall be 1-1/16-inch thick Solar  
78 Heat Gain Coefficient (SHGC) of 27 and Visual Light  
79 Transmitted (VLT) of 64 percent.

80  
81 **(D) Glazing Tapes**

82  
83 **(1) Back-Bedding Mastic Glazing Tape.** Back-bedding mastic  
84 glazing tape shall be preformed, butyl-based 100 percent solids  
85 elastomeric tape; non-staining and non-migrating in contact with non-  
86 porous surfaces; with or without spacer rod as recommended in  
87 writing by tape and glass manufacturers for application required; and  
88 complying with ASTM C 1281 and AAMA 800 for products. Provide  
89 AAMA 804.3 tape, AAMA 806.3 tape or AAMA 807.3 tape as  
90 recommended by the glass and window manufacturers as required  
91 for each installation.  
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**(2) Expanded Cellular Glazing Tape.** Expanded cellular glazing tape shall be closed-cell, polyvinyl chloride (PVC) foam tape; factory coated with adhesive on both surfaces and complying with AAMA 800 for the types required.

**(E) Glazing Gaskets**

**(1) Dense Compression Gaskets.** Provide molded or extruded gaskets of profile and hardness required to maintain watertight seal made from ethylene propylene diene monomer (EPDM), ASTM C864, silicon, ASTM C 1115 or thermoplastic polyolefin rubber, ASTM C 1115 as per the manufacturer's recommendations.

**(2) Soft Compression Gaskets.** Provide extruded or molded, closed cell, integral-skinned gaskets complying with ASTM C 509, Type II, black; and of profile and hardness required to maintain watertight seal made from EPDM, silicone, or thermoplastic polyolefin rubber as per the manufacturer's recommendations.

**(F) Elastomeric Glazing Sealants**

**(1) Elastomeric Glazing Sealant Standard.** Comply with ASTM C 920 and other requirements for each liquid-applied, chemically curing sealant complying with the following requirements:

**(a) Compatibility.** Select glazing sealants that are compatible with one another and with other materials they will contact including glass products and glazing channel substrates, under conditions of service and application, as demonstrated by sealant manufacturer based on testing and field experience.

**(b) Suitability.** Comply with sealant and glass manufacturers' written instructions for selecting glazing sealants suitable for applications required and for conditions existing at the time of installation.

**(c) Colors of Exposed Glazing Sealants.** Colors shall be as selected from manufacturer's full range for this characteristic.

**(G) Miscellaneous Glazing Materials**

**(1) General.** Provide products of size material, size, and shape complying with applicable glazing standard requirements of manufacturers of glass and other glazing materials for application

139 required and with a proven record of compatibility with surfaces  
140 contacted in installation.

141  
142 **(2) Cleaners, Primers, and Sealers.** Provide types  
143 recommended by sealant or gasket manufacturer.

144  
145 **(3) Setting Blocks.** Setting blocks shall be elastomeric material  
146 with a Shore A durometer hardness of 85, plus or minus 5.

147  
148 **(4) Spacers.** Spacers shall be elastomeric material or  
149 continuous extrusions with a Shore A durometer hardness required  
150 by glass manufacturer to maintain glass lites in place for installation  
151 indicated.

152  
153 **(5) Edge Blocks.** Edge blocks shall be elastomeric material of  
154 hardness needed to limit glass lateral movement (side walking).

155  
156 **(6) Cylindrical Glazing Sealant Backing.** Cylindrical glazing  
157 sealant backing shall comply with ASTM C 1330, and shall be Type  
158 O (open-cell material), of size and density to control glazing sealant  
159 depth and otherwise produce optimum glazing sealant performance.

160  
161 **(H) Fabrication of Glass and Other Glazing Products.** Fabricate  
162 glass and other glazing products in sizes required to glaze openings  
163 indicated for the project, with edge and face clearances, edge and surface  
164 conditions and bite complying with written instructions of product  
165 manufacturer and applicable glazing sealant performance.

### 166 167 **688.03 Construction**

168  
169 **(A) Related Requirements.** Work shall conform to the specifications  
170 herein as well as to the following sections:

171  
172 **(1)** Section 681 "Aluminum Windows" for window glass.

#### 173 174 **(B) Submittals**

175  
176 **(1) Product Data.** Submit for information only, manufacturers  
177 product data, specifications, and instructions for handling, storing,  
178 installing, cleaning, and protecting each type of glass and glazing  
179 material.

180  
181 **(2) Shop Drawings.** Submit manufacturer's or fabricator's shop  
182 drawings, including plans, elevations, sections, and details indicating  
183 glass dimensions, tolerances, types, thicknesses, and coatings  
184 where applicable.

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**(3) Samples.** Submit 4-inch x 4-inch sample of each type and thickness of glass prior to ordering.

**(4) Product Certificates.** Submit certificate signed by manufacturers of glass and glazing products certifying that products furnished comply with requirements.

**(5) Warranty.** Submit written warranty by insulating glass manufacturer agreeing to provide material and labor to replace insulating-glass units that deteriorate at manufacturer's own expense.

**(a)** Deterioration of insulating glass includes the failure of the hermetic seal under normal use that is attributed to the manufacturing process and not to causes other than glass breakage and practices for maintaining and cleaning insulating glass contrary to manufacturer's written instructions. Evidence of failure is the obstruction of vision by dust, moisture, or film on interior surfaces of glass.

**(b) Warranty Period.** Warranty period shall be ten years from date of project acceptance. The Surety shall not be held liable beyond 2 years from the project acceptance date.

**(C) Quality Assurance**

**(1) Installer Qualifications.** The installer shall be experienced, who has completed glazing similar in material design and extent to that indicated for the Project, and whose work has resulted in construction with a record of successful in-service performance.

**(2) Source Limitations for Glass.** Obtain each type of glass/units from manufacturer using the same type of glass and other components for each type of unit indicated.

**(3) Source Limitations for Glazing Accessories.** Obtain glazing accessories from one source for each product and installation method required.

**(4) Glazing Publications.** Comply with published recommendations of glass product manufacturer and organization as applicable to glass types specified herein.

**(D) Product Handling.** Comply with manufacturer's instructions for shipping, handling, storing, and protecting glass and glazing

231 materials. Exercise exceptional care to prevent edge damage to  
232 glass.

233  
234 **(E) Examination.** Examine framing glazing with installer present for  
235 compliance with the following:

236  
237 **(1)** Manufacturing and installation tolerances, including those for  
238 size, squareness, and offset at corners.

239  
240 **(2)** Presence and functioning of weep system.

241  
242 **(3)** Minimum required face or edge clearances.

243  
244 **(4)** Effective sealing between joins of glass-framing members.

245  
246 **(F) Preparation.** Clean glazing channels and other framing members  
247 receiving glass immediately before glazing. Remove coatings not firmly  
248 bonded to substrates.

249  
250 **(G) Glazing, General**

251  
252 **(1)** Perform glazing in strict accordance with applicable provisions  
253 of the "Glazing Manual" published by the Glass Association of North  
254 America (GANA) and as per manufacturer's recommendations for  
255 the type of glazing required by the manufacturers of sections as  
256 noted in paragraph entitled "Related Work Specified Elsewhere"  
257 hereinabove.

258  
259 **(2)** Comply with combined written instructions of manufacturers of  
260 glass, sealants, tapes, gaskets and other glazing materials unless  
261 more stringent requirements are required.

262  
263 **(3)** Glazing channel of manufacturer shall provide necessary bite  
264 on glass, minimum edge and face clearances, and adequate sealant  
265 thicknesses with reasonable tolerances. Adjust as required by  
266 Project conditions during installation.

267  
268 **(4)** Protect glass edges from damage during handling and  
269 installation. Remove damaged glass from Project site and legally  
270 dispose of off Project site. Damaged glass is glass with edge  
271 damage or other imperfections that when installed, could weaken  
272 glass and impair performance and appearance.

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274 **(5)** Apply primers to joint surfaces where required for adhesion of  
275 sealants, determine by preconstruction sealant-substrate testing as  
276 per manufacturer's requirements.

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**(6)** Install setting blocks in sill rabbets sized and located to comply with applicable glazing publications unless otherwise required by glass manufacturer. Set blocks in thin course of compatible sealant suitable for heel bead.

**(7)** Do not exceed edge pressures stipulated by glass manufacturers for installing glass lites.

**(8)** Provide spacers for glass lites where the length plus the width is larger than 50-inches as follows:

**(a)** Locate spacers directly opposite each other on both inside and outside faces of glass. Install correct size and spacing to preserve required face clearances unless gaskets and glazing tapes are used that have demonstrated ability to maintain required face clearances and to comply with system performance requirements.

**(b)** Provide 1/8-inch minimum bite of spaces on glass and use thickness equal to sealant width. With glazing tape, use thickness slightly less than final compressed thickness of tape.

**(9)** Provide edge blocking where required to prevent glass lites from moving sideways in glazing channel as recommended in writing by glass manufacturer.

**(10)** Set glass lites in each series with uniform pattern, draw, bow and similar characteristics.

**(11)** Where wedge-shaped gaskets are driven into one side of channel to pressurize sealant or gasket on opposite side, provide adequate anchorage so gasket cannot walk out when installation is subjected to movement.

**(12)** Where applicable, square cut wedge-shaped gaskets at corners and install gaskets at corners and install gaskets in a manner recommended by gasket manufacturer to prevent corners from pulling away. Seal corner joints and butt joints with sealant recommended by gasket manufacturer.

**(H) Protection and Replacement.** All glass shall be protected against damage. At completion of work, all imperfect glass which cannot be properly cleaned shall be replaced in kind. All broken or cracked glass shall be replaced.

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**(I) Cleaning and Washing.** At the completion of construction, the Contractor shall clean and wash all of the glass provided by him, removing all dirt, putty stains, etc. and shall leave the glass perfectly cleaned and polished.

**688.04 Measurement.** The Engineer will not measure glazing for payment.

**688.05 Payment.** The Engineer will not pay for glazing separately. The Engineer will consider the price for glazing included in the contract price for Section 608 – Modular Storage Containers. Payment will be full compensation for work prescribed in this section and contract documents.

The price includes full compensation for providing all submittals, furnishing labor, materials, tools, and equipment for installing glazing, and all incidentals necessary to complete the work.

**END OF SECTION 688**



1 Make the following section a part of the Standard Specifications:  
2

### 3 **SECTION 689 – TERMITE CONTROL** 4 5

6 **689.01 Description.** This section describes the materials for and  
7 application/installation of termite control. This section includes the use of chemical  
8 soil treatment against subterranean termite infestation and a metal mesh barrier  
9 system at all slab joints and penetrations.  
10

#### 11 **689.02 Materials** 12

13 **(A) Chemicals.** An aqueous solution of Dursban TC, Dragnet, Demon  
14 TC, Prevail FT, or accepted equivalent shall be used.  
15

#### 16 **(B) Equipment** 17

18 **(1) Metering equipment.** A totalizing meter shall be used to  
19 determine application rates and to indicate the total volume of  
20 pesticide applied in U.S. gallons. Do not allow distance from meter  
21 from the applicator to exceed 5-feet.  
22

23 **(2) Pumping equipment.** Pumping equipment shall be type  
24 normally used, capable of pumping the working solution in a manner  
25 accepted and practiced by the pest control industry.  
26

27 **(C) Metal Mesh.** Metal mesh shall be compliant with ASTM A 478 and  
28 ASTM A 580; Type A1AA marine grade 316 stainless steel mesh of 0.007-  
29 inch diameter wire with mesh openings of 0.026 x 0.018-inches.  
30

31 **(D) Accessories.** Accessories include parging adhesives, bonding  
32 cement, high grade stainless steel clamps, ties and other accessories as  
33 recommended by system manufacturer.  
34

#### 35 **689.03 Construction** 36

37 **(A) Related Requirements.** Work shall conform to the specifications  
38 herein as well as to the following sections:  
39

40 **(1)** Section 657 "Cast-in-Place Concrete".  
41

#### 42 **(B) Submittals** 43

44 **(1) Product Data.** Submit data for each type of product  
45 specified.  
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(a) Include label for the proposed metal mesh system.

(b) Include the EPA-Registered Label for termiticide products.

(c) Include the manufacturer's application instructions and metal mesh installation manual.

**(2) Product Certificates.** Submit product certificates for termite control products, signed by product manufacturer.

**(3) Shop Drawings.** Submit shop drawings of the metal mesh barrier system installation at all joint and penetration conditions.

**(4) Samples.** Submit 4-inch square sample of stainless steel mesh.

**(5) Soil Treatment Application Report.** After application of termiticide is completed, submit report for State's record information, including the following:

(a) Date and time of Application.

(b) Moisture content of soil before application.

(c) Brand name and manufacturer of termiticide.

(d) Quality of undiluted termiticide used.

(e) Dilutions, methods, volumes, and rates of application used.

(f) Areas of application.

(g) Water source of application.

**(6) Warranty**

**(a) Chemical Treatment.** Furnish a written warranty stating the following:

(i) Application was made at the concentration, rates, methods, and locations specified.

(ii) Effectiveness of the treatment against subterranean termite infestation is warranted for a

93 period of not less than two years from the Project  
94 Acceptance date.

95  
96 (iii) If damage by subterranean termites occurs  
97 within a period of one year from the Project Acceptance  
98 date, necessary building repairs to termite-caused  
99 damage, up to a total of \$5,000, will be made at no  
100 additional expense.

101  
102 (iv) If subterranean termite infestation occurs  
103 through the treated area within the warranty period, the  
104 Contractor will re-treat the soil to exterminate all  
105 infestation, at no additional expense as follows:

106  
107 Remove floor covering as required.

108  
109 Drill 1/2 or 9/16-inch diameter holes through  
110 interior concrete ground floor slabs, not more than 18-  
111 inches apart, along both sides of partitions and walls, at  
112 each plumbing and utility penetration and at cracks and  
113 expansion joints.

114  
115 Drill one hole per block along one course above  
116 adjacent grade of concrete unit masonry walls which  
117 extend below grade.

118  
119 Treat at a rate consistent with pesticide label  
120 directions at working pressures applicable and safe  
121 under the conditions at the site.

122  
123 Perform corrective treatment to at least ten feet  
124 from each visible subterranean termite activity.

125  
126 Patch drill holes with cement/concrete to full  
127 depth of slab thickness. Refinish as necessary to  
128 prevent backflow and to restore original appearance.

129  
130 Re-install finishes as applicable. Use a  
131 competent commercial carpet installer to re-install  
132 carpets.

133  
134 Replace finishes and finish materials which are  
135 contaminated by spilled chemicals.

136  
137 Treat above-ground areas infested with  
138 subterranean termites as appropriate with a proven,

139 effective insecticide to eliminate those termites.

140  
141 **(b) Metal Mesh System.** Furnish a written warranty  
142 including the following:

143  
144 **(i)** Manufacturer's written warranty against  
145 infestation or re-infestation by subterranean termites of  
146 the building renovated under this contract. Perform  
147 annual inspections of the building. If live subterranean  
148 termite infestation or damage is discovered during the  
149 warranty period and building conditions have not been  
150 altered in the interim, Contractor shall:

151  
152 Correct defective stainless steel mesh  
153 installation and perform other treatment as may be  
154 necessary for the elimination of subterranean termite  
155 infestation.

156  
157 Repair damage caused by termite infestation.

158  
159 Re-inspect the building approximately 180  
160 calendar days after the repair.

161  
162 **(ii)** Warranty Period: Five years from the Project  
163 Acceptance date.

164  
165 **(iii)** The Surety shall not be held liable beyond 2  
166 years from the Project Acceptance date.

167  
168 **(C) Quality Assurance**

169  
170 **(1) Installer.** The installer shall be trained and accredited by the  
171 system supplier. Installer shall employ only workers trained and  
172 accredited at the appropriate level by the system supplier.

173  
174 **(2) Regulatory Requirements.** Formulate and apply termiticides  
175 according to the EPA-Registered Label.

176  
177 **(3)** Notify the Engineer at least one day before application of  
178 chemicals.

179  
180 **(4)** In addition to requirements of these specifications, comply  
181 with manufacturer's instructions and recommendations for work  
182 including preparation of substrate and application.

