



ADDENDUM NO. 2
to the
BIDDING DOCUMENTS, SPECIFICATIONS AND DRAWINGS
for
City of Aberdeen
WWTP Improvements
July 23, 2024

All bidders shall acknowledge receipt of this addendum by dating, numbering, and initialing under Article 7, Bid Form.

All changes, corrections, deletions and/or additions to the initial bidding documents enumerated herein shall be included in the Bidder's Proposal. In case of any conflict between the drawings, specifications, and this Addendum, this Addendum shall govern.

SUPPLEMENTAL INFORMATION

Supplemental information is provided for the Bidder's information only. The following items are not part of the Contract Documents and do not change the plans and specifications:

Q: What manufacturer are the existing plant PLCs?

A: Existing plant PLC is an Allen Bradley CompactLogix 1769-L33ER.

BIDDING DOCUMENTS

Section C-111 – Advertisement for Bids

- CHANGE the day of the Bid Opening to Thursday, August 15, 2024, in the second paragraph. Time is unchanged.

TECHNICAL SPECIFICATIONS

Section 22 11 24 – Air Gap System

- DELETE Part 1.3, E. in its entirety and ADD the following in its place:

“E. Submit anchoring calculations and anchor bolt shop drawings in accordance with Section 43 05 50 – Equipment Mounting. Anchoring calculations shall be sealed by a licensed Civil or Structural Engineer in the State of Idaho.”
- ADD the following to this Section:

“2.17 ANCHOR BOLTS

 - A. Equipment manufacturer shall furnish all anchor bolts of ample size and strength required to securely anchor the equipment skid. Anchor bolts, hex nuts, and washers shall be Type 316 stainless steel. Anchor bolts shall be wedge or epoxy type.
 - B. Anchor bolts shall be set by the Contractor as per the Equipment Manufacturer's recommendations and the anchoring calculations.”



Section 31 00 00 – Earthwork

- ADD Part 2.3 to this section as follows:

“2.3 CITY-PROVIDED FILL MATERIAL

- A. It is expected that the Contractor will need to import fill to complete the plant improvements. The City has excess fill that will be provided at no cost if suitable for construction. Contractor shall be responsible for testing the stockpile and verifying that the material meets specifications for suitable fill materials. Provide test results to Engineer for approval prior to using stockpiled materials.
- B. Stockpile is located at the City’s gravel storage area at E. Custer Street and S. 5th East Street. Contractor shall be responsible for all hauling costs to the WWTP site and coordination with City staff when accessing the site.

Section 31 66 13.13 - Aggregate Piers

- REPLACE the section in its entirety with the attached revised specification.

Section 32 92 19.16 – Hydraulic Seeding

- DELETE this section in its entirety from the specifications. The Owner will reseed the site after the project is complete.

Section 43 25 00 – Submersible Non-Clog Pumps

- REFER to Section 2.1, C. and the table for P-4301, P-4302, P-4303. CHANGE the Design Flow minimum efficiency from 71.9% to 69.1%.
- REFER to Part 2.1, C. and the table for P-7010, P-7020. CHANGE the Design Flow minimum efficiency from 71.9% to 62.9%.
- REFER to Section 2.2, A. Table. MODIFY as follows:
 1. Impeller: ADD “ or Hard Iron (ASTM A-532 IIB 15% chrome cast Iron)” to Materials column. DELETE “shall have vanes hardened to Rc60 and” in the second sentence in the Construction column.
 2. Shaft Seals: DELETE “WCCR” in two locations in the Construction column.
 3. Bearings: CHANGE the last sentence in the Construction column to “Single row lower bearings are also acceptable.”
 4. Cable Entry: In the Construction column, DELETE the last sentence regarding secondary sealing systems. ADD the following in its place:

“Acceptable alternate cable seal: Cable seal shall include a compressed rubber grommet to seal the cable exterior and epoxy fill to seal the interior passages. A strain relief device, in direct contact with both the cable and the cast iron housing, shall be provided. This type of cable entry shall be rated by Factory Mutual (or UL) for submerged operating depths up to 85 feet.”
- Part 2.3, B: DELETE “or lifting cable” in second sentence. Contractor shall provide a Type 316 stainless steel lifting chain for each pump.



- Part 2.3, C.: DELETE the last sentence in that section and MODIFY the second sentence to read as follows:

“Each pump shall have permanently installed discharge elbow that seats against the pump discharge connection by a machined metal to metal contact or with the use of a profile gasket between metal surfaces as per manufacturer’s standard design.”

