



STATE OF HAWAII
DEPARTMENT OF HUMAN SERVICES
HAWAII PUBLIC HOUSING AUTHORITY
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EXECUTIVE ASSISTANT

ADDENDUM NO. 4

TO THE
PLANS AND SPECIFICATIONS
FOR
FURNISHING LABOR AND MATERIALS
REQUIRED FOR

PALOLO VALLEY HOMES MODERNIZATION, PHASE 3
HONOLULU, OAHU, HAWAII
Tax Map Key No.: (1) 3-004-015

HPHA Job No. 15-016-108-Z
IFB-CMB-2016-17

June 3, 2016

The items listed hereinafter are hereby made a part of the contract for the above project and shall govern the work, taking precedence over previously issued plans and specifications governing the items mentioned.

I. CHANGES TO SPECIFICATIONS

- A. Section 02456 COMPOSITE PILES
1. Add new specification section, 1 – 8 pages. See attachment.

II. CHANGES TO "LISTING OF GENERAL AND SUBCONTRACTORS" FORM

- A. C-35 Pile Driving and Foundation license was added to form. See attached "Revised List of General and Subcontractors" form. **THIS REVISED FORM MUST BE USED IN SUBMITTING A BID.**

III. CLARIFICATIONS

- A. The following questions were submitted after the RFI submission deadline. However, HPHA deems the following questions to be substantive enough to warrant a response. See the following:

1. Q: *There appear to be no micro pile specifications for this project in the provided documents. It is requested a micro pile spec section be provided.*

A: See attached Section 02456.

2. Q: *Sheet S-301 shows that a micro pile test pile program would be required, however, there are no specifications or no mention on how much and what kind testing would be required for the micro piles.*

A: See attached Section 02456.

3. Q: *Project documents state to use a 2" dia. MAI type hollow bar for micro pile installation. However, there is no mention of required diameter of micro pile grout after installation?*

A: Outside diameter of grout shall be 5.5 inches.

4. Q: *Does the 2" dia hollow bar for micro pile installation or any require any type of galvanizing or coating system?*

A: Bar shall be galvanized per Concrete note D on S-101.

5. Q: *Please provide dimensions (length, width & thickness) and steel type for bearing plate to be installed at top of micro pile. Would steel bearing plate require any type of galvanizing or coating system?*

A: Bearing plate shall be ½"x8"x8". Plate shall be galvanized per Concrete note D on S-101.

6. Q: *Should the contractor have the C-35 Pile Driving and Foundation license class?*

A: Contractor shall include C-35 Pile Driving and Foundation license to their bids. See the attached REVISED CONTRACTOR'S LICENSING REQUIREMENTS and LISTING OF GENERAL AND SUBCONTRACTORS form. Contractor needs to submit the revised LISTING OF GENERAL AND SUBCONTRACTORS form with the bid.

All other items and conditions shall remain in full force and effect.

Approved by:



Rick T. Sogawa
Procurement Officer



SECTION 02456 - COMPOSITE PILES

PART 1 - GENERAL

1.01 GENERAL CONDITIONS

As specified in the General Conditions and the Special Conditions.

1.02 SUMMARY

Section includes concrete-filled steel shell piles.

1.03 UNIT PRICES

A. The Contract Sum: Base the Contract Sum on number and dimensions of piles indicated from tip to cutoff, plus not less than 12 inches of overlength for cutting piles at cutoff elevations.

B. Work of this Section is affected as follows:

1. Additional payment for pile lengths in excess of that indicated, and credit for pile lengths less than that indicated, will be calculated at unit prices stated in the Contract, based on net addition or deduction to total pile length as determined by the HPHA Engineer measured to nearest 12 inches.

Additional payment for splices required to extend pile lengths in excess of that indicated will be calculated at unit prices stated in the Contract.

2. Additional payment for number of piles in excess of that indicated, and credit for number of piles less than that indicated, will be calculated at unit prices stated in the Contract.
3. Unit prices include labor, materials, tools, equipment, and incidentals for furnishing, driving, cutting off, capping, and disposing of cutoffs.
4. Test piles that become part of permanent foundation system will be considered as an integral part of the Work.
5. No payment will be made for rejected piles, including piles drilled out of tolerance, defective piles, or piles damaged during handling or driving.

1.04 SUBMITTALS

A. Submit under provisions of GR-6 – SUBMITTALS of the GENERAL REQUIREMENTS.

B. Product Data: For each type of product indicated.

C. Shop Drawings: For composite piles. Show fabrication and installation details for piles, including splices and tip details.

