

ADDENDUM NO. 5
TO THE CONTRACT DOCUMENTS
for the construction of
McCroskey Island WWTP Expansion

Date: August 3, 2022
Project No.: C6A08007

City of Sevierville, TN
McCroskey Island Wastewater Treatment Plant

To All Planholders and/or Prospective Bidders:

The following changes, additions, and/or deletions are hereby made a part of the Contract Documents for the construction of **McCroskey Island WWTP Expansion** for Sevierville, Tennessee dated July 2022 as fully and completely as if the same were fully set forth therein:

A. PART 1, PROCUREMENT REQUIREMENTS

1.

B. PART 2, CONTRACTING REQUIREMENTS

1.

C. PART 3, SPECIFICATIONS

1. In response to Question #8, Section 44 42 41 Grit Removal System. 2.02
A.1.c – CHANGE grit pump model number to T4C75SC-B /F.
2. In response to Question #30, Section 44 42 41 Grit Removal System. 2.04
B.2.d.1 – REPLACE this paragraph with the following:
 - a) 90 percent removal of all grit less than 150 µm and greater than 106 µm.
 - b) 95 percent removal of all grit less than 212 µm and greater than 150 µm.
 - c) 98 percent removal of all grit less than 300 µm and greater than 212 µm.
3. In response to Question #33, Section 44 42 41 Grit Removal System. 2.04
F.5.d. – REPLACE “Cast Iron Class 30” to “G-R Hard Iron”.
4. In response to Question #37, Section 44 42 41 Grit Removal System. 2.04
G.5.e. – REPLACE “1-1/2-inch” with “1-inch”.
5. In response to Question #34, Section 44 42 41 Grit Removal System. 2.05
C.4.b. – REPLACE “belt” with “conveyor”.
6. In response to Question #35, Section 44 42 41 Grit Removal System. 2.05
C.4.d. – DELETE this paragraph in its entirety and RENUMBER subsequent paragraphs.

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7. In response to Question #31, Section 44 42 41 Grit Removal System;
 - a. Paragraph 2.04.A.3, REVISE the first sentence to: “Equipment furnished under this Section (excluding the control panel and Grit Blower/Motor) shall be suitable for Class I, Division 1, outdoor environment.
 - b. Induction Motor Data Sheet, Grit Blower, Special Features - – DELETE this sentence in its entirety and REPLACE it with the following: “Grit blower motor shall be mounted a minimum of 18-inches above walkway.”
8. In response to Question #4, Section 44 42 56.03, Vertical Turbine Pumps- ADD Paragraph 1.03.A.12:

“12. Critical speed analysis results.”
9. In response to Question #2, Section 44 42 56.03, Vertical Turbine Pumps- Paragraph 2.02.B.3.e.1, CHANGE “422” to “422C”.
10. In response to Question #5, Section 44 42 56.03, Vertical Turbine Pumps- Paragraph 2.06.D, REPLACE in its entirety (including D.1) with:

“D. Functional Test: Perform manufacturer standard test on equipment using job motors.”
11. In response to Question #4, Section 44 42 56.03, Vertical Turbine Pumps- ADD Paragraph 2.06.H:

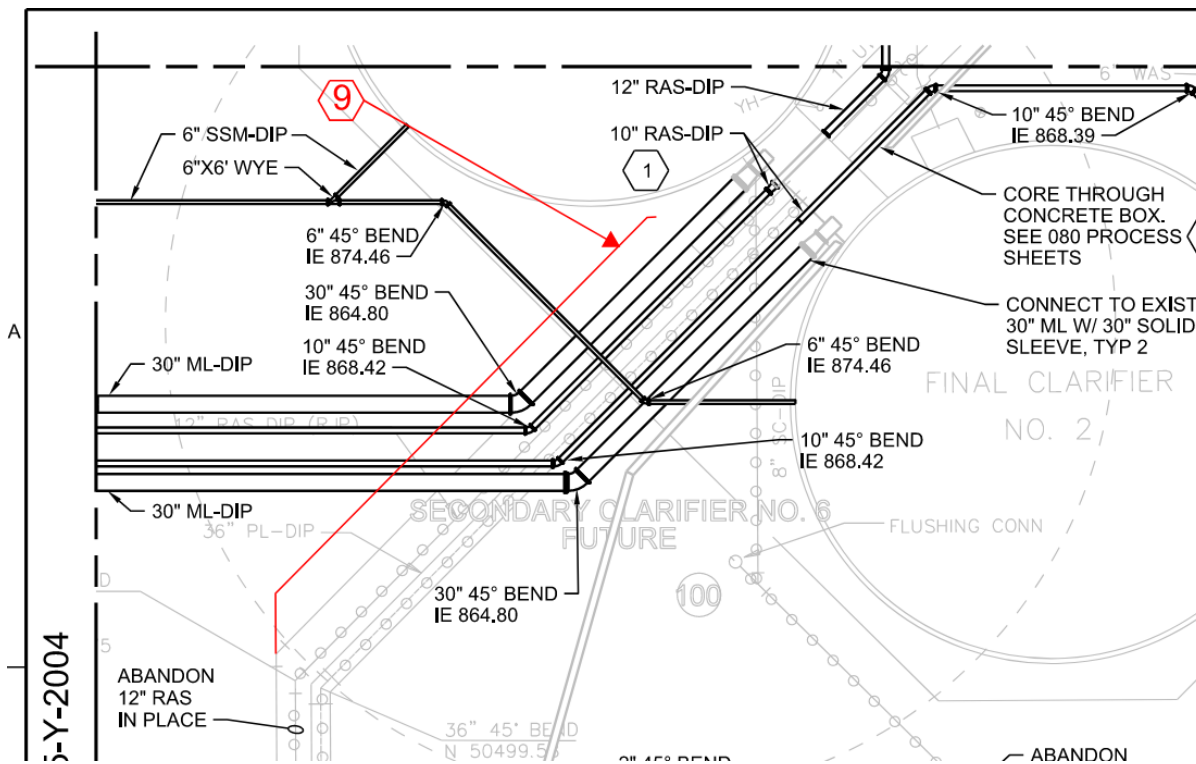
“H. Critical speed analysis calculations in accordance with HI 9.6.4. Provide range of safe operation.”
12. In response to Question #1, Vertical Turbine Pump Data Sheet 44 42 56-03-01, under Design and materials, Coupling- CHANGE “Manufacturer Standard” to “Manufacturer’s standard adjustable”.
13. In response to Question #6, Vertical Turbine Pump Data Sheet 44 42 56-03-01, under Drive Motor, Remarks- ADD “Motor to be vertical solid shaft (VSS).”
14. In response to Question #39, Section 44 42 56.13 Progressing Cavity Pump Data Sheet, Drive Motor, Drive Arrangement, C-Face Mounted: CHANGE “N” to “Y”.
15. In response to Question #13, Section 40 99 90 Package Control Systems, paragraph 1.03-B.14. d. DELETE paragraph 1.03-B.14. d. 1 and REPLACE

with the following: “ 1) Provide PLC code and operator interface documentation for the packaged control system on USB drive and an exported version PDF.”

16. In response to Questions #25 and #28, Section 40 99 90 Package Control Systems, paragraphs 2.06A, DELETE in its entirety and REPLACE with the following: “A. Provide all application software programming for the package control system PLC and panel mounted OIU. Runtime licenses for the specified packaged control system PLC and OIU are not required. Coordinate the software versions with the PICS Integrator prior to program development of the packaged control system PLC and OIU”.

D. PART 4, DRAWINGS

1. In response to Question #43, Drawing 005-Y-2005,
 ADD Keynote 9, “Field relocate and reconnect 2” W3-PVC. See Keynote 1.”;
 Grid Area A1, MODIFY the drawing as shown below:



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All Bidders shall acknowledge receipt and acceptance of this Addendum No. 5 in the Bid Form or by submitting the Addendum with the bid package. Bid Forms submitted without acknowledgment or without this Addendum will be considered in nonconformance.

Jacobs


Project Manager

Appended hereto and part of Addendum No. 5:
Questions and Responses – Addendum No. 5

END OF ADDENDUM

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City of Sevierville, TN
McCroskey Island Wastewater Treatment Plant

QUESTIONS AND RESPONSES
ADDENDUM NO. 5

1. **Question:** Section 44 42 56.03 Vertical Turbine Pumps. 2.02 B.3.a – Please consider specifying an adjustable coupling (see note on Vertical Turbine Pump Data Sheet below).

