WAUFORD
J. R. Wauford & Company, Consulting Engineers, Inc.

ADDENDUM NO. 4
HWEA CONTRACT # 133-2019-01
HAMMOND-WOOD WASTEWATER TREATMENT PLANT EXPANSION
HOPKINSVILLE WATER ENVIRONMENT AUTHORITY
HOPKINSVILLE, KENTUCKY
WAUFORD PROJECT NO. 1983

Date of Addendum: Friday, January 17, 2020
Mandatory Pre-Bid Meeting: Tuesday, January 21, 2020, 9:00 a.m. Central Time
Bid Opening: Thursday, February 6, 2020, 2:00 p.m. Central Time

1. The following Contractors are pre-qualified to submit bids for HWEA Contract # 133-2019-01 Hammond-Wood Wastewater Treatment Plant Expansion:

Adams Robinson Construction
2735 Needmore Rd.
Dayton, OH 45414
Phone: 937-274-5318
Email: arco@adamsrobinson.com

Lane Construction Corporation
3010 Royal Blvd. South., Suite 125
Alpharetta, GA 30022
Phone: 770-274-1489
Email: dkgooden@laneconstruct.com

Judy Construction Company
103 South Church Street
Cynthiana, KY 41031
Phone: 859-234-6900
Email: cjones@judyconstructionco.com

Smith Contractors, Inc.
P. O. Box 480
Lawrenceburg, KY 40342
Phone: 502-839-4196
Email: cg@sci82.com

2. Attached is a revised Questions and Clarifications document.

3. Instructions to Bidders, Article 3, Paragraph 3.01, Page IB-1:

Delete the following sentence from this paragraph:

"Prospective Bidders shall submit required information regarding their qualifications at the time of the mandatory pre-bid conference."

4. BID FORM, Page BF-6*:

Replace Page BF-6* with the attached revised Page BF-6**.

5. Detailed Specifications, Section 5. Piping, Fittings, Valves, Manholes and Accessories, Paragraph 4.d.(5) Special Linings and Coatings, Page DS 5-7:

Modify the first sentence of the second paragraph as follows:

"If indicated on the Plans, the outside of ductile iron pipe shall have either 3M Scotchkote or Tnemec Series 22/FC22 applied at 30 mils in one coat at the pipe manufacturer's ***or fabricator's*** facility. Minimum surface preparation shall be NAPF 500-03-04."

6. Detailed Specifications, Section 5. Piping, Fittings, Valves, Manholes and Accessories, Paragraph 4.g. Exposed Stainless Steel Air Service Piping, Page DS 5-8:

Modify the paragraph as follows:

"Piping systems conveying air shall be Schedule 10 AISI Type 304L stainless steel above the water line and Type 316 stainless steel below the water line. ***All interior and exterior piping at the Blower/Electrical Building*** shall be insulated with FOAMGLAS or equal. Insulation shall be pre-formed 3-inch minimum thickness with 0.016" smooth aluminum jacket. All joints shall be sealed as per the manufacturer's recommendations. The fittings and joints utilized shall be rated for air service at a continuous temperature of 200ºF. All gaskets shall be Viton."

7. Detailed Specifications, Section 5. Piping, Fittings, Valves, Manholes and Accessories:

Add the following two paragraphs to the end of this Section.

"36. Plug Drain (Mud) Valves

Plug drain (mud) valves shall be cast iron, bronze fitted non-rising stem. Unless otherwise shown on the Plans, plug drain valves shall be furnished with a 2-inch square nut for floor box operation. Seat, disc or gate ring, and valve stem shall be bronze. Extension stems shall be bronze and stem guides shall have bronze surfaces. Valves shall be furnished with spigot or flat frames as shown on the Plans and shall open by turning to the left. PLUG DRAIN VALVES SHALL BE SET ONE INCH LOW AND THE FLOOR SLOPED TO DRAIN. Plug drain valves shall be Troy, Fontane, or equal."

"37. Sluice Gates

a. General

The Contractor shall furnish and install one rising stem, handwheel operated sluice gate and wall thimble for the 48-inch diameter influent pipe as shown on the Plans. The sluice

gate shall be of the flush-bottom closure type. The gate and accessories shall operate properly, with a practical degree of watertightness under a maximum unbalanced unseating head of 36 feet. The gate shall be designed with a minimum safety factor of five to withstand, without permanent distortion of any part, service for which it was designed. The sluice gate shall be Model No. HY-Q as manufactured by Rodney Hunt or equal. Operator shall be manual gearbox with handwheel.

b. Gate Frame

The frame shall be of cast iron, one-piece construction with mounting flange and rectangular or circular opening as indicated on the plans. All contact surfaces of the frame will be machined. The frame shall have machined dovetailed grooves on the front face into which bronze seat facings shall be driven and machined to a 63 micro-inch finish. The back of the frame shall be machined to bolt directly to the machined face of a wall thimble. The frame shall have integrally cast pads machined with keyways to receive top and bottom wedge seats.

c. Gate Disc or Slide

The disc shall be of cast iron, one-piece construction, rectangular with integrally cast vertical and horizontal ribs. A reinforcing rib along each side shall be provided to ensure rigidity between the side wedges. The disc shall have machined dovetailed grooves on the seating face into which bronze seat facings shall be driven and machined to a 63 micro-inch finish. A tongue on each side, extending the full length of the disc, shall be machined on all sides with a 1/16" clearance maintained between the disc tongue and gate guide groove. Wedge pads for side, top, and bottom wedges shall be cast integrally on the disc and machined to receive adjustable bronze wedges. A heavily reinforced nut pocket shall be cast integrally on the vertical centerline and above the horizontal center and be of such shape to receive the square-backed thrust nut.

d. Gate Guides

The guides shall be cast iron, one-piece, designed to withstand the total thrust due to water pressure and the wedging action. The guides shall be machined on all contact surfaces, and a

groove shall be machined the entire length of the guide to allow 1/16" clearance between the disc tongue and guide groove. The guides shall be of such length as to retain and support at least one half the disc in the full open position. The guides shall be integrally cast with or attached to the frame with silicon bronze or stainless steel studs and nuts, and shall be dowelled to prevent any relative motion between the guides and frame. Bronze wedge seats shall be securely attached to machined pads on the guides.

