

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT			1. CONTRACT ID CODE	PAGE 1 OF PAGES 46
2. AMENDMENT/MODIFICATION NO. 0003	3. EFFECTIVE DATE 31 Jan 03	4. REQUISITION/PURCHASE REQ. NO. W38XGR-2309-6369	5. PROJECT NO. (If applicable)	
6. ISSUED BY DEPARTMENT OF THE ARMY CORPS OF ENGINEERS, MEMPHIS DISTRICT 167 N. MAIN ST., B202 MEMPHIS, TN 38103-1894	CODE B1P0100	7. ADMINISTERED BY (If other than Item 6) See Item 6		
8. NAME AND ADDRESS OF CONTRACTOR (No., street, county, State and ZIP Code)			(<input checked="" type="checkbox"/>)	9A. AMENDMENT OF SOLICITATION NO. DACW66-03-B-0003
			(<input checked="" type="checkbox"/>)	9B. DATED (SEE ITEM 11) 12/23/02
				10A. MODIFICATION OF CONTRACTS/ORDER NO.
				10B. DATED (SEE ITEM 13)
CODE	FACILITY CODE			

11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers is extended, is not extended.

Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods:

(a) By completing Items 8 and 15, and returning 1 copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

12. ACCOUNTING AND APPROPRIATION DATA (If required)

13. THIS ITEM APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS, IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.

(<input checked="" type="checkbox"/>)	A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.
	B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation date, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b).
	C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:
	D. OTHER (Specify type of modification and authority)

E. IMPORTANT: Contractor is not, is required to sign this document and return _____ copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.)

This solicitation for Phase 1-A Short Fork Wastewater Treatment Facility, near Hernando, DeSoto County, Mississippi scheduled to open 11 February 2003 at 2:30 p.m. is amended as follows:

1. SECTION 00010, BIDDING SCHEDULE: Delete the Bidding Schedule in its entirety (pages 00010-3 through 00010-4) and replace with the attached Bidding Schedule (pages 00010-3 through 00010-4).

2. All references to Option #1 in the solicitation are deleted in their entirety.

(AMENDMENT # 0003 - CONTINUED ON NEXT PAGE)

Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.

15A. NAME AND TITLE OF SIGNER (Type or print)		16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print)	
15B. CONTRACTOR/OFFEROR	15C. DATE SIGNED	16B. UNITED STATES OF AMERICA	16C. DATE SIGNED
_____ (Signature of person authorized to sign)		BY _____ (Signature of Contracting Officer)	

3. SECTION 00100 – INSTRUCTIONS, CONDITIONS AND NOTICE TO BIDDERS, PARAGRAPH 52.217-5 “EVALUATION OF OPTIONS: Delete paragraph “(b)” in its entirety.

4. SECTION 00800 – SPECIAL CONTRACT REQUIREMENTS, COMMENCEMENT, PROSECUTION, AND COMPLETION OF WORK (APR 1984), PARAGRAPH 1.1: Change contract time from “510” to “540” calendar days.

5. SECTION 00800 – SPECIAL CONTRACT REQUIREMENTS, PARAGRAPH 1.5.e: Add the following work and drawings to the referenced paragraph:

The work for the Short Fork Wastewater Treatment Plant access road shall be completed as shown on the following drawings:

Sheet Title	Drawing Number
Typical Section, Plant Access Road	1
Plan and Profile, Plant Access Road (Sta. 10+00 to 38+00)	2
Plan and Profile, Plant Access Road (Sta. 38+00 to 50+00)	3

6. SECTION 01270A – MEASUREMENT AND PAYMENT: Delete SECTION 01270A in its entirety and replace with the attached SECTION 01270A.

7. SECTION 01451A – CONTRACTOR QUALITY CONTROL, PARAGRAPH 3.7.2: Replace the existing paragraph with the following:

All testing of soil, gravel, aggregate, stone, concrete, and asphalt shall be performed by a testing laboratory validated by the Material Testing Center (MTC) of the Corps of Engineers. Refer to the MTC website www.wes.army.mil/SL/MTC/ValStatesTbl.htm for a complete and current list of validated commercial laboratories. If the Contractor proposes to use a commercial laboratory that is not validated or set up an on-site laboratory, he shall make arrangements for validation by contacting the Material Testing Center at Waterways Experiment Station, Vicksburg, Mississippi, telephone number: 601-634-3974, www.wes.army.mil/SL/MTC/inspection.htm. The Government will not be responsible for any costs associated with the validation of laboratories that are not currently validated. The validation process could take 60 to 90 days or more. The Contractor shall be responsible for determining the amount of time required for the validation of the proposed laboratory and accounting for this event in his progress schedule. If the Contractor elects to use a non-validated laboratory, work requiring testing shall not commence until the laboratory has been validated by MTC.

8. SECTION GI-1 – GENERAL INSTRUCTIONS FOR TECHNICAL SPECIFICATIONS: Add this entire specification section as attached to this amendment after Section 01781.
9. SECTION GCN-1 – GENERAL CONSTRUCTION NOTES: Add this entire specification section as attached to this amendment after Section GI-1.
10. SECTION 02220 – DEWATERING, PARAGRAPH 1-05.A: Delete the first sentence and replace with the following: “The dewatering system shall be designed and sealed by a professional engineer paid by the Contractor using accepted professional methods of engineering design consistent with the best current practice.”
11. SECTION 02220-DEWATERING, PARAGRAPH 1-05.A In the last sentence delete the words “and approval”.
12. SECTION 02220 – DEWATERING, PARAGRAPH 1-06.A.5: Delete the first sentence and replace with the following: “The system shall consists of wells, well-points, sumps, sump pumps, ditches and necessary appurtenances capable of intercepting seepage before it exits on any interior surface or excavation face and of providing control of surface water all consistent with the design sealed by a professional engineer paid for by the Contractor.”
13. SECTION 02220 – DEWATERING, PARAGRAPH 1-06.A.5: Delete the words “of deep wells” in the second sentence.
14. SECTION 02367 – PRESTRESSED CONCRETE PILING, PARAGRAPH 3-05.B: Replace the second sentence with the following: “An independent testing laboratory, provided at the contractor’s expense, approved by the Contracting Officer, shall observe the test and record and analyze the data. The results of test and all logs of blow counts and data shall be submitted to the Contracting Officer prior to payment for prestressed concrete test piling.”
15. SECTION 02367 – PRESTRESSED CONCRETE PILING, PARAGRAPH 3-05.C: Add “for test piles” to the end of the paragraph.
16. SECTION 02367 – PRESTRESSED CONCRETE PILING, PARAGRAPH 4-01.A: Delete paragraph in its entirety and substitute the following:
 - A. Acceptable permanent piling in place will be measured per linear foot (LF). For permanent prestressed concrete piles the pile length shall be measured from cut-off elevation to tip elevation plus 12” strand projection. Pile cut-offs will be measured for as follows:
 - a. Cut-offs smaller than 20” per each
 - b. Cut-offs 20” and larger per each

Piling lengths in excess of those shown on the plans or approved by the Contracting Officer will not be measured for payment unless such additional lengths below cut-offs are approved in writing by the Contracting Officer for incorporation in the structure.

- B. Test Piles: Test piles will be measured per each complete-in-place. Piles paid for as test piles will not be included in the measurement of pay footage for permanent piles. Test piles constructed in accordance with the lengths indicated on the plans and which are required to be extended or built up will be measured as a percentage, calculated by dividing the sum of the plan length plus the length of the ordered extension or build-up, by the plan length. Splices required for the build-up(s) will not be measured for payment.

If the Contractor is required to redrive a test pile that has not been extended, spliced or built-up and no pay item is included in the Contract for redriving a test pile, a lump sum quantity to be paid for such test pile shall be 1.50 the subject test pile.

No measurement for payment will be made for cut-off of a test pile.

- C. Cut-Offs: No deduction from pay length will be made for a cut-off of one foot or less.

The summation of all cut-offs greater than one foot in length less one foot for each cut-off shall be deducted at 50 percent to determine the footage for payment.

Cut-offs for pile lengths in excess of those shown on the plans or approved by the Contracting Officer will be deducted at 100 percent.

All piling cut-offs shall become the property of the Contractor for his disposal.

- D. Build-Ups: Build-ups will not be measured for payment as such, but will be included in the length of piling remaining in the finished structure. In determining the amount to be included in piling footage, no allowance will be made for cut-offs necessary to accomplish the build-ups.
- E. Splices: Measurement of splices necessary for build-ups on prestressed piles will be paid for by linear feet of piling and will be determined by allowing five linear feet of piling for each splice. The total number of linear feet of piling to be paid for shall be determined by adding 5 feet to the net length of piling for each splice in place in the finished structure. No measurement or

payment will be made for splices except those made at the direction of the Contracting Officer and under the supervision of the same.

17. SECTION 02367 – PRESTRESSED CONCRETE PILING, PARAGRAPH 4-02:

Delete paragraph in its entirety and substitute the following:

A. Payment for permanent piles will be made for acceptable piling at their respective contract price per linear foot (LF) for the types and sizes shown on the bid form. For permanent prestressed concrete piles required to be cut off in lengths greater than one foot and the cut-offs are not necessitated by damage to the pile or as a result of a pile furnished in a length greater than that established by the pile list on the plans or furnished by the Contracting Officer, the Contractor will be paid as follows:

- | | |
|------------------------------|------------------|
| a. Cut-offs smaller than 20” | \$30.00 per each |
| b. Cut-offs 20” and larger | \$40.00 per each |

B. Payment for test piles will be made for accepted test piles and will be paid at the contract unit price for the type and sizes per each shown on the bid schedule.

18. SECTION 02560 – SANITARY SEWAGE – PROCESS PIPING, PARAGARPH 2-05 B: The last line shall be deleted and replaced with the following:

“The interior of sanitary sewer system manholes and pump stations wetwells shall be lined with two (2) coats of twenty (20) mil dry film thickness (each coat) of epoxy coating unless directed otherwise by the Specifications or Drawings. Each coat of epoxy shall be of contrasting colors and shall adequately coat all surfaces and joints. Epoxy coating shall be Poly-Spec “Tuffrez 240” or equal as approved by the Contracting Officer.”

19. SECTION 02560 – SANITARY SEWAGE – PROCESS PIPING, PARAGRAPH 2-11 B: Delete second sentence in first paragraph and replace with the following, “Valves 20 inches and smaller shall be rectangular port design”.

20. SECTION 02560 – SANITARY SEWAGE – PROCESS PIPING, PARAGARPH 3-13 C: This paragraph shall be deleted and replaced with the following:

"Manholes and other sanitary sewer structures shall receive exterior and interior coatings, as applicable, with other sections of these Specifications and/or details on the Drawings."

21. SECTION 02562 - MONOLITHIC MANHOLE SURFACING SYSTEM: Delete this section in its entirety.

22. SECTION 02700 – LIME TREATED BASE COURSE, PARAGRAPH 4-01:

Revise first sentence to read: “Mixing for accepted lime treated subgrade will be measured by the square yard (SY) as shown on the bid form, complete in place, as directed by the Contracting Officer.”

23. SECTION 02700 LIME TREATED BASE COURSE, PARAGRAPH 4-02: Delete “Lime mixing will be paid for at the contract unit price per square yard (SY)”, and replace with the following:

“Lime mixing will be paid for at the contract unit price per square yard (SY) under either Item No. 0007, “Lime-Soil-Water Mixing (0-8” Depth)” for a 8” total mixing depth, Item No. 0008, “Lime-Soil-Water Mixing (0”-16” Depth)” for a 16” total mixing depth, or Item No. 0009, “Lime-Soil-Water Mixing (0”-24” Depth)” for a 24” total mixing depth, whichever is applicable.”

24. SECTION 03300 – CAST IN PLACE CONCRETE, PARAGRAPH 2-01.B.1:

Delete “clean natural gravel”

25. SECTION 03300 – CAST IN PLACE CONCRETE, PARAGRAPH 2-01 P: Add the

following sentence to the end of the paragraph: “Waterproofing material shall be Duramem® 700-SM or approved equal.”

26. SECTION 03300 – CAST IN PLACE CONCRETE, PARAGRAPH 3-05 D: Add

the following:

“2. Waterproof coating shall be applied to all exposed exterior concrete and one foot below low water surface of all concrete structures.”

27. SECTION 09300 – TILE: Add the attached specification section following SECTION 08800.

28. SECTION 09650 – RESILIENT FLOORING: Delete SECTION 09650 and replace with the attached SECTION 09650. .

29. SECTION 13310 – ELECTRICAL, INSTRUMENTATION, AND CONTROLS, PARAGRAPH 1-02 D: In the last sentence of the first paragraph change “200” miles to “250” miles.

30. SECTION 13310 – ELECTRICAL, INSTRUMENTATION, AND CONTROLS, PARAGRAPH 2-02:

The following Point ID Descriptions shall be revised as indicated:

Point ID	Former Description	Revised Description
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PLC2-1	IPS – Level	Spare
PLC2-2	IPS – Pump No. 1 Status “Running”	Spare
PLC2-3	IPS – Pump No. 1 Status “Failed”	Spare
PLC2-4	IPS – Pump No. 1 On/Off	Spare
PLC2-5	IPS – Pump No. 2 Status “Running”	Spare
PLC2-6	IPS – Pump No. 1 Status “Failed”	Spare
PLC2-7	IPS – Pump No. 2 On/Off	Spare
PLC2-8	IPS – Pump No. 3 Status “Running”	Spare
PLC2-9	IPS – Pump No. 3 Status “Failed”	Spare
PLC2-10	IPS – Pump No. 3 On/Off	Spare
PLC2-11	IPS – Pump No. 3 Speed Reference	Spare
PLC2-12	IPS – Pump No. 4 Status “Running”	Spare
PLC2-13	IPS – Pump No. 4 Status “Failed”	Spare
PLC2-14	IPS – Pump No. 4 On/Off	Spare
PLC2-15	IPS – Pump No. 4 Speed Reference	Spare
PLC2-16	IPS – High Level Alarm	Spare
PLC2-18	IPS – Lag Large Pump Start	Spare
PLC2-19	IPS – Lead Large Pump Start	Spare
PLC2-20	IPS – Lag Small Pump Start	Spare
PLC2-21	IPS – Lead Small Pump Start	Spare
PLC2-22	IPS – Pump(s) Stop	Spare
PLC2-23	IPS – Low Level Alarm	Spare
PLC2-24	IPS – Small Pump P1 Lead	Spare
PLC2-25	IPS – Small Pump P2 Lead	Spare
PLC2-26	IPS – Large Pump P3 Lead	Spare
PLC2-27	IPS – Large Pump P4 Lead	Spare
PLC2-28	IPS – Pump No. 1 HOA Selector Switch in “Auto”	Spare
PLC2-29	IPS – Pump No. 2 HOA Selector Switch in “Auto”	Spare
PLC2-30	IPS – Pump No. 3 HOA Selector Switch in “Auto”	Spare
PLC2-31	IPS – Pump No. 4 HOA Selector Switch in “Auto”	Spare

The following points shall be added to the I/O Point List.

Point ID	Dig/Analog/Serial	Description
Short Fork Influent Pump Station (SFIPS)		
PLC1-71	AI	Spare
PLC1-72	DI	Spare
PLC1-73	DI	Spare
PLC1-74	DO	Spare
PLC1-75	DI	Spare
PLC1-76	DI	Spare
PLC1-77	DO	Spare
PLC1-78	DI	Spare
PLC1-79	DI	Spare
PLC1-80	DO	Spare
PLC1-81	AO	Spare

31. SECTION 13310 ELECTRICAL, INSTRUMENTATION AND CONTROLS,
PARAGRAPH 2-05: Add the following:

2-05 DUPLEX PUMP CONTROLLER

A. Duplex Pump Controllers shall be Control Systems, Inc. model number DC101-D, or equal as approved by the Contracting Officer. The controller shall control two pumps, and include the following control functions:

1. OPERATORS AND FRONT PANEL INDICATORS (for each pump)

- a. Manual-Off-Automatic selector switch
- b. Green "Pump Running" pilot light
- c. Red "Pump Failure" pilot light
- d. Red "Pump Seal Failure" pilot light (if required)

2. A Pump NO. 1 LEAD-ALTERNATE-Pump NO. 2 LEAD sequence selector switch to select either pump as lead pump or to select that the pumps alternate as lead pump on each call for cycle.

