ADDENDUM NO. 2 TO CONTRACT DOCUMENTS

Date:	January 18, 2022
Project:	OWASA University Lake Permanganate Facility
Owner:	Orange Water and Sewer Authority
Engineer:	Hazen and Sawyer

To All Bidders:

Contractors submitting Proposals for the above-named Project shall take note of the following changes, additions, deletions, clarifications, etc., in the Contract Documents, which shall become part of and have precedence over anything contrarily shown or described in the Contract Documents, and all such shall be taken into consideration and be included in the Contractor's Bid Proposal.

All other general items, conditions, drawings, and specifications shall remain the same. Please acknowledge the receipt of Addendum No. 2 with the Bid Form.

Refer to the Attached Sheets.

The return receipt requested with this communication will be deemed evidence that the bidder has received this Addendum and has followed the instructions outlined herein. Please sign, date, clearly print company name, and email this sheet back to Hazen and Sawyer at owasaulakeperm@hazenandsawyer.com.

Company Name

Acknowledgement of Receipt

Date



1/18/2022

Melanie Mann, P.E.

HAZEN AND SAWYER

OWASA University Lake Permanganate Facility Project

Addendum No. 2

GENERAL

Pre-Bid Meeting agenda, handouts, slides, and attendance log are provided for reference in Attachment #1 to this addendum.

Pre-Bid Meeting Questions

1. Question: Must bidders submit the entire project manual in hard copy with the bid? Refer to clarification in Addendum #2.

2. Question: Does the Systems Integration allowance in the bid form include sales tax? Response: Refer to System Integrator proposal in project manual.

3. Question: The project manual includes two sets of forms to document good faith efforts for MWBE participation. Must bidders submit both sets of forms? Response: Bidders must fill out both sets of forms for minority business participation and submit with Bid. Forms in Document 00300 – Proposal are OWASA's forms. NC DWI MBE/WBE (DBE) compliance forms are found following Section 00900.

4. Questions: What is the Engineer's estimate of construction cost? $2.2 million.

5. Will the University Lake site be open to the public during construction? Refer to clarification in Addendum #2.

6. Can OWASA share record drawings of the existing 20-inch raw water main installation? Refer to Addendum #1 for record drawings of 20-inch raw water main.

Planholder List is provided for reference in Attachment #2 to this addendum.

SPECIFICATIONS:

Document 00100 - Instructions to Bidders

Article 13.01. DELETE the third sentence, "Do not remove any pages from the bound documents," and REPLACE with the following:

> "Bid forms may be removed from the documents and submitted with the Bid as long as Bid is complete and responsive including all required attachments, acknowledgements, and supporting documentation."

Section 00500 – Agreement

Paragraph 4.04, ADD to the end of the paragraph:

"Starting procurement process by submitting shop drawings to the Engineer is an acceptable means of commencing construction."

Section 01010 - Summary of Work

Paragraph 1.07.A. REPLACE first sentence of this paragraph with:

"The normal time of work for this Contract is limited to 40 hours per week and shall generally be between the hours of 7:00 a.m. and 6:00 p.m., Monday through Friday. Contractor is advised that the University Lake site is open to the public on Saturdays and Sundays starting the first weekend in March and ending on the last weekend of October each year."

Section 01520 – Maintenance of Utility Operations During Construction

Paragraph 1.04.A.1. 20-inch Raw Water Main Location, Marking, and Repair Materials.
REPLACE last sentence of paragraph with:

"Repair materials maintained on site shall include two (2) repair saddles and all required accessories for repair to exterior damage to 20-inch pre-stressed concrete cylinder pipe (PCCP), as manufactured by Thompson Pipe Group or equal."

Section 01550 – Site Access and Storage

Paragraph F.1. ADD new subsection "F. Public Access". ADD Paragraph F.1:

"Contractor is advised that the University Lake site is open to the public on Saturdays and Sundays, starting on the first weekend in March and ending on the last weekend in October each year. Contractor's operations shall not interfere with public access on these days. Contractor shall leave areas of Contractor's storage, operations, and construction protected from access by the public at all times."

Section 15390 – Schedules

Water Treatment Piping Schedule:

For Potable Water (PW) pipe, change field test pressure to 200 psi.

For Raw Water (RW) pipe, change working test pressure to 150 psi and change field test pressure to 200 psi.

REPLACE Chemical Piping Schedule with the following:

CHEMICAL PIPING SCHEDULE

PIPE DESIGNATIONS		MATERIAL	BURIED PIPING		EXPOSED PIPING			DESIGN PRESSURE (PSI)[1]		
			TYPE OF JOINT	CLASS/ DESIGN	TYPE OF JOINT	CLASS/ DESIGN	HEAT TRACE[2]	WORKING	SURGE	FIELD TEST
CCP	CHEMICAL CASING PIPE	PVC	SOCKET	SCH 80 (LONG RADIUS BENDS)	SOCKET/ FLANGED[3]	SCH 80 (LONG RADIUS BENDS)	NO	N/A	N/A	N/A
SP	SODIUM PERMANGANATE AT NEW PERMANGANATE FACILITY[4]	HDPE	FUSION	Per Section 15009	FUSION	per Section 15009	NO	5 psi on suction side of metering pumps, 75 psi on discharge side of metering pumps	25 psi discharge side metering pumps	5 psi on suction side of metering pumps, 100 psi on discharge side of metering pumps
		PVDF (KYNAR)	FUSION	SCH 80	FUSION	SCH 80	NO			
SP	SODIUM PERMANGANATE IN CASING PIPE	PVC (BRAIDED HOSE)	Hose	Rated 150 psi	Hose	Rated 150 psi	NO	75 psi	25 psi discharge side metering pumps	100 psi
SP	SODIUM PERMANGANATE IN RAW WATER PUMP STATION	PVC	SOCKET	SCH 80	SOCKET/ FLANGED (3)	SCH 80	NO	75 psi	25 psi discharge side metering pumps	100 psi

1) Restraint system design pressure shall be equal to the sum of working pressure and surge pressure and shall be used to determine the size, number, material, and dimensions of tabs and threaded-rods for piping specified or shown to have threaded-rods for thrust restraint.
2) Provide heat tracing and insulation as specified in Section 15391 on all exposed outdoor piping.
3) Flanges shall be provided as shown on the drawings or as approved by the Engineer.
4) Includes Tank Fill, Tank Vent, Tank Overflow, Tank Sight Gage Connection, Tank Outlet, Tank Drain, and Metering Pump Suction/Discharge.

Section 15009 – High Density Polyethylene (HPDE) Pipe for Chemical Service

ADD Section 15009 to Division 15 of the specifications, see Attachment #4.

Section 15011 – Polypropylene and Polyvinylidene Fluoride Pipe

Part 2.03 Pipe Configuration. DELETE Paragraphs 2.03.A, B, and C.

Section 15115 – PVC/CPVC Valves

Part 2.01, ADD Paragraph D.

"D. PVC valves in sodium permanganate service shall be by ASAHI/AMERICA, Chemtrol Products Division of NIBCO, IPEX Industrial Thermoplastics, or Hayward Industrial Products."

DRAWINGS:

C7 Demolition Plan. DELETE Note 3 and REPLACE with:

"3. Provide abatement of all lead and asbestos material associated with demolition of this approximately 912 sf one-story structure per specifications. Lead and asbestos inspection report is attached to Contract Documents."

C8 Demolition Plan – Wardens House, Alternate Bid. DELETE Note 6 and REPLACE with:

"6. Provide abatement of all lead and asbestos material associated with demolition of this approximately 2,116 sf one-story structure per specifications. Lead and asbestos inspection report is attached to Contract Documents."

C13 Yard Piping Plan. ADD to the end of Note 3:

"Contractor is advised that for recent installation of duct bank within the University Lake Pump Station security fence rock was found just below grade. Contractor shall assume new electrical duct bank in this area will be installed in rock. Blasting will not be allowed. Excavation will remain unclassified."

C13 Yard Piping Plan. ADD Note 4:

"4. Installation of potable water and fire service pipe, valves, meters, backflow preventers and other accessories shall be in accordance with "OWASA Manual of Standards, Specifications, and Design" dated July 2021 and available online at owasa.org. Selected OWASA Standard Details are included in Appendix G for convenience."

APPENDICES:

Add to the project manual Appendix F – Photo of 20-inch Raw Water Main Installation, in Attachment #3 to this addendum.

Add to the project manual Appendix G - Selected OWASA Standard Details, in Attachment #5 to this addendum.

2512.04 – 4" to 12" Standard Tapping Sleeve and Valve Assembly
2512.07 – Thrust Footing
2515.04 – Standard 2" Meter Vault (3 pages) p275-277
2515.09 – 2 1//2" to 10" RPZ, RPDA Assembly (Indoor)

ATTACHMENTS

Attachment #1:	Pre-Bid Meeting Agenda and Attendance Log
Attachment #2:	Planholder List
Attachment #3:	Appendix F - Photo of 20-inch Raw Water Main Installation
Attachment #4:	Section 15009 - High Density Polyethylene (HDPE) Pipe for Chemical Service
Attachment #5:	Appendix G, Selected Details from OWASA Manual of Standards, Specifications, and Design, July 2021

ATTACHMENT # 1

University Lake Permanganate Facility
ORANGE WATER AND SEWER AUTHORITY
CARRBORO, NORTH CAROLINA
PRE-BID MEETING
DECEMBER 14, 2022 @ 1 PM

1. Introductions

- OWASA – Owner
  - Coleman Olinger, PE – Utilities Engineer
  - Darren Berger – Engineering Associate
  - Johnny Riley – Senior Lake Warden
  - Justin Blankinship – Lake Warden
  - Chris Giesting – Water Supply and Treatment Manager
  - Tiffanie Hawley – WTP Operations Supervisor
- NC DENR
  - Matthew Rushing – Project Manager
- Hazen – Design Engineer and Construction Administration
  - Melanie Mann, PE – Design Engineer / Construction Administrator
  - Adam Miller, PE – Construction Administrator

2. Safety

- Contractor is solely responsible for Safety & Protection - 00700-General Conditions
- Contractor shall follow all OSHA and all applicable industry safety standards.
- Contractor shall comply with the applicable requirements of Owner's safety programs.
- Contractor shall demonstrate via required submittals that all safety concerns applicable to the work have been addressed prior to shutdowns and demolition.

3. Minority Businesses for Participation in OWASA Projects

- Specification Section 00300 – Proposal
- Requirement of OWASA and also of SRF funded projects
- Mandatory Participation Form and Affidavit "A" of good faith efforts be completed and submitted with bid.
- Good Faith Effort Guidelines included in 00300 and SRF Supplement.

