State of Hawaii
DEPARTMENT OF LAND AND NATURAL RESOURCES
DIVISION OF BOATING AND OCEAN RECREATION
Honolulu, Hawaii

BOARD OF LAND AND NATURAL RESOURCES

Ryan K.P. Kanaka'ole
Chairperson

CONTRACT SPECIFICATIONS AND PLANS

Job No. KA26-03
Port Allen Small Boat Harbor Hurricane Lowell Water System Repair and Lighting
Eleele, Kauai, Hawaii

November 2026

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Port Allen Small Boat Harbor Hurricane Lowell Water System Repair and Lighting
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Approved: _____

FINN D. MCCALL
Engineering Branch Head
Division of Boating and Ocean Recreation

Approved: _____

MEGHAN L. STATTS
Administrator
Division of Boating and Ocean Recreation

November 2026

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NOTICE TO BIDDERS

(Chapter 103D, HRS)

COMPETITIVE SEALED BIDS for Job No. KA26-03, Port Allen Small Boat Harbor Hurricane Lowell Water System Repair and Lighting, Eleele, Kauai, Hawaii shall be submitted to the Department of Land and Natural Resources, Division of Boating and Ocean Recreation, Engineering Branch on the specified date and time through the State of Hawaii e-Procurement System (HIePRO) at: http://www.spo.hawaii.gov/hiepro.

The Department of Land and Natural Resources Interim General Conditions dated October 1994, as amended, and the General Conditions – AGS008 latest revision (General Conditions), shall be made a part of the specifications. Electronic copies of the General Conditions are available through the State Procurement Office website.

The purpose of this Invitation for Bids is to award to a Contractor work that shall consist of paying for all materials, tools, equipment, labor and other incidental work necessary to complete connection to existing water mains, installation of high density polyethylene (HDPE) water main pipe/fittings, new hose bibb pedestals, and new solar powered area lighting with footings and poles, and appurtenant work as required or called for in this Proposal, all according to the true intent and meaning of the Notice to Bidders, Information and Instructions to Bidders, Proposal, Technical Specifications, Interim General Conditions, Plans, and any and all addenda related to this solicitation.

Due to the nature of work contemplated, bidders must possess a valid State Contractor's license Class "A" General Engineering.

This project is located at the Port Allen Small Boat Harbor, Eleele, Kauai, Hawaii.

The estimated cost of construction is $400,000.00.

Prospective Bidders are strongly encouraged to visit the project site prior to submitting their bid. Site visit arrangements shall be made by calling the Kauai District Manager, Mr. Jeremiah Aguilera, at (808) 652-3660 or (808) 241-3115 or via email at jeremiah.g.aguilera@hawaii.gov.

As a condition for award of the contract and final payment, the vendor shall provide proof of compliance with the requirements of 103D-310(c) HRS. Proof of compliance/documentation is obtained through Hawaii Compliance Express (HCE). Vendors shall register in Hawaii Compliance Express (HCE), a program separate from HIePRO. The vendor is responsible for maintaining compliance. If the vendor does not maintain timely compliance in HCE, an offer otherwise deemed responsive and responsible may not be awarded.

The award of the contract, if it be awarded, will be subject to the availability of funds.

The Engineering Branch Head is responsible for administering and overseeing the Contract, including monitoring and assessing contractor performance.

The job is subject to preference for Hawaii Products established by Section 103D, Hawaii Revised Statutes. The Hawaii Product List may be examined at the State Procurement Office.
Should there be any questions, please use the question and answer section of the HIePRO solicitation.

INFORMATION AND INSTRUCTIONS TO BIDDERS

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INFORMATION AND INSTRUCTIONS TO BIDDERS

A. PROJECT LOCATION AND SCOPE OF WORK: The project location and scope of work shall be as generally described in the Notice to Bidders.

B. SEALED PROPOSALS**: Not applicable. See D. PROPOSAL FORM.**

C. GENERAL CONDITIONS: The Department of Land and Natural Resources Interim General Conditions dated October 1994, as amended, shall be made a part of these contract specifications and are referred to hereafter as the DLNR General Conditions.

D. PROPOSAL FORM: **The Bidders shall fill out and upload the electronic copy of the proposal form to the HIePRO website when submitting the bid. Bid Proposals shall not be mailed, faxed or delivered to the State, unless requested to do so after the designated closing date. The successful Bidder shall fill out and print a hard copy of the proposal form, sign and submit the form with the contract award package.**

E. OMISSIONS OR ERASURES: Any proposal which contains any omission or erasure or alteration not properly initialed, or conditional bid, or other irregularity may be rejected by the Board of Land and Natural Resources (Board).

F. NOTICE OF INTENT TO BID AND QUESTIONNAIRE:
A Notice of Intent to Bid is not required for this project. In compliance with HRS Section 103D-310, the lowest responsive and responsible bidder may be required to complete a standard questionnaire. When required, the completed questionnaire shall be submitted to the Chief Engineer for evaluation. Failure to furnish the requested information within the time allowed may be grounds for a determination of non-responsibility, in accordance with HRS Section 103D-310 and HAR Section 3-122-108.

G. BID SECURITY: A bid security (also known as "bid bond") shall be furnished by each bidder as provided in sub-section 2.7 of the DLNR General Conditions for construction or repair contracts only. Contracts for Goods, Services, and/or Goods and Services-only do not require submission of a bid security with the bid proposal. For construction or repair contracts only - the successful bidder's bid security will be retained until Contract execution and furnished a performance and payment bond in an amount equal to one hundred percent (100%) of the total Contract price, including an amount estimated to be required for extra work, is furnished. A bid security shall be required for all construction or repair contracts with an estimated cost of $25,000 or more.

The Board reserves the right to hold the bid securities of the four lowest bidders until the successful bidder has entered into a contract and has furnished the required performance bond. All bid securities will be returned in accordance with sub-section 3.5 of the DLNR General Conditions.

Should the successful bidder fail to enter into a contract and furnish a satisfactory performance bond within the time stated in the proposal, the bid security shall be forfeited as required by law.

H. CONTRACTOR'S LICENSE REQUIRED: The Board will reject all bids received from contractors who have not been licensed by the State Contractors License Board in accordance with Chapter 444, HRS; Title 16, Chapter 77, Hawaii Administrative Rules; and statutes amendatory thereto. Goods and Service or Service-only contracts do not require a contractor's license. See Notice to Bidders for contractor's license required for construction or repair contracts.

I. IRREGULAR BIDS: No irregular bids or propositions for doing the work will be considered by the Board.

J. WITHDRAWAL OF BIDS: No bidder may withdraw his bid between the time of the opening thereof and the award of contract.

K. SUCCESSFUL BIDDER TO FILE PERFORMANCE AND PAYMENT BONDS: For Competitive Sealed Bidding (also known as Invitation for Bids) procurements pursuant to HRS 103D-302 for construction or repair contracts only with an estimated cost of $25,000 or more, the successful bidder will be required to file performance and payment bonds each; in the amount equal to the total contract price, including amounts estimated to be required for extra work, as provided in sub-section 3.6 of the DLNR General Conditions.

For Small Purchase procurements pursuant to HRS 103D-305, performance and payment bonds shall be provided for construction or repair contracts only with an estimated cost of $50,000 or more.

Performance and payment bonds are not required for Goods, Services, and/or Goods and Services only contracts, regardless of contract cost.

L. NUMBER OF EXECUTED ORIGINAL COUNTERPARTS OF CONTRACT DOCUMENTS: If requested by the Board, six copies of the Contract, performance and payment bonds shall be executed.

M. CHANGE ORDERS: No work of any kind in connection with the work covered by the plans and specifications shall be considered as change order work, or entitle the Contractor to extra compensation, except when the work has been ordered in writing by the Chief Engineer (Engineer) and in accordance with sub-section 4.2 of the DLNR General Conditions.

The Contractor shall clearly identify and inform the Engineer in writing of any deviations from the contract documents at the time of submission and shall obtain the Engineer's written approval to the specified deviation prior to proceeding with any work.

N. WAGES AND HOURS: In accordance with sub-sections 7.3 to 7.9 of the General Conditions relative to hours of labor, minimum wages and overtime pay, the current minimum wage rates promulgated by the Department of Labor and Industrial Relations (DLIR) shall be paid to the various classes of laborers and mechanics engaged in the performance of this contract on the job site. The minimum wages shall be increased during the performance of the contract in an amount equal to the increase in the prevailing wages for those kinds of work as periodically determined by the DLIR.

The Department of Land and Natural Resources will not recognize any claim for additional

compensation because of the payment by the Contractor of any wage rate in excess of the said minimum wage rates. The possibility of wage increase is one of the elements to be considered by the Contractor in determining his bid, and will not, under any circumstances, be considered as the basis of a claim against the Department under this Contract.

No work shall be done on Saturdays, Sundays, legal State holidays, and/or in excess of eight (8) hours each day without the written consent of the Engineer. Should permission be granted to work at such times, the Contractor shall pay for all inspection administrative costs thereof. No work shall be done at night unless authorized by the Engineer.

O. PERMITS: The Contractor shall procure all required project permits and pay the required fees, including hiring consultants and payment thereto for services related to obtaining required permits if required. In all cases, the Contractor shall give all notices necessary and incident to the due and lawful prosecution of the work.

P. PROPERTY DAMAGE: It shall be the responsibility of the contractor to respect State property and to prevent damage to existing improvements. The Contractor will be responsible for damages resulting from construction operations. Immediately upon discovery, the Contractor shall repair such damage to the satisfaction of the Engineer.

All trees and shrubbery outside the excavation, embankment or construction limits shall be fully protected from injury.

Q. TIME: The time of completion is specified in the Proposal. It is the Board's intention to insist the Contractor diligently prosecute the work to completion within the specified time.

Prospective bidders are reminded that the State has the option to proceed with or abandon a project depending on whether the project can be completed for occupancy in the specified time.

It is the bidder's responsibility to check the availability of all materials before bidding. The bidder shall select sub-contractors and suppliers who can warrant availability and delivery of all specified or qualified materials to assure project completion within the specified time.