DRAWINGS

Sheet C-121 – Site Plan – Area 1

- DELETE Keynote 05 and the keynote tag from this sheet. Sprinkler repair and hydroseeding work has been removed from the project.

Sheet C-122 – Site Plan – Area 2

- DELETE Keynote 04 and the keynote tag from this sheet. Sprinkler repair and hydroseeding work has been removed from the project.

Sheet C-401 – Enlarged Site Plan – Area 1

- DELETE Keynote 05 and the keynote tag from this sheet. Sprinkler repair and hydroseeding work has been removed from the project.

Sheet C-402 – Enlarged Site Plan – Area 2

- DELETE Keynote 04 and the keynote tag from this sheet. Sprinkler repair and hydroseeding work has been removed from the project.

Sheet M-102-D1 – Tertiary Lift Station – Mechanical Plan

- DELETE Keynote 01 from this sheet. The lift station and piping will not be coated with Sprayroq.

Sheet M-301-D1 – Tertiary Lift Station – Mechanical Section

- DELETE Keynote 01 from this sheet. The lift station and piping will not be coated with Sprayroq.

Sheet M-100-G1 – Blower Building – Mechanical Demolition Plan

- REFER to “Equipment Keynotes”. MODIFY the description for B#3 DISC to read:

“BLOWER #3 DISCONNECT (E)”

Sheet M-101-G1 – Blower Building – Mechanical Plan

- REFER to “Equipment Keynotes”. DELETE the equipment descriptions and ADD the following in their place:

“B-1 POSITIVE DISPLACEMENT LOBE BLOWER PACKAGE (E)

B-2 POSITIVE DISPLACEMENT LOBE BLOWER PACKAGE (E)

B-3 POSITIVE DISPLACEMENT LOBE BLOWER PACKAGE, RE: SPECS”



Sheet M-301-G1 – Blower Building – Mechanical Sections

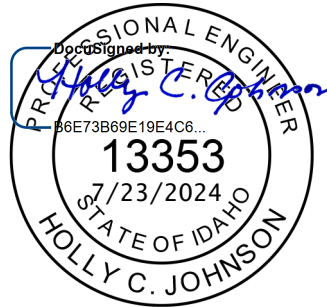
- REFER to “Equipment Keynotes”. MODIFY the description for B-3 to read:
“B-3 POSITIVE DISPLACEMENT LOBE BLOWER PACKAGE, RE: SPECS”

Sheet E-101-G1 – Blower Building – Electrical Plan

- REFER to “Equipment Keynotes”. DELETE the equipment descriptions for the blowers and ADD the following in their place:
“B-1 POSITIVE DISPLACEMENT LOBE BLOWER PACKAGE (E)
B-2 POSITIVE DISPLACEMENT LOBE BLOWER PACKAGE (E)
B-3 POSITIVE DISPLACEMENT LOBE BLOWER PACKAGE, RE: SPECS”

Sheet DM-101-G2 – Decant Lift Station – Demo Plan

- ADD the following to Keynote 01:
“. Demo pipe supports.”



Prepared by _____
Keller Associates, Inc.

CITY OF ABERDEEN
WWTP IMPROVEMENTS

222032-001

SECTION 31 66 13.13 –AGGREGATE PIERS

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Work shall consist of designing, furnishing, and installing Aggregate Pier foundations to the lines and grades designated on the project foundation plan and as specified herein. The aggregate piers shall be constructed by either augering a cavity, driving a hollow mandrel, or vibroflot to the design depth and compacting lifts of aggregate using the specially designed tamper head and high-energy impact densification equipment to create the compacted aggregate pier. The Aggregate Pier elements shall be in a columnar-type configuration and shall be used to produce an intermediate foundation system for support of foundation loads.
- B. Extents of Aggregate Pier installation shown on project drawings are conceptual in nature. Final design (spacing, depth, etc.) and construction of Aggregate Piers is ultimately the responsibility of the Contractor based on the requirements outlined herein and shall be included in the final bid cost. Changes in the layout of the Aggregate Piers will be at no cost to the Owner.

1.2 WORK INCLUDED

- A. Provision of all equipment, material, labor, and supervision to design and install Aggregate Pier elements. Design shall rely on subsurface information presented in the project geotechnical report. Layout of Aggregate Pier elements, spoil removal (as required), footing excavations, and subgrade preparation following aggregate pier installation is not included.
- B. The Aggregate Pier design and installation shall adhere to all methods and standards described in this Specification.
- C. Drawings and General Provisions of the Contract, including General and Supplemental Conditions, and Division 1 Specifications, apply to the work in this specification.