4. Project Description (Not all inclusive)

- Removal of existing Maintenance Building
- Construction of Permanganate Facility for indoor storage and feed of 20% sodium permanganate in place of the Maintenance Building

Hazen

- Connection of new permanganate chemical piping to existing raw water piping in University Lake Raw Water Pump Station
- Associated electrical work
- Associated building systems for HVAC, plumbing, and fire suppression
- Associated instruments and controls
- Additive Alternate Bid – Warden's House demolition, if implemented

5. Bid Opening

- January 25th, 2022 at 2 p.m.
  Administrative Offices-OWASA
  400 Jones Ferry Road
  Carrboro, NC 27510
- Bids will be received in the Community Room
- One representative per organization

6. Examination of Site

- May inspect the site today
- Additional site visits by appointment only. Please contact Coleman Olinger, Utilities Engineer at (919) 537-4249 or colinger@owasa.org

7. Destructive Weather Preparation Requirements

- Coordinate work efforts with owner when there are concerns of inclement weather.
- Destructive Weather Preparation Checklist attached herein.

8. COVID Protocols for Contractors

- Must submit a health and safety plan to address job-specific hazards, including measures to prevent spread of COVID-19
- COVID Contractor Requirements attached herein.

9. Coordination with Other Projects

- There will be active construction projects ongoing at the University Lake site which will require coordination during construction.
  - University Lake Dam Repairs, Bid date TBD

10. Interpretation of Contract Documents

- All questions to Hazen and Sawyer attention, owasaulakeperm@hazenandsawyer.com All questions must be emailed.
- Questions should reference the drawing or specification page to help expedite the response.
- Last day for questions: five days prior to bid opening.
- Only questions answered by formal written addenda will be binding.

- Must submit emailed or mailed acknowledgement of all addenda.

11. Bid Security

- Certified Check, Bank Money Order, or Bond in the amount of 5% of the bid.
- Section 00100 - Article 8

12. Contract Time

- Substantial Completion – 330 days
- Final Completion – 365 days

13. Proposal Form

- Submit bid on the form and all other required documents. Do not strike through any wording of the form. Do not remove any pages from the bound documents.
- Total "Bid" Price includes all Lump Sum work, OWASA's System Integrator work, and $25,000 contingency allowance.
- Bid form includes an additive alternate bid for demolition of the Warden's House at the University Lake site.
- Per North Carolina general statutes (GS 143-128) all bidders must identify the following subcontractors within proposal form regardless of subcontract amount:
    - HVAC
    - Plumbing
    - Electrical
    - General
- If the contractor writes a subcontractor in their bid on the identified subcontractor list or the Appendix A MWBE sub list, that is a commitment to work with that sub and they cannot change it without written permission from OWASA. The contractor is permitted to write in self-perform as the response to who is doing the work in the 4 trades, but they cannot change to self-perform after they have identified a sub without OWASA's consent.

14. Submission of Bids

- No bids accepted by OWASA in any other location other than those listed in specification 00100 - Instructions to Bidders.

15. Bids to Remain Open

- 90 days

16. Award of the Contract

- Section 00100 - Instructions to Bidders, Article 19

- Expect Notice of Award in March 2022, NTP April 2022

17. <u>Building Permits</u>

- Shall be obtained by and paid for by the Contractor.

18. <u>Project Funding</u>

- OWASA will fund this project using State Revolving Loan Funds.
- SRF requirements: Davis-Bacon Wage Requirements and American Iron & Steel Requirements, See Special Conditions for SRF Specific MBE/DBE Requirements

19. <u>Sales Tax</u>

- See Section 00100 Instructions to Bidders, Article 22
- The Bidder shall include North Carolina Sales and Use Tax in its Bid.
- Sales tax will be reimbursed to OWASA for items that become a part of or are annexed to building structures based on the documentary evidence supplied by the Contractor to the OWASA.

Orange Water and Sewer Authority
OWASA is Carrboro-Chapel Hill's not-for-profit public service agency
delivering high quality water, wastewater, and reclaimed water services.

Good Faith Effort Guidelines

Note: It is mandatory that the Identification of Minority Participation form and Affidavit "A" Listing of Good Faith Efforts be properly completed as defined in the document specifications and submitted with the Bid (unless the prime contractor intends to perform 100% of the work with Own Workforce and properly executes Affidavit B).

Adequate good faith efforts mean that the bidder took all necessary and reasonable steps to achieve the goal which, by their scope, intensity, and appropriateness, could reasonably be expected to obtain sufficient MBE/WBE participation. Adequate good faith efforts also mean that the bidder actively and aggressively sought MBE/WBE participation. Mere *pro forma* efforts are not considered good faith efforts.

OWASA will consider the quality, quantity, and intensity of the different kinds of efforts a bidder has made.

Listed below are examples of the types of actions a bidder will take in making a good faith effort to meet the goals. This list is not intended to be exclusive or exhaustive, nor is it intended to be a mandatory checklist.

(A) Soliciting through all reasonable and available means (e.g. attendance at pre-bid meetings, advertising, written notices, use of verifiable electronic means) the interest of all certified MBEs/WBEs who have the capability to perform the work of the contract. **The bidder must solicit this interest within at least 10 days prior to bid opening** to allow the MBEs/WBEs to respond to the solicitation. The bidder must determine with certainty if the MBEs/WBEs are interested by taking appropriate steps to follow up initial solicitations.

(B) Selecting portions of the work to be performed by MBEs/WBEs in order to increase the likelihood that the MBE and WBE goals will be achieved.

(1) Where appropriate, break out contract work items into economically feasible units to facilitate MBE/WBE participation, even when the prime contractor might otherwise prefer to perform these work items with its own forces.

(1) Negotiate with subcontractors to assume part of the responsibility to meet the contract MBE/WBE goals when the work to be sublet includes potential for MBE/WBE participation (2nd and 3rd tier subcontractors).

(C) Providing interested MBEs/WBEs with adequate information about the plans, specifications, and requirements of the contract in a timely manner to assist them in responding to a solicitation.

(D) (1) Negotiating in good faith with interested MBEs/WBEs. It is the bidder's responsibility to make a portion of the work available to MBE/WBE subcontractors and suppliers and to select those portions of the work or material needs consistent with the available MBE/WBE subcontractors and suppliers, so as to facilitate MBE/WBE participation. Evidence of such negotiation includes the names, addresses, and telephone numbers of MBEs/WBEs that were considered; a description of the information provided regarding the plans and specifications for the work selected for subcontracting; and evidence as

to why additional agreements could not be reached for MBEs/WBEs to perform the work.

(2) A bidder using good business judgment would consider a number of factors in negotiating with subcontractors, including MBE/WBE subcontractors, and would take a firm's price and capabilities as well as contract goals into consideration. However, the fact that there may be some additional costs involved in finding and using MBEs/WBEs is not in itself sufficient reason for a bidder's failure to meet the contract MBE or WBE goals, as long as such costs are reasonable. **Also, the ability or desire of a prime contractor to perform the work of a contract with its own organization does not relieve the bidder of the responsibility to make good faith efforts. Bidding contractors are not, however, required to accept higher quotes from MBEs/WBEs if the price difference is excessive or unreasonable.**

(E) Not rejecting MBEs/WBEs as being unqualified without sound reasons based on a thorough investigation of their capabilities. The bidder's standing within its industry, membership in specific groups, organizations, or associates and political or social affiliations (for example, union vs. non-union employee status) are not legitimate causes for the rejection or non-solicitation of bids in the bidder's efforts to meet the project goal. **Any rejection of a minority business based on lack of qualification should have the reasons documented in writing.**

(F) Making efforts to assist interested MBEs/WBEs in obtaining bonding, lines of credit, or insurance as required by the recipient or bidder.

(G) Making efforts to assist interested MBEs/WBEs in obtaining necessary equipment, supplies, materials, or related assistance or services.

(H) Effectively using the services of available minority/women community organizations; minority/women contractors' groups; Federal, State, and local minority/women business assistance offices; and other organizations as allowed on a case-by-case basis to provide assistance in the recruitment and placement of MBEs/WBEs.

(I) Any other evidence that the bidder submits which shows that the bidder has made reasonable good faith efforts to meet the MBE and WBE goal.

In addition, OWASA may take into account the following:

(1) Whether the bidder's documentation reflects a clear and realistic plan for achieving the MBE and WBE goals.

(2) The bidders' past performance in meeting the MBE and WBE goals.

(3) The performance of other bidders in meeting the MBE and WBE goals. For example, when the apparent successful bidder fails to meet the goals, but others meet it, you may reasonably raise the question of whether, with additional reasonable efforts the apparent successful bidder could have met the goals. If the apparent successful bidder fails to meet the MBE and WBE goals, but meets or exceeds the average MBE and WBE participation obtained by other bidders, OWASA may view this, in conjunction with other factors, as evidence of the apparent successful bidder having made a good faith effort.

CIP Manager will review this spreadsheet for completeness on the 1st of the month from June through December, and at each of the various planning modes when Destructive Weather protocol has been implemented.

DESTRUCTIVE WEATHER CHECKLIST FOR CIP

Pre-Planning (OWASA PM)	Review this checklist with construction team at pre-construction meeting
	Review this checklist with construction team at start of hurricane season
	Inspect the site monthly during hurricane season to identify trash, debris, and any construction equipment or materials that are no longer needed and should be removed by the contractor
	Confirm emergency contact info above and on next spreadsheet tab at start of hurricane season
72-hour Planning Mode (OWASA PM)	Inform construction team (typically: engineering project manager, construction observer, prime contractor project manager and superintendent) that destructive weather is expected within 72 hours
	Review this checklist with construction team
	Visit site and document pre-event site conditions
	Convey to contractor the expectations for actions to be taken for 48-hour Planning Mode
	If sewer bypass is expected to continue through potential destructive weather, ensure that bypass information is entered into GIS, maps are prepared and distributed per protocol, and arrange for onsite meeting with D&C Manager and/or Assistant Manager.
	Confirm emergency contact info above and on next spreadsheet tab
	Verify once contractor has completed all 72-hour Planning Mode actions
72-hour Planning Mode (Contractor)	Continue with normal construction operations but with added diligence to regular daily housekeeping, such as consolidation of rubbish and construction materials.
	Communicate to personnel / subcontractors that destructive weather is expected within 72 hrs.
	Ensure that 48-hr Planning Mode actions can be quickly met should timing of event accelerate
	Ensure trailers are properly anchored (including conex boxes).
48-hour Planning Mode (OWASA PM)	Monitor weather forecasts to assess the possibility/timing that 24-hour planning mode will be set
	Visit job site to determine what actions need to be taken if 24-hour planning mode is set.
	Notify contractor that immediate action may be required should the 24-hour planning mode be set
	If 24-hour planning mode may be enacted on a weekend/holiday, confirm that the contractor will be required to respond during daylight hours (whether Saturday or Sunday) to immediately meet all requirements for that condition.
	Verify once contractor has completed all 48-hour Planning Mode actions
48-hour Planning Mode (Contractor)	Normal construction operations may continue, but active preparation of job sites must begin.
	Communicate to personnel / subcontractors that destructive weather is expected within 48 hrs.
	Confirm to OWASA PM that the 24-hour actions can be quickly met, if required (i.e., should timing accelerate), including if 24-hour planning mode falls on weekend/holiday.

