

**CITY OF TURLOCK
STANISLAUS COUNTY, CALIFORNIA**



ADDENDUM NO. 2

TO

**CONTRACT DOCUMENTS FOR THE CONSTRUCTION OF THE
TURLOCK REGIONAL WATER QUALITY CONTROL FACILITY
SECONDARY CLARIFIER NO. 5 AND DENITRIFICATION PROJECT**

CITY PROJECT NO. 15-39C

May 24, 2017



ADDENDUM NO. 2

Turlock Regional Water Quality Control Facility Secondary Clarifier No. 5 and Denitrification Project

Project No. 15-39C

City of Turlock, California

THIS ADDENDUM IS NOW INCORPORATED AS A PART OF THE CONTRACT DOCUMENTS AND MODIFIES THE ORIGINAL PLANS AND SPECIFICATIONS AS NOTED HEREIN. BY SUBMISSION OF A BID FOR THIS PROJECT, THE BIDDER IS ACKNOWLEDGING THAT THE BIDDER HAS CONFIRMED THAT HE OR SHE HAS RECEIVED ALL ADDENDA ISSUED FOR THAT PROJECT AND HAS INCLUDED COSTS FOR SUCH IN THE BID SUBMITTED.

While we believe the plans and specifications to be accurate, they are disseminated in accordance with law and are to be relied upon only at user's risk. The user should be advised to contact the City for updates on any material they receive to ensure that they have the latest/most current information.

It shall be the responsibility of the prime bidder to inform any affected sub bidder of the content of this Addendum.

SPECIFICATIONS (VOLUME 1 OF 3 – DIVISIONS 0 THROUGH 11)

1. TABLE OF CONTENTS

A. Page TOC-3 - DIVISION 02 SITE CONSTRUCTION

1. After 02300 EARTHWORK, insert the following: "*02312 CONTROLLED LOW STRENGTH MATERIAL (CLSM)*".

2. DOCUMENT 00410 - BID FORM

- A. Delete Document 00410 and replace with attached version of Document 00410.

3. DOCUMENT 00436 - LIST OF EQUIPMENT MANUFACTURERS

- A. Page 00436-1, Article 2, Paragraph 2.04.

1. Add the following to the row in the table for the Manufacturer/Supplier for Section 11292A Flap Gates after Whipps, Inc.: "*Golden Harvest*"

4. DOCUMENT 00800 - SUPPLEMENTARY CONDITIONS

- A. Page 00800-5, PARAGRAPH SC-6.03.K.2.:

1. For General Aggregate, Delete "\$5,000,000" and replace with "\$2,000,000".
 2. For Products - Completed Operations Aggregate, Delete "\$5,000,000" and replace with "\$2,000,000".
5. DOCUMENT 02312 - CONTROLLED LOW STRENGTH MATERIAL (CLSM)
- A. Add Specification Section 02312, attached.
6. DOCUMENT 02742A - ASPHALTIC CONCRETE PAVING
- A. Page 02742A-3, PARAGRAPH 2.02.A:
1. Delete Item 1 and replace with "*1. None. Slurry seal not used.*"
7. DOCUMENT 11292A - FLAP GATES
- A. Page 11292A-2, PARAGRAPH 2.01.A:
1. Add Item 3 as follows: "*3. Golden Harvest, Inc.*"

SPECIFICATIONS (VOLUME 2 OF 3 – DIVISIONS 13 THROUGH 17)

1. TABLE OF CONTENTS
- A. Page TOC-3 - DIVISION 02 SITE CONSTRUCTION
1. After 02300 EARTHWORK, insert the following: "*02312 CONTROLLED LOW STRENGTH MATERIAL (CLSM)*".
2. DOCUMENT 15052 - COMMON WORK RESULTS FOR GENERAL PIPING
- A. Page 15052-14, PARAGRAPH 3.05, PIPING SCHEDULE
1. Delete Process Abbreviation "SSC" and replace with "SC".
3. DOCUMENT 15286 - STAINLESS STEEL PIPE AND TUBING
- A. Page 15286-2, PARAGRAPH 1.03.C.1.:
1. After "*Field welding is prohibited.*" add the following: "*Connect existing stainless steel piping to new steel piping by using flexible couplings, flanges, or other mechanical means unless specifically noted otherwise on the Drawings.*"

DRAWINGS (VOLUME 3 OF 3)

1. Sheet Number 7 of 201, Drawing No. 00G07

A. Add label for "*RAS WEIR STRUCTURE*". The RAS Weir Structure is located approximately 10 feet east of the Chlorine Building. It is at grid location C8 as indicated by the sheet border.

2. Sheet Number 10 of 201, Drawing No. 00G10

A. Revise the Top of Wall (TOW) elevation callouts in Aeration Basin No. 7 as follows:

1. Delete "*102.33*" and replace with "*102.52*".

2. Delete "*102.25*" and replace with "*102.47*".

3. Delete "*102.17*" and replace with "*102.43*".

3. Sheet Number 18 of 201, Drawing No. 00TC02

A. Add Typical Detail C311, attached.

4. Sheet Number 47 of 201, Drawing No. 01C02

A. Add new General Note No. 4 as follows: "*4. FOR BIDDING PURPOSES, ASSUME THE EXISTING DUCTBANKS AND 36" ML PIPING BELOW THE NEW AC PAVEMENT WERE INSTALLED IN VERTICALLY SHORED TRENCHES, OVER-EXCAVATED TO FIRM NATIVE SOILS, AND BEDDED AND BACKFILLED IN ACCORDANCE WITH DETAIL P002/TYP AND SECTION 02318.*"

B. Delete Key Note 6 and replace with the following: "*PRIOR TO GRADING, OVER-EXCAVATE ALL LANDFILL MATERIAL FOR THE STORMWATER DETENTION BASIN TO DEPTH OF FIRM NATIVE SOILS AND BACKFILL IN ACCORDANCE WITH DETAIL C311/TYP.*"

5. Sheet Number 48 of 201, Drawing No. 01C03

A. At Typical Road Section A, delete the words "*WITH SLURRY SEAL*" from the callout that begins "*4" ASPHALT CONCRETE*".