3. Signal inputs for: stop, lead pump start, lag pump start and high/low alarm. The sensors shall be optically isolated and operate on 24 Vdc with a maximum current of 16 ma for intrinsic safety.

4. Pilot light indicators for each signal input described above, as well as, pump no.1 and no.2 running inputs.

5. The controller shall operate a pump based upon various combinations of signal inputs. Normal operation shall operate pumps in the following automatic sequence:

With no signal inputs activated and both pumps off, a stop input activation shall not cause a pump to operate. With a stop input activated and a lead start input activated the controller shall start a single pump and the pump shall operate until the lead start and stop inputs are deactivated. With both the stop and lead start inputs activated and one pump operating, a lag start input being activated shall operate the second pump. Both pump shall operate until the lag start, lead start and stop inputs are deactivated.

In the event an input device(s) fails to activate the controller shall operate as follows:

With a stop input device failure, the controller shall operate a single pump based upon the status of the lead start input and a field adjustable short cycle delay. The short cycle delay shall keep the pump operating after the start input deactivates for the delay time setting. If the stop input device fails to activate, the controller shall

operate one pump as described above with the lag start input starting the second pump. Both pumps shall operate until both start inputs are deactivated and the individual pump short cycle delays have expired. In the event both the stop and lead start inputs fail to operate the controller shall operate both pumps based upon the status of the lag start input and the individual pump short cycle delay timers. Both pumps shall operate until the lag start input is deactivated and the individual pump short cycle delays have expired. If all input devices fail except the high/low alarm input, the controller shall operate both pumps based upon the status of the high/low alarm input and the individual pump short cycle delay timers. Both pumps shall operate until the high/low alarm input is deactivated and the individual pump short cycle delays have expired.

6. A field adjustable failure time delay for each pump, in the range of 5 seconds to 6½ minutes, to start the lag pump at the lead pump start point if the lead pump fails or if the lead pump selector switch is placed in the off position. If a pump fails, the remaining functional pump shall remain the lead pump on future cycles. The failed pump shall only be called to operate at the lag pump operating point. Normal pump alternation shall resume when the failure condition is corrected and the pump has been reset.
7. Soft stop feature to require the pumps to stop three (3) seconds apart during the condition that both pumps are running when signaled to stop. Soft start feature to require the pumps to start three (3) seconds apart during conditions that the lead and lag pumps are called for simultaneously.
8. Individual field adjustable time controls to delay starting each pump in the automatic mode after power failure or during initial startup.
9. Pump failure, pump seal failure, and high/low alarm red pilot lights shall flash when activated. Provide field selectable controls to allow the seal failure indicator to burn steady when activated.
10. Manual override inputs for each pump, which can be used to manually override the duplex control's pump outputs when the controls are in the Auto mode. Inputs shall be provided to start or stop each pump from a remote location.
11. Provide a selectable improper sequence alarm to activate the common alarm in the event the control inputs are activated in the wrong order. The proper order shall be: Stop, Lead Start, Lag Start. The High or Low alarm shall not be included in the improper sequence test. Provide a selectable Lag Stop Level control to allow the lag pump to stop based upon the status of the lead start level input.

12. Provide automatic pump alternation on pump failure and seal failure when a failure condition is detected and the pumps are in the automatic mode. The failed pump shall be made the lag pump on future cycles until the failure condition is corrected. Pump failure shall require manual reset to clear the failure condition and the seal failure condition shall clear when the failure condition clears. Provide field selectable controls to allow the seal failure condition to not automatically alternate the pumps.

13. An exterior alarm light output which will flash the light brightly during any common alarm condition which include pump failure, seal failure, improper sequence, and high/low alarm. The output shall allow the light to dim glow under normal conditions to indicate that power is on and the lamp is good. A normally open common alarm output contact shall be energized by these alarm conditions. Provide selectable controls to prevent the seal failure input from activating the common alarm output and alarm light.

14. A lamp test feature to light all of the front panel pilot lights.

Provide input indicator and test module with improper input sequence indicator and controls (Control Systems, Inc. model FT101, or equal as approved by the Contracting Officer). The following controls and equipment shall be supplied:

- A. Four deadfront panel mounted input pilot light indicators: One for each of the following level control points: Stop, Lead Start, Lag Start and High Level alarm.
- B. Four deadfront panel mounted pushbuttons to test each pump level control input.
- C. Automatic input sequence monitoring, such that if the inputs do not occur in proper order (stop, lead start, lag start), a red pilot light indicator shall be activated.
- D. If stop input fails, followed by lead input activation, lead pump shall operate and continue until lead pump input is removed and a field adjustable time delay has expired.
- E. If stop input fails, followed by lead and lag input activation, both motors shall operate and continue until their respective

input is removed and an individual field adjustable time delay for each pump has expired.

- F. If stop, lead and lag inputs fail, followed by high level input activation, both motors shall operate and continue until the high level input is removed and a field adjustable time delay for each pump has expired.
- G. Improper sequence activation shall also activate the common external alarm controls.
- H. Improper sequence alarm shall require reset button activation to remove the alarm light.

15. DUPLEX ALARM TELEMETRY - Provide an Alarm Telemetry system (Control Systems, Inc. model DCAT or equal as approved by the Contracting Officer) for the Duplex Controller which provides auxiliary normally open relay contact outputs for the following duplex controller alarms: auxiliary alarm, improper sequence, Motor 1 Failure, Motor 2 Failure, Motor 1 Seal Failure, Motor 2 Seal Failure and High Level. Provide the following features for the system:

- A. The control circuitry shall be solid-state and contain an integral power supply with proper surge and over-current protection.
- B. Provide an individual Normally Open, Dry-Contact output for each alarm that has a contact rating of 5 Amps @ 120 VAC, resistive.
- C. Provide individual LED indicators for each output relay to show when each relay is energized.

32. SECTION 13310 ELECTRICAL, INSTRUMENTATION AND CONTROLS,
PARAGRAPH 2-06: Add the following:

2-06 TRIPLEX PUMP CONTROLLER

A. Triplex Pump Controllers shall be Control Systems, Inc. model TC101, or equal as approved by the Contracting Officer. The controller shall include the following features for each pump:

1. OPERATORS AND INDICATORS

- a. Manual-Off-Automatic selector switch
- b. Green "Running" pilot light
- c. Red "Failure" pilot light
- d. Red "Seal Failure" pilot light
- e. Green pump "Start" pilot lights for Lead, Lag 1, Lag 2 and Lag 3
- f. Amber pump "Stop" pilot lights for Lead, Lag 1, Lag 2 and Lag 3

2. LEVEL INPUTS

- a. Individual "Start" and "Stop" level control points shall be provided for each pump or field adjustable controls shall be provided to allow the first "Stop" level control point to stop all of the pumps.
- b. Provide a High liquid level alarm input sensing point, as required for the application.
- c. Provide pilot light indicators for each level input sensing point.
- d. Provide manual override inputs for each pump, which can be used to override the triplex controller's pump call-for outputs when the controls are in the Automatic mode. Inputs shall be provided to start or stop each pump from a remote location.
- e. All pump control inputs shall be optically isolated and their power limited to 24 vdc with a maximum current of 16 ma for intrinsic safety.

3. PUMP SEQUENCING

- a. Automatic pump alternation on each lead pump "Call" cycle. Pump alternation shall be field selectable to alternate on a first pump "On", first pump "Off" basis or on a last pump "On", first pump "Off" basis.
- b. The pumps shall also alternate as lead pump, when the lead pump reaches a field adjustable running time period, which shall have a time range from 10 minutes to 21 hours.
- c. Provide a field adjustable failure time delay for each pump. If a pump fails to run, or if that pump's selector switch is placed in the

off position, provide controls to start the next pump in the sequence at the failed or disabled pump's operating call-for input setting.

- d. If a pump fails to run, that pump shall automatically become the last called for pump in the operating sequence. Normal pump alternation shall resume when the failure condition is corrected and the failed pump has been reset.
- e. Provide individual field adjustable time controls to delay starting each pump in the automatic mode after power failure or during initial start.
- f. Provide stagger stop feature to require the pumps to stop a minimum of two (2) seconds apart during the condition that two or more pumps are running when signaled to stop. Provide stagger start feature to start the pumps a minimum of three (3) seconds apart during conditions that two or more pumps are called for simultaneously.
- g. Provide controls to remove any pump(s) from the alternating sequence, making the removed pump(s) the last pump(s) to be called for if the input conditions require it.
- h. Pump failure, Seal failure, High level alarm and Improper Sequence alarm red pilot lights shall flash when activated.
- i. Provide automatic controls to alternate on Pump Failure, Seal Failure, or when a pump is running in Automatic and is manually turned off.
- j. When pump seal failures are not needed, the seal failure circuitry for each pump shall be able to indicate an auxiliary condition by flashing or steady operation without interfering with the controller operation.

4. INPUT MONITORING AND CONTROL

- a. The Manual-Off-Automatic switches shall bypass all of the controls and energize their respective pump outputs when placed in the Manual position. In the Manual and Off modes, pump failure alarms shall be disabled.
- b. The Manual-Off-Automatic switches shall be used to reset a pump failure alarm after the failure condition has been cleared, by

manually switching the failed pump to the OFF position and back to Automatic.

- c. Provide automatic input sequence monitoring, such that if the first “All Pumps Stop” input fails to activate, and any two start inputs are activated, the lead pump shall start.
 - d. If a third start input is activated, start the first lag pump.
 - e. If the high level alarm input is activated, start all pumps.
 - f. When operating in a “Last On, First Off” mode, each pump that is started is turned off at the next lower start input setting during the “improper sequence”. That is, the Lag 2 pump will turn off at the Lag 1 Start setting, Lag 1 will turn off at the Lead Start setting and the Lead pump will run until the Lead Start input turns off.
 - g. When operating in a “First On, First Off” mode, the Lead pump will turn off first, followed by the Lag 1 and Lag 2 pumps.
 - h. Provide a red pilot light indicator to alarm "Improper Input Sequence" when any of the above described conditions occurs. Also provide a manual reset pushbutton switch for clearing the Improper Sequence alarm.
 - i. If the “improper sequence” clears itself, the pumps will return to normal operation. The alarm will continue to be energized until manually reset.
5. ANNUNCIATING MODULE (Control Systems, Inc. model TCAT, or equal as approved by the Contracting Officer)
- a. Provide individual discrete pump running output contacts for each pump.
 - b. Provide individual discrete “Alarm Telemetry” dry contact outputs for the following alarms:
 - each pump failure
 - each pump seal failure
 - High level alarm
 - Improper level input Sequence
 - c. Provide a Common Alarm discrete output contact that will actuate when any alarm condition occurs.

- d. Provide an exterior alarm light output which allows the light to dim glow under normal conditions to indicate power on and lamp good. The light shall flash brightly during any alarm condition.
- e. Provide a lamp test feature to light all of the front panel pilot lights.

33. SECTION 13310 ELECTRICAL, INSTRUMENTATION AND CONTROLS,
PARAGRAPH 4-02: Add the following:

“F. Spare Parts

- 1. Provide the following spare parts upon final acceptance of the specified instrumentation and control systems:

Two (2) Simplex Motor Controller (Specification 16480/2-02.D)
Two (2) Motor Monitors (Specification 16480/2-02C)
One (1) Duplex Pump Controller (Specification 13310/2-05)
One (1) Triplex Pump Controller (Specification 13310/2-06)”

34. SECTION 15262 – ULTRAVIOLET DISINFECTION EQUIPMENT,
PARAGRAPH 1-03: Add the following section “B” to the reference paragraph.

B. Alternate Equipment

- 1. If the Contractor desires to offer equipment as an alternate to the specified equipment, he shall submit, within 14 days after award, substantial descriptive information in order that the Contracting Officer may determine if the proposed alternate is equal or superior quality to that specified.
 - a. No alternate will be considered unless, in the opinion of the Contracting Officer, it conforms to the specification in all respects except manufacturer and model and minor details.
 - b. Alternate equipment which is a "standard product" of the Manufacturer shall be modified, redesigned, or furnished with special features or special materials as may be necessary to conform to the requirements of this specification and contract drawings.
 - c. Contracting Officer reserves the right to decide whether or not the proposed alternate will be acceptable.
- 2. Descriptive information shall include the following:

- a. Bidder shall submit a revised drawing of the UV system layout. This revised drawing shall show the proposed location of the substitute unit, and area required for withdrawal space of replacement or serviceable components. This drawing shall also show clearances of adjacent equipment and service area required by that equipment. Drawing should show the same top of concrete elevation to insure adequate protection of flooding.
- b. Bidder shall submit documentation showing calculations of the hydraulic profile as the wastewater travels through the UV channel.
- c. Bidder shall hold fast to the quality assurance items in section 1-02 and submit documentation as required.

3. See also SECTION 00700, Contract Clause 52.236-5 MATERIAL AND WORKMANSHIP (APR 1984).

35. SECTION 15351 – EFFLUENT PUMPS, PARAGRAPH 2-03.A: In sentence two delete the words " be clockwise rotation and".

36. SECTION 15352 – SCUM PUMPING STATION, PARAGRAPH 1-04: Add the following as Item "D" under the referenced paragraph.

"The Contractor shall furnish and install the Danger sign as detailed below. The installation of this sign to be provided by the Contractor in a location determined by the Contracting Officer at the time of construction."

Danger, 14"W X 10"H .040 Vinyl Clad Aluminum- ALUM

Confined Space Area Entry Permit Required



37. SECTION 15352 – SCUM PUMPING STATION, PARAGRAPH 2-01: Delete the first sentence and replace with the following: "The contractor shall provide only products approved for this project."

38. SECTION 15352 – SCUM PUMPING STATION, PARAGRAPH 2-03A: Delete the second sentence in its entirety and replace with the following:

“The pumps shall be Class I, Division 1, Groups C and D for hazardous locations.”

39. SECTION 15352 – SCUM PUMPING STATION, PARAGRAPH 2-03B.1.iv: Modify the minimum hydraulic efficiency from “50%” to “45%”.

40. SECTION 15352 – SCUM PUMPING STATION, PARAGRAPH 2-03B.1.v: Modify the shutoff head from “52 ft.” to “45 ft. to 55 ft”.

41. SECTION 15352 – SCUM PUMPING STATION, PARAGRAPH 2-03B.1.vi: Modify the NPSHR from “8 ft.” to “8 ft. to 15 ft.”.

42. SECTION 15352 – SCUM PUMPING STATION, PARAGRAPH 2-03C: Add the following words to the end of the last sentence: “,or the case wearing ring shall have a grooved surface to shear stringy material when entering the pump volute.”

43. SECTION 15352 – SCUM PUMPING STATION, PARAGRAPH 2-03D: Delete sentences two and three.

44. SECTION 15352 – SCUM PUMPING STATION, PARAGRAPH 2-03E: Delete sentence five.

45. SECTION 15352 – SCUM PUMPING STATION, PARAGRAPH 2-03F: Delete the last two sentences.

46. SECTION 15352 – SCUM PUMPING STATION, PARAGRAPH 2-03G.2: Add the words “or FM Approved” to the end of the first sentence. .

47. SECTION 15352 – SCUM PUMPING STATION, PARAGRAPH 2-03.G.4: Add the words “AISI 431” after the number “416” in the first sentence.

48. SECTION 15352 – SCUM PUMPING STATION, PARAGRAPH 2-03.G.5: Delete the entire paragraph except for the first sentence.

49. SECTION 15352 – SCUM PUMPING STATION, PARAGRAPH 2-03.G.8: Delete the last two sentences, and replace with the following: “The lower seal spring shall be protected from trash in the pumped fluid.”