CIP Manager will review this spreadsheet for completeness on the 1st of the month from June through December, and at each of the various planning modes when Destructive Weather protocol has been implemented.

24-hour Planning Mode (OWASA PM)	Instruct contractor to report to job site at first daylight to take the actions below
	Inspect active job sites at 1st daylight to ensure that requirements for this condition have been met.
	Email CIP Manager to confirm that 24-hr planning mode requirements have been met.
24-hour Planning Mode (Contractor)	Interrupt construction operations and shift priority to preparing the site for destructive weather.
	Communicate to personnel and subcontractors that destructive weather is expected within 24 hours and these specific action items are required.
	Conduct all actions with idea that the job site may have to be evacuated within hours.
	Remove all missile hazards from the site.
	Securely close all building openings.
	Disconnect all temporary power.
	Remove or secure all equipment
	Remove or firmly secure (by banding, cables, or rope) all bulk materials.
	Firmly secure all scaffolding. Remove all planking.
	Contractor shall not secure the job site for the day until the above requirements have been met.

12-hour Planning Mode	All outside work on OWASA job sites will have been secured. Construction team will closely monitor local media to stay abreast of weather developments.

Destructive weather has passed (OWASA PM)	Coordinate with contractors/consultants to visit each active job site for damage assessment
	Document damage with photographs
	Email CIP Manager with damage assessment summary and site-specific recovery plans.

Orange Water and Sewer Authority

OWASA is Carrboro-Chapel Hill's not-for-profit public service agency delivering high quality water, wastewater, and reclaimed water services.

COVID-19 Safety Measures at OWASA facilities and job sites

The term 'contractor' below includes all contractors, technicians, consultants, vendors and other hired visitors (as distinguished from OWASA staff or members of the public) working at OWASA facilities.

*It is the responsibility of the OWASA staff member that hires a contractor to review **Part 2** of this form with the appropriate Department manager for the site, and to provide this form to the contractor.*

It is the responsibility of a contractor to communicate safety requirements to their subcontractors.

Form last updated August 2021.

Issued to (contractor): xxx
Issued by: xxx
Issue date: xxx
Expected duration of work: xxx
Expected locations of work: xxx

Part 1: Minimum requirements for OWASA facilities and work sites:

- **Stay away if sick:** contractors must stay away from OWASA staff and facilities if exhibiting COVID-19 symptoms or have received a positive COVID-19 test result within 14 days prior.
- **Do not enter buildings:** contractors must not enter an OWASA building, including for use of restrooms, unless explicitly authorized by the appropriate OWASA Department manager.
- **Face coverings:**
  - contractors must use masks per OWASA guidelines whenever inside buildings (if authorized - see above), and whenever riding in vehicles with two or more people;
  - contractors are encouraged to use masks in outdoor settings if 6 feet of distance cannot be maintained or if OWASA staff have masks on.
- **Social distancing:** maintaining personal space of at least 6 feet is strongly encouraged.
- **Communication:** must be in regular communication with designated OWASA staff as to locations and activities of work. Contractors must have a means of daily tracking job-related personnel should there be a need for contact tracing.
- **Duty to Report:** Upon learning of an infection, the contractor must immediately notify the appropriate OWASA Department manager, while maintaining confidentiality of the infected worker.
- Contractors for longer term projects (generally longer than three weeks) must submit a health and safety plan to address job-specific hazards, including measures to prevent spread of COVID-19. The plan must be reviewed by the OWASA staff member responsible for the hiring and the appropriate Department manager for compliance with the applicable requirements of OWASA's safety programs, including these COVID-19 safety measures.

(See reverse for Part 2)

Part 2: Additional job-specific requirements, if applicable:

- Cleaning/disinfection requirements: N/A
- Specific communication requirements: N/A
    - Advance / recurring email:
    - Sign-in / Sign-out:
- Other requirements: N/A

All OWASA staff have the authority and responsibility to call a "Safety Timeout" and report violations of safety protocols by contractors to their supervisor.

OWASA reserves the right to stop a project if safety precautions are not being followed. Depending on the situation, negligence in following these safety protocols could result in termination of the contract.

Thank you for your attention to these guidelines as we all work to protect each other and the public while maintaining critical services.

Hazen and Sawyer, P.C.
4011 WestChase Blvd.
Raleigh, NC 27607
919-833-7152
Fax: 919-833-1828

Hazen

Plan Holders List
H&S Project No. 32258-014
OWASA University Lake Permanganate Facility
Pre- Bid December 14th,2021 1:00PM (Not Mandatory)
Bid Date January 25th, 2022, 2:00 PM

1. Construction Connect	Logan.Hinton@constructconnect.com
2. Dodge Data Analytics	Milica.Yurong@construction.com
3. Bolton Construction	ConstructionAA@boltonRDU.com
4. Dellinger Inc.	marie@dellinger-inc.com
5. Carolina Civilworks Inc.	jshaw@carolinacivilworks.com
6. Turner Murphy Co. Inc.	bthomas@turnermurphy.com
7. Bar Construction Company Inc.	kbryant@barconstruction.com
8. Muter Construction	djones@muterconstruction.com
9. Harper General Contractors	JHaltiwagner@harperGC.com
10. WGK Construction	kdrumheller@wgkconstruction.com
11. Laughlin Sutton Construction	lancepollock@laughlinsutton.com

