ADDENDUM NO. 1
AUGUST 15, 2017

Solicitation Title: Winson Water Treatment Plant Bid Package 1: Filter Rehabilitation

Solicitation No.: IFB No. 30-16-17 Opening Date: Thursday, August 31, 2017 by 3:30PM (LOCAL TIME)

Attention all potential bidders:

☑ MUST Addendum: Read carefully and follow all instructions. Information included in this Addendum will have a material impact on the submittal for this solicitation. All “MUST” addenda are considered a matter of responsiveness. “MUST” addenda must be acknowledged on Form “A-5”. Failure of a Submitter to acknowledge the addenda shall be cause for rejection of the bid.

To all prospective bidders, please note the following changes and clarifications:

1. The deadline for receipt of requests for additional information and clarification has been extended as follows:

   DEADLINE FOR QUESTIONS:
   WEDNESDAY, AUGUST 9, 2017 FRIDAY, AUGUST 18, 2017 BY NO LATER THAN 3:30PM (LOCAL TIME)

2. Bid form is replaced with the Revised Bid Form included as Attachment 1 of this addendum.

   Note: See revisions to Section 01025 – Measurement and Payment (Attachment 2) for further explanation.

Request for Information and or Questions/Clarification (NOTE: The following list includes questions received by the City’s Purchasing Department and questions asked during the pre-bid conference and subsequent site visit):

Q.1 “Please clarify if the Permit Allowance provided in the Bid Form will pay for all permits listed in 01010, 1.08, B and any other permits required for the project. SC, 2.15 & GC, 6.6 call for the GC to pay for all permits except for the Miami agency permits.”

A.1 The permit fee will pay for all permits listed in Specification 01010, 1.08, B and any other permits required for the project. (See Attachment 3)
Q.2 “Please confirm there will be a site visit following the pre-bid meeting.”

A.2 A mandatory site visit was held after the pre-bid meeting.

Q.3 “Specification Section 01011, 1.01, D & E call for a Special Building Inspector Allowance totaling 100 hours. Is this to be included in the $5,000 permitting allowance?”

A.3 Delete 01011, 1.01, paragraph E. Include the cost of the Special Inspector in Bid Item 2. See revisions to Specification 01011, page 1 (Attachment 4).

Q.4 “Please expand on the requirements for a security guard listed in 01510, 1.07. Is a security guard required during work hours only or 24-7 while the project is ongoing?”

A.4 Employ security guard during Contractor’s working hours. See revisions to Specification 01510, page 2 (Attachment 5).

Q.5 “Please provide the wage determinations as required for the Davis Bacon wages.”

A.5 The Wage Determination and guidelines can be found at the website below: https://www.wdol.gov/dba.aspx

Q.6 “There are 100 days per filter group (200 days for both filter sets) plus 14 days in the gallery leaves you 86 days to submit, review, approve, and procure all materials necessary for the gallery. It doesn’t seem like enough time to go through the procurement process?”

A.6 Change Special Conditions, Section 2.4 “Term of Contract” to 360 calendar days for substantial completion and 425 calendar days for final completion.

Change Section 3 of the Bidding Requirements, titled “Scope of Work” to 360 calendar days for substantial completion and 425 calendar days for final completion.

See revised bid form included as Attachment 1 of this addendum.

Q.7 “So you’re saying that work can start in the filter boxes first?”

A.7 Yes.

Q.8 “The materials will require a large amount of room for laydown.”

A.8 Additional staging area is available across the street from the WTP on newly acquired City of North Miami owned land. (See Attachment 6)
The Contractor shall be responsible for all security measures it deems necessary at the Additional Staging Area. Furthermore, if the contractor determines it needed additional gates in the existing fence around the Additional Staging Area, the Contractor shall furnish and install the gates.

Q.9 "The bidding documents indicate weekly construction meetings, is that your intention?"

A.9 The intent is to have weekly progress meetings during periods of high activity per Specification 01010-1.07.E. However, we will be flexible and the meeting frequency can be reduced during low activity periods. (See Attachment 3)

Q.10 "Specification Section 01011, 1.01, D & E call for a Special Building Inspector Allowance totaling 100 hours. Is this to be included in the $5,000 permitting allowance?"

A.10 See A.3 above.

Q.11 "What are the qualifications for the Special Inspector?"

A.11 The special inspector shall be a professional engineer licensed in Florida per Specification 01011-1.01.B. (See Attachment 4)

Q.12 "On the bacteriological testing for the pipe, could you consider that it takes 3 days for the bacteriological which would cut down the 14 days to only 11 days?"

A.12 The 14-day period will be extended to 20 days by addendum to allow for time for performing the bacteriological testing and obtaining the results.

See revisions to Specification 01010 (Attachment 3). These revisions clarify the work needed to be "completed" within the 20-day shutdown period.

Q.13 "Is the only liquidated damage to the $10,000 or are the other associated fees?"

A.13 The $10,000 per amount is not a liquidated damage, rather, it is a penalty to encourage rapid completion.

Liquidated damages are described in the Special Conditions Article 2.12.

Penalties for exceeding the shutdown periods are described in Specification 01010-1.04 Articles E.2 and E.3. (See Attachment 3)

Q.14 "Do the penalties cover the cost of the City water purchase?"

A.14 No.

Q.15 "Are there additional expenses such as engineering fees?"
A.15 There are engineering fees associated with the Special Inspector. Please refer to Specification Section 01011.

Specification 01400 currently indicates that the Owner will retain a lab for material testing called for in the specs. This will be changed by addendum to have the contractor pay for the testing lab. (See Attachment 7)

Q.16 “During the 14-day shutdown period while working 24 hours per day, are there overtime inspection costs incurred by the Contractor?”

A.16 There will be no overtime inspection costs during the 24 hours per day work required for the shut-down period described in Specification 01010-1.04.E. (See Attachment 3)

Q.17 “Who will be the inspector when the contractor lays down the material in the staging area?”

A.17 Hazen and Sawyer will be the City’s inspector.

Q.18 “During the installation of the filter media, who will be the inspector?”

A.18 Laboratory testing and filter media supplier observation requirements are described in Specification 13222.

Q.19 “The liquidated damages clause states $1,350/day if the final completion date is exceeded. There’s no damages for missing the substantial completion?”

A.19 There are no liquidated damages for exceeding the substantial completion date, there are liquidated damages if the final completion date is exceeded, as described in Special Conditions, Article 2.12.

Q.20 “Local vendor preference criteria? Clarify will it enter into the award of the contract?”

A.20 The City’s Local Vendor Preference Ordinance shall not apply to this Solicitation. However, it is the City’s goal to solicit and encourage participation in City projects by Contractors who are willing to provide subcontracting and employment opportunities to local businesses and residents.

Q.21 “What about the asbestos survey?”

A.21 Lead and asbestos survey reports shall be prepared by the Owner’s laboratory and provided to bidders as a subsequent Addendum.

The Contractor is responsible for the proper handling and disposal of lead-containing and asbestos materials that are shown on the drawings to be removed or otherwise required to be removed for a complete and operable project.

Please review Specification 09805 issued by this Addendum (see Attachment 8).
Please see revisions made to Specification 01540 (see Attachment 9).

Q.22 “Are we going to be doing this project during the hurricane season?”

A.22 Yes.

Q.23 “Is it possible that during the asbestos and lead paint survey you could check as an alternative to save time for the radioactive stuff too?”

A.23 The Winson WTP uses groundwater from the Biscayne Aquifer. Radioactivity will not be a health concern for neither water from the Biscayne Aquifer nor materials in contact with water from the Biscayne Aquifer.

Q.24 “During the 14 day period in the gallery, are you expecting controls for the valves and the filters?”

A.24 See revisions made to Specification 01010, page 3 (Attachment 3).

Q.25 “Is the intent of your specification to test the existing filters, is that to test the waterproofing that we apply? Is that the intent of the hydrostatic testing of the existing filters?”

A.25 The intent is to perform the work described in the Specification titled “Hydrostatic Testing of Structures” after the application of the waterproofing described in the Specification titled “Filter Basin Interior Waterproofing” and its associated curing time.

Q.26 “Are the existing underdrains wheeler bottoms?”

A.26 The City reports that the existing underdrains are Wheeler bottoms.

Q.27 “Will you consider an administrative notice to proceed followed by a construction notice to proceed?”

A.27 While there may be certain advantages of this approach to both parties, the added complexity of this approach is not warranted by the simplicity of this project. Rather, the contract time will be increased by addendum.

Q.28 “Pipe schedule calls for Schedule 5S and stainless-steel pipe spec calls for Schedule 10S. Which is correct?”

A.28 “It should be Schedule 10S in the pipe schedule and in the stainless-steel pipe spec. See revisions made to Specification 15000, page 12 (Attachment 10).

Q.29 “Specification Section 13220, Para. 1.01 - F, Please change: ‘Severn Trent Water Purification’ to ‘DeNora Water Technologies, Inc.’”
A.29 Specification Section 13220, Para. 1.01 - F, Please change: ‘Severn Trent Water Purification’ to ‘DeNora Water Technologies, Inc.’ See revisions made to Specification 13220 (Attachment 11).

Q.30 “Contract Drawings M-21 & M-22 Please clarify how the surface washer / sweep rotation indicating flag is expected to be made. With the sweep positioned directly under the troughs, the flag cannot be straight above the washer. The flag is shown on the drawings at the top of the drop pipe that dog-legs around the trough. With this configuration the rotating motion of will not transfer to the flag. The excerpts below are from drawings M-21 & M-22.”

A.30 Delete all rotation indicators from Drawing M-21. Please see the revised Drawing M-21 (Attachment 12).

Q.31 “Please advise the list of approved systems integrators for division 17.”

A.31 There are no named control system subcontractors in the Specifications. Rather, there are minimum experience requirements as described in Specification 17000-1.04.

Q.32 “We would assume that, if pre-existing Hazardous Materials are encountered; (a) Contractor would cease Work in the area and notify Owner and Engineer; (b) the Owner would be responsible for all aspects of the remediation, would be considered the generator of all pre-existing hazardous materials and would sign all manifests, and (c) Contractor would be entitled to an equitable adjustment in the Contract Price and/or the Contract Times as the case may warrant, much as for a differing site condition. Please confirm, or, if not correct, please advise what process would be applicable in the event unknown pre-existing Hazardous Materials are encountered by Contractor.”

A.32 Lead and asbestos survey reports shall be prepared by the Owner’s laboratory and provided to the bidders as a subsequent Addendum.

The Contractor is responsible for the proper handling and disposal of lead-containing and asbestos materials that are shown on the drawings to be removed or otherwise required to be removed for a complete and operable project.

See Specification 09805 issued with this Addendum (Attachment 8).

See revisions made to Specification 01540 (Attachment 9).

If pre-existing hazardous materials other than lead-containing paint and asbestos are encountered then the Contractor would be entitled to an equitable adjustment in the Contract Price and/or the Contract Times as the case may warrant.

Q.33 “Can the Deadline for Receipt of Questions be pushed until August 16?”

A.33 Please see item 1 above.
Q.34 “Is the contractor required to employ a full-time security guard at the new gate we are providing?”

A.34 See A.4 above.

Q.35 “Reference Filter Pipe Gallery 14 day shutdown. Will filter backwash controls need to be operational or can filters operate manually?”

A.35 See revisions made to Specification 01010, page 3 (Attachment 3). The word “completed” is defined in this addendum.

Q.36 “Would you be able to provide me a copy of the specs for the Filter Rehabilitation project?”

A.36 The bid documents contained in this Solicitation include, but are not limited to, the applicable specifications for this project.

Q.37 “Section 15000-12, the pipe schedule calls for SCH 5S 316 SS Pipe, however Section 15012 calls for SCH 10S 316 SS Pipe. Please clarify.”

A.37 See answer to Q.28 above and referenced attachments.

Q.38 “Do you have a copy of the Contract for the North Miami Winson WTP Bid Package 1: Filter Rehabilitation – IFB 30-16-17. I did not see one in the bid documents.”

A.38 A copy of the Contract is not included as part of this Solicitation.

Q.39 “Have you issued any addenda for this project?”

A.39 This is the first addendum issued for this project.

Q.40 “I would like to ask for a copy of the bidders list”

A.40 Please see Attachment 13.

List of Attachments:

- Attachment 1 – Revised Bid Form
- Attachment 2 – Specification 01025 Revisions
- Attachment 3 – Specification 01010 Revisions
- Attachment 4 – Specification 01011, Page 1 Revisions
- Attachment 5 – Specification 01510, Page 2 Revisions
- Attachment 6 – Additional Staging Area Drawing
- Attachment 7 – Specification 01400, Page 1 Revisions
- Attachment 8 – Specification 09805
- Attachment 9 – Specification 01540 Revisions
- Attachment 10 – Specification 15000 Revisions
- Attachment 11 – Specification 13220 Revisions
- Attachment 12 – Drawing M-21 Revisions
- Attachment 13 – Pre-Bid Conference and Site Visit Sign-In Sheet Summary

For any other questions, clarification can be found in the specifications.

All other terms, conditions and specifications remain unchanged for this solicitation.

End of Addendum
Attachment 1:
Revised Bid Form
The prices listed in the bid form shall include the total cost to complete the work including but not limited to materials, labor, equipment, bonds, insurances, etc., as necessary to ensure the successful completion of this project.