50. SECTION 15352 – SCUM PUMPING STATION, PARAGRAPH 2-05.B: Add the words “stainless steel” after the words “NEMA IIR”.

51. SECTION 15353-1 -SUBMERSIBLE CHOPPER PUMPS FOR DECANT PUMP STATION, PARAGRAPH 2.01.B : In the fourth line change “twenty (20)” to “ten (10)”.
52. SECTION 15381 – MECHANICAL BAR SCREEN, PARAGRAPH 2-02.D.1.a:
Add the words " or 304 stainless steel" after the word "steel" in the first sentence.
53. SECTION 15381 – MECHANICAL BAR SCREEN, PARAGRAPH 2-02.E.2.: Add this sentence to the end – “Dual rake arms shall not be allowed”.
54. SECTION 15382 - HYDRAULIC REMOVAL CLARIFIERS, PARAGRAPH 2-03,d.1.b: Delete the words "Fabricated steel housings" from the last sentence.
55. SECTION 15382 - HYDRAULIC REMOVAL CLARIFIERS, PARAGRAPH 2-03,d.3.a: Delete the words "Cycloidal and" from the last sentence.
56. SECTION 15384 – SCREW PUMP EQUIPMENT, PARAGRAPH 3-01.A: Add the number "09900" after the word "Section"
57. SECTION 15384 – SCREW PUMP EQUIPMENT, PARAGRAPH 3-02.C: Delete this paragraph in its entirety.
58. SECTION 15390 – AERATION BASIN SPECIFICATIONS, PARAGRAPH 1-03:
Add the following section “B” to the reference paragraph.

B. Alternate Equipment

1. If the Contractor desires to offer equipment as an alternate to the specified equipment, he shall submit, within 14 days after award , substantial descriptive information in order that the Contracting Officer may determine if the proposed alternate is equal or superior quality to that specified.
 - a. No alternate will be considered unless, in the opinion of the Contracting Officer, it conforms to the specification in all respects except manufacturer and model and minor details..
 - b. Alternate equipment which is a "standard product" of the Manufacturer shall be modified, redesigned, or furnished with special features or special materials as may be necessary to conform to the requirements of this specification and contract drawings.
 - c. The Contracting Officer reserves the right to decide whether or not the proposed alternate will be acceptable.

2. Descriptive information shall include the following:
 - a. Bidder shall submit with a revised drawing of the mechanical equipment and basin layouts. This revised drawing shall show the proposed location of the substitute unit, and area required for withdrawal space of replacement or serviceable components. This drawing shall also show clearances of adjacent equipment and service area required by that equipment.
 - b. Bidder shall submit documentation verifying that the MLSS concentration shall be 4,500 mg/l in each of the aeration basin channels.
 - c. Bidder shall submit documentation showing calculations of the hydraulic profile as the wastewater travels through the aeration basin.
 - d. Mixing Efficiency Data:
 - i. In order to insure maximum turndown conditions for seasonal oxygen requirement variances and provide a continual anoxic environment for each channel of the aeration basin, the aeration equipment shall include an evaluation based upon minimum mixing requirements.
 - ii. The Equipment Manufacturer shall submit data verifying the mixing efficiency of the proposed aerator device. Data shall be considered responsive only if:
 1. The reactor in which data was derived had a volume of 1.9 million gallons to 2.5 million gallons, with a minimum of three (3) channels with a maximum width of 20 feet, and at a depth greater than 12 feet.
 2. The data demonstrates an average velocity of 1.0 ft/sec (0.30 m/s) or greater with a max. mixing power of 100,000 gals/1 BHP (weighted average for all channels at a velocity of 1.0 ft/sec).
 3. The data is derived using a polyphase wattmeter.
 4. The data shall conclusively indicate the mixing efficiency (see definition below) and consistent with the conditions outlined in the above items of this section.

Definition: Mixing efficiency

Mixing efficiency is expressed as the volume of the aeration basin being mixed (gallons) per brake horsepower (BHP) while maintaining a minimum velocity of 1.0 ft/sec (0.30 m/s). Since power is proportional to the square of the velocity, the equation used for the determination of the mixing efficiency is as follows:

$$E = (s^2 * V)/P$$

Where: E = mixing efficiency in gal/BHP
s = measured velocity in fps
V = basin volume in gallons
P = brake Hp

iii. If such mixing efficiency data cannot be furnished, consistent with the above items in this section, then the Equipment Manufacturer shall include in his price one (1) submersible mixer for each channel, and also the services of an independent testing laboratory to field verify that a minimum velocity of 1 fps can be maintained. Submersible mixers shall be approved by Contracting Officer. Field velocity testing shall be as listed in this Aeration Basin Specification. Should the field testing show that the equipment does not meet the specified mixing efficiency then the Equipment Manufacturer shall pay the total cost of any modifications necessary to maintain a minimum velocity of 1 fps.

iv. Oxygen Transfer Data

1. The disc aerator shall be capable of delivering a standard aeration efficiency (SAE) of 3.4 lbs. O₂/BHP-hr at a design delivery rate not to exceed 2.2 lbs. O₂/ft of shaft section. The Equipment Manufacturers shall submit data verifying this capability.

v. Reference Installations

1. The Equipment Manufacturer shall provide a list of at least ten (10) installations where equipment identical to that proposed to be furnished has been in successful operation.

3. See also SECTION 00700, Contract Clause 52.236-5 MATERIAL AND WORKMANSHIP (APR 1984).

59. SECTION 15396 – AEROBIC DIGESTER, PARAGRAPH 1-02 B: In the last sentence, change “twenty (20)” to “ten (10)”

60. SECTION 15396 – AEROBIC DIGESTER, PARAGRAPH 1-04: Add the following section “C” to the reference paragraph.

C. Alternate Equipment

1. If the Contractor desires to offer equipment as an alternate to the specified equipment, he shall submit, within 14 days after award, substantial descriptive information in order that the Contracting Officer may determine if the proposed alternate is equal or superior quality to that specified.

a. No alternate will be considered unless, in the opinion of the Contracting Officer, it conforms to the specification in all respects except manufacturer and model and minor details.

b. Alternate equipment which is a "standard product" of the Manufacturer shall be modified, redesigned, or furnished with special features or special materials as may be necessary to conform to the requirements of this specification and contract drawings.

c. The Contracting Officer reserves the right to decide whether or not the proposed alternate will be acceptable.

2. Descriptive information shall include the following:

a. List of ten (10) installations of equipment in successful operation of the design in all essential regards as specified.

b. Design information relating to the performance of the air diffusion system to include Manufacturer's certification that the equipment offered will meet or exceed the Design Requirements listed in these Specifications.

c. Manufacturer's certification that all Warranty Requirements listed in these Specifications will be included with the equipment offered.

3. See also SECTION 00700, Contract Clause 52.236-5 MATERIAL AND WORKMANSHIP (APR 1984).

61. SECTION 15397 – SHAFTLESS SCREW SLUDGE CONVEYOR, PARAGRAPH 1-01.A: The last sentence shall be revised to read “...The conveyor system shall be capable of conveying dewatered sludge at a minimum rate of 500 cubic feet per hour.”

62. SECTION 16131 - CONDUIT, PARAGRAPH 2-01.C.1: Delete paragraph and substitute the following: “1. Primary service conduits: below grade, concrete encased galvanized or sherardized thick wall rigid steel (GRC).”

63. SECTION 16131 - CONDUIT, PARAGRAPH 2-01.C.2: Delete paragraph and substitute the following: “2. Conduit without concrete encasement in earth: Schedule 80 PVC.”

64. SECTION 16131 - CONDUIT, PARAGRAPH 2-01.C.7: Delete paragraph and substitute the following: “7. In exposed locations outdoors: PVC-coated steel GRC. To include all conduit above grade and attached to any part of the water treatment facility structures and walkway structures.”

65. SECTION 16131 - CONDUIT, PARAGRAPH 2-01.C.8: Delete paragraph and substitute the following: “8. Conduit with concrete encasement in earth: Schedule 40 PVC.”

66. SECTION 16131 - CONDUIT, PARAGRAPH 2-01.C.9: Delete paragraph and substitute the following: “9. In exposed locations indoors within the Solids Handling Building: PVC coated GRC”

67. SECTION 16131 - CONDUIT, PARAGRAPH 2-01.C.10: Delete paragraph and substitute the following: “10. Signal wiring and data highway: Outdoors in non-corrosive areas use steel GRC; in corrosive areas use PVC coated GRC. Indoors at Headquarters Bldg, use EMT.”

68. SECTION 16131 - CONDUIT, PARAGRAPH 3-02.Y: Delete paragraph and substitute the following: “Y. Install all feeders in concrete encased Schedule 40 PVC conduit. Install exterior branch circuits and control wiring in GRC. For all conduits passing under roadways, used concrete encased raceways; concrete encasement extends to 5 feet outside the roadway shoulders.”

69. SECTION 16231 – PACKAGED ENGINE GENERATORS, PARAGRAPH 2-04.F: Delete the requirement for the Line Circuit Breaker. Mark subparagraph F as 'Not Used'.

70. SECTION 16413 – AUTOMATIC TRANSFER SWITCH, PARAGRAPH 2-01.K: Delete entire section and replace with: “Enclosure: NEMA 4X”

71. SECTION 16413 – AUTOMATIC TRANSFER SWITCH, PARAGRAPH 2-01.M:
Delete the paragraph in its entirety, and replace with the following: “Lugs: Provide two hole compression lugs for all conductors sizes larger than #4/0 AWG and one hole lugs for conductor #4 through #4/0, except where the use of compression lugs would void the switch U.L. label.”

72. SECTION 16413 – AUTOMATIC TRANSFER SWITCH, PARAGRAPH 2-02.B.1:
Delete the paragraph in its entirety, and replace with the following: “Lugs: Provide two-hole compression lugs on all input and output connections except where the use of compression lugs would void the switch U.L. label.”

73. SECTION 16413 – AUTOMATIC TRANSFER SWITCH, PARAGRAPH 3-01.A:
Delete the paragraph in its entirety, and replace with the following: “Control and Annunciator Panel Mounting: Flush in door, with lockable hinged covers.”

74. SECTION 16480 – POWER CONTROL CENTER, PARAGRAPH 1-01: Delete “accepts the incoming utility power and” from the second line.

75. SECTION 16480 – POWER CONTROL CENTER, PARAGRAPH 1-04.B: Delete "TVSS" from the last line and insert the following at the end of the paragraph: "Though specified in this section, the TVSS is separately mounted in the housing for the "SE-ATS."

76. SECTION 16480 – POWER CONTROL CENTER, PARAGRAPH 2-01.A: Delete items #1 and #2

77. SECTION 16480 – POWER CONTROL CENTER, PARAGRAPH 2-01.B: Delete the following from the first sentence : "(housing the feeder circuit breakers)"

78. SECTION 16480 – POWER CONTROL CENTER, PARAGRAPH 2-01.R: Delete the first two sentences and replace with: "Transient Voltage Suppression System (TVSS): The TVSS is mounted in the housing for the Service Entrance automatic transfer switch "SE-ATS". The TVSS is connected to the main bus in "SE-ATS" with conductors of size and of no greater length than indicated in the TVSS manufacturer's installation instructions.”

DRAWINGS

79. Access Road Drawings (Sheet Nos. 1, 2, and 3) are added by this amendment.

80. DRAWING P.06: In elevation, change note on check valve to read “Red Valve Model TF-1”.

81. DRAWING P.04: Revise Drawing P.04 in accordance with Drawing entitled “Forcemain Extension Beyond Toe of Slope” added by this amendment.
82. DRAWING P.04A: Delete call-out “42”-45° Bend” in the right of sheet near the “Influent Junction Box”.
83. DRAWINGS P.04 and P.04A: Add a "42"-45° BEND" exiting the “Headworks”.
84. DRAWING M1.01: Delete the 12" Decant Pipe shown in the upper left corner of the pump station in the "Influent Pump Station Plan View". This line is connected as shown in drawings P.04A or P.05A.
85. DRAWING M2.01: Revise Drawing M2.01 in accordance with Drawing entitled “SHORT FORK FORCEMAIN CONNECTION TO HEADWORKS” added by this amendment. “ADDENDUM NO. 2” is changed to “Amendment No. 0003”.
86. DRAWINGS M2.01 and M9.01: Furnish and install a permanent refrigerated automatic composite sampler at the Headworks and Post Aeration structures. The location of the sampler shall be determined by the Contracting Officer at the time of construction. The requirements for the sampler are defined in the attached file/document entitled “Fiberglass Composite Refrigerated Samplers”.
87. DRAWING AS1.00: In the next to the last sentence on Note F.2, change “increase” to “adjust”.
88. DRAWING E.03: Add Note 4 as follows: “Provide empty conduits (one 2” and one 1”) from PCC (in Administration Bldg.) to the north side of the north service road; cap the conduits for future extension and permanently mark the location of the north ends.”
89. DRAWING E.04: Delete the Influent Pump Station and its attendant circuits from MCCB and from Panel “FRC”; delete the Type “L” fixtures, the switches, receptacles and grounding system at the Influent Pump Station.
90. DRAWING E.04: MV#3 (Decant) shall be provided with 120V power. The location of MV#3 (Decant) is indicated on Drawings P.05/P.05A.
91. DRAWING E.09: Revise the Power Wire and Conduit Schedule as follows:
 - a. For feeders marked P51 through P57 and P62, change "Option #2" to "Option #1".
 - b. delete wire and conduit data for circuits marked P48, P49, P51, P52, P53, P54, P55, P56, P57 and P62;
 - c. at circuit marked P50, change the number of runs from “6” to “5”.
 - d. For feeders marked P70 through P78, change "Option #1" to "Option #2".

92. DRAWING E.09: Add Note 1 as follows: "PVC/RGS" used in the schedule indicates that the circuit uses both PVC and RGS conduits, encased or not encased, in accordance with the requirements of SECTION 16131 of the Project Manual.
93. DRAWING E.10: Add Note 11 as follows: " The automatic transfer switch "SE-ATS", the TVSS and the NEMA 4X enclosure are provided as separate units and are not provided as a single manufactured unit. The individual units may be assembled on-site, or off-site and delivered to the site as an assembled unit."
94. DRAWING E.10: Revise the "PCC", as follows:
- a. change the rating of the breaker serving "MCCB" from "2500/3" to "2000/3";
 - b. add, on the 1600 A bus, one 225/3 circuit breaker reserved and noted for future "Short Fork Influent Pump Station".
95. DRAWING E.11: At the "Riser Sludge Digester/Thickener" diagram add the following note: "Four (4) Sludge pumps are to be furnished and installed. Control of the sludge pumps shall be coordinated with Specification SECTION 15393 (Sludge Belt Press). Motor starters (VFD's) for the four (4) sludge pumps shall be incorporated into the Digester/Thickener Control Panel. All requirements for Sludge Pumps #3 and #4 shall be identical to those indicated for Sludge Pumps #1 and #2 and shall be incorporated into the Lump Sum Price Bid (Base Bid)."
96. DRAWING E.11: Revise the "MCCB" as follows:
- (a) Change the main breaker rating from "2500/3" to "2000/3";
 - (b) Change the main bus rating from "2500 A bus" "2000 A bus";
 - (c) Delete the breakers and devices serving the Influent Pump Station (the equipment shown within the dashed boundaries identifying Option #1); Add 30" wide section on "MCCB" for PLC and control equipment.
97. SKETCH SK-01 "PILE ANCHORAGE INTO CONCRETE ABOVE" is added by this amendment.
98. DRAWING S0.02: Pile Head Detail, delete the words "Typical at all structures", and add "Typical except as shown on SK-01".
99. DRAWING S4.03: In Section 5, change the elevation for the top of the slab from "225.20" to "250.20".
100. DRAWING A9.01: Revise Detail 4D and 5D as follows:

- a. Delete all references to "Stainless Steel Countertop" and "Stainless Steel Countertop and Backsplash" and replace with "Modified Epoxy Resin Countertops" and "Modified Epoxy Resin Countertops and Backsplash" respectively.
- b. Delete "Rubber Base" and replace with "Sheet Vinyl Integral Cove Base Typical"

101. DRAWING A9.01: Revise Detail 4D as follows:

- a. Delete notation "Stainless Steel Wall Panel" and "S/S Closer Angle Upper Cabinet"

102. DRAWING A9.01: Revise Detail 1A as follows:

- a. Delete section mark 3D/A9.01 and Replace with 4D/A9.01

103. DRAWING E.09: Change circuits P86 and P87 from 2 runs of 3/4" C each to 1 run of 3/4" C each

104. DRAWING S3.02: In Detail B, change dimension on slab from 24" to 2'-6".

105. DRAWING S5.02: In Section 2, change dimension on slab from 24" to 2'-6".

QUESTIONS FROM PROSPECTIVE BIDDERS, SUB-CONTRACTORS AND SUPPLIERS

Questions from Eclipse Controls Inc.

