

ADDENDUM No. 1

ITB No. 4680

City of Ann Arbor WWTP Clear Well Improvements

Bids Due: June 1, 2021 at 2:00 P.M. (Local Time)

The information contained herein shall take precedence over the original documents and all previous addenda (if any) and is appended thereto. **This Addendum includes 42 pages.**

Bidder is to acknowledge receipt of this Addendum No. 1, including all attachments (if any) in its Bid by so indicating on page ITB-1 of the Invitation to Bid Form. Bids submitted without acknowledgment of receipt of this addendum may be considered nonconforming.

The following forms provided within the ITB document should be included in submitted bids:

- City of Ann Arbor Prevailing Wage Declaration of Compliance
- City of Ann Arbor Living Wage Ordinance Declaration of Compliance
- Vendor Conflict of Interest Disclosure Form
- City of Ann Arbor Non-Discrimination Ordinance Declaration of Compliance

Bids that fail to provide these forms listed above upon bid opening may be rejected as non-responsive and may not be considered for award.

Meeting notes and sign-in sheet from the pre-bid conference held on May 4, 2021 are included at the end of this Addendum for information only. Actual changes to the Contract Documents, if any, are included as part of the text of the Addendum No. 1. Bidders are reminded that oral statements made at the prebid conference shall not be relied upon and are not legally binding.

I. CORRECTIONS/ADDITIONS/DELETIONS

Changes to the Bid document which are outlined below are referenced to a page or Section in which they appear conspicuously. The Bidder is to take note in its review of the documents and include these changes as they may affect work or details in other areas not specifically referenced here.

Section/Page(s)

Change

IB-6

As provided in Existing Site Conditions section:
Add Appendix B Filter Clear Well Inspection Report to Appendices of the Bidding Documents.

Comment: The intent with this change is to provide the Filter Clear Well Inspection Report for Bidders information. Appendix B Filter Clear Well Inspection Report provided herein.

Section/Page(s)

Change

C-1

As provided in ITB No. 4680 Bid Document:
Bid Form, Section 1 – Schedule of Prices as Page C-1

As updated herein:
Bid Form, Section 1 – Schedule of Prices as Pages C-1.

Comment: The intent with this change is to update the Schedule of Prices to include the additional Item 6 for the Demobilization and Remobilization Due to High Ground Water Level. Replace Page C-1 provided in the ITB Document with the revised Page C-1 provided herein.

01 22 00

Revise the following paragraph by adding Item 26 to the end of the list.

3.2 CLEAR WELL IMPROVEMENTS (BID ITEM #1)

- 26.** Control of nuisance water in clear wells through the PRVs and leaking gates and valves.

Add new bid item 3.7 to this section:

3.7 DEMOBILIZATION AND REMOBILIZATION DUE TO HIGH GROUND WATER LEVEL (BID ITEM #6)

The completed work as measured for DEMOBILIZATION AND REMOBILIZATION DUE TO HIGH GROUND WATER LEVEL will be paid for at the contract unit price for the following contract items (pay items):

<u>Pay Item</u>	<u>Pay Unit</u>
Demobilization and Remobilization Due to High Ground Water Level	Each

The contract unit price shall be payment in full for all labor, materials and equipment necessary to demobilize and remobilize from each of the clear wells in the event that the ground water level exceeds the elevation 732.0 feet and/or required by the Owner. The unit price shall be payment for all work and operations which may include, but is not limited to: movement of personnel, equipment, supplies, and incidentals to the project site, and any other work and operations that must be performed as part of the demobilization and remobilization process. This unit price shall include up to 30 days that the Contractor will be unable to work inside the clear well.

Contract Time will be extended for the period the Contractor is unable to work in the clear well(s) due to the high ground water level.

Comment: The intent of these changes is to update the Bid Items. Replace Specification Section 01 22 00 Unit Prices provided in the ITB Document with the Specification Section 01 22 00 Unit Prices pages 1 through 5 provided herein.

Section/Page(s) **Change**

Drawing P-3 Delete Note 6 and replace with the following:

CONTRACTOR TO FIELD VERIFY CONNECTIONS TO AIR HEADER PRIOR TO PREPARING DIFFUSER SUBMITTAL. PROPOSED 6-inch LPA PIPING SHALL BE TYPE 304L SCH 10 STAINLESS STEEL. PROVIDE FLANGE ADAPTER (UNIFLANGE SERIES 200 OR EQUAL) AT CONNECTION TO EXISTING AIR HEADER.

Comment: Clarification of the new air piping connection to the existing air piping.

Drawing P-7 For the PRESSURE RELIEF VALVE (PRV) DETAIL, add the following note:

4. PROVIDE TWO ROWS OF WATER STOP ADEKA ULTRASEAL P-201 AT THE INTERFACE OF THE NEW AND EXISTING CONCRETE.

Comment: Addition of water stop material to the detail.

Bidders are responsible for any conclusions that they may draw from the information contained in the Addendum.

End of Addendum #1

BID FORM

Section 1 – Schedule of Prices

Company: _____

Project: **ITB# 4680 - WWTP Clear Well Improvements**

Unit Price Bid

Item No.	Description	Estimated Quantity	Bid Unit Price	Bid Price
1	Clear Well Improvements	LS	\$	\$
2	Remove & Replace Pressure Relief Valve	24 EA	\$	\$
3	Concrete Joint Sealer Repair, Repair Detail R2	75 LF	\$	\$
4	Urethane Crack Injection Repair, Repair Detail R16	250 LF	\$	\$
5	Delaminated Concrete Repair, Repair Detail R10	1,200 Sq Inches	\$	\$
6	Demobilization and Remobilization Due to High Ground Water Level	2 EA	\$	\$

Total Base Bid for Items 1 through 6	\$
---------------------------------------------	----

CONTRACT ALTERNATES

Contractor is required to provide a quote as part of Bid for the following work which Owner may/may not elect to consider:

Item Number	Description	Add/Deduct	Amount
Alternate No. 1	Limit air header demolition to extent shown on Drawings		\$

SECTION 01 22 00 - UNIT PRICES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements for unit prices.
- B. Related Requirements:
 - 1. Section 01 26 00 "Contract Modification Procedures" for procedures for submitting and handling Change Orders.
 - 2. Section 01 40 00 "Quality Requirements" for field testing by an independent testing agency.

1.2 DEFINITIONS

- A. Unit price is an amount incorporated into the Agreement, applicable during the duration of the Work as a price per unit of measurement for materials, equipment, or services, or a portion of the Work, added to or deducted from the Contract Sum by appropriate modification, if the scope of Work or estimated quantities of Work required by the Contract Documents are increased or decreased.

1.3 PROCEDURES

- A. Unit prices include all necessary material, plus cost for delivery, installation, insurance, applicable taxes, overhead, and profit.
- B. Owner reserves the right to reject Contractor's measurement of work-in-place that involves use of established unit prices and to have this work measured, at Owner's expense, by an independent surveyor acceptable to Contractor.
- C. List of Unit Prices: A schedule of unit prices is included in Part 3. Specification Sections referenced in the schedule contain requirements for materials described under each unit price.
- D. Payment for work under this contract will be based on a unit price or lump sum for work actually completed. Final measurements of the work will be taken by the Engineer to determine the amount of work done and thereby determine the total cost. The method of applying the unit prices to measured quantities will be as herein specified. Payment will include the cost of all labor, tools, materials, and equipment necessary to do the work.
- E. Several items may have been included in the bid form but may not be called for on the plans. These items have been included in order to establish a unit price in the event that the item of work is necessary. The Contractor should be aware that these items may increase, decrease, or be zero based on field conditions, or Owner direction.