<table>
<thead>
<tr>
<th>Item</th>
<th>Quantity</th>
<th>Description</th>
<th>Total</th>
</tr>
</thead>
</table>
| 1    | Lump Sum | Mobilization:  
Included in this item are all mobilization activities, including but not limited to bonds, scheduling, temporary facilities and all other activities necessary to prepare to complete the contract work, for the lump sum price of:  
(The total payment for mobilization shall not exceed five (5) percent of the proposed Bid Price for Bid Item No. 2) | $_____________ |
| 2    | Lump Sum | Filter System Rehabilitation:  
For the complete furnishing and installation of all general, structural, architectural, mechanical, instrumentation, electrical and ancillary work required for the rehabilitation of the existing filter installation in accordance with the Contract Documents along with all other items necessary to complete the Work that are not specifically included in other bid items for the lump sum price of: | $_____________ |
| 3    | Lump Sum | Permit Fee:  
Payment for permit fees will be based upon the actual permit fees required by the Contractor from the various agencies having jurisdiction for construction of the project. | $ __________ 5,000.00 |
| 4    | Lump Sum | Water Purchases:  
Payment for owner’s lost revenue for water purchases during timeframe that the filters will be out of service during construction of the project. | $ __________ 1,225,000.00 |
| 5    | Lump Sum | Contractor’s Markups for Bid Item No. 4:  
Bid Item No. 5 is for all Contractor markups and costs associated with Bid Item No. 4. | $ __________ |
<table>
<thead>
<tr>
<th>Item</th>
<th>Quantity</th>
<th>Description</th>
<th>Total</th>
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<td>TOTAL FOR BID ITEMS 1 THROUGH 5:</td>
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<td>(Written Dollar Amount)</td>
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**NOTES:**

- The awarded Bidder must achieve Substantial Completion for this project within **360 calendar days** of issuance of Notice to Proceed (NTP) by the City and Final Completion must be accomplished within **425 calendar days** from NTP.

- Respondent(s), individual, partnership, corporation or association responding to this Solicitation certifies that all statements made in this document are true and correct to the best of their knowledge. Moreover, the Respondent(s) agrees to hold this offer open for a period of ninety (90) days from Bid Opening.

- Respondent(s) understand and agree to be bound by the conditions contained in this Solicitation and shall comply with all requirements.

Company Name

Authorized Company Representative (Print Name)  Title:

Signature  Date:
Attachment 2:
Specification 01025 Revisions
PART 1 - GENERAL

1.01 THE REQUIREMENT

A. Payment for the various items in the Schedule of Payment items, as further specified herein, shall include all compensation to be received by the Contractor for furnishing all tools, equipment, supplies, and manufactured articles, and for all labor, operations, taxes, materials, commissions, transportation and handling, bonds, permit fees, insurance, overhead and profit, and incidentals appurtenant to the items of Work being described, as necessary to complete the various items of the Work all in accordance with the requirements of the Contract Documents, including all appurtenances thereto, and including all costs of compliance with the regulations of public agencies having jurisdiction, including Safety and Health Requirements of the Occupational Safety and Health Administration of the U.S. Department of Labor (OSHA). Such compensation shall also include payment for any loss or damages arising directly or indirectly from the Work.

B. The Contractor’s attention is called to the fact that the quotations for the various items of Work are intended to establish a total price for completing the Work in its entirety. Should the Contractor feel that the cost for any item of Work has not been established by the Schedule of Payment items or this Section, it shall include the cost for that Work in some other applicable bid item, so that its proposal for the project does reflect its total price for completing the Work in its entirety.

1.02 SCHEDULE OF VALUES BIDS

A. **Item No. 1 - Mobilization:** For performing preparatory work and operations in mobilizing for beginning the work of the Project shall include, but not be limited to:

- Movement of personnel, equipment, supplies and incidentals to the Project site for the establishment of temporary offices, safety equipment, first aid supplies, staging area, sanitary and other temporary facilities.

- The cost of bonds, required insurance, preparation of the schedule, submittal of shop drawings for long-lead materials and equipment that need to be ordered as soon as possible; together with ordering said materials and equipment in a timely fashion.

- All other preconstruction expenses.

- **This item excludes the actual cost of permit fees, which are paid under Bid Item No. 3. Additionally, this item excludes the cost of materials that are paid under Bid Item No. 2.**

- No actual construction or physical preparatory work for the other bid items under this project may be performed at the project site until the contractor has completed its mobilization activities.

The total payment for mobilization shall not exceed five (5) percent of the original Bid Price for Bid Item No. 2.
Partial payment for the mobilization item shall be made in accordance with the following payment schedule:

<table>
<thead>
<tr>
<th>Percent of Original Bid Item No. 2 Amount Earned</th>
<th>Allowable Percent of Lump Sum Price for the Item</th>
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<td>5</td>
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<td>90</td>
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B. **Item No. 2 – Filter System Rehabilitation:** Included in this item are the complete furnishing and installation of all general, structural, architectural, mechanical, instrumentation, and electrical and appurtenant work required for a complete and operable installation in accordance with the Contract Documents along with all other items necessary to complete the Work that are not specifically included in other bid items.

C. **Item No. 3 - Permit Fees:** Payment for permit fees will be based upon the actual permit fees required by the Contractor from the various agencies having jurisdiction for construction of the project, in accordance with the Contract Documents. The amount shown on the bid schedule is an estimate of permit fees required for the project and is a cost pass through item and no mark-ups will be added to this item. The Contractor shall produce documentation upon request verifying actual cost. Only permit fees substantiated by the Contractor and approved by the Engineer will be paid as part of this bid item. Any portion of this bid item that remains after all authorized payments have been made will be withheld from contract payments and will remain with the Owner.

D. **Item No. 4 – Water Purchases:** This bid item is an estimate of the City’s lost revenue during the purchase of water from Miami-Dade during the timeframe that the filters would be out of service. It is being added at the request of the Florida Department of Environmental Protection State Revolving Fund. After the execution of the contract and issuance of a notice-to-proceed, the City will prepare a deduct Change Order (CO), to remove Bid Item No. 4 ($1,225,000.00) from the Contractor’s Contract Amount.

E. **Item No. 5 – Contractor’s Markups for Bid Item No. 4:** Bid Item No. 5 is for all Contractor markups and costs associated with Bid Item No. 4. It is being added at the request of the Florida Department of Environmental Protection State Revolving Fund. After the execution of the contract and issuance of a notice-to-proceed, the City will prepare a deduct Change Order (CO), to remove Bid Item No. 5 from the Contractor’s Contract Amount.

1.03 **SCHEDULE OF PAYMENT VALUES**

A. The Contractor shall submit a Schedule of Payment Values for review with the return of the executed Agreement to the Owner. The schedule shall contain the installed value of the component parts of Work for the purpose of making progress payments during the construction period.
B. The schedule shall be given in sufficient detail for proper identification of Work accomplished. The Schedule of Payment Values shall directly correlate to each activity outlined in the construction progress schedule and the construction network analysis (specified in the Section entitled “Submittals” to accurately relate construction progress to the requested payment. Each item shall include its proportional share of all costs including the Contractor’s overhead, contingencies and profit. The sum of all scheduled items shall equal the total value of the Contract.

C. If the Contractor anticipates the need for payment for materials stored on the project site or off-site in bonded warehouse, it shall also submit a separate list covering the cost of materials, delivered and unloaded with taxes paid. This list shall also include the installed value of the item with coded reference to the Work items in the Schedule of Payment Values. Similar procedures shall be employed for undelivered specifically manufactured equipment and materials as specified herein.

1.04 NON-PAYMENT FOR REJECTED OR UNUSED PRODUCTS

A. Payment will not be made for following:

1. Loading, hauling, and disposing of rejected material.

2. Quantities of material wasted or disposed of in manner not called for under Contract Documents.

3. Rejected loads of material, including material rejected after it has been placed by reason of failure of Contractor to conform to provisions of Contract Documents.

4. Material not unloaded from transporting vehicle.

5. Defective Work not accepted by Owner.

6. Material remaining on hand after completion of Work.

1.05 PARTIAL PAYMENT FOR STORED MATERIALS AND EQUIPMENT

A. Partial Payment: No partial payments will be made for materials and equipment delivered or stored unless Shop Drawings or preliminary operation and maintenance manuals are acceptable to Engineer.

B. Final Payment: Will be made only for products incorporated in Work; remaining products, for which partial payments have been made, shall revert to Contractor unless otherwise agreed, and partial payments made for those items will be deducted from final payment.

1.06 APPLICATION FOR PAYMENT

A. Transmittal Summary Form: Attach one Summary Form with each detailed Application for Payment and include Request for Payment of Materials and Equipment on Hand as applicable. Execute certification by authorized officer of Contractor.

B. Use detailed Application for Payment Form provided by the Owner.
C. Include accepted schedule of values for each portion of Work and the unit price breakdown for the Work to be paid on unit price basis, and a listing of Owner-selected equipment, if applicable, and permit fees, as appropriate.

D. Preparation:

1. Round values to nearest dollar.

2. List each Change Order and Written Amendment executed prior to date of submission as separate line item. Totals to equal those shown on the Transmittal Summary Form.

3. Submit Application for Payment, including a Transmittal Summary Form and detailed Application for Payment Form, a listing of materials on hand as applicable, and such supporting data as may be requested by the Engineer or Owner.

- END OF SECTION -
Attachment 3:
Specification 01010 Revisions
SECTION 01010 - SUMMARY OF WORK

PART 1 - GENERAL

1.01 THE REQUIREMENT

A. The Work to be performed under this Contract shall consist of furnishing and installation of all tools, equipment, materials, supplies, manufactured articles, transportation and services, including fuel, power, water, and essential communications, for the performance of all labor, work, and/or other operations as required for the fulfillment of the Contract in strict accordance with the Contract Documents. The Work shall be complete, and all work, materials, and services not expressly shown or called for in the Contract Documents which may be necessary for the complete and proper construction of the Work in good faith shall be performed, furnished, and installed by the Contractor as though originally so specified or shown, at no increase in cost to the Owner.

B. Wherever the Contract Documents address a third party, i.e., subcontractor, manufacturer, etc., it is to be considered as the Contractor through the third party.

C. Wherever a reference to number of days is noted, it shall be construed to mean calendar days.

D. The project is located at the Winson Water Treatment Plant 12098 NW 11th Avenue, North Miami, Florida, 33168. The Contractor shall note that the project area is on property owned by the City of North Miami. The Contractor shall confine its construction activities to the locations shown in the Drawings.

E. The Contractor is advised that the work is to be performed in a fully operational water treatment facility, which is the principal source of potable water supply to the City of North Miami. The Contractor shall be fully responsible for all precautionary measures together with all remediation, cleanup, disinfection, regulatory agency fines and all other labor, materials, and costs associated with any contamination of the water supply caused directly or indirectly by the activities of the Contractor in the performance of the work.

F. Notwithstanding other indemnification requirements of the Contract Documents, the Contractor shall also indemnify, defend, and hold harmless the Owner, the Engineer and the Owner's agents from any and all legal action that may arise from contamination of the water supply caused directly or indirectly by the Contractor in the performance of the work.

1.02 WORK COVERED BY CONTRACT DOCUMENTS

A. The Work of the Contract at the Winson Treatment Plant is comprised of the replacement of the filter media, surface wash agitator system, underdrains and filter pipe gallery for existing Filters No. 1 through No. 4, including internal wall waterproofing for leak suppression, with all auxiliary accessories as detailed in the Contract Documents.

B. The Work set forth within these bid documents includes the furnishing of all labor, materials, equipment, services and incidentals, including all associated piping, electrical work, control systems, and all appurtenant work, complete, tested and ready for operation, all in conformance with Contract Document requirements.
1.03 WORK BY OTHERS

A. The Contractor’s attention is directed to the fact that Work may be conducted at the site by other Contractors during the performance of the Work under this Contract. The Contractor shall conduct its operations so as to cause a minimum of interference with the Work of such other Contractors, and shall cooperate fully with such Contractors to provide continued safe access to their respective portions of the site, as required to perform their respective contracts.

B. The contract drawings illustrate the approximate limits of Contractor’s staging area. For additional sequencing restrictions reference Article 1.04 of this Section.

C. When two or more contracts are being executed at one time on the same or adjacent land in such manner that work on one contract may interfere with that on another, the Owner shall determine the sequence and order of the Work. When the territory of one contract is the necessary or convenient means of access for the execution of another contract, such privilege of access or any other reasonable privilege may be granted by the Owner to the Contractor so desiring, to the extent, amount, in the manner, and at the times permitted. No such decision as to the method or time of conducting the Work or the use or territory shall be made the basis of any claim of delay or damage.

D. Interference with Work on Utilities: The Contractor shall cooperate fully with all utility forces of the Owner or forces of other public or private agencies engaged in the relocation, altering, or otherwise rearranging of any facilities which interfere with the progress of the Work, and shall schedule the Work so as to minimize interference with said relocation, altering, or other rearranging of facilities.

1.04 SEQUENCE OF CONSTRUCTION

A. General: Work under the Contract shall be scheduled and performed in such a manner as to result in the least possible disruption to the operation of the existing treatment facilities. Process control modifications shall not be made without first obtaining written permission from the Owner or from the Engineer.