183  
184 **(5) Pre-installation Meeting.** No less than one week prior to

185 beginning installation, convene a pre-installation meeting at the  
186 construction site attended by Contractor, the installer including the  
187 crew leader, and representatives of the trades affected by this work.  
188 Review conditions of preparation and coordination with related work.  
189

190 **(D) Delivery, Storage, and Handling**

191  
192 **(1)** Deliver materials to the site in original unbroken packaging  
193 and containers, with original labels in place. Store materials in  
194 conformance with manufacturer's recommendations.  
195

196 **(E) Job Conditions**

197  
198 **(1)** Do not apply soil treatment solution until excavation, filling,  
199 and grading operations are completed, except as otherwise required  
200 in construction operations.  
201

202 **(2)** To ensure penetration, do not apply soil treatment to  
203 excessively wet soils or during inclement weather. Comply with  
204 handling and application instructions of the soil toxicant  
205 manufacturer.  
206

207 **(F) Coordination**

208  
209 **(1)** Coordinate soil treatment application with excavating, filling,  
210 grading, and concreting operations. Treat soil under footings, grade  
211 beams, and ground-supported slabs before construction.  
212

213 **(2)** Coordinate metal mesh system installation with concrete  
214 installation.  
215

216 **(G) Examination**

217  
218 **(1)** Examine the surfaces and conditions under which work of this  
219 section will be performed with Installer present. Do not proceed until  
220 unsatisfactory conditions detrimental to timely and proper completion  
221 of the work have been corrected.  
222

223 **(2)** Verify, in writing, that the site conditions under the proposed  
224 slabs and at penetrations are proper for the installation of the termite  
225 barrier system and that the following are complete:  
226

227 **(a)** The ground has been cleared of wood scraps such as  
228 ground stakes, forms, and other termite food sources.  
229

230 **(b)** The work area has been filled with finely grades soil

231 consisting of particle sizes no larger than one-inch and  
232 compacted to eliminate soil movement.

233  
234 (c) Footings and foundations and outer forms are in place.

235  
236 (d) Communications, electrical, and plumbing penetrating  
237 pipes are in place.

238  
239 **(H) Preparation**

240  
241 **(1) General.** Comply with the most stringent requirements of  
242 authorities having jurisdiction and with manufacturer's written  
243 instruction for preparation before beginning application of termite  
244 control treatment. Remove all extraneous sources of wood cellulose  
245 and other edible materials such as wood debris, tree stumps and  
246 roots, stakes, formwork, and construction waste wood from soil  
247 within and around foundations.

248  
249 **(2)** Remove foreign matter which could decrease effectiveness of  
250 treatment on areas to be treated.

251  
252 **(3)** Loosen, rake, and level soil to be treated, except previously  
253 compacted areas under slabs and foundations.

254  
255 **(4)** Toxicants may be applied before placement of compacted fill  
256 under slab, if recommended by manufacturer.

257  
258 **(I) Application**

259  
260 **(1) Chemical Treatment**

261  
262 **(a)** Use chemicals in accordance with the product labels  
263 and provisions related to the use of those pesticides as  
264 adopted by the Hawaii Pesticide Law, Chapter 149A, HRS,  
265 and the Federal Insecticide, Fungicide and Rodenticide Act.

266  
267 **(b)** Apply the soil treatment solution as follows:

268  
269 **(i)** Apply not more than 24 hours before placing  
270 concrete over the affected area, whenever possible.

271  
272 **(ii)** Apply under slabs after backfill has been  
273 completed and rough plumbing and other utility lines  
274 have been installed and just prior to the placement of  
275 the moisture barrier.

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(iii) Apply to dry material whenever possible. Do not apply chemicals under conditions during which the soil does not readily absorb the solution.

(iv) Apply uniformly and at the rates indicated on the label for the chemical being used for both horizontal application and vertical barriers indicated on product label.

(c) Reapply soil treatment solution to areas disturbed by subsequent excavation and other construction following application.

**(2) Metal Mesh Systems**

(a) Strictly follow the manufacturer's installation instructions published in Manufacturer's Installation Instruction Manual.

(i) Fit mesh tightly around all pipe or other penetrations and terminate at perimeters as described in the installation instructions.

(ii) Install mesh under the perimeter of concrete slab edges, block-outs, and all joints after vapor barrier and reinforcing steel are in place, and comply with manufacturer's written installation methods.

(iii) Where required, integrate mesh into subsequent construction as instructed by manufacturer's written installation methods.

**(J) Protection**

(1) The installed metal mesh system, attachments, and accessories shall be protected before, during, and after the work of all trades as required by the system supplier or directed by the Engineer.

(2) In the event following trades on the site move, or damage the mesh, clamps or parging mix, immediately contact the mesh installer, for recommendation of necessary repairs.

**689.04 Measurement.** The Engineer will not measure termite control for payment.

323 **689.05 Payment.** The Engineer will not pay for termite control separately. The  
324 Engineer will consider the price for termite control included in the contract price for  
325 Section 608 – Modular Storage Containers. Payment will be full compensation for  
326 work prescribed in this section and contract documents.

327

328 The price includes full compensation for providing all submittals, furnishing  
329 labor, materials, tools, and equipment for installing termite control, and all  
330 incidentals necessary to complete the work.

331

332

333

334

**END OF SECTION 689**



1 Make the following section a part of the Standard Specifications:  
2

### 3 SECTION 690 – BATT INSULATION 4 5

6 **690.01 Description.** This section describes the furnishing and installation of  
7 batt insulation. This section includes batt insulation at roof.  
8

#### 9 **690.02 Materials**

##### 10 **(A) Batt Insulation Materials**

11  
12  
13 **(1) Fiberglass Batt Insulation Bonded with a Thermosetting**  
14 **Resin.** Batts shall be laminated with a Foil or FSK (foil-scrim-kraft)  
15 facing. Pre-cut batts shall fit within standard framing cavities. Comply  
16 with ASTM C665, Type III Class A, Category 1.  
17

18 **(a) Flame Spread Index.** 25 or less, when tested in  
19 accordance with ASTM E84.  
20

21 **(b) Smoke Developed Index.** 50 or less when tested in  
22 accordance with ASTM E84.  
23

##### 24 **(c) Manufacturers**

25  
26 **(i)** Johns Manville; R30 Foil Faced Fiberglass  
27 Insulation Batt: [www.jm.com](http://www.jm.com)  
28

29 **(ii)** Owens Corning, R-30 Foil Faced Fiberglass  
30 Insulation Batts; [www.owenscorning.com](http://www.owenscorning.com)  
31

32 **(iii)** Knauf Ecobatt R-30 Foil Faced Insulation  
33 Batt; [www.knaufinsulation.com](http://www.knaufinsulation.com)  
34

35 **(iv)** Or approved substitute.  
36

##### 37 **(B) Accessories**

38  
39 **(1) Insulation Fasteners.** Provide fasteners appropriate for  
40 purpose intended and approved as recommended by insulation  
41 manufacturer.  
42

43 **(2) Adhesive.** Provide single-component, polyurethane  
44 adhesives tested to UL 1987.  
45

46 **(3) Sealant.** Provide one-part, flexible polyurethane-based  
47 elastomeric sealant; moisture curing and non-sagging; to ASTM

C920, Type S, Grade NS, Class 25.

**690.03 Construction**

**(A) Related Requirements.** Work shall conform to the specifications herein as well as to the following sections:

**(1)** Section 684 “Preformed Metal Roofing”

**(B) Reference Standards.** In addition to referenced codes and standards within this specification, the work shall comply with the latest edition of the following standards. When conflicts arise between standards, the more stringent shall apply:

**(1) American Society for Testing Materials (ASTM) Publications**

**(a)** ASTM C665 – Standard Specification for Mineral-Fiber Blanket Thermal Insulation for Light Frame Construction and Manufacturing Housing; 2012.

**(b)** ASTM E84 – Standard Test Method for Surface Burning Characteristics of Building Materials; 2015a.

**(C) Submittals**

**(1) Product Data.** Provide data on product characteristics, performance criteria, and product limitations.

**(2) Manufacturer’s Certificate.** Provide a certificate from the manufacturer stating that products meet or exceed specified requirements.

**(3) Manufacturer’s Installation Instructions.** Provide manufacturer’s installation instructions and include information on installation techniques.

**(D) Examination**

**(1)** Verify that the substrate, adjacent materials, and insulation materials are dry and that substrates are ready to receive insulation and adhesive.

**(2)** Verify substrate surfaces are flat, free of honeycomb, fins, irregularities, or materials or substances that may impede adhesive bond.

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**(E) Installation**

**(1)** Install in accordance with manufacturer's installation instructions.

**(F) Batt Installation**

**(1)** Install insulation and vapor retarder in accordance with manufacturer's instructions.

**(2)** Install in exterior roof spaces without gaps or voids. Do not compress insulation.

**(3)** Trim insulation neatly to fit spaces. Insulate miscellaneous gaps and voids.

**(4)** Fit insulation tightly in cavities.

**(G) Protection**

**(1)** Do not permit installed insulation to be damaged prior to its concealment.

**690.04 Measurement.** The Engineer will not measure batt insulation for payment.

**690.05 Payment.** The Engineer will not pay for batt insulation separately. The Engineer will consider the price for batt insulation included in the contract price for Section 608 – Modular Storage Containers. Payment will be full compensation for work prescribed in this section and contract documents.

The price includes full compensation for providing all submittals, furnishing labor, materials, tools, and equipment for installing batt insulation, and all incidentals necessary to complete the work.

**END OF SECTION 690**

1 **SECTION 699 – MOBILIZATION**

2  
3 Make the following amendments to said Section:

4  
5 **(I) Amend 699.03 Applicability** by revising from lines 21 to 24 to read as  
6 follows:

7  
8 **“699.03 Applicability.** Maximum bid allowed for this item is an amount not to  
9 exceed 6 percent of the sum of all items excluding the bid price of this item.”

10  
11 **(II) Amend 699.05 Payment** by revising from lines 44 to 47 to read as follows:

12  
13 “Mobilization (Not to exceed 6 percent of the sum of all items  
14 excluding the bid price of this item) Lump Sum”

15  
16  
17  
18  
19  
20 **END OF SECTION 699**

1 Amend **Section 701 - HYDRAULIC CEMENT** to read as follows:

2  
3 **SECTION 701 - HYDRAULIC CEMENT**  
4

5  
6 **701.01 Portland Cement.** Portland cement shall consist of Type I or Type II  
7 portland cement, Type IL portland-limestone cement, or Type IP portland-pozzolan  
8 cement.  
9

10 Type I and Type II portland cement shall conform to AASHTO M 85 and the  
11 28-day compressive strength requirement cited in AASHTO M 85, Table 4.  
12

13 Type IL portland-limestone cement and Type IP portland-pozzolan cement  
14 shall conform to AASHTO M 240.  
15

16 Mineral admixtures may be used to replace a portion of the required portland  
17 cement in accordance with Subsection 711.03 - Admixtures.  
18

19 Safe and suitable facilities for sampling cement shall be provided at the weigh  
20 hopper or in the feedline immediately in advance of the hopper. Cement shall be  
21 stored in a weathertight building that will protect cement from dampness and  
22 minimize warehouse set, and stored in such a manner to permit easy access for  
23 proper inspection and identification of each shipment.  
24

25 Cement which for any reason has become partially set or which contains  
26 caked lumps shall not be used.  
27

28 Different types of cement shall not be mixed or used in the same unit of  
29 construction. Cement used in the manufacture of cast-in-place concrete for  
30 exposed surfaces of like elements of a structure shall be from the same mill.  
31

32 Certificate of compliance that complies with Subsection 106.07 – Certificate  
33 of Compliance shall be submitted to the Engineer before using any cement.  
34 Certificate of compliance shall include pertinent information as to the type of cement;  
35 and applicable chemical and physical test results from samples taken at local  
36 distribution sites or concrete batch plants.  
37

38 Once certificate of compliance has been accepted, the Engineer may permit  
39 use of cement before release by the laboratory. Cement furnished without an  
40 accepted certificate of compliance shall not be used until the Engineer has had  
41 sufficient time to make appropriate tests and has accepted cement for use.  
42

43 If cement does not conform to requirements of the contract documents, as  
44 determined by laboratory test samples, use of cement from the same source shall  
45 be delayed until the Engineer can make tests on each cement lot delivered.  
46

47  
48

**END OF SECTION 701**

1                                   **SECTION 702 – BITUMINOUS MATERIALS**  
2

3    Make the following amendments to said Section:  
4

5    **(I)**    Amend **Subsection 702.06 (Unassigned)** by replacing line 23 to read:  
6

7    **“702.06 Warm Mix Asphalt (WMA) Additive.**    Additives for WMA shall be  
8    approved by the Engineer.”  
9

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14                                   **END OF SECTION 702**  
15  
16

1 Amend **Section 711 – CONCRETE CURING MATERIALS AND ADMIXTURES** to  
2 read as follows:

3  
4 **SECTION 711 - CONCRETE CURING MATERIALS AND ADMIXTURES**

5  
6  
7 **711.01 Curing Materials.** Curing materials must conform to requirements of  
8 Table 711.01-1 - Curing Material Requirements.  
9

<b>TABLE 711.01-1 - CURING MATERIAL REQUIREMENTS</b>	
<b>MATERIAL</b>	<b>SPECIFICATION</b>
Liquid Membrane-Forming Compounds for Curing Concrete (Excluding Bridge Decks)	ASTM C309
Liquid Membrane-Forming Compounds for Curing Concrete Bridge (Bridge Decks Only)	ASTM C309, Type 2
Waterproof Paper for Curing Concrete	ASTM C171
White Polyethylene Sheeting (Film) for Curing Concrete	ASTM C171
Burlap Cloth Made from Jute or Kenaf	AASHTO M 182

10  
11 **711.02 (Unassigned).**

12  
13 **711.03 Admixtures.** Admixtures in portland cement concrete must be used  
14 when indicated in the contract documents or authorized in writing by the Engineer.  
15 ASTM C494 (or AASHTO M194) Type S admixtures may also be used when  
16 accepted by the Engineer.

17  
18 Chemical and air-entraining admixtures must not be used in prestressed or  
19 reinforced concrete if chloride content is more than 1 percent by weight of  
20 admixture, as determined by California Test 415.

21  
22 Admixture containing calcium chloride must not be used in concrete with steel  
23 reinforcement or other embedded metal.

24  
25 Admixture that is non-uniform during application must not be used.

26  
27 If two or more admixtures are used, all must be compatible.

28  
29 In determining the total quantity of free water per cubic yard of concrete, a



30 liquid admixture that requires a batched dosage greater than 1/2 gallon or 64 fluid  
31 ounces per cubic yard must be considered to be free water and counted in the  
32 water-cement ratio in concrete designs.

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36

**(A) Admixture Material.** The listed admixtures must conform to the requirements of Table 711.03-1 - Admixture Requirements.

TABLE 711.03-1 - ADMIXTURE REQUIREMENTS	
TYPE	SPECIFICATION
Chemical Admixtures for Concrete	AASHTO M 194
Air-Entraining Admixtures for Concrete	AASHTO M 154
Calcium Chloride	AASHTO M 144
Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use as a Mineral Admixture in Concrete	AASHTO M 295, except that loss on ignition, must not exceed 3 percent

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**(B) Admixture Acceptance.** The Engineer's written acceptance is required before the use of admixture in concrete, including ASTM C494 (or AASHTO M194) Type S admixtures. Acceptance is contingent upon the furnishing of certified test results by the Contractor and additional tests the Engineer may choose to perform. For ASTM C494 (or AASHTO M194) Type S admixtures provide a list of additional effects for Engineer's review. If the Engineer requests samples of admixture or samples of the concrete with the admixtures for testing, samples must be submitted at least 30 days before the intended use.

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If a previously accepted admixture is proposed for use, the Contractor must provide a certificate of compliance from the manufacturer affirming that both admixtures and mix design are identical. The Engineer reserves the right to sample admixture even with the certification.

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If mineral admixture is delivered directly to the worksite or is to be used in ready-mix concrete or precast concrete product, the Contractor must submit a certificate of compliance signed by the manufacturer or concrete supplier.

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**(C) Admixture Usage.** If chemical admixture or calcium chloride is indicated for use in the contract documents or ordered in writing by the Engineer, quantity must be as indicated or ordered. If the quantity is not

61 indicated or ordered, the manufacturer's recommendation must be followed  
62 when accepted by the Engineer.

63  
64 Admixtures allowed are Type A or Type F water-reducing, Type B  
65 retarding, and Type D or Type G water-reducing and retarding, in accordance  
66 with AASHTO M 194, to economize on cement or facilitate construction.  
67 ASTM C494 (or AASHTO M194) Type S admixtures may also be used when  
68 specified in the contract documents or when accepted by the Engineer.

69  
70 If the air-entraining admixture is specified in the contract documents or  
71 ordered in writing by the Engineer, the quantity of admixture must be as  
72 required to produce concrete with specified air content, when tested in  
73 accordance with AASHTO T 152.

74  
75 Air-entraining admixture will be allowed even when not specified or  
76 ordered. In such an event, the air content of concrete shall be 4 percent plus  
77 or minus 1 percent.

78  
79 Replacement of up to 15 percent by weight of portland cement, other  
80 than Type IP, with mineral admixture, will be allowed, except when high early  
81 strength concrete is specified or mineral admixture is prohibited. Weight of  
82 mineral admixture must be equal to or greater than the weight of portland  
83 cement replaced. In determining free water for concrete, mineral admixture  
84 must be considered to be cement. Replacement of more than 15 percent by  
85 weight with mineral admixture is allowed if specified in contract documents or  
86 in an approved concrete design.