e. Wedges

The wedges shall be solid cast bronze, machined on all contact surfaces. They shall be attached to the disc with studs and nuts and shall have adjusting screws with lock nuts.

f. Seat Facings

All seat facings shall be malleable extruded bronze of a composition which shall increase in wearing ability with cold working. The extruded seat facings shall be of special shape to fill and permanently lock in the machined dovetailed grooves when driven into place. The installed seat facings shall be machined to a 63 micro-inch finish or better.

g. Stems

The operating stem shall be of a size to safely withstand, without buckling or permanent distortion, the stresses induced by normal operating forces. In addition, the stem shall be designed to transmit in compression at least 2-1/2 times the rated output of the floorstand with a 40 pound effort on the crank. The threaded portion of the stem shall have machine cut threads of the 29º Acme type. Stems of more than one section shall be joined by bronze couplings threaded and keyed to the stems. All threaded and keyed couplings of the same size shall be interchangeable. Manually operated, rising stem gates shall be provided with an adjustable stop collar on the stem above the floorstand lift nut.

h. Stem Guides

Stem guides shall be cast iron, bronze bushed, mounted on cast iron brackets. They shall be adjustable in two directions

and shall be spaced at sufficient intervals to adequately support the stem. Stem guide spacing shall not exceed and L/r ratio of 200 and shall not be spaced greater than 10 feet except where required by gate travel.

i. Wall Thimble

Wall thimbles shall be A-126, Class B Iron as manufactured by Rodney Hunt or equal.

j. Painting

The gate manufacturer shall be responsible for shop priming the gate and floorstand. Field painting shall be as specified in Section 8 of these Detailed Specifications.

k. Shop Testing

The completely assembled gate shall be shop inspected for proper seating. Seat facings will be machined, and wedges adjusted to exclude a 0.004" thickness gauge between the frame and disc seating surfaces. The gate disc shall be fully opened and closed in its guide system to ensure that it operates freely. The floorstands shall be shop operated to insure proper assembly and operation.

l. Flush Bottom Closure

The flush bottom closure type of gate shall have a compressible resilient seal attached to the bottom of the disc (sliding member) with a stainless steel bar and fasteners. The seal shall be of a specially extruded shape, and designed to accurately fit to the bottom rib of the disc. The seal shall be shaped to produce a wide sealing area on a machined cast iron stop bar that is bolted to the gate frame to form a flush invert. The differential sealing pressure of the resilient seal on the stop bar shall be variable by adjustment of the side wedges on the gate. The flush bottom closure gates shall be the Hy-Q design as manufactured by Rodney Hunt Company or equal.

m. Materials

All materials used in construction of the gates and appurtenances shall conform to the following specifications:

Part	ASTM Designation
Iron castings for wall thimbles, frame, disc and guides, stem guides, floorstands, and other items	A-126, Class B
Bronze castings for wedges, thrust nut, lift nut and coupling	B-584, C86500
Bronze for seat facings in frame and disc	B-21, C46400
Bronze tongue and guide liners	B-98, C65500
Stainless steel for stems	A-276, Type 304
Stainless steel for fasteners	A-276, Type 304

8. Detailed Specifications, Sub-Section 6B. Building Construction – All Other Buildings:

Add the following paragraph to the end of this Sub-Section.

"21. Wind Shelters

There shall be furnished and installed as shown on the Plans wind shelters consisting of aluminum tubing, grey tint acrylic glazing, and skylights. All sections shall be of extruded aluminum (alloy 6063-T5) of a thickness no less than .040 inch. No unnecessary exposed joints or spices will be accepted.

The aluminum framing shall be designed for 20 psf wind load.

All exposed surfaces shall be polished free of die marks, blisters, streaks and other blemishes. Mouldings shall be alumilited in accordance with the alumiliting process to provide a finish equal to that required by AA-M10C22A31. Sealing of alumilite or equal shall be complete and permanent.

Aluminum which comes in direct contact with steel or other dissimilar metals shall be protected to prevent galvanic corrosion of the aluminum. The aluminum in contact with concrete shall be coated with heavy bodied-bituminous paint. All aluminum shall be cleaned thoroughly with mild soap and water or petroleum product. No abrasive or caustic cleaning shall be used. All aluminum material shall be protected with a coating of suitable wax or similar compound to

preserve the finish while other trades are doing their work. Wind shelters shall be DUO-GARD or approved equal."

9. Detailed Specifications, Section 9. Miscellaneous Metals:

Add the following paragraph to the end of this Sub-Section.

"15. Final Clarifier Launder Covers

a. General

The Contractor shall supply and install final clarifier effluent launder covers as shown on the Plans. The launder cover shall be designed to inhibit the growth of algae on the launder troughs and weirs of the clarifiers by minimizing incident sunlight on these surfaces. Launder covers shall be provided by NEFCO Inc. of Palm Beach Gardens, FL or approved equal.

b. Design

The launder cover shall consist of a system of molded fiberglass panels that are attached together to form a continuous cover over the launder trough, weir and scum baffle within the treatment tank. The cover shall be designed and manufactured to inhibit incident sunlight from striking the surfaces of the launder and weir. Each cover section shall be molded of UV-protected fiberglass and shall be opaque to sunlight. Individual sections shall be a minimum of four feet in length and curved to follow the curvature of the tank. The cover shall extend over the trough and weir as far as possible and may extend to a point immediately inside the scum baffle so long as the cover does not interfere with the sweep arm. The cover shall be designed such that adjacent panels fit together properly and the completed cover, when installed, forms a rigid structure and has a well-engineered and professional appearance.

Provision shall be made to support the cover in such a manner that the panels are held securely in place, with the panels hinged to provide access to the launder and weir for inspection and maintenance. Neither the cover nor the means used to support it shall interfere with effluent flow over the weir or within the trough. Cover supports shall not impede personnel from entering and traversing the launder. Cover supports that

cantilever from the outer effluent launder wall without support at the weir wall are unacceptable.