1.3 APPROVED INSTALLERS

- A. Installers of Aggregate Pier foundation systems shall have a minimum of 3 years of experience with the installation of Aggregate Pier systems and shall have completed at least 50 projects.
- B. Installers currently approved for these works are:
 - 1. Geopier-Northwest, Inc., Bellevue, WA
 - 2. Inland Foundation Company, Boise, ID
 - 3. Farrell Design-Build, Placerville, CA

CITY OF ABERDEEN
WWTP IMPROVEMENTS

222032-001

4. GeoConstructors, Inc., Leesburg, VA
5. Keller North America, Seattle, WA
6. Specialty Foundation Systems, Billings, MT

1.4 REFERENCE STANDARDS

A. Design

1. "Control of Settlement and Uplift of Structures Using Short Aggregate Piers," by Evert C. Lawton (Assoc. Prof., Dept. of Civil Eng., Univ. of Utah), Nathaniel S. Fox (President, Geopier Foundation Co., Inc.), and Richard L. Handy (Distinguished Prof. Emeritus, Iowa State Univ., Dept. of Civil Eng.), reprinted from *IN-SITU DEEP SOIL IMPROVEMENT, Proceedings of sessions sponsored by the Geotechnical Engineering Division/ASCE in conjunction with the ASCE National Convention held October 9-13, 1994, Atlanta, Georgia.*
2. "Settlement of Structures Supported on Marginal or Inadequate Soils Stiffened with Short Aggregate Piers," by Evert C. Lawton and Nathaniel S. Fox. *Geotechnical Special Publication No. 40: Vertical and Horizontal Deformations of Foundations and Embankments*, ASCE, 2, 962-974.
3. "Behavior of Geopier[®]-Supported Foundation Systems during Seismic Events," by Kord Wissmann, Evert C. Lawton, and Tom Farrell. Geopier Foundation Company, Inc. Blacksburg, VA ©1999.
4. "Predicting Performance of Aggregate Piers" by Sehn, A. L., and Blackburn, J. T. *Proc., 23rd Central Pennsylvania Geotechnical Conf., Central Pennsylvania ASCE Geotechnical Group, Hershey, PA. 2008.*

B. Modulus Testing

1. ASTM D 1143 - Pile Load Test Procedures
2. ASTM D 1194 - Spread Footing Load Test

C. Materials and Inspection

1. ASTM D 1241 - Aggregate Quality
2. ASTM D 422 - Gradation of Soils

- D. Where specifications and reference documents conflict, the Aggregate Pier Designer shall make the final determination of the applicable document.

1.5 CERTIFICATIONS & SUBMITTALS

- A. Provide shop drawings per Section 01 33 00 – Submittal Procedures.

CITY OF ABERDEEN
WWTP IMPROVEMENTS

222032-001

- B. Design Calculations - The Installer shall submit detailed design calculations and construction drawings prepared by the Aggregate Pier Designer (the Designer) for review and approval by the Owner or Owner's Engineer. All plans shall be sealed by a Professional Engineer in the State in which the project is constructed.
- C. Professional Liability Insurance - The Aggregate Pier Designer shall have Errors and Omissions design insurance for the work. The insurance policy should provide a minimum coverage of \$3 million per occurrence.
- D. Modulus Test Reports – A modulus test(s) is performed on a non-production Aggregate Pier element as required by the Aggregate Pier Designer to verify the design assumptions. The Installer shall furnish the Contractor a description of the installation equipment, installation records, complete test data, analysis of the test data and verification of the design parameter values based on the modulus test results. The report shall be prepared under the direction of a Registered Professional Engineer.
- E. Daily Aggregate Pier Progress Reports – The Installer shall furnish a complete and accurate record of Aggregate Pier installation to the Contractor. The record shall indicate the pier location, length, volume of aggregate used or number of lifts, densification forces during installation, and final elevations or depths of the base and top of piers. The record shall also indicate the type and size of the installation equipment used, and the type of aggregate used. The Installer shall immediately report any unusual conditions encountered during installation to the Contractor, the Engineer and to the Testing Agency.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Aggregate used by the Aggregate Pier Installer for pier construction shall be pre-approved by the Designer and shall demonstrate suitable performance during modulus testing. Typical aggregate consists of Type 1 Grade B in accordance with ASTM D-1241-68, No. 57 stone, recycled concrete or other graded aggregate approved by the Designer.
- B. Potable water or other suitable sources shall be used to increase aggregate moisture content where required. The Contractor shall provide such water to the Installer.