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89

**END OF SECTION 711**

1 Make the following Section a part of the Standard Specifications:  
2

3 **"SECTION 719 – MACRO-SYNTHETIC FIBERS FOR CONCRETE**  
4 **REINFORCEMENT**  
5

6 **719.01 Macro-Synthetic Fibers for Concrete Reinforcement.** Macro-Synthetic  
7 Fibers for Concrete Reinforcement shall conform to the following requirements:  
8

9 **(A)** Macro-synthetic fibers shall be manufactured from virgin polyolefins  
10 (polypropylene and polyethylene) and comply with ASTM C 1116.4.1.3.  
11 Fibers manufactured from materials other than polyolefins must show  
12 documentary evidence confirming their long term resistance to deterioration  
13 when in contact with moisture and alkalies present in cement paste and/or  
14 the substances present in air-entraining and chemical admixtures.  
15

16 **(B)** The minimum fiber length shall be 1.50 inches.  
17

18 **(C)** Macro-synthetic fibers shall have an aspect ratio (length divided by the  
19 equivalent diameter of the fiber) between 45 and 150.  
20

21 **(D)** Macro-synthetic fibers shall have a minimum tensile strength of 40 ksi  
22 when tested in accordance with ASTM D 3822.  
23

24 **(E)** Minimum dosage rate in pounds of fibers per cubic yard of concrete  
25 shall be established by determining a minimum average residual strength of  
26 no less than 150 psi when tested in accordance with ASTM C 1399. The  
27 minimum fiber dosage rate shall be 3 lbs/cubic yard.  
28

29 **(F)** Macro-synthetic fibers shall have a minimum modulus of elasticity of 400  
30 ksi when tested in accordance with ASTM D 3822.”  
31  
32

33 END OF SECTION 719

## Requirements of Chapter 104, HRS Wages and Hours of Employees on Public Works Law

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Chapter 104, HRS, applies to every public works construction project over \$2,000, regardless of the method of procurement or financing (purchase order, voucher, bid, contract, lease arrangement, warranty, SPRB).

### Rate of Wages for Laborers and Mechanics

- Minimum prevailing wages (basic hourly rate plus fringe benefits), as determined by the Director of Labor and Industrial Relations and published in wage rate schedules, shall be paid to the various classes of laborers and mechanics working on the job site. [§104-2(a), (b), Hawaii Revised Statutes (HRS)]
- If the Director of Labor determines that prevailing wages have increased during the performance of a public works contract, the rate of pay of laborers and mechanics shall be raised accordingly. [§104-2(a) and (b), HRS; §12-22-3(d) Hawaii Administrative Rules (HAR)]

### Overtime

- Laborers and mechanics working on a Saturday, Sunday, or a legal holiday of the State or more than eight hours a day on any other day shall be paid overtime compensation at not less than one and one-half times the basic hourly rate plus the cost of fringe benefits for all hours worked. If the Director of Labor determines that a prevailing wage is defined by a collective bargaining agreement, the overtime compensation shall be at the rates set by the applicable collective bargaining agreement [§§104-1, 104-2(c), HRS; §12-22-4.1, HAR]

### Weekly Pay

- Laborers and mechanics employed on the job site shall be paid their full wages at least once a week, without deduction or rebate, except for legal deductions, within five working days after the cutoff date. [§104-2(d), HRS]

### Posting of Wage Rate Schedules

- Wage rate schedules with the notes for prevailing wages and special overtime rates, shall be posted by the contractor in a prominent and easily accessible place at the job site. A copy of the entire wage rate schedule shall be given to each laborer and mechanic employed under the contract, except when the employee is covered by a collective bargaining agreement. [§104-2(d), HRS]

### Withholding of Accrued Payments

- If necessary, the contracting agency may withhold accrued payments to the contractor to pay to laborers and mechanics employed by the contractor or subcontractor on the job site any difference between the wages required by the public works contract or specifications and the wages received. [§104-2(e), HRS]

### Certified Weekly Payrolls and Payroll Records

- A certified copy of all payrolls shall be submitted weekly to the contracting agency. [§104-3(a), HRS; §12-22-10, HAR]
- The contractor is responsible for the submission of certified copies of the payrolls of all subcontractors. The certification shall affirm that the payrolls are correct and complete, that the wage rates listed are not less than the applicable rates contained in the applicable wage rate schedule, and that the classifications for each laborer or mechanic conform with the work the laborer or mechanic performed. [§104-3(a), HRS; §12-22-10, HAR]
- Payroll records shall be maintained by the contractor and subcontractors for three years after completion of construction. The records shall contain: [§104-3(b), HRS; §12-22-10, HAR]
  - the name and home address of each employee
  - the last four digits of social security number
  - a copy of the apprentice's registration with DLIR
  - the employee's correct classification
  - rate of pay (basic hourly rate + fringe benefits)
  - itemized list of fringe benefits paid
  - daily and weekly hours worked
  - weekly straight time and overtime earnings
  - amount and type of deductions
  - total net wages paid
  - date of payment
- Records shall be made available for examination by the contracting agency, the Department of Labor and Industrial Relations (DLIR), or any of its authorized representatives, who may also interview employees during working hours on the job. [§§104-3(c), 104-22(a), HRS; §12-22-10, HAR]

## Termination of Work on Failure to Pay Wages

- If the contracting agency finds that any laborer or mechanic employed on the job site by the contractor or any subcontractor has not been paid prevailing wages or overtime, the contracting agency may, by written notice to the contractor, terminate the contractor's or subcontractor's right to proceed with the work or with the part of the work in which the required wages or overtime compensation have not been paid. The contracting agency may complete this work by contract or otherwise, and the contractor or contractor's sureties shall be liable to the contracting agency for any excess costs incurred. [§104-4, HRS]

## Apprentices

- Apprentice wage rates apply to contractors who are a party to a bona fide apprenticeship program which has been registered with the DLIR. In order to be paid apprentice rates, apprentices must be parties to an agreement either registered with or recognized as a USDOL nationally approved apprenticeship program by the DLIR, Workforce Development Division, (808) 586-8877, and the apprentice must be individually registered by name with the DLIR. [§12-22-6(1) and (2), HAR]
- The number of apprentices on any public work in relation to the number of journeyworkers in the same craft classification as the apprentices employed by the same employer on the same public work may not exceed the ratio allowed under the apprenticeship standards registered with or recognized by the DLIR. A registered or recognized apprentice receiving the journeyworker rate will not be considered a journeyworker for the purpose of meeting the ratio requirement. [§12-22-6(3), HAR]

## Enforcement

- To ensure compliance with the law, DLIR and the contracting agency will conduct investigations of contractors and subcontractors. If a contractor or subcontractor violates the law, the penalties are: [§104-24, HRS]
  - First Violation Equal to 25% of back wages found due or \$250 per offense up to \$2,500, whichever is greater.
  - Second Violation Equal to amount of back wages found due or \$500 for each offense up to \$5,000, whichever is greater.
  - Third Violation Equal to two times the amount of back wages found due or \$1,000 for each offense up to \$10,000, whichever is greater; and  
**Suspension** from doing any new work on any public work of a governmental contracting agency for three years.
- A violation would be deemed a second violation if it occurs within two years of the **first notification of violation**, and a third violation if it occurs within three years of **the second notification of violation**. [§104-24, HRS; §12-22-25(b), HAR]
- **Suspension:** For a first or second violation, the department shall immediately suspend a contractor who fails to pay wages or penalties until all wages and penalties are paid in full. For a third violation, the department shall penalize and suspend the contractor as described above, **except that if the contractor continues to violate the law, then the department shall immediately suspend the contractor for a mandatory three years. The contractor shall remain suspended until all wages and penalties are paid in full.** [§§104-24, 104-25, HRS]
- **Suspension:** Any contractor who fails to make payroll records accessible or provide requested information within 10 days, or fails to keep or falsifies any required record, shall be assessed a penalty including suspension as provided in Section 104-22(b) and 104-25(a)(3), HRS. [§104-3(c), HRS; §12-22-26, HAR]
- If any contractor interferes with or delays any investigation, the contracting agency shall withhold further payments until the delay has ceased. Interference or delay includes failure to provide requested records or information within ten days, failure to allow employees to be interviewed during working hours on the job, and falsification of payroll records. The department shall assess a penalty of \$10,000 per project, and \$1,000 per day thereafter, for interference or delay. [§104-22(b), HRS; §12-22-26, HAR]
- Failure by the contracting agency to include in the provisions of the contract or specifications the requirements of Chapter 104, HRS, relating to coverage and the payment of prevailing wages and overtime, is not a defense of the contractor or subcontractor for noncompliance with the requirements of this chapter. [§104-2(f), HRS]



For additional information, visit the department's website at <http://labor.hawaii.gov/vsd> or contact any of the following DLIR offices:

Oahu (Wage Standards Division).....(808) 586-8777  
Hawaii Island .....(808) 974-6464  
Maui and Kauai .....(808) 243-5322

"General Decision Number: HI20240001 06/07/2024

Superseded General Decision Number: HI20230001

State: Hawaii

Construction Types: Building, Heavy (Heavy and Dredging), Highway and Residential

Counties: Hawaii Statewide.

BUILDING CONSTRUCTION PROJECTS; RESIDENTIAL CONSTRUCTION PROJECTS (consisting of single family homes and apartments up to and including 4 stories); HEAVY AND HIGHWAY CONSTRUCTION PROJECTS AND DREDGING

Note: Contracts subject to the Davis-Bacon Act are generally required to pay at least the applicable minimum wage rate required under Executive Order 14026 or Executive Order 13658. Please note that these Executive Orders apply to covered contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but do not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(1).

<p>If the contract is entered into on or after January 30, 2022, or the contract is renewed or extended (e.g., an option is exercised) on or after January 30, 2022:</p>	<ul style="list-style-type: none"> <li>. Executive Order 14026 generally applies to the contract.</li> <li>. The contractor must pay all covered workers at least \$17.20 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in 2024.</li> </ul>
<p>If the contract was awarded on or between January 1, 2015 and January 29, 2022, and the contract is not renewed or extended on or after January 30, 2022:</p>	<ul style="list-style-type: none"> <li>. Executive Order 13658 generally applies to the contract.</li> <li>. The contractor must pay all covered workers at least \$12.90 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on that contract in 2024.</li> </ul>

The applicable Executive Order minimum wage rate will be adjusted annually. If this contract is covered by one of the Executive Orders and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must still submit a conformance request.

Additional information on contractor requirements and worker protections under the Executive Orders is available at <http://www.dol.gov/whd/govcontracts>.

Modification Number	Publication Date
0	01/05/2024
1	01/12/2024
2	01/19/2024
3	04/19/2024
4	05/17/2024
5	06/07/2024

ASBE0132-001 09/03/2023

	Rates	Fringes
Asbestos Workers/Insulator Includes application of all insulating materials, protective coverings, coatings and finishes to all types of mechanical systems. Also the application of firestopping material for wall openings and penetrations in walls, floors, ceilings and curtain walls.....	\$ 44.80	27.50

BOIL0627-005 01/01/2021

	Rates	Fringes
BOILERMAKER.....	\$ 37.25	31.25

\* BRHI0001-001 09/05/2023

	Rates	Fringes
BRICKLAYER Bricklayers and Stonemasons.	\$ 48.03	32.23
Pointers, Caulkers and Weatherproofers.....	\$ 48.28	32.23

\* BRHI0001-002 09/05/2023

	Rates	Fringes
Tile, Marble & Terrazzo Worker Terrazzo Base Grinders.....	\$ 44.69	33.00
Terrazzo Floor Grinders and Tenders.....	\$ 43.14	33.00
Tile, Marble and Terrazzo Workers.....	\$ 46.50	33.00

CARP0745-001 10/01/2021

	Rates	Fringes
Carpenters: Carpenters; Hardwood Floor Layers; Patent Scaffold Erectors (14 ft. and over); Piledrivers; Pneumatic Nailers; Wood Shinglers and Transit and/or Layout Man.....	\$ 51.25	24.84

Millwrights and Machine Erectors.....	\$ 51.50	24.84
Power Saw Operators (2 h.p. and over).....	\$ 51.40	24.84

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 CARP0745-002 09/04/2023

	Rates	Fringes
Drywall and Acoustical Workers and Lathers.....	\$ 53.00	27.74

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 ELEC1186-001 08/22/2023

	Rates	Fringes
Electricians:		
Cable Splicers.....	\$ 61.64	31.91
Electricians.....	\$ 54.55	31.70
Telecommunication worker....	\$ 38.00	14.84

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 ELEC1186-002 08/22/2023

	Rates	Fringes
Line Construction:		
Cable Splicers.....	\$ 61.64	31.91
Groundmen/Truck Drivers.....	\$ 40.91	26.03
Heavy Equipment Operators...	\$ 49.10	29.37
Linemen.....	\$ 54.55	31.70
Telecommunication worker....	\$ 38.00	14.84

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 \* ELEV0126-001 01/01/2024

	Rates	Fringes
ELEVATOR MECHANIC.....	\$ 70.90	37.885+a+b

a. VACATION: Employer contributes 8% of basic hourly rate for 5 years service and 6% of basic hourly rate for 6 months to 5 years service as vacation pay credit.

b. PAID HOLIDAYS: New Year's Day, Memorial Day, Independence Day, Labor Day, Veterans' Day, Thanksgiving Day, the Friday after Thanksgiving Day and Christmas Day.

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 ENGI0003-002 09/03/2018

	Rates	Fringes
Diver (Aqua Lung) (Scuba))		
Diver (Aqua Lung) (Scuba) (over a depth of 30 feet)...	\$ 66.00	31.26
Diver (Aqua Lung) (Scuba) (up to a depth of 30 feet)..	\$ 56.63	31.26
Stand-by Diver (Aqua Lung) (Scuba).....	\$ 47.25	31.26
Diver (Other than Aqua Lung)		
Diver (Other than Aqua Lung).....	\$ 66.00	31.26
Diver Tender (Other than Aqua Lung).....	\$ 44.22	31.26
Stand-by Diver (Other than Aqua Lung).....	\$ 47.25	31.26



## Helicopter Work

Airborne Hoist Operator for Helicopter.....	\$ 45.80	31.26
Co-Pilot of Helicopter.....	\$ 45.98	31.26
Pilot of Helicopter.....	\$ 46.11	31.26

Power equipment operator -  
tunnel work

GROUP 1.....	\$ 42.24	31.26
GROUP 2.....	\$ 42.35	31.26
GROUP 3.....	\$ 42.52	31.26
GROUP 4.....	\$ 42.79	31.26
GROUP 5.....	\$ 43.10	31.26
GROUP 6.....	\$ 43.75	31.26
GROUP 7.....	\$ 44.07	31.26
GROUP 8.....	\$ 44.18	31.26
GROUP 9.....	\$ 44.29	31.26
GROUP 9A.....	\$ 44.52	31.26
GROUP 10.....	\$ 44.58	31.26
GROUP 10A.....	\$ 44.73	31.26
GROUP 11.....	\$ 44.88	31.26
GROUP 12.....	\$ 45.24	31.26
GROUP 12A.....	\$ 45.60	31.26

## Power equipment operators:

GROUP 1.....	\$ 41.94	31.26
GROUP 2.....	\$ 42.05	31.26
GROUP 3.....	\$ 42.22	31.26
GROUP 4.....	\$ 42.49	31.26
GROUP 5.....	\$ 42.80	31.26
GROUP 6.....	\$ 43.45	31.26
GROUP 7.....	\$ 43.77	31.26
GROUP 8.....	\$ 43.88	31.26
GROUP 9.....	\$ 43.99	31.26
GROUP 9A.....	\$ 44.22	31.26
GROUP 10.....	\$ 44.28	31.26
GROUP 10A.....	\$ 44.43	31.26
GROUP 11.....	\$ 44.58	31.26
GROUP 12.....	\$ 44.94	31.26
GROUP 12A.....	\$ 45.30	31.26
GROUP 13.....	\$ 42.22	31.26
GROUP 13A.....	\$ 42.49	31.26
GROUP 13B.....	\$ 42.80	31.26
GROUP 13C.....	\$ 43.45	31.26
GROUP 13D.....	\$ 43.77	31.26
GROUP 13E.....	\$ 43.88	31.26

## POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1: Fork Lift (up to and including 10 tons); Partsman (heavy duty repair shop parts room when needed).

GROUP 2: Conveyor Operator (Handling building material); Hydraulic Monitor; Mixer Box Operator (Concrete Plant).

GROUP 3: Brakeman; Deckhand; Fireman; Oiler; Oiler/Gradechecker; Signalman; Switchman; Highline Cableway Signalman; Bargeman; Bunkerman; Concrete Curing Machine (self-propelled, automatically applied unit on streets, highways, airports and canals); Leveeman; Roller (5 tons and under); Tugger Hoist.

