PROJECT:
West Parish Filters Water Treatment Plant
1515 Granville Road
Westfield, MA 01085
Project No. 24-51

ADDENDUM NO. 16 06/18/2024

Posted: 06/18/2024 at 7:31PM EDT

Awarding Authority/Owner:
Springfield Water and Sewer Commission
250 M Street Extension
Agawam, MA 01001

Reference Contract Documents (drawings and specifications) dated 02/26/2024

The attention of Bidders submitting proposals for the above subject project is called to the following addendum to the specifications and drawings. The items set forth herein, whether of omission, addition, substitution, or clarifications are all to be included in and form a part of the proposal submitted.

THE NUMBER OF THIS ADDENDUM (**16**) MUST BE ENTERED IN THE APPROPRIATE SPACE "B" PROVIDED AFTER THE WORD "NUMBERS" OF THE CONTRACT FORM ENTITLED "FORM FOR GENERAL BID," AND IN SPACE "B" OF THE "FORM FOR SUB-BID."

BID DOCUMENT MODIFICATIONS ARE AS FOLLOWS.

Other Modifications / Attachments:

The following attachment includes additional modifications, clarifications and/or provisions not included in the items above in this Addendum.
See document at the end of document.

All other of the portions of the Contract Documents remain **unchanged**. Please be reminded to acknowledge this Addendum on the bid forms.

ATTACHMENTS

24-51 Addendum No. 16.pdf

--- End of Addendum No. **16** ---

SPRINGFIELD WATER AND SEWER COMMISSION

WEST PARISH WATER TREATMENT PLANT

SWSC BID NO. 24-51

ADDENDUM NO. 16

6/18/2024

TO ALL CONTRACTORS ESTIMATING:

Bidders are hereby informed that plans and specifications for the above-mentioned contract are modified, corrected, and/or supplemented as follows, and that Addendum No. 16 becomes a part of the Contract Documents and consists of Item Nos. 16-1 through 16-25.

ANNOUCEMENTS (THESE ITEMS NOT TO BECOME PART OF THE CONTRACT DOCUMENTS AND ARE FOR INFORMATION ONLY)

The filed sub-bid for The Waterproofing Company under Waterproofing, Dampproofing and Caulking is withdrawn.

Electrical Closet 1325 on the 2nd floor of the Administrative Area of the Water Treatment Plant is renamed Fire Suppression Closet 1325. Drawings will be modified upon issuance of Conformed Documents to the awarded Contractor

DRAWING CHANGES

ITEM 16-1: CONTRACT DRAWINGS

Delete the following drawing sheets in their entirety and replace with the attached drawings in Attachment A:

- C-001, Overall Site Plan and Drawing Key
- C-004, Erosion and Sediment Control Phasing Plan - Phase III
- C-005, Erosion and Sediment Control Phasing Plan - Phase IV
- C-006, Erosion and Sediment Control Phasing Plan - Phase V
- C-120, Interim Overall Grading and Drainage Plan
- C-122, Interim Site Plan 2
- C-124, Interim Site Plan 4
- C-130, Overall Grading and Drainage Plan
- C-131, Grading and Drainage Plan - Sheet 1
- C-132, Grading and Drainage Plan - Sheet 2
- C-133, Grading and Drainage Plan - Sheet 3
- C-134, Grading and Drainage Plan - Sheet 4
- C-140, Overall Yard Piping Plan
- C-141, Yard Piping Plan - Sheet 1
- C-143, Yard Piping Plan - Sheet 3
- C-145, Yard Piping Plan - Sheet 5
- C-150, Overall Final Site Plan
- C-151, Final Site Plan - Sheet 1
- C-152, Final Site Plan - Sheet 2
- C-153, Final Site Plan - Sheet 3
- C-160, Staking Plan - Limit of Disturbance
- C-161, Staking Plan - Sheet 1
- C-162, Staking Plan - Sheet 2
- C-163, Staking Plan - Sheet 3
- C-164, Staking Plan - Sheet 4
- C-167, Staking Tables
- C-168, Staking Tables - Limit of Disturbance
- C-172, Site Sections - Sheet 2
- C-177, Site Sections - Sheet 7
- C-202, Access Road Plan and Profile - Sheet 2
- C-203, Access Road Plan and Profile - Sheet 3
- C-205, Roadway Sections
- C-206, Roadway Details

- C-210, Stormwater Wetland Pond Plan
- C-211, Stormwater Wetland Pond Profile and Cross Sections
- C-213, Storm Drain Profiles - Sheet 2
- C-231, Sanitary Sewer Profiles
- C-240, Overall Transmission Mains Plan
- C-241, Raw Water Transmission Main Plan and Profile - Sheet 1
- C-242, Raw Water Transmission Main Plan and Profile - Sheet 2
- C-243, Raw Water Transmission Main Plan and Profile - Sheet 3
- C-244, Raw Water Transmission Main Plan and Profile - Sheet 4
- C-245, Raw Water Transmission Main Plan and Profile - Sheet 5
- C-246, Raw Water Transmission Main Connection Details - Sheet 1
- C-252, Treated Water Transmission Main Plan and Profile - Sheet 2
- C-273, Process Piping Profiles - Sheet 1
- C-275, Wash Water and Domestic Water Profiles
- C-276, Process and Domestic Water Profiles
- C-316, Yard Piping Details - Sheet 1C-205,
- L-107, Planting Plan – Sheet 7
- M-1201, Plan at El 471.00 - Administration Area 1

SPECIFICATION CHANGES

ITEM 16-2: Section 00 01 10 – Table of Contents

After Appendix E Springfield Water and Sewer Commission Holidays, insert the following:

“F	Select SWSC Material Specifications”

ITEM 16-3: Section 00 01 10 Table of Contents

Add the following after 01 51 00 Temporary Utilities

"01 51 50	Temporary Bypass Pumping"

ITEM 16-4: 00 40 00.02 DWSRF Forms

At the end of the Section, add the form in Attachment B.

ITEM 16-5: Section 00 73 00 Supplementary Conditions

Delete the following text under SC 15.02

"Delete Paragraph 15.02D of the General Conditions in its entirety."

ITEM 16-6: <u>Section 01 11 00 – Summary of Work</u>

After section 1.15.C, insert the following:

"D. Salvaged millstones to be protected and stored for use on site. Refer to Landscape Architecture Contract Drawings for locations and configurations."

ITEM 16-7: <u>Section 01 14 00 Coordination with Owner's Operations</u>

Delete paragraph 1.06A.2.h.6.d in its entirety and replace with the following:

"d) The Contractor shall assume that bypass pumping of 3 mgd is required to construct the 24" drain line and to conduct Tie-ins 9E and 9W (See Section 01 51 50 Temporary Bypass Pumping)."

ITEM 16-8: <u>Section 01 51 50 Temporary Bypass Pumping</u>

Add Specification Section 01 51 50 included in Attachment C.

ITEM 16-9: <u>Section 01 55 00 Contractor Access and Parking</u>

After Section 3.01, insert the following:

"3.02 SNOW AND ICE REMOVAL

A. The Contractor shall remove snow and ice from the following areas:

1. The sidewalks and parking areas associated with the Engineer's field office.

2. All construction access roads.

    a. Any Plant walkways which cannot be accessed by the Plant's snow removal equipment due to construction activities.

    b. Any additional areas designated by the Engineer.

3. All work areas around the site as necessary to perform the construction activities.

B. Snow and ice removal shall be before 7:00 AM whenever there is a snowfall storm and before 7:00 AM on the day following the termination of the snowfall storm.

C. When directed by the Engineer, the Contractor shall begin snow and/or ice removal immediately (within one (1) hour of the Engineer's directive to proceed).

D. The Contractor shall haul the removed snow and ice for disposal as per the applicable local rules.

E. Spreading of Salt and Sand

1. The Contractor shall furnish all labor, tools, equipment, and materials necessary to provide the following services specifically requested and authorized in writing by the Engineer:

2. Spread calcium chloride over all areas of the Engineer's parking lot and spread sand on the steps and platforms at the entrances to the Engineer's field office.

3. Salt and sand shall be spread prior to a snowstorm.

4. Upon termination of a snowstorm, the Contractor shall remove all sand from the steps and platforms at the entrances to the Engineer's field office.

F. Disposal of sand shall be the responsibility of the Contractor."

ITEM 16-10: **<u>01 73 00 Demolition and Execution of Work</u>**

Delete paragraph 3.01.B.2 in its entirety and replace with the following:

"2. Contractor shall document the Site during the progress of the Work on a monthly basis, at a minimum, and take a minimum of 200 photographs, 50 aerial photographs, and a minimum of a two-hour video."

ITEM 16-11: **<u>Section 06 41 00 – Architectural Wood Casework</u>**

Delete paragraph 1.01.B.1 in its entirety and replace with the following:

"1. Special fabricated wood cabinet units, floating and suspended shelves, and wood stair treads."

ITEM 16-12: **Section 06 41 00 Architectural Wood Casework**

Delete paragraph 1.03 in its entirety and replace with the following:

"1.03 REFERENCES

A. ANSI A208.1 – Particleboard, Mat-Formed Wood.
B. ANSI/BHMA A156.9 – Cabinet Hardware.
C. ANSI/AWI SMA 0643-2021 – Wood Stair, Handrail, and Guard Systems
D. AWI – Architectural Woodwork Institute
E. NFSI – National Floor Safety Institute"

ITEM 16-13: **Section 06 41 00 Architectural Wood Casework**

After paragraph 2.01.C, insert the following:

"D. Stair Treads and Landings shall be as manufactured by the following or approved equal:

1. Kinzel Wood Products, 1825 South 30th Street, Manitowoc, WI 54220. Tel: 920-683-2025. Web: www.kinzelwoodproducts.com.

2. Hardwood Lumber Company, 13813 Station Rd., Middlefield, OH 44062. Tel: 800-798-1269. Web: www.hardwood-lumber.com.

3. Whitewater Flooring Products, 2720 Morain Way, Batavia, OH 45103. Tel: 877-235-5861. Web: www.whitewaterforest.com

4. Or approved equal."

ITEM 16-14: **Section 06 41 00 Architectural Wood Casework**

Delete paragraphs 2.04 (listed twice) in their entirety and replace with:

"2.04 WOOD STAIR TREADS AND LANDING

A. Wood Stair Treads shall be 1-1/2-inches thick by width and length indicated on the Contract Drawings.

B. Wood Stair Landing shall be 3-inches thick by width and length indicated on the Contract Drawings.

C. Wood species: Ash, select grade, Janka hardness equal to or greater than 1320 lbf.

D. Construction: Solid hardwood, random width, joined and glued, wire brushed exposed texture, non-exposed edges to be sanded flush.

E. Finish: Matte polyurethane, UV resistant, factory prefinished.

F. Edge: Square

G. Non-Slip Inserts: Extruded aluminum and recycled rubber inset ribbed bar nosing with square front and back with the following properties:

1. Finish: 6063-T5 aluminum, mill finish.

2. Size: 1-3/8-inches wide by full length of tread and landing.

3. Inset: Replaceable, recycled rubber, black.

4. Attachment: mechanically fastened.

2.05 FINISHES

A. Wood Cabinets, Floating Shelves, Suspended Shelves, and Wood Stair Treads:

1. Wood cabinets shall be provided with a factory-applied Color and finish to match door front.

2. Stain colors and varnish sheen shall be selected by the Engineer from manufacturer's standard VOC requirements meeting the requirements of AWI.

B. Bamboo Finish: All bamboo to be finished as Amber Edge Grain plywood as manufactured by Smith and Fong or approved equal with clear coat finish. Clear coat shall only be applied with spray equipment to achieve a uniform finish across the top and end grain side. Provide manufacturer’s prefinished coating system for the applications indicated.”

ITEM 16-15: **<u>Section 06 41 00 Architectural Wood Casework</u>**

Renumber paragraphs 2.05, 2.06 and 2.07 as follows

“2.06 HARDWARE
2.07 CUSTOM COUNTERTOP, BACKSPLASH AND WINDOWSILLS
2.08 TROUGH SINKS”

ITEM 16-16: **<u>Section 31 00 01 – Earthwork</u>**

Delete paragraph 1.14.E in its entirety and replace with the following:

"E. Where the Contractor chooses to reuse filter sand media and uncoated concrete, the Contractor shall comply with the requirements of the Beneficial Use Determination (BUD) Permit Approval including the following:

1. Only the subject BUD material; clean soil fill and crushed, uncoated concrete shall be used as common fill. The uncoated concrete shall be crushed to less than four inches in diameter.

2. All solid waste and scrap metal (e.g., rebar) shall be removed from the uncoated concrete, and shall be disposed or recycled properly off-site at permitted solid waste disposal or recycling facilities.

3. The BUD material shall not be reused outside of the approved limits without a separate MassDEP BUD permit.

4. The mixed uncoated, crushed concrete and BUD material shall be covered with a separation geotextile, a minimum thickness of 24 inches of clean fill (unless shown otherwise on the Contract Drawings), and shall be compacted as required for proper engineering control.

5. All appropriate measures shall be taken during demolition of the sand filter units and bins, placement of the BUD material, and any other associated construction activities, to mitigate or eliminate the creation of nuisance dusts, in accordance with the regulations at 310 CMR 16.05(3)(e) and 310 CMR 19.010(16)(3). Demolition of sand filter units and bins and associated activities with the BUD material shall occur only during normal business hours: Monday through Saturday, 6:00 AM through 6:00 PM.

6. All appropriate Health and Safety measures shall be taken during the handling, processing, and placement of the BUD material (filter sand media) and uncoated concrete from sand filter units and bins."

ITEM 16-17: **<u>Section 31 00 01 – Earthwork</u>**

Delete paragraph 3.16 in its entirety and replace with the following:

"3.16 DISPOSAL OF SURPLUS AND UNSUITABLE MATERIALS

A. The Contractor shall remove and dispose of off-site all excess

and unsuitable materials. Within thirty (30) consecutive days after Notice to Proceed, the Contractor shall submit to the Engineer for review all required permits and a list of disposal sites for the unsuitable materials. If the disposal site is located on private property, the submittal shall also include written permission from the owner of record.

B. All excess and unsuitable materials shall be disposed of in locations and under conditions that comply with federal, state/commonwealth and local laws and regulations.

C. The Contractor shall obtain an off-site disposal area prior to beginning demolition or excavation operations.

D. All excess and unsuitable materials shall be hauled in trucks of sufficient capacity and tight construction to prevent spillage. Trucks shall be covered to prevent the propagation of dust.

E. Disposal of excavated materials shall meet requirements of Subsection 120.60.B of the MassDOT Standard Specifications.

F. When all excess and unsuitable material disposal operations are completed, the Contractor shall leave the disposal sites in a condition acceptable to the Owner and Owner(s) of the disposal site(s).

G. The Contractor shall remove waste materials, including unsatisfactory soil, trash, and debris, and legally dispose of them off Owner's property."

ITEM 16-18: **<u>Section 32 10 00 Paving and Surfacing</u>**

Delete paragraph 2.01 in its entirety and replace with the following:

"2.01 STRUCTURAL FILL

A. The Contractor shall place structural fill as necessary to complete the embankments, shoulders, subgrade foundation and replacement for removed unsuitable material in accordance with Section 31 00 01 – Earthwork."

ITEM 16-19: **<u>Section 40 05 81 – Fire, Wall, and Yard Hydrants</u>**

After paragraph 1.01.A, insert the following:

"B. Refer to Appendix F, Springfield Water and Sewer Commission's Material Specifications, for additional submittal, inspection, and owner training requirements."

ITEM 16-20: **Section 40 05 81 – Fire, Wall, and Yard Hydrants**

Delete paragraph 2.01.A in its entirety and replace with the following:

"A. Refer to section 3.11 of Appendix F, Springfield Water and Sewer Commission's Material Specifications, for material requirements for all fire hydrants."

ITEM 16-21: **Section 40 05 81 – Fire, Wall, and Yard Hydrants**

Delete paragraph 2.01.B in its entirety and replace with the following:

"B. NOT USED"

ITEM 16-22: **Section 40 05 81 – Fire, Wall, and Yard Hydrants**

Delete paragraph 2.02 in its entirety replace with the following:

"A. NOT USED"

ITEM 16-23: **Section 40 05 81 – Fire, Wall, and Yard Hydrants**

Delete paragraph 2.03.A in its entirety and replace with following:

"A. NOT USED."

ITEM 16-24: **Section 40 05 81 – Fire, Wall, and Yard Hydrants**

Delete paragraph 2.04 in its entirety and replace with the following:

"A. Wash water system hydrants shall be of the 1.5-inch non-freeze post-yard type with bronze or galvanized casing. The barrel shall be self-draining; operating parts must be removable through the top of the hydrant.

B. Packing shall be double "O" rings to ensure a positive shutoff with a minimum packing friction when the hydrant is being operated. Each hydrant shall be equipped with suitable adapters to connect 1.5-inch and ¾-inch hoses.

C. Yard hydrants shall be models U150 as manufactured by

Woodford, Z-1390 as manufactured by Zurn, 5913 as manufactured by Smith Company, or equal."

ITEM 16-25: **Appendices**

"After Appendix E Springfield Water and Sewer Commission Holidays, insert Appendix F Select SWSC Material Specifications included in Attachment D."

RESPONSES TO BIDDER QUESTIONS

Number	Question	Response
16-Q1	Section 40 68 00, Part 2.02, Line G-HMI/SCADA mentions one SCADA platform or Approved Equal. I am reaching out to get VTScada by Trihedral Engineering listed. VTScada will reduce the number of servers needed and eliminate the number of software licenses. VTScada has a built-in Historian with every license, as well as built-in redundancy, alarm notification, and reporting. The platform offers unlimited clients and no need for terminal server software or Cals. VTScada is also IEC 62443 – ML 2 Cyber Security Certified. I attached an overview marking doc and I would be more than happy to set up a meeting to show you VTScada and discuss how we work with several New England water and wastewater municipalities.	Additional suppliers will not be included in the project documents as the bid deadline is closed.
16-Q2	Drawing S-2205 note 3 indicates that the steel framing shown is for bidding purposes and the actual design of framing will be designed and submitted by the Contractor. Are we to assume that after the design is completed and approved if changes to the weight of the steel or layout as shown is required, this would be considered a Change Order?	Contractors shall bid the framing as shown in the Contract Drawings.
16-Q3	Section 40 61 13 Process Control System General Provisions, lists acceptable Instrumentation and Control contractors. Only (1) of the listed subcontractors has shown any interest in the project. Can you provide any others that may be deemed acceptable?	Any I&C subcontractors that meet the listed criteria should be deemed acceptable.

16-Q4	Addendum #9 has removed the Project Labor Agreement added via Addendum #1. Addendum #9 has also revised the Field Sub-Bid Deadline to June 4, 2024 and the General Bid Deadline to June 13, 2024. This adjustment in Bid Deadlines does not provide ample time for bidding contractors and subcontractors, that ceased pursuit of the project due to the enactment of the PLA requirement, to now re-engage in pursuit of the project with the PLA requirement removed. To afford maximum competition and the resultant best value for the Owner, it is recommended that the original bidding timeframe from initial project release be reinstated. This would result in a Filed Sub-Bid Deadline of June 25, 2024 and a General Bid Deadline of August 6, 2024.	The submission dates shall be as listed in addendum 10 and addendum 11.
16-Q5	Would rotary screw blowers be accepted in lieu of rotary lobe blowers?…within the pic below, you'll see the rotary screw blowers having a potential savings of 30% to 50% as compared to the rotary lobe technology	Substitutions will be reviewed in accordance with Section 01 25 00. Substitutions are not be evaluated during the bidding phase.
16-Q6	1. Addendum 12 includes a copy of the Figure 5 potential re-use area of the BUD material. Please clarify the following: a. Section 31 00 01, paragraph 1.14.E.4 states ""The BUD material cannot be re-used outside of the approved limits without a separate MassDEP BUD permit". Who is responsible for applying for this permit?	If BUD material is proposed to be used outside of the limits shown on Figure 5, the contractor is responsible for procuring changes or modifications to existing approval. If the BUD material is proposed to be disposed of offsite, the contractor is responsible for all associated permitting. See revised specification sections 31 00 01 - 1.14-E and 3.16.
16-Q7	1. Addendum 12 includes a copy of the Figure 5 potential re-use area of the BUD material. Please clarify the following: b. The amount of BUD material being generated exceeds what can be re-used as defined by the current permit. If re-permitting is not successful, or if the new permit places restrictions that would make re-use impractical, who is responsible payment for disposal of the regulated material?	BUD materials are made available to the contractor to use as potential backfill as stipulated in the permit and contract documents. The use of BUD materials as common fill is not a contract requirement, but an option for the contractor. If the reuse of the BUD material is not feasible, then the contractor shall remove and dispose of the materials from the site at no additional cost to the Owner. See revised specification sections 31 00 01 - 1.14-E and 3.16.

16-Q8	1. Addendum 12 includes a copy of the Figure 5 potential re-use area of the BUD material. Please clarify the following: c. Confirm the Owner will be listed as the generator for disposal of this regulated material.	Confirmed, Type E is only required at the concrete encasement of the domestic and process water lines as shown on drawing C-276
16-Q9	2. Addenda 12, Q74 discusses the DBE forms requested to be submitted with the bid. Please read form EEO-DEP-191C, top of page. The "notification by the LGU" is a notification to the apparent low bidder. Form EEO-DEP-190C is a supporting document to 191C. Please clarify why DBE commitments need to be made prior to notification to the apparent low bidder by the LGU as required by MA DEP?	Addendum 4 clarifies which forms shall be submitted with the bid, and which forms shall be submitted 3 days after notification of the low bidder. See response to 16-Q39 and 16-Q40.
16-Q10	3. Addendum 12, Form of General Bid, page 6, 2nd paragraph – Clarify why the Contractor is paying the premiums for the performance and payment bonds for the Pre-Selected Filed Sub-Bidders?	Language is per the statutory requirements of MGL 149, section 44E.
16-Q11	4. Addendum 12, C-241, C-242, and C-243 plans appear to mislabel the Type B and D trenches as they relate to C-317 trench details. Confirm Type D trench is only required at the concrete encased TM.	The raw water transmission mains shall be encased as indicated on drawing C-241, C-242, and C-243. The encasement is reinforced as detailed on drawing C-311. The reinforced encasement shall be backfilled as indicated on the profile drawings, Type B. The sections of TM that are called out with a Type D trench, shall be backfilled with flowable fill. Note 1 on drawings C-243 and C-245 was revised to match Note 1 on drawings C-241, C-242, C-244.
16-Q12	5. Addendum 12, C-276 plan references C-317 trench details. Confirm Type E is only required at concrete encasement of the domestic and process water lines as shown on C-276 plan.	Confirmed, Type E is only required at the concrete encasement of the domestic and process water lines as shown on drawing C-276
16-Q13	• The Spec calls for pressure relief switches in the covers. It does not mention how many: O But the discharge points on both ends of each conveyor are open. We see no reason to employ pressure relief covers. O That said, if they are required, then since the conveyors are reversing, please confirm each conveyor is to have TWO (2) pressure relief covers (one at each end).	Noted. Substitutions will be reviewed in accordance with Section 01 25 00. Substitutions are not be evaluated during the bidding phase.

16-Q14	The hinged covers with quick release clamps are specified to be 1/8" thk: We request and recommend the CEMA standard 12 ga thk. 1/8" thk is unnecessarily too heavy (on hinges, and operators).	Noted. Substitutions will be reviewed in accordance with Section 01 25 00. Substitutions are not be evaluated during the bidding phase.
16-Q15	• In order to properly quote this control system, we need to know if a MicroLogix 1400 will accepted as an approved equal to the named ControlLogix PLC (specified in Section 40 63 43, paragraph 2.01.E.1). The REASON we ask is because the specified ControlLogix PLC is a large, very expensive PLC, meant to be used for controlling/monitoring large processes. The MicroLogix 1400 PLC is the more appropriate size PLC and proven for this application, and much less costly for long-term O&M. Without pre-bid acceptance to provide the MicroLogix 1400 PLC we will have to include the very costly and 'overkill' ControlLogix PLC in our quote.	No PLC is shown or specified specifically for the screw conveyors. The screw conveyors shall have local controls as indicated. PLC control of the screw conveyors shall be by the dewatering centrifuge PLCs, in accordance with Section 46 76 33 Dewatering Centrifuges.
16-Q16	Related to Specification Section 02 84 00-2: section 1.03B says that "PCB-contaminated building materials work shall include but not be limited to the materials identified in the PCB-Containing Building Materials Schedule appended to this Section." And that "1. It is the sole responsibility of the Contractor to visit the site, review the Contract Documents and determine the quantities of materials to be removed when developing their Bid." However 1.03C of this section states "no sampling and/or analysis by the Contractor or affiliates of the Contractor (subcontractors, subconsultants, etc.) for total PCBs (Soxhlet Extraction) shall be performed at any point during the performance of the work." Since it is not possible for bidding contractors to survey the site and perform tests on any potential remaining PCB containing material not already identified in the bid documents prior to submitting our bid, please confirm that if any potential PCB containing material not identified in 02 84 00 appendix A is required to be disturbed in order to perform the work, any testing, abatement and disposal costs related to this material not identified in the bidding documents would be paid to the contractor via change order.	The intent of 02 84 00-2, Section 1.3B is for the Contractor to visit the site and verify quantities of previously identified /specified materials, not conduct their own survey and testing. Section 1.3A states that if additional materials are discovered during the work that were not previously tested, the Contractor is to notify the Engineer immediately. If new suspect materials are discovered during the work and confirmed PCBs via analysis, then it is likely a change order would be assessed. We also anticipate that any subsequent PCB source testing will be conducted by the Engineer and not the Contractor.

16-Q17	Reference Previous Question and answer in Addenda number 5 denying the restoration of language to allow the contractor a reasonable period of time to cure an event to avoid termination. As the deletion of 0073 00 SC 15.02 D could in effect allow for termination of the contractor for occurrences such as filed sub-contractors not supplying sufficient numbers of workers and does not provide any period for the filed sub bidder or contractor to cure the issue it creates a high level of Risk for Contractors and therefore we again request that language allowing contractor and subs a reasonable period to commence a cure to avoid termination be inserted into the contract.	Section 15.02 D will be reinstated.
16-Q18	We respectfully Request that SC 16.01 which provides for mediation in good faith ahead of litigation or some other language allowing for alternative dispute resolution be reinserted into the contract as the elimination of this provision poses increased risk to contractors and filed sub-contractors.	Request denied.
16-Q19	Please confirm that if any potential PCB containing material not identified in 02 84 00 appendix A is required to be disturbed in order to perform the work, any schedule impacts resulting from testing, abatement and disposal of this material not identified in the bidding documents would be the basis of a time extension and cost impact	See the general conditions for procedures on reporting and resolving discrepancies.
16-Q20	Due to the thousands of pages of revised Specifications and Plans issued to date please distribute a conformed set of bidding documents (Specifications and Plans) through Addendum 12 for bidders by 6/11/2024.	Conformed documents will be provided to the awarded contractor.
16-Q21	Addendum 12 – Item 12-31 – At the Slow Sand Filters that will be demolished as part of this contract, please identify existing coated concrete versus uncoated concrete for General Contractors to quantify the permissible volume.	Contractor shall assume all SSF and sand bin concrete is uncoated.
16-Q22	The Contract Documents, as revised in Addendum 12, dictate that Filed Sub Bidders “shall furnish, install and maintain all staging, planking and scaffolding up to eight feet in height required for the Work in this Section”. Please confirm who is to furnish, install, and maintain all staging, planking, and scaffolding for this work above eight feet in height? If the General Contractor is expected to provide	Refer to Addendum 7, item 7-Q70.

	"staging, planking, and scaffolding", for the work of Filed Sub Bidders above eight feet in height, then it is requested that the Owner amend the Form for Sub Bid, for the Filed Sub Bidders to provide a quantification of "staging, planking, and scaffolding" needs above eight feet in height, with their bids. This information would be shared with General Bidders with the Filed Sub Bid results, via Addendum, following receipt of Filed Sub Bids, providing a quantifiable, common scope, for all General Bidders. Absent this information, the General Bidders are not in a position to quantify this scope, when the Filed Sub Bidders are not known until two weeks or less prior to the General Bid and the Filed Sub Bidders are not obligated to provide supplemental information to the General Bidders. Absent this, the General Bidders are being asked to estimate a non-quantifiable scope and it is recommended that an allowance be established for this scope.	
16-Q23	Please provide more detail on the 6,000 SF of Asbestos Containing Material Concrete Seam Tar in Small Regulator House & Stairwells to SSF 15-18 as quantified in the Bid Survey. Per Appendix B Asbestos Location Drawing, the area of ACM Seam Tar is presumed to be within the walls of SSF 15-18. Please advise of the average width of seam caulk as well as the average depth. Also, please advise whether the seam caulk is just at the vertical seams between the concrete wall panels (assumed to be +/- 20-ft on center) or whether the ACM seam caulk is at the top and bottom horizontal joint (i.e., interface of the concrete roof and concrete floor slab). See attached photos for reference and below calculation assumption. Depending on the location and depth of caulking, it may be more economical to perform the assumed non-friable ACM removal by controlled demolition process (i.e. machine demo) in lieu of conventional manual asbestos abatement (i.e., manual removal with laborers and hand tools.).	The ACM concrete seam tar was observed in the stairwells leading to sand filters 15-18 of the small regulator house. The areas of tar that were visible were approximately 4" wide and applied to the horizontal seams of concrete. There was no access to the sand filters at the time of pre-demolition assessment as they were full of water. Therefore, it is assumed that the ACM concrete tar is at all horizontal and vertical concrete seams of the sand filters.

16-Q24	Section 40 05 24.23 2.02 Steel Pipe E. Pipe Barrel 2. “The inside diameter, including the lining, shall be a minimum of the nominal diameter of the pipe specified.” Are Nominal pipe sizes as shown on the contract drawings acceptable for the exposed steel (indoor and outdoor)?	Nominal diameters are labeled on the Contract Drawings.
16-Q25	Section 02 84 00 - PCBs in Building Material Management Para. 3.16 titled Engineer’s Post-Remediation Verification Sampling requirements, states that the Consultant(Engineer’s) may conduct post-remediation verification sampling following removal of PCB Bulk Product Waste. Please confirm the following related to this section: 1. Please confirm that the Engineer’s consultant will perform any testing required by regulations beyond the limited amount of testing that the contractor is allowed to perform in section 1.03	Yes, Consultant will conduct PCB related testing beyond Contractors responsibilities.
16-Q26	Section 02 84 00 - PCBs in Building Material Management Para. 3.16 titled Engineer’s Post-Remediation Verification Sampling requirements, states that the Consultant(Engineer’s) may conduct post-remediation verification sampling following removal of PCB Bulk Product Waste. Please confirm the following related to this section: 2. If the consultant’s post-remediation verification sampling determines that there are substrate elements containing residual PCB levels please confirm that any added costs related to the removal of these elements would be paid for as a change order?	Yes, a change order would be issued in the event post-remediation verification sampling discovers substrate PCB contamination unless it is the contractor’s responsibility to fully abate the PCB hazard /contamination. Similarly, if additional sampling determines the need for less work than initially scoped, a credit may be considered back to the Owner.
16-Q27	02 84 00 Appendix A identifies 750LF of Gray Caulk and 27,00 SF of concrete at the Sand Bins that is to be disposed of as Bulk Waste. Please clarify the limits of the 27,000 sf of concrete identified in the table.	The 27,000 SF of concrete accounts for the six sand binds that has PCB containing caulk at the bottom of each bin.
16-Q28	We anticipate that over 200 craft will be onsite in peak periods. The contractor staging areas as shown on Drawings C001 and C004 may be insufficient to accommodate the total volume of employee parking needs and contractor	There is no additional area available onsite for parking. See specification section 01 55 00, 1.02.D with references to car-pooling and shuttling.

	materials. Are there additional areas available onsite for employee parking?	
16-Q29	Addendum 5 Specification 31 00 01-3.10-C-4 and Drawing C-205: Please confirm that Select Fill is to be used underneath pavements per drawing C-205 and not Structural Fill as stated in the Addendum 5 Earthwork specification	Structural fill shall be used underneath pavements. See revised drawings C-205 and C-206.
16-Q30	Questions submitted on behalf of WesTek Architectural Woodwork - Millwork contractor: a. Architectural Plans: Please confirm depth of the window sills. Section on 5/A-017 show just under 2" deep with no overhang. Wall section E1/A-1702 shows 5 ¼" with no overhang. Narrative on A-002 mentions 3/4" overhang not shown in details	Window detail shall govern.
16-Q31	Copper Door Display 3/A-1304 – what is to be figured for millwork?	Salvaged Copper Door assembly to be reinstalled in gypsum board system. Refer to Section 01 11 00 Summary of Work Part 1.15.A.1.B for Copper Door assemblies to be salvaged. Wood material is not required at this detail.
16-Q32	Narrative on A-002 mentions millstone seating. Is this millwork? What does this consist of?	Salvaged Millstones placement will be civil/landscape elements.
16-Q33	Glued up 1 ½" Plyboo material does not seem appropriate for stair treads. We would be concerned with durability. Is this really the material requested here? Plyboo offers Strand flooring. Spec mentions gluing up treads to 3" thick. Detail 3/A-1706 seems to show 2" thick. Can the architect confirm they want us at to use 1 ½" glued up Plyboo at stair treads and landing? Also please confirm dimensions.	Hardwood tread and landing to be provided. Please refer to Section 06 41 00 in Addendum No. 16.
16-Q34	Spec mentions suspended shelves should be 2" thick. Detail 2/A-1706 shows ¾" thick. Specs also mention frame to be from Plyboo…detail does not represent this.	Specification and written dimensions take precedence over scaled dimensions. Refer to Section 06 41 00 Architectural Wood Casework for thickness.
16-Q35	Plyboo offers their own finishing of panels. Are we to quote this way or are we ordering the panels unfinished and finishing ourselves with clear/natural finish?	Prefinished material shall be acceptable. Refer to Section 06 41 00 in Addendum No. 16.
16-Q36	Are cabinets to use face frame construction? Section details of cabinets and elevation do not match up. Elevations look to	Refer to Section 06 41 00 Architectural Wood Casework for cabinetry requirements.

	be face framed with inset doors. Sections seem to show hidden face frame. Wall cabinets show no face frames. Would European overlay cabinets w/ prefinished maple interiors be acceptable construction (this is exact/similar to how the sections are drawn other than the hidden face frame)? Doors, drawer fronts and finished/exposed ends would be Plyboo.	Alternates are not evaluated during bidding.
16-Q37	Concerning 017399 Part 3, 3.01 B 2, Construction Progress Documentation for the West Parish Water Treatment Plant Bid No. 24-51 project. The specs call for monthly documentation totaling at least 200 photos, 50 aerial photos, and a 2 hour video. All of this is to be distributed evenly among the monthly construction documentation. As the project is scheduled at 48 months, this ends up averaging 4-5 monthly photos, 1 aerial photo and about a 2-3 minute video each month.	Note that the spec calls for monthly photos. The phrase "spread over the course of the project" will be removed.
16-Q38	Addendum 14 assigns the work of Elevators and Miscellaneous & Ornamental Iron Filed Sub-Bid Categories to the General Contractor due to the lack of unrestricted Filed Sub-Bids. With only 7 business days between receipt of this Addendum and the scheduled General Bid date, there is not sufficient time for the GCs to source subcontractors and obtain accurate pricing. It is recommended that the Owner either (1) establish allowances for these two categories to be carried by all GCs or (2) extend the General bid date by two-weeks.	Please refer to announcements under Addendum 14 and 15. Per the MGL Chapter 149, 44F, trades that do not receive any bids, or only receive restricted bids, shall be carried by the General Contractor.
16-Q39	The forms for General Bid were reissued in Addendum 12 which included the Schedule of Participation (Form EEO-DEP-190C), Letters of Intent (Form EEO-DEP-191C) and the DBE certification of United States Citizenship. Per addendum 4 Item 4-10 Section 00 40 02 – Required Forms Listing item D these three forms are to be submitted by the two low bidders on the third business day after bid opening. Please confirm that these forms are not due until three	Confirmed.

	days post bid.	
16-Q40	According to revisions made in Addendum 4 Instructions to Bidders 14.07 H and Section 004002 Required Forms Listing 1.01 7 there are three forms that are required to be submitted with the bid; a. DBE Certifications prepared by each DBE b. DBE Subcontractor Participation Form (EPA form 6100-2) c. Request for Waiver (Form EEO-DEP-490C) Please clarify what item a. DBE Certifications prepared by each DBE is. Please provide item b. DBE Subcontractor Participation Form (EPA form 6100-2). As an alternative consider removing the requirement of submitting these forms with the bid documents.	Item a is a certification provided to each DBE by the Supplier Diversity Office. The DBE Subcontractor Participation form is provided within 00 40 00.02. The Request for Waiver form is not provided and shall be provided within this addendum. Considered, however these documents shall be submitted with the bids.
16-Q41	Upon review of Addendum #14 and the Bid Results of the Filed Sub Bids, there were no bids submitted for the following: Lathing and Plastering Resilient Flooring Elevators Miscellaneous and Ornamental Iron (Only 1 bid with single bidder restriction) With no extension to the bid date, we request that allowance items be added to the bid form for these Filed Sub Bids and be addressed post award. Recently contacted subcontractors and vendors cannot guarantee a responsible bid, given the time required and current market conditions. Did the SWSC contact pre-qualified Filed Sub Bidders to ensure scope coverage prior to the Filed Sub Bid Date and have a plan in place for the unsolicited bidding of these Filed Sub Categories?	See response to 16-Q38. Pre-qualification and bidding has proceeded per the requirements of MGL Chapter 149.

SPRINGFIELD WATER AND SEWER COMMISSION

Theo G. Theocles, Esq.
Director of Legal Affairs/Chief Procurement Officer

Date: June 18, 2024

Attachment A – Contract Drawings

CIVIL PLANS SERIES SUMMARY:

C-100 - EXISTING CONDITION PLAN
C-110 - DEMOLITION PLANS
C-120 - INTERIM SITE PLANS
C-130 - GRADING AND DRAINAGE PLANS
C-140 - YARD PIPING PLANS
C-150 - FINAL SITE PLANS

EDV (TO BE CONSTRUCTED BY OTHERS)
60" RW TM SEE DWG C-240
SEDIMENTATION BASIN
EXISTING DAM 3
LIMITS OF SURVEY (SEE GENERAL NOTE 1.B, DWG C-000)
EXISTING GARAGE
EXISTING BRIDGE 1
EXISTING DAM 1
EXISTING LAB BUILDING
EXISTING CHLORINATION BUILDING
LOWER LAGOON
EXISTING INFLUENT CONTROL STATION
EXISTING BRIDGE 2
BRIDGE 4
EXISTING BRIDGE 3
COOK BROOK
C-105, C-115, C-125, C-135, C-155
SOURCE ON GENERAL NOTE 1.A
SOURCE ON GENERAL NOTE 1.B
LIMITS OF SURVEY (SEE GENERAL NOTE 1, DWG C-000)
EXISTING DAM 2
C-106, C-116, C-136, C-156
C-103, C-113, C-123, C-133, C-143, C-153
C-104, C-114, C-124, C-134, C-144, C-154
EXISTING SSF NO. 11
EXISTING SSF NO. 12
EXISTING SSF NO. 13
EXISTING SSF NO. 14
C-145
DEWATERING BUILDING
WASTE WASHWATER TANKS
WETLAND BOUNDARY, TYP
200' RIVERFRONT AREA, TYP
100' WETLAND BUFFER ZONE AREA, TYP
UPPER LAGOON
EXISTING GATE 1
EXISTING GATE 5
BIORETENTION CELL 1
RESIDUALS STORAGE TANK AND CENTRATE TANK
60" TW TM SEE DWG C-240
WATER TREATMENT BUILDING
EXISTING REGULATOR HOUSE
EXISTING SAND BINS
EXISTING GATE 4
C-101, C-111, C-121, C-131, C-141, C-151
C-102, C-112, C-122, C-132, C-142, C-152
STORMWATER WETLAND
BIORETENTION CELL 2
EXISTING BACKWASH TANK AND PUMP STATION
EXISTING OPERATIONS BUILDING
SECURITY FENCE, TYP
EXISTING RAPID SAND FILTER BUILDING
LIMITS OF SURVEY (SEE GENERAL NOTE 1.C, DWG C-000)
60" RW TM SEE DWG C-240
72" RW TM SEE DWG C-240
GRANVILLE ROAD
SEPTIC FIELD
EXISTING SEPTIC FIELD
GATE 2
GATE 3

SCALE: 1" = 100'
100 50 0 100'

REV	ISSUED FOR	DATE	BY
2	ADDENDUM NO. 16	JUN 24	MWM
1	ADDENDUM NO. 12	MAY 24	MWM
0	ISSUED FOR BIDS	FEB 24	MWM

PROJECT ENGINEER:	K. BARRETT
DESIGNED BY:	J. RIVAS
DRAWN BY:	K. ROBBINS
CHECKED BY:	D. SHEERAN

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE (0, 1/2", 1")

COMMONWEALTH OF MASSACHUSETTS
DANIEL J. SHEERAN
CIVIL
No. 58423
REGISTERED PROFESSIONAL ENGINEER
6/17/2024

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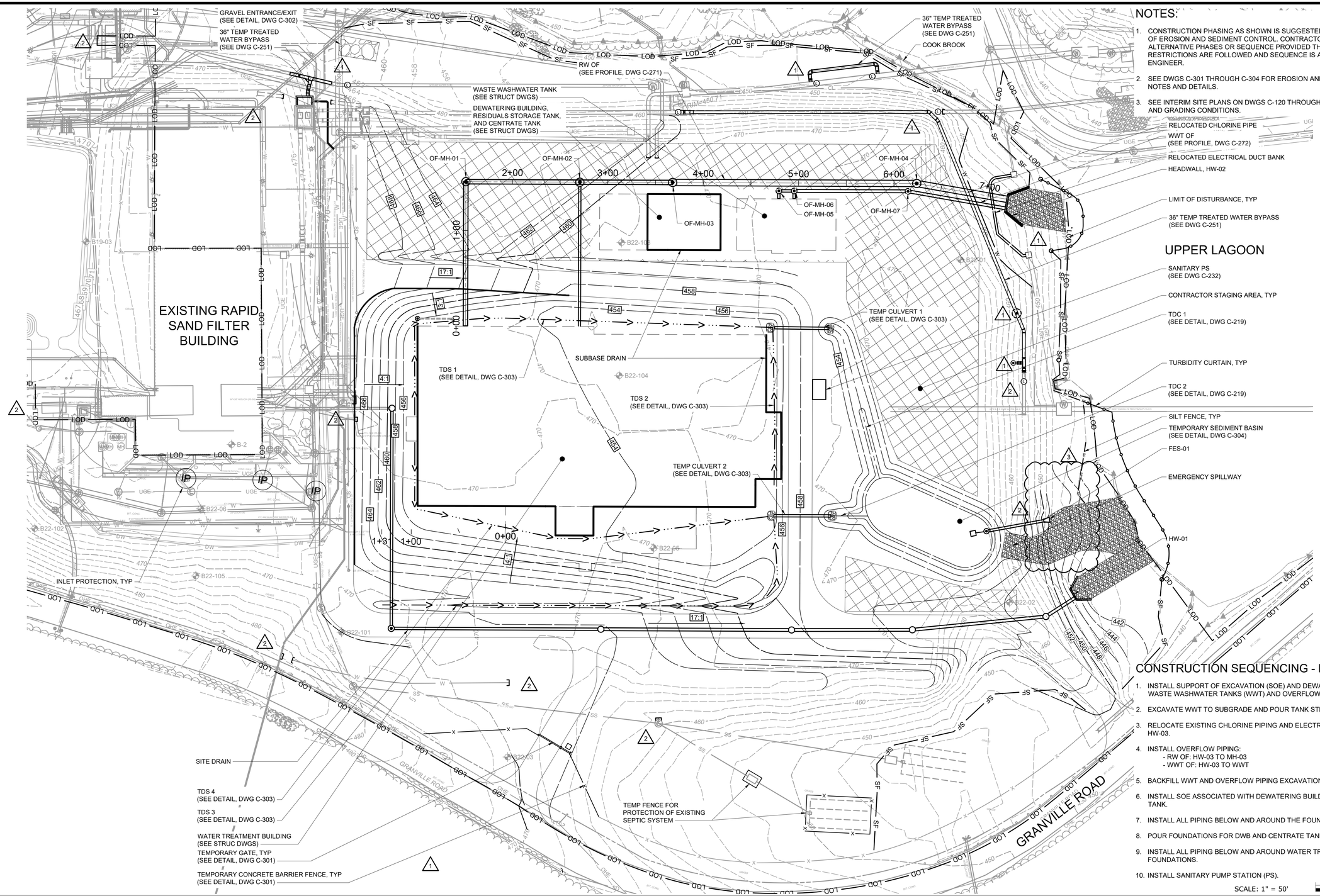
HAZEN AND SAWYER
100 GREAT MEADOW ROAD, SUITE 702
WETHERSFIELD, CT 06109

SPRINGFIELD WATER AND SEWER COMMISSION

WEST PARISH WATER TREATMENT PLANT

CIVIL
OVERALL SITE PLAN AND DRAWING KEY

DATE: FEBRUARY 2024
HAZEN NO.: 90398-004
CONTRACT NO.: 24-51
DRAWING NUMBER: C-001



NOTES:

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2. SEE DWGS C-301 THROUGH C-304 FOR EROSION AND SEDIMENT CONTROL NOTES AND DETAILS.
3. SEE INTERIM SITE PLANS ON DWGS C-120 THROUGH C-125 FOR PHASE III SITE AND GRADING CONDITIONS.

CONSTRUCTION SEQUENCING - PHASE III:

1. INSTALL SUPPORT OF EXCAVATION (SOE) AND DEWATERING SYSTEM FOR WASTE WASHWATER TANKS (WWT) AND OVERFLOW PIPING.
2. EXCAVATE WWT TO SUBGRADE AND POUR TANK STRUCTURE.
3. RELOCATE EXISTING CHLORINE PIPING AND ELECTRICAL DUCT BANK NEAR HW-03.
4. INSTALL OVERFLOW PIPING:
   - RW OF: HW-03 TO MH-03
   - WWT OF: HW-03 TO WWT
5. BACKFILL WWT AND OVERFLOW PIPING EXCAVATIONS.
6. INSTALL SOE ASSOCIATED WITH DEWATERING BUILDING (DWB) AND CENTRATE TANK.
7. INSTALL ALL PIPING BELOW AND AROUND THE FOUNDATIONS OF DWB.
8. POUR FOUNDATIONS FOR DWB AND CENTRATE TANK.
9. INSTALL ALL PIPING BELOW AND AROUND WATER TREATMENT BUILDING (WTB) FOUNDATIONS.
10. INSTALL SANITARY PUMP STATION (PS).

SCALE: 1" = 50'

REV	ISSUED FOR	DATE	BY
3	ADDENDUM NO. 16	JUN 24	MWM
2	ADDENDUM NO. 12	MAY 24	MWM
1	ADDENDUM NO. 3	MAR 24	MWM
0	ISSUED FOR BIDS	FEB 24	MWM

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PROJECT ENGINEER:	K. BARRETT
DESIGNED BY:	J. RIVAS
DRAWN BY:	J. HARKINS
CHECKED BY:	D. SHEERAN

COMMONWEALTH OF MASSACHUSETTS
DANIEL J. SHEERAN
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SPRINGFIELD WATER AND SEWER COMMISSION

WEST PARISH WATER TREATMENT PLANT

CIVIL
EROSION AND SEDIMENT CONTROL
PHASING PLAN - PHASE III

DATE:	FEBRUARY 2024
HAZEN NO.:	90398-004
CONTRACT NO.:	24-51
DRAWING NUMBER:	C-004

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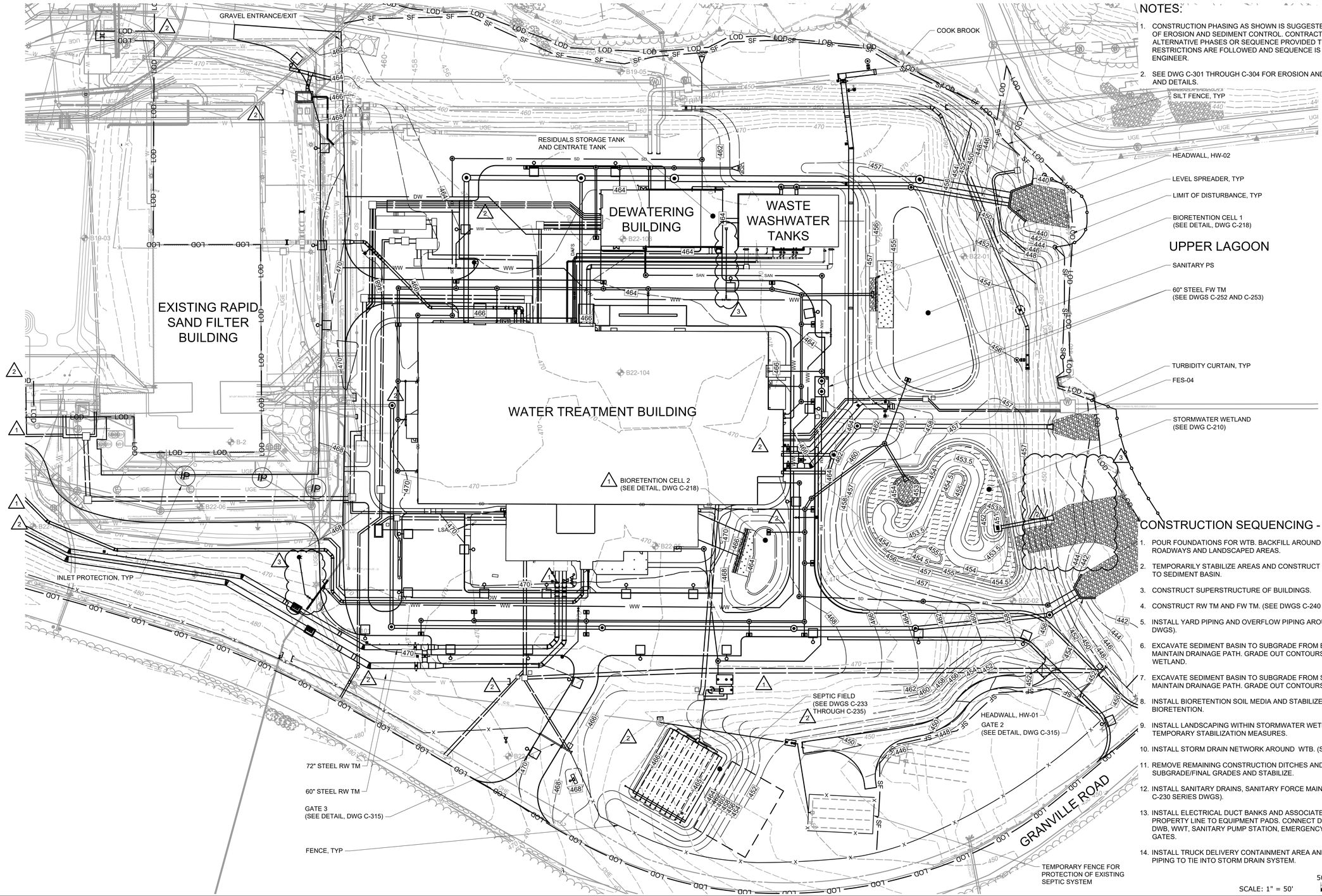

NOTES:

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2. SEE DWG C-301 THROUGH C-304 FOR EROSION AND SEDIMENT CONTROL NOTES AND DETAILS.