Question 1 : Section 13310 of bid solicitation DACW66-03-B-0003 refers to a single source system provider for controls and PCC and MCCs. I have assumed that this reference to sole source was overlooked by the design engineer. I also refer you to the restriction on the geographic location and years of experience of the service provider (section 13310 1.02 D&F) as inappropriate. Eclipse Controls has only 8 years experience as a firm (personnel that would be involved average over 20 years of water/wastewater process & instrumentation experience) and does not meet the 200 or 250 mile radius criteria. In this day of cell phones, internet and air travel Eclipse can easily meet the 24 hour support requirement. Is it necessary for a contractor bidding using our services to take exception to these parts? It seems that some if not all of these sections go against Federal Bidding regulations. Please clarify.

Response 1 : The requirement for a single provider for electrical and controls is intended to simplify integration of the two related sections. Past experience has shown that many problems can and do arise due to conflicts between the electrical and the control systems. These conflicts very often degrade into a supplier argument over which system is faulty. There has been great success in the past integrating these two systems. This approach reduces the risks of integration problems with two different manufacturers and simplifies the construction process. In the event a prospective supplier is capable of furnishing one item and not the other, the Specifications do not prevent partnering or outsourcing the item which cannot be provided.

The basis for the geographical location requirement is to minimize delay, repair, and maintenance costs. It may be true that problems can be resolved via the telephone or internet on occasion. Historically site visits to repair hardware or troubleshoot conflicting systems is the most common maintenance requirement after the warranty period has expired. Based upon past experience, these costs are often very excessive when the distance of travel exceeds approximately 250 miles. Paragraph 1.02 D, change "200" miles to "250" miles per this Amendment.

With regard to the experience requirement, the Government considers ten years experience of the system supplier to be reasonable.

Question 2 : We have interpreted Section 13310 as requiring 4 PLCs. One to be located in MCCA, one in MCCB and 2 others – one associated with Digester Air Pump Control panel, and one associated with the effluent pump station. It appears as if the later two as stated in 13310 4.02 B1 & C1 are housed in outdoor MCC panels. Is this correct? I didn't see these located on the drawings. Did I miss this?

Response 2 : Specifically, the Specifications call for the Digester Air Pump Control Panel (13310/4.02B) under Option #2 to incorporate an "Intelligent Controller" that may be interpreted as a PLC. The Effluent Pump Station (13310/4.02C) has a similar requirement.

The Digester Control Panel is indicated on sheet E.04 in the vicinity of the Blowers. In our experience, panels of this type are typically coordinated in the field during construction for specific location. Please note that Section 15396 indicates the control panel for the Digester to be provided by the equipment manufacturer for system integration purposes and single source system responsibility. Section 15396/2-02C further describes the Digester system controls. Section 13310/4.02B describes the panel required to control the Blowers and interface with the Digester Manufacturer's panel. The effluent pump control panel shall be located in the vicinity of the effluent pumps. The specific location will be directed by the Contracting Officer. The digester control panel will be located in a similar manner.

Questions from Hall Blake and Associates

Question 1 : Questions about QA/QC on-site, will the Corp. of Engineers provide QA for the project or will that be in conjunction with the QC and the contractors budget?

Response 1 : Quality Control (QC) is the responsibility of the Contractor. See SECTION 01451A. Quality Assurance (QA) on site is performed by the Government to insure the Contractor performs in accordance with the Section 01451A and the contract requirements. Government inspections and tests are for the sole benefit of the Government and do not relieve the Contractor of responsibility for providing adequate quality control measures. Also the presence or absence of a Government inspector does not relieve the Contractor from any contract requirement, nor is the inspector authorized to change any term or condition of the specification without the Contracting Officer's written authorization. See SECTION 00700, 52.246-12 INSPECTION OF CONSTRUCTION (AUG 1996).

Questions from EPIC / LANDUSTRIE

Question 1 : Section 15384, page 8, Part 3 'Execution, 3-01 'A' - Please verify what Section Number is referred to.

Response 1 : SECTION 15384.3-01.A : Add the number "09900" after the word "Section" per this Amendment.

Question 2 : Is Spec. Section 15384, page 8 Part 3 – Execution, 3-02 C written to preclude technically capable and qualified manufacturers that meet all the functional and performance requirements from offering their equipment?

Response 2 : SECTION 15384.3-02.C: Delete this paragraph in its entirety per this Amendment.

Questions from Houston Service Industries, Inc.

Question 1 : As we discussed, Houston Service Industries, Inc. is a manufacturer of Multistage Centrifugal Blowers located in Houston, TX. Our machines are very similar to the Continental, Hoffman, Lamson, Hibon and Spencer blowers. We compete with those manufacturers on a daily basis particularly in the wastewater market. I have been reviewing the Short Fork specification and would like to submit a bid, however, before I can do so, I need some clarifications on the spec.

The spec has been written to package the aerobic digester and the blowers in one bundle. It appears that maybe the Enviroquip rep is also the Continental rep and he has supplied a template spec which discourages bidding the blowers separately. Specifically the performance requirements for the blower are presented in a way that is more meaningful to the digester manufacturer than to a stand-alone blower manufacturer. Also the control requirements for the blowers are left to the discretion of the digester manufacturer and are

to be included in the digester controls. Is the engineer intentionally discouraging a stand-alone blower bid or is this just an unintentional result of the way the spec was compiled?

If the bundling was done intentionally to simplify service issues down the road, I would like to point out that Enviroquip will not be doing the service on the Continental blowers and that these blowers are manufactured in France and sold through a sales office in Syracuse, NY. Parts availability and service presence would be far greater with a domestic manufacturer with a nearby manufacturing facility.

If the bundling was done unintentionally, could you please provide specific performance and controls requirements for the blowers. This will allow bids from blower manufacturers whose reps cannot offer an aerobic digester equal to the Enviroquip and therefore assure more competition for the blowers.

Response 1 : The Specifications for the Centrifugal Blowers (15394) and the Aerobic Digester (15396) were not written to intentionally "bundle" these two equipment Sections. They were written to require close coordination between the vendor/manufacturer supplying the Centrifugal Blowers and the vendor/manufacturer supplying the Aerobic Digester. Efficient and effective operation of any aerobic digestion system is heavily dependant upon a properly designed and installed blower system. The Specifications are clearly written to provide equipment considered "...equal as approved by the Contracting Officer....". It is the final responsibility of the Contractor to ensure proper operation of the installed system, especially if alternative equipment is furnished and installed. Control of the blower system is not "...left to the discretion of the digester manufacturer..." but are to be integrated into the control logic and functions of the Digester System. Specific performance and control requirements for the blowers should be available from the Bidders based upon whatever aerobic digester manufacturer they propose to furnish and install. The performance requirements of the blowers are given in SECTION 15396. Any items of equipment other than those specified are subject to approval by the Contracting Officer. **Contract Clause 52.236-5, MATERIAL AND WORKMANSHIP**, states *“References in the specifications to equipment, material, articles, or patented processes by trade name, make, or catalog number, shall be regarded as establishing a standard of quality and shall not be construed as limiting competition. The Contractor may, at his option, use any equipment, material, article, or process that, in the judgment of the Contracting Officer, is equal to that named in the specifications, unless otherwise specifically provided in this contract.”* If any redesign is necessary in order to make an item of equipment work, this cost will be the burden of the Contractor.

Questions from Gulf States Engineering

Question 1 : As we understand the plans and specifications, this pumping station is to convey plant effluent from the secondary clarifiers, and post aeration to the gravity outfall at Short Fork Creek in the event of a high water elevation condition in that tributary. Because this is plant effluent and should not have solids, does this pump need

to be rated for 3 1/4" solids? Normally, plant effluent pumps are the standard vertical turbine pump, which is more efficient than the solids handling pump. Will a typical vertical turbine pump, that will meet the physical layout, be considered as an equal to the solids handling pump?

Response 1 : The effluent pumps are designed as propeller pumps (stated in the description of SECTION 15351.1-01.A) that coincidentally handle solids. Also, a vertical turbine pump is typically more expensive than a "prop" pump. (The prop pumps are also between 75% and 80% efficient - very efficient).

Question 2 : If a traditional vertical turbine type pump is acceptable, will manufactures that satisfy the performance criteria and the salient functionality of this effluent pumping station be considered to be equal, even if materials and methods of construction differ slightly than as specified?

Response 2 : The effluent pumps shall be provided as described in SECTION 15351 - as propeller pumps.

Question 3 : The valve extended stem shown on the plans in elevation view is not clearly specified. Is this a flapper-type check valve that would normally allow gravity flow and prohibit backflow when pumping is required or is it a butterfly valve with MJ connection?

Response 3 : As referred to on sheet M10.01 the valve in question is a 42 inch Butterfly Valve. The valve has a MJ connection.

Questions from Gephart Electrical Construction

Question 1 : The control panels for the Grid Chamber, Screens and Sludge Pumps are not shown in SECTION 13310-4.02. Are they to be supplied with the equipment?

Response 1 : SECTION 15381.2-04.A has the control panel for the Mechanical Bar Screen and 15381.2-02.H.9 has the control panel for the screenings press. SECTION 15386.2-06 has the control panel for the Grit Removal System. The supplier needs to coordinate with the equipment manufacturer.

Question 2 : Are controls required for the ½ HP Thickener Drive?

Response 2 : Specification SECTION 15396 requires that the control of the Thickener Drive mechanism is included with the Aerobic Digester.

Question 3 : Are the "DO"s for starting the Digester/Thickener motors missing from the I/O Points List ?

Response 3 : “DO’s” for the Digester/Thickener are not required as the Computer Control and Data Acquisition System does not monitor or control the Digester/Thickener. The Digester/Thickener shall be automated with its own control system and be monitored manually.

Question 4 : Is sheet P.07 “Control Wiring and Conduit Schedule” correct with the location of PLC-3 in the Digester/Thickener Control Panel and the location of PLC-4 in the Effluent Control Panel ?

Response 4 : The Specifications call for the Digester Air Pump Control Panel (13310/4.02B) under Option #2 to incorporate an "Intelligent Controller" that may be interpreted as a PLC. The Effluent Pump Station (13310/4.02C) has a similar requirement.

The Digester Control Panel is indicated on sheet E.04 in the vicinity of the Blowers. Please note that SECTION 15396 indicates the control panel for the Digester to be provided by the equipment manufacturer for system integration purposes and single source system responsibility. SECTION 15396/2-02C further describes the Digester system controls. SECTION 13310/4.02B describes the panel required to control the Blowers and interface with the Digester Manufacturer's panel.

The effluent pump control panel shall be located in the vicinity of the effluent pumps. The specific location will be directed by the Contracting Officer. The digester control panel will be located in a similar manner.

Question 5 : Should MCCB have a vertical control section for PLC-2 components ?

Response 5 : There is a PLC section associated with MCCB. The size of the PLC section will be determined by the Div. 13 controls equipment supplier; it does not have to be made into MCCB but must interface it.

Question 6 : Are the Flow Meter Transmitters to be located on racks above the meter vaults ?

Response 6 : Yes, unless otherwise recommended by the meter manufacturer.

Question 7 : Does specification section 13310 – 4.01 apply to Flow Meters “RAS”, “Effluent”, “Influent”, “WAS”, “Waste Sludge” and “Decant” ?

Response 7 : Specification 13310, 4-01 applies to “WAS”, “Waste Sludge”, and “Decant” and the Influent are all magnetic flow meters.

Question 8 : What type of flow meters are required for “RAS” and “WAS”.

Response 8 : The RAS and Effluent flow meters are ultra sonic parshall flumes and are covered by SECTIONS 15173 and 15174. The WAS flow meter is a magnetic flow meter and is covered by SECTION 13310.4-01.

Questions from INMAN CONSTRUCTION CORPORATION

Question 1 : Will there be any contractor licensing requirements for this project? If so, will they be the same for other Public Works projects in the State of Mississippi?

Response 1 : SECTION 00700, Clause **52.236-7 PERMITS AND RESPONSIBILITIES (NOV 1991)** provides that the Contractor shall, without additional expense to the Government, be responsible for obtaining any necessary licenses and permits, and for complying with any Federal, State, and municipal laws, codes, and regulations applicable to the performance of the work.

Question 2 : Will the local building department and local fire marshal be involved in this project for permits, inspections, and final sign-off?

Response 2 : See Response 1 above.

Question 3 : We have not been able to locate anything in the contract documents which spells out local vs. federal funding for this project. Could you highlight this section of the document for us.

Response 3 : The project is “cost shared” by 75% federal funds and 25% local funds.

Questions from Phoenix Process Equipment Company

Question 1 : Regarding the referenced specification section, will press manufacturers meeting the experience, quality and performance criteria of the specification be acceptable if their design utilizes an inclined gravity drainage section specifically designed to prevent flooding?

Response 1 : The Specifications do not exclude an inclined gravity drainage section. Any equipment submitted for approval as an “equal” to those named in the Specifications are subject to approval by the Contracting Officer. See Material and Workmanship Clause SECTION 00700, Contract Clause 52.236-5.

Questions from Vulcan Industries, Inc.

Question 1 : Regarding page 15381-6, Subsection 2-02.D.1.a.: Will manufacturers whose design incorporates side frames constructed of 304 stainless steel channel, 34” wide by 3/8-inch thick be considered as an equal?

Response 1 : SECTION 15381.2-02.D.1.a : Add the words " or 304 stainless steel" after the word "steel" in the first sentence per this Amendment.

Question 2 : Regarding page 15381-7, Subsection 2-02.E.2.: Will manufacturers whose design incorporates dual rake arms, to better handle heavy and/or offset loads, in lieu of the specified single rake arm be considered equal?

Response 2 : SECTION 15381.2-02.E.2. : Add this sentence to the end – “Dual rake arms shall not be allowed.” per this Amendment.

Question 3 : Regarding page 15381-10, Subsection 2-02.H.6.a.: Will manufacturers whose design incorporates a thrust bearing to take the axial loads in lieu of the gear box taking these loads be considered equal?

Response 3 : This issue is answered in SECTION 15381 paragraph 2-02.H.7.a , which states: “The axial load developed by the compacting screw shall be neutralized by a built-in spherical thrust bearing.”

Questions from Chancellor & Son, Inc.

Question 1 : Section 02200 Earthwork, 3-01 General Requirements

Disposal of Excess Material

“ All excess material and material unsuitable for use in fills shall be disposed of in approved Contractor furnished off-site disposal areas or as directed by the Contracting Officer, in designated on-site areas. If excess material has to be disposed of off-site, this will only add to the cost of the project. Why can't excess material be disposed of in the borrow area after borrow is excavated? Also, can any clearing debris, remaining after burning be disposed of in the same manner?

Response 1 : Excess earthwork may be disposed of in the borrow areas, with the approval of the Contracting Officer. Clearing debris remaining after burning may be disposed of on-site at locations approved by the Contracting Officer. However, no debris may be disposed of in areas proposed for future construction.

Question 2 : In the soils report it suggested pre-loading the embankment in anticipation of subsidence. With the pre-loading option not utilized by the government, it would seem the contractor is responsible for all subsidence that occurs. In most Corps contracts, the Contractor is given the option to place settlement plates to monitor settlement, and be compensated if settlement occurs. Will this option be allowed due to the soil conditions on this project?

Response 2 : This option does not exist on this project. Costs related to settlement/subsidence are the responsibility of the contractor, and shall be included in the bid item 0001.