1.4 INCIDENTAL ITEMS

- A. Any items of work indicated as incidental or included shall be considered as part of the project work and shall be completed at no additional expense to the Owner. Incidental or included items shall include labor, materials, and equipment that may not be specifically listed in the Bid Form or in the drawings or specifications, but which are necessary to complete the work.

1.5 PERMITS

A. A number of permits have been applied for by the Owner of this project. The Owner has acquired any known permits necessary for this project.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 SCHEDULE OF UNIT PRICES

3.2 Clear well improvements (BID ITEM #1)

The completed work as measured for CLEAR WELL IMPROVEMENTS will be paid for at the contract lump sum for the following items (pay items):

<u>Pay Item</u>	<u>Pay Unit</u>
Clear Well Improvements	Lump Sum

The contract lump sum price shall be payment in full for all services, labor, materials, superintendence, equipment, tools, supplies, fuel, power, lighting, quality control, independent testing, dewatering, temporary ventilation and heating, cleaning, as necessary to perform the improvements and rehabilitation of the wastewater tertiary filter clear wells; dewatering and cleaning clear wells; demolition of existing masonry baffles walls, aeration equipment and appurtenances; and as necessary to furnish and install clear well aeration equipment, dissolved oxygen analyzer, SCADA programming, concrete modifications and accessories in compliance with the Contract Documents except for contract items listed separately below. This shall include, but not be limited to:

1. Insurance and bonds.
2. Compliance with General Requirements.
3. Mobilization and demobilization, unless specified under a separate unit price.
4. Soil erosion control measures in compliance with applicable laws.
5. Permit requirements.
6. Traffic maintenance and control at the WWTP site (and as directed by the Engineer).
7. Confined space entry equipment; consisting of but not limited to lighting, ventilation, air quality monitoring.
8. Pressure washing equipment for tank cleaning.
9. Removal and disposal of debris from clear well following cleaning.
10. Structural concrete and maintenance of concrete work unless specified under a separate unit price.
11. Demolition, removal and disposal of existing baffle wall, aeration equipment and appurtenances noted for removal.
12. Cutting and patching associated with demolition and installation activities.
13. Structural concrete work unless specified under a separate unit price.
14. Field measurements and investigation of existing clear well tank.
15. Loading, transportation and unloading of all proposed equipment.
16. Provide proposed piping, equipment and appurtenances noted on drawings and specifications.
17. Electrical and instrumentation work.
18. SCADA and HMI programming.
19. Field preparation and coating of miscellaneous metal items.
20. Project restoration.
21. Monitoring of ground water elevation and removal of monitoring wells.
22. Equipment startup, training, and commissioning.
23. Site cleanup.

- 24. Record drawings of proposed equipment in AutoCAD format.
- 25. Project closeout.
- 26. Control of nuisance water in clear wells through the PRVs and leaking gates and valves.

Unit of measurement: Lump Sum based on schedule of values. Contractor shall submit a schedule of values for this work with major portions of the work group together in a logical manner (i.e., site work, demolition, cleaning, dewatering, concrete, masonry, mechanical, electrical, instrumentation, etc.). Submit the schedule of values to the Engineer at the pre-construction conference or no later than 21 days prior to the Initial Application for Payment. No payment requests shall be approved without an Engineer approved Schedule of Values. Amounts should be rounded to the nearest whole dollar, with the total equal to the unit price item. Provide a separate line item in the schedule of values for each part of the work where Applications for Payment may include materials or equipment purchased or fabricated and stored, but not yet installed. Provide separate line items in the schedule of values for initial cost of materials, for each subsequent stage of completion, and for total installed value of that part of the Work. Update and resubmit the schedule of values before the next Applications for Payment when Change Orders or Construction Change Directives result in a change in the unit price item.

3.3 REMOVE & REPLACE TYPE A PRESSURE RELIEF VALVES (BID ITEM #2)

The completed work as measured for REMOVE & REPLACE PRESSURE RELIEF VALVES will be paid for at the contract unit price for the following contract items (pay items):

<u>Pay Item</u>	<u>Pay Unit</u>
Remove & Replace Pressure Relief Valves	Each

Payment for Remove & Replace Pressure Relief Valves will be on the basis of the contract unit price per each.

The contract unit price shall be payment in full for all labor, materials and equipment necessary to remove and replace the existing pressure relief valves when repairs to the slab are completed. Payment for Remove and Replace Pressure Relief Valves shall include the following (except such items for which separate prices are received on the bid form): sawcutting and removal of the existing valves, well point dewatering at the PRVs, removal and replacement of the existing gravel drainage, 6-inch pressure relief valve, epoxy anchors, concrete disposal of removed material, salvage and reuse of existing rebar, placement of concrete, complete cleanup and surface restoration.

Remove and Replace Pressure Relief Valves shall only be paid for location where called for on the plans and as directed by the Engineer.

3.4 CONCRETE JOINT SEALER, REPAIR DETAIL R2 (BID ITEM #3)

The completed work as measured for CONCRETE JOINT SEALER will be paid for at the contract unit price for the following contract items (pay items):

<u>Pay Item</u>	<u>Pay Unit</u>
Concrete Joint Sealer, Repair Detail R2	Lineal Foot

Payment for Repair Detail R2 Concrete Joint Sealer will be on the basis of the contract unit price per lineal foot.

The contract unit price shall be payment in full for all labor, materials and equipment necessary to install joint sealer as called for on the plans and specifications. This includes but is not limited to product, installation equipment; control of water; removal of existing sealant; joint preparation and cleaning; removal of efflorescence present in the cracks and joints; application of primer; installation of backer rod, bond breaker tape and sealant; and cleaning of excess sealant materials from adjacent surfaces.

Concrete Joint Sealer shall only be paid for where called for on the plans and as directed by the Engineer.

3.5 URETHANE CRACK INJECTION REPAIR, REPAIR DETAIL R16 (BID ITEM #4)

The completed work as measured for EPOXY WALL REPAIR will be paid for at the contract unit price for the following contract items (pay items):

<u>Pay Item</u>	<u>Pay Unit</u>
Urethane Crack Injection Repair, Repair Detail 16	Lineal Foot

Payment for Repair Detail 16 Urethane Crack Injection Repair will be on the basis of the contract unit price per lineal foot.

The contract unit price shall be payment in full for all labor, materials and equipment necessary to install the Urethane Crack Injection Repair as called for on the plans and specifications.

The contract unit price shall be payment in full for all labor, materials and equipment necessary to install and inject the urethane as called for on the plans. This includes but is not limited to product, pumps and installation equipment, control of water, drilling/crack preparation and cleaning, removal of efflorescence present in the cracks, application of surface seal material to the face of the crack, installation, curing and removal of excess product and repair of sound concrete damaged by the chemical grout injection process.

Detail 16 Urethane Crack Injection Repair shall only be paid for where called for on the plans and as directed by the Engineer.