The cover shall be configured with the hinges toward the inside of the tank (inward opening). Each cover segment shall consist of a fixed mounting section and one or more cover sections, each connected to the mounting section by a continuous stainless steel hinge. The mounting section shall provide a rigid mount for the cover sections and ensure the proper fixed spacing between them.

The mounting section is fastened to the weir wall with FRP and/or stainless steel brackets and extends inward to a point just inboard the scum baffle. The hinged cover sections extend outward toward the outer launder wall and swing open to allow inspection and maintenance of the launder and weir. The hinge point of the cover is positioned between the weir and the scum baffle to ensure full visibility of the launder and weir when the cover is open. In the closed position, the cover sections rest on an FRP support flange attached to the outer launder wall.

The hinged cover sections shall be designed to open independently. Each cover panel has integrally molded, 2” downward flanges along each side of the panel, leaving a small space between closed panels. This space can be filled by a suitable gasket attached to the flange on one side of each panel.

Provision shall be made to secure the cover in the closed position for safety and security. Handles and lift rings shall be provided. A means of limiting the travel of the hinged cover sections, in the form of a restraint cable or tether, shall also be provided to protect against damage. Covers with inspection hatches or cleanout doors are unacceptable.

Where the circumference of the trough is interrupted by a bridge-support or another obstacle, a fixed panel(s) shall be installed over the trough beneath the support such that the surface of the cover is continuous around the entire tank. Alternatively, vertical panels may be installed on both sides of the bridge supports to block out sunlight.

The cover system shall be designed to withstand common wind and snow loads but the entire cover shall not be intended as a

"walk-on" cover designed to support the weight of plant personnel. Adequate stiffeners shall be integral to each panel, but panels reinforced with balsa or foamcores are not acceptable except where a single or double length reinforced walk-on section is used for safe entry to the launder.

c. Materials

Each cover panel shall be molded of fiberglass, reinforced plastics. The resins and fiberglass reinforcing materials shall be consistent with the environmental conditions and structural requirements of the application.

The resin shall be an industrial quality, isophthalic polyester resin with UV suppression additives, Corezyn COR75-AQ-010, or equivalent. The resin shall be pigmented to ensure that the resulting part is opaque. The glass reinforcement shall be chopped strand roving, 357-211 PLN CTC, or equivalent, with a minimum 1/2-inch strand length. Additional reinforcement in the form of stiffening ribs shall be added when necessary. The glass content of the finished laminate shall be not less than 30% by weight. The nominal thickness of each panel shall be 1/4 inch. The laminate shall consist of a 20 mil outer layer of marine quality white gelcoat, followed by chopped strand roving. The laminations shall be dense and free of voids, dry spots, cracks or crazes. All factory-trimmed edges shall be sanded and sealed. The finished laminate shall have a smooth, even appearance.

Fasteners, handles, hinge and latches shall be stainless steel. The weir wall mounting brackets shall be stainless steel, FRP or a combination of the two. The latch/handle shall be a spring-loaded mechanism with a positive detent positioned to indicate the closed/locked position of the handle. The latch is activated by pressing down on the spring-loaded handle and turning it. The magnetic latch is disengaged by pulling upward on the cover, ring or other fixture with sufficient force to overcome the force of the magnet.

The tether or restraint cable shall consist of a length of stainless steel cable secured to the tank wall and the hinged cover section by means of stainless steel eyebolts. The length of the cable is selected to limit the travel of the cover.

d. Installation

The cover sections shall be mounted to the weir wall on stainless steel or FRP brackets. The free end of each cover panel shall be supported at the outer tank wall by an FRP support flange that attaches to the entire periphery of the tank.

The installation contractor shall install the cover in accordance with the contract drawings, manufacturing drawings and manufacturer's recommendations. Field cutting of panels shall be allowed to complete the structure and accommodate in-tank obstructions. All cut ends shall be dressed as per the manufacturer's recommendations.

All of the fasteners and brackets required for the installation shall be Stainless Steel and shall be supplied by the cover manufacturer. The support flange and weir wall brackets are installed using 3/8" x 3-3/4" expansion anchors with flat washers, lock washers and hex nuts."

10. Detailed Specifications, Section 10. Miscellaneous Equipment, Paragraph 16. Portable Valve Operator, Page DS 10-7:

Modify the first sentence of this paragraph as follows:

"The Contractor shall furnish one (1) portable valve operator and furnish/install all required connectors/adaptors suitable for the portable valve operators' use on all valves, slide gates ***and sluice gates*** provided as part of this project."

11. Detailed Specifications, Sub-Section 11C. Grit Removal Equipment, Paragraph 1. Scope, Page DS 11C-1:

Modify the bulleted list in this paragraph as follows:

"
- Two (2) grit removal units;
- Two (2) grit classification and washing units;
- Two (2) grit dewatering units;
- Two (2) ***4***-inch electrically operated plug valves;
- Two (2) grit transfer pumps; and
- Two (2) local PLC based control and monitoring panel capable of controlling and monitoring all functions of the equipment included in one engineered grit removal system unit process train and capable of controlling and monitoring one ***4***-inch electrically operated plug valve

for the control of grit slurry flow into the suction of the grit transfer pump."

12. Detailed Specifications, Sub-Section 11C. Grit Removal Equipment, Paragraph 5.c.(2)(b), Page DS 11C-4:

Modify this paragraph as follows:

"(b) An Uninterruptible Power Supply (UPS) shall be provided and wired such that the electrically operated ***4***-inch plug valve automatically closes during a power failure."

13. Detailed Specifications, Sub-Section 11C. Grit Removal Equipment, Paragraph 5.c.(2)(c), Page DS 11C-4:

Modify this paragraph as follows:

"(c) The electrical power supply for the electronically operated ***4***-inch plug valve located on the suction pipeline to the grit transfer pump shall be provided by the Vendor from the associated control and monitoring panel."