1. Indicate welds by standard AWS symbols, distinguishing between shop and field welds, and show size, length, and type of each weld.
2. Indicate locations, sizes, type, and arrangement of reinforcement.

3. Include arrangement of static pile reaction frame, test and anchor piles, equipment, and instrumentation. Submit structural analysis data signed and sealed by the qualified professional engineer responsible for their preparation.
- D. Qualification Data: For qualified installer and testing agency.
- E. Welding certificates.
- F. Design Mixes: For each concrete mix. Include revised mix proportions when characteristics of materials, Project conditions, weather, test results, or other circumstances warrant adjustments.
- G. Material Certificates: For steel shell piles and accessories and concrete admixtures, from manufacturer.
- H. Material Test Reports: For concrete materials.
- I. Static Pile Test Reports: Submit within three days of completing each test.
- J. Field quality-control reports.

1.05 QUALITY ASSURANCE

- A. Installer Qualifications: Manufacturer's authorized representative who is trained and approved for installation of units required for this Project.
- B. Testing Agency Qualifications: An independent testing agency qualified according to ASTM C 1077 and ASTM E 329 for testing indicated.
- C. Comply with requirements in ACI 301, "Specifications for Structural Concrete."
- D. Welding Qualifications: Qualify procedures and personnel according to the following:
AWS D1.1/D1.1M, "Structural Welding Code - Steel"
- E. Preinstallation Conference: Conduct conference at Project site.

1.06 DELIVERY, STORAGE, AND HANDLING

Deliver piles to Project site in such quantities and at such times to ensure continuity of installation. Handle and store piles at Project site to prevent physical damage.

1.07 PROJECT CONDITIONS

- A. Protect structures, underground utilities, and other construction from damage caused by pile operations.
- B. Site Information: A geotechnical report has been prepared for this Project and is available for information only.
- C. Preconstruction Photographs: Inventory and record the condition of adjacent structures, underground utilities, and other construction. Provide photographs of conditions that might be misconstrued as damage caused by pile drilling.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

- A. Atlas
- B. Dywidag-Systems International

2.02 STEEL SHELL PILES

- A. Galvanized Steel Tube Piles: 2" nominal diameter hollow tube galvanized steel piers (MAI type).
- B. Bearing Plates: ASTM A36/A36M, galvanized.

2.03 CONCRETE MATERIALS

- A. Portland Cement: ASTM C 150, Type I or II.
- B. Normal-Weight Aggregates: ASTM C 33, uniformly graded, 3/4-inch maximum aggregate size. Provide aggregates from a single source.
- C. Water: Potable, complying with ASTM C 94/C 94M requirements.
- D. Admixtures: Provide admixtures certified by manufacturer to be compatible with other admixtures and to contain not more than 0.1 percent chloride ions by mass of cementitious material.

Water-Reducing Admixture: ASTM C 494/C 494M, Type A.

2.04 CONCRETE MIXES

- A. Prepare concrete design mixes according to ACI 301, determined by either laboratory trial batch or field test data basis.

Use a qualified testing agency for preparing and reporting proposed mix designs determined by laboratory trial batch.
- B. Proportion mixes according to ACI 301 to provide normal-weight concrete suitable for piles with the following properties:
 - 1. Compressive Strength (28 Days): 3000 psi.
 - 2. Maximum Water-Cementitious Material Ratio at Point of Placement: 0.50.
 - 3. Slump Limit: 5 inches, plus or minus 1 inch.
- C. Cementitious Materials: Limit percentage, by weight, of cementitious materials other than portland cement according to ACI 301 limits as if concrete were exposed to deicing chemicals.
- D. Limit water-soluble, chloride-ion content in hardened concrete to 0.15 percent by weight of cement.

- E. Concrete-mix design adjustments may be considered if characteristics of materials, Project conditions, weather, test results, or other circumstances warrant. Resubmit and obtain approval from the HPHA Engineer of proposed changes to concrete-mix proportions.

2.05 FABRICATION

- A. Fabricate and assemble piles in shop to greatest extent possible.
- B. Fabricate full-length piles by splicing pile lengths together. Maintain axial alignment of pile lengths. Maintain structural properties of pile across splice.
 - 1. **Welded Splices:** Continuously weld steel shell pile according to manufacturer's written instructions and AWS D1.1/D1.1M and AWS D1.3 for procedures, appearance and quality of welds, and methods used in correcting welding work.
 - 2. Splice piles during fabrication or field installation.

2.06 CONCRETE MIXING

Ready-Mixed Concrete: Comply with ASTM C 94/C 94M.