Hazen



OWASA University Lake Permanganate Facility Pre-Bid Meeting

December 14, 2021

Site Overview/ Contractor Laydown Area/ Alternate Bid

University Lake Permanganate Facility Site Overview



UNC NURSERY/ LAYDOWN AREA

WARDEN'S HOUSE – ALT BID

UNC RESEARCH LAB

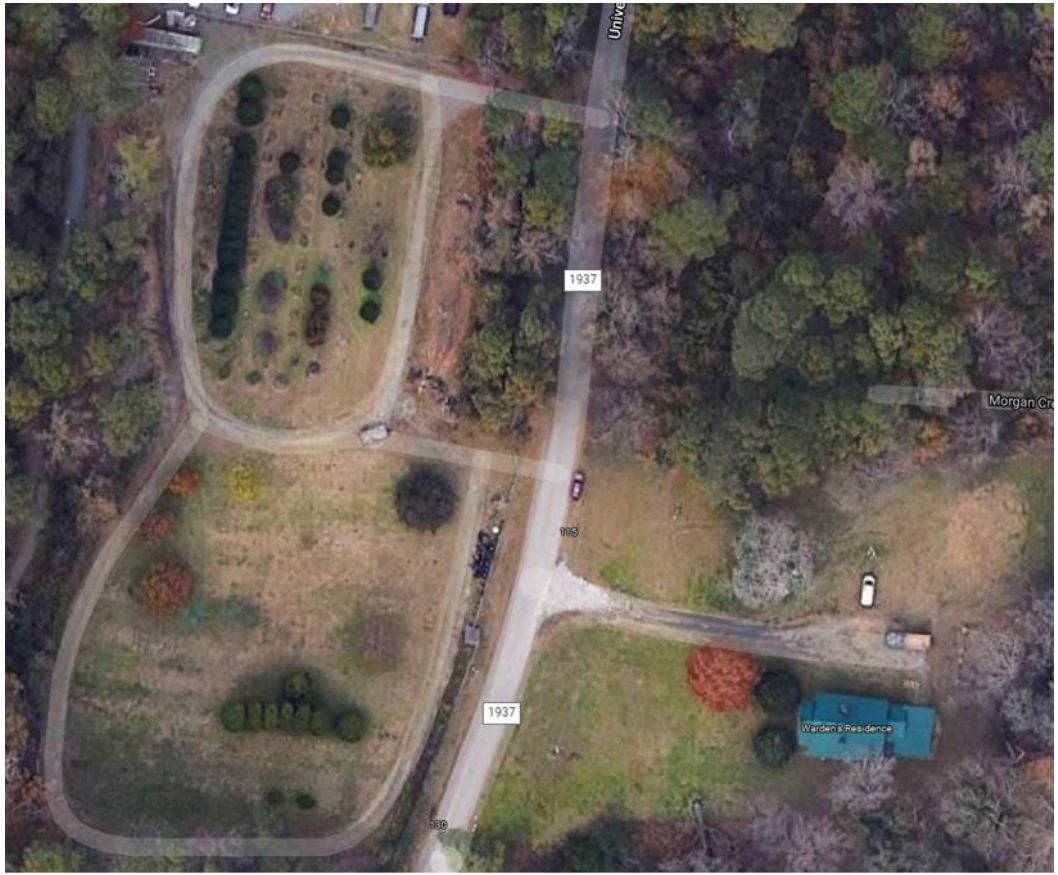
MAINTENANCE BUILDING

RAW WATER PUMP STATION

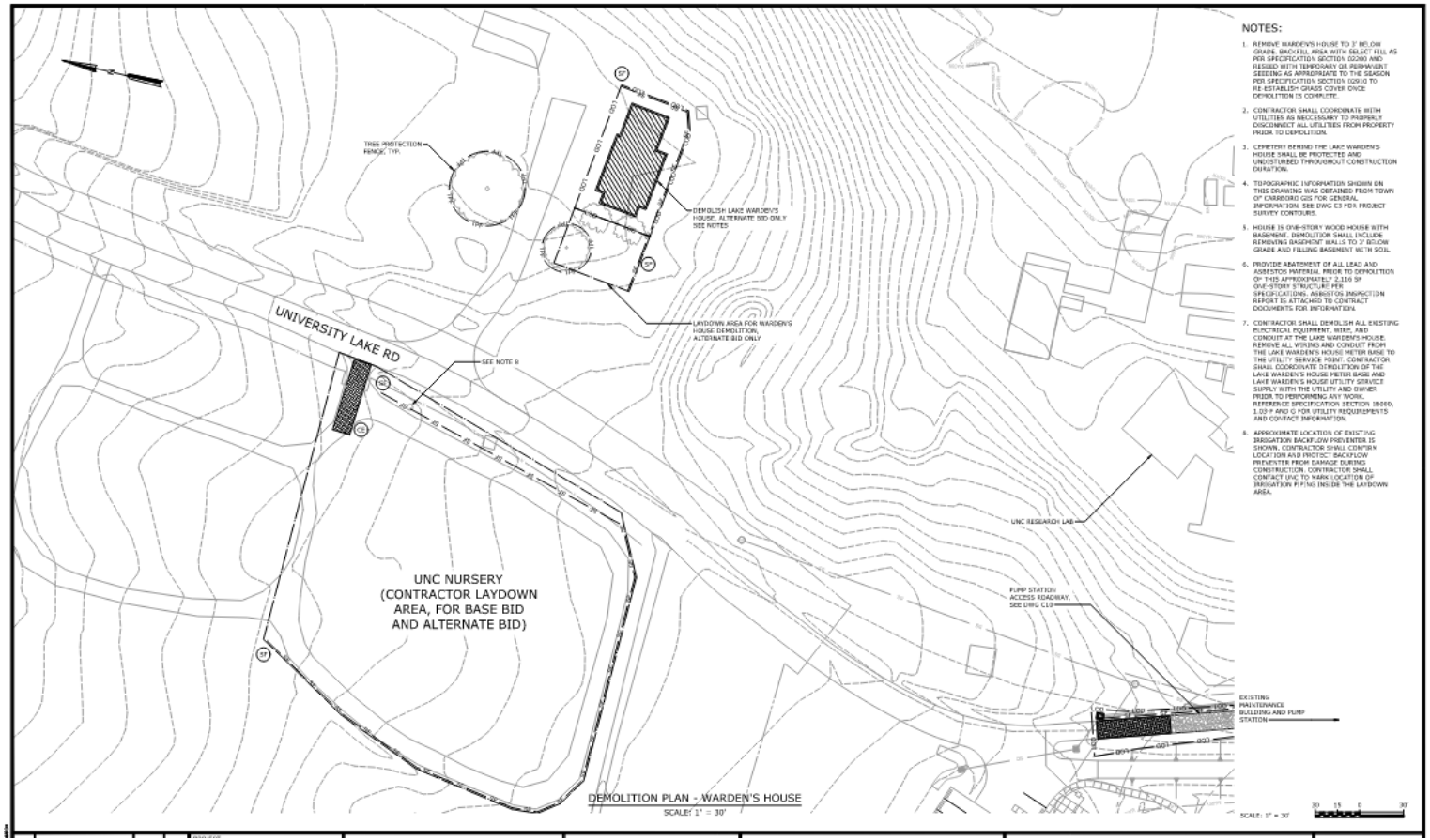
Contractor Laydown Area and Additive Alternate Bid

Part of UNC-owned plant nursery area is designated for Contractor laydown area

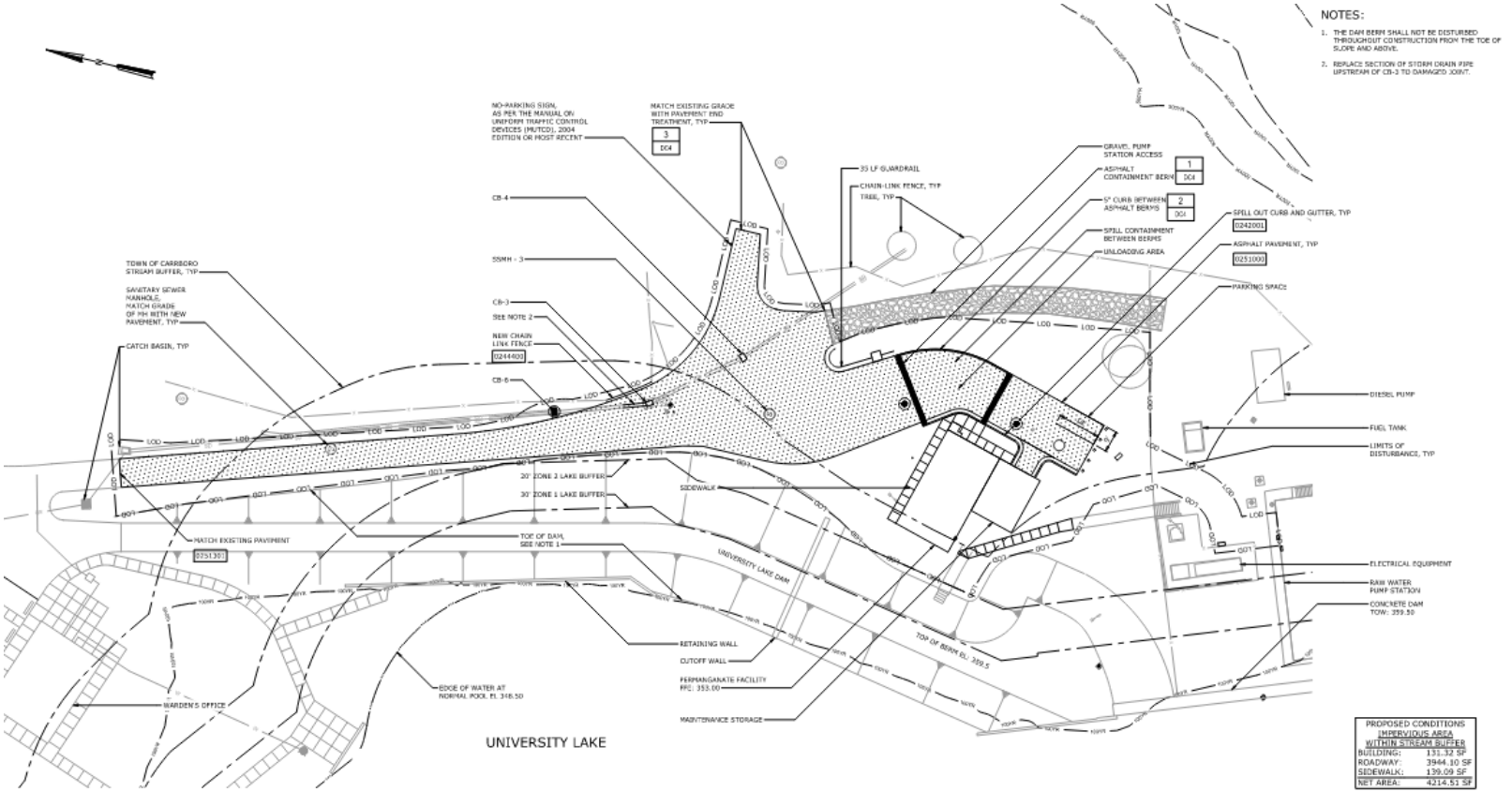
Alternate bid includes demolition of Warden's House



Contractor Laydown Area and Additive Alternate Bid



Permanganate Facility Site Plan



Firm Price Quote

Firm Price Quote

BID FORM

NOTE TO BIDDERS: DO NOT REMOVE THIS BID FORM FROM THE CONTRACT DOCUMENTS

LUMP SUM SINGLE PRIME CONTRACT

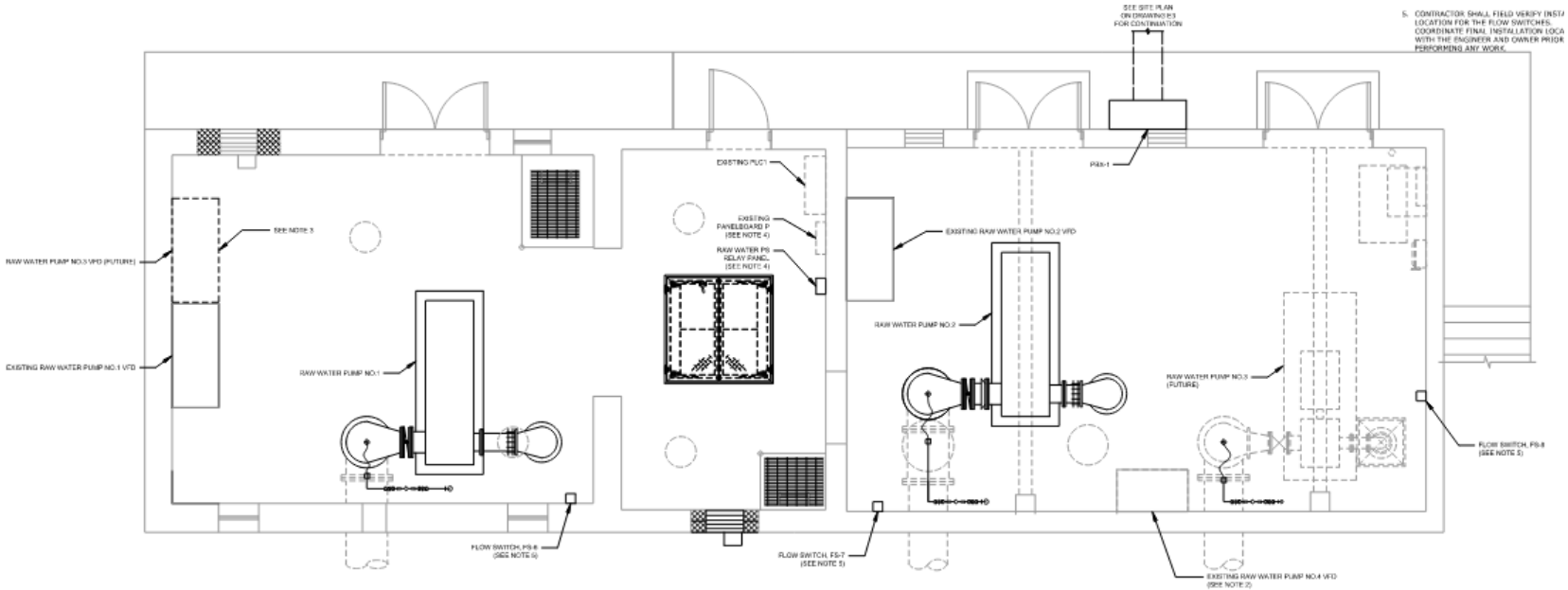
UNIVERSITY LAKE PERMANGANATE FACILITY

ITEM NO.	DESCRIPTION	UNIT	BID PRICE
1	BASE BID	LS	
2	SYSTEM INTEGRATION	LS	**$165,519**
3	CONTINGENCY ALLOWANCE	LS	**$25,000**
4	TOTAL BASE BID (SUM OF ITEMS 1, 2, AND 3)	LS	

CITI, LLC System Integrator

Raw Water Pump Station items include (not a complete list):