GROUP 4: Boom Truck or dual purpose "A" Frame Truck (5 tons or less); Concrete Placing Boom (Building Construction); Dinky Operator; Elevator Operator; Hoist and/or Winch (one drum); Straddle Truck (Ross Carrier, Hyster and similar).

GROUP 5: Asphalt Plant Fireman; Compressors, Pumps, Generators and Welding Machines ("Bank" of 9 or more, individually or collectively); Concrete Pumps or Pumpcrete Guns; Lubrication and Service Engineer (Grease Rack); Screedman.

GROUP 6: Boom Truck or Dual Purpose "A" Frame Truck (over 5 tons); Combination Loader/Backhoe (up to and including 3/4 cu. yd.); Concrete Batch Plants (wet or dry); Concrete Cutter, Groover and/or Grinder (self-propelled unit on streets, highways, airports, and canals); Conveyor or Concrete Pump (Truck or Equipment Mounted); Drilling Machinery (not to apply to waterliners, wagon drills or jack hammers); Fork Lift (over 10 tons); Loader (up to and including 3 and 1/2 cu. yds); Lull High Lift (under 40 feet); Lubrication and Service Engineer (Mobile); Maginnis Internal Full Slab Vibrator (on airports, highways, canals and warehouses); Man or Material Hoist; Mechanical Concrete Finisher (Large Clary, Johnson Bidwell, Bridge Deck and similar); Mobile Truck Crane Driver; Portable Shotblast Concrete Cleaning Machine; Portable Boring Machine (under streets, highways, etc.); Portable Crusher; Power Jumbo Operator (setting slip forms, etc., in tunnels); Rollers (over 5 tons); Self-propelled Compactor (single engine); Self-propelled Pavement Breaker; Skidsteer Loader with attachments; Slip Form Pumps (Power driven by hydraulic, electric, air, gas, etc., lifting device for concrete forms); Small Rubber Tired Tractors; Trencher (up to and including 6 feet); Underbridge Personnel Aerial Platform (50 feet of platform or less).

GROUP 7: Crusher Plant Engineer, Dozer (D-4, Case 450, John Deere 450, and similar); Dual Drum Mixer, Extend Lift; Hoist and/or Winch (2 drums); Loader (over 3 and 1/2 cu. yds. up to and including 6 yards.); Mechanical Finisher or Spreader Machine (asphalt), (Barber Greene and similar) (Screedman required); Mine or Shaft Hoist; Mobile Concrete Mixer (over 5 tons); Pipe Bending Machine (pipelines only); Pipe Cleaning Machine (tractor propelled and supported); Pipe Wrapping Machine (tractor propelled and supported); Roller Operator (Asphalt); Self-Propelled Elevating Grade Plane; Slusher Operator; Tractor (with boom) (D-6, or similar); Trencher (over 6 feet and less than 200 h.p.); Water Tanker (pulled by Euclids, T-Pulls, DW-10, 20 or 21, or similar); Winchman (Stern Winch on Dredge).

GROUP 8: Asphalt Plant Operator; Barge Mate (Seagoing); Cast-in-Place Pipe Laying Machine; Concrete Batch Plant (multiple units); Conveyor Operator (tunnel); Deckmate; Dozer (D-6 and similar); Finishing Machine Operator (airports and highways); Gradesetter; Kolman Loader (and similar); Mucking Machine (Crawler-type); Mucking Machine (Conveyor-type); No-Joint Pipe Laying Machine; Portable Crushing and Screening Plant; Power Blade Operator (under 12); Saurman Type Dragline (up to and including 5 yds.); Stationary Pipe Wrapping, Cleaning and Bending Machine; Surface Heater and Planer Operator, Tractor (D-6 and similar); Tri-Batch Paver; Tunnel Badger; Tunnel Mole and/or Boring Machine Operator Underbridge Personnel Aerial Platform (over 50 feet of platform).

GROUP 9: Combination Mixer and Compressor (gunite); Do-Mor Loader and Adams Elegrader; Dozer (D-7 or equal); Wheel and/or Ladder Trencher (over 6 feet and 200 to 749 h.p.).

GROUP 9A: Dozer (D-8 and similar); Gradesetter (when required by the Contractor to work from drawings, plans or specifications without the direct supervision of a foreman or superintendent); Push Cat; Scrapers (up to and including 20 cu. yds); Self-propelled Compactor with Dozer; Self-Propelled, Rubber-Tired Earthmoving Equipment (up to and including 20 cu. yds) (621 Band and similar); Sheep's Foot; Tractor (D-8 and similar); Tractors with boom (larger than D-6, and similar).

GROUP 10: Chicago Boom; Cold Planers; Heavy Duty Repairman or Welder; Hoist and/or Winch (3 drums); Hydraulic Skooper (Koehring and similar); Loader (over 6 cu. yds. up to and including 12 cu. yds.); Saurman type Dragline (over 5 cu. yds.); Self-propelled, rubber-tired Earthmoving Equipment (over 20 cu. yds. up to and including 31 cu. yds.) (637D and similar); Soil Stabilizer (P & H or equal); Sub-Grader (Gurries or other automatic type); Tractors (D-9 or equivalent, all attachments); Tractor (Tandem Scraper); Watch Engineer.

GROUP 10A: Boat Operator; Cable-operated Crawler Crane (up to and including 25 tons); Cable-operated Power Shovel, Clamshell, Dragline and Backhoe (up to and including 1 cu. yd.); Dozer D9-L; Dozer (D-10, HD41 and similar) (all attachments); Gradall (up to and including 1 cu. yd.); Hydraulic Backhoe (over 3/4 cu. yds. up to and including 2 cu. yds.); Mobile Truck Crane Operator (up to and including 25 tons) (Mobile Truck Crane Driver Required); Self-propelled Boom Type Lifting Device (Center Mount) (up to and including 25 tons) (Grove, Drott, P&H, Pettibone and similar); Trencher (over 6 feet and 750 h.p. or more); Watch Engineer (steam or electric).

GROUP 11: Automatic Slip Form Paver (concrete or asphalt); Band Wagon (in conjunction with Wheel Excavator); Cable-operated Crawler Cranes (over 25 tons but less than 50 tons); Cable-operated Power Shovel, Clamshell, Dragline and Backhoe (over 1 cu. yd. up to 7 cu. yds.); Gradall (over 1 cu. yds. up to 7 cu. yds.); DW-10, 20, etc. (Tandem); Earthmoving Machines (multiple propulsion power units and 2 or more Scrapers) (up to and including 35 cu. yds., "struck" m.r.c.); Highline Cableway; Hydraulic Backhoe (over 2 cu. yds. up to and including 4 cu. yds.); Leverman; Lift Slab Machine; Loader (over 12 cu. yds); Master Boat Operator; Mobile Truck Crane Operator (over 25 tons but less than 50 tons); (Mobile Truck Crane Driver required); Pre-stress Wire Wrapping Machine; Self-propelled Boom-type Lifting Device (Center Mount) (over 25 tons m.r.c); Self-propelled Compactor (with multiple-propulsion power units); Single Engine Rubber Tired Earthmoving Machine (with Tandem Scraper); Tandem Cats; Trencher (pulling attached shield).

GROUP 12: Clamshell or Dipper Operator; Derricks; Drill Rigs; Multi-Propulsion Earthmoving Machines (2 or more Scrapers) (over 35 cu. yds "struck"m.r.c.); Operators (Derricks, Piledrivers and Cranes); Power Shovels and Draglines (7 cu. yds. m.r.c. and over); Self-propelled rubber-tired Earthmoving equipment (over 31 cu. yds.) (657B and similar); Wheel Excavator (up to and including 750 cu. yds. per hour); Wheel Excavator (over 750 cu. yds. per hour).

GROUP 12A: Dozer (D-11 or similar or larger); Hydraulic Excavators (over 4 cu. yds.); Lifting cranes (50 tons and

over); Pioneering Dozer/Backhoe (initial clearing and excavation for the purpose of providing access for other equipment where the terrain worked involves 1-to-1 slopes that are 50 feet in height or depth, the scope of this work does not include normal clearing and grubbing on usual hilly terrain nor the excavation work once the access is provided); Power Blade Operator (Cat 12 or equivalent or over); Straddle Lifts (over 50 tons); Tower Crane, Mobile; Traveling Truss Cranes; Universal, Liebherr, Linden, and similar types of Tower Cranes (in the erection, dismantling, and moving of equipment there shall be an additional Operating Engineer or Heavy Duty Repairman); Yo-Yo Cat or Dozer.

GROUP 13: Truck Driver (Utility, Flatbed, etc.)

GROUP 13A: Dump Truck, 8 cu.yds. and under (water level); Water Truck (up to and including 2,000 gallons).

GROUP 13B: Water Truck (over 2,000 gallons); Tandem Dump Truck, over 8 cu. yds. (water level).

GROUP 13C: Truck Driver (Semi-trailer. Rock Cans, Semi-Dump or Roll-Offs).

GROUP 13D: Truck Driver (Slip-In or Pup).

GROUP 13E: End Dumps, Unlicensed (Euclid, Mack, Caterpillar or similar); Tractor Trailer (Hauling Equipment); Tandem Trucks hooked up to Trailer (Hauling Equipment)

BOOMS AND/OR LEADS (HOURLY PREMIUMS):

The Operator of a crane (under 50 tons) with a boom of 80 feet or more (including jib), or of a crane (under 50 tons) with leads of 100 feet or more, shall receive a per hour premium for each hour worked on said crane (under 50 tons) in accordance with the following schedule:

Booms of 80 feet up to but not including 130 feet or Leads of 100 feet up to but not including 130 feet	0.50
Booms and/or Leads of 130 feet up to but not including 180 feet	0.75
Booms and/or Leads of 180 feet up to and including 250 feet	1.15
Booms and/or Leads over 250 feet	1.50

The Operator of a crane (50 tons and over) with a boom of 180 feet or more (including jib) shall receive a per hour premium for each hour worked on said crane (50 tons and over) in accordance with the following schedule:

Booms of 180 feet up to and including 250 feet	1.25
Booms over 250 feet	1.75

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ENGI0003-004 09/04/2017

Rates Fringes

Dredging: (Boat Operators)

Boat Deckhand.....	\$ 41.22	30.93
Boat Operator.....	\$ 43.43	30.93
Master Boat Operator.....	\$ 43.58	30.93
Dredging: (Clamshell or Dipper Dredging)		
GROUP 1.....	\$ 43.94	30.93
GROUP 2.....	\$ 43.28	30.93
GROUP 3.....	\$ 42.88	30.93
GROUP 4.....	\$ 41.22	30.93
Dredging: (Derricks)		
GROUP 1.....	\$ 43.94	30.93
GROUP 2.....	\$ 43.28	30.93
GROUP 3.....	\$ 42.88	30.93
GROUP 4.....	\$ 41.22	30.93
Dredging: (Hydraulic Suction Dredges)		
GROUP 1.....	\$ 43.58	30.93
GROUP 2.....	\$ 43.43	30.93
GROUP 3.....	\$ 43.28	30.93
GROUP 4.....	\$ 43.22	30.93
GROUP 5.....	\$ 37.88	26.76
Group 5.....	\$ 42.88	30.93
GROUP 6.....	\$ 37.77	26.76
Group 6.....	\$ 42.77	30.93
GROUP 7.....	\$ 36.22	26.76
Group 7.....	\$ 41.22	30.93

CLAMSHELL OR DIPPER DREDGING CLASSIFICATIONS

- GROUP 1: Clamshell or Dipper Operator.
- GROUP 2: Mechanic or Welder; Watch Engineer.
- GROUP 3: Barge Mate; Deckmate.
- GROUP 4: Bargeman; Deckhand; Fireman; Oiler.

HYDRAULIC SUCTION DREDGING CLASSIFICATIONS

- GROUP 1: Leverman.
- GROUP 2: Watch Engineer (steam or electric).
- GROUP 3: Mechanic or Welder.
- GROUP 4: Dozer Operator.
- GROUP 5: Deckmate.
- GROUP 6: Winchman (Stern Winch on Dredge)
- GROUP 7: Deckhand (can operate anchor scow under direction of Deckmate); Fireman; Leveeman; Oiler.

DERRICK CLASSIFICATIONS

- GROUP 1: Operators (Derricks, Piledrivers and Cranes).
- GROUP 2: Saurman Type Dragline (over 5 cubic yards).
- GROUP 3: Deckmate; Saurman Type Dragline (up to and including 5 yards).
- GROUP 4: Deckhand, Fireman, Oiler.

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 ENGI0003-044 09/03/2018

Rates Fringes

Power Equipment Operators (PAVING)		
Asphalt Concrete Material Transfer.....	\$ 42.92	32.08
Asphalt Plant Operator.....	\$ 43.35	32.08
Asphalt Raker.....	\$ 41.96	32.08
Asphalt Spreader Operator...	\$ 43.44	32.08

Cold Planer.....	\$ 43.75	32.08
Combination Loader/Backhoe (over 3/4 cu.yd.).....	\$ 41.96	32.08
Combination Loader/Backhoe (up to 3/4 cu.yd.).....	\$ 40.98	32.08
Concrete Saws and/or Grinder (self-propelled unit on streets, highways, airports and canals).....	\$ 42.92	32.08
Grader.....	\$ 43.75	32.08
Laborer, Hand Roller.....	\$ 41.46	32.08
Loader (2 1/2 cu. yds. and under).....	\$ 42.92	32.08
Loader (over 2 1/2 cu. yds. to and including 5 cu. yds.).....	\$ 43.24	32.08
Roller Operator (five tons and under).....	\$ 41.69	32.08
Roller Operator (over five tons).....	\$ 43.12	32.08
Screed Person.....	\$ 42.92	32.08
Soil Stabilizer.....	\$ 43.75	32.08

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IRON0625-001 09/01/2023

	Rates	Fringes
Ironworkers:.....	\$ 46.50	39.00
a. Employees will be paid \$.50 per hour more while working in tunnels and coffer dams; \$1.00 per hour more when required to work under or are covered with water (submerged) and when they are required to work on the summit of Mauna Kea, Mauna Loa or Haleakala.		

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\* LAB00368-001 09/05/2023

	Rates	Fringes
Laborers:		
Driller.....	\$ 41.65	25.01
Final Clean Up.....	\$ 30.85	20.27
Gunite/Shotcrete Operator and High Scaler.....	\$ 41.15	25.01
Laborer I.....	\$ 40.65	25.01
Laborer II.....	\$ 38.05	25.01
Mason Tender/Hod Carrier....	\$ 41.15	25.01
Powderman.....	\$ 41.65	25.01
Window Washer (bosun chair).\$	40.15	25.01

LABORERS CLASSIFICATIONS

Laborer I: Air Blasting run by electric or pneumatic compressor; Asphalt Laborer, Ironer, Raker, Luteman, and Handroller, and all types of Asphalt Spreader Boxes; Asphalt Shoveler; Assembly and Installation of Multiplates, Liner Plates, Rings, Mesh, Mats; Batching Plant (portable and temporary); Boring Machine Operator (under streets and sidewalks); Buggymobile; Burning and Welding; Chainsaw, Faller, Logloader, and Bucker; Compactors (Jackson Jumping Jack and similar); Concrete Bucket Dumpman; Concrete Chipping; Concrete Chuteman/Hoseman (pouring concrete) (the handling of the chute from ready-mix trucks for such jobs as walls, slabs, decks, floors, foundations, footings, curbs, gutters, and sidewalks); Concrete Core Cutter (Walls, Floors, and Ceiling); Concrete Grinding or Sanding;