The successful bidder must assume all risks for completing the project by the specified date. There shall be no extension of time for any reason except for delays caused by acts of God, labor disputes involving unions, or actions of the State. If for any reason the project falls behind schedule, the Contractor shall at its own cost, take necessary remedial measures to get the project back on schedule, i.e., working overtime, air freighting all materials, etc. In addition, if the Contractor fails to fully complete the project by the completion date, Contractor will be required to make the facility usable at its own cost.

R. BIDDER'S RESPONSIBILITY TO PROVIDE PROPER SUPERINTENDENCE: The successful low bidder shall designate in writing to the Engineer the name of its authorized superintendent (Superintendent), who will be present at the job site whenever any work is in progress. The Superintendent shall be responsible for all work, receiving and implementing instructions from the Engineer in a timely manner. The cost for superintendence shall be considered incidental to the project.

If the Superintendent is not present at the site of work, the Engineer shall have the right to suspend the work as described under sub-section 5.5 c. and 7.20 - Suspension of Work of the General Conditions.

S. LIQUIDATED DAMAGES: Liquidated damages in the amount specified in the Proposal will be assessed for each and every calendar day from and after the expiration of the time period stated in the Contract for the completion of the project.

T. HIRING OF LOCAL LABOR: The Contractor shall hire local labor whenever practicable.

U. WATER AND ELECTRICITY: The Contractor shall make all necessary arrangements and pay all expenses for water and electricity used in the construction of this project.

V. PUBLIC CONVENIENCE AND SAFETY: The Contractor shall conduct construction operations with due regard to the convenience and safety of the public at all times. No materials or equipment shall be stored where it will interfere with the safe passage of public traffic. The Contractor shall provide, install, and maintain in satisfactory condition, all necessary signs, flares and other protective facilities and shall take all necessary precautions for the protection of the work and the convenience and safety of the public. The Engineer shall have the right to suspend the performance of the work in accordance with sub-section 7.20 - Suspension of Work of the General Conditions.

W. WORK TO BE DONE WITHOUT DIRECT PAYMENT: Whenever the contract that the Contractor is to perform work or furnish materials of any kind for which no price is fixed in the contract, it shall be understood that the Contractor shall perform such work or furnish said materials without extra charge or allowance or direct payment of any sort. The cost of performing such work or furnishing said material is to be included by the Contractor in a unit price for the appropriate item unless it is expressly specified that such work or material is to be paid for as extra work.

X. AS-BUILT DRAWINGS: As-built drawings, the intent of which is to record the actual in-place construction so that any future renovations or tie-ins can be anticipated accurately, shall be required. All authorizations given by the Engineer to deviate from the plans shall be drawn on the job site plans. All deviations from alignments, elevations and dimensions which are stipulated on the plans shall be recorded on the as-built drawings. Final as-built drawings shall be submitted to the Engineer by the Contractor at the end of the project in both hard copy and electronic copy in Adobe PDF format on CD ROM.

Y. ASBESTOS CONTAINING MATERIALS: The use of asbestos containing materials or equipment is prohibited. The Contractor shall insure that all materials and equipment incorporated in the project are asbestos-free

Z WORKER SAFETY: The Contractor shall provide, install and maintain in satisfactory condition all necessary protective facilities and shall take all necessary precautions for the protection and safety of its workers in accordance with the Occupational Safety and Health Standards for the State of Hawaii. The Engineer shall have the right to suspend the performance of the work in accordance with sub-section 7.20 - Suspension of Work of the General Conditions.

AA. TOILET FACILITIES: All toilet facilities constructed at the project site shall be in accordance with the Public Health Regulations of the State Department of Health (DOH). All necessary precautions shall be observed at the project site. The use of sanitary facilities shall be strictly enforced and workers violating these provisions shall be promptly discharged.

BB. SIGNS: Whenever the project involves closing or obstructing any public thoroughfare, the Contractor shall provide traffic signs conforming to the applicable provisions of the current edition of the "Manual on Uniform Traffic Control Devices for Streets and Highways", published by the Federal Highway Administration as directed by the Engineer for the purpose of diverting or warning traffic prior to the construction area. All traffic signs shall bear proper wording stating thereon the necessary information as to diverting or warning traffic. **A project sign is not required for this project.**

CC. FIELD OFFICE AREA FOR DEPARTMENT: **Not required for this project.**

DD. QUANTITIES: All bids will be compared on the basis of quantities of work to be done as shown in the Proposal; the quantities shown in the Unit Price items are estimated, being given as a basis for comparison of bids. The Board reserves the right to increase or decrease the quantities given under the items or delete items entirely as may be required during the progress of the work.

EE. OTHER HEALTH MEASURES: Forms of work site exposure or conditions which may be detrimental to the health or welfare of workers or of the general public shall be eliminated or reduced to safe levels as required by the DOH codes, standards, and regulations. Suitable first aid kits and a person qualified to render first aid, as specified in the DOH regulations, shall be provided at all times when work is scheduled.

FF. HAWAII BUSINESS OR COMPLIANT NON-HAWAII BUSINESS REQUIREMENT: Bidders (Contractors) shall be incorporated or organized under the laws of the State or be registered to do business in the State as a separate branch or division that is capable of fully performing under the contract, as stipulated in §3-122-112 HAR.

GG. COMPLIANCE WITH §3-122-112 HAR:
As a condition for award of the contract the contactor shall be in compliance with the following requirements:

A. TAX CLEARANCE REQUIREMENTS (HRS Chapter 237): Bidder shall obtain a tax clearance certificate from the Hawaii State Department of Taxation (DOTAX) and the Internal Revenue Service (IRS). The certificate is valid for six months from the most recently approved stamp date on the certificate; the certificate must be valid on the date received by the Department.

B. Department of Labor (DLIR) "**Certificate of Compliance**". (HRS Chapter 383 - Unemployment Insurance, Chapter 386 - Workers' Compensation, Chapter 392 - Temporary Disability Insurance, and 393 – Prepaid Health Care): Bidder shall obtain a certificate of compliance from the Hawaii State Department of Labor and Industrial relations (DLIR). The certificate is valid for six months from the date of issue; certificates must be valid on the date received by the Department.

C. Department of Commerce and Consumer Affairs (DCCA), Business Registration Division (BREG) "**Certificate of Good Standing**". Bidder shall obtain a certificate of good standing issued by the Department of Commerce and Consumer Affairs (DCCA), Business Registration Division (BREG). The certificate of good standing is valid for six months from the date of issue; certificates must be valid on the date received by the Department.

COMPLIANCE, DOCUMENTATION AND HAWAII COMPLIANCE EXPRESS

As a condition for award of the contract and as proof of compliance with the following requirements of 103D-310(c) HRS:

Vendors are required to be compliant with all appropriate state and federal statutes. Proof of compliance (compliance documentation) is required. See the HIePRO Buyer FAQ on the State Procurement website for more information.

Proof of compliance/documentation is obtained through Hawaii Compliance Express (HCE). Vendors shall register in Hawaii Compliance Express (HCE), a program separate from HIePRO. The annual subscription fee to utilize the HCE service is currently $12.00. Allow 2 weeks to obtain complete compliance status after initial registration. It is highly recommended that vendors subscribe to HCE prior to responding to a solicitation.

The vendor is responsible for maintaining compliance. If the vendor does not maintain timely compliance in HCE, an offer otherwise deemed responsive and responsible may not be awarded.

SPECIAL PROVISIONS

Amend INTERIM GENERAL CONDITIONS, dated October 1994, as follows:

Section 2 – Proposal Requirements and Conditions

1. **AMEND** Section 2.1 Qualification of Bidder with the following:

Written Notice of Intent to Bid or Offer: A written Notice of Intent to Bid is not required for the Solicitation.

Standard Qualification Questionnaire: Bidders may be required to complete a standard qualifications questionnaire. When requested, the information shall be furnished within two working days or longer at the discretion of the Engineer. Failure to furnish the requested information within the time allowed may be grounds for a determination of non-responsibility, in accordance with HRS Section 103D-310 and HAR Section 3-122-108.

Hawaii Business or Compliant Non-Hawaii Business Requirement: Bidders shall be incorporated or organized under the laws of the State or be registered to do business in the State as a separate branch or division that is capable of fully performing under the contract, as stipulated in §3-122-112 HAR. A certified letter is not required prior to bid opening.

Compliance with §3-122-112 HAR: As a condition for award of the contract and as proof of compliance with the requirements of 103D-310(c) HRS, the apparent low bidder shall furnish the required documents to the Department. If the valid required certificates are not submitted on a timely basis for award of a contract, a bidder otherwise responsive and responsible may not receive the award. Bidder is responsible to apply for and submit the following documents to the Department.

A. Tax Clearance (HRS Chapter 237): Bidder shall obtain a tax clearance certificate from the Hawaii State Department of Taxation (DOTAX) and the Internal Revenue Service (IRS). The certificate is valid for six months from the most recently approved stamp date on the certificate; the certificate must be valid on the date received by the Department.

B. Department of Labor (DLIR) "Certificate of Compliance". (HRS Chapter 383 - Unemployment Insurance, Chapter 386 - Workers' Compensation, Chapter 392 - Temporary Disability Insurance, and 393 – Prepaid Health Care): Bidder shall obtain a certificate of compliance from the Hawaii State Department of Labor and Industrial relations (DLIR). The certificate is valid for six months from the date of issue; certificates must be valid on the date received by the Department.

C. Department of Commerce and Consumer Affairs (DCCA), Business Registration Division (BREG) "Certificate of Good Standing". Bidder shall obtain a certificate of good standing issued by the Department of Commerce and Consumer Affairs (DCCA), Business Registration Division (BREG). The certificate of good standing is valid for six months from the date of issue; certificates must be valid on the date received by the Department.