B. Critical events in the sequence of construction are specified herein. The outlined sequence of construction does not include all items necessary to complete the work, but is intended to identify the sequence of critical events necessary to minimize disruption to the on-going plant operations and to ensure compliance with regulatory requirements. It shall be understood by the Contractor that the critical events identified are not all inclusive and that additional items of work not shown may be required. The sequence of construction is a precedence requirement and does not attempt to schedule the Contractor’s work. It is intended only to indicate which activities must precede other activities in order to minimize interferences and disruptions.

C. At no time shall the Contractor undertake to close off any pipelines, or open valves, or take any other action that would affect the operation of the existing system, until authorization is granted by the Owner or Engineer and after proper notification.

D. The work to be performed by the Contractor involves additions, temporary facilities, and modifications to major operational systems within the treatment plant and other minor sub-processes. The Contractor will be required to “interface” with these active facilities and should ensure that these systems remain operational during all construction
activities. Specific constraints to be placed on the work to be performed are summarized below. Note that this listing is subject to revision based on actual conditions.

E. General constraints on the sequence of construction are as follows:

   1. Following the Notice to Proceed with the Work, Contractor shall notify Owner and Engineer in writing at least seven (7) days before it is ready to start actual construction and prior to removing a filter basin from service.

   2. The Contractor can proceed with either “Filter Pipe Gallery Replacement” or the “Filter Basin Upgrade” work sequence first at its discretion. Only one of these work sequences can performed at a time.

   3. FILTER PIPE GALLERY REPLACEMENT

      a. The Contractor shall mobilize and prepare the staging area as shown on the drawings, including the demolition of the existing northeast wall of the filter gallery.

      b. The Contractor shall work closely with the Owner and Engineer for scheduling the work required under this Contract.

      c. The Owner will take the entire filter operation out of service for one consecutive twenty (20) calendar day period – a total of 480 consecutive hour period – commencing at approximately 10 am on a specific date as mutually agreed to by the Contractor and Owner. The Owner will drain the filters and have them ready for Contractor to commence work accordingly.

      d. The Contractor shall meet with the Engineer and Owner at least fourteen (14) days prior to the planned shutdown to review its proposed demolition and construction sequence, to reach agreement with the Owner as to access requirements and a subsequent testing, disinfection and startup schedule.

      e. This shutdown is intended to provide the Contractor full, uninterrupted access to the filter gallery for demolition and construction work without need of having to maintain operations.

      f. The Contractor shall proceed with Work continuously, (24 hours/day) start to finish, until the Work noted herein is “completed” and normal plant operation is restored.

      g. Completed shall mean to have all proposed piping and valves in place and fully testing and functional for manual operation of the filter valves along with all piping disinfected and satisfactory bacteriological laboratory results provided to the Engineer in writing. The Engineer will contact the Health Department to obtain its approval to return the filters to service.

      h. During this shutdown period the Owner will purchase water from other utilities for distribution to residents. The Owner shall pay for water for up to twenty (20) calendar days.
i. During this one shutdown period, the filter facility will be off-line and the Contractor shall have access to the filter gallery for the continuous 24-hour per day, twenty (20) calendar days period as noted.

j. The Contractor shall install the proposed air compressor unit with ancillary piping and electrical work as necessary to result in a functioning system acceptable to the Owner prior to commencing any demolition work.

k. The Contractor shall demolish existing and install new filter gallery mechanical, structural, electrical and instrumentation work as shown on the drawings.

l. For purposes of existing filter gallery structure refurbishment required by the contract documents, the Contractor shall coordinate its activities to ensure that all such work is completed prior to the conclusion of this one shutdown period.

m. As demolition and construction activity within the pipe gallery will be limited to the noted twenty (20) consecutive day period, the Contractor shall coordinate its activities to ensure that all requisite existing dimensions and connections have been verified, required submittals / shop drawings have been approved by the Engineer, proposed piping and equipment has been procured, delivered and field assembled to extent necessary, and all new stainless steel piping has been fabricated to match dimensional requirements of the proposed installation.

n. The Contractor shall remove the wall at the northeast end of the filter gallery to facilitate access. Reference the structural drawings for removal and reconstruction requirements.

o. As the existing filter gallery can also be accessed through the southwestern end, and that area includes critical process monitoring equipment, the Contractor shall exercise due caution and utilize requisite methods of its choosing to transport materials and equipment required for the demolition installation work as necessary to not impact plant operations. It is suggested that the Contractor thoroughly familiarize itself with existing work area access and restrictions, as all costs for such shall be included in the base bid.

p. The Contractor shall make all necessary provision to have access to requisite trades and equipment as may be necessary to implement field adjustments during the shutdown need to address existing conditions. In this effort, the Contractor shall also ensure that it will have uninterrupted power (emergency generators), lights, equipment and materials as necessary to complete the work.

q. Properly dispose of all replaced materials, piping, and other debris from the water treatment plant on a daily basis. Storage of demolition materials on site shall not be acceptable.

r. If the Contractor fails to complete the requisite work during the noted twenty (20) calendar day shut-down period, it shall be responsible for payment to the City a penalty in the amount of $10,000 per day for the duration after the initial twenty (20) calendar day period until the work is completed. This payment shall be deducted from the Contractors pay request accordingly.
s. The Contractor shall pressure test and disinfect all new filter pipe gallery improvements in accordance with the requirements noted in the Section entitled “Pipeline Testing and Disinfection”.

4. FILTER BASIN UPGRADES

a. The Contractor can proceed with either “Filter Pipe Gallery Replacement” or the “Filter Basin Upgrade” work sequence first at its discretion. Only one of these work sequences can performed at a time.

b. The Contractor shall meet with the Engineer and Owner at least fourteen (14) days prior to commencing filter basin upgrades to review its proposed demolition and construction sequence, to reach agreement with the Owner as to access requirements and a subsequent testing, disinfection and startup schedule.

c. The existing filters are covered with screen enclosures that shall remain in place at all times during construction, with the exception of the filter that is being refurbished. The Contractor may, with City approval, remove the screen over the filter that is being refurbished. If it chooses to do so, the Contractor shall store and protect the screen and reinstall it at the completion of the work for the filter unit. Any damage to the screen or support structure resulting from Contractor activities shall be corrected, to the satisfaction of the Owner, at no additional cost.

d. The Owner may take up to two filters out of service and empty the liquid contents. Under normal conditions, all filter basins are in operation at all times. No more than two (2) filter may be out of service at any one time for rehabilitation.

e. The Contractor shall be required to restrict its construction activities to two filters at a time. To avoid impacts to adjacent functioning filters, the Contractor shall install a wooden partition between out of service and functioning filters if applicable. The partition shall be supported by the screen superstructure, and the design of such partition shall be by the Contractor, subject to Owner acceptance.

f. Filters shall be rehabilitated in the following sequence:

<table>
<thead>
<tr>
<th>Phase</th>
<th>Filter No. 2 and Filter No. 4</th>
<th>Filter No. 1 and Filter No. 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Out of Service</td>
<td>In-Service</td>
</tr>
<tr>
<td>2</td>
<td>In-Service</td>
<td>Out of Service</td>
</tr>
</tbody>
</table>

g. During each filter shutdown period the Owner will purchase water from other utilities for distribution to residents.

h. The Owner shall pay for water purchases during these individual filter shutdown periods.
i. It is anticipated that the media in the existing filters and underdrains is either wholly or partially “cemented” and will require use of jackhammers, or other such equipment to remove. The Contractor shall include all such costs to demolish, remove and dispose of existing filter internals in its base bid.

j. Reference the Sections entitled “Filter Underdrains”, “Filter Basin Interior Waterproofing”, “Filter Media and Gravel” and “Surface Wash Agitator System” for additional requirements related to filter equipment.


l. A maximum of two (2) filters may be taken off–line at any time. Total downtime for each filter basin, including testing, disinfection and acceptance by the Engineer shall not exceed 100 calendar days. For a total of four filters, the cumulative filter downtime shall not exceed 200 calendar days.

m. If the Contractor fails to complete the requisite filter basin upgrade work during the noted 200 cumulative calendar day period, it shall be responsible for payment of City a penalty in the amount of $5,000 for any additional days beyond the 200 cumulative day filter shutdown period allowed by the contract until the work is completed. This payment shall be deducted from the Contractors pay request accordingly.

n. Note that the filter media cannot be placed until after a minimum mandatory waterproofing cure time of 14 days.

o. In addition, the Contractor shall not install filter media until onsite media testing has been accepted by Owner. Contractor shall retain the services of an independent testing laboratory to test the filter media immediately upon delivery and prior to installation.

p. The Contractor shall notify the Owner in writing at least seven (7) days prior to filter media washing and scraping operations and surface scour and underdrain system hydraulic testing.

q. Each individual filter basin surface scour test and underdrain system hydraulic test shall not be conducted until the hydrostatic test has been successfully completed and accepted by the Owner.

r. The Contractor shall notify water plant operations personnel when the filter media is ready for washing and scraping / scouring operations. All operations shall be conducted by the water plant staff.

s. The Contractor shall hydraulically test each existing filter basin in accordance with the requirements noted in the Section entitled “Hydraulic Testing of Structures”.
t. The Contractor shall disinfect each refurbished filter in accordance with the requirements noted in the Section entitled “Disinfection and Bacteriological Testing”.

u. The Contractor shall work closely with the Owner and Engineer for scheduling the work required under this Contract.

v. The Contractor shall coordinate with materials and equipment manufacturers to ensure that requisite personnel are on-site for trouble shooting and training purposes during testing, checkout, disinfection and startup.

w. Properly dispose of all replaced materials, piping, and other debris from the water treatment plant on a daily basis. Storage of demolition materials on site shall not be acceptable.

E. Substantial Completion: See the Section titled “COMPLETION TIME TERM OF CONTRACT” in the Special Conditions.

F. Final Completion: See the Section titled “COMPLETION TIME TERM OF CONTRACT” in the Special Conditions.

1.05 CONTRACTOR USE OF PROJECT SITE

A. The Contractor’s use of the project site shall be limited to its construction operations, including on-site storage of materials, on-site fabrication facilities, and field offices, as noted in the Contract Drawings.

B. Disposal of Debris: All debris, materials, piping, and miscellaneous waste products from the Work described in this Section shall be removed from the project daily. Such materials shall be disposed of in accordance with applicable federal, state, and local regulations. The Contractor is responsible for determining these regulations and shall bear all costs or retain any profit associated with disposal of these items.

C. The Contractor shall provide a security badge identification system for its employees and subcontractors working in and around the WTP facilities as described in the Section entitled “Site Access and Storage”.

1.06 OWNER USE OF THE PROJECT SITE

A. The Owner may utilize all or part of the facilities during the entire period of construction for the conduct of the Owner’s normal operations. The Contractor shall cooperate with the Owner to minimize interference with the Contractor’s operations and to facilitate the Owner’s operations.

1.07 PROJECT MEETINGS

A. Preconstruction Conference: Prior to the commencement of Work at the site, a preconstruction conference will be held at a mutually agreed time and place which shall be attended by the Contractor, its superintendent, and its subcontractors as appropriate. Other attendees will be:

1. Representatives of the Owner.
2. Governmental representatives as appropriate.

3. Others as requested by Contractor, Owner, or Engineer.

B. Unless previously submitted to the Engineer, the Contractor shall bring to the conference one copy each of the following:

1. Preliminary schedule.

2. Preliminary procurement schedule of major equipment and materials and items requiring long lead time.

3. Preliminary Shop Drawing/Sample/Substitute or "Or Equal" submittal schedule.

4. Schedule of Payment Items (lump sum price breakdown) for progress payment purposes.

C. The purpose of the conference is to designate responsible personnel and establish a working relationship. Matters requiring coordination will be discussed and procedures for handling such matters established. The agenda will include:

1. Contractor’s tentative schedules.

2. Transmittal, review, and distribution of Contractor’s submittals.

3. Processing applications for payment.


5. Critical work sequencing.

6. Field decisions and Change Orders.

7. Use of project site, office and storage areas, security, housekeeping, the Owner’s needs.

8. Major equipment deliveries and priorities.

D. The Engineer will preside at the preconstruction conference and will arrange for keeping the minutes and distributing the minutes to all persons in attendance.

E. Progress Meetings: The Engineer will schedule and hold regular on-site progress meetings at least weekly and at other times as requested by Engineer. The Owner, Contractor, Engineer, and all subcontractors active on the site shall be represented at each meeting. Contractor may at its discretion request attendance by representatives of its suppliers, manufacturers, and other subcontractors.

F. The Engineer will preside at the meetings and provide for keeping and distribution of the minutes. The purpose of the meetings will be to review the progress of the Work, maintain coordination of efforts, discuss changes in scheduling, and resolve other problems which may develop.
G. The Contractor shall attend meetings held to coordinate work between other contracts that may be on-going on the project site. The General Superintendent, Job Superintendent, and/or other key representatives of each prime Contractor shall attend these meetings, at the Owner's request.

1.08 PERMITS

A. It shall be the Contractor's responsibility to secure all permits of every description required to initiate and complete the work under this contract, except permits obtained by the Owner.

