

ADDENDUM NO. 2
TO THE CONTRACT DOCUMENTS
Oak Lake Estates Wastewater & Drainage Improvements
Okeechobee Utility Authority

Date: 01/18/2021
Project Number: 19-04.D
Bid Number: N/A

TO: All Plan Holders

The following clarifications, changes, additions and/or deletions are hereby made a part of the Contract Documents for the construction of the Oak Lake Estates Wastewater & Drainage Improvements project dated December 2020 as fully and completely as if this same were fully set forth therein:

I. VENDOR RFIs AND CLARIFICATIONS

The following requests for information (RFIs) were received via email from AirVac:

Section 00100

3.2.1 (Contractor experience): *The contractor is to demonstrate successful experience with the installation of a vacuum sewer system with 3 criteria to meet (25,000 lf pipe, 3 separate systems, at least 20 valve pits). Does a contractor who has this experience with Manufacturer A products/systems but not with Manufacturer B, meet this clause if they intend to use Manufacturer B?*

Yes, once the bidder demonstrates that he has experience with the installation of a vacuum sewer system as outlined in the specifications, then he may use either of the two manufacturers specified.

Section 02997

1.04 (Delivery, Storage and Handling): *This is an Airvac specification based on Airvac's 3-piece pit which we no longer offer, and which are not called for in this project. This project has either 1-piece pits or 2- piece pits. Below is Airvac's current specifications regarding this topic (applies to both 1-piece and 2- piece pits).*

Comment noted. Edits were made to specification 02997 VACUUM SEWER COLLECTION SYSTEM, 1.04 to incorporate some items listed in the example specification below.

DELIVERY, STORAGE and HANDLING:

- A. *Cast iron rings and covers, complete one-piece PE valve pits and two-piece valves pit and all components that make up the hybrid two-piece pits may be stored outside. If any such material is to be stored more than 2 years (such as spares for future work), temporary shading is required. Simple covering of these products which allows temperature buildup or exposure to direct or indirect sunlight is not permitted.*
- B. *Suction and sensor pipes and flexible service laterals shall be stored in a manner that will keep them at ambient outdoor temperatures and out of the sunlight. Temporary shading as required to meet this requirement shall be provided. Simple covering of the*

pipe and fittings, which allows temperature buildup or exposure to direct or indirect sunlight, is not permitted.

- C. Boxes of grommets and valve pit O-ring seals shall be kept in a dry area.*
- D. 3" Vacuum valves with controllers, sump breathers, and installation parts bags shall be kept in a dry area. For safe storage, the individual cartons are to remain intact while in storage. Temperature surrounding the boxes while in storage shall not exceed 110 degrees.*
- E. Valve pit cones: Fiberglass valve pit cones may be stacked or laid on their sides. Stack shall be limited to a maximum of eight (8) valve pit cones.*
- F. Collection sumps: Collection sumps shall be stacked upside-down on pallets.*
- G. Cast iron rings and covers shall be stacked on pallets. Rings and covers shall be on separate pallets.*

2.06.A (Valve pit types): *Airvac pit model VP5454H is a 9 ft-2 piece Hybrid valve pit but the table shows this as a 6.00 ft pit. Is the intention to have a 2-piece 9 ft Hybrid pit or is this a typo with the intended pit being a 2-piece 6 ft Hybrid pit (Model VP3042H)? Please clarify.*

Comment noted. Yes, there was a typographic error. The pit referenced on Drawing CD-08 and mentioned in specification section 02997 VACUUM SEWER COLLECTION SYSTEM, 2.06, A AIRVAC pit table should be VP3042P2 instead of VP5454H.

2.06.C (Traffic rated): *This is an old Airvac specification. We updated this spec several years ago to clarify that it is the valve pit itself that must be traffic rated.*

All valve pits shall be H20 traffic rated on their own merits without a concrete collar included in the rating process. An independent laboratory certification shall be provided that the entire valve pit assembly is rated for H20 traffic wheel loads. Calculated data is not acceptable.

We respectfully request that this language be added by Addendum.

Comment noted. We believe the language mentioned in specification 2.06, C is adequate.

2.06.D (Breather): *External breather piping or tubing is not acceptable. Does "external" mean external to the valve pit sump or external to the valve pit itself? Please clarify.*

"External" in this situation means external to the valve pit.

2.06.D (Breather): *Is there a requirement for the breather to be capable of protecting the controller from ingesting liquid?*

No, there is no specific requirement mentioned.