Response: See PART 3, Specifications, Addendum No. 5.

2. **Question:** Section 44 42 56.03 Vertical Turbine Pumps. 2.02 B.3.e.1 – Please consider specifying the Chesterton 442C mechanical seal. It is a superior design to the old 442, and makes working on the seal much easier for the end-user/technicians in the future.

Response: See PART 3, Specifications, Addendum No.5.

3. **Question:** Section 44 42 56.03 Vertical Turbine Pumps. 2.06 B – Please confirm that factory control panel testing is to be conducted by the panel manufacturer, separate from the pump manufacturer’s testing.

Response: Control panel is to be tested by who fabricates it.

4. **Question:** Section 44 42 56.03 Vertical Turbine Pumps. 2.06 D.1 – HI allowable tolerances for a factory vibration test are outside of the total indicated runout for the specified mechanical seal (0.001in TIR/inch diam.). For a fully assembled pump vibration test this means that the mechanical seals will need to be replaced (i.e. seven mechanical seals become necessary for the order instead of four). Please consider adding language to allow for packing to be used in place of the mechanical seal during the vibration test. At worst a small portion of the shaft would need to be replaced after the test, a major savings over new seals.

Alternative 2.06 D.1: The pump manufacturer can perform hand calculations for critical speed analysis per HI 9.6.4 to determine critical speeds of the pump. This would determine if a critical speeds exists for the design pump range. Providing calculations only would also prevent the need for full assembly of the pump, and replacement of the mechanical seals.

Response: See PART 3, Specifications, Addendum No.5.

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5. **Question:** Section 44 42 56.03 Vertical Turbine Pumps. 2.06 E – Please clarify if a fully assembled pump test with job motor will be required for this section. Please note, if hand calculations per Alternative 2.06 D.1 are not suitable for the vibration testing referenced in 2.06 D.1, a fully assembled pump will be required for that section anyway.

Alternative 2.06 E: If Alternative 2.06 D.1 is acceptable, a bowl only performance test can be specified which would provide a significant cost savings to the city over a fully-assembled pump test.

Response: See PART 3, Specifications, Addendum No. 5.

6. **Question:** Section 44 42 56.03 Vertical Turbine Pumps. Vertical Turbine Pump Data Sheet – Please consider specifying a VSS motor for this application. A VHS motor cannot be guaranteed to meet the TIR requirements of the mechanical seal (0.001inch TIR/inch diam.), even with the addition of a steady bushing. We would also recommend that an adjustable coupling be specified with the VSS motor; since there is a split seal an adjustable spacer is not necessary.

Response: See PART 3, Specifications. Addendum No.5.

7. **Question:** Section 44 42 41 Grit Removal System. 2.01 B – Please verify that the pump tag only needs to include the number 010PMP12201. Please confirm that identification plate requirements are the same as 44 42 56.10B – 2.03 A

Response: Provide your standard nameplate information. If it does not include the tag number, add to nameplate or provide a separate plate with the tag number.

8. **Question:** Section 44 42 41 Grit Removal System. 2.02 A.1.c – Please change pump model number to T4C75SC-B /F to match requested materials of construction in 2.04 F.5.

Response: See PART 3, Specifications, Addendum No.5.

9. **Question:** Section 44 42 56.10B Horizontal End Suction Centrifugal Pumps. 2.03 A – Please verify that the equipment identification plate only needs to include the pump tag number (e.g. 110PMP64001). If not, please clarify what information is required in addition to the standard pump tag.

Response: Provide your standard nameplate information. If it does not include the tag number, add to nameplate or provide a separate plate with the tag number.

10. **Question:** Section 26 05 04 Basic Electrical Materials and Methods (with respect to Section 44 44 73). 2.01-D – Please confirm that 2.01 only applies to MCCBs and Division 26 does not apply to the Trojan UV Disinfection System.

Response: The requirements of Section 26 05 04, paragraph 2.01.D applies to all electrical equipment provided under Division 26 as well as all equipment from Section 44 44 73 or any other spec section. The specified equipment short circuit ratings are applicable to all electrical equipment throughout the project regardless of who may be providing the equipment.

11. **Question:** Section 26 05 05 Conductors (with respect to Section 44 44 73). 3.02 – Please confirm that 3.02 only applies to cabling exiting from plant feeder breaker and that Division 26 does not apply to the Trojan UV Disinfection System.