B. Permits that have been obtained by the Owner include the following:

<table>
<thead>
<tr>
<th>Agency</th>
<th>Permit</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Florida Department of Health</td>
<td>No permit required</td>
<td>See Attachment 1</td>
</tr>
<tr>
<td>Miami-Dade Department of Environmental Resources Management (DERM)</td>
<td>Approval Letter issued March 12, 2013</td>
<td>See Attachment 2</td>
</tr>
<tr>
<td>Miami-Dade Building Department</td>
<td>Processing No. M2016016055</td>
<td></td>
</tr>
<tr>
<td>City of North Miami Building Department</td>
<td>Permit No. BBC00-2016-00104</td>
<td>The Owner will provide copies of the approved drawings</td>
</tr>
</tbody>
</table>

C. Measurement and Payment for Contractor acquired permit requirements. The Engineer will furnish signed and sealed sets of Contract Documents for permit use as required.

D. The Contractor shall furnish to the Engineer copies of all permits prior to commencement of Work requiring permits.

1.09 FIELD ENGINEERING

A. Provide Field Engineering Services: Establish elevations, lines, and levels, utilizing recognized engineering survey practices.

B. Submit a copy of registered site drawing and certificate signed by the Land Surveyor that the elevations and locations of the Work are in conformance with the Contract Documents.

C. The Contractor shall provide sketches for Engineer's review of all field routed piping (generally 2-inch and smaller), instrument locations and conduit stub-ups at equipment.

D. If dimensions of equipment or piping locations are not shown on the Drawings, the Contractor shall coordinate such accordingly with the Engineer.

1.10 SITE CONDITIONS

A. The Contractor acknowledges that it has investigated prior to bidding and satisfied itself as to the conditions affecting the Work, including but not restricted to those bearing upon
transportation, disposal, handling and storage of materials, availability of labor, water, electric power, roads and uncertainties of weather, river stages, tides, water tables or similar physical conditions at the site, the conformation and conditions of the ground, the character of equipment and facilities needed preliminary to and during execution of the Work. The Contractor further acknowledges that it has satisfied itself as to the character, quality and quantity of surface and subsurface materials or obstacles to be encountered insofar as this information is reasonably ascertainable from an inspection of the site, or any contiguous site, as well as from information presented by the Drawings and Specifications made a part of this Contract, or any other information made available to it prior to receipt of Bids. Any failure by the Contractor to acquaint itself with the available information will not relieve him from responsibility for estimating properly the difficulty or cost of successfully performing the Work. The Owner assumes no responsibility for any conclusions or interpretations made by the Contractor on the basis of the information made available by the Owner.

1.11 DIMENSIONS OF EXISTING FACILITIES

A. Where the dimensions and locations of existing improvements are of critical importance in the installation or connection of new work, the Contractor shall verify such dimensions and locations in the field prior to the fabrication and/or installation of materials or equipment which are dependent on the correctness of such information.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

-END OF SECTION-
Attachment 1

Section 01010

Florida Department of Health
Permit Determination from MD Health Dept.
North Miami WTP Filter Rehab

Determination: No Permit is Required

August 18, 2016
From: Pierre-Louis, Wisler [mailto:PWisler@northmiamifl.gov]
Sent: Thursday, August 18, 2016 10:25 AM
To: Brown, George A. <gbrown@hazenandsawyer.com>; Carney, Patricia A
<pcarney@hazenandsawyer.com>; Mena, Freddy J <fmena@hazenandsawyer.com>
Cc: Vida, Paul <PVida@northmiamifl.gov>; Rizvi, Hasan <hrizvi@northmiamifl.gov>; Okereke, Chuks
<cokereke@northmiamifl.gov>
Subject: Fwd: North Miami Winson Water Treatment Plant Filter Rehabilitation

FYI

Sent from my iPhone

Begin forwarded message:

From: "Caballero, Reinaldo" <Reinaldo.Caballero@flhealth.gov>
Date: August 18, 2016 at 10:00:15 AM EDT
To: "Pierre-Louis, Wisler" <PWisler@northmiamifl.gov>, "Rojas, Richard M"
<Richard.Rojas@flhealth.gov>
Subject: North Miami Winson Water Treatment Plant Filter Rehabilitation

Good morning Mr. Wisler,

Based on the description of the project and its purpose this project does not require permit from The
Health Department.

According to Chapter 62-555.520(1)(c)(1) F.A.C. “No construction permit is required for replacement of
any existing drinking water pumping, storage, or treatment facilities, including chemical application
facilities and residuals handling facilities, with new facilities of the SAME DESIGN AND CAPACITY, and
the same general location, as the existing facilities”

However, suppliers of water shall submit written notification to the Department before beginning such
work or alterations. Each notification shall include a description of the scope, purpose, and location of
the work or alterations, and the assurance that the work or alterations will comply with applicable
requirements.

When constructing or altering treatment or storage facilities, or water mains, for which a public water
system construction permit is not required per subsection 62-555.520 (1), F.A.C., the facilities may be
placed into, or returned to, operation without the Department’s approval after disinfection and
satisfactory completion of as bacteriological evaluation (two consecutive days) . The results of the
bacteriological evaluation shall be submitted to the County Health Department within ten days after the
end of the month during which the bacteriological evaluation was completed.

No Permit Required projects require a DOH “NO PERMIT REQUIRED” stamp. The fee for that stamp is
$72.10 and we stamp up to seven sets for that fee.

If you have any question, please do not hesitate to contact me anytime.
Reinaldo Caballero  
Florida Department of Health in Miami-Dade County  
Environmental Specialist III  
Email: Reinaldo.Caballero@flhealth.gov  
Phone: (305) 623-3500 x 22022  
Mailing Address: 1725 NW 167 STREET, Floor: 01 Room: 119  
MIAMI, FL 33056  

Our Mission is to protect, promote & improve the health of all people  
in Florida through integrated state, county, & community efforts.

Please note: Florida has very broad public records law. Most written  
communication to or from state officials regarding state business are  
public records available to the public and media upon request. Your  
e-mail communications may therefore be subject to public disclosure.

The City of North Miami is a public entity subject to Chapter 119 of the Florida Statutes concerning public records. E-mail messages are covered  
der under such laws and thus subject to disclosure. All E-mail sent and received is captured by our servers and kept as a public record.
Attachment 2

Section 01010

Miami-Dade

Department of Environmental Resources Management
March 12, 2013

Mr. Wisler Pierre-Louis
North Miami City Engineer
1815 NE 150 St.
North Miami, FL 33181

RE: City of North Miami - Winson Water Treatment Plant – Filter Rehabilitation
12098 Northwest 11th Avenue. North Miami, FL 33168
Folio #: 0621260167320
RER Operating Permit: PWO-14

Certified Mail No. 7008 1830 0002 8168 6543
Return receipt requested

APPROVAL LETTER

Project Description: Replacement of the filter media, surface wash agitator system, underdrains and filter pipe gallery for existing filters No. 1 through No. 4 at the Winson Water Treatment Plant.

Dear Mr. Pierre-Louis:

This letter shall serve as a notification that as of March 12, 2013 the plans and supporting documentation for the above described project have been approved under Section 24-15 of the Miami-Dade County Code. This approval is intended for the water supply facilities as they pertain to Section 24-43 of the Miami-Dade County Code. Any modification in your plans should be submitted for review, as changes may result in approvals or permits being required. This letter does not relieve you from the need to obtain any other approvals or permits (local, state or federal), which may be required. This determination has been done on the basis of the following information presented by the applicant:


Within thirty (30) days of completion of construction (COC), the engineer of record shall submit as-built plans and a letter of certification verifying that the facility has been constructed in compliance with the approved plans. After receipt of the COC, an inspection and approval of the certified facility by RER staff is required.

Failure to adhere to the items and timeframes stipulated above may result in the referral of this case for enforcement action.

If we may be of any further assistance, please contact me or Mr. Galo Pacheco of this office at (305)372-6584 or via e-mail at pacheg@miamidade.gov.

Sincerely,

Rashid Atambour, P.E., Chief
Pollution Regulation Division

Cc: Johnny Vega, Galo Pacheco – RER
    RER No. PWO-14
Attachment 4:
Specification 01011, Page 1 Revisions
PART 1 -- GENERAL

1.01 THE REQUIREMENT

A. The CONTRACTOR shall provide a Special Building Inspector, in accordance with the requirements of the Florida Building Code, to perform all special inspections required by the Building Department with jurisdiction.

B. The Special Inspector shall be a Professional Engineer licensed in the State of Florida.

C. It is recognized that the scope of services associated with providing the special inspector cannot be quantified until the CONTRACTOR meets with the Building Department with jurisdiction and the Building Department defines the scope of special inspections.

D. For the purposes of bidding, assume an allowance of 100 hours of professional engineering services on a time and material basis for special inspections.

E. Special Inspector Allowance: The allowance amount for this bid item is to pay for all labor, equipment and materials for all work necessary and required for a licensed Professional Engineer to perform special inspections of the Work. This item includes, but is not limited to performing all special inspections as required by the Florida Building Code and all discretionary special inspections as required by the Building Department with jurisdiction, completion of all inspection reports, and completion/submittal of the Certification of Compliance. The allowance shown on the bid schedule is an estimate of services required. Payment will be based on the actual fee paid directly to the Special Inspector, documented by paid receipts, specifically excluding any labor, mark-up, overhead and profit, administration or other costs involved in obtaining licenses or paying fees. Any portion of this allowance that remains after all authorized payments have been made will be withheld from contract payments and will remain with the Owner.

1.02 SPECIAL BUILDING INSPECTOR FORM

A. Prepare and submit the form for “Special Building Inspector” as required by the Building Department with jurisdiction. The form shall be executed by the Professional Engineer licensed in the state of Florida.

B. Provide a copy of the form that is submitted to the Building Department to the ENGINEER for informational purposes.

1.03 INSPECTION REPORTS

A. Prepare a log of all progress reports and inspections related to the Special Inspections required by the Building Official. The log shall be maintained at the job site.

B. On a weekly basis submit signed and sealed progress reports and inspection reports to the Building Official as required by the Florida Building Code.
Attachment 5:
Specification 01510, Page 2 Revisions
1.07 SECURITY

A. The Contractor shall install fences and employ security guards to protect the job site against vandalism, burglary, theft, trespassing, as required. The Contractor shall care for and protect against loss or damage of all material to be incorporated in the construction, the existing structures, equipment and materials for the duration of the Contract, and shall repair or replace damaged or lost materials and damage to structures.

B. The Contractor shall be responsible for providing, maintaining and securing gates used for construction purposes for the duration of the project as required for security purposes. Reference the drawings for additional requirements.

1.08 STAGING AREA

A. The Contractor can establish staging area(s) suitable for the storage of materials and equipment associated with the project, as defined on the Drawings, and shall be fully responsible for abiding all applicable rules, regulations and conditions having jurisdictional control at the site chosen.

B. The Contractor shall be aware that the staging area shall be limited to the area(s) defined on the Drawings. The Contractor shall arrange, coordinate and take all necessary steps regarding its work effort to work within these site constraints, including off-site parking and material equipment storage, as may required to complete the work. Costs associated with these efforts shall be included in the base bid items for this project.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

- END OF SECTION -
Attachment 6:
Additional Staging Area Drawing
The City of North Miami owns this land and will make it available for staging.
Attachment 7:
Specification 01400, Page 1 Revisions
SECTION 01400 - QUALITY CONTROL

PART 1 - GENERAL

1.01 SAMPLING AND TESTING

A. Unless otherwise specified, all sampling and testing shall be in accordance with the methods prescribed in the current standards of the ASTM, as applicable to the class and nature of the article or materials considered; however, the Owner reserves the right to use any generally accepted system of sampling and testing which, in the opinion of the Engineer will insure the Owner that the quality of the workmanship is in full accord with the Contract Documents.

B. Any waiver by the Owner of any specific testing or other quality assurance measures, whether or not such waiver is accompanied by a guarantee of substantial performance as a relief from the specified testing or other quality assurance requirements as originally specified, and whether or not such guarantee is accompanied by a performance bond to assure execution of any necessary corrective or remedial Work, shall not be construed as a waiver of any requirements of the Contract Documents.

C. Notwithstanding the existence of such waiver, the Engineer reserves the right to make independent investigations and tests and failure of any portion of the Work to meet any of the requirements of the Contract Documents, shall be reasonable cause for the Engineer to require the removal or correction and reconstruction of any such Work in accordance with the General Conditions.

1.02 SITE INVESTIGATION AND CONTROL

A. The Contractor shall verify all dimensions in the field and shall check field conditions continuously during construction. The Contractor shall be solely responsible for any inaccuracies built into the Work due to its failure to comply with this requirement.

B. The Contractor shall inspect related and appurtenant Work and shall report in writing to the Engineer any conditions which will prevent proper completion of the Work. Failure to report any such conditions shall constitute acceptance of all site conditions, and any required removal, repair, or replacement caused by unsuitable conditions shall be performed by the Contractor within the scope of the Project.

1.03 OBSERVATION AND TESTING

A. The Owner will employ and pay for the services of an independent testing laboratory for testing as specified by the Engineer unless otherwise specified in these documents.