CONSTRUCTION SEQUENCING - PHASE IV:

1. POUR FOUNDATIONS FOR WTB. BACKFILL AROUND BUILDING TO SUBBASE OF ROADWAYS AND LANDSCAPED AREAS.
2. TEMPORARILY STABILIZE AREAS AND CONSTRUCT DITCHES TO CONVEY RUNOFF TO SEDIMENT BASIN.
3. CONSTRUCT SUPERSTRUCTURE OF BUILDINGS.
4. CONSTRUCT RW TM AND FW TM. (SEE DWGS C-240 THROUGH C-253).
5. INSTALL YARD PIPING AND OVERFLOW PIPING AROUND WTB. (SEE C-140 SERIES DWGS).
6. EXCAVATE SEDIMENT BASIN TO SUBGRADE FROM EAST TO WEST DIRECTION TO MAINTAIN DRAINAGE PATH. GRADE OUT CONTOURS FOR STORMWATER WETLAND.
7. EXCAVATE SEDIMENT BASIN TO SUBGRADE FROM SOUTH TO NORTH TO MAINTAIN DRAINAGE PATH. GRADE OUT CONTOURS FOR BIORETENTION, BIO-01.
8. INSTALL BIORETENTION SOIL MEDIA AND STABILIZE AREAS AROUND THE BIORETENTION.
9. INSTALL LANDSCAPING WITHIN STORMWATER WETLAND AND PROVIDE TEMPORARY STABILIZATION MEASURES.
10. INSTALL STORM DRAIN NETWORK AROUND WTB. (SEE C-130 SERIES DWGS).
11. REMOVE REMAINING CONSTRUCTION DITCHES AND GRADE AREAS TO SUBGRADE/FINAL GRADES AND STABILIZE.
12. INSTALL SANITARY DRAINS, SANITARY FORCE MAIN, AND SEPTIC FIELD. (SEE C-230 SERIES DWGS).
13. INSTALL ELECTRICAL DUCT BANKS AND ASSOCIATED STRUCTURES FROM PROPERTY LINE TO EQUIPMENT PADS. CONNECT DUCT BANKS TO THE WTB, DWB, WWT, SANITARY PUMP STATION, EMERGENCY GENERATOR, AND ACCESS GATES.
14. INSTALL TRUCK DELIVERY CONTAINMENT AREA AND ASSOCIATED DRAINAGE PIPING TO TIE INTO STORM DRAIN SYSTEM.

SCALE: 1" = 50'

50 25 0 50'

REV	ISSUED FOR	DATE	BY
3	ADDENDUM NO. 16	JUN 24	MWM
2	ADDENDUM NO. 12	MAY 24	MWM
1	ADDENDUM NO. 3	MAR 24	MWM
0	ISSUED FOR BIDS	FEB 24	MWM

PROJECT ENGINEER:	K. BARRETT
DESIGNED BY:	J. RIVAS
DRAWN BY:	K. ROBBINS
CHECKED BY:	D. SHEERAN

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SPRINGFIELD WATER AND SEWER COMMISSION

WEST PARISH WATER TREATMENT PLANT

CIVIL
EROSION AND SEDIMENT CONTROL PHASING PLAN - PHASE IV

DATE:	FEBRUARY 2024
HAZEN NO.:	90398-004
CONTRACT NO.:	24-51
DRAWING NUMBER:	C-005

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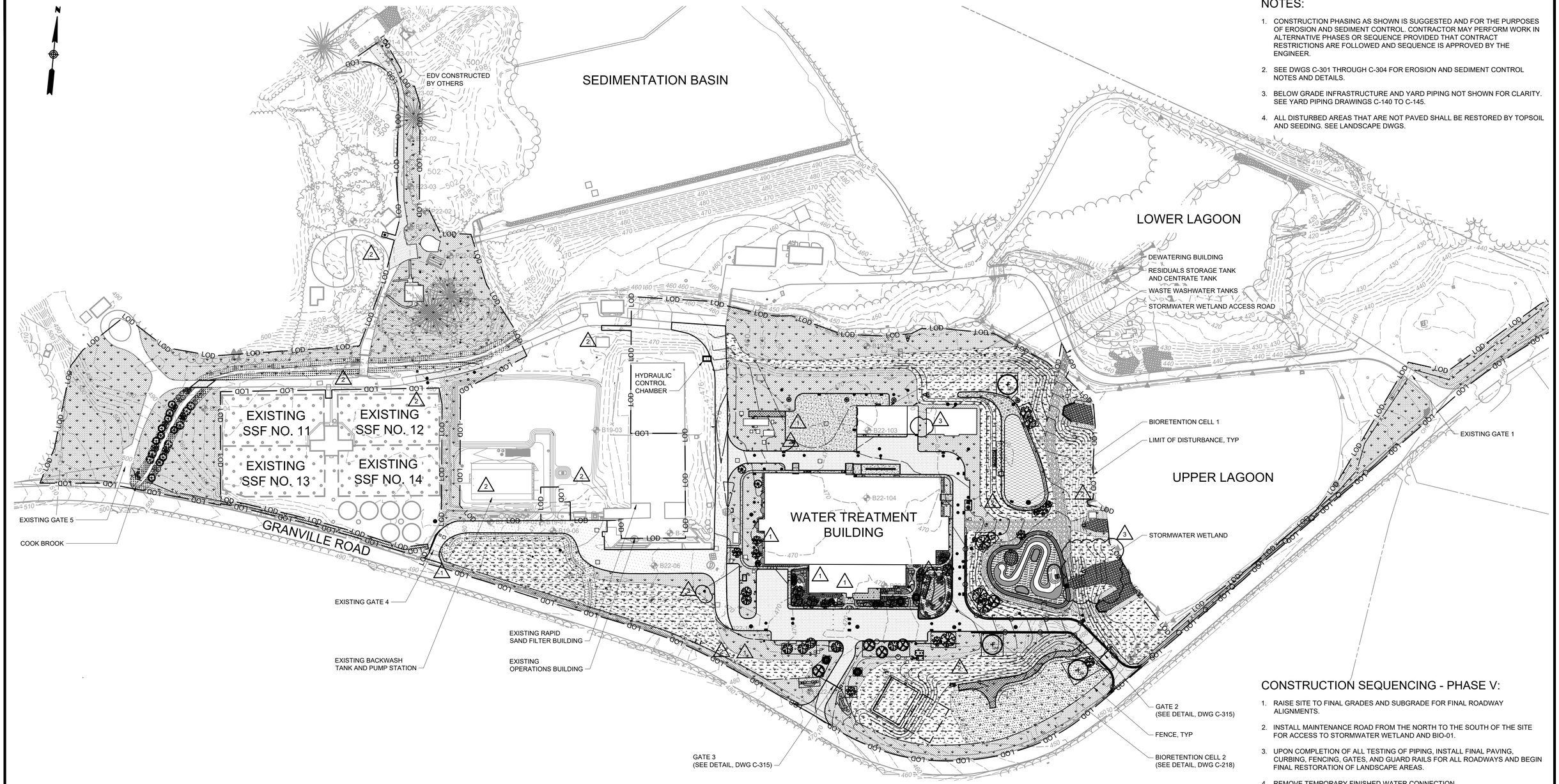

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2. SEE DWGS C-301 THROUGH C-304 FOR EROSION AND SEDIMENT CONTROL NOTES AND DETAILS.
3. BELOW GRADE INFRASTRUCTURE AND YARD PIPING NOT SHOWN FOR CLARITY. SEE YARD PIPING DRAWINGS C-140 TO C-145.
4. ALL DISTURBED AREAS THAT ARE NOT PAVED SHALL BE RESTORED BY TOPSOIL AND SEEDING. SEE LANDSCAPE DWGS.

CONSTRUCTION SEQUENCING - PHASE V:

1. RAISE SITE TO FINAL GRADES AND SUBGRADE FOR FINAL ROADWAY ALIGNMENTS.
2. INSTALL MAINTENANCE ROAD FROM THE NORTH TO THE SOUTH OF THE SITE FOR ACCESS TO STORMWATER WETLAND AND BIO-01.
3. UPON COMPLETION OF ALL TESTING OF PIPING, INSTALL FINAL PAVING, CURBING, FENCING, GATES, AND GUARD RAILS FOR ALL ROADWAYS AND BEGIN FINAL RESTORATION OF LANDSCAPE AREAS.
4. REMOVE TEMPORARY FINISHED WATER CONNECTION.
5. PERFORM FINAL LANDSCAPING IN AREA AROUND THE WTB AND COOK BROOK. INSTALL BIORETENTION BIO-02. ESTABLISH PERMANENT VEGETATION OVER ALL DISTURBED AREAS.
6. REMOVE ALL TEMPORARY EROSION CONTROL MEASURES UPON FINAL STABILIZATION.
7. CONDUCT FINAL INSPECTION WITH SWSC, CITY OF WESTFIELD, AND THE ENGINEER AND CLOSE OUT PERMITS.

SCALE: 1" = 100'

100 50 0 100'

REV	ISSUED FOR	DATE	BY
3	ADDENDUM NO. 16	JUN 24	MWM
2	ADDENDUM NO. 12	MAY 24	MWM
1	ADDENDUM NO. 3	MAR 24	MWM
0	ISSUED FOR BIDS	FEB 24	MWM

PROJECT ENGINEER:	K. BARRETT
DESIGNED BY:	J. RIVAS
DRAWN BY:	K. ROBBINS
CHECKED BY:	D. SHEERAN

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SPRINGFIELD WATER AND SEWER COMMISSION

WEST PARISH WATER TREATMENT PLANT

CIVIL
EROSION AND SEDIMENT CONTROL
PHASING PLAN - PHASE V

DATE:	FEBRUARY 2024
HAZEN NO.:	90398-004
CONTRACT NO.:	24-51
DRAWING NUMBER:	C-006

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NOTES:

1. INTERIM SITES PLANS ARE PROVIDED TO COMMUNICATE REQUIREMENTS FOR THE SITE IN THE INTERIM CONDITIONS, INCLUDING BUT NOT LIMITED TO:

   1.1. MAINTAIN OPERATIONS OF EXISTING SWSC INFRASTRUCTURE INCLUDING THE TREATED WATER BYPASSES

   1.2. ACCESS DURING CONSTRUCTION TO EXISTING SWSC INFRASTRUCTURE (RAPID SAND FILTER PLANT)

2. THESE INTERIM SITE PLANS DO NOT PRECLUDE THE CONTRACTOR FROM SUBMITTING SUPPORT OF EXCAVATION PLANS. ANY DEVIATIONS FROM THESE PLANS ASSOCIATED WITH THE CONTRACTOR'S MEANS AND METHODS OF CONSTRUCTION SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW. CHANGES TO THE PLANS ASSOCIATED WITH THE CONTRACTOR'S MEANS AND METHODS OF CONSTRUCTION SHALL COME AT NO ADDITIONAL COST TO SWSC.

3. TEMPORARY CONCRETE BARRIER SHALL BE PROVIDED IN ACCORDANCE WITH MASSDOT CONSTRUCTION STANDARD DETAIL DRAWING NUMBERS E 403.1.0 THROUGH 403.3.0 FOR TEMPORARY CONCRETE BARRIER MASH TL-2. CONCRETE BARRIER SHALL BE MAINTAINED BY THE CONTRACTOR THROUGHOUT CONSTRUCTION AND MOVED TO ACCOMMODATE SWSC OPERATIONS AS NECESSARY.

4. AFTER THE DEMOLITION OF THE SLOW SAND FILTERS AND PRIOR TO THE CONSTRUCTION OF THE STORMWATER PRACTICES (BIORETENTIONS AND STORMWATER WETLAND POND), CONTRACTOR SHALL CONDUCT A GEOTECHNICAL INVESTIGATION OF THE SOILS WITH A MINIMUM OF THREE BORINGS AT EACH STORMWATER PRACTICE FOOTPRINT. IN ADDITION, THE CONTRACTOR SHALL PERFORM A SOIL INFILTRATION TEST WITHIN EACH BIORETENTION FOOTPRINT. CONTRACTOR SHALL SUBMIT SOIL RESULTS AND INFILTRATION TEST RESULTS TO THE ENGINEER PRIOR TO PROCEEDING WITH ANY WORK AT THE STORMWATER PRACTICES. ACCEPTABLE INFILTRATION TESTS INCLUDE:

   4.1. GUELPH PERMEAMETER - ASTM D5126-90 METHOD

   4.2. FALLING HEAD PERMEAMETER - ASTM D5126-90 METHOD

   4.3. DOUBLE RING PERMEAMETER OR INFILTROMETER - ASTM D3385-03, D5093-02, D5126-90 METHODS

   4.4. AMOOZEMETER OR AMOOZEGAR PERMEAMETER - AMOOZEGAR 1992

5. AFTER THE DEMOLITION OF THE SLOW SAND FILTERS, CONTRACTOR SHALL ALSO INSTALL A GROUNDWATER MONITORING WELL WITH A WATER LEVEL DATA LOGGER AT EACH STORMWATER PRACTICE FOOTPRINT. CONTRACTOR SHALL PERFORM GROUNDWATER MONITORING THROUGHOUT CONSTRUCTION AND SUBMIT MONTHLY GROUNDWATER READINGS TO THE ENGINEER PRIOR TO PROCEEDING WITH ANY WORK AT THE STORMWATER PRACTICES.

△1

UPPER LAGOON

DEWATERING BUILDING, RESIDUALS STORAGE TANK, AND CENTRATE TANK (SEE STRUC DWGS)

WASTE WASHWATER TANKS (SEE STRUC DWGS)

WATER TREATMENT BUILDING (SEE STRUC DWGS)

TDS 1 (SEE DETAIL, DWG C-304)

TDS 2 (SEE DETAIL, DWG C-304)

TDS 3 (SEE DETAIL, DWG C-304)

TDS 4 (SEE DETAIL, DWG C-304)

TEMPORARY CONCRETE BARRIER, TYP (SEE NOTE 3, THIS DWG)

△1 TEMPORARY CONCRETE BARRIER FENCE, TYP SEE DETAIL, DWG C-301

TEMPORARY GATE, TYP (SEE DETAIL, DWG C-301)

TEMP FENCE FOR PROTECTION OF EXISTING SEPTIC SYSTEM

TEMP CULVERT 1 (SEE DETAIL, DWG C-303)

SANITARY PS (SEE DWG C-232)

TDC 1 (SEE DETAIL, DWG C-219)

TEMPORARY SEDIMENT BASIN

TDC 2 (SEE DETAIL, DWG C-219)

TEMP CULVERT 2 (SEE DETAIL, DWG C-303)

FES-01

HW-01

GRANVILLE ROAD

SCALE: 1" = 50'

50 25 0 50'

REV	ISSUED FOR	DATE	BY
3	ADDENDUM NO. 16	JUN 24	MWM
2	ADDENDUM NO. 12	MAY 24	MWM
1	ADDENDUM NO. 3	MAR 24	MWM
0	ISSUED FOR BIDS	FEB 24	MWM

PROJECT ENGINEER:	K. BARRETT
DESIGNED BY:	J. RIVAS
DRAWN BY:	J. HARKINS
CHECKED BY:	D. SHEERAN

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE 0 1/2" 1"

COMMONWEALTH OF MASSACHUSETTS
DANIEL J. SHEERAN
CIVIL
No. 58423
REGISTERED PROFESSIONAL ENGINEER
6/19/2024

Hazen

HAZEN AND SAWYER
100 GREAT MEADOW ROAD, SUITE 702
WETHERSFIELD, CT 06109

SPRINGFIELD WATER AND SEWER COMMISSION

WEST PARISH WATER TREATMENT PLANT

CIVIL
INTERIM OVERALL GRADING AND DRAINAGE PLAN

DATE:	FEBRUARY 2024
HAZEN NO.:	90398-004
CONTRACT NO.:	24-51
DRAWING NUMBER:	C-120

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PLOT DATE: 6/14/2024 1:38 PM BY: KROBBINS

MATCHLINE - SEE DRAWING NO. C-121

MATCHLINE - SEE DRAWING NO. C-124

TEMPORARY SEDIMENT BASIN
(SEE DETAIL, DWG C-304)

TDC 2
(SEE DETAIL, DWG C-219)

TEMP CULVERT 2
INV OUT: 452.7(24")(W)
(SEE DETAIL, DWG C-303)

SKIMMER
(SEE DETAIL, DWG C-304)

RISER
(SEE DETAIL, DWG C-304)

FES-01
EMERGENCY SPILLWAY
HW-01

UPPER LAGOON

TEMPORARY
CONSTRUCTION ACCESS
ROAD, TYP
(SEE DETAIL, DWG C-303)

SITE DRAIN
(SEE PROFILE, DWG C-220)

NMH-04

NMH-05

NMH-06

B22-02

20.0'

25.00'

R40.00'

TEMP FENCE FOR
PROTECTION OF EXISTING
SEPTIC SYSTEM

GRANVILLE ROAD

PROPERTY LINE PER MassGIS

KEY MAP
NTS

SCALE: 1" = 20'

20 10 0 20'

REV	ISSUED FOR	DATE	BY
2	ADDENDUM NO. 16	JUN 24	MWM
1	ADDENDUM NO. 12	MAY 24	MWM
0	ISSUED FOR BIDS	FEB 24	MWM

PROJECT ENGINEER:	K. BARRETT
DESIGNED BY:	J. RIVAS
DRAWN BY:	J. HARKINS
CHECKED BY:	D. SHEERAN

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COMMONWEALTH OF MASSACHUSETTS
DANIEL J. SHEERAN
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6/19/2024

Hazen
HAZEN AND SAWYER
100 GREAT MEADOW ROAD, SUITE 702
WETHERSFIELD, CT 06109

SPRINGFIELD WATER AND SEWER COMMISSION

WEST PARISH WATER TREATMENT PLANT

CIVIL
INTERIM SITE PLAN 2

DATE:	FEBRUARY 2024
HAZEN NO.:	90398-004
CONTRACT NO.:	24-51
DRAWING NUMBER:	C-122

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PLOT DATE: 6/14/2024 1:40 PM BY: KROBBINS

MATCHLINE - SEE DRAWING NO. C-123

MATCHLINE - SEE DRAWING NO. C-125

NOTES:

1. SEE ELECTRICAL OVERALL SITE PLAN, DWG E-012 FOR TEMPORARY POWER AND COMMUNICATION. SEE DWG M-105 FOR METER CHAMBER DETAIL.

TEMP CULVERT 1
INV OUT: 452.7(24")(W)
(SEE DETAIL, DWG C-303)

SANITARY PS
(SEE DWG C-232)

TDC 1
(SEE DETAIL, DWG C-219)

36" TEMP TREATED WATER BYPASS
(SEE DWG C-251)

METER CHAMBER
(SEE NOTE 1, THIS DWG)

EXISTING METER CHAMBER
(SEE NOTE 1, THIS DWG)

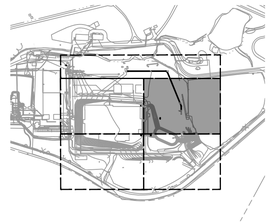
60"P.R.C.P. PURE WATER (54-3)

60"P.R.C.P. PURE WATER (54-3)
FLANGED OUTLET

UPPER LAGOON

SEDIMENT BASIN

B22-01



KEY MAP
NTS

SCALE: 1" = 20'

20 10 0 20'

REV	ISSUED FOR	DATE	BY
3	ADDENDUM NO. 16	JUN 24	MWM
2	ADDENDUM NO. 12	MAY 24	MWM
1	ADDENDUM NO. 3	MAR 24	MWM
0	ISSUED FOR BIDS	FEB 24	MWM

PROJECT ENGINEER:	K. BARRETT
DESIGNED BY:	J. RIVAS
DRAWN BY:	J. HARKINS
CHECKED BY:	D. SHEERAN

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE 0 1/2" 1"

COMMONWEALTH OF MASSACHUSETTS
DANIEL J. SHEERAN
CIVIL
No. 58423
REGISTERED PROFESSIONAL ENGINEER
6/17/2024

Hazen
HAZEN AND SAWYER
100 GREAT MEADOW ROAD, SUITE 702
WETHERSFIELD, CT 06109

SPRINGFIELD WATER AND SEWER COMMISSION

WEST PARISH WATER TREATMENT PLANT

CIVIL
INTERIM SITE PLAN 4

DATE:	FEBRUARY 2024
HAZEN NO.:	90398-004
CONTRACT NO.:	24-51
DRAWING NUMBER:	C-124

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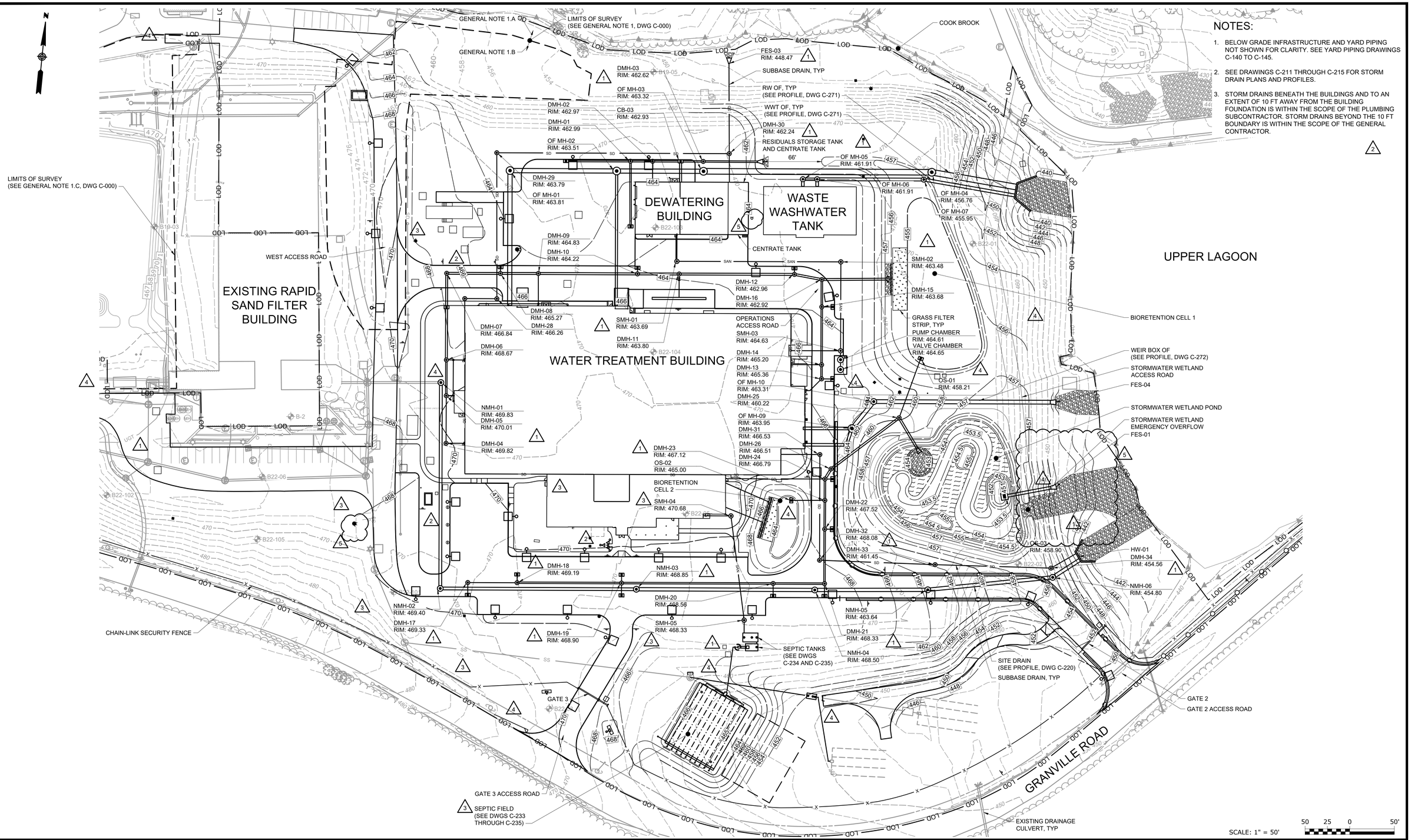

NOTES:

1. BELOW GRADE INFRASTRUCTURE AND YARD PIPING NOT SHOWN FOR CLARITY. SEE YARD PIPING DRAWINGS C-140 TO C-145.
2. SEE DRAWINGS C-211 THROUGH C-215 FOR STORM DRAIN PLANS AND PROFILES.
3. STORM DRAINS BENEATH THE BUILDINGS AND TO AN EXTENT OF 10 FT AWAY FROM THE BUILDING FOUNDATION IS WITHIN THE SCOPE OF THE PLUMBING SUBCONTRACTOR. STORM DRAINS BEYOND THE 10 FT BOUNDARY IS WITHIN THE SCOPE OF THE GENERAL CONTRACTOR.

REV	ISSUED FOR	DATE	BY
5	ADDENDUM NO. 16	JUN 24	MWM
4	ADDENDUM NO. 12	MAY 24	MWM
3	ADDENDUM NO. 4	APR 24	MWM
2	ADDENDUM NO. 3	MAR 24	MWM
1	ADDENDUM NO. 2	MAR 24	MWM
0	ISSUED FOR BIDS	FEB 24	MWM

PROJECT ENGINEER: K. BARRETT
DESIGNED BY: J. RIVAS
DRAWN BY: K. ROBBINS
CHECKED BY: D. SHEERAN
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE 0 1/2" 1"

COMMONWEALTH OF MASSACHUSETTS
DANIEL J. SHEERAN
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6/19/2024

Hazen
HAZEN AND SAWYER
100 GREAT MEADOW ROAD, SUITE 702
WETHERSFIELD, CT 06109

SPRINGFIELD WATER AND SEWER COMMISSION

WEST PARISH WATER TREATMENT PLANT

CIVIL
OVERALL GRADING AND DRAINAGE PLAN

DATE: FEBRUARY 2024
HAZEN NO.: 90398-004
CONTRACT NO.: 24-51
DRAWING NUMBER: C-130

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PLOT DATE: 6/14/2024 5:14 PM BY: KROBBINS

MATCHLINE - SEE DRAWING NO. C-133

WATER TREATMENT BUILDING (ADMINISTRATION AREA) FFE = 471.00 (1)

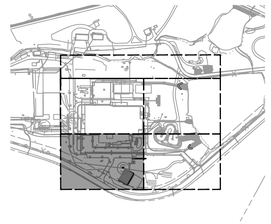
NOTES:

1. BELOW GRADE INFRASTRUCTURE AND YARD PIPING NOT SHOWN FOR CLARITY. SEE YARD PIPING DRAWINGS C-140 TO C-145.
2. SEE DRAWINGS C-211 THROUGH C-215 FOR STORM DRAIN PLANS AND PROFILES.
3. SEE DRAWINGS C-201 THROUGH C-205 FOR ACCESS ROAD PLANS AND PROFILES.

MATCHLINE - SEE DRAWING NO. C-132

WEST ACCESS ROAD
GATE 2 ACCESS ROAD
GATE 3 ACCESS ROAD
GRANVILLE ROAD
HOLDING TANK
PROPANE TANKS ON CONCRETE PAD (SEE DWG P-1201)
2' X 2' SPLASH PAD NO 57 STONE, 6" THICK, TYP
NMH-01 TO HEADWALL 1
BIORETENTION CELL, BIO-02 (SEE DETAILS, DWG C-218)
6" SANITARY DRAIN (SEE PROFILE, DWG C-231)
CB-10 TO DMH-21 (SEE PROFILE, DWG C-215)
LEVEL SPREADER (SEE DETAIL, DWG 219)
FLUSH CURB
GRASS FILTER STRIP
SITE DRAIN (SEE PROFILE, DWG C-220)
CONCRETE CURB, TYP (SEE DETAIL, DWG C-314)
GATE 3 (SEE DETAIL, DWG C-315)
SWSC SIGN, TYP (SEE DWG A-5201)
SEPTIC TANKS (SEE DWGS C-234 AND C-235)
FOOTPRINT FOR RESERVE AREA
SEPTIC FIELD
PROPERTY LINE PER MassGIS
TBM 1
TBM 2

S-(89) RIM: 461.10 INV IN: 460.00(12")(N) INV OUT: 460.00(12")(E)
S-(90) RIM: 461.10 INV IN: 460.00(12")(W) INV OUT: 460.00(12")(N)
CB-11 RIM: 469.00 INV OUT: 464.79(12")(S)
DMH-17 RIM: 469.33 INV IN: 465.48(12")(S) INV OUT: 465.48(12")(E)
DMH-18 RIM: 469.19 INV IN: 464.65(12")(W) INV IN: 464.65(12")(N) INV OUT: 464.15(18")(E)
DMH-19 RIM: 468.90 INV IN: 462.39(18")(W) INV IN: 462.89(12")(S) INV IN: 462.89(12")(N) INV OUT: 462.39(18")(E)
CB-13 RIM: 467.94 INV OUT: 463.03(12")(S)
CB-12 RIM: 467.98 INV OUT: 463.10(12")(N)
NMH-02 RIM: 469.40 INV IN: 446.97(30")(N) INV OUT: 446.97(30")(E)
CB-10 RIM: 469.18 INV OUT: 465.69(12")(N)
NMH-03 RIM: 468.85 INV IN: 445.20(30")(W) INV OUT: 444.70(36")(E)
O-07 RIM: 0.32FFE: 471.00 INV OUT: 464.10(6")(E)
O-05 INV OUT: 465.06(10")(E)
SMH-04 RIM: 470.68 INV IN: 465.29(6")(W) INV OUT: 464.98(6")(S)
OS-02 RIM: 465.00 INV OUT: 458.29(12")(E)
OF-03 RIM: 465.20 INV IN: 464.27(10")(W)
OF-02 INV IN: 464.59(10")(W)
DMH-20 RIM: 468.56 INV IN: 459.85(18")(W) INV IN: 460.35(12")(S) INV OUT: 459.85(18")(E)
SMH-05 RIM: 468.33 INV IN: 463.20(4")(E) INV IN: 463.80(6")(N) INV OUT: 461.14(6")(S)
CB-14 RIM: 468.32 INV OUT: 460.56(12")(N)



KEY MAP
NTS

SCALE: 1" = 20'

REV	ISSUED FOR	DATE	BY
5	ADDENDUM NO. 16	JUN 24	MWM
4	ADDENDUM NO. 12	MAY 24	MWM
3	ADDENDUM NO. 4	APR 24	MWM
2	ADDENDUM NO. 3	MAR 24	MWM
1	ADDENDUM NO. 2	MAR 24	MWM
0	ISSUED FOR BIDS	FEB 24	MWM

PROJECT ENGINEER: K. BARRETT
DESIGNED BY: J. RIVAS
DRAWN BY: K. ROBBINS
CHECKED BY: D. SHEERAN
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COMMONWEALTH OF MASSACHUSETTS
DANIEL J. SHEERAN
CIVIL
No. 58423
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6/17/2024

Hazen
HAZEN AND SAWYER
100 GREAT MEADOW ROAD, SUITE 702
WETHERSFIELD, CT 06109

SPRINGFIELD WATER AND SEWER COMMISSION

WEST PARISH WATER TREATMENT PLANT

CIVIL
GRADING AND DRAINAGE PLAN
SHEET 1

DATE: FEBRUARY 2024
HAZEN NO.: 90398-004
CONTRACT NO.: 24-51
DRAWING NUMBER: C-131

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MATCHLINE - SEE DRAWING NO. C-134

MATCHLINE - SEE DRAWING NO. C-131

OPERATIONS ACCESS ROAD

STORMWATER WETLAND (SEE DWG C-210)

UPPER LAGOON

GATE 2 ACCESS ROAD

GRANVILLE ROAD

HIGH MARSH ZONE
6" DEEP PERMANENT PONDING, TYP

MICROPOOL

STORMWATER WETLAND EMERGENCY SPILLWAY
LOW MARSH ZONE

SUBBASE DRAIN OUTFALL

RIPRAP OUTLET PROTECTION, TYP
(SEE DETAIL, DWG C-302)

WETLANDS BOUNDARY, TYP

GUARD RAIL, TYP
(SEE MASSDOT CONSTRUCTION STANDARD DETAIL DRAWINGS 400.1.1 AND 400.1.6)

GATE 2
(SEE DETAIL, DWG C-315)

ABANDONED SEPTIC FIELD

EXISTING SEPTIC FIELD, APPROX

CHAIN-LINK SECURITY FENCE, TYP
(SEE DETAIL, DWG C-315)

CB-17
RIM: 466.62
INV OUT: 456.31(12")(W)

DMH-24
RIM: 466.79
INV IN: 456.18(12")(E)
INV IN: 457.23(18")(S)
INV IN: 462.95(6")(W)
INV OUT: 455.19(24")(N)

CB-15 TO DMH-24
(SEE PROFILE, DWG C-215)

DMH-23
RIM: 467.12
INV IN: 457.59(18")(S)
INV IN: 457.73(12")(W)
INV OUT: 457.59(18")(N)

DMH-22
RIM: 467.52
INV IN: 458.07(18")(S)
INV IN: 458.57(12")(E)
INV OUT: 458.07(18")(N)

CB-16
RIM: 467.52
INV OUT: 458.69(12")(W)

DMH-32
RIM: 468.08
INV IN: 451.54(12")(N)
INV OUT: 451.54(12")(E)

DMH-33
RIM: 461.45
INV IN: 446.81(12")(W)
INV OUT: 446.81(12")(E)

CB-10 TO DMH-21
(SEE PROFILE, DWG C-215)

DMH-21
RIM: 468.33
INV IN: 458.98(18")(W)
INV IN: 459.48(12")(S)
INV OUT: 458.98(18")(N)

CB-15
RIM: 468.60
INV OUT: 459.69(12")(N)

NMH-04
RIM: 468.50
INV IN: 443.09(36")(W)
INV OUT: 443.09(36")(E)

NMH-05
RIM: 463.64
INV IN: 442.07(36")(W)
INV OUT: 442.07(36")(E)

SITE DRAIN
(SEE PROFILE, DWG C-220)

OS-03
RIM: 458.90
INV OUT: 448.00(30")(E)

FES-01
RIM: 450.33
INV IN: 447.35(30")(W)

HEADWALL, HW-01
INV: 440.63 (12")(W)
INV: 440.63 (36")(W)
(SEE STRUCT DWGS)

DMH-34
RIM: 454.56
INV IN: 442.05(12")(W)
INV OUT: 442.05(12")(NE)

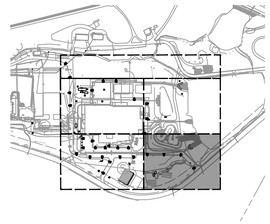
NMH-06
RIM: 454.80
INV IN: 441.05(36")(W)
INV OUT: 441.05(36")(NE)

B22-02

12" SD
18" SD
24" SD
30" SD
36" SD

NOTES:

1. BELOW GRADE INFRASTRUCTURE AND YARD PIPING NOT SHOWN FOR CLARITY. SEE YARD PIPING DRAWINGS C-140 TO C-145.
2. SEE DRAWINGS C-211 THROUGH C-215 FOR STORM DRAIN PLANS AND PROFILES.
3. SEE DRAWINGS C-201 THROUGH C-205 FOR ACCESS ROAD PLANS AND PROFILES.



KEY MAP
NTS

SCALE: 1" = 20'

20 10 0 20'

REV	ISSUED FOR	DATE	BY
2	ADDENDUM NO. 16	JUN 24	MWM
1	ADDENDUM NO. 12	MAY 24	MWM
0	ISSUED FOR BIDS	FEB 24	MWM

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE 0 1/2" 1"

PROJECT ENGINEER:	K. BARRETT
DESIGNED BY:	J. RIVAS
DRAWN BY:	K. ROBBINS
CHECKED BY:	D. SHEERAN

COMMONWEALTH OF MASSACHUSETTS
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100 GREAT MEADOW ROAD, SUITE 702
WETHERSFIELD, CT 06109

SPRINGFIELD WATER AND SEWER COMMISSION

WEST PARISH WATER TREATMENT PLANT

CIVIL
GRADING AND DRAINAGE PLAN
SHEET 2

DATE:	FEBRUARY 2024
HAZEN NO.:	90398-004
CONTRACT NO.:	24-51
DRAWING NUMBER:	C-132

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MATCHLINE - SEE DRAWING NO. C-135

MATCHLINE - SEE DRAWING NO. C-134

MATCHLINE - SEE DRAWING NO. C-131

LIMITS OF SURVEY

WEST ACCESS ROAD

OPERATIONS ACCESS ROAD

WASTE WASHWATER TANKS

DEWATERING BUILDING
FFE: 464.50

WATER TREATMENT BUILDING
(PROCESS AREA)
1 FFE = 466.50

DMH-29
RIM: 463.79
INV IN: 450.90(12")(S)
INV OUT: 450.90(12")(E)

CB-01
RIM: 463.00
INV OUT: 458.97(18")(E)

OF MH-01
RIM: 463.81
INV IN: 449.39(54")(S)
INV OUT: 449.39(54")(E)

CB-01 TO FES-02
(SEE PROFILE, DWG C-212)

PAD MOUNTED STANDBY DIESEL GENERATOR
TOP OF PAD EL: 466.75

PAD MOUNTED SERVICE DISCONNECT
TOP OF PAD EL: 466.75

PAD MOUNTED TRANSFER SWITCH
TOP OF PAD EL: 466.50

PAD MOUNTED UTILITY TRANSFORMER
TOP OF PAD EL: 466.60

PAD MOUNTED OUTDOOR SWITCHGEAR
TOP OF PAD EL: 466.50

54" RAW
WATER OVERFLOW

DMH-08
RIM: 465.27
INV IN: 461.01(12")(N)
INV IN: 460.01(24")(W)
INV OUT: 460.01(24")(E)

DMH-09
RIM: 464.83
INV IN: 459.75(24")(W)
INV IN: 460.75(12")(S)
INV OUT: 459.75(24")(E)

CB-05
RIM: 465.61
INV OUT: 461.05(12")(S)

DMH-07 TO OF-01
(SEE DWG C-213)

DMH-28
RIM: 466.26
INV IN: 452.99(12")(W)
INV OUT: 452.99(12")(N)

DMH-07
RIM: 466.84
INV IN: 461.31(24")(S)
INV OUT: 460.31(24")(E)

CB-04
RIM: 467.84
INV IN: 461.50(24")(S)
INV OUT: 461.50(24")(N)

OF OUTLET 01
RIM: 466.00
INV OUT: 453.50 (60") (N)

SUBBASE DRAIN
INV: 460 (12")

DMH-06
RIM: 468.67
INV IN: 462.29(18")(S)
INV IN: 462.79(12")(E)
INV OUT: 461.79(24")(N)

NMH-01
RIM: 469.83
INV IN: 449.32(EX 24")(W)
INV OUT: 448.82(30")(S)

DMH-05
RIM: 470.01
INV IN: 462.99(12")(S)
INV IN: 465.00(4")(E)
INV OUT: 462.49(18")(N)

PAD MOUNTED
OUTDOOR SWITCHGEAR
TOP OF PAD EL: 469.36

DMH-04 TO DMH-07
(SEE PROFILE, DWG C-213)

DMH-04
RIM: 469.82
INV IN: 463.59(8")(E)
INV OUT: 463.26(12")(N)

NMH-01 TO HW-01
(SEE PROFILE, DWG C-220)

DMH-02
RIM: 462.97
INV IN: 458.47(18")(W)
INV IN: 458.97(12")(S)
INV OUT: 458.47(18")(E)

OF MH-02
RIM: 463.51
INV IN: 448.19(54")(W)
INV IN: 453.07(24")(S)
INV OUT: 448.20(54")(E)

DMH-01
RIM: 462.99
INV IN: 458.60(18")(W)
INV IN: 458.81(18")(S)
INV OUT: 458.60(18")(E)

CB-02 TO DMH-01
(SEE DWG C-212)

SUBBASE DRAIN
INV: 449 (12")

CB-02
RIM: 464.30
INV OUT: 459.17(18")(N)

DMH-10
RIM: 464.22
INV IN: 459.09(24")(W)
INV IN: 460.09(12")(N)
INV OUT: 459.09(24")(E)

CB-06
RIM: 464.26
INV OUT: 460.13(12")(S)

12" CONTAINMENT
VALVE

DMH-11
RIM: 463.80
INV IN: 459.80(12")(S)
INV IN: 458.81(24")(W)
INV OUT: 458.81(24")(E)

6" SANITARY DRAIN
(SEE PROFILE, DWG C-231)

DMH-12
RIM: 462.96
INV IN: 458.03(24")(W)
INV IN: 459.03(12")(N)
INV OUT: 458.03(24")(E)

STAIRS
(SEE STRU DWGS)

TRENCH DRAIN
GRATE: 464.25
INV OUT: 461.00 (12") (N)

1 CONCRETE
CONTAINMENT PAD
(SEE STRU DWGS)

B22-104

DMH-03
RIM: 462.62
INV IN: 458.20(18")(W)
INV OUT: 458.20(18")(E)

CB-03
RIM: 462.93
INV IN: 458.33(18")(W)
INV IN: 458.82(8")(S)
INV IN: 459.32(8")(S)
INV OUT: 458.32(18")(E)

OF MH-03
RIM: 463.32
INV IN: 447.21(54")(W)
INV OUT: 444.52(68")(E)

DMH-30
RIM: 462.24
INV IN: 448.57(12")(S)
INV IN: 447.84(12")(W)
INV OUT: 447.84(12")(N)

FES-02
RIM: 459.55
INV IN: 457.90(18")(W)

SMH-01
RIM: 463.69
INV IN: 457.99(4")(N)
INV IN: 459.50(2")(NW)
INV OUT: 457.90(6")(E)

OF MH-05
RIM: 461.91
INV IN: 458.50(12")(W)
INV IN: 442.39(30")(S)
INV OUT: 442.29(30")(E)

RESIDUALS STORAGE
TANK AND CENTRATE TANK
TOP OF TANK EL: 467.00

CB-07
RIM: 462.86
INV OUT: 459.07(12")(S)

SUBBASE DRAIN
INV: 460 (12")

NOTES:

1. BELOW GRADE INFRASTRUCTURE AND YARD PIPING NOT SHOWN FOR CLARITY. SEE YARD PIPING DRAWINGS C-140 TO C-145.
2. SEE DRAWINGS C-211 THROUGH C-215 FOR STORM DRAIN PLANS AND PROFILES.
3. SEE DRAWINGS C-201 THROUGH C-205 FOR ACCESS ROAD PLANS AND PROFILES.

KEY MAP
NTS

SCALE: 1" = 20'

20 10 0 20'

REV	ISSUED FOR	DATE	BY
5	ADDENDUM NO. 16	JUN 24	MWM
4	ADDENDUM NO. 12	MAY 24	MWM
3	ADDENDUM NO. 4	APR 24	MWM
2	ADDENDUM NO. 3	MAR 24	MWM
1	ADDENDUM NO. 2	MAR 24	MWM
0	ISSUED FOR BIDS	FEB 24	MWM

PROJECT ENGINEER: K. BARRETT
DESIGNED BY: J. RIVAS
DRAWN BY: K. ROBBINS
CHECKED BY: D. SHEERAN

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE 0 1/2" 1"

COMMONWEALTH OF MASSACHUSETTS
DANIEL J. SHEERAN
CIVIL
No. 58423
REGISTERED PROFESSIONAL ENGINEER
6/17/2024

Hazen

HAZEN AND SAWYER
100 GREAT MEADOW ROAD, SUITE 702
WETHERSFIELD, CT 06109

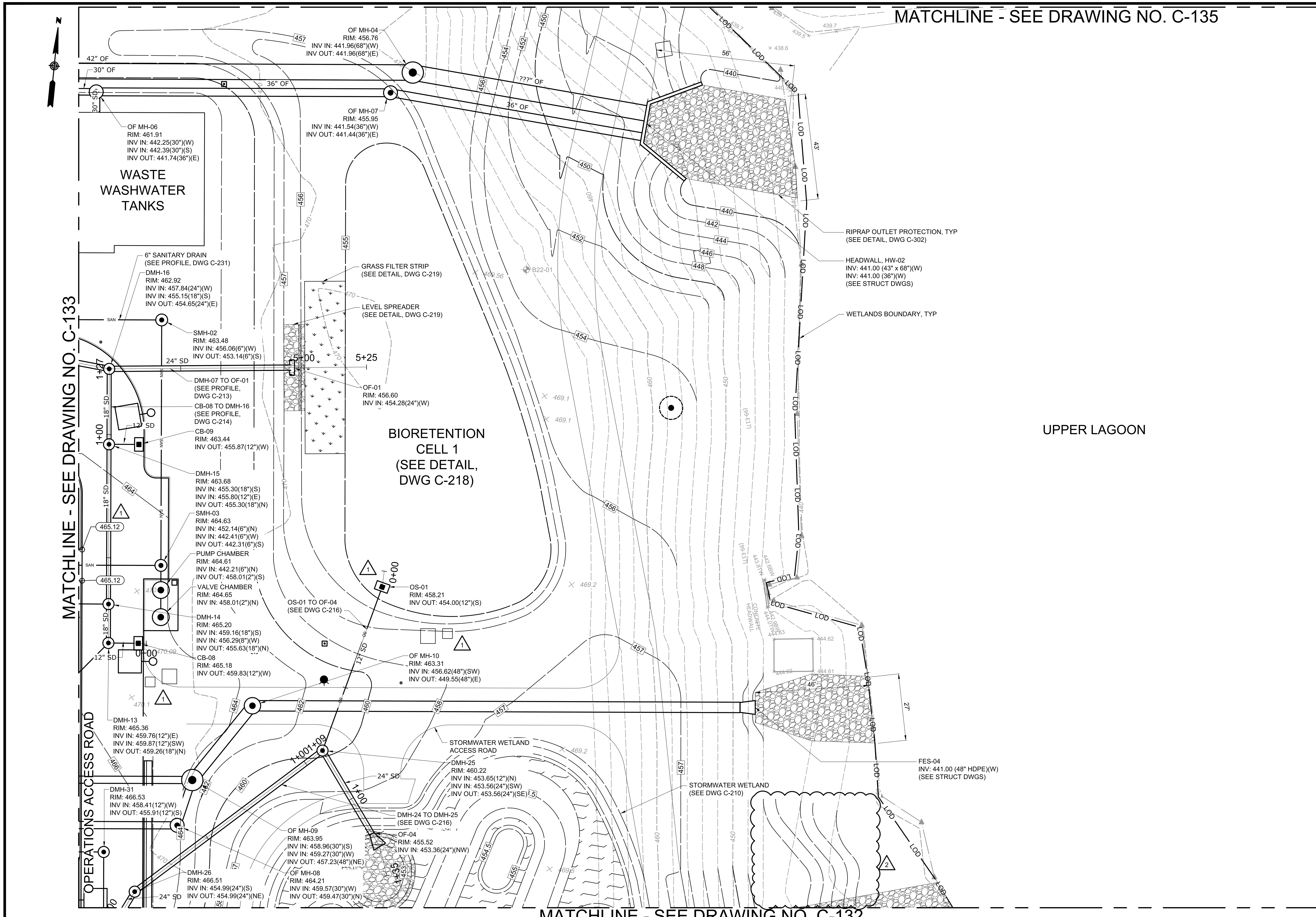
SPRINGFIELD WATER AND SEWER COMMISSION

WEST PARISH WATER TREATMENT PLANT

CIVIL
GRADING AND DRAINAGE PLAN
SHEET 3

DATE: FEBRUARY 2024
HAZEN NO.: 90398-004
CONTRACT NO.: 24-51
DRAWING NUMBER: C-133

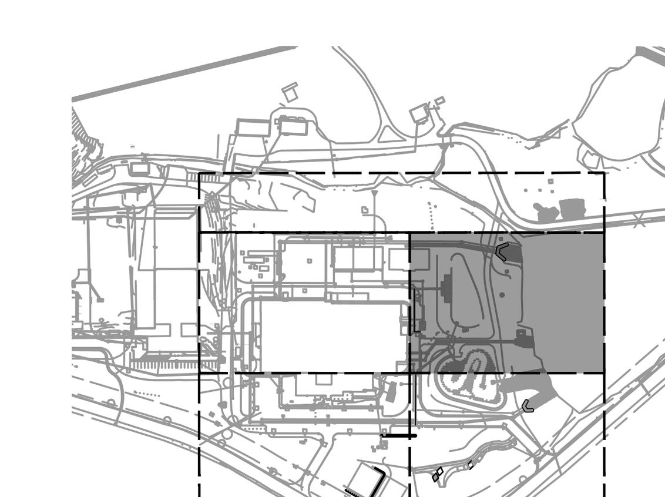
File: C:\USERS\KROBBINS\DC\ACCDOCS\HAZEN AND SAWYER\90398-004_WEST PARISH FILTER WTP\PROJECT FILES\CIVIL\C-133 Saved by KROBBINS Save date: 6/13/2024 2:36 PM
PLOT DATE: 6/14/2024 1:50 PM BY: KROBBINS



MATCHLINE - SEE DRAWING NO. C-135
MATCHLINE - SEE DRAWING NO. C-133
MATCHLINE - SEE DRAWING NO. C-132
OF MH-04
RIM: 456.76
INV IN: 441.96(68")(W)
INV OUT: 441.96(68")(E)
OF MH-07
RIM: 455.95
INV IN: 441.54(36")(W)
INV OUT: 441.44(36")(E)
OF MH-06
RIM: 461.91
INV IN: 442.25(30")(W)
INV IN: 442.39(30")(S)
INV OUT: 441.74(36")(E)
42" OF
30" OF
36" OF
???" OF
WASTE WASHWATER TANKS
6" SANITARY DRAIN
(SEE PROFILE, DWG C-231)
DMH-16
RIM: 462.92
INV IN: 457.84(24")(W)
INV IN: 455.15(18")(S)
INV OUT: 454.65(24")(E)
SMH-02
RIM: 463.48
INV IN: 456.06(6")(W)
INV OUT: 453.14(6")(S)
DMH-07 TO OF-01
(SEE PROFILE, DWG C-213)
CB-08 TO DMH-16
(SEE PROFILE, DWG C-214)
CB-09
RIM: 463.44
INV OUT: 455.87(12")(W)
DMH-15
RIM: 463.68
INV IN: 455.30(18")(S)
INV IN: 455.80(12")(E)
INV OUT: 455.30(18")(N)
SMH-03
RIM: 464.63
INV IN: 452.14(6")(N)
INV IN: 442.41(6")(W)
INV OUT: 442.31(6")(S)
PUMP CHAMBER
RIM: 464.61
INV IN: 442.21(6")(N)
INV OUT: 458.01(2")(S)
VALVE CHAMBER
RIM: 464.65
INV IN: 458.01(2")(N)
DMH-14
RIM: 465.20
INV IN: 459.16(18")(S)
INV IN: 456.29(8")(W)
INV OUT: 455.63(18")(N)
CB-08
RIM: 465.18
INV OUT: 459.83(12")(W)
DMH-13
RIM: 465.36
INV IN: 459.76(12")(E)
INV IN: 459.87(12")(SW)
INV OUT: 459.26(18")(N)
DMH-31
RIM: 466.53
INV IN: 458.41(12")(W)
INV OUT: 455.91(12")(S)
DMH-26
RIM: 466.51
INV IN: 454.99(24")(S)
INV OUT: 454.99(24")(NE)
OPERATIONS ACCESS ROAD
GRASS FILTER STRIP
(SEE DETAIL, DWG C-219)
LEVEL SPREADER
(SEE DETAIL, DWG C-219)
OF-01
RIM: 456.60
INV IN: 454.28(24")(W)
BIORETENTION CELL 1
(SEE DETAIL, DWG C-218)
OS-01
RIM: 458.21
INV OUT: 454.00(12")(S)
OS-01 TO OF-04
(SEE DWG C-216)
OF MH-10
RIM: 463.31
INV IN: 456.62(48")(SW)
INV OUT: 449.55(48")(E)
STORMWATER WETLAND ACCESS ROAD
DMH-25
RIM: 460.22
INV IN: 453.65(12")(N)
INV IN: 453.56(24")(SW)
INV OUT: 453.56(24")(SE)
DMH-24 TO DMH-25
(SEE DWG C-216)
OF-04
RIM: 455.52
INV IN: 453.36(24")(NW)
OF MH-09
RIM: 463.95
INV IN: 458.96(30")(S)
INV IN: 459.27(30")(W)
INV OUT: 457.23(48")(NE)
OF MH-08
RIM: 464.21
INV IN: 459.57(30")(W)
INV OUT: 459.47(30")(N)
STORMWATER WETLAND
(SEE DWG C-210)
RIPRAP OUTLET PROTECTION, TYP
(SEE DETAIL, DWG C-302)
HEADWALL, HW-02
INV: 441.00 (43" x 68")(W)
INV: 441.00 (36")(W)
(SEE STRUCT DWGS)
WETLANDS BOUNDARY, TYP
UPPER LAGOON
FES-04
INV: 441.00 (48" HDPE)(W)
(SEE STRUCT DWGS)
LOD

NOTES:

1. BELOW GRADE INFRASTRUCTURE AND YARD PIPING NOT SHOWN FOR CLARITY. SEE YARD PIPING DRAWINGS C-140 TO C-145.
2. 60" OVERFLOW DISCHARGE LOCATION WILL REQUIRE REGRADING OVER THE TOP OF EXISTING ELECTRICAL DUCT BANK. THE DUCT BANKS MUST BE RELOCATED AND SET TO MINIMUM BURIAL DEPTH. SEE YARD PIPING DRAWING C-144.
3. SEE DRAWINGS C-211 THROUGH C-215 FOR STORM DRAIN PLANS AND PROFILES.