Hawaii Compliance Express. Alternately, instead of separately applying for these certificates at the various state agencies, bidder may choose to use the Hawaii Compliance Express (HCE), which allows businesses to register online through a simple wizard interface at http://vendors.ehawaii.gov to acquire a "Certificate of Vendor compliance" indicating that bidder's status is compliant with requirements of §103D-310(c), HRS, shall be accepted for contracting and final payment purposes.
Bidders that elect to use the new HCE services will be required to pay an annual fee of $15.00 to the Hawaii Information Consortium, LLC (HIC). Bidders choosing not to participate in the HCE program will be required to provide the paper certificates as instructed in the previous paragraphs.

2. **ADD** Section 2.4a, Pre-Bid Conferences

Required Pre-bid Conferences: For construction and design-build projects with an estimated value of $500,000 or more and solicited under the competitive sealed bid method (103D-302 HRS); and for construction and design-build projects with an estimated value of $100,000 or more and solicited under the competitive sealed proposal method (103D-303 HRS); a pre-bid conference is required.

Other Pre-Bid Conferences: The Department may require a pre-bid conference for construction or design-build projects that are below the dollar threshold listed in above or when projects have special or unusual requirements.

Other Conditions: The Department may require the prospective Bidders to make a physical inspection of the project site and make attendance at the pre-bid conference a condition for submitting an offer.

Nothing stated at the pre-bid conference shall change the solicitation unless a change is made by written addendum.

3. **DELETE** Section 2.5, Addenda and Interpretations, in its entirety and replace with the following:

"Discrepancies, omissions, or doubts as to the meaning of drawings and specifications should be communicated using the question and answer section on the HIePRO solicitation for interpretation and must be received in the time frame set in the HIePRO solicitation. Any interpretation, if made and any supplemental instructions will be in the form of written addenda to the plans and specifications and made available prior to the offer due date. It shall be the prospective bidder's sole responsibility to verify and obtain any said addenda. Failure of any bidder to receive any such addendum or interpretation shall not relieve such bidder from any obligation under his bid as submitted. All addenda so issued shall become part of the contract documents."

Section 3 – Award and Execution of Contract

1. **AMEND** Section 3.3, Award of Contract, by deleting "sixty (60)" and replacing with "ninety (90)" in the first paragraph.

2. **AMEND** Section 3.3, Award of Contract, by adding the following after the first paragraph:

"If the contract is not awarded within the ninety (90) days, the Department may request the successful Bidder to extend the time for the acceptance of its bid. The Bidder may reject such a request without penalty; and in such case, the Department may at its sole discretion make a similar offer to the next lowest responsive and responsible bidder and so on until a bid is duly accepted or until the Department elects to stop making such requests."

3. **AMEND** Section 3.9, Notice to Proceed, by replacing the last paragraph with the following:

In the event the Notice to Proceed is not issued within three hundred and sixty-five (365) days after the date of bid opening, the Contractor may submit a claim for increased labor and materials costs (but not overhead costs) that will be incurred after 365 days after the date of bid opening plus the contract time allowed for performance of the work. Such claims shall be accompanied with the necessary documentation to justify the claim. No payments will be made for escalation costs that are not fully justified as determined by the State.

4. **ADD** Section 3.10, Protests:

"**3.10 PROTESTS**—Pursuant to Section 103D-701, Hawaii Revised Statutes, an actual or prospective offeror who is aggrieved in connection with the solicitation or award may submit a protest. Any protest shall be submitting in writing to the Chairperson, Department of Land and Natural Resources, 1151 Punchbowl Street, Honolulu, Hawaii 96813, or designee as specified in the solicitation.

A protest shall be submitted in writing within five (5) working days after the aggrieved person knows or should have known the facts giving rise thereto; provided that a protest based upon the content of the solicitation shall be submitted in writing prior to the date set for receipt of offers. Further provided that a protest of an award or proposed award shall be submitted within five (5) working days after the posting of the award of the contract.

The notice of award, if any, resulting from this solicitation shall be posted on the HIePRO website.

Section 5 – Control of Work

AMEND Section 5.8 Value Engineering Incentive by deleting "$100,000" and replacing with "$250,000" in the first paragraph.

Section 6 – Substitution of Materials and Equipment

ADD the following to Section 6.3 Sub-paragraph b:

4. If the substitution meets all the requirements of the specifications and plans.

Section 7 – Prosecution and Progress

1. **DELETE** Section 7.2d in its entirety and replace with the following:

"d. INSURANCE REQUIREMENTS

1. **Obligation of Contractor** - Contractor shall not commence any work until it obtains, at its own expense, all required herein insurance. Such insurance must have the approval of the Department as to limit, form and amount and must be maintained with a company authorized by laws of the State to issue such insurance in the State of Hawaii. Coverage by a "Non-Admitted" carrier is permissible provided the carrier has a AM Best's Rating of "A-VII" or better.

2. All insurance described herein will be maintained by the Contractor for the full period of the contract and in no event will be terminated or otherwise allowed to lapse prior to written certification of final acceptance of the work by the Department.

3. Certificate(s) of Insurance acceptable to the Department shall be filed with the Engineer prior to commencement of the work. Certificates shall identify if the insurance company is a "captive" insurance company or a "Non-Admitted" carrier to the State of Hawaii. The Best's Rating must be stated for the "Non-Admitted" carrier. Certificates shall contain a provision that coverages afforded under the policies will not be canceled or changed until at least thirty (30) days written notice has been given to the Engineer by registered mail. The insurance policies shall name the State of Hawaii, its officers and employees as an additional insured and such coverage shall be noted on the certificate. Should any policy be canceled before final acceptance of the work by the Department, and the Contractor fails to immediately

procure replacement insurance as specified, the Department, 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 to the Contractor.

4. 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 Department harmless pursuant to other provisions of this contract. In no instance will the Department'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.

5. All insurance described herein shall cover the insured for all work to be performed under the contract, all work performed incidental thereto or directly or indirectly connected therewith, including traffic detour work or other work performed outside the work area, and all change order work.

6. The Contractor shall, from time to time, furnish the Engineer, when requested, satisfactory proof of coverage of each type of insurance required or a copy of the actual policies 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.

7. If the Contractor is self-insured, it shall furnish, upon the request and the satisfaction of the Engineer, any documentation to demonstrate the ability to self-insure itself. The Engineer, from time to time, can conduct an audit to determine the ability of the Contractor to be self-insured. Failure to comply with the Engineer's request will be considered a material breach of the contract, and at the discretion of the Engineer, may be sufficient grounds to terminate the contract, suspend any work or withhold future payments.

8. It is the responsibility of the Contractor to notify the Department of any changes to its insurance policies or if the Contractor receives a notice of cancellation of any of its insurance policies. The Contractor will immediately provide written notice to the Department should the insurance policies evidenced on its Certificate of Insurance form be cancelled, limited in scope, or not renewed upon expiration.

9. In addition, the Contractor's insurance policies shall contain the following clauses:
   (a) The State of Hawaii is added as an additional insured with respect to operations performed for the State of Hawaii.
   (b) It is agreed that any insurance maintained by the State of Hawaii will apply in excess of, and not contribute with, insurance provided by this policy.

10. Types of Insurance - The 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 the subcontractor or by anyone directly or indirectly employed by any of them or by anyone for whose acts any of them may be liable.

   (a) Worker's Compensation. The Contractor and all subcontractors shall obtain worker's compensation insurance for all persons whom they employ or may employ in carrying out the work under this contact. This insurance shall be in strict conformity with the

requirements of the most current and applicable State of Hawaii Worker's Compensation Insurance laws in effect on the date of the execution of this contract and as modified during the duration of the contract.

(b) Commercial General Liability. The Contractor shall obtain General Liability insurance with a limit of not less than $1,000,000 per occurrence and $2,000,000 aggregate. The commercial general liability insurance shall include the State as an additional insured. The required limit of insurance may be provided by a single policy or with a combination of primary and excess polices.

(c) Comprehensive Automobile Liability. The Contractor shall obtain Auto Liability insurance covering all owned, non-owned and hired autos with a combined single Limit of not less than $1,000,000 per accident for bodily injury and property damage. The State shall be named as additional insured. The required limit of insurance may be provided by a single policy or with a combination of primary and excess policies.

Furthermore, the Contractor's commercial general liability insurance and automobile liability insurance shall include coverage for bodily injury, sickness, disease or death of any person, arising directly or indirectly out of, or in connection with, the performance of work under this contract.

The Contractor's property damage liability insurance shall provide for all damages arising out of injury to or destruction of property of others including the Department's, arising directly or indirectly out of or in connection with the performance of the work under this contract including explosion or collapse.

The Contractor shall either:

i. Require each of its subcontractors to procure and to maintain during the life of its subcontract, subcontractors' comprehensive general liability, automobile liability and property damage liability insurance of the type and in the same amounts specified herein; or

ii. Insure the activities of its subcontractors in its own policy.

The Contractor will be permitted, in cooperation with insurers, to maintain a self-insured retention for up to 25% of the per occurrence combined single limits of the commercial general liability and the automobile liability policies. The existence of the self-insured retention must be noted on the certificate of insurance coverage submitted to the Department or else it will be understood that the insurer is providing first dollar coverage for all claims. For all claims within the self-insured retention amount, the rights, duties and obligations between the Contractor and the Department shall be identical to that between a liability insurer and the Department, as an additional insured, as if there was no self-insured retention.

(d) Builder's Risk Insurance. Unless included in the Specifications of this project, the Contractor shall not be required to provide builder's risk insurance. If required as noted in the Specifications, builder's risk insurance shall be provided during the progress of work and until final acceptance by the Department upon completion of the contract. It shall be "All Risk" (including but not limited to earthquake, windstorm and flood damage) completed value insurance coverage on all completed work and work in progress to the full replacement value thereof. Such insurance shall include the

Department as additional name insured. The Contractor shall submit to the Engineer for its approval all items deemed to be uninsurable. The policy may provide for a deductible in an amount of up to 25% of the amount insured by the policy. With respect to all losses up to any deductible amount, the relationship between the Contractor and the Department shall be that of insurer and additional insured as if no deductible existed".