B. The work or actions of the testing laboratory shall in no way relieve the Contractor of its obligations under the Contract. The laboratory testing work will include such observations and testing required by the Contract Documents, existing laws, codes, ordinances, etc. The testing laboratory will have no authority to change the requirements of the Contract Documents, nor perform, accept or approve any of the Contractor's Work.

C. The Contractor shall allow the Engineer ample time and opportunity for field observation and testing materials and equipment to be used in the Work. The Contractor shall advise the Engineer promptly upon placing orders for materials and equipment so that arrangements may be made, if desired, for observation before shipment from the place of manufacture.
Attachment 8:
Specification 09805
PART 1 -- GENERAL

1.01 SCOPE

A. Assume for bidding purposes that the existing piping and possibly other surfaces within the filter pipe gallery are coated with lead-containing paint.

B. This Section covers the removal and disposal of paint from surfaces coated with lead-containing paint. The objective is to create a work area that is safe for workers and occupants during the removal of lead-containing paint items, and to properly dispose of lead-containing paint items, while complying with all applicable Federal, State and local regulations governing the removal and disposal of lead-containing painted items.

C. Furnish all labor, equipment and materials, and perform all operations necessary for the removal, containment, cleanup and disposal of all lead-containing paint debris and items indicated on the drawings to be removed. CONTRACTOR shall obtain any required permits and payment of any fees in connection with the Project. CONTRACTOR shall perform his own quality control, administer and supervise his work force as specified herein.

D The OWNER has retained a laboratory to inspect for lead containing paint. A copy of the report will be issued as an Addendum prior to bidding.

E. CONTRACTOR shall comply with all laws, ordinances, rules, and regulations of Federal, State and local authorities regarding worker protection during removal, handling, storing, transporting, and disposing of lead-containing waste materials. CONTRACTOR shall submit matters requiring interpretation of standards to the appropriate administrative agency for resolution before starting removal work.

1.02 REFERENCE SPECIFICATIONS, CODES AND STANDARDS

A. The publications listed below form a part of these Specifications to the extent referenced. The publications are referred to in the text by basic designation only. The list is not inclusive of all standards applicable to the project.

B. Code of Federal Regulations Publications:

29 CFR 1910 - Occupational Safety and Health Standards
29 CFR 1926 - Safety and Health Regulations for Construction
40 CFR 117 - Determination of Reportable Quantities for Hazardous Substances
40 CFR 241 - Guidelines for the Land Disposal of Solid Wastes
40 CFR 261 - Identification and Listing of Hazardous Waste
40 CFR 262 - Standards Applicable to Generators of Hazardous Waste
40 CFR 263  -  Standards Applicable to Transporters of Hazardous Waste
40 CFR 268  -  Land Disposal Restrictions
40 CFR 302  -  Designation, Reportable Quantities, and Notification

C. **Occupational Safety and Health Administration Publication:**

   PUB 3126  -  Working with Lead in the Construction Industry

D. **National Institute of Occupational Safety and Health Publication:**

   Method 7082  -  Lead

E. **American Society of Testing and Materials Publications:**

   ASTM D 3335  -  Test Method for Low Concentrations of Lead, Cadmium and Cobalt in Paint by Atomic Absorption Spectroscopy

F. **Environmental Protection Agency Publications:**

   SW-846  -  Test Methods for Evaluating Solid Waste – Physical/Chemical Methods

   Method 3050  -  Acid Digestion of Sediments, Sludges and Soils

G. **Society For Protective Coatings Publications:**

   Guide 6I (CON)-  Guide for Continuing Debris Generated During Plant Removal Operations

   Guide 7I (DIS) -  Guide for the Disposal of Lead-Contaminated Surface Preparation Debris

1.03 **DEFINITIONS**

A. **Action Level:**  Employee exposure, without regard to use of respirators, to an airborne concentration of lead of 30 micrograms per cubic meter of air averaged over an 8-hour period in an occupational or industrial environment.

B. **Competent Person (CP):**  As used in this section, refers to a person employed by the Contractor who is trained in the recognition and control of lead hazards in accordance with current federal, State, and local regulations.

C. **Eight-Hour Time Weighted Average (TWA):**  Airborne concentration of lead to which an employee is exposed, averaged over an 8-hour workday indicated in 29 CFR 1926.62

D. **Lead Containing Paint (LCP):**  Lead-based paint or other similar surfaces or coatings containing lead or lead compound which contain in excess of 0.06% lead by weight and are applicable to OSHA standard 29 CFR 1926.62.  Any condition that causes exposure to lead from lead-contaminated dust, lead-contaminated...
soil, lead-based paint that is deteriorated or present in accessible surfaces, friction surfaces, or impact surfaces that would result in adverse human health effects.

E. **Lead Control Area**: A demarcated, enclosed area or structure constructed as a temporary containment equipped with HEPA filtered local exhaust, which prevents the spread of lead dust, paint chips, or debris existing as a condition of lead-based paint removal operations. The lead control area is also isolated by physical boundaries to prevent unauthorized entry of personnel.

F. **Lead Permissible Exposure Limit (PEL)**: Fifty micrograms per cubic meter of air as an 8-hour time weighted average as determined by 29 CFR 1926.62. If an employee is exposed for more than eight hours in a workday, the PEL shall be determined by the following formula:

\[
PEL \text{ (micrograms/cubic meter of air)} = \frac{400}{\text{no. hours worked per day}}
\]

G. **Personal Sampling**: Sampling of airborne lead concentrations within the breathing zone of an employee to determine the 8-hour time weighted average concentration in accordance with 29 CFR 1926.62. Samples shall be representative of the employees’ work tasks. Breathing zone shall be considered an area within a hemisphere, forward of the shoulders, with a radius of 6 to 9 inches and centered at the nose or mouth of an employee.

H. **Physical Boundary**: Area physically roped or partitioned off around an enclosed lead control area to limit unauthorized entry personnel. As used in this section “inside boundary” shall mean the same as “outside lead control area but inside boundary”.

1.04 **SUBMITTALS**

A. The following items identified in this Article shall be submitted in accordance with Section 01300 entitled “Submittals”.

B. **Work Plan**: CONTRACTOR shall submit a detailed LCP removal work plan of the work procedures to be used in the containment, ventilation, decontamination, removal and disposal of LCP within seven days of the date of the Notice to Proceed and prior to the start of any removal work. The LCP removal work plan shall meet the applicable requirements of 29 CFR 1926. Prior to beginning work, CONTRACTOR shall meet ENGINEER to discuss in detail the removal work plan, including removal, containment, ventilation, daily work procedures, worker protection, safety precautions and disposal of waste.

C. **Containment Plan**: CONTRACTOR shall submit a detailed Containment Plan sealed by a Professional Engineer, registered in the State of Florida.

D. **Ventilation Plan**: CONTRACTOR shall submit a detailed Ventilation Plan signed and sealed by a Professional Engineer, registered in the State of Florida.
E. **Manufacturer’s Catalog Plan:** CONTRACTOR shall submit manufacturer’s data on:

1. Respirators, filters and protective clothing.
2. Containment materials.
3. Ventilation materials and equipment.
4. Other materials and equipment identified in plans submitted by CONTRACTOR.

F. **Test Reports:** Lead dust sampling shall be completed by CONTRACTOR and results reviewed by CONTRACTOR within 24 hours of the time taken. CONTRACTOR shall notify ENGINEER immediately of any exposures to workers, or others to lead dust in excess of the OSHA acceptable limits. CONTRACTOR shall submit air monitoring results to ENGINEER within three working days of the samples taken, signed by the testing laboratory employee(s) performing air monitoring, and the worker who took the sample, and CONTRACTOR’s outside foreman.

G. **CONTRACTOR** shall submit copies of all test results to ENGINEER.

H. **CONTRACTOR** shall submit the following records to ENGINEER:

1. **Testing Laboratory:** The laboratory selected by CONTRACTOR, if used to analyze air and surface samples for LCP shall meet the requirements of OSHA for Quality Control Procedures. A copy of current results of the quality assurance programs shall be submitted to ENGINEER.

2. **Permits:** A copy of all Federal, State and local licenses and permits shall be submitted for the LCP removal firm, the supervising foreman, if such licensing is required. CONTRACTOR shall obtain necessary permits in conjunction with the LCP removal work.

3. **Reports:** Daily filed reports.

4. **Logs:** Daily worker and visitor logs.

5. **Landfill:** Written evidence that the designated disposal landfill meets the requirements of 40 CFR 241 and is approved for LCP debris disposal by the EPA, State and local regulatory agencies. Submit detailed delivery tickets, prepared, signed, and dated by an agent of the landfill, certifying the amount of and concentration of leaded materials delivered to the landfill, within three working days after delivery.


7. **Hazardous Waste Manifest:** The Hazardous Waste Manifest.

8. **Notifications:** CONTRACTOR shall notify the EPA and ENGINEER in writing ten working days prior to the start of LCP removal work.
1.05 SAFETY AND HEALTH COMPLIANCE

A. **General:** CONTRACTOR shall further comply with all laws, ordinances, rules, and regulations of Federal, State and local authorities regarding handling, storing, transporting, and disposing of lead-containing waste materials. CONTRACTOR shall submit matters requiring interpretation of standards to the appropriate administrative agency for resolution before starting removal work.

B. **Medical Surveillance:** Provide medical surveillance to all personnel exposed to lead as indicated in 29 CFR 1926.62.

C. **Training:** Train each employee performing paint removal, disposal, and air sampling operations prior to the time of initial job assignment and annually thereafter, in accordance with 29 CFR 1926.21, and 29 CFR 1926.62.

D. **Training Certification:** Submit a certificate for each employee, signed and dated by the training source, stating that the employee has received the required lead training per 29 CFR 1926.62.

E. **Respiratory Protection Program:** Furnish each employee required to wear a negative pressure respirator or other appropriate type with a respirator fit test at the time of initial fitting and at least annually thereafter as required by 29 CFR 1926.62. Establish and implement a respiratory protection program as required 29 CFR 1910.134 and 29 CFR 1926.62. Establish and implement a Hazard Communication Program as required by 29 CFR 1926.59.

1.06 HAZARDOUS WASTE MANAGEMENT

A. The Hazardous Waste Management Plan shall comply with applicable requirements of federal, State, and local hazardous waste regulations and address:

1. Identification and classification of hazardous wastes associated with the work.

2. Estimated quantities of wastes to be generated and disposed.

3. Names and qualifications of each contractor that will be transporting, storing, treating, and disposing of the wastes. Include the facility location and operator and a 24-hour point of contact.

4. Names and qualifications (experience and training) of personnel who will be working on-site with hazardous wastes.

5. List of waste handling equipment to be used in performing the work, to include cleaning, volume reduction, and transport equipment.

6. Spill prevention, containment, and cleanup contingency measures including a health and safety plan to be implemented in accordance with 29 CFR1926.65.

7. Work plan and schedule for waste containment, removal and disposal. Wastes shall be cleaned up and containerized daily.
8. Include any process that may alter or treat waste rendering a hazardous waste nonhazardous.

1.07 COMPETENT PERSON RESPONSIBILITIES

A. The following are the responsibilities of the CP:

1. Certify training as meeting all federal, State, and local requirements.

2. Review and approve LCP removal and disposal plan for conformance to applicable referenced standards.

3. Inspect LCP removal work for conformance with the approved plan.

4. Responsible for personnel air sampling.

5. Ensure work is performed in strict accordance with specifications at all times.

6. Control work to prevent exposure to occupants and to the environment at all times.

7. Certify the conditions of the work as called for elsewhere in this specification.

1.08 POLLUTION

A. The generation of lead containing dust or LCP debris outside of the Lead Control Area is prohibited.

PART 2 – PRODUCTS

2.01 BLASTING ABRASIVE MATERIALS

A. General: CONTRACTOR shall use mineral, slag or synthetic type abrasives for blast cleaning of paint. Silica sand shall not be used as an abrasive for blast cleaning. The blasting abrasive shall be of the type and size to establish an angular anchor profile within the guidelines of the Coating Manufacturer’s product data sheets

B. Blasting Abrasive Additive: CONTRACTOR shall a blasting abrasive additive such as Blastox, or equal, to the abrasives to condition the waste so that it is considered nonhazardous by EPA standards. The blasting abrasive additive shall be designed to disintegrate into small particles when it hits the surface being sandblasted to provide maximum coverage of the additive to the paint particles.

2.02 EQUIPMENT

A. Respirators: Furnish appropriate respirators approved by the National Institute for Occupational Safety and Health (NIOSH), Department of Health and Human Services, for use in atmospheres containing lead dust. Respirators shall comply with the requirements of 29 CFR 1926.62.
B. **Special Protective Clothing:** Furnish personnel who will be exposed to lead-contaminated dust with proper disposable (uncontaminated, reusable) protective whole body, head covering, gloves, and foot coverings as required by 29 CFR 1926.62. Furnish proper disposable plastic or rubber gloves to protect hands. Reduce the level of protection only after obtaining approval from the CP.

C. Furnish the ENGINEER with two complete sets of personal protective equipment (PPE) daily, as required herein, for entry into and inspection of the lead removal work within the lead controlled area. Personal protective equipment shall include disposable whole body covering, including appropriate foot, head, eye, and hand protection. PPE shall remain the property of the CONTRACTOR. Any Type "C" respiratory protection necessary for the safe entry into the controlled area for the Site Representative will be provided by the CONTRACTOR while any air purifying respiratory protection used by ENGINEER.