KEY MAP
NTS

SCALE: 1" = 20'

REV	ISSUED FOR	DATE	BY
2	ADDENDUM NO. 16	JUN 24	MWM
1	ADDENDUM NO. 12	MAY 24	MWM
0	ISSUED FOR BIDS	FEB 24	MWM

PROJECT ENGINEER:	K. BARRETT
DESIGNED BY:	J. RIVAS
DRAWN BY:	K. ROBBINS
CHECKED BY:	D. SHEERAN

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

COMMONWEALTH OF MASSACHUSETTS
DANIEL J. SHEERAN
CIVIL
No. 58423
REGISTERED PROFESSIONAL ENGINEER
6/17/2024

Hazen

HAZEN AND SAWYER
100 GREAT MEADOW ROAD, SUITE 702
WETHERSFIELD, CT 06109

SPRINGFIELD WATER AND SEWER COMMISSION

WEST PARISH WATER TREATMENT PLANT

CIVIL
GRADING AND DRAINAGE PLAN
SHEET 4

DATE:	FEBRUARY 2024
HAZEN NO.:	90398-004
CONTRACT NO.:	24-51
DRAWING NUMBER:	C-134

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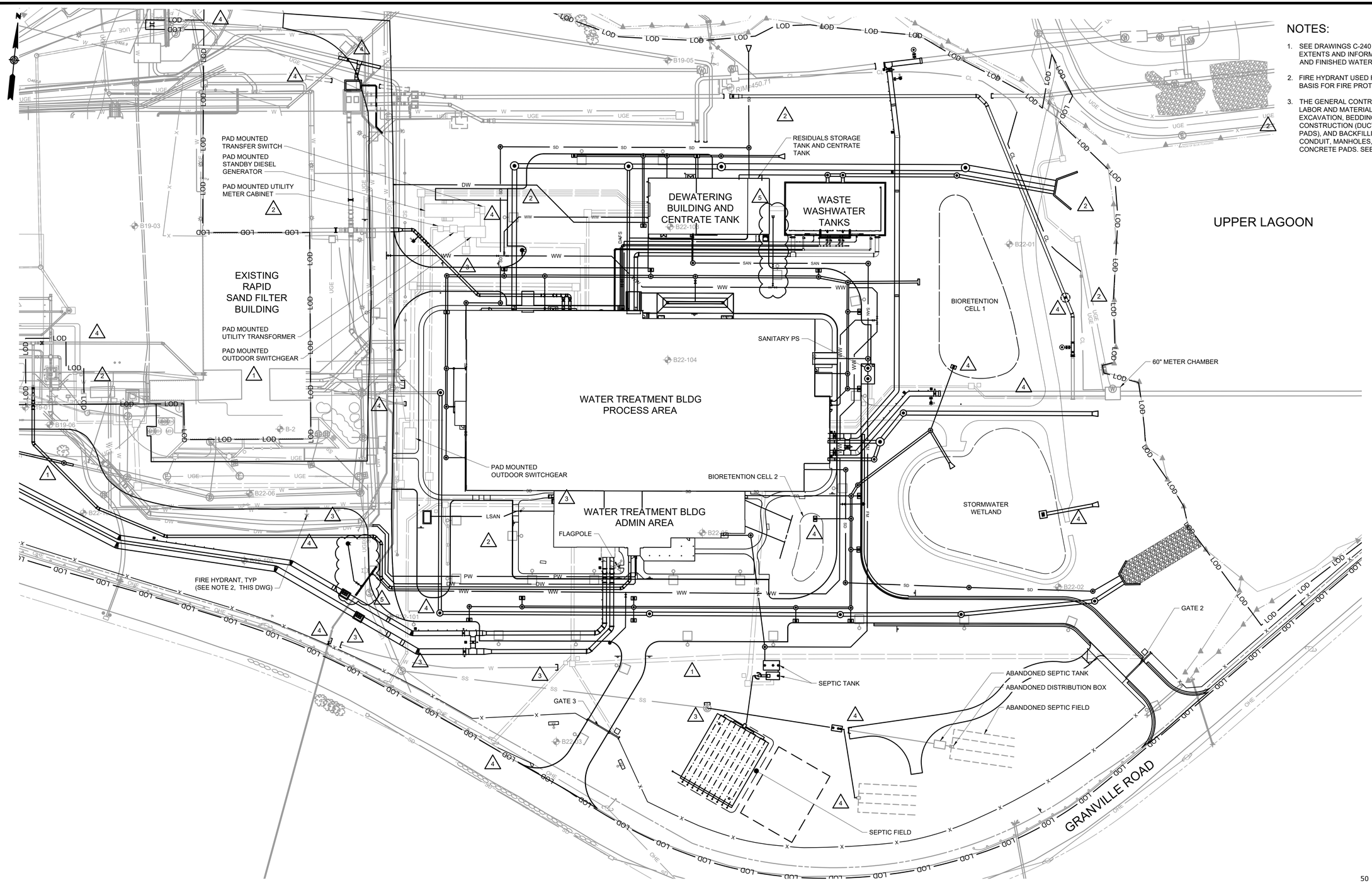
PLOT DATE: 6/14/2024 1:51 PM BY: KROBBINS



SCALE: 1" = 50'

50 25 0 50'

NOTES:

1. SEE DRAWINGS C-240 THROUGH C-254 FOR EXTENTS AND INFORMATION ON THE RAW WATER AND FINISHED WATER TRANSMISSION MAINS.
2. FIRE HYDRANT USED FOR FIRE FLOW TEST AND IS BASIS FOR FIRE PROTECTION DESIGN.
3. THE GENERAL CONTRACTOR SHALL PROVIDE ALL LABOR AND MATERIALS ASSOCIATED WITH EXCAVATION, BEDDING MATERIALS, CONCRETE CONSTRUCTION (DUCT BANKS AND EQUIPMENT PADS), AND BACKFILLING OF DUCT BANKS, CONDUIT, MANHOLES, HANDHOLES, AND CONCRETE PADS. SEE ELECTRICAL DRAWINGS.

REV	ISSUED FOR	DATE	BY
5	ADDENDUM NO. 16	JUN 24	MWM
4	ADDENDUM NO. 12	MAY 24	MWM
3	ADDENDUM NO. 4	APR 24	MWM
2	ADDENDUM NO. 3	MAR 24	MWM
1	ADDENDUM NO. 2	MAR 24	MWM
0	ISSUED FOR BIDS	FEB 24	MWM

PROJECT ENGINEER:	K. BARRETT
DESIGNED BY:	L. WALLACE
DRAWN BY:	J. LU
CHECKED BY:	D. SHEERAN

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE 0 1/2" 1"

COMMONWEALTH OF MASSACHUSETTS
DANIEL J. SHEERAN
CIVIL
No. 58423
REGISTERED PROFESSIONAL ENGINEER
6/17/2024

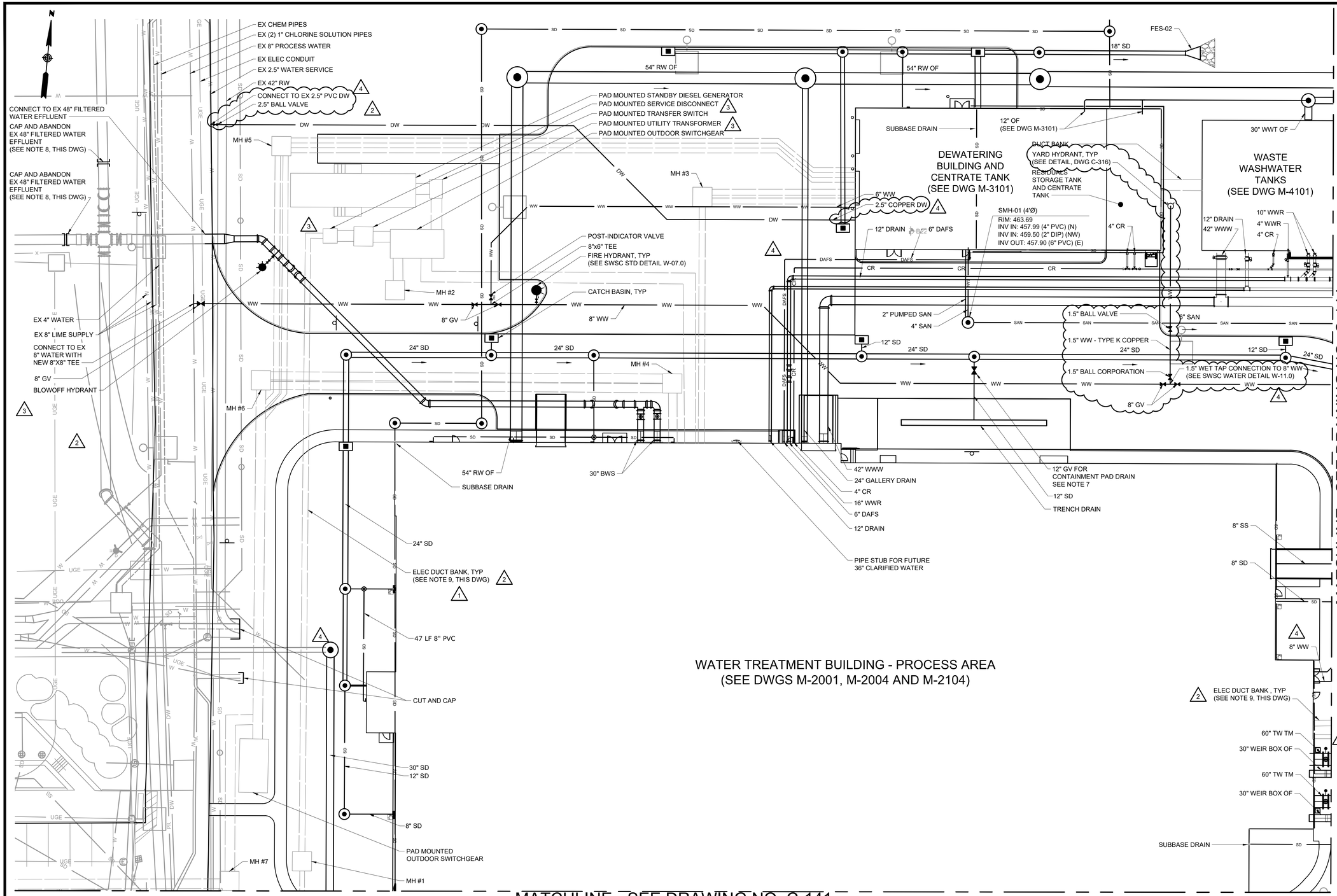
Hazen
HAZEN AND SAWYER
100 GREAT MEADOW ROAD, SUITE 702
WETHERSFIELD, CT 06109

SPRINGFIELD WATER AND SEWER COMMISSION

WEST PARISH WATER TREATMENT PLANT

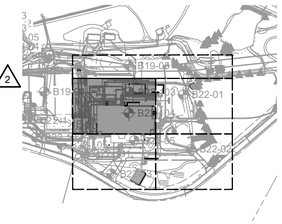
CIVIL
OVERALL YARD PIPING PLAN

DATE:	FEBRUARY 2024
HAZEN NO.:	90398-004
CONTRACT NO.:	24-51
DRAWING NUMBER:	C-140



NOTES:

1. SEE DRAWINGS C-131 THROUGH C-136 FOR ADDITIONAL INFORMATION ON STORM DRAINS AND MANHOLES.
2. SEE DRAWINGS C-251 THROUGH C-254 FOR ADDITIONAL INFORMATION ON THE FINISHED WATER TRANSMISSION MAINS.
3. SEE DRAWINGS C-212 AND C-216 FOR STORM DRAIN PROFILES.
4. SEE DRAWINGS C-271 THROUGH C-274 FOR PROCESS PIPING AND OVERFLOW PROFILES.
5. SEE DRAWING C-275 FOR WATER PIPING PROFILES.
6. SEE DRAWING E-012 FOR ADDITIONAL INFORMATION ON DUCT BANKS AND ELECTRICAL EQUIPMENT.
7. THE GATE VALVE ON THE 12" PIPE FROM THE CONTAINMENT PAD TO BE CLOSED DURING DELIVERIES. VALVE TO REMAIN OPEN AT ALL OTHER TIMES TO ALLOW FOR STORMWATER TO DRAIN FROM THE CONTAINMENT PAD.
8. INSTALL PIPE CAPS AND ABANDON EXISTING 48" FILTERED WATER EFFLUENT AS SHOWN AND IN ACCORDANCE WITH THE SEQUENCE OF CONSTRUCTION AS SPECIFIED IN SECTION 01 14 00.
9. ELECTRICAL DUCT BANKS, MANHOLES, HANDHOLES, LIGHTS, AND EQUIPMENT ARE SCREENED FOR CLARITY. SEE ELECTRICAL DRAWINGS D-012 AND D-013 AND NOTE 3 ON DRAWING C-140.



KEY MAP
NTS

SCALE: 1" = 20'

20 10 0 20'

REV	ISSUED FOR	DATE	BY
4	ADDENDUM NO. 16	MAY 24	MWM
3	ADDENDUM NO. 4	APR 24	MWM
2	ADDENDUM NO. 3	MAR 24	MWM
1	ADDENDUM NO. 2	MAR 24	MWM
0	ISSUED FOR BIDS	FEB 24	MWM

PROJECT ENGINEER:	K. BARRETT
DESIGNED BY:	L. WALLACE
DRAWN BY:	K. ROBBINS
CHECKED BY:	D. SHEERAN

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE (0 1/2" 1")

COMMONWEALTH OF MASSACHUSETTS
DANIEL J. SHEERAN
CIVIL
No. 58423
REGISTERED PROFESSIONAL ENGINEER
6/17/2024

Hazen

HAZEN AND SAWYER
100 GREAT MEADOW ROAD, SUITE 702
WETHERSFIELD, CT 06109

SPRINGFIELD WATER AND SEWER COMMISSION

WEST PARISH WATER TREATMENT PLANT

CIVIL
YARD PIPING PLAN
SHEET 3

DATE:	FEBRUARY 2024
HAZEN NO.:	90398-004
CONTRACT NO.:	24-51
DRAWING NUMBER:	C-143

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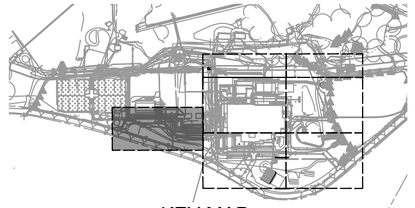
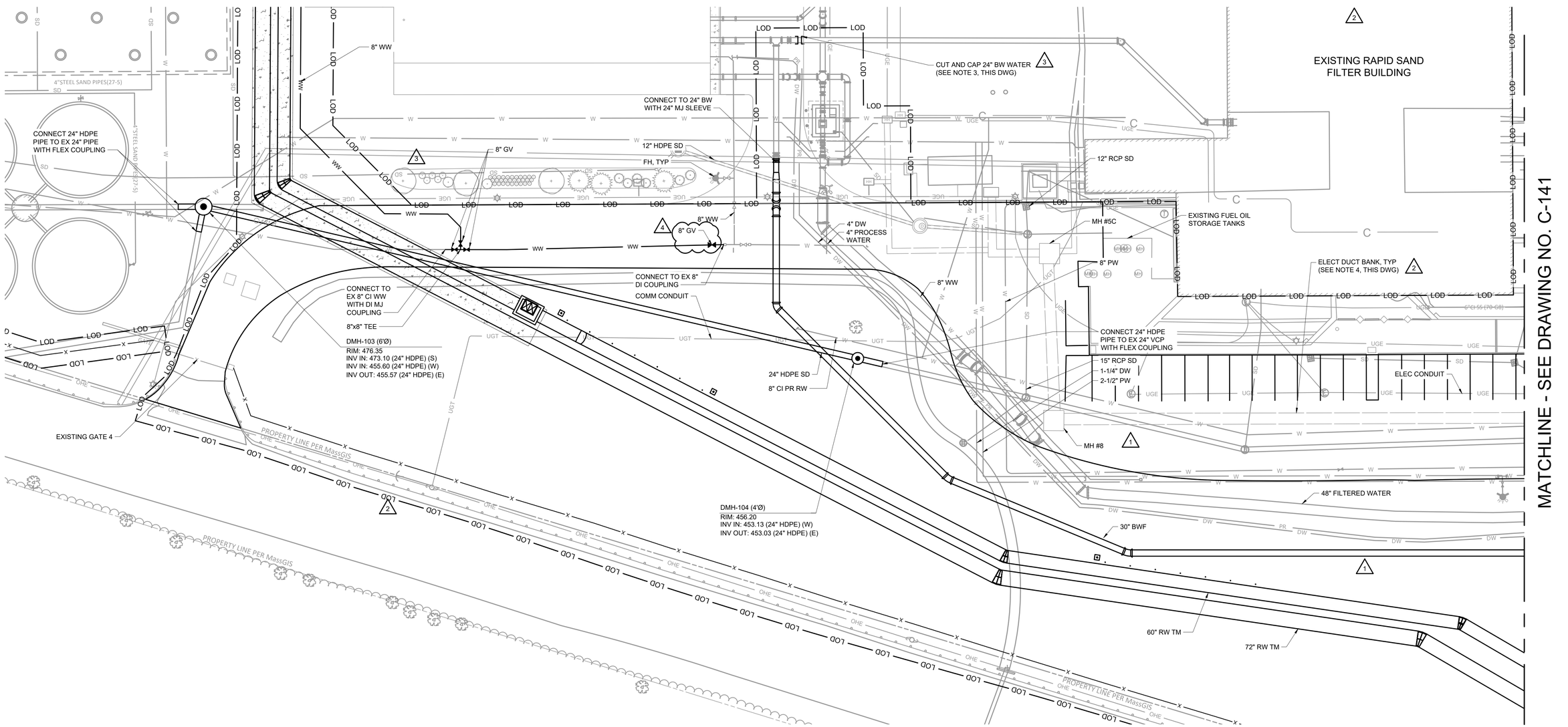


KEY MAP
NTS

NOTES:

1. SEE DRAWINGS C-240 THROUGH C-246 FOR ADDITIONAL INFORMATION ON THE RAW WATER TRANSMISSION MAINS.
2. SEE DRAWING C-248 FOR WASH WATER PROFILE.
3. SEE SEQUENCE OF CONSTRUCTION SPECIFIED IN SECTION 01 14 00.
4. ELECTRICAL DUCT BANKS, MANHOLES, HANDHOLES, LIGHTS, AND EQUIPMENT ARE SCREENED FOR CLARITY. SEE ELECTRICAL DRAWINGS E-012 AND E-013 AND NOTE 3 ON DRAWING C-140.



MATCHLINE - SEE DRAWING NO. C-141

SCALE: 1" = 20'

20 10 0 20'

REV	ISSUED FOR	DATE	BY
4	ADDENDUM NO. 16	MAY 24	MWM
3	ADDENDUM NO. 12	MAY 24	MWM
2	ADDENDUM NO. 3	MAR 24	MWM
1	ADDENDUM NO. 2	MAR 24	MWM
0	ISSUED FOR BIDS	FEB 24	MWM

PROJECT ENGINEER:	K. BARRETT
DESIGNED BY:	L. WALLACE
DRAWN BY:	K. ROBBINS
CHECKED BY:	D. SHEERAN

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE 0 1/2" 1"

COMMONWEALTH OF MASSACHUSETTS
DANIEL J. SHEERAN
CIVIL
No. 58423
REGISTERED PROFESSIONAL ENGINEER
6/19/2024

Hazen
HAZEN AND SAWYER
100 GREAT MEADOW ROAD, SUITE 702
WETHERSFIELD, CT 06109

SPRINGFIELD WATER AND SEWER COMMISSION

WEST PARISH WATER TREATMENT PLANT

CIVIL
YARD PIPING PLAN
SHEET 5

DATE:	FEBRUARY 2024
HAZEN NO.:	90398-004
CONTRACT NO.:	24-51
DRAWING NUMBER:	C-145

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PLOT DATE: 6/14/2024 5:26 PM BY: KROBBINS

NOTES:

1. EXISTING PAVEMENT SHALL BE MILLED TO A MINIMUM OF 1.5" AND SHALL BE OVERLAID TO FINAL GRADES.
2. BELOW GRADE INFRASTRUCTURE, YARD PIPING, AND TOPOGRAPHIC INFORMATION NOT SHOWN FOR CLARITY. SEE GRADING AND DRAINAGE DRAWINGS C-130 TO C-136 AND YARD PIPING DRAWINGS C-140 TO C-145.

CHEMICAL INJECTION VAULT (SEE DWG M-5301)
FINISHED VALVE CHAMBER (INSTALLED BY OTHERS)
ASPHALT PAVEMENT RESTORATION, TYP (SEE NOTE 1, THIS DWG)
GRASS GEOCELL ROADWAY
PAD MOUNTED STANDBY DIESEL GENERATOR
PAD MOUNTED SERVICE DISCONNECT
PAD MOUNTED UTILITY TRANSFORMER
PAD MOUNTED TRANSFER SWITCH
PAD MOUNTED OUTDOOR SWITCHGEAR
CONCRETE PAVEMENT, TYP (SEE DETAIL, DWG C-206)
RESIDUALS STORAGE TANK AND CENTRATE TANK
STORMWATER WETLAND ACCESS ROAD
LIMIT OF DISTURBANCE, TYP
UPPER LAGOON
BLOWOFF HYDRANT
HYDRANT, TYP
DEWATERING BUILDING
WASTE WASHWATER TANKS
OPERATIONS ACCESS ROAD
BIORETENTION CELL 1 (SEE DWG C-218)
EXISTING RAPID SAND FILTER BUILDING
TRAFFIC ARROW PAVEMENT MARKING, TYP (SEE DETAIL, DWG C-314)
CONCRETE CONTAINMENT PAD (SEE STRUCT DWGS)
WATER TREATMENT BUILDING
EXISTING METER CHAMBER
CONCRETE WALKWAY, TYP (SEE DETAILS, DWG C-314)
STORM MANHOLE, TYP
LANDSCAPE, TYP (SEE LANDSCAPE DWGS)
BIORETENTION CELL 2
STORMWATER WETLAND (SEE DWG C-210)
HOLDING TANK
OUTFALL STRUCTURE, TYP
PORCELAIN TILE (SEE DWG A-1201)
OUTLET STRUCTURE, TYP
WEST ACCESS ROAD
LIGHTING, TYP (SEE ELEC DWGS)
GATE 2 ACCESS ROAD
SEPTIC ACCESS BARRIER GATE (SEE DETAIL, DWG C-315)
GATE 2 (SEE DETAIL, DWG C-315)
CATCH BASIN, TYP
ASPHALT PAVEMENT, TYP (SEE DETAIL, DWG C-206)
SANITARY MANHOLE, TYP (SEE DWG C-141)
PAVEMENT MILLING MULCH, TYP (SEE MASSDOT CONSTRUCTION STANDARD DETAIL DWG 400.1.6)
CHAIN-LINK SECURITY FENCE, TYP (SEE DETAIL, DWG C-315)
GATE 3 ACCESS ROAD
GATE 3 (SEE DETAIL, DWG C-315)
PUMP CHAMBER (SEE DWGS C-233 TO C-235)
SWSC SIGN, TYP (SEE DWG A-5201)
GRASS GEOCELL ROADWAY
SEPTIC TANK (SEE DWGS C-233 TO C-235)
SEPTIC FIELD (SEE DWGS C-234 AND C-235)
GUARD RAIL, TYP (SEE MASSDOT CONSTRUCTION STANDARD DETAIL DWGS 400.1.1 AND 400.1.6)
GRANVILLE ROAD
GRANVILLE ROAD

SCALE: 1" = 50'

REV	ISSUED FOR	DATE	BY
5	ADDENDUM NO. 16	JUN 24	MWM
4	ADDENDUM NO. 12	MAY 24	MWM
3	ADDENDUM NO. 4	APR 24	MWM
2	ADDENDUM NO. 3	MAR 24	MWM
1	ADDENDUM NO. 2	MAR 24	MWM
0	ISSUED FOR BIDS	FEB 24	MWM

PROJECT ENGINEER: K. BARRETT
DESIGNED BY: J. RIVAS
DRAWN BY: K. ROBBINS
CHECKED BY: D. SHEERAN
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE 0 1/2" 1"

COMMONWEALTH OF MASSACHUSETTS
DANIEL J. SHEERAN
CIVIL
No. 58423
REGISTERED PROFESSIONAL ENGINEER
6/19/2024

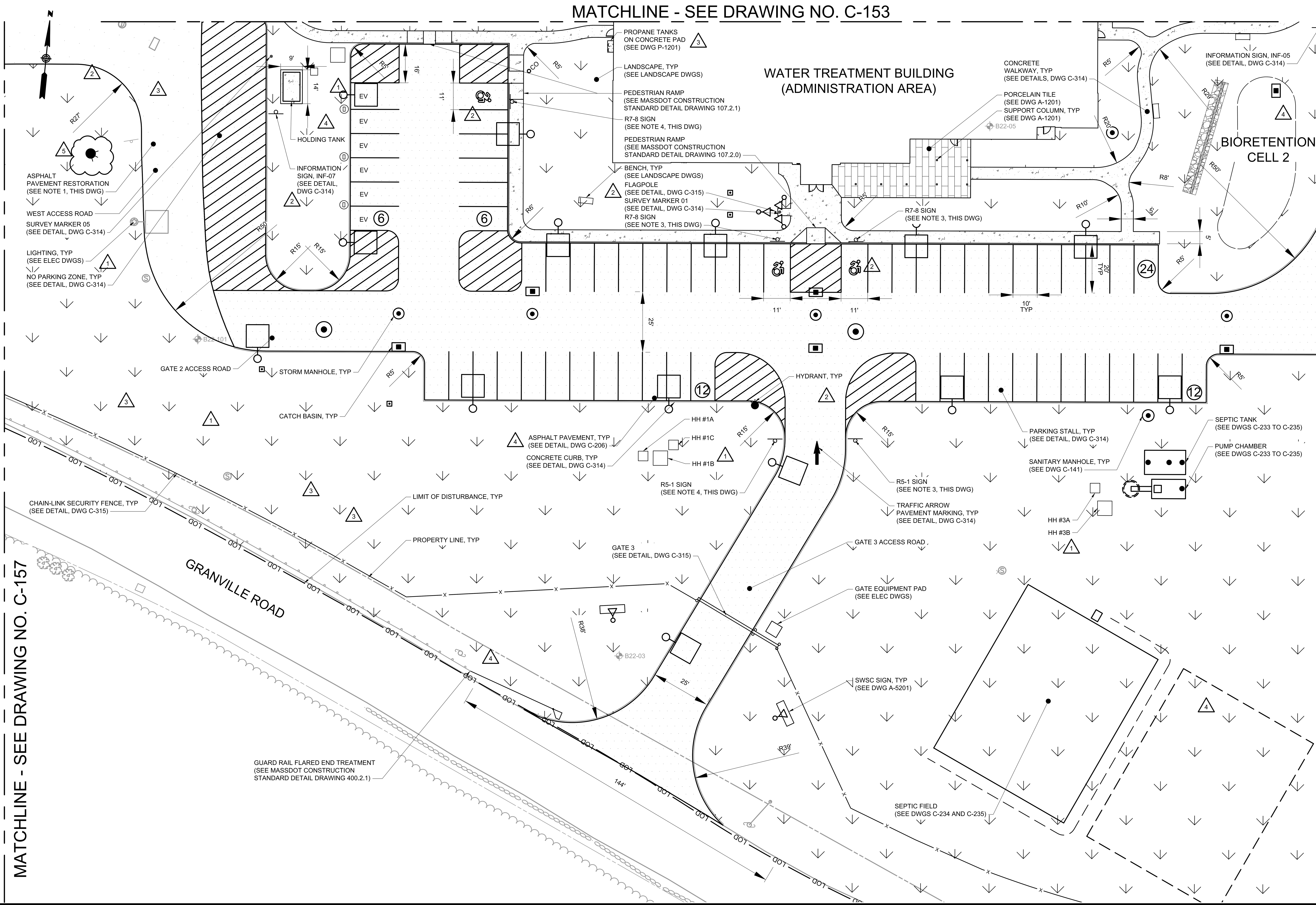
Hazen
HAZEN AND SAWYER
100 GREAT MEADOW ROAD, SUITE 702
WETHERSFIELD, CT 06109

SPRINGFIELD WATER AND SEWER COMMISSION

WEST PARISH WATER TREATMENT PLANT

CIVIL
OVERALL FINAL SITE PLAN

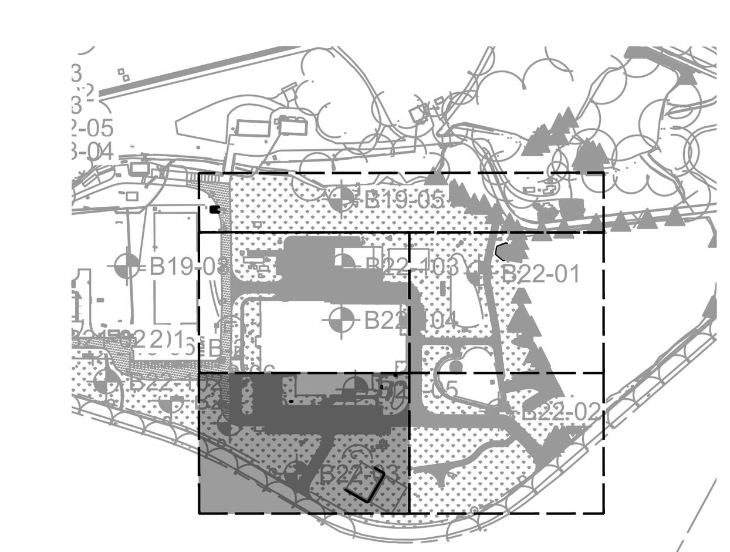
DATE: FEBRUARY 2024
HAZEN NO.: 90398-004
CONTRACT NO.: 24-51
DRAWING NUMBER: C-150



MATCHLINE - SEE DRAWING NO. C-153
MATCHLINE - SEE DRAWING NO. C-152
MATCHLINE - SEE DRAWING NO. C-157
WATER TREATMENT BUILDING
(ADMINISTRATION AREA)
BIORETENTION
CELL 2
GRANVILLE ROAD
PROPANE TANKS
ON CONCRETE PAD
(SEE DWG P-1201)
LANDSCAPE, TYP
(SEE LANDSCAPE DWGS)
PEDESTRIAN RAMP
(SEE MASSDOT CONSTRUCTION
STANDARD DETAIL DRAWING 107.2.1)
R7-8 SIGN
(SEE NOTE 4, THIS DWG)
PEDESTRIAN RAMP
(SEE MASSDOT CONSTRUCTION
STANDARD DETAIL DRAWING 107.2.0)
BENCH, TYP
(SEE LANDSCAPE DWGS)
FLAGPOLE
(SEE DETAIL, DWG C-315)
SURVEY MARKER 01
(SEE DETAIL, DWG C-314)
R7-8 SIGN
(SEE NOTE 3, THIS DWG)
CONCRETE
WALKWAY, TYP
(SEE DETAILS, DWG C-314)
PORCELAIN TILE
(SEE DWG A-1201)
SUPPORT COLUMN, TYP
(SEE DWG A-1201)
INFORMATION SIGN, INF-05
(SEE DETAIL, DWG C-314)
HOLDING TANK
INFORMATION
SIGN, INF-07
(SEE DETAIL,
DWG C-314)
ASPHALT
PAVEMENT RESTORATION
(SEE NOTE 1, THIS DWG)
WEST ACCESS ROAD
SURVEY MARKER 05
(SEE DETAIL, DWG C-314)
LIGHTING, TYP
(SEE ELEC DWGS)
NO PARKING ZONE, TYP
(SEE DETAIL, DWG C-314)
R7-8 SIGN
(SEE NOTE 3, THIS DWG)
EV
GATE 2 ACCESS ROAD
STORM MANHOLE, TYP
CATCH BASIN, TYP
HYDRANT, TYP
ASPHALT PAVEMENT, TYP
(SEE DETAIL, DWG C-206)
CONCRETE CURB, TYP
(SEE DETAIL, DWG C-314)
HH #1A
HH #1C
HH #1B
R5-1 SIGN
(SEE NOTE 4, THIS DWG)
R5-1 SIGN
(SEE NOTE 3, THIS DWG)
TRAFFIC ARROW
PAVEMENT MARKING, TYP
(SEE DETAIL, DWG C-314)
PARKING STALL, TYP
(SEE DETAIL, DWG C-314)
SANITARY MANHOLE, TYP
(SEE DWG C-141)
SEPTIC TANK
(SEE DWGS C-233 TO C-235)
PUMP CHAMBER
(SEE DWGS C-233 TO C-235)
HH #3A
HH #3B
CHAIN-LINK SECURITY FENCE, TYP
(SEE DETAIL, DWG C-315)
LIMIT OF DISTURBANCE, TYP
PROPERTY LINE, TYP
GATE 3
(SEE DETAIL, DWG C-315)
GATE 3 ACCESS ROAD
GATE EQUIPMENT PAD
(SEE ELEC DWGS)
SWSC SIGN, TYP
(SEE DWG A-5201)
SEPTIC FIELD
(SEE DWGS C-234 AND C-235)
GUARD RAIL FLARED END TREATMENT
(SEE MASSDOT CONSTRUCTION
STANDARD DETAIL DRAWING 400.2.1)
B22-101
B22-05
B22-03
25'
11'
10'
TYP
144'
R38'
R39'
R50'
R27'
R15'
R5'
R10'
R8'
R20'
R29'
6
12
24

NOTES:

1. EXISTING PAVEMENT SHALL BE MILLED TO A MINIMUM OF 1.5" AND SHALL BE OVERLAID TO FINAL GRADES.
2. BELOW GRADE INFRASTRUCTURE, YARD PIPING, AND TOPOGRAPHIC INFORMATION NOT SHOWN FOR CLARITY. SEE GRADING AND DRAINAGE DRAWINGS C-130 TO C-136 AND YARD PIPING DRAWINGS C-140 TO C-145.
3. NEW SIGNS SHALL CONFORM TO THE 2009 MUTCD FOR SIZE, COLOR, AND TEXT DIMENSION. SEE DWG C-314 FOR MUTCD SIGN SCHEDULE.



KEY MAP
NTS

SCALE: 1" = 20'

20 10 0 20'

REV	ISSUED FOR	DATE	BY
5	ADDENDUM NO. 16	JUN 24	MWM
4	ADDENDUM NO. 12	MAY 24	MWM
3	ADDENDUM NO. 4	APR 24	MWM
2	ADDENDUM NO. 3	MAR 24	MWM
1	ADDENDUM NO. 2	MAR 24	MWM
0	ISSUED FOR BIDS	FEB 24	MWM

PROJECT ENGINEER:	K. BARRETT
DESIGNED BY:	J. RIVAS
DRAWN BY:	K. ROBBINS
CHECKED BY:	D. SHEERAN

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

0 1/2" 1"

COMMONWEALTH OF MASSACHUSETTS
DANIEL J. SHEERAN
CIVIL
No. 58423
REGISTERED PROFESSIONAL ENGINEER
6/17/2024

Hazen

HAZEN AND SAWYER
100 GREAT MEADOW ROAD, SUITE 702
WETHERSFIELD, CT 06109

SPRINGFIELD WATER AND SEWER COMMISSION

WEST PARISH WATER TREATMENT PLANT

CIVIL
FINAL SITE PLAN
SHEET 1

DATE:	FEBRUARY 2024
HAZEN NO.:	90398-004
CONTRACT NO.:	24-51
DRAWING NUMBER:	C-151

File: C:\USERS\KROBBINS\DC\ACCDOCS\HAZEN AND SAWYER\90398-004_WEST PARISH FILTER WTP\PROJECT FILES\CIVIL\C-151 Saved by JLU Save date: 5/22/2024 5:25 PM
PLOT DATE: 6/14/2024 5:30 PM BY: KROBBINS

MATCHLINE - SEE DRAWING NO. C-154

MATCHLINE - SEE DRAWING NO. C-151

N

HYDRANT

OPERATIONS ACCESS ROAD

TRAFFIC ARROW PAVEMENT MARKING, TYP (SEE DETAIL, DWG C-314)

25'

R50'

R61'

STORMWATER WETLAND ACCESS ROAD

OUTLET STRUCTURE, TYP

STORMWATER WETLAND (SEE DWG C-210)

R27'

STORMWATER WETLAND EMERGENCY OVERFLOW

HEADWALL, HW-01 (SEE STRUCTURAL DWG S-5002)

UPPER LAGOON

LIMIT OF DISTURBANCE, TYP

WETLAND BOUNDARY, TYP

LANDSCAPE, TYP (SEE LANDSCAPE DWGS)

INFORMATION SIGN, INF-03 (SEE DETAIL, DWG C-314)

CONCRETE CURB, TYP (SEE DETAIL, DWG C-314)

INFORMATION SIGN, INF-01 (SEE DETAIL, DWG C-314)

B22-02

GUARD RAIL, TYP (SEE MASSDOT CONSTRUCTION STANDARD DETAIL DRAWINGS 400.1.1 AND 400.1.6)

ASPHALT PAVEMENT (SEE DETAIL, DWG C-206)

GATE 2 ACCESS ROAD

GATE EQUIPMENT PAD (SEE ELEC DWGS)

PAVEMENT MILLING MULCH, TYP (SEE MASSDOT CONSTRUCTION STANDARD DETAIL DRAWING 400.1.6)

CATCH BASIN, TYP

STORM MANHOLE, TYP

R5-1 SIGN (SEE NOTE 3, THIS DWG)

R25'

R40'

R7'

15'

SEPTIC ACCESS BARRIER GATE (SEE DETAIL, DWG C-315)

R80'

R65'

GATE 2 (SEE DETAIL, DWG C-315)

101'

GRASS GEOCELL ROADWAY, TYP (SEE DETAIL, DWG C-314)

12'

INFORMATION SIGN, INF-04 (SEE DETAIL, DWG C-314)

PROPERTY LINE, TYP

CHAIN-LINK SECURITY FENCE, TYP (SEE DETAIL, DWG C-315)

PROPERTY LINE PER MassGIS

GRANVILLE ROAD

NOTES:

1. EXISTING PAVEMENT SHALL BE MILLED TO A MINIMUM OF 1.5" AND SHALL BE OVERLAID TO FINAL GRADES.
2. BELOW GRADE INFRASTRUCTURE, YARD PIPING, AND TOPOGRAPHIC INFORMATION NOT SHOWN FOR CLARITY. SEE GRADING AND DRAINAGE DRAWINGS C-130 TO C-136 AND YARD PIPING DRAWINGS C-140 TO C-145.
3. NEW SIGNS SHALL CONFORM TO THE 2009 MUTCD FOR SIZE, COLOR, AND TEXT DIMENSION. SEE DWG C-314 FOR MUTCD SIGN SCHEDULE.

KEY MAP
NTS

SCALE: 1" = 20'

20 10 0 20'

REV	ISSUED FOR	DATE	BY
3	ADDENDUM NO. 16	JUN 24	MWM
2	ADDENDUM NO. 12	MAY 24	MWM
1	ADDENDUM NO. 3	MAR 24	MWM
0	ISSUED FOR BIDS	FEB 24	MWM

PROJECT ENGINEER:	K. BARRETT
DESIGNED BY:	J. RIVAS
DRAWN BY:	K. ROBBINS
CHECKED BY:	D. SHEERAN

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE 0 1/2" 1"

COMMONWEALTH OF MASSACHUSETTS
DANIEL J. SHEERAN
CIVIL
No. 58423
REGISTERED PROFESSIONAL ENGINEER
6/17/2024

Hazen

HAZEN AND SAWYER
100 GREAT MEADOW ROAD, SUITE 702
WETHERSFIELD, CT 06109

SPRINGFIELD WATER AND SEWER COMMISSION

WEST PARISH WATER TREATMENT PLANT

CIVIL
FINAL SITE PLAN
SHEET 2

DATE: FEBRUARY 2024
HAZEN NO.: 90398-004
CONTRACT NO.: 24-51
DRAWING NUMBER: C-152

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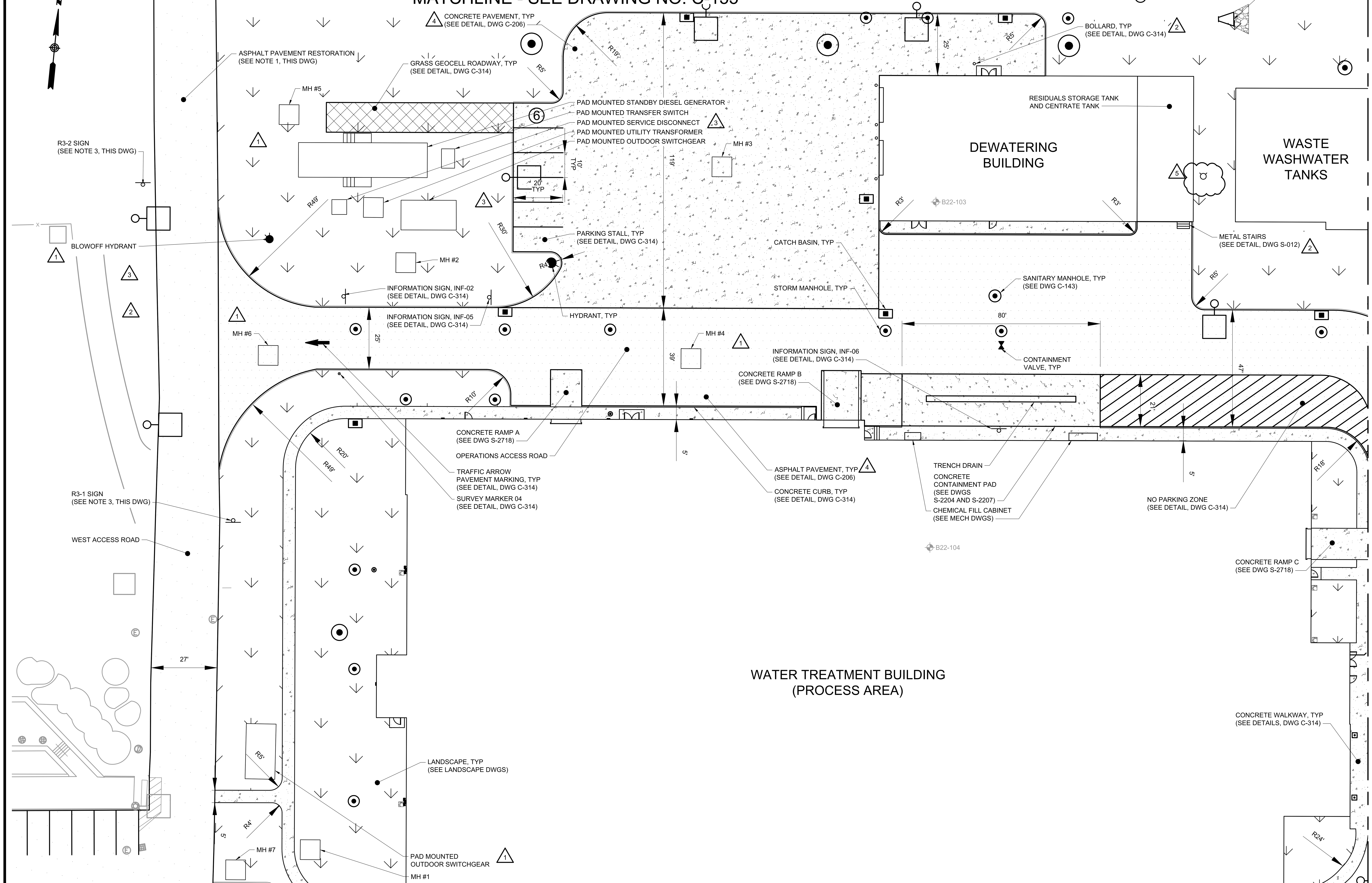
PLOT DATE: 6/14/2024 12:59 PM BY: KROBBINS

MATCHLINE - SEE DRAWING NO. C-155



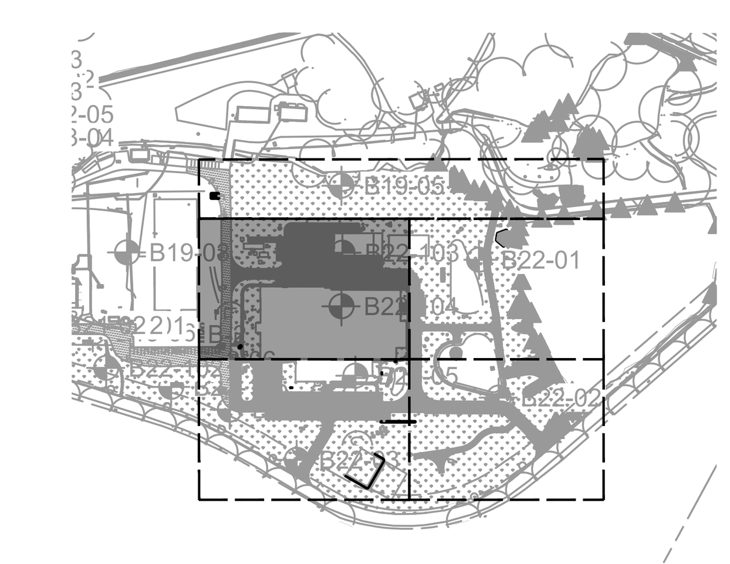
CONCRETE PAVEMENT, TYP (SEE DETAIL, DWG C-206)
ASPHALT PAVEMENT RESTORATION (SEE NOTE 1, THIS DWG)
GRASS GEOCELL ROADWAY, TYP (SEE DETAIL, DWG C-314)
MH #5
PAD MOUNTED STANDBY DIESEL GENERATOR
PAD MOUNTED TRANSFER SWITCH
PAD MOUNTED SERVICE DISCONNECT
PAD MOUNTED UTILITY TRANSFORMER
PAD MOUNTED OUTDOOR SWITCHGEAR
MH #3
R3-2 SIGN (SEE NOTE 3, THIS DWG)
BLOWOFF HYDRANT
PARKING STALL, TYP (SEE DETAIL, DWG C-314)
MH #2
INFORMATION SIGN, INF-02 (SEE DETAIL, DWG C-314)
INFORMATION SIGN, INF-05 (SEE DETAIL, DWG C-314)
HYDRANT, TYP
MH #6
MH #4
CATCH BASIN, TYP
STORM MANHOLE, TYP
BOLLARD, TYP (SEE DETAIL, DWG C-314)
OUTFALL STRUCTURE, TYP
RESIDUALS STORAGE TANK AND CENTRATE TANK
DEWATERING BUILDING
WASTE WASHWATER TANKS
METAL STAIRS (SEE DETAIL, DWG S-012)
SANITARY MANHOLE, TYP (SEE DWG C-143)
CONTAINMENT VALVE, TYP
INFORMATION SIGN, INF-06 (SEE DETAIL, DWG C-314)
CONCRETE RAMP B (SEE DWG S-2718)
CONCRETE RAMP A (SEE DWG S-2718)
OPERATIONS ACCESS ROAD
TRAFFIC ARROW PAVEMENT MARKING, TYP (SEE DETAIL, DWG C-314)
SURVEY MARKER 04 (SEE DETAIL, DWG C-314)
ASPHALT PAVEMENT, TYP (SEE DETAIL, DWG C-206)
CONCRETE CURB, TYP (SEE DETAIL, DWG C-314)
TRENCH DRAIN
CONCRETE CONTAINMENT PAD (SEE DWGS S-2204 AND S-2207)
CHEMICAL FILL CABINET (SEE MECH DWGS)
NO PARKING ZONE (SEE DETAIL, DWG C-314)
R3-1 SIGN (SEE NOTE 3, THIS DWG)
WEST ACCESS ROAD
CONCRETE RAMP C (SEE DWG S-2718)
WATER TREATMENT BUILDING (PROCESS AREA)
CONCRETE WALKWAY, TYP (SEE DETAILS, DWG C-314)
LANDSCAPE, TYP (SEE LANDSCAPE DWGS)
MH #7
PAD MOUNTED OUTDOOR SWITCHGEAR
MH #1
B22-103
B22-104
27'
80'
119'
39'
25'
47'

MATCHLINE - SEE DRAWING NO. C-154

MATCHLINE - SEE DRAWING NO. C-151

NOTES:

1. EXISTING PAVEMENT SHALL BE MILLED TO A MINIMUM OF 1.5" AND SHALL BE OVERLAID TO FINAL GRADES.
2. BELOW GRADE INFRASTRUCTURE, YARD PIPING, AND TOPOGRAPHIC INFORMATION NOT SHOWN FOR CLARITY. SEE GRADING AND DRAINAGE DRAWINGS C-130 TO C-136 AND YARD PIPING DRAWINGS C-140 TO C-145.
3. NEW SIGNS SHALL CONFORM TO THE 2009 MUTCD FOR SIZE, COLOR, AND TEXT DIMENSION. SEE DWG C-314 FOR MUTCD SIGN SCHEDULE.