3.6 DELAMINATED CONCRETE REPAIR, REPAIR DETAIL R10 (BID ITEM #5)

The completed work as measured for DELAMINATED CONCRETE REPAIR will be paid for at the contract unit price for the following contract items (pay items):

<u>Pay Item</u>	<u>Pay Unit</u>
Delaminated Concrete Repair	Square Inches

Payment for Repair Detail R10 Delaminated Concrete Repair will be on the basis of the contract unit price per square inches.

The contract unit price shall be payment in full for all labor, materials and equipment necessary to install polymer-modified repair mortar on vertical, horizontal and overhead surfaces as called for on the plans. This includes but is not limited to identification and removal of unsound concrete, control of water, preparation of concrete surfaces and reinforcing steel, forming, mixing of products, patching of concrete surfaces, curing, finishing of formed surfaces, removal of excess product and cleaning.

Patching of concrete surfaces resulting from demolition and installation activities to be include in Bid Item 1.

Repair Detail R10 – Delaminated Concrete Repair shall only be paid for where called for on the plans or as directed by the Engineer.

3.7 DEMOBILIZATION AND REMOBILIZATION DUE TO HIGH GROUND WATER LEVEL (BID ITEM #6)

The completed work as measured for DEMOBILIZATION AND REMOBILIZATION DUE TO HIGH GROUND WATER LEVEL will be paid for at the contract unit price for the following contract items (pay items):

<u>Pay Item</u>	<u>Pay Unit</u>
Demobilization and Remobilization Due to High Ground Water Level	Each

The contract unit price shall be payment in full for all labor, materials and equipment necessary to demobilize and remobilize from each of the clear wells in the event that the ground water level exceeds the elevation of 732.0 feet and/or required by the Owner. The unit price shall be payment for all work and operations which may include, but is not limited to: movement of personnel, equipment, supplies, and incidentals to the project site, and any other work and operations that must be performed as part of the demobilization and remobilization process. This unit price shall include up to 30 days that the Contractor will be unable to work inside the clear well. Contract Time will be extended for the period of time the Contractor is unable to work in the clear well(s) due to the high ground water level.

END OF SECTION 01 22 00

APPENDIX B

FILTER CLEAR WELL INSPECTION REPORT

**Ann Arbor Wastewater Treatment Plant
Tertiary Filter Building
Filter Clear Well Investigation Summary and Recommendations**

Prepared by OHM Advisors
June 5, 2020

memorandum

Date: June 5, 2020

To: Chris Englert, City of Ann Arbor
Earl Kenzie, City of Ann Arbor
Keith Sanders, City of Ann Arbor

cc: File, OHM Advisors

From: Jennifer Drinan, OHM Advisors

Re: Filter Clear Well Investigation Summary and Recommendations

Executive Summary

The Filter Building and Clear Wells were originally constructed as part of the 1980's Wastewater Treatment Plant (WWTP) expansion. There are twelve rapid sand filters consisting of two cells each. Six filters, or twelve filter cells, are on the north side of the building and the remaining filters and cells are on the south. The clear wells are directly below the filters and capture the filter effluent water. Oxygen transfer is provided from low pressure blowers and coarse air diffusers to meet the NPDES dissolved oxygen (DO) permit requirement of 5.0 mg/l at the effluent discharge to the Huron River. The other uses of the filter effluent water include backwash water for the filters and plant effluent water for use throughout the WWTP.

After an incident in late 2018 in which the City of Ann Arbor (City) fell below the 5.0 mg/l DO requirement, the City performed entries into each clear well to identify concerns. During the City's entries, they identified deterioration of the baffle walls and the coarse diffuser system. These deficiencies prompted the Filter Clear Well Improvements project.

On February 25, 2020, OHM Advisors team inspected the interior of the North Clear Well. On March 5, 2020, OHM Advisors team inspected the South Clear Well. Both clear wells are generally considered to be in good condition, except for the concrete masonry unit (CMU) baffle walls and the existing coarse air diffusers. Both clear wells are capable of continued operation during the design phase of this project. However, some rehabilitation should be performed as part of the Filter Clear Wells Improvement Project. The major rehabilitation efforts include:

- Removal of the CMU baffles walls
- Patching of spalled concrete in the bottom of ceiling beams
- Sealing cracks in ceiling
- Sandblasting and painting of piping
- Removal and replacement of diffusers
- Removal chlorine injection system
- Replacement of sample piping
- Cleaning of tank
- Replacement of pressure relief valves (PRVs) in the base slab



Background

The Filter Building and Clear Wells were originally constructed as part of the 1980's Wastewater Treatment Plant (WWTP) expansion. There are twelve rapid sand filters consisting of two cells each. Six filters, or twelve filter cells, are on the north side of the building and the remaining filters are on the south. The filters were originally multimedia filters. In 1997, the filters were rehabilitated and changed to mono media filter sand with the WesTech combined air-water backwash system.

Clear wells consist of a north and south portion directly under the associated with the filters and capture the filter effluent water. Each Clear Well is approximately 220 feet long by 25 wide and operating depth of 10 feet. Each has an operating capacity of approximately 410,000 gallons. Each tank is construction of reinforced concrete and is primarily below grade with several four foot by four foot grated access points along its length. The north and south clear wells are interconnected via pipes at both the east and west ends. Each clear well can be isolated by closing the influent valves to the six filters and by closing gates on the two interconnecting pipes. Filter effluent water exits the clear wells by flowing over a weir and then by gravity to the UV building for disinfection prior to discharge to the Huron River.

The original construction of the clear wells included concrete masonry unit (CMU) baffle walls (from the floor to the ceiling) to direct the flow of the filtered water through the tank. Coarse air diffusers were installed to provide oxygen transfer to meet the dissolved oxygen permit requirements. Chlorine was also injected for disinfection. The original baffle walls eliminated short circuiting of the filter effluent and provided contact time for chlorination.

The City of Ann Arbor (City) entered the Clear Wells late in 2018 and discovered that the baffle walls were deteriorating, and the coarse air diffusers needed replacement. These observations led to this Filter Clear Well Improvement project.

North Clear Well Site Investigation

On February 25, 2020 OHM Advisors team inspected the interior of the North Clear Well. The clear well was drained by the City prior to arriving on the site. A minimal amount of water remained in the bottom of the clear well; approximately two to four inches of water on the base slab. Entry was through the north west grated accessway. Flashlights were used for lighting inside the clear well.

A plan view of the clear well layout annotated with notes and references to photos is included in Attachment 1. The photos are included as Attachment 2.

Based on the field observations the following conditions were noted:

Clear Well Ceiling and Beams

- There are no expansion joints in this clear well.
- The ceiling is in good condition and not stained as it is above the operating water level.
- There were circular areas on the underside of the wide beams/ troughs at the bottom of the filter cells that require concrete restoration. Several small holes that appeared to be tie- holes from the original construction, or possibly the location that the vertical resteel was anchored for the Westech supports for the 1997 underdrains. Several of these areas were actively leaking which would have been water remaining in the underdrain troughs from the shutdown. These areas will need to be dried and patched.
- There was intermittent cracking along the ceiling of the structure and efflorescence was visible. The efflorescence is produced when the free lime in the concrete reacts with water. The water causing the



efflorescence may be from condensation inside the tank or possibly from infiltration from the filters above. These items are noted in the attached annotated plan of the clear wells.