Response: The requirements of Section 26 05 05, paragraph 3.02 applies to all conductors used throughout the project, so it is also applicable to the equipment provided under Section 44 44 73 or any other vendor provided equipment from any other spec Section.

12. **Question:** Section 40 99 00 Package Control Systems (with respect to Section 44 44 73). ALL - Does this section apply to Trojan premanufactured panels? Please confirm. It had not been considered previously because if applied it would result in customized panels which will significantly increase cost and lead time. This also leads to potential issues supporting City Employees with service/troubleshooting as their panels would be custom/unique compared to the standard offering. We recommend providing panels developed specifically for this product to avoid these potential challenges.

Response: Please refer to responses below.

13. **Question:** Section 40 99 00 Package Control Systems (with respect to Section 44 44 73). 1.03-B.14.d.2 thru 4 – Please clarify, are these to be provided as separate documents or are they to be handled within the code?

Response: This is provided within the PLC code for the packaged system provided on USB drive and an exported version PDF.

14. **Question:** Section 40 99 00 Package Control Systems (with respect to Section 44 44 73). 1.03-B.14.d.6.e – Please clarify, does this section mean that only SCADA exchange tags may be requested to be modified?

Response: Correct. Coordination between the PICS between the Plant SCADA for handshaking between the two control systems for minor communication modifications.

15. **Question:** Section 40 99 00 Package Control Systems (with respect to Section 44 44 73). 2.04-L – The UPS in the SSC only supplies 24 VDC, which is inline with Trojan’s standard scope of supply. See note 2.05-N.1.f.

Response: See response #21.

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16. **Question:** Section 40 99 00 Package Control Systems (with respect to Section 44 44 73). 2.05-G.2 – Please confirm this paragraph only applies to the System Control Center.

Response: This paragraph applies to all UL listed control panels furnished. Please be more specific for control panels furnished in question.

17. **Question:** Section 40 99 00 Package Control Systems (with respect to Section 44 44 73). 2.05-G.3 – Please consider the Phoenix Contact push-in type terminal blocks as an equal for Trojan provided panels. Datasheet appended for your review.

Response: Provide the screw clamp type as specified.

18. **Question:** Section 40 99 00 Package Control Systems (with respect to Section 44 44 73). 2.05-I.2 – Please consider the Phoenix Contact SPDT 6A relay for discrete output as an equal for Trojan provided panels. Datasheet appended for your review. Please confirm if Trojan will need to provide DO card as well.

Response: Refer to response #19.

19. **Question:** Section 40 99 00 Package Control Systems (with respect to Section 44 44 73). 2.05-N.1.f – Clarification on PLC equipment, Trojan’s standard supply includes 24VDC operated modules, please advise if the following standard supply is acceptable:

- o 1 – Controller: 1769-L33ER
- o 2 – Power Supply: 1769-PB2
- o 3 – Digital Input Module: 1769-IQ16
- o 4 – Digital Output Module: 1769-OB16
- o 5 – Analog Input Module: 1769-IF4
- o 6 – Analog Output Module: 1768-OF2

Response: The controller is acceptable. The other PLC equipment listed under items 2 through 6 are not acceptable because they are not in conformance with the plant standards which are 120VAC digital I/O modules and isolated analog I/O modules.

20. **Question:** Section 40 99 00 Package Control Systems (with respect to Section 44 44 73). 2.05-N.3 – Please consider the Phoenix contact unmanaged fiber optic ethernet switch as an equal. Please note, an ST connector switch is being provided per previous design discussion, but an SC switch can be provided. Please confirm. Datasheet appended for your review.

Response: The System Control Center (SCC) control panel (LCP-G1) is included in the plant fiber optic device level ring network which will require the specified Allen

Bradley 1783-ETAP2F as shown on drawing 008-N-0036 and specified under 40 99 00, Package Control Systems.

21. **Question:** Section 40 99 00 Package Control Systems (with respect to Section 44 44 73). 2.05-N.7 – Please consider the Phoenix contact QUINT 4 series 24VDC UPS as an equal for Trojan provided panels. Datasheet appended for your review.

Response: The UPS is required to support the 120VAC power supplied to the panel equipment and components.