KEY MAP
NTS

SCALE: 1" = 20'

REV	ISSUED FOR	DATE	BY
5	ADDENDUM NO. 16	JUN 24	MWM
4	ADDENDUM NO. 12	MAY 24	MWM
3	ADDENDUM NO. 4	APR 24	MWM
2	ADDENDUM NO. 3	MAR 24	MWM
1	ADDENDUM NO. 2	MAR 24	MWM
0	ISSUED FOR BIDS	FEB 24	MWM

PROJECT ENGINEER:	K. BARRETT
DESIGNED BY:	J. RIVAS
DRAWN BY:	K. ROBBINS
CHECKED BY:	D. SHEERAN

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

COMMONWEALTH OF MASSACHUSETTS DANIEL J. SHEERAN CIVIL No. 58423 REGISTERED PROFESSIONAL ENGINEER 6/17/2024

Hazen

HAZEN AND SAWYER
100 GREAT MEADOW ROAD, SUITE 702
WETHERSFIELD, CT 06109

SPRINGFIELD WATER AND SEWER COMMISSION

WEST PARISH WATER TREATMENT PLANT

CIVIL
FINAL SITE PLAN
SHEET 3

DATE:	FEBRUARY 2024
HAZEN NO.:	90398-004
CONTRACT NO.:	24-51
DRAWING NUMBER:	C-153

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PLOT DATE: 6/14/2024 1:05 PM BY: KROBBINS

SEDIMENTATION BASIN

LOWER LAGOON

UPPER LAGOON

EXISTING SSF NO. 11

EXISTING SSF NO. 12

EXISTING SSF NO. 13

EXISTING SSF NO. 14

EXISTING BACKWASH TANK

EXISTING SAND STORAGE

EXISTING SSF NO. 15

EXISTING SSF NO. 16

EXISTING SSF NO. 9

EXISTING SSF NO. 10

EXISTING SSF NO. 17

EXISTING SSF NO. 18

EXISTING BACKWASH TANK AND PUMP STATION

EXISTING RAPID SAND FILTER BUILDING

EXISTING OPERATIONS BUILDING

COOK BROOK

GRANVILLE ROAD

SEE INSET BELOW

SEE DRAWING ABOVE

SCALE: 1" = 100'

100 50 0 100'

REV	ISSUED FOR	DATE	BY
1	ADDENDUM NO. 16	JUN 24	MWM
0	ADDENDUM NO. 12	MAY 24	MWM

PROJECT ENGINEER:	K. BARRETT
DESIGNED BY:	J. RIVAS
DRAWN BY:	W. STRZEPKA
CHECKED BY:	D. SHEERAN

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE 0 1/2" 1"

COMMONWEALTH OF MASSACHUSETTS
DANIEL J. SHEERAN
CIVIL
No. 58423
REGISTERED PROFESSIONAL ENGINEER
6/19/2024

Hazen
HAZEN AND SAWYER
100 GREAT MEADOW ROAD, SUITE 702
WETHERSFIELD, CT 06109

SPRINGFIELD WATER AND SEWER COMMISSION

WEST PARISH WATER TREATMENT PLANT

CIVIL
STAKING PLAN
LIMIT OF DISTURBANCE

DATE:	FEBRUARY 2024
HAZEN NO.:	90398-004
CONTRACT NO.:	24-51
DRAWING NUMBER:	C-160

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PLOT DATE: 6/14/2024 12:33 PM BY: KROBBINS

MATCHLINE - SEE DRAWING NO. C-163

MATCHLINE - SEE DRAWING NO. C-162

WATER TREATMENT BUILDING
(ADMINISTRATION AREA)

BIORETENTION
CELL 2

SEPTIC FIELD

GRANVILLE ROAD

N: 2870300.00

N: 2870100.00

N: 2869900.00

E: 294900.00

E: 294700.00

E: 294500.00

B22-01

B22-03

B22-05

NOTES:

1. FOR STORM DRAIN STRUCTURES STAKING POINTS, SEE SCHEDULE, DWG C-217.
2. FOR SANITARY DRAIN STRUCTURES STAKING POINTS, SEE SCHEDULE, DWG C-217.
3. FOR ROADWAY GEOMETRY, SEE FINAL SITE PLANS IN C-150 SERIES AND PROFILE DRAWINGS IN C-200 SERIES DWGS.
4. FOR TRANSMISSION MAIN STAKING POINTS, SEE C-240 AND C-250 SERIES DWGS.

KEY MAP
NTS

SCALE: 1" = 20'

20 10 0 20'

REV	ISSUED FOR	DATE	BY
2	ADDENDUM NO. 16	JUN 24	MWM
1	ADDENDUM NO. 12	MAY 24	MWM
0	ISSUED FOR BIDS	FEB 24	MWM

PROJECT ENGINEER:	K. BARRETT
DESIGNED BY:	J. RIVAS
DRAWN BY:	W. STRZEPKA
CHECKED BY:	D. SHEERAN
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE	0 1/2" 1"

COMMONWEALTH OF MASSACHUSETTS
DANIEL J. SHEERAN
CIVIL
No. 58423
REGISTERED PROFESSIONAL ENGINEER
6/19/2024

Hazen

HAZEN AND SAWYER
100 GREAT MEADOW ROAD, SUITE 702
WETHERSFIELD, CT 06109

SPRINGFIELD WATER AND SEWER COMMISSION

WEST PARISH WATER TREATMENT PLANT

CIVIL
STAKING PLAN
SHEET 1

DATE:	FEBRUARY 2024
HAZEN NO.:	90398-004
CONTRACT NO.:	24-51
DRAWING NUMBER:	C-161

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PLOT DATE: 6/14/2024 5:33 PM BY: KROBBINS

MATCHLINE - SEE DRAWING NO. C-164

MATCHLINE - SEE DRAWING NO. C-161

STORMWATER WETLAND
(SEE DWG C-210)

UPPER LAGOON

GRANVILLE ROAD

PROPERTY LINE PER MassGIS

B22-02

E: 295100.00
N: 2870300.00

E: 295300.00
N: 2870300.00

E: 295100.00
N: 2870100.00

E: 295300.00
N: 2870100.00

E: 295500.00
N: 2870100.00

NOTES:

1. FOR STORM DRAIN STRUCTURES STAKING POINTS, SEE SCHEDULE, DWG C-217.
2. FOR SANITARY DRAIN STRUCTURES STAKING POINTS, SEE SCHEDULE, DWG C-217.
3. FOR ROADWAY GEOMETRY, SEE FINAL SITE PLANS IN C-150 SERIES AND PROFILE DRAWINGS IN C-200 SERIES DWGS.
4. FOR TRANSMISSION MAIN STAKING POINTS, SEE C-240 AND C-250 SERIES DWGS.

KEY MAP
NTS

SCALE: 1" = 20'

20 10 0 20'

REV	ISSUED FOR	DATE	BY
2	ADDENDUM NO. 16	JUN 24	MWM
1	ADDENDUM NO. 12	MAY 24	MWM
0	ISSUED FOR BIDS	FEB 24	MWM

PROJECT ENGINEER:	K. BARRETT
DESIGNED BY:	J. RIVAS
DRAWN BY:	W. STRZEPKA
CHECKED BY:	D. SHEERAN
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE	0 1/2" 1"

COMMONWEALTH OF MASSACHUSETTS
DANIEL J. SHEERAN
CIVIL
No. 58423
REGISTERED PROFESSIONAL ENGINEER
6/19/2024

Hazen
HAZEN AND SAWYER
100 GREAT MEADOW ROAD, SUITE 702
WETHERSFIELD, CT 06109

SPRINGFIELD WATER AND SEWER COMMISSION

WEST PARISH WATER TREATMENT PLANT

CIVIL
STAKING PLAN
SHEET 2

DATE:	FEBRUARY 2024
HAZEN NO.:	90398-004
CONTRACT NO.:	24-51
DRAWING NUMBER:	C-162

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PLOT DATE: 6/14/2024 12:38 PM BY: KROBBINS

MATCHLINE - SEE DRAWING NO. C-165

MATCHLINE - SEE DRAWING NO. C-164

MATCHLINE - SEE DRAWING NO. C-161

DEWATERING BUILDING

RESIDUALS STORAGE TANK AND CENTRATE TANK

WASTE WASHWATER TANKS

WATER TREATMENT BUILDING (PROCESS AREA)

B22-103

B22-104

2-1"PVC CHLORINE LINES(70-G8)

E: 294500.00

N: 2870500.00

E: 294700.00

N: 2870500.00

E: 294900.00

N: 2870500.00

E: 294500.00

N: 2870300.00

E: 294700.00

N: 2870300.00

NOTES:

1. FOR STORM DRAIN STRUCTURES STAKING POINTS, SEE SCHEDULE, DWG C-217.
2. FOR SANITARY DRAIN STRUCTURES STAKING POINTS, SEE SCHEDULE, DWG C-217.
3. FOR ROADWAY GEOMETRY, SEE FINAL SITE PLANS IN C-150 SERIES AND PROFILE DRAWINGS IN C-200 SERIES DWGS.
4. FOR TRANSMISSION MAIN STAKING POINTS, SEE C-240 AND C-250 SERIES DWGS.

KEY MAP
NTS

SCALE: 1" = 20'

20 10 0 20'

REV	ISSUED FOR	DATE	BY
2	ADDENDUM NO. 16	JUN 24	MWM
1	ADDENDUM NO. 12	MAY 24	MWM
0	ISSUED FOR BIDS	FEB 24	MWM

PROJECT ENGINEER:	K. BARRETT
DESIGNED BY:	J. RIVAS
DRAWN BY:	W. STRZEPKA
CHECKED BY:	D. SHEERAN
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE	0 1/2" 1"

COMMONWEALTH OF MASSACHUSETTS
DANIEL J. SHEERAN
CIVIL
No. 58423
REGISTERED PROFESSIONAL ENGINEER
6/19/2024

Hazen
HAZEN AND SAWYER
100 GREAT MEADOW ROAD, SUITE 702
WETHERSFIELD, CT 06109

SPRINGFIELD WATER AND SEWER COMMISSION

WEST PARISH WATER TREATMENT PLANT

CIVIL
STAKING PLAN
SHEET 3

DATE:	FEBRUARY 2024
HAZEN NO.:	90398-004
CONTRACT NO.:	24-51
DRAWING NUMBER:	C-163

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PLOT DATE: 6/14/2024 12:43 PM BY: KROBBINS

MATCHLINE - SEE DRAWING NO. C-165

MATCHLINE - SEE DRAWING NO. C-163

MATCHLINE - SEE DRAWING NO. C-162

WASTE WASHWATER TANKS

BIORETENTION CELL 1 (SEE DWG C-218)

STORMWATER WETLAND (SEE DWG C-210)

UPPER LAGOON

B22-01

N: 2870700.00

N: 2870500.00

E: 295100.00

E: 295300.00

LOD

NOTES:

1. FOR STORM DRAIN STRUCTURES STAKING POINTS, SEE SCHEDULE, DWG C-217.
2. FOR SANITARY DRAIN STRUCTURES STAKING POINTS, SEE SCHEDULE, DWG C-217.
3. FOR ROADWAY GEOMETRY, SEE FINAL SITE PLANS IN C-150 SERIES AND PROFILE DRAWINGS IN C-200 SERIES DWGS.
4. FOR TRANSMISSION MAIN STAKING POINTS, SEE C-240 AND C-250 SERIES DWGS.

KEY MAP
NTS

SCALE: 1" = 20'

20 10 0 20'

REV	ISSUED FOR	DATE	BY
2	ADDENDUM NO. 16	JUN 24	MWM
1	ADDENDUM NO. 12	MAY 24	MWM
0	ISSUED FOR BIDS	FEB 24	MWM

PROJECT ENGINEER:	K. BARRETT
DESIGNED BY:	J. RIVAS
DRAWN BY:	W. STRZEPKA
CHECKED BY:	D. SHEERAN

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE 0 1/2" 1"

COMMONWEALTH OF MASSACHUSETTS
DANIEL J. SHEERAN
CIVIL
No. 58423
REGISTERED PROFESSIONAL ENGINEER
6/17/2024

Hazen
HAZEN AND SAWYER
100 GREAT MEADOW ROAD, SUITE 702
WETHERSFIELD, CT 06109

SPRINGFIELD WATER AND SEWER COMMISSION

WEST PARISH WATER TREATMENT PLANT

CIVIL
STAKING PLAN
SHEET 4

DATE:	FEBRUARY 2024
HAZEN NO.:	90398-004
CONTRACT NO.:	24-51
DRAWING NUMBER:	C-164

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PLOT DATE: 6/14/2024 12:41 PM BY: KROBBINS

STAKING TABLE

POINT #	NORTHING	EASTING	DESCRIPTION
1	2870214.65	294688.06	WATER TREATMENT BUILDING
2	2870219.28	294766.08	WATER TREATMENT BUILDING
3	2870221.50	294778.89	WATER TREATMENT BUILDING
4	2870235.77	294809.07	WATER TREATMENT BUILDING
5	2870245.66	294807.35	WATER TREATMENT BUILDING
6	2870263.63	294883.06	WATER TREATMENT BUILDING
7	2870307.20	294875.35	WATER TREATMENT BUILDING
8	2870317.76	294936.36	WATER TREATMENT BUILDING
9	2870351.21	294957.64	WATER TREATMENT BUILDING
10	2870420.23	294945.44	WATER TREATMENT BUILDING
11	2870497.60	294916.06	WATER TREATMENT BUILDING
12	2870474.71	294736.92	WATER TREATMENT BUILDING
13	2870443.15	294554.55	WATER TREATMENT BUILDING
14	2870347.25	294559.48	WATER TREATMENT BUILDING
15	2870322.29	294563.80	WATER TREATMENT BUILDING
16	2870257.36	294587.39	WATER TREATMENT BUILDING
17	2870273.07	294678.16	WATER TREATMENT BUILDING
18	2870612.79	294718.67	DEWATERING BUILDING
19	2870630.57	294821.30	DEWATERING BUILDING
20	2870634.43	294843.64	RESIDUALS AND CENTRATE TANK
21	2870576.63	294853.65	RESIDUALS AND CENTRATE TANK
22	2870572.76	294831.32	DEWATERING BUILDING
23	2870554.98	294728.68	DEWATERING BUILDING
24	2870632.74	294861.19	WASTE WASHWATER TANKS
25	2870579.53	294870.40	WASTE WASHWATER TANKS
26	2870650.47	294963.67	WASTE WASHWATER TANKS
27	2870597.27	294972.88	WASTE WASHWATER TANKS
28	2870216.32	294462.96	EDGE OF ROAD
29	2870156.37	294497.60	LIGHT POLE
30	2870194.61	294493.91	EDGE OF ROAD
31	2870150.22	294503.07	EDGE OF ROAD
32	2870109.45	294557.63	LIGHT POLE
33	2870113.05	294559.91	EDGE OF ROAD
34	2870227.87	294547.48	HOLDING TANK
35	2870152.53	294553.41	EDGE OF ROAD
36	2870158.49	294587.84	EDGE OF ROAD
37	2870162.90	294584.03	LIGHT POLE
38	2870223.01	294573.62	LIGHT POLE
39	2870239.29	294573.85	EDGE OF ROAD
40	2870245.07	294577.93	EDGE OF ROAD
41	2870255.30	294637.05	EDGE OF ROAD
42	2870239.53	294639.78	EDGE OF ROAD
43	2870179.92	294650.09	EDGE OF ROAD
44	2870175.44	294656.45	EDGE OF ROAD
45	2870257.74	294648.21	LIMITS OF SIDEWALK
46	2870251.96	294644.14	LIMITS OF SIDEWALK
47	2870220.45	294652.64	LIGHT POLE
48	2870185.94	294655.56	LIMITS OF SIDEWALK
49	2870186.44	294670.19	LIGHT POLE
50	2870123.49	294620.20	EDGE OF ROAD
51	2870119.42	294625.98	EDGE OF ROAD
52	2870104.64	294628.53	EDGE OF ROAD
53	2870104.60	294648.84	LIGHT POLE
54	2870118.41	294728.61	LIGHT POLE
55	2870197.53	294734.24	LIGHT POLE
56	2870127.49	294760.57	EDGE OF ROAD
57	2870098.59	294776.46	EDGE OF ROAD
58	2870104.19	294774.46	LIGHT POLE
59	2870023.20	294635.26	FENCE
60	2870047.33	294740.58	FENCE

STAKING TABLE

POINT #	NORTHING	EASTING	DESCRIPTION
61	2870032.58	294725.36	SIGN
62	2870025.47	294743.77	LIGHT POLE
63	2869986.90	294691.67	EDGE OF ROAD
64	2869953.45	294780.72	EDGE OF ROAD
65	2870034.00	294778.85	GATE
66	2870028.79	294789.70	FENCE
67	2870006.24	294793.53	SIGN
68	2869969.11	294831.25	FENCE
69	2869999.56	294860.72	SEPTIC FIELD
70	2870072.85	294887.40	SEPTIC FIELD
71	2870051.65	294945.66	SEPTIC FIELD
72	2869978.35	294918.99	SEPTIC FIELD
73	2870093.45	294801.28	EDGE OF ROAD
74	2870119.54	294802.54	EDGE OF ROAD
75	2870136.87	294814.77	EDGE OF ROAD
76	2870138.37	294843.94	LIGHT POLE
77	2870154.04	294932.52	LIGHT POLE
78	2870138.74	294941.89	SEPTIC TANK
79	2870119.17	294922.42	PUMP CHAMBER
80	2870159.73	294946.80	EDGE OF ROAD
81	2870174.51	294944.24	EDGE OF ROAD
82	2870201.53	294924.54	EDGE OF ROAD
83	2870205.57	294918.57	EDGE OF ROAD
84	2870220.36	294916.01	EDGE OF ROAD
85	2870223.62	294885.00	LIGHT POLE
86	2870211.68	294816.02	LIGHT POLE
87	2870216.95	294783.65	LIMITS OF SIDEWALK
88	2870226.05	294836.24	LIMITS OF SIDEWALK
89	2870233.64	294834.92	LIMITS OF SIDEWALK
90	2870242.29	294884.94	LIMITS OF SIDEWALK
91	2870286.46	294900.82	LIMITS OF SIDEWALK
92	2870309.81	294919.72	LIMITS OF SIDEWALK
93	2870082.11	295024.89	LIMITS OF SIDEWALK
94	2870070.71	295028.63	LIMITS OF SIDEWALK
95	2870049.06	295109.74	LIMITS OF SIDEWALK
96	2870105.17	295133.31	LIMITS OF SIDEWALK
97	2870266.55	295007.05	GUARD RAIL
98	2870226.97	295063.21	GUARD RAIL
99	2870193.45	295032.68	GUARD RAIL
100	2870253.12	295222.51	EDGE OF ROAD
101	2870228.46	295226.64	EDGE OF ROAD
102	2870222.79	295234.21	LIGHT POLE
103	2870207.09	295257.68	GATE
104	2870224.32	295245.22	EDGE OF ROAD
105	2870216.05	295257.05	EDGE OF ROAD
106	2870201.27	295278.20	EDGE OF ROAD
107	2870244.83	295259.69	EDGE OF ROAD
108	2870204.87	295317.09	GATE
109	2870115.11	295331.69	EDGE OF ROAD
110	2870158.12	295327.72	FENCE
111	2870184.22	295389.99	EDGE OF ROAD
112	2870184.55	295366.89	FENCE
113	2870188.62	295382.15	FENCE
114	2870331.39	295206.27	OVERFLOW
115	2870317.66	295211.52	OVERFLOW
116	2870347.64	295230.88	OVERFLOW
117	2870361.91	295241.12	OVERFLOW
118	2870336.70	295274.82	OVERFLOW
119	2870371.51	295330.90	OVERFLOW
120	2870353.76	295338.40	OVERFLOW

STAKING TABLE

POINT #	NORTHING	EASTING	DESCRIPTION
121	2870334.64	295357.55	OVERFLOW
122	2870304.47	295282.30	HEADWALL
123	2870290.30	295277.40	HEADWALL
124	2870281.22	295285.25	HEADWALL
125	2870284.06	295299.98	HEADWALL
126	2870334.41	295316.38	OVERFLOW
127	2870591.62	294425.14	EDGE OF ROAD
128	2870595.07	294449.96	EDGE OF ROAD
129	2870503.81	294433.00	LIGHT POLE
130	2870513.80	294465.17	EDGE OF ROAD
131	2870481.15	294510.58	EDGE OF ROAD
132	2870410.04	294483.83	EDGE OF ROAD
133	2870456.66	294515.68	EDGE OF ROAD
134	2870422.66	294452.13	LIGHT POLE
135	2870452.21	294451.62	EDGE OF ROAD
136	2870335.09	294469.54	EDGE OF ROAD
137	2870269.65	294480.04	EDGE OF ROAD
138	2870277.19	294505.53	EDGE OF ROAD
139	2870282.13	294504.75	EDGE OF ROAD
140	2870545.42	294492.56	ELECTRICAL EQUIPMENT
141	2870517.88	294539.44	ELECTRICAL EQUIPMENT
142	2870291.69	294530.61	LIMITS OF SIDEWALK
143	2870277.89	294533.00	LIMITS OF SIDEWALK
144	2870264.45	294540.40	LIMITS OF SIDEWALK
145	2870415.86	294514.19	LIMITS OF SIDEWALK
146	2870415.01	294509.26	LIMITS OF SIDEWALK
147	2870443.91	294529.63	LIMITS OF SIDEWALK
148	2870438.98	294530.49	LIMITS OF SIDEWALK
149	2870468.37	294583.00	EDGE OF ROAD
150	2870455.79	294595.32	EDGE OF ROAD
151	2870517.07	294585.46	EDGE OF ROAD
152	2870493.59	294582.11	EDGE OF ROAD
153	2870519.63	294600.24	EDGE OF ROAD
154	2870546.12	294577.39	LIGHT POLE
155	2870576.19	294575.23	EDGE OF ROAD
156	2870597.93	294591.76	EDGE OF ROAD
157	2870618.74	294606.42	EDGE OF ROAD
158	2870628.44	294644.90	LIGHT POLE
159	2870642.94	294728.65	LIGHT POLE
160	2870647.98	294775.40	EDGE OF ROAD
161	2870624.21	294784.60	EDGE OF ROAD
162	2870658.93	294849.48	OUTFALL STRUCTURE
163	2870475.31	294711.03	EDGE OF SIDEWALK
164	2870509.41	294827.41	EDGE OF ROAD
165	2870488.71	294831.00	EDGE OF ROAD
166	2870546.48	294858.36	EDGE OF ROAD
167	2870542.40	294864.14	EDGE OF ROAD
168	2870545.57	294867.79	LIGHT POLE
169	2870551.33	294915.73	EDGE OF ROAD
170	2870504.26	294920.83	EDGE OF ROAD
171	2870498.60	294921.81	LIMITS OF SIDEWALK
172	2870488.41	294936.26	LIMITS OF SIDEWALK
173	2870466.22	294940.10	LIMITS OF SIDEWALK
174	2870453.78	294942.25	LIMITS OF SIDEWALK
175	2870445.71	294943.65	LIMITS OF SIDEWALK
176	2870326.42	294966.32	LIGHT POLE
177	2870550.88	294931.62	EDGE OF ROAD
178	2870518.74	294961.96	EDGE OF ROAD
179	2870526.77	294963.40	LIGHT POLE
180	2870501.88	294975.03	EDGE OF ROAD

STAKING TABLE

POINT #	NORTHING	EASTING	DESCRIPTION
181	2870554.11	295013.34	STRUCTURE
182	2870461.50	294982.02	EDGE OF ROAD
183	2870441.50	294989.54	PUMP STATION
184	2870489.51	294941.14	LIMITS OF SIDEWALK
185	2870347.54	294965.71	LIMITS OF SIDEWALK
186	2870387.27	294986.15	GUARD RAIL
187	2870387.03	294984.76	EDGE OF ROAD
188	2870431.37	294977.08	EDGE OF ROAD
189	2870186.81	295018.23	LIGHT POLE
190	2870205.57	295126.62	LIGHT POLE
191	2870154.87	295329.77	LIGHT POLE
192	2870270.24	294474.27	LIGHT POLE
193	2870427.44	294981.74	LIGHT POLE
194	2870419.15	294994.42	EDGE OF ROAD
195	2870404.37	294996.98	EDGE OF ROAD
196	2870413.64	295050.78	EDGE OF ROAD
197	2870397.34	295073.90	EDGE OF ROAD
198	2870390.44	295075.08	EDGE OF ROAD
199	2870368.47	295042.67	EDGE OF ROAD
200	2870330.19	295034.44	EDGE OF ROAD
201	2870275.42	295084.75	EDGE OF ROAD
202	2870265.65	295194.60	EDGE OF ROAD
203	2870309.20	295226.53	EDGE OF ROAD
204	2870321.65	295221.58	EDGE OF ROAD
205	2870307.38	295221.87	EDGE OF ROAD
206	2870270.64	295194.99	EDGE OF ROAD
207	2870280.30	295085.86	EDGE OF ROAD
208	2870330.96	295039.38	EDGE OF ROAD
209	2870344.72	295038.93	EDGE OF ROAD
210	2870388.58	295093.66	EDGE OF ROAD
211	2870398.94	295094.93	EDGE OF ROAD
212	2870397.93	295089.02	EDGE OF ROAD
213	2870423.42	295107.25	EDGE OF ROAD
214	2870446.54	295152.70	EDGE OF ROAD
215	2870431.76	295155.24	EDGE OF ROAD
216	2870418.92	295177.45	EDGE OF ROAD
217	2870370.49	295195.15	EDGE OF ROAD
218	2870371.40	295210.79	EDGE OF ROAD
219	2870475.26	295180.12	EDGE OF ROAD
220	2870581.01	295140.19	EDGE OF ROAD
221	2870575.72	295126.16	EDGE OF ROAD
222	2870662.40	295112.57	EDGE OF ROAD
223	2870661.65	295127.55	EDGE OF ROAD
224	2870708.96	295114.90	EDGE OF ROAD
225	2870704.98	295129.71	EDGE OF ROAD
226	2870696.62	295160.67	HEADWALL
227	2870685.31	295141.22	HEADWALL
228	2870669.31	295141.27	HEADWALL
229	2870658.12	295160.80	HEADWALL
230	2870696.61	295194.77	OVERFLOW
231	2870658.14	295206.59	OVERFLOW
232	2870471.86	295268.34	OVERFLOW
233	2870445.74	295275.98	OVERFLOW
234	2870394.41	295310.85	OVERFLOW
235	2870468.90	295245.94	OVERFLOW
236	2870442.11	295250.71	OVERFLOW
237	2870457.50	295224.60	OVERFLOW
238	2870445.47	295226.75	OVERFLOW
239	2870448.46	295219.94	HEADWALL
240	2870604.00	294418.00	LIGHT POLE

STAKING TABLE

POINT #	NORTHING	EASTING	DESCRIPTION
241	2870684.71	294377.63	LIGHT POLE
242	2870612.77	294421.47	EDGE OF ROAD
243	2870617.88	294445.41	EDGE OF ROAD
244	2870629.69	294417.44	EDGE OF ROAD
245	2870675.10	294392.36	EDGE OF ROAD
246	2870697.58	294356.49	EDGE OF ROAD
247	2870720.41	294351.25	EDGE OF ROAD
248	2870728.02	294423.10	EDGE OF ROAD
249	2870761.79	294799.09	OUTFALL STRUCTURE
250	2870790.08	295118.95	EDGE OF ROAD
251	2870771.51	295133.04	EDGE OF ROAD
252	2870762.91	295117.59	EDGE OF ROAD
253	2870755.17	295132.23	EDGE OF ROAD
254	2870755.52	295117.22	EDGE OF ROAD
255	2870748.30	295131.88	EDGE OF ROAD
256	2870225.35	293267.19	FENCE
257	2870205.82	293277.92	FENCE
258	2870192.43	293355.04	FENCE
259	2870190.11	293476.36	FENCE
260	2870243.51	294926.07	STRUCTURE
261	2870220.20	293272.75	FENCE
262	2870537.97	295022.35	STRUCTURE
263	2870374.00	295081.32	OUTFALL STRUCTURE
264	2870201.91	293314.69	FENCE
265	2869987.05	294721.54	RADIUS = 38'
266	2869973.99	294764.41	RADIUS = 39'
267	2870124.97	294771.77	RADIUS = 15'
268	2870130.74	294805.06	RADIUS = 15'
269	2870122.65	294623.93	RADIUS = 5'
270	2870123.19	294520.66	RADIUS = 50'
271	2870211.79	294482.87	RADIUS = 27'
272	2870142.83	294559.55	RADIUS = 15'
273	2870147.29	294585.32	RADIUS = 15'
274	2870243.02	294574.69	RADIUS = 5'
275	2870255.69	294644.98	RADIUS = 5'
276	2870176.36	294652.34	RADIUS = 6'
277	2870205.13	294787.18	RADIUS = 5'
278	2870178.24	294945.08	RADIUS = 5'
279	2870202.34	294920.62	RADIUS = 5'
280	2870240.58	294892.97	RADIUS = 10'
281	2870250.81	294893.26	RADIUS = 20'
282	2870243.79	294899.61	RADIUS = 8'
283	2870224.71	294972.62	RADIUS = 50'
284	2870300.67	294892.86	RADIUS = 5'
285	2870300.19	294902.52	RADIUS = 29'
286	2870233.97	295026.11	RADIUS = 50'
287	2870228.23	295236.34	RADIUS = 25'
288	2870255.98	295240.60	RADIUS = 50'
289	2870074.10	295076.56	RADIUS = 40'
290	2870085.20	295110.17	RADIUS = 40'
291	2870125.28	295170.00	RADIUS = 80'
292	2870176.73	295197.66	RADIUS = 69'
293	2870177.56	295240.29	RADIUS = 40'
294	2870211.54	295259.93	RADIUS = 7'
295	2870202.42	295272.97	RADIUS = 7'
296	2870147.30	295339.77	RADIUS = 40'
297	2870177.84	295364.97	RADIUS = 40'
298	2870298.40	295054.73	RADIUS = 61'
299	2870281.56	295218.61	RADIUS = 27'
300	2870280.48	294531.36	RADIUS = 4'

STAKING TABLE

POINT #	NORTHING	EASTING	DESCRIPTION
301	2870287.96	294529.77	RADIUS = 5'
302	2870430.80	294517.55	RADIUS = 20'
303	2870438.40	294492.36	RADIUS = 49'
304	2870489.01	294481.79	RADIUS = 49'
305	2870466.69	294590.47	RADIUS = 10'
306	2870500.44	294596.60	RADIUS = 30'
307	2870518.88	294603.78	RADIUS = 4'
308	2870580.68	294593.41	RADIUS = 5'
309	2870611.37	294594.78	RADIUS = 19'
310	2870647.14	294779.14	RADIUS = 5'
311	2870550.59	294730.33	RADIUS = 3'
312	2870568.06	294831.24	RADIUS = 3'
313	2870543.24	294860.41	RADIUS = 5'
314	2870501.24	294934.27	RADIUS = 18'
315	2870330.20	294957.75	RADIUS = 24'
316	2870544.61	294945.59	RADIUS = 40'
317	2870421.67	294983.22	RADIUS = 15'
318	2870398.23	294987.28	RADIUS = 15'
319	2870410.28	295065.72	RADIUS = 20'
320	2870414.84	295092.03	RADIUS = 20'
321	2870365.55	295046.74	RADIUS = 48'
322	2870429.37	295168.67	RADIUS = 20'
323	2870455.10	295164.91	RADIUS = 17'
324	2870620.68	295129.71	RADIUS = 200'
325	2870685.66	294380.85	RADIUS = 75'
326	2870802.48	295117.63	RADIUS = 40'
327	2870775.91	295136.20	RADIUS = 5'

REV	ISSUED FOR	DATE	BY
2	ADDENDUM NO. 16	JUN 24	MWM
1	ADDENDUM NO. 12	MAY 24	MWM
0	ISSUED FOR BIDS	FEB 24	MWM

PROJECT ENGINEER: K. BARRETT
DESIGNED BY: J. RIVAS
DRAWN BY: W. STRZEPKA
CHECKED BY: D. SHEERAN

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE 0 1/2" 1"

COMMONWEALTH OF MASSACHUSETTS
DANIEL J. SHEERAN
CIVIL
No. 58423
REGISTERED PROFESSIONAL ENGINEER
6/19/2024

Hazen
HAZEN AND SAWYER
100 GREAT MEADOW ROAD, SUITE 702
WETHERSFIELD, CT 06109

SPRINGFIELD WATER AND SEWER COMMISSION

WEST PARISH WATER TREATMENT PLANT

CIVIL
STAKING TABLES

DATE: FEBRUARY 2024
HAZEN NO.: 90398-004
CONTRACT NO.: 24-51
DRAWING NUMBER: C-167

File: C:\USERS\KROBBINS\DOCS\ACCDOCS\HAZEN AND SAWYER\90398-004_WEST PARISH FILTER WTP\PROJECT FILES\CIVIL\C-167 Saved by KROBBINS Save date: 6/13/2024 1:01 PM
PLOT DATE: 6/14/2024 12:45 PM BY: KROBBINS

STAKING TABLE

POINT #	NORTHING	EASTING	DESCRIPTION
501	2870753.82	294221.03	LIMIT OF DISTURBANCE
502	2870772.09	294379.04	LIMIT OF DISTURBANCE
503	2870764.51	294492.07	LIMIT OF DISTURBANCE
504	2870772.47	294553.49	LIMIT OF DISTURBANCE
505	2870753.08	294661.24	LIMIT OF DISTURBANCE
506	2870778.69	294803.20	LIMIT OF DISTURBANCE
507	2870792.44	294821.39	LIMIT OF DISTURBANCE
508	2870800.45	294857.87	LIMIT OF DISTURBANCE
509	2870808.94	294970.20	LIMIT OF DISTURBANCE
510	2870769.20	295090.69	LIMIT OF DISTURBANCE
511	2870756.59	295112.63	LIMIT OF DISTURBANCE
512	2870813.87	295112.55	LIMIT OF DISTURBANCE
513	2870774.87	295141.51	LIMIT OF DISTURBANCE
514	2870745.11	295133.15	LIMIT OF DISTURBANCE
515	2870697.81	295200.06	LIMIT OF DISTURBANCE
516	2870656.83	295210.66	LIMIT OF DISTURBANCE
517	2870571.67	295220.76	LIMIT OF DISTURBANCE
518	2870523.26	295231.00	LIMIT OF DISTURBANCE
519	2870507.06	295232.11	LIMIT OF DISTURBANCE
520	2870502.18	295221.34	LIMIT OF DISTURBANCE
521	2870494.55	295224.37	LIMIT OF DISTURBANCE
522	2870490.93	295261.71	LIMIT OF DISTURBANCE
523	2870445.46	295276.07	LIMIT OF DISTURBANCE
524	2870424.44	295281.18	LIMIT OF DISTURBANCE
525	2870394.41	295310.85	LIMIT OF DISTURBANCE
526	2870371.51	295330.90	LIMIT OF DISTURBANCE
527	2870353.53	295338.50	LIMIT OF DISTURBANCE
528	2870334.64	295357.55	LIMIT OF DISTURBANCE
529	2870262.87	295432.65	LIMIT OF DISTURBANCE
530	2870318.49	295477.20	LIMIT OF DISTURBANCE
531	2870441.22	295590.09	LIMIT OF DISTURBANCE
532	2870563.78	295689.28	LIMIT OF DISTURBANCE
533	2870624.78	295721.08	LIMIT OF DISTURBANCE
534	2870899.01	295824.51	LIMIT OF DISTURBANCE
535	2870895.27	295908.24	LIMIT OF DISTURBANCE
536	2871063.83	296071.00	LIMIT OF DISTURBANCE
537	2871112.87	296130.33	LIMIT OF DISTURBANCE
538	2871094.64	296200.08	LIMIT OF DISTURBANCE
539	2871041.48	296137.14	LIMIT OF DISTURBANCE
540	2870983.33	296068.67	LIMIT OF DISTURBANCE
541	2870931.61	296012.14	LIMIT OF DISTURBANCE
542	2870866.38	295948.02	LIMIT OF DISTURBANCE
543	2870727.66	295836.70	LIMIT OF DISTURBANCE
544	2870679.14	295797.82	LIMIT OF DISTURBANCE
545	2870649.84	295773.49	LIMIT OF DISTURBANCE
546	2870572.52	295709.24	LIMIT OF DISTURBANCE
547	2870534.74	295678.78	LIMIT OF DISTURBANCE
548	2870497.71	295648.58	LIMIT OF DISTURBANCE
549	2870460.81	295617.80	LIMIT OF DISTURBANCE
550	2870422.89	295586.79	LIMIT OF DISTURBANCE
551	2870384.57	295556.32	LIMIT OF DISTURBANCE
552	2870357.82	295533.83	LIMIT OF DISTURBANCE
553	2870332.40	295513.32	LIMIT OF DISTURBANCE
554	2870276.27	295467.84	LIMIT OF DISTURBANCE
555	2870240.94	295439.16	LIMIT OF DISTURBANCE
556	2870198.66	295404.33	LIMIT OF DISTURBANCE
557	2870156.70	295370.17	LIMIT OF DISTURBANCE
558	2870120.65	295340.39	LIMIT OF DISTURBANCE
559	2870092.31	295316.81	LIMIT OF DISTURBANCE
560	2870050.07	295280.18	LIMIT OF DISTURBANCE

STAKING TABLE

POINT #	NORTHING	EASTING	DESCRIPTION
561	2870025.45	295254.50	LIMIT OF DISTURBANCE
562	2870004.95	295228.89	LIMIT OF DISTURBANCE
563	2869987.04	295202.24	LIMIT OF DISTURBANCE
564	2869970.01	295171.65	LIMIT OF DISTURBANCE
565	2869952.66	295134.12	LIMIT OF DISTURBANCE
566	2869935.28	295084.14	LIMIT OF DISTURBANCE
567	2869926.22	295048.06	LIMIT OF DISTURBANCE
568	2869919.75	295011.41	LIMIT OF DISTURBANCE
569	2869916.30	294976.12	LIMIT OF DISTURBANCE
570	2869916.10	294933.50	LIMIT OF DISTURBANCE
571	2869919.63	294898.55	LIMIT OF DISTURBANCE
572	2869927.46	294856.76	LIMIT OF DISTURBANCE
573	2869936.94	294821.65	LIMIT OF DISTURBANCE
574	2869954.91	294772.39	LIMIT OF DISTURBANCE
575	2869967.99	294741.15	LIMIT OF DISTURBANCE
576	2869982.50	294702.04	LIMIT OF DISTURBANCE
577	2869990.72	294678.43	LIMIT OF DISTURBANCE
578	2870004.89	294639.50	LIMIT OF DISTURBANCE
579	2870020.01	294597.03	LIMIT OF DISTURBANCE
580	2870031.30	294563.90	LIMIT OF DISTURBANCE
581	2870045.01	294522.47	LIMIT OF DISTURBANCE
582	2870056.22	294485.15	LIMIT OF DISTURBANCE
583	2870068.77	294436.12	LIMIT OF DISTURBANCE
584	2870080.85	294362.97	LIMIT OF DISTURBANCE
585	2870093.51	294257.70	LIMIT OF DISTURBANCE
586	2870103.43	294160.89	LIMIT OF DISTURBANCE
587	2870119.33	294047.70	LIMIT OF DISTURBANCE
588	2870138.68	293890.57	LIMIT OF DISTURBANCE
589	2870317.64	293900.21	LIMIT OF DISTURBANCE
590	2870498.69	293862.74	LIMIT OF DISTURBANCE
591	2870456.93	293645.20	LIMIT OF DISTURBANCE
592	2870413.22	293419.60	LIMIT OF DISTURBANCE
593	2870304.41	293438.87	LIMIT OF DISTURBANCE
594	2870195.60	293458.14	LIMIT OF DISTURBANCE
595	2870188.56	293608.91	LIMIT OF DISTURBANCE
596	2870162.63	293848.77	LIMIT OF DISTURBANCE
597	2870177.55	293895.43	LIMIT OF DISTURBANCE
598	2870168.02	293898.48	LIMIT OF DISTURBANCE
599	2870152.42	293849.66	LIMIT OF DISTURBANCE
600	2870175.38	293649.70	LIMIT OF DISTURBANCE
601	2870185.55	293459.92	LIMIT OF DISTURBANCE
602	2870182.57	293460.44	LIMIT OF DISTURBANCE
603	2870183.99	293338.66	LIMIT OF DISTURBANCE
604	2870185.40	293216.88	LIMIT OF DISTURBANCE
605	2870162.37	293085.22	LIMIT OF DISTURBANCE
606	2870238.30	293102.05	LIMIT OF DISTURBANCE
607	2870325.44	293103.99	LIMIT OF DISTURBANCE
608	2870412.57	293105.94	LIMIT OF DISTURBANCE
609	2870448.53	293124.74	LIMIT OF DISTURBANCE
610	2870532.27	293197.84	LIMIT OF DISTURBANCE
611	2870483.27	293292.49	LIMIT OF DISTURBANCE
612	2870483.27	293391.28	LIMIT OF DISTURBANCE
613	2870525.99	293564.26	LIMIT OF DISTURBANCE
614	2870556.32	293685.89	LIMIT OF DISTURBANCE
615	2870697.87	293711.97	LIMIT OF DISTURBANCE
616	2870825.24	293721.78	LIMIT OF DISTURBANCE
617	2870908.86	293700.84	LIMIT OF DISTURBANCE
618	2871071.01	293677.04	LIMIT OF DISTURBANCE
619	2871119.43	293649.38	LIMIT OF DISTURBANCE
620	2871129.49	293570.95	LIMIT OF DISTURBANCE

STAKING TABLE

POINT #	NORTHING	EASTING	DESCRIPTION
621	2871133.78	293567.33	LIMIT OF DISTURBANCE
622	2871190.12	293624.42	LIMIT OF DISTURBANCE
623	2871133.73	293671.51	LIMIT OF DISTURBANCE
624	2871120.41	293674.19	LIMIT OF DISTURBANCE
625	2871113.07	293681.39	LIMIT OF DISTURBANCE
626	2871105.74	293703.65	LIMIT OF DISTURBANCE
627	2871069.85	293722.24	LIMIT OF DISTURBANCE
628	2870854.25	293758.74	LIMIT OF DISTURBANCE
629	2870857.34	293778.68	LIMIT OF DISTURBANCE
630	2870812.83	293810.48	LIMIT OF DISTURBANCE
631	2870823.02	293872.40	LIMIT OF DISTURBANCE
632	2870726.26	293922.23	LIMIT OF DISTURBANCE
633	2870649.42	293991.97	LIMIT OF DISTURBANCE
634	2870595.79	294029.82	LIMIT OF DISTURBANCE
635	2870499.46	293907.55	LIMIT OF DISTURBANCE
636	2870377.57	293928.32	LIMIT OF DISTURBANCE
637	2870267.07	293947.16	LIMIT OF DISTURBANCE
638	2870241.86	293985.34	LIMIT OF DISTURBANCE
639	2870276.62	294177.18	LIMIT OF DISTURBANCE
640	2870295.29	294280.20	LIMIT OF DISTURBANCE
641	2870258.47	294287.36	LIMIT OF DISTURBANCE
642	2870270.28	294352.57	LIMIT OF DISTURBANCE
643	2870282.08	294417.78	LIMIT OF DISTURBANCE
644	2870378.88	294400.15	LIMIT OF DISTURBANCE
645	2870495.13	294379.02	LIMIT OF DISTURBANCE
646	2870475.48	294268.48	LIMIT OF DISTURBANCE
647	2870614.65	294244.75	LIMIT OF DISTURBANCE
648	2870694.82	294231.08	LIMIT OF DISTURBANCE
649	2870684.58	294170.98	LIMIT OF DISTURBANCE
650	2870674.72	294172.65	LIMIT OF DISTURBANCE
651	2870684.97	294232.77	LIMIT OF DISTURBANCE
652	2870314.32	294170.35	LIMIT OF DISTURBANCE
653	2870311.02	294152.13	LIMIT OF DISTURBANCE
654	2870341.52	294146.60	LIMIT OF DISTURBANCE
655	2870333.97	294104.92	LIMIT OF DISTURBANCE
656	2870265.78	294117.28	LIMIT OF DISTURBANCE
657	2870214.34	293917.81	LIMIT OF DISTURBANCE
658	2870198.83	293908.19	LIMIT OF DISTURBANCE
659	2870157.91	293899.04	LIMIT OF DISTURBANCE
660	2870440.09	293648.43	LIMIT OF DISTURBANCE
661	2870437.64	293635.67	LIMIT OF DISTURBANCE
662	2870454.46	293632.44	LIMIT OF DISTURBANCE
663	2870466.45	293874.86	LIMIT OF DISTURBANCE
664	2870783.76	293718.59	LIMIT OF DISTURBANCE
665	2870786.63	293691.51	LIMIT OF DISTURBANCE
666	2870796.58	293692.56	LIMIT OF DISTURBANCE
667	2870793.74	293719.36	LIMIT OF DISTURBANCE

1

REV	ISSUED FOR	DATE	BY
1	ADDENDUM NO. 16	JUN 24	MWM
0	ADDENDUM NO. 12	MAY 24	MWM

PROJECT ENGINEER:	K. BARRETT
DESIGNED BY:	J. RIVAS
DRAWN BY:	W. STRZEPKA
CHECKED BY:	D. SHEERAN

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE 0 1/2" 1"

COMMONWEALTH OF MASSACHUSETTS
DANIEL J. SHEERAN
CIVIL
No. 58423
REGISTERED PROFESSIONAL ENGINEER
6/19/2024

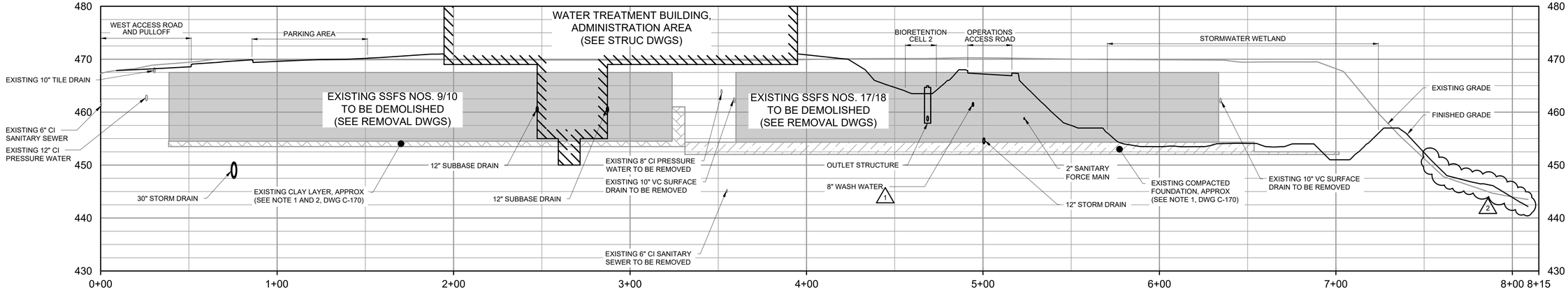
Hazen
HAZEN AND SAWYER
100 GREAT MEADOW ROAD, SUITE 702
WETHERSFIELD, CT 06109

SPRINGFIELD WATER AND SEWER COMMISSION

WEST PARISH WATER TREATMENT PLANT

CIVIL
STAKING TABLES
LIMIT OF DISTURBANCE

DATE: FEBRUARY 2024
HAZEN NO.: 90398-004
CONTRACT NO.: 24-51
DRAWING NUMBER: C-168



PROFILE C

HORIZONTAL SCALE: 1" = 30'
VERTICAL SCALE = 1" = 10'

SCALE: 1" = 10'

SCALE: 1" = 30'

REV	ISSUED FOR	DATE	BY
2	ADDENDUM NO. 16	JUN 24	MWM
1	ADDENDUM NO. 12	MAY 24	MWM
0	ISSUED FOR BIDS	FEB 24	MWM

PROJECT ENGINEER:	K. BARRETT
DESIGNED BY:	J. RIVAS
DRAWN BY:	K. ROBBINS
CHECKED BY:	D. SHEERAN

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE (0, 1/2", 1")

COMMONWEALTH OF MASSACHUSETTS
DANIEL J. SHEERAN
CIVIL
No. 58423
REGISTERED PROFESSIONAL ENGINEER
6/19/2024

Hazen

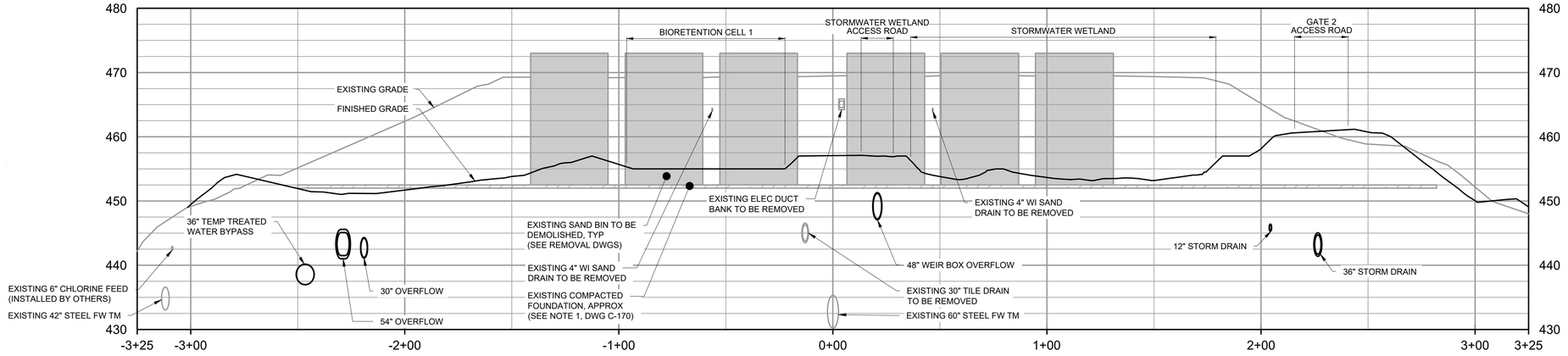
HAZEN AND SAWYER
100 GREAT MEADOW ROAD, SUITE 702
WETHERSFIELD, CT 06109

SPRINGFIELD WATER AND SEWER COMMISSION

WEST PARISH WATER TREATMENT PLANT

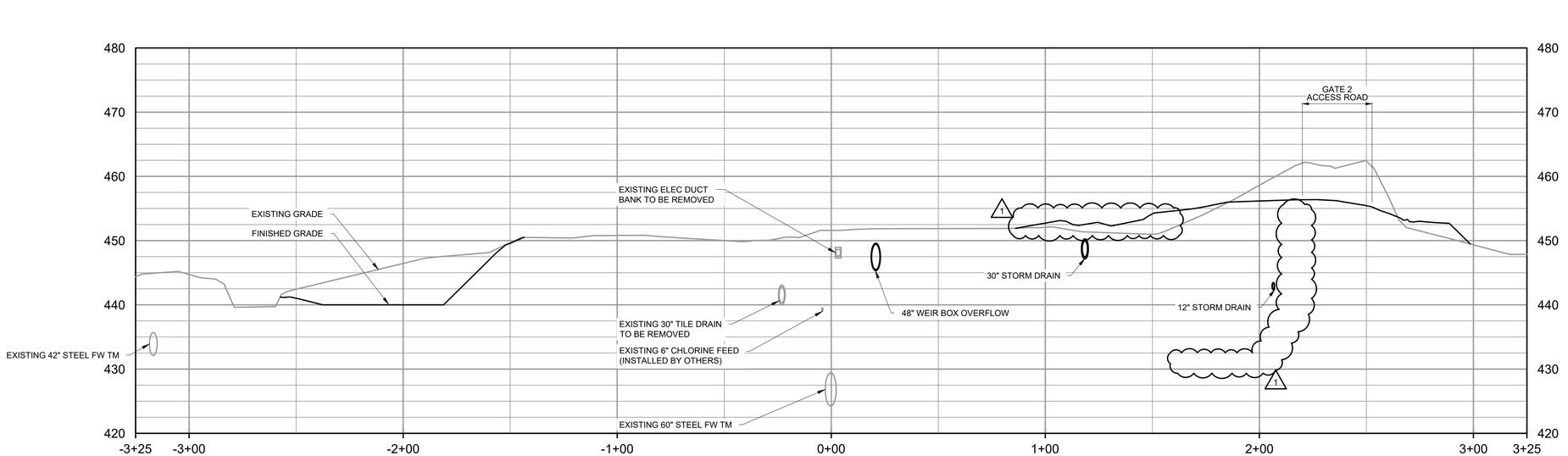
CIVIL
SITE SECTIONS - SHEET 2

DATE: FEBRUARY 2024
HAZEN NO.: 90398-004
CONTRACT NO.: 24-51
DRAWING NUMBER: C-172



SITE SECTION - STA 6+70

HORIZONTAL SCALE: 1" = 30'
VERTICAL SCALE = 1" = 10'