6. Sheet Number 52 of 201, Drawing No. 01YP04

A. Add label for "*RAS WEIR STRUCTURE*". The RAS Weir Structure is located approximately 10 feet east of the Chlorine Building. It is at grid location B8 as indicated by the sheet border.

7. Sheet Number 58 of 201, Drawing No. 01YS03

A. SECTION C:

1. Add the following callout for fill in the bottom of the outlet from elevation 87.00 to 87.20: *"CLASS C CONCRETE"*.

8. Sheet Number 59 of 201, Drawing No. 01YS04

A. SECTION F:

1. Delete the following callout: *"DRILL AND EPOXY #6@12" WITH 10" EMBEDMENT. REPLACE MISSING WSTP WITH HYDROPHILIC WSTP"*.

9. Sheet Number 64 of 201, Drawing No. 01YS09

A. SECTION C:

1. Add the following callout for the invert elevation of the Biotower Pump Station: *"TOC 82.0±"*.

10. Sheet Number 71 of 201, Drawing No. 02S05

- A. Add Key Note 1 with the following text: *"PERFORATED PIPE PER ASTM D2729. 1/2" HOLE SIZE AT 5" ± 1/4" SPACING. 2-ROW PATTERN AT 120 DEGREES ± 5 DEGREES."*

- B. Add callouts for Key Note 1 in the following locations: 12" DW inner ring piping, 6" DW middle ring piping, and 6" DW outer ring piping.

11. Sheet Number 76 of 201, Drawing No. 03S01

- A. Delete Drawing No. 03S01 and replace with new Drawing No. 03S01, attached.

12. Sheet Number 77 of 201, Drawing No. 03S02

- A. Delete Drawing No. 03S02 and replace with new Drawing No. 03S02, attached.

B. SECTION C:

1. Add Key Note 3 callout adjacent to callout *"CLSM BACKFILL UNDER FLOW METER PIT"*. Key Note 3 shall read: *"BACKFILL WITH CLSM FROM BOTTOM OF 12" ABC TO UNDISTURBED FIRM NATIVE SOILS."*

13. Sheet Number 78 of 201, Drawing No. 03S03

A. SECTION H:

1. Add dimension callout for thickness of sump base slab of "2'-0"

14. Sheet Number 79 of 201, Drawing No. 03M01

A. BOTTOM SECTIONAL PLAN D:

1. Delete Pump Tag Number "*PMP-2701*" and replace with "*PMP-2711*".
2. Delete Pump Tag Number "*PMP-2702*" and replace with "*PMP-2721*".

B. TOP PLAN A:

1. Add Pump Tag Numbers "*PMP-2701*" and "*PMP-2702*" to the sump pumps called out with Typical Detail M242.

15. Sheet Number 91 of 201, Drawing No. 04S04

A. TOP PLAN D: Revise the CONC WEIR WALL TOC elevation callouts as follows:

1. Delete "101.97" and replace with "102.43".
2. Delete "102.05" and replace with "102.47".
3. Delete "102.13" and replace with "102.52".

16. Sheet Number 92 of 201, Drawing No. 04S05

A. TOP PLAN E: Revise the CONC WEIR WALL TOC elevation callouts as follows:

1. Delete "101.97" and replace with "102.43".
2. Delete "102.05" and replace with "102.47".
3. Delete "102.13" and replace with "102.52".

17. Sheet Number 93 of 201, Drawing No. 04S06

A. TOP PLAN F: Revise the CONC WEIR WALL TOC elevation callouts as follows:

1. Delete "101.97" and replace with "102.43".
2. Delete "102.05" and replace with "102.47".
3. Delete "102.13" and replace with "102.52".

18. Sheet Number 94 of 201, Drawing No. 04S07

A. SECTION G:

1. Delete callout for "2'-0" x 2'-0" OPNG (TYP)" and replace with "2'-0" WIDE BY 1'-6" TALL OPNG (TYP)".

19. Sheet Number 103 of 201, Drawing No. 04M07

- A. Add the following to Key Note 8: *"CUT EXISTING PIPING AND FIELD BUTT WELD. FIELD WELDED FITTINGS SHALL BE TYPE 304L SST. PICKLE AND PASSIVATE WELDS IN ACCORDANCE WITH ASTM A380 AND A967."*

20. Sheet Number 104 of 201, Drawing No. 04M08

- A. Delete Key Note 1 and replace with the following: *"PVC PIPING AND COUPLING FOR ATTACHMENT TO SST DROPLEG FURNISHED BY DIFFUSER MANUFACTURER."*

21. Sheet Number 107 of 201, Drawing No. 05S02

A. TOP PLAN B: Revise the CONC WEIR WALL TOC elevation callouts as follows:

1. Delete "102.17" and replace with "102.43".
2. Delete "102.25" and replace with "102.47".
3. Delete "102.33" and replace with "102.52".

22. Sheet Number 108 of 201, Drawing No. 05S03

A. SECTION D:

1. Delete callout for "2'-0" SQ OPNG" and replace with "1'-6" SQ OPNG (TYP)".

23. Sheet Number 114 of 201, Drawing No. 06S02

A. TOP PLAN B: Revise the CONC WEIR WALL TOC elevation callouts as follows:

1. Delete "102.33" and replace with "102.52".
2. Delete "102.25" and replace with "102.47".
3. Delete "102.17" and replace with "102.43".