2.07.A (Valve Pit types): *There is no mention of the 3" vacuum valve in the section nor is there a specification for the vacuum valve. But in Measurement & Payment section, the valve pit description includes the 3" valve. Are the vacuum valves included in this project or just the valve pits without the valve? If so, can you provide a specification?*

Comment Noted: Yes 3-inch vacuum valves are included within the project and shall be provided by the vacuum pit manufacturer.

2.07.E (Anti-buoyancy collar): *This is old Airvac spec describing the anti-buoyancy collar of our 3-piece pit which is no longer used. Neither our 1-piece pit nor our 2-piece pit use a fiberglass anti-buoyancy collar. Both use PE with the collar on the 1-piece pit being integral to the pit itself and the collar on the 2-piece pit is made of PE. We suggest revising this section to replace the word "fiberglass" with "polyethylene."*

Comment Noted: The specification has been updated.

2.07.E (Anti-buoyancy collar): *This section says that anti-floatation is required when ground water is present at grade. We assume this means the "ground water table" is at grade. In this case, is concrete ballast and/or flowable fill an acceptable alternative to the anti-buoyancy collar?*

Comment Noted: Yes, concrete ballast and/or flowable fill is an acceptable alternative to the anti-buoyancy collar. Contactor shall submit signed and sealed buoyancy calculations during shop drawing process if Contactor intends on using concrete/flowable fill instead of the anti-buoyancy collar.

2.09.C (Valve Pit Covers): CD-06 -710: *This calls for a Neenah Foundry Model R5900 ring/cover. But this is not consistent with Drawing CD-06-71, which shows a US Foundry 1116 ring/cover for the Airvac valve pit. This is a mid-flange ring which allows for pavement or concrete. Please clarify which ring and cover is required.*

Comment Noted: We will add US Foundry 1116 ring/cover to the specification.

2.10 (Dedicated Air-Intake/Vent Pillar): *The standard details show Airvac's Dedicated Air Terminal which is 6". On Dwg CD10, Note 5 says that the Flovac vent pipe in their Vent pillar is typically 3". Elsewhere on that drawing it says that it is 4" but could be 6" if desired. Please clarify which size the Owner wants.*

Comment noted: A 6" air-intake will be used.

Note: Airvac's experience is that, if atmospheric air is introduced at only 1 place (i.e.— the valve pit), they must be 6" to provide sufficient transport air and to avoid traps from being emptied. We cannot comment on Flovac's experience using 3" or 4" for this purpose. We only mention this for the Owner's benefit.

2.10 (Dedicated Air-Intake/Vent Pillar): *There is no mention of this item as included as part of the valve pit in the Measurement & Payment section nor is there a separate description of this item in Measurement & payment. And, there is no bid item for it on the bid form. Is this item part of this bid? Please clarify.*

Yes, it is a part of the bid. Per the details, we understand that the dedicated air-intake and vent pillar is a preferred part of the valve pit assembly. We have revised specification section 01025, MEASUREMENT AND PAYMENT to include it within the valve pit assembly.

2.11.A (Stub-outs & House Laterals): *This allows non-pressure rated pipe, which apparently is a Flovac standard. Airvac specifications only allows pressure rated PVC for the gravity stub-outs and laterals and expressly prohibits the use of non-pressure rate pipe. No matter which vacuum vendor is chosen, it would seem that the Owner would want the same level of quality when it comes to pipe material. Please clarify.*

Note: We changed our spec years ago to require pressure rated pipe after several problems surfaced with non-pressure rated pipe. For what it is worth, following is the Airvac specification for stub-out pipes and gravity laterals.

- A. *All valve pit stub-out pipes, gravity laterals and fittings installed in the public right-of-way shall be pressure rated. Non-pressure rate pipe and fittings and foam core pipe is not acceptable.*
- B. *Pipe: SDR21 & SDR 26: ASTM D2241; Sch 40: ASTM D1784.*
- C. *Fittings: Sch 40: ASTM D1784 and ASTM D 2466*
- D. *Stub outs: Stub-outs shall be of the pipe material specified in 2.03 and shall be 6" in diameter and a minimum of 6 feet long or the length necessary to extend service to the propertyline.*
- E. *House laterals: Any gravity house lateral pipe that is connected to the valve pit stub-out shall be of the pipe material specified in 2.03 (we can supply this section if requested)*

Also note that SDR 35 pipe does not fit snugly in the Airvac grommet which requires a pipe with a sufficient OD (SDR 26 or SDR 21) to seal against our grommet.