SITE SECTION - STA 7+50

HORIZONTAL SCALE: 1" = 30'
VERTICAL SCALE = 1" = 10'

SCALE: 1" = 10' 10 5 0 10'

SCALE: 1" = 30' 30 15 0 30'

REV	ISSUED FOR	DATE	BY
1	ADDENDUM NO. 16	JUN 24	MWM
0	ISSUED FOR BIDS	FEB 24	MWM

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE (0 1/2" 1")

PROJECT ENGINEER:	K. BARRETT
DESIGNED BY:	J. RIVAS
DRAWN BY:	K. ROBBINS
CHECKED BY:	D. SHEERAN

COMMONWEALTH OF MASSACHUSETTS
DANIEL J. SHEERAN
CIVIL
No. 58423
REGISTERED PROFESSIONAL ENGINEER
6/19/2024

Hazen

HAZEN AND SAWYER
100 GREAT MEADOW ROAD, SUITE 702
WETHERSFIELD, CT 06109

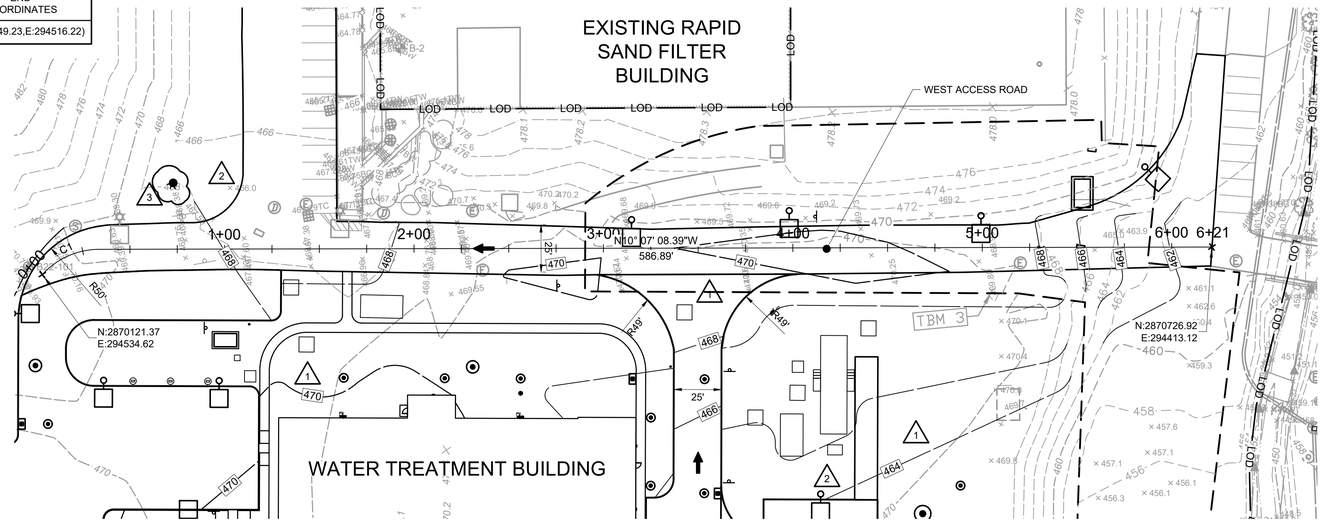
SPRINGFIELD WATER AND SEWER COMMISSION

WEST PARISH WATER TREATMENT PLANT

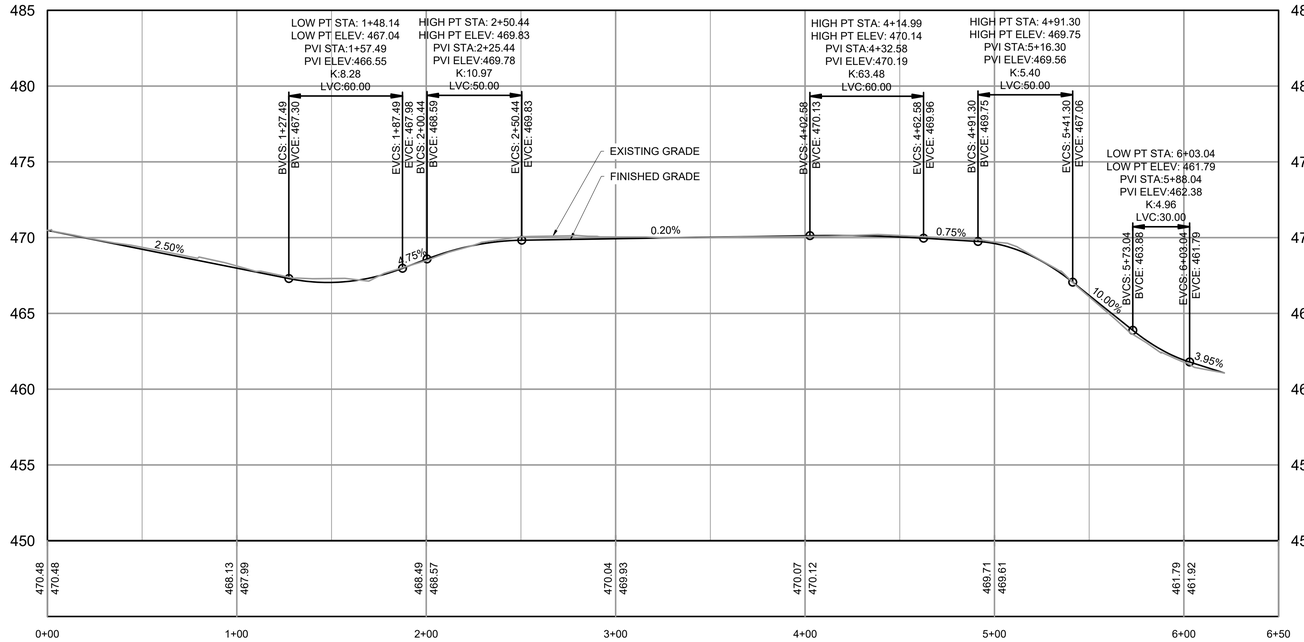
CIVIL
SITE SECTIONS - SHEET 7

DATE:	FEBRUARY 2024
HAZEN NO.:	90398-004
CONTRACT NO.:	24-51
DRAWING NUMBER:	C-177

CURVE TABLE					
CURVE NO.	RADIUS (FT)	LENGTH (FT)	CHORD DIRECTION	START COORDINATES	END COORDINATES
C1	40.64	34.41	N33° 26' 21.17"W	(N:2870121.37,E:294534.62)	(N:2870149.23,E:294516.22)



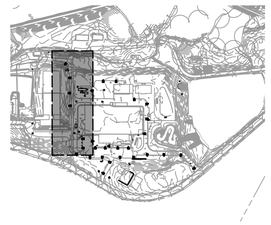
PLAN
SCALE: 1" = 40'



WEST ACCESS ROAD PROFILE
HORIZONTAL SCALE: 1" = 40'
VERTICAL SCALE: 1" = 5'

NOTES:

1. BELOW GRADE INFRASTRUCTURE AND YARD PIPING NOT SHOWN FOR CLARITY. SEE YARD PIPING DRAWINGS C-140 TO C-145.



KEY MAP
NTS

SCALE: 1" = 5'
5 2.5 0 5'

SCALE: 1" = 40'
40 20 0 40'

REV	ISSUED FOR	DATE	BY
3	ADDENDUM NO. 16	JUN 24	MWM
2	ADDENDUM NO. 4	APR 24	MWM
1	ADDENDUM NO. 2	MAR 24	MWM
0	ISSUED FOR BIDS	FEB 24	MWM

PROJECT ENGINEER:	K. BARRETT
DESIGNED BY:	J. RIVAS
DRAWN BY:	K. ROBBINS
CHECKED BY:	D. SHEERAN
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE	0 1/2" 1"

COMMONWEALTH OF MASSACHUSETTS
DANIEL J. SHEERAN
CIVIL
No. 58423
REGISTERED PROFESSIONAL ENGINEER
6/19/2024

Hazen
HAZEN AND SAWYER
100 GREAT MEADOW ROAD, SUITE 702
WETHERSFIELD, CT 06109

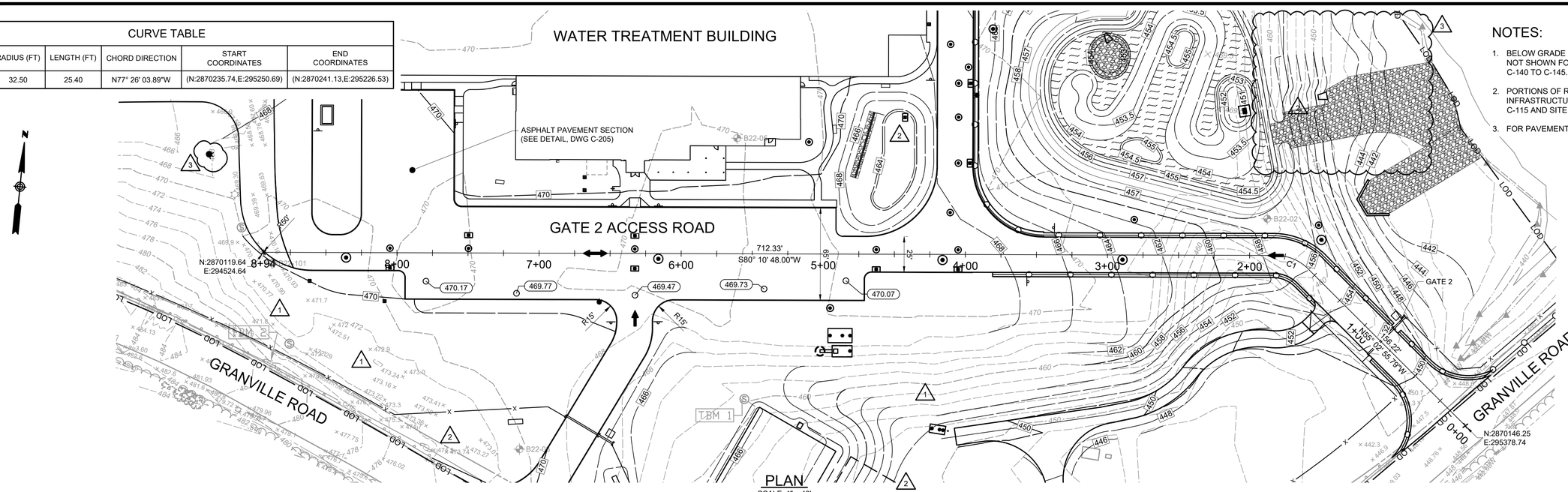
SPRINGFIELD WATER AND SEWER COMMISSION

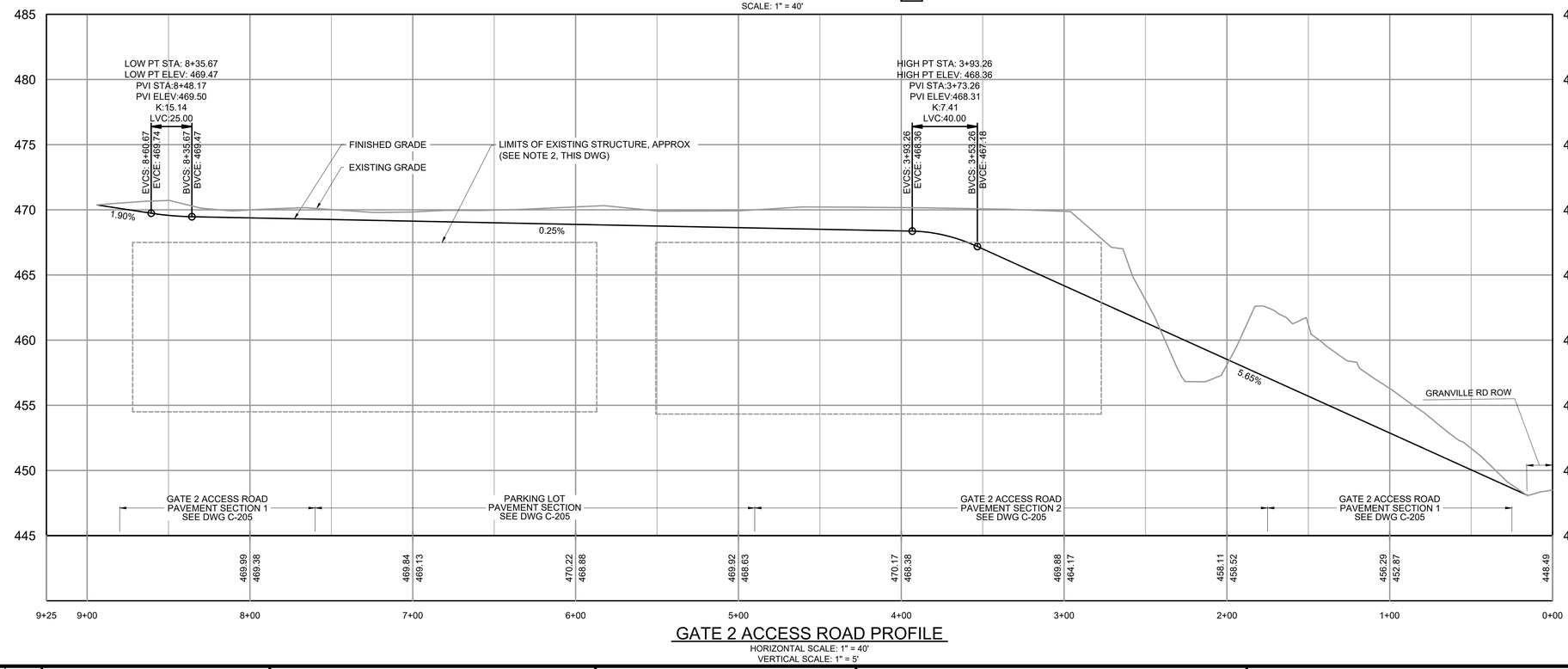
WEST PARISH WATER TREATMENT PLANT

CIVIL
ACCESS ROAD PLAN AND PROFILE
SHEET 2

DATE:	FEBRUARY 2024
HAZEN NO.:	90398-004
CONTRACT NO.:	24-51
DRAWING NUMBER:	C-202

CURVE TABLE					
CURVE NO.	RADIUS (FT)	LENGTH (FT)	CHORD DIRECTION	START COORDINATES	END COORDINATES
C1	32.50	25.40	N77° 26' 03.89"W	(N:2870235.74,E:295250.69)	(N:2870241.13,E:295226.53)



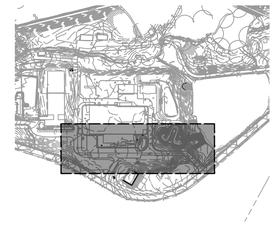


GATE 2 ACCESS ROAD PROFILE

HORIZONTAL SCALE: 1" = 40'
VERTICAL SCALE: 1" = 5'

NOTES:

1. BELOW GRADE INFRASTRUCTURE AND YARD PIPING NOT SHOWN FOR CLARITY. SEE YARD PIPING DRAWINGS C-140 TO C-145.
2. PORTIONS OF ROAD TO BE INSTALLED OVER EXISTING INFRASTRUCTURE. SEE DEMOLITION DWGS C-110 TO C-115 AND SITE SECTIONS C-170 TO C-176.
3. FOR PAVEMENT CROSS-SECTIONS, SEE DWG C-205.



KEY MAP
NTS

SCALE: 1" = 5'
5 2.5 0 5'

SCALE: 1" = 40'
40 20 0 40'

REV	ISSUED FOR	DATE	BY
3	ADDENDUM NO. 16	JUN 24	MWM
2	ADDENDUM NO. 12	MAY 24	MWM
1	ADDENDUM NO. 4	APR 24	MWM
0	ISSUED FOR BIDS	FEB 24	MWM

PROJECT ENGINEER: K. BARRETT
DESIGNED BY: J. RIVAS
DRAWN BY: K. ROBBINS
CHECKED BY: D. SHEERAN
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE 0 1/2" 1"

COMMONWEALTH OF MASSACHUSETTS
DANIEL J. SHEERAN
CIVIL
No. 58423
REGISTERED PROFESSIONAL ENGINEER
6/17/2024

Hazen
HAZEN AND SAWYER
100 GREAT MEADOW ROAD, SUITE 702
WETHERSFIELD, CT 06109

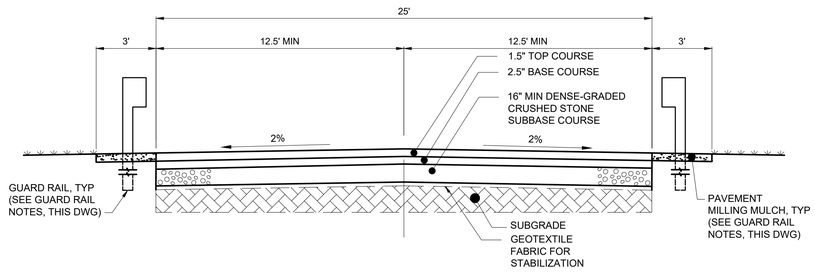
SPRINGFIELD WATER AND SEWER COMMISSION

WEST PARISH WATER TREATMENT PLANT

CIVIL
ACCESS ROAD PLAN AND PROFILE
SHEET 3

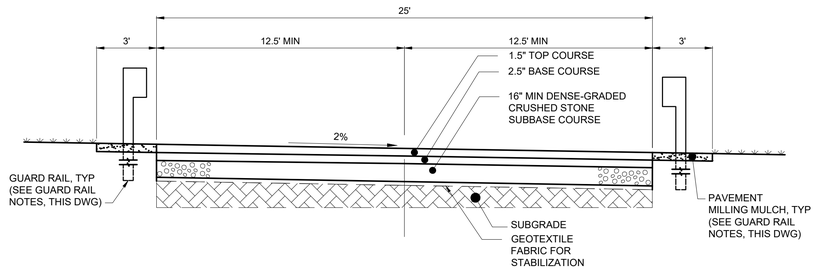
DATE: FEBRUARY 2024
HAZEN NO.: 90398-004
CONTRACT NO.: 24-51
DRAWING NUMBER: C-203

File: C:\USERS\KROBBINS\DC\ACCDOCS\HAZEN AND SAWYER\90398-004_WEST PARISH FILTER WTF\PROJECT FILES\CIVIL\C-203 Saved by KROBBINS Save date: 6/14/2024 12:51 PM
PLOT DATE: 6/14/2024 5:37 PM BY: KROBBINS



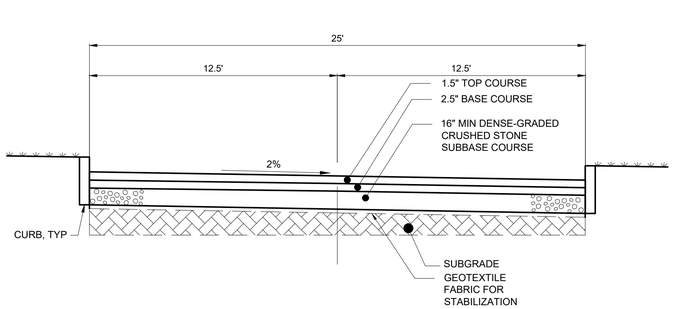
GATE 2 ACCESS ROAD PAVEMENT SECTION 1

NTS



GATE 2 ACCESS ROAD PAVEMENT SECTION 2

NTS

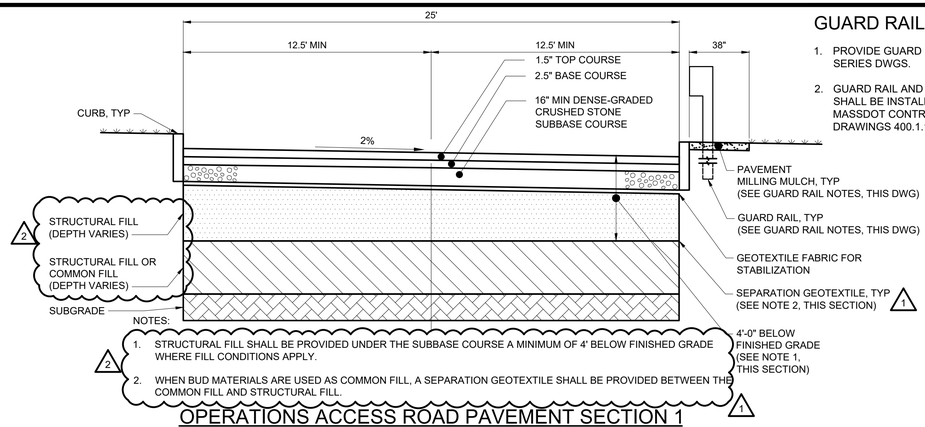


GATE 3 ACCESS ROAD PAVEMENT SECTION

NTS

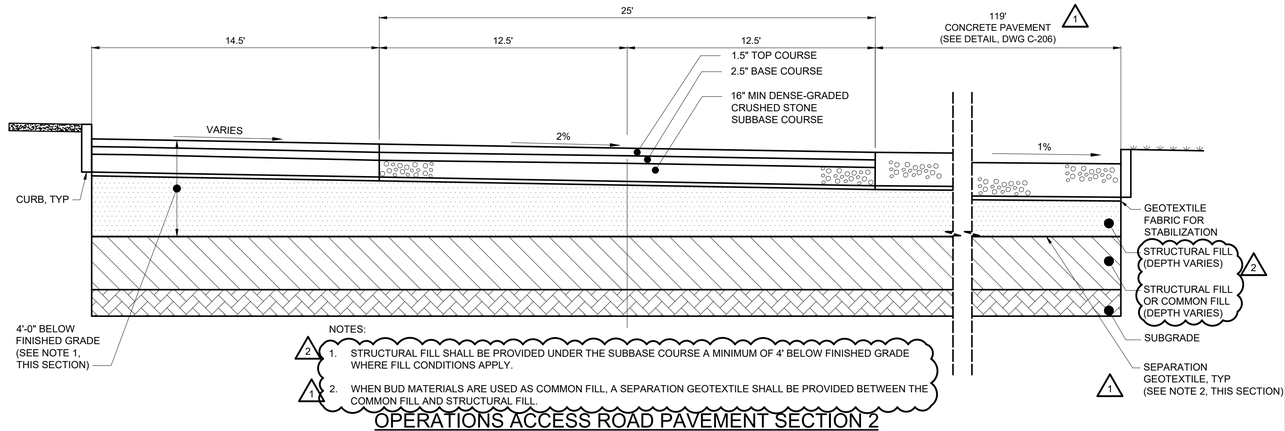
GUARD RAIL NOTES:

1. PROVIDE GUARD RAIL AS SHOWN ON C-150 SERIES DWGS.
2. GUARD RAIL AND PAVEMENT MILLING MULCH SHALL BE INSTALLED IN ACCORDANCE WITH MASSDOT CONTRUCTION STANDARD DETAIL DRAWINGS 400.1.1 AND 400.1.6.



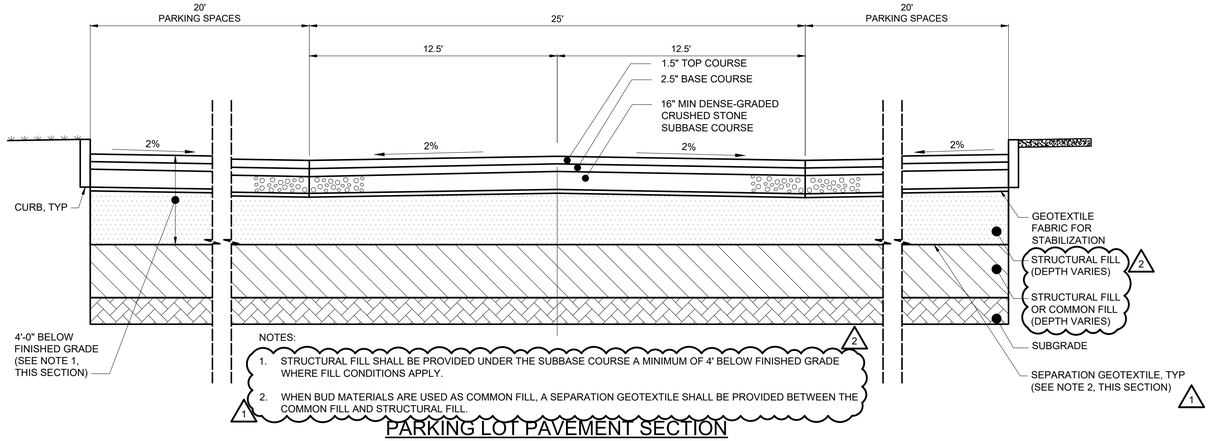
OPERATIONS ACCESS ROAD PAVEMENT SECTION 1

NTS



OPERATIONS ACCESS ROAD PAVEMENT SECTION 2

NTS



PARKING LOT PAVEMENT SECTION

NTS

REV	ISSUED FOR	DATE	BY
2	ADDENDUM NO. 16	JUN 24	MWM
1	ADDENDUM NO. 12	MAY 24	MWM
0	ISSUED FOR BIDS	FEB 24	MWM

PROJECT ENGINEER:	K. BARRETT
DESIGNED BY:	J. RIVAS
DRAWN BY:	K. ROBBINS
CHECKED BY:	D. SHEERAN

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE (0 1/2" 1")

COMMONWEALTH OF MASSACHUSETTS
DANIEL J. SHEERAN
CIVIL
No. 58423
REGISTERED PROFESSIONAL ENGINEER
6/19/2024

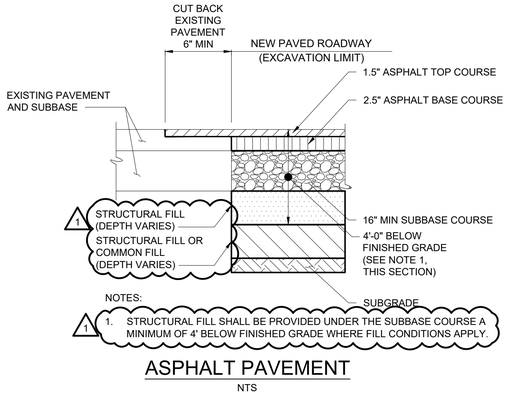
Hazen
HAZEN AND SAWYER
100 GREAT MEADOW ROAD, SUITE 702
WETHERSFIELD, CT 06109

SPRINGFIELD WATER AND SEWER COMMISSION

WEST PARISH WATER TREATMENT PLANT

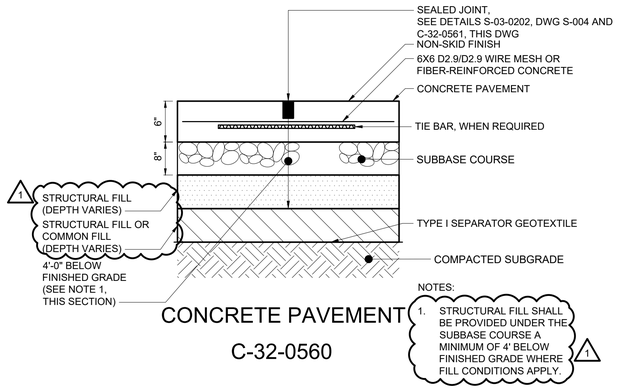
CIVIL
ROADWAY SECTIONS 1

DATE:	FEBRUARY 2024
HAZEN NO.:	90398-004
CONTRACT NO.:	24-51
DRAWING NUMBER:	C-205



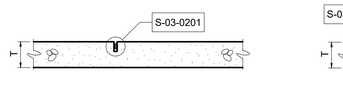
ASPHALT PAVEMENT

NTS

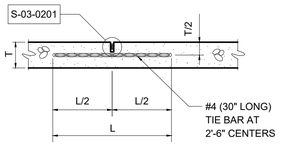


CONCRETE PAVEMENT

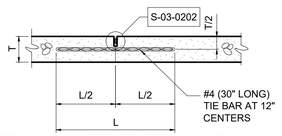
C-32-0560



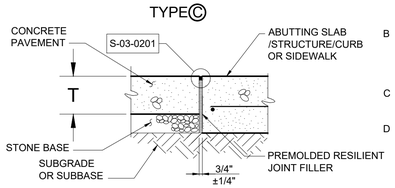
TRANSVERSE CONTRACTION JOINT TYPE(A)



LONGITUDINAL CONTRACTION JOINT TYPE(B)



INTERIM OR PLANNED TRANSVERSE OR LONGITUDINAL CONSTRUCTION JOINT TYPE(C)



EXPANSION (ISOLATION) JOINT TYPE(D)

NOTES:

A TRANSVERSE AND LONGITUDINAL CONSTRUCTION JOINTS, TYPE C, SHALL BE CONSTRUCTED AT THE END OF EACH DAYS OPERATIONS (PLANNED JOINT) OR WHENEVER THE PLACING OF CONCRETE IS SUSPENDED FOR MORE THAN 30 MINUTES (INTERIM JOINT). AN APPROVED HEADER SHALL BE USED AT INTERIM JOINTS AND SHALL BE DESIGNED TO PERMIT THE PLACEMENT OF TIE BARS AND SHALL HOLD SUCH BARS IN THEIR CORRECT LOCATIONS.

B PLANNED TRANSVERSE AND LONGITUDINAL CONSTRUCTION JOINTS SHALL BE LOCATED AT THE SAME SPACING REQUIRED FOR CONTRACTION JOINTS.

C VERTICAL TOLERANCE FOR PLACEMENT OF DOWELS OR TIE BARS SHALL BE 1/4".

D JOINT TREATMENT AS INDICATED BY DETAIL S-03-0202 IS NOT REQUIRED FOR INTERIM JOINTS.

CONCRETE PAVEMENT CONTROL JOINTS

C-32-0561

REV	ISSUED FOR	DATE	BY
1	ADDENDUM NO. 16	JUN 24	MWM
0	ADDENDUM NO. 12	MAY 24	MWM

PROJECT ENGINEER:	K. BARRETT
DESIGNED BY:	J. RIVAS
DRAWN BY:	K. ROBBINS
CHECKED BY:	D. SHEERAN

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE — 0 1/2" 1"

COMMONWEALTH OF MASSACHUSETTS
DANIEL J. SHEERAN
CIVIL
No. 58423
REGISTERED PROFESSIONAL ENGINEER
6/19/2024

Hazen
HAZEN AND SAWYER
100 GREAT MEADOW ROAD, SUITE 702
WETHERSFIELD, CT 06109

SPRINGFIELD WATER AND SEWER COMMISSION

WEST PARISH WATER TREATMENT PLANT

CIVIL
ROADWAY DETAILS

DATE:	FEBRUARY 2024
HAZEN NO.:	90398-004
CONTRACT NO.:	24-51
DRAWING NUMBER:	C-206

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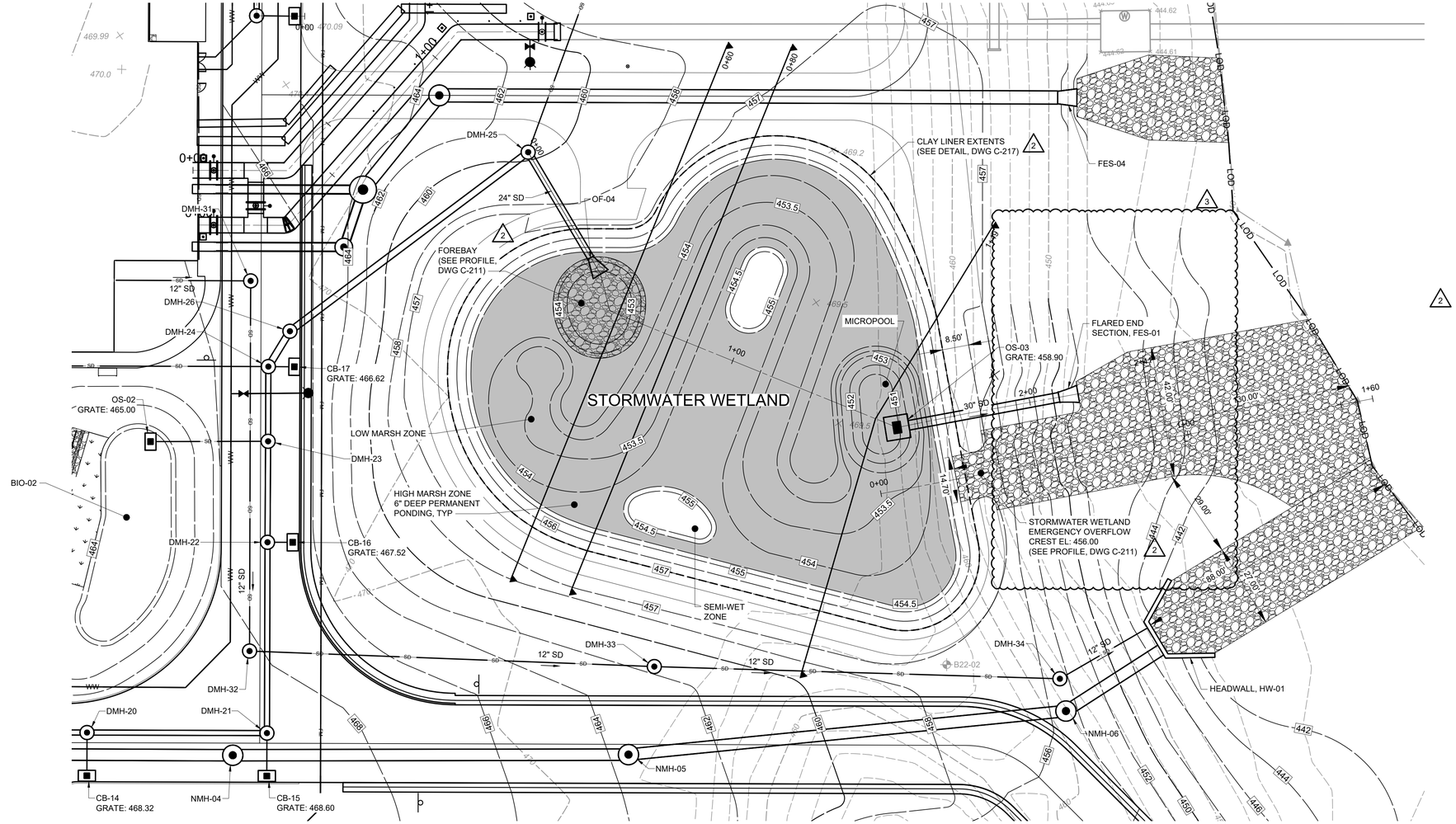
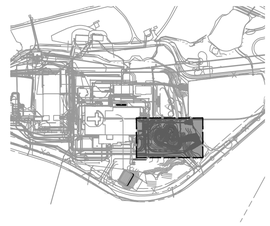
PLOT DATE: 6/14/2024 12:31 PM BY: KROBBINS

NOTES:

1. SEE DRAWING C-211 FOR STORMWATER WETLAND POND PROFILE AND CROSS SECTIONS.
2. SEE DRAWING L-107 FOR LANDSCAPE PLANTING ZONES.
3. SEE NOTE 4 ON DRAWING C-120.





KEY MAP
NTS

SCALE: 1" = 20'

20 10 0 20'

REV	ISSUED FOR	DATE	BY
3	ADDENDUM NO. 16	JUN 24	MWM
2	ADDENDUM NO. 12	MAY 24	MWM
1	ADDENDUM NO. 3	MAR 24	MWM
0	ISSUED FOR BIDS	FEB 24	MWM

PROJECT ENGINEER:	K. BARRETT
DESIGNED BY:	J. RIVAS
DRAWN BY:	K. ROBBINS
CHECKED BY:	D. SHEERAN

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE 0 1/2" 1"

COMMONWEALTH OF MASSACHUSETTS
DANIEL J. SHEERAN
CIVIL
No. 58423
REGISTERED PROFESSIONAL ENGINEER
6/19/2024

Hazen
HAZEN AND SAWYER
100 GREAT MEADOW ROAD, SUITE 702
WETHERSFIELD, CT 06109

SPRINGFIELD WATER AND SEWER COMMISSION

WEST PARISH WATER TREATMENT PLANT

CIVIL
STORMWATER WETLAND POND PLAN

DATE:	FEBRUARY 2024
HAZEN NO.:	90398-004
CONTRACT NO.:	24-51
DRAWING NUMBER:	C-210

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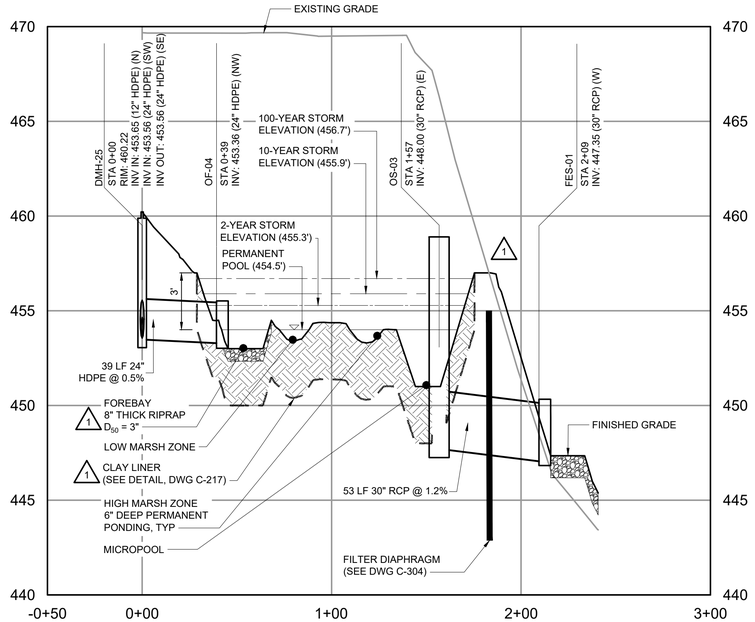
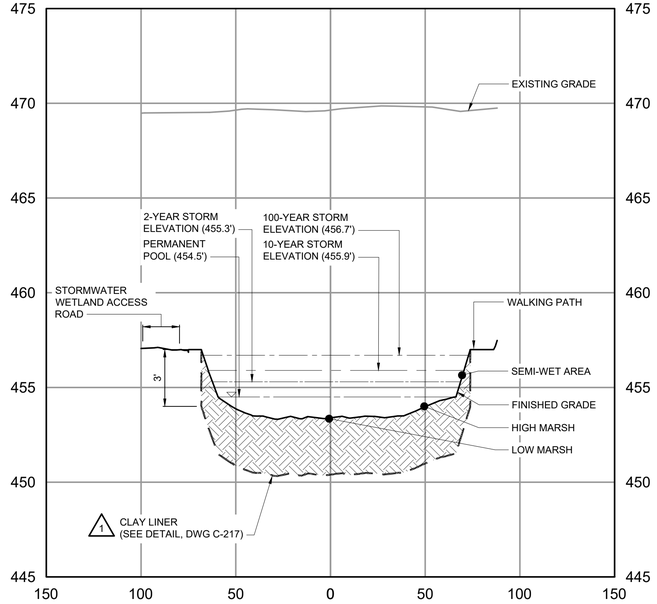


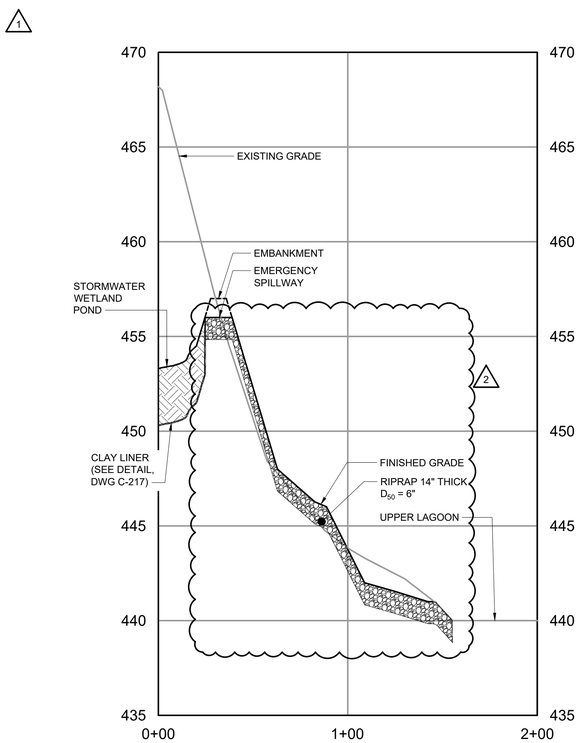
PROFILE - STORMWATER WETLAND POND

HORIZONTAL SCALE: 1" = 40'
VERTICAL SCALE = 1" = 4'



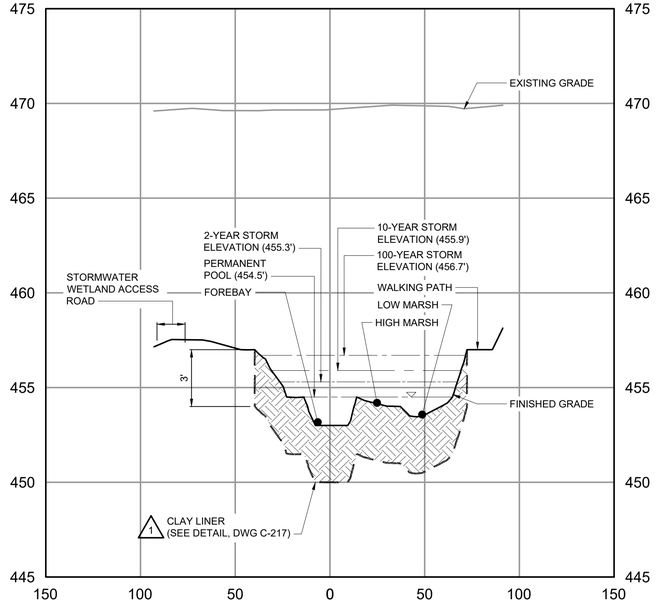
STORMWATER WETLAND POND SECTION - STA 0+80

HORIZONTAL SCALE: 1" = 40'
VERTICAL SCALE = 1" = 4'



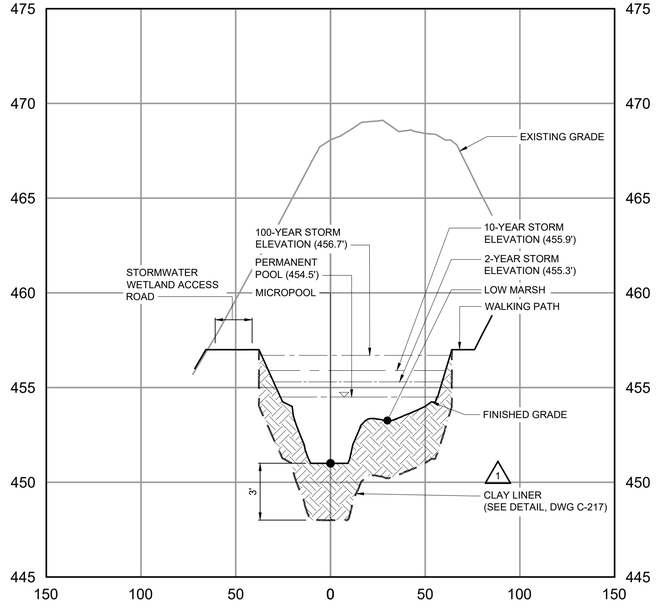
PROFILE - STORMWATER WETLAND EMERGENCY OVERFLOW

HORIZONTAL SCALE: 1" = 40'
VERTICAL SCALE = 1" = 4'



STORMWATER WETLAND POND SECTION - STA 0+60

HORIZONTAL SCALE: 1" = 40'
VERTICAL SCALE = 1" = 4'



STORMWATER WETLAND POND SECTION - STA 1+32

HORIZONTAL SCALE: 1" = 40'
VERTICAL SCALE = 1" = 4'

NOTES:

1. SEE DRAWING C-210 FOR STORMWATER WETLAND POND PLAN.
2. SEE DRAWING L-107 FOR LANDSCAPE PLANTING ZONES.
3. SEE DRAWINGS C-132, C-134 FOR STORM DRAIN PLANS.
4. FOR EXISTING GRADE AND SITE CONDITIONS, SEE DWG C-000 GENERAL NOTES NOTE 1.

HORIZONTAL SCALE: 1" = 40
40 20 0 40
VERTICAL SCALE: 1"=4'
4 2 0 4

REV	ISSUED FOR	DATE	BY
2	ADDENDUM NO. 16	JUN 24	MWM
1	ADDENDUM NO. 12	MAY 24	MWM
0	ISSUED FOR BIDS	FEB 24	MWM

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE (0 1/2" 1")

PROJECT ENGINEER:	K. BARRETT
DESIGNED BY:	J. RIVAS
DRAWN BY:	J. HARKINS
CHECKED BY:	D. SHEERAN

COMMONWEALTH OF MASSACHUSETTS
DANIEL J. SHEERAN
CIVIL
No. 58423
REGISTERED PROFESSIONAL ENGINEER
6/17/2024

Hazen
HAZEN AND SAWYER
100 GREAT MEADOW ROAD, SUITE 702
WETHERSFIELD, CT 06109

SPRINGFIELD WATER AND SEWER COMMISSION

WEST PARISH WATER TREATMENT PLANT

CIVIL
STORMWATER WETLAND POND
PROFILE AND CROSS SECTIONS

DATE:	FEBRUARY 2024
HAZEN NO.:	90398-004
CONTRACT NO.:	24-51
DRAWING NUMBER:	C-211

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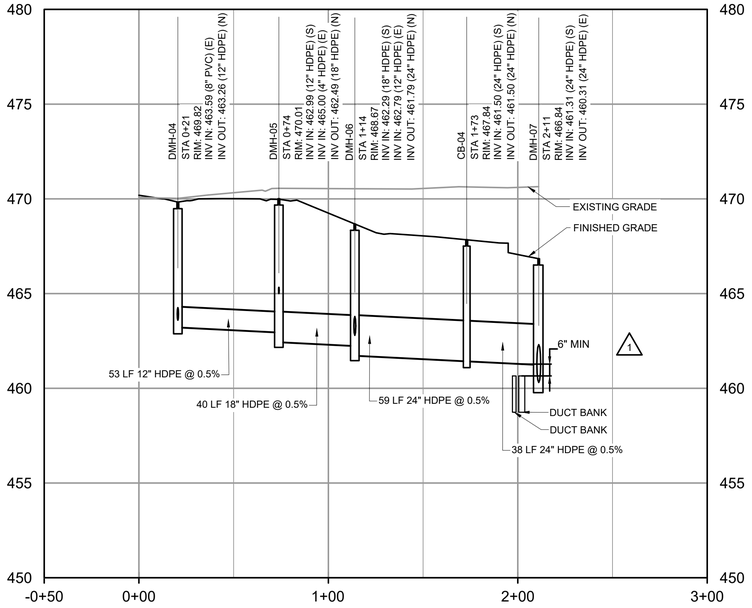
PLOT DATE: 6/14/2024 12:15 PM BY: KROBBINS

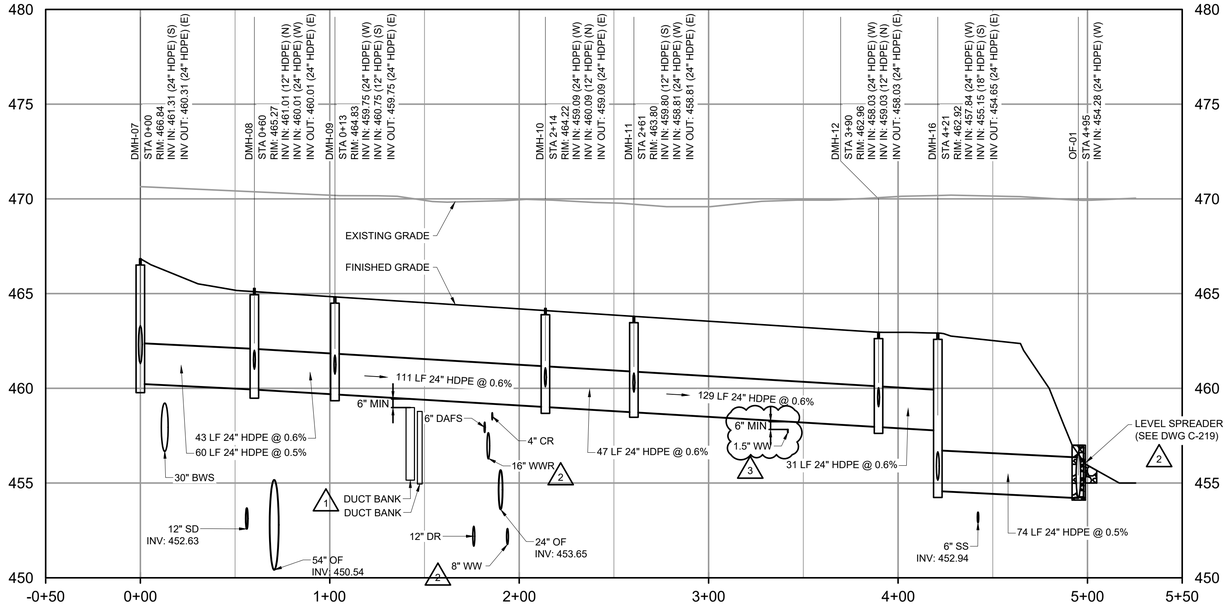
NOTES:

1. SEE DRAWINGS C-132 THROUGH C-134 FOR STORM DRAIN PLANS.
2. FOR EXISTING GRADE AND SITE CONDITIONS, SEE DWG C-000 GENERAL NOTES NOTE 1.
3. FOR TRENCH DETAILS, SEE DWG C-317.