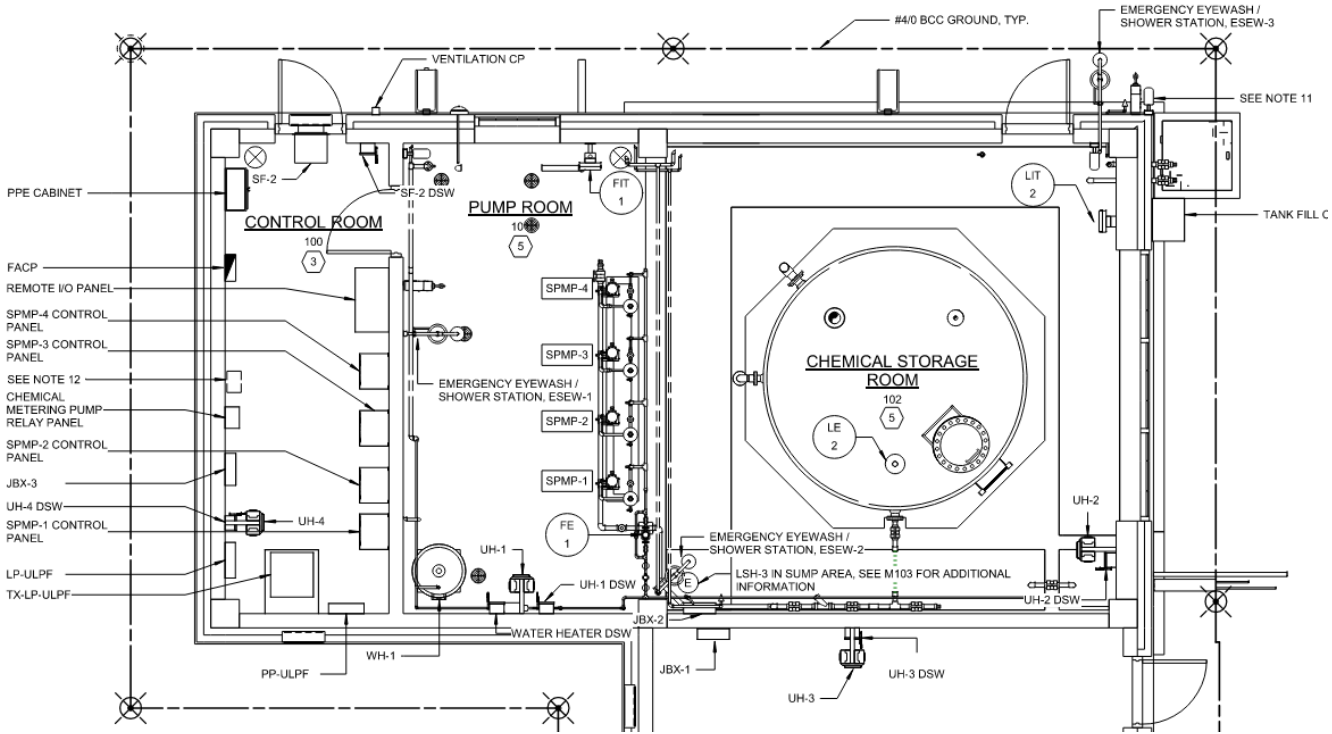
- PLC-1 modifications, Raw Water PS Relay Panel, instruments



CITI, LLC System Integrator

Permanganate Facility and WTP items include (not a complete list):

- RIO panel, Chemical Pumps Relay Panel, Chemical fill station, instruments
- SCADA configuration
- Quote, scope in Appendix A

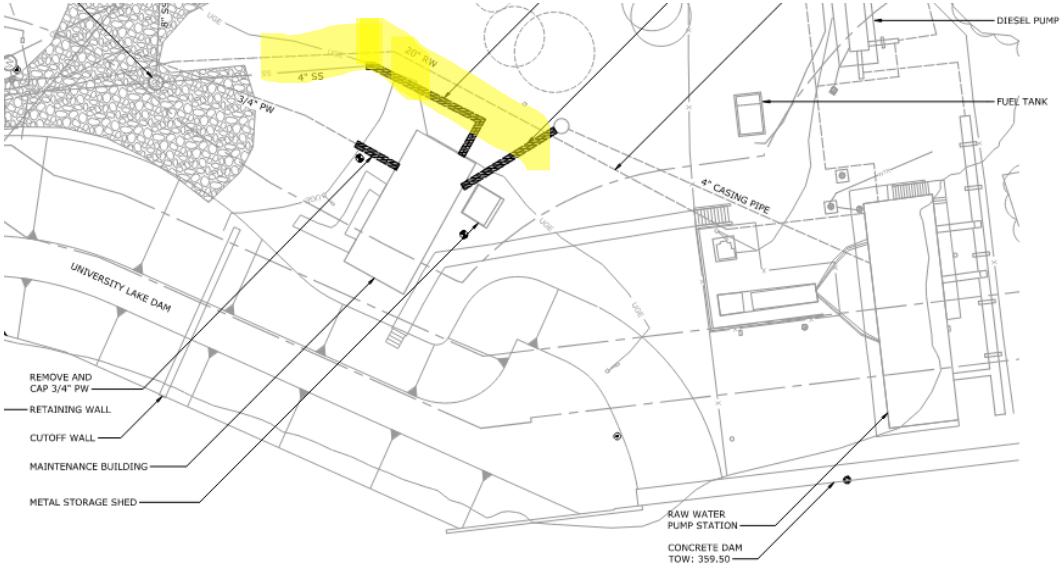


Sequence of Operations

Raw Water Main - Locate Prior to Excavation

See Section 01520

- 20-inch RW shown based on record drawings
- Contractor must locate exactly existing 20-inch RW prior to excavation
- 20-inch RW out of service during exploration
- Contractor keep 20-inch PCCP repair materials on site



University Lake Permanganate Facility
ORANGE WATER AND SEWER AUTHORITY
CARRBORO, NORTH CAROLINA
PRE-BID MEETING
DECEMBER 14, 2021 @ 1 PM

Pre-Bid Conference Attendance

Name	Firm	Email
Jake Bowman	Mutar	jbowman@Mutarcontractors.com
Kyle Drumheller	WGK Construction	kdrumheller@wgkconstruction.com
STEVE WORSHAM	HARPER GC	sworsham@harpergc.com
Lanie Pollock	Laughlin Sutton	lanie.pollock@laughlinsutton.com
Austin Riccio	BAR Construction	Bids@BARconstruction.com
DEAN KITE	DELLINGER INC	deank@dellinger-inc.com
JOHN GILBERT III	GILBERT ENG'G CO	jgilbert3@gilbertengineering.com

Hazen

ATTACHMENT # 2

Hazen and Sawyer, P.C.
4011 WestChase Blvd.
Raleigh, NC 27607
919-833-7152
Fax: 919-833-1828

Hazen

Plan Holders List
H&S Project No. 32258-014
OWASA University Lake Permanganate Facility
Pre- Bid December 14th,2021 1:00PM (Not Mandatory)
Bid Date January 25th, 2022, 2:00 PM

1. Construction Connect	Logan.Hinton@constructconnect.com
2. Dodge Data Analytics	Milica.Yurong@construction.com
3. Bolton Construction	ConstructionAA@boltonRDU.com
4. Dellinger Inc.	marie@dellinger-inc.com
5. Carolina Civilworks Inc.	jshaw@carolinacivilworks.com
6. Turner Murphy Co. Inc.	bthomas@turnermurphy.com
7. Bar Construction Company Inc.	kbryant@barconstruction.com
8. Muter Construction	djones@muterconstruction.com
9. Harper General Contractors	JHaltiwagner@harperGC.com
10. WGK Construction	kdrumheller@wgkconstruction.com
11. Laughlin Sutton Construction	lancepollock@laughlinsutton.com
12. Turner Murphy Company	Bthomas@turmermurphy.com
13. CITI. LLC	grant@citi-llc.com
14. Lopez Construction Services LLC.	mlopez@estamade.com

ATTACHMENT # 3

OWASA University Lake Permanganate Facility

OWASA CIP #: 270-28

SRF # WIF 1983

Appendix F

Photo of 20-inch Raw Water Main installation



ATTACHMENT # 4

SECTION 15009

HIGH DENSITY POLYETHYLENE (HDPE) PIPE FOR CHEMICAL SERVICE

PART 1 – GENERAL

1.01 THE REQUIREMENT

A. Reference Section 15000 – Basic Mechanical Requirements.

PART 2 – PRODUCTS

2.01 HDPE PIPE FOR GENERAL CHEMICAL SERVICE (NOT FOR SODIUM PERMANGANATE)

A. All material shall be manufactured from a PE 4710 resin listed with the Plastic Pipe Institute (PPI) as TR-4. The resin material shall meet the specifications of ASTM D 3350 with a minimum cell classification of 445574C. HDPE pipe and fittings shall contain no recycled compounds except those generated in the manufacturer's own plant from resin of the same specification from the same raw material. HDPE products shall be homogeneous throughout and free of visible cracks, holes, foreign inclusions, voids, or other injurious defects.

B. Pipe shall be made of HDPE material with a minimum material designation code of PE 4710 and with a minimum Cell Classification as noted in 2.01.A. Pipe shall have a Dimension Ratio of SDR11. HDPE pipe shall be listed as meeting NSF-61. Reference standards shall be as follows:

- For pipe sizes 3" and larger, ASTM F 714
- For pipe sizes smaller than 3", ASTM D 3035
- For pipe sizes 4" and larger, AWWA C906
- For pipe sizes ½" to 3", AWWA C901

C. HDPE pipe shall be marked either continuously or on intervals not to exceed five (5) feet by indirect printing with the following information:

1. Name and/or trademark of the manufacturer
2. Nominal pipe size
3. Dimension ratio
4. The letters PE followed by the polyethylene grade, followed by the Hydrostatic Design Basis
5. Manufacturing Standard Reference

01-14-2021

6. Production Code from which time and date of manufacture can be determined

D. Fittings shall be made of HDPE material with a minimum material designation code of PE 4710 and with a minimum Cell Classification as noted in 2.01.A. Fittings shall have a minimum pressure rating equal to or greater than the pipe to which they are joined unless otherwise specified. All fittings shall meet the requirements of AWWA C901 or C906.

1. Molded fittings shall comply with the requirements of ASTM D 3261.

2. All fabricated elbows, tees, reducing tees and end caps shall be produced and meet the requirements of ASTM F 2206. Each fitting shall be marked per ASTM F 2206 Section 10 including the nominal size and fitting EDR, which will meet or exceed the pipe DR identified for the project. The butt fusion outlets of fabricated fittings shall be machined to the same SDR as the system piping to which they are to be fused.