Concrete: Hooking on, signaling, dumping of concrete for treme work over water on caissons, pilings, abutments, etc.; Concrete: Mixing, handling, conveying, pouring, vibrating, otherwise placing of concrete or aggregates or by any other process; Concrete: Operation of motorized wheelbarrows or buggies or machines of similar character, whether run by gas, diesel, or electric power; Concrete Placement Machine Operator: operation of Somero Hammerhead, Copperheads, or similar machines; Concrete Pump Machine (laying, coupling, uncoupling of all connections and cleaning of equipment); Concrete and/or Asphalt Saw (Walking or Handtype) (cutting walls or flatwork) (scoring old or new concrete and/or asphalt) (cutting for expansion joints) (streets and ways for laying of pipe, cable or conduit for all purposes); Concrete Shovelers/Laborers (Wet or Dry); Concrete Screeding for Rough Strike-Off: Rodding or striking-off, by hand or mechanical means prior to finishing; Concrete Vibrator Operator; Coring Holes: Walls, footings, piers or other obstructions for passage of pipes or conduits for any purpose and the pouring of concrete to secure the hole; Cribbers, Shorer, Lagging, Sheeting, and Trench Jacking and Bracing, Hand-Guided Lagging Hammer Whaling Bracing; Curbing (Concrete and Asphalt); Curing of Concrete (impervious membrane and form oiler) mortar and other materials by any mode or method; Cut Granite Curb Setter (setting, leveling and grouting of all precast concrete or stone curbs); Cutting and Burning Torch (demolition); Dri Pak-It Machine; Environmental Abatement: removal of asbestos, lead, and bio hazardous materials (EPA and/or OSHA certified); Falling, bucking, yarding, loading or burning of all trees or timber on construction site; Forklift (9 ft. and under); Gas, Pneumatic, and Electric tools; Grating and Grill work for drains or other purposes; Green Cutter of concrete or aggregate in any form, by hand, mechanical means, grindstone or air and/or water; Grout: Spreading for any purpose; Guinea Chaser (Grade Checker) for general utility trenches, sitework, and excavation; Headerboard Man (Asphalt or Concrete); Heat Welder of Plastic (Laborers' AGC certified workers) (when work involves waterproofing for waterponds, artificial lakes and reservoir) heat welding for sewer pipes and fusion of HDPE pipes; Heavy Highway Laborer (Rigging, signaling, handling, and installation of pre-cast catch basins, manholes, curbs and gutters); High Pressure Nozzleman - Hydraulic Monitor (over 100# pressure); Jackhammer Operator; Jacking of slip forms: All semi and unskilled work connected therewithin; Laying of all multi-cell conduit or multi-purpose pipe; Magnesite and Mastic Workers (Wet or Dry)(including mixer operator);Mortar Man; Mortar Mixer (Block, Brick, Masonry, and Plastering); Nozzleman (Sandblasting and/or Water Blasting): handling, placing and operation of nozzle; Operation, Manual or Hydraulic jacking of shields and the use of such other mechanical equipment as may be necessary; Pavement Breakers; Paving, curbing and surfacing of streets, ways, courts, under and overpasses, bridges, approaches, slope walls, and all other labor connected therewith; Pilecutters; Pipe Accessment in place, bolting and lining up of sectional metal or other pipe including corrugated pipe; Pipelayer performing all services in the laying and installation of pipe from the point of receiving pipe in the ditch until completion of operation, including any and all forms of tubular material, whether pipe, HDPE, metallic or non-metallic, conduit, and any other stationary-type of tubular device used for conveying of any substance or element, whether water, sewage, solid, gas,

air, or other product whatsoever and without regard to the nature of material from which tubular material is fabricated; No-joint pipe and stripping of same, Pipewrapper, Caulker, Bander, Kettlemen, and men applying asphalt, Laykold, treating Creosote and similar-type materials (6-inch) pipe and over); Piping: resurfacing and paving of all ditches in preparation for laying of all pipes; Pipe laying of lateral sewer pipe from main or side sewer to buildings or structure (except Contactor may direct work be done under proper supervision); Pipe laying, leveling and marking of the joint used for main or side sewers and storm sewers; Laying of all clay, terra cotta, ironstone, vitrified concrete, HDPE or other pipe for drainage; Placing and setting of water mains, gas mains and all pipe including removal of skids; Plaster Mortar Mixer/Pump; Pneumatic Impact Wrench; Portable Sawmill Operation: Choker setters, off bearers, and lumber handlers connected with clearing; Posthole Digger (Hand Held, Gas, Air and Electric); Powderman's Tender; Power Broom Sweepers (Small); Preparation and Compaction of roadbeds for railroad track laying, highway construction, and the preparation of trenches, footings, etc., for cross-country transmission by pipelines, electrical transmission or underground lines or cables (by mechanical means); Raising of structure by manual or hydraulic jacks or other methods and resetting of structure in new locations, including all concrete work; Ramming or compaction; Rigging in connection with Laborers' work (except demolition), Signaling (including the use of walkie talkie) Choke Setting, tag line usage; Tagging and Signaling of building materials into high rise units; Riprap, Stonepaver, and Rock Slinger (includes placement of stacked concrete, wet or dry and loading, unloading, signaling, slinging and setting of other similar materials); Rotary Scarifier (including multiple head concrete chipping Scarifier); Salamander Heater, Drying of plaster, concrete mortar or other aggregate; Scaffold Erector Leadman; Scaffolds: (Swing and hanging) including maintenance thereof; Scaler; Septic Tank/Cesspool and Drain Fields Digger and Installer; Shredder/Chipper (tree branches, brush, etc.); Stripping and Setting Forms; Stripping of Forms: Other than panel forms which are to be re-used in their original form, and stripping of forms on all flat arch work; Tampers (Barko, Wacker, and similar type); Tank Scaler and Cleaners; Tarman; Tree Climbers and Trimmers; Trencher (includes hand-held, Davis T-66 and similar type); Trucks (flatbed up to and including 2 1/2 tons when used in connection with on-site Laborers' work; Trucks (Refuse and Garbage Disposal) (from job site to dump); Vibra-Screed (Bull Float in connection with Laborers' work); Well Points, Installation of or any other dewatering system.

Laborer II: Asphalt Plant Laborer; Boring Machine Tender; Bridge Laborer; Burning of all debris (crates, boxes, packaging waste materials); Chainman, Rodmen, and Grade Markers; Cleaning, clearing, grading and/or removal for streets, highways, roadways, aprons, runways, sidewalks, parking areas, airports, approaches, and other similar installations; Cleaning or reconditioning of streets, ways, sewers and waterlines, all maintenance work and work of an unskilled and semi-skilled nature; Concrete Bucket Tender (Groundman) hooking and unhooking of bucket; Concrete Forms; moving, cleaning, oiling and carrying to the next point of erection of all forms; Concrete Products Plant Laborers; Conveyor Tender (conveying of building



materials); Crushed Stone Yards and Gravel and Sand Pit Laborers and all other similar plants; Demolition, Wrecking and Salvage Laborers: Wrecking and dismantling of buildings and all structures, with use of cutting or wrecking tools, breaking away, cleaning and removal of all fixtures, All hooking, unhooking, signaling of materials for salvage or scrap removed by crane or derrick; Digging under streets, roadways, aprons or other paved surfaces; Driller's Tender; Chuck Tender, Outside Nipper; Dry-packing of concrete (plugging and filling of she-bolt holes); Fence and/or Guardrail Erector: Dismantling and/or re-installation of all fence; Finegrader; Firewatcher; Flagman (Coning, preparing, stablishing and removing portable roadway barricade devices); Signal Men on all construction work defined herein, including Traffic Control Signal Men at construction site; General Excavation; Backfilling, Grading and all other labor connected therewith; Digging of trenches, ditches and manholes and the leveling, grading and other preparation prior to laying pipe or conduit for any purpose; Excavations and foundations for buildings, piers, foundations and holes, and all other construction. Preparation of street ways and bridges; General Laborer: Cleaning and Clearing of all debris and surplus material. Clean-up of right-of-way. Clearing and slashing of brush or trees by hand or mechanical cutting. General Clean up: sweeping, cleaning, wash-down, wiping of construction facility and equipment (other than "Light Clean up (Janitorial) Laborer. Garbage and Debris Handlers and Cleaners. Appliance Handling (job site) (after delivery unloading in storage area); Ground and Soil Treatment Work (Pest Control); Gunite/Shotcrete Operator Tender; Junk Yard Laborers (same as Salvage Yard); Laser Beam "Target Man" in connection with Laborers' work; Layout Person for Plastic (when work involves waterproofing for waterponds, artificial lakes and reservoirs); Limbers, Brush Loaders, and Pilers; Loading, Unloading, carrying, distributing and handling of all rods and material for use in reinforcing concrete construction (except when a derrick or outrigger operated by other than hand power is used); Loading, unloading, sorting, stockpiling, handling and distribution of water mains, gas mains and all pipes; Loading and unloading of all materials, fixtures, furnishings and appliances from point of delivery to stockpile to point of installation; hooking and signaling from truck, conveyance or stockpile; Material Yard Laborers; Pipelayer Tender; Pipewrapper, Caulker, Bander, Kettleman, and men applying asphalt, Laykold, Creosote, and similar-type materials (pipe under 6 inches); Plasterer Laborer; Preparation, construction and maintenance of roadbeds and sub-grade for all paving, including excavation, dumping, and spreading of sub-grade material; Prestressed or precast concrete slabs, walls, or sections: all loading, unloading, stockpiling, hooking on of such slabs, walls or sections; Quarry Laborers; Railroad, Streetcar, and Rail Transit Maintenance and Repair; Roustabout; Rubbish Trucks in connection with Building Construction Projects (excluding clearing, grubbing, and excavating); Salvage Yard: All work connected with cutting, cleaning, storing, stockpiling or handling of materials, all cleanup, removal of debris, burning, back-filling and landscaping of the site; Sandblasting Tender (Pot Tender): Hoses and pots or markers; Scaffolds: Erection, planking and removal of all scaffolds used for support for lathers, plasters, brick layers, masons, and other construction trades crafts; Scaffolds: (Specially designed by carpenters) laborers shall tend said carpenter

on erection and dismantling thereof, preparation for foundation or mudsills, maintenance; Scraping of floors; Screeds: Handling of all screeds to be reused; handling, dismantling and conveyance of screeds; Setting, leveling and securing or bracing of metal or other road forms and expansion joints; Sheet piling/trench shoring (handling and placing of skip sheet or wood plank trench shoring); Ship Scalers; Shipwright Tender; Sign Erector (subdivision traffic, regulatory, and street-name signs); Sloper; Slurry Seal Crews (Mixer Operator, Applicator, Squeegee Man, Shuttle Man, Top Man); Snapping of wall ties and removal of tie rods; Soil Test operations of semi and unskilled labor such as filling sand bags; Stripper (Asphalt, Concrete or other Paved Surfaces); Tool Room Attendant (Job Site); Traffic Delineating Device Applicator; Underpinning, lagging, bracing, propping and shoring, loading, signaling, right-of-way clearance along the route of movement, The clearance of new site, excavation of foundation when moving a house or structure from old site to new site; Utilities employees; Water Man; Waterscape/Hardscape Laborers; Wire Mesh Pulling (all concrete pouring operations); Wrecking, stripping, dismantling and handling concrete forms and false work.

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 LAB00368-002 09/04/2023

	Rates	Fringes
Landscape & Irrigation Laborers		
GROUP 1.....	\$ 27.85	16.45
GROUP 2.....	\$ 28.85	16.45
GROUP 3.....	\$ 22.55	16.45

LABORERS CLASSIFICATIONS

GROUP 1: Installation of non-potable permanent or temporary irrigation water systems performed for the purposes of Landscaping and Irrigation architectural horticultural work; the installation of drinking fountains and permanent or temporary irrigation systems using potable water for Landscaping and Irrigation architectural horticultural purposes only. This work includes (a) the installation of all heads, risers, valves, valve boxes, vacuum breakers (pressure and non-pressure), low voltage electrical lines and, provided such work involves electrical wiring that will carry 24 volts or less, the installation of sensors, master control panels, display boards, junction boxes, conductors, including all other components for controllers, (b) and metallic (copper, brass, galvanized, or similar) pipe, as well as PVC or other plastic pipe including all work incidental thereto, i.e., unloading, handling and distribution of all pipes fittings, tools, materials and equipment, (c) all soldering work in connection with the above whether done by torch, soldering iron, or other means; (d) tie-in to main lines, thrust blocks (both precast and poured in place), pipe hangers and supports incidental to installation of the entire irrigation system, (e) making of pressure tests, start-up testing, flushing, purging, water balancing, placing into operation all irrigation equipment, fixtures and appurtenances installed under this agreement, and (f) the fabrication, replacement, repair and servicing of landscaping and irrigation systems. Operation of hand-held gas, air, electric, or self-powered

tools and equipment used in the performance of Landscape and Irrigation work in connection with architectural horticulture; Choke-setting, signaling, and rigging for equipment operators on job-site in the performance of such Landscaping and Irrigation work; Concrete work (wet or dry) performed in connection with such Landscaping and Irrigation work. This work shall also include the setting of rock, stone, or riprap in connection with such Landscape, Waterscape, Rockscape, and Irrigation work; Grubbing, pick and shovel excavation, and hand rolling or tamping in connection with the performance of such Landscaping and Irrigation work; Sprigging, handseeding, and planting of trees, shrubs, ground covers, and other plantings and the performance of all types of gardening and horticultural work relating to said planting; Operation of flat bed trucks (up to and including 2 1/2 tons).:

GROUP 2. Layout of irrigation and other non-potable irrigation water systems and the layout of drinking fountains and other potable irrigation water systems in connection with such Landscaping and Irrigation work. This includes the layout of all heads, risers, valves, valve boxes, vacuum breakers, low voltage electrical lines, hydraulic and electrical controllers, and metallic (coppers, brass, galvanized, or similar) pipe, as well as PVC or other plastic pipe. This work also includes the reading and interpretation of plans and specifications in connection with the layout of Landscaping, Rockscape, Waterscape, and Irrigation work; Operation of Hydro-Mulching machines (sprayman and driver), Drillers, Trenchers (riding type, Davis T-66, and similar) and fork lifts used in connection with the performance of such Landscaping and Irrigation work; Tree climbers and chain saw tree trimmers, Sporadic operation (when used in connection with Landscaping, Rockscape, Waterscape, and Irrigation work) of Skid-Steer Loaders (Bobcat and similar), Cranes (Bantam, Grove, and similar), Hoptos, Backhoes, Loaders, Rollers, and Dozers (Case, John Deere, and similar), Water Trucks, Trucks requiring a State of Hawaii Public Utilities Commission Type 5 and/or type 7 license, sit-down type and ""gang"" mowers, and other self-propelled, sit-down operated machines not listed under Landscape & Irrigation Maintenance Laborer; Chemical spraying using self-propelled power spraying equipment (200 gallon capacity or more).

GROUP 3: Maintenance of trees, shrubs, ground covers, lawns and other planted areas, including the replanting of trees, shrubs, ground covers, and other plantings that did not ""take"" or which are damaged; provided, however, that re-planting that requires the use of equipment, machinery, or power tools shall be paid for at the rate of pay specified under Landscape and Irrigation Laborer, Group 1; Raking, mowing, trimming, and runing, including the use of ""weed eaters"", hedge trimmers, vacuums, blowers, and other hand-held gas, air, electric, or self-powered tools, and the operation of lawn mowers (Note: The operation of sit-down type and ""gang"" mowers shall be paid for at the rate of pay specified under Landscape & Irrigation Laborer, Group 2); Guywiring, staking, propping, and supporting trees; Fertilizing, Chemical spraying using spray equipment with less than 200 gallon capacity, Maintaining irrigation and sprinkler systems, including the staking, clamping, and adjustment of risers, and the adjustment and/or replacement of sprinkler heads, (Note: the cleaning and gluing of pipe

and fittings shall be paid for at the rate of pay specified under Landscape & Irrigation Laborer(Group 1); Watering by hand or sprinkler system and the performance of other types of gardening, yardman, and horticultural-related work.

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LAB00368-003 09/05/2023

	Rates	Fringes
Underground Laborer		
GROUP 1.....	\$ 41.25	24.96
GROUP 2.....	\$ 42.75	24.96
GROUP 3.....	\$ 43.25	24.96
GROUP 4.....	\$ 44.25	24.96
GROUP 5.....	\$ 44.50	24.96
GROUP 6.....	\$ 44.60	24.96
GROUP 7.....	\$ 44.85	24.96

GROUP 1: Watchmen; Change House Attendant.

GROUP 2: Swamper; Brakeman; Bull Gang-Muckers, Trackmen; Dumpmen (any method); Concrete Crew (includes rodding and spreading); Grout Crew; Reboundmen

GROUP 3: Chucktenders and Cabetenders; Powderman (Prime House); Vibratorman, Pavement Breakers

GROUP 4: Miners - Tunnel (including top and bottom man on shaft and raise work); Timberman, Retimberman (wood or steel or substitute materials thereof); Blasters, Drillers, Powderman (in heading); Microtunnel Laborer; Headman; Cherry Picker (where car is lifted); Nipper; Grout Gunmen; Grout Pumpman & Potman; Gunite, Shotcrete Gunmen & Potmen; Concrete Finisher (in tunnel); Concrete Screed Man; Bit Grinder; Steel Form Raisers & Setters; High Pressure Nozzleman; Nozzleman (on slick line); Sandblaster-Potman (combination work assignment interchangeable); Tugger

GROUP 5: Shaft Work & Raise (below actual or excavated ground level); Diamond Driller; Gunite or Shotcrete Nozzleman; Rodman; Groundman

GROUP 6: Shifter

GROUP 7: Shifter (Shaft Work & Raiser)

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PAIN1791-001 01/01/2024

	Rates	Fringes
Painters:		
Brush.....	\$ 41.65	30.05
Sandblaster; Spray.....	\$ 41.65	30.05

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PAIN1889-001 07/01/2023

	Rates	Fringes
Glaziers.....	\$ 44.00	38.37

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PAIN1926-001 03/05/2023

	Rates	Fringes
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Soft Floor Layers.....	\$ 39.77	33.80
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\* PAIN1944-001 01/07/2024

	Rates	Fringes
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Taper.....	\$ 45.20	31.40
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PLAS0630-001 09/04/2023

	Rates	Fringes
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PLASTERER.....	\$ 46.12	34.53
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PLAS0630-002 09/04/2023

	Rates	Fringes
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Cement Masons:

Cement Masons.....	\$ 44.12	33.63
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Trowel Machine Operators....	\$ 44.27	33.63
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PLUM0675-001 01/07/2024

	Rates	Fringes
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Plumber, Pipefitter, Steamfitter & Sprinkler Fitter...	\$ 52.33	30.40
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ROOF0221-001 11/06/2022

	Rates	Fringes
--	-------	---------

Roofers (Including Built Up, Composition and Single Ply).....	\$ 43.15	21.21
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SHEE0293-001 03/05/2023

	Rates	Fringes
--	-------	---------

Sheet metal worker.....	\$ 47.37	31.71
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\* SUHI1997-002 09/15/1997

	Rates	Fringes
--	-------	---------

Drapery Installer.....	\$ 13.60 **	1.20
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FENCE ERECTOR (Chain Link Fence).....	\$ 9.33 **	1.65
--	------------	------

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WELDERS - Receive rate prescribed for craft performing  
operation to which welding is incidental.