- A. Do not add water to concrete mix after mixing.
- B. Maintain concrete temperature to not exceed 90 deg F.

PART 3 - EXECUTION

3.01 EXAMINATION

Site Conditions: Do not start pile-drilling operations until earthwork fills have been completed.

3.02 STATIC PILE TESTS

- A. **General:** Static pile tests will be used to verify drilling criteria and pile lengths and to confirm allowable load of piles.

Determination of actual length of piles will be based on results of static pile tests.
- B. **Pile Tests:** Arrange and perform the following pile tests:
 - 1. **Axial Compressive Static Load Test:** ASTM D 1143.
 - 2. **Lateral Load Test:** ASTM D 3966.
- C. Equip each test pile with two telltale rods, according to ASTM D 1143, for measuring deformation during load test.
- D. Provide pile reaction frame, anchor piles, equipment, and instrumentation with sufficient reaction capacity to perform tests. Notify the HPHA Engineer at least 48 hours in advance of performing tests. On completion of testing, remove testing structure, anchor piles, equipment, and instrumentation.
 - 1. Allow a minimum of seven days to elapse after drilling test piles before starting pile testing.

2. Number of Test Piles: Two piles equally spaced along retaining wall.
- E. Drilling Test Piles: Drill test piles at locations indicated to the minimum penetration or driving resistance indicated. Use test piles identical to those required for Project and drill with appropriate pile-drilling equipment.
- Pile Design Load: 15 kips
- F. Approval Criteria: Allowable load shall be the load acting on the test pile when the lesser of the following criteria are met, divided by a factor of safety of 2:
1. Net settlement, after deducting rebound, of not more than 0.01 inch/ton of test load.
 2. Total settlement exceeds the pile elastic compression by 0.15 inch, plus 1.0 percent of the tip diagonal dimension.
 3. A plunging failure or sharp break in the load settlement curve.
- G. Test Pile-Drilling Records: Prepare drilling records for each test pile. Include same data as required for drilling records of permanent piles.
- H. Test piles that comply with requirements, including location tolerances, may be used on Project.

3.03 CONCRETE PLACEMENT

- A. Do not place concrete until other piles within a radius of 20 feet have been drilled and approved.
- B. Inspection: Before placing concrete, allow testing and inspecting agency to visually inspect and verify that each pile is clean, watertight, plumb, and free of distortion or other defects.
- C. Place concrete in a continuous operation and without segregation immediately after cleaning out pile.
- D. Grout bulb diameter shall be 5 ½ inches, minimum.
- E. Place concrete by pump with minimum pressure of 100 psi.
- F. Place concrete in a dry pile unless placement underwater is approved by the HPHA Engineer.
1. Place concrete underwater by tremie method or pumping. Control placement operations to ensure tremie is embedded no less than 60 inches into concrete, and flow of tremied concrete is continuous from bottom to top of pile.
 2. Other methods of depositing concrete may be used if approved by the HPHA Engineer.
- G. Consolidate final 10 feet of concrete during placement to ensure that concrete is thoroughly worked around steel reinforcement and into corners.
- H. Screed concrete level at cutoff elevation and apply a scoured, rough finish.

3.04 DRILLING PILES

- A. General: Piles shall be drilled, installed and grouted prior to excavation below the water table. Continuously drill piles to elevations or penetration resistance indicated. Establish and maintain axial alignment of leads and piles before and during drilling.
- B. Heaved Piles: Redrill heaved piles to tip elevation at least as deep as original tip elevation.
- C. Pile Splices: Splice piles during installation and align pile segments concentrically.
- D. Drilling Tolerances: Drill piles without exceeding the following tolerances, measured at pile heads:
 - 1. Location: 2 inches from location indicated after initial drilling, and 4 inches after pile drilling is completed.
 - 2. Plumb: Maintain plumbness within two percent from vertical.
- E. Withdraw damaged or defective piles and piles that exceed driving tolerances and install new piles within drilling tolerances.

Fill holes left by withdrawn piles using cohesionless soil material such as gravel, broken stone, and gravel-sand mixtures. Place and compact in lifts not exceeding 72 inches.
- F. Abandon and cut off rejected piles as directed by the HPHA Engineer. Leave rejected piles in place and install new piles in locations as directed by the HPHA Engineer.
- G. Cutting Off: Cut off tops of drilled piles square with pile axis and at elevations indicated.
- H. Pile-Drilling Records: Maintain accurate drilling records for each pile. Include the following data:
 - 1. Project name and number.
 - 2. Name of Contractor.
 - 3. Pile location in pile group and designation of pile group.
 - 4. Sequence of drilling in pile group.
 - 5. Pile dimensions.
 - 6. Ground elevation.
 - 7. Elevation of tips after drilling.
 - 8. Final tip and cutoff elevations of piles after drilling pile group.
 - 9. Records of redrilling.
 - 10. Elevation of splices.
 - 11. Cushion material and thickness.