Comment noted. Specifications will be updated to require pressure-rated pipe.

2.11.B (Stub-outs & House Laterals): *The first sentence says that the stub-out piping should be 6" but the last sentence refers to a 4" stop coupling to allow for a 4" stub length to protrude into the pit. Does this mean it is acceptable to reduce the gravity stub-out pipe from 6" to 4" just outside the pit? Please clarify.*

Comment noted. Specification have been modified. Stub-outs can be 4" or 6" in diameter.

2.12 **(Spare Parts):** Part A says that no spare parts are to be included but this conflicts with Part C which says to provide spare parts bill of materials with submittals. Please clarify if spare parts are required and if so, what parts are they?

Comment noted. Specifications will be updated to reflect that no spare parts are required.

3.03.B (Type of lubrication): This section allows water-soluble or silicone spray when installing PVC pipes through grommets. Please note that Airvac has specific requirements for lubricants depending on the application as shown below:

Type of Lubricant	Permitted	Where used
Pipe lubricant per ANSI/NSF Standard #61	Either water soluble or non-water soluble is permitted	Grommets for gravity stub-outs and vacuum service laterals (all valve pits)
Liquid dishwashing detergent diluted 10-20% in water	Pipe lubricant not permitted	Grommets for suction & sensor pipes and in-sump breather (2-piece pits only)
Clearco 3005-NSF H1 NLGI#2 silicone grease non-water soluble for underwater use	Only non-water soluble is permitted	Twist lock hole seal for suction pipe and combined sump breather/sensor pipe (1-piece pits only)

We cannot speak for Flovac regarding this topic, but if Airvac pits are used, the above chart should be followed. Not following these requirements will void the warranty and more importantly, will result in problems.

3.04 (Valve Pit Installation): This is an old Airvac specification for the installation of a 3-piece pit, which is no longer applicable to this project. The “first” test described in 3.04.2 and later in 3.07.A does not apply to either the 1-piece or 2-piece Airvac pit. To avoid confusion, we suggest using our current specification (with some modifications to remove the word Airvac) for the installation of a 1-piece pit. Note that existing OUA projects used 1-piece pits.

Flovac’s valve pit installation instructions may be different than Airvac’s. So that bidders can price things appropriately, shouldn’t the Flovac valve pit installation instructions be included as well? See our related question/comment on Section 3.12.

Comment noted: We eliminated specific installation instructions and mention that the vacuum pit assembly shall be assembled, installed and tested in accordance with the manufacturer’s instructions.

VALVE PIT INSTALLATION (1-PIECE PITS)

- A. Valve pits shall be assembled in accordance with manufacturer’s instructions.
- B. Valve pits shall be installed using the following procedures:

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1. *Determine proper location and alignment with vacuum main and wye connection.*
 2. *Determine grade elevation for the top of the pit package.*
 3. *Determine the gravity line depth from the home to the pit package and verify that adequate slope exists from the house to the sump inlet. If sufficient fall does not exist, consult the ENGINEER or inspector prior to completing the valve pit installation.*
 4. *Determine which raised flat area of the sump will require a gravity line stub out. Mark and cut the holes in the raised flat area as required. Each coupon shall be removed from the hole saw and hung inside the upper chamber as proof of its removal.*
 - a) *For 4" laterals, a 5" opening is required with the centerline of the opening 18" from the outside bottom of the sump.*
 - b) *For 6" laterals, a 6-7/8" opening is required with the centerline of the opening 19" from the outside bottom of the sump.*
 5. *Install the appropriate size rubber grommets into the field cut holes.*
 6. *Excavate and prepare the bedding for the valve pit package as shown on construction plans or as field instructed.*
 7. *Lower the pit package into the prepared excavation hole.*
 8. *Install the prefabricated house gravity line stub-outs through the grommet into the collection sump tank with the stop coupling firmly against the grommet. Use lubricant as specified elsewhere when installing the stub outs. Ensure that grommet remains in place after pipe stub is installed.*
 9. *Level the entire assembly. Do not apply any force from excavation equipment to lower or level the pit package as damage to the valve pit will result.*
 10. *Protect the top of the valve pit to prevent the entrance of soil and begin backfilling. Compact soil as instructed by the specifications. Keep pit package level and at desired top elevation. Stop backfilling just below the pit package outlet port.*
 11. *Conduct sump test as described in Section 3.07*
 12. *Lubricate the o-ring seal inside the 3" vacuum service lateral alignment port on the valve pit package with water soluble soap.*
 13. *Insert the beveled end of the 3" flexible connector into the 3" alignment port. Push flexible connector all the way to the 3" suction elbow.*
 14. *Inspect the rubber seal in the 3" vacuum service lateral alignment port to make sure it has not been pinched.*
 15. *Use a 3" PVC coupling to attach the end of the flexible connector to the suction*