PROFILE - DMH-04 TO DMH-07

HORIZONTAL SCALE: 1" = 40'
VERTICAL SCALE = 1" = 4'



PROFILE - DMH-07 TO OF-01

HORIZONTAL SCALE: 1" = 40'
VERTICAL SCALE = 1" = 4'

HORIZONTAL SCALE: 1" = 40

40 20 0 40

VERTICAL SCALE: 1"=4'

REV	ISSUED FOR	DATE	BY
3	ADDENDUM NO. 16	JUN 24	MWM
2	ADDENDUM NO. 12	MAY 24	MWM
1	ADDENDUM NO. 3	MAR 24	MWM
0	ISSUED FOR BIDS	FEB 24	MWM

PROJECT ENGINEER:	K. BARRETT
DESIGNED BY:	J. RIVAS
DRAWN BY:	K. ROBBINS
CHECKED BY:	D. SHEERAN
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE	0 1/2" 1"

COMMONWEALTH OF MASSACHUSETTS
DANIEL J. SHEERAN
CIVIL
No. 58423
REGISTERED PROFESSIONAL ENGINEER
6/17/2024

Hazen
HAZEN AND SAWYER
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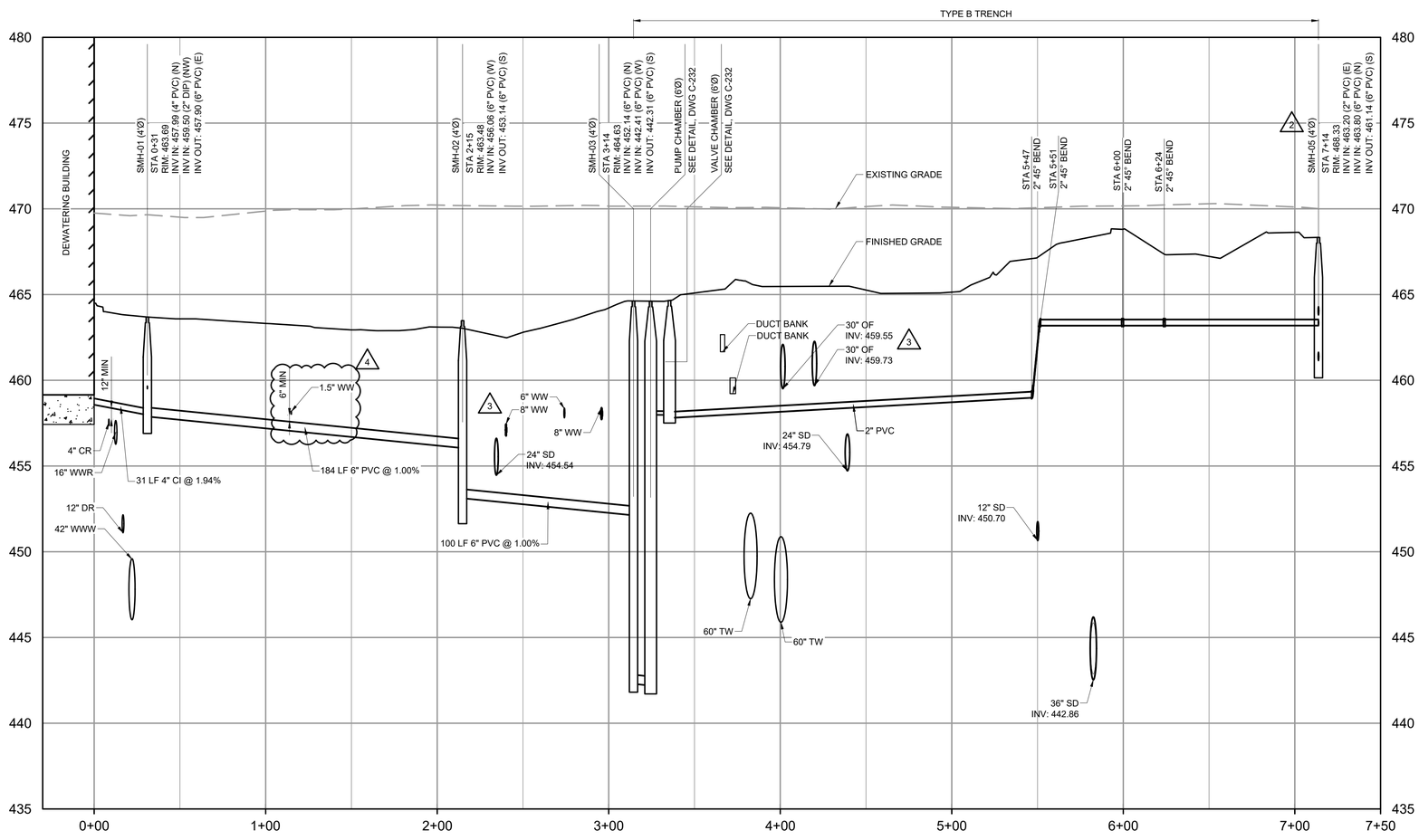
SPRINGFIELD WATER AND SEWER COMMISSION

WEST PARISH WATER TREATMENT PLANT

CIVIL
STORM DRAIN PROFILES
SHEET 2

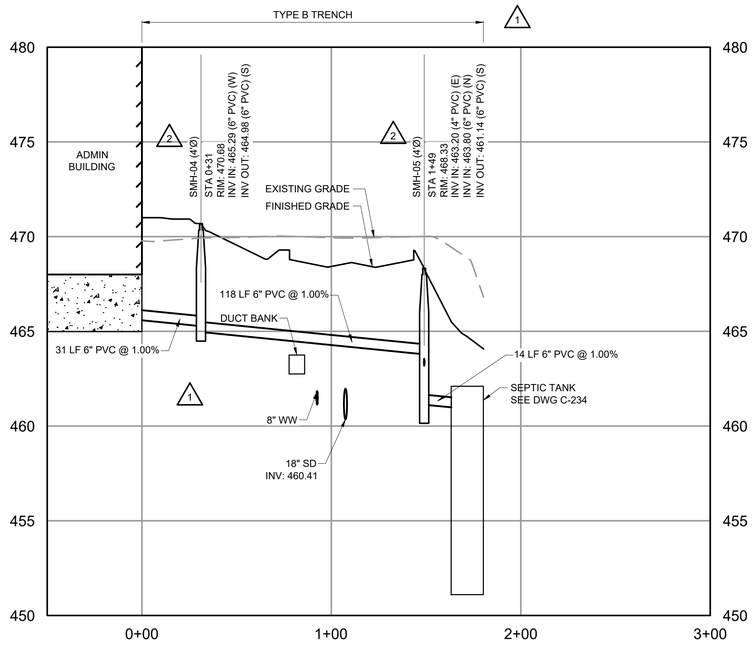
DATE:	FEBRUARY 2024
HAZEN NO.:	90398-004
CONTRACT NO.:	24-51
DRAWING NUMBER:	C-213

File: C:\USERS\KROBBINS\DOCUMENTS\ACCDOCS\HAZEN AND SAWYER\90398-004_WEST PARISH FILTER WTF\PROJECT FILES\CIVIL\C-213 Saved by KROBBINS Save date: 6/14/2024 10:46 AM
PLOT DATE: 6/14/2024 10:51 AM BY: KROBBINS



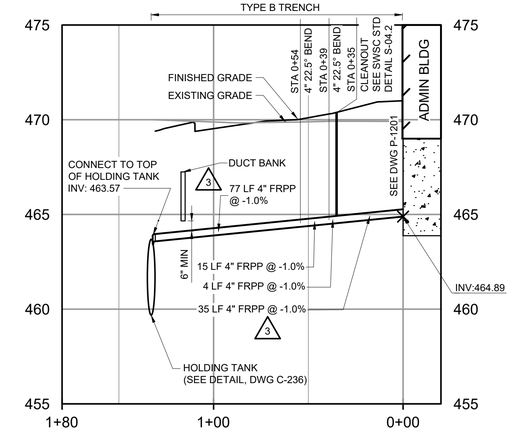
PROFILE - SANITARY DRAIN - DEWATERING BLDG TO SMH-08

HORIZONTAL SCALE: 1" = 40'
VERTICAL SCALE: 1" = 4'
FOR PLAN VIEW, SEE DWGS
C-141, C-142, C-143 AND C-144



PROFILE - SANITARY DRAIN - ADMIN BLDG TO SEPTIC FIELD

HORIZONTAL SCALE: 1" = 40'
VERTICAL SCALE: 1" = 4'
FOR PLAN VIEW, SEE DWGS
C-141, C-142, C-143 AND C-144



PROFILE - LAB SANITARY DRAIN PROFILE

HORIZONTAL SCALE: 1" = 40'
VERTICAL SCALE: 1" = 4'
FOR PLAN VIEW, SEE DWG C-141

HORIZONTAL SCALE: 1" = 40'
40 20 0 40'
4 2 0 4
VERTICAL SCALE: 1"=4'

REV	ISSUED FOR	DATE	BY
4	ADDENDUM NO. 16	JUN 24	MWM
3	ADDENDUM NO. 12	MAY 24	MWM
2	ADDENDUM NO. 4	APR 24	MWM
1	ADDENDUM NO. 3	MAR 24	MWM
0	ISSUED FOR BIDS	FEB 24	MWM

PROJECT ENGINEER: K. BARRETT
DESIGNED BY: L. WALLACE
DRAWN BY: J. HARKINS
CHECKED BY: D. SHEERAN
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE 0 1/2" 1"

COMMONWEALTH OF MASSACHUSETTS
DANIEL J. SHEERAN
CIVIL
No. 58423
REGISTERED PROFESSIONAL ENGINEER
6/17/2024

Hazen
HAZEN AND SAWYER
100 GREAT MEADOW ROAD, SUITE 702
WETHERSFIELD, CT 06109

SPRINGFIELD WATER AND SEWER COMMISSION

WEST PARISH WATER TREATMENT PLANT

CIVIL
SANITARY DRAIN PROFILES

DATE: FEBRUARY 2024
HAZEN NO.: 90398-004
CONTRACT NO.: 24-51
DRAWING NUMBER: C-231

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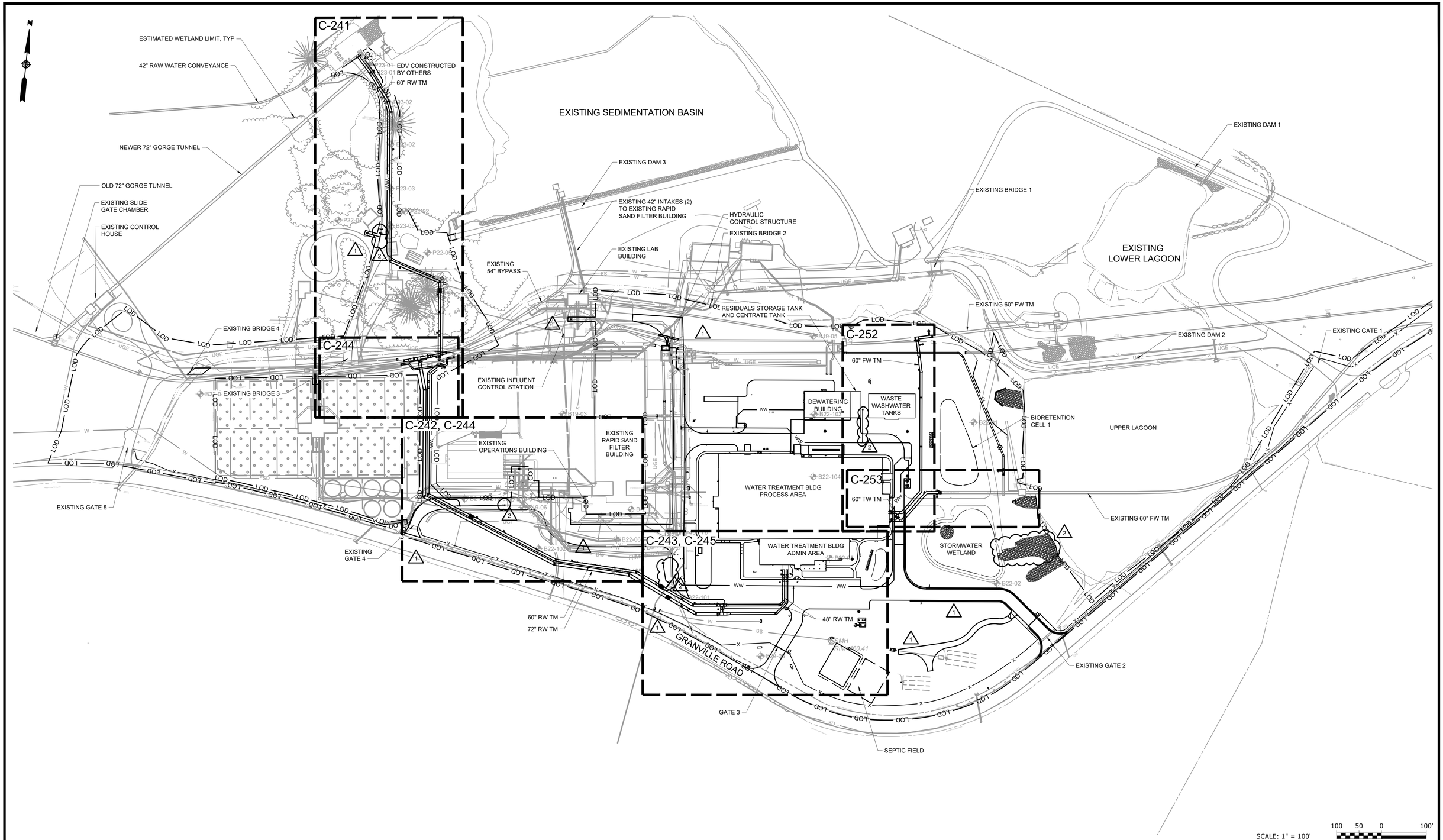

REV	ISSUED FOR	DATE	BY
2	ADDENDUM NO. 16	JUN 24	MWM
1	ADDENDUM NO. 12	MAY 24	MWM
0	ISSUED FOR BIDS	FEB 24	MWM

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE (0, 1/2", 1")

PROJECT ENGINEER:	K. BARRETT
DESIGNED BY:	L. WALLACE
DRAWN BY:	J. LU
CHECKED BY:	D. SHEERAN

COMMONWEALTH OF MASSACHUSETTS
DANIEL J. SHEERAN
CIVIL
No. 58423
REGISTERED PROFESSIONAL ENGINEER
6/17/2024

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HAZEN AND SAWYER
100 GREAT MEADOW ROAD, SUITE 702
WETHERSFIELD, CT 06109

SPRINGFIELD WATER AND SEWER COMMISSION

WEST PARISH WATER TREATMENT PLANT

CIVIL
OVERALL TRANSMISSION MAINS PLAN

DATE:	FEBRUARY 2024
HAZEN NO.:	90398-004
CONTRACT NO.:	24-51
DRAWING NUMBER:	C-240

File: C:\USERS\KROBBINS\DCA\CACHE\DOCS\HAZEN AND SAWYER\90398-004_WEST PARISH FILTER WTF\PROJECT FILES\CIVIL\C-240 Saved by KROBBINS Save date: 6/14/2024 12:00 PM
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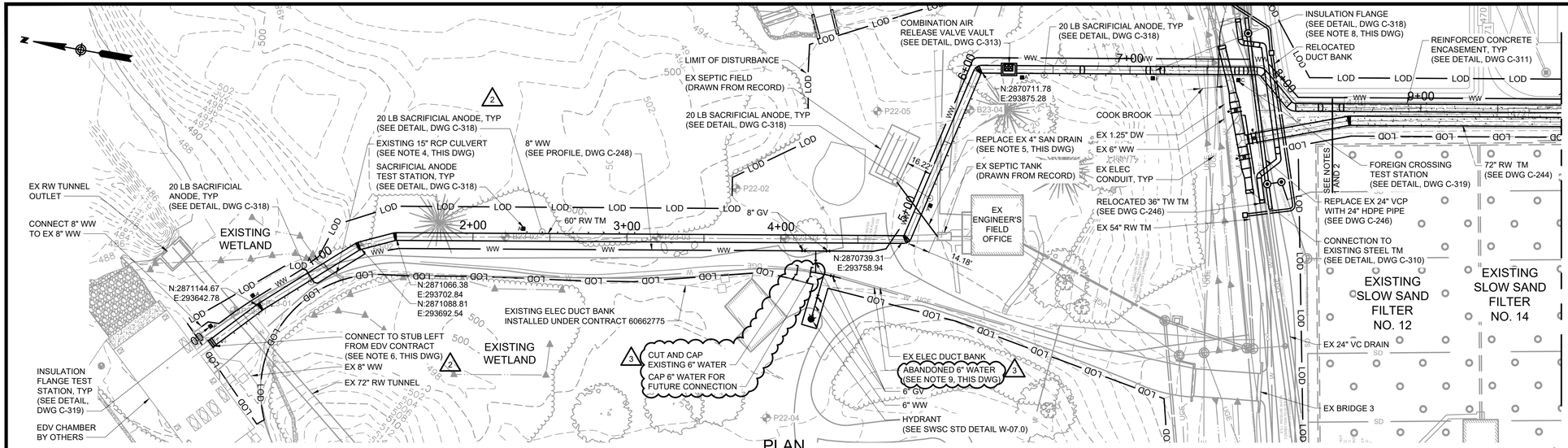
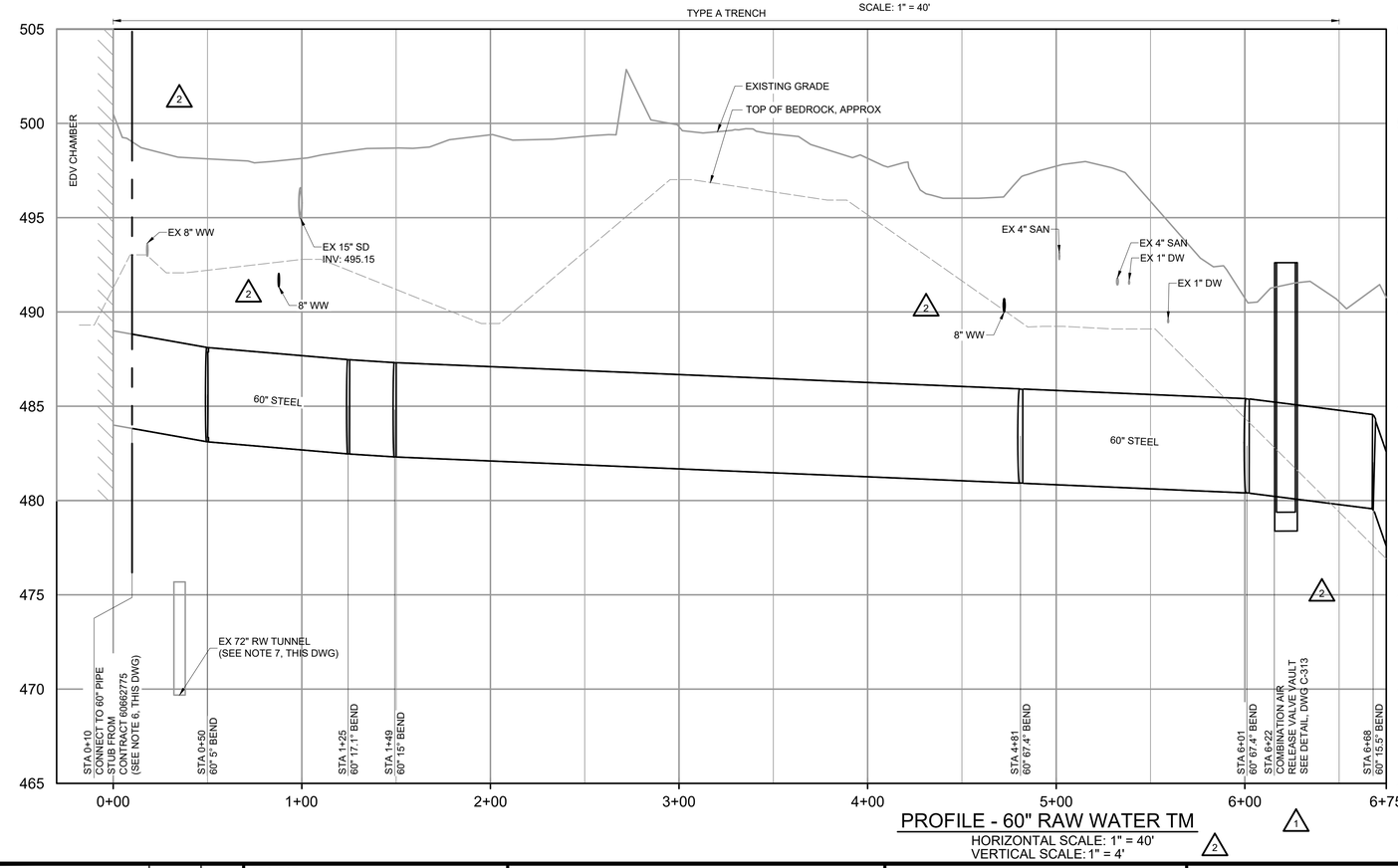
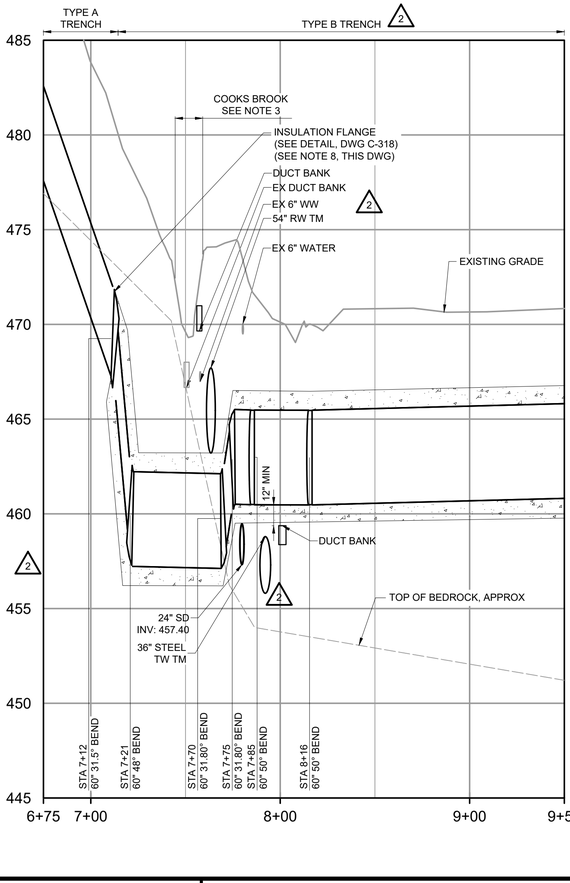


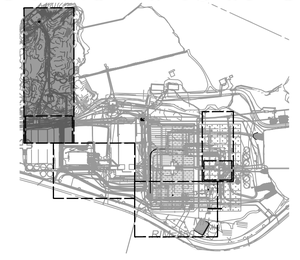
PLAN
SCALE: 1" = 40'



PROFILE - 60" RAW WATER TM
HORIZONTAL SCALE: 1" = 40'
VERTICAL SCALE: 1" = 4'



HORIZONTAL SCALE: 1" = 40'
VERTICAL SCALE: 1"=4'



KEY MAP
NTS

NOTES

1. CONTRACTOR SHALL USE THE TRENCH TYPES CALLED OUT ON THE PROFILES. SEE TRENCH DETAILS ON DRAWING C-317.
2. SEE SECTION ON DRAWING C-242.
3. CONTRACTOR TO BYPASS COOKS BROOK DURING CONSTRUCTION OF THE 60" RAW WATER TRANSMISSION MAIN. SEE DETAIL, DRAWING C-219.
4. EXISTING 15" CULVERT CONVEYS FLOW BETWEEN WETLANDS AND IS AN INTERMITTENT STREAM. CULVERT SHALL BE SUPPORTED AND PROTECTED DURING CONSTRUCTION.
5. CONTRACTOR SHALL SUPPORT AND PROTECT THE 4" SANITARY DRAIN FROM THE ENGINEER'S FIELD OFFICE TO THE SEPTIC FIELD DURING CONSTRUCTION OF THE RAW WATER TRANSMISSION MAIN. CONTRACTOR SHALL PROVIDE TEMPORARY PORTABLE BATHROOM FACILITIES OUTSIDE THE ENGINEER'S FIELD OFFICE DURING CONSTRUCTION OF THE RAW WATER TRANSMISSION MAIN AS A BACKUP IN THE EVENT THE SANITARY DRAIN IS DAMAGED.
6. CONTRACTOR SHALL REMOVE THE EXISTING BLIND FLANGE AND CONNECT TO THE EXISTING 60" STEEL FLANGE USING A COUPLING. CONTRACTOR SHALL INSTALL AN INSULATION FLANGE ON THE CONNECTION BETWEEN THE EXISTING PIPE SECTION AND THE NEW PIPE SECTION, SEE DETAIL ON DWG C-318.
7. EXISTING RAW WATER TUNNEL IS CARVED FROM ROCK AND LINED WITH CONCRETE. THE TOP OF THE TUNNEL IS APPROXIMATELY ELEVATION 476 AT THE CROSSING OF THE 60" RAW WATER TRANSMISSION MAIN.
8. INSULATION FLANGE TO BE INSTALLED AT PIPE JOINT WITHIN TWO FEET OF THE CONCRETE ENCASEMENT.
9. CONTRACTOR SHALL TEST THE ABANDONED 6" WATER PIPE FROM THE TIE-IN POINT TO THE TEE NEAR BRIDGE 3. THE CONTRACTOR SHALL WORK WITH THE OWNER TO LOCATE AND OPERATE THE CLOSEST VALVES TO FACILITATE TESTING.

MATCHLINE - SEE DWG NO. C-242

REV	ISSUED FOR	DATE	BY
3	ADDENDUM NO. 16	JUN 24	MWM
2	ADDENDUM NO. 12	MAY 24	MWM
1	ADDENDUM NO. 2	MAR 24	MWM
0	ISSUED FOR BIDS	FEB 24	MWM

PROJECT ENGINEER:	K. BARRETT
DESIGNED BY:	L. WALLACE
DRAWN BY:	L. WALLACE
CHECKED BY:	D. SHEERAN

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE (0, 1/2", 1")

COMMONWEALTH OF MASSACHUSETTS
DANIEL J. SHEERAN
CIVIL
No. 58423
REGISTERED PROFESSIONAL ENGINEER
6/17/2024

Hazen
HAZEN AND SAWYER
100 GREAT MEADOW ROAD, SUITE 702
WETHERSFIELD, CT 06109

SPRINGFIELD WATER AND SEWER COMMISSION

WEST PARISH WATER TREATMENT PLANT

CIVIL
RAW WATER TRANSMISSION MAIN
PLAN AND PROFILE - SHEET 1

DATE:	FEBRUARY 2024
HAZEN NO.:	90398-004
CONTRACT NO.:	24-51
DRAWING NUMBER:	C-241

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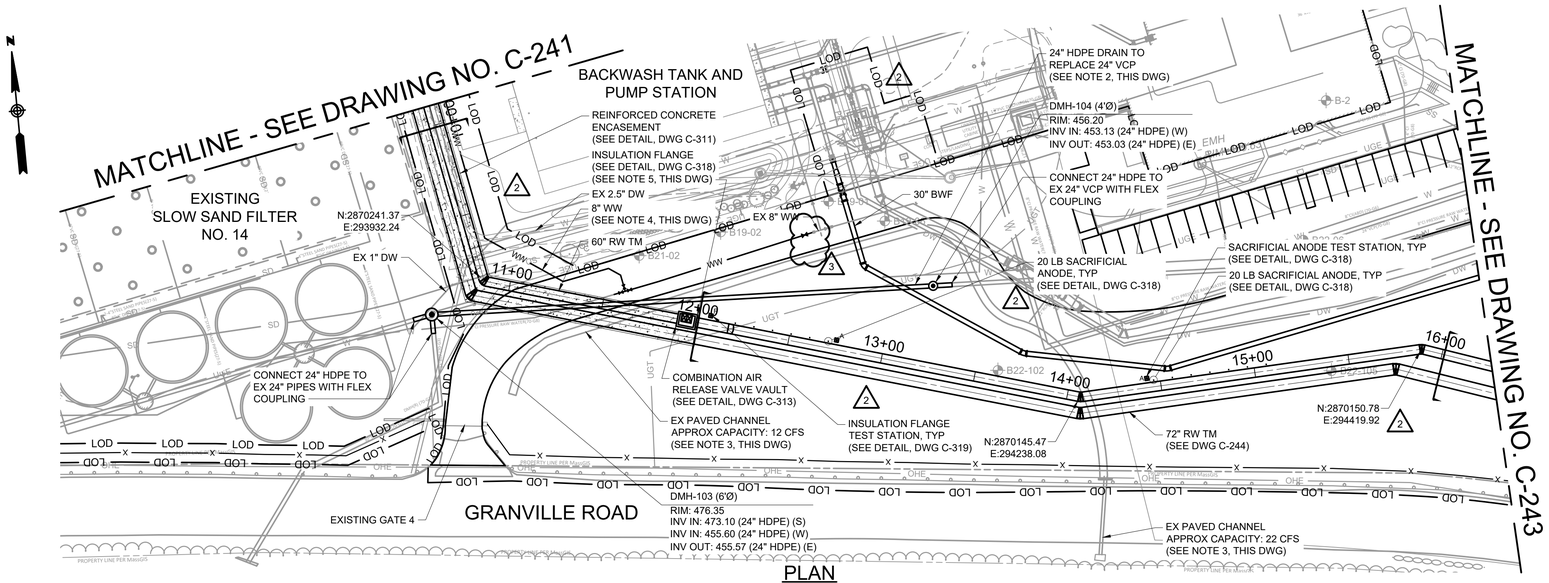
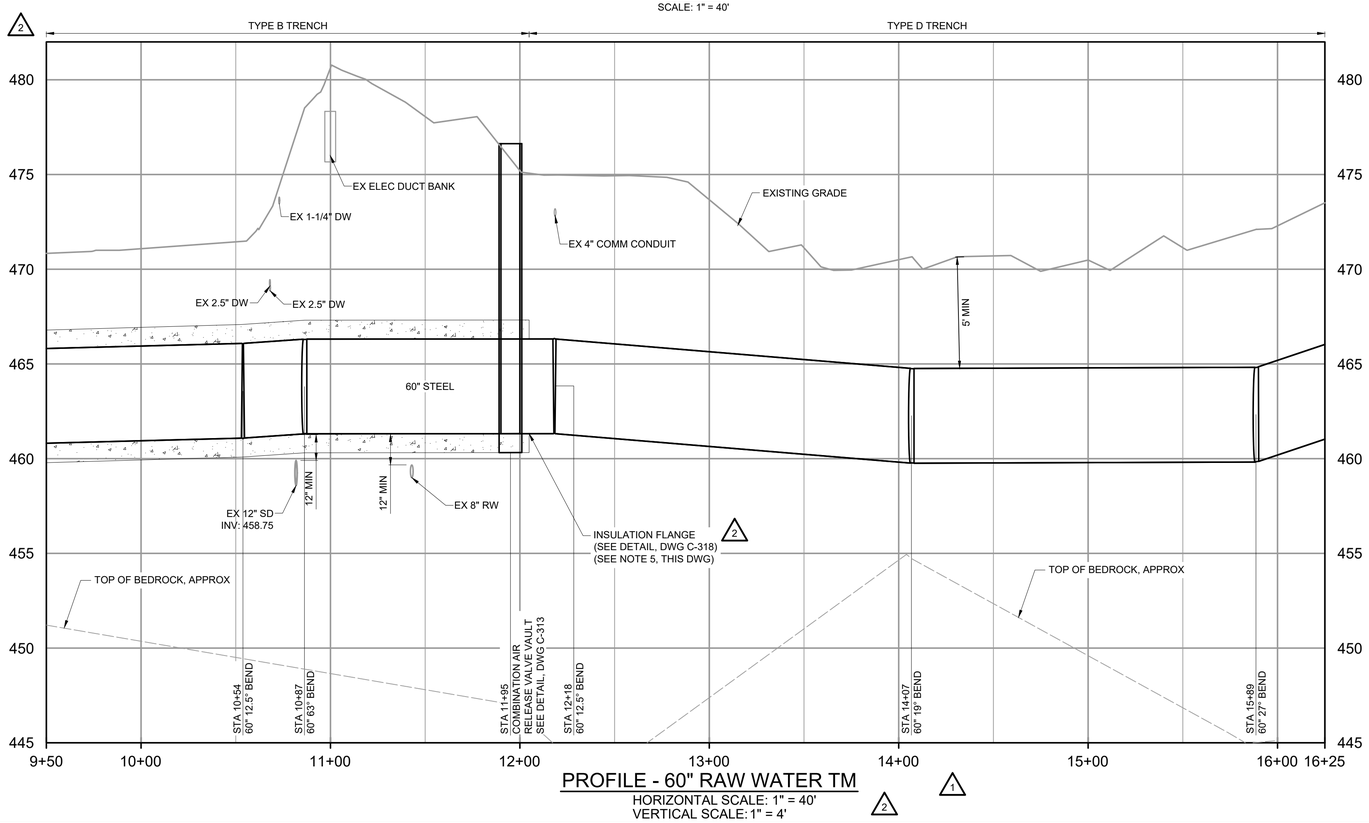
PLOT DATE: 6/14/2024 5:46 PM BY: KROBBINS



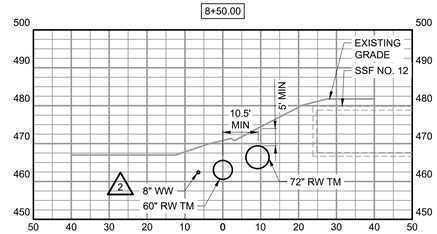
PLAN
SCALE: 1" = 40'



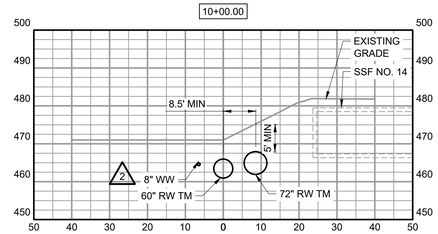
PROFILE - 60" RAW WATER TM
HORIZONTAL SCALE: 1" = 40'
VERTICAL SCALE: 1" = 4'

NOTES

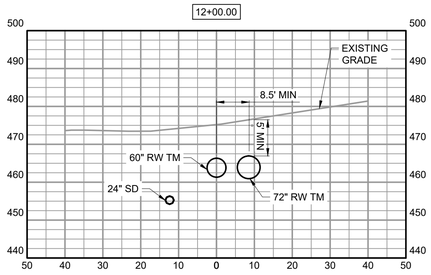
1. CONTRACTOR SHALL USE THE TRENCH TYPES CALLED OUT ON THE PROFILES. SEE TRENCH DETAILS ON DRAWING C-317.
2. CONTRACTOR TO VERIFY INVERTS IN THE FIELD. MANHOLES USED FOR REPLACEMENT OF THE DRAIN SHALL BE 4-FOOT DIAMETER MANHOLES IN ACCORDANCE WITH SWSC STANDARD DETAIL S-02.0.
3. CONTRACTOR SHALL SUBMIT PLANS TO MAINTAIN FLOW THROUGH THE EXISTING PAVED CHANNEL AND THE EXISTING 24" DRAIN DURING CONSTRUCTION ACTIVITIES TO THE ENGINEER AND OWNER FOR REVIEW.
4. FOR DETAILED PLAN VIEW OF WASH WATER, SEE DWG C-145. FOR PROFILE, SEE DWG C-248.
5. INSULATION FLANGE TO BE INSTALLED AT PIPE JOINT WITHIN TWO FEET OF THE CONCRETE ENCASEMENT.



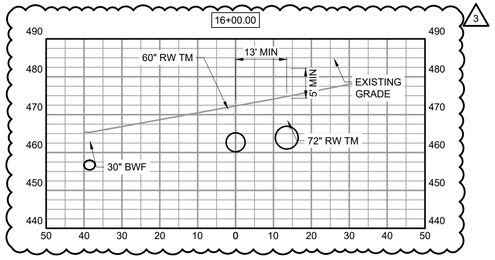
SECTION
SCALE: 1" = 20'



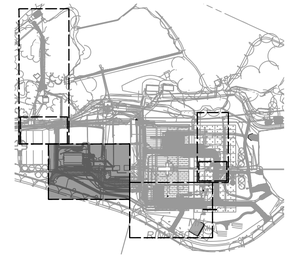
SECTION
SCALE: 1" = 20'



SECTION
SCALE: 1" = 20'



SECTION
SCALE: 1" = 20'



KEY MAP
NTS

HORIZONTAL SCALE: 1" = 40'
40 20 0 40'
VERTICAL SCALE: 1"=4'
4 2 0 4

REV	ISSUED FOR	DATE	BY
3	ADDENDUM NO. 16	JUN 24	MWM
2	ADDENDUM NO. 12	MAY 24	MWM
1	ADDENDUM NO. 2	MAR 24	MWM
0	ISSUED FOR BIDS	FEB 24	MWM

PROJECT ENGINEER:	K. BARRETT
DESIGNED BY:	L. WALLACE
DRAWN BY:	K. ROBBINS
CHECKED BY:	D. SHEERAN

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE
0 1/2" 1"

COMMONWEALTH OF MASSACHUSETTS
DANIEL J. SHEERAN
CIVIL
No. 58423
REGISTERED PROFESSIONAL ENGINEER
6/19/2024

Hazen
HAZEN AND SAWYER
100 GREAT MEADOW ROAD, SUITE 702
WETHERSFIELD, CT 06109

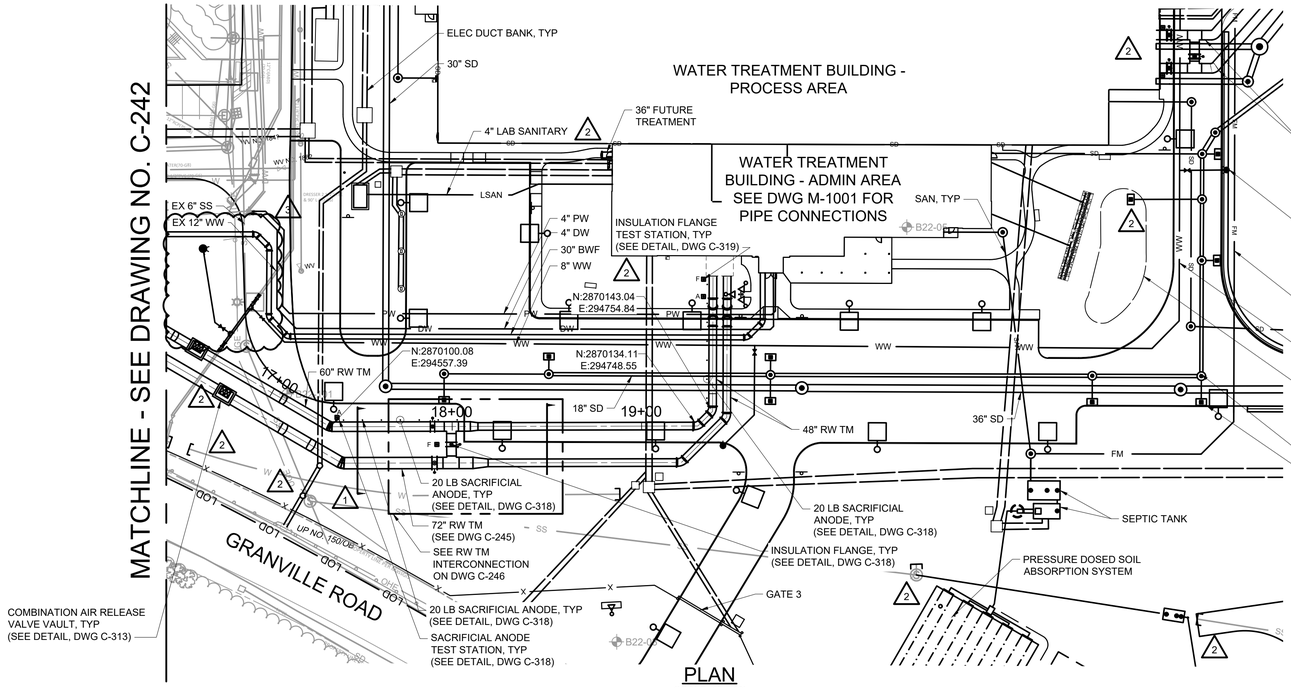
SPRINGFIELD WATER AND SEWER COMMISSION

WEST PARISH WATER TREATMENT PLANT

CIVIL
RAW WATER TRANSMISSION MAIN
PLAN AND PROFILE - SHEET 2

DATE:	FEBRUARY 2024
HAZEN NO.:	90398-004
CONTRACT NO.:	24-51
DRAWING NUMBER:	C-242

File: C:\USERS\KROBBINS\DC\ACCDOCS\HAZEN AND SAWYER\90398-004_WEST PARISH FILTER WTP\PROJECT FILES\CIVIL\C-242 Saved by KROBBINS Save date: 5/22/2024 5:38 PM
PLOT DATE: 6/14/2024 5:52 PM BY: KROBBINS

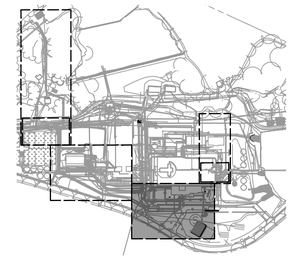


PLAN

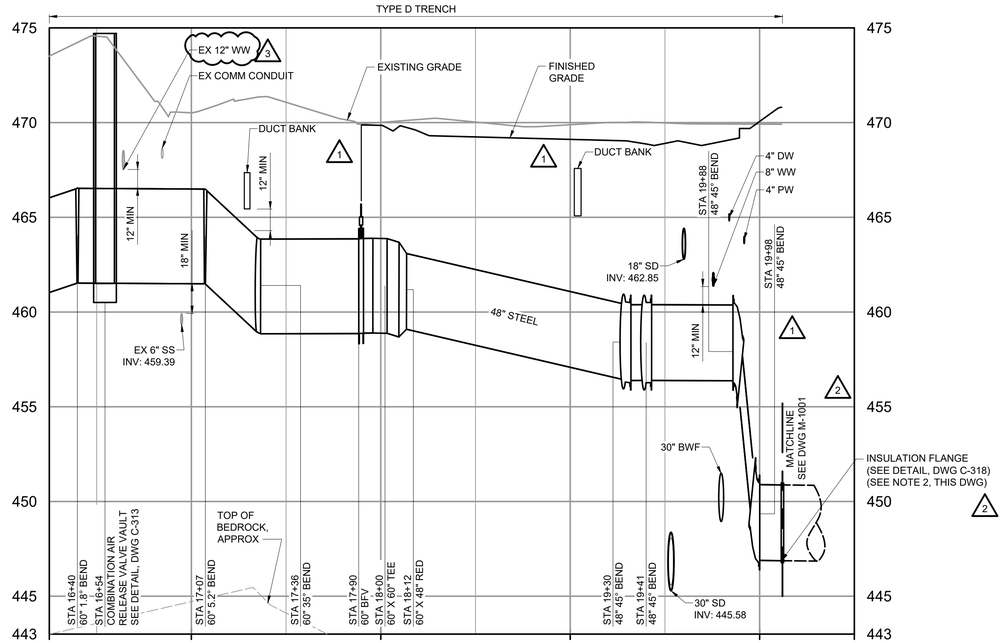
SCALE: 1" = 40'

NOTES

1. CONTRACTOR SHALL USE THE TRENCH TYPES CALLED OUT ON THE PROFILES. SEE TRENCH DETAILS ON DWG C-317.
2. INSULATION FLANGE TO BE INSTALLED AT PIPE JOINT WITHIN TWO FEET OF THE CONCRETE ENCASEMENT OR BUILDING FACE.

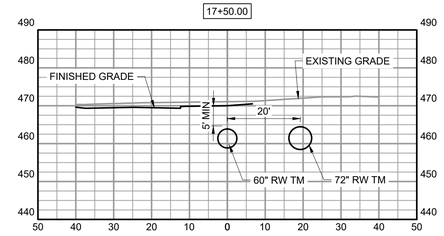


KEY MAP
NTS



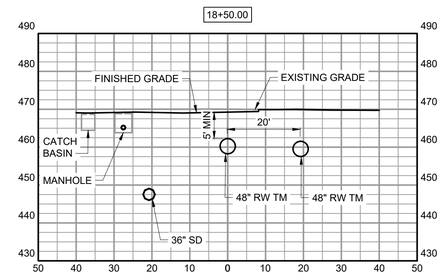
PROFILE - RAW WATER TM

HORIZONTAL SCALE: 1" = 40'
VERTICAL SCALE: 1" = 4'



SECTION

SCALE: 1" = 20'



SECTION AT STA 18+50

SCALE: 1" = 20'

HORIZONTAL SCALE: 1" = 40'

40 20 0 40'

VERTICAL SCALE: 1"=4'

REV	ISSUED FOR	DATE	BY
3	ADDENDUM NO. 16	JUN 24	MWM
2	ADDENDUM NO. 12	MAY 24	MWM
1	ADDENDUM NO. 2	MAR 24	MWM
0	ISSUED FOR BIDS	FEB 24	MWM

PROJECT ENGINEER:	K. BARRETT
DESIGNED BY:	L. WALLACE
DRAWN BY:	K. ROBBINS
CHECKED BY:	D. SHEERAN

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE (0 1/2" 1")

COMMONWEALTH OF MASSACHUSETTS
DANIEL J. SHEERAN
CIVIL
No. 58423
REGISTERED PROFESSIONAL ENGINEER
6/17/2024

Hazen
HAZEN AND SAWYER
100 GREAT MEADOW ROAD, SUITE 702
WETHERSFIELD, CT 06109

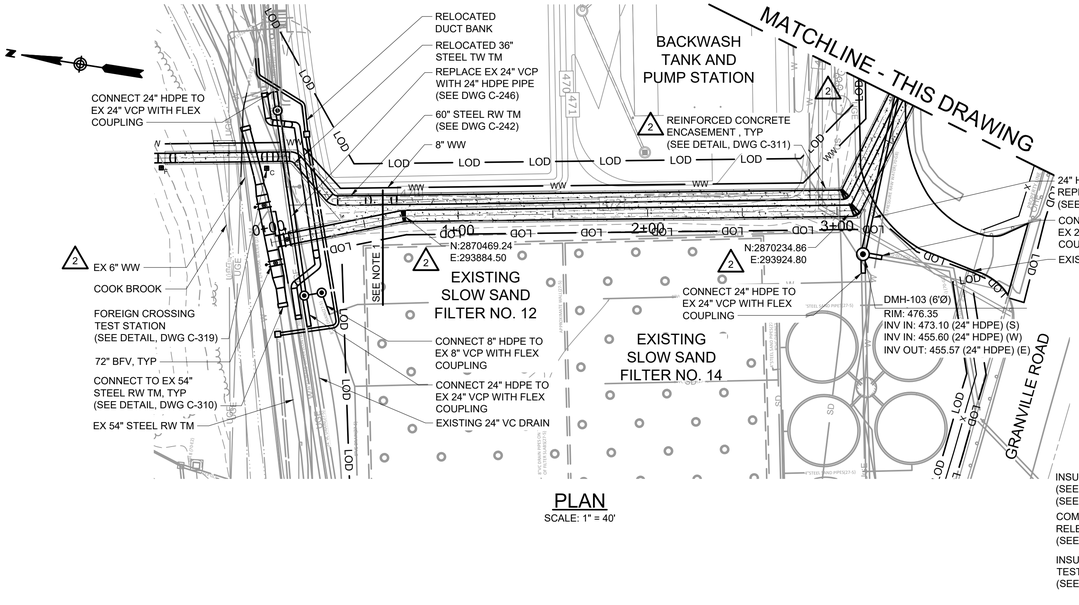
SPRINGFIELD WATER AND SEWER COMMISSION

WEST PARISH WATER TREATMENT PLANT

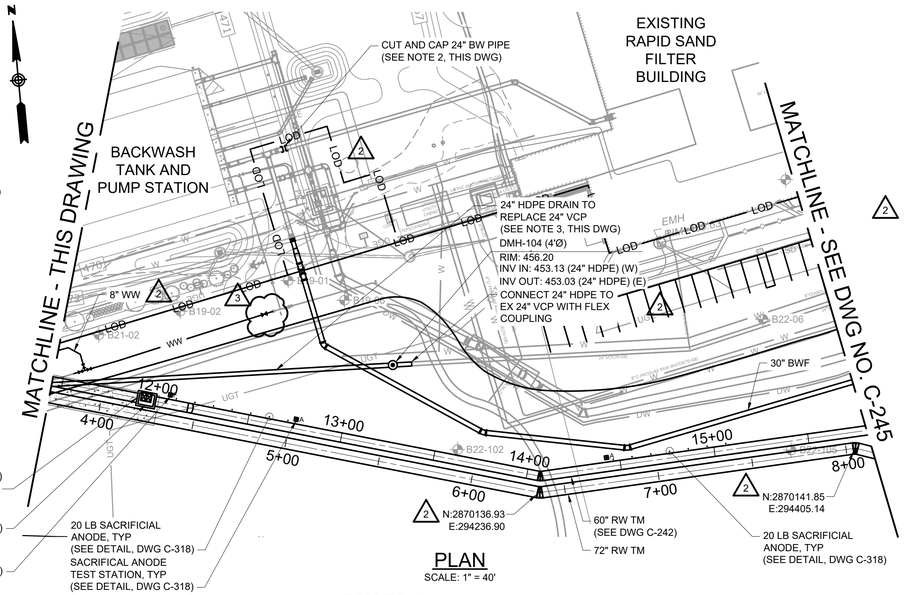
CIVIL
RAW WATER TRANSMISSION MAIN
PLAN AND PROFILE - SHEET 3

DATE:	FEBRUARY 2024
HAZEN NO.:	90398-004
CONTRACT NO.:	24-51
DRAWING NUMBER:	C-243

File: C:\USERS\KROBBINS\DOCUMENTS\ACCDOCS\HAZEN AND SAWYER\90398-004_WEST PARISH FILTER WTF\PROJECT FILES\CIVIL\C-243 Saved by KROBBINS Save date: 6/14/2024 11:10 AM
PLOT DATE: 6/14/2024 6:00 PM BY: KROBBINS



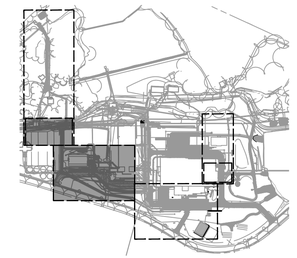
PLAN
SCALE: 1" = 40'



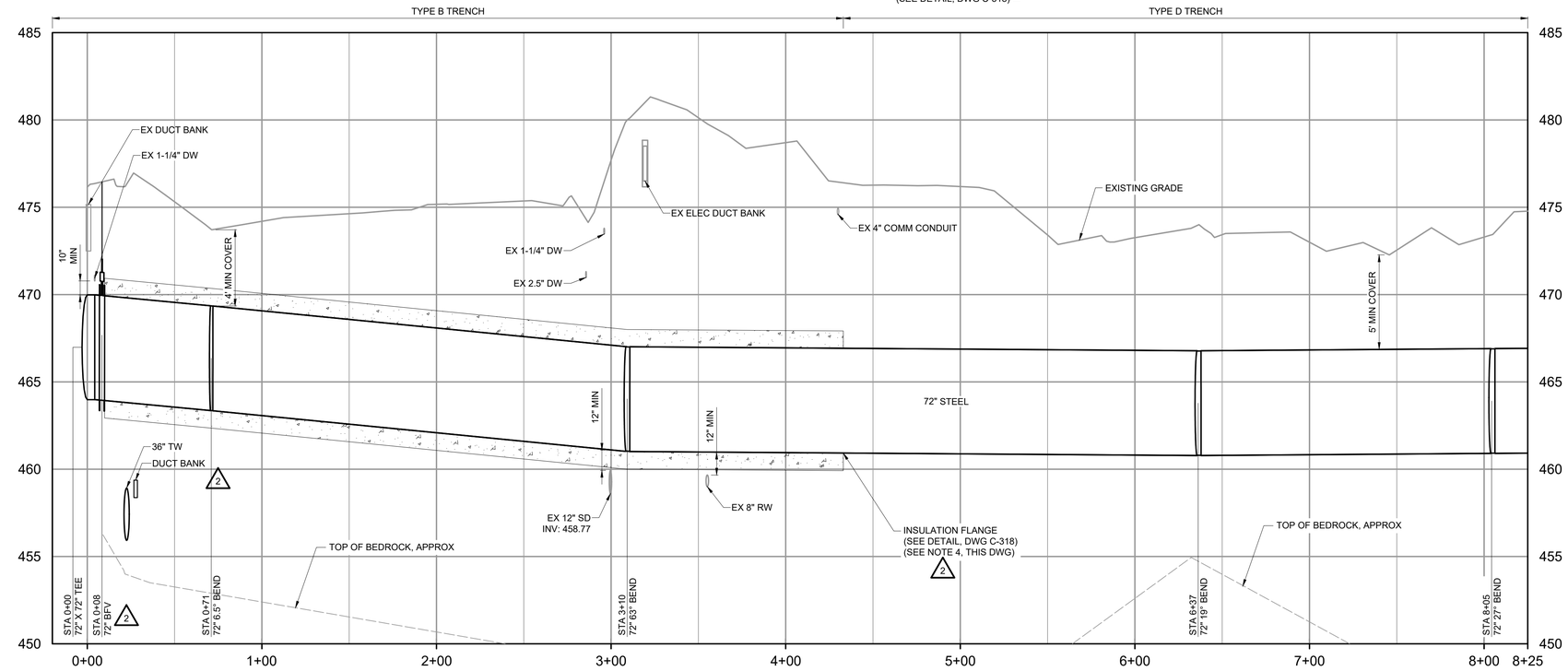
PLAN
SCALE: 1" = 40'

NOTES

1. CONTRACTOR SHALL USE THE TRENCH TYPES CALLED OUT ON THE PROFILES. SEE TRENCH DETAILS ON DRAWING C-317.
2. SEE SEQUENCE OF CONSTRUCTION SPECIFIED IN SECTION 01 14 00.
3. CONTRACTOR TO VERIFY INVERTS IN THE FIELD. MANHOLES USED FOR REPLACEMENT OF THE DRAIN SHALL BE 4-FOOT DIAMETER MANHOLES IN ACCORDANCE WITH SWSC STANDARD DETAIL S-02.0. CONTRACTOR SHALL SUBMIT PLANS TO MAINTAIN FLOW THROUGH THE EXISTING 24" DRAIN DURING CONSTRUCTION ACTIVITIES TO THE ENGINEER AND OWNER FOR REVIEW.
4. INSULATION FLANGE TO BE INSTALLED AT PIPE JOINT WITHIN TWO FEET OF THE CONCRETE ENCASEMENT.