3. Socket fittings shall meet ASTM D 2683.

E. HDPE pipes and fittings shall be joined one to another by thermal butt fusion, saddle fusion, or socket fusion in accordance with procedures recommended by the pipe manufacturer and as outlined in ASTM F 2620. The manufacturer shall provide fusion training services to the Contractor upon request.

1. Butt fusion joining of unlike SDR’s shall not be permitted. Transition from one SDR to another shall be accomplished by the use of mechanical couplings or a transition nipple, which is a short length of the heavier SDR pipe with one end machined to the lighter SDR.

F. Mechanical connections of polyethylene pipe to systems or fittings of other materials, or to unlike SDR, shall be by means of flanged connections or mechanical compression couplings designed for joining HDPE to HDPE or HDPE to another piping material.

1. Flanged connections shall consist of flange adapters and back-up rings and shall have a minimum pressure rating equal to or greater than the system piping. Flanged adapters shall be made to ASTM D 3261, or if machined, to ASTM F 2206. Flanges and MJ adapters shall be fused onto the pipe. Flange adapters shall meet the dimensional and material requirements of ASTM F 2880. Metallic back-up rings (Van-Stone style lap joint flanges) shall have a radius on the inside diameter of the bore so as to be compatible with HDPE flanges. Back up rings shall have bolt pattern that will mate with AWWA C207 Class D (or B or E), ASME/ANSI B 16.5 Class 150, ASME/ANSI B 16.1 Class 125, or ASME/ANSI B16.47 Series A.

a. Gaskets of reinforced rubber or other elastomer that is completely compatible with the specified chemical in the pipe shall be required when

joining to HDPE or non-HDPE materials. Flanged HDPE joints shall be gasketed at all service pressures.

b. Flange assemblies shall be assembled and torqued according to PPI TN-38, “Bolt Torque for Polyethylene Flanged Joints.”

c. HDPE pipe adjacent to flanged joints and the joints themselves shall be rigidly supported at a distance of one (1) foot or one pipe diameter, whichever is greater, beyond the flange assembly.

2. Mechanical compression couplings, or mechanical transition fittings, shall be designed for use and compatible with HDPE pipe. Mechanical couplings shall have a pressure rating equal to or greater than the pipe.

a. Couplings without self-restraining capabilities (integrated serrated teeth or grippers) shall include a plan for external restraint or isolation from pipeline generated forces.

b. When mechanical compression couplings are used, HDPE pipes shall be reinforced by a stiffener in the pipe bore. Stiffeners, or inserts, shall be properly sized from the size and SDR of pipe being joined. The pipe stiffeners shall be formed of PVC, 304 stainless steel, or 316 stainless steel, and shall be completely compatible with the specified chemical.

c. Mechanical couplings shall be installed in accordance with the manufacturer’s recommended procedure.

d. Mechanical transition fittings shall be POLY-CAM Series 735 or Engineer approved equal.

G. Tests for compliance with this Specification shall be made as specified herein and in accordance with the applicable ASTM Specification. A certificate of compliance and a report of each test shall be furnished by the manufacturer for all material furnished under this Specification. HDPE pipe and fittings shall be rejected for failure to meet the requirements of this Specification.

H. For HDPE pipe to be installed inside casing pipe for buried service, pipe shall be continuous from the source to the discharge unless shown otherwise on the Drawings. Joints shall occur only in handholes or manholes. Joints shall be fused if space allows for the fusion equipment in the handhole/manhole; otherwise, mechanical couplings shall be provided at the joints.

I. Wetted materials shall be completely resistant to corrosion by the specified chemicals. Pipe manufacturer shall guarantee that the material is suitable for the intended service.

J. All HDPE pipe, fittings (other than mechanical compression couplings), and fusion equipment shall be provided by ISCO Industries; Performance Pipe, a division of Chevron Phillips Chemical Company; Flying W Plastics; or equal.

2.02 HDPE PIPE FOR SODIUM PERMANGANATE SERVICE

A. Pipe and fittings shall be made from virgin resin produced by one supplier. The resin shall be PE 100-RC, Borsafe HE3490-LS-H black high density polyethylene material according to ASTM D 3350 with a minimum cell classification of PE445584C. All pipe and fitting components shall meet the material requirements according to PAS 1075. Pipe and fittings shall be certified to NSF 61. Chemical resistance shall be verified and submitted for approval.

B. All pipe through 12" shall be extruded from PE 100-RC resin as outlined above. All piping shall be produced based on an SDR system and calculated utilizing a hydrostatic design basis according to ASTM D 2837. Pipe shall be SDR 7 with a pressure rating of 230 psi at 68° F for sizes ½"– 12" or SDR 11 with a pressure rating of 150 psi at 68° F for sizes ½" – 12".

C. All fittings shall be injection molded. Fittings shall have same or greater wall thickness and pressure rating as the pipe. Standard fittings shall be socket fusion in ½" – 4" and electrofusion for ½" through 12".

D. All valve and accessory component materials shall be verified for the application by the manufacturer and submitted for approval. Acceptable connections shall be true union o-ring seal, molded fusion, or flanged. No solvent cement or threaded connections shall be allowed. Fusion end connectors shall be of the same material as the piping system.

E. Joining equipment shall be socket fusion for ½" – 4", and/or butt fusion for ½" – 12" and/or electrofusion ½" – 12".

   1. Joining equipment shall be provided by pipe manufacturer.

   2. Installers shall be pre-qualified through training on welding technique according to ASTM D-2657.

   3. Manufacturer shall provide on-site training in the assembly and installation of the chemical piping system.

   4. Joining equipment shall be turned over to Owner after installation.

F. Pipe shall be completed per drawing layout with all pipe and valve supports in place. Pipe, valves and equipment shall be supported as specified, without any concentrated loads on the system. Pipe shall be in good condition, void of any cracks, gouges or deformation.

1. Pipe flanges shall be properly aligned. All flange bolts should be checked for correct torque by the installer.

2. All joints should be reviewed for appropriate welding technique.

3. Socket welds should have two beads on the end of the fitting and on the outside of the pipe in contact. Refer to manufacturer's instructions for weld bead inspection.

4. Butt-joints should have two beads 360° around the joint. Refer to manufacturer's instructions for specific weld bead inspection.

G. Pipe shall be Asahi/America Chem Proline or equal.

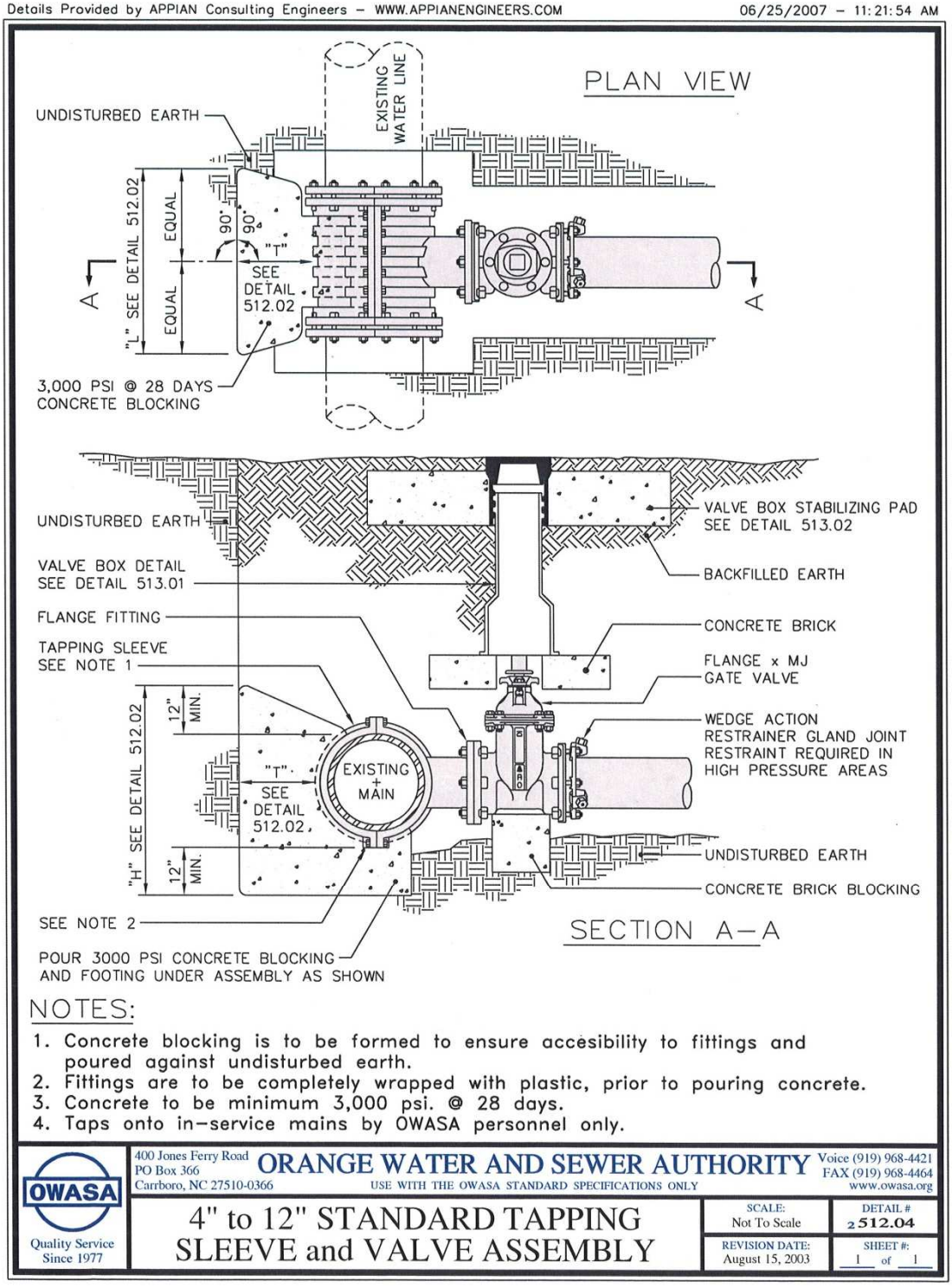
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ATTACHMENT # 5

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NOTES:

1. Concrete blocking is to be formed to ensure accesibility to fittings and poured against undisturbed earth.
2. Fittings are to be completely wrapped with plastic, prior to pouring concrete.
3. Concrete to be minimum 3,000 psi. @ 28 days.
4. Taps onto in–service mains by OWASA personnel only.