12. Pile-drilling start and finish times, and total drilling time.
13. Time, pile-tip elevation, and reason for interruptions.
14. Pile deviations from location and plumb.
15. Preboring, jetting, or special procedures used.
16. Unusual occurrences during pile drilling.

3.05 FIELD QUALITY CONTROL

- A. **Special Inspections:** HPHA will engage a qualified special inspector to perform the following special inspections:

Pile foundations.

- B. **Testing Agency:** Engage a qualified independent testing agency to perform tests and inspections.

- C. **Tests and Inspections:**

1. **Dynamic Pile Testing:** High-strain dynamic monitoring shall be performed and reported according to ASTM D 4945 during initial drilling and during restriking on 10 percent of piles.
2. **Low-strain integrity measurement** shall be performed and reported for each pile.
3. **Concrete:** Sampling and testing of concrete for quality control shall include the following:
 - a. **Sampling Fresh Concrete:** ASTM C 172, except modified for slump to comply with ASTM C 94/C 94M.
 - b. **Slump:** ASTM C 143/C 143M; one test at point of placement for each compressive-strength test, but no fewer than one test for each concrete load.
 - c. **Compression Test Specimens:** ASTM C 31/C 31M; one set of four standard cylinders for each compressive-strength test unless otherwise indicated. Mold and store cylinders for laboratory-cured test specimens unless field-cured test specimens are required.
4. **Compressive-Strength Tests:** ASTM C 39/C 39M; one set for each truck load. One specimen shall be tested at seven days, two specimens shall be tested at 28 days, and one specimen shall be retained in reserve for later testing if required.
 - a. When frequency of testing will provide fewer than five strength tests for a given class of concrete, testing shall be conducted from at least five randomly selected batches or from each batch if fewer than five are used.
 - b. When strength of field-cured cylinders is less than 85 percent of companion laboratory-cured cylinders, evaluate current operations and

provide corrective procedures for protecting and curing in-place concrete.

- c. Strength level of concrete will be considered satisfactory if averages of sets of three consecutive strength test results equal or exceed specified compressive strength and no individual strength test result falls below specified compressive strength by more than 500 psi.
- d. Test results shall be reported in writing to the HPHA Engineer, concrete manufacturer, and Contractor within 24 hours of testing. Reports of compressive-strength tests shall contain Project identification name and number, date of concrete placement, name of concrete testing and inspecting agency, concrete type and class, location of concrete batch in piles, design compressive strength at 28 days, concrete-mix proportions and materials, compressive breaking strength, and type of break for both 7- and 28-day tests.
- e. Additional Tests: Testing and inspecting agency shall make additional tests of concrete when test results indicate concrete strengths or other requirements have not been met.

3.06 DISPOSAL

Remove withdrawn piles and cutoff sections of piles from site and legally dispose of them off HPHA's property.

END OF SECTION

REVISED

CONTRACTOR'S LICENSING REQUIREMENTS

The Bidder is reminded that due to the Hawaii Supreme Court's January 28, 2002 decision in Okada Trucking Co., Ltd. v. Board of Water Supply, et al., 97 Haw. 450 (2002), the Bidder with "A" general engineering contractors or "B" general building contractor is prohibited from undertaking any work, solely or as part of a larger project, that would require the general contractor to act as a specialty contractor in any area in which the general contractor has no license. Although the "A" or "B" contractor may still bid on and act as the "prime" contractor on an "A" or "B" project, respectively, the "A" and "B" contractor may only perform work in the areas in which they have the appropriate "C" specialty contractor's license. The remaining work must be subcontracted out to appropriately licensed "C" specialty contractors.

Bidders must possess a valid State of Hawaii "A," "B" or "C" contractor license.

The following is a list of the contractor's licenses that the HPHA anticipates is required to complete this particular project; however, this list is not exclusive and additional licenses may be required. **It is the sole responsibility of the contractor to review the requirements of this project and determine additional appropriate licenses that are required to complete the project.**

(THE CONSULTANT SHALL PROVIDE THE LIST OF REQUIRED SUBCONTRACTOR LICENSES) i.e.