elbow (do not glue) to insure proper alignment.

16. *Install the rubber U-seal provided over the top edge of pit package.*
17. *Set the cast iron ring (without cover) into position on top of the pit package. Caution must be taken when installing the ring to keep U-seal in position. Do not attempt to set the ring vertical on top of the pit package and pivot into position. Place the cast iron cover on the ring to keep foreign material out while backfilling. The ring and cover must be installed prior to the final backfilling of the pit in order to prevent possible distortion of the top of the pit.*
18. *After bedding the flexible connector, backfill to the top of the valve pit package. Compact soil per the ENGINEER's requirements.*
19. *Remove the 3" coupling and cut the PVC end of the flexible connector to the center of the pit package (+/-1"). This is the only time the flexible connector may be cut during installation. The flexible connector must remain aligned concentrically with the suction pipe +/-1/2" after cutting.*
20. *Glue a PVC cap onto the end of the 3" flexible connector inside the pit package. **NOTE:** It is important to glue the PVC cap onto the end of the flexible connector prior to any vacuum being applied to the 3" vacuum service lateral. Failure to do this may result in the collapse of the lower collection sump.*
21. *Complete the installation of vacuum service piping from flexible service lateral to wye connection at vacuum main. Ensure downward slope from pit to main and any lifts required meet design requirements.*
22. *Complete the back-fill of the service lateral (flexible connector to main line wye). Tamp or vibrate fill.*
23. *When required by ENGINEER, pour a concrete ring.*
24. *Record information on the Valve Pit Installation Form.*

3.07 (Vacuum Pit Sump Testing): *This is an old Airvac specification for the installation of a 3-piece pit, which is no longer applicable to this project. The "first" test described in 3.04.2 and later in 3.07.A does not apply to either the 1-piece or 2-piece Airvac pit. To avoid confusion, we suggest using our current specification (with some modifications to remove the word Airvac) for sump testing. This specification applies to both the 1-piece as well as the 2-piece Airvac valve pit and we assume it would also apply to the Flovac valve pits. Please confirm. See discussion below.*

Side note: Like the Flovac chamber, the Airvac valve pit itself requires no testing. However, we do require 1 field test of the sump after the pit is installed in order to test the watertight integrity of the grommets and the gravity stub-outs since the holes for the stub-outs are field cut by the contractor. This field test is in the Owner's best interest as a successful test ensures no groundwater infiltration into the sump. Just like Airvac's valve pit, the holes for the incoming gravity lines for the Flovac collection pit must also be field cut. To protect the Owner and ensure a watertight seal, we believe the watertight integrity of the grommets and stub-out pipes of the Flovac pit also be tested the same degree.

Comment noted: We eliminated specific testing instructions and mention that the vacuum pit assembly shall be assembled, installed and tested in accordance with the manufacturer's instructions.

AIRVAC SUMP TESTING - 1-PIECE PITS

- A. *One sump test shall be performed. This test is performed after all holes have been field cut, grommets and stub-out pipes have been installed and the entire valve pit assembly installed in the ground. This test is done to test the grommets, the entire length of the stub-outs including any pipe in the public right-of-way, and the overall sump assembly.*
- B. *Sump testing shall be done as follows:*
1. *Attach provided sump test assembly onto the end of the 3" suction pipe inside the valve pit with a 3" No-hub or Fernco coupling and PVC test cap.*
 2. *Secure 1/8" tubing to the HIGH port on a 0-50" magnehelic gauge, and connect the other end to the tubing port on the PVC test cap.*
 3. *Install a test plug in the sump breather hole using the rubber seal provided. Apply water soluble soap to the rubber seal before installation. Turn 90 degrees to make a tight seal.*
 4. *Pressurize the collection sump through the air chuck on the PVC test cap.*
 5. *Test at 40" water gauge pressure for a period of one (1) minute. Leakage must be under 5" water gauge in one (1) minute.*
 6. *If leak test fails the CONTRACTOR must locate the leak, repair it and retest.*