ATTACHMENTS:

1. SPECIFICATION SECTION 00410 - BID FORM (8 pages)
 2. SPECIFICATION SECTION 02312 - CONTROLLED LOW STRENGTH MATERIAL (CLSM) (8 pages)
 3. TYPICAL DETAIL C311 - STORMWATER DETENTION BASIN EXCAVATION AND BACKFILL (1 page)
 4. DRAWING NO. 03S01 - RAS PUMP STATION NO. 2 PLANS (1 page)
 5. DRAWING NO. 03S02 - RAS PUMP STATION NO. 2 SECTIONS (1 page)
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This Addendum No. 2 shall become part of the Contract and all provisions of the Contract shall apply thereto. This addendum has been prepared by or under, the direction of the following Registered Engineers:



5/24/2017

James Wickstrom, P.E. California Civil C-57732

CIVIL ENGINEERING

Carollo Engineers, Inc., 2700 Ygnacio Valley Rd., Suite 300
Walnut Creek, CA 94598, Telephone: 925-932-1710



5/24/2017

Robert Hunt, P.E. California Civil C-73037

CIVIL ENGINEERING

Carollo Engineers, Inc., 2700 Ygnacio Valley Rd., Suite 300
Walnut Creek, CA 94598, Telephone: 925-932-1710

ATTACHMENT 1

(8 Pages)

SPECIFICATION SECTION 00410 - BID FORM

DOCUMENT 00410

BID FORM

ARTICLE 1 - BID RECIPIENT

1.01 Project Identification:

City of Turlock
Development Services Department/Engineering Division
Turlock Regional Water Quality Control Facility
Secondary Clarifier No. 5 and Denitrification Project
City of Turlock Project No. 15-39C

1.02 This Bid is submitted to:

City of Turlock
Development Services Department/Engineering Division
156 South Broadway, Suite 150
Turlock, CA 95380 - 5454

1.03 The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into an agreement with Owner in the form included in the Bidding Documents to perform all Work as specified or indicated in the Bidding Documents within the specified time and for the price indicated in this Bid and in accordance with the other terms and conditions of the Bidding Documents.

ARTICLE 2 - BIDDER'S ACKNOWLEDGMENT

2.01 Bidder accepts all of the terms and conditions of Document 00200 - Instructions to Bidders, including without limitation those dealing with the disposition of Bid security. The Bid will remain subject to acceptance for 90 days after the Bid opening, or for such longer period of time that Bidder may agree to in writing upon request of Owner.

ARTICLE 3 - BIDDER'S REPRESENTATIONS

3.01 In submitting this Bid, Bidder represents that:

- A. Bidder has examined and carefully studied the Bidding Documents, and any data and reference items identified in the Bidding Documents, and hereby acknowledges receipt of the following Addenda:

Addendum No.	Addendum Date
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

- B. Bidder has visited the Site, conducted a thorough, alert visual examination of the Site and adjacent areas, and become familiar with and satisfied itself as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.
- C. Bidder is familiar with and has satisfied itself as to all Federal, state, and local Laws and Regulations and Permits that may affect cost, progress, and performance of the Work.
- D. Bidder has carefully studied all:
 - 1. reports of explorations and tests of subsurface conditions at or adjacent to the Site and all drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings.
 - 2. reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings.
- E. Bidder has considered the information known to Bidder itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Bidding Documents; and any Site-related reports and drawings identified in the Bidding Documents, with respect to the effect of such information, observations, and documents on:
 - 1. The cost, progress, and performance of the Work.
 - 2. The means, methods, techniques, sequences, and procedures of construction to be employed by Bidder.
 - 3. Bidder's safety precautions and programs.
- F. Bidder agrees, based on the information and observations referred to in the preceding paragraph, that no further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of this Bid for performance of the Work at the price bid and within the times required, and in accordance with the other terms and conditions of the Bidding Documents.
- G. Bidder is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Bidding Documents.
- H. Bidder has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder has discovered in the Bidding Documents, and confirms that the written resolution thereof by Engineer is acceptable to Bidder.
- I. The Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance and furnishing the Work required by the Bidding Documents.
- J. In accordance with Section 1861, California Labor Code, the Bidder states the following as its certification.
- K. "I am aware of the provisions of Section 3700 of the California Labor Code which require every employer to be insured against liability for workers' compensation or to undertake self-insurance in accordance with the provisions of that code, and I will comply with such provisions before commencing the performance of the Work."

ARTICLE 4 - BIDDER'S CERTIFICATION

4.01 Bidder further represents:

- A. This Bid is genuine and not made in the interest of or on behalf of any undisclosed individual or entity and is not submitted in conformity with any agreement or rules of any group, association, organization or corporation.
- B. Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham bid.
- C. Bidder has not solicited or induced any individual or entity to refrain from bidding.
- D. Bidder has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for the Contract. For the purposes of this paragraph:
 - 1. "Corrupt practice" means the offering, giving, receiving, or soliciting of anything of value likely to influence the action of a public official in the bidding process.
 - 2. "Fraudulent practice" means an intentional misrepresentation of facts made:
 - a. to influence the bidding process to the Owner's detriment,
 - b. to establish bid prices at artificial non-competitive levels, or
 - c. to deprive Owner of the benefits of free and competitive bidding process.
 - 3. "Collusive practice" means a scheme or arrangement between two or more Bidders with or without the knowledge of Owner, a purpose of which is to establish bid prices at artificial, non-competitive levels.
 - 4. "Coercive practice" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.
 - 5. Pursuant to California Public Contract Code Section 7103.5(b), Contractor or Subcontractor shall offer and agree to assign to the awarding body all rights, title, and interest in and to all causes of action it may have under Section 4 of the Clayton Act (15 U.S.C. Sec. 15) or under the Cartwright Act (Chapter 2 (commencing with Section 16700) of Part 2 of Division 7 of the Business and Professions Code).

ARTICLE 5 - ASSIGNMENTS AND ALLOWANCES

5.01 No assignments are used on this project.

5.02 Bidder shall provide the Owner with an allowance for work associated with locating unanticipated existing underground utilities and yard piping of \$25,000. The Owner, at Owner's option, will use this allowance for locating unanticipated existing underground utilities and yard piping. The Contractor will submit the appropriate invoices to the Owner with pay requests. The \$25,000 allowance shall be included in the Lump Sum Bid in addition to the cost of the Work in accordance with Section 01210 - Allowances of the General Requirements.

