BID ADDENDUM NO. 4

CONSTRUCTION
NEW GEORGE WYTHE HIGH SCHOOL
(RHSA)
(a.k.a. RICHMOND HIGH SCHOOL FOR THE ARTS)
RICHMOND PUBLIC SCHOOLS

IFB # 23 – 7061 – 11
RRMM Project # 21310 – 00

January 9, 2024
Architect of Record:
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This Addendum forms a part of the Construction Documents and modifies the Project Manual dated November 14, 2023, and Construction Drawings dated November 14, 2023.

The information in this Addendum supersedes any contradictory information or omission set forth in the Contract Documents.

Where any component of the Contract Documents is modified or deleted by this Addendum, the unaltered components of that Section, Article, or Drawing shall remain in effect.

Acknowledge receipt of this Addendum by inserting its number and date in the Proposal Form. Failure to do so may subject Bidder to disqualification.

Bid Addendum No. 4 consists of a one (1) page cover sheet, three (3) pages of Addendum No. 4 narrative, and ten (10) pages of one added specification section, for a total of **fourteen (14) pages.**

CHANGES PERTAINING TO THE PROJECT MANUAL AND SPECIFICATIONS

1.1 PROJECT MANUAL – TABLE OF CONTENTS: Page TOC-7, Division 31 Earthwork; **ADD** new specification section **"313421 AGGREGATE PIER SOIL REINFORCEMENT".**

1.2 SECTION 018113.23 – SUSTAINABLE DESIGN REQUIREMENTS - LEED V4.1 BD+C: SCHOOLS:

- Page 2, paragraph 1.3.N; **DELETE** this paragraph in its entirety.

1.3 SECTION 033000 – CAST-IN-PLACE CONCRETE:

- Page 7, paragraph 2.2.A; **DELETE** this paragraph in its entirety.

1.4 SECTION 042000 – UNIT MASONRY:

- Page 2, paragraph 1.5.D; **DELETE** this paragraph in its entirety.
- Page 7, paragraph 2.4.A; **DELETE** this paragraph in its entirety.

1.5 SECTION 047200 – CAST STONE MASONRY:

- Page 1, paragraph 1.2.B; **DELETE** this paragraph in its entirety.
- Page 4, paragraph 2.3.A; **DELETE** this paragraph in its entirety.
- Page 5, paragraph 2.4.B; **DELETE** this paragraph in its entirety.

1.6 SECTION 055000 – METAL FABRICATIONS:

- Page 4, paragraph 2.2.C; **DELETE** this paragraph in its entirety.

1.7 SECTION 055113 – METAL PAN STAIRS:

- Page 4, paragraph 2.2.B.2; **DELETE** this paragraph in its entirety.
- Page 4, paragraph 2.2.C.2; **DELETE** this paragraph in its entirety.
- Page 4, paragraph 2.2.D.2; **DELETE** this paragraph in its entirety.

1.8 SECTION 061000 – ROUGH CARPENTRY:

- Page 3, paragraph 2.1.A; **DELETE** this paragraph in its entirety.

1.9 SECTION 062023 – INTERIOR FINISH CARPENTRY:

- Page 3, paragraph 2.1.A; **DELETE** this paragraph in its entirety.

1.10 SECTION 064116 – PLASTIC-LAMINATE-CLAD ARCHITECTURAL CABINETS:

- Page 4, paragraph 2.2.E; **DELETE** this paragraph in its entirety.

1.11 SECTION 084329 – SLIDING STOREFRONT SYSTEMS:

- Page 7, paragraph 2.5.D; **DELETE** this paragraph in its entirety.

1.12 SECTION 085653 – SECURITY WINDOWS:

- Page 4, paragraph 2.1.C; **DELETE** this paragraph in its entirety.