Reservoir Walls/Columns

- The walls and columns were generally straight and plumb.
- The walls and columns were stained black up to the normal operating line from contact with filter effluent water.
- The wall and column concrete were sound, with no resteel exposed or rust discoloration present. Some aggregate was exposed due to years of water movement but is not deemed a concern at this time.
- The walls and columns require no structural action at this time.
- The wall control joints, and some miscellaneous cracks had sealant that was either absent or had been deteriorated. It is recommended that these joints and cracks be sealed.
- Several circular crystallized growths were observed on several columns. These appeared to be surface growths and not impacting the structure. Recommend removal during cleaning of the clear well during construction.
- The supporting columns were in good condition. Separation of the columns from the slab above was not observed.
- Along the exterior wall of the clear well at the single beam locations, we identified galvanized plates that are starting to rust. These plates appear to be stay in place forms from the original construction and recommend sandblasting and coating.

Reservoir Base Slab

- There was approximately 3 inches of water in each of the clear wells upon entry. The water had visible organism swimming in it. The water also had an appearance of diluted waste activated sludge maybe about 0.5% solids. This water will need to be removed for the construction project.
- Due to the level of water in the tanks, we were not able to see the pressure relief valves in the bottom slab or to determine the degree of cracks in the base slab.
- The base slab appeared to be uniform with no signs of unusual settlement.

Reservoir Appurtenances

- The CMU baffle wall was deteriorating primarily at the location of the Filter Effluent discharge bells near the ceiling of the clear well. Recommend complete removal of the baffle wall. The interfaces to the base slab and ceiling to be patched. The requirement of a new baffle wall and design to be explored as part of the alternatives analysis.
- Existing coarse air diffusers are not fully functioning and require removal and replacement. Design of new oxygen transfer system to be explored as part of the alternatives analysis.
- The piping into the clear wells appears to be sound. We recommend sandblasting and re-coating to extend useful life. Recommend replacing pipe support clamps and bolts.
- Chlorine injection pipe and diffusers are no longer in operation. Recommend removal and capping pipe at the wall.
- Sample piping supports are failing. Recommend replacing sample piping and supports.
- Isolation gates were leaking which will also need to be addressed for construction.
- Several ladder rungs for the reservoir showed signs of tuberculation. Steps are still functional and do not require replacement at this time.



South Clear Well Site Investigation

On March 5, 2020 OHM Advisors team inspected the interior of the South Clear Well. The clear well was drained by the City prior to arriving on the site. A minimal amount of water remained in the bottom of the clear well; approximately three to four inches of water on the base slab. Entry was through the south west grated access way. Flashlights were used for lighting inside the clear well.

A plan view of the clear well layout annotated with notes and references to photos is included in Attachment 3. The photos are included as Attachment 4.

Based on the field observations the following conditions were noted:

Clear Well Ceiling and Beams

- There are no expansion joints in this clear well.
- The ceiling is in good condition and not stained as it is above the operating water level.
- There were circular areas on the underside wide beams/ troughs at the bottom of the filter cells that require concrete restoration. Several small holes that appeared to be tie- holes from the original construction, or possibly the location that the vertical resteel was anchored for the Westech supports for the 1997 underdrains. Several of these areas were actively leaking which would have been water remaining in the underdrain troughs from the shutdown. These areas will need to be dried and patched.
- There was intermittent cracking along the ceiling of the structure and efflorescence was visible. The efflorescence is produced when the free lime in the concrete reacts with water. The water causing the efflorescence may be from condensation inside the tank or possibly from infiltration from the filters above. These items are noted in the attached annotated plan of the clear wells.

Reservoir Walls/Columns

- The walls and columns were generally straight and plumb.
- The walls and columns were stained black up to the normal operating line from contact with filter effluent water.
- The wall and column concrete were sound, with no resteel exposed or rust discoloration present. Some aggregate was exposed due to years of water movement but is not deemed a concern at this time.
- We noted concrete spalling at the top of one column as noted on the plan in Attachment 3 and photo SCW 9A and 9B that requires patching.
- The walls and columns require no structural action at this time.
- The wall control joints and some miscellaneous cracks had sealant that was either absent or had been deteriorated. It is recommended that these joints and cracks be sealed.
- The supporting columns were in good condition. Separation of the columns from the slab above was not observed.
- Along the exterior wall of the clear well at the single beam locations, we identified galvanized plates that are starting to rust. These plates appear to be stay in place forms from the original construction and recommend sandblasting and coating.

Reservoir Base Slab

- There was approximately 4 inches of water in each of the clear wells upon entry. The water had visible organisms swimming in it. The water also had an appearance of diluted waste activated sludge maybe about 0.5% solids. This water will need to be removed for the construction project.

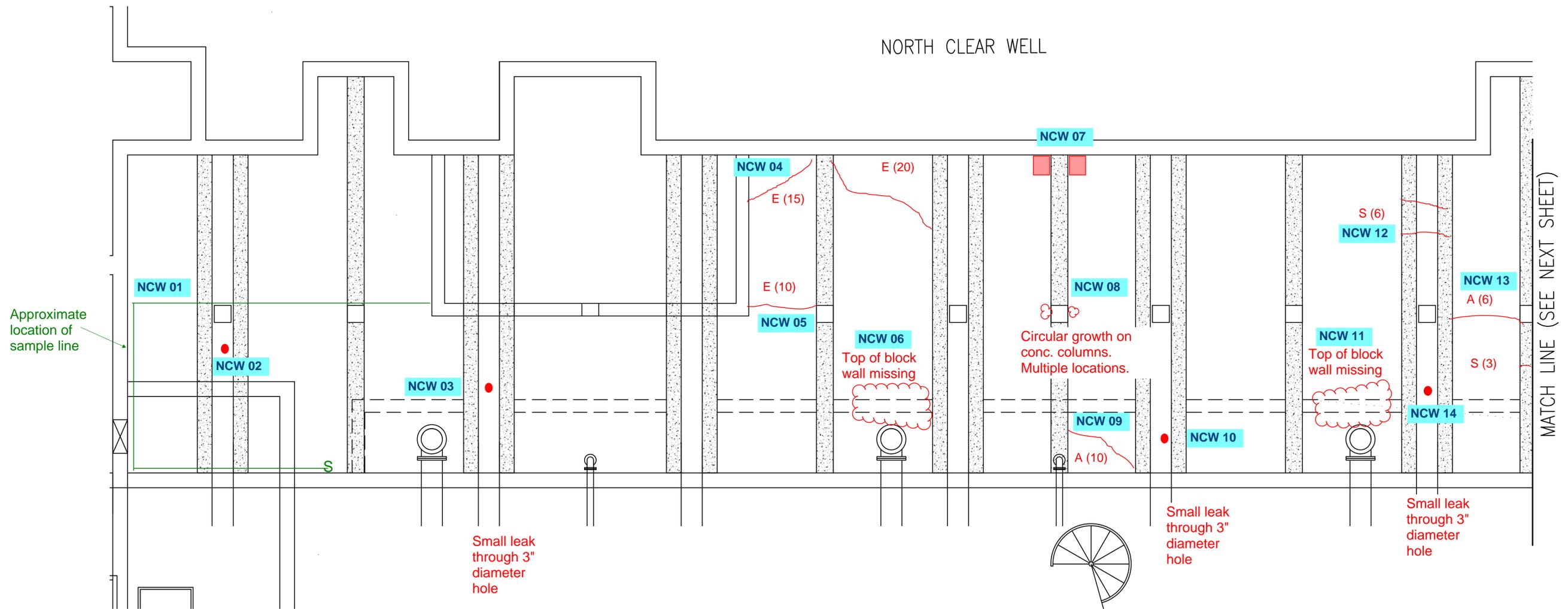


- Due to the level of water in the tanks, we were not able to see the pressure relief valves in the bottom slab or to determine the degree of cracks in the base slab.
- The base slab appeared to be uniform with no signs of unusual settlement.