2. **DELETE** Section 7.16 in its entirety and replace with the following:

"RESPONSIBILITY FOR DAMAGE CLAIMS; INDEMNITY – The Contractor shall indemnify the State and the Department against all loss of or damage to the State's or the Department's existing property and facilities arising out of any act or omission committed in the performance of the work by the Contractor, any subcontractor or their employees and agents. Contractor shall defend, hold harmless and indemnify the Department and the State, their employees, officers and agents against all losses, claims, suits, liability and expense, including but not limited to attorneys' fees, arising out of injury to or death of persons (including employees of the State and the Department, the Contractor or any subcontractor) or damage to property resulting from or in connection with performance of the work and not caused solely by the negligence of the State or the Department, their agents, officers and employees. The State or the Department may participate in the defense of any claim or suit without relieving the Contractor of any obligation hereunder. The purchase of liability insurance shall not relieve the Contractor of the obligations described herein.

The Contractor agrees that it will not attempt to hold the State and its Departments and Agencies and their officers, representatives, employees or agents, liable or responsible for any losses or damages to third parties from the action of the elements, the nature of the work to be done under these specifications or from any unforeseen obstructions, acts of God, vandalism, fires or encumbrances which may be encountered in the prosecution of the work.

The Contractor shall pay all just claims for materials, supplies, tools, labor and other just claims against the Contractor or any subcontractor in connection with this contract and the surety bond will not be released by final acceptance and payment by the Department unless all such claims are paid or released. The Department may, but is not obligated to, withhold or retain as much of the monies due or to become due the Contractor under this contract considered necessary by the Engineer to cover such just claims until satisfactory proof of payment or the establishment of a payment plan is presented.

The Contractor shall defend, indemnify and hold harmless the State and its Departments and Agencies and their officers, representatives, employees or agents from all suits, actions or claims of any character brought on account of any claims or amounts arising or recovered under the Worker's Compensation Laws or any other law, by-law, ordinance, order or decree.

Section 8 – Measurement and Payment

1. **DELETE** Section 8.7a in its entirety and replace with the following:

a. Tax Clearances from the State of Hawaii Department of Taxation and Internal Revenue Service, subject to section 103D-328, HRS, current within two months of issuance date indicating that all delinquent taxes levied or accrued under State Statutes against the contractor have been paid.

2. **ADD** Section 8.7d, Certificate of Compliance:

d. A Certification from the Contractor affirming that the Contractor has, as applicable, remained in compliance with all laws as required by Section 103D-310, HRS, and Section 3-122-112, HAR. A

contractor making a false affirmation shall be suspended and may be debarred pursuant to section 103D-702, HRS.

1. Certification of Compliance for Final Payment, State Procurement Office Form-22. Must be Signed Original.

3. **ADD** Section 8.7e, Hawaii Compliance Express:

e. In lieu of submitting the tax clearances from Taxation and IRS, and SPO Form -22, the Contractor may choose to use the Hawaii Compliance Express as described on page SP-1 of this Special Provisions.

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SECTION 01019

GENERAL SPECIFICATIONS

PART 1 - GENERAL

1.1 GENERAL REQUIREMENTS

Work shall consist of furnishing all labor, tools, materials, and equipment necessary and required to construct in-place-complete all work as indicated on the drawings and as specified herein.

1.2 GENERAL

A. Construction Lines, Levels and Grades: The Contractor shall verify all lines, levels and elevations indicated on the drawings before any clearing, excavation or construction begins. Any discrepancy shall be immediately brought to the attention of the Engineer, and any change shall be made in accordance with his instruction. The Contractor shall not be entitled to extra payment if he fails to report the discrepancies before proceeding with any work whether within the area affected or not.

B. Examination of Premises: The Contractor shall contact the Engineer and obtain permission before visiting the site.

C. Notices: The Contractor shall call the Engineer and give at least three (3) working days notice before starting any work.

D. Conditions at Site: Every person bidding on this project is expected to visit the site and examine the conditions and satisfy himself as to the character and amount of the work to be performed as indicated on the drawings and called for by the specifications. No additional allowance will be granted because of the lack of knowledge of such conditions.

E. Disruption of Utility Services: All work related to the temporary disconnection of electrical system shall be pre-arranged with the Engineer so that any disruption of such services will be kept to a minimum. In the event temporary power hook-up is required, the Contractor shall provide the necessary services.

F. Contractor's Operations

1. The Contractor must employ, insofar as possible, such methods and means of carrying out the work so as not to cause any interruption or interference to the facility's operations. Where the Contractor's operations would result in interruptions which would hamper the operations of the facilities, the Contractor shall rearrange the schedule of work accordingly.

2. The Contractor shall maintain safe passageway to and from the facility's occupied spaces for the user agency personnel and the public at all times.

G. Parking Policy for Contractor

1. The Contractor and his employees will not be allowed to park in zones assigned to facility personnel.

2. Areas to be used by the Contractor shall be as designated by the Engineer. Any lawn damaged by the Contractor shall be restored when so instructed by the Engineer at no cost to the State.

H. Toilet Accommodations: The Contractor may use the existing toilet facilities if so designated by the Engineer; however, it is the Contractor's responsibility to keep same clean and in a sanitary condition at all times.

I. Protection of Property: The Contractor shall continually maintain adequate protection of all his work from damage and shall protect all property, including but not limited to buildings, equipment, furniture, grounds, vegetation, material, utility systems, and boats located at and adjoining the job site. The Contractor shall repair, replace or pay the expense of repair of damages resulting from his operations.

J. Use of Power-Driven Equipment: The Contractor is cautioned to take all necessary safety precautions to protect facility personnel, and the public whenever power driven equipment is used.

K. Safety:

1. The Hawaii Occupational Safety and Health Law, Chapter 396, Hawaii Revised Statutes, as amended, is applicable and made a part of the Contract.

2. The Contractor shall carefully read and strictly comply with its requirements.

L. Clean Up Premises: The Contractor shall clean up and remove from the premises all debris accumulated from operations from time to time and as directed. See also Section 7.25 of the GENERAL CONDITIONS.

M. Responsibility:

1. The State of Hawaii will hold the Contractor liable for all the acts of Subcontractors and shall deal only with him (the prime Contractor) in matters pertaining to other trades employed on the job. The Contractor shall be responsible for coordinating the work of all trades on the job.

2. Should he discover any discrepancy in the plans or specifications, the Contractor shall immediately notify the Engineer before proceeding any further with the work, otherwise, he will be held responsible for any cost involved in correction of work placed due to such discrepancy.

N. Cooperation with Other Contractors: The State reserves the right at any time to contract for or otherwise perform other or additional work within the contract zone limits of this Contract. The Contractor of this project shall to the extent ordered by the State, conduct his work so as not to interfere with or hinder the progress or completion of the work performed by other contractors.

O. Division of the Work: The Divisions and Sections into which these Specifications are divided shall not be considered an accurate or complete segregation of work by trades. This also applies to all work specified within each Section.

P. Drawings and Specifications:

1. The Contractor shall not make alterations in the drawings and specifications. In the event he discovers any errors or discrepancies, the Contractor shall immediately notify the Engineer in accordance with the GENERAL CONDITIONS.

2. Where devices, or items, or parts thereof are referred to in the singular, it is intended that such reference shall apply to as many such devices, items or parts as are required to properly complete the work.

3. Specifications and drawings are prepared in abbreviated form and include incomplete sentences. Omission of words or phrases such as “the Contractor shall,” “as shown on the drawings,” “a,” “an,” and “the” are intentional. Omitted words and phrases shall be provided by inference to form complete sentences.

Q. Required Submittals:

1. Required submittals as specified in the Technical Sections of these specifications include one or more of the following: shop drawings; color samples; material samples; technical data; schedules of materials; schedules of operations; guarantees; operating and maintenance manuals; and as-built drawings.

2. Contractor shall make a comprehensive list of the required submittals, by Specification Section, and submit this list to the Engineer within 15 days after notice to proceed.

3. As-Built Drawings: When as-built drawings are required for submittal, the following shall apply:

    a. As-built drawings, the intent of which is to record the actual in-place construction so that any future renovations or tie-ins can be anticipated accurately, shall be required.

    b. All deviations from alignments, elevations and dimensions which are stipulated on the plans shall be recorded in red on the as-built drawings.

    c. The following procedure shall be followed:

        1) Immediately after these changes are constructed in place, the Contractor shall record them on the field office plans. This is to assure that changes are recorded before they are forgotten.

        2) Within two weeks after final inspection of the project, the Contractor shall transfer the changes marked on the field office plans onto a clean copy of plans using a red pencil. Any deletions shall be so noted and redrawn as necessary. The Contractor shall stamp or mark the tracings "AS-BUILT", and also sign and date each drawing so marked.

        3) The Contractor shall submit the as-built drawings together with the marked-up field office plans to the Engineer.

        4) Any as-built drawing which the Engineer determines does not accurately record the deviation shall be corrected by the State and the Contractor shall be charged for the services.

PART 2 – PRODUCTS (NOT USED)

PART 3- EXECUTION (NOT USED)

PART 4-PAYMENT (NOT USED)

END OF SECTION

SECTION 01300

SUBMITTALS

PART 1 - GENERAL

1.1 SUBMITTALS

A. Product information shall be required for:

1. Section 01530 – Barricades

2. Section 02230 – Aggregate Base Course

3. Section 02520 – Asphalt Concrete Pavement

3. Section 02713 – Water System

5. Section 03330 – Cast-in-Place Concrete Reinforcement

7. Any others as called for in the plans and specifications or by the Engineer

B. Other required submittals shall include:

1. Shop Drawings

2. Certificates of Warranty

3. Barricade Shop Drawings

4. Any others as called for in the plans and specifications or by the Engineer

1.2 BIDDER'S SPECIAL RESPONSIBILITY FOR COORDINATING CONTRACTUAL WORK AND SUBMITTALS:

A. The Contractor is responsible for the coordination of all contractual work and submittals.

B. The Contractor shall have a rubber stamp made up in the following format:

CONTRACTOR NAME

PROJECT: _____

_____

JOB NO: _____

THIS SUBMITTAL HAS BEEN CHECKED BY THIS GENERAL CONTRACTOR. IT IS CERTIFIED CORRECT, COMPLETE, AND IN COMPLIANCE WITH CONTRACT DRAWINGS AND SPECIFICATIONS. ALL AFFECTED CONTRACTORS AND SUPPLIERS ARE AWARE OF, AND WILL INTEGRATE THIS SUBMITTAL INTO THEIR OWN WORK.