=====  
\*\* Workers in this classification may be entitled to a higher minimum wage under Executive Order 14026 (\$17.20) or 13658 (\$12.90). Please see the Note at the top of the wage determination for more information. Please also note that the minimum wage requirements of Executive Order 14026 are not currently being enforced as to any contract or subcontract to which the states of Texas, Louisiana, or Mississippi, including

their agencies, are a party.

Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at <https://www.dol.gov/agencies/whd/government-contracts>.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (iii)).

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The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of ""identifiers"" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

#### Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than ""SU"" or ""UAVG"" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

#### Survey Rate Identifiers

Classifications listed under the ""SU"" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that

classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

#### Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

#### State Adopted Rate Identifiers

Classifications listed under the "SA" identifier indicate that the prevailing wage rate set by a state (or local) government was adopted under 29 C.F.R. 1.3(g)-(h). Example: SAME2023-007 01/03/2024. SA reflects that the rates are state adopted. ME refers to the State of Maine. 2023 is the year during which the state completed the survey on which the listed classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 01/03/2024 reflects the date on which the classifications and rates under the ?SA? identifier took effect under state law in the state from which the rates were adopted.

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#### WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- \* an existing published wage determination
- \* a survey underlying a wage determination
- \* a Wage and Hour Division letter setting forth a position on a wage determination matter
- \* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour National Office because National Office has responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations  
Wage and Hour Division  
U.S. Department of Labor  
200 Constitution Avenue, N.W.  
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator  
U.S. Department of Labor  
200 Constitution Avenue, N.W.  
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board  
U.S. Department of Labor  
200 Constitution Avenue, N.W.  
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISION"



**STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION  
HONOLULU, HAWAII**

**P R O P O S A L**

**PROPOSAL TO THE  
STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION**

**PROJECT:** INTERSTATE ROUTE H-3  
HALAWA-LULUKU INTERPRETIVE DEVELOPMENT  
LULUKU PROJECT AREA  
DISTRICT OF KOOLAUPOKO  
ISLAND OF OAHU

**FEDERAL-AID  
PROJECT NO.:** I-H3-1(75)

**COMPLETION TIME:** 352 Calendar days from the date indicated in the  
Start Work Date from the Department.

**DBE PROJECT GOAL:** 0.9%

**DESIGN PROJECT MANAGER:**

**NAME:** Evan Kimoto  
**ADDRESS:** Department of Transportation  
601 Kamokila Boulevard, Room 688  
Kapolei, Hawaii 96707  
**PHONE NO.:** (808) 692-7551  
**EMAIL:** evan.kimoto@hawaii.gov

**ELECTRONIC SUBMITTAL:** Bidders shall submit and upload the complete proposal to HlePRO prior to the bid opening date and time. Any additional support documents explicitly designated as confidential and/or proprietary shall be uploaded as a separate file to HlePRO. Bidders shall refer to **SPECIAL PROVISIONS 102.09 Delivery of Proposal for complete details. FAILURE TO UPLOAD THE COMPLETE PROPOSAL TO HlePRO SHALL BE GROUNDS FOR REJECTION OF THE BID.**

Director of Transportation  
869 Punchbowl Street  
Honolulu, Hawaii 96813

Dear Sir:

The undersigned Bidder declares the following:

1. It 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 connection with this proposal.
2. It has not been assisted or represented on this matter by any individual who has, in a State capacity, been involved in the subject matter of this contract within the past two years.
3. It has not and will not, either directly or indirectly offered or given a gratuity (i.e., an entertainment or gift) to any State or County employee to obtain a contract or favorable treatment under a contract.
4. It will not maintain for its employees any segregated facilities at any of its establishments.
5. Does not and will not permit its employees to perform their services at any location under its control, where segregated facilities are maintained.

The undersigned Bidder further agrees to the following:

1. If this proposal is accepted, it shall execute a contract with the Department to provide all necessary labor, machinery, tools, equipment, apparatus and any other means of construction, to do all the work and to furnish all the materials specified in the contract in the manner and within the time therein prescribed in the contract, and that it shall accept in full payment therefore the sum of the unit and/or lump sum prices as set forth in the attached proposal schedule for the actual quantities of work performed and materials furnished and furnish satisfactory security in accordance with Section 103D-324, Hawaii Revised Statutes, within 10 days after the award of the contract or within such time as the Director of Transportation may allow after the undersigned has received the contract documents for execution, and is fully aware that non-compliance with the aforementioned terms will result in the forfeiture of the full amount of the bid guarantee required under Section 1032D-323, Hawaii Revised Statutes.
2. That the quantities given in the attached proposal schedule are approximate only and are intended principally to serve as a guide in determining and comparing the bids.

3. That the Department does not either expressly or by implication, agree that the actual amount of work will correspond therewith, but reserves the right to increase or decrease the amount of any class or portion of the work, or to omit portions of the work, as may be deemed necessary or advisable by the Director of Transportation, and that all increased or decreased quantities of work shall be performed at the unit prices set forth in the attached proposal schedule except as provided for in the specifications.
4. In case of a discrepancy between unit prices and the totals in said Proposal Schedule, the unit prices shall prevail.
5. Unless amended by Special Provision, agrees to begin work within 10 working days after the date of notification to commence with the work, which date is in the notice to proceed, and shall finish the entire project within the time prescribed.
6. The Director of Transportation reserves the right to reject any or all bids and to waive any defects when in the Director's opinion such rejections or waiver will be for the best interest of the public.

The Bidder acknowledges receipt of and certifies that it has completely examined the following listed items: Hawaii Standard Specifications for Road and Bridge Construction, 2005, and/or the General Provisions for Construction Projects for AIR and WATER Transportation Facilities Division dated 2016, as applicable, the Notice to Bidders, Special Provisions, Proposal, Contract, Bond Forms, and Project Plans.

In accordance with Section 103D-323, Hawaii Revised Statutes, this proposal is accompanied with a bid security in the amount of 5% of the total amount bid, in the form checked below. (Check applicable bid security submitted with bid.)

\_\_\_\_\_ Surety Bid Bond (Use standard form),

\_\_\_\_\_ Cash,

\_\_\_\_\_ Cashier's Check,

\_\_\_\_\_ Certified Check, or

\_\_\_\_\_ (Fill in other acceptable security.)

The undersigned Bidder acknowledges receipt of any addendum issued by the Department by recording in the space below the date of receipt.

Addendum No. 1 \_\_\_\_\_ Addendum No. 3 \_\_\_\_\_

Addendum No. 2 \_\_\_\_\_ Addendum No. 4 \_\_\_\_\_

In accordance with Section 103D-302, Hawaii Revised Statutes, the undersigned as Bidder has listed the name of each person or firm who will be engaged by the Bidder on the project as Subcontractor or Joint Contractor and the nature of work to be done by each on the following page. The Bidder must adequately and unambiguously disclose the unique nature and scope of the work to be performed by each Subcontractor or Joint Contractor. For each listed firm, the Bidder declares the respective firm is a Subcontractor or Joint Contractor and is subject to evaluation as a Subcontractor or Joint Contractor. It is understood that failure to comply with the aforementioned requirements may be cause for rejection of the bid submitted.

The undersigned Bidder asserts that affirmative action has been taken to seek out and consider Disadvantaged Business Enterprises (DBEs) for portions of the work which can be subcontracted, and the affirmative actions of the Bidder are fully documented in its records and are available upon request by the Department. It is also understood that it must meet or exceed the DBE contract goal listed on page P-1 or demonstrate that it made good faith efforts to meet the DBE project goal. The undersigned as Bidder, agrees to utilize each participating DBE that it submitted to meet the contract goal of \_\_\_\_\_% (percentage to be completed by Bidder) DBE participation if the contract is awarded to it, and shall maintain such DBE participation during the construction of this project.

**SUBCONTRACTOR LISTING**  
(Attach additional sheets if necessary.)

	NAME OF FIRM	NATURE OF WORK
<b>SUBCONTRACTOR:</b>		
1.	_____	_____
	1a <sup>1</sup> . _____	_____
2.	_____	_____
	2a. _____	_____
3.	_____	_____
	3a. _____	_____
4.	_____	_____
	4a. _____	_____
5.	_____	_____
	5a. _____	_____
6.	_____	_____
	6a. _____	_____
7.	_____	_____
	7a. _____	_____

**NOTES:**

The Name of Firm and Nature of Work shall be indicated for all listed firms. The Bidder must adequately and unambiguously disclose the unique nature and scope of the work to be performed by each Sub- or Joint Contractor.

For each listed firm, the Bidder declares the respective firm is a Sub- or Joint Contractor and subject to evaluation as a Sub- or Joint Contractor.

\_\_\_\_\_

<sup>1</sup> Second tier subcontractors

**JOINT CONTRACTOR LISTING**  
 (Attach additional sheets if necessary.)

	NAME OF FIRM	NATURE OF WORK
<b>JOINT CONTRACTOR:</b>		
1.	_____	_____
	1a <sup>1</sup> . _____	_____
2.	_____	_____
	2a. _____	_____
3.	_____	_____
	3a. _____	_____
4.	_____	_____
	4a. _____	_____
5.	_____	_____
	5a. _____	_____
6.	_____	_____
	6a. _____	_____
7.	_____	_____
	7a. _____	_____

**NOTES:**

The Name of Firm and Nature of Work shall be indicated for all listed firms. The Bidder must adequately and unambiguously disclose the unique nature and scope of the work to be performed by each Sub- or Joint Contractor.

For each listed firm, the Bidder declares the respective firm is a Sub- or Joint Contractor and subject to evaluation as a Sub- or Joint Contractor.

\_\_\_\_\_

<sup>1</sup> Second tier joint contractors

The undersigned hereby certifies that the bid prices contained in the attached proposal schedule have been carefully checked and are submitted as correct and final.

This declaration is made with the understanding that the undersigned is subject to the penalty of perjury under the laws of the United States and is in violation of the Hawaii Penal Code, Section 710-1063, unsworn falsification to authorities, of the Hawaii Revised Statutes, for knowingly rendering a false declaration.

\_\_\_\_\_  
Bidder (Company Name)

\_\_\_\_\_  
Authorized Signature

\_\_\_\_\_  
Title

\_\_\_\_\_  
Business Address

\_\_\_\_\_  
Business Telephone

\_\_\_\_\_  
Email

\_\_\_\_\_  
Date

\_\_\_\_\_  
Contact Person (If different from above.)

Phone: \_\_\_\_\_ Email: \_\_\_\_\_

NOTE:

If Bidder is a CORPORATION, the legal name of the corporation shall be set forth above, the corporate seal affixed, together with the signature(s) of the officer(s) authorized to sign contracts for the corporation. Please attach to this page current (not more than six months old) evidence of the authority of the officer(s) to sign for the corporation.

If Bidder is a PARTNERSHIP, the true name of the partnership shall be set forth above, with the signature(s) of the general partner(s). Please attach to this page current (not more than six months old) evidence of the authority of the partner authorized to sign for the partnership.

If Bidder is an INDIVIDUAL, the bidder's signature shall be placed above.

If signature is by an agent, other than an officer of a corporation or a partner of a partnership, a POWER OF ATTORNEY must be on file with the Department before opening bids or submitted with the bid. Otherwise, the Department may reject the bid as irregular and unauthorized.



**PROPOSAL SCHEDULE**

<b>ITEM NO.</b>	<b>ITEM</b>	<b>APPROX. QUANTITY</b>	<b>UNIT</b>	<b>UNIT PRICE</b>	<b>AMOUNT</b>
201.0100	Clearing and Grubbing	0.66	AC	\$ _____	\$ _____
203.0100	Site Excavation for Permeable Surface, Storage Containers, and Restroom Building	728	CY	\$ _____	\$ _____
204.0100	Trench Excavation for Water System	12	CY	\$ _____	\$ _____
204.0200	Trench Excavation for Sewer System	2,100	CY	\$ _____	\$ _____
204.0300	Trench Backfill for Water System	LS	LS	LS	\$ _____
204.0400	Trench Backfill for Sewer System	LS	LS	LS	\$ _____
209.0100	Installation, Maintenance, Monitoring, and Removal of BMP	LS	LS	LS	\$ _____
209.0200	Additional Water Pollution, Dust, and Erosion Control	FA	FA	FA	\$20,000
304.0100	Aggregate Base Course	130	CY	\$ _____	\$ _____
401.0100	Hot Mix Asphalt Pavement, Mix No. IV	LS	LS	LS	\$ _____
421.0100	Permeable Surface	LS	LS	LS	\$ _____
608.1000	Construction of Modular Storage Containers Facility and Incidentals Necessary	LS	LS	LS	\$ _____
609.1000	Precast Concrete Restroom Building	LS	LS	LS	\$ _____
624.0100	Water System	LS	LS	LS	\$ _____
625.0100	Sewer System	LS	LS	LS	\$ _____
641.0100	Hydro-Mulch Seeding	150	SY	\$ _____	\$ _____
645.0100	Traffic Control	LS	LS	LS	\$ _____

**PROPOSAL SCHEDULE**

ITEM NO.	ITEM	APPROX. QUANTITY	UNIT	UNIT PRICE	AMOUNT
651.0100	Installation of Cattle Gate	LS	LS	LS	\$ _____
657.0100	Cast-In-Place Concrete Base for Storage Containers	LS	LS	LS	\$ _____
657.0200	Cast-In-Place Concrete Base for Restroom Building	LS	LS	LS	\$ _____
699.1000	Mobilization (Not to Exceed 6 Percent of the Sum of All Items Excluding the Bid Price of this Item)	LS	LS	LS	\$ _____

TOTAL AMOUNT FOR COMPARISION OF BIDS ..... \$ \_\_\_\_\_

**NOTE:**

1. Bids shall include all Federal, State, County and other applicable taxes and fees.
2. The TOTAL AMOUNT FOR COMPARISON OF BIDS shall be used to determine the lowest responsible bidder.
3. Bidders shall complete all unit prices and amounts. Failure to do so shall be grounds for rejection of bid.
4. If a discrepancy occurs between unit bid price and the bid price, the unit bid price shall govern.
5. **Bidders shall submit and upload the complete proposal to HlePRO prior to the bid opening date and time. Proposals received after said due date and time shall not be considered. Any additional support documents explicitly designated as confidential and/or proprietary shall be uploaded as a separate file to HlePRO. Bidders shall not include confidential and/or proprietary documents with the proposal. The record of each bidder and respective bid shall be open to public inspection. Original (wet ink, hard copy) proposal documents are not required to be submitted. Contract award shall be based on evaluation of proposals submitted and uploaded to HlePRO. FAILURE TO UPLOAD THE COMPLETE PROPOSAL TO HlePRO SHALL BE GROUNDS FOR REJECTION OF THE BID. If there is a conflict between the specification document and the HlePRO solicitation, the specifications shall govern and control, unless otherwise specified.**

1 **PROPOSAL SCHEDULE**

2  
3 The bidder is directed to Subsection 105.16 – Subcontracts.

4  
5 The bidder’s attention is directed to Section 699 – Mobilization for the  
6 limitation of the amount bidders are allowed to bid.

7  
8 If the bid price for any proposal item having a maximum allowable bid  
9 indicated therefore in any of the contract documents is in excess of such a  
10 maximum amount, the bid price for such proposal item shall be adjusted to reflect  
11 the limitation thereon. The comparison of bids to determine the successful Bidder  
12 and the amount of contract to be awarded shall be determined after such  
13 adjustments are made, and such adjustments shall be binding upon the Bidder.