**PART 3 – EXECUTION**

**3.01 CONTAINMENT**

A. **General:** CONTRACTOR shall erect a temporary structure around the work area to contain debris from blast cleaning operations including airborne particulate matter. Containment shall be maintained during painting operation.

B. CONTRACTOR shall test solid waste for hazardous material content. All wastes shall be considered hazardous until sufficient testing indicates that it is nonhazardous. CONTRACTOR shall take all necessary actions to protect his workers from working with and handling wastes that are considered to be hazardous.

C. The containment system shall meet the requirements of Class 2 as specified in the SSPC Guide 6 “Guide for Containing Debris Generated During Paint Removal Operations.” Assessment of the containment system will be conducted in accordance with SSPC Guide 6 Section 5.5. CONTRACTOR is responsible for the testing. All workers shall be protected in accordance with the applicable OSHA standards.

D. **Loads:** The containment system shall be designed and erected so that no damaging loads are imposed by the containment and collection systems on the existing structures and/or piping.

E. **Boundary Requirements:** Provide physical boundaries around the lead control area and staging area by barricade tape and work compound.

F. **Warning Signs:** Provide caution signs at boundary and warning signs at approaches to lead control areas. Locate signs at such a distance that personnel may read the sign and take the necessary precautions before entering the area. Signs shall comply with the requirements of 29 CFR 1926.62.

**3.02 MONITORING**
A. CONTRACTOR shall perform personnel air monitoring during the ongoing paint removal activity to determine the level of airborne lead and the adequacy of the respiratory protection required. Each active worker shall be monitored. The highest reading of any worker shall serve as the basis of respirator protection. CONTRACTOR shall provide ENGINEER with test results within three consecutive days after completion of the weekly testing. Federal, State or local regulations regarding occupational exposure monitoring shall be followed if more stringent than the monitoring required herein. Monitoring shall be determined by CONTRACTOR to be in compliance with federal regulations.

B. CONTRACTOR shall install air monitors to continuously monitor airborne particulate matter for lead. The monitors shall be placed into operation prior to the erection of the containment facilities and remain in service until after the removal of the containment facilities. The number and location of monitors shall be determined by CONTRACTOR to be in compliance with local, state and federal regulations based on his operations.

3.03 SOIL SAMPLING

A. Soil sampling prior to the start of the Work on the site. CONTRACTOR shall test four locations near the filters, as designated by the ENGINEER in the field. Locations of the soil samples shall be staked and surveyed by CONTRACTOR. Sample locations shall be marked with a surveyor stake or pin to locate the sample points after the completion of the Work.

B. After completion of the work, the CONTRACTOR shall test the same seven sample areas as described in above. CONTRACTOR shall collect samples according to the HUD protocol contained in HUD Guidelines to determine the lead content of settled dust in parts per million (ppm) or micrograms per gram (mg/g) for soil. Comparing these soil samples with the ones taken prior to the start of the work will determine if soil lead levels increased at a statistically significant level (significant at the 95 percent confidence limit) from the soil lead levels prior to the lead removal operation. If soil lead levels either show a statistically significant increase above soil lead levels prior to lead removal operations or soil lead levels are above any applicable federal or state standard for lead in soil, the soil shall be remediated by the CONTRACTOR at no cost to the OWNER.

3.04 BLASTING ABRASIVE ADDITIVE

A. CONTRACTOR shall store and blend blasting abrasive additive in accordance with the manufacturer’s written instructions.

3.05 DISPOSAL OF WASTE

A. Requirements: Blasting media/waste and residue shall be cleaned from the work area prior to coating activities. CONTRACTOR shall dispose of LCP debris in accordance with applicable Federal, State, and local requirements. CONTRACTOR shall submit written disposal plans to ENGINEER for review not less than seven days prior to bringing any disposal operations involving LCPs. CONTRACTOR shall complete and furnish to ENGINEER a complete written report
of all disposal activities, whether hazardous or nonhazardous, within three days after completion of the particular disposal activity or operation.

B. CONTRACTOR shall refer to SSPC Guide 7 “Guide for Disposal of Lead Contaminated Surface Preparation Debris” for disposal.

C. Wastes from different removal methods and from dust collecting equipment shall be kept separate by CONTRACTOR and stored and handled as hazardous waste. All wastes shall be assumed to contain lead and CONTRACTOR shall take all necessary actions to protect his workers from this hazard. All wastes shall be considered hazardous until sufficient testing indicates that it is nonhazardous.

D. Testing for Hazardous Waste: CONTRACTOR shall determine if any of the wastes are hazardous based on the test results for leachable lead by Total Characteristic Leaching Procedures (TCLP) or, based on previous TCLP test results, declare a waste to be hazardous. CONTRACTOR shall take random samples of waste material prior to cleanup for testing purposes. When the results of this testing indicate a concentration of leachable lead to be greater than five parts per million the waste shall be considered hazardous, requiring special disposal.

E. Waste generated may contain lead although the amount of leachable lead shall be below five ppm to consider it a nonhazardous waste.

F. Nonhazardous Waste Disposal: All nonhazardous waste shall be transported to a Class 1 Sanitary Landfill where they shall be disposed. CONTRACTOR shall submit a tracking document indicating where and when the waste was disposed. The transporter and the disposal facility shall sign the document.

G. Hazardous Waste: If any of the wastes are determined to be hazardous wastes, then CONTRACTOR shall obtain an EPA identification number and dispose of the waste in accordance with the following:

1. CONTRACTOR shall complete EPA Form 8700-12 and transmit it to the EPA Region Office where a permanent identification number will be assigned – usually within three to six weeks.

2. All hazardous waste shall be collected and stored in proper DOT approved containers. The waste containers shall meet all DOT requirements for packaging and labeling before transport. The containers must be labeled “Hazardous Waste” and once full, dates of accumulations must be placed on them. Once dated, the waste can be stored on site for a maximum of ninety days before shipment is required. When not in use, all containers must be secured. “Danger: Unauthorized Personnel Keep Out” signs shall be placed around the waste storage area and shall be visible from all directions of approach.

3. Lead-containing waste shall be transported and disposed of in a manner to prevent lead from becoming airborne.

4. An EPA Manifest form shall be obtained prior to transporting the waste. CONTRACTOR shall keep the original copy of the Manifest for at least three
years after the issuance of Substantial Completion by OWNER. Copies shall be submitted to ENGINEER.

- END OF SECTION -
Attachment 9:
Specification 01540 Revisions
PART 1 - GENERAL

1.01 THE REQUIREMENT

A. The Contractor shall furnish all labor, materials and equipment to demolish associated piping, equipment and accessories designated to be removed on the Drawings.

B. It is important to note that limited record drawings are available for the existing facilities where demolition work is to be implemented under the scope of this project. To this end, the demolition drawings are generally intended to illustrate the existing conditions through a series of pictures taken as noted. As such, not all existing improvements may be discernible from the contract drawings.

C. The Contractor shall retain full responsibility for coordinating with Owner staff as necessary to visit the Project site, verify existing conditions, and properly include all costs associated with demolition, protection of existing improvements and facilities, and the installation of all Work through Project completion and closeout in accordance with all requirements noted in these specifications, in its base bid.

D. No additional payment to the Contractor will be made as a result of impacts to the Work that may result from existing conditions and improvements, whether readily identifiable on the contract drawings or not.

E. By submitting a Bid, the Contractor acknowledges that it has investigated the site prior to bidding and satisfied itself as to the conditions affecting the demolition work. The Contractor further acknowledges that it has satisfied itself as to the character, quality and quantity of materials and/or obstacles to be encountered insofar as this information is reasonably ascertainable from an inspection of the site, or any contiguous site, as well as from information presented by the Drawings and Specifications made a part of this Contract, or any other information made available to it prior to receipt of Bids. Any failure by the Contractor to acquaint itself with the available information will not relieve it from responsibility for estimating properly the difficulty or cost of successfully performing the work.

F. The Owner assumes no responsibility for any conclusions or interpretations made by the Contractor on the basis of the information made available by the Owner.

G. The Contractor shall include all costs associated with demotion work in its Base Bid.

1.02 DIMENSIONS OF EXISTING FACILITIES AND COMPONENTS

A. Where the dimensions, locations, number and type of existing improvements are of critical importance, the Contractor shall verify such in the field prior to submission of its Base Bid.

1.03 SUBMITTALS – DEMOLITION WORK PLAN

A. The Contractor shall submit for review, in accordance with the Section entitled "Submittals" a “Demolition Work Plan” indicating the proposed methods, equipment and
operation sequence, including coordination for shut-off and isolation of existing facilities and utilities, temporary connections for continuation of service, and other applicable items to ensure no interruption of plant operations except as agreed to with Owner.

1.04 TITLE TO EQUIPMENT AND MATERIALS

A. The Contractor shall have no right or title to any of the equipment, materials or other items to be removed from the existing structures unless and until said equipment, materials and other items have been removed from the premises. The Contractor shall not sell or assign, or attempt to sell or assign any interest in the said equipment, materials or other items until the said equipment, materials or other items have been removed.

B. Reference the Demolition drawings and review Article 1.05 below for general discussion of items to be salvaged by the Owner prior to commencement of demolition.

C. All Items remaining after the Owner has completed its salvage work shall become the responsibility of the Contractor to demolish and dispose of per jurisdictional requirements.

D. The Contractor shall have no claim against the Owner because of the absence of materials that it may have assumed to remain that the Owner salvages.

1.05 CONDITION OF STRUCTURES AND EQUIPMENT

A. The Owner does not assume responsibility for the actual condition of structures and equipment to be demolished and removed.

B. Conditions existing at the time of inspection for bidding purposes will be maintained by the Owner to the extent practicable.

C. The information regarding the existing structures and equipment shown on the Drawings is based on visual inspection and a walk-through survey only. Neither the Engineer nor the Owner will be responsible for interpretations or conclusions drawn therefrom by the Contractor.

D. The Contractor shall perform all requisite field investigations to properly establish costs for such work and include these in its Base Bid.

E. It is of critical importance that the Contractor schedule and perform the requisite number of pre-bid field visits it deems necessary to ascertain the conditions, construction dimensions, components and general complexity and makeup of both interior, exterior and buried facilities to be demolished under the scope of this Project, as not all improvements may be visible from an external surface observation.

1.06 LEAD-CONTAINING PAINT

A. See specification Section 09805.

1.07 ASBESTOS

A. All demolition and renovation projects for commercial facilities require review for asbestos and approval from the Miami-Dade Division of Environmental Resources Management, Department of Regulatory and Economic Resources.
B. An asbestos survey must be completed for all demolition projects and all renovation projects over 160 square feet.

C. The OWNER has retained a laboratory to perform an asbestos survey. A copy of the asbestos survey report will be issued as an addendum.

D. The Contractor shall prepare and submit an “Affidavit for Asbestos Survey” if it is required. See website link below for form.


E. The Contractor shall prepare and submit a “Notice of Demolition or Asbestos Renovation” if it is required. See website link below for form.


F. The Contractor shall obtain all necessary permits from the Miami-Dade Department of Environmental Resource Management (DERM).

G. It is the responsibility of the Contractor to quantify the amount of asbestos-containing material during bidding and the Contractor’s review of the Asbestos Survey.

H. The Contractor shall furnish all labor, equipment and materials, and perform all operations necessary for the removal, containment, cleanup and disposal of all asbestos-containing elements in the structures. Obtain any required permits and payment of any fees relating to this work. The Contractor shall perform his own quality control, administer and supervise his work force as specified herein.

I. The Contractor shall comply with all laws, ordinances, rules and regulations of Federal, State and local authorities regarding worker protection during removal, handling, storing, transporting, and disposing of asbestos-containing waste materials. The Contractor shall submit matters requiring interpretation of standards to the appropriate administrative agency for resolution before starting removal work. The Contractor shall assume responsibility for all costs related to compliance with regulatory requirements.

PART 2 – PRODUCTS (NOT USED)

PART 3 -- EXECUTION

3.01 DEMOLITION AND REMOVALS

A. The removal of all equipment and piping, and all materials from the demolition effort shall, when released by the Owner and Engineer, become the Contractor's property, unless
otherwise noted, for disposition in any manner not contrary to the Contract requirements and shall be removed from the site to the Contractor’s own place of disposal.

B. The Contractor shall de-energize all panelboards, lighting fixtures, switches, circuit breakers, electrical conduits, motors, limit switches, pressure switches, instrumentation such as flow, level and/or other meters, wiring, and similar power equipment prior to removal, as applicable. Any electric panels or equipment that are to be retained shall be relocated or isolated prior to the removal of the equipment specified herein. All existing electrical equipment to be removed shall be removed with such care as may be required to prevent unnecessary damage, to keep existing systems in operation and to keep the integrity of the grounding systems.

C. Conduits and wires shall be abandoned or removed where noted or as shown on the Drawings. All wires in abandoned conduits shall be removed. Abandoned conduits concealed in floor or ceiling slabs or in walls, shall be cut flush with the slab or wall at the point of entrance. The conduits shall be suitably plugged and the area repaired in a flush, smooth, approved manner. Exposed conduits and their supports shall be disassembled and removed from the project site. Repair all areas of removal to prevent rust spots on exposed surfaces.