DATE RECEIVED _____
SPECIFICATION SECTION _____
SPECIFICATION PARAGRAPH _____
DRAWING NUMBER _____
SUBCONTRACTOR NAME _____
SUPPLIER NAME _____
MANUFACTURER NAME _____

CERTIFIED BY: _____

C. This stamp, "filled in", should appear on the title sheet of each shop drawing, on a cover sheet of submittals in an 8-1/2" x 11" format, or on one face of a cardstock tag (min. 3" x 6") tied to each sample. The tag on the samples should state what the sample is so that, if the tag is accidentally separated from the sample, it can be matched up again. The back of this tag will be used by the Engineer for his receipt, review, and log stamp and for any comments that relate to the sample.

D. All submittals for material, equipment, and shop drawings listed in the contract documents, including dimensioned plumbing shop drawings, shall be required and shall be reviewed by the Engineer, prior to any ordering of materials and equipment.

E. Unless otherwise noted, the Contractor shall submit to the Engineer for his review eight copies of all shop drawings, piping layout, and/or catalog cuts for fabricated items and manufactured items (including mechanical and electrical equipment) required for the construction. Drawings shall be submitted in sufficient time to allow the Engineer not less than twenty regular working days for examining the drawings.

F. The drawing shall be accurate, distinct, and complete and shall contain all required information, including satisfactory identification of items, units and assemblies in relation to the contract drawings and specifications.

G. Unless otherwise approved by the Engineer, shop drawings shall be submitted only by the Contractor, who shall indicate by a signed stamp on the drawings or other approved means that the Contractor has checked the shop drawings and that the work or equipment shown is in accordance with contract requirements and has been checked for dimensions and relationship with work of all other trades involved. All deviations from the plans and specifications shall be listed. The practice of submitting incomplete or unchecked shop drawings for the Engineer to correct or finish will not be acceptable, and shop drawings which, in the opinion of the Engineer, clearly indicate that they have not been checked by the Contractor will be considered as not complying with the intent of the contract documents and will be returned to the Contractor for resubmission in the proper form.

H. When the shop drawings have been reviewed by the Engineer, two sets of submittals will be returned to the Contractor appropriately stamped. If major changes or corrections are necessary, the drawing may be rejected and one set will be returned to the Contractor with such changes or corrections indicated, and the Contractor shall correct and resubmit eight copies of the drawings, unless otherwise directed by the Engineer. No changes shall be made by the Contractor to the resubmitted shop drawings other than those changes indicated by the Engineer. The resubmittal shall be so indicated on the shop drawing.

I. The review of such drawings and catalog cuts by the Engineer shall not relieve the Contractor from responsibility for correctness of the dimensions, fabrication details, and space requirements or for deviations from the contract drawings and specifications, unless the Contractor has called attention to such deviations, in writing, by a letter accompanying the drawings and the Engineer approved the change or deviations, in writing, at the time of submission; nor shall review by the Engineer relieve the Contractor from the responsibility for errors in the shop drawings. When the Contractor does call such deviations to the attention of the Engineer, he shall state in his letter whether or not such deviations involve any deduction or extra cost adjustment.

J. The approval of the above drawings, lists, prints, specifications, or other data shall in no way release the Contractor from his responsibility for the proper fulfillment of the requirements of this contract nor for fulfilling the purpose of the installation nor from his liability to replace the same should it prove defective or fail to meet the specified requirements.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

PART 4 - PAYMENT (NOT USED)

END OF SECTION

SECTION 01505

MOBILIZATION AND DEMOBILIZATION

PART 1 - GENERAL

1.1 GENERAL REQUIREMENTS

A. Description: This section covers the requirements for mobilization and demobilization.

1.2 MOBILIZATION: Mobilization shall consist of the transporting, assembling, constructing, installing, and making ready for use at the job site, all the equipment, machinery, structures, utilities, materials, labor, and incidentals necessary to do the work covered by this contract.

1.3 DEMOBILIZATION: Demobilization shall consist of the dismantling and removal of the above-mentioned equipment, machinery, structures, utilities, materials, and incidentals, and the cleaning up of the site.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.1 GUIDELINES: If the Contractor utilizes private lands other than the sites provided by the Department for mobilization purposes, the provisions of this section shall apply, and the mobilization and demobilization work on said private lands shall be in accordance with the agreement between the Contractor and the land owner.

Any and all additional mobilization or demobilization costs in excess of the maximum amounts specified in the Proposal shall be included in the appropriate unit prices bid in the Proposal. The Contractor shall not receive any compensation for mobilization and demobilization in addition to those specified in the Proposal.

All equipment, machinery, buildings, utilities and incidentals mobilized and demobilized under this section shall remain the property of the Contractor.

END OF SECTION

SECTION 01530

BARRICADES

PART 1 - GENERAL

1.1 GENERAL REQUIREMENTS

A. Description. This work shall consist of furnishing, installing and maintaining barricades in accordance with the requirements of the contract.

Barricade application shall be provided for in the latest edition of the FHWA publication, Manual on Uniform Traffic Control Devices for Streets and Highways (MUTCD), and as amended.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Lumber: Lumber for rails, frames and braces shall be dry, sound, undamaged, well seasoned, and free from any defect which may impair their strength and durability.

B. Hardware: Nails shall be galvanized wire nails. As many and as large a size as is practicable shall be used.

C. Paints: Paints shall be exterior enamel paint of the best grade or first line as made by approved manufacturers.

D. Sheet Reflecting Material: Sheet reflecting material shall conform to the applicable requirements of Subsection 712.20(C) of the “Standard Specifications for Road and Bridge Construction.”

E. Alternate Designs: Alternate barricade designs such as plastic molded barricades may be used subject to the Engineer's approval. The Contractor shall submit shop drawings or catalog cuts for approval.

PART 3 - EXECUTION

3.1 CONSTRUCTION REQUIREMENTS

A. General: Barricades shall be constructed in a first class, workmanlike manner in accordance with details shown on the plans and as specified herein.

Barricades shall be in good condition and approved by the Engineer for use within the project limits. Barricade application and installation shall be as shown on the plans and as directed by the Engineer in accordance with the guidelines provided in the latest edition of the FHWA publication, Manual on Uniform Traffic Control Devices for Streets and Highways (MUTCD), and any amendments or revisions thereof as may be made from time to time.

Sand bags or other approved weights shall be provided where required or as directed by the Engineer. Sand bags or other approved weights shall not be placed on any striped barricade rail.

Steady burn and/or flashing lamps shall be required on selected barricades used during hours of darkness. Locations shall be as shown on the plans and as directed by the Engineer. Lamps shall be attached on the barricade ends closest to the traveled way and shall be visible to the motorist.

Barricades furnished and paid for as provided for as provided herein may be used for temporary detours, construction phasing, or other temporary traffic control work.

Barricades furnished and paid for use in temporary detours or construction phasing may be used for permanent location called for on the plans.

Upon completion of the construction work, barricades shall be left in place, relocated, or removed and disposed of as shown on the plans or as directed by the Engineer. Barricades left in place, or relocated to new permanent locations shall become the property of the State. Barricades directed to be removed and disposed of shall become the property of the Contractor.

B. Painting: Wooden rails, frames and braces shall be given a prime coat and 2 finish coats of new white exterior enamel paint. Rail faces to be reflectorized may be left unpainted unless otherwise specified or directed.

C. Reflectorization: Reflectorization of barricade rails shall be done in a first class, workmanlike manner and the attachment of reflective sheeting shall be as shown on the plans, specified herein, or as directed and approved by the Engineer.

Both vertical faces of each barricade rail shall be reflectorized as shown on the plans.

Wooden rails shall be reflectorized with one of the following:

1. Reflective sheeting specified in Subsection 712.20(C)(4) of the “Standard Specifications for Road and Bridge Construction” and backed with a 26 gage galvanized steel sheet, or

2. A hardened aluminum backed reflective sheeting as specified in Subsection 712.20(C)(5) of the “Standard Specifications for Road and Bridge Construction.”

D. Color: Rails, frames, and braces shall be white.

The front and back faces of barricade rails shall have 6-inch wide alternative colored and white striped sloping downward toward the traveled way at an angle of 45 degrees with the vertical. The colored stripes shall be either orange or red in accordance with the following requirements:

1. Orange and white stripes shall be used in the following conditions:

   a. Construction work.

   b Detours.

   c. Maintenance work.

2. Red and white stripes shall be used in the following conditions:

   a. On roadways with no outlet (i.e. dead-ends, cul-de-sacs).

   b. Ramps or lanes closed for operational purposes.

   c Permanent or semi-permanent closure or termination of a roadway.

E. Maintenance: Barricades shall be kept in good condition throughout their usage during construction until the end of the contract.

F. The Contractor shall repair, repaint, clean or replace the barricades as required and as directed by the Engineer to maintain their effectiveness and appearance.

The Constructor shall immediately replace all lost, stolen or damaged barricades, lamps, sand bags and other approved weights.

Barricades used during construction phasing, temporary detours or other temporary traffic control work shall be cleaned and repaired as necessary, prior to being relocated to a permanent location shown on the plans or as directed.

No extra payment will be made for any repair work, repainting, or cleaning of barricades. The Engineer shall determine the suitable condition of each barricade and shall determine when each barricade shall be repaired, repainted or cleaned.

PART 4 - PAYMENT

Barricades will not be measured and paid for separately, but shall be incidental to applicable items in the Proposal.