Question 3 : Section 02700 Lime Treated Base Course

“The depth will be determined during construction by the Contracting Officer. The depth can be considered not less than 8” nor more than 24.” If the depth requested by the Contracting Officer is 8”, application and mixing can proceed immediately. If a 16” or 24” depth is requested, subgrade will have to be undercut so lime can be placed in 8” lifts. How will contractor be compensated for greater depths over 8” that require the undercut and replacement of soil?

Response 3 : New bid items have been added to the schedule by this amendment for various lime soil water mixing depths to resolve this question.

Question 4 : Part 4 – Compensation

“Mixing for accepted lime treated subgrade will be measured by the square yard (SY) regardless of depth, complete in place, as directed by the Contracting Officer.” If contractor does not know the depth of mixing, the contractor should be paid for each 8” lift at the square yard price for mixing.

Response 4 : See response immediately above.

Questions from ITT Industries

Question 1 : As we understand the plans for the decant pumping station, it is conveying decant from the Sludge Lagoon #2 to the plant headworks. From our experience, “decant” is normally non-solids laden. Is there truly a need for a “chopper” type impeller/submersible pump for this application rather than a traditional solids handling submersible pump?

Response 1 : A "chopper" pump is specified due to concerns over miscellaneous solid objects (i.e. turtles, wood, etc.) that may make their way into the lagoons and, eventually, the pumps. A typical "solids" handling pump is not intended in this installation.

Question 2 : If a submersible chopper-type pump is desired, will manufacturers that satisfy the experience clauses, performing criteria, and the salient functionality of this submersible pumping station be considered an equal, even if materials and methods of construction differ slightly than as specified?

Response 2 : The Contracting Officer will have final approval whether an item of equipment is an equal to those named in the Specifications. The materials of construction and the functionality of the pump must be considered in the evaluation of equipment to

be considered an equal in performance to those items named in the Specifications. See SECTION 00700, Contract Clause 52.236-5 Material and Workmanship.

Question 3 : Will this pumping station be eliminated if “Option No. 2” is selected in the bid evaluation process?

Response 3 : As indicated on Sheet P.05A, the Decant Pump Station is to be constructed as a part of Option #2.

Questions from Cajun Contractors, Inc.

Question 1 : Spec. Section 100, 52.0-4048, Quantity Estimates. Please provide these estimated quantities.

Response 1: Estimated Quantities are furnished on Memphis District Web Site, Advertised Solicitations.

Question 2 : Dwg. P.04A shows the Lagoon Effluent Decant line tying into the 24” Influent to the Headworks. Dwg. M1.01 shows this line tying into the Influent Pump Station. Please clarify.

Response 2 : The 6” Decant Force Main discharges into the 24” DIP from the Influent Pump Station to the Headworks. See Sheet P.05/P.05A for all solids handling piping.

Question 3 : Please provide Specifications for the following materials:\

- a) Ceramic Tile Flooring
- b) VCT Tile & Base
- c) Quarry Tile Flooring

Response 3 : SECTION 09300 is attached with this amendment.

Question 4 : Will a Quality Assurance person be required to be onsite at all times. If so, will this person be allowed to perform other duties also.

Response 4 : Quality Assurance (QA) on site is performed by the Government to insure the Contractor performs in accordance with the Section 01451A and the contract requirements. Government inspections and tests are for the sole benefit of the Government and do not relieve the Contractor of responsibility for providing adequate quality control measures. Also the presence or absence of a Government inspector does not relieve the Contractor from any contract requirement, nor is the inspector authorized to change any term or condition of the specification without the Contracting Officer's written authorization. Quality Control (QC) is the responsibility of the Contractor. The Contractor's full time Quality Control (CQC) representative or his alternate shall be employed at the worksite, and shall be responsible for overall management of CQC, and shall have no other duties. See SECTION 01451A, paragraph 3.4.

Question 5 : Please provide the names of the Agencies that we are required to work with when obtaining the permits that are required at the Creek Crossing (see sheet C.04).

Response 5 : The Memphis District Corps of Engineers will provide the storm water pollution protection permit. Other agencies that should be consulted include, but may not be limited to, the Short Fork Creek Drainage District, and the Mississippi Department of Environmental Quality. It is the contractor's responsibility to determine compliance with SECTION 00700, Clause 52.236-7, Permits and Responsibilities.

Question 6 : Explain the reason for providing the influent pump station as an option item. Is there a possibility that this work may not be awarded as part of this contract?

Response 6 : The option for the influent pump station has been deleted by this Amendment.

Question 7 : Please provide copies of the actual boring logs. They have been requested by several pile-driving subcontractors and engineers designing the cofferdam at the influent pump station.

Response 7 : Actual boring logs, included as Appendix "A" of the geotechnical report attached to the contract documents, are for informational purposes. See SECTION 00800, paragraph 1.6.

Question 8 : Please clarify where the soil – lime- stabilization is to take place.

Response 8 : Lime and Lime-Soil-Water Mixing are included in the Bid Schedule for the Bidders to include a Unit Price for these items in the event they are required. These items are to be used for access across the primary site, stabilizing the soil under proposed roads, and anywhere else under the proposed fill areas that the Contracting Officer determines to be required to improve the existing site conditions for construction and to ensure the finished quality of the Project. It may be possible these items are not required during construction in the event of improved site conditions. This lime is not permitted to be used in the borrow areas nor is it to be used in the fill operations.

Question 9 : Will the entire site be stabilized? If so, to what depth? The specs call for 8" to 24" of stabilization as per the onsite inspector. It is difficult to estimate the cost for such a varying depth. Could this item be bid as units based on two depths, 8" and 24"?

Response 9 : It is not intended that the entire site require stabilization. New bid items have been added to the schedule by this amendment for various lime soil water mixing depths to resolve this question. See Response 3, Chancellor & Son, Inc., above.

Question 10 : If the existing soils are to be stabilized, are we required to strip the site? If so to what depth?

Response 10 : Yes, see Note 2, Drawing C.04, and SECTION 02111, paragraph 3-02.

Questions from Tri-State Electric

Question 1 : The drawings and spec call for PVC-coated rigid conduit (PVC/RGS) to be installed above and underground throughout most of the plant. The main feeder conduits for MCCB are located approximately 850 ft from the PCC where it gets is 480V feed. 850 ft x 6 parallel runs = 5,100 ft of 3-1/2 PVC-coated rigid conduit. That is a lot of money since the PVC-coated conduit is approximately 15 times the cost of the schedule 40 PVC conduit. Consider the following option. Install schedule 40 or 80 PVC conduit underground and encase in concrete. Transition to PVC-coated rigid conduit where the conduits turn out of the duct banks and up to the structures. This has the potential to save several thousand dollars in material costs for the PVC-coated rigid conduit.

Response 1 : See revised specifications section in this Amendment for changes to conduit.

Questions from J. Richard Wolf Co.

Question 1 : The specs of the influent pump station, section 15350, call for explosion proof motors. The motors used in submersible pumps are already sealed and rated for under water and in dry pit applications, but are not explosion proof. To use explosion proof motors would raise the price of the pumps enormously, especially for the two large 200 HP submersible pumps. Can the specs be changed to the use of standard factory designed motors. These pumps already carry a 3 to 5 year warranty.

Response 1 : The influent pumping station is deleted in this Amendment.

Questions from Westech Engineering, Inc.

Question 1 : Hydraulic Removal Clarifiers – Section 15382

Will a fabricated steel housing and precision bearing drive unit, which not only meets all the torque, speed, and HP requirements but also increases the bearing life, be accepted as an equal?

Response 1 : SECTION 15382.2-03.D.1.b : Delete the words "Fabricated steel housings" from the last sentence per this Amendment. See SECTION 00700, 52.236-5 Material and Workmanship Clause.

Question 2 : Can a more efficient gear reduction unit, such as a cycloidal gear reducer, be used in the clarifier drive?

Response 2: SECTION 15382.2-03.D.3.a : Delete the words "Cycloidal and" from the last sentence per this Amendment. See SECTION 00700, 52.236-5 Material and Workmanship Clause

Question 3 : If an endless channel / oxidation ditch design with a different aeration arrangement meets the performance requirements, fits the same footprint, and saves concrete expense, will it be accepted as an equal?

Response 3 : See Specification addition under paragraph 1-03 "Submittals" for specification 15390 in this Amendment.

Question 4 : Will a stainless steel coarse bubble system, which meets the performance requirements, uses the same SCFM of air, and uses the same HP, be accepted as an equal?

Response 4 : See Specification addition under paragraph 1-04 "Submittals" for specification 15396 in this Amendment.

Question from Generator Power Systems

Question 1 : As I stated in email last week, we agree that 1200 amp breaker on generator is not economically justifiable if we use over current protection instead, and that resistive load testing is all we normally do. Need your recommendations for amendment if you agree.

Response 1 : In SECTION 16231, paragraph 2-04.F., the requirement for the Line Circuit Breaker has been deleted by this Amendment. . Mark subparagraph F as 'Not Used'.

Questions from of Preiser Scientific

Question 1 : Page 3, bottom of page: There is no number or other requirements for Deionized Water Cartridge System. Need capacities or something to pick this item.

Response 1 : Capacity of Deionization System shall have a maximum flow rate of 2 L/min of deionized flow.

Question 2 : Page 3: The part numbers for graduated cylinders is obsolete, teflon rimmed cylinders no longer available. Will plain ones be ok?

Response 2 : Refer to SECTION 11600/1-01.D of the Specifications

Question 3 : Page 2: The Model 50B YSI DO Meter is obsolete, new number is YSI 52. Do we need probe tip with this meter, it is not listed?

Response 3 : Refer to SECTION 11600/1-01.D of the Specifications. A VWR Cat #5739/5740 DO Probe and Capable is listed on Page 4 of Equipment List in Section 2-01 of the Specifications.

QUESTIONS FROM CHRIS-HILL CONSTRUCTION

Question 1 : HOW IS PAY LENGTH MEASURED?

- a) PILE CUTOFF ELEVATION TO TIP ELEVATION, OR
- b) SAME AS “a” PLUS 12” STRAND PROJECTION, OR
- c) ORDERED LENGTH OF PILE, OR
- d) OTHER METHOD OF MEASUREMENT

Response 1 : See revised payment section for piling in this amendment.

Question 2 : SECTION 02367 PARAGRAPH 4-01 STATES: “No measurement will be made for failed test piles.” WHAT DOES THIS MEAN? SINCE THE TEST PILE LENGTH WILL BE SPECIFIED BY THE DESIGNER/OWNER AND THE LOAD TEST PERFORMED ACCORDING TO SPECS, THE CONTRACTOR HAS NO CONTROL OVER THE RESULTS OF THE LOAD TEST.

Response 2 : See Response No. 1 above.

Question 3 : SECTION 02367 PARAGRAPH 4-01 ALSO STATES THAT CUTOFFS WILL NOT BE PAID “ ... as a result of a pile furnished in a length greater than that established by the pile list on the Bid Form ...”. WHAT IF LONGER PILES ARE REQUIRED TO ACHIEVE REQUIRED BEARING?

Response 3 : See Response No. 1 above.

Questions from Preiser Scientific

Question 1 : The question was asked "On Drawings, in Elevation 1A, Laboratory #109, are there specs on dishwasher and fecal bath?"

Response 1 : Fecal Bath specified in SECTION 11600 as VWR Cat# 13309-435, Dishwasher as specified in SECTION 11450

Questions from Malouf Construction Company

Question 1 : The Table of Contents has sections GI-1 and GCN-1 which I do not find in the specifications. Are these specifications to be issued?

Response 1 : The files/documents are attached with this amendment.

Question 2 : To what extent will the access road be complete when the Contractor mobilizes?

Response 2 : Completion of the road construction from it's current condition is added to the contract documents by this amendment.

Question 3 : What is the design of the access road from Laughter Road to the site?

Response 3 : The design is stipulated in the plans added by this amendment.

Question 4 : Specification Section 00800 paragraph 1.7 requires the Contractor to be responsible for all road damage. There are several miles of county road leading to this project and bridges with no weight restrictions posted. Does section 00800 intend to require that the Contractor is responsible for maintenance of all roads or just the roads within the right of way? Will Road Maintenance Bonds be required?

Response 4 : SECTION 00800, paragraph 1.7, covers all roads within rights-of-way. SECTION 00700, 52.236-7 Permits and Responsibilities Clause applies to all other roads.

Question 5 : Specification Section 02220 paragraph 1.06.A. (5) requires dewatering be accomplished by using a system of deep wells. Does this mean that deep wells are required in lieu of well points or other methods?

Response 5 : Typical methods of dewatering besides deep wells may be used if determined to be feasible by the Contractor's professional engineer. Any dewatering method including deep wells shall be designed by the Contractor's professional engineer and sufficient documentation shall be provided to the Contracting Officer for review. See amended SECTION 02220.

Question 6 : Specification Section 03300 paragraph 3-05 B states that all formed concrete surfaces will receive a "Rubbed Finish". Is this intended to be a requirement for all concrete surfaces or just for certain exposed concrete? Much of the concrete is below grade or below design liquid levels in the tanks.

Response 6 : Any exposed exterior concrete and a minimum of one foot below design liquid level shall receive a rubbed finish.

Question 7 : Specification Section 03300 paragraph 2-01 P. Waterproofing calls out a requirement for a rubberized asphalt sheet membrane waterproofing at the exterior walls of the influent junction box and influent pump station. Is there a technical specification for this product or will one be provided?

Response 7 : Waterproofing material shall be Duramem® 700-SM or approved equal .

Question 8 : Specification Section 02200 paragraph 3-01 D. and the soils report specifies excavation slopes at no steeper than 3 horizontal to 1 vertical where ground water is present. The specifications require dewatering. Do dewatered excavations require 3:1 slopes or may they be excavated at 1.5:1 slopes after dewatering?

Response 8 : Specifications call for shallow excavations to be no steeper than 3:1 where groundwater is encountered. Shallow excavations with no ground water present, dewatered or not, may be excavated at 1.5 : 1.

Pile Questions

Question 9 : What is the concrete pile embedment length? The “Pile Head Detail” on sheet S0.02 indicates 3”. All other details in the plans indicate 4”.

Response 9 : Provide 4” for all Pile embedment lengths.

Question 10 : Is the intension of the pile head break back to expose the prestressed strands or is this to be reinforcing steel (rebar)? Embedded rebar can cause shelling of the pile head while driving.

Response 10 : All drawing details showing rebar pile to footing ties shall be changed in accordance with this amendment. Detail “SK-01 PILE ANCHORAGE INTO CONCRETE ABOVE” added by this amendment applies to the Digester/Thickner, Solids Handling Building, Administration Building and Lagoon Effluent Structures. “Pile Head Detail” on Drawing S0.02 applies to all other pile to footing connections.

Question 11 : How long are the test piles?

Response 11 : Test pile length will be dependent upon pile load requirements. It is anticipated that a 40 ft. embedment will be required to meet load requirements. See SECTION 02367, paragraph 3-05, and DRAWING S0.00. A separate pay item has been added in the bid schedule for test piles per this amendment.

Question 12 : What is the test pile tip elevation?

Response 12 : See previous Response.

Question 13 : What is the “Pay Length” of the piling? (Bottom of slab to tip? Top of breakback to tip? Bottom of breakback to tip?)

Response 13 : Pay length is revised by this amendment to SECTION 02367 above.

Question 14 : What is the plan length of the pile at the generator support slab?

Response 14 : 40 ft embedment length. This length may be adjusted in accordance with Note F2 Sheet AS1.00.

Questions from Chris-Hill Construction

Question 1 : Again, why should the contractor not be paid for test piles that “fail” the load test? Theoretically, if the pile formula were completely accurate, a test pile driven to a bearing and loaded to twice that bearing should fail. Can you add line items for test piles, paid regardless of load test results?

Response 1 : Test piles will be measured per each complete-in-place. Bid sheets and specifications have been revised per this amendment.

Question 2 : There are only two test piles specified in the plans. Should there not be one or more test piles for each of the sizes used in the project?