ARTICLE 6 - BASIS OF BID (AD1)

6.01 Bidder will complete the Work in accordance with the Contract Documents for the Lump Sum Bid Price of:

BASE BID					
Item Number	Lump Sum Item Description	<u>Unit</u>	<u>Unit Price</u>	<u>Estimated Quantity</u>	Lump Sum <u>Total</u> Amount
1	Sheeting, shoring, and bracing, or equivalent method for protection of life and limb in trenches and open excavations.	<u>Lump Sum</u>	---	<u>1</u>	\$ (In figures)
2	Preparation and submittal of a written geotechnical report as specified in Section 02260, including field investigations, soil sampling, laboratory testing, and interpretation of the data by a register geotechnical engineer in the State of California for the purpose of shoring design, dewatering and other temporary facilities.	<u>Lump Sum</u>	---	<u>1</u>	\$ (In figures)
3	RTU and SCADA work performed by HSQ Technology described by HSQ Quote No. 1610-0019-SC-B dated April 18, 2017 attached to Section 17050.	<u>Lump Sum</u>	---	<u>1</u>	\$ 360,170
4	Bid allowances for locating unanticipated existing underground utilities and yard piping.	<u>Lump Sum</u>	---	<u>1</u>	\$ 25,000
<u>5</u>	<u>Disposal of existing landfill debris stockpiles described by Key Note 7 on Drawing 00G07 and described in Section 02300-3.03.B.4.</u>	<u>Ton</u>	<u>\$</u> (In figures)	<u>7,500</u>	<u>\$</u> (In figures)
<u>65</u>	Completion of all Work associated with the Contract Documents excluding all work listed on other bid items in this table.	<u>Lump Sum</u>	---	<u>1</u>	\$ (In figures)
	TOTAL LUMP SUM BID PRICE (BID ITEMS 1 - <u>65</u>) (In words)				\$ (In figures)

6.02 Bid Alternatives

- A. Bidder offers to make, at the bid alternate prices following, the changes in the Work covered by the Lump Sum Bid Price that are specified in the bid alternates priced below.
- B. It is understood that:
1. All bid alternate prices must be filled in.
 2. The acceptance or rejection of any or all of these bid alternates is at the option of Owner.
 3. Acceptance or rejection of bid alternates will not necessarily be made on the basis of price alone.
 4. The acceptance or rejection of one or more bid alternates will not affect the Lump Sum Bid Price, nor other conditions of this Bid, nor the price of other accepted bid alternates.
 5. The addition or deduction shown herein for each bid alternate is the net addition or net deduction that is to be applied to the Lump Sum Bid Price of the undersigned if the bid alternate is accepted by Owner.
 6. The Contract Price shall be the net amount determined by applying the bid alternate prices of all accepted bid alternates to the Lump Sum Bid Price.
- C. Bid Alternate A (add): Bidder agrees to add to the total Lump Sum Bid Price the amount shown below for insurance coverage in the amount of fifty (50) percent of the Lump Sum Bid Price against the risk of tidal wave and earthquake ~~of any magnitude in excess of 3.5 on the Richter scale,~~ ^(AD2) deemed an act of God ~~as provided in Section 7104 pursuant to Section 7105~~ ^(AD2) of California Public Contract Code. Owner may, at its sole option, elect to provide its own insurance. ^(AD2)

\$ (in figures)

 dollars (in words)

- D. Bid Alternate B (deduct): Bidder agrees to deduct from the total Lump Sum Bid Price the amount shown below if the Owner chooses to allow excess screened and segregated soils to be stockpiled on the project site as described in Section 02300:

\$ (in figures)

 dollars (in words)

ARTICLE 7 - TIME OF COMPLETION

- 7.01 Bidder agrees that the Work will be substantially completed, and, completed and ready for final payment in accordance with Paragraph 15.06 of the General Conditions on or before the dates or within the number of calendar days as specified in Document 00520 - Agreement.
- 7.02 Bidder accepts the provisions of the Agreement as to delay damages in the event of failure to complete the Work within the times specified above, which shall be as specified in Document 00520 - Agreement.

ARTICLE 8 - ATTACHMENTS TO THIS BID

8.01 The following documents are attached to and made a condition of this Bid:

- A. Document 00432 - Bid Bond. Provide required Bid security in the form of cash, a certified or bank check, or a Bid Bond as specified in this document.
- B. Document 00434 - Proposed Subcontractors Form.
- C. Document 00436 - List of Equipment Manufacturers.
- D. Document 00451A - Construction Contractor's Qualification Statement with supporting data.
- E. Document 00452 - Affirmative Action Program Certificate.
- F. Document 00456 - Non-Collusion Affidavit.
- G. Document 00458 - Certification of Drug-Free Workplace Requirements.

ARTICLE 9 - DEFINED TERMS

9.01 The terms used in this Bid with initial capital letters or all capital letters have the meanings as specified in Document 00200 - Instructions to Bidders, General Conditions, and Supplementary Conditions.

ARTICLE 10 - BID SUBMITTAL

SUBMITTED on _____, 2017.

State Contractor License Number _____. (If applicable)

If Bidder is:

An Individual

Name (typed or printed): _____

By: _____
(Individual's signature)

Doing business as: _____

Business address: _____

Phone Number: () _____ FAX Number: () _____

A Partnership

Partnership Name: _____

By: _____
(Signature of general partner -- attach evidence of authority to sign)

Name (typed or printed): _____

Business address: _____

Phone Number: () _____ FAX Number: () _____

A Corporation

Corporation Name: _____

State of Incorporation: _____

Type (General Business, Professional, Service, Limited Liability): _____

By: _____
(Signature -- attach evidence of authority to sign)

Name (typed or printed): _____

Title: _____

Attest: _____
(Signature of Corporate Secretary, Acting Secretary or other officer)

Business address: _____

Phone Number: () _____ FAX Number: () _____

Date of Qualification to do business is _____

A Joint Venture

Joint Venturer Name: _____

By: _____
(Signature of joint venture partner -- attach evidence of authority to sign)

Name (typed or printed): _____

Title: _____

Business address: _____

Phone Number: () _____ FAX Number: () _____

Joint Venturer Name: _____

By: _____
(Signature of joint venture partner -- attach evidence of authority to sign)

Name (typed or printed): _____

Title: _____

Business address: _____

Phone Number: () _____ FAX Number: () _____

Phone and FAX Number, and Address for receipt of official communications:

(Each joint venturer must sign. The manner of signing for each individual, partnership, and corporation that is a party to the joint venture should be in the manner indicated above.)