END OF SECTION

SECTION 02225

TRENCHING, BACKFILLING, AND COMPACTING

PART 1 - GENERAL

1.1 GENERAL REQUIREMENTS

This section covers the requirements for utility trenching, backfilling, and compacting.

A. Work includes: Trench, backfill, and compact as specified herein and as needed for installation of underground utilities associated with the Work.

B. Related Work:

1. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.

1.2 QUALITY ASSURANCE

A. Use adequate numbers of skilled workers who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.

B. Use equipment adequate in size, capacity, and numbers to accomplish the work in a timely manner.

C. In addition to complying with requirements of governmental agencies having jurisdiction, comply with the directions of the Engineer.

D. Compaction requirements are defined by American Society for Testing and Materials (ASTM) publication D-1557 “Moisture-Density Relations of Soils and Soil-Aggregate Mixtures using 10-lb Rammer and 18-inch Drop.”

1.3 PERMITS

A. Obtain necessary permits required from applicable agencies. All permit fees will be considered incidental to the work and a separate payment shall not be made.

1. Grading Permit

PART 2 - PRODUCTS

2.1 BACKFILL MATERIALS

A. Select Granular Material: Backfill from the bottom of the trench to six inches (6 inches) above the top of the pipe shall be select granular material. Sand, graded crushed rock (commonly known as “rock sand”) or excavated granular or sandy material shall be used for select material provided that all rocks or lumps of material over one inch in its longest dimension have been removed. Select material shall be free from salt, ashes, refuse, organic material, or other material which, in the opinion of the Engineer, is unsuitable.

All material to be used as select material backfill shall be approved by the Engineer. If in the opinion of the Engineer the excavated material does not meet the grading requirements of select material, the Contractor shall be required to screen the material prior to its use as select material backfill.

B. Ordinary Material: Material used in the upper portion of the backfill from one foot above the top of the pipe to the surface of the ground or subgrade of the road shall not contain stone, rock or other material larger than six inches in its longest dimensions. No wood, vegetable matter or other material which, in the opinion of the Engineer, is unsuitable, shall be included in the backfill. No “adobe” or other materials determined to be deleterious by the Engineer shall be included in the backfill.

C. The Contractor shall obtain the approval of the Engineer of all backfill material.

2.2 OTHER MATERIALS

A. Provide other materials, not specifically described but required for a complete and proper installation, as selected by the Contractor subject to the approval of the Engineer.

PART 3 - EXECUTION

3.1 SURFACE CONDITIONS

A. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.

3.2 FINISH ELEVATIONS AND LINES

A. All material excavated from trenches shall be considered unclassified, whether consisting of earth, lava, soft rock, decomposed rock, solid rock, boulders, or coral. The trench shall be so dug that the pipe can be properly installed to the alignment and grade specified. Excavation shall commence at the point directed by the Engineer and shall be carried on in an orderly manner. No trench shall be opened more than 500 feet in advance of the installed pipe without the approval of the Engineer. No jumps or spaces will be permitted unless approved by the Engineer. Before proceeding with any excavation under asphaltic concrete and concrete pavements, the Contractor shall cut the edges of the excavation with a power saw to insure a neat cut along the pavement.

B. Trench Widths:

1. The widths of trenches for all pipes and appurtenances shall be as shown on the Drawings.

2. Increases in widths over those shown due to sheeting, bracing, or other necessities of construction, may be made by the Contractor with the approval of the Engineer but no additional compensation will be allowed for such extra width.

3. Bell holes shall be provided at each joint to permit the jointing of pipes to be made properly.

C. Trench Depths:

1. In general, trench depths for all pipes and appurtenances shall be as shown on the Drawings.

2. Where necessary, the Engineer reserves the right to raise or lower the grades or to change alignments from those shown on the Drawings.

D. Excavation Below Grades:

1. Any part of the trench excavated below grade by the Contractor shall be corrected with select material, thoroughly compacted in place at no cost to the State.

3.3 PROCEDURES

A. Utilities:

1. All excavated areas shall be toned prior to excavation.

2. Unless shown to be removed, protect lines shown on the drawings or otherwise made known to the Contractor prior to trenching. If damaged, repair or replace at no additional cost to the State.

3. If active utility lines are encountered, and are not shown on the Drawings or otherwise made known to the Contractor, promptly take necessary steps to assure that service is not interrupted.

4. If service is interrupted as a result of work under this Section, immediately restore service by repairing the damaged utility at no additional cost to the State.

5. Expose existing utilities to confirm clearances as initial trenching work. If existing utilities are found to interfere with the permanent facilities being constructed under this Section, immediately notify the Engineer and secure his instructions.

6. Do not proceed with permanent relocation of utilities until written instructions are received from the Engineer.

B. Protection of persons and property:

1. Barricade open holes and depressions occurring as part of the Work, and post warning lights on property adjacent to or with public access.

2. Operate warning lights during hours from dusk to dawn each day and as otherwise required.

3. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, washout, and other hazards created by operations under this Section.

C. Dewatering:

1. Remove water by pumping or other methods to prevent the softening of surfaces exposed by excavation, prevent hydrostatic uplift, and provide a stable trench condition for installation of the utility. Use screens and gravel packs or other filtering systems on the dewatering devices to prevent the removal of fines from soil.

2. Dispose water at an approved location by pumps, drains, and other approved methods. Water shall not be discharged into State waters or any adjacent waterbodies.

3. Should dewatering be required with discharge other than back into the trench, an NPDES NOI-G should be obtained by the Contractor.

D. During the period of construction, the Contractor shall protect the public against mud, dust, and similar nuisances and shall take steps to abate such nuisances.

E. Convenient access to buildings and/or facilities along the line of work shall be maintained and temporary approaches shall be provided and kept in order. Temporary bridges for pedestrian traffic shall have handrails securely fastened to them. Handrails shall be free from any projecting nails, splinters, and rough edges.

F. Storing of excavated material alongside the trench shall be done in such a manner as not to obstruct traffic. Whenever, in the opinion of the Engineer, proper storage of excavated material cannot be made alongside the pipe trench, the material shall be hauled away from the work site. If the excavated material meets the requirements for backfill material and proper storage cannot be made alongside the pipe trench, the material shall be stockpiled at convenient locations for later use in backfill.

G. Surplus Material:

1. Unless otherwise specified in the Plans or Specifications, or ordered by the Engineer, surplus excavated material shall become the Contractor's property and shall be removed from the work site and disposed of at no cost to the State.

3.4 TRENCHING

A. Comply with pertinent provisions of applicable "Soils Report" as provided for the project and the provisions of this Section.

B. Provide sheeting and shoring necessary for protection of the Work, undermining of existing facilities and for the safety of personnel.

1. Prior to backfilling, remove all sheeting.

2. Do not permit sheeting to remain in the trenches except when, in the opinion of the Engineer, field conditions or the type of sheeting or methods of construction such as use of concrete bedding are such as to make removal of sheeting impracticable. In such cases, the Engineer may permit portions of sheeting to be cut off and remain in the trench.

C. Excavation:

1. Where it becomes necessary to excavate beyond the limits of normal excavation lines in order to remove boulders or other interfering objects, backfill the voids remaining after removal of the objects at no additional cost to the State, as directed by the Engineer.

2. When the void is below the subgrade for the utility bedding, use select materials and compact to the relative density directed by the Engineer, but in no case to a relative density less than 90%.

3. When the void is in the side of the utility trench or open cut, use suitable earth or sand compacted or consolidated as approved by the Engineer, but in no case to a relative density less than 80%.

4. Excavating for appurtenances:

a. Excavate for manholes and similar structures to a distance sufficient to leave at

least 12” clear between outer surfaces and the embankment or shoring that may be used to hold and protect the banks.

b. Overdepth excavation beyond such appurtenances that has not been directed will be considered unauthorized. Fill with sand, gravel, or lean concrete as directed by the Engineer, and at no additional cost to the State.

D. Depressions:

1. Dig bell holes and depressions for joints after the trench has been graded. Provide uniform bearing for the pipe on prepared bottom of the trench.

2. Except where rock is encountered, do not excavate below the depth indicated or specified.

3. Where rock is encountered, excavate rock to a minimum overdepth of 4” below the trench depth indicated or specified.

E. Cover:

1. Provide a minimum cover over the top of the pipe as indicated on the drawings.

2. Where the minimum cover is not provided, jacket the pipes in concrete as indicated. Provide concrete with a minimum 28 day compressive strength of 2500 psi.

3.5 BEDDING

A. Provide bedding as indicated on the Drawings.

3.6 BACKFILLING

A. General

1. All backfill material shall be placed in the trench by hand or by approved mechanical methods. The compaction of backfill material shall be done by tamping with hand tools or approved pneumatic tampers, by using vibratory compactors, by puddling if the backfill material can be suitably drained, or by any combination of the three. The method of compaction shall be approved by the Engineer and all compaction shall be done to the satisfaction of the Engineer.

2. When removal of unsuitable excavated material creates a shortage of backfill material, the Contractor shall, at no cost to the State, furnish material as specified in this section in the amount required to complete the backfill.

3. When backfill material is delivered by trucks, the material shall not be dumped directly into the trench but the fall of the material shall be broken at the edge of the trench. The backfill material shall then be deposited by hand or by approved

mechanical methods.

4. Ensure that no damage is done to structures or their protective coatings.

B. Backfilling Around Pipe:

1. Select granular material shall be used to backfill the trench from its bottom to one foot above the pipe. Prior to the laying of the pipe, the select material cushion shall be deposited in the trench and shall be leveled off, compacted, and shaped to obtain a smooth compacted bed providing firm uniform bearing along the laying length of the pipe.

2. After the pipe is installed, but prior to testing the line, select material shall be deposited in the trench evenly on both sides and along the full length of the pipe in 6-inch maximum loose lifts. If necessary, additional select material can be deposited over the center of each length of pipe to prevent undue movement during testing of the line. Ensure that initially placed material is tamped firmly under pipe haunches. The bell holes at the pipe joints shall not be backfilled at this time.