22. **Question:** Section 40 99 00 Package Control Systems (with respect to Section 44 44 73). 2.05-N.8.a.2 – Previous design conversations confirmed the use of an ST connector. LC connector is mentioned in this section; please confirm that this comment is no longer valid.

Response: LC connectors are utilized throughout the plant. Provide fiber patch with LC connectors.

23. **Question:** Section 40 99 00 Package Control Systems (with respect to Section 44 44 73). 2.05-O.4.e – Trojan uses 22mm ABB selector switch in PDC and HSC. This meets Trojan design requirements and maintains a Panel UL Type 4X rating.

Response: Provide 30mm selector switch as specified.

24. **Question:** Section 40 99 00 Package Control Systems (with respect to Section 44 44 73). 2.05-O.4.e – Trojan uses 22mm ABB selector switch in PDC and HSC. This meets Trojan design requirements and maintains a Panel UL Type 4X rating.

Response: Provide 30mm size selector switch as specified.

25. **Question:** Section 40 99 00 Package Control Systems (with respect to Section 44 44 73). 2.06-A – Clarification that Trojan is no longer able to provide licenses for Rockwell software per Rockwell policy. Customer will need to purchase directly from Rockwell.

Response: Development and runtime software licenses are not required for the specified package control system. Coordinate software version with the PICS integrator prior to program development of the UV System PLC and OIU.

26. **Question:** Section 40 99 90 Package Control Systems (with respect to Section 44 42 41). 1.05-A – Please confirm if the spare parts outlined in this section are to be supplied by HUBER?

Response: HUBER is required to provide spare parts only if these components listed are furnished in the packaged system.

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27. **Question:** Section 40 99 90 Package Control Systems (with respect to Section 44 42 41). 2.05-N.2 – Please confirm that the ProSoft communication module MVI69E-MBS is to be provide by the Grit Removal System manufacturer.

Response: The ProSoft communication module MVI69E-MBS is not required for the Grit System PLC Panel LCP-A1.

28. **Question:** Section 40 99 90 Package Control Systems (with respect to Section 44 42 41). 2.06A – Please confirm if this software is to be provided by the Grit Removal System manufacturer.

Response: Development and runtime licenses are not required for the specified package control system. Coordinate software version with the PICS integrator prior to program development of the Grit Removal System PLC and OIU.

29. **Question:** Section 44 42 41 Grit Removal System. 2.04-A.3 – Clarification that the Grit pump will not be rated for a Class 1 Div 1 environment, but the motor shall comply. The blower unit is a contained compressor and motor, and will not be suitable for a classified environment.

Response: The grit pump motor is located in a Class I, Division 1 environment. The grit blower/motor is in an unclassified environment if it is mounted 18-inches above the walkway. See PART 3, Specifications, Addendum No. 5.

30. **Question:** Section 44 42 41 Grit Removal System. 2.04-B.2.d.1.a thru c – Please note the grit capture rates specified are not what HUBER proposed and/or designed around originally. We are interpreting this as a typo, HUBER suggests to switch the values, i.e.:

- o 2.04-B.2.d.1.a – 90 percent removal of all grit less than 150 µm and greater than 106 µm.
- o 2.04-B.2.d.1.b – 95 percent removal of all grit less than 212 µm and greater than 150 µm.
- o 2.04-B.2.d.1.c – 98 percent removal of all grit less than 300 µm and greater than 212 µm.

Response: See PART 3, Specifications, Addendum No. 5.

31. **Question:** Section 44 42 41 Grit Removal System. 2.04-C and Induction Motor Datasheet Supplement 4 – Please note that this blower is only available for unclassified locations and it is not suitable for Class 1 Div 2 environments. An XP suitable unit would add significant cost to source, and is outside of HUBER’s standard design. Datasheet attached for your review. Please advise if the standard unit will be acceptable.

Response: See PART 3, Specifications, Addendum No. 5.