Reservoir Appurtenances

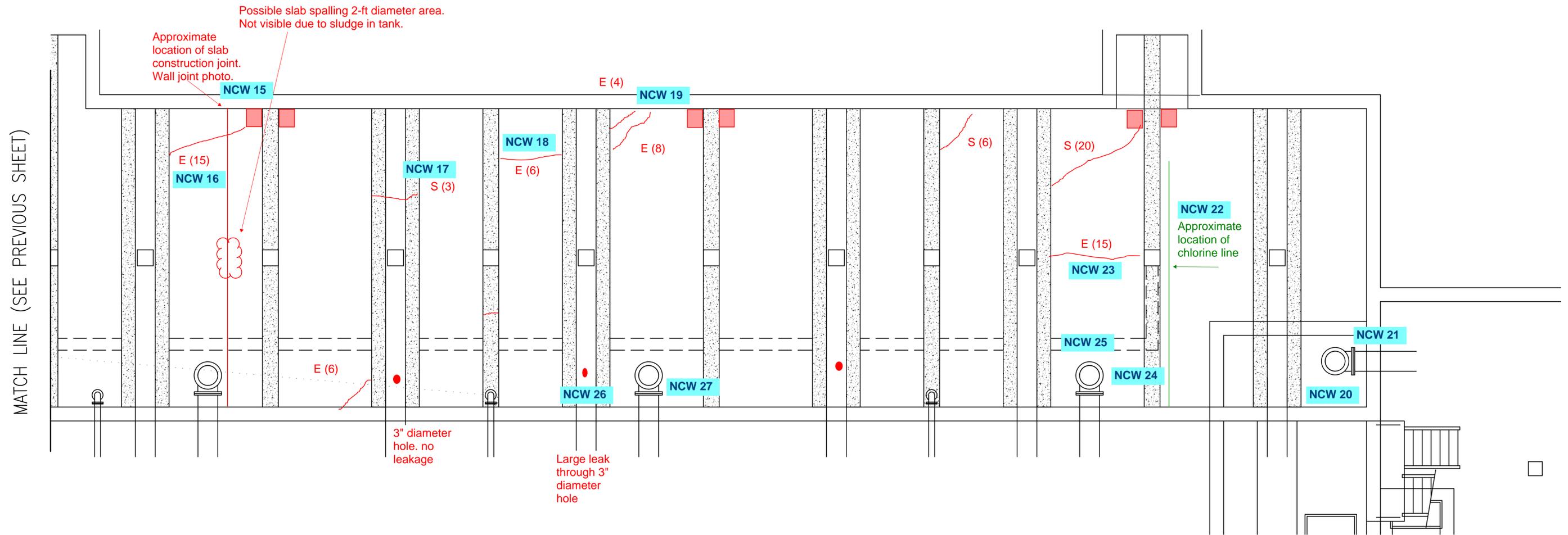
- The CMU baffle wall was deteriorating primarily at the location of the Filter Effluent discharge bells near the ceiling of the clear well. Approximately in the middle of the wall the section between two beams had fallen down and damaged the coarse air diffusers. Recommend complete removal of the baffle wall. The interfaces to the base slab and ceiling to be patched. The requirement of a new baffle wall and design to be explored as part of the alternative analysis.
- Existing coarse air diffusers are not fully functioning require removal and replacement. Design of new oxygen transfer system to be explored as part of the alternatives analysis.
- The second from west Filter Effluent discharge bell was overflowing. Recommend repairing or replacing valve that is not fully seating.
- The piping into the clear wells appears to be sound. We recommend sandblasting and re-coating to extend useful life. Recommend replacing pipe support clamps and bolts.
- Chlorine injection pipe and diffusers are no longer in operation. Recommend removal and capping pipe at the wall.
- Sample piping supports are failing. Recommend replacing sample piping and supports.
- Isolation gates were leaking which will also need to be addressed for construction.
- Several ladder rungs for the clear well were missing as noted in the plan in Attachment 3. Recommend replacement of the missing rungs.

NORTH CLEAR WELL



- Galvanized steel plates with clips. (typical)
- Approximately 3-inch diameter hole in the bottom of beam.
- A = Crack actively leaking
- E = Crack with efflorescence
- S = Stress crack
- ~ Crack with estimate length
- NCW XX Photo reference number

NORTH CLEAR WELL



MATCH LINE (SEE PREVIOUS SHEET)

- Galvanized steel plates with clips. (typical)
- Approximately 3-inch diameter hole in the bottom of beam.
- A = Crack actively leaking
- E = Crack with efflorescence
- S = Stress crack
- Crack with estimate length
- NCW XX Photo reference number