1.13 SECTION 087100 – DOOR HARDWARE: Page 43, Hardware Set #55 – CR WD; **ADD** gasketing for door C134 as follows:

Set #55 - CR WD

Doors: A105A, C114, C134, C135, C137B

1	Continuous Hinge	662HD UL EPT LAR	AL	ST
1	Electromechanical Lock	9KW3-7DEU15D PATD C CORMAX PATENTED	KEYING	RQE S3
	626	BE		
1	Closer	EHD9016 SPA90	689	BE
1	Kick Plate	K0050 10" x 2" LDW x B4E-Heavy x CSK	630	TR
1	Wall Bumper	1270CX	626	TR
1	Card Reader	By Security Provider		BY
1	Harness	WH-XX x coordinate with door for LAR		ST
1	Power Transfer	EPT-12C	630	PR
1	Harness	WH-192P		ST
1	Door Position Switch	MC7		DM
1	Power Supply	DKPS-2A		RC
3	Silencer	1229A	GREY	TR
1	***Gasketing***	***5050B @ Head and Jambs Door C134 only***		***TR***

NOTE: Doors are normally closed and locked. Presentation of authorized credential at exterior credential reader unlocks the lever allowing entry. Door(s) secure (Fail Secure) during emergency event or loss of power. Free egress at all times.
RQE switch signals authorized exiting.
Door Position Switch (DS) monitors door position.

1.14 SECTION 092116.23 – GYPSUM BOARD SHAFT WALL ASSEMBLIES:

- Page 2, paragraph 2.1.E; **DELETE** this paragraph in its entirety.

1.15 SECTION 098433 – SOUND-ABSORBING WALL UNITS:

- Page 1, paragraph 1.3.B.2; **DELETE** this paragraph in its entirety.
- Page 7, paragraph 2.8.C; **DELETE** this paragraph in its entirety.

1.16 SECTION 098436 – SOUND-ABSORBING CEILING UNITS:

- Page 1, paragraph 1.5.B.2; **DELETE** this paragraph in its entirety.
- Page 5, paragraph 2.4.D; **DELETE** this paragraph in its entirety.

1.17 SECTION 102113 – TOILET COMPARTMENTS:

- Page 3, paragraph 2.2.B; **DELETE** this paragraph in its entirety.

1.18 SECTION 123623.13 – PLASTIC-LAMINATE-CLAD COUNTERTOPS:

- Page 4, paragraph 2.2.C; **DELETE** this paragraph in its entirety.

1.19 SECTION 313421 – AGGREGATE PIER SOIL REINFORCEMENT: **ADD** the attached specification section.

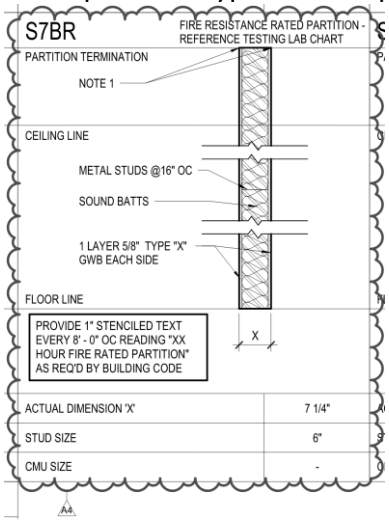
CHANGES PERTAINING TO THE DRAWINGS

1.20 SHEET LS102 - LIFE SAFETY PLAN – FIRST FLOOR:

- Life Safety Plan – First Floor - **ADD 1 hour Fire Barrier** around all four walls of electrical room **C134**.
- Life Safety Plan – First Floor - **ADD 45 min rated door and frame assembly** tag to door **C134**.

1.21 SHEET A-002 - PARTITION TYPES:

- Testing Lab Chart - **ADD** partition type **S7BR** with UL **#U419** listed under 1 Hour Rating column.
- **ADD** partition type **S7BR** to partition types legend as follows:



1.22 SHEET A-103 – FIRST FLOOR PLAN - AREA 'C':

- First Floor - Area 'C'- **REVISE** partition type on North and South wall of electrical room C134 only from M3 to **"M3R"** and apply change on all subsequent floor plans of this room where wall is tagged.
- First Floor - Area 'C'- **REVISE** partition type on West wall of electrical room C134 from S6B to **"S6R"** and apply change on all subsequent floor plans of this room where wall is tagged.
- First Floor - Area 'C'- **REVISE** partition type on East wall of electrical room C134 from S7B to **"S7BR"** and apply change on all subsequent floor plans of this room where wall is tagged.