# SURETY BID BOND

Bond No. \_\_\_\_\_

KNOW ALL BY THESE PRESENTS:

That we, \_\_\_\_\_  
(Full name or legal title of offeror)

as Offeror, hereinafter called the Principal, and

\_\_\_\_\_  
(Name of bonding company)

as Surety, hereinafter called Surety, a corporation authorized to transact business as a Surety in the State of Hawaii, are held and firmly bound unto

\_\_\_\_\_  
(State/county entity)

as Owner, hereinafter called Owner, in the penal sum of

\_\_\_\_\_  
(Required amount of bid security)

Dollars (\$ \_\_\_\_\_), lawful money of the United States of America, for the payment of which sum well and truly to be made, the said Principal and the said Surety bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

## WHEREAS:

The Principal has submitted an offer for \_\_\_\_\_

\_\_\_\_\_  
(Project by number and brief description)

## NOW, THEREFORE:

The condition of this obligation is such that if the Owner shall reject said offer, or in the alternate, accept the offer of the Principal and the Principal shall enter into a contract with the Owner in accordance with the terms of such offer, and give such bond or bonds as may be specified in the solicitation or Contract Documents with good and sufficient surety for the faithful performance of such Contract and for the prompt payment of labor and material furnished in the prosecution thereof as specified in the solicitation then this obligation shall be null and void, otherwise to remain in full force and effect.

Signed this \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_

(Seal) \_\_\_\_\_  
Name of Principal (Offeror)

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Title

(Seal) \_\_\_\_\_  
Name of Surety

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Title

**STATE OF HAWAII**  
**DEPARTMENT OF TRANSPORTATION**  
**HONOLULU, HAWAII**

**SAMPLE FORMS**

Contract

Performance Bond (Surety)

Performance Bond

Labor and Material Payment Bond (Surety)

Labor and Material Payment Bond

Disclosure of Lobbying Activities (Standard Form – LLL and LLL-A)

Statement of Compliance (Form WH-348)

Chapter 104, Compliance Certificate

C O N T R A C T

THIS AGREEMENT, made this day \_\_\_\_\_, by and between the STATE OF HAWAII, by its Director of Transportation, hereinafter referred to as "STATE", and «CONTRACTOR», «STATE OF INCORPORATION», whose business/post office address is «ADDRESS» hereinafter referred to as "CONTRACTOR",

WITNESSETH: That for and in consideration of the payments hereinafter mentioned, the CONTRACTOR hereby covenants and agrees with the STATE to complete in place, furnish and pay for all labor and materials necessary for

“«PROJECT\_NAME\_AND\_NO»”,

or such a part thereof as shall be required by the STATE, the total amount of which labor, materials and construction shall be computed at the unit and/or lump sum prices set forth in the attached proposal schedule and shall be the sum of «BASIC»----- DOLLARS

(\$«BASIC\_NUMERIC») as follows:

TOTAL AMOUNT FOR COMPARISON OF BIDS.....\$«BASIC\_NUMERIC»

which shall be provided from the following funds:

Federal Funds.....	.....
State Funds.....	.....
TOTAL AMOUNT.....	.....

all in accordance with the specifications, the special provisions, if any, the notice to bidders, the instructions to bidders, the proposal and plans for «PROJECT NO ONLY», and any supplements thereto, on file in the office of the Director of Transportation. These documents, together with all alterations, amendments, and additions thereto and deductions therefrom, are attached hereto or incorporated herein by reference and made a part of this contract.

The CONTRACTOR hereby covenants and agrees to complete such construction within «WORKING\_DAYS», from the date indicated in the notice to proceed from the STATE, subject, however, to such extensions as may be provided for under the specifications.

For and in consideration of the covenants, undertakings and agreements of the CONTRACTOR herein set forth and upon the full and faithful performance thereof by the CONTRACTOR, the STATE hereby agrees to pay the CONTRACTOR the sum of «BASIC»-----DOLLARS (\$«BASIC\_NUMERIC») in lawful money, but not more than such part of the same as is actually earned according to the STATE's determination of the actual quantities of work performed and materials furnished by the CONTRACTOR at the unit or lump sum prices set forth in the attached proposal schedule. Such payment, including any extras, shall be made, subject to such additions or deductions hereto or hereafter made in the manner and at the time prescribed in the specifications and this contract.

An additional sum of «EXTRAS»-----DOLLARS (\$«EXTRA\_NUMERIC») is hereby provided for extra work and shall be provided from the following funds:

Federal Funds.....  
State Funds.....  
Total.....

Where Federal funds are involved, it is covenanted and agreed by and between the parties hereto that the sum of ----«FEDERAL\_BASIC»----DOLLARS (\$«FEDERAL\_BASIC\_NUMERIC») and ----«FEDERAL\_EXTRAS»----DOLLARS (\$«FEDERAL\_EXTRAS\_NUMERIC»), a portion of the contract price and extras, respectively, shall be paid out of the applicable Federal funds, and that this contract shall be construed to be an agreement to pay said sums to the Contractor only out of the aforesaid Federal funds if and when such Federal funds shall be received from the Federal Government, and that this contract shall not be construed to be a general agreement to pay said portions at all events out of any funds other than those which may be so received from the Federal Government; provided, that if the Federal share of the cost of the project is not immediately forthcoming from the Federal Government, the STATE may advance the CONTRACTOR the anticipated Federal reimbursement of the cost of the completed portions of the work from funds which have been appropriated by the STATE for its pro rata share.

All words used herein in the singular shall extend to and include the plural. All words used in the plural shall extend to and include the singular. The use of any gender shall extend to and include all genders.



IN WITNESS WHEREOF, the parties hereto have caused this instrument to be duly executed the day and year first above written.

STATE OF HAWAII

\_\_\_\_\_  
Director of Transportation

«CONTRACTOR»

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Print name

\_\_\_\_\_  
Print Title

\_\_\_\_\_  
Date

**PERFORMANCE BOND (SURETY)**  
(6/21/07)

**KNOW TO ALL BY THESE PRESENTS:**

That \_\_\_\_\_,  
*(Full Legal Name and Street Address of Contractor)*

as Contractor, hereinafter called Principal, and \_\_\_\_\_

\_\_\_\_\_  
*(Name and Street Address of Bonding Company)*

as Surety, hereinafter called Surety, a corporation(s) authorized to transact business as a surety in the State of Hawaii, are held and firmly bound unto the \_\_\_\_\_,  
*(State/County Entity)*

its successors and assigns, hereinafter called Obligee, in the amount of \_\_\_\_\_

\_\_\_\_\_ DOLLARS (\$ \_\_\_\_\_), to which payment Principal and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

**WHEREAS**, the above-bound Principal has signed a Contract with Obligee on \_\_\_\_\_, for the following project: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

hereinafter called Contract, which Contract is incorporated herein by reference and made a part hereof.

**NOW THEREFORE**, the condition of this obligation is such that:

If the Principal shall promptly and faithfully perform, and fully complete the Contract in strict accordance with the terms of the Contract as said Contract may be modified or amended from time to time; then this obligation shall be void; otherwise to remain in full force and effect.

Surety to this Bond hereby stipulates and agrees that no changes, extensions of time, alterations, or additions to the terms of the Contract, including the work to be performed thereunder, and the specifications or drawings accompanying same, shall in any way affect its obligation on this bond, and it does hereby waive notice of any such changes, extensions of time, alterations, or additions, and agrees that they shall become part of the Contract.

In the event of Default by the Principal, of the obligations under the Contract, then after written Notice of Default from the Oblige to the Surety and the Principal and subject to the limitation of the penal sum of this bond, Surety shall remedy the Default, or take over the work to be performed under the Contract and complete such work, or pay moneys to the Oblige in satisfaction of the surety's performance obligation on this bond.

Signed this \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_.

(Seal)

\_\_\_\_\_  
Name of Principal (Contractor)

\*

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Title

(Seal)

\_\_\_\_\_  
Name of Surety

\*

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Title

\*ALL SIGNATURES MUST BE ACKNOWLEDGED  
BY A NOTARY PUBLIC

# PERFORMANCE BOND

## KNOW TO ALL BY THESE PRESENTS:

That we, \_\_\_\_\_  
(full legal name and street address of Contractor)

as Contractor, hereinafter called Contractor, is held and firmly bound unto the

\_\_\_\_\_ (State/County entity)

its successors and assigns, as Obligee, hereinafter called Obligee, in the amount

\_\_\_\_\_ DOLLARS \$ \_\_\_\_\_),  
(Dollar amount of Contract)

lawful money of the United States of America, for the payment of which to the said Obligee, well and truly to be made, Contractor binds itself, its heir, executors, administrators, successors and assigns, firmly by these presents. Said amount is evidenced by:

- Legal Tender;**
- Share Certificate** unconditionally assigned to or made payable at sight to \_\_\_\_\_  
Description: \_\_\_\_\_;
- Certificate of Deposit**, No. \_\_\_\_\_, dated \_\_\_\_\_ issued by \_\_\_\_\_ drawn on \_\_\_\_\_ a bank, savings institution or credit union insured by the Federal Deposit Insurance Corporation or the National Credit Union Administration, payable at sight or unconditionally assigned to \_\_\_\_\_;
- Cashier's Check** No. \_\_\_\_\_, dated \_\_\_\_\_ drawn on \_\_\_\_\_ a bank, savings institution or credit union insured by the Federal Deposit Insurance Corporation or the National Credit Union Administration, payable at sight or unconditionally assigned to \_\_\_\_\_;
- Teller's Check** No. \_\_\_\_\_, dated \_\_\_\_\_ drawn on \_\_\_\_\_ a bank, savings institution or credit union insured by the Federal Deposit Insurance Corporation or the National Credit Union Administration, payable at sight or unconditionally assigned to \_\_\_\_\_;
- Treasurer's Check** No. \_\_\_\_\_, dated \_\_\_\_\_ drawn on \_\_\_\_\_ a bank, savings institution or credit union insured by the Federal Deposit Insurance Corporation or the National Credit Union Administration, payable at sight or unconditionally assigned to \_\_\_\_\_;
- Official Check** No. \_\_\_\_\_, dated \_\_\_\_\_ drawn on \_\_\_\_\_ a bank, savings institution or credit union insured by the Federal Deposit Insurance Corporation or the National Credit Union Administration, payable at sight or unconditionally assigned to \_\_\_\_\_;
- Certified Check** No. \_\_\_\_\_, dated \_\_\_\_\_ accepted by a bank, savings institution or credit union insured by the Federal Deposit Insurance Corporation or the National Credit Union Administration, payable at sight or unconditionally assigned to \_\_\_\_\_;

**WHEREAS:**

The Contractor has by written agreement dated \_\_\_\_\_ entered into a contract with Obligee for the following Project: \_\_\_\_\_

hereinafter called Contract, which Contract is incorporated herein by reference and made a part hereof.

**NOW THEREFORE,**

The Condition of this obligation is such that, if Contractor shall promptly and faithfully perform the Contract in accordance with, in all respects, the stipulations, agreements, covenants and conditions of the Contract as it now exists or may be modified according to its terms, and shall deliver the Project to the Obligee, or to its successors or assigns, fully completed as in the Contract specified and free from all liens and claims and without further cost, expense or charge to the Obligee, its officers, agents, successors or assigns, free and harmless from all suits or actions of every nature and kind which may be brought for or on account of any injury or damage, direct or indirect, arising or growing out of the doing of said work or the repair or maintenance thereof or the manner of doing the same or the neglect of the Contractor or its agents or servants or the improper performance of the Contract by the Contractor or its agents or servants or from any other cause, then this obligation shall be void; otherwise it shall be and remain in full force and effect.

**AND IT IS HEREBY STIPULATED AND AGREED** that suit on this bond may be brought before a court of competent jurisdiction without a jury, and that the sum or sums specified in the said Contract as liquidated damages, if any, shall be forfeited to the Obligee, its successors or assigns, in the event of a breach of any, or all, or any part of, covenants, agreements, conditions, or stipulations contained in the Contract or in this bond in accordance with the terms thereof.

The amount of this bond may be reduced by and to the extent of any payment or payments made in good faith hereunder.

Signed and sealed this \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_.

(Seal) \_\_\_\_\_

Name of Contractor

\_\_\_\_\_  
Signature\*

\_\_\_\_\_  
Title

\*ALL SIGNATURES MUST BE ACKNOWLEDGED  
BY A NOTARY PUBLIC

**LABOR AND MATERIAL PAYMENT BOND (SURETY)**  
(6/21/07)

**KNOW TO ALL BY THESE PRESENTS:**

That \_\_\_\_\_,  
*(Full Legal Name and Street Address of Contractor)*

as Contractor, hereinafter called Principal, and \_\_\_\_\_  
\_\_\_\_\_  
*(Name and Street Address of Bonding Company)*

as Surety, hereinafter called Surety, a corporation(s) authorized to transact business as a surety in the State of Hawaii, are held and firmly bound unto the \_\_\_\_\_,  
*(State/County Entity)*

its successors and assigns, hereinafter called Oblige, in the amount of \_\_\_\_\_

\_\_\_\_\_ Dollars (\$\_\_\_\_\_), to which payment Principal and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

**WHEREAS**, the above-bound Principal has signed Contract with the Oblige on \_\_\_\_\_ for the following project: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

hereinafter called Contract, which Contract is incorporated herein by reference and made a part hereof.

**NOW THEREFORE**, the condition of this obligation is such that if the Principal shall promptly make payment to any Claimant, as hereinafter defined, for all labor and materials supplied to the Principal for use in the performance of the Contract, then this obligation shall be void; otherwise to remain in full force and effect.

1. Surety to this Bond hereby stipulates and agrees that no changes, extensions of time, alterations, or additions to the terms of the Contract, including the work to be performed thereunder, and the specifications or drawings accompanying same, shall in any way affect its obligation on this bond, and it does hereby waive notice of any such changes, extensions of time, alterations, or additions, and agrees that they shall become part of the Contract.

2. A "Claimant" shall be defined herein as any person who has furnished labor or materials to the Principal for the work provided in the Contract.

Every Claimant who has not been paid amounts due for labor and materials furnished for work provided in the Contract may institute an action against the Principal and its Surety on this bond at the time and in the manner prescribed in Section 103D-324, Hawaii Revised Statutes, and have the rights and claims adjudicated in the action, and judgment rendered thereon; subject to the Obligee's priority on this bond. If the full amount of the liability of the Surety on this bond is insufficient to pay the full amount of the claims, then after paying the full amount due the Obligee, the remainder shall be distributed pro rata among the claimants.

Signed this \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_.

(Seal)

\_\_\_\_\_  
Name of Principal (Contractor)

\*

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Title

(Seal)

\_\_\_\_\_  
Name of Surety

\*

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Title

**\*ALL SIGNATURES MUST BE ACKNOWLEDGED  
BY A NOTARY PUBLIC**

# LABOR AND MATERIAL PAYMENT BOND

## KNOW ALL BY THESE PRESENTS:

That we, \_\_\_\_\_  
(full legal name and street address of Contractor)

as Contractor, hereinafter called Contractor, is held and firmly bound unto \_\_\_\_\_  
(State/County entity)

its successors and assigns, as Obligee, hereinafter called Obligee, in the amount  
\_\_\_\_\_ DOLLARS (\$ \_\_\_\_\_),  
(Dollar amount of Contract)

lawful money of the United States of America, for the payment of which to the said Obligee, well and truly to be made, Contractor binds itself, its heir, executors, administrators, successors and assigns, firmly by these presents. Said amount is evidenced by:

- Legal Tender;**
- Share Certificate** unconditionally assigned to or made payable at sight to \_\_\_\_\_  
Description: \_\_\_\_\_
- Certificate of Deposit, No.** \_\_\_\_\_, dated \_\_\_\_\_  
issued by \_\_\_\_\_  
drawn on \_\_\_\_\_  
a bank, savings institution or credit union insured by the Federal Deposit Insurance Corporation or the National Credit Union Administration, payable at sight or unconditionally assigned to \_\_\_\_\_;
- Cashier's Check No.** \_\_\_\_\_, dated \_\_\_\_\_  
drawn on \_\_\_\_\_  
a bank, savings institution or credit union insured by the Federal Deposit Insurance Corporation or the National Credit Union Administration, payable at sight or unconditionally assigned to \_\_\_\_\_;
- Teller's Check No.** \_\_\_\_\_, dated \_\_\_\_\_  
drawn on \_\_\_\_\_  
a bank, savings institution or credit union insured by the Federal Deposit Insurance Corporation or the National Credit Union Administration, payable at sight or unconditionally assigned to \_\_\_\_\_;
- Treasurer's Check No.** \_\_\_\_\_, dated \_\_\_\_\_  
drawn on \_\_\_\_\_  
a bank, savings institution or credit union insured by the Federal Deposit Insurance Corporation or the National Credit Union Administration, payable at sight or unconditionally assigned to \_\_\_\_\_;
- Official Check No.** \_\_\_\_\_, dated \_\_\_\_\_  
drawn on \_\_\_\_\_  
a bank, savings institution or credit union insured by the Federal Deposit Insurance Corporation or the National Credit Union Administration, payable at sight or unconditionally assigned to \_\_\_\_\_;
- Certified Check No.** \_\_\_\_\_, dated \_\_\_\_\_  
accepted by a bank, savings institution or credit union insured by the Federal Deposit Insurance Corporation or the National Credit Union Administration, payable at sight or unconditionally assigned to \_\_\_\_\_;



**WHEREAS:**

The Contractor has by written agreement dated \_\_\_\_\_ entered into a contract with Obligee for the following Project: \_\_\_\_\_

hereinafter called Contract, which Contract is incorporated herein by reference and made a part hereof.