NCW 01



NCW 02



NCW 03



NCW 04



NCW 05



NCW 06



NCW 07



NCW 08



NCW 09



NCW 10



NCW 11



NCW 12



NCW 13



NCW 14



NCW 16

NCW 15



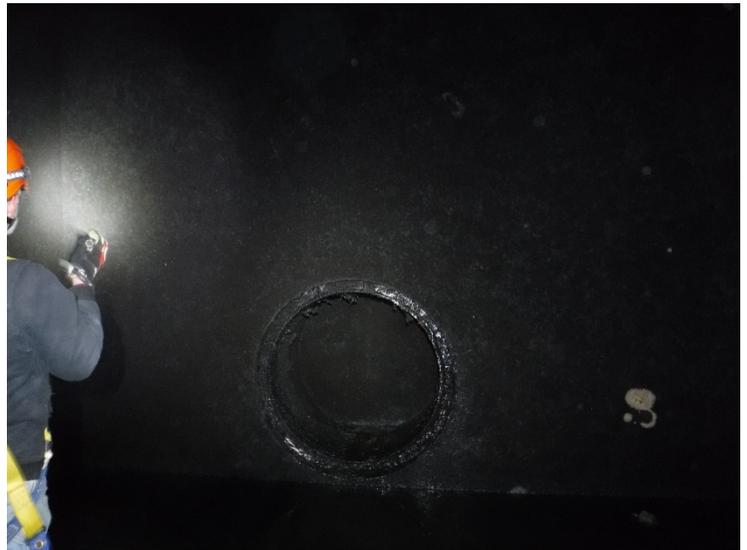
NCW 17



NCW 19



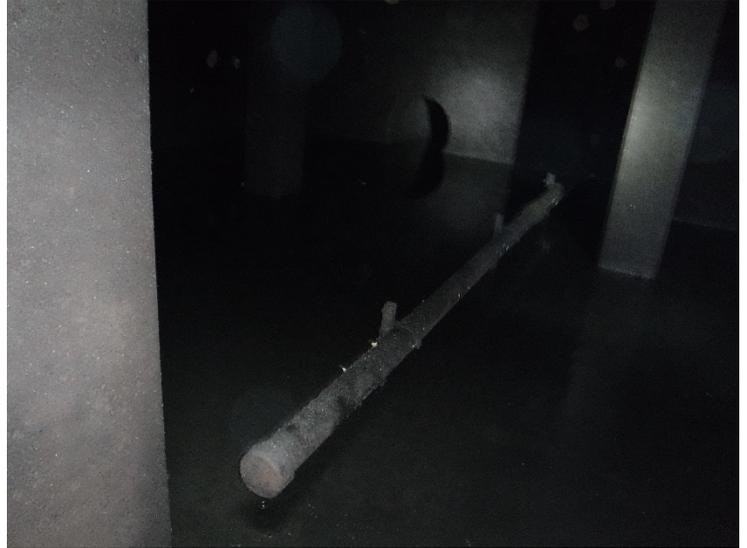
NCW 18



NCW 20



NCW 21



NCW 22



NCW 23





NCW 25



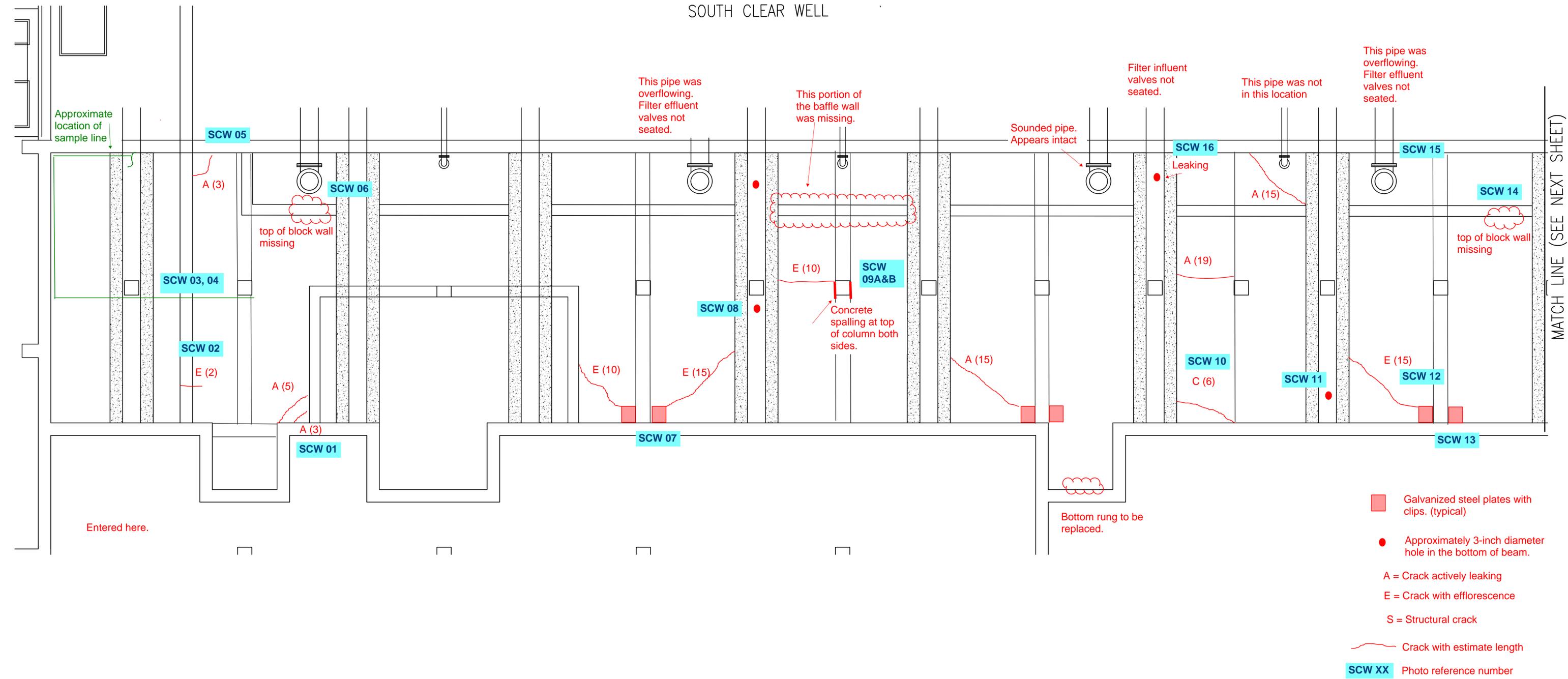
NCW 24

NCW 26

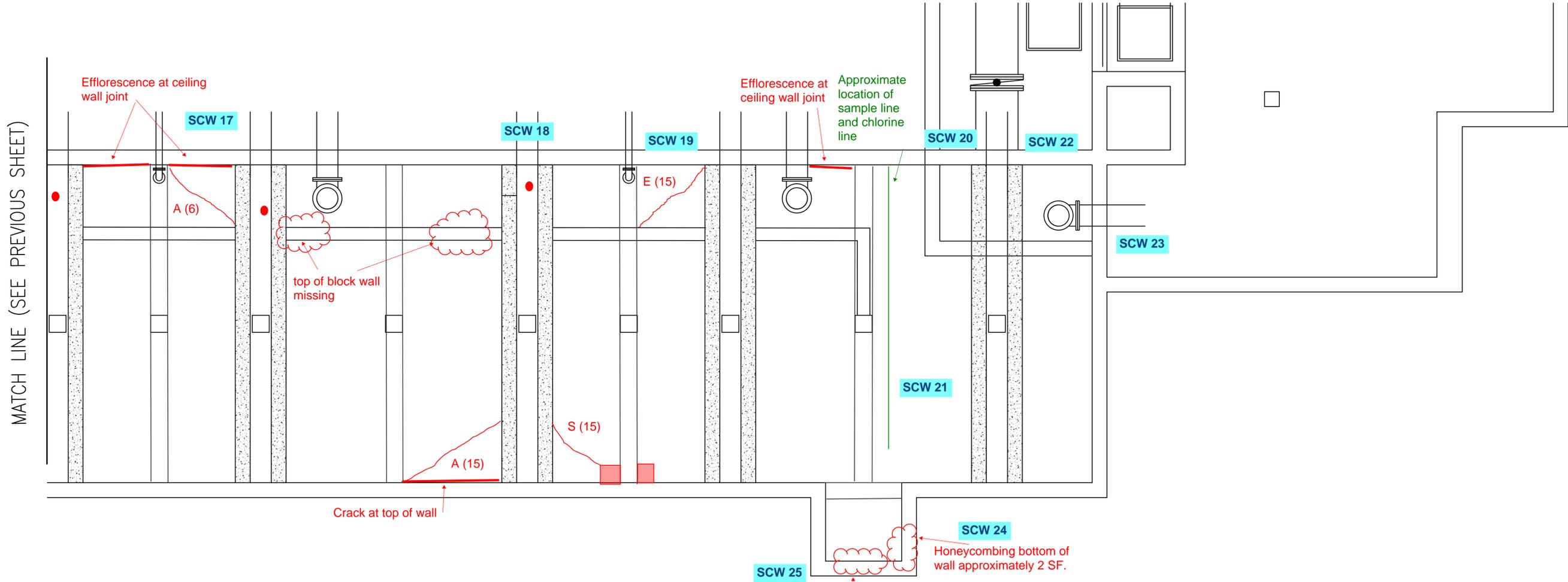


NCW 27

SOUTH CLEAR WELL



SOUTH CLEAR WELL



- Galvanized steel plates with clips. (typical)
- Approximately 3-inch diameter hole in the bottom of beam.
- A = Crack actively leaking
- E = Crack with efflorescence
- S = Structural crack
- Crack with estimate length
- SCW XX Photo reference number