END OF DOCUMENT

AD1 Addendum No. 1

AD2 Addendum No. 2

ATTACHMENT 2

(8 Pages)

SPECIFICATION SECTION 02312 - CONTROLLED LOW STRENGTH MATERIAL
(CLSM)

SECTION 02312 (AD2)

CONTROLLED LOW STRENGTH MATERIAL (CLSM)

PART 1 GENERAL

1.01 SUMMARY

- A. Section includes: Controlled low strength material (CLSM), also known as “flowable fill.”
- B. Related sections:
 - 1. The Contract Documents are complementary; what is called for by one is as binding as if called for by all.
 - 2. It is the Contractor's responsibility for scheduling and coordinating the Work of subcontractors, suppliers, and other individuals or entities performing or furnishing any of Contractor's Work.
 - 3. The following Sections are related to the Work described in this Section. This list of Related Sections is provided for convenience only and is not intended to excuse or otherwise diminish the duty of the Contractor to see that the completed Work complies accurately with the Contract Documents.
 - a. Section 01450 - Quality Control.
 - b. Section 01455 - Special Tests and Inspections.
 - c. Section 01460 - Contractor Quality Control Plan.

1.02 REFERENCES

- A. American Concrete Institute (ACI)
 - 1. 229R - Report on Controlled Low-Strength Materials.
 - 2. 301 - Specifications for Structural Concrete.
- B. ASTM International (ASTM):
 - 1. C 33 - Standard Specification for Concrete Aggregates.
 - 2. C 94 - Standard Specification for Ready Mix Concrete.
 - 3. C 143 - Standard Test Method for Slump of Hydraulic Cement Concrete.
 - 4. C 150 - Standard Specification for Portland Cement.
 - 5. C 260 - Standard Specification for Air-Entraining Admixtures for Concrete.
 - 6. C 618 - Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use in Concrete.
 - 7. D 1557 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft³(2,700 kN-m/m³)).
 - 8. D 4832 - Standard Test Method of Preparation and Testing of Controlled Low Strength Material (CLSM) Test Cylinders.
 - 9. D 5971 - Standard Practice for Sampling Freshly Mixed Controlled Low Strength Material.
 - 10. D 6023 - Standard Test Method for Density (Unit Weight), Yield, Cement Content, and Air Content (Gravimetric) of Controlled Low-Strength Material.
 - 11. D 6103 - Standard Test Method for Flow Consistency of Controlled Low Strength Material.

1.03 SYSTEM DESCRIPTION

- A. Mixture of portland cement, water, pozzolan, fine aggregate and admixtures, proportioned in accordance with the recommendations of ACI 229 to produce a homogeneous mixture that is flowable, that will readily work into corners and angles; that will not segregate in the plastic state; and that is self-compacting at the time of placement without the use of mechanical vibration.
- B. Performance requirements:
 - 1. Air content, total calculated in accordance with ASTM D 6023: Not less than 8.0 percent, nor greater than 12.0 percent.
 - 2. Compressive strength, measured in accordance with ASTM D 4832 at 28 days: Not less than 50 pounds per square inch, nor greater than 150 pounds per square inch.
 - 3. Wet density: Not greater than 132 pounds per cubic foot.
 - 4. Slump, measured in accordance with ASTM C 143 at the point of placement: Greater than 9 inches and that allows CLSM to flow freely and to be self-compacting during placement.

1.04 SUBMITTALS

- A. Product data: Submit data completely describing materials in the mix and demonstrating compliance with the requirements of this Section.
 - 1. Cement: Mill tests. Indicate alkali content representative of each shipment.
 - 2. Fly ash: Identify source and type of fly ash.
 - 3. Water: Identify source and quality if not from a municipal treatment source.
 - 4. Admixtures: Manufacturer's product data indicating suitability for use in CLSM mixes and recommended dosage rates.
 - 5. Aggregate:
 - a. Submit source, type, and sieve analyses.
 - b. Resubmit at any time there is a significant change in grading of materials.
- B. Mix design:
 - 1. Submit full details, including mix design calculations for mix proposed for use.
 - 2. Trial batch test data:
 - a. Submit data for each test cylinder.
 - b. Submit data that identifies mix and slump for each test cylinder.

1.05 DELIVERY, STORAGE AND HANDLING

- A. Store or stockpile cement, fly ash, and aggregate in accordance with ACI 301.
- B. Store admixtures in accordance with the manufacturer's recommendations.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Cement:
 - 1. Portland cement in accordance with ASTM C 150, Type II.

2. Having total alkali content not more than 0.60 percent.
- B. Fly ash: Class C or Class F fly ash in accordance with ASTM C 618.
- C. Water:
 1. Potable water. Clean and free from oil and deleterious amounts of alkali, acid, organic matter, or other substances.
- D. Admixtures: Products of a single manufacturer, specifically manufactured or recommended by that manufacturer for use in CLSM.
 1. Air entraining admixture: In accordance with ASTM C 260.
- E. Aggregate:
 1. Non-expansive, non-reactive, inert natural sand conforming to the following requirements:
 - a. Not more than 12 percent passing a No. 200 sieve.
 - b. No plastic fines present.
 - c. Including pea gravel no larger than 3/8 inch.

2.02 MIXES

- A. See System Description for performance requirements of the plastic and hardened mix.

2.03 SOURCE QUALITY CONTROL

- A. Trial batch:
 1. After mix design has been accepted by Engineer, have trial batch of the accepted mix design prepared by testing laboratory acceptable to Engineer.
 2. Prepare trial batches using the specific cement, fly ash, admixtures, aggregates, and water proposed for the Work.
 3. Prepare trial batch with quantity sufficient to determine slump, workability, and consistency; and to provide test cylinders as indicated in the following paragraphs.
- B. Trial batch testing:
 1. Determine slump in accordance with ASTM C 143, with the following modifications:
 - a. Do not rod the concrete material.
 - b. Place material in slump cone in one semi-continuous filling operation, slightly overfill, tap lightly, strike off, and then measure and record slump.
 2. Prepare and test trial batch specimens in accordance with ASTM D 4832, with the following modifications:
 - a. Provide cylindrical test specimens, each 6-inches in diameter by 12-inch high.
 - b. Provide a minimum of 8 cylinders for testing of each trial batch.
 - c. Fill the molds to overflowing and tap sides lightly to settle the mix.
 - d. Do not rod the mix for consolidation in the cylinder.
 - e. Strike off the excess material.