KEY MAP
NTS



PROFILE - 72" RAW WATER TM
HORIZONTAL SCALE: 1" = 40'
VERTICAL SCALE: 1" = 2'

HORIZONTAL SCALE: 1" = 40'
40 20 0 40'
4 2 0 4
VERTICAL SCALE: 1"=4'

REV	ISSUED FOR	DATE	BY
3	ADDENDUM NO. 16	JUN 24	MWM
2	ADDENDUM NO. 12	MAY 24	MWM
1	ADDENDUM NO. 2	MAR 24	MWM
0	ISSUED FOR BIDS	FEB 24	MWM

PROJECT ENGINEER:	K. BARRETT
DESIGNED BY:	L. WALLACE
DRAWN BY:	K. ROBBINS
CHECKED BY:	D. SHEERAN
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE	0 1/2" 1"

COMMONWEALTH OF MASSACHUSETTS
DANIEL J. SHEERAN
CIVIL
No. 58423
REGISTERED PROFESSIONAL ENGINEER
6/19/2024

Hazen
HAZEN AND SAWYER
100 GREAT MEADOW ROAD, SUITE 702
WETHERSFIELD, CT 06109

SPRINGFIELD WATER AND SEWER COMMISSION

WEST PARISH WATER TREATMENT PLANT

CIVIL
RAW WATER TRANSMISSION MAIN
PLAN AND PROFILE - SHEET 4

DATE:	FEBRUARY 2024
HAZEN NO.:	90398-004
CONTRACT NO.:	24-51
DRAWING NUMBER:	C-244

File: C:\USERS\KROBBINS\DC\ACCDOCS\HAZEN AND SAWYER\90398-004_WEST PARISH FILTER WTP\PROJECT FILES\CIVIL\C-244 Saved by LWALLACE Save date: 5/24/2024 11:29 AM
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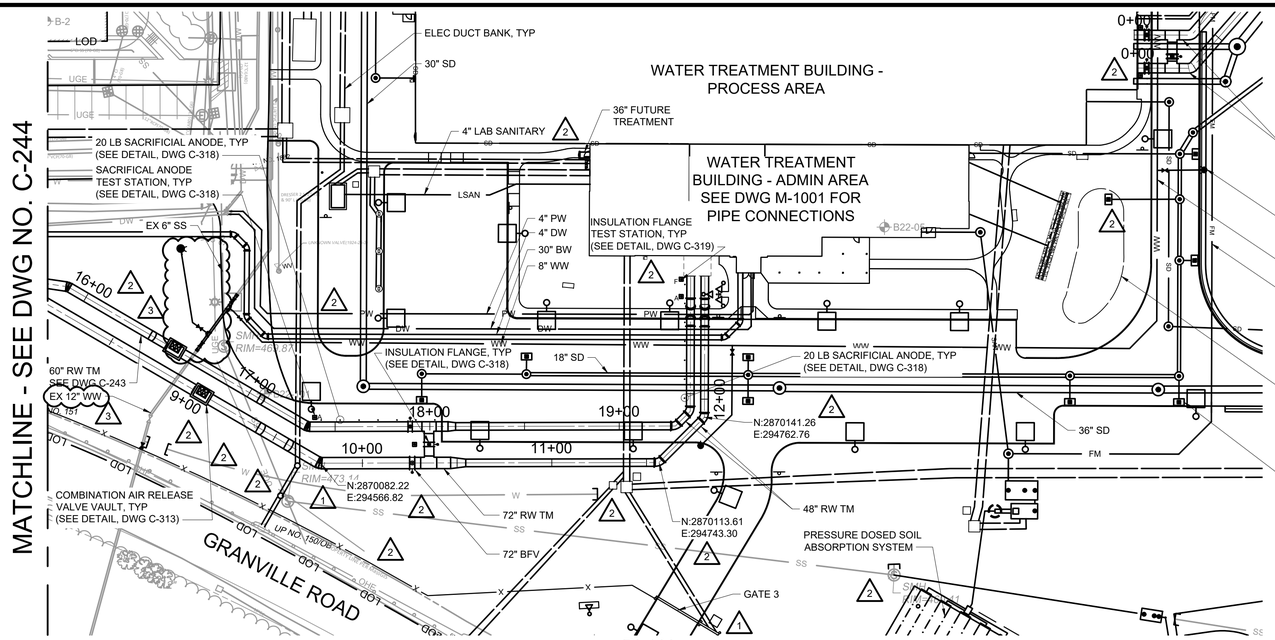
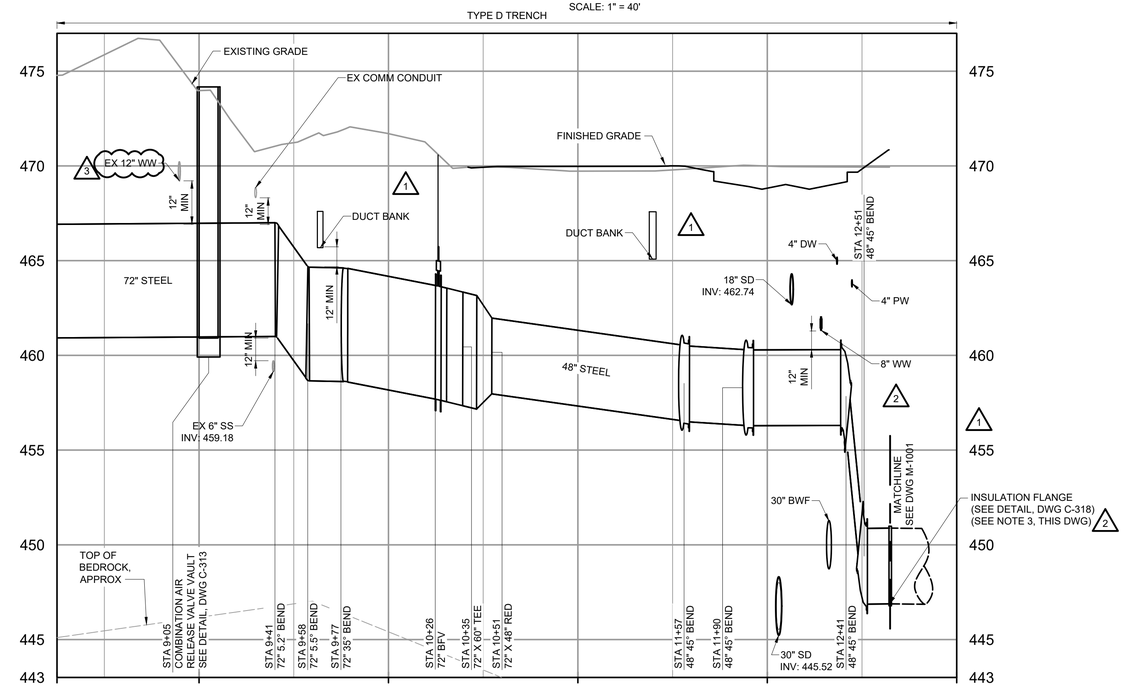


NOTES

1. CONTRACTOR SHALL USE THE TRENCH TYPES CALLED OUT ON THE PROFILES. SEE TRENCH DETAILS ON DWG C-317.
2. SEE DRAWING C-243 FOR DETAILS ON INTERCONNECTION BETWEEN 60" AND 72" RW TRANSMISSION MAINS.
3. INSULATION FLANGE TO BE INSTALLED AT PIPE JOINT WITHIN TWO FEET OF THE CONCRETE ENCASEMENT OR BUILDING FACE.

KEY MAP
NTS



PROFILE - RAW WATER TM
HORIZONTAL SCALE: 1" = 40'
VERTICAL SCALE: 1" = 2'

HORIZONTAL SCALE: 1" = 40'
40 20 0 40'
4 2 0 4
VERTICAL SCALE: 1"=4'

REV	ISSUED FOR	DATE	BY
3	ADDENDUM NO. 16	JUN 24	MWM
2	ADDENDUM NO. 12	MAY 24	MWM
1	ADDENDUM NO. 2	MAR 24	MWM
0	ISSUED FOR BIDS	FEB 24	MWM

PROJECT ENGINEER:	K. BARRETT
DESIGNED BY:	J. RIVAS
DRAWN BY:	K. ROBBINS
CHECKED BY:	D. SHEERAN

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE (0, 1/2", 1")

COMMONWEALTH OF MASSACHUSETTS
DANIEL J. SHEERAN
CIVIL
No. 58423
REGISTERED PROFESSIONAL ENGINEER
6/19/2024

Hazen
HAZEN AND SAWYER
100 GREAT MEADOW ROAD, SUITE 702
WETHERSFIELD, CT 06109

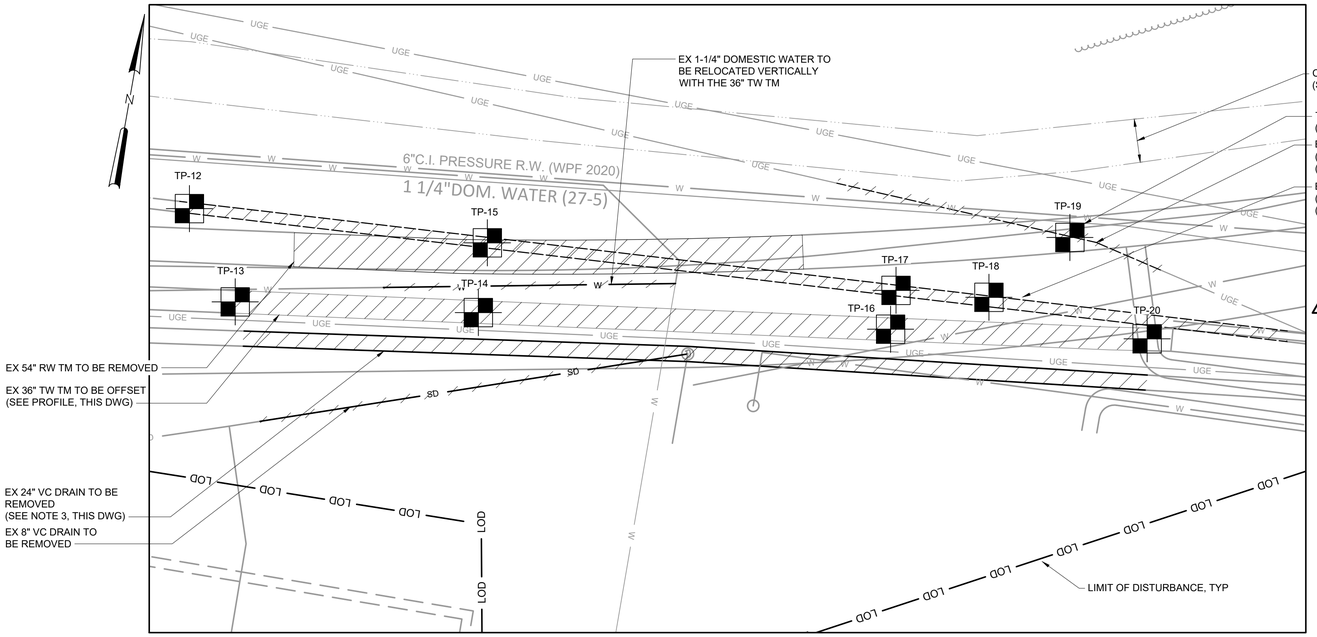
SPRINGFIELD WATER AND SEWER COMMISSION

WEST PARISH WATER TREATMENT PLANT

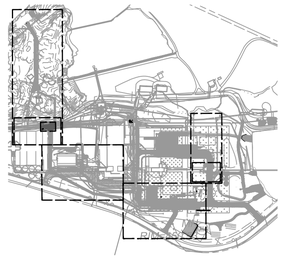
CIVIL
RAW WATER TRANSMISSION MAIN
PLAN AND PROFILE - SHEET 5

DATE:	FEBRUARY 2024
HAZEN NO.:	90398-004
CONTRACT NO.:	24-51
DRAWING NUMBER:	C-245

File: C:\USERS\KROBBINS\DOCACCDOCS\HAZEN AND SAWYER\90398-004_WEST PARISH FILTER WTP\PROJECT FILES\CIVIL\C-245 Saved by KROBBINS Save date: 6/14/2024 11:13 AM
PLOT DATE: 6/14/2024 6:02 PM BY: KROBBINS



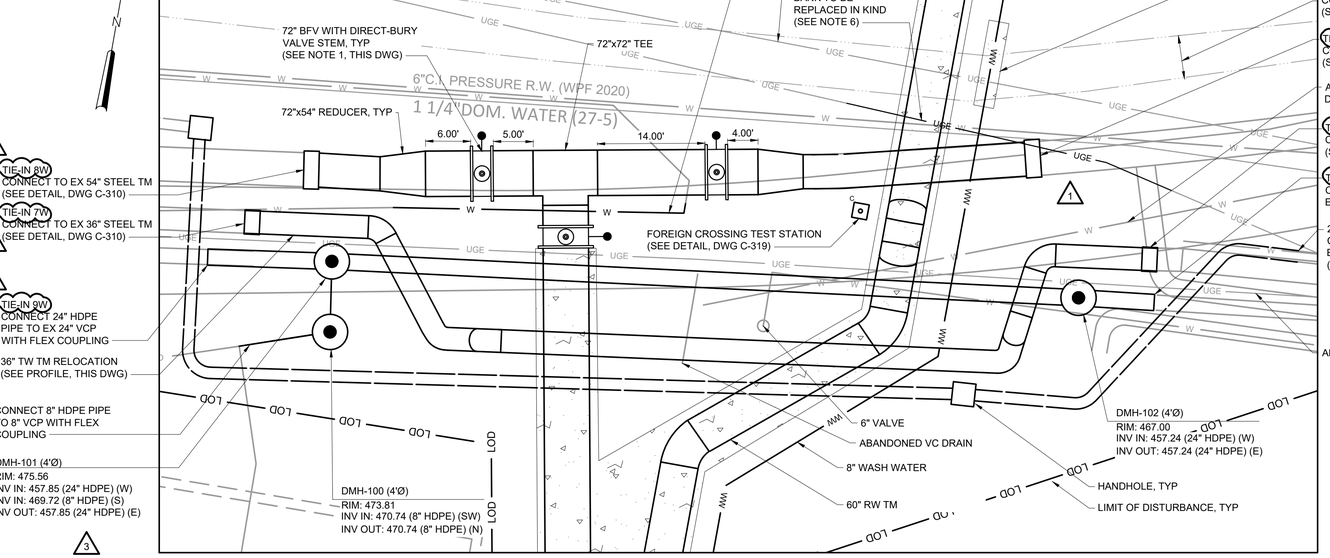
RW TM YARD RELOCATIONS PLAN
SCALE: 1" = 10'



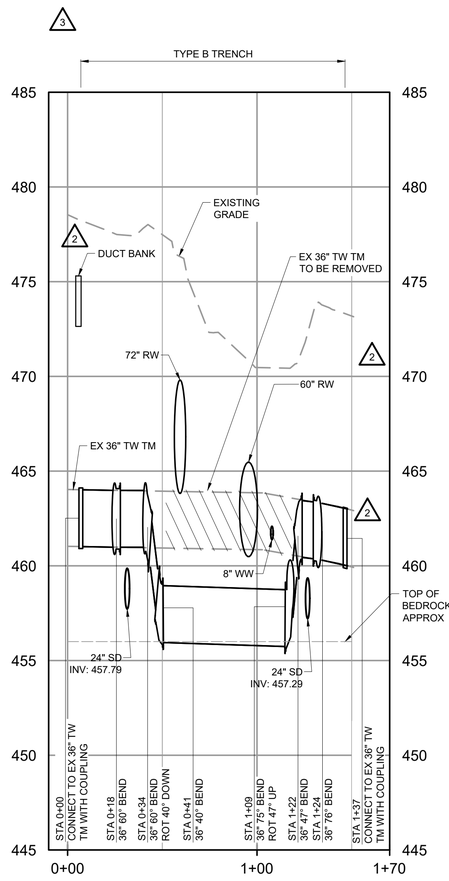
KEY MAP
NTS

NOTES:

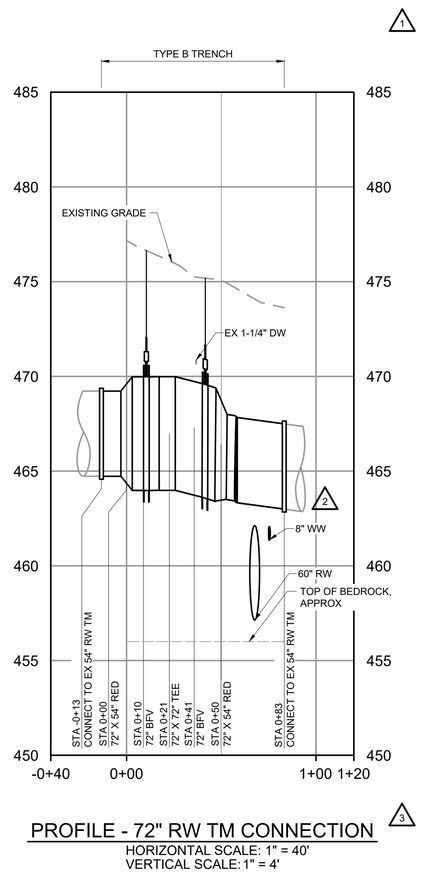
1. BUTTERFLY VALVES ON TRANSMISSION MAINS SHALL BE INSTALLED WITH THE VALVE STEM HORIZONTAL.
2. CONTRACTOR SHALL TEST PIT AREAS TO CONFIRM LOCATION AND DEPTH OF THE EXISTING ELECTRICAL DUCT BANK AND 36" FILTERED WATER PIPE AND SUBMIT TO THE ENGINEER FOR REVIEW.
3. PRIOR TO SHOP DRAWING SUBMITTALS, CONTRACTOR SHALL TEST PIT AND CONFIRM CONDITION AND DIMENSIONS OF ALL EXISTING STEEL TRANSMISSION MAINS AT THEIR RESPECTIVE CONNECTIONS.
4. CONTRACTOR SHALL PROVIDE PROVISIONS FOR MAINTAINING FLOW OF THE EXISTING DRAIN DURING ALL CONSTRUCTION ACTIVITIES ASSOCIATED WITH THE EXISTING AND NEW RAW WATER AND TREATED WATER TRANSMISSION MAINS.
5. SEE DRAWING C-219 FOR COOK BROOK BYPASS.
6. SEE ELECTRICAL OVERALL SITE PLAN DRAWING E-12 FOR TEMPORARY POWER AND COMMUNICATION.



PLAN - 72" RW TM CONNECTION
SCALE: 1" = 10'



PROFILE - 36" TW TM RELOCATION
HORIZONTAL SCALE: 1" = 40'
VERTICAL SCALE: 1" = 4'



PROFILE - 72" RW TM CONNECTION
HORIZONTAL SCALE: 1" = 40'
VERTICAL SCALE: 1" = 4'

HORIZONTAL SCALE: 1" = 40'
40 20 0 40'
VERTICAL SCALE: 1"=4'
4 2 0 4
SCALE: 1" = 10'
10 5 0 10'

REV	ISSUED FOR	DATE	BY
4	ADDENDUM NO. 16	JUN 24	MWM
3	ADDENDUM NO. 12	MAY 24	MWM
2	ADDENDUM NO. 3	MAR 24	MWM
1	ADDENDUM NO. 2	MAR 24	MWM
0	ISSUED FOR BIDS	FEB 24	MWM

PROJECT ENGINEER:	K. BARRETT
DESIGNED BY:	L. WALLACE
DRAWN BY:	J. LU
CHECKED BY:	D. SHEERAN

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE 0 1/2" 1"

COMMONWEALTH OF MASSACHUSETTS
DANIEL J. SHEERAN
CIVIL
No. 58423
REGISTERED PROFESSIONAL ENGINEER
6/17/2024

Hazen
HAZEN AND SAWYER
100 GREAT MEADOW ROAD, SUITE 702
WETHERSFIELD, CT 06109

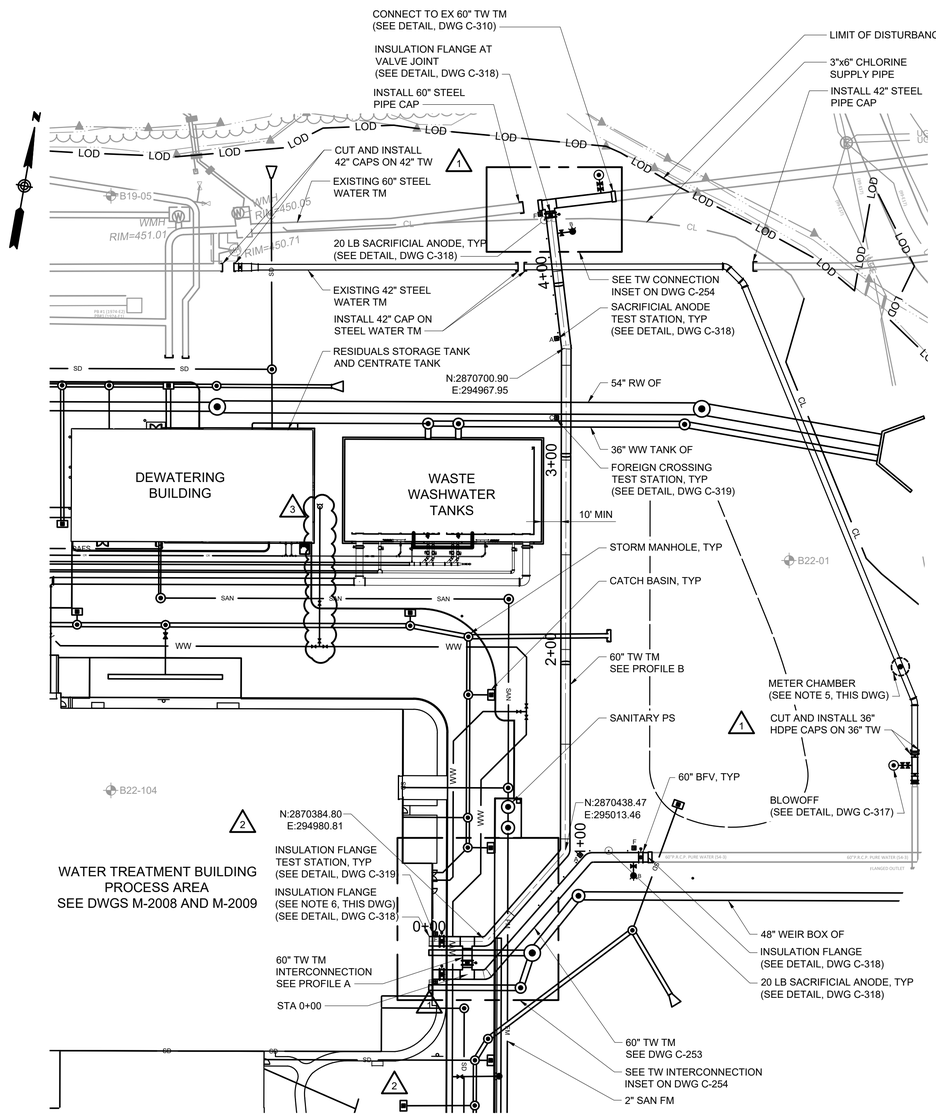
SPRINGFIELD WATER AND SEWER COMMISSION

WEST PARISH WATER TREATMENT PLANT

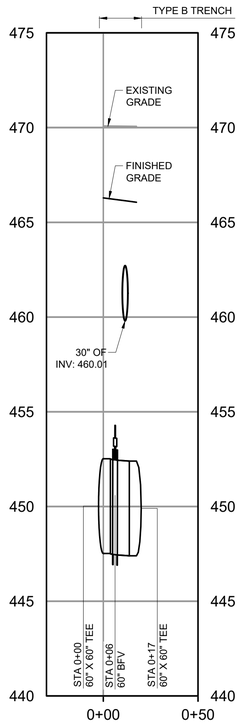
CIVIL
RAW WATER TRANSMISSION MAIN
CONNECTION DETAILS - SHEET 1

DATE:	FEBRUARY 2024
HAZEN NO.:	90398-004
CONTRACT NO.:	24-51
DRAWING NUMBER:	C-246

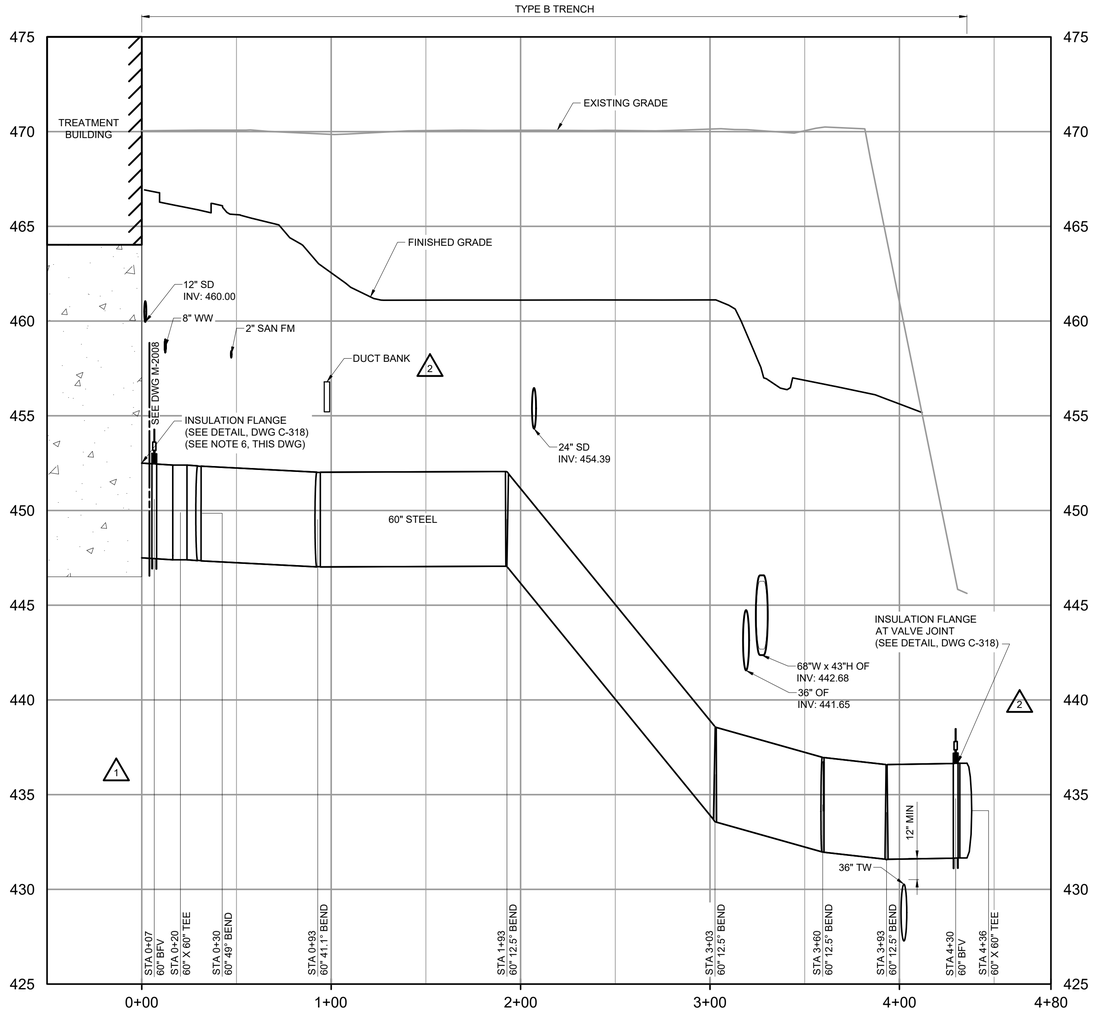
File: C:\USERS\LWALLACE\DCA\ACCDOCS\HAZEN AND SAWYER\90398-004_WEST PARISH FILTER WTP\PROJECT FILES\CIVIL\C-246 Saved by LWALLACE Save date: 5/23/2024 10:28 PM
PLOT DATE: 6/17/2024 4:21 PM BY: LWALLACE



PLAN
SCALE: 1" = 40'



PROFILE A - INTERCONNECTION
HORIZONTAL SCALE: 1" = 40'
VERTICAL SCALE: 1" = 4'



PROFILE B - 60" TREATED WATER TM
HORIZONTAL SCALE: 1" = 40'
VERTICAL SCALE: 1" = 4'

NOTES:

1. SEE DRAWINGS C-131 THROUGH C-135 FOR ADDITIONAL INFORMATION ON STORM DRAINS AND MANHOLES.
2. SEE DRAWINGS C-140 THROUGH C-145 FOR ADDITIONAL INFORMATION ON YARD PIPING.
3. SEE DRAWINGS C-310 THROUGH C-315 FOR STEEL PIPE DETAILS.
4. SEE DRAWINGS G-013 AND G-014 AND SECTION 01 14 00 FOR SEQUENCE OF CONSTRUCTION OF INFRASTRUCTURE.
5. SEE ELECTRICAL OVERALL SITE PLAN DRAWING E-012 FOR TEMPORARY POWER AND COMMUNICATION.
6. INSULATION FLANGE TO BE INSTALLED AT PIPE JOINT WITHIN TWO FEET OF THE CONCRETE ENCASEMENT OR BUILDING FACE.

HORIZONTAL SCALE: 1" = 40'
40 20 0 40'
4 2 0 4
VERTICAL SCALE: 1"=4'

REV	ISSUED FOR	DATE	BY
3	ADDENDUM NO. 16	JUN 24	MWM
2	ADDENDUM NO. 12	MAY 24	MWM
1	ADDENDUM NO. 3	MAR 24	MWM
0	ISSUED FOR BIDS	FEB 24	MWM

PROJECT ENGINEER:	K. BARRETT
DESIGNED BY:	L. WALLACE
DRAWN BY:	L. WALLACE
CHECKED BY:	D. SHEERAN

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE
0 1/2" 1"

COMMONWEALTH OF MASSACHUSETTS
DANIEL J. SHEERAN
CIVIL
No. 58423
REGISTERED PROFESSIONAL ENGINEER
6/17/2024

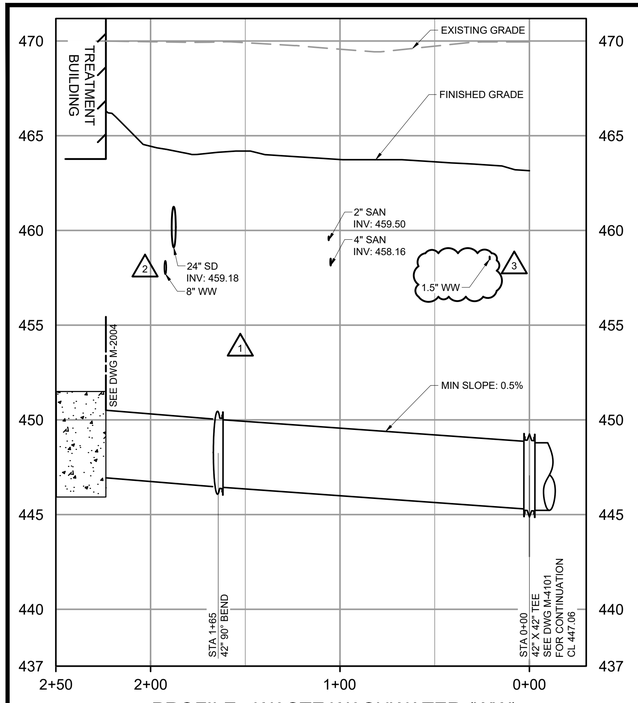
Hazen
HAZEN AND SAWYER
100 GREAT MEADOW ROAD, SUITE 702
WETHERSFIELD, CT 06109

SPRINGFIELD WATER AND SEWER COMMISSION

WEST PARISH WATER TREATMENT PLANT

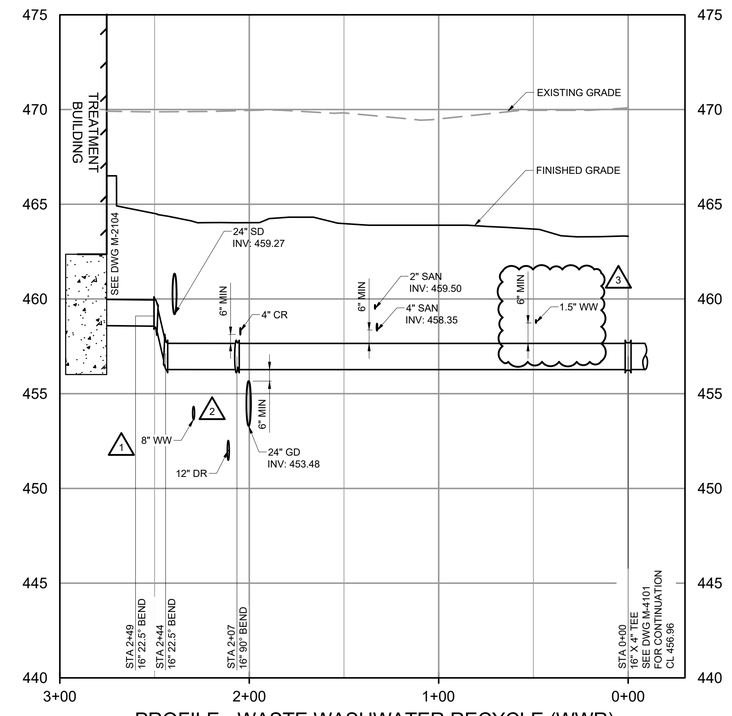
CIVIL
TREATED WATER TRANSMISSION MAIN
PLAN AND PROFILE - SHEET 2

DATE:	FEBRUARY 2024
HAZEN NO.:	90398-004
CONTRACT NO.:	24-51
DRAWING NUMBER:	C-252



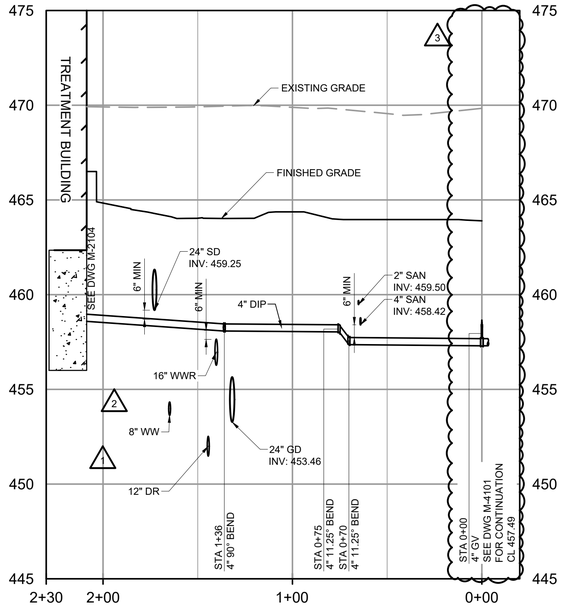
PROFILE - WASTE WASHWATER (WW)

HORIZONTAL SCALE: 1" = 40'
VERTICAL SCALE: 1" = 4'
FOR PLAN VIEW, SEE DWG C-143



PROFILE - WASTE WASHWATER RECYCLE (WWR)

HORIZONTAL SCALE: 1" = 40'
VERTICAL SCALE: 1" = 4'
FOR PLAN VIEW, SEE DWG C-143

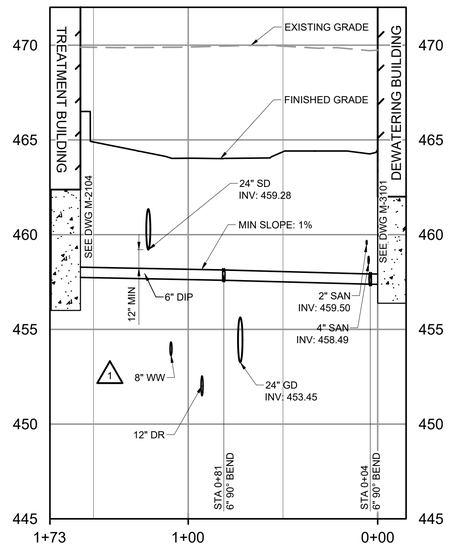


PROFILE - CENTRATE RECYCLE (CR)

HORIZONTAL SCALE: 1" = 40'
VERTICAL SCALE: 1" = 4'
FOR PLAN VIEW, SEE DWGS C-143 AND C-144

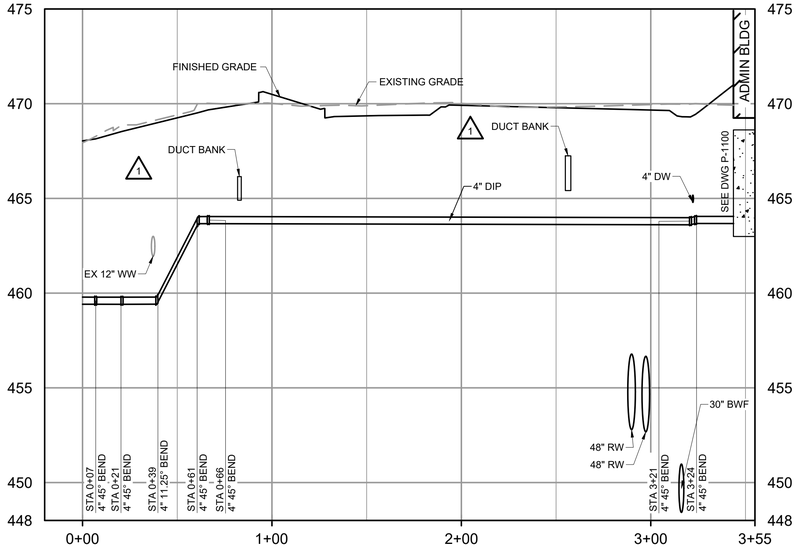
NOTE:

USE TYPE B TRENCHES FOR ALL PIPES PROFILED ON THIS DRAWING. SEE DETAIL ON DRAWING C-317.



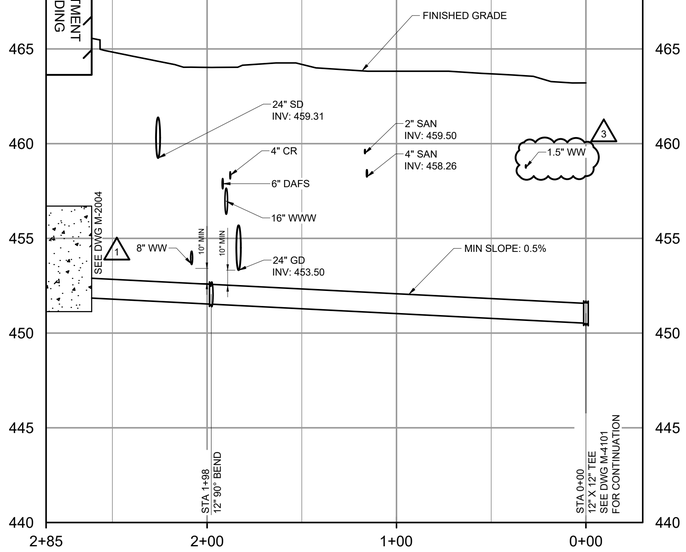
PROFILE - DAFS

HORIZONTAL SCALE: 1" = 40'
VERTICAL SCALE: 1" = 4'
FOR PLAN VIEW, SEE DWG C-143



PROFILE - ADMIN BUILDING PROCESS WATER

HORIZONTAL SCALE: 1" = 40'
VERTICAL SCALE: 1" = 4'
FOR PLAN VIEW, SEE DWG C-141



PROFILE - 12" DRAIN

HORIZONTAL SCALE: 1" = 40'
VERTICAL SCALE: 1" = 4'
FOR PLAN VIEW, SEE DWGS C-143 AND C-144

HORIZONTAL SCALE: 1" = 40'
40 20 0 40'
4 2 0 4
VERTICAL SCALE: 1"=4'

REV	ISSUED FOR	DATE	BY
3	ADDENDUM NO. 16	JUN 24	MWM
2	ADDENDUM NO. 12	MAY 24	MWM
1	ADDENDUM NO. 3	MAR 24	MWM
0	ISSUED FOR BIDS	FEB 24	MWM

PROJECT ENGINEER:	K. BARRETT
DESIGNED BY:	L. WALLACE
DRAWN BY:	K. ROBBINS
CHECKED BY:	D. SHEERAN

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE 0 1/2" 1"

COMMONWEALTH OF MASSACHUSETTS
DANIEL J. SHEERAN
CIVIL
No. 58423
REGISTERED PROFESSIONAL ENGINEER
6/17/2024

Hazen
HAZEN AND SAWYER
100 GREAT MEADOW ROAD, SUITE 702
WETHERSFIELD, CT 06109

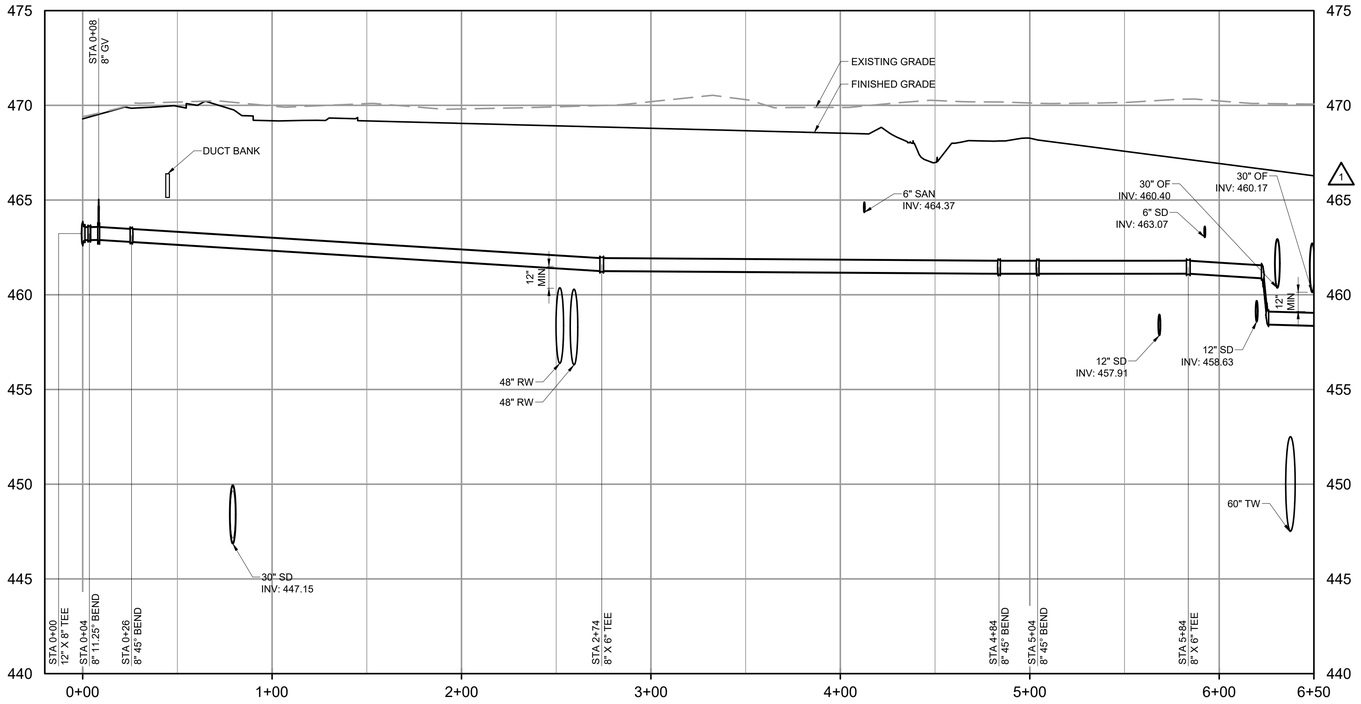
SPRINGFIELD WATER AND SEWER COMMISSION

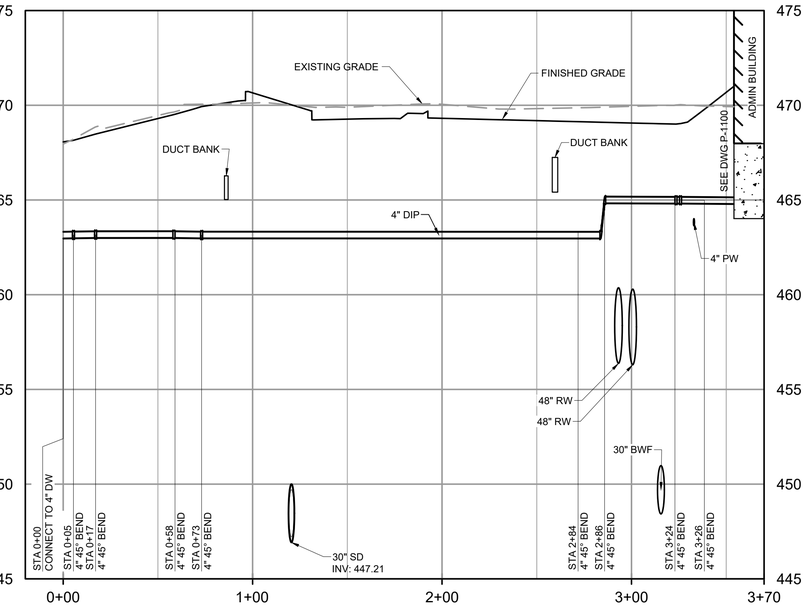
WEST PARISH WATER TREATMENT PLANT

CIVIL
PROCESS PIPING PROFILES
SHEET 1

DATE:	FEBRUARY 2024
HAZEN NO.:	90398-004
CONTRACT NO.:	24-51
DRAWING NUMBER:	C-273

File: C:\USERS\KROBBINS\DCA\CCDOCS\HAZEN AND SAWYER\90398-004_WEST PARISH FILTER WTP\PROJECT FILES\CIVIL\C-273 Saved by KROBBINS Save date: 6/14/2024 10:09 AM
PLOT DATE: 6/14/2024 10:40 AM BY: KROBBINS



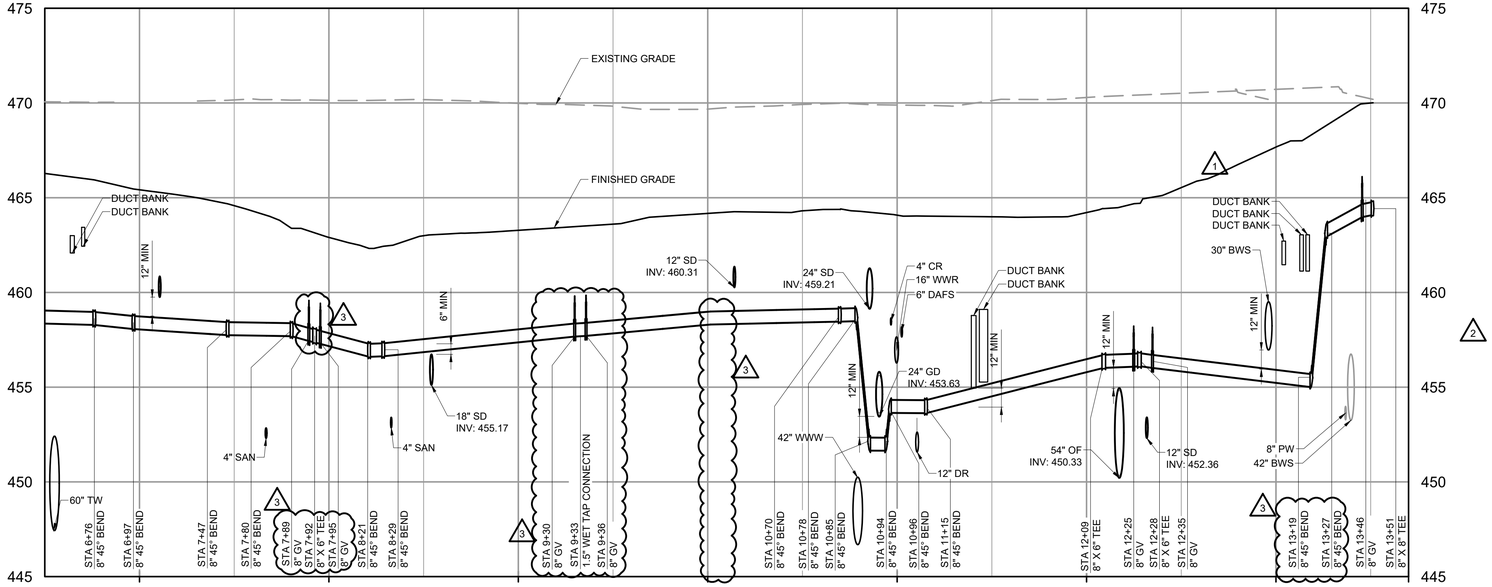


PROFILE - ADMIN BUILDING DOMESTIC WATER

HORIZONTAL SCALE: 1" = 40'
VERTICAL SCALE: 1" = 4'
FOR PLAN VIEW, SEE DWG C-141

NOTES:

USE TYPE B TRENCHES FOR ALL PIPES PROFILED ON THIS DRAWING. SEE DETAIL ON DRAWING C-317.