- C-2 Mechanical insulation
- C-3 Asphalt paving and surfacing
- C-3a Asphalt patching, sealing and striping
- C-5 Cabinet, millwork & carpentry
- C-6 Carpentry framing
- C-12 Drywall
- C-13 Electrical
- C-14 Sign
- C-17 Excavating, grading & trenching
- C-19 Asbestos
- C-21 Flooring
- C-22 Glazing and tinting contractor
- C-27 Landscaping
- C-27b Tree trimming and removal contractor
- C-31 Masonry
- C-31a Cement concrete
- C-31e Concrete cutting, drilling, sawing, coring and pressure grouting
- C-32 Ornamental, guardrail and fencing
- C-33 Painting & decorating
- C-33b Taping
- C-35 Pile Driving and Foundation
- C-37 Plumbing
- C-37a Sewer and drain line contractor
- C-41 Reinforcing steel
- C-42 Roofing
- C-43 Sewer, sewage disposal drain & pipe laying
- C-44 Sheet metal
- C-44a Gutters
- C-48 Structural steel contractor
- C-51 Tile
- C-55 Waterproofing

REVISED

LISTING OF GENERAL AND SUBCONTRACTORS

The following shall be attached to and be considered a part of the bid:

As per 103D, HRS, if the invitation for bids is for construction, it shall specify that all bids include the name of each person or firm to be engaged by the bidder as a joint contractor or subcontractor in the performance of the contract and the nature and scope of the work to be performed by each. Construction bids that do not comply with this requirement may be accepted if acceptance is in the best interest of the State and the value of the work to be performed by the joint contractor or subcontractor is equal to or less than one percent (1%) of the total bid amount.

The bidder acknowledges that as a general contractor ('A' or 'B' license) the bidder is prohibited from undertaking any work which would require the bidder ('A' or 'B' general contractor) to act as a specialty ('C' license) contractor in any area in which the bidder has no specialty contractor's license.

As per the HPHA General Conditions section 5.13.6 SUBCONTRACTING – Contractor shall perform with its own organization, work amounting to not less than twenty percent (20%) of the total contract cost, exclusive of costs for materials and equipment the Contractor purchases for installation by its subcontractors, except that any items designated by the HPHA in the contract as specialty items may be performed by a subcontractor and the cost of any such specialty items so performed by the subcontractor may be deducted from the total contract cost before computing the amount of work required to be performed by the Contractor with its own organization.

The bidder shall complete the form in its entirety with **NO BLANKS**. The bidder shall submit an RFI in case a listed license is not required or a specific license needs to be added. Failure to fully complete this form may cause a bid to be considered non-responsive.

	SCOPE OF WORK	NAME OF CONTRACTOR OR RME	LIC. NO.
C-2	MECHANICAL INSULATION		
C-3	ASPHALT PAVING AND SURFACING		
C-3a	ASPHALT CONCRETE PATCHING, SEALING, AND STRIPING		
C-5	CABINET, MILLWORK, AND CARPENTRY REMODELING AND REPAIRS		
C-6	CARPENTRY FRAMING		
C-12	DRYWALL		
C-13	ELECTRICAL		
C-14	SIGN		
C-17	EXCAVATING, GRADING AND TRENCHING		
C-19	ASBESTOS		
C-21	FLOOR COVERING		
C-22	GLAZING AND TINTING		
C-27	LANDSCAPING		
C-27b	TREE TRIMMING AND REMOVAL CONTRACTOR		
C-31	MASONRY		
C-31a	CEMENT CONCRETE		

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	SCOPE OF WORK	NAME OF CONTRACTOR OR RME	LIC. NO.
C-31e	CONCRETE CUTTING, DRILLING, SAWING, CORING AND PRESSURE GROUTING		
C-32	ORNAMENTAL, GUARDRAIL, AND FENCING		
C-33	PAINTING AND DECORATING		
C-33b	TAPING		
C-35	PILE DRIVING AND FOUNDATION		
C-37	PLUMBING		
C-41	REINFORCING STEEL		
C-42	ROOFING		
C-43	SEWER, SEWAGE DISPOSAL, DRAIN, AND PIPE LAYING		
C-44	SHEET METAL		
C-44a	GUTTERS		
C-51	TILE (CERAMIC & MOSAIC)		
C-55	WATERPROOFING		

BIDDERS MUST SUBMIT AN RFI FOR ANY ADDITIONAL LICENSES THAT MAY BE REQUIRED.

OFFICIAL ADDRESS:

FIRM NAME: _____

BY: _____

TITLE: _____

HAWAII CONTRACTOR'S LICENSE NO.:

DATE: _____

FEDERAL TAXPAYER ID NO.:

STATE TAXPAYER ID NO.:
