

AMENDMENT 1 TO OWNER-ENGINEER AGREEMENT

1. Background Data:

- a. Effective Date of Owner-Engineer Agreement: Novemeber 13th, 2018
- b. Owner: Town of McCordsville, Indiana
- c. Engineer: Whitaker Engineering Corporation
- d. Project: WWTP Expansion to 1 MGD

1. Nature of Amendment

- Modified Services to be performed by Engineer
- Modifications to Payment to Engineer

2. Description of Modifications

- Attachment 1, "WWTP Design Contract Amendment Summary"

Owner and Engineer hereby agree to modify the above-referenced Agreement as set forth in this Amendment. All provisions of the Agreement not modified by this or previous Amendments remain in effect. The Effective Date of this Amendment is _____.

OWNER:

ENGINEER:

Town of McCordsville, IN

Whitaker Engineering Corporation

By: _____

By: Cecil L. Whitaker, P.E.
Cecil L. Whitaker

Title: _____

Title: President

Date
Signed: _____

Date
Signed: 12/4/19

WWTP Design Contract Amendment Summary

Over the past several months there have been changes in the design that impacted many sheets of the plan set. At Mark Witsman's direction, Whitaker is preparing a contract amendment to expand the fee to cover the changes that were necessary but unplanned. Below is a discussion of the changes.

A few out-of-scope items came up towards the beginning of the project that did not require much time. However, those out-of-scope items led to the discovery of larger issues that impacted the design. The out-of-scope items are listed below:

1. Update the master plan of WWTP buildout to facilitate cell tower placement discussion,
2. Review of Banning's Stansbury and Shultz Ditch Realignment project,
3. Perform coordination of existing blower upgrade to 75hp and modeling of existing air piping.

The two significant issues came out of the above out-of-scope items which were not included in the contract's scope of work. (The contract scope of work is attached to the change order for reference.) The two issues are listed below are the basis of this change order:

1. Design of corrective measures for air leaks in the air piping for the existing AeroMod plant and
2. Hydraulic analysis and design of a new effluent sewer to remove a significant hydraulic restriction.

AIR PIPING IN THE EXISTING AEROMOD PLANT (\$20,000)

The proposed air piping design included providing new blowers with the appropriate connection to the existing air header serving the existing WWTP. WE's scope also consisted of working with AeroMod to provide needed air piping to the new tanks of McCordsville's facility. The air piping design was completed in April of 2019. An exhibit (D103 dated 5/31/19) of the plan view of the original design is included.

On May 20, 2019 during a site visit, WE learned of several air leaks within the air piping for the existing AeroMod tanks. These leaks required a significant redesign of air piping system to eliminate the deficiencies. Discovering the nature and locations of all leaks, developing a strategy to correct the leaks while keeping the WWTP in operation, and completing a redesign of the air piping. Whitaker Engineering has recovered one month of the lost time. An exhibit (D103 dated 11/15/19) showing the extent of the air piping redesign is included.

Hydraulic Analysis and Effluent Sewer Design (\$29,000)

Whitaker requested information about the effluent ditch and sewer to confirm what changes were made in Phase 4 to update the hydraulic profile sketch. It was then brought to our attention that a modification to the Stansbury and Shultz ditch was planned. Whitaker asked for the hydraulic model, spreadsheet or calculations because Banning's proposed sewer slope was less than the original sewer design. Hydraulic information was not available from the previous expansion since it was lost from the ransomware incident.

After calculating the water surface elevation in each structure from the Stansbury and Shultz ditch to the head of the WWTP, it was determined that the effluent sewer was not constructed in the original WWTP at the correct slope. Whitaker then offered the Town suggestions on how to alter Banning's design to prepare for a new effluent sewer across CR W 800 N in the next expansion. It was also determined that the plant has approximately 6-inches of elevation difference between the effluent weir and bottom of the clarifier effluent box. A new 18" effluent sewer of the west side of the WWTP tanks is

required. See an exhibit (D118 dated 11/15/19) showing the proposed effluent pipe solution at the post aeration tank.

These hydraulic calculations took place over a few months, but efforts ramped up towards the end of October. Time was spent seeing if significant piping changes could be avoided. During this time Whitaker mentioned the potential of needing to upgrade the effluent sewer via regular phone calls with the town engineer. A sewer layout to eliminate the hydraulic restriction was determined and reviewed with town engineer in November. These changes are currently being incorporated into the design to submit to IDEM between December 6th and 13th.

Summary

Whitaker Engineering advised the Town staff of the issues as they became known and quantified the costs when the costs were known. These changes significantly affected 13 sheets and partially affected 7 sheets out of a total of 33 sheets in Whitaker’s portion of the drawings.

WE requests an increase in our contract in the amount of \$49,000 and 30 additional days of design to cover the increased scope of work. This amount represents an increase of the total contract amount by 6%. The contract amount breakdown is shown in the table below.

Design	\$ 430,000
Bid	\$ 14,000
Construction Administration	\$ 125,000
Construction Observation	\$ 230,000
Total	\$ 799,000

Whitaker has had conversations about the permit review timeframe with IDEM and will receive preliminary comments ahead of the official response. This will allow WE to address comments earlier, so the project can make up the remaining lost time in order to bid the project in February or March of 2020.

Appendix A – Services by Consultant

Services/Deliverables

Basic Scope Description

Design modifications and additions to existing wastewater treatment plant consisting of the following components based upon the technical memo dated 9/7/18:

- WWTP Tank Expansion
- AeroMod Equipment
- Digester Pumps and Force Main
- Turbo Blower and Air Piping
- Generator Addition and Electrical Overhaul
- Lift Station and Force Main Upgrade
- Addition Lab Building of Approximately 1,300 sqft
- Existing Lab Building Remodel
- A New Process Building for Sludge, Chemical and UV Facilities of Approximately 4,820 sqft
- Sludge Dewatering Station
- Chemical Phosphorous Removal System
- UV Equipment and Flow Meter
- Chemical Manholes and Piping
- Site Grading and Stormwater Piping
- Approximately 1660 sq. ft. of Pavement Addition
- Process Control Design for New Equipment
- Permitting

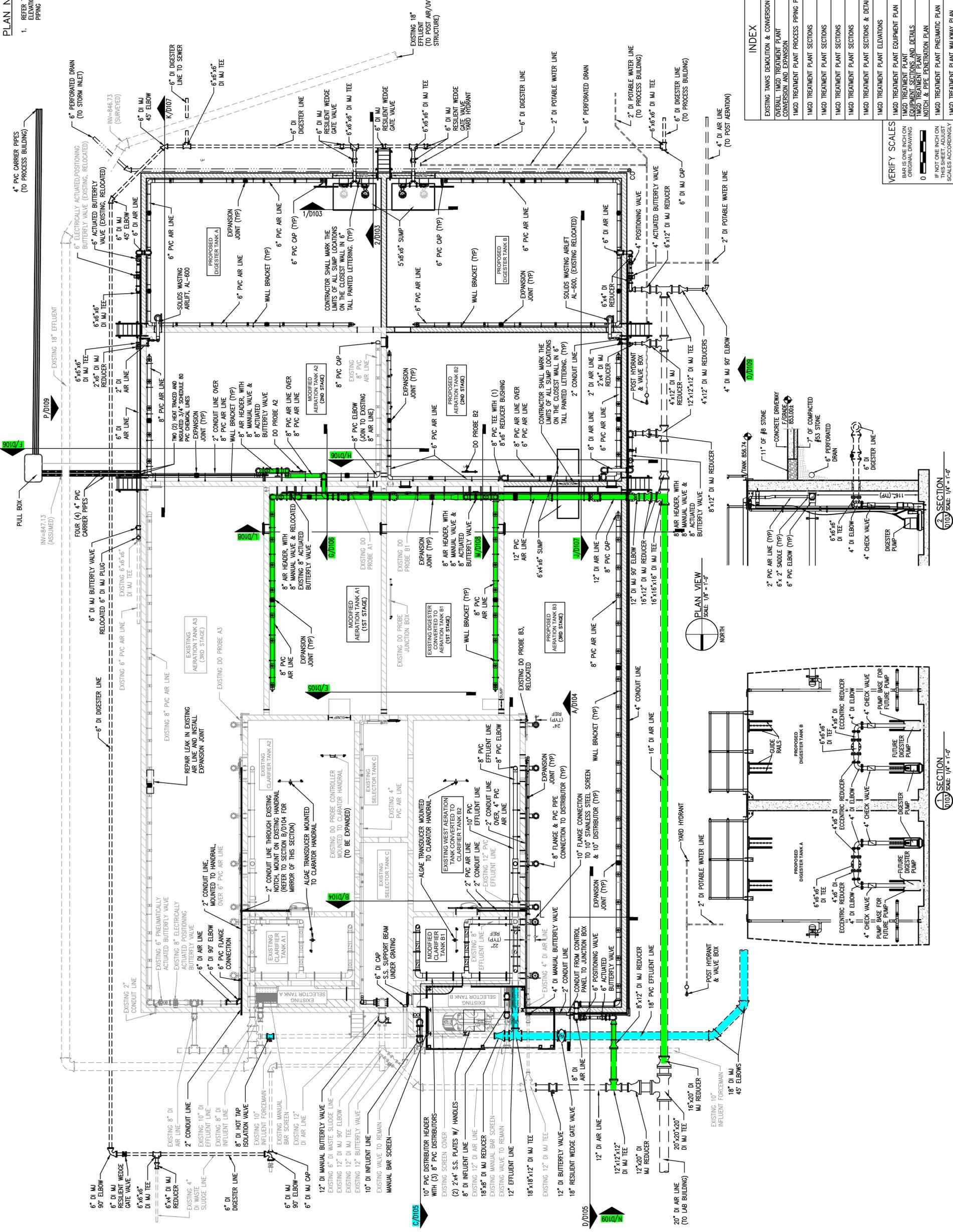
This work will be performed on a time and materials with the following budgets for each phase:

Design	\$ 430,000
Bid	\$ 14,000
Construction Administration	\$ 125,000
Construction Observation	\$ 230,000
Total	\$ 799,000

These numbers are preliminary budgets for each phase and may be billed above the amount show. The total number will act as a not-to-exceed amount for the design and construction services.

PLAN NOTES

- REFER TO SECTIONS AND ELEVATIONS FOR ADDITIONAL PIPING INFORMATION.



INDEX	SHEETS
EXISTING TANKS DEMOLITION & CONVERSION PLAN	D101
OVERALL 1MGD TREATMENT PLANT CONVERSION AND EXPANSION	D102
1MGD TREATMENT PLANT PROCESS PIPING PLAN	D103
1MGD TREATMENT PLANT SECTIONS	D104
1MGD TREATMENT PLANT SECTIONS	D105
1MGD TREATMENT PLANT SECTIONS	D106
1MGD TREATMENT PLANT SECTIONS	D107
1MGD TREATMENT PLANT SECTIONS & DETAILS	D108
1MGD TREATMENT PLANT ELEVATIONS	D109
1MGD TREATMENT PLANT EQUIPMENT PLAN	D110
1MGD TREATMENT PLANT TREATMENT SECTIONS AND DETAILS	D111
1MGD TREATMENT PLANT NOTCH & PIPE PENETRATION PLAN	D112
1MGD TREATMENT PLANT PNEUMATIC PLAN	D113
1MGD TREATMENT PLANT WALKWAY PLAN	D114

VERIFY SCALES
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IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

OWNER INFORMATION:
TOWN OF MCCORDSVILLE
6280 W. 800
MCCORDSVILLE, IN 46055

SHEET LABEL	SHEET No.	OF:
D103	17	
PROJECT No.:		
CHECKED BY:	JLE	MLW
DRAWN BY:	JLE	MLW
DATE:	11/15/19	

PROJECT TITLE:
1MGD TREATMENT PLANT PROCESS PIPING PLAN
SHEET TITLE:
PHASE 5 EXPANSION
TOWN OF MCCORDSVILLE WTP

WHITAKER ENGINEERING

REGISTERED PROFESSIONAL ENGINEER
 No. 10809470
 STATE OF INDIANA

Matthew R. Whitaker

CERTIFIED BY:
 CONSTRUCTION AND DESIGN SERVICES, INC.
 10809470
 STATE OF INDIANA
 REGISTERED PROFESSIONAL ENGINEER
 No. 10809470
 STATE OF INDIANA
 CONSTRUCTION AND DESIGN SERVICES, INC.
 10809470
 STATE OF INDIANA
 REGISTERED PROFESSIONAL ENGINEER
 No. 10809470
 STATE OF INDIANA

SECTION	SCALE
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2	1/8" = 1'-0"

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UV CHANNEL & POST AERATION TANK MODIFICATIONS

TOWN OF MCCORDSVILLE WTP
PHASE 5 EXPANSION

REVISIONS:

SHEET TITLE:

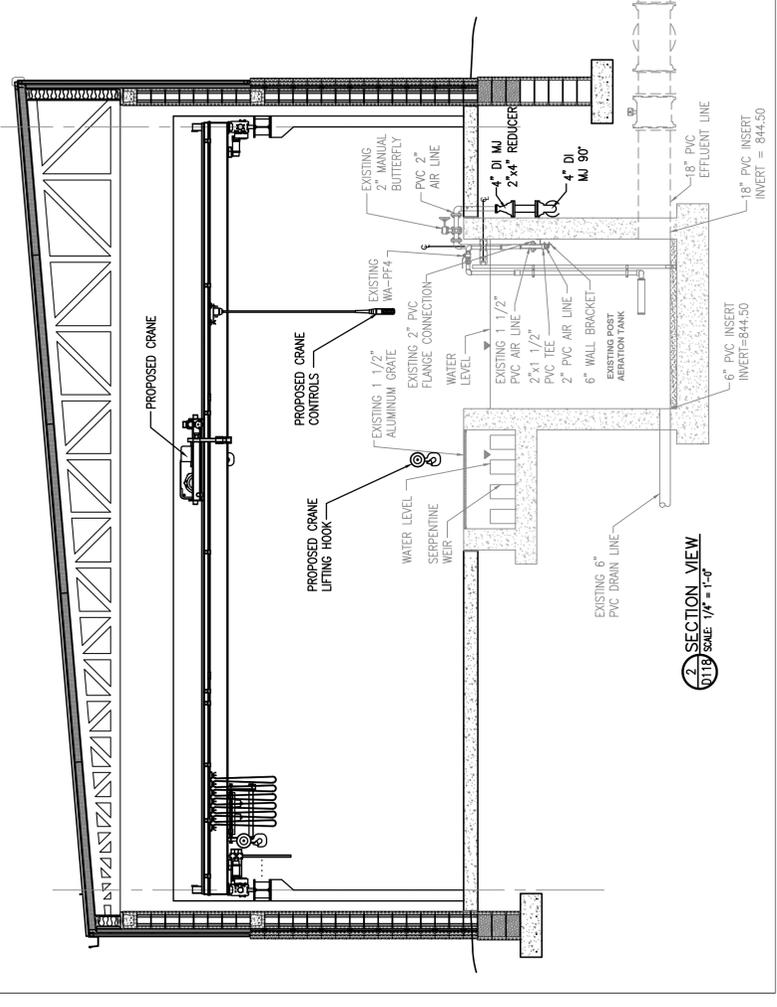
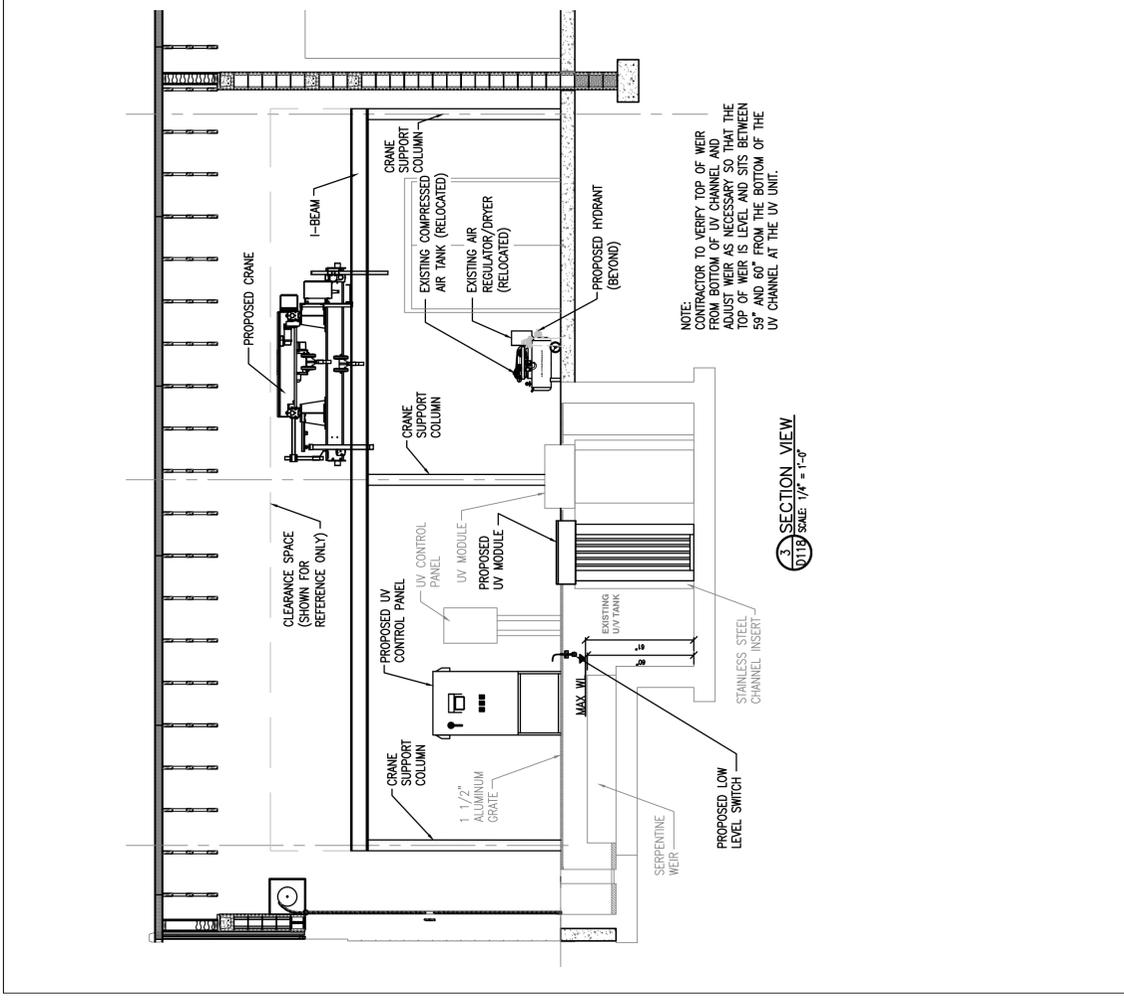
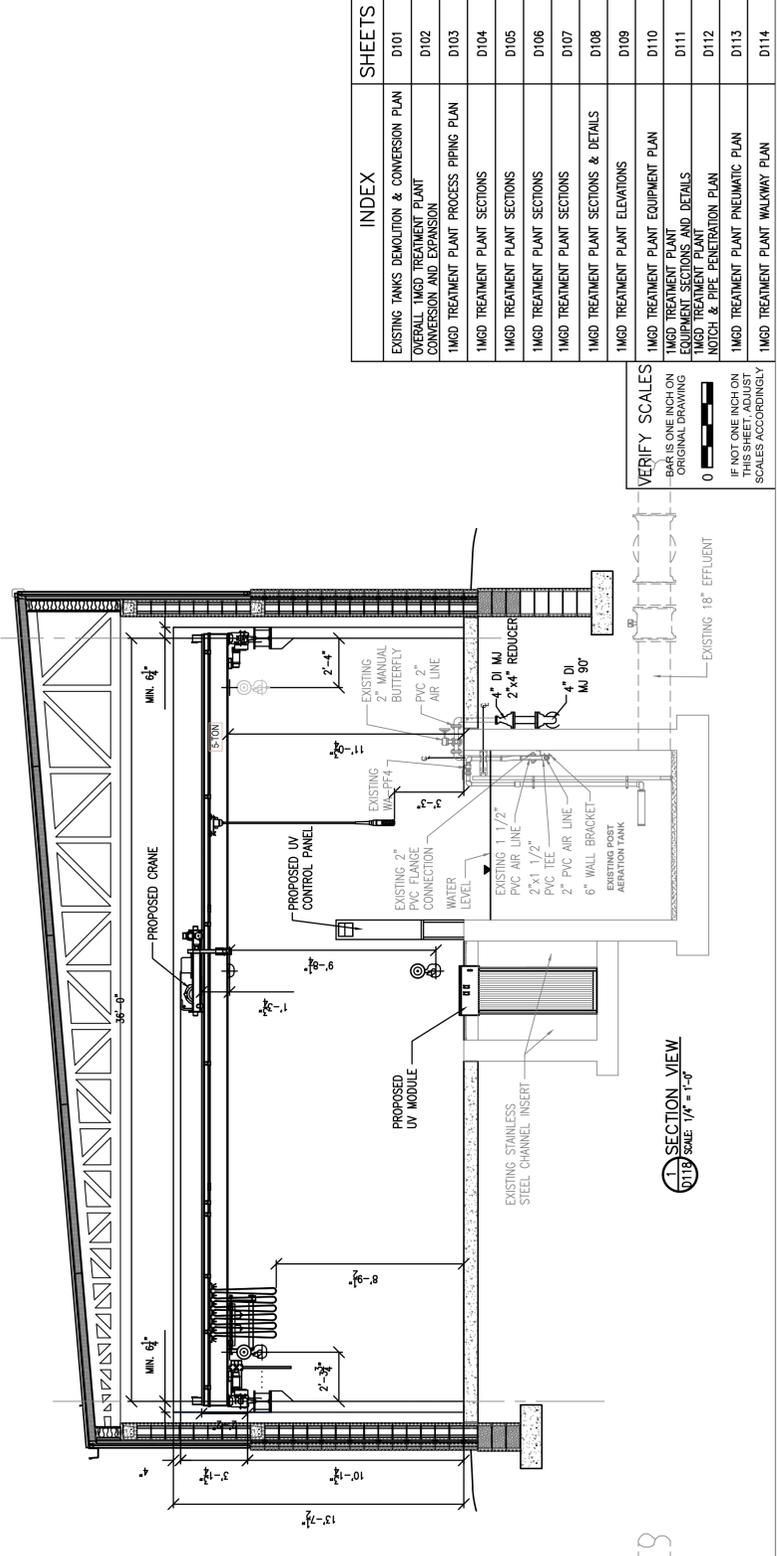
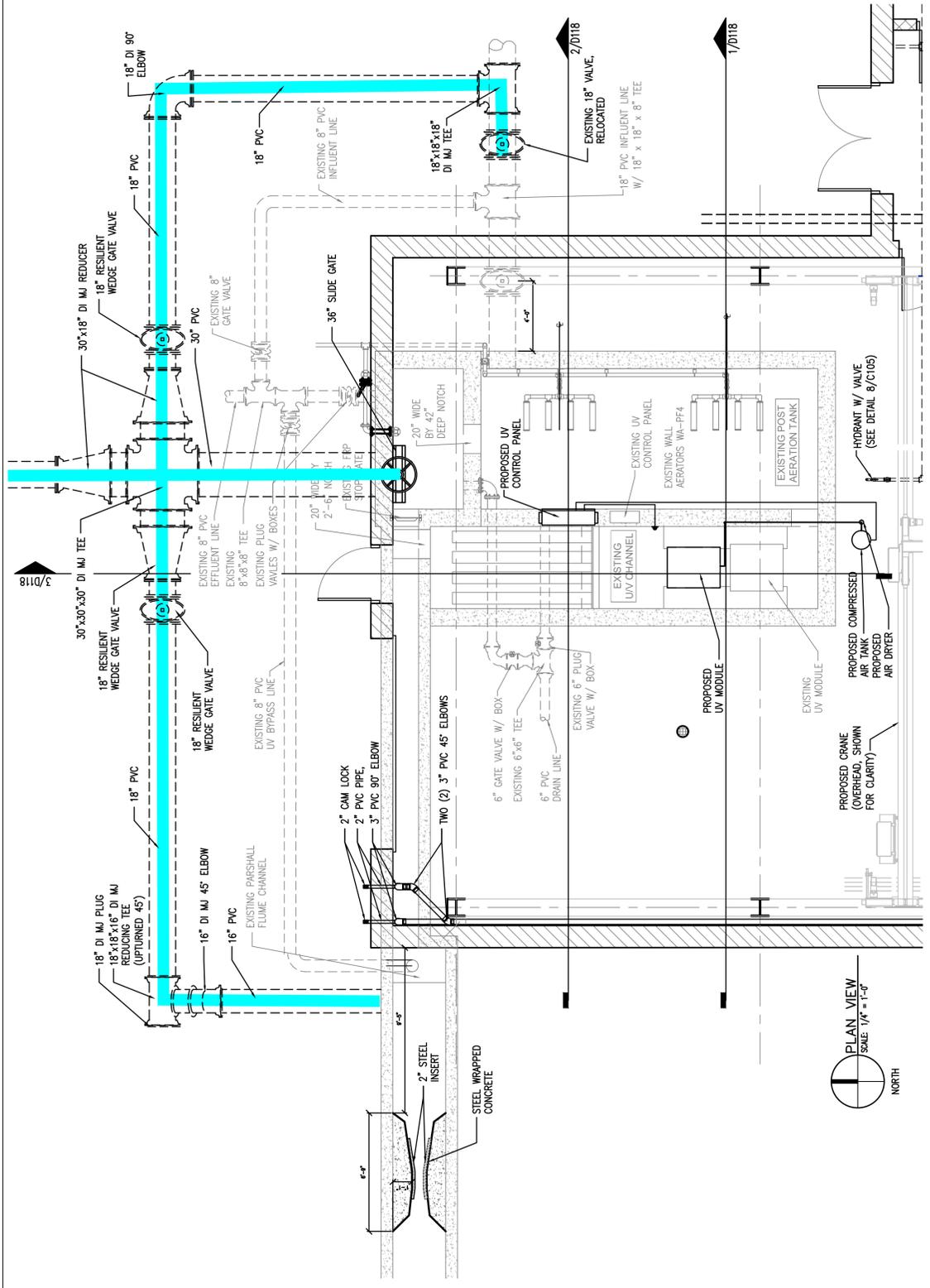


Matthew R. Whitaker
CERTIFIED BY:
I AM AN ENGINEER IN THE STATE OF ILLINOIS
I HAVE BEEN LICENSED AS AN ENGINEER
IN THE STATE OF ILLINOIS SINCE 1998
I HAVE BEEN LICENSED AS A PROFESSIONAL
ENGINEER SINCE 1998
I HAVE BEEN LICENSED AS A PROFESSIONAL
ENGINEER SINCE 1998
I HAVE BEEN LICENSED AS A PROFESSIONAL
ENGINEER SINCE 1998



OWNER INFORMATION:
TOWN OF MCCORDSVILLE
6280 W. 800
MCCORDSVILLE, IN 46055

SHEET LABEL: D118
SHEET No. OF: 32
PROJECT No.:
CHECKED BY: MLW
DRAWN BY: JLE
DATE: 11/15/2019



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NOTE:
CONTRACTOR TO VERIFY TOP OF WEIR FROM BOTTOM OF UV CHANNEL AND ADJUST WEIR AS NECESSARY SO THAT THE TOP OF WEIR IS LEVEL AND SITS BETWEEN 59" AND 60" FROM THE BOTTOM OF THE UV CHANNEL AT THE UV UNIT.

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