PROFILE - WASH WATER (WW) 1

HORIZONTAL SCALE: 1" = 40'
VERTICAL SCALE: 1" = 4'
FOR PLAN VIEW, SEE DWGS C-141 THROUGH C-144

HORIZONTAL SCALE: 1" = 40'
40 20 0 40'
4 2 0 4
VERTICAL SCALE: 1"=4'

REV	ISSUED FOR	DATE	BY
3	ADDENDUM NO. 16	JUN 24	MWM
2	ADDENDUM NO. 12	MAY 24	MWM
1	ADDENDUM NO. 3	MAR 24	MWM
0	ISSUED FOR BIDS	FEB 24	MWM

PROJECT ENGINEER:	K. BARRETT
DESIGNED BY:	L. WALLACE
DRAWN BY:	K. ROBBINS
CHECKED BY:	D. SHEERAN

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE 0 1/2" 1"

COMMONWEALTH OF MASSACHUSETTS
DANIEL J. SHEERAN
CIVIL
No. 58423
REGISTERED PROFESSIONAL ENGINEER
6/17/2024

Hazen

HAZEN AND SAWYER
100 GREAT MEADOW ROAD, SUITE 702
WETHERSFIELD, CT 06109

SPRINGFIELD WATER AND SEWER COMMISSION

WEST PARISH WATER TREATMENT PLANT

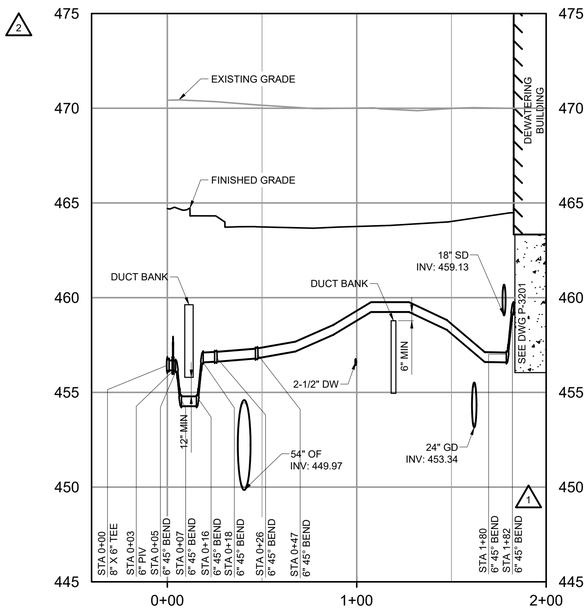
1 CIVIL
WASH WATER AND DOMESTIC WATER PROFILES

DATE: FEBRUARY 2024
HAZEN NO.: 90398-004
CONTRACT NO.: 24-51
DRAWING NUMBER: C-275

File: C:\USERS\KROBBINS\DCVACCDOCS\HAZEN AND SAWYER\90398-004_WEST PARISH FILTER WTF\PROJECT FILES\CIVIL\C-275 Saved by KROBBINS Save date: 6/14/2024 11:58 AM
PLOT DATE: 6/14/2024 2:31 PM BY: KROBBINS

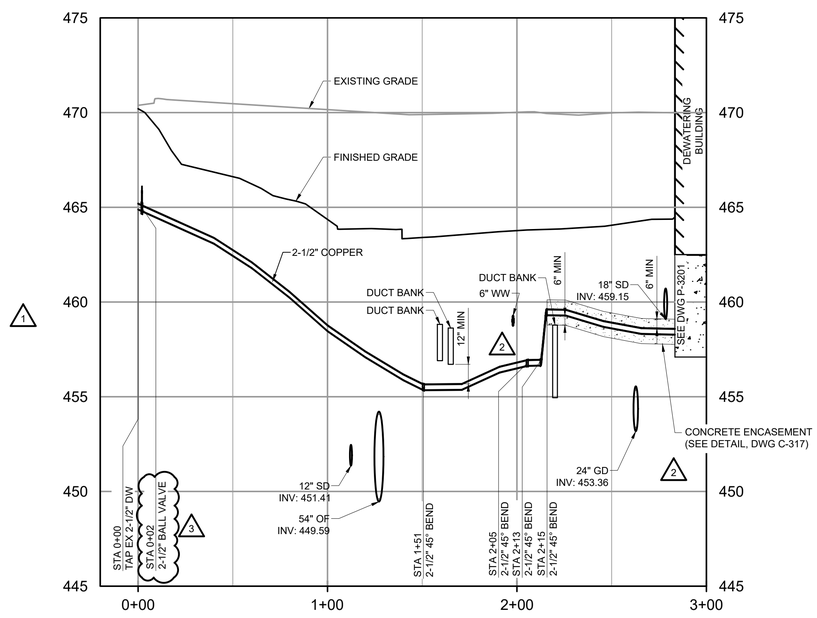
NOTE:

USE TYPE B TRENCHES FOR ALL PIPES PROFILED ON THIS DRAWING. SEE DETAIL ON DRAWING C-317.



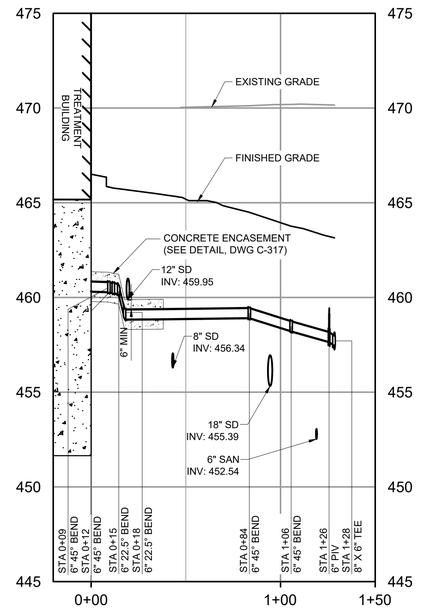
PROFILE - DEWATERING BUILDING PROCESS WATER

HORIZONTAL SCALE: 1" = 40'
VERTICAL SCALE: 1" = 4'
FOR PLAN VIEW, SEE DWG C-143



PROFILE - DEWATERING BUILDING DOMESTIC WATER

HORIZONTAL SCALE: 1" = 40'
VERTICAL SCALE: 1" = 4'
FOR PLAN VIEW, SEE DWG C-143



PROFILE - TREATMENT BUILDING PROCESS WATER

HORIZONTAL SCALE: 1" = 40'
VERTICAL SCALE: 1" = 4'
FOR PLAN VIEW, SEE DWG C-144

2

HORIZONTAL SCALE: 1" = 40'
40 20 0 40'
4 2 0 4
VERTICAL SCALE: 1"=4'

REV	ISSUED FOR	DATE	BY
3	ADDENDUM NO. 16	JUN 24	MWM
2	ADDENDUM NO. 12	MAY 24	MWM
1	ADDENDUM NO. 3	MAR 24	MWM
0	ISSUED FOR BIDS	FEB 24	MWM

PROJECT ENGINEER:	K. BARRETT
DESIGNED BY:	J. RIVAS
DRAWN BY:	K. ROBBINS
CHECKED BY:	D. SHEERAN

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE 0 1/2" 1"

COMMONWEALTH OF MASSACHUSETTS
DANIEL J. SHEERAN
CIVIL
No. 58423
REGISTERED PROFESSIONAL ENGINEER
6/17/2024

Hazen
HAZEN AND SAWYER
100 GREAT MEADOW ROAD, SUITE 702
WETHERSFIELD, CT 06109

SPRINGFIELD WATER AND SEWER COMMISSION

WEST PARISH WATER TREATMENT PLANT

1 CIVIL
PROCESS AND DOMESTIC WATER PROFILES

DATE:	FEBRUARY 2024
HAZEN NO.:	90398-004
CONTRACT NO.:	24-51
DRAWING NUMBER:	C-276

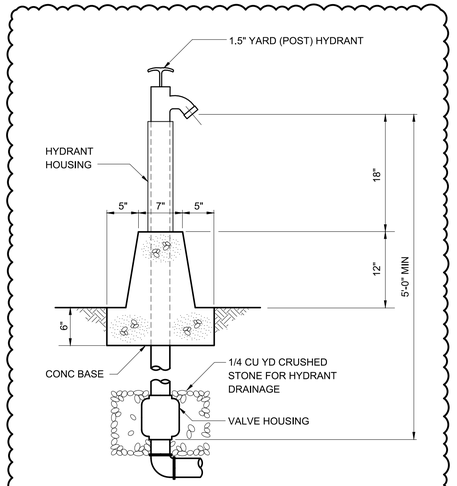
File: C:\USERS\KROBBINS\DC\ACCDOCS\HAZEN AND SAWYER\90398-004_WEST PARISH FILTER WTF\PROJECT FILES\CIVIL\C-276 Saved by KROBBINS Save date: 6/13/2024 4:58 PM
PLOT DATE: 6/14/2024 5:40 PM BY: KROBBINS

SPRINGFIELD WATER AND SEWER COMMISSION STANDARD DETAILS

ITEM NUMBER	DRAWING NUMBER	DRAWING TITLE
1	W-01.0	UTILITY SEPARATION DETAIL
2	W-02.0	NON-PAVED AREA TRENCH DETAIL
9	W-03.0	STANDARD AIR VALVE ASSEMBLY DETAIL
12	W-04.0	END OF MAIN
14	W-05.0	STANDARD TEE INSTALLATION
16	W-06.0	REPAIR TO EXISTING WATER MAINS
25	W-07.0	STANDARD FIRE HYDRANT ASSEMBLY
29	W-08.0	VALVE BOX
30	W-08.1	REPLACE, RAISE, OR RESET VALVE BOX
34	W-10.0	FLUSHING DEVICE
35	W-11.0	NEW WATER SERVICE
41	W-12.0	TYPICAL SERVICE BOX DETAIL IN PAVED AREAS
42	W-12.1	TYPICAL SERVICE BOX DETAIL IN NON-PAVED AREAS
43	W-12.2	REPLACE, RAISE OR RESET SERVICE BOX
44	W-12.3	RAISE SERVICE BOX WITH RISER
52	W-13.7	32-INCH STANDARD WATER COVER
61	W-14.0	THRUST BLOCK BEHIND FITTING
62	W-14.1	THRUST BLOCKS
69	S-01.0	TRENCH DETAIL FOR SEWER PIPES
70	S-02.0	PRECAST CONCRETE SEWER MANHOLE
71	S-02.1	PRECAST CONCRETE SEWER PIPE CONNECTIONS
74	S-02.4	INTERIOR DROP MANHOLE
82	S-02.62	32-INCH STANDARD SEWER COVER
87	S-03.0	UTILITY CROSSING DETAIL
89	S-04.1	NEW SEWER MAIN TO BUILDING CONNECTION
90	S-04.2	CLEAN OUT WITH SWEEP
97	S-09.2	LOW PRESSURE SANITARY SEWER PIPE TRENCH DETAIL

2

1



YARD HYDRANT

C-33-0640

2

REV	ISSUED FOR	DATE	BY
2	ADDENDUM NO. 16	JUN 24	MWM
1	ADDENDUM NO. 3	MAR 24	MWM
0	ISSUED FOR BIDS	FEB 24	MWM

PROJECT ENGINEER: K. BARRETT
DESIGNED BY: J. RIVAS
DRAWN BY: L. WALLACE
CHECKED BY: D. SHEERAN
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE 0 1/2" 1"

COMMONWEALTH OF MASSACHUSETTS
DANIEL J. SHEERAN
CIVIL
No. 58423
REGISTERED PROFESSIONAL ENGINEER
6/19/2024

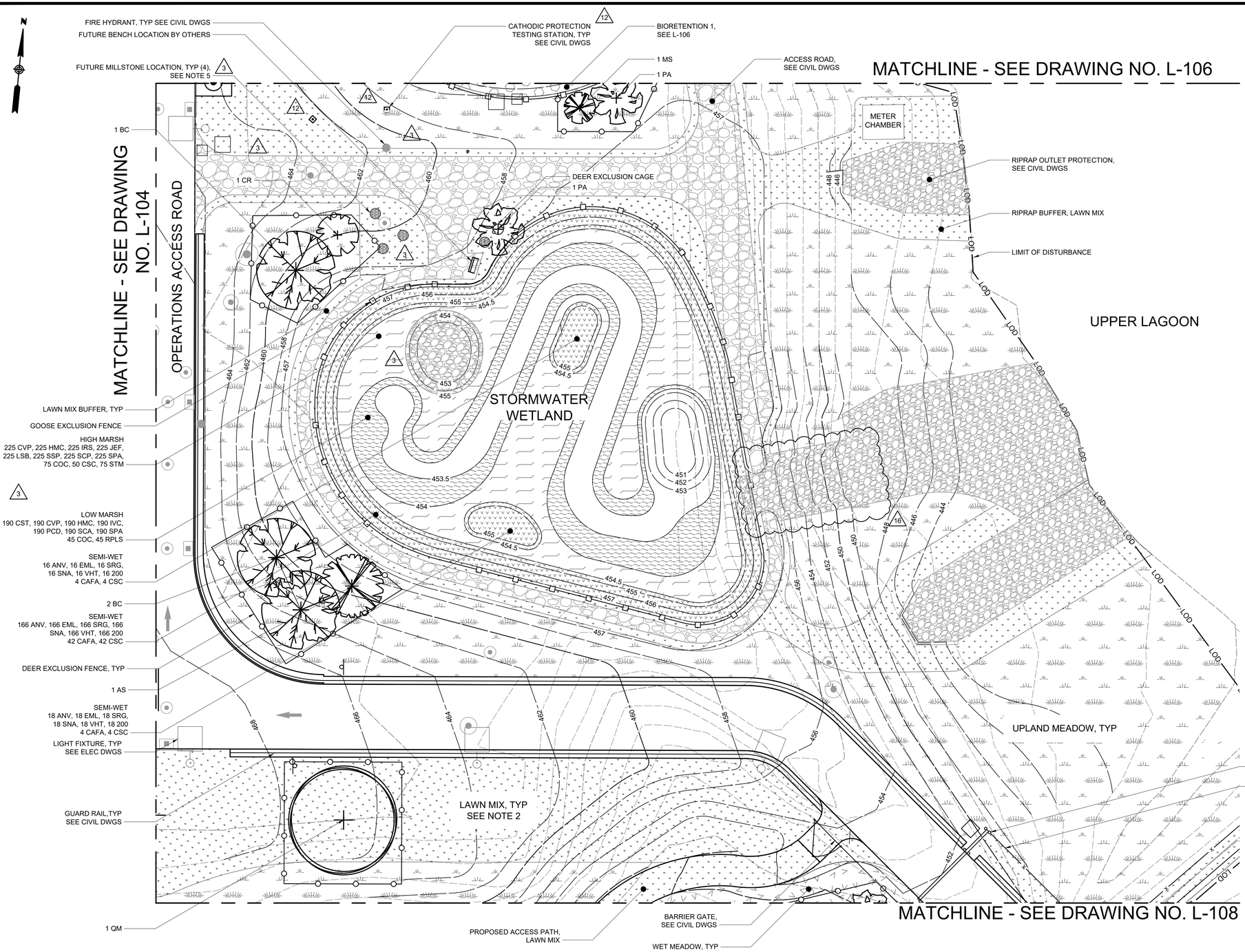
Hazen
HAZEN AND SAWYER
100 GREAT MEADOW ROAD, SUITE 702
WETHERSFIELD, CT 06109

SPRINGFIELD WATER AND SEWER COMMISSION

WEST PARISH WATER TREATMENT PLANT

CIVIL
YARD PIPING DETAILS - SHEET 1

DATE: FEBRUARY 2024
HAZEN NO.: 90398-004
CONTRACT NO.: 24-51
DRAWING NUMBER: C-316



NOTES:

1. SEE SEEDING NOTES ON L-001.
2. SEE L-002 FOR FULL LAWN MIX EXTENTS.
3. SEE PLANTING AND SEEDING SCHEDULE ON L-201.
4. SEE PLANTING DETAILS ON L-202 AND L-203.
5. FINAL LOCATION OF MILLSTONE TO BE AS FIELD DIRECTED BY THE LANDSCAPE ARCHITECT.

LEGEND:

- LOD — LIMIT OF DISTURBANCE
- DEER EXCLUSION FENCE
- GOOSE EXCLUSION FENCE
- DEER PROTECTION CAGE
- FUTURE BENCH, BY OTHERS
- MILLSTONE

GROUNDCOVER

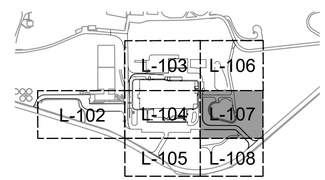
- LAWN MIX
- UPLAND MEADOW
- WET MEADOW

STORMWATER WETLAND / BIORETENTION

- SEMI-WET
- BIORETENTION 1 UPPER ZONE
- HIGH MARSH
- LOW MARSH

TREES

- AS - *Acer saccharum* 'Commemoration'
- BN - *Betula Nigra* 'Cully'
- CR - *Carpinus caroliniana*
- MS - *Magnolia stellata* 'Chrysanthemiflora'
- PA - *Prunus sargentii* x sub. 'Accolade'
- QM - *Quercus macrocarpa*



KEY MAP
NTS

SCALE: 1" = 20'
20 10 0 20'

REV	ISSUED FOR	DATE	BY
16	ADDENDUM NO. 16	JUN 24	MWM
12	ADDENDUM NO. 12	JUN 24	MWM
3	ADDENDUM NO. 3	MAR 24	MWM
0	ISSUED FOR BIDS	FEB 24	MWM

PROJECT ENGINEER: K. BARRETT
DESIGNED BY: K. CAMPOS
DRAWN BY: K. CAMPOS
CHECKED BY: E. MOSKALENKO

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE 0 1/2" 1"

MASSACHUSETTS ELIZABETH MOSKALENKO NO. 44541 REGISTERED LANDSCAPE ARCHITECT

Hazen

HAZEN AND SAWYER
100 GREAT MEADOW ROAD, SUITE 702
WETHERSFIELD, CT 06109

SPRINGFIELD WATER AND SEWER COMMISSION

WEST PARISH WATER TREATMENT PLANT

LANDSCAPE
PLANTING PLAN - SHEET 7

DATE: FEBRUARY 2024
HAZEN NO.: 90398-004
CONTRACT NO.: 24-51
DRAWING NUMBER: L-107

File: C:\USERS\KCAMPOS\DOCACCDOCS\HAZEN AND SAWYER\90398-004_WEST PARISH FILTER WTP\PROJECT FILES\LANDSCAPE\L-107 Saved by KCAMPOS Save date: 6/14/2024 1:16 PM
PLOT DATE: 6/17/2024 3:57 PM BY: KCAMPOS

NOTES:
1. SAMPLE PIPES TO BE INSULATED FOR ANTI-SWEAT

2. CONTRACTOR SHALL FURNISH AND INSTALL INCUBATOR MODEL BINDER BF115, BINDER BF260, THERMOFISHER 51028135 178L, OR EQUAL.

3. CONTRACTOR SHALL FURNISH AND INSTALL REICHERT DARKFIELD QUEBEC COLONY COUNTER OR EQUAL.

4. CONTRACTOR SHALL FURNISH AND INSTALL TUTTNAUER AUTOCLAVE MODEL 5075 ELP OR EQUAL.

5. CONTRACTOR SHALL FURNISH AND INSTALL TUTTNAUER BRINKMANN AUTOCLAVE MODEL 2540 EAP OR EQUAL.

6. CONTRACTOR SHALL FURNISH AND INSTALL DRYING OVEN BINDER ED56, THERMOFISHER 51028112 65L, THERMOFISHER 51028113 105L, OR EQUAL.

7. CONTRACTOR SHALL FURNISH AND INSTALL DAF JAR TESTING EQUIPMENT, CONSISTING OF THE FOLLOWING:
- DAF TEST ACCESSORIES KIT, WRUBEL WATER TECH LLC (A PLATYPUS US DIVISION) MODEL 4GSAT OR EQUAL
  (1) SATURATOR
  (2) LITER DAF ASSEMBLIES WITH DISPERSERS AND TAPS
  (4) PORT DISTRIBUTION MANIFOLD
- WERTHER OIL FREE BENCHTOP COMPRESSOR, WRUBEL WATER TECH LLC (A PLATYPUS US DIVISION), MODEL PC120/4C OR EQUAL
- PLATYPUS JAR TESTER WITHOUT JARS, WRUBEL WATER TECH LLC (A PLATYPUS US DIVISION) MODEL 4GJT1L OR EQUAL

1

PLANT NORTH

PROCESS AREA

MATCHLINE SEE DWG M-2206

C M-1703

A M-1701

B M-1702

D M-1703

P-40440 1" SW
P-30020 1" SW
P-10340 1" SW
P-10330 1" SW
P-40430 1" SW
P-30010 1" SW
P-10320 1" SW
P-10310 1" SW

NOTE 2
NOTE 3
NOTE 4
NOTE 5
NOTE 6

MICRO LAB
JANITOR RM
LAB STOR.
STAIR A
WELLNESS
ELEVATOR

1" SW, P-40440
1" SW, P-30020
1" SW, P-10340
1" SW, P-10330
1" SW, P-40430
1" SW, P-30010
1" SW, P-10320
1" SW, P-10310

OWS LAB

1" SW TO SAMPLE SINK (SEE ARCHITECTURAL DRAWINGS FOR CONNECTIONS TO THE SINK)

LABORATORY

TRAINING ROOM

LAB MGR

AAB RESTROOM

AAB RESTROOM

LOBBY

VESTIBULE

EL 471.00

13" TYP
5" TYP
5' 3" TYP
3' - 11"
17" TYP
5" TYP
10"

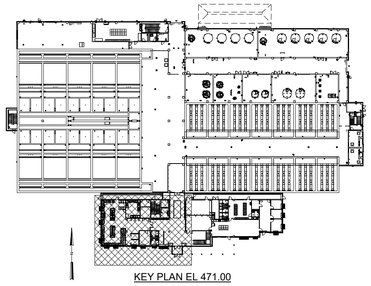
9' - 1"
20' - 8"
14' - 0"
5' - 0"
10' - 0"

A
B
C
D
E

1
2
3
4
5

26' - 8"
26' - 4"
20' - 10"
17' - 8"

PLAN AT EL 471.00 - ADMINISTRATION AREA 1
3/16" = 1'-0"



KEY PLAN EL 471.00

3/16" = 1'-0"

6 4 2 0 5'

REV	ISSUED FOR	DATE	BY
1	ADDENDUM NO. 14	JUN 24	MWM
0	ISSUED FOR BIDS	FEB 24	MWM

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE 0 1/2" 1"

PROJECT ENGINEER:	K. BARRETT
DESIGNED BY:	C. THORNTON
DRAWN BY:	D. KVOPKA
CHECKED BY:	M. MORIN

COMMONWEALTH OF MASSACHUSETTS
MARC W. MORIN
CIVIL
No. 53783
REGISTERED PROFESSIONAL ENGINEER

6/18/2024

Hazen

HAZEN AND SAWYER
100 GREAT MEADOW ROAD, SUITE 702
WETHERSFIELD, CT 06109

SPRINGFIELD WATER AND SEWER COMMISSION

WEST PARISH WATER TREATMENT PLANT

WATER TREATMENT BUILDING
MECHANICAL
PLAN AT EL 471.00 - ADMINISTRATION AREA 1

DATE:	FEBRUARY 2024
HAZEN NO.:	90398-004
CONTRACT NO.:	24-51
DRAWING NUMBER:	M-1201

Autodesk Docs://90398-004_West Parish Filter WTF/90398-004-ADM-M.rvt
6/7/2024 2:19:51 PM

Attachment B – DWSRF Request for Waiver Form

REQUEST FOR WAIVER FOR SRF CONSTRUCTION

Upon exhausting all known sources and making every possible effort to meet the minimum requirements for DBE participation, the Bidder may seek relief either partially or entirely from these requirements by submitting a completed waiver package by the close of business on the third business day after notification by the LGU. Failure to comply with this process shall be cause to reject the bid thereby rendering the Bidder not eligible for award of the contract.

General Information

Project Title: _____ Project Location: _____

Bid Opening (time/date) _____

Bidder: _____

Mailing Address: _____

Contact Person: _____ Telephone No. _____

Minimum Requirements

The bidder must demonstrate that good faith efforts were undertaken to comply with the percentage goals as specified. The firm seeking relief must show that such efforts were taken appropriately in advance of the time set for opening bid proposals to allow adequate time for response(s) by submitting the following:

A. A detailed record of the effort made to contact and negotiate with disadvantaged minority and/or woman owned businesses, including:

1. names, addresses, telephone numbers and contact dates of all such companies contacted;

2. copies of written notice(s) which were sent to DBE potential subcontractors prior to bid opening;

3. a detailed statement as to why each subcontractor contacted (i) was not willing to do the job or (ii) was not qualified to perform the work as solicited; and

4. in the case(s) where a negotiated price could not be reached the bidder should detail what efforts were made to reach an agreement on a competitive price.

5. copies of advertisements, dated not less than ten (10) days prior to bid opening, as appearing in general publications, trade-oriented publications, and applicable minority/women-focused media detailing the opportunities for participation;

B. MassDEP may require the bidder to produce such additional information as it deems appropriate.

C. No later than fifteen (15) days after submission of all required information and documentation, MassDEP shall make a determination, in writing, whether the waiver request is granted and shall provide that determination to the bidder and Awarding Authority. If the waiver request is denied, the facts upon which a denial is based will be set forth in writing.

CERTIFICATION

The undersigned herewith certifies that the above information and appropriate attachments are true and accurate to the best of my knowledge and that I have been authorized to act on behalf of the bidder in this matter.

_____ _____

(authorized original signature) DATE

Attachment C – 01 51 50 – Temporary Bypass Pumping

SECTION 01 51 50
TEMPORARY BYPASS PUMPING

PART 1 – GENERAL

1.01 THE REQUIREMENT

A. The Contractor shall furnish all labor, materials, equipment, and appurtenances required to install and test the temporary pumping system complete as specified herein, including, but not limited to: designing, operating, maintaining, and removing the temporary bypass pumping system comprised of: pumps; piping; valves; air release valves; plugs; fuel, anchors; supports; blocking; controls; flow measuring devices; spill containment; power and lighting; line stopping (as applicable); pumper trucks (as applicable); and ancillary items required for a complete system.

1. If necessary, the Contractor shall employ the services of a Subcontractor that satisfies the qualifications stated herein.

2. If necessary, the Contractor shall employ the services of a Line Stopping Specialty Subcontractor that satisfies the qualifications herein. Line Stopping shall be in accordance with Section 40 05 53 Line Stops and Bypass on Water Main Systems.

B. Temporary pumping shall be provided by the Contractor during as described in Section 01 14 00 Coordination with Owner's Operations.

C. All equipment including pumps, piping, valves and appurtenances shall be flushed disinfected prior to use per the potable water requirements of Section 33 01 10.13 – Disinfection of Water Treatment Facilities. This shall be done prior to mobilizing the equipment to the site.

D. The Contractor shall conform to the requirements specified herein and shall include in the Construction Schedule all events that may impact operation of the Slow Sand Filters and the bypass pumping system.

E. The Owner shall be responsible for initial dewatering of, and sediment removal in the existing facilities.

F. The services of the manufacturer's representative shall be provided for a period of not less than 2 days for installation, checking, startup and testing, and training. Any additional time required to achieve successful installation and operation shall be at the expense of the Contractor.

1.02 RELATED WORK

A. Drawings and general provisions of the Contract, including Division 0 and Division 1 Section apply to this Section.

B. Division 33 – Utilities

C. Section 40 05 00 – Basic Mechanical Requirements

1.03 SUBMITTALS

A. Submit the following in accordance with Section 01 33 00 – Submittal Procedures.

1. References: Within 4 weeks of the Notice to Proceed, and prior to any bypass operations, the Contractor or Subcontractor conducting bypass flow handling and the Specialty Subcontractor providing line stopping (if applicable) shall provide references satisfying the requirements of Paragraph 1.04 of this Section.

2. Prepare a project specific Temporary Pumping Plan. The Contractor must obtain the Engineer and Owner's approval at least seven (7) days in advance of the scheduled time of the Work.

a. The plan shall include, but not be limited to:

1) Manufacturer's cut sheets for pumps, pipes and hoses, valves, couplings and sewer plugs;

2) Layout drawings showing: staging areas for pumps; plan views with field verified elevations; piping layout including size, location, length and material for suction and discharge; location and types of fittings, valves, anchors and other appurtenances; sewer plugging locations, method and types of plugs; temporary pipe supports and anchoring; plans showing any power connections;

3) Hydraulic design calculations shall include: pump sizes and capacities, static head, friction losses, and flow velocity under all operating conditions; system curve and pump curves showing pump operating range; fuel consumption and storage times and piping thrust and restraint design;

4) Shop drawings showing the control and alarm systems; method of noise control and power requirements for each pump;

5) Details regarding the proposed bypass flow measurement device including cut sheets, accuracy, manufacturer's operating requirements;

6) Schedules for installation and maintenance of the bypass pumping system, including manpower, planned duration; and

7) Provisions for monitoring the performance of the system, including emergency response.

b. The temporary pumping plan shall be prepared and signed by a Professional Engineer licensed in the Commonwealth of Massachusetts.

1.04 QUALITY ASSURANCE

A. Provide materials, equipment, and services from a Provider or Subcontractor having at least five (5) years of experience in design, production, assembly, and field service of similar temporary pumping systems.

1. Provide at least five references for projects of similar size and complexity performed by the Contractor or Subcontractor within the past five years.

B. Competent Operator

1. Provide at least one qualified and competent employee (competent operator) to operate and maintain all temporary pumping operations.

2. The competent operator shall be at the jobsite or on-call at all times (24 hours per day) while the pump station is dependent on the temporary bypass pumping system.

3. The competent operator shall be on the jobsite whenever problems are occurring with any portion of the temporary bypass pumping system.

4. The presence of the competent operator shall be mandatory within 30 minutes or less from the time an alarm is activated and/or Contractor is acknowledged or aware of the situation. Contractor shall immediately notify the Owner after acknowledgement or becoming aware of the alarm situation.

5. Qualifications of Competent Operator

a. Minimum three (3) years of experience in operation and maintenance tasks required for pumping systems/stations of similar capacities; trained in the operation and maintenance of the pumps and certified by manufacturer/supplier of pumping equipment; capable of emergency repairs.

b. Readily available at site for trouble response and capable of effective communication with the Engineer/Owner.

C. All equipment shall arrive at the jobsite in a reliable and well-maintained condition. All pumps shall be inspected for wear prior to arriving to the job site and shall have all wearable items replaced.

PART 2 – PRODUCTS

2.01 GENERAL

A. It shall be the Contractor's responsibility to provide pumping equipment that is capable of handling raw water, and adequate for the performance of the Work or portions thereof under this Contract within the time specified. All pumping equipment shall be kept in satisfactory operating condition, shall be capable of safely and efficiently performing the required bypass pumping Work, and shall be subject to review by the Owner and/or Engineer at any time within the duration of the Contract. All bypass pumping Work hereunder shall be performed in strict accordance with all applicable requirements of OSHA and Local agencies.

B. Provide any and all temporary utilities and services required for operation of the bypass pumping equipment. Maintain these utilities and services during the relevant portion of the Work and remove them upon completion of the Work, all in accordance with Section 01 51 00 – Temporary Utilities.

C. The Contractor shall provide all pipeline, plugs, and pump(s) of adequate size to handle the assumed demand submitted by the Contractor, ensuring that the total flow can be safely diverted while the drain is being modified.

D. The Contractor shall ensure that the discharge point is protected from scouring, and shall repair any damage done at no cost to the Owner.

E. The Contractor shall make available within a 60-minute time period, a backup unit for all components (pumps, piping, controls, etc.) of the bypass pumping system.

2.02 SYSTEM DESCRIPTION

A. Slow Sand Filter Drain System Requirements

1. The Contractor is responsible for restricting and diverting draining from SSF 11-14.

2. Empirical Flow and Head characteristics are:
   a. Pump Station Capacity – 2080 gallons per minute (3 MGD)
   a. Suction Water Surface Level Elevation: 467

3. The Contractor will be responsible for verifying all elevations. The Contractor shall be responsible for adequately sizing the system to safely convey the design flow from the first 4’ manhole on the 24” VCP pipe North of Slow Sand Filters 11-14 (Shown on C-146 and Reference Contract 27, Extension of West Parish Filters),

and shall discharge into Cook Brook at a location approved by the Owner. For bidding purposes, Contractor shall assume that the discharge main is 1000 ft.

4. The Contractor shall be responsible for equipping the bypass pumping system with a magnetic flow meter. The magnetic flow meter shall be installed on the combined discharge piping from the bypass pumping system. The magnetic flow meter must be capable of measuring flow rates between 0 and 6 million gallons per day, have an accuracy of ± 0.50% for a flow rate velocity range of 0.3 to 10 m/s and have a minimum turndown of 100:1. The flow meter shall also be equipped with a data logging device capable of totalizing flow on a daily basis.

5. A redundant (backup) pumping unit shall be made available for the entire duration of bypassing activity and be operational within 60 minutes of the primary pump malfunctioning. The backup pump shall of equal capacity of the primary pump but be from a different power source.

6. The bypass pumping system shall convey flow in a manner that does not cause surcharging of Slow Sand Filters, and that protects public and private property from damage.

7. Provide all pump controls and a notification/alarm system for the pumping system(s). The notification/alarm system shall be capable of notifying the Contractor and Owner 24 hours a day, 7 days a week in the event of a high-water level or pump failure.

2.03 MATERIALS

A. Pumps:

1. Provide fully automatic self-priming units that do not require the use of foot valves in priming the system. All pumps used must be constructed to allow dry running for long periods of time to accommodate the cyclical nature of flows. Pumps shall be capable of handling solids up to 3 inches. Electric submersible pumps shall also be acceptable.

2. Design for continuous duty operation in air for application in a temporary pump-around system. Do not overload the motors at any point on the pump performance curve throughout the specified speed range.

3. Acceptable Manufacturers

   a. Godwin, Gorman Rupp, Baker, or equal.

B. Controls:

1. Provide each pump with a HAND-OFF-AUTOMATIC selector switch.

2. Provide a means to measure the flow depth in the suction manhole that is compatible with the control panel for primary and backup pumping system(s).

3. For electrically driven pumps, provide a variable frequency drive (VFDs) that meet the dynamic variations of the flow requirements.

    a. Provide a VFD with the capability of bypassing.

C. Piping

1. Provide a suction and piping configuration in that facilitate the quick switching between, and isolation of the primary and backup pumps.

2. Provide screening as necessary on the suction piping and use quick connect couplings for pump switch-out as needed.

3. Piping shall be constructed of rigid pipe with positive, restrained joints. Under no circumstances will aluminum “irrigation” type piping or glued PVC pipe be allowed. Provide isolation, check valves, and air and vacuum relief valves as needed.

    a. All pipe materials utilized in temporary bypass pumping during construction shall be in good condition and shall be free of defects and leaks. Any defective material shall be replaced by the Contractor at no cost to the Owner.

D. Provide sound attenuation enclosure(s), as required, to meet maximum sound level of 55 dBA from a measured distance of 40 ft or more.

E. Provide containment for areas where there is potential for the seepage from the bypassing systems (e.g. air release valves, maintenance ports, fuel tanks, etc.). Height of the containment shall be adequate for reason release of water during maintenance operations.

2.04 NOTIFICATION SYSTEMS

A. Provide provisions for the pumping system(s) to notify off site personnel of problems with the temporary bypass pumping system.

1. Maintain a current list of personnel (name, address, telephone number) at the site at all times.

B. Provide local alarm beacon to indicate alarm conditions.

2.05 POWER

A. Provide all power required for complete operation of the bypass pumping system (including controls, lights, etc.).

PART 3 – EXECUTION

3.01 EXAMINATION

A. Verify all dimensions and conditions relative to the performance of the temporary pump-around system.

B. The Contractor shall be responsible for locating all existing utilities in the area, where the Contractor proposes to locate the bypass pump(s) and pipe. The Contractor shall locate the bypass pipelines to minimize any disturbance to existing utilities and shall obtain approval of the proposed alignment from the Owner and/or Engineer.

C. Prior to starting any specific bypass pumping operation, the Contractor shall confirm with the Owner and Engineer that the assumed demand submitted by the Contractor is acceptable.

D. Bypass pumping equipment and materials shall not be installed until all equipment, materials, provisions, and requirements have been reviewed by the Owner and/or Engineer.

3.02 PREPARATION

A. Clean all pipe and manholes if they are found to contain debris or blockage that may hinder the operation or maintenance of the bypass pumping system. Protect all existing structures and pipes from damage.

B. If used, sound attention measures/structures shall be installed prior to the start-up of the temporary bypass pumping system.

C. The contractor is responsible to make provisions for and to provide power for the temporary lighting and bypass pumps. Contractor shall coordinate the installation and removal of temporary power with the local utility.

3.03 INSTALLATION

A. Install system in accordance with approved submittals and the manufacturer's installation instructions. Locate all piping, pumping and other equipment so as to provide the least amount of disruption to normal activities.

B. The Contractor shall be responsible to make any modifications to the existing sanitary manholes, etc. as necessary to accommodate the temporary pumping system. Contractor shall restore any modified or affected structures to a condition equal to the original or better than what existed prior to the construction.

C. All piping, hoses and connections shall be secured and durable. All pipe joints shall be free of leakage.

D. The Contractor shall have all pumps (primary and standby) piped and ready to pump at all times from the time of installation until removal. Arrange pumps and valves so that any pump can be removed and replaced (if necessary) without interrupting the conveyance of flow

E. Provide temporary lighting to adequately illuminate the area where the temporary pumps are located. Lighting shall be sufficient to allow maintenance and repairs to be performed at any time of the day. Contractor is responsible to make provisions for and provide power for the temporary lighting.

F. Blocking of flows shall incorporate a plugging device. When plugging or blocking is no longer needed for performance and acceptance of Work, remove it in a manner that permits the flow to slowly return to normal without surge, to prevent surcharging or causing other major disturbances downstream.

G. Locate the pumps and pipelines off of streets and sidewalks and shoulders of the roads. Where required to cross the road, pipe shall be buried and covered in temporary pavement. When the work is complete, the pipe shall be removed and the road shall be repaired with permanent pavement.

3.04 SYSTEM STARTUP

A. Test capacity of each pump operating independently and in parallel with other pumps to verify capacity prior to any temporary pumping operations. Measure pump discharge pressure and review output from magnetic flow meter to determine pump flow rates.

B. Provide 48 hours advance notice to Engineer and Owner prior to testing.

1. Testing periods shall occur only between the hours of 8:30 a.m. and 3:00 p.m., Monday through Thursday. Testing of bypass pumping system shall NOT be allowed Friday through Sunday, on the Owner or Engineer's scheduled Holidays, or on the day immediately prior to an Owner or Engineer's scheduled Holiday. In addition, testing of bypass pumping system shall only be performed during the Owner and Engineer's normally scheduled workdays.

C. Leakage and Pressure Test: The Contractor shall perform leakage and pressure testing for a minimum of 2 hours on the pump suction and discharge piping,

D. During all bypass pumping operations, the Contractor shall protect the bypass pumps, bypass pipelines, discharge pipeline or structure, and influent pipeline or structure from damage inflicted by any equipment or traffic. The Contractor shall be responsible for all physical damage to the temporary pumping system or collection system caused by human or mechanical failure.

E. The Contractor shall demonstrate a minimum of 48 hours of continuous satisfactory pumping prior to dismantling any drain piping.

3.05 OPERATION AND MAINTENANCE

A. Inspect and log the bypass pumping system regularly to ensure that the system is working correctly. Inspect and ensure proper operating condition of the bypass pumping system at least at 7 A.M. and 7 P.M., seven (7) days a week. However, Engineer has the right to increase the frequency of inspection as required.

B. Have available, at all times, sufficient repair parts, tools and equipment, on-site to assure rapid emergency troubleshooting and repair of any pump or equipment.

C. Maintain alarm and notification system throughout the duration of the temporary pump-around operations.

D. Bypass pumping system shall be monitored 24 hours per day, 7 days per week by a responsible and competent mechanic/operator who is capable of starting, stopping, and maintaining the pumps at all times that the system is in operation. Said competent operator must be capable of responding to a bypass pumping emergency within 30 minutes of receiving an alarm.

E. The temporary pumping system shall remain operational until approval for removal is obtained from the Engineer and Owner.

3.06 CLEANING AND RESTORATION

A. Clean and the containment areas after maintenance operations, or the release of flow.

B. Following the completion of the temporary pumping operations:

1. Restore disturbed areas to the original or better conditions that existed prior to the construction.

2. Flush with clean water, all drains surcharged during the temporary pump-around operations to remove any solids deposited during surcharging.

C. In the event, during the performance of any form of flow control, that liquids/solids being bypassed are spilled, discharged, leaked, or otherwise deposited into the open environment, including, but not limited to: on the ground; on roadways; onto/into private property; into creeks; and/or into storm drains, due to the Contractor's Work, the Contractor shall be responsible for cleaning these liquids/solids and stabilizing the area affected, all in compliance with any and all regulatory requirements. The Contractor shall immediately notify the Owner and/or Engineer of the spill/discharge/leak/deposit after it occurs and shall immediately correct the violation. Correcting, cleaning and paying for any associated fines shall be performed at no additional cost to the Owner.

3.07 TRAINING

A. Provide a minimum of 2-hours of operation and maintenance training for the temporary pumping system to Owner personnel (all licensed employees to be trained).

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Attachment D – SWSC Material Specifications

SPRINGFIELD WATER AND SEWER COMMISSION

MATERIAL SPECIFICATIONS

Version 4 – November 1, 2020

William E. Leonard, Commissioner
Vanessa Otero, Commissioner
Daniel Rodriguez, Commissioner

Springfield Water and Sewer Commission

Material Specifications

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Section 3.11 HYDRANTS – DRY BARREL

3.11.1 Public Hydrants

3.11.2 General

1. Hydrants provided to the Springfield Water and Sewer Commission (Commission) or installer shall be manufactured, tested, inspected and delivered in full compliance with this Specification.

2. Hydrants as a minimum shall conform to the most current American Water Works Association Standard C-502 and all addenda thereto.

3. Working pressure 250 PSI. Test pressure 500 PSI.

4. Hydrant shall open RIGHT (clockwise).

5. The direction to open shall be cast with an indicating arrow and "OPEN" into the operating nut and weather shield or into the bonnet and shall be clearly visible when viewed from the top.

6. Hydrants shall be for 5-feet-0-inch, 5-feet-6-inch, 6-feet-0-inch, and 6-feet-6-inch bury. The standard depth of bury is 6-feet-0-inch, unless otherwise specified by the Commission (See delivery requirements, below). Depth of bury shall be painted on the lower barrel section of the hydrant.

7. Hydrant shall be of the full compression design, opening against and closing with the water pressure.

8. All internal parts shall be designed for rapid and simple removal employing a compact lightweight wrench that will withdraw all working parts from the base of the hydrant as a unit.

    - The design and construction of the hydrant shall be such that a Commission maintenance and repair crew can fully disassemble the hydrant from the frangible coupling in no more than one (1) hour.

9. Hydrants shall be bid without accessories (glands, gland gaskets and bolts).

    - Accessories shall be as specified in Section 3.16 of these Material Specifications.

10. The product(s) shall have all parts cast and assembled in North America or meet the requirements of the American Iron & Steel (AIS), as follows;

    (a) North America shall mean the United States, Canada, and Mexico,

(b) Cast shall mean molten metals poured into a mold to create Casting(s) for a finished product,

(c) Incidental parts may be purchased/obtained from other counties to provide a finished product , in accordance with these Material Specifications, and

(d) Assembled shall mean castings and sourced parts are put together to build a finished product, or

(e) The finished product shall meet all the requirements of the AIS language, and all guidance issued by the EPA. For any Massachusetts State Revolving Fund (SRF) project this requirement governs.

11. Inspection:

(a) All finished product(s) furnished shall be subject to inspection by the Commission at the place of manufacture and shall be subject to inspection after delivery to the Commission.

(b) Cost of re-inspection of materials or fabricated finished product(s) caused by the non-compliance of the manufacturer with the provisions of the specifications, shall be paid for by the manufacturer, and shall be deductible from the price paid for the hydrants.

12. Delivery shall be made by truck in minimum truckload quantity to locations designated in the Commission's service area in and near Springfield, Massachusetts. The low bidder shall notify the Commission of the quantity comprising a minimum truckload. The Commission reserves the right to mix depth of buries to reach a full truckload.

13. The manufacturer/vendor/shipper must use care in preparing finished product(s) for shipment and in handling during shipment and delivery, to insure that the finished(s) are delivered without damage. Particular attention must be directed at protecting the protective coating from damage. Damaged finished(s) will not be accepted.

14. The manufacturer and/or vendor, on request, shall provide the purchaser with an affidavit for each and every delivery of an order, stating that the finished product(s) and all materials in its construction exactly conform to the applicable requirements of these specifications and the applicable AWWA Standards.

3.11.3 Submittals

1. Submittals are required at time of bid award, at time of purchase, or as required by the Commission's Purchasing Agent.

2. The manufacturer and/or vendor shall furnish three (3) sets of 24-inch by 36-inch certified shop drawings for all materials to be used. All components shall be provided in accordance to these drawings. The drawings shall show the following:

   (a) Cross sectional drawings of the hydrant showing overall dimensions,

   (b) Material specifications for each component,

   (c) Coating applied to each component, if applicable,

   (d) Weight of each component and total weight for each bury depth, and

   (e) Country of origin for each component.

3. The manufacturer shall furnish three (3) sets of coating specification(s) of each component that has a coating applied identifying component surface preparation, primer (if applicable), type of coating(s), color of coating(s), manufacturer of coating(s), part number of the coating(s), and a sample on a 3-inch by 5-inch chip.

4. The manufacturer shall furnish a letter certifying the product meets all the requirements of the AIS, an explanation, in the letter, of how the products meets the AIS requirements, and signed by the Owner or President of the Company.

5. The manufacturer shall furnish one (1) complete catalogue or manual for parts, repair, and maintenance.

6. The manufacturer shall furnish a certified statement that all hydrants of the same make and model bid, regardless of the year of manufactured, shall have interchangeable component parts and that the parts availability and delivery shall remain firm for ten (10) years.

7. The manufacturer shall furnish a warranty for the hydrants that states that the hydrants shall be free from all defects in material and workmanship under normal use of the product for a minimum ten (10) year time period from time of delivery. The manufacturer shall replace and/or repair defective parts or the whole hydrant for a minimum ten (10) year time period from time of delivery. The manufacturer shall repaint, recoat hydrants, or replace hydrant or hydrant parts that exhibit coating failure, such as rusting, chipping, flaking, under normal condition and from handling during delivery for a minimum three (3) year time period from time of delivery. Coating failures caused by Installer will not be a cause of coating failure.

8. The manufacturer shall furnish a certified statement that the required tests on the various materials and on the completed hydrant have been made, and the results of all tests conform to the requirements of the American Water Works Association

Standard Specification C-502. The records of the tests shall be furnished for the individual parts with respect to physical and chemical properties.

9. The manufacturer and/or vendor shall furnish references, on request, which shall list a minimum of three (3) Municipalities/Utilities that were, supplied this product, in the last two (2) years. The listing is to include:

   (a) Name of Municipality/Utility

   (b) Total amount of product bid on and amount delivered

   (c) Date the bid was accepted and date the product was delivered

   (d) Reference person with address and desk top phone number whom the Commission has authorization to contact regarding the product

10. The Springfield Water and Sewer Commission will mark one (1) set of plans and coating specification "Approved", "Approved as Noted", or "Rejected-Resubmit" and return to the manufacturer and/or vendor.

    (a) Approved means the contractor can supply the material as shown on the drawing(s).

    (b) Approved as Noted means the contractor can supply the material as shown on the drawing(s), but with the changes as noted.

    (c) Rejected – Resubmit means the contractor must resubmit three (3) sets of new shop drawings for correct materials to be used.

3.11.4 Bonnet

1. The bonnet shall be one piece and made of high strength cast iron ASTM A-126 Class B or of high strength ductile iron ASTM A-536 grade 65-45-12.

2. The bonnet shall be free draining.

3. The bonnet shall be designed to make tampering difficult and provide a convenient means for lubricating.

3.11.5 Barrel Sections

1. The barrel sections shall be one piece and made of high strength cast iron ASTM A-126 Class B or of high strength ductile iron ASTM A-536 grade 65-45-12.

2. The lower barrel shall be provided with a bury line painted or embossed onto it.

3. The upper and lower barrel joint shall be no less than 2-inches above the bury line.

4. The upper barrel nozzles shall be "three (3) way" and as follows:

   (a) The upper barrel shall be equipped with (2) two each 2-1/2-inch hose nozzles, 180 degrees apart.

   (b) The upper barrel be equipped with one (1) each 4-1/2-inch pumper nozzle on the same plane and in between the 2-1/2-inch hose nozzles.

   (c) The location of the center line of the upper barrel nozzles shall be at least 16-inches above the bury line so that a 15-inch wrench can freely turn 360-degrees without hitting the ground.

5. Changes in shape or size of the barrel sections shall be curved. The junction of the hose and pumper outlets shall be rounded.

6. The upper and lower barrel joint shall be connected with a traffic safety flange.

   (a) The traffic safety flange shall be designed so that in the event of accident, damage, or breaking of the hydrant above or near the ground line the main valve will remain closed.

   (b) The traffic safety flange shall be of the split flange, split coupling type, or lock ring designed to permit 360-degree rotary movement of the upper barrel without shutting down service or removing the flange bolt

   (c) The traffic safety flange may be high strength cast iron ASTM A-126 Class B or of high strength ductile iron ASTM A-536 grade 65-45-12 or other approved material designed so that in the event of accident, damage, or breaking of the hydrant above or near the ground line the main valve will remain closed.

   (d) Break-away bolts, break-away barrel, lugs or individual metal keeper devices are not acceptable.

7. Hydrants shall be provided with permanent markings cast or stamped, mechanical or adhesive attachment shall not be acceptable, that are easily discernable (at least ½-inch to 1-inch tall) after the hydrant is installed (characters in parentheses are examples of permanent markings) that include the following:

   (a) Identity of manufacturer by name, initials, insignia, or abbreviations commonly in use,

   (b) Size of main valve opening (5-1/4"),

   (c) Material the barrels are made of (DI or CI),

(d) Year of manufacture (2010),

(e) Pressure rating (250 PSI), and

(f) Underwriters Laboratory Listed (UL).

3.11.6 Outlet Nozzles

1. Hydrant outlet nozzles shall be bronze and fastened into the nozzle section of the upper barrel by a mechanical means.

   (a) Screwed in outlet nozzles shall be provided with a lock pin/screw to prevent the outlet nozzle from backing out, or;

   (b) Recessed lug & groove outlet nozzles shall be provided with a threaded retainer or lock pin/screw to prevent outlet nozzle from backing out.

   (c) Hydrant outlet nozzles shall not have any movement when locked into place.

   (d) Caulking the outlet nozzle into the upper barrel shall not be allowed.

2. Hydrant outlet nozzles shall have National Fire Protection Association (NFPA) Number 194 National (American) Standard Fire Hose Coupling Screw Threads.

3.11.7 Outlet Nozzle Caps

1. Outlet nozzle caps shall be made of high strength Cast Iron ASTM 126A Class B

2. Outlet nozzle caps shall have National Fire Protection Association (NFPA) Number 194 National (American) Standard Fire Hose Coupling Screw Threads.

3. Nozzle caps shall be provided with 1-1/8" (point to flat) pentagon and shall be not less than 1" high.

4. All nozzle caps shall be provided with a metal slip ring attached to the nozzle cap and metal chains connected to the slip ring and hydrant barrel. The chain (slip) ring and chains shall allow the nozzle caps to rotate freely.

   (a) The chain (slip) ring shall not be less than ¼-inch diameter steel.

   (b) The chain shall be non-kink double/twisted loop steel and shall not be less than 3/16-inch diameter. Each link shall be approximately 1-1/2-inches long. Each chain shall have at least eleven (11) links.

   (c) The slip ring and chain shall be rust proof coated or plated or stainless steel.

3.11.8 Operating Mechanism

1. Operating nut shall be made of high strength ductile iron ASTM A-536 grade 65-45-12 or bronze

   (a) 1-1/8" (point to flat) pentagon and shall be not less than 1" high.

   (b) Operating nut may function as both an operating nut and weather-shield.

   (c) The operating mechanism may be sealed with a rubber weather-shield or O-ring seal.

2. The design and construction of the hydrant operating mechanism of the hydrant shall be such that one (1) person shall be able to open and close the hydrant under a maximum operating pressure of 250-PSI with a 15-inch wrench.

3. The design and construction of the hydrant operating mechanism located at the top of the hydrant shall be such that no part of the operating threads will be in contact with water in the upper barrel (standpipe) when the hydrant is in service