32. **Question:** Section 44 42 41 Grit Removal System. 2.04-F. – Please confirm that no vibration or performance testing is required for the Grit pump. If performance testing is required, we would recommend an HI Acceptance Grade 2B considering the pump size and service.
- Response:** No vibration or performance testing is required for this pump.
33. **Question:** Section 44 42 41 Grit Removal System. 2.04-F.5.d – Please change “Cast Iron Class 30” to “G-R Hard Iron” to meet manufacturer’s construction.
- Response:** See PART 3, Specifications, Addendum No. 5.
34. **Question:** Section 44 42 41 Grit Removal System. 2.05.C.4.b – Please note, HUBER’s grit washer does not incorporate a belt. Please consider removing this language.
- Response:** See PART 3, Specifications, Addendum No. 5.
35. **Question:** Section 44 42 41 Grit Removal System. 2.05.C.4.d – This paragraph is not a part of HUBER’s grit washer design. Please consider removing this language.
- Response:** See PART 3, Specifications, Addendum No. 5.
36. **Question:** Section 44 42 41 Grit Removal System. 2.05.C.7.d – Pressure diaphragm seals are typically installed by the contractor, please confirm if this will need to be provided by HUBER.
- Response:** Confirmed. Diaphragm seal is provided by HUBER.
37. **Question:** Section 44 42 41 Grit Removal System. 2.04-G.5.e – Please note that HUBER’S standard is a 1-inch connection.
- Response:** See PART 3, Specifications, Addendum No. 5.
38. **Question:** Section 44 42 41 Grit Removal System. Induction Motor Datasheet – Grit Pump – Please confirm that neither space heaters nor thermal protection is required for this motor, per 26 20 00 Low Voltage AC Induction Motors.
- Response:** Neither space heaters nor thermal protection are required for this motor.
39. **Question:** Section 44 42 56.13 Progressing Cavity Pumps. Datasheet – Motors will be c-face mounted to the gearbox; shaft connections past the gear motor will use universal pin joint connection.
- Response:** See PART 3, Specifications, Addendum No. 5.

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40. **Question:** Section 44 44 73 Ultraviolet Disinfection Equipment for Wastewater. 2.05.H.3.c – Please clarify, does Trojan need to provide power from the SSC for the level transmitter? Will Trojan need to provide SPD for the UVT monitor?
- Response:** Power to the level transmitters are provided from panel 145LP1, circuits 5 and 6. Trojan is required to provide the SPD for the UVT monitor as specified.
41. **Question:** Section 44 44 73 Ultraviolet Disinfection Equipment for Wastewater. 2.07-A – Lifting lugs are included on the PDCs (590 lbs/ea), the HSC (310 lbs) and SSC (200 lbs) do not include lifting lugs. Please advise if this will be acceptable.
- Response:** Coordinate with Contractor for their needs for lifting and installation. Exception acceptable by Engineer to not include on HCS and SCC.
42. **Question:** Section 44 44 73 Ultraviolet Disinfection Equipment for Wastewater. 3.08-E – Please clarify how many shifts and total training is required.
- Response:** Two shifts of training which includes operational and maintenance training courses.
43. **Question:** Sheet 080-D-2002 shows a 2” W3 line feeding a hose bib. There’s a note referring us to see the civil drawings for continuation. The civil drawing 005-Y-2005 does not indicate this line. Please show where this line connects with the yard pipe.
- Response:** See PART 4, Drawings, Addendum #5.
44. **Question:** Vol. 2, 32 23 16. Addendum No. 3 outlined unit price work for over excavation for structures on the project site. Where does this quantity measurement begin? We’re assuming that this quantity measurement starts at the bottom of the 1’ minimum thickness granular fill layer? However, it can be assumed that this measurement starts at the lowest undercut elevation shown in the plans. For example, plan sheet 050-S-3001 (Biological Train No. 2) shows the lowest undercut elevation at 860.00. Would the undercut measurement start at elevation 869.00 (bottom of the 1’ granular fill layer) or at elevation 860.00 (bottom of the undercut shown on plan)?
- Response:** Overexcavation starts at the bottom of the 1’ minimum thickness granular fill layer. The overexcavation limits shown on the structural drawings, and associated notes, are not intended to define the limits of required overexcavation. See response to Question #9 in Addendum #3.
45. **Question:** We received this project today and we are not listed as an Approved Lightning Protection Manufacturer. I have attached an approval letter about our company. Our websites are listed in the letter where you may view our products and services. We would like to be listed as an Approved Lightning Protection Manufacturer on this project and future projects.

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Response: The specification for this product does not have language that disallows submission of substitute products. This response is not an Engineer pre-approval for use of this product. Coordinate with Contractor, see project substitution requirements in Section 01 21 13, Instruction to Bidders (Paragraph 11) and Section 00 72 00 General Conditions.