SCW 01



SCW 02



SCW 03



SCW 04



SCW 05



SCW 06



SCW 07



SCW 08



SCW 9A



SCW 9B



SCW 10



SCW 11



SCW 12



SCW 13



SCW 14



SCW 15



SCW 16



SCW 17



SCW 18



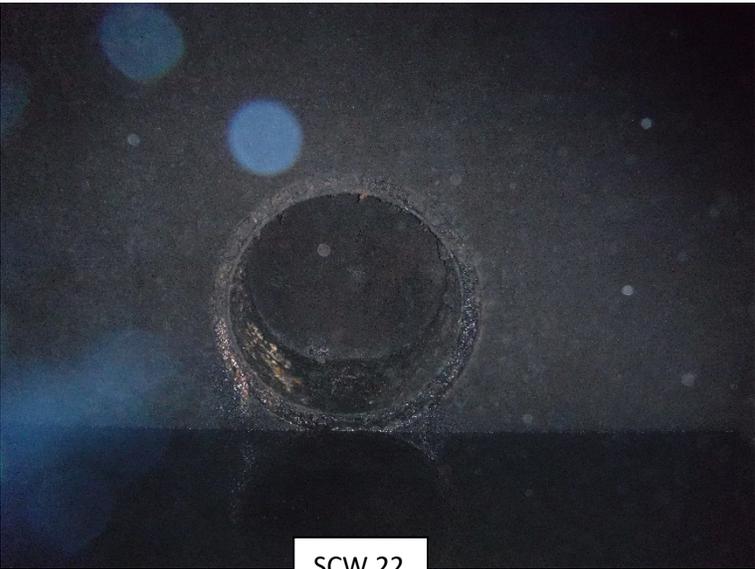
SCW 19



SCW 20



SCW 21



SCW 22



SCW 23



SCW 24



SCW 25

II. QUESTIONS AND ANSWERS

The following Questions have been received by the City. Responses are being provided in accordance with the terms of the ITB. Bidders are directed to take note in their review of the documents of the following questions and City responses as they affect work or details in other areas not specifically referenced here.

Question 1: PRV detail on drawing P-7 indicates the existing resteel is to be salvaged. Is the just the bottom mat that is to be salvage?

Answer 1: All resteel is to be salvaged.

Question 2: How thick is the gravel drainage layer beneath the clear well base slab? Does the layer extend beneath the entire slab?

Answer 2: Available information is shown on the contract documents. Refer to Detail of (PRS) Pressure Relief Valve Slab Type Detail on drawing D-4 for extent of gravel layer.

Question 3: P-7 has a wall plug detail and a grout plug detail. Where specifically are each of these required? Can the contractor use either option for any penetration plugs?

Answer 3: The GROUT PLUG DETAIL is used for penetrations with sleeves and the WALL PENETRATION PLUG DETAIL is used for the smaller pipe penetrations without sleeves.

Question 4: The specification 012200 pay item description for Bid Item #3 indicates the work includes control of water. Is this control of water penetrating thru the joint we are sealing or just control of nuisance water in the work area?

Answer 4: The control of water required to perform the unit price work shall be included in the unit price for Bid Item #3, concrete joint sealer installation.

Question 5: Specification 030130 pertains to the concrete spall repairs, joint sealing and crack inject repairs. The specification indicates we are to provide a testing agency to perform tests and inspections as approved by the engineer. What specific tests, inspections and frequency of the same do you require for this type of work?

Answer 5: Refer to paragraph 3.9. in Specification section 03 01 30.

Question 6: The Geotechnical report indicates the groundwater table in the upper unconfined aquifer was measured to range between elevation 730 and 735. The measurements were taken in December and January when the water table and the adjacent Huron River were likely at the seasonal low point. In any event, these elevations indicate that the piezometric surface beneath the clear well base slab extends 7 to 12 feet above the top of slab surface and likely more in the spring and summer months. The Engineer has proposed using well points installed within the clear well to lower the groundwater beneath the base slab so that the slab can be removed and replaced. We expect the points will need to remain in operation a few days until the new concrete has achieved enough strength to prevent groundwater under artesian pressure from seeping thru the freshly placed concrete and preventing a watertight seal for the new replacement slab. However, the installation of the well points will also require holes thru the base slab that will need to be repaired as soon as the well points are removed. However, these

penetrations will not have the benefit of a lowered groundwater table while the repair material is allowed to set. If the base slab really is underlain by a gravel drainage layer it won't take long for the water table to reestablish once the well point are pulled. Has the engineer considered this situation? Will the Contractor be responsible if the method proposed by the engineer does not work or results in a long-term leakage problem thru the base slab?

Answer 6: Contractor to include all costs in their bid based on the available information provided in the Bidding Documents. Contractor may assume each functioning PRV to be capable of releasing up to 20 gpm/each and another 20 gpm from other sources. Contractor is responsible for means, methods, and materials for permanent water-tight repair of well point penetrations.

Question 7: The scope of work includes cleaning and removal of debris (i.e. mud, filter media an similar debris) from the clear wells. The cost of this work is entirely dependent on the amount of material to be removed and disposed of. We request that the Owner establish a separate pay item (unit price) for this work with an established quantity of debris (preferably tons rather than cyd's). If tons are used payment could be based on landfill tickets.

Answer 7: Contractor to include in their bid costs of disposal of all debris from demolition and construction activities shown in the Contract Documents. No significant amount of filter media is anticipated in the clear wells.

Question 8: Specification 011000 article 1.7.E.3 states that the contractor should expect leakage from the gates and valves used to isolate the clear wells. The pumping cost is dependent on the leakage rate. What is the expected leakage rate?

Answer 8: Contractor should be prepared to pump out up to 4 inches of water over the surface of the clear well base slab at the start of each day. Contractor may assume each functioning PRV to be capable of releasing up to 20 gpm/each and another 20 gpm from other sources.

Question 9: Specification 011000 article 1.7.E.3 states that once the clear well is dewatered, if the groundwater elevation exceeds 732, the contractor will need to abandon his work and the clear well will need to be flooded? If this occurs, will the Contractor be compensated for the extra cost and time associated with such an event? If not, we request that the Owner establish a unit price pay item (per each) for such an event.

Answer 9: This addendum includes revisions to Specification Section 01 22 00 to add Demobilization and Remobilization for High Ground Water Level Bid Item #6.

Question 10: Is cleaning expected to be required on both sides of the masonry baffle walls or just the side from which we have access to the clear well (i.e. the non-aerated side)?

Answer 10: Refer to Specification Section 02 01 10 Paragraphs 1.2.F. though 1.2.I. and paragraph 1.3 for requirements of cleaning. Contractor has control of the mean and methods of their work. Contractor's deviation from the suggested sequence of work in Specification Section 01 10 00 is not grounds for a claim for additional time or money.

Question 11: Specification 012200 article 3.2 scope item no. 14 indicates the Contractor is required to perform field measurements and investigation of the existing clear wells? Is this work limited to that solely required to support the contractors work? If not, please clarify what is expected.

Answer 11: Yes, to support the Contractor's work.