2.2 AGGREGATE PIER DESIGN

- A. The design of the Aggregate Pier system shall be based on the service load bearing pressure and the allowable total and differential settlement criteria of all footings indicated by the design team for support by the Aggregate Pier system. The Aggregate Pier system shall be designed in accordance with generally accepted engineering practice and the methods described in Section 1 of these Specifications. The design life of the structure shall be 50+ years.
- B. The design shall meet the following criteria.
 - a. Estimated Total Long-Term Settlement for Footings: \leq 1-inch

CITY OF ABERDEEN
 WWTP IMPROVEMENTS

222032-001

- b. Estimated Long-Term Differential Settlement of Adjacent Footings: $\leq 1/2$ -inch
- c. Minimum Allowable Bearing Pressure for Footings Supported by Aggregate Pier Reinforced Soils for the following structures:
 - a) Tertiary Treatment (Structure D): 5,000 psf
 - b) Control & Dewatering (Structure E): 5,000 psf
- C. The Aggregate Pier elements shall be designed and installed to completely penetrate existing fill.
- D. The Aggregate Pier elements shall be designed using an Aggregate Pier stiffness modulus to be verified by the results of the modulus test described in Section 3.4 of these specifications.

2.3 DESIGN SUBMITTAL

The Installer shall submit detailed design calculations, construction drawings, and shop drawings, (the Design Submittal), for approval at least 2 week(s) prior to the beginning of construction. A detailed explanation of the design parameters for settlement calculations shall be included in the Design Submittal. Additionally, the quality control test program for Aggregate Pier system, meeting these design requirements, shall be submitted. All computer-generated calculations and drawings shall be prepared and sealed by a Professional Engineer, licensed in the State of Idaho. Submittals will be submitted electronically only unless otherwise required by specific submittal instructions.

PART 3 - EXECUTION

3.1 INSTALLATION PROCEDURES

The following sections provide general criteria for the construction of the Aggregate Pier elements. Unless otherwise approved by the Designer, the installation method used for Aggregate Pier construction shall be that as used in the construction of the successful modulus test.

- A. Augered Rammed Aggregate Pier systems:
 - 1. Augered Rammed Aggregate Pier system shall be pre-augered using mechanical drilling or excavation equipment.
 - 2. If cave-ins exceeding 10% of the lift volume occur during excavation such that the sidewalls of the hole are deemed to be unstable, steel casing shall be used to stabilize the cavity or a displacement Rammed Aggregate Pier system may be used.
 - 3. Aggregate shall be placed in the augered cavity in lift thicknesses as determined by the Rammed Aggregate Pier Designer.

CITY OF ABERDEEN
WWTP IMPROVEMENTS

222032-001

4. A specially designed beveled tamper and high-energy impact densification apparatus shall be employed to densify lifts of aggregate during installation. The apparatus shall apply direct downward impact energy to each lift of aggregate.
- B. Displacement Rammed Aggregate Pier systems:
1. Displacement Rammed Aggregate Pier systems shall be constructed by advancing a specially designed mandrel with a minimum 15-ton static force augmented by dynamic vertical ramming energy to the full design depth. The hollow-shaft mandrel, filled with aggregate, is incrementally raised, permitting the aggregate to be released into the cavity, and then lowered by vertically advancing and/or ramming to densify the aggregate and force it laterally into the adjacent soil. The cycle of raising and lowering the mandrel is repeated to the top of pier elevation. The cycle distance shall be determined by the Rammed Aggregate Pier designer.
 2. Special high-energy impact densification apparatus shall be employed to vertically densify the Rammed Aggregate Pier elements during installation of each constructed lift of aggregate.
 3. Densification shall be performed using a mandrel/tamper. The mandrel/tamper foot is required to adequately increase the lateral earth pressure in the matrix soil during installation. Compaction equipment that induces horizontal vibratory energy (such as Vibroflot equipment) is not permitted.
 4. Downward crowd pressure shall be applied to the mandrel during installation.
- C. Vibratory Aggregate Pier systems:
1. Install piers with a down-hole vibrator capable of densifying the aggregate by forcing it radially into the surrounding soil. The vibrator shall be of sufficient size and capacity to construct stone columns to the diameters and lengths shown on the installer's approved construction drawings.
 2. The probe and follower tubes shall be of sufficient length to reach the elevations shown on the installer's approved construction drawings. The probe, used in combination with the available pressure to the tip jet, shall be capable of penetration to the required tip elevation. Preboring shall be permitted if it is specified in the installer's approved construction procedure submittal.
 3. The probe and follower shall have visible markings at regular increments to enable measurement of penetration and repenetration depths.
 4. Provide methods for supplying to the tip of the probe a sufficient quality of air or water to widen the probe hole to allow adequate space for stone backfill placement around the probe.
 5. The probe shall penetrate into the foundation soil layer to the minimum depths required in the installer's construction plans.