1.23 SHEET A-604 - DOOR SCHEDULE: Door C134 - **ADD 45 MIN** fire rating to door**.**

1.24 SHEET M-103 – FIRST FLOOR PLAN - AREA 'C' - DUCTWORK: First Floor Plan - Area 'C' - Ductwork **- ADD Fire Damper** at South wall of electrical room **C134** on both 8"/8" ducts.

END OF BID ADDENDUM NO. 4

SECTION 313421 - AGGREGATE PIER SOIL REINFORCEMENT (ADDENDUM NO. 4)

PART 1 - GENERAL

1.1. DESCRIPTION

A. Work shall consist of designing, furnishing and installing Rammed Aggregate Pier foundations to the lines and grades designated on the project drawings and as specified herein. The piers shall be constructed by either augering a shaft or driving a hollow mandrel to the design depth and vertically ramming lifts of aggregate or an aggregate/cement mixture using the specially designed tamper head and high-energy impact densification equipment to create the compacted aggregate pier. The pier elements shall be in a columnar-type configuration and shall be used to produce an intermediate foundation system.

1.2. RELATED REQUIREMENTS:

A. Section 013300 "Submittal Procedures".

B. Section 014000 "Quality Requirements".

C. Section 017823 "Operations and Maintenance Data".

D. Section 017900 "Demonstration and Training".

1.3. WORK INCLUDED

A. Provision of all equipment, material, labor, and supervision to design and install pier elements. Design shall rely on subsurface information presented in the project geotechnical report. Layout of pier elements, spoil removal (as required), footing excavations, and subgrade preparation following aggregate pier installation is not included.

B. The Rammed 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.

1.4. APPROVED INSTALLERS

A. The Pier Installer (the Installer) shall be approved by the Owner's Engineer.

B. Installers of Rammed Aggregate Pier foundation systems shall have a minimum of 5 years of experience with the installation of Rammed Aggregate Pier systems and shall have completed at least 50 projects.

C. Without exception, no alternate installer will be accepted unless approved by Owner's Engineer and the RAP Design Engineer.

1.5. 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. ***"Bearing Capacity and Settlement of Pile Foundations", by George Geoffrey Meyerhof, ASCE Journal of the Geotechnical Engineering Division, Vol. 102, No. 3 March 1976, pp.195-228.***

B. Modulus Testing

1. ***ASTM D1143 - Pile Load Test Procedures***
2. ***ASTM D1194 - Spread Footing Load Test***

C. Materials and Inspection

1. ***ASTM D1241 - Aggregate Quality***
2. ***ASTM D422 - Gradation of Soils***

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

1.6. CERTIFICATIONS AND SUBMITTALS

A. Design Calculations - The Installer shall submit detailed design calculations and construction drawings prepared by the Rammed Aggregate Pier Designer (the Designer) for review and approval by the Owner's Engineer. All plans shall be sealed by a Professional Engineer in the State in which the project is constructed.

B. Professional Liability Insurance – The Rammed 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.

C. Modulus and Uplift Test Reports – A modulus test(s) is performed on a non-production Rammed Aggregate Pier elements as required by the Rammed Aggregate Pier Designer to verify design assumptions. The Installer shall furnish to the General Contractor and Owner's Engineer 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 direction of a Professional Engineer registered in the Commonwealth of Virginia.

D. Daily Rammed Aggregate Pier Progress Reports – The Installer shall furnish a complete and accurate record of Rammed Aggregate Pier installation to the General Contractor and the Owner's Engineer. The record shall indicate the pier location, length, volume of aggregate used or number of lifts, average lift thickness, aggregate quality, 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 General Contractor, to the Designer and to the Testing Agency.

PART 2 - MATERIALS

2.1 AGGREGATE

A. Aggregate used by the Rammed 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 source shall be used to increase aggregate moisture content where required.

PART 3 - DESIGN REQUIREMENTS

3.1 RAMMED AGGREGATE PIER DESIGN

A. The design of the Rammed Aggregate Pier (RAP) elements shall be based on the service load contact pressure and the allowable total and differential settlement criteria as indicated by the design team for support by the Rammed Aggregate Pier elements. The Rammed Aggregate Pier elements 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.