Question 12: In regard to specification 012200 article 3.2 scope item no. 12, are the wells limited to MW-1 an MW-2 as presented in the FKE Geotechnical Report? If not, please provide wells logs for each well to be abandoned.

Answer 12: The monitoring wells are identified on drawing G-3 and removing and restoring these identified wells is required by Note 8 on drawing G-3.

Question 13: Is the Contractor required to provide material testing or will this be handled by the Owner?

Answer 13: Yes, per specification section 01 40 00 the Contractor is responsible for testing. Refer to the technical specifications for details.

Question 14: Specification 099200, Part 4 lists the piping and related elements that require painting. These items are difficult to identify on the drawings. Can the drawings be annotated to clearly identify the location and extent of these elements?

Answer 14: Refer to drawing P-4 for piping to be re-coated and drawing P-5 for galvanized plates to be re-coated.

Question 15: What is the estimated volume of accumulated mud, filter media, sludge, in each clear well?

Answer 15: Refer to the answer to Question 7 above.

Question 16: It says to clean clear well to the satisfaction of the engineer. Do you have a standard?

Answer 16: The interior of the clear wells shall be broom cleaned so that there is no debris including but not limited to gravel, screws, nails, nuts, bolts, concrete, grout, mortar, plastic, cardboard, electrical wire, paint chips, wood, etc. in sumps or on the surface that would damage the pumps or filters.

Question 17: Can one clear well be dewatered to conduct an inspection?

Answer 17: It is not practical for a clear well to be made available for a confined space entry and inspection. Refer to the Appendix B Filter Clear Well Inspection Report added in this Addendum for additional information.

Question 18: Can the proposal due date be extended two weeks?

Answer 18: No

III. PRE-BID CONFERENCE

A pre-bid conference for this Project was conducted on May 4, 2021. The pre-bid conference notes and sign-in sheet are enclosed with this Addendum No. 1 for information purposes only.

The information disclosed in the pre-bid conference and site tour is available in the Project Manual. Bidders are reminded that oral statements made at the pre-bid conference and site tour shall not be relied upon and are not legally binding.



Pre-Bid Conference Minutes

WWTP Clear Well Improvements, City of Ann Arbor ITB No. 4680

Project No.: 0028-20-0010

Date: Tuesday, May 04, 2021 @ 10:00 am

1. Introductions / Sign In Sheet Attached

- Earl Kenzie – Wastewater Treatment Services Unit (WWTSU) Manager
- Keith Sanders – WWTSU Assistant Manager
- Chris Englert – WWTSU Engineer
- Jennifer Drinan & Lucas Manhice – OHM Advisors Design Engineers

2. Purpose of Meeting – Review scope of project.

3. Summary of Project

A. Location:

- 49 Old Dixboro Road Ann Arbor
- East of US-23 near Geddes Road

B. Existing Conditions:

- North and South clear wells are 25'x222'x12' deep.
- Filters will be taken out of service one at a time to facilitate WWTP operations.
- All construction materials shall be delivered to site before construction can commence in either clear well. Otherwise, a definitive material delivery date must be provided to Owner and Engineer.
- Contractor shall monitor ground water levels at monitoring wells near North and South side of tertiary filter building during construction. This is to mitigate the risk of the water table rising and damaging the bottom slabs of clear wells.
- Ground water measurements taken from December 2020 to date indicate that the water table hovers around 730 feet. Contractor shall consult Geotechnical Report regarding ground water table characteristics at project location.
- The clear wells are a confined space. Multiple access ways are available. Structural drawings show an alternate method of access which is not a requirement but may be considered as part of Contractor's means and methods.
- Clear well access ways are at grade at south side and 3 feet above grade at north side of Tertiary Filter Building.
- Clear wells are very dark. Contractor shall furnish lights to facilitate work.

C. Scope of work

- Demolish existing masonry baffle walls in clear wells.
- Demolish aeration equipment in clear wells.
- Remove accumulated mud and similar debris in clear wells.
- Clean and paint existing piping in clear wells.
- Demolish existing steel air headers in the filter gallery.
 - Base bid includes removing air headers in the clear wells and all the way across the filter gallery.
 - Alternate 1 includes removing air headers in the clear wells up to elbow fitting closest to filter gallery wall.
- Patch and repair existing concrete surfaces:
 - Spalling in bottom beams about 3 inches in diameter.
 - Cracks in walls, ceilings, and beams.
 - Other miscellaneous defects.
- Raise effluent weir walls:
 - Weir walls can be accessed from within clear wells or through manway.
- Furnish and install new fine bubble aeration equipment and Dissolved Oxygen (DO) probes in the clear wells.
 - Three aeration equipment suppliers are listed in specifications. Contractor shall only submit one equipment supplier in bid documents. No substitutions are allowed.
- Program SCADA system to allow automated control of existing blower based upon DO.

D. Additional Clarifications:

- Contractor to provide own electrical power.
- Contractor can use plant effluent water, which supplies fire hydrants around WWTP, for clear well cleaning purposes.
- Water from clear wells can be pumped to backwash water tank. Provide filters to eliminate gravel, concrete, and miscellaneous debris from discharging into the backwash tank.
- Contractors can schedule field visits/site tours with Chris Englert.
- No changes to the City of Ann Arbor's contract will be accepted. A sample contract was included in the ITB.

4. Questions and Answers

1) Does Owner require Contractor to fulfill disadvantaged business requirements?

No. There are no DBE requires.

2) Will the PowerPoint presentation be shared online?

Yes. The presentation will be shared with all meeting attendees.

3) Are any permits or building permits required for this project?

No permits are required from Ann Arbor Township. A SESC permit is not required either but filter fabric drops must be installed in catch basins that are impacted by construction activities.

4) What was the engineers estimated cost for the project?

\$1.2 million

5) Are Pressure Relief Valves actively leaking?

OHM did not observe any flow of water through the PRVs during its inspection of the clear wells. However, the Contractor should expect hydrostatic pressure under clear well bottom slabs. Refer to the geotechnical report for the estimated quantity of water to be discharged when PRVs are removed.



34000 Plymouth Rd
Livonia, MI 48150
T: 734.522.6711
F: 734.522.6427
www.ohm-advisors.com

Project: WWTP Clear Well Improvements, City of Ann Arbor ITP No. 4680

Project No.: 0028-20-0010

Date: Tuesday, May 4, 2021 at 10:00 am

Name	Representing	Phone	E-Mail
Earl Kenzie	AA WWTP		
Chris Englert	AA WWTP		Cenglert@a2gov.org
Jennifer Drinan	OHM Advisors	734-323-8954	Jennifer.Drinan@ohm-advisors.com
Lucas Manhice	OHM Advisors	517-940-2327	Lucas.Manhice@ohm-advisors.com
Brent Canup	Midwest Power Systems		midwestpower@hotmail.com
Ashmead Bob			
Craig John			
Danny Vushaj	Seven Brothers Painting		Danny.Vushaj@sevenbrotherspainting.com
David Bruce	Spence Brothers		DavidB@spencerbrothers.com
Glaz Matt			
Joshua Price	Structured Solutions		jprice@structuredsolutions.com
Jason Klingemith			
Kyle Bentley	Peterson Matz		Kyle.Bentley@petersonandmatz.com
Matt Kemper	Weiss Construction		mkemper@weiss-construction.com
Matt Shaeffer	Midwest Power Systems		midwestpower@hotmail.com