Response 2 : Revisions have been made to Bid Schedule under this Amendment. Locations of test piles will be provided by the Contracting Officer at the time of construction.

Question 3 : The specified payment values for cut-offs account for labor and equipment to cut off piles, but will not cover the cost of the pile material. Can pile cut-offs be paid per linear foot instead?

Response 3 : SECTION 02367 has been revised per this amendment to provide a discounted rate for cut-offs.

Question 4 : Please confirm that no additional dowels are required from piling to structure other than the 12” projection of prestressing strands.

Response 4 : Additional dowels are not required. See Response 10 to Malouf Construction.

Question 5 : Who will be responsible for determining required lengths of piles for each structure?

Response 5 : The installed lengths required will be determined from the pile driving formulas to reach the design capacity. The load tests will test Pile Formulas which will be tested by an independent testing laboratory paid for by the contractor. Blow counts logs will be maintained by the Contractor with inspection and monitoring by the Corps of Engineers. Pay lengths will then be determined by the Contracting Officer and/or their representative based on inspections, monitoring and blow count logs.

Question 6 : Who will be responsible for monitoring of pile driving and recording of blow counts?

Response 6 : The Contractor (QC representative) is responsible for monitoring and maintaining records of blow counts. These records will be submitted to the Contracting Officer.

Questions from WEDECO—Ideal Horizons, Inc.

Question 1 : The technology specified for the Short Fork WWTF project is based on medium pressure technology. The other technology offered in the market place is a low pressure-high output technology. There is no difference in the disinfection performance. The differences between the technologies reside in the maintenance and operations. Medium pressure technology will require fewer installed lamps, but will have a shorter lamp life and a higher electrical costs. Low pressure-high output technology can meet the intent of the specification regarding disinfection while saving money and maintenance requirements.

Will low pressure-high output systems be accepted as an equal to the proprietary system specified?

Response 1 : This issue has been resolved by a change to SECTION 15262 per this amendment. See also SECTION 00700, 52.236-5 Material and Workmanship.

Questions from Metals Technology Corp.

Question 1 : At several Locations on the Structural Drawings (e.g. S2.02 section 2) Grating support Steel is called out as Cast Steel L2-1/2x2-1/2x1/4. Is Cast Steel required or is Galvanized A36 acceptable?

Response 1 : Cast is used as a verb in the call out on the plans. Angles shall be galvanized steel.

Questions from Harry Pepper & Associates

Question 1 : My question concerns Specification Section 12311, Metal Casework. Under Part 2.2-01D, Page 12311-2, the counter tops, back splash, and side splash are to be modified epoxy resin, acid resistant, however, on Drawing A9.01 they are shown stainless steel in Detail 5D.

Also, on Drawing A9.01, the profile of the wall cabinet in Laboratory elevation 3A resembles Cabinet Detail 4D rather than Cabinet Detail 3D as referenced to in Laboratory elevation 1A.

Response 1 : These issues have been resolved in accordance with this amendment.

Questions from Cajun Contractors

Question 1 : The specs do not call for restraints on pipe fittings. On dwg C.13, there is a note stating that all bends shall receive Mega Lug accessories. Please clarify.

Response 1 : Specification SECTION 02660, 3-06.C calls for all water system fittings to be securely braced by restrained joints. Sheet C.07 Note 1 calls for all water system vertical bends to be restrained per manufacturer's recommendations. Sheet C.13 indicates all water system fittings shall receive a "Mega Lug" in addition to a thrust block.

Question 2 : Spec section 15350 specifies "Gate Valve", w/ MJ connections and valve boxes, at the influent pump station. Please clarify where these valves are to be located.

Response 2 : Option 1 has been deleted per this amendment.

Questions from Malouf Construction

Question 1 : Drawing sheet P.04A at the top right of page calls out a 42" - 45 degree bend. Is this note in error? If not, what is the location for this fitting?

Response 1 : The referenced notation has been deleted per this amendment.

Question 2 : Drawing sheet S4.03 Wall Section 5 indicates a top of slab elevation of 225.20. Is this correct, or should it be elevation 250.20?

Response 2 : The elevation has been corrected per this amendment.

Question 3 : Currently the contract requires pricing a base bid and 2 options. The options (particularly option 1) dramatically impact construction methods, scheduling and sequencing of the work as well as man power and other resources required for the project. It is my understanding that the time of completion does not vary with the selection of options. Will selected options be declared by the Corps of Engineers at award time or is the Contractor required to keep the options open and available for some time? If the latter is correct, for how long must the options remain open for inclusion in the project?

Response 3 : Option #1 is being deleted with this amendment. In accordance with SECTION 00700 Contract Clause 52.217-7, Option for Increased Quantity- Separately Priced Line Items, the Government may exercise Option 2 within 90 days after award.

Question 4 : Where will the Lime Soil Treatment (Item Numbers 0004 and 0005) be used on the project?

Please note that the total "foot print" of the site is about 16.5 acres (79,860 s.y.). The roadbed foot print is only about 17,000 s.y. There is 190,000 s.y. of lime mixing set up. This is one of the reasons for the question. Will the lime be used to pre-treat the borrow at the pit? If not your quantity may need to be adjusted.

Response 4 : See Response Nos. 8 and 9 to Cajun Contractors, Inc.

Questions from Tri-State Electric

Question 1 : Drawing E.14, Detail 3 shows conduit terminations at pull box. I need clarification of the following items:

Are 90-degree bends into pull box rigid steel conduit (RGS) on PVC?

Are stub ups into pull box RGS or PVC?

If stub ups are PVC, do we terminate with end bell or grounding bushing?

If stub ups are RGS, do we use just a grounding bushing?

Response 1 : For 90 degree bends (ells) in PVC conduit provide rigid steel elbows. For stub-ups into pullboxes use rigid steel ells with grounding bushings.

Question 2 : Drawing E.09 shows conduits associated with the Influent Pump Station and indicates that they are to be included in Option #2. this conflicts with drawings E.02 & E.04.

Drawing E.09 shows conduits associated with the Solids Handling Building to be included in Option #1. this conflicts with drawings E.02 & E.08.

It looks as though Option #1 & #2 conduits were incorrectly labeled on drawing E.09.

Response 2 : These issues have been resolved in this amendment.

Questions from Cooper Electrical Controls

Question 1 : I would like to know what the specifications for the following items actually are:

Control Systems, Inc. Model SC101 Simplex Controller

Control Systems, Inc., Model MM101 Motor Monitor

Control Systems, Inc. Model TC101 Triplex Controller

Control Systems, Inc. Model DC 101 Simplex Controller

Control Systems, Inc. Model FT 101 Float Module

Response 1 :

SC 101 is specified in SECTION 16480/2-02.C (Simplex Motor Controller)

MM101 is specified in SECTION 16480/2-02.C (Motor Monitor)

The specifications for TC 101 and DC 101 have been added by this amendment. See amended SECTION 13310 paragraphs 2.05 and 2.06.

FT101 is specified in the DC 101 amended specification.

**PHASE 1-A SHORT FORK WASTEWATER TREATMENT FACILITY
NEAR HERNANDO, DESOTO COUNTY, MISSISSIPPI**

**SECTION B
SUPPLIES OR SERVICES AND PRICES/COSTS**

<u>ITEM</u>	<u>DESCRIPTION</u>	<u>U/M</u>	<u>QUANTITY</u>	<u>UNIT/PRICE</u>	<u>AMOUNT</u>
<u>BASE BID ITEMS</u>					
0001	Short Fork Wastewater Treatment Facility (Excluding Option #1, Option #2, Piling and Lime.)	LS	1.0	\$ _____	\$ _____
0002	Prestressed Concrete Piling (14")	LF	51,700.0	\$ _____	\$ _____
0003	Prestressed Concrete Piling (16")	LF	2,700.0	\$ _____	\$ _____
0004	Prestressed Concrete Test Piling (14")	EA	2.0	\$ _____	\$ _____
0005	Prestressed Concrete Test Piling (16")	EA	3.0	\$ _____	\$ _____
0006	Lime	TN	4,000.0	\$ _____	\$ _____
0007	Lime-Soil-Water Mixing (0"-8" Depth)	SY	10,000.0	\$ _____	\$ _____
0008	Lime-Soil-Water Mixing (0"-16" Depth)	SY	30,000.0	\$ _____	\$ _____
0009	Lime-Soil-Water Mixing (0"-24" Depth)	SY	60,000.0	\$ _____	\$ _____
0010	Allowance for Furnishings	LS	1.0	\$ 12,000.00	\$ 12,000.00
0011	Allowance for Vegetative Screening	LS	1.0	\$ 20,000.00	\$ 20,000.00

TOTAL BASE BID - ITEMS 0001 THRU 0011 \$ _____

OPTION # 1 BID ITEMS

0012	Influent Pump Station	LS	1.0	\$ _____	OMITTED
0013	Influent Junction Box	LS	1.0	\$ _____	OMITTED
0014	Short Fork Creek 36" Interceptor Sewer	LS	1.0	\$ _____	OMITTED
0015	Camp Creek 54" Interceptor Sewer	LS	1.0	\$ _____	OMITTED
0016	64" Influent Sewer Line	LS	1.0	\$ _____	OMITTED

TOTAL OPTION #1 - ITEMS 0012 THRU 0016 **\$0.00**

OPTION #2 BID ITEMS

0017	ADD Digester, Thickner, Belt Press and Solid Handlings Building and DEDUCT Lagoon & Lagoon Appurtenances (Excluding Piling)	LS	1.0	\$ _____	\$ _____
0018	16" Prestressed Concrete Piling	LF	1,440.0	\$ _____	\$ _____
0019	20" Prestressed Concrete Piling	LF	10,800.0	\$ _____	\$ _____
0020	Prestressed Concrete Test Piling (16")	EA	1.0	\$ _____	\$ _____
0021	Prestressed Concrete Test Piling (20")	EA	1.0	\$ _____	\$ _____

TOTAL OPTION #2 - ITEMS 0017 THRU 0021 \$ _____

GRAND TOTAL - ITEMS 0001 THRU 0021 \$ _____

LS = LUMP SUM
LF = LINEAR FEET

TN = TON
SY = SQUARE YARD

SEE NOTES ON NEXT PAGE

Notes:

1. Bidders are cautioned to read Contract Clause entitled “NOTICE OF PRICE EVALUATION PREFERENCE FOR HUBZONE SMALL BUSINESS CONCERNS” (52.219-4) located in SECTION 00600.
2. The Government will evaluate offers for award purposes by adding the total price for all options to the total price for the basic requirement; i.e., option prices will be included in the evaluation for award purposes. See SECTION 00100, 52.217-5 “EVALUATION OF OPTIONS”.
3. Evaluation of options will not obligate the government to exercise the options.
4. Bidders shall furnish unit prices for all items listed on the schedule of bid items, which require unit prices. If the bidder fails to insert a unit price in the appropriate blank for required items, but does furnish an extended total or an estimated amount for such item, the Government will deem his unit price to be the quotient obtained by dividing the extended Estimated amount for that line item by the quantity. IF THE BIDDER OMITTS BOTH THE UNIT PRICE AND THE EXTENDED AMOUNT FOR ANY ITEM, HIS BID WILL BE DECLARED NONRESPONSIVE.
5. Award will be made as a whole to one bidder.
6. If a bid or modification to a bid based on unit prices is submitted and provides for a lump sum adjustment to the total estimated cost, the application of the lump sum adjustment to each unit price, including lump sum units, in bid schedule must be stated, or, if it is not stated, the bidder agrees that the lump sum adjustment shall be applied on a pro rata basis to every unit price in the bid schedule.
7. Bidders are cautioned to read Contract Clause entitled “Required Central Contractor Registration” (252.204-7004) located in SECTION 00700.

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DIVISION 1 - GENERAL REQUIREMENTS

SECTION 01270A

MEASUREMENT AND PAYMENT

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PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

SECTION 01270A

MEASUREMENT AND PAYMENT

PART I - GENERAL

1-1 LUMP SUM BID ITEMS

1-1-1 General

Payment items for the work of this contract for which contract lump sum payments will be made are listed in the BID FORM and described below. All costs for items of work, which are not specifically mentioned to be included in a particular lump sum or unit price payment item, shall be included in the listed lump sum item most closely associated with the work involved. The lump sum price and payment made for each item listed shall constitute full compensation for furnishing all plant, labor, materials, and equipment, and performing any associated Contractor quality control, environmental protection, meeting safety requirements, tests and reports, and for performing all work required for which separate payment is not otherwise provided

1-1-2 Lump Sum Items

**(1) "SHORT FORK WASTEWATER TREATMENT FACILITY"
(EXCLUDING OPTION 1, OPTION 2, PILING and LIME)**

a. Payment

Payment will be made for all costs associated with providing all items installed and in complete working order as shown on or contained within the plans and specifications entitled Phase I-A Short Fork Wastewater Treatment Facility dated November, 2002, excluding items specifically listed under Option #1, Option #2 and piling of lengths and sizes indicated on the Bid Form. All costs associated for providing all items of the access road installed and completed in place as shown on drawings 1, 2 and 3 as added by Amendment 0003 excluding lime and lime-soil-water mixing shall be included for payment under this line item.

b. Measurement

Measurement for this item shall be Lump Sum: L.S.

1-2 UNIT PRICE BID ITEMS

1-2-1 General

Payment items for the work of this contract on which the contract unit price payments will be made are listed in the BID FORM and described below. The unit price and payment made for each item listed shall constitute full compensation for furnishing all labor, materials, and equipment, and performing any associated Contractor quality control, environmental protection, meeting safety requirements, tests and reports, and for performing all work

required for each of the unit price items.

1-2-2 Unit Price Items

(2) PRESTRESSED CONCRETE PILING (14")

(3) PRESTRESSED CONCRETE PILING (16")

a. Payment

See Section 02367 "PRESTRESSED CONCRETE PILING" for payment.

b. Measurement

See Section 02367 "PRESTRESSED CONCRETE PILING" for measurement.

(4) PRESTRESSED CONCRETE TEST PILING (14")

(5) PRESTRESSED CONCRETE TEST PILING (16")

a. Payment

See Section 02367 "PRESTRESSED CONCRETE PILING" for payment.

b. Measurement

See Section 02367 "PRESTRESSED CONCRETE PILING" for measurement.

(6) LIME

a. Payment

See Section 02700 "LIME TREATED BASE COURSE" for payment.

b. Measurement

See Section 02700 "LIME TREATED BASE COURSE" for measurement.

(7) LIME-SOIL-WATER MIXING (8" DEPTH)

(8) LIME-SOIL-WATER MIXING (16" DEPTH)

(9) LIME-SOIL-WATER MIXING (24" DEPTH)

c. Payment

See Section 02700 "LIME TREATED BASE COURSE" for payment.

d. Measurement

See Section 02700 "LIME TREATED BASE COURSE" for measurement.

1-3 ALLOWANCE BID ITEMS

1-3-1 General

Payment items for the work of this contract for which allowance payments (AL) will be made are listed in the BID FORM and described below. It is understood that the CONTRACTOR has included in the Total Contract Price all allowances as described below and shall cause the Work so covered to be performed for such sums as may be acceptable to the CONTRACTING OFFICER. The CONTRACTOR agrees that:

Payment for allowances shall include the cost to CONTRACTOR of materials and equipment required by the allowances to be delivered to the Site, and all applicable taxes. The CONTRACTOR's costs for unloading and handling on the Site, labor, installation costs, overhead, profit, and other expenses contemplated for the allowances have been included in the Bid Item #1, LS and is not to be a part of the allowance and no demands for additional payment on account of any of the foregoing will be valid.

Prior to final payment, an appropriate Change Order will be issued as recommended by the CONTRACTING OFFICER to reflect actual amounts due the CONTRACTOR for Work covered by allowances if the specified amounts are more or less than those amounts specified herein. All invoices shall be provided with the CONTRACTOR'S pay request for each specific item requesting payment.

1-3-2 Allowance Items

(10) ALLOWANCE FOR FURNISHINGS

a. Payment

Payment shall be made for the items listed in the measurement section below as stipulated under Subsection 1-3-1 "General" of Section 1-3 "Allowance Bid Items". The CONTRACTOR shall record and furnish to the CONTRACTING OFFICER all invoices showing all applicable costs for delivered item to the site in order to receive payment for individual items.