1.	*Maximum Allowable Bearing Pressure for Footings supported by Rammed Aggregate Pier Reinforced Soils*	*5,000 psf*
2.	*Estimated Total Long-Term Settlement*	*≤ 1-inch*
3.	*Estimated Long-Term Differential Settlement*	*≤ 1/2-inch*

C. The Rammed Aggregate Pier elements shall be designed and installed to completely penetrate existing fills where encountered and designs shall take into account stresses imposed by adjacent footings, as applicable.

D. The Rammed Aggregate Pier elements shall be designed using a Rammed Aggregate Pier stiffness modulus to be verified by the results of the modulus test described in Section 5.2 of these specifications.

3.2 DESIGN SUBMITTAL

A. 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 or Province where the piers are to be built. Submittals will be submitted electronically only unless otherwise required by specific submittal instructions.

PART 4 - EXECUTION

4.1 APPROVED INSTALLATION PROCEDURES

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

1. Augered Rammed Aggregate Pier elements –

a. Augered Rammed Aggregate Pier system shall be pre-augered using mechanical drilling or excavation equipment.

b. If cave-ins exceeding 10 percent 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 shaft or a displacement Rammed Aggregate Pier system may be used.

c. Aggregate shall be placed in the augered shaft in lift thicknesses as determined by the Rammed Aggregate Pier Designer.

d. 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. Compaction equipment that induces horizontal vibratory energy (such as Vibroflot equipment) is not permitted.

2. Displacement Rammed Aggregate Pier –

a. 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 shaft, 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.

b. 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.

c. 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.

d. Downward crowd pressure shall be applied to the mandrel during installation.

e. For Rammed Aggregate pier elements using #57 stone and neat cement or sand cement grout mixtures a minimum of 3 cylinders shall be taken daily in accordance with ASTM C31 to perform compressive strength testing of the stone/cement mixture to show it is in accordance with the project strength requirements.

4.2 PLAN LOCATION AND ELEVATION OF PIER ELEMENTS

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.

4.3 REJECTED PIER ELEMENTS

A. 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.

PART 5 - QUALITY CONTROL

5.1 QUALITY CONTROL TECHNICIAN

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

5.2 RAMMED AGGREGATE PIER MODULUS TESTING

A. As required by the RAP designer, a Rammed Aggregate Pier Modulus Test(s) will be performed at location(s) agreed upon by the Rammed Aggregate Pier Designer to verify or modify Rammed Aggregate Pier designs. Modulus Test Procedures shall utilize appropriate portions of ASTM D 1143 and ASTMD 1194, as outlined in the Rammed Aggregate Pier design submittal. RAP modulus test shall be performed as outlined in Technical Bulletin No. 12 (Wissmann and Carter, 2015). The test element shall be tested to a load equal to the element area times at least 150 percent of the RAP elements maximum design stress (not allowable bearing pressure for footings to demonstrate that the element exhibits safe response during service loading. Single-element modulus tests that are proposed to be loaded as a function of allowable bearing pressure are not considered standard practice and will not be accepted since the allowable bearing pressure is often only a fraction of the RAP element's maximum design stress.

5.3 BOTTOM STABILIZATION TESTING (BSTS) / CROWD STABILIZATION TESTING (CSTS)

A. Bottom stabilization testing (BSTs) or Crowd stabilization testing (CSTs) shall be performed by the Control Technician during the installation of the modulus test pier. Additional testing as required by the Pier Designer shall be performed on selected production Pier elements to compare results with the modulus or load test pier.

PART 6 - QUALITY ASSURANCE

6.1 INDEPENDENT ENGINEERING TESTING AGENCY (OWNER'S QUALITY ASSURANCE)

A. The Pier Installer shall provide full-time Quality Control monitoring of Pier construction activities. The Owner is responsible for retaining an independent engineering testing agency (The Agency) to provide Quality Assurance services.

6.2 RESPONSIBILITIES OF INDEPENDENT ENGINEERING TESTING AGENCY

A. 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.

B. The Testing Agency shall monitor the installation of Pier elements to verify that the production installation practices are like those used during the installation of the modulus test elements.

C. The Testing Agency shall report any discrepancies to the Installer and General Contractor immediately.

D. The Testing Agency shall observe the excavation, compaction and placement of the foundations as described in Section 7.5. Dynamic Cone Penetration testing or other approved evaluation method may be performed to evaluate the footing bottom condition as determined by the Testing Agency.