3. Place test cylinders in a moist curing room. Exercise caution in moving and transporting the cylinders since they are fragile and will withstand only minimal bumping, banging, or jolting without damage.
 4. Do not remove the test cylinder from mold until that cylinder is to be capped and tested.
 - a. Perform the capping carefully to prevent premature fractures.
 - b. Do not perform initial compression test until the cylinders reach a minimum age of 3 days.
 5. Provide compressive strength tests.
 - a. Test 4 test cylinders at 7 days after casting, and another 4 cylinders at 28 days after casting.
 - b. The compression strength of the 4 test cylinders tested at 28 days shall be equal to or greater than the minimum required compression strength, but shall not exceed maximum compression strength.
- C. If the trial batch tests do not meet the Specifications for strength or density, revise and re-submit the mix design, prepare additional trial batch(es), and complete additional trial batch tests. Repeat until an acceptable trial batch is that conforms to the Specifications is produced.
1. All the trial batches and acceptability of materials shall be paid by the Contractor.
 2. After acceptance, do not change the mix design without submitting a new mix design, trial batches, and test information.

PART 3 EXECUTION

3.01 PREPARATION

- A. Do not place CLSM until preparation and condition of surfaces receiving the fill have been observed and accepted by the Engineer.
- B. Remove debris foreign matter, and standing or running water from excavations and areas receiving CLSM before placement.
- C. Pipes and trenches.
1. Where CLSM is placed around and over pipes, secure pipes in place, or place CLSM in lifts to prevent pipe flotation.
 2. Where CLSM is placed in long, open trenches, confine material using bulkheads of sandbags, earth dams, or stiffer concrete at open ends of placement.
- D. Soil preparation:
1. Prior to placement of CLSM, prepare underlying soils as follows:
 - a. Scarify surface to a depth of 8 inches.
 - b. Adjust moisture content to or slightly above the optimum in accordance with ASTM D 155.
 - c. Re-compact scarified surface to a minimum of 95 percent relative density in accordance with ASTM D 1557.

3.02 MEASURING, BATCHING, MIXING AND TRANSPORTING

- A. Measure, batch, mix and transport CLSM in accordance with the requirements of ASTM C 94 and this Section.
- B. Mix until there is uniform distribution of materials.
- C. Discharge mixer completely prior to recharging.
- D. After trial batch testing and mix acceptance, maintain slump during construction within plus or minus 1 inch of the design slump.

3.03 PLACING

- A. Place controlled low strength material by method that preserves the quality of the material in terms of compressive strength and density.
- B. Maintain fluid properties of the mix during placement.
 - 1. At point of placement, provide material that flows easily around, beneath, or through walls, pipes, conduits, or other structures.
 - 2. Do not place CLSM that has partially hardened or that has been contaminated by foreign materials.
 - 3. Handle and place CLSM using methods that minimize segregation of the mix.
 - 4. Deposit mix as near its final position as possible to avoid segregation due to rehandling or flowing.
 - 5. Contain and confine mix while it is fluid. Design containment structures and bracing at walls and forms to withstand lateral pressures of wet mix.
- C. Lifts:
 - 1. Limit lift heights of CLSM placed against structures and other facilities that could be damaged due to the pressure from the CLSM, to 3 feet.
 - 2. Do not place another lift of CLSM until the last lift of CLSM has set and gained sufficient strength to prevent additional lateral load against the forms or structure due to the weight of the next lift of CLSM.
- D. Water conditions:
 - 1. Do not place CLSM in standing or flowing water.
 - 2. Do not permit water to flow over the surface of freshly placed or un-hardened CLSM.
 - 3. Do not submerge CLSM in water within 24 hours after placement.
- E. Manage CLSM bleed water.
 - 1. Grade top surface of CLSM to drain away from the fill.
 - 2. Provide side containment that permits bleed water to drain to a contained management area away from the fill.

3.04 CURING AND PROTECTION

- A. Curing;
 - 1. Prior to and during curing, install barriers to prevent equipment or personnel from falling into or becoming entrapped in CLSM.

- B. Protect CLSM from:
 - 1. Damage from the elements.
 - 2. Damage of any nature during surrounding construction operations.

3.05 FIELD QUALITY CONTROL

- A. Provide quality control over the Work of this Section as specified in Sections 01450 and 01460 and as specified in this Section.
- B. General:
 - 1. Engineer inspection and acceptance required prior to placement.
 - 2. Make provisions for and furnish all material for the test specimens, and provide manual assistance to assist the Owner's Testing Laboratory in preparing said specimens.

3.06 FIELD QUALITY ASSURANCE

- A. Provide quality control over the work of this Section as specified in Sections 01450 and 01460.
- B. Field inspections:
 - 1. Engineer shall provide on-site inspection for the Work of this Section.
 - 2. Advise Engineer of readiness to proceed at least 24 hours prior to each placement of CLSM.
 - 3. Required inspections:
 - a. Engineer will observe the prepared areas. Do not place CLSM until Engineer has observed and accepted preparations.
 - 4. Record of inspections.
- C. Field sampling and testing:
 - 1. During construction, Owner shall provide sampling and testing to determine whether the CLSM, as produced and placed, complies with the requirements specified.
 - a. Make provisions for and furnish material for test specimens. Cooperate by allowing free access for Owner's independent testing firm to sample and test materials. Provide assistance in obtaining and preparing said specimens.
 - 2. Sample CLSM for testing in accordance with ASTM D 5971.
 - 3. Required tests:
 - a. Air content: Prepare sample and test in accordance with ASTM D 6023
 - b. Compressive strength: Prepare and test cylinder specimens in accordance with ASTM D 4832.
 - 1) Prepare 6-inch diameter by 12-inch high specimens for testing.
 - a) Provide one set of specimens for each 150 cubic yards of CLSM placed, but not less than 1 set for each half day's placement.
 - b) Prepare and test not less than 3 cylinders for each set.
 - c) Place CLSM in the molds in accordance with ASTM D 4832. Do not rod or otherwise consolidate the material in the mold.
 - d) In accordance with ASTM D 4832 recommendations for displacing bleed water at the top of the molds and refilling the molds before covering with a lid. Do not use air-tight lids.