Furnishings Allowance	\$12,000.00
-----------------------	-------------

b. Measurement

The measurement of the allowance for furnishings shall consist of the selection by the CONTRACTING OFFICER of the following items:

1. Office Furniture
2. Chairs
3. Bookcases
4. File Cabinets

5. Conference Table
6. Miscellaneous Furniture Items

(11) ALLOWANCE FOR VEGETATIVE SCREENING

a. Payment

Payment shall be made for the items listed in the measurement section below. Payment shall be for Landscape Plantings installed and complete in living condition. The CONTRACTOR shall record and furnish to the CONTRACTING OFFICER all invoices showing all applicable costs for installed items in order to receive payment for individual items. All Landscaping shown on the drawings shall be included in the Lump Sum Bid Item #1 and will not be considered for payment under this allowance.

Vegetative Screening Allowance \$20,000.00

b. Measurement

Measurement shall include the following Vegetative Screening:

1. Buffer planting materials along the boundary of Short Fork Creek. Materials to be selected by the CONTRACTING OFFICER. Limits of plantings to be determined during construction by the CONTRACTING OFFICER.

1-4 OPTION #1

1-4-1 General

Payment items for the work of this contract that is listed under Option #1 and Option #2 shall include the items listed below. The items listed as lump sum payments under these options shall be subject to those requirements listed in Section 1.1.1 of this specification. Those items listed as unit price bid items under these options shall be subject to those requirements listed in Section 1.2.1 of this specification.

1-4-2 Option #1 Items

ADD INFLUENT JUNCTION BOX, INFLUENT PUMP STATION, CAMP CREEK 54" INTERCEPTOR SEWER, SHORT FORK CREEK 36" INTERCEPTOR SEWER, AND NECESSARY PIPING AND APPURTENANCES AND REPLACE SCUM PUMP STATION AND APPURTENANCES

(12&13) INFLUENT JUNCTION BOX AND PUMP STATION

a. Payment

Payment will be made for all costs associated with providing the following items:

1. Influent Junction Box
2. Influent Pump Station
3. All other excavation, backfill, sheeting, shoring, electrical, piping and mechanical requirements to construct and complete the systems described on sheets P.04, M1.01, M1.02, M1.03, S1.01, S1.02, S1.03, and S1.04.
4. Replace the scum pump station and appurtenances and all 4" ductile iron force main called for to be furnished and installed as indicated on sheet P.04 of the drawings with the necessary 6" and 10" ductile iron gravity sewer and manholes as indicated on sheet P.04A including all excavation, sheeting, shoring, backfilling, and all other work and appurtenances required to complete the installation of the scum piping.

b. Measurement

Measurement for this item shall be Lump Sum: L.S.

(14) SHORT FORK CREEK 36" INTERCEPTOR SEWER

a. Payment

Payment will be made for all costs associated with providing the following items:

1. All 36" ductile iron gravity sewer and manholes called for to be furnished and installed as indicated as the Short Fork Creek Interceptor on Sheet P.09 of the Drawings.
2. All excavation, sheeting shoring, backfilling, and all other work and appurtenances required to complete the installation on the Short Fork Creek Interceptor Sewer Influent Line as indicated on Sheet P.09 of the Drawings.

b. Measurement

Measurement for this item shall be Lump Sum: L.S.

(15) CAMP CREEK 54" INTERCEPTOR SEWER

a. Payment

Payment will be made for all costs associated with providing the following items:

1. All 54" ductile iron gravity sewer and manholes called for to be furnished and installed as indicated on sheet P.08 of the drawings.
2. All excavation, sheeting, shoring, backfilling, and all other work and appurtenances required to complete the installation on the Camp Creek Interceptor Sewer Influent Line as indicated on sheet P.08 of the drawings.

b. Measurement

Measurement for this item shall be Lump Sum: L.S.

(16) 64" INFLUENT SEWER LINE

a. Payment

Payment will be made for all costs associated with providing the following items:

1. All 64" ductile iron gravity sewer called for to be furnished and installed as indicated on sheet P.04A of the drawings.
2. All excavation, sheeting, shoring, backfilling, and all other work and appurtenances required to complete the installation on the 64" Influent Line from the Influent Junction Box to the Influent Pump Station as indicated on sheet P.04A of the drawings.

b. Measurement

Measurement for this item shall be Lump Sum: L.S.

1-5 OPTION #2

1-5-1 General

Payment items for the work of this contract that is listed under Option #2 shall include the items listed below. The items listed as lump sum payments under this option shall be subject to those requirements listed in Section 1.1.1 of this specification. Those items listed as unit price bid items under this option shall be subject to those requirements listed in Section 1.2.1 of this specification.

1-5-2 Option #2 Items

(17) ADD DIGESTER, THICKENER, BELT PRESS AND SOLIDS HANDLINGS BUILDING AND DEDUCT LAGOON & LAGOON APPURTENANCES (EXCLUDING PILING)

a. Payment

Payment will be made for all costs associated with providing the following items:

1. Sludge Digester/Thickener
2. Centrifugal Blowers
3. Solids Handling Building
4. Sludge Belt Press
4. Polymer Feed System
5. All other excavation, backfill, sheeting, shoring, electrical, piping, and mechanical requirements to construct, complete, the systems described on Sheets C.04A, C.05A, P.05A, M11.01-M11.04, M12.01-M12.02, S11.01-S11.02, A3.02, A6.02, AS2.01-AS2.02, AS3.04-AS3.05, AP2.01-AP2.02, AM2.01-AM2.02, and E.08.

6. The following items shall be deducted as a part of the Lagoon and Lagoon appurtenances:

- Grading, drainage, erosion control measures, and water system for Sludge Lagoons as indicated on Sheets C.04, C.05, C.06, and C.07 to be eliminated or reduced as a part of Option #2.
- Sludge Lagoons #1 and #2
- Sludge Lagoon Effluent Structures #1 and #2
- All other excavation, backfill, sheeting, shoring, electrical, piping, and mechanical requirements to construct, complete, the systems described on Sheet C.15 and P.05.

b. Measurement

Measurement for this item shall be Lump Sum: L.S.

(18) PRESTRESSED CONCRETE PILING (16”)

b. Payment

See Section 02367 “PRESTRESSED CONCRETE PILING” for payment.

c. Measurement

See Section 02367 “PRESTRESSED CONCRETE PILING” for measurement.

(19) PRESTRESSED CONCRETE PILING (20”)

a. Payment

See Section 02367 “PRESTRESSED CONCRETE PILING” for payment.

b. Measurement

See Section 02367 “PRESTRESSED CONCRETE PILING” for measurement.

(20) PRESTRESSED CONCRETE TEST PILING (16")

c. Payment

See Section 02367 "PRESTRESSED CONCRETE PILING" for payment.

d. Measurement

See Section 02367 "PRESTRESSED CONCRETE PILING" for measurement.

a. Payment

See Section

(21) PRESTRESSED CONCRETE TEST PILING (20")

d. Payment

See Section 02367 "PRESTRESSED CONCRETE PILING" for payment.

e. Measurement

See Section 02367 "PRESTRESSED CONCRETE PILING" for measurement.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION (Not Applicable)

END OF SECTION

**GENERAL INSTRUCTIONS
FOR
THE TECHNICAL SPECIFICATIONS**

PART 1 - GENERAL

- A. The following Technical Specifications represent the standards and requirements to be met by materials, equipment and workmanship incorporated into or relating to the Project.
- B. These Specifications supersede the Drawings wherever information depicted by the Drawings may be incomplete, unclear or in conflict with the requirements of the Specifications.

PART 2 - DEFINITIONS

- A. Inspection - when used in reference to the Contracting Officer or his authorized Representative, means visual observation of materials, equipment, or construction work, on an intermittent basis, to determine that the work is in conformance with the Contract Documents and the design intent. Such inspection does not constitute acceptance of the work, nor shall it be construed to relieve the Contractor from his responsibility for the means and methods of construction **or for safety on the construction site.**
- B. Equal, or Approved Equal - when appearing in these specifications, means that submittals of materials, equipment or methods differing from a specific description in the specification may be reviewed by the Contracting Officer after Contract Award, to determine if the proposed substitute meets the test of apparent equivalence for application to the requirements of the project, and appears to possess the same performance qualities and characteristics and fulfill the utilitarian function without decrease in quality, durability, or longevity. No inference is intended that items must be identical in **all** respects if above conditions are satisfied. The decision of the Contracting Officer will be final. It remains the Contractor's responsibility for submittals to meet the requirements of the Specifications.
- C. Approve - when used in reference to responses by the Contracting Officer to work performed, material, equipment, or methods used, means to give limited, or conditional or qualified approval to the work or use of material, equipment or methods; **the qualified condition being strict compliance with Contract Document and Specifications requirements.**

GENERAL CONSTRUCTION NOTES

1. Existing utility locations shown on the Drawings are approximate only. The Contractor shall coordinate the location (horizontal and vertical) of existing utilities (power, telephone, gas, water, sewer, etc.) with the appropriate utility company before construction begins.
2. Utility or service lines encountered during construction, whether shown on the Drawings or not, shall be protected by the Contractor and repairs necessary due to damage to same by the Contractor shall be at no additional cost to the Government.
3. The Contractor shall be responsible for verifying horizontal and vertical clearances on any utility service crossings before installation.
4. The Contractor shall fertilize and seed all areas where the existing vegetation was removed or disturbed during construction and not required to be solid sodded, paved, or graveled.
5. Sanitary sewer, storm sewer, and water main reach lengths may be varied in construction of project to conform to normal joint lengths.
6. TBM's which are or may be in conflict with construction activities shall be relocated by Contracting Officer prior to commencement of construction in the immediate area.
7. All detailed construction staking will be by Contractor at no cost to the Government.
8. All private utilities will be relocated or adjusted by the affected company to eliminate any conflict with the proposed improvements at no cost to the Contractor.
9. Contractor shall be responsible for completing all sampling and testing of materials, and for submission of same to Contracting Officer for review prior to their use. This shall include select backfill, concrete, asphalt, aggregates and other items as specified by the Contracting Officer. Such prior use testing shall be an absorbed item.
10. Contractor shall obtain and furnish to the Contracting Officer copies of manufactures certifications for all materials such as water pipe, sewer piping, storm culverts, casting, specials, seed and other items required by these specifications. Such certification shall state that the subject material meets the specified quality, grade, purity, class or weight, or that the subject material meets or exceeds the requirements of the applicable ASTM, AASHTO, MSHD or other standards. Certifications shall be submitted to the Contracting Officer prior to incorporation of the subject material into the project.
11. Contractor shall verify the invert elevations of existing sanitary sewer mains to be adjusted or incorporated into the work prior to initiation of construction on any new lines connecting thereto. Any variations from plan grades shall be reported to the Contracting Officer.

12. Contractor shall repair any existing fence damaged, removed or disturbed during construction. The fence shall be restored to its original condition or better. Any fence repair shall be an absorbed cost.
13. Contractor is to preserve existing trees where possible.
14. The Contractor shall be responsible for the construction, operation and maintenance of the access road into the site.

DIVISION 1 - GENERAL REQUIREMENTS

SECTION 09300

TILE

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SECTION 09300

TILE

PART 1 - GENERAL

1-01 SECTION INCLUDES

- A. Tile for floor and wall applications, including ceramic, ceramic mosaic, and quarry tile.
- B. Cementitious backer board as tile substrate.
- C. Stone thresholds.
- D. Ceramic trim.
- E. Non-ceramic trim.

1-02 REFERENCES

- A. ANSI A108 Series/A118 Series/A136.1 - American National Standard Specifications for the Installation of Ceramic Tile (Compendium); 1999.
 - 1. ANSI A108.1a - American National Standard Specifications for Installation of Ceramic Tile in the Wet-Set Method, with Portland Cement Mortar; 1999.
 - 2. ANSI A108.1b - American National Standard Specifications for Installation of Ceramic Tile on a Cured Portland Cement Mortar Setting Bed with Dry-Set or Latex Portland Cement Mortar; 1999.
 - 3. ANSI A108.1c - Specifications for Contractors Option: Installation of Ceramic Tile in the Wet-Set Method with Portland Cement Mortar or Installation of Ceramic Tile on a Cured Portland Cement Mortar Bed with Dry-Set or Latex Portland Cement Mortar; 1999.
 - 4. ANSI A108.4 - American National Standard Specifications for Installation of Ceramic Tile with Organic Adhesives or Water Cleanable Tile Setting Epoxy Adhesive; 1999.
 - 5. ANSI A108.5 - American National Standard Specifications for Installation of Ceramic Tile with Dry-Set Portland Cement Mortar or Latex-Portland Cement Mortar; 1999.
 - 6. ANSI A108.6 - American National Standard Specifications for Installation of Ceramic Tile with Chemical Resistant, Water Cleanable Tile-Setting and - Grouting Epoxy; 1999.
 - 7. ANSI A108.9 - American National Standard Specifications for Installation of Ceramic Tile with Modified Epoxy Emulsion Mortar/Grout; 1999.
 - 8. ANSI A108.10 - American National Standard Specifications for Installation of Grout in Tilework; 1999.
 - 9. ANSI A108.11 - American National Standard for Interior Installation of Cementitious Backer Units; 1999.
 - 10. ANSI A118.1 - American National Standard Specifications for Dry-Set Portland Cement Mortar; 1999.
 - 11. ANSI A118.4 - American National Standard Specifications for Latex-Portland Cement Mortar; 1999.
 - 12. ANSI A118.6 - American National Standard Specifications for Standard Cement

- Grouts for Tile Installation; 1999.
13. ANSI A118.7 - American National Standard Specifications for Polymer Modified Cement Grouts for Tile Installation; 1999.
 14. ANSI A118.9 - American National Standard Specifications for Cementitious Backer Units; 1999.
 15. ANSI A137.1 - American National Standard Specifications for Ceramic Tile; 1988.
- B. ASTM C 847 - Standard Specification for Metal Lath; 1995 (reapproved 2000).
- C. TCA (HB) - Handbook for Ceramic Tile Installation; Tile Council of America, Inc.; 2002.

1-03 SUBMITTALS

- A. See Section 00800, for submittal procedures.
- B. Samples: Mount tile and apply grout on two plywood panels, 18x18 inch in size illustrating pattern, color variations, and grout joint size variations.

1-04 QUALITY ASSURANCE

- A. Maintain one copy of TCA Handbook and ANSI A108 Series/A118 Series on site.

1-05 PRE-INSTALLATION MEETING

- A. Convene one week before starting work of this section.

1-06 DELIVERY, STORAGE, AND HANDLING

- A. Protect adhesives from freezing or overheating in accordance with manufacturer's instructions.

1-07 ENVIRONMENTAL REQUIREMENTS

- A. Do not install adhesives in an unventilated environment.
- B. Maintain ambient and substrate temperature of 50 degrees F during installation of mortar materials.

PART 2 - PRODUCTS

2-01 TILE

- A. Manufacturers: All products by the same manufacturer.
- B. Ceramic Mosaic Tile: ANSI A137.1, and as follows:
1. Moisture Absorption: 0 to 0.5 percent.
 2. Size and Shape: 1 inch square.
 3. Edges: Square.
 4. Surface Finish: Unglazed.
 5. Colors: to be selected from manufacturer's standard colors.
- C. Glazed Wall Tile: ANSI A137.1, and as follows:

1. Moisture Absorption: 3.0 to 7.0 percent.
2. Size and Shape: 4-1/4 inch square.
3. Edges: Cushioned.
4. Surface Finish: High gloss.
5. Colors: to be selected from manufacturer's standard colors.

D. Quarry Tile: ANSI A137.1, and as follows:

1. Moisture Absorption: 0.5 to 3.0 percent.
2. Size and Shape: 8 inch square.
3. Thickness: 3/4 inch.
4. Edges: Square.
5. Surface Finish: Non-slip.
6. Colors: To be selected from manufacturer's standard range.

