ADDENDUM NO. 2

FOR THE

CAESARS LANE
WASTEWATER TREATMENT PLANT EXPANSION
PHASE 2 PROJECT

TOWN OF NEW WINDSOR
ORANGE COUNTY, NEW YORK

PREPARED FOR:
Town of New Windsor
555 Union Avenue
New Windsor, NY 12553

PREPARED BY:
MHE Engineering, D.P.C.
111 Wheatfield Drive, Suite 1
Milford, PA 18337

NOTE: ANY UNAUTHORIZED ALTERATION OR ADDITION TO THIS DOCUMENT IS A VIOLATION OF SECTION 7209(2) OF THE NEW YORK STATE EDUCATION LAW.

DATE: June 20, 2025
JOB #: 18-732

THIS ADDENDUM CONSISTS OF (7) PAGES & (13) ATTACHMENTS

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Prospective bidders are advised of the following revisions, additions, deletions and/or clarifications to the contract documents:

Bid Opening Date:

THE BID OPENING DATE WILL BE CHANGED FROM JULY 10, 2024 AT 10:00AM TO JULY 24, 2024 AT 10:00 AM. FUTURE BID EXTENSIONS WILL BE CONTINUOUSLY ASSESSED. AS A REMINDER, THE CONTRACT TIME OF SUBSTANTIAL COMPLETION DATE IS A NYSDEC SPDES PERMIT REQUIREMENT AND WILL NOT BE CHANGED. FURTHER EXTENSION OF BID OPENING DATE BEYOND 7/24 MAY REDUCE TIME AVAILABLE FOR CONSTRUCTION COMPLETION.

Clarifications/Additional Information

1. RFI's received but not included in this addendum will continue to be reviewed and addressed in future addendums. We anticipate Addendum #3 to be released on 27 June 2025.

2. The basis of design for the proposed Autothermal Thermophilic Aerobic Digestion (ATAD) System is the Thermaer, SNDR, and Biolfiltaer products by Thermal Process Systems, Inc. (TPS). As a optional benefit to bidders, redline drawings may be requested from TPS which clearly highlight TPS's scope of supply on the Project Plans. To be clear, TPS is considered an acceptable "Thermaer Supplier" as defined in Specification 467321, however it should be understood that TPS products are not sole sourced for the ATAD System. Alternate products may be submitted after award for review as an "acceptable equal" in accordance with the contract.

RFI's:

1. **Question:** Does the project have AIS (American Iron and Steel) Requirements?
   Response: This project does not have AIS Requirements.

2. **Question:** Agreement between Owner and Contractor article 6.02 – in regard to retainage will the owner release partial retainage on portions of work in which it takes beneficial use of during the course of the project?
   Response: Yes, portions of completed work will be eligible for partial retainage release. This will be subject to Engineer approval. Eligible work could include equipment, buildings, or systems that are fully installed and operational for use by the plant operator. For example, this may include a fully functional building that has obtained a Certificate of Occupancy.

3. **Question:** Please confirm that the only Build America, Buy America (BABA) requirement is for the Fine Screening Equipment listed under specification 46 21 00.

Response: Please disregard this reference to BABA in Specification 462100. BABA requirements do not apply to this project.

4. **Question:** Plan sheet C-554 Cross Section 3 calls out Flowmeter Typical of 4 (20-FV-622-x) this tag number is a butterfly valve on the Process Valve List. Please clarify.
   Response: Correct tag ID number for the flow meter is 20-FIT-507 typical of 4. Plan sheet C-554 has been updated to reflect.

5. **Question:** Plan sheet C-602, can the Owner/Engineer verify piping schematic for the ATAD Cooling Water and the ATAD Return Water?
   Response: Cooling Water Pump discharge piping arrangement revised on Plan Sheet C-602 for clarification.

6. **Question:** In the project specification Belt Dewatering Press 467621-7-E, "Unless otherwise specified herein, all metal parts in contact with or subject to splashing polyelec-trolyteor sludge shall be type 304L stainless steel. All fasteners, pins, and anchor bolts shall be type 304L stainless steel." Can the Owner/Engineer delineate the areas subject to splashing? Secondly, are any other areas required to have stainless bolts, for example exterior or submerged?
   Response: fasteners, pins, anchor bolts etc. that are associated with the Belt Dewatering Press shall be 304L SS. All fasteners, pins, anchor bolts etc. that are submerged or subject to contact with liquid shall be 304L SS unless otherwise specified on the plans or specifications in accordance with manufacturers requirements.

7. **Question:** Specification 402323-2.3C, this seems to be a Ductile Iron specification and not a PV. Can the Owner/Engineer please clarify.
   Response: Please disregard Specification 402323. It will be removed for clarification. Please refer to Specification 221005 for information on plumbing piping.

8. **Question:** Can the Owner/Engineer clarify if the 1" CPVC Citric Acid Feed is to be dual contained labeling differs from plan sheets C-551 to C-542.
   Response: All chemical piping shall be dual contained per Chemical Piping specification 402400. All CPVC chemical piping has been removed and replaced with PVC.

9. **Question:** Can the Owner/Engineer verify on plan sheet C-550 the call out for 1" SS Air Supply.
   Response: The call out for 1"SS Air Supply lines was relocated to Plan Sheet C-550 / B.

10. **Question:** Can the Owner/Engineer verify the Sodium Hypochlorite feed sizing. Plan sheet C-553 calls out 1 ½" and plan sheet C-554 detail 4 calls out 1".
    Response: Pipe diameter for Sodium Hypochlorite shall be 1" according to Veolia P&ID DS-111. Plan sheets C-551 and C-553 have been revised.

11. **Question:** Once Primary #4 and MBR are operational, can Primary's 1,2,3 be taken offline for a brief window to allow for work to be completed inside the Primary Sludge Pit, explicitly the valve and wye replacements?
    Response: This can be further discussed and coordinated with the operator during construction, however, it is unlikely that Primary Tanks 1-3 can be taken offline at the same time for an extended period of time. Factors such as time of year, anticipated weather events, and plant staffing will dictate how many Primary Tanks need to remain in operation. For bid purposes, it should be assumed that Primary Tanks 1-3 need to be taken offline sequentially.

12. **Question:** Due to unknown quantity and occurrence of finding Asbestos Containing pipe when installing new buried process piping, would the Owner/Engineer entertain making an allowance for such instances?
    Response: Contingency Item C-13 is included in the contract to obtain a Linear Foot unit price for work to remove asbestos containing pipe, if encountered. The quantity provided (500 LF) is an estimate for bidding purposes, however the unit price provided will be utilized for the actual length of asbestos containing pipe removed.

13. **Question:** Drawing E-042 calls out lighting schedule showing 3 types, A, I, EX, but these callouts do not appear next to some of the exit signs. Please advise as to what type of exit sign these shall be.
    Response: Exit signs will be reviewed and correctly labeled on revised Plan Sheets in a future addendum.

14. **Question:** Plan Sheet CD-801 regarding the secondary settling tanks shows the existing concrete walls remaining and states "After Demolition is complete, backfill with accepted structural backfill material installed in compacted lifts in accordance with structural excavation, backfill and compaction specification." However, the new ATAD building and sludge holding tanks are located where one of the secondary tanks are located. Please advise.
    Response: Note 1 under section 2/CD-801 indicates that the entire structure shall be removed to top of existing slab at approximately elevation 0.0'. The plan callouts and elevations on CD-801 have been revised for clarification.

15. **Question:** Trying to determine how much sludge is at the bottom of the settling tanks. Can you please provide the last date the settling tanks were cleaned.
    Response: It is not anticipated that there will be sludge removal required. The Operator will handle the removal of sludge as part of their normal operation. Coordination between the Contractor and Operator will be required prior to taking the clarifiers offline. The Contractor is responsible to drain the clarifiers down and pump the effluent into the effluent discharge box or other location coordinated with the Operator. The Contractor will then clean the settling tanks and the remaining sludge will be directed into the hopper at the bottom of the tank which discharges to the sludge pump station. However, to account for unforeseen

conditions, a contingency item for liquid sludge removal was included in the bid form. This will be utilized in the event liquid sludge removal is required.

16. **Question:** Contract Documents and Technical Specifications, 6.3 Contractor's Insurance, G. 6., requires additional insured endorsements that include both ongoing operations and products and completed operations coverage through ISO Endorsements CG 20 10 10 01 and CG 20 37 10 01. Contractor uses the most current forms of these endorsements, CG 20 10 12 19 and CG 20 37 12 19. Please confirm the most recent ISO forms are acceptable.
Response: Yes, the updated ISO forms are acceptable provided the wording states completed and ongoing operations.

17. **Piping Clarifications-**
    a. **Question:** Please clarify the material origin requirement. Does AIS, BABA, or EFC apply, or is import acceptable?
    Response: AIS and BABA requirements do not apply to the project. This project is receiving EFC funding, therefore EFC requirements apply as stated in the contract. In particular, see Exhibit A for more information.

    b. **Question:** Please verify the ductile iron buried fittings can be either C153 or C110.
    Response: Buried ductile iron pipe shall include mechanical joint fittings meeting the requirements of ANSI/AWWA C110/A21.10 with the joint meeting the requirements of ANSI/AWWA C111/A21.11.

    c. **Question:** Please advise what gasket materials are for buried ductile iron.
    Response: See Specification 331113.13 section 2.3.8. American Standard (A21.11). Acceptable manufacturers are Rainbow, Durable, Garlock. Gaskets shall comply with ANSI/AWWA C111/A21.11-23 Rubber Gasket Joints. Plain Rubber SBR is acceptable.

    d. **Question:** Please provide a specification for the buried ductile bolting. Is Corten acceptable?
    Response: Mechanical joint T Bolts and nuts shall be BLU (Fluoropolymer coated) Corten steel and conform to AWWA C-111,11-7.5 and ANSI A21.11 for high strength low alloy steel.

    e. **Question:** Please provide a specification for the exposed ductile iron bolting material. Also for submerged flanged joints.
    Response: Exposed flanged ductile iron nuts and bolting material shall conform with ANSI B18.2.1 and ANSI B18.2.2 respectively. Bolts and nuts of low-carbon steel conforming to ASTM A307 are specified in the Appendix of AWWA C110 and C115 for flanged pipe when rubber gaskets are used. Submerged flanged joints shall be 304L SS unless otherwise noted or specified on the plans in accordance with manufacturers recommendations.

f. **Question:** Please provide a specification for exposed ductile iron flanged gaskets.
Response: Exposed ductile iron flanged gaskets shall conform with ANSI/AWWA C111/A21.11 Plain Rubber SBR.

g. **Question:** Please clarify the OD requirements for HDPE Piping.
Response: More information on DR9 HDPE can be found in Specification 331050.

h. **Question:** Please provide a specification for air piping flange gaskets. Is Viton or Neoprene acceptable?
Response: Air piping flange gaskets shall be of fluoroelastomer synthetic rubber by Fluorel, Viton, or acceptable equal.

18. **Question:** Please allow more time for the preparation of the bid by postponing the date 4 weeks.
Response: At this time, we are extending the bid opening date by 2 weeks, to 24 July 2025. We will continue to assess whether a further extension is warranted.

19. **Question:** Will current process plant sludge be utilized for MBR seed sludge?
Response: The existing plant sludge will not be utilized for MBR seed sludge. The source and quantity of required seed sludge will be identified in the next addendum.

20. **Question:** Specification section 462100 part 3.4.A states "The manufacture of equipment shall provide a warranty for 12 months commencing acceptance or beneficial use by Owner but no later than ***90 days*** from of shipment by the Manufacture". Please remove the 90 days from shipment as that is unrealistic time frame for warranty commencement with the amount of associated construction, construction sequence and coordination related to this project.
Response: Specification section 462100 section 3.4.A has been revised to remove reference to the shipment date by the manufacturer.

21. **Question**: Can the Owner/Engineer clarify which area is the Bypass Building referred to in specification 028300 in the table.
Response: This is referring to the Headworks Building.

22. **Question**: Can the Owner/Engineer identify the Camlock size for the numerous camlock connections points throughout the project.
Response: All Camlock connections are 4" male end as noted on the plans. Plan sheets C-502, C-510, C-520 and C-530 have been revised for clarification.

23. **Question**: Electrical: Notes 7 and 8 on drawing E-950 state that the access control and security cameras are by others and the contractor is only responsible for the conduit. Can you confirm if this is typical for the entire site and not just the garage on E-950?

Response: These notes were incorrect and removed as part of the re-issued Electrical Plan Set in Addendum #1.

24. **Question**: One of our door suppliers noted that elevations appear to show Steel Sectional Doors and the specifications call for aluminum. According to our supplier, the R value required by the specification would negate an aluminum door being used. Please advise on steel or aluminum, and if the R value is correct.
    Response: The sectional door will be a sectional insulated steel door. See the revised Specification #083613 - R2 attached to this addendum.

Attachments:
Revised Plan sheets C-502, C-510, C-520, C-530, C-550, C-551, C-553, C-554, C-602, CD-801,
Revised Specification Section 462100
Revised Specification Section 083613
Revised Table of Contents for Specifications

ALL BIDDERS MUST SUBMIT ACKNOWLEDGEMENT OF RECEIPT OF ALL ADDENDUMS WITH BID

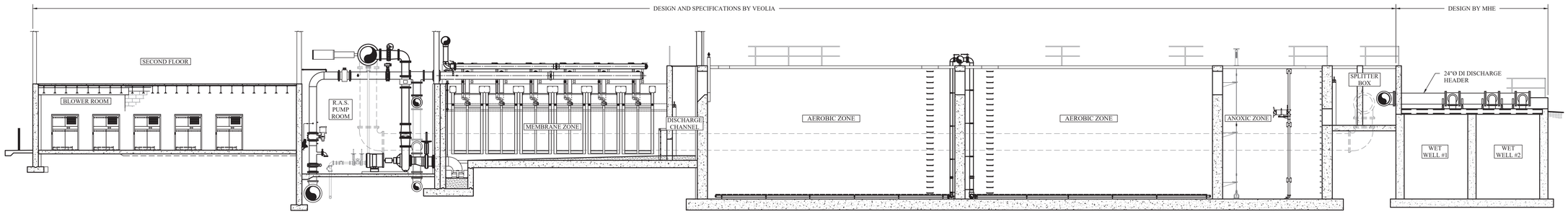
ACKNOWLEDGEMENT OF RECEIPT OF ALL ADDENDUMS LISTED BELOW:

ADDENDUM No. 2: June 20, 2025 _____

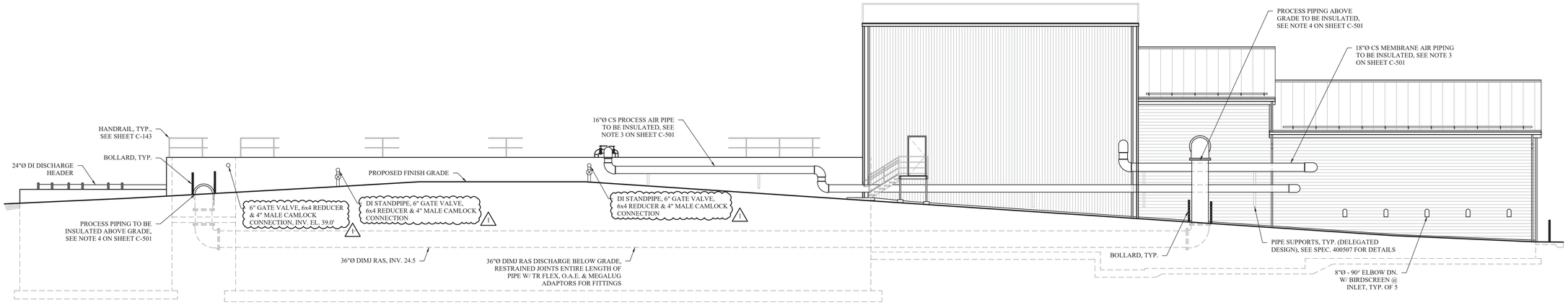
<u>SUBMIT THIS SHEET WITH YOUR BID</u>

MHE Engineering, P.C.
111 Wheatfield Drive, Suite 1
Milford, PA 18337

(End of Addendum No. 2)



1 / C-502 MBR - LONGITUDINAL SECTION
SCALE: 1/8" = 1'-0"



2 / C-502 MBR - REAR ELEVATION
SCALE: 1/8" = 1'-0"

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BID SET

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145 CAESARS LN.
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FOR TOWN OF NEW WINDSOR
555 UNION AVE.
NEW WINDSOR, NY 12553

MBR - OVERALL PROCESS SECTION AND REAR ELEVATION

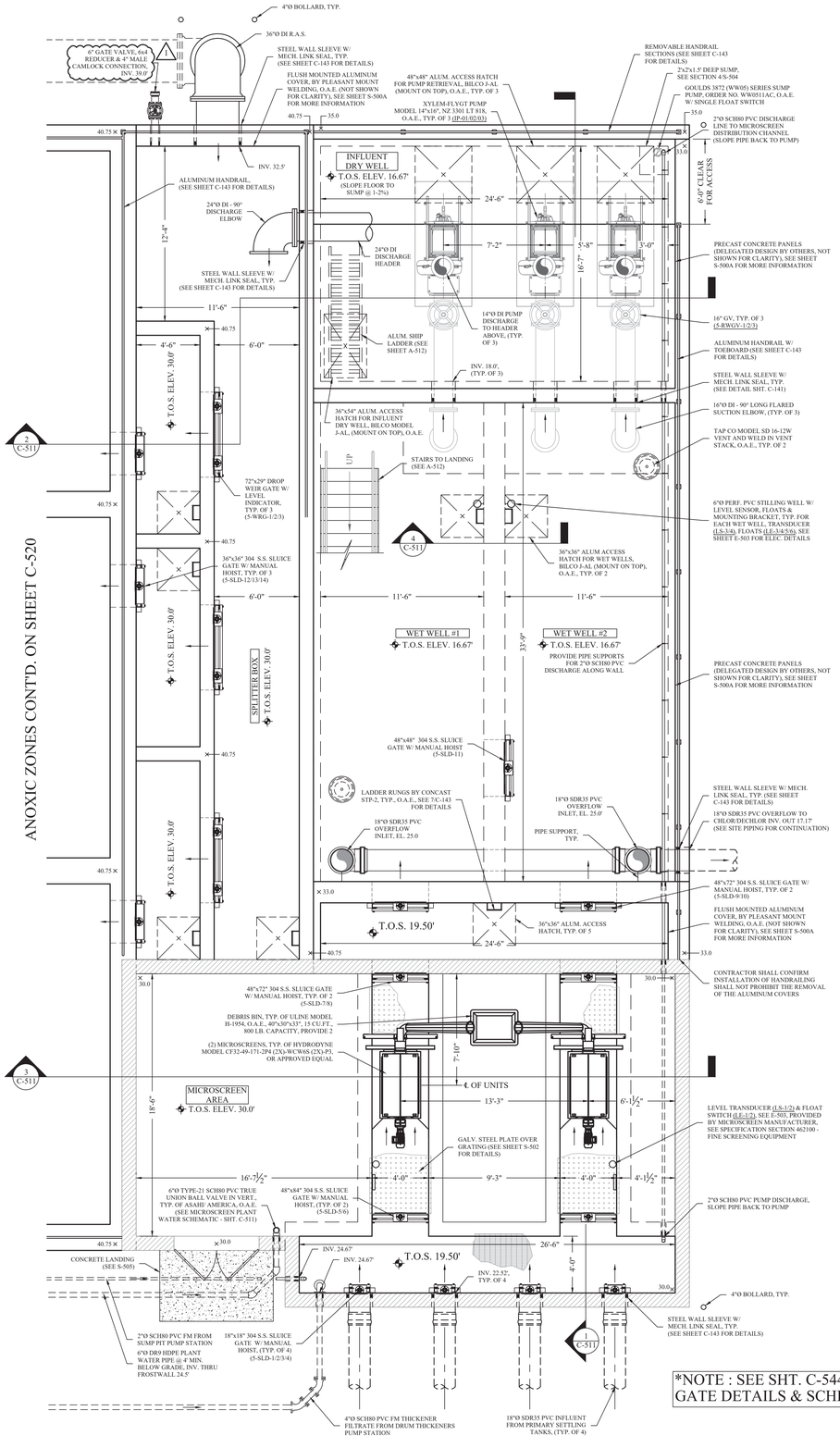
REVISIONS

NO.	DESCRIPTION	DATE
1	ADDENDUM 2	06/20/25

ISSUED DATE:	18 APR, 2025
DESIGN BY:	JTW
DRAWN BY:	HPBJr
CHECKED BY:	MWW
REVIEWED BY:	MJS, JZ

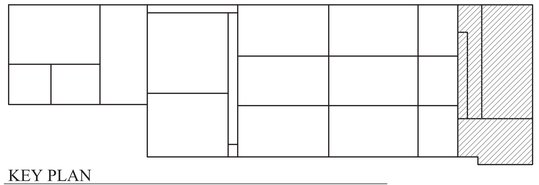
SHEET NO.
C-502

PROJECT # 18-732 PHASE #



*NOTE : SEE SHT. C-544 FOR GATE DETAILS & SCHEDULE)

A C-510 MBR - INFLUENT PUMPS & MICROSCREEN PLAN
SCALE: 1/4" = 1'-0"



KEY PLAN
SCALE: 1/32" = 1'-0"

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NEW WINDSOR, NY 12553
FOR TOWN OF NEW WINDSOR
555 UNION AVE.
NEW WINDSOR, NY 12553

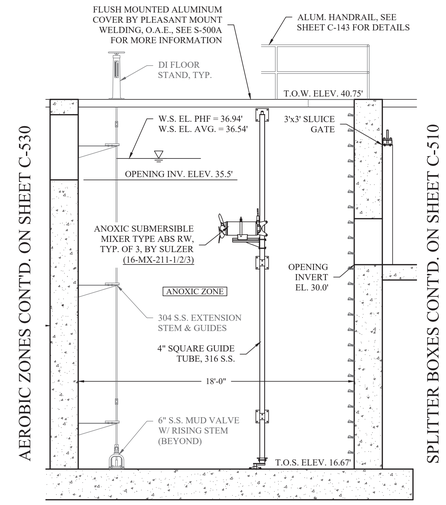
MBR - INFLUENT PUMPS & MICROSCREEN PLAN

REVISIONS

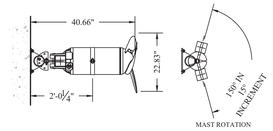
NO.	DESCRIPTION	DATE
1	ADDENDUM 2	06/20/25

ISSUED DATE:	18 APR, 2025
DESIGN BY:	JTW
DRAWN BY:	HPBJr
CHECKED BY:	MWW
REVIEWED BY:	MJS, JZ
SHEET NO.	C-510

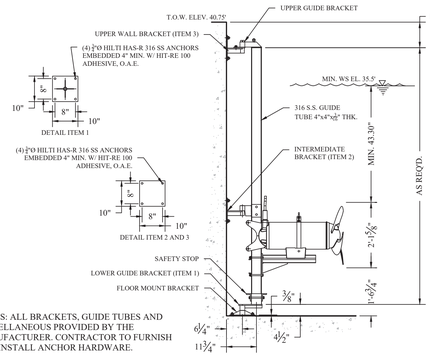
PROJECT # 18-732 PHASE #



1 C-520 SECTION
SCALE: 1/4" = 1'-0"



PLAN VIEW DETAILS

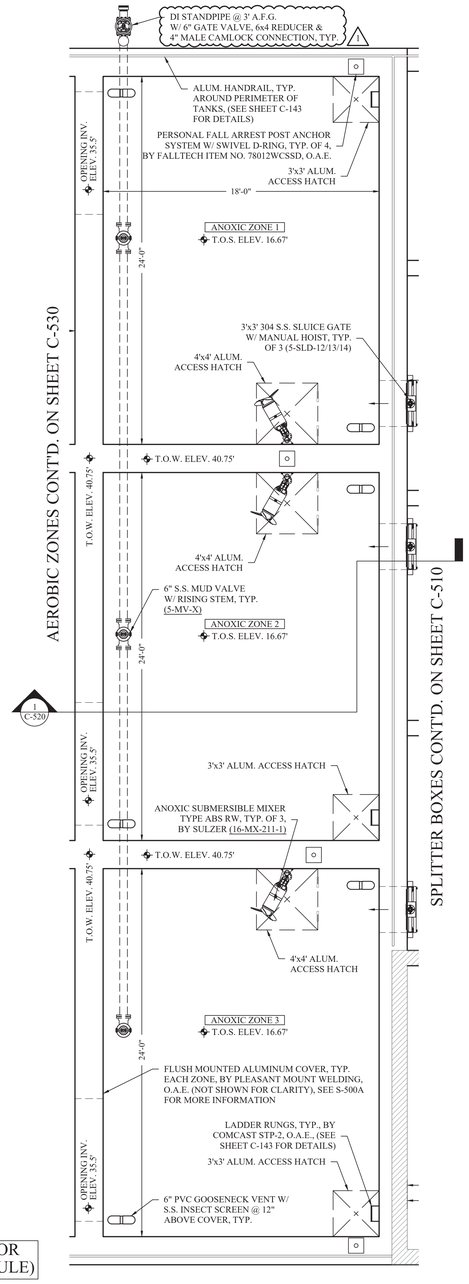


NOTES: ALL BRACKETS, GUIDE TUBES AND MISCELLANEOUS PROVIDED BY THE MANUFACTURER. CONTRACTOR TO FURNISH AND INSTALL ANCHOR HARDWARE.

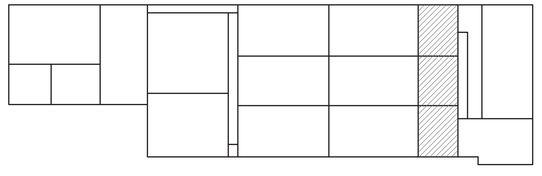
ELEVATION VIEW DETAILS

2 C-520 SUBMERSIBLE MIXER INSTALLATION DETAIL
SCALE: 1/2" = 1'-0" (PROVIDED BY VEOLIA)

*NOTE : SEE SHT. C-544 FOR GATE DETAILS & SCHEDULE)



A C-520 MBR - ANOXIC ZONE TANK PLAN
SCALE: 1/4" = 1'-0"



KEY PLAN
SCALE: 1/32" = 1'-0"

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BID SET

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NEW WINDSOR, NY 12553
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NEW WINDSOR, NY 12553

MBR - ANOXIC ZONE TANK PLAN, SECTIONS & DETAILS

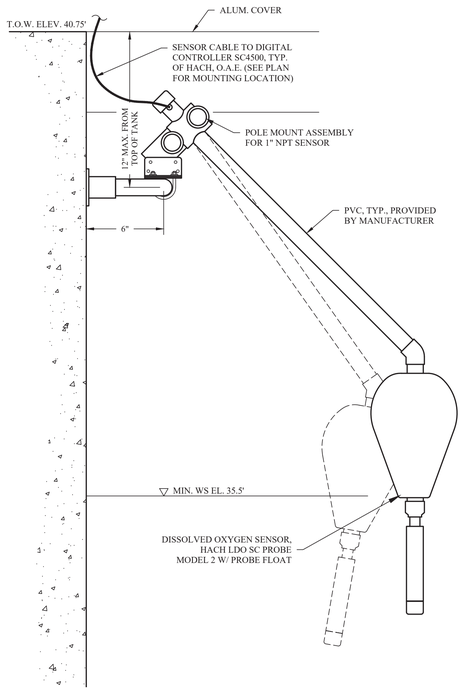
REVISIONS

NO.	DESCRIPTION	DATE
1	ADDENDUM 2	06/20/25

ISSUED DATE:	18 APR, 2025
DESIGN BY:	JTW
DRAWN BY:	HPBJr
CHECKED BY:	MWW
REVIEWED BY:	MJS, JZ

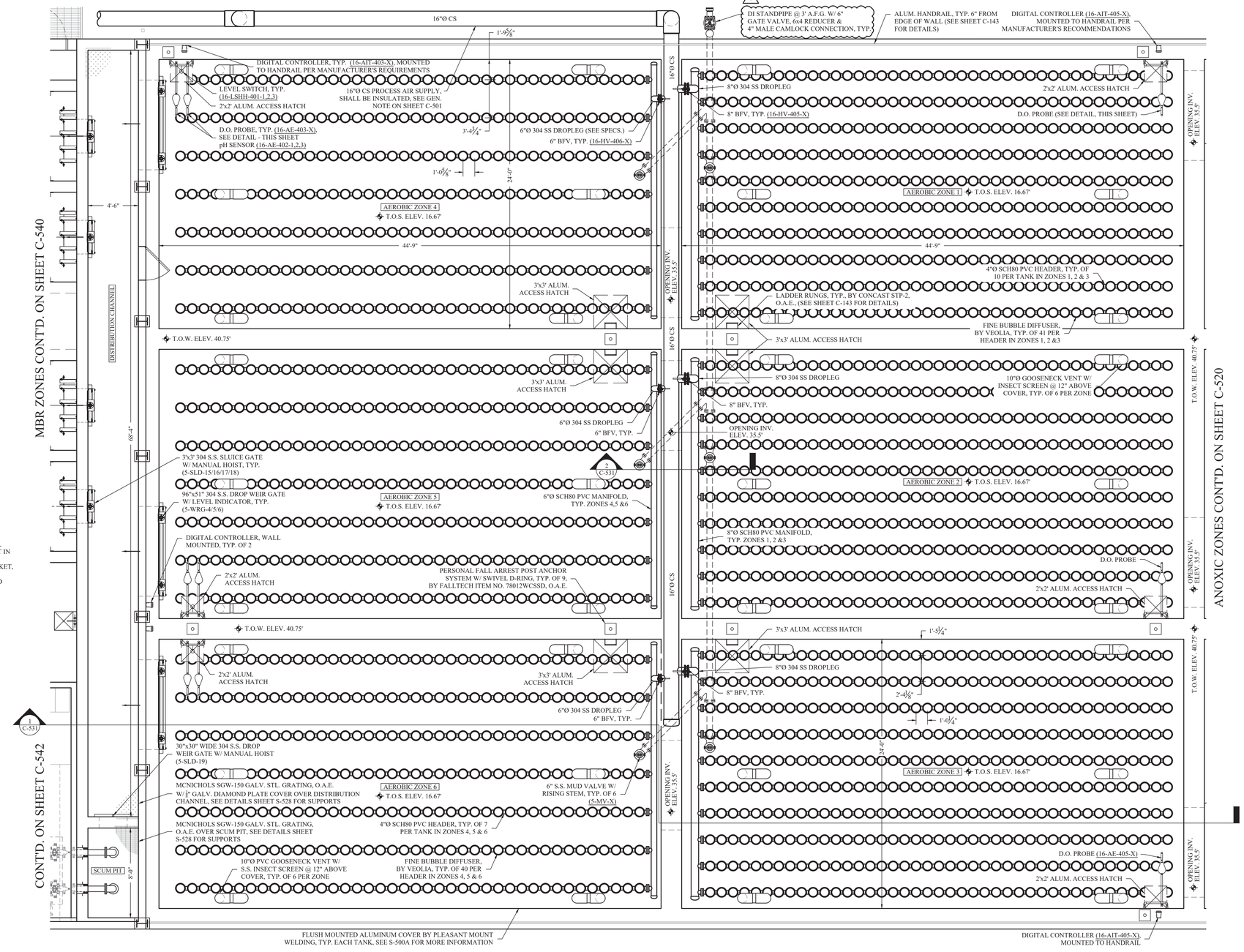
SHEET NO.
C-520

PROJECT # 18-732 PHASE #



1 C-530 D.O. PROBE/pH SENSOR FLOAT MOUNT DETAIL
SCALE: NONE (PROVIDED BY VEOLIA)

NOTE: CONTRACTOR TO INSTALL AND MOUNT IN ACCORDANCE WITH MANUFACTURER'S MOUNTING INSTALLATION. MOUNTING BRACKET, ANCHORS AND HARDWARE SUPPLIED BY MANUFACTURER. FURNISHED BY VEOLIA AND SUPPLIED BY MANUFACTURER.

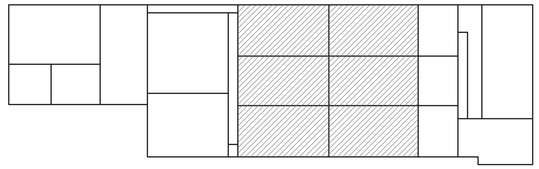


A C-530 MBR - AEROBIC ZONE TANK PLAN
SCALE: 1/4" = 1'-0"

NOTES :

1. ALL CARBON STEEL AND STAINLESS STEEL PIPE SHALL COMPLY WITH ASTM A53.
2. ALL CARBON STEEL AND STAINLESS STEEL PIPE SHALL BE WELDED.
3. ALL FITTINGS SHALL COMPLY WITH ASTM A234-WPB.

*NOTE : SEE SHT. C-544 FOR GATE DETAILS & SCHEDULE)



KEY PLAN
SCALE: 1/32" = 1'-0"

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NEW WINDSOR, NY 12553

MBR - AEROBIC ZONE TANK PLAN

REVISIONS

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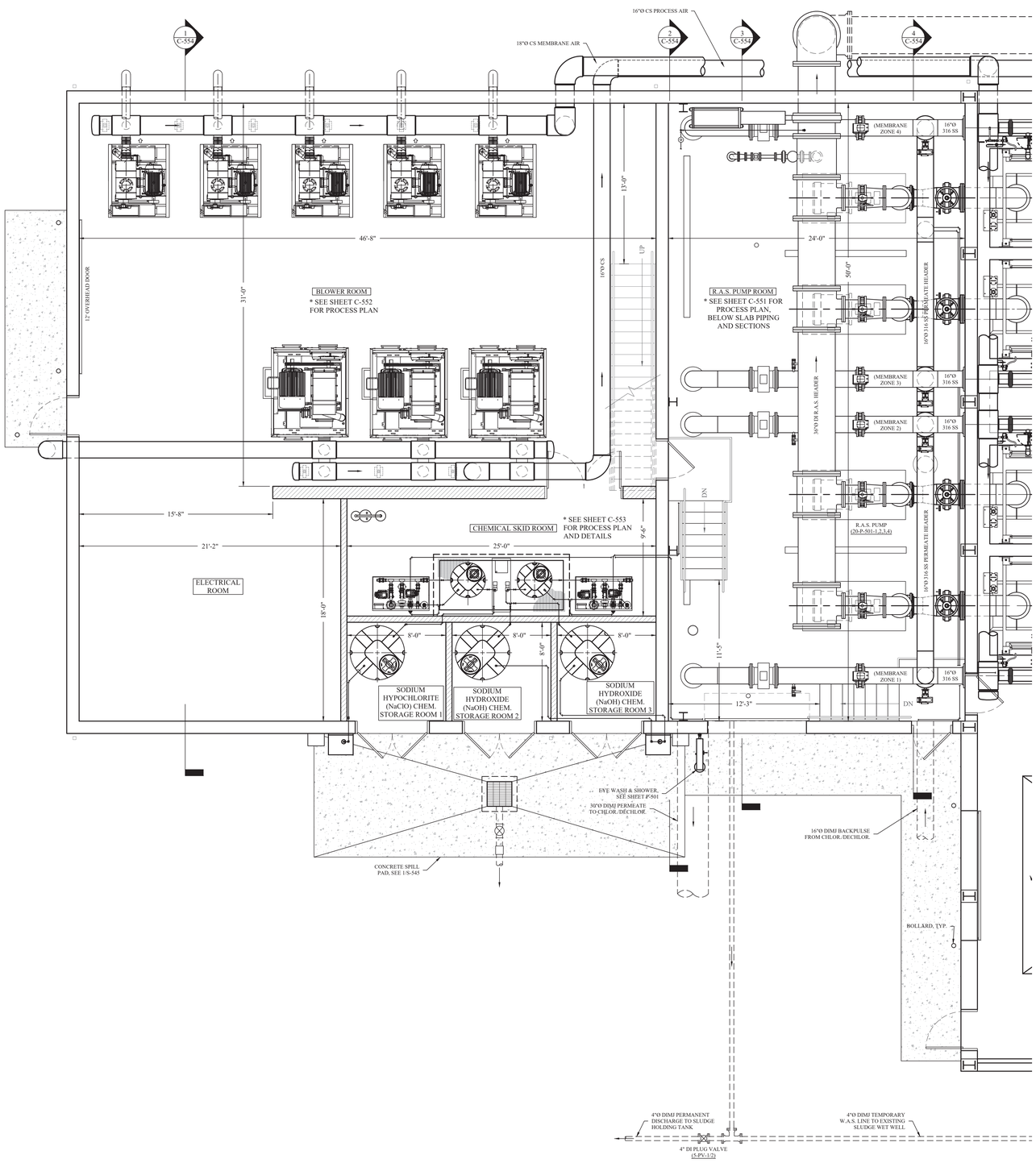
1	ADDENDUM 2	06/20/25

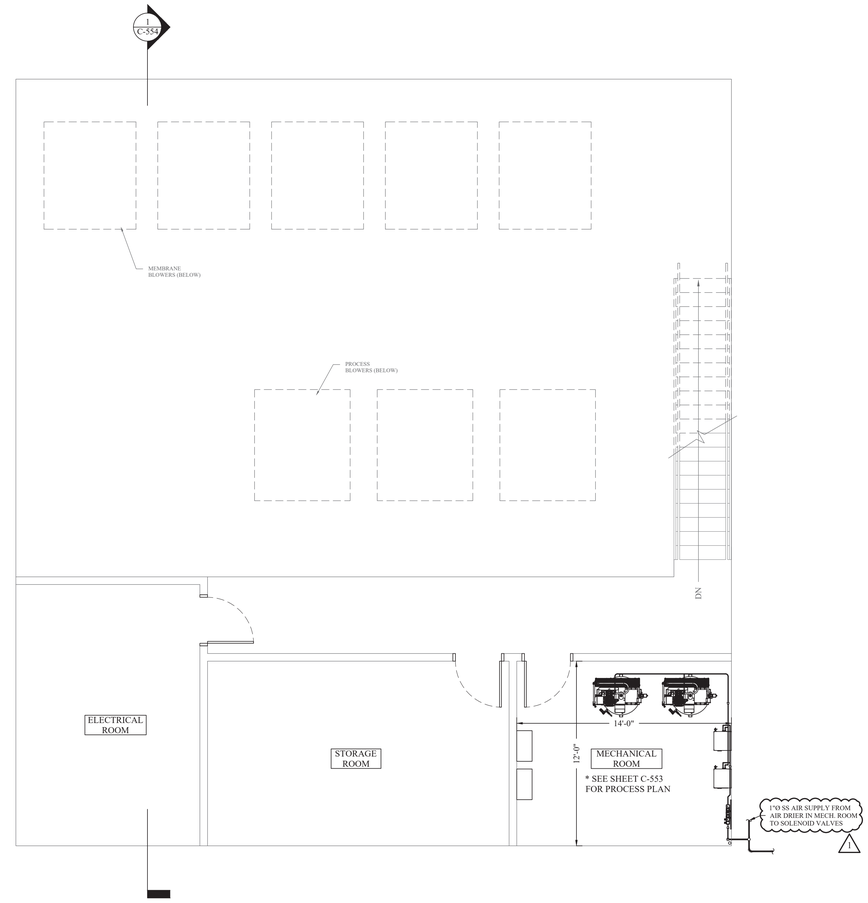
ISSUED DATE:	18 APR, 2025
DESIGN BY:	JTW
DRAWN BY:	HPBJr
CHECKED BY:	MWW
REVIEWED BY:	MJS, JZ

SHEET NO.
C-530

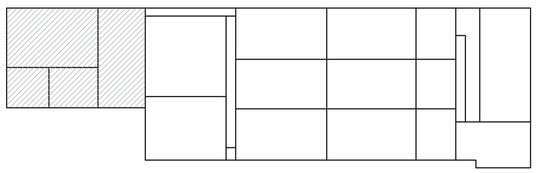
PROJECT # 18-732 PHASE #



A C-550 MBR - FIRST FLOOR PROCESS PLAN
SCALE: 1/4" = 1'-0"



B C-550 MBR - SECOND FLOOR PLAN
SCALE: 1/4" = 1'-0"



KEY PLAN
SCALE: 1/32" = 1'-0"

MHE ENGINEERING
33 Airport Center Drive, Suite 202
New Windsor, NY 12553
(845) 567-3100
111 Wheatfield Drive, Suite 1
Milford, PA 18337
(570) 296-2765

BID SET

HAZARDOUS MATERIAL NOTE:
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UDIG·NY
SAFE DIGGING STARTS HERE
CALL 811

CAESARS LANE WWTP EXPANSION PROJECT: PHASE 2
145 CAESARS LN.
NEW WINDSOR, NY 12553
FOR TOWN OF NEW WINDSOR
555 UNION AVE.
NEW WINDSOR, NY 12553

MBR - FIRST FLOOR PROCESS PLAN AND SECOND FLOOR PLAN

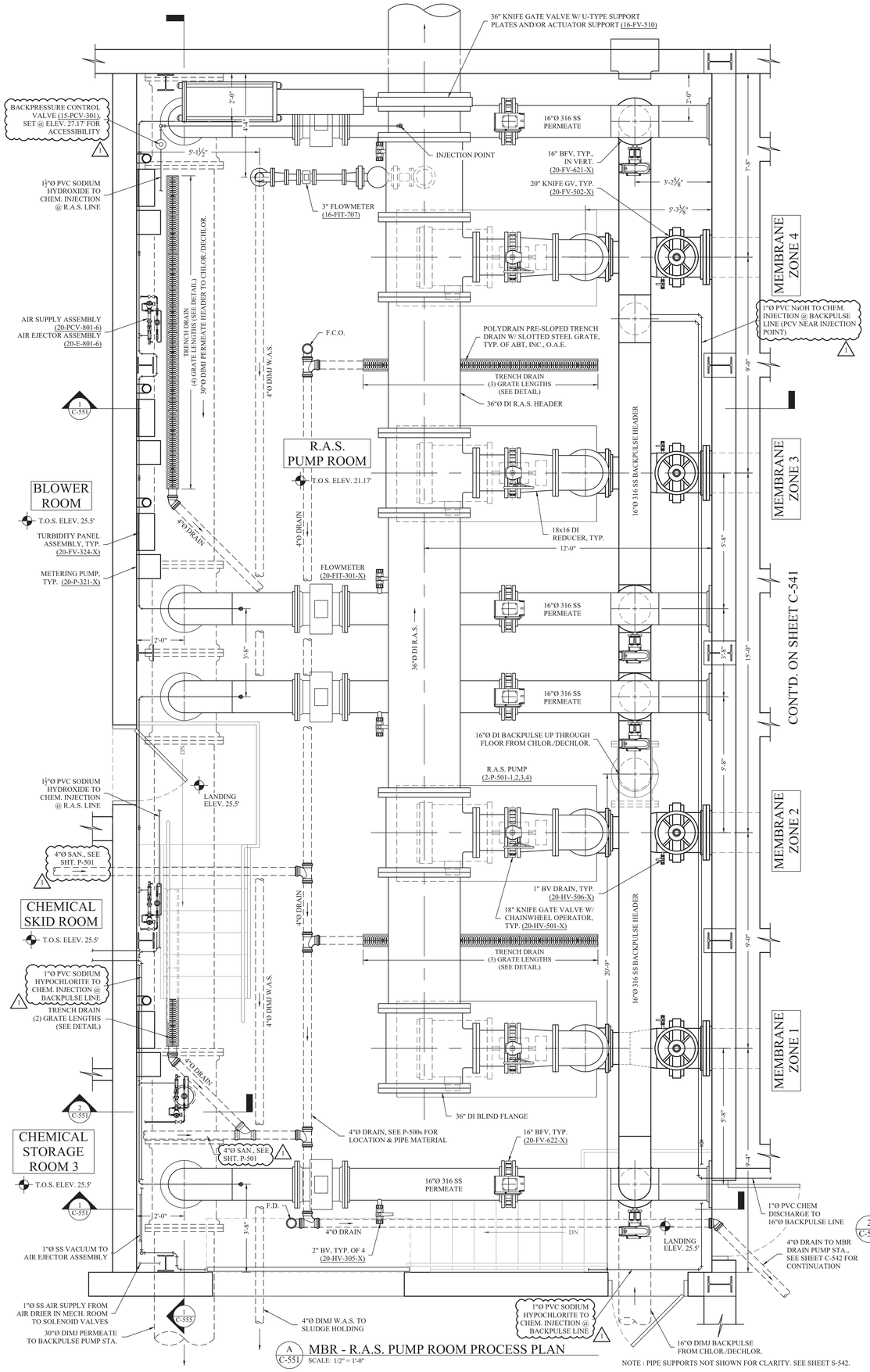
REVISIONS

NO.	DESCRIPTION	DATE
1	ADDENDUM 2	06/20/25

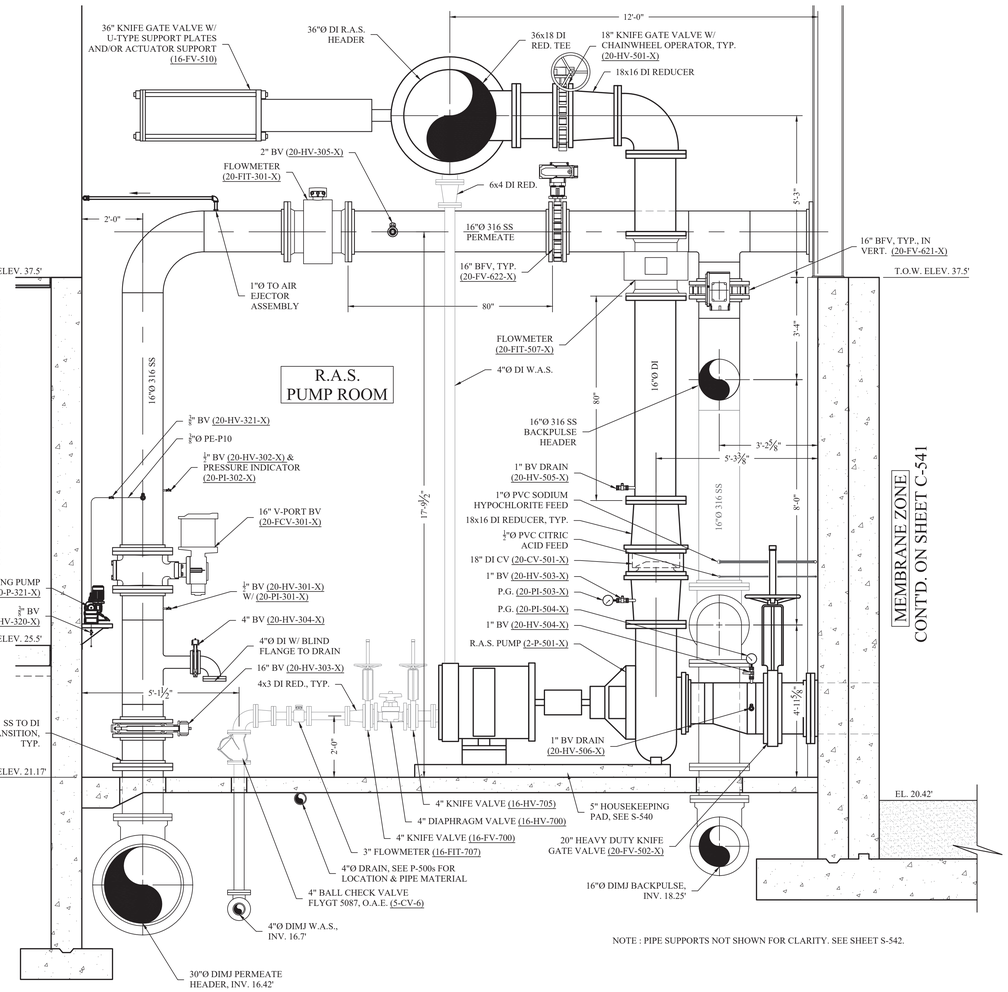
ISSUED DATE:	18 APR, 2025
DESIGN BY:	JTW
DRAWN BY:	HPB/Jr
CHECKED BY:	MWW
REVIEWED BY:	MJS, JZ

SHEET NO.
C-550

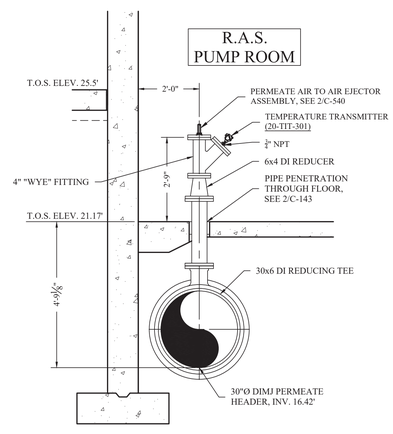
PROJECT # 18-732 PHASE #



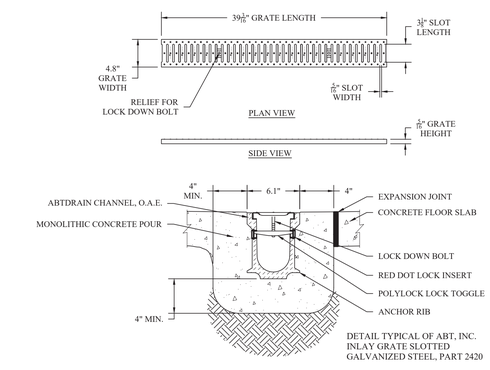
A C-551 MBR - R.A.S. PUMP ROOM PROCESS PLAN
SCALE: 1/2" = 1'-0"



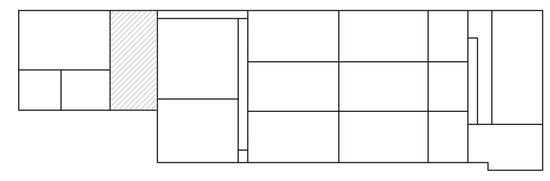
1 C-551 MBR - R.A.S. PUMP ROOM SECTION
SCALE: 1/2" = 1'-0"



2 C-551 MBR - R.A.S. PUMP ROOM - TEMP. TRANSMITTER DETAIL
SCALE: 1/2" = 1'-0"



3 C-551 PRE-SLOPED TRENCH DRAIN DETAILS
SCALE: NONE



KEY PLAN
SCALE: 1/32" = 1'-0"

MHE ENGINEERING
33 Airport Center Drive, Suite 202
New Windsor, NY 12553
(845) 567-3100
111 Wheatfield Drive, Suite 1
Milford, PA 18337
(570) 296-2765

BID SET

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UDIG·NY SAFE DIGGING STARTS HERE
CALL 811

CAESARS LANE WWTP EXPANSION PROJECT: PHASE 2
145 CAESARS LN.
NEW WINDSOR, NY 12553
FOR TOWN OF NEW WINDSOR
555 UNION AVE.
NEW WINDSOR, NY 12553

MBR - R.A.S. PUMP ROOM PROCESS PLAN AND SECTIONS

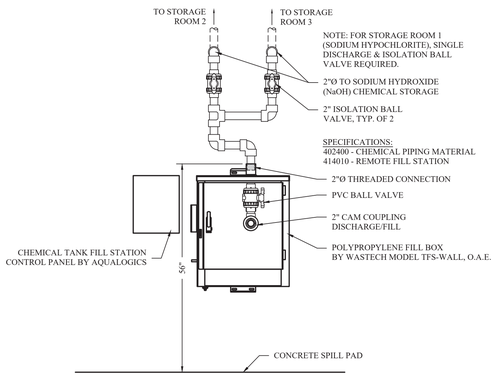
REVISIONS

NO.	DESCRIPTION	DATE
1	ADDENDUM 2	06/20/25

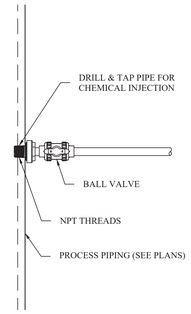
ISSUED DATE:	18 APR. 2025
DESIGN BY:	JTW
DRAWN BY:	HPBJr
CHECKED BY:	MWW
REVIEWED BY:	MJS, JZ

SHEET NO.
C-551

PROJECT # 18-732 PHASE #

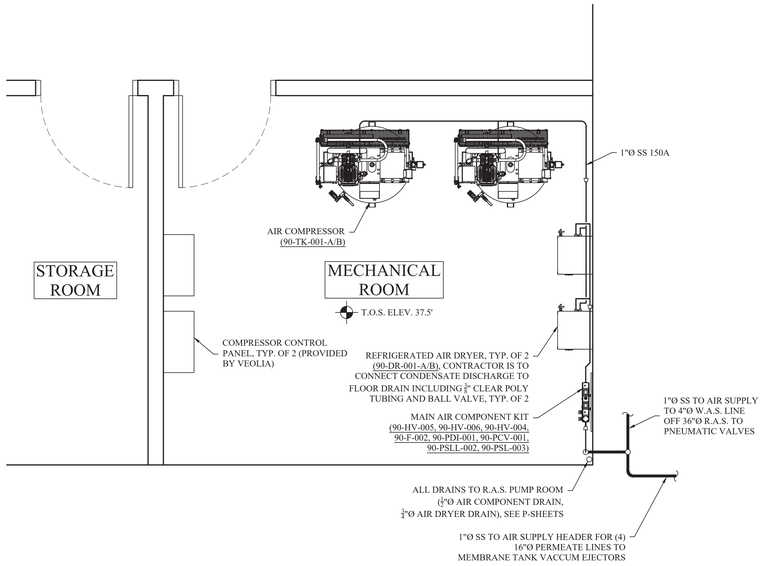


1 C-553 CHEMICAL FILL STATION DETAILS (TYP.)
SCALE: 3/4" = 1'-0"

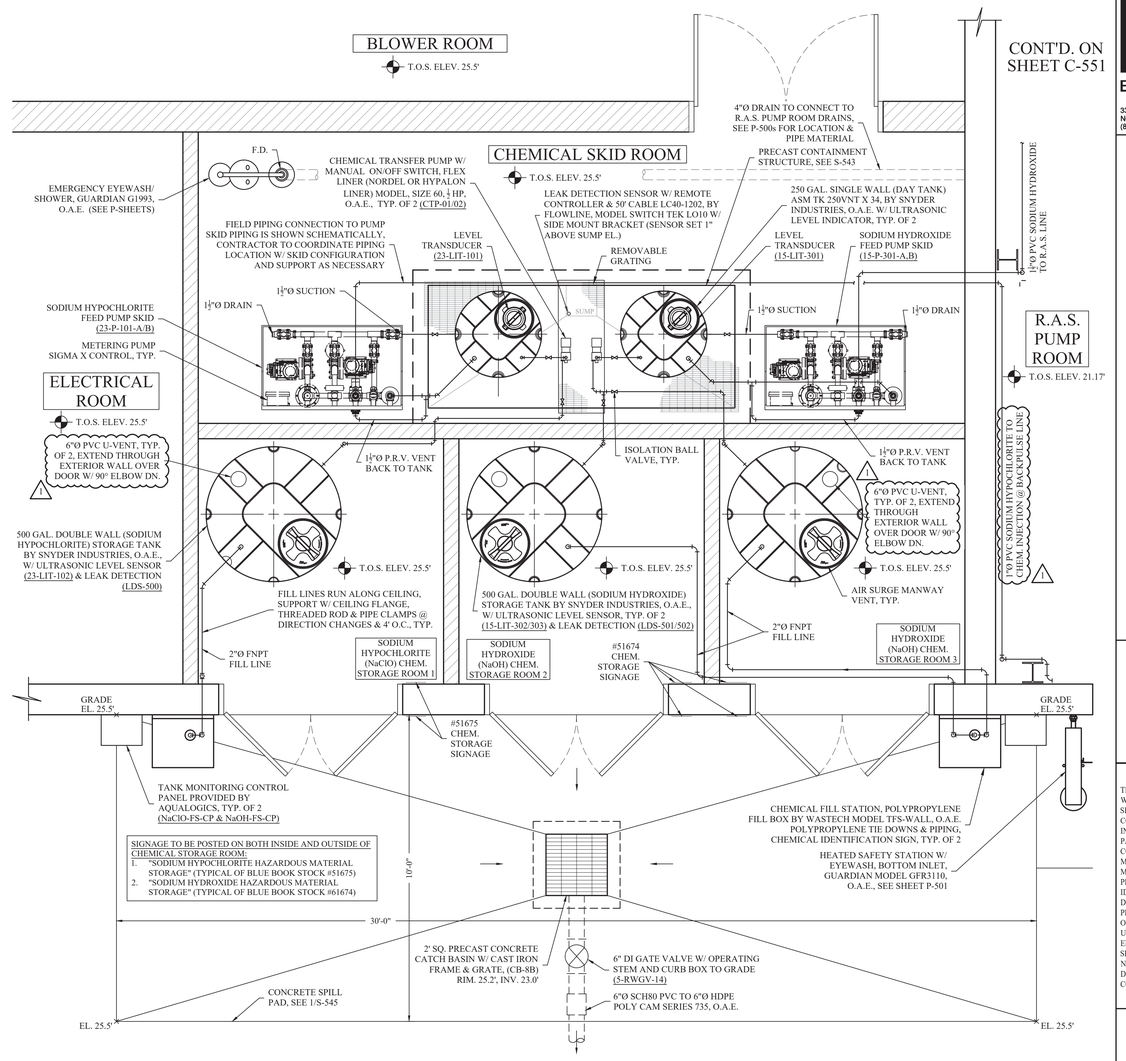


2 C-553 CHEMICAL INJECTION POINT DETAIL
SCALE: N.T.S. (TYP. OF 3)

TOTAL INJECTION POINTS = 3
SODIUM HYPO - BACKPULSE LINE - 4/C-554
CITRIC ACID - BACKPULSE LINE - 4/C-554
SODIUM HYDROXIDE - 36" R.A.S. HEADER - A/C-551

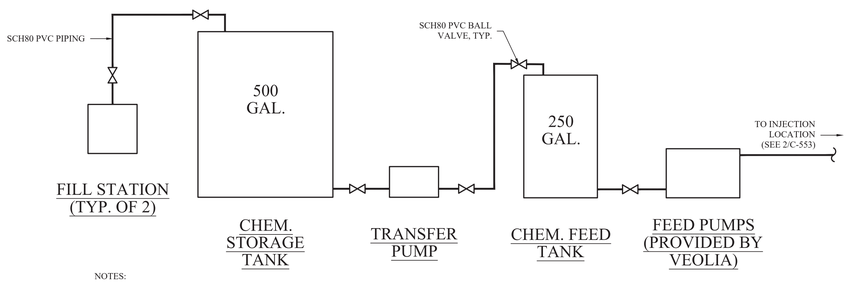


B C-553 MBR - 2ND. FLOOR MECHANICAL ROOM PROCESS PLAN
SCALE: 1/2" = 1'-0"



NOTE : CONTRACTOR TO COORDINATE WITH OWNER FOR FILLING OF TANKS FOR INITIAL STARTUP. OWNER IS RESPONSIBLE FOR INITIAL TANK FILL FOR STARTUP.

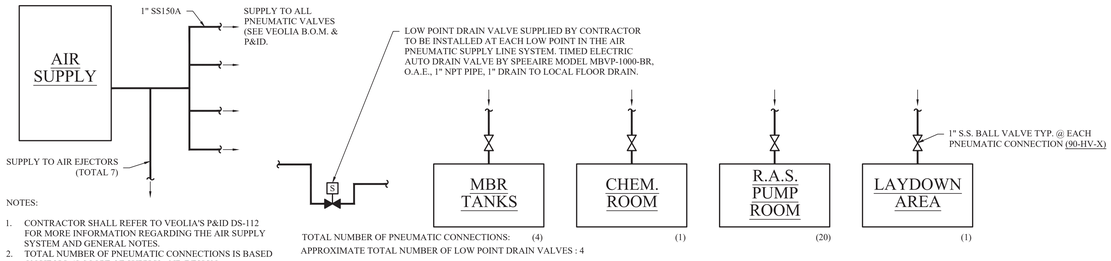
A C-553 MBR - CHEM FEED PROCESS PLAN
SCALE: 1/2" = 1'-0"



NOTES:

1. CONTRACTOR TO REFER TO SPECIFICATION SECTIONS 434183, 414010, 402400 AND 463366 FOR LIQUID CHEMICAL STORAGE TANKS, REMOTE FILL STATIONS, LIQUID CHEMICAL PIPING AND LIQUID CHEMICAL TRANSFER PUMPS RESPECTIVELY FOR MORE INFORMATION.
2. CONTRACTOR SHALL INSTALL CHEMICAL STORAGE TANKS AND CHEMICAL EQUIPMENT IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
3. ALL PIPING CONTAINING OR TRANSPORTING CORROSIVE OR HAZARDOUS CHEMICALS SHALL BE IDENTIFIED WITH LABELS EVERY TEN FEET (3M) AND WITH AT LEAST TWO LABELS IN EACH ROOM, CLOSET OR PIPE CHASE.
4. PIPES CONTAINING HAZARDOUS OR CORROSIVE CHEMICALS SHOULD NOT BE LOCATED ABOVE SHOULDER LEVEL EXCEPT WHERE CONTINUOUS DRIP COLLECTION TRAYS AND COUPLING GUARDS WILL ELIMINATE CHEMICAL SPRAY OR DRIPPING ONTO PERSONNEL.

4 C-553 CHEMICAL FILL GENERAL SCHEMATIC
SCALE: N.T.S.

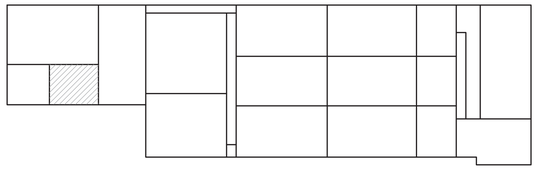


NOTES:

1. CONTRACTOR SHALL REFER TO VEOLIA'S P&ID DS-112 FOR MORE INFORMATION REGARDING THE AIR SUPPLY SYSTEM AND GENERAL NOTES.
2. TOTAL NUMBER OF PNEUMATIC CONNECTIONS IS BASED ON VEOLIA'S SCOPE OF SUPPLY AND DESIGN. (CONTRACTOR SHALL VERIFY PRIOR TO INSTALLATION).
3. CONTRACTOR IS RESPONSIBLE TO VERIFY TOTAL NUMBER OF LOW POINTS IN THE SYSTEM FOR FINAL TOTAL NUMBER OF DRAIN VALVES REQUIRED. DRAIN VALVES SHALL BE FIELD ADJUSTED UPON STARTUP IN ACCORDANCE WITH VEOLIA'S RECOMMENDATIONS AND REQUIREMENTS.
4. LOWEST PNEUMATIC CONNECTION; 10" MEMBRANE AIR LINE, BFV SODIUM HYPO SKID, 4" W.A.S. KNIFE GATE VALVE, CITRIC ACID SKID TAG ID 90-FV-011-A/B/C/B.

TOTAL NUMBER OF PNEUMATIC CONNECTIONS:
APPROXIMATE TOTAL NUMBER OF LOW POINT DRAIN VALVES : 4

5 C-553 PNEUMATIC CONNECTIONS SCHEMATIC
SCALE: N.T.S.



KEY PLAN
SCALE: 1/32" = 1'-0"

MHE ENGINEERING
33 Airport Center Drive, Suite 202
New Windsor, NY 12553
(845) 567-3100
111 Wheatfield Drive, Suite 1
Milford, PA 18337
(570) 296-2765

BID SET

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UDIG·NY SAFE DIGGING STARTS HERE
CALL 811

CAESARS LANE WWTP EXPANSION PROJECT: PHASE 2
145 CAESARS LN.
NEW WINDSOR, NY 12553
FOR TOWN OF NEW WINDSOR
555 UNION AVE.
NEW WINDSOR, NY 12553

MBR - CHEM FEED PROCESS PLAN AND DETAILS

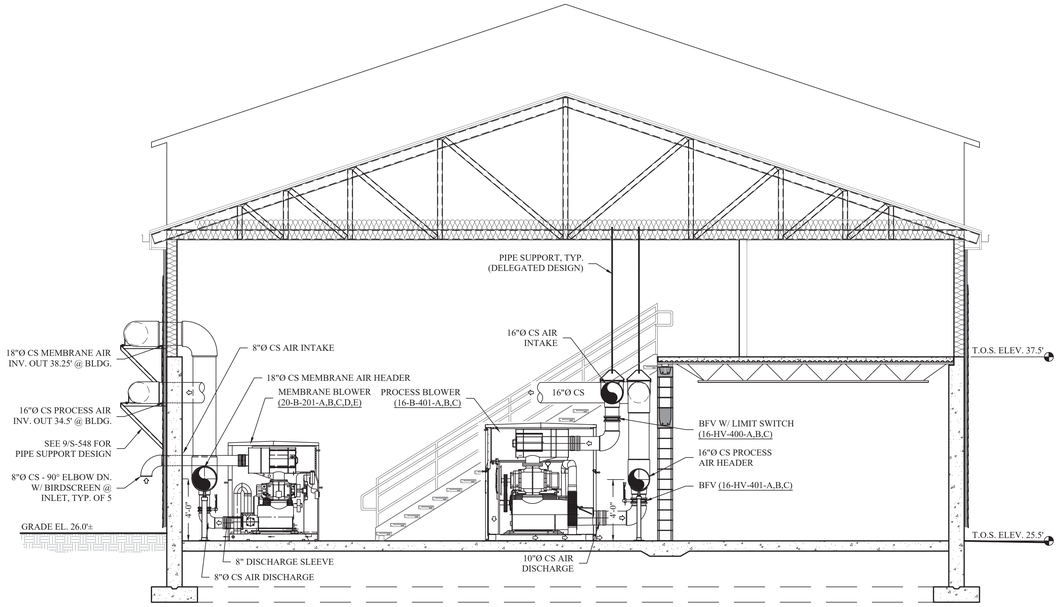
REVISIONS

NO.	DESCRIPTION	DATE
1	ADDENDUM 2	06/20/25

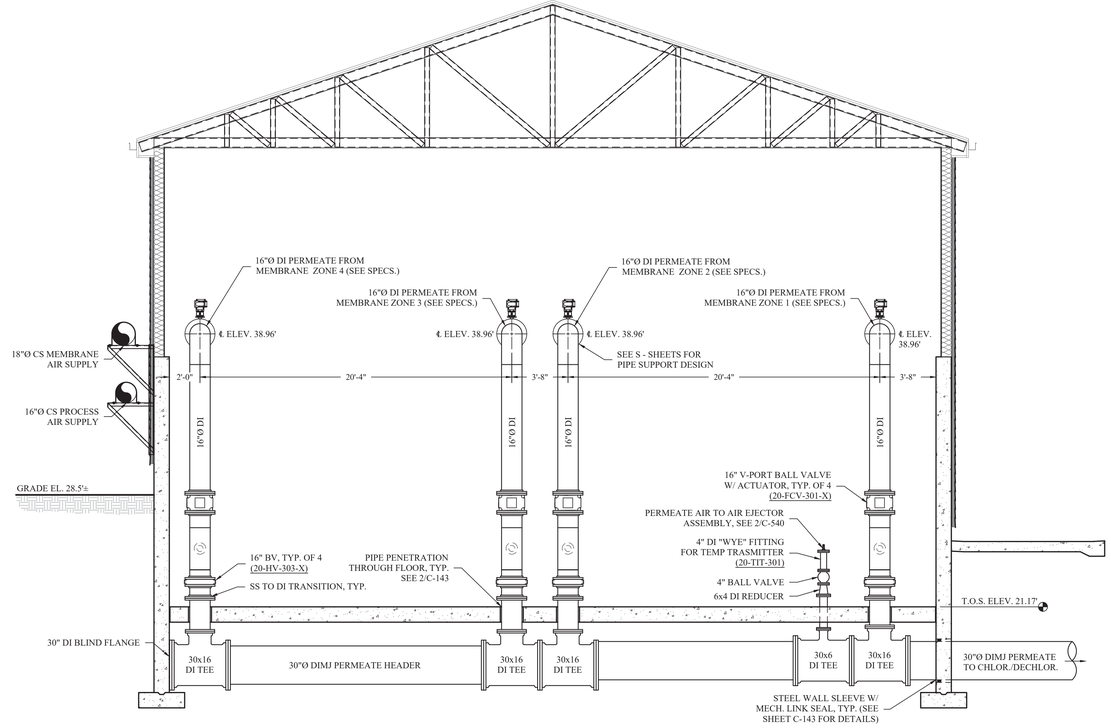
ISSUED DATE:	18 APR, 2025
DESIGN BY:	JTW
DRAWN BY:	HPB/Jr
CHECKED BY:	MWW
REVIEWED BY:	MJS, JZ

SHEET NO.
C-553

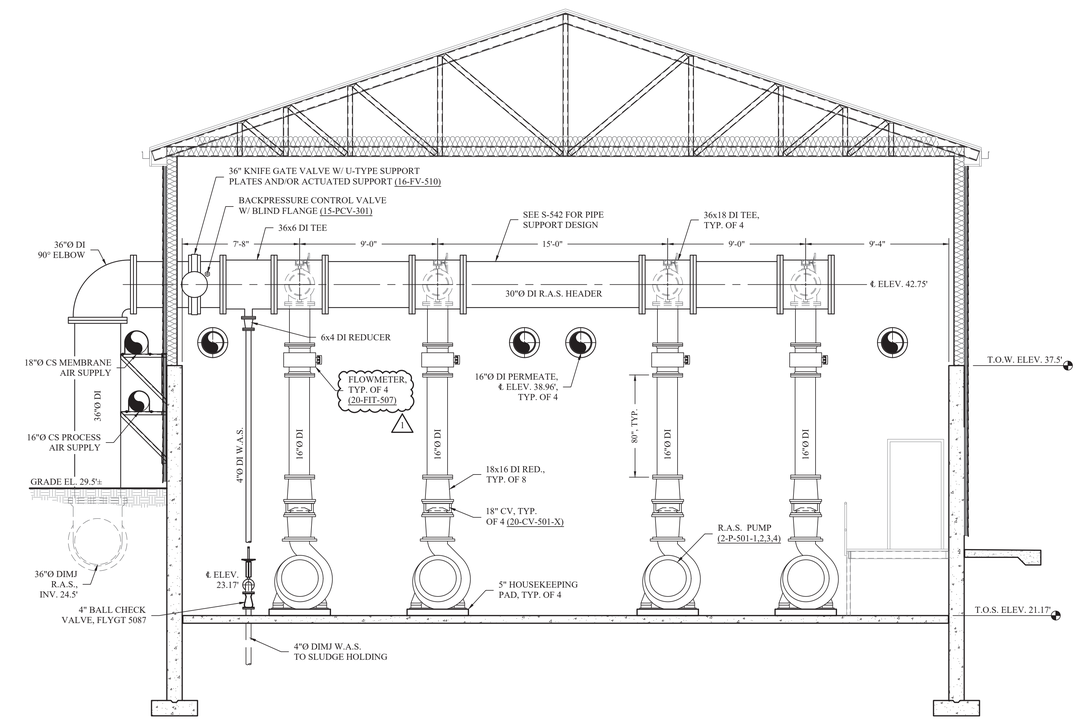
PROJECT # 18-732 PHASE #



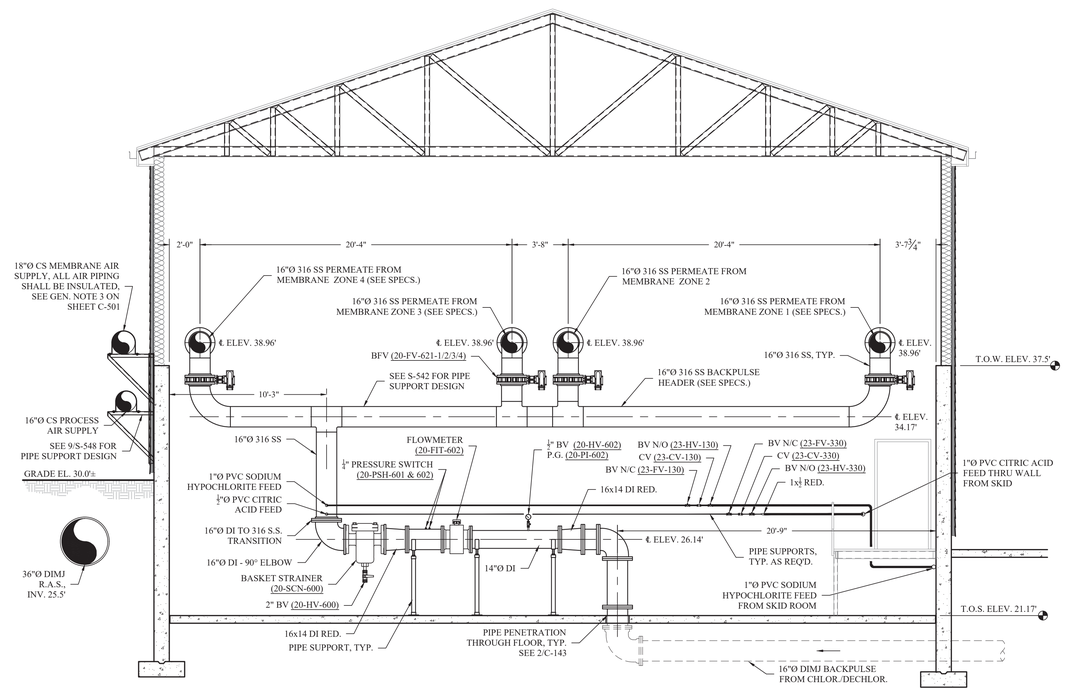
1 / C-554 SECTION THRU BLOWER ROOM
SCALE: 1/4" = 1'-0"



2 / C-554 30" PERMEATE PIPING ELEVATION
SCALE: 1/4" = 1'-0"



3 / C-554 36" R.A.S. PUMPS & PIPING HEADER ELEVATION
SCALE: 1/4" = 1'-0"



4 / C-554 16" BACKPULSE INFLUENT & HEADER ELEVATION
SCALE: 1/4" = 1'-0"

MHE ENGINEERING
33 Airport Center Drive, Suite 202
New Windsor, NY 12553
(845) 567-3100
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Milford, PA 18337
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BID SET

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UDIG·NY SAFE DIGGING STARTS HERE
CALL 811

CAESARS LANE WWTP EXPANSION PROJECT: PHASE 2
145 CAESARS LN.
NEW WINDSOR, NY 12553
FOR TOWN OF NEW WINDSOR
555 UNION AVE.
NEW WINDSOR, NY 12553

MBR SECTIONS & PIPE ELEVATIONS

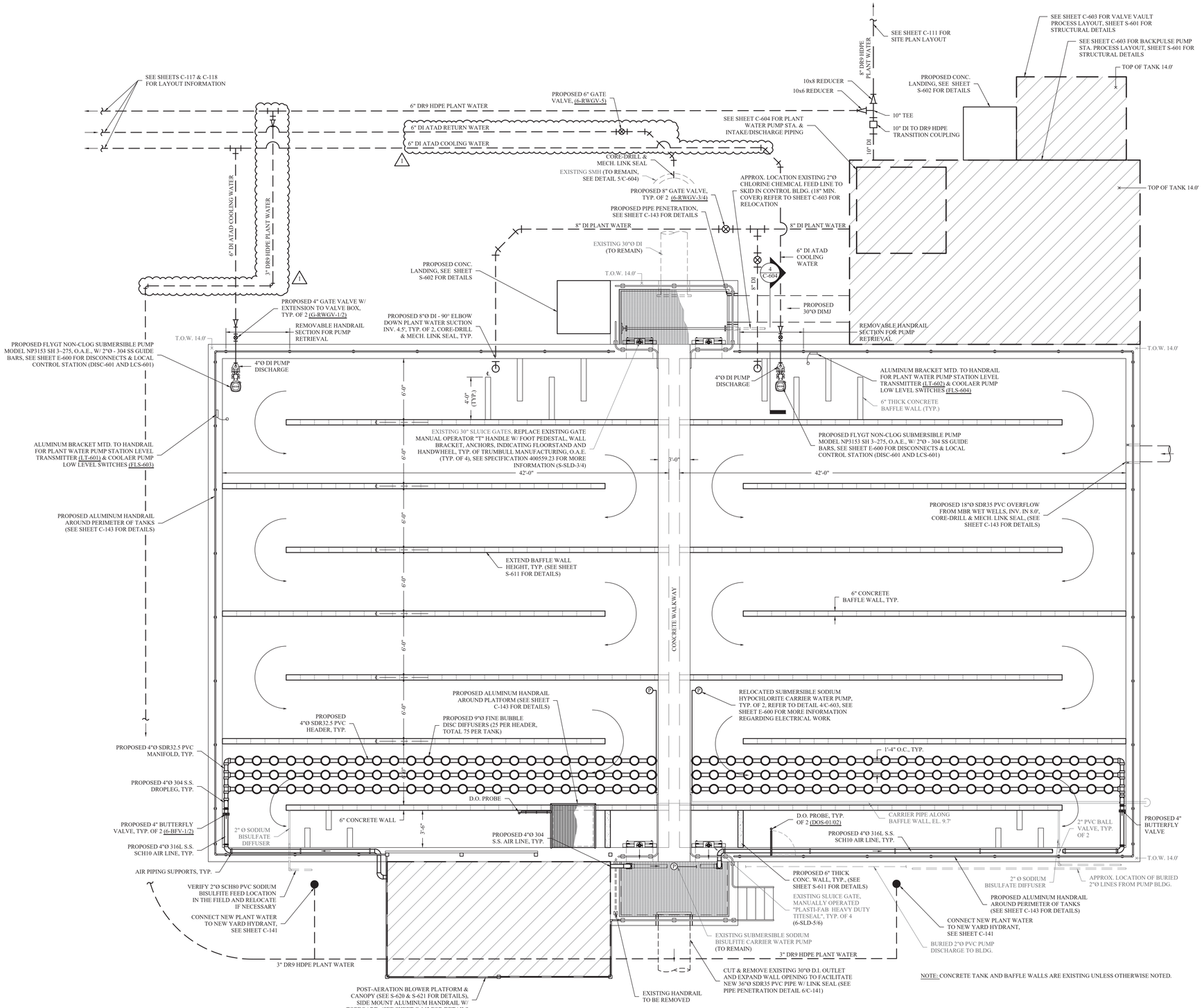
REVISIONS

NO.	DESCRIPTION	DATE
1	ADDENDUM 2	06/20/25

ISSUED DATE:	18 APR, 2025
DESIGN BY:	JTW
DRAWN BY:	HPBJr
CHECKED BY:	MWW
REVIEWED BY:	MJS, JZ

SHEET NO.
C-554

PROJECT # 18-732 PHASE #



NOTE: CONCRETE TANK AND BAFFLE WALLS ARE EXISTING UNLESS OTHERWISE NOTED.

EXISTING DE-CHLORINATION MODIFICATIONS PLAN FOR POST AERATION

A / C-602 SCALE: 1/4" = 1'-0"

MHE ENGINEERING

33 Airport Center Drive, Suite 202
New Windsor, NY 12553
(845) 567-3100

111 Wheatfield Drive, Suite 1
Milford, PA 18337
(570) 296-2765

BID SET

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UDIG·NY SAFE DIGGING STARTS HERE CALL 811

CAESARS LANE WWTP EXPANSION PROJECT: PHASE 2
145 CAESARS LN.
NEW WINDSOR, NY 12553
FOR TOWN OF NEW WINDSOR
555 UNION AVE.
NEW WINDSOR, NY 12553

POST AERATION PROCESS PLAN

REVISIONS

NO.	DESCRIPTION	DATE
1	ADDENDUM 2	06/20/25

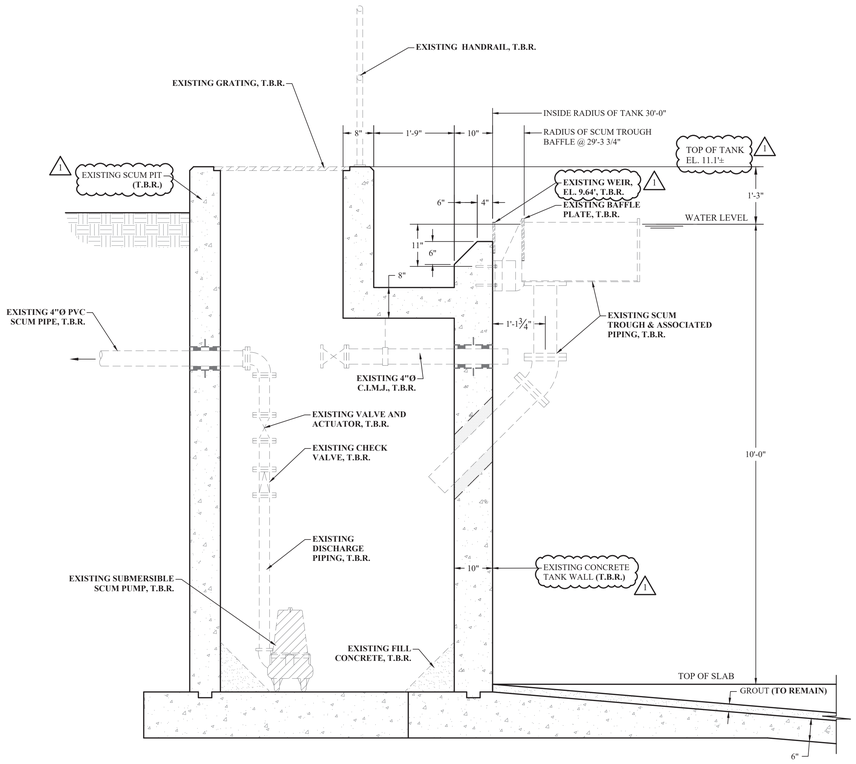
ISSUED DATE:	18 APR, 2025
DESIGN BY:	JTW
DRAWN BY:	HPBJr
CHECKED BY:	MWW
REVIEWED BY:	MJS, JZ

SHEET NO.

C-602

PROJECT # 18-732 PHASE #

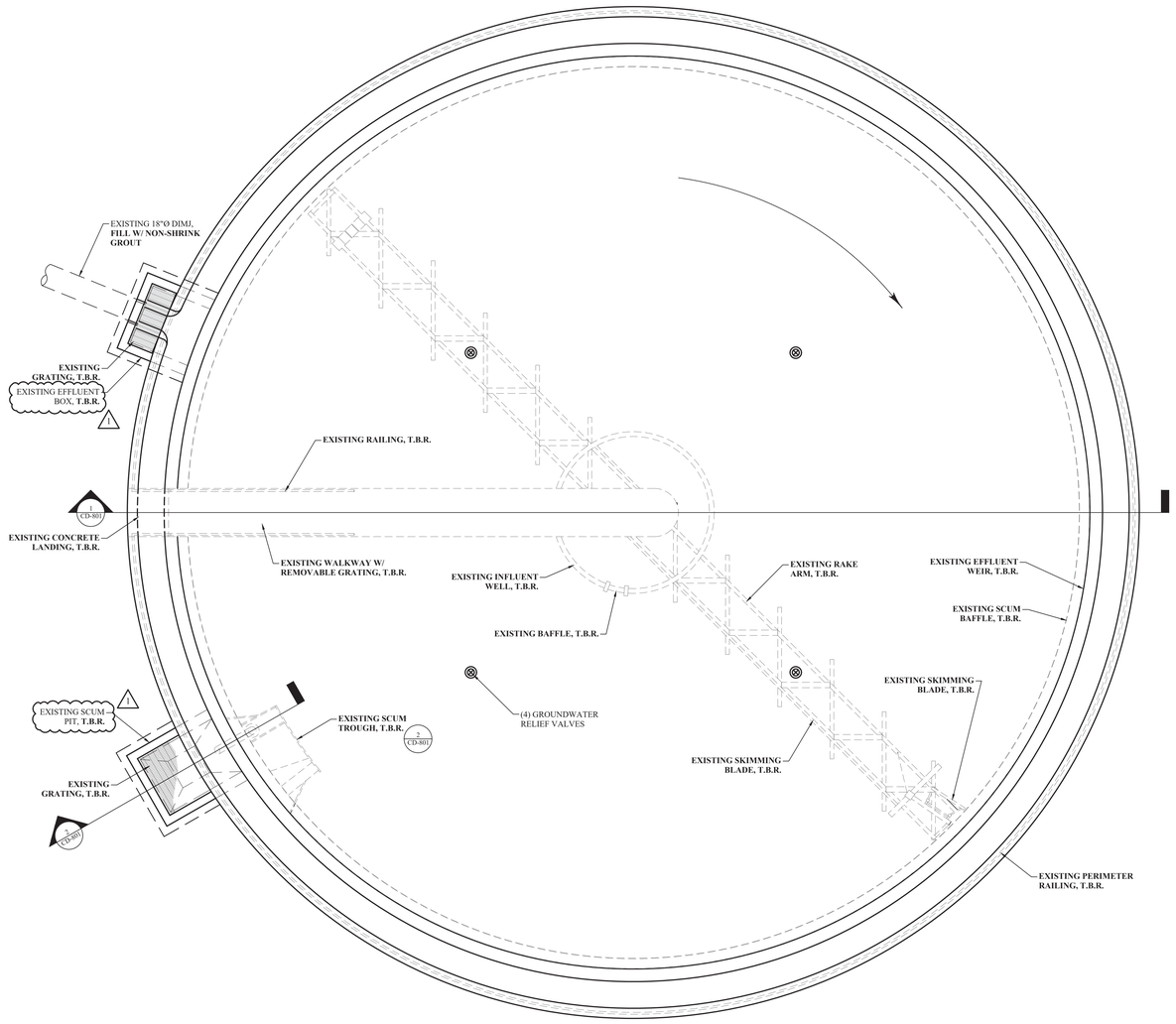
F:\2018\18-732 Caesar Lane WWTP Improvements\Expansion Phase\Drafting\6 - Post Aeration\Civil-Process\Addendum 2\POST AERATION REVISIONS.dwg, C-602, 6/20/2025 10:59:04 AM



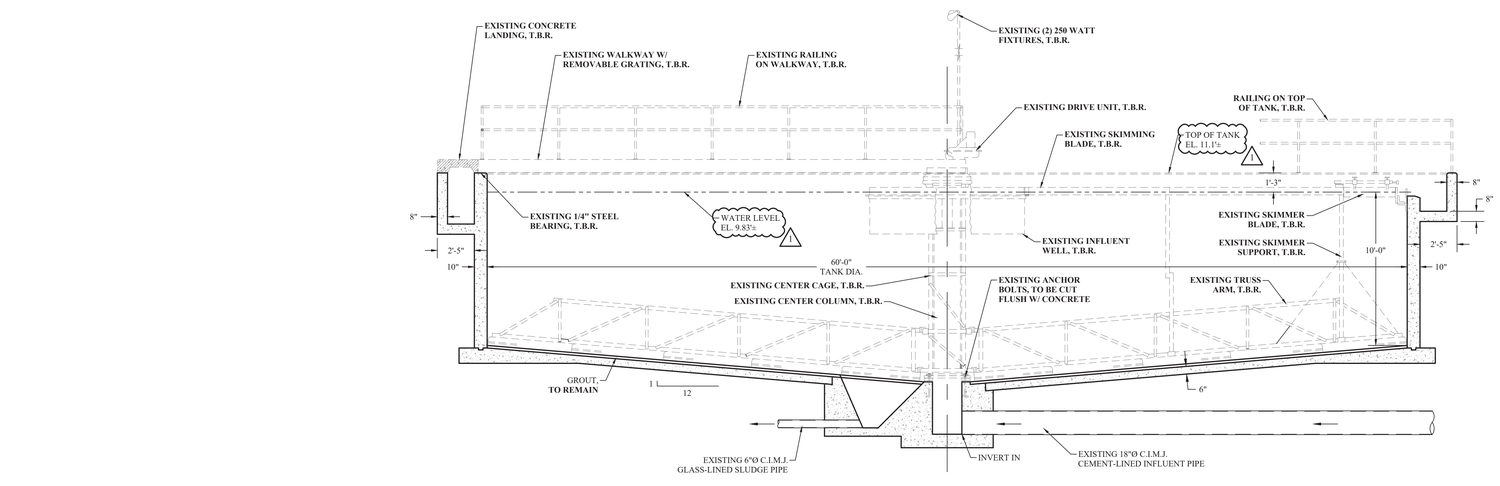
2 CD-801 TYPICAL SECONDARY SETTLING TANK DEMOLITION SECTION THRU SCUM PIT & TROUGH
SCALE: 3/4" = 1'-0"

NOTES:

1. ENTIRE STRUCTURE INCLUDING EQUIPMENT, PIPING, CONCRETE, ETC. TO BE REMOVED IN FULL TO TOP OF EXISTING SLAB (T.O.S.) AT APPROXIMATELY ELEVATION 0.0'.
2. DEMOLITION PLAN IS TYPICAL OF SECONDARY SETTLING TANKS 1 AND 2.
3. REFER TO SITE PLAN FOR ACTUAL PIPING, EFFLUENT TROUGH AND SCUM PIT ORIENTATION.
4. AFTER DEMOLITION IS COMPLETE, BACKFILL WITH ACCEPTED STRUCTURAL BACKFILL MATERIAL INSTALLED IN COMPACTED LIFTS IN ACCORDANCE WITH STRUCTURAL EXCAVATION, BACKFILL AND COMPACTION SPECIFICATION.
5. ALL ITEMS NOTED AS TO BE REMOVED, OR "T.B.R." SHALL BE COMPLETELY REMOVED BY THE CONTRACTOR AND PROPERLY DISPOSED OF. DISPOSAL MANIFESTS SHALL BE PROVIDED TO THE OWNER.
6. CONTENTS OF EXISTING SETTLING TANKS MAY BE DISPOSED OF BY PUMPING TO THE INFLUENT STRUCTURE ON THE GRAVITY THICKENERS AS COORDINATED WITH THE PLANT OPERATOR.
7. ALL POWER AND CONTROL WIRING AT THE SECONDARY SETTLING TANKS, INCLUDING CONDUIT SHALL BE REMOVED AND PROPERLY DISPOSED OF.
8. EXISTING BURIED PIPING NOT REMOVED SHALL BE FILLED WITH NON-SHRINK GROUT.



1 CD-801 TYPICAL SECONDARY SETTLING TANK DEMOLITION PLAN
SCALE: 1/4" = 1'-0"



3 CD-801 TYPICAL SECONDARY SETTLING TANK DEMOLITION ELEVATION - SECTION
SCALE: 1/4" = 1'-0"

MHE ENGINEERING
33 Airport Center Drive, Suite 202
New Windsor, NY 12553
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Milford, PA 18337
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BID SET

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UDIG·NY SAFE DIGGING STARTS HERE
CALL 811

CAESARS LANE WWTP EXPANSION PROJECT: PHASE 2
145 CAESARS LN.
NEW WINDSOR, NY 12553
FOR TOWN OF NEW WINDSOR
555 UNION AVE.
NEW WINDSOR, NY 12553

TYPICAL EXISTING SECONDARY SETTLING TANK DEMOLITION PLAN

REVISIONS

NO.	DESCRIPTION	DATE
1	ADDENDUM 2	06/20/25

ISSUED DATE:	18 APR. 2025
DESIGN BY:	JTW
DRAWN BY:	HPBJr
CHECKED BY:	MWW
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SHEET NO.
CD-801

PROJECT # 18-732 PHASE #

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SECTION 462100 – FINE SCREENING EQUIPMENT

PART 1 – GENERAL

1.1 WORK INCLUDED:

A. Supply all labor, materials, equipment and incidentals required to install and place into operation the fine screening system as shown on the Drawings and as specified herein.

1.2 REFERENCE STANDARDS:

A. The properties of all materials, design, fabrication and performance of the equipment to be furnished under this section shall be in accordance with the latest issue of applicable standard specifications. The governing authorities of these standards are listed below.

1. AICS, American Institute of Steel Construction
2. AISI American Iron and Steel Institute
3. ANSI, American National Standards Institute
4. ASCE, American Society of Civil Engineers
5. ASME, American Society of Mechanical Engineers
6. ASTM, American Society of Testing and Materials
7. AWS, American Welding Society
8. IBC, International Building Code
9. IEC, International Electric Code
10. IEEE, Institute of Electrical and Electronics Engineers
11. NEC, National Electrical Code
12. NEMA, National Electrical Manufacturers Association
13. Underwriters Laboratory (UL and cUL)

1.3 SUBMITTALS:

A. Submittals shall be provided to the engineer that includes all the following information:

1. Certified shop drawings showing all important details of construction, dimensions and anchor bolt locations.
2. Descriptive product literature.
3. Schematic electrical wiring diagram and electrical controls information.
4. Complete motor and drive data.
5. The total weight of the equipment.
6. A complete bill of materials of all equipment.
7. A valid certificate of registration naming manufacturer, and supplier if equipment is relabeled, as ISO 9001:2015 certified.
8. A certificate from an industry recognized, independent testing facility verifying compliance with Screening Capture Ratio requirement.

1.4 QUALIFICATIONS:

A. All the equipment specified under this Section shall be supplied by a single manufacturer whose Quality Management System is ISO 9001:2015 certified and applicable to the manufacture of

water and wastewater treatment equipment.

B. Qualified manufacturers shall have a minimum of ten (10) years experience with wastewater screening systems, specifically including Center Flow band screens and washing compactors for consideration.

C. If equipment is not manufactured by supplier, including welding and machining, the name and contact information of manufacturing facility must be supplied. If more than one manufacturer is used all companies and facilities must be provided.

D. If patents protecting equipment are not owned by supplier, then an affidavit must be supplied stating owner of design and expiration of licensing agreement.

E. All equipment specified under this Section shall comply Bipartisan Infrastructure Law's (BIL Public Law 117-58) Build America, Buy America (BABA) requirements for manufactured products. As defined in the Law, this requires

1. The manufactured product was manufactured in the United States, and
2. The cost of the components of the manufactured product that are mined, produced, or manufactured in the United States is greater than 55 percent of the total cost of all components of the manufactured product.

F. Certifications attesting to compliance will be required prior to approval and shall be included with submittals and upon completion of manufacture.

1.5 DESIGN REQUIRMENTS:

A. System Description

1. The fine screen will have a continuous stainless-steel belt that automatically rotates within the internal guide system of the static frame.

2. The fine screen herein specified will be of the center flow type. The flow enters the inside of the continuous belt and exits through both sides and the bottom of the belt.

3. The screen shall have undergone performance testing by an industry recognized, independent testing facility. The results of this testing shall verify a Screening Capture Ratio of at least 84% for solids equal to or larger than the screen grid opening listed in System Performance below.

4. The screen will be installed into the channel as shown on the contract drawings to accommodate the flow pattern through the screen belt.

5. The solids will collect as a mat on the inside of the continuous belt. The belt will intermittently rotate and elevate the solids to the discharge point. Larger objects will be picked up by a series of hooks and/or trays placed at regular intervals.

6. The solids will be removed at the top of the screen by two spray bar headers positioned on the outside of the belt. The screenings will drop into an internal hopper and be fed to the screening handling system.

7. The continuous belt will be directly driven by drive sprockets that shall support and rotate the grid assembly.

8. The screen will be totally enclosed and have access covers that will be lightweight and easily removable for maintenance. Maintenance, inspection, access and lubrication points shall be no higher than 60 inches above grade level.

9. The Washing Compactor will sit under the discharge point of the fine screen.

10. The Washing Compactor will be adequately sized to handle all the screenings and wash water that will be generated by the screen at peak flow. The system will be required to wash the screenings to reduce the organic content and compact the remaining solids into a dry plug.

11. The Washing Compactor will generally comprise of a screw auger rotating within the washing and drainage trough, a wash water system, a compaction zone and an outlet chute arrangement.

12. All stainless steel (including frame, grid and drive components) mentioned below as stainless steel shall be T304 stainless steel. All hardware shall be T316 stainless steel.

B. System Performance – The fine screening system will be designed to meet the following design parameters:

Number of Screens	2
Peak Flow Per Screen	16.5 MGD
Screen Grid Opening	2 mm
Head Loss at Peak Flow	11.86 inches @ 30% blinding and 52 inches downstream water level
Structural Design Differential of Frame/Grid	48 inches minimum @ 100% blinding
Drive Design Differential (Operating)	48 inches minimum
Screen Grid Supporting Drive Sprockets	3 minimum – all stainless steel
Channel Width	48 inches
Channel Height	114 inches
Channel Width – Recess Around Screen	N/A
Number of Washing Compactors	2
Diameter of Screw	6 inches
Diameter of Shaft	2.26 inches
Compactor Discharge Height Above Grade	48 inches
Wash Water Requirements per Screen/WC	82 GPM @ 60 PSI when screen is on

PART 2 - MATERIALS

2.1 MANUFACTURER:

A. The equipment shall be the Center Flow Screen and Washing Compactor as provided by Hydro-Dyne Engineering, Inc., Clearwater, FL. Other than the named supplier, all manufacturers proposing equipment described herein, will provide a detailed submittal package, which will

consist, at a minimum, of all information and details prescribed in Contract Documents.

B. If submitted equipment requires arrangement differing from that specified, prepare, and submit for review complete structural, mechanical, and electrical drawings and equipment lists showing all necessary changes and embodying all special features of equipment proposed. Any changes are at no additional compensation and the Manufacturer will be responsible for all engineering costs of redesign by the Engineer, if necessary.

2.2 CENTER FLOW SCREEN:

A. Perforated Plate - The Continuous Screening Belt

1. The screenings belt will consist of panels manufactured from stainless steel plate that shall be punched with perforations of the specified opening. The stainless steel plate shall be reinforced with a stainless steel frame.

2. The perforated panels will be supported by 12 gauge stainless steel vertical mounted lifting hooks horizontally spaced a maximum of 3 inches apart preventing deflection. The lifting hooks shall support the screening grid and bear tension loads across the entire length and width of the screen belt.

3. The hooks on elements shall form horizontal lifting trays or shelves for removing large solids and rags every 8 inches around the entire screen grid.

4. The perforated panels will be connected by heavy duty stainless steel axles every 8 inches to form a continuous belt that will rotate within the frame's guide system. The axle design will allow the plates to pivot and create a seal between the perforated panels to prevent the passage of solids.

5. The axles will include Delrin spacers that will maintain the 3 inch space between the vertical support elements. Delrin spacers will also form a seal between each perforated panel with clearance not to exceed 0.5mm.

6. The axles will be extended to fix a stainless-steel guide link to the side of each perforated plate. These guides will interlock to create a continuous guide link system that will slide within the frame.

7. Guide links shall be precision machined from solid virgin stainless steel. Injection molded links are not acceptable.

8. The heavy duty guide links will be minimum 2 inches thick to protect against undue wear from grit and will be specially machined to form a closure seal between the rotating belt and the static frame.

9. The seal shall be continuous from grade level through the water flow forming an uninterrupted closure between the traveling screen grid and the stationary frame. The seal shall be heavy gauge stainless steel, fixed to the screen frame and be adjustable so it will remain in contact with the rotating screen belt at all times. There shall be no gap in the grid to frame seal larger than 0.5mm.

10. Guide systems that use rollers, stainless or hardened steel chains will not be acceptable.

11. Grid panel sealing systems that use neoprene seals or stainless steel hinges will not be acceptable.

12. Grid to frame sealing systems that use adjustable stainless steel strips attached to the frame will not be acceptable.

B. FRAME

1. The continuous belt will rotate within a heavy-duty stainless steel static support frame that shall be a rectangular box construction.

2. The guide link system will travel around a stainless-steel guide wear track that is integral to the support frame. Top and bottom wear tracks shall be bolt in and field replaceable.

3. There shall be a removable inspection panel located directly beneath the drive allowing easy access to the grid drive sprockets, drive shaft and screenings collection hopper.

4. The design will ensure that the support frame meshes with the closure seal on each guide link to prevent passage of screening material and grit particles.

5. All components of the lower wear tracks shall be bolt in, field replaceable and manufactured from stainless steel.

6. The frame shall accommodate stainless steel protective covers designed to prevent leakage and contain spray wash. All access covers for maintenance will be lightweight and easily removable. Screens with covers requiring neoprene, rubber or plastic seals are not acceptable.

7. The screen manufacturer will supply the stainless-steel angled filler plates to connect from the upstream corners of the support frame to the channel walls.

8. The back-plate of the screen shall be furnished with a bypass gate that will allow manual removal for complete flow bypass.

C. OFFLOADING OF SCREENINGS

1. Two stainless steel spray wash headers will be located in the head space of the screen to offload the screenings from the continuous belt.

2. The spray bar will incorporate brass nozzles at 2 inch spaces that can easily be replaced or removed for cleaning.

3. The spray bars will be positioned behind the rotating belt and will backwash the solids into an internal hopper manufactured from stainless steel. The wash water will be used to continuously flush the screenings from the internal hopper directly into the Washing Compactor.

4. The addition of a rotating or static brush system to aid offloading will not be acceptable.

D. SCREEN DRIVE MECHANISM

1. Each screen will have a minimum 1.0 hp, continuous duty electric motor suitable for a 460/3/60 supply.As a minimum, the motor will be TEFC with an IP55 enclosure rating and will conform to NEMA MG-1 requirements. The motor will be located outside of the screen covers and above the top of the channel.

2. The gear reducer shall be directly coupled to a heavy duty shaft machined from solid stainless steel round bar.

3. The drive shaft shall be supported on both ends by grease filled roller bearings. Separate grease-filled self-contained cartridge seals shall be mounted on drive shaft between bearings and frame to eliminate spray wash from entering bearings or gear reducer.

4. The continuous belt will be supported and rotated around heavy duty stainless steel sprockets located on the drive shaft in the head space of the screen.

5. These sprockets will have lugs that transmit torque directly from the gear reducer to notches on the underside of the UHMWPE guide links. Driving forces shall be transmitted to areas located behind the screen's grid to prevent solids from contacting drive surfaces.

6. Chain driven systems or screens with wheels submerged in the wastewater are not acceptable.

7. Drive systems that use an external track and pinion to drive or push the band against grid weight supporting wear tracks will not be acceptable. Drive shall lift, and be capable of bearing, the full weight of the grid.

2.3 WASHING COMPACTOR WITH ENHANCED WASHING AND DEWATERING:

A. The main body will be the washing trough that will receive screenings and wash water directly from the discharge point of the screen.

B. The washing trough will house the screw auger and provide a dedicated section to reduce organic content.

C. The stainless-steel drainage section will be slots with 5mm openings and be adjustable to maintain auger alignment. This drainage section shall be removable and easily replaceable in the field with no special tools. The flights of the screw may be fitted with a stiff nylon brush that will maintain contact with the drainage section, preventing blockages. The replaceable brushes will be supplied in pre-coiled lengths with stainless steel removable clamps.

D. The AR400 hardened steel screw auger will sit in the washing trough. Washing compactors with shaftless screws are not acceptable as a shaft is required to support the flight and provide necessary torque and compaction. Screw auger will be primer coated to inhibit corrosion.

E. The auger will be a varied pitch screw aligned at the compaction end by AR400 hardened steel wear and anti-rotation bars designed to prevent the compacted screening from spinning within the compaction zone.

F. The screw will rotate allowing wash water and free organic/fecal material finer than trough

openings to escape and return to the plant flow. The wash water will flush the separated organic material through the drainage section in solution or as small particles.

G. Washing of screenings shall be achieved through an enhanced washing module consisting of the following minimum requirements manufactured out of stainless steel:

1. Variable pitch flight for separate screening transport through the wash, dewatering and compaction zones.

2. Washing Module Zone
   a. Flanged connections and a stainless-steel orifice plate or nozzle
   b. Hardened steel wear and anti-rotation bars
   c. Separately controlled high pressure washing to sheer and break-up organic and fecal material for return to the channel.
   d. Cleansing cycles moving the auger in forward and reverse direction are controlled through the main control panel and operator adjustable up to 9 cycles

3. Dewatering and Compaction Zone
   a. Stainless steel header feeding an external rinse shower
   b. Hardened steel wear and anti-rotation bars
   c. Full circumference perforations for dewatering and extrusion of organics and fecal material.
   d. Attached drainage catch pan with a separate wash water supply to purge the area of accumulated solids
   e. Removable covers for inspection access

H. The compacted screenings will be pushed through the compaction zone and pass through an elbow into an outlet chute. The outlet chute will provide for screening expansion and will elevate the dewatered screenings to discharge by gravity into a waste receptacle (by others).

I. Each Washing Compactor will have a minimum 1.5 hp, inverter duty reversing electric motor suitable for a 460/3/60 supply and rated for a Class 1 Div. 1 environment. As a minimum, the motor will be TEFC with an IP55 enclosure rating and will conform to NEMA MG-1 requirements.

2.4 PARABOLIC PROPORTIONAL WEIR:

A. The manufacturer shall design and supply a stainless steel parabolic proportional weir that will be installed by the contractor downstream of the screen.

B. The weir will be designed to maintain a grid velocity of no more than 3 ft/sec for the full flow range (minimum to maximum).

C. The weir will be designed to maintain a downstream water depth that will increase screen performance during periods of high flow.

D. The weir will be anchored to the sides of the channel with no horizontal supports across the channel to prevent the accumulation of solids.

E. Weir will allow for 2 inch incremental height adjustment and shall have the capability to be safely removed during live flow conditions.

2.5 SPARE PARTS:

A. The manufacturer will supply the following spare parts, per screen supplied, with the equipment:

1. Ten (10) hook links and elements spacers
2. Two (2) grid axles
3. Two (2) guide links

2.6 ACCESSORIES:

A. The manufacturer will supply the following accessories, per screen supplied, with the equipment:

1. One (1) NEMA 7 brass body solenoid valve
2. One (1) wash water strainer
3. Two (2) wash water pressure gauges

2.7 ELECTRICAL CONTROLS AND ANCILLARY COMPONENTS:

A. General Information - The manufacturer will supply one UL listed main control panel and two local control stations that shall automatically control the equipment offered in this section.

B. The Main Control Panel – NEMA 4X stainless steel enclosure for indoor or outdoor installation - panel shall consist of the following components:

1. Allen Bradely PLC for ethernet output for SCADA integration.
2. Main lockout/fused disconnect switch
3. Variable Frequency Drive for screen
4. Compactor motor starter
5. Control transformer, 500 VA minimum
6. Programmable control relay with minimum of 5 cycle timers
7. Fused disconnect
8. Hour run meter
9. Fuses and breakers
10. Motor overload sensor
11. Panel power light
12. Screen run/fault lights
13. Washing Compactor run/fault lights
14. Reset pushbutton
15. Current monitors

C. Ancillary Control Components

1. Float switch
2. Upstream ultrasonic level system consisting of the following per screen:
   a. NEMA 4X enclosure with viewing window
   b. Milltronics Hydro-Ranger 200 controller with real-time 4-20 mA output
   c. One (1) NEMA 4X transducer
3. Local Control Station – NEMA 4X - Each local station panel shall consist of the following components:
   a. 4-hole NEMA 4X cast aluminum enclosure
   b. Hand/Off/Auto switch for each motor

c. Forward/Off/Reverse for compactor
d. Emergency stop

PART 3 - CONSTRUCTION DETAILS

3.1 GENERAL:

A. Applicable stainless-steel materials, including hardware, flanges and piping shall be pickled by means of a four-tank system that is in accordance with ASTMs A380 and A967. This process is for quality control, removal of heat affected discoloration, surface treatment for corrosive environments and to provide a uniform finish to the stainless-steel surfaces. Stainless steel components must be fully submerged in the tanks for complete coverage. Electro-chemical wanding is acceptable on weld finishes that cannot be submerged due to size. Sandblasting, pickling pastes and abrasive cleaners will not be accepted as forms of metal finishing. The drive and grid components do not require pickling.

1. Tank 1 – Detergent bath for the removal of soils, greases, oils and dirt
2. Tank 2 – Rinsing process to remove detergent and residual soils
3. Tank 3 – Two part acid solution for the removal of tightly adhere oxide films
4. Tank 4 – Final rinse process to remove all residual acid

B. All ferrous surfaces (except stainless steel) shall be coated with a pre-primer, primer, and an exterior top coating, or fusion bonded polyester coating suitable for humid/wet environments for superior corrosion protection.

C. Motors and gearboxes shall be surface prepared to withstand humid/wet environments for superior corrosion protection.

3.2 DELIVERY AND STORAGE:

A. The screening system shall be appropriately crated and delivered to protect against damage during shipment.

B. An authorized representative of the Contractor shall inspect the screens on delivery to the jobsite and shall report any damage or missing components to the Manufacturer and the Engineer within 72 hours of receipt of the shipment.

3.3 INSTALLATION:

A. The installation of the equipment shall be as indicated on the drawings and in strict accordance with the Manufacturer's instructions and recommendations.

3.4 WARRANTY:

A. The Manufacturer of the equipment supplied under this specification shall provide a warranty for a period of twelve months commencing on acceptance and/or beneficial occupancy by the Owner. ~~but no later than 90 days from the date of shipment by the Manufacturer.~~ The Manufacturer shall guarantee that the equipment furnished is suitable for the purpose intended

and free from defects in design, materials and workmanship. In the event that the equipment fails to perform as specified the Manufacturer shall, at his option, promptly repair, modify or replace the defective equipment.

3.5 FACTORY TESTING:

A. The screening system and all components shall be factory assembled and tested for a minimum of 24 hours prior to shipment. The equipment shall be shipped fully assembled and shall be capable of being set in place and field erected by the Contractor with minimal field assembly.

B. During the factory test period the screening system shall be adjusted as required assuring proper operation on completion of the field installation. The Manufacturer shall supply a certification of the completion of the factory testing of the assembled screening system and appurtenances and shall certify as to the equipment being in satisfactory operating condition at time of shipment. The Engineer and/or Owner may, at their own option and expense, witness the factory test.

3.6 FIELD TESTS, ADJUSTMENTS, AND COMMISSIONING:

A. The equipment shall be shipped completely factory assembled. Contractor shall verify all access dimensions, channel dimensions, and any interior building dimensions to ensure equipment may be installed as a factory assembled units.

B. After completion of the installation, the equipment shall be inspected and certified by an authorized representative of the Manufacturer as being in compliance with the Manufacturer's recommendations and requirements. At such time as the Manufacturer has deemed the installation to be acceptable, the Manufacturer's authorized service representative shall make any required adjustments and shall start the equipment to assure proper operation.

C. The Manufacturer's authorized representative shall provide instruction to the plant personnel as to the operation and maintenance of the equipment including commissioning, shut down, on-line operations, lubrication and preventative maintenance.

D. Manufacturer shall state field service rates for a Service Engineer to Owner and Contractor. In the event that the field service time required by this section should not be sufficient to properly place the equipment into operation, and the requirement for additional time is beyond the manufacturer's responsibility, additional time shall be purchased by Contractor to correct deficiencies in installation, equipment, or material without additional cost to Owner.

E. The Contractor shall include in his bid, the cost of the above referenced authorized service representative for one (1) trip totaling three (3) eight-hour days total for the fine screens onsite to complete the certifications and training described in this specification section.

END OF SECTION 462100

SECTION 083613 - SECTIONAL DOORS – R2

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes manually or electrically operated sectional doors.

1.2 ACTION SUBMITTALS

A. Product Data: For each type and size of sectional door and accessory.

B. Shop Drawings: For each installation and for special components not dimensioned or detailed in manufacturer's product data.

C. Samples: For each exposed product and for each color and texture specified.

1.3 INFORMATIONAL SUBMITTALS

A. Sample warranty.

1.4 CLOSEOUT SUBMITTALS

A. Maintenance data.

1.5 QUALITY ASSURANCE

A. Installer Qualifications: An entity that employs installers and supervisors who are trained and approved by manufacturer for both installation and maintenance of units required for this Project.

1.6 WARRANTY

A. Special Warranty: Manufacturer agrees to repair or replace components of sectional doors that fail in materials or workmanship within specified warranty period.

1. Warranty Period: Five years from date of Substantial Completion.

B. Special Finish Warranty: Manufacturer agrees to repair or replace components that show evidence of deterioration of factory-applied finishes within specified warranty period.

1. Warranty Period: 10 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. General Performance: Sectional doors shall comply with performance requirements specified without failure due to defective manufacture, fabrication, installation, or other defects in construction and without requiring temporary installation of reinforcing components.

B. Structural Performance, Exterior Doors: Capable of withstanding the design wind loads.

1. Design Wind Load: Uniform pressure (velocity pressure) of 20 lbf/sq. ft., acting inward and outward.
2. Testing: According to ASTM E330 or DASMA 108 for garage doors and complying with the acceptance criteria of DASMA 108.

C. Seismic Performance: Sectional doors shall withstand the effects of earthquake motions determined according to ASCE/SEI 7.

2.2 DOOR ASSEMBLY

A. Sectional Insulated Steel Door: Sectional door formed with hinged sections and fabricated according to DASMA 102 unless otherwise indicated.

a. Basis of design : ThermaSeal TM320 as manufactured by Raynor Garage Doors.

2. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

a. Overhead Door Corporation.
b. Wayne-Dalton Corp.

B. Operation Cycles: Door components and operators capable of operating for not less than 50,000.

C. Air Infiltration: Maximum rate of 0.4 cfm/sq. ft. at 15 and 25 mph when tested according to ASTM E283.

D. R-Value: 24.0 deg F x h x sq. ft./Btu.

E. Steel Sections: Zinc-coated (galvanized) steel sheet with G60 zinc coating.

1. Section Thickness: 3 inches.
2. Exterior-Face Surface: Paneled 20 Gauge.
3. Interior Facing Material: Zinc-coated (galvanized) 26 gauge steel sheet.

F. Track Configuration: Standard-lift & Low-headroom track.

G. Weather-seals: Fitted to bottom and top and around entire perimeter of door. Provide combination bottom weather-seal and sensor edge.

H. Windows: Approximately 24 by 8 inches, with curved corners, and spaced apart the approximate distance as indicated on Drawings; in one row(s) at height indicated on Drawings; installed with insulated glazing of clear float glass.

I. Locking Devices: Equip door with locking device assembly.

1. Locking Device Assembly: Cremone type, both jamb sides, locking bars, operable from inside with thumb-turn, outside with cylinder.

J. Electric Door Operator:

1. Usage Classification: Standard duty, up to 25 cycles per hour and up to 90 cycles per day.
2. Operator Type: Jackshaft, side mounted.
3. Safety: Listed according to UL 325 by a qualified testing agency for commercial or industrial use; moving parts of operator enclosed or guarded if exposed and mounted at 8 feet or lower.
4. Motor Exposure: Interior, clean, and dry.
5. Emergency Manual Operation: Chain type.
6. Obstruction-Detection Device: Automatic photoelectric sensor.
7. Control Station: Interior-side mounted.
8. Other Equipment: Portable, radio-control system.

K. Door Finish:
1. Baked-Enamel or Powder-Coat Finish: Color and gloss as selected by Engineer/Architect from manufacturer's full range.
2. Factory Prime Finish: Manufacturer's standard color.
3. Finish of Interior Facing Material: Finish as selected by Engineer/Architect from manufacturer's full range.

2.3 STEEL DOOR SECTIONS

A. Exterior Section Faces and Frames: Zinc-coated (galvanized), cold-rolled, commercial steel (CS) sheet.

1. Roll horizontal meeting edges to a continuous, interlocking, keyed, rabbeted, shiplap, or tongue-in-groove weather-resistant seal, with a reinforcing flange return.
2. For insulated doors, provide sections with continuous thermal-break construction, separating the exterior and interior faces of door.

B. Section Ends and Intermediate Stiles: Enclose open ends of sections with channel end stiles formed from galvanized-steel sheet welded to door section. Provide intermediate stiles formed from galvanized-steel sheet, cut to door section profile, and welded in place. Space stiles not more than 48 inches apart.

C. Reinforce bottom section with a continuous channel or angle conforming to bottom-section profile and allowing installation of astragal.

D. Reinforce sections with continuous horizontal and diagonal reinforcement, as required to stiffen door and for wind loading. Provide galvanized steel bars, struts, trusses, or strip steel, formed to depth and bolted or welded in place. Ensure that reinforcement does not obstruct vision lites.

E. Provide reinforcement for hardware attachment.

F. Thermal Insulation: Insulate interior of steel sections with door manufacturer's standard CFC-free insulation, with maximum flame-spread and smoke-developed indexes of 75 and 450, respectively, according to ASTM E84. Enclose insulation completely within steel sections and the interior facing material, with no exposed insulation.

2.4 TRACKS, SUPPORTS, AND ACCESSORIES

A. Tracks: Manufacturer's standard, galvanized-steel track system of configuration indicated, sized for door size and weight, designed for lift type indicated and clearances indicated on Drawings, Provide complete system including brackets, bracing, and reinforcement to ensure rigid support of ball-bearing roller guides for required door type, size, weight, and loading.

1. Track Reinforcement and Supports: Galvanized-steel members to support track without sag, sway, and vibration during opening and closing of doors. Slot vertical sections of track spaced 2 inches apart for door-drop safety device.

B. Weather-seals: Replaceable, adjustable, continuous, compressible weather-stripping gaskets of flexible vinyl, rubber, or neoprene fitted to bottom and top of sectional door unless otherwise indicated.

C. Windows: Manufacturer's standard window units of type, size, and in arrangement indicated. Provide removable stops of same material as door-section frames.

2.5 HARDWARE

A. General: Heavy-duty, corrosion-resistant hardware, with hot-dip galvanized, stainless-steel, or other corrosion-resistant fasteners, to suit door type.

B. Hinges: Heavy-duty, galvanized-steel hinges at each end stile and at each intermediate stile, according to manufacturer's written recommendations for door size. Attach hinges to door sections through stiles and rails.

C. Rollers: Heavy-duty rollers with steel ball-bearings in case-hardened steel races, mounted with varying projections to suit slope of track. Provide 3-inch-diameter roller tires for 3-inch-wide track and 2-inch-diameter roller tires for 2-inch-wide track.

D. Push/Pull Handles: Equip each push-up operated or emergency-operated door with galvanized-steel lifting handles on each side of door, finished to match door.

2.6 LOCKING DEVICES

A. Slide Bolt: Fabricate with side-locking bolts to engage through slots in tracks for locking by padlock, located on single-jamb side, operable from inside only.

B. Locking Device Assembly: Fabricate with cylinder lock, spring-loaded deadbolt, operating handle, cam plate, and adjustable locking bars to engage through slots in tracks.

1. Lock Cylinders: Cylinders specified in Section 087100 "Door Hardware" and keyed to building keying system.
2. Keys: Three for each cylinder.

C. Chain Lock Keeper: Suitable for padlock.

D. Safety Interlock Switch: Equip power-operated doors with safety interlock switch to disengage power supply when door is locked.

2.7 COUNTERBALANCE MECHANISM

A. Torsion Spring: Counterbalance mechanism consisting of adjustable-tension torsion springs fabricated from steel-spring wire complying with ASTM A229/A229M, mounted on torsion shaft made of steel tube or solid steel. Provide springs designed for number of operation cycles indicated.

B. Cable Drums and Shaft for Doors: Cast-aluminum or gray-iron casting cable drums mounted on torsion shaft and grooved to receive door-lifting cables as door is raised. Mount counterbalance mechanism with manufacturer's standard ball-bearing brackets at each end of torsion shaft.

C. Cables: Galvanized steel, multistrand, lifting cables.

D. Cable Safety Device: Include a spring-loaded steel or spring-loaded bronze cam mounted to bottom door roller assembly on each side and designed to automatically stop door if either lifting cable breaks.

E. Bracket: Provide anchor support bracket as required to connect stationary end of spring to the wall and to level the shaft and prevent sag.

F. Bumper: Provide spring bumper at each horizontal track to cushion door at end of opening operation.

2.8 ELECTRIC DOOR OPERATORS

A. General: Electric door operator assembly of size and capacity recommended and provided by door manufacturer for door and "operation cycles" requirement specified, with electric motor and factory-prewired motor controls, starter, gear-reduction unit, solenoid-operated brake, clutch, control stations, control devices, integral gearing for locking door, and accessories required for proper operation.

1. Manufacturers: Subject to compliance with requirements, provide products by the following:

   a. Chamberlain Group, Inc. (The).

2. Comply with NFPA 70.
3. Control equipment complying with NEMA ICS 1, NEMA ICS 2, and NEMA ICS 6; with NFPA 70, Class 2 control circuit, maximum 24-V ac or dc.

B. Usage Classification: Electric operator and components capable of operating for not less than number of cycles per hour indicated for each door.

C. Door-Operator Type: Unit consisting of electric motor, gears, pulleys, belts, sprockets, chains, and controls needed to operate door and meet required usage classification.

D. Motors: Reversible-type motor with controller (disconnect switch) for motor exposure indicated.

1. Electrical Characteristics:

a. Phase: Single phase.
b. Volts: 115 V.
c. Hertz: 60.

2. Motor Size: Minimum size as indicated. If not indicated, large enough to start, accelerate, and operate door in either direction from any position, at a speed not less than 8 in./sec. and not more than 12 in./sec., without exceeding nameplate ratings or service factor.

E. Obstruction Detection Device: External entrapment protection consisting of indicated automatic safety sensor capable of protecting full width of door opening. Activation of device immediately stops and reverses downward door travel.

1. Photoelectric Sensor: Manufacturer's standard system designed to detect an obstruction in door opening without contact between door and obstruction.

a. Self-Monitoring Type: Designed to interface with door operator control circuit to detect damage to or disconnection of sensing device. When self-monitoring feature is activated, door closes only with sustained pressure on close button.

2. Electric Sensor Edge: Automatic safety sensor edge, located within astragal or weather stripping mounted to bottom section. Contact with sensor activates device. Connect to control circuit using manufacturer's standard take-up reel or self-coiling cable.

a. Self-Monitoring Type: Four-wire configured device designed to interface with door-operator control circuit to detect damage to or disconnection of sensor edge.

F. Control Station: Three-button control station in fixed location with momentary-contact push-button controls labeled "Open" and "Stop" and sustained- or constant-pressure, push-button control labeled "Close."

1. Interior-Mounted Units: Full-guarded, surface-mounted, heavy-duty type, with general-purpose NEMA ICS 6, Type 1 enclosure.
2. Exterior-Mounted Units: Full-guarded, standard-duty, surface-mounted, weatherproof type, NEMA ICS 6, Type 4 enclosure, key operated.

G. Emergency Manual Operation: Equip electrically powered door with capability for emergency manual operation. Design manual mechanism so required force for door operation does not exceed 25 lbf.

H. Emergency Operation Disconnect Device: Equip operator with hand-operated disconnect mechanism for automatically engaging manual operator and releasing brake for emergency manual operation while disconnecting motor without affecting timing of limit switch. Mount mechanism so it is accessible from floor level. Include interlock device to automatically prevent motor from operating when emergency operator is engaged.

I. Motor Removal: Design operator so motor may be removed without disturbing limit-switch adjustment and without affecting emergency manual operation.

J. Audible and Visual Signals: Audible alarm and visual indicator lights in compliance with regulatory requirements for accessibility.

K. Portable Radio-Control System: Consisting of two of the following:

1. Three-channel universal coaxial receiver to open, close, and stop door.
2. Portable control devices to open and stop door may be momentary-contact type; control to close door shall be sustained- or constant-pressure type.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install sectional doors and operating equipment complete with necessary hardware, anchors, inserts, hangers, and equipment supports; according to manufacturer's written instructions and as specified.

B. Tracks: Provide sway bracing, diagonal bracing, and reinforcement as required for rigid installation of track and door-operating equipment.

C. Accessibility: Install sectional doors, switches, and controls along accessible routes in compliance with regulatory requirements for accessibility.

D. Power-Operated Doors: Install automatic garage doors openers according to UL 325.

E. Adjust hardware and moving parts to function smoothly so that doors operate easily, free of warp, twist, or distortion.

F. Touch-up Painting: Immediately after welding galvanized materials, clean welds and abraded galvanized surfaces and repair galvanizing to comply with ASTM A780/A780M.

3.2 DEMONSTRATION

A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain sectional doors.

END OF SECTION 083613