3. The pipeline shall then be tested. After the pipeline has passed the test, the Contractor shall backfill the bell holes with select material. The select material, which had been previously deposited over the pipe in the trench, shall be leveled and compacted.

C. Backfilling to Grade:

1. From an elevation one foot above the top of the pipe to grade, the backfill material shall be placed in layers not to exceed 12 inches in loose lifts each lift shall be compacted to a relative density not less than 90%.

2. If the trench section is flooded, no further backfill shall be placed for two (2) days. After this period, the backfill shall again be thoroughly compacted to a relative density of not less than 90% by a method and with equipment approved by the Engineer.

3. The Contractor shall reconstruct the base course and pavement of roadway damaged by the construction of the pipeline as covered elsewhere in these Detailed Specifications.

4. Other improvements such as driveways, sidewalks, curbs, gutters, stonewalls, fences and other structures damaged during construction shall be replaced or repaired to their original condition or better as approved by the Engineer.

3.10 FIELD QUALITY CONTROL

A. The Engineer will inspect and approve open cuts and trenches before installation of pipeline or structures, and will make the following tests:

1. Assure that trenches are not backfilled until all tests have been completed;

2. Check bedding for proper layer thickness and compaction;

3. Verify that test results conform to the specified requirements, and that sufficient tests are performed;

4. Assure that defective work is removed and properly replaced.

END OF SECTION

SECTION 02230

AGGREGATE BASE COURSE

PART 1 - GENERAL

1.1 GENERAL REQUIREMENTS

A. Description. This work shall consist of furnishing and placing one or more courses of aggregate base on a prepared surface in accordance with the requirements of the contract.

PART 2 - PRODUCTS

2.1 MATERIALS

Materials shall meet the requirements specified in the following Subsections of Division 700 Materials of the "Standard Specifications for Road and Bridge Construction."

Aggregate –	Untreated Base	703.06
Aggregate –	Bed Course Material for Crushed Rock Cradle	703.16
Water		712.01

PART 3 - EXECUTION

3.1 CONSTRUCTION REQUIREMENTS

A Placing

1. The base material shall be placed on the prepared surface without segregation. Segregated materials shall be remixed until a uniform distribution is obtained. The material shall not be dumped in piles on the prepared surface.

2. Depositing and spreading shall commence at that part of the work farthest from the point of loading the material and shall progress continuously without breaks, unless otherwise directed by the Engineer.

3. If the required compacted depth of the base course exceeds 6 inches, the base shall be constructed on 2 or more layers of approximately equal thickness. The maximum compacted thickness of any one layer shall not exceed 6 inches.

4. If the contractor uses a vibratory roller weighing 9 tons or more, the lift thickness may be increased to 7 inches.

5. Spreading of binder material over the surface of the compacted base will not be permitted. Additional material if required shall be incorporated uniformly throughout the thickness of the compacted material by scarifying and blading. The combined material shall meet all quality requirements as specified.

B. Shaping and compacting

1. The Contractor shall perform such shaping work as necessary and such that the finished base shall conform to the required grade and cross-section. The finished base where not controlled by adjacent structures or features shall not vary more than 0.04 foot above or below the theoretical grade.

2. Compaction of each layer shall continue until a density of not less than 95 percent of the maximum density, determined in accordance with the requirements of Subsection 106.09 - Special Test Methods, of the "Standard Specifications for Road and Bridge Construction, has been achieved. Field density determination will be made in accordance with Hawaii Test Method HWY-TC 1. The surface of each layer shall be maintained during the compaction operations in such a manner that a uniform texture is produced and the aggregates firmly keyed. Water shall be uniformly applied over the base materials during compaction in the quantity necessary for proper consolidation.

3. Should high or low spots develop during rolling operations, such spots shall be smoothed out by blading with a self-propelled and pneumatic-tired motor grader having a wheel base not less than 15 feet long and a blade not less than 10 feet long.

4. Each layer shall be compacted initially by rolling with three-wheel rollers followed by intermediate rolling with pneumatic-tired rollers. Final rolling shall be done with three-wheel rollers.

C. Equipment. Three-wheel rollers and pneumatic-tired rollers shall conform to the requirements specified in Subsection 401.03(B)(4) - Rollers.

END OF SECTION

SECTION 02620 (Revised 10/6/14)

HIGH DENSITY POLYETHYLENE (HDPE) PIPE

PART 1 GENERAL

1.1 GENERAL REQUIREMENTS

This section covers the requirements for furnishing and installing high density polyethylene (HDPE) pipe and fittings.

1.2 REFERENCES

A. ASTM F714: Standard Specification for Polyethylene (PE) Plastic Pipe (DR-PR), Based on Outside Diameter.

B. AWWA C906: Polyethylene (PE) Pressure Pipe and Fittings 4 inch Through 63 inches for Water Distribution and Transmission.

C. All products and execution shall be consistent with Plastic Pipe Institute “Polyethylene Piping Systems Field Manual for Municipal Water applications”, 2009, or current edition.

PART 2 - PRODUCTS

2.1 MATERIALS

A. The pipe and fittings shall be made from PE4710 high-density polyethylene resin meeting cell classification 445574C according to ASTM F714. The manufacturer shall certify that the materials used to manufacture pipe and fittings meet these requirements.

B. The material shall be listed and approved for potable water in accordance with NSF Standard 14 and 61.

C. The pipe shall be manufactured and tested in accordance with AWWA C906 and shall be so marked.

D. Compliance with the requirements of this paragraph shall be certified in writing by the pipe supplier, upon request.

E. Inspection and Certification: All material furnished under these specifications shall be inspected and tested prior to shipment for conformance to the State of Hawaii "Water System Standards," 2002, as amended.

F. The manufacturer of the pipe and fittings shall submit to the Engineer a sworn statement that the inspection and all tests for the pipe have been made and met as specified. The manufacturer shall also submit a warranty guaranteeing his product against production or material defects. This warranty shall be of one year, from date of final acceptance of this project, replacing free of charge all defective materials only. Failure to obtain this material warranty shall be just cause for the rejection of all pipe installed by the Contractor.

G. High-density polyethylene pipe shall be DR-11 rating capable of withstanding working pressures up to 200 pounds per square inch.

H. High-density polyethylene pipe shall be Driscoplex Series 4000/4100 as manufactured by Performance Pipe, a division of Chevron Phillips Chemical Company LP, or approved equal.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Joints between the plain end of pipes and fittings shall be joined by the method of thermal butt-fusion. Joints between the main and saddle branch fittings or corporation stops shall be made using saddle fusion. Butt fusion and saddle fusion procedures shall be in conformance with those recommended by the manufacturer.

B. A stiffener shall be installed in the bore of the polyethylene pipe when an outside-diameter (O.D.) compression mechanical coupling is used and when connecting plane end pipe to a mechanical joint pipe, fitting, or appurtenance.

C. Branch connections to the main shall be made with saddle fittings or tees and fused per paragraph A above.

D. The pipe supplier shall be consulted to obtain machinery and expertise for the joining by butt-fusion of polyethylene pipe and fittings. No pipe or fittings shall be joined by fusion by any contractor unless he is adequately trained and qualified in the techniques involved.

3.2 LEAK TESTING

A. Hydrostatic testing shall be conducted in accordance with ASTM F2164, “Field Leak Testing of PE Pressure Piping Systems using Hydrostatic Pressure”. Pneumatic pressure testing is prohibited. The test pressure shall be as indicated by the Engineer.

B. Wherever possible, the leak test shall be done in sections isolated from valve to valve or pipe cap. Ensure each end is properly restrained to withstand the test pressure.

C. An isolation valve shall be provided between the pressurizing equipment and test section.

D. Leak testing shall be performed according to the following procedure:

1. Filling: Fill the restrained section of pipe, ensuring all trapped air has been released.

2. Initial Expansion Phase: Gradually pressurize the test section to the test pressure and maintain the test pressure for three (3) hours. Periodically add water to maintain test pressure in the test section as the pipe initially expands.

3. Test Phase: Immediately following the Initial Expansion Phase, shut the isolation valve between the pressurizing equipment and test section. Reduce pressure in test section by 10 PSI and observe pressure for one (1) hour.

4. Acceptance Criteria: If the test section pressure does not decrease by more than 5% of the target pressure over the one (1) hour period, the test section will have passed the leak test.

3.3 CHLORINATION

A. Chlorination of water mains shall be performed by a certified chlorination contractor possessing a valid State Contractor's License Classification C-37 or C-37D.

B. Chlorination specifications and procedures shall follow Specification Section 02675, Testing and Chlorination.

END OF SECTION

SECTION 02675

TESTING AND CHLORINATION

PART 1 - GENERAL

1.1 GENERAL REQUIREMENTS

This section covers the requirements for testing and chlorination requirements for potable water mains.

A. Upon completion of the installation of the water system and pressure testing, the Contractor shall flush and disinfect the water system.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.1 PIPE PRESSURE TESTS

A. All water mains and appurtenances including service laterals and service connections shall be subjected to a hydrostatic pressure test as shown on the plans by the Contractor in the presence of the Engineer.

B. A separate test shall be made on each section of the pipeline and its appurtenances whenever any section of the work can be segregated as a unit. If valves are available at each end of the section, the test shall be made between the valves. If valves are not available, a plug or cap shall be installed and properly braced to withstand the required test pressure. When a section of the work is ready for testing, the corporation stop installed in accordance with the County of Hawai'i Department of Water "Water System Standards", 2002, Standard Details, shall be connected by suitable pipeline to the test pump. A stopcock shall be installed between the tap and pump. A pressure gage furnished by the Engineer shall be installed between the stopcock and the tap.

C. The section of pipe to be tested shall be completely filled with water. Care shall be taken to insure that no air pockets exist. The stopcock shall be opened and the hydrostatic pressure raised to the required pressure called for on the plans.

D. The stopcock shall be shut and the gage observed for 30 minutes. During the 30 minutes, the pressure shall not drop more than 10 psi.

E. The Engineer may require tests to cover any section or any combination of sections, and may require additional tests to be made at any time.