D. The Contractor shall proceed with the removal of equipment, piping and appurtenances in a sequence designed to maintain the plant in continuous operation as described in the Section entitled "Maintenance of Utility Operations During Construction", and shall proceed only after approval of the Engineer and Owner.

E. Any equipment piping and appurtenances removed without proper authorization, which are necessary for the operation of the existing facilities, shall be replaced to the satisfaction of the Engineer at no cost to the Owner.

F. No removals shall be started until it is acceptable to the Engineer.

3.02 PROTECTION OF EXITING FACILITIES AND PLANT OPERATIONS

A. Demolition and removal work shall be performed by competent experienced workmen for the various type of demolition and removal work and shall be carried out through to completion with due regard to the safety of Owner employees, workmen on-site and the public. The work shall be performed with as little nuisance as possible.

B. The work shall comply with the applicable provisions and recommendation of ANSI A10.2, Safety Code for Building Construction, all governing codes, and as hereinafter specified.

C. The Contractor shall make such investigations, explorations and probes as are necessary to ascertain any required protective measures before proceeding with demolition and removal. The Contractor shall give particular attention to shoring and bracing requirements so as to prevent any damage to new or existing construction.

D. The Contractor shall provide, erect, and maintain catch platforms, lights, barriers, weather protection, warning signs and other items as required for proper protection of the public, occupants of the building, workmen engaged in demolition operations, and adjacent construction.
E. The Contractor shall provide and maintain weather protection at exterior openings so as to fully protect the interior premises against damage from the elements until such openings are closed by new construction.

F. The Contractor shall provide and maintain temporary protection of the existing structure designated to remain where demolition, removal and new work is being done, connections made, materials handled or equipment moved.

G. The Contractor shall take necessary precautions to prevent dust from rising by wetting demolished masonry, concrete, plaster and similar debris. Unaltered portions of the existing buildings affected by the operations under this Section shall be protected by dust-proof partitions and other adequate means. Existing electrical and mechanical equipment to remain shall be protected from damage, dust, and debris.

H. The Contractor shall provide adequate fire protection in accordance with local Fire Department requirements.

I. The Contractor shall not close or obstruct walkways, passageways, or stairways and shall not store or place materials in passageways, stairs or other means of egress. The Contractor shall conduct operations with minimum traffic interference.

J. The Contractor shall be responsible for any damage to the existing structure or contents by reason of the insufficiency of protection provided.

3.03 WORKMANSHIP

A. The demolition and removal work shall be performed as described in the Contract Documents. The work required shall be done with care, and shall include all required shoring, bracing, etc. The Contractor shall be responsible for any damage which may be caused by demolition and removal work to any part or parts of existing structures or items designated for reuse or to remain. The Contractor shall perform patching, restoration and new work in accordance with applicable Technical Sections of the Specifications and in accordance with the details shown on the Drawings. Prior to starting of work, the Contractor shall provide a detailed description of methods and equipment to be used for each operation and the sequence thereof for review by the Engineer.

B. All supports, pedestals and anchors shall be removed with the equipment and piping unless otherwise specified or required. Concrete bases, anchor bolts and other supports shall be removed to approximately 1-inch below the surrounding finished area and the recesses shall be patched to match the adjacent areas. Superstructure wall and roof openings shall be closed, and damaged surfaces shall be patched to match the adjacent areas, as specified under applicable Sections of these Specifications, as shown on the Drawings, or as directed by the Engineer. Wall sleeves and castings shall be plugged or blanked off, all openings in concrete shall be closed in a manner meeting the requirements of the appropriate Sections of these Specifications, as shown on the Drawings, and as directed and approved by the Engineer.

C. Materials or items designated to remain the property of the Owner shall be as hereinafter tabulated. Such items shall be removed with care and stored at a location at the site to be designated by the Owner.
D. Where equipment is shown or specified to be removed and relocated, the Contractor shall not proceed with removal of this equipment without specific prior approval of the Engineer. Upon approval, and prior to commencing removal operations, the equipment shall be operated in the presence of representatives of the Contractor, Owner and Engineer. Such items shall be removed with care, under the supervision of the trade responsible for reinstallation and protected and stored until required. Material or items damaged during removal shall be replaced with similar new material or item. Any equipment that is removed without proper authorization and is required for plant operation shall be replaced at no cost to the Owner.

E. Wherever piping is to be removed for disposition, the piping shall be drained by the Contractor and adjacent pipe and headers that are to remain in service shall be blanked off or plugged and then anchored in an approved manner.

F. Materials or items demolished and not designated to become the property of the Owner or to be reinstalled shall become the property of the Contractor and shall be removed from the property and legally disposed of.

G. The Contractor shall execute the work in a careful and orderly manner, with the least possible disturbance to the public and to the occupants of the structures.

H. In general, masonry shall be demolished in small sections, and where necessary to prevent collapse of any construction, the Contractor shall install temporary shores, struts, and bracing.

I. Where alterations occur, or new and old work join, the Contractor shall cut, remove, patch, repair or refinish the adjacent surfaces to the extent required by the construction conditions, so as to leave the altered work in as good a condition as existed prior to the start of the work. The materials and workmanship employed in the alterations, unless otherwise shown on the Drawing or specified, shall comply with that of the various respective trades which normally perform the particular items or work.

J. The Contractor shall clean existing surfaces of dirt, grease, loose paint, etc., before refinishing.

K. The Contractor shall cut out embedded anchorage and attachment items as required to properly provide for patching and repair of the respective finishes.

l. The Contractor shall remove temporary work, such as enclosures, signs, guards, and the like when such temporary work is no longer required or when directed at the completion of the work.

3.04 MAINTENANCE

A. The Contractor shall maintain the buildings, structures and public properties free from accumulations of waste, debris and rubbish, caused by the demolition and removal operations.

B. The Contractor shall provide on-site dump containers for collection of waste materials, debris and rubbish, and it shall wet down dry materials to lay down and prevent blowing dust.
C. At reasonable intervals during the progress of the demolition and removal work or as directed by the Engineer, the Contractor shall clean the site and properties, and dispose of waste materials, debris and rubbish.

3.05 CLEANUP

A. The Contractor shall, promptly and on a regular basis, remove from the project site all debris resulting from the demolition and removal operations as it accumulates. Upon completion of the demolition work, all materials, equipment, waste and debris of every sort shall be removed and the premises shall be left clean, neat and orderly.

B. Upon completion of the demolition work the disturbed areas shall be graded and prepared to receive proposed construction as specified in Division 2 of these documents.

- END OF SECTION -
Attachment 10:
Specification 15000 Revisions
# PIPE SCHEDULE

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<tr>
<th>Service</th>
<th>Nominal Pipe Diameter (Inches)</th>
<th>Material</th>
<th>Thickness Class or Schedule</th>
<th>Working Pressure (PSIG)</th>
<th>Type of Joints</th>
<th>Type of Fittings</th>
<th>Protective Coating</th>
<th>Remarks</th>
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<td>Sch 5S</td>
<td>100</td>
<td>Note 1</td>
<td>316 SS</td>
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<td>Filter Feed, Backwash, Drain, Waste and Product Piping</td>
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<td>316 SS</td>
<td>Sch 5S</td>
<td>100</td>
<td>Note 1</td>
<td>316 SS</td>
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<tr>
<td>Compressed Air Piping</td>
<td>3-inch and less</td>
<td>Galvanized Steel</td>
<td>Sch 80</td>
<td>100</td>
<td>Note 3</td>
<td>-</td>
<td>-</td>
<td>-</td>
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<tr>
<td>Potable Water Supply to Hose Bibbs (above ground mounted on existing filters)</td>
<td>3-inch and less</td>
<td>Galvanized Steel</td>
<td>Sch 80</td>
<td>100</td>
<td>Note 3</td>
<td>-</td>
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1 Refer to the Section entitled “Stainless Steel Pipe”
2 Refer to the Section entitled “Stainless Steel Tubing”
3 Refer to the Section entitled “Mill Piping, Exposed and Buried”

- END OF SECTION -
Attachment 11:
Specification 13220 Revisions
SECTION 13220 – FILTER UNDERDRAINS

PART 1 - GENERAL

1.01 THE REQUIREMENT

A. The Contractor shall remove the contents of each existing filter, including surface scour, media, underdrains and ancillary supports and equipment, as necessary to result in a suitably clean filter box, acceptable to the proposed Filter Underdrain, Supplier, for installation of new filter units as specified herein.

B. In this effort, the Contractor shall visit the site, perform exploratory work and otherwise meet and coordinate with the Plant Staff and Filter Underdrain Supplier to verify the actual content, construction of the existing filter units, properly coordinate shutdowns, demolition, disposal and installation of all new filter improvements.

C. The existing filters are covered with screen enclosures that shall remain in place at all times during construction. Therefore, the Contractor shall plan its work as necessary to ensure that the screen is not removed / damaged – except at times when materials/equipment required for the Work must be transferred from the exterior to the interior of the enclosed area.

D. The Contractor shall furnish, deliver, install, test and place in satisfactory operation the underdrain system for four (4) filters, complete with all necessary accessories at the locations shown on the Drawings and as specified herein.

E. All equipment and materials used in contact with the water shall meet NSF Standard 61.

F. All of the equipment described in this section shall be supplied by F.B. Leopold Company, DeNora Water Technologies, Inc., or equal.

G. The Contractor shall be responsible for coordinating all equipment, materials and services required under this Contract for proper installation and operation of the filters rehabilitated. Coordination will be required during demolition, construction, start-up and testing.

H. It is the intent of this Specification is to obtain an installation complete in every necessary detail whether or not covered by the Specification. Any omission of required equipment from the Specification shall not relieve the manufacturer of its responsibility to satisfy this intent.

I. Reference the Section entitled “Summary of Work” for construction sequencing restrictions applicable to this Work.

1.02 RELATED WORK SPECIFIED ELSEWHERE

A. Hydrostatic Testing of Structures

B. Summary of Work

C. Maintenance of Utility Operations during Construction
D. Stainless Steel Pipe

E. Pipe Supports

F. Filter Basin Interior Waterproofing

G. Filter Media and Gravel

H. Surface Wash Agitator System

I. Demolition of Existing Facilities

J. Equipment Testing and Plant Startup

1.03 REFERENCE SPECIFICATIONS, CODES AND STANDARDS

A. NSF Standard 61 Drinking Water System Components - Health Effects

1.04 SUBMITTALS

A. The Contractor shall submit complete Shop Drawings, Performance Affidavit, Operation and Maintenance Instructions and other information as specified in accordance with sections entitled “Materials and Equipment” and “Submittals”.

B. **Shop Drawings**: Required information shall include manufacturer’s catalog information, descriptive literature, specifications, materials of construction and supports, headloss data for backwash, structural design calculations, complete installation and adjustment instructions and recommendations, flow distribution calculations, certification of compatibility of the underdrain system with the filter media specified in the Section entitled “Filter Media and Gravel”, NSF-61 certification of all underdrain components, details for installing reinforcing and other items to be embedded in concrete. Shop drawings shall show all important details of construction, dimensions, and location of endplates, bridging, anchorage and all other data which in the judgment of Engineer is necessary to demonstrate conformance with all requirements of the Contract Documents.

C. **Certificates**: The Contractor shall submit certificate of factory tests and test results prior to delivery of underdrains. Prior to shipment from the factory, one (1) out of every 50 underdrain blocks shall be tested for headloss and uniform dispersion of water. A full length lateral shall be tested in a test cell capable of isolating and physically measuring flow rate at 2-feet intervals. The results of the headloss and dispersion tests shall be within 10 percent of the manufacturer’s published values. Certification shall include that the underdrain system has been designed to resist all loads specified, implied, and reasonably anticipated.

D. **Schedule**: The Contractor shall submit a schedule of work for approval prior to commencement of work.

E. **Testing Procedure**: The Contractor shall submit detailed hydraulic test and start-up procedures as obtained from the underdrain manufacturer.
F. **Performance Affidavit:** Contractor shall provide manufacturer’s affidavit of proper installation and performance to the Owner upon completion of successful testing.

G. Two alternative filter designs are specified herein.

H. To facilitate generation of the contract drawings, the filter structure design shows a central sump per F.B. Leopold Supplier requirements.

I. The Contractor’s proposed Supplier shall have unit responsibility for reviewing the contract drawings and determining any proposed revisions needed for the central sump or proposed structure, ancillary equipment and materials to properly fit / accept the Suppliers equipment.

J. In cases, where revisions are recommended, the Supplier shall prepare revised drawings and meet with the Engineer to reach agreement as to any revisions that are to be incorporated into the Work. All such efforts, and any resulting modifications to structures, equipment and piping shall be at no additional costs to the Owner. In addition, Engineer participation in reviews shall be subject to conditions noted in the Section entitled “Submittals”.

K. In addition, all revisions shall be submitted under the seal of a Professional Engineer Registered in the State of Florida. The Supplier shall also assume responsibility for coordinating with the Contractor and fabricating the proper equipment and forming and casting proper structures to accept the Suppliers equipment, while maintaining the general intent of the design documents.