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Quality Service Since 1977

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ORANGE WATER AND SEWER AUTHORITY

USE WITH THE OWASA STANDARD SPECIFICATIONS ONLY

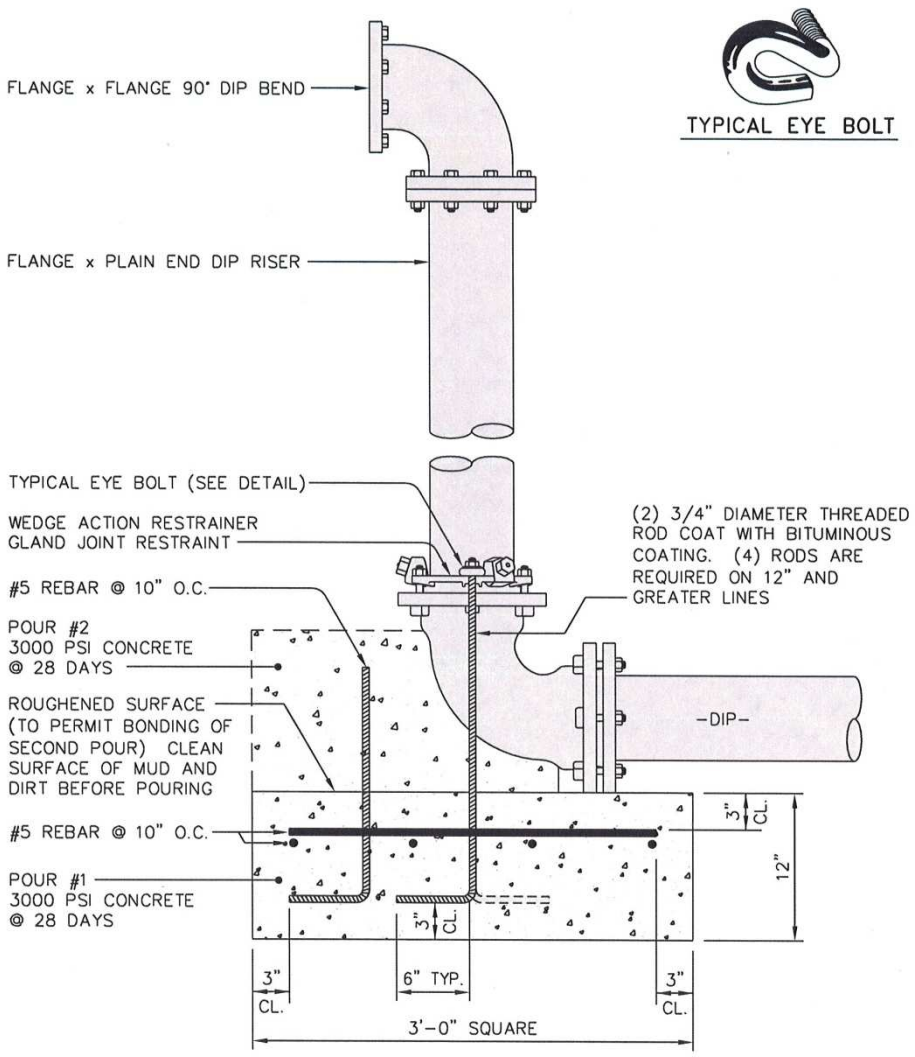
Voice (919) 968-4421
FAX (919) 968-4464
www.owasa.org

4" to 12" STANDARD TAPPING SLEEVE and VALVE ASSEMBLY

SCALE:	DETAIL #
Not To Scale	2512.04
REVISION DATE: August 15, 2003	SHEET #: 1 of 1

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NOTES:

1. Excavate under elbow for footing, place steel & rods in footing & pour (pour #1)
2. Once concrete has set in footing pour horizontal blocking (pour #2)
3. Footing adequate for water mains up to 8". North Carolina licensed Professional Engineer to design footings for lines greater than 8" diameter.

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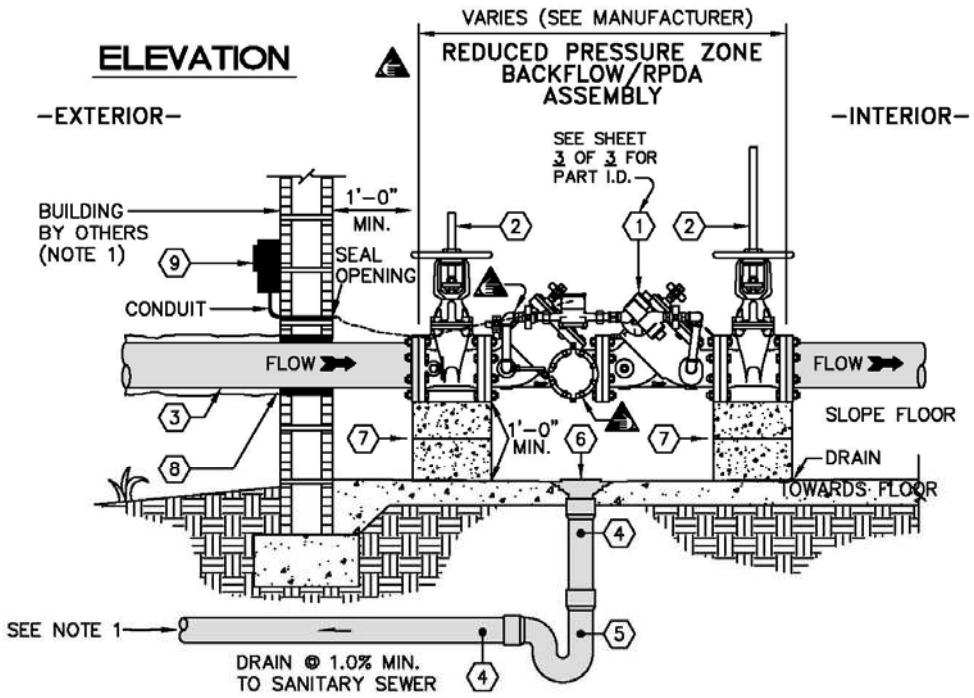
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THRUST FOOTING DETAIL

SCALE:	DETAIL #
Not To Scale	2512.07
REVISION DATE: August 15, 2003	SHEET #: 1 of 1



SEE SHEET 3 of 3 FOR ALTERNATE THRU FLOOR ACCESS INTO BUILDING

NOTES:

1. OPTIONAL FLOOR DRAIN.

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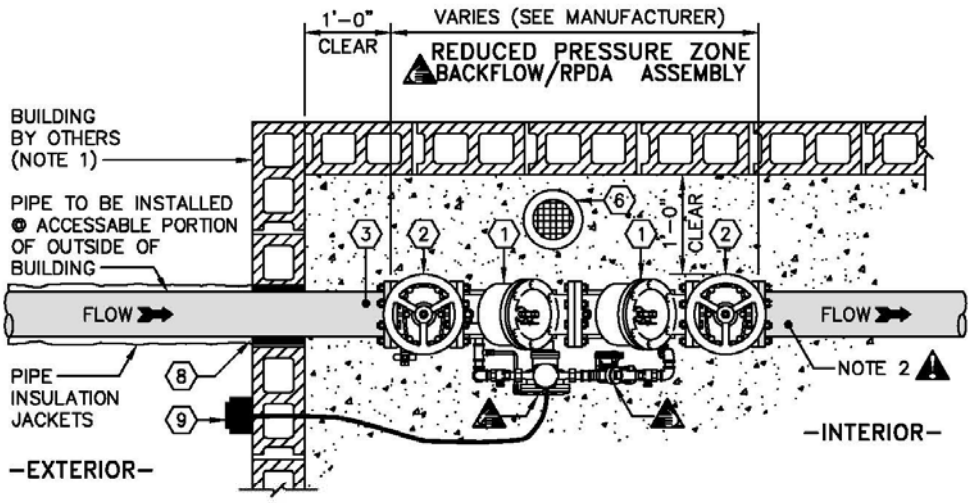
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2 1/2" to 10" RPZ, RPDA ASSEMBLY (INDOOR)

SCALE:	DETAIL #
Not To Scale	2.515.09
REVISION DATE: December 20, 2016	SHEET #: 1 of 3

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PLAN VIEW

NOTES:

1. Backflow assembly is to be installed at an accessible portion of the building, provide doorway & key.
2. For critical facilities, provide bypass line with backflow assembly.
3. Provide minimum 3" annular clearance around riser.

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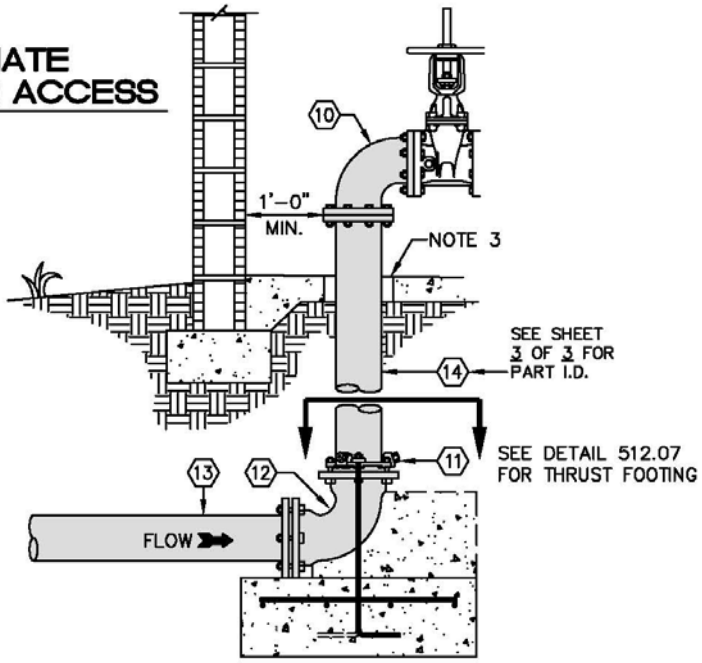
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2 1/2" to 10" RPZ, RPDA ASSEMBLY (INDOOR)

SCALE:	DETAIL #
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REVISION DATE: December 20, 2016	SHEET #: 2 of 3