**NOW THEREFORE,**

The condition of this obligation is such that, if Contractor shall promptly and faithfully perform the Contract in accordance with, in all respects, the stipulations, agreements, covenants and conditions of the Contract as it now exists or may be modified according to its terms, free from all liens and claims and without further cost, expense or charge to the Obligee, its officers, agents, successors or assigns, free and harmless from all suits or actions of every nature and kind which may be brought for or on account of any injury or damage, direct or indirect, arising or growing out of the doing of said work or the repair or maintenance thereof or the manner of doing the same or the neglect of the Contractor or its agents or servants or the improper performance of the Contract by the Contractor or its agents or servants or from any other cause, then this obligation shall be void; otherwise it shall be and remain in full force and effect.

**AND IT IS HEREBY STIPULATED AND AGREED** that suit on this bond may be brought before a court of competent jurisdiction without a jury, and that the sum or sums specified in the said Contract as liquidated damages, if any, shall be forfeited to the Obligee, its successors or assigns, in the event of a breach of any, or all, or any part of, covenants, agreements, conditions, or stipulations contained in the Contract or in this bond in accordance with the terms thereof.

**AND IT IS HEREBY STIPULATED AND AGREED** that this bond shall inure to the benefit of any and all persons entitled to file claims for labor performed or materials furnished in said work so as to give any and all such persons a right of action as contemplated by Sections 103D-324(d) and 103D-324(e), Hawaii Revised Statutes.

The amount of this bond may be reduced by and to the extent of any payment or payments made in good faith hereunder, inclusive of the payments of mechanics' liens which may be filed of record against the Project, whether or not claim for the amount of such lien be presented under and against this bond.

Signed this \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_.

(Seal) \_\_\_\_\_  
Name of Contractor

\* \_\_\_\_\_  
Signature

\_\_\_\_\_  
Title

\*ALL SIGNATURES MUST BE  
ACKNOWLEDGED BY A NOTARY PUBLIC

**DISCLOSURE OF LOBBYING ACTIVITIES..**

Approved by..

Complete this form to disclose lobbying activities pursuant to 31 U.S.C. 1352..

0348-0046..

(See reverse for public burden disclosure.)..

<p>1. Type of Federal Action:..</p> <p><input type="checkbox"/> a. contract</p> <p><input type="checkbox"/> b. grant</p> <p><input type="checkbox"/> c. cooperative agreement</p> <p><input type="checkbox"/> d. loan</p> <p><input type="checkbox"/> e. loan guarantee</p> <p><input type="checkbox"/> f. loan insurance</p>	<p>2. Status of Federal Action:</p> <p><input type="checkbox"/> a. bid/offer/application</p> <p><input type="checkbox"/> b. initial award</p> <p><input type="checkbox"/> c. post-award</p>	<p>3. Report Type:</p> <p><input type="checkbox"/> a. initial filing</p> <p><input type="checkbox"/> b. material change</p> <p>For Material Change Only:</p> <p>year _____ quarter _____</p> <p>date of last report _____</p>
<p>4. Name and Address of Reporting Entity:</p> <p><input type="checkbox"/> Prime <input type="checkbox"/> Subawardee</p> <p>Tier _____, <i>if known:</i></p> <p>Congressional District, <i>if known:</i></p>		<p>5. If Reporting Entity in No. 4 is Subawardee, Enter Name and Address of Prime</p> <p>Congressional District, <i>if known:</i></p>
<p>6. Federal Department/Agency:</p>	<p>7. Federal Program Name/Destination:</p> <p>CFDA Number, <i>if applicable:</i></p>	
<p>8. Federal Action Number, <i>if known:</i></p>	<p>9. Award Amount, <i>if known:</i></p> <p>\$ _____</p>	
<p>10. a. Name and address of Lobbying Entity <i>(if individual, last name, first name, MI):</i></p>		<p>b. Individuals Performing Services <i>(including address if different from No. 10a)</i> <i>(last name, first name, MI):</i></p>
<p>(attach Continuation Sheet(s) SF-LLL-A, if necessary)</p>		
<p>11. Amount of Payment <i>(check all that apply):</i></p> <p>\$ _____ <input type="checkbox"/> actual <input type="checkbox"/> planned</p>	<p>13. Type of Payment <i>(check all that apply):</i></p> <p><input type="checkbox"/> a. retainer</p> <p><input type="checkbox"/> b. one-time fee</p> <p><input type="checkbox"/> c. commission</p> <p><input type="checkbox"/> d. contingent fee</p> <p><input type="checkbox"/> e. deferred</p> <p><input type="checkbox"/> f. other; specify: _____</p>	
<p>12. Form of Payment <i>(check all that apply):</i></p> <p><input type="checkbox"/> a. cash</p> <p><input type="checkbox"/> b. in-kind; specify: nature _____ value _____</p>		
<p>14. Brief Description of Services Performed or to be Performed and Date(s) of Service, including officer(s), employees(s) or Member(s) contacted, for Payment Indicated in Item 11:</p> <p>(attach Continuation Sheet(s) SF-LLL-A, if necessary)</p>		
<p>15. Continuation Sheet(s) SF-LLL-A attached:      <input type="checkbox"/> Yes      <input type="checkbox"/> No</p>		
<p>16. Information requested through this form is authorized by title 31 U.S.C. section 1352. This disclosure of lobbying activities is a material representation of fact upon which reliance was placed by the tier above when this transaction was made or entered into. This disclosure is required pursuant to 31 U.S.C. 1352. This information will be reported to the Congress semi-annually and will be available for public inspection. Any person who fails to file the required disclosure shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.</p>		<p>Signature: _____</p> <p>Print Name: _____</p> <p>Title: _____</p> <p>Telephone No.: _____ Date: _____</p>
<p>Federal Use Only:</p>		<p align="center">Authorized for Local Reproduction Standard Form - LLL</p>

## INSTRUCTIONS FOR COMPLETION OF SF-LLL, DISCLOSURE OF LOBBYING ACTIVITIES

This disclosure form shall be completed by the reporting entity, whether subawardee or prime Federal recipient, at the initiation or receipt of a covered Federal action, or a material change to a previous filing, pursuant to title 31 U.S.C. section 1352. The filing of a form is required for each payment or agreement to make payment to any lobbying entity for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with a covered Federal action. Use the SF-LLL-A Continuation Sheet for additional information if the space on the form is inadequate. Complete all items that apply for both the initial filing and material change report. Refer to the implementing guidance published by the Office of Management and Budget for additional information.

1. Identify the type of covered Federal action for which lobbying activity is and/or has been secured to influence the outcome of a covered Federal action.
2. Identify the status of the covered Federal action.
3. Identify the appropriate classification of this report. If this is a followup report caused by a material change to the information previously reported, enter the year and quarter in which the change occurred. Enter the date of the last previously submitted report by this reporting entity for this covered Federal action.
4. Enter the full name, address, city, state and zip code of the reporting entity. Include Congressional District, if known. Check the appropriate classification of the reporting entity that designates if it is, or expects to be, a prime or subaward recipient. Identify the tier of the subawardee, e.g., the first subawardee of the prime is the 1st tier. Subawards include but are not limited to subcontracts, subgrants and contract awards under grants.
5. If the organization filing the report in item 4 checks "Subawardee", then enter the full name, address, city, state and zip code of the prime Federal recipient. Include Congressional District, if known.
6. Enter the name of the Federal agency making the award or loan commitment. Include at least one organizational level below agency name, if known. For example, Department of Transportation, United States Coast Guard.
7. Enter the Federal program name or description for the covered Federal action (item 1). If known, enter the full Catalog of Domestic Assistance (CFDA) number for grants, cooperative agreements, loans, and loan commitments.
8. Enter the most appropriate Federal identifying number available for the Federal action identified in item 1 (e.g., Request for Proposal (RFP) number; Invitation for Bid (IFB) number; grant announcement number; the contract, grant, or loan award number; the application/proposal control number assigned by the Federal Agency). Include prefixes, e.g., "RFP-DE-90-001."
9. For a covered Federal action where there has been an award or loan commitment by the Federal agency, enter the Federal amount of the award/loan commitment for the prime entity identified in item 4 or 5.
10.
  - (a) Enter the full name, address, city, state and zip code of the lobbying entity engaged by the reporting entity identified in item 4 to influence the covered Federal action.
  - (b) Enter the full names of the individual(s) performing services, and include full address if different from 10(a). Enter Last Name, First Name, and Middle Initial (MI).
11. Enter the amount of compensation paid or reasonably expected to be paid by the reporting entity (item 4) to the lobbying entity (item 10). Indicate whether the payment has been made (actual) or will be made (planned). Check all boxes that apply. If this is a material change report, enter the cumulative amount of payment made or planned to be made.
12. Check the appropriate box(es). Check all boxes that apply. If payment is made through an in-kind contribution, specify the nature and value of the in-kind payment.
13. Check the appropriate box(es). Check all boxes that apply. If other, specify nature.
14. Provide a specific and detailed description of the services that the lobbyist has performed, or will be expected to perform, and the date(s) of any services rendered. Include all preparatory and related activity, not just time spent in actual contact with Federal officials. Identify the federal official(s) or employee(s) contacted or the officer(s), employee(s), or Member(s) or Congress that were contacted.
15. Check whether or not a SF-LLL-A Continuation Sheet(s) is attached.
16. The certifying official shall sign and date the form, print his/her name, title, and telephone number.

Public reporting burden for this collection of information is estimated to average 30 minutes per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to the Office of Management and Budget, Paperwork Reduction (0348-0046), Washington, D.C. 20503.

DISCLOSURE OF LOBBYING ACTIVITIES  
CONTINUATION SHEET

Approved by  
0348-0046

Reporting Entity: \_\_\_\_\_ Page \_\_\_\_\_ of \_\_\_\_\_

STATEMENT OF COMPLIANCE

Date \_\_\_\_\_

I, \_\_\_\_\_ do hereby state:  
 (Name of signatory party) (Title)

(1) That I pay or supervise the payment of the persons employed by \_\_\_\_\_ on  
 (Contractor or subcontractor)  
 the \_\_\_\_\_; that during the payroll period commencing on the \_\_\_\_\_ day of \_\_\_\_\_,  
 (Building or work)  
 \_\_\_\_\_ and ending the \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_ all persons employed on said project have been paid the  
 full weekly wages earned, that no rebates have been or will be made either directly or indirectly to or on behalf of said  
 \_\_\_\_\_ from the full weekly wages earned by any person and that no deductions have  
 (Contractor or subcontractor)  
 been made either directly or indirectly from the full wages earned by any person, other than permissible deductions as defined in  
 Regulations, Part 3 (29 CFR Subtitle A), issued by the Secretary of Labor under the Copeland Act, as amended (48 Stat. 948.63  
 Stat. 108, 72 Stat. 967; 76 Stat. 357; 40 U.S.C. 2760), and described below:

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

(2) That any payrolls otherwise under this contract required to be submitted for the above period are correct and complete; that the wage rates for laborers or mechanics contained therein are not less than the applicable wage rates contained in any wage determination incorporated into the contract; that the classifications set forth therein for each laborers or mechanic conform with the work he performed.

(3) That any apprentices employed in the above period are duly registered in a bona fide apprenticeship program registered with a State apprenticeship agency recognized by the Bureau of Apprenticeship and Training, United States Department of Labor, or if no such recognized agency exists in a State, are registered with the Bureau of Apprenticeship and Training, United States Department of Labor.

(4) That:

(a) WHERE FRINGE BENEFITS ARE PAID TO APPROVED PLANS, FUNDS, OR PROGRAMS

In addition to the basic hourly wage rates paid to each laborer or mechanic listed in the above-  
 Referenced payroll, payments of fringe benefits as listed in the contract have been or will be made to  
 appropriate program for the benefit of such employees, except as noted in Section 4(c) below.

(b) WHERE FRINGE BENEFITS ARE PAID IN CASH

Each Laborer or mechanic listed in the above referenced payroll has been paid as indicated on the payroll, an  
 amount not less than the sum of the applicable basic hourly wage rate plus the amount of the required fringe  
 benefits as listed in the contract, except as noted in Section 4(c) below.

(c) EXCEPTIONS

EXCEPTION (CRAFT)	EXPLANATION
REMARK	

NAME AND TITLE	SIGNATURE
THE WILFUL FALSIFICATION OF ANY OF THE ABOVE STATEMENTS MAY SUBJECT THE CONTRACTOR OR SUBCONTRACTOR TO CIVIL OR CRIMINAL PROSECUTION. SEE SECTION 1001 OF TITLE 18 AND SECTION 231 OF TITLE 31 OF THE UNITED STATES CODE.	

## INSTRUCTIONS FOR PREPARATION OF STATEMENT OF COMPLIANCE

This statement of compliance meets needs resulting from the amendment of the Davis-Bacon Act to include fringe benefits provisions. Under this amended law, the contractor is required to pay fringe benefits as predetermined by the Department of Labor, in addition to payment of the minimum rates. The contractor's obligation to pay fringe benefits may be met by payment of the fringes to the various plans, funds, or programs or by making these payments to the employees as cash in lieu of fringes.

The contractor should show on the face of his payroll all monies paid to the employees whether as basic or as cash in lieu of fringes. The contractor shall represent in the statement of compliance that he is paying to others fringes required by the contract and not paid as cash in lieu of fringes. Detailed instructions follow:

### Contractors who pay all required fringe benefits:

A contractor who pays fringe benefits to approved plans, funds, or programs in amounts not less than were determined in the applicable wage decision of the Secretary of Labor shall continue to show on the face of his payroll the basic cash hourly rate and overtime rate paid to his employees, just as he has always done. Such a contractor shall check paragraph 4(a) of the statement to indicate that he is also paying to approved plans, funds, or programs not less than the amount predetermined as fringe benefits for each craft. Any exception shall be noted in Section 4(c).

### Contractors who pay no fringe benefits:

A contractor who pays no fringe benefits shall pay to the employee and insert in the straight time hourly rate column of his payroll an amount not less than the predetermined rate for each classification plus the amount of fringe benefits determined for each classification in the applicable wage decision. Inasmuch as it is not necessary to pay time and a half on cash paid in lieu of fringes, the overtime rate shall be not less than the sum of the basic predetermined rate, plus the half time premium on the basic or regular rate plus the required cash in lieu of fringes at the straight time rate. To simplify computation of overtime, it is suggested that the straight time basic rate and cash in lieu of fringes be separately stated in the hourly rate column, thus \$3.25/.40. In addition, the contractor shall check paragraph 4(b) of the statement to indicate that he is paying fringe benefits in cash directly to his employees. Any exceptions shall be noted in Section 4(c).

### Use of Section 4(c), Exceptions

Any contractor who is making payment to approved plans, funds, or programs in amounts less than the wage determination requires is obliged to pay the deficiency directly to the employees as cash in lieu of fringes. Any exceptions to Section 4(a) or 4(b), whichever the contractor may check, shall be entered in Section 4(c). Enter in the Exception column the craft, and enter in the Explanation column the hourly amount paid the employees as cash in lieu of fringes, and the hourly amount paid to plans, funds, or programs as fringes.

CHAPTER 104, HRS COMPLIANCE CERTIFICATE

The undersigned bidder does hereby certify to the following:

1. Individuals engaged in the performance of the contract on the job site shall be paid:
  - A. Not less than the wages that the director of labor and industrial relations shall have determined to be prevailing for corresponding classes of laborers and mechanics employed on public works projects; and
  - B. Overtime compensation at one and one-half times the basic hourly rate plus fringe benefits for hours worked on Saturday, Sunday, or a legal holiday of the State or in excess of eight hours on any other day.
2. All applicable laws of the federal and state governments relating to workers' compensation, unemployment compensation, payment of wages, and safety shall be fully complied with.

DATED at Honolulu, Hawaii, this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_.

\_\_\_\_\_  
«CONTRACTOR»  
Name of Corporation, Partnership, or Individual

\_\_\_\_\_  
Signature and Title of Signer

Notary Seal  
NOTARY ACKNOWLEDGEMENT

Subscribed and sworn before me this \_\_\_\_\_ day of \_\_\_\_\_  
Notary signature \_\_\_\_\_  
Notary public, State of \_\_\_\_\_  
My Commission Expires: \_\_\_\_\_

Notary Seal  
NOTARY CERTIFICATION

Doc. Date: \_\_\_\_\_ #Pages: \_\_\_\_\_  
Notary Name: \_\_\_\_\_ Circuit \_\_\_\_\_  
Doc. Description: \_\_\_\_\_  
\_\_\_\_\_  
Notary signature \_\_\_\_\_  
Date \_\_\_\_\_