14. Detailed Specifications, Sub-Section 11C. Grit Removal Equipment, Paragraph 5.d.(1) 6-inch Electrically Operated Plug Valve, Page DS 11C-12:

Modify this paragraph as follows:

"(1) ***4***-inch Electrically Operated Plug Valve

Plug valve shall be as specified in Section 5, Paragraph 15. Plug Valves. Electric actuator shall be as specified in Section 5, Paragraph 27. Electric Actuators."

15. Detailed Specifications, Sub-Section 11D. Perforated Membrane Fine Bubble Diffused Aeration System, Paragraph 2. Vendors/Manufacturers, Page DS 11D-1:

Modify this paragraph as follows:

"2. Vendors / Manufacturers

- Sanitaire Corporation, ITT Industries of Sterling, Massachusetts

- Stamford Scientific International, Inc. of Poughkeepsie, New York

- ***Evoqua Water Technologies, LLC of Waukesha, Wisconsin***

- Approved equal as determined by the Engineer"

16. Detailed Specifications, Sub-Section 11F. Wet Pit Submersible Pumps, Mixers and Accessories, Paragraph 1. Scope, Page DS 11F-1:

Modify the second paragraph as follows:

"Note that one local control panel with integral VFD shall be provided for each submersible mixer ***by the Mixer Vendor / Manufacturer***. Control panels and VFDs for submersible pumps will be furnished by the Systems Integrator."

17. Detailed Specifications, Sub-Section 11J. Manifold-Type Hydraulic Suction Circular Clarifier Equipment, Paragraph 2. Vendors/Manufacturers, Page DS 11J-2:

Modify this paragraph as follows:

"2. Vendors / Manufacturers

The clarifier equipment shall be manufactured by:

- Evoqua Water Technologies, LLC
  2607 N. Grandview Blvd.
  Waukesha, Wisconsin 53189

- WesTech Engineering, Inc.
  3625 South West Temple
  Salt Lake City, Utah 84115

- Ovivo USA, LLC
  4246 Riverboat Road, Suite 300
  Salt Lake City, UT 84123

- ***Envirodyne Systems Inc.***
  75 Zimmerman Drive
  Camp Hill, PA 17011

- Approved Equal as determined by the Engineer"

18. Detailed Specifications, Sub-Section 11J. Manifold-Type Hydraulic Suction Circular Clarifier Equipment, Paragraph 4. Performance and Design Requirements, Page DS 11J-3:

Modify the sixth paragraph as follows:

"The drive causing the rotation of the manifold-type hydraulic suction sludge removal mechanism and surface skimmers shall be capable of generating a minimum of ***31,300*** foot-pounds minimum continuous operating torque while maintaining a minimum continuous service rated design capacity to continuous operating torque ratio (safety factor) of not less than 1.5."

19. Detailed Specifications, Sub-Section 11J. Manifold-Type Hydraulic Suction Circular Clarifier Equipment, Paragraph 5.h. Static Hollow Center Support Pier, Page DS 11J-7:

Modify the paragraph as follows:

"h. Static Hollow Center Support Pier

The drive mechanism and the clarifier rotating equipment shall be supported by a static hollow center support pier that serves as the wastewater inlet to the clarifier. The static hollow center support pier shall be a steel pipe meeting the requirements at ASTM Standard A53 having a minimum ***36***-inch nominal size and a wall thickness established by the manufacturer."

20. Detailed Specifications, Sub-Section 11L. Screw Press Equipment and Accessories, Paragraph 6.e.(5) Rotor and Stator, Page DS 11L-14*:

Delete the following sentence from the end of the second paragraph:

"Stator designs shall additionally incorporate a retensioning feature to compensate for wear in lieu of increasing pump speed."

21. Detailed Specifications, Sub-Section 11M. Solar Drying System, Paragraph 2. Vendors/Manufacturers, Page DS 11M-1:

Modify this paragraph as follows:

"2. Vendors / Manufacturers

The Manufacturer shall be

- ***Thermal Process Systems, Inc.***
  627 East 110th Avenue
  Crown Point, IN 46307

- Approved equal as determined by the Engineer"

22. Plans, Sheet 2 Construction Notes:

Modify Construction Note No. 4 on Sheet 2 of the Plans as follows:

"EXISTING STRUCTURES TO BE RAZED SHALL BE RAZED TWO FEET BELOW FINISHED ***OR PROPOSED STRUCTURE SUBGRADE***. PLUG ALL PIPES (SEE PLUG DETAIL). DRILL HOLES IN BOTTOM OF STRUCTURES FOR ADEQUATE DRAINAGE AND FILL WITH SHOT ROCK AND CRUSHED STONE. COVER AREAS ***TO BE SEEDED*** WITH TOPSOIL."

23. Plans, Sheet 35 Construction Notes:

Modify Special Note on Sheet 35 of the Plans as follows:

"NOTE:
ALL ***DRAIN*** PIPING UNDER STRUCTURE SHALL BE SPECIALLY LINED & ENCASED IN MIN. 6" CLASS "C" CONCRETE. ALL DIP GRIT SYSTEM PIPING SHALL BE SPECIALLY LINED."

24. Plans, Sheets 34, 35, 36, 81 and 84:

Modify these sheets as shown on the attached 8 ½" X 11" sheets.

25. Plans, Sheet 37, Section G-37 and East Interior Wall Elevation:

Modify the Grit Piping label as follows:

"3" S.S. Grit Piping"

J. R. WAUFORD & COMPANY,
CONSULTING ENGINEERS, INC.

Stephen C. Lee, P.E.
Kentucky License No. 27833

PRE-BID QUESTIONS AND CLARIFICATIONS
HWEA CONTRACT # 133-2019-01
HAMMOND-WOOD WASTEWATER TREATMENT PLANT EXPANSION
HOPKINSVILLE WATER ENVIRONMENT AUTHORITY
HOPKINSVILLE, KENTUCKY

Bid Date: Thursday, February 6, 2020
Time: 2:00 PM Central Time

Questions/Answers and Clarifications:

1. **Clarification –** Any prospective bidder wishing to visit the Hammond-Wood Wastewater Treatment Plant site may call the plant at 270-887-4298.

2. **Question** – *Can the requirements for the Contractor's warranty and major equipment warranties be clarified?*

   Answer – Refer to the following:

   Standard General Conditions of the Construction Contract, Article 15, Paragraph 15.08,
   Detailed Specifications, Section 1, Paragraph 4, and,
   Detailed Specifications, Sub-Sections 11A through 11P – Part I, Last Paragraph of each Sub-Section.

3. **Question –** *What will the effluent reuse system water system pressure be at the WWTP?*

   Answer – The effluent reuse water system pressure is expected to vary between 75 psi and 125 psi. Pressure reducers suitable for effluent reuse water shall be provided by the equipment vendor where proposed equipment requires lower water pressures.

4. **Question** – *Where is Addendum No. 1?*

   Answer – Addendum No. 1 was incorporated into the documents issued to plan holders and plan rooms. Addendum No. 1 is dated November 25, 2019 as shown in the title block on the applicable plan sheets.

5. **Question** – *With Addendum No. 1 included as part of the original bid documents, are we required to list receipt of Addendum No. 1 on the Bid Form?*

   Answer – Yes.

6. **Question** – *Detailed Specifications, Sub-Section 11A, Paragraph 3 requires the screen to be designed to resist hydraulic pressure due to 100% blinding of the screen at full channel depth. Is this required?*

   Answer – Yes.

7. **Comment** – *Plan notes on sheet 35 call for "specially lined DIP Vent" for the grit system. Please specify the ductile iron pipe interior lining for the grit system at the headworks. Also, please specify the pipe material from the grit removal unit to the grit transfer pumps.*

   Response – Please refer to the Interior and Above Ground Piping Schedule on sheet 84 of the Plans and Section 5, Paragraph 4.d.(5), Special Linings and Coatings.

8. **Comment –** *Please specify "special lining" for piping under structure as noted on Sheet 35.*

   Response – Please refer to Section 5, Paragraph 4.d.(5), Special Linings and Coatings.

9. **Comment –** *Please specify "special coating" for the 18" ductile iron piping as noted on sheet 42.*

   Response – Please refer to Section 5, Paragraph 4.d.(5), Special Linings and Coatings.

10. **Question –** *Will push-on wall bell wall pipes be allowed in lieu of MJ bell wall pipes?*

    Answer – No.

11. **Question –** *Since buried fittings are required to utilize retainer glands, do MJ bell wall pipes require restraint?*

    Answer – Yes.

12. **Question –** *Is it your intent to use PVC coated 90 degree bends (electrical conduit) at stub-ups and/or galvanized 90 degree bends with bitumastic paint?*

    Answer – Please refer to Section 12. Electrical, Pages DS 12-13 and DS 12-14.

BID FORM: HAMMOND-WOOD WASTEWATER TREATMENT PLANT EXPANSION

BID FORM A - CONSTRUCTION

Bids shall include sales tax and all other applicable taxes and fees.

1. Lump Sum Price

For performing all labor and furnishing all materials, equipment, and equipment installation necessary for constructing Contract 133-2019-01 – Hammond-Wood Wastewater Treatment Plant Expansion including all incidentals and all other work and appurtenances except Finish Grading, Topsoiling, Seeding and Final Clean-up necessary for completion of work under this Contract as shown on the Plans and/or specified for the lump sum amount of:

TOTAL BID FORM A, Item No. 1 - ($_____)

_____Dollars

_____Cents

2. Lump Sum Price – Finish Grading, Topsoiling, Seeding and Final Clean Up

For performing all labor and furnishing all materials required for Finish Grading, Topsoiling, Seeding and Final Clean-up necessary for completion of work under this Contract as shown on the Plans and/or specified for the lump sum amount of:

TOTAL BID FORM A, Item No. 2 - ($_____)

_____Dollars

_____Cents

* NOTE: Bid Item No. 2 shall not be less than ***2%*** of Bid Item No. 1.

TOTAL BID FORM A, Item No. 1 + Item No. 2 - ($_____)

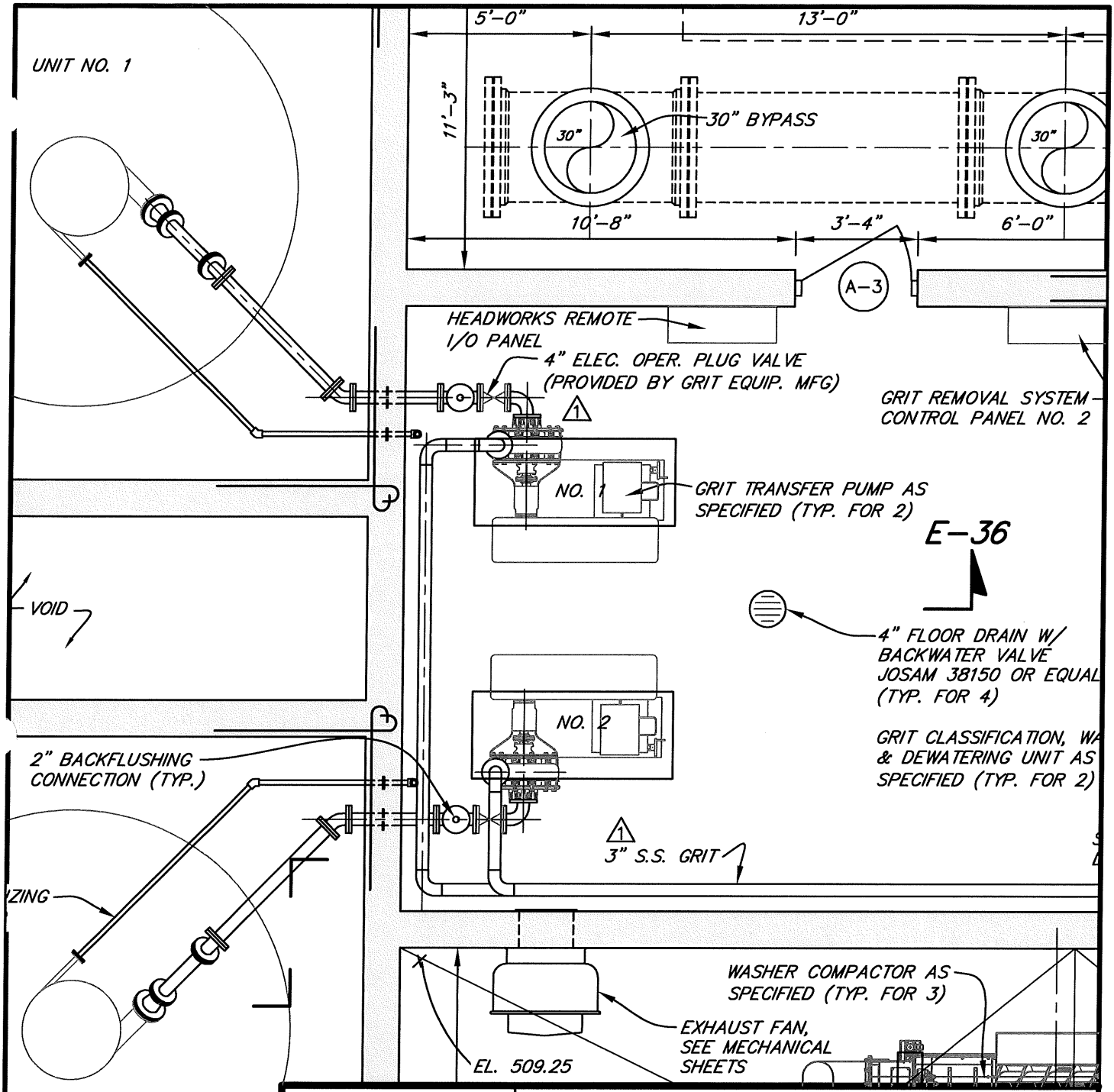
_____Dollars

_____Cents

Equipment to be Furnished

The prices for equipment listed hereinafter for work to be constructed under Sub-Sections 11A through 11P are included in the lump sum price shown previously as Lump Sum Price. The BIDDER shall use the lowest priced item listed as an acceptable Base Bid item as the basis for arriving at his overall price. The BIDDER is required to fill in the items below in order to indicate the relative prices of the equipment of various manufacturers which may be considered by the Owner for various reasons. The prices shown on the next page shall include the cost of furnishing the various equipment items.

The prices listed hereinafter are not to be in addition to the Lump Sum Price hereinbefore but are to be included in it.



SHEET **34** OF **97**

REVISIONS

1 ADDENDUM NO. 4 1/17/20 AWR

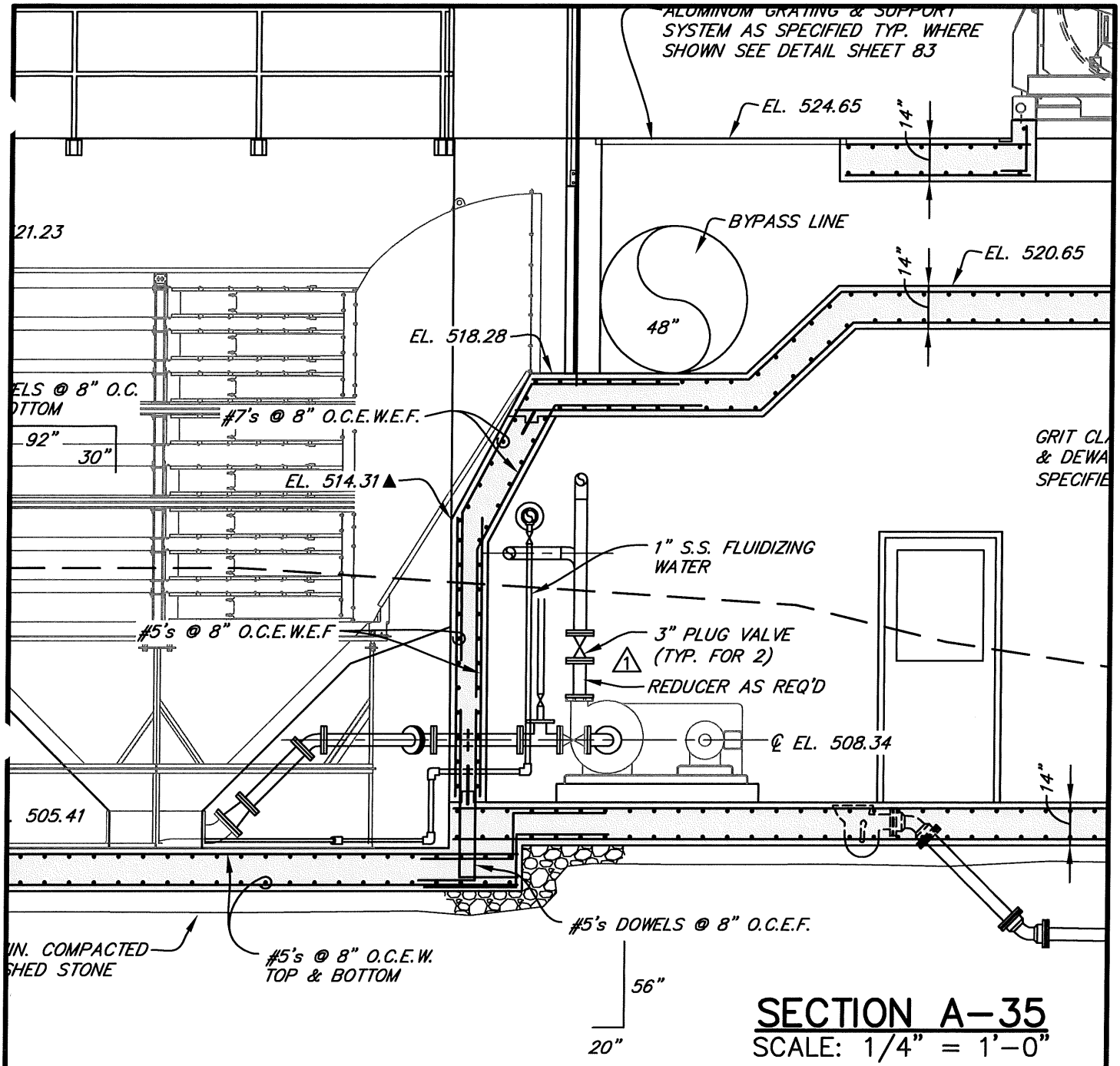
SEWER SYSTEM IMPROVEMENTS
CONTRACT NO. 133-2019-01
HAMMOND-WOOD WASTEWATER TREATMENT PLANT EXPANSION

PROPOSED HEADWORKS PLAN AND SECTIONS

FOR
HOPKINSVILLE WATER ENVIRONMENT AUTHORITY

SCALE	DESIGNED
AS SHOWN	SCL
	DRAWN AWR
PROJECT NUMBER 1983	CHECKED JGD
DATE FEB. 2019	

WAUFORD
J. R. Wauford & Company, Consulting Engineers, Inc.
Nashville, Tennessee
(615)883-3243
www.jrwauford.com



SECTION A–35
SCALE: 1/4" = 1'–0"

SHEET 35 OF 97

REVISIONS

1 ADDENDUM NO. 4 1/17/20 AWR

SEWER SYSTEM IMPROVEMENTS
CONTRACT NO. 133–2019–01
HAMMOND–WOOD WASTEWATER TREATMENT PLANT EXPANSION

PROPOSED HEADWORKS SECTIONS

FOR
HOPKINSVILLE WATER ENVIRONMENT AUTHORITY

SCALE	DESIGNED
AS SHOWN	SCL
	DRAWN AWR
PROJECT NUMBER 1983	CHECKED JGD
DATE FEB. 2019	

WAUFORD
J. R. Wauford & Company, Consulting Engineers, Inc.
Nashville, Tennessee
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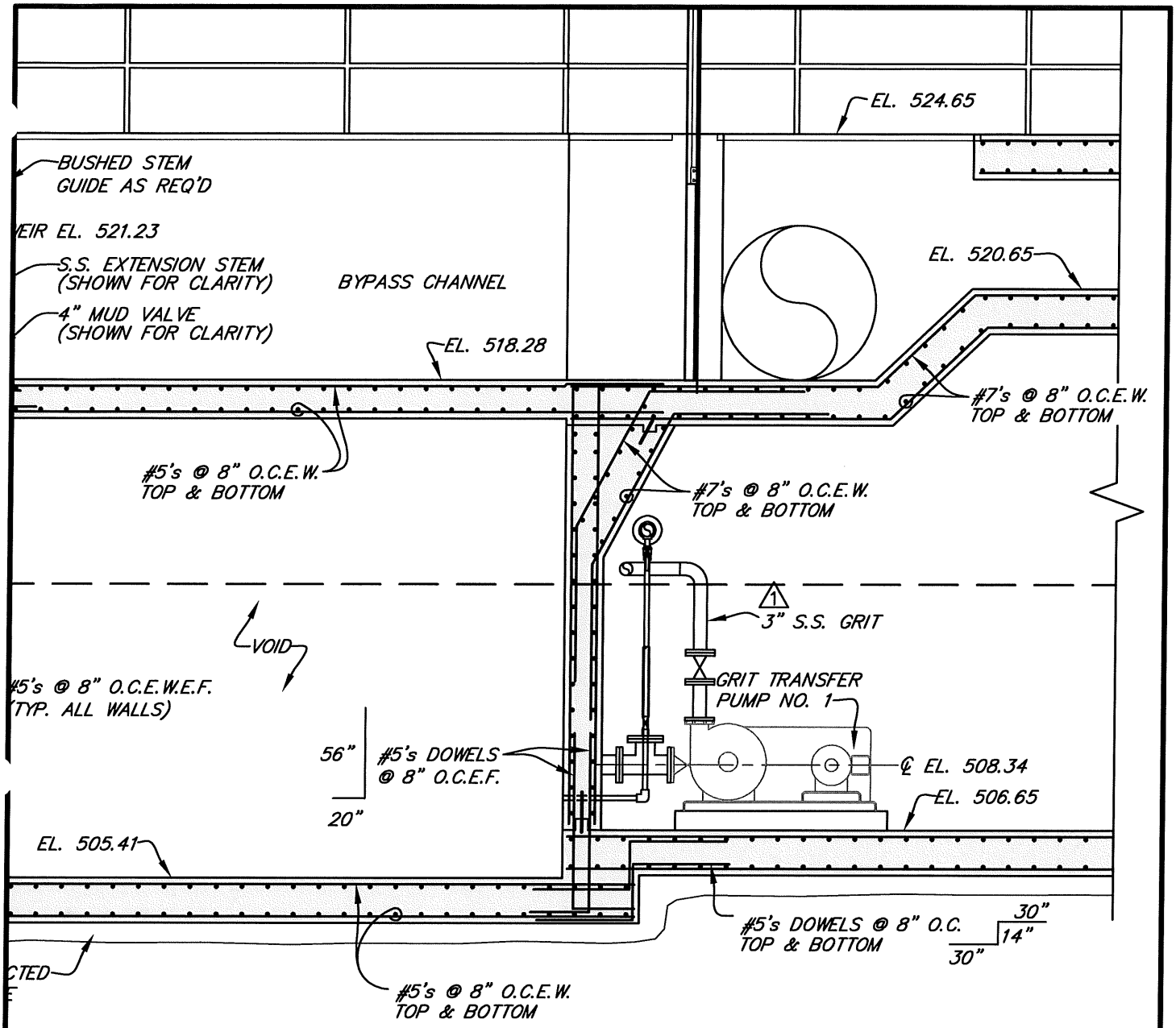

SECTION E–36

SCALE: 1/4" = 1'–0"

SHEET **36** OF **97**

REVISIONS

1 ADDENDUM NO. 4 1/17/20 AWR

PROJECT NUMBER 1983

SCALE AS SHOWN

DATE FEB. 2019

SEWER SYSTEM IMPROVEMENTS
CONTRACT NO. 133–2019–01
HAMMOND WOOD WASTEWATER TREATMENT PLANT EXPANSION

PROPOSED HEADWORKS SECTIONS AND DETAILS

FOR
HOPKINSVILLE WATER ENVIRONMENT AUTHORITY

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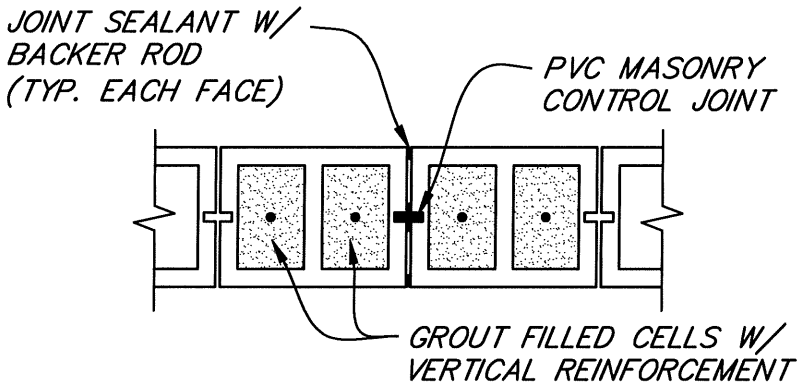
DESIGNED SCL
DRAWN AWR
CHECKED JGD



NOTE:
BOND BEAM REINFORCEMENT SHALL BE CONTINUOUS ACROSS JOINT. DISCONTINUE OTHER HORIZONTAL REINFORCEMENT AT JOINT.

⚠2 MASONRY CONTROL JOINT

SCALE: 3/4" = 1'-0"

SHEET 81 OF 97

REVISIONS

⚠1 ADDENDUM NO. 3 1/10/20 AWR

⚠2 ADDENDUM NO. 4 1/17/20 AWR

PROJECT NUMBER 1983

SEWER SYSTEM IMPROVEMENTS
CONTRACT NO. 133-2019-01
HAMMOND-WOOD WASTEWATER TREATMENT PLANT EXPANSION

GENERAL STRUCTURAL NOTES AND DETAILS

FOR
HOPKINSVILLE WATER ENVIRONMENT AUTHORITY

SCALE: AS SHOWN

DATE: FEB. 2019

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DRAWN AWR

CHECKED JGD

VAL

	QTY.	TYPE	SIZE	CONNECTION	LOCATION
	2	CHECK	20"	FL	MAIN SPS RAW SEWAGE PUMP DISCHARGE
	2	CHECK	16"	FL	MAIN SPS RAW SEWAGE PUMP DISCHARGE
	2	GATE	20"	FL	MAIN SPS RAW SEWAGE PUMP DISCHARGE
	2	GATE	16"	FL	MAIN SPS RAW SEWAGE PUMP DISCHARGE
	2	GATE	4"	FL	EFFLUENT REUSE WATER TO DECK GUN
	2	GATE	24"	FL	RAW WASTEWATER FLOW METER PIT
	4	PLUG	30"	FL	HEADWORKS INFLUENT
3	● 2	PLUG	4"	FL	GRIT TRANSFER PUMP SUCTION
3	2	PLUG	3"	FL	GRIT TRANSFER PUMP DISCHARGE
	1	GATE	4"	FL	EFFLUENT REUSE WATER
	2	MUD	8"	FL	ANAEROBIC REACTOR DRAIN
	1	MUD	4"	FL	ANAEROBIC REACTOR DRAIN
	2	PLUG	18"	FL	OXIDATION DITCH NO. 3 INFLUENT
	2	B'FLY	10"	WAFER	OXIDATION DITCH NO. 3 AIR
	3	MUD	12"	FL	OXIDATION DITCH NO. 3 DRAIN
	2	PLUG	18"	FL	OXIDATION DITCH NO. 1 INFLUENT
	2	B'FLY	10"	WAFER	OXIDATION DITCH NO. 1 AIR
	2	PLUG	18"	FL	OXIDATION DITCH NO. 2 INFLUENT
	2	B'FLY	10"	WAFER	OXIDATION DITCH NO. 2 AIR
	2	CHECK	3"	FL	SCUM PUMPING STATION PUMP DISCHARGE
	2	PLUG	3"	FL	SCUM PUMPING STATION PUMP DISCHARGE
2	2	TELESCOPING	16"	FL	F.C. NO. 1 & 2 RAS CONTROL STRUCTURE I
2	2	GATE	12"	FL	F.C. NO. 1 & 2 RAS CONTROL STRUCTURE I
	1	TELESCOPING	16"	FL	F.C. NO. 3 & 4 RAS CONTROL STRUCTURE I
2	2	GATE	12"	FL	F.C. NO. 3 & 4 RAS CONTROL STRUCTURE I
	3	CHECK	12"	FL	RAS PUMP DISCHARGE
	3	GATE	12"	FL	RAS PUMP DISCHARGE
	2	CHECK	6"	FL	WAS PUMP DISCHARGE
	2	GATE	6"	FL	WAS PUMP DISCHARGE
	● 4	CHECK	12"	WAFER	OXIDATION DITCH BLOWER DISCHARGE
	● 4	B'FLY	12"	WAFER	OXIDATION DITCH BLOWER DISCHARGE
	3	B'FLY	14"	WAFER	OXIDATION DITCH BLOWER DISCHARGE

REVISIONS

1 ADDENDUM NO. 1 11/25/19 AWR

2 ADDENDUM NO. 3 1/10/20 AWR

3 ADDENDUM NO. 4 1/17/20 AWR

PROJECT NUMBER 1983

DATE FEB. 2019

SCALE AS SHOWN

SEWER SYSTEM IMPROVEMENTS
CONTRACT NO. 133-2019-01
HAMMOND-WOOD WASTEWATER TREATMENT PLANT EXPANSION

VALVE SCHEDULE AND MISCELLANEOUS DETAILS

FOR
HOPKINSVILLE WATER ENVIRONMENT AUTHORITY

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