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ALTERNATE THRU FLOOR ACCESS



#	PART	MANUFACTURER MODEL / Cat. No.
1	BACKFLOW PREVENTER, AS APPLICABLE	USC & ASSE APPROVED
2	OS&Y GATE VALVE WITH RESILIENT SEATS	TO BE APPROVED BY OWASA
3	DIP FLANGE x FLANGE PIPE (VERIFY LENGTH)	AMERICAN CAST IRON PIPE, or GRIFFIN PIPE CO. TO BE APPROVED BY OWASA
4	CISP OR PVC SCH 40 PIPE	---
5	CISP OR PVC SCH 40 "P" TRAP	---
6	FLOOR DRAIN	SIZE & TYPE DETERMINED BY NC PE. TO BE APPROVED BY OWASA
7	MASONRY BLOCK	
8	WALL SLEEVE with LINK SEAL	TO BE APPROVED BY OWASA
9	METER BOX WITH ERT AND METER	PURCHASED FROM OWASA
10	90° DIP FLANGE x FLANGE ELBOW	AMERICAN CAST IRON PIPE, or GRIFFIN PIPE CO., or UNION–TYLER PIPE CO., or U.S. PIPE & FOUNDRY
11	WEDGE ACTION RESTRAINER GLAND JOINT RESTRAINT	EBAA IRON SALES, INC. , FORD
12	90° DIP MJ x MJ ELBOW	AMERICAN CAST IRON PIPE, GRIFFIN PIPE CO., UNION–TYLER PIPE CO., U.S. PIPE & FOUNDRY
13	DIP FLANGE x PE PIPE (VERIFY LENGTH)	AMERICAN CAST IRON PIPE, GRIFFIN PIPE CO., UNION–TYLER PIPE CO., U.S. PIPE & FOUNDRY
14	3" THRU 10" DIP	AMERICAN CAST IRON PIPE, GRIFFIN PIPE CO., UNION–TYLER PIPE CO., U.S. PIPE & FOUNDRY

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2 1/2" to 10" RPZ, RPDA ASSEMBLY (INDOOR)

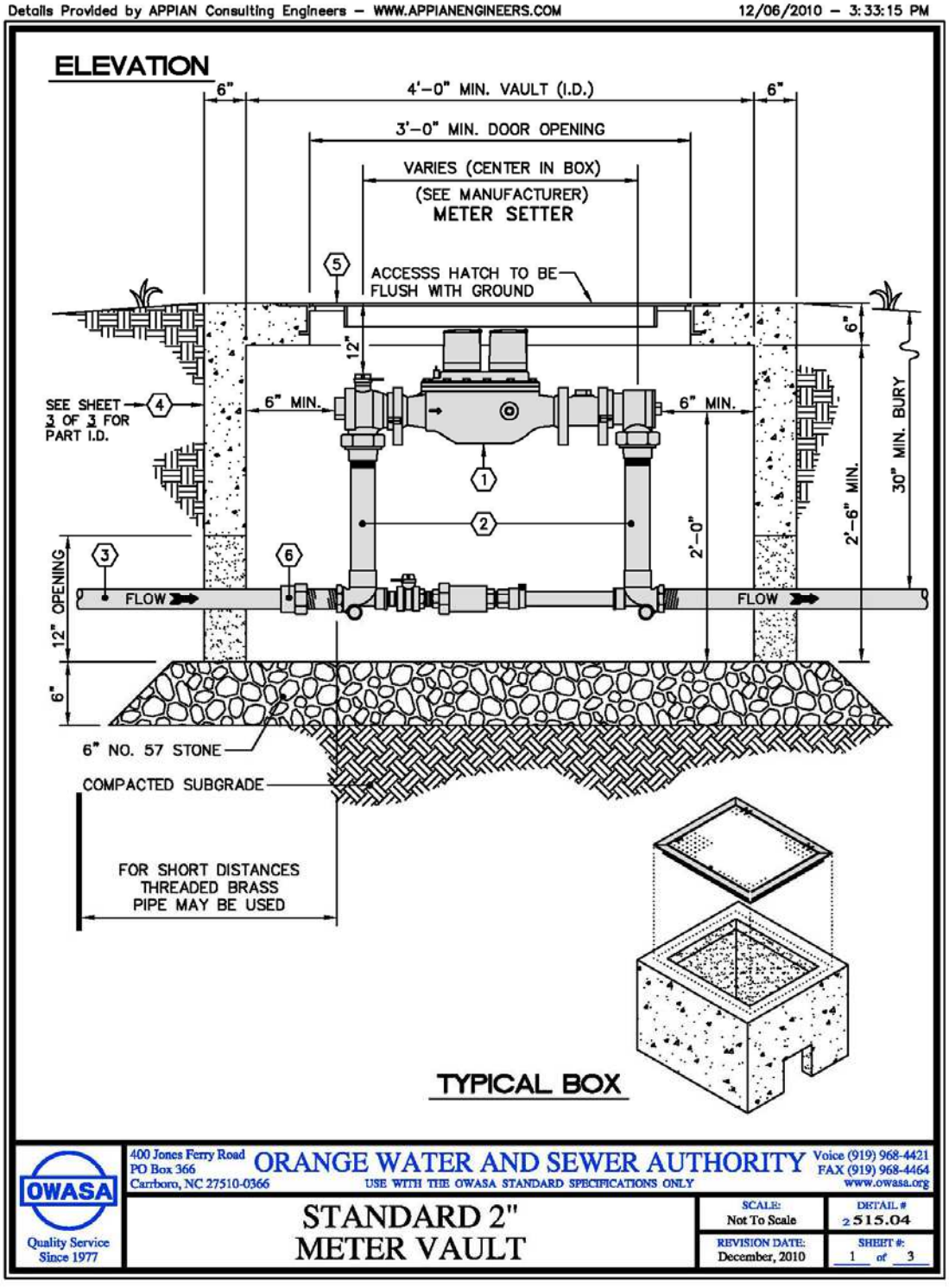
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REVISION DATE: December 20, 2016

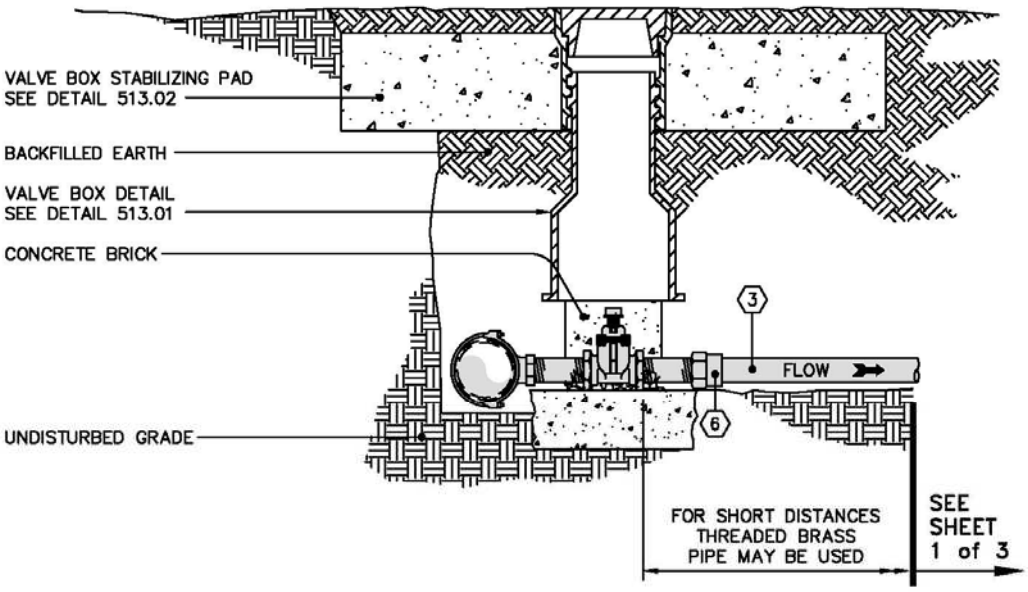
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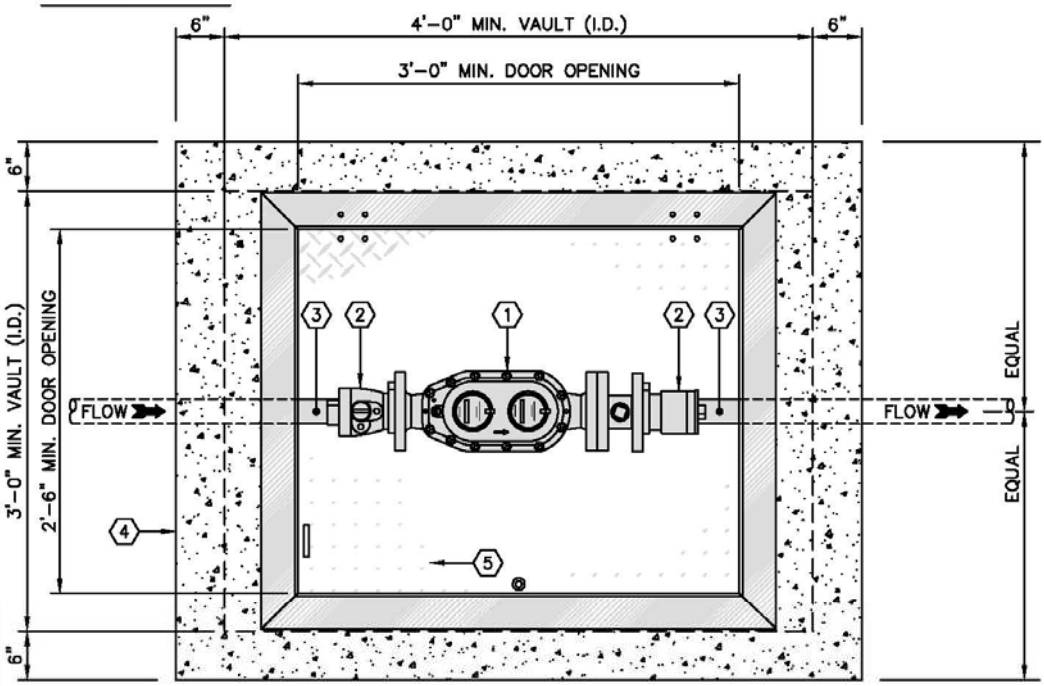
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STANDARD 2" METER VAULT

SCALE:	DETAIL #
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PLAN VIEW



#	PART	MANUFACTURER MODEL / Cat. No.
1	2" COMPOUND METER	FURNISHED BY OWASA
2	2" METER SETTER	(2") FORD STD. 18" RISE VBHH77–18BHC–11–77 MUELLER 15" RISE MUELLER DWG No. B2423–2
3	2" TYPE "K" HARD DRAWN COPPER SERVICE	---
4	4' x 5' PRECAST CONCRETE METER VAULT	See Section 02510 2.3.6 (OR APPROVED EQUIVALENT)
5	ACCESS HATCH NO EXPOSED HINGES OR LOCKS	See Section 02510 2.3.13
6	SILVER BRAZED JOINT	See Section 02510 2.1.2

NOTES:

1. Ensure positive surface grade away from vault.

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STANDARD 2" METER VAULT

SCALE:	DETAIL #
Not To Scale	2 515.04
REVISION DATE: December, 2010	SHEET #: 3 of 3