1.05 RESPONSIBILITIES AND GUARANTEE

A. The materials covered by these Specifications are intended to be standard equipment of proven reliability and as manufactured by reputable manufacturers having experience in the production of such equipment. The equipment furnished shall be designed, constructed, and installed in accordance with the best practices and methods and shall operate satisfactorily when installed as shown on the Drawings and operated per manufacturer’s recommendations.

B. The underdrain manufacturer shall guarantee to the Contractor and Owner compatibility of the underdrain system with the specified filter media and surface wash system. The underdrain manufacturer shall guarantee proper performance of the underdrain/media system with respect to influent and backwash flow distribution, short circuiting, proper cleaning of the media, plugging and related operational concerns.

C. The underdrain manufacturer shall be fully responsible for the structural design and integrity of the underdrain system including all anchorage and connections. The underdrain manufacturer shall warrant the underdrain blocks for materials and workmanship for a period of two (2) years after the completion of the project. Warranty shall be submitted with the Shop Drawings.

1.06 MANUFACTURER’S SERVICE REPRESENTATIVE

A. The services of a qualified Leopold technical representative who shall adequately supervise the installation and testing of all equipment furnished under this contract and instruct the Owner’s operating personnel in its maintenance and operation. The services
of the manufacturer's representative shall be provided for a period of not less than seven (7) days as follows:

1. One (1) trip of at least three (3) days (8 hrs/day) to instruct the Contractor's personnel on the proper installation technique of the underdrain system, including certification of the installation.

2. Four (4) trips of at least four (4) days (8 hrs/day) to complete underdrain system performance testing including instructing the Owner's personnel in the proper operation and maintenance of the underdrain system.

B. The times specified are exclusive of travel to and from the facility and shall not be construed as to relieve the manufacturer of any additional visits to provide sufficient service to place the equipment in satisfactory operation.

C. Any additional time required to achieve successful installation shall be at the expense of the Contractor.

D. Underdrain manufacturer's services shall be at such times as requested by the Contractor and the Owner.

1.07 MATERIAL DELIVERY, STORAGE, AND PROTECTION

A. Place or store underdrains and specialties only in designated staging areas shown on the Drawings and approved by the Owner.

B. Store underdrains and specialties off the ground, under ultraviolet-resistant tarps from time of delivery on-site until final installation of the filters.

C. Replace, at no charge to Owner, underdrains and specialties damaged during storage and delivery.

D. Underdrains and specialties are subject to inspection at the Engineer's or Owner's request if visual evidence of damage is observed.

1.08 CLEANUP

A. The Contractor shall take all precautions recommended by the underdrain manufacturer or specified herein to ensure that the filter underdrain system and any piping communicating therewith is completely clean and free of any debris, dirt, or other foreign materials which could clog the underdrain system or interfere with flow.

B. Backwash water piping shall be thoroughly flushed clean. All loose debris and dirt within the filter bays and flume shall be removed by brooming down and vacuuming.

C. Care shall be taken to keep grout from being deposited anywhere where it could interfere with flow. Any grout so deposited shall be removed.

D. As installation progresses, the Contractor shall ensure partially completed portions of the Work is protected with heavy visqueen or other suitable material to maintain the cleanliness of the underdrain system. Such protection shall be maintained until the filter media is installed.
E. Any time the underdrain laterals are to be used as a work surface, the underdrain block shall be overlaid with ½-inch minimum plywood sheeting where necessary to distribute the load of yard buckets, wheel barrows, ladders, scaffolds, etc., to prevent damage to the underdrain.

F. Following installation of the underdrain system and grout curing, the system shall be completely cleaned and washed free of all loose materials and debris prior to placement of the filter media.

PART 2 — PRODUCTS

2.01 GENERAL

A. The filter underdrain system shall be designed and installed to ensure long-term stability in its operating characteristics. It shall be resistant to changes in head loss, flow uniformity, and any other effects that would in time cause loss of efficiency or effectiveness in its operation.

B. The underdrain system shall be designed to allow for the uniform collection of filtered water and uniform distribution of backwash water over the total area of the filter floor.

C. The system shall be designed to avoid localized areas of excessive flow (maldistribution) that may cause mounding, lateral displacement, or other deleterious disturbances in the filter media.

D. To ensure the underdrain will control distribution (limit maldistribution) and not be overpowered by the media headloss, the minimum headloss through the orifices (primary and secondary) of an individual underdrain block shall not be less than a 20-inch water column at a backwash flow rate of 20 gpm/sf of filter area when the water temperature is approximately 60°F.

2.02 PERFORMANCE AND DESIGN REQUIREMENTS

A. Design Flow Rates: The filter underdrain system shall be furnished and installed to perform satisfactorily and as specified when operated under the following conditions:


B. Flow Distribution: The filter underdrain system, as installed, shall provide acceptable flow uniformity. Maldistribution of water flows during backwash shall not exceed +/- 2 percent of the maximum gpm/sf rates noted above. This shall include maldistribution, due to specific flume arrangement, entry conditions into both flume and underdrain laterals and flow velocities.

C. Structural Design Requirement: The filter underdrain system shall be furnished and installed to perform satisfactorily and as specified under the following conditions:

1. The filter underdrain system, including anchorage and supports shall be designed to safely withstand loadings for the specified conditions.
2. The filter underdrain system, when installed, shall be designed for a net internal loading during backwash of the greater of either 600 psf or 200 percent of the maximum pressure at maximum backwash rates. No credit shall be taken for the weight of gravel or filter media.

3. The filter underdrain system shall also be designed to withstand a net downward loading of not less than 1,400 psf.

2.03 UNDERDRAIN BLOCKS

A. The individual underdrain blocks shall be of impervious high strength, completely corrosion-resistant, high-density polyethylene (HDPE) material. The blocks shall be resistant to erosion and corrosion and have uniform smooth surfaces. The blocks shall be essentially rectangular in shape with dispersion orifices located in the top flat surface.

B. PVC construction shall not be acceptable.

C. The blocks shall have ridges and pockets for structural rigidity. The sides of the block shall have grout lock-in lugs to key into surrounding grout so that the walls can bond with the grout. The block size and weight shall permit ease of handling and installation.

D. The block nominal dimensions vary by manufacturer.

1. F.B. Leopold Company shall be 8-inches high by 11-inches wide by 48-inches long. The weight of the block shall be approximately 19 pounds.

2. Severn Trent Water Purification, Inc shall be 8-inches high by 17-inches wide by 36-inches long. The weight of the block shall be approximately 25 pounds.

3. The underdrain system for the filters shall be a dual parallel lateral type whereby feeder and compensating chambers are provided within the cross section of a single block. The cross section of the underdrain shall be so arranged that the feeder (or primary) chamber is adjacent and connected to the compensating (or secondary) chambers through a series of orifices. The orifices shall be located at four different elevations and sized to provide uniform distribution of water. All internal orifices shall be integrally molded to provide a smooth bore orifice. Underdrains requiring secondary drilling procedures will not be considered acceptable. The primary chamber should provide at least 30 square inches of cross sectional area per block to reduce flow velocity during backwash.

4. The compensating chambers shall provide the essential uniform pressure and flow distribution from the top of the blocks. The discharge flow from the top of the blocks into the filter bed shall be provided by approximately twenty-three dispersion orifices per square foot of filter area. The orifices shall be not less than 7/32 inches diameter to prevent clogging and shall be recessed from the surface by approximately 1/8 inch. The top of each orifice shall be encircled by a depression approximately 3/8 inch x 3/4 inch, which shall act to prevent the gravel support media from resting directly on and thereby blocking the dispersion orifice.

5. The underdrain shall have a horizontal flat top discharge surface, so that the finished filter bottom is essentially flat, with above stated dispersion orifices for uniform energy...
intensity of water coverage that direct flow vertically for effective penetration and cleaning of the media.

6. The dual-parallel block units with integral flow metering elements and any specialties required for installation such as special anchorage, grout retaining strips, closures, gaskets shall be the products of a single manufacturer/supplier.

2.04 GROUT RETAINER

A. Grout retaining strips for bridging flume blocks shall be of high-impact polystyrene properly keyed to fit the underdrain blocks to allow adjustment of lateral center-to-center distance without difficulty. Retaining strips shall be supplied by the filter underdrain manufacturer.

2.05 GROUT

A. The grout used in installing the underdrain blocks shall have a minimum compressive strength of 2500 psi after 30 days of curing. Use a grout with one part Portland cement and two parts clean silica sand properly mixed and wetted with a maximum water-cement ratio by weight equal to 0.50 to 0.55 for the base grout and 0.61 to 0.67 for the fill grout.

B. Cement shall be standard brand Portland cement conforming to ASTM C150, Type II, for general use. Cement that has become “lumpy” shall not be used. Do not use non-shrink grout.

C. Water for mixing and curing shall be clean and clear potable water. The water shall be considered potable if it meets the requirements of the local government agencies. Agriculture water with a total dissolved solids of 1000 mg/l or higher, shall not be used.

D. Sand shall be clean and washed masonry sand. When tested in accordance with ASTM D2419, the sand equivalency shall not be less than 90% for an average of three samples, or less than 85% for any individual sample. 100% of sand particles shall pass No. 4 sieve and not more than 4% of sand particles shall pass No. 200 sieve.

PART 3 — EXECUTION

3.01 REMOVALS

A. All materials designated for disposal or required to be removed for new installations, such as underdrains, filter media, and piping shall, when released by the Owner, become the Contractor’s property and shall be removed from the site to the Contractor’s own place of disposal. Items identified by the Owner to be salvaged, shall be removed and given to the Owner.

B. The Contractor shall execute the demolition and removal work to prevent damage or injury to the other parts of the filter. The Contractor shall repair damage done to facilities to remain, or to any property belonging to the Owner in accordance with the procedures acceptable to the Owner.

3.02 INSTALLATION
A. The Contractor shall install the filter underdrain system in strict accordance with the manufacturer's written instructions and recommendations including the manufacturer's installation drawings, written directions provided by the manufacturer's technical representative who is supervising and observing the Work and any additional requirements specified herein. A manufacturer’s representative shall be on site to supervise the underdrain installation for at least one filter.

B. The Contractor shall exercise caution in preparing the filter floor slab and in setting the anchors to assure proper alignment and elevation. Steel anchor rods shall be furnished by the filter manufacturer and set in the floor slab on both sides of the distribution flume in accordance with the Drawings provided. The floor slab shall be screened into a flat level plane and be free of protrusions and depressions.

C. The underdrain laterals shall be set in level rows on a bed of fresh grout over the filter floor slab. Plates for closing the ends of each row of blocks shall be furnished by the filter manufacturer and installed by the Contractor. After all blocks have been set and carefully aligned, setting the blocks, and the bed of grout is set-up, as soon as possible, grout all spaces between rows and end of blocks and walls so that the entire bed is totally sealed and held firmly in place. Prevent any grout from entering laterals, orifices, IMS cap pores.

D. Allow grout to cure for at least 3 full days before filter media is placed or any functional tests are performed.

E. The blocks shall be arranged end-to-end and mechanically joined to form continuous underdrain laterals approximately equivalent to the length of the filter bay. The joints shall be sealed utilizing one (1) O-Ring seal, bell and spigot type with internal alignment tabs for proper joint alignment, and water-tight. Joints shall be of snap-lock type so that the blocks are joined with integral interlocking snap lugs and lug receptors for ease of assembly and installation of the laterals.

3.03 PERFORMANCE TESTING

A. The filter underdrain system in each filter bay shall be given a series of visual, qualitative, flow distribution tests to verify that orifices are not clogged with debris and that flow distribution is uniform. These tests shall be performed before the filter media is placed.

B. During each test, the underdrain laterals shall be visually inspected for uniform distribution of water and for any signs of quiescent zones and excessive surface turbulence.

C. Working under the direction of the manufacturer and in the presence of the Owner’s designated representative; the Contractor shall conduct underdrain start-up as outlined in the manufacturer’s suggested start-up procedure.

D. Following installation of the blocks and prior to the placing of the filter media, independent water backwash tests shall be performed on the completed system. The Contractor shall notify water plant operations personnel and/or the Owner’s representative when the filter is ready for backwashing. All backwashing operations shall be conducted by the Owner's staff.
E. Following completion of the manufacturer’s suggested underdrain start-up procedure and prior to placement of the media, conduct separate hydraulic tests using rates specified in Article 2.02 under performance requirements for verification of proper underdrain installation.

F. During each test, the underdrain laterals shall be visually inspected for uniform distribution of water and for any signs of quiescent zones and excessive surface turbulence as outlined by the manufacturer’s testing procedures.

G. Check for and correct leaks and non-uniform flow of backwash water, structural instability, or other defects.

H. If correction of defects is required, retest independently as necessary until results are acceptable and at no additional cost to the Owner.

I. All water used during underdrain system testing shall be directed to the washwater drain pipe or filter to waste pipe. None of this water should be directed to the filter effluent header pipe to the existing clearwell.

J. The Contractor shall notify the Engineer at least seven (7) days prior to any testing to enable the Engineer to witness the tests.

K. All laboratory costs, labor, power, equipment, water and incidentals required for the performance tests shall be furnished by the Contractor.

3.04 DISINFECTION

A. See the Section entitled “Disinfection and Bacteriological Testing”.

- END OF SECTION -
Attachment 12:

Drawing M-21 Revisions
Attachment 13:
Pre-Bid Conference and Site Visit
Sign-In Sheet Summary
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