3.08 & 3.09 (Vacuum Line Testing): *We did not see anything in the specifications regarding the testing equipment although Drawing G-06 has a general note that a Trailer Mounted Vacuum Pump (TMVP) is required. There is no mention of this item in the Measurement & Payment section nor is there a bid item for it on the bid form. Is this item part of this bid? If so, will a specification for it be provided? Also, if made part of the bid, will this unit be turned over to the Owner at the end of the construction period?*

Comment noted: The CONTRACTOR will be required to test the vacuum line per Specification Section 02997 using necessary equipment, such as a TMVP. To date, no discussion has taken place indicating that the TMVP will be turned over to the OWNER after the construction period.

3.12 (general comment): *We understand the reasoning behind a generic specification that doesn't preclude either manufacturer. However, Airvac's products and recommended installation instructions are different than Flovac's. We have been involved in other projects where the following clause was added to the specifications.*

Where installations include manufactured products, the Contractor shall comply with manufacturer's applicable instructions and recommendations for installation, to whatever extent these are more explicit or more stringent than applicable requirements indicated in the Contract Documents.

So that bidders understand the differences between installing Airvac and Flovac products and to protect the Owner, perhaps this language could be added here or elsewhere in the bidding documents.

Comment noted: We eliminated specific testing instructions and mention that the vacuum pit assembly shall be assembled, installed and tested in accordance with the manufacturer's instructions.

Drawings

CD-05 – 724: *This shows the valve pit located on the same side of the street as the vacuum main and one across the street from the vacuum main. On the one that crosses the street, 2 air-intakes are called for...1 for the gravity line that crosses the street and 1 at the valve pit location. Perhaps Flovac requires this because they use 3" or 4" vent pipes; however be advised that Airvac only requires a single 6" Air Terminal located near the pit.*

Comment noted: Air intake on the opposite side of the valve pit assembly is not required.

CD-06 – 722: *This shows the Airvac valve pit and air terminal. There is a note that indicates SDR 21 Pipe and SDR 35 ASTM fittings, which are not allowed in Airvac standard specifications.*

Comment noted: Detail has been updated.

CD-07 – 713: *This is a standard valve pit orientation detail. The plan drawing depicts the Flovac valve pit but refers to it as an Airvac valve pit. This is not an Airvac detail and should be modified. This detail also indicates SDR 21 pipe and SDR35 fittings, which are not allowed in Airvac standard specifications.*

Comment noted. Conflicting references to fittings were removed and can be found in specification.

CD-07 – 714: *This is a dedicated EAAC valve pit installation detail. Is this item included in this project? Please clarify.*

Comment noted: No, it is not.

CD-08 – 723: *This is a standard detail of Airvac's 2-piece valve pit. However, the description says this is both a 1-piece and 2-piece valve pit. These pit types are different. Since the specs call for 3 different Airvac valve pits, perhaps there should be a drawing for each. We can supply upon request.*

Comment noted: 2-piece pit unit has been removed.

CD-08 – 723: *On note 5 it indicates there are (2) two holes that are to be field cut. One of those holes is for the external breather, the other is a 5" hole for the gravity lines. Both are incorrect. There is no external breather so the 1 ¼" hole can be eliminated. The only holes needed to be field cut are the gravity lines. The gravity lines are 6" which requires a 6 7/8" hole to be cut.*

Comment noted: Notes have been updated.

II. SPECIFICATIONS

A. **Remove and replace** specification SECTION 02997 VACUUM SEWER COLLECTION SYSTEM_REVISED with the specification **SECTION 02997 VACUUM SEWER COLLECTION SYSTEM_REVISED2, attached.**

III. DRAWINGS

A. **Replace** Sheets CD-05, CD-06, CD-07, CD-08, CD-10 and CD-11 of the Oak Lake Estates Vacuum Sewer drawings with the attached revised sheets.

All Bidders shall acknowledge receipt and acceptance of Addendum No. 1 by submitting the signed Addendum with the Bid package. Proposals submitted without this Addendum will be considered informal.

Sincerely,

Jeffrey M. Sumner, P.E.

Receipt acknowledged and conditions agreed to the _____ day of _____, 2021.

Proposer

By