CITY OF ABERDEEN
WWTP IMPROVEMENTS

222032-001

6. Lift thickness shall not exceed 4 feet. After penetration to the treatment depth, slowly retrieve the vibrator in 12-inch to 18-inch increments to allow backfill placement.
 7. Compact the backfill in each lift by repenetrating it at least twice with the vibrating probe to densify and force the stone into the surrounding soil.
- D. The equipment shall have the capability to properly install an aggregate pier to a minimum depth as determined by the aggregate pier designer.

3.2 PLAN LOCATION & ELEVATION OF PIERS

- A. The as-built center of each pier shall be within 6 inches of the locations indicated on the plans. Piers installed outside of the above tolerances and deemed not acceptable shall be rebuilt at no additional expense to the Owner.

3.3 REJECTED RAMMED AGGREGATE PIERS

- A. Aggregate Pier elements installed beyond the maximum allowable tolerances shall be abandoned and replaced with new piers unless the Designer approves the condition or provides other remedial measures. All material and labor required to replace rejected piers shall be provided at no additional cost to the Owner unless the cause of rejection is due to an obstruction or mislocation.

3.4 QUALITY CONTROL

A. Control Technician

1. The Installer shall have a full-time, on-site Control Technician to verify and report on all installation procedures. The Installer shall immediately report any unusual conditions encountered during installation to the Aggregate Pier Designer, the Contractor, and to the Testing Agency.

B. Aggregate Pier Modulus Test

1. As required by the AP designer, an Aggregate Pier Modulus Test(s) will be performed at locations agreed upon by the Aggregate Pier Designer and the Testing Agency to verify or modify Aggregate Pier designs. Modulus Test Procedures shall utilize appropriate portions of ASTM D 1143 and ASTM D 1194, as outlined in the Aggregate Pier design submittal.

3.5 QUALITY ASSURANCE

A. Independent Engineering Testing Agency (Owner's Quality Assurance)

1. The Aggregate Pier Installer shall provide full-time Quality Control monitoring of Aggregate Pier construction activities. The Contractor is responsible for retaining an independent engineering testing firm to provide Quality Assurance services to verify bearing capacities.

CITY OF ABERDEEN
WWTP IMPROVEMENTS

222032-001

B. Responsibilities of Independent Engineering Testing Agency

1. The Testing Agency shall monitor the modulus test pier installation and testing. The Installer shall provide and install all dial indicators and other measuring devices.
2. The Testing Agency shall monitor the installation of Aggregate Pier elements to verify that the production installation practices are similar to those used during the installation of the modulus test elements.
3. The Testing Agency shall report any discrepancies to the Installer and Contractor immediately.
4. The Testing Agency shall observe the excavation, compaction and placement of the foundations as described in Section 7.05. Dynamic Cone Penetration testing may be performed to evaluate the footing bottom condition as determined by the Testing Agency.

3.6 RESPONSIBILITIES OF THE CONTRACTOR

A. Site Preparation and Protection

1. The Contractor shall locate and protect underground and aboveground utilities and other structures from damage during installation of the Aggregate Pier elements.
2. Site grades for Aggregate Pier installation shall be within 1 foot of the top of footing elevation or finished grade elevation to minimize Aggregate Pier installation depths. Ground elevations and bottom of footing elevations shall be provided to the Aggregate Pier Installer in sufficient detail to estimate installation depth elevations to within 3 inches.
3. The Contractor will provide site access to the Installer, after earthwork in the area has been completed. A working surface shall be established and maintained by the Contractor to provide wet weather protection of the subgrade and to provide access for efficient operation of the Aggregate Pier installation.
4. Prior to, during and following Aggregate Pier installation, the Contractor shall provide positive drainage to protect the site from wet weather and surface ponding of water.
5. If spoils are generated by Aggregate Pier installation, spoil removal from the Aggregate Pier work area in a timely manner to prevent interruption of Aggregate Pier installation is required.