- 2) Place the cylinders in a safe location away from construction activities.
 - a) Protect cylinders from bumping and impact.
 - b) Maintain temperature surrounding cylinders between 60 and 80 degrees Fahrenheit until delivery to the laboratory for testing.
 - c) After the first day, surround molds with a high humidity environment by covering with wet burlap, or equivalent highly absorptive material. Maintain saturation of the cover. Do not sprinkle water directly on the cylinders.
- 3) After 4 days, place the cylinders in a protective container for transport to the laboratory for testing.
 - a) Exercise caution in moving and transporting the cylinders since they are fragile and will withstand only minimal bumping, banging, or jolting without damage.
 - b) Transport container may be a box with a Styrofoam or similar lining that will limit jarring and bumping of the cylinders.
- 4) Upon receipt at the testing laboratory, place test cylinders in a moist curing room until dates for testing.
- 5) Do not remove test cylinders from molds until the day that cylinders is to be capped and tested.
- 6) Cap and test for compressive strength in accordance with ASTM D 4832.
 - a) Do not perform initial compression test until the cylinders reach an age of at least 4 days.
 - b) Test 1 cylinder at 7 days and 2 at 28 days.
- 7) Compressive strength of the cylinders tested at 28 days shall be equal to or greater than the minimum required compression strength, but shall not exceed maximum compression strength specified.

3.07 NON-CONFORMING WORK

- A. When testing or observation indicates CLSM with properties outside the specified and accepted range, Engineer will issue instructions regarding disposition of nonconforming materials.
- B. Engineer may:
 1. Reject CLSM represented by those test specimens and require its removal and replacement.
 2. Require modification of the mix design to provide CLSM with the properties specified.
- C. Make such modifications at no additional expense to the Owner and with no adjustment to the schedule.

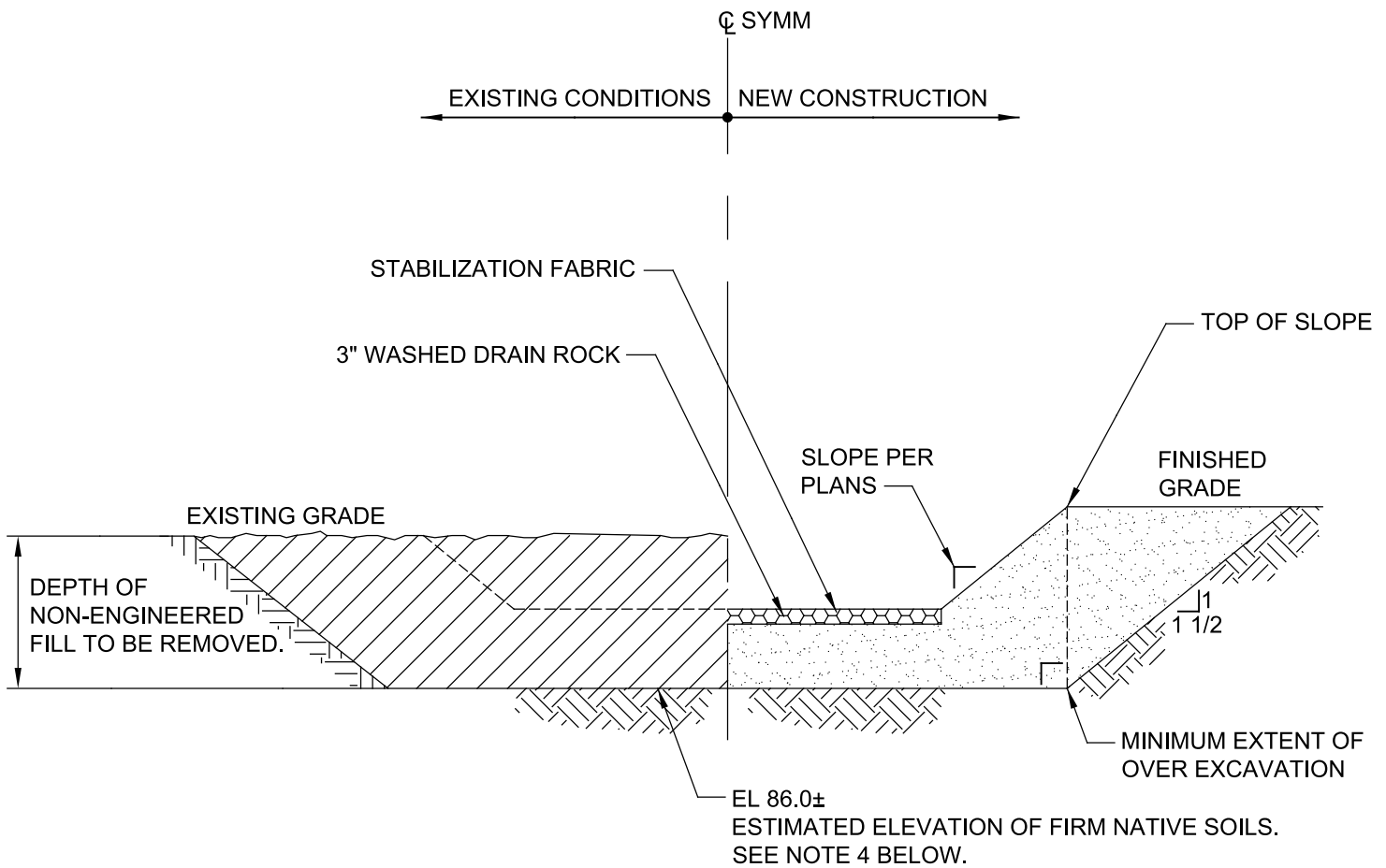
END OF SECTION

[AD2 Addendum No. 2](#)