F. All equipment and material necessary for tests shall be furnished and installed by the

Contractor.

G. After all leaks have been stopped and the test completed, brass Mueller plugs shall be furnished and installed by the Contractor in holes made for testing purposes.

3.2 CHLORINATION OF WATER PIPELINES

A. The Contractor shall install temporary risers adjacent to certain valves for disinfection purposes prior to the start to backfill. After the water mains have been certified by the department or otherwise directed by the Engineer, the Contractor shall remove the risers. The excavation necessary to expose these risers and the final backfill shall be performed by the Contractor.

The Contractor shall expose all service connections for chlorination. After completion of the chlorination and flushing, the Contractor shall backfill the connections.

B. Disinfection Procedure. The Contractor shall perform all work necessary for the disinfection of water pipelines under the supervision of the Engineer or his authorized representative.

C. Preliminary Flushing. Where conditions permit, mains shall be flushed with maximum available pressure and velocity. Adequacy of turnovers shall be determined by the absence of particles. During all flushing operations, the Engineer or his authorized representative shall determine the rate of water use.

D. Chlorination. The Contractor shall submit to the Engineer, for approval, a sketch showing locations of sampling points and a plan or schedule delineating the method or steps he proposes to use to accomplish the work. The following methods for chlorination may be used:

1. Flush new system adequately with chlorinated water of at least 50 mg/1 concentration

2. Retention of chlorinated water (50 mg/1) overnight

3. Expose interior surfaces of pipes with chlorinated water (300 mg/1) for three (3) hours

E. Sampling. Unless otherwise directed, microbiological samples shall be taken in all cases after all chlorine has been flushed out as evidenced by the ortho-tolidine test. Sampling shall be done by the Contractor under the coordination of the department's inspector with sampling bottles furnished by the department. Under no circumstances shall sample bottles be rinsed out.

F. Disposal of Chlorinated Water. The Contractor shall be responsible for the proper disposal of chlorinated water to safeguard public health and environment in accordance

with applicable Department of Health requirements.

G. Certification. New mains shall be certified after two (2) samples that are collected 24 hours apart in nonchlorinated areas, and one (1) sample that is collected in normally chlorinated areas show the absence of coliforms.

Repetition of Procedure. Disinfection of mains shall be repeated until samples show absence of coliforms.

H. Procedure Guideline. The disinfection procedures hereinabove are guidelines only and the department does not guarantee certification after one application.

END OF SECTION

SECTION 02713

WATER SYSTEM

PART 1 - GENERAL

1.1 GENERAL REQUIREMENTS

The work included in this section shall consist of furnishing all labor, materials, equipment, tools, and incidentals necessary to install exterior water system as indicated on the Plans and specified herein.

1.2 RELATED SECTIONS

A. SECTION 01300 – SUBMITTALS
B. SECTION 02225 – TRENCHING, BACKFILLING AND COMPACTING

1.3 REFERENCE CONSTRUCTION STANDARDS

The reference construction standards shall supplement the requirements of these specifications. Where there is a conflict between the reference standards and the project specifications, the project specification shall govern. The following reference construction standards, including addenda and revisions, are hereby incorporated into and made a part of these specifications and shall be applicable to all work performed by the Contractor:

A. "Water System Standards" dated 2002, or latest edition, as amended, of the Board of Water Supply and Departments of Water Supply, for the counties of Kauai, Maui, Hawaii, and Honolulu.

   1. Paragraphs relating to Measurement and Payment in the Sections are not applicable to this project.

   2. Where an installation detail is not indicated on the drawings, the standard detail in the "Standard Details for Water System Construction" dated 2002 or latest edition, including all revisions and addenda shall be followed.

B. Uniform Plumbing Code (UPC), or latest edition as amended.

1.4 SUBMITTALS

A. Certificates: The Contractor shall furnish to the Engineer affidavits from the manufacturers of pipe, pipe coating, fittings, and valves (including meter valves), furnished and installed under this section certifying that such materials delivered to the project conform to the requirements of this section. Certificate of disinfection shall also be submitted to the Engineer.

1.5 GUARANTEE

The equipment covered by these specifications shall be guaranteed against defective parts due to faulty material or workmanship for one (1) year after date of acceptance of project. The Contractor shall guarantee to replace all defective parts within the period of time specified. All costs for the replacement of defective parts including the removal and reinstallation of the pump shall be paid for by the Contractor at no cost to the State. The guarantee shall be in writing and shall be submitted to the Engineer prior to the completion of the project.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Materials for the water distribution system shall be in conformance with the appropriate Sections of the "Water System Standards" dated 2002 or latest edition, as amended, unless otherwise revised as follows or on the drawings.

B. Copper pipe shall be soft temper Type "K" and shall conform to ASTM B88.

C. The pipe and fittings shall be made from PE4710 high-density polyethylene resin meeting cell classification 445574C according to ASTM F714. The manufacturer shall certify that the materials used to manufacture pipe and fittings meet these requirements.

D. Hose Bibbs shall be brass, 150 psi maximum pressure rating, 3/4" Male Pipe Threads (MPT) inlet and garden hose thread outlet.

E. Bronze Ball Stop Valves (1-1/2" and 2") shall be Ford Meter Box Company, or equal.

F. Bronze Ball Meter Valves (3/4", 1-1/2", and 2") shall be Ford Meter Box Company, or equal.

G. Meter Boxes (Type B, X, and III) shall be per the Standard Details in the "Water System Standards."

H. Valve Boxes (Type A, for gate valve and for air relief valve) shall be per the Standard Details in the "Water System Standards."

I. Manhole, Type C, waterproofed including pre-cast base and walls, frame, and cover shall be per Standard Detail MH19 in the "Water System Standards."

J. Ductile Iron (D.I.) pipe and fittings shall comply with ANSI A-21.10 and AWWA C110. The D.I. fittings shall have either mechanical joints (Class 350), push-on joints, or flanged joints (Class 350).

K. Air Relief Valve (ARV) shall be APCO Valve and Primer Corporation, model 65 or approved equal. The ARV shall have a ¾" inlet, 1/8" orifice and working pressure of 0–150 psi.

L. Polyvinyl Chlorine (PVC) Pipe 4-inch and larger shall be meet ASTM F477 and AWWA specification C900. PVC pipe less than 4-inch shall Schedule 80.

PART 3 - EXECUTION

3.01 GENERAL

A. The Contractor shall be responsible for precisely laying out the various exterior utility lines shown on the Contract Drawings or as provided elsewhere in these Specifications. The location shown on the Contract Drawings of the various existing utility lines, which the new lines are to cross over or under or connect to where determined on the basis of the best information available; however, no assurance can be provided that the actual locations will be precisely as shown on the Contract Drawings. The Contractor shall field verify the location of the existing utilities prior to the start of construction and shall notify the engineer of any discrepancies or problems.

B. In performing all work, the Contractor shall exercise due care and caution necessary to avoid any damage to and impairment in the use of any existing utility lines. Any damage inflicted on existing lines resulting from the Contractor' operations shall be immediately repaired and restored as directed by the Engineer at the Contractor's expense.

C. The Contractor shall notify and coordinate any connection or temporary service disruption with the Engineer, DOBOR Harbor personnel, the Harbor Master and, if required, Department of Water Supply personnel. The Contractor shall further notify neighboring residents and the fire department of any water service disruptions at least 24 hours in advance.

3.02 INSTALLATION

A. Excavation and Backfill: Trench excavation and backfill for the laying and installation of the water distribution system shall be in accordance with the Drawings and the Water System Standards and Standard Details.

B. Connecting, Testing, Flushing, and Disinfecting: The new lines shall be installed, but not connected until pressure testing and disinfecting is completed. Connecting shall be done at

the discretion of the Engineer. Pressure testing, flushing of valves and mains, disinfection of the system shall be carried out in accordance with the "Water System Standards." The Contractor shall submit the results of such test to the Engineer for approval. All charges for services by the Department of Water Supply shall be paid for by the Contractor.

3.03 FINAL INSPECTION

At the time of final inspection of the work performed under the contract, the water system shall be complete in every respect and operating as designed. All surplus materials in every character resulting from the work of this section shall have been removed. All defects discovered in the water system subsequent to this inspection shall be corrected prior to final acceptance.

PART 4 - PAYMENT

4.01 HDPE pipe shall be paid for at the unit price per linear foot for each size designated. Payment made shall be full compensation for furnishing materials, preparation and installation of pipe cushion, warning tape, and electronic markers, and all labor, equipment, tools, and incidentals necessary for constructing the water line in place complete.

4.02 Payment for removal of existing water lines, removal and replacement of hose bibbs, HDPE tees, elbow and reducer, ball valves and elbow shall be made at the unit prices shown in the proposal.

END OF SECTION

SECTION 16100

SOLAR LIGHT POLE ASSEMBLY

PART 1 – GENERAL

1.1 SUMMARY

A. Furnish all labor, tools and equipment required for all electrical, concrete and related work for a complete and proper installation as indicated on the contract drawings.

B. The following section covers work related to this work:

1. Section 03000 – CONCRETE AND RELATED WORK

2. Section 03300 – CAST-IN-PLACE CONCRETE

1.2 GENERAL REQUIREMENTS

A. Provide solar light pole assemblies per contract drawings.

B. Submit shop drawings and product specifications to Engineer for approval prior to ordering.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Solar Light Pole Assembly shall be SEPCO-SEPA100-M-VPR40EXOIII-ALC11/MAID-SP4-PZ5, or approved equal, and shall have the following:

1. 100-watt solar electric power assembly.

2. 112-amp hour battery assembly.

3. Viper fixture, 400-watt LED EXO-Optics, type III distribution.

4. Adaptive lighting control for dusk to dawn operation.

5. Motion-activated infrared detector.

6. Side of pole bracket shall be four (4) feet.

7. Light pole shall be 24 feet, tapered, with an 8-inch base, complete with template and J-bolts.

8. Top cap, with stainless steel solar bolts and power wire.