B. Aggregate Pier Layout

1. The location of Aggregate Pier-supported foundations for this project, including layout of individual Aggregate Pier elements, shall be marked in the field using survey stakes or similar means at locations shown on the drawings.

CITY OF ABERDEEN
WWTP IMPROVEMENTS

222032-001

- C. Contractor's / Owner's Independent Testing Agency (Owner's Quality Assurance)
1. Contractor is responsible for acquiring an Independent Testing Agency (Quality Assurance) as required. Testing Agency roles are as described in Part 3.5 of this specification. The Aggregate Pier Installer will provide Quality Control services as described in Part 3.4 of this specification.
- D. Excavations of Obstructions
1. Should any obstruction be encountered during Aggregate Pier installation, the Contractor shall be responsible for promptly removing such obstruction, or the pier shall be relocated or abandoned. Obstructions include, but are not limited to, boulders, timbers, concrete, bricks, utility lines, etc., which shall prevent placing the piers to the required depth or shall cause the pier to drift from the required location.
 2. Dense natural rock or weathered rock layers shall not be deemed obstructions, and piers may be terminated short of design lengths on such materials.
- E. Utility Excavations
1. The Contractor shall coordinate all excavations made after Aggregate Pier installations so that excavations do not encroach on the piers as shown in the Aggregate Pier construction drawings. Protection of completed Aggregate Pier elements is the responsibility of the Contractor. In the event that utility excavations are required in close proximity to the installed Aggregate Pier elements, the Contractor shall contact the Aggregate Pier Designer immediately to develop construction solutions to minimize impacts on the installed Aggregate Pier elements.
- F. Footing Bottoms
1. Excavation and surface compaction of all footings shall be the responsibility of the Contractor.
 2. Foundation excavations to expose the tops of Aggregate Pier elements shall be made in a workman-like manner, and shall be protected until concrete placement, with procedures and equipment best suited to (1) avoid exposure to water, (2) prevent softening of the matrix soil between and around the Aggregate Pier elements before pouring structural concrete, and (3) achieve direct and firm contact between the dense, undisturbed Aggregate Pier elements and the concrete footing.
 3. All excavations for footing bottoms supported by Aggregate Pier foundations shall be prepared in the following manner by the Contractor. Recommended procedures for achieving these goals are to:
 - a. Limit over-excavation below the bottom of the footing to 3-inches (including disturbance from the teeth of the excavation equipment).

CITY OF ABERDEEN
WWTP IMPROVEMENTS

222032-001

- b. Compaction of surface soil and top of Aggregate Pier elements shall be prepared using a motorized impact compactor (“Wacker Packer,” “Jumping Jack,” or similar). Sled-type tamping devices shall only be used in granular soils and when approved by the designer. Loose or soft surficial soil over the entire footing bottom shall be recompacted or removed, respectively. The surface of the aggregate pier shall be recompacted prior to completing footing bottom preparation.
 - c. Place footing concrete immediately after footing excavation is made and approved, preferably the same day as the excavation. Footing concrete must be placed on the same day if the footing is bearing on moisture-sensitive soils. If same day placement of footing concrete is not possible, open excavations shall be protected from surface water accumulation. A lean concrete mud-mat may be used to accomplish this. Other methods must be pre-approved by the Designer.
4. The following criteria shall apply, and a written inspection report sealed by the project Testing Agency shall be furnished to the Installer to confirm:
- a. That water (which may soften the unconfined matrix soil between and around the Aggregate Pier elements, and may have detrimental effects on the supporting capability of the Aggregate Pier reinforced subgrade) has not been allowed to pond in the footing excavation at any time.
 - b. That all Aggregate Pier elements designed for each footing have been exposed in the footing excavation.
 - c. That immediately before footing construction, the tops of Aggregate Pier elements exposed in each footing excavation have been inspected and recompacted as necessary with mechanical compaction equipment.
 - d. That no excavations or drilled shafts (elevator, etc.) have been made after installation of Aggregate Pier elements within the excavation limits described in the Aggregate Pier construction drawings, without the written approval of the Installer or Designer.
- G. Failure to provide the above inspection and certification by the Testing Agency, which is beyond the responsibility of the Aggregate Pier Installer, may void any written or implied warranty on the performance of the Aggregate Pier system.

END OF SECTION 31 66 13.13