ATTACHMENT 3

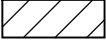
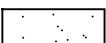
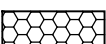
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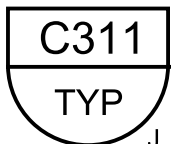
TYPICAL DETAIL C311 - STORMWATER DETENTION BASIN EXCAVATION AND
BACKFILL



SITE SECTION

NOTES:

1.  AREA OF REQUIRED REMOVAL.
2.  AREA OF COMPACTED FILL. PROVIDE SUITABLE NATIVE OR SELECT IMPORTED MATERIALS AS SPECIFIED.
3.  3" WASHED DRAIN ROCK OVER STABILIZATION FABRIC
4. ESTIMATED ELEVATION OF FIRM NATIVE SOILS IS FOR BID PURPOSES ONLY. ACTUAL ELEVATION OF BOTTOM OF OVER-EXCAVATION MAY VARY BASED ON SITE CONDITIONS. OVER-EXCAVATION SHALL EXTEND TO COMPETENT SOILS AS DETERMINED BY THE ENGINEER. ENGINEER SHALL OBSERVE SUBGRADE CONDITIONS BEFORE FILL OR BACKFILL IS PLACED.
5. NON-ENGINEERED FILL IS DEBRIS OF UNKNOWN MAKE-UP INCLUDING WOOD, PLASTIC, CANS, GLASS AND PAPER.



STORMWATER DETENTION BASIN EXCAVATION AND BACKFILL

ATTACHMENT 4

(1 Pages)

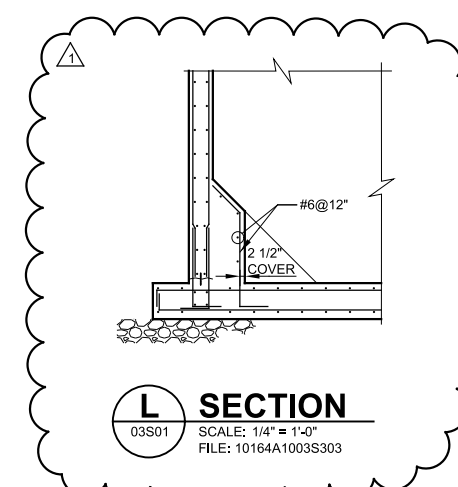
DRAWING NO. 03S01 - RAS PUMP STATION NO. 2 PLANS



ATTACHMENT 5

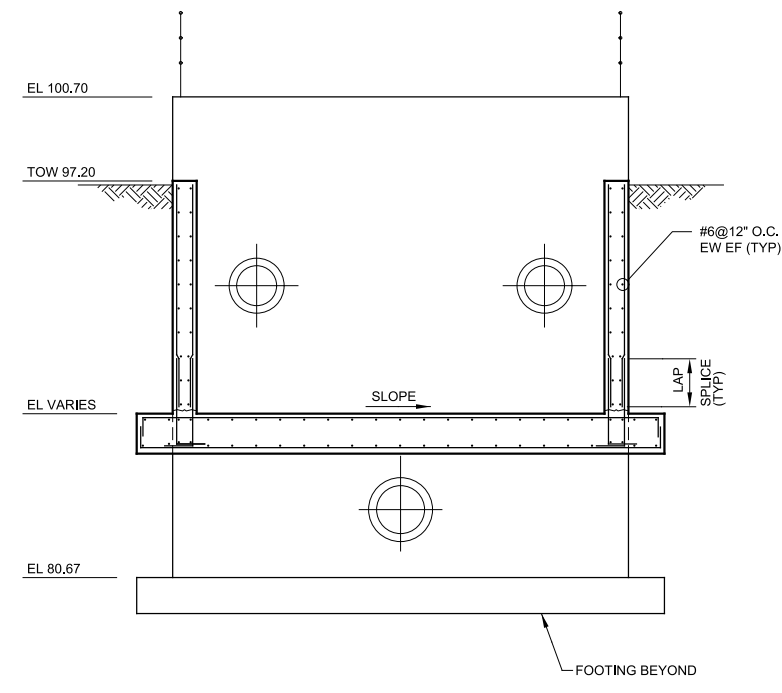
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DRAWING NO. 03S02 - RAS PUMP STATION NO. 2 SECTIONS




KEY NOTES:

- 1 WALL VERTICAL REINFORCEMENT TO TERMINATE 3" FROM TOP OF WALL TO AVOID INTERFERENCE WITH ACCESS HATCH FRAME. CONTINUE WALL HORIZONTAL REINFORCEMENT TO TOP OF WALL AND PROVIDE A MINIMUM 2" COVER.
- 2 OVER EXCAVATE TO REMOVE ALL LANDFILL MATERIAL UNDER AND SURROUNDING PROPOSED FOUNDATION WITHIN 5'-0" ALL AROUND. BACKFILL UNDER STRUCTURE WITH ENGINEERED FILL. REFER TO DETAIL C310/TYP FOR SUBGRADE PREPARATION REQUIREMENTS.




F SECTION
03S01 SCALE: 1/4" = 1'-0"
FILE: 10164A1003S307

G					DESIGNED IKC
					DRAWN AL
					CHECKED MED
		5/25	IKC	CHANGED PER ADDENDUM NO 2	DATE MARCH 2017
	REV	DATE	BY	DESCRIPTION	



STANISLAUS COUNTY, CALIFORNIA

CITY OF TURLOCK
SECONDARY CLARIFIER NO. 5 AND DENITRIFICATION PROJECT
STRUCTURAL
RAS PUMP STATION NO. 2 SECTIONS

<p>VERIFY SCALES</p> <p>BAR IS ONE INCH ON ORIGINAL DRAWING</p> <p>0  1"</p> <p>IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY</p>	<p>JOB NO.</p> <p>10164A.10</p>
	<p>DRAWING NO</p> <p>03S02</p>
	<p>SHEET NO.</p> <p>77 OF 201</p>