PART 7 - RESPONSIBILITIES OF THE GENERAL CONTRACTOR

7.1 SITE PREPARATION AND PROTECTION

A. The General Contractor shall locate and protect underground and aboveground utilities and other structures from damage during installation of the Pier elements.

B. Site grades for Pier installation shall be within 1 foot of the top of footing elevation or finished grade elevation to minimize Pier installation depths. Ground elevations and bottom of footing elevations shall be provided to the Pier Installer in sufficient detail to estimate installation depth elevations to within 3 inches.

C. The General 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 General Contractor to provide wet weather protection of the subgrade and to provide access for efficient operation of the Pier installation.

D. Prior to, during and following Pier installation, the General Contractor shall provide positive drainage to protect the site from wet weather and surface ponding of water.

E. If spoils are generated by Pier installation, spoil removal from the Pier work area in a timely manner to prevent interruption of Pier installation is required.

7.2 PIER LAYOUT

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

7.3 CONTRACTOR'S / OWNER'S INDEPENDENT TESTING AGENCY (OWNER'S QUALITY ASSURANCE)

A. The Owner is responsible for acquiring an Independent Testing Agency (Quality Assurance) as required. Testing Agency roles are as described in Part 6 of this specification. The Pier Installer will provide Quality Control services as described in Part 5 of this specification.

7.4 EXCAVATIONS OF OBSTRUCTIONS

A. Should any obstruction be encountered during Pier installation, the General 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.

B. Dense natural rock or weathered rock layers shall not be deemed obstructions, and piers may be terminated short of design lengths on such materials.

7.5 UTILITY EXCAVATIONS

A. The General Contractor shall coordinate all excavations made after Pier installations so that excavations do not encroach on the piers as shown in the Pier construction drawings. Protection of completed Pier elements is the responsibility of the General Contractor. If utility excavations are required in close proximity to the installed Pier elements, the General Contractor shall contact the Pier Designer immediately to develop construction solutions to minimize impacts on the installed Pier elements.

7.6 FOOTING BOTTOMS

A. Excavation and surface compaction of all footings shall be the responsibility of the General Contractor.

B. Foundation excavations to expose the tops of 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 Rammed Aggregate Pier elements before pouring structural concrete, and (3) achieve direct and firm contact between the dense, undisturbed Rammed Aggregate Pier elements and the concrete footing.

C. All excavations for footing bottoms supported by Rammed Aggregate Pier foundations shall be prepared in the following manner by the General Contractor. Recommended procedures for achieving these goals are to:

1. Limit over-excavation below the bottom of the footing to 3-inches (including disturbance from the teeth of the excavation equipment).

2. *Compaction of surface soil and top of Rammed 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.*
3. *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.*

D. *The following criteria shall apply, and a written inspection report sealed by the project Testing Agency shall be furnished to the Installer to confirm:*

1. *That water (which may soften the unconfined matrix soil between and around the Rammed Aggregate Pier elements, and may have detrimental effects on the supporting capability of the Rammed Aggregate Pier reinforced subgrade) has not been allowed to pond in the footing excavation at any time.*
2. *That all Rammed Aggregate Pier elements designed for each footing have been exposed in the footing excavation.*
3. *That immediately before footing construction, the tops of Rammed Aggregate Pier elements exposed in each footing excavation have been inspected and recompacted as necessary with mechanical compaction equipment.*
4. *That no excavations or drilled shafts (elevator, etc.) have been made after installation of Aggregate Pier elements within the excavation limits described in the Rammed Aggregate Pier construction drawings, without the written approval of the Installer or Designer.*

E. *Failure to provide the above inspection and certification by the Testing Agency, which is beyond the responsibility of the Pier Installer, may void any written or implied warranty on the performance of the Rammed Aggregate Pier system.*

PART 8 - PAYMENT

8.1 METHOD OF MEASUREMENT

A. *Measurement of the Rammed Aggregate Piers is on a lump sum basis.*

B. *Payment shall cover design, supply and installation of the aggregate pier foundation system. Excavation of unsuitable materials, delays, re-engineering, and remobilization as documented and approved by the Owner or Owner's Engineer, shall be paid for under separate pay items.*

END OF SECTION 313421

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