2-02 TRIM AND ACCESSORIES

- A. Ceramic Trim: Matching bullnose, double bullnose, cove base, and cove ceramic shapes in sizes coordinated with field tile.
1. Applications: Use in the following locations:
 - a. Open Edges: Bullnose.
 - b. Inside Corners: Jointed.
 - c. Floor to Wall Joints: Cove base.
 2. Manufacturer: Same as for tile.
- B. Non-Ceramic Trim: Satin natural anodized extruded aluminum, style and dimensions to suit application, for setting using tile mortar or adhesive.
1. Applications: Use in the following locations:
 - a. Open edges of wall tile.
 - b. Wall corners, outside and inside.
- C. Thresholds: Marble, white or gray, honed finish; 2 inches wide by full width of wall or frame opening; 1/2 inch thick thick; beveled one long edge with radiused corners on top side; without holes, cracks, or open seams.
1. Applications: Provide at the following locations:
 - a. At doorways where tile terminates.

2-03 ADHESIVE MATERIALS

- A. Manufacturers: as approved by tile manufacturer.

2-04 MORTAR MATERIALS

- A. Manufacturers: as approved by tile manufacturer.
- B. Mortar Bed Materials: Portland cement, sand, and water.
- C. Mortar Bond Coat Materials:
1. Dry-Set Portland Cement type: ANSI A118.1.
 2. Latex-Portland Cement type: ANSI A118.4.

2-05 GROUT MATERIALS

- A. Standard Grout: Polymer modified cement grout, sanded or unsanded, as specified in

ANSI A118.7.

1. Color: As selected.

2-06 ACCESSORY MATERIALS

- A. Uncoupling Membrane: 1/8 inch thick polyurethane matting with three-dimensional grid structure with dovetail shaped cavities and fleece webbing laminated to the underside to provide a mechanical bond to the substrate adhesive (DITRA).
- B. Waterproofing Membrane: Fluid applied neoprene complying with ANSI A118.10.
- C. Membrane at Walls: 4 mil thick polyethylene film.
- D. Reinforcing Mesh: 2 x 2 inch size weave of 16/16 wire size; welded fabric, galvanized.
- E. Metal Lath: ASTM C 847, Flat diamond mesh, of weight to suit application, galvanized finish.
- F. Cementitious Backer Board: ANSI A118.9; High density, cementitious, glass fiber reinforced, 1/2 inch thick; 2 inch wide coated glass fiber tape for joints and corners.

PART 3 - EXECUTION

3-01 EXAMINATION

- A. Verify that sub-floor surfaces are smooth and flat within tolerances specified in Section 06100 and are ready to receive tile.
- B. Verify that wall surfaces are smooth and flat within tolerances specified in Section 09260, are dust-free, and are ready to receive tile.
- C. Verify that required floor-mounted utilities are in correct location.

3-02 PREPARATION

- A. Protect surrounding work from damage.
- B. Vacuum clean surfaces and damp clean.
- C. Seal substrate surface cracks with filler. Level existing substrate surfaces to acceptable flatness tolerances.
- D. Install cementitious backer board in accordance with ANSI A108.11 and board manufacturer's instructions. Tape joints and corners, cover with skim coat of dry-set mortar to a feather edge.
- E. Prepare substrate surfaces for adhesive installation in accordance with adhesive manufacturer's instructions.

3-03 INSTALLATION - GENERAL

- A. Install tile and thresholds and grout in accordance with applicable requirements of ANSI A108.1 through A108.13, manufacturer's instructions, and TCA Handbook recommendations.
- B. Cut and fit tile to penetrations through tile, leaving sealant joint space. Form corners and bases neatly. Align floor joints.
- C. Place tile joints uniform in width, subject to variance in tolerance allowed in tile size. Make joints watertight, without voids, cracks, excess mortar, or excess grout.
- D. Form internal angles square and external angles bullnosed.
- E. Install non-ceramic trim in accordance with manufacturer's instructions.
- F. Install thresholds where there is a change in flooring material.
- G. Sound tile after setting. Replace hollow sounding units.
- H. Keep expansion joints free of adhesive or grout. Apply sealant to joints.
- I. Allow tile to set for a minimum of 48 hours prior to grouting.
- J. Grout tile joints. Use standard grout unless otherwise indicated.
- K. Apply sealant to junction of tile and dissimilar materials and junction of dissimilar planes.

3-04 INSTALLATION - FLOORS - THIN-SET METHODS

- A. Over interior concrete substrates, install in accordance with TCA Handbook Method F113, dry-set or latex-portland cement bond coat, with standard grout, unless otherwise indicated.
 - 1. Use uncoupling membrane under all tile unless other underlayment is indicated.
 - 2. Where waterproofing membrane is indicated, install in accordance with TCA Handbook Method F122, with latex-portland cement grout.

3-05 INSTALLATION - SHOWERS AND BATHTUB WALLS

- A. Grout with standard grout as specified above.
- B. Seal joints between tile work and other work with sealant Type specified in Section 07900.

3-06 INSTALLATION - WALL TILE

- A. Over cementitious backer units on studs, install in accordance with TCA Handbook Method W244.

3-07 CLEANING

- A. Clean tile and grout surfaces.

3-08 PROTECTION OF FINISHED WORK

- A. Do not permit traffic over finished floor surface for 4 days after installation.

DIVISION 1 - GENERAL REQUIREMENTS

SECTION 09650

RESILIENT FLOORING

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SECTION 09650

RESILIENT FLOORING

PART 1 - GENERAL

1-01 SECTION INCLUDES

- A. Resilient sheet flooring.
- B. Resilient base.
- C. Installation accessories.

1-02 REFERENCES

- A. ASTM E 648 - Standard Test Method for Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Source; 2000.
- B. ASTM F 710 - Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring; 2000.
- C. ASTM F 1303 - Standard Specification for Sheet Vinyl Floor Covering with Backing; 1999.
- D. ASTM F 1861 - Standard Specification for Resilient Wall Base; 2000.
- E. ASTM F 1913 - Standard Specification for Vinyl Sheet Floor Covering Without Backing; 1998.
- F. NFPA 253 - Standard Method of Test for Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source; National Fire Protection Association; 2000.

1-03 SUBMITTALS

- A. See Section 00800, for submittal procedures.
- B. Selection Samples: Submit manufacturer's complete set of color samples for Contracting Officer's initial selection.
- C. Verification Samples: Submit two samples, 12x12 inch in size illustrating color and pattern for each resilient flooring product specified.
- D. No material shall be ordered until the full size samples have been approved for use. The Contracting Officer has the right to make minor changes in color and pattern upon reviewing actual samples.
- E. Maintenance Data: Include maintenance procedures, recommended maintenance materials, and suggested schedule for cleaning, stripping, and re-waxing.

1-04 DELIVERY, STORAGE, AND PROTECTION

- A. Deliver materials to the job in the manufacturer's original, unopened containers with brands, names, and production runs clearly marked thereon. Handle materials carefully, and store them in their original containers at no less than 65°F for at least 48 hours prior to starting work.

1-05 ENVIRONMENTAL REQUIREMENTS

- A. Maintain temperature in storage area between 55 degrees F and 90 degrees F.
- B. Store materials for not less than 48 hours prior to installation in area of installation at a temperature of 70 degrees F to achieve temperature stability. Thereafter, maintain conditions above 55 degrees F.

PART 2 - PRODUCTS

2-01 MATERIALS - SHEET FLOORING

- A. Vinyl Sheet Flooring: Homogeneous without backing, with color and pattern throughout full thickness, and:
 - 1. Minimum Requirements: Comply with ASTM F 1303, Type II, without backing, or ASTM F 1913.
 - 2. Critical Radiant Flux (CRF): Minimum 0.45 watt per square centimeter, when tested in accordance with ASTM E 648 or NFPA 253.
 - 3. Total Thickness and Wear Layer Thickness: 0.080 inch nominal.
 - 4. Sheet Width: 72 inch minimum.
 - 5. Static Load Resistance: 750 psi minimum, when tested as specified in ASTM F 1303.
 - 6. Integral coved base with cap strip.
- B. Vinyl Welding Rod: Solid vinyl bead produced by manufacturer of vinyl flooring for heat welding seams, in color matching field color.

2-02 MATERIALS - BASE

- A. Resilient Base: ASTM F 1861, Type TS rubber, vulcanized thermoset; top set Style B, Cove, and as follows:
 - 1. Height: 4 inch.
 - 2. Thickness: 0.125 inch thick.
 - 3. Finish: Satin.
 - 4. Length: Roll.
 - 5. Color: Color as selected from manufacturer's standards.
 - 6. Accessories: Premolded external corners and end stops.

2-03 ACCESSORIES

- A. Subfloor Filler: White premix latex; type recommended by adhesive material manufacturer.
- B. Primers and Adhesives: Waterproof; types recommended by flooring manufacturer.
- C. Moldings and Edge Strips: Metal.
- D. Filler for Coved Base: Plastic.
- E. Sealer and Wax: Types recommended by flooring manufacturer.

PART 3 - EXECUTION

3-01 EXAMINATION

- A. Verify that sub-floor surfaces are smooth and flat within tolerances specified in Section 03300 and are ready to receive resilient flooring.
- B. Verify that wall surfaces are smooth and flat within tolerances specified in Section 09260, are dust-free, and are ready to receive resilient base.
- C. Verify that concrete sub-floor surfaces are ready for resilient flooring installation by testing for moisture emission rate and alkalinity in accordance with ASTM F 710; obtain instructions if test results are not within limits recommended by resilient flooring manufacturer and adhesive materials manufacturer.
- D. Verify that required floor-mounted utilities are in correct location.

3-02 PREPARATION

- A. Remove sub-floor ridges and bumps. Fill minor low spots, cracks, joints, holes, and other defects with sub-floor filler to achieve smooth, flat, hard surface.
- B. Prohibit traffic until filler is cured.
- C. Clean substrate.
- D. Apply primer as required to prevent "bleed-through" or interference with adhesion by substances that cannot be removed.

3-03 INSTALLATION - SHEET FLOORING

- A. Install in accordance with manufacturer's instructions.
- B. Spread only enough adhesive to permit installation of materials before initial set.
- C. Set flooring in place, press with heavy roller to attain full adhesion.
- D. Lay flooring with joints and seams parallel to longer room dimensions, to produce minimum number of seams. Lay out seams to avoid widths less than 1/3 of roll width; match patterns carefully at seams.
- E. Double cut sheet; provide heat welded seams.

- F. Where floor finishes are different on opposite sides of door, terminate flooring under centerline of door.
- G. Install edge strips at unprotected or exposed edges, where flooring terminates, and where indicated. Secure metal strips after installation of flooring with stainless steel screws. Secure resilient strips by adhesive.
- H. Coved Base: Install using coved base filler as backing at floor to wall junction. Extend sheet flooring vertically to height indicated, and cover top edge with metal cap strip.
- I. Scribe flooring to walls, columns, cabinets, floor outlets, and other appurtenances to produce tight joints.

3-04 INSTALLATION - BASE

- A. Fit joints tightly and make vertical. Maintain minimum dimension of 18 inches between joints.
- B. Miter internal corners. At external corners, use premolded units. At exposed ends, use premolded units.
- C. Install base on solid backing. Bond tightly to wall and floor surfaces.
- D. Scribe and fit to door frames and other interruptions.

3-05 CLEANING

- A. Remove excess adhesive from floor, base, and wall surfaces without damage.
- B. Clean, seal, and wax resilient flooring products in accordance with manufacturer's instructions. Minimum requirements - provide 2 coat sealer and 5 coat polish. Sealer and polish as per manufacturer's recommendation.

3-06 PROTECTION OF FINISHED WORK

- A. Prohibit traffic on resilient flooring for 48 hours after installation.

Fiberglass Composite Refrigerated Samplers

Standard Features

- Fiberglass-shell refrigerator suitable for exterior applications
- Built-in heaters to prevent freezeup of compressor and evaporator in cold weather
- Liquid Presence Detector and pump revolution counting system ensure accurate, repeatable sample volumes.
- Available to be setup for:
 - Uniform time intervals
 - Non-uniform time intervals
 - Flow-paced sampling with or without time delay
- 3710 Controller housed in a NEMA 4X and 6 (IP67) environmentally sealed enclosure, and be fully interchangeable between refrigerated and portable samplers.
- Composite sampling bottle configurations - 1 x 2.5 gallon (9.5 liter) polyethylene
- Suction lines and strainers (as recommended by supplier)
- Power supply shall be provided by contractor at both locations

Specifications

Size (HxWxD):	47 x 26 x 26 inches (125 x 66 x 66 cm)
Weight (dry):	160 lbs. 73 kg
Exterior materials:	Resin transfer molded fiberglass with UV resistant fiberglass gel coat
Frame:	Stainless steel
Corrosion protection:	Condenser - powder coated with polyester; Compressor - Enamel paint; Evaporator - Powder coated with food grade epoxy; Refrigeration tubing - Polyester tubing or phenolic resin
Insulation:	Top 3 in. (7.6 cm); Sides 1.5 in. (3.8 cm)
Thermal Resistance:	R-16
Power required:	120VAC 60 Hz; 240VAC 50/60 Hz (specify)
Current draw:	3.5A running, 17A startup @ 120VAC; (1.75 amp running, 8.5A startup @ 240VAC)
Compressor Protection:	Safety cutout at 221°F 105°C
Sample Temperature Control	
Thermostat:	1 mechanical bulb-type
Set-point range:	32° to 46°F (0° to 8°C)
Accuracy (at 4°C):	±1.8°F (±1°C)
Typical Recovery Time:	5 minutes (for internal air temperature to return to 39°F (4°C) after the door has been opened for one minute. At external temperature

	of 75°F (24°C)
Heaters:	3, automatically controlled . 2 evaporator heaters, 60 watts each; 1 compressor heater, 30 watts
Pump	
Intake purge:	Adjustable air purge before and after each sample.
Tubing life indicator:	Provides a warning to change pump tubing.
Pump tubing life:	Recommended 500,000 pump counts
Intake suction tubing:	Vinyl or Teflon®; 3/8 inch (1 cm) or 1/4 inch (0.6cm) ID; 3 to 99 feet (1 to 30 m) Length
Maximum lift:	26 ft. (7.9 m)
Repeatability:	±10 ml typical
Typical line velocity @ Head height:	2.9 ft./s @ 3 ft; 2.5 ft./s @ 10 ft; 1.9 ft./s @ 15 ft. (0.88 m/s @ 0.9 m; 0.76 m/s @ 3.1 m; 0.58 m/s @ 4.6 m)
Liquid presence detector:	Non-wetted, non-conductive sensor detects when liquid sample reaches the pump to automatically compensate for changes in head heights.
Controller	
Weight:	11 lbs (5 kg)
Size (HxWxD):	10 x 12.5 x 10 inches (25 x 32 x 25 cm)
Operational temperature:	32° to 120°F (0° to 49°C)
Enclosure rating:	NEMA 4X, 6 IP67
Program memory:	Non-volatile ROM
Flow meter signal input:	5 to 15 volt DC pulse or 25 millisecond isolated contact closure.
Number of Samples:	Up to 999 composite samples. (Fail-safe weight table shutoff.)
Interface port:	6 pin connector; data output at 2400 baud in ASCII. RS-232 format with handshake. 8 bits, 1 stop bit, no parity.
Clock accuracy:	1 minute per month, typical, for real time clock
Software	
Sample frequency:	1 minute to 99 hours 59 minutes, in 1 minute increments. Non-uniform times in minutes or clock times 1 to 9,999 flow pulses
Sample pacing:	Uniform time, non-uniform time, flow. Flow pacing is controlled by external flowmeter pulses.
Sample volumes:	Programmable from 10 to 9,990 ml in 1 ml increments
Sample retries:	If no sample is detected, up to 3 attempts; user selectable
Rinse cycles:	Automatic rinsing of suction line up to 3 rinses for each sample

	collection
Program storage:	3 sampling programs
Sampling stop/resume:	Up to 24 real time/date sample stop/resume commands.
Controller diagnostics:	Tests for RAM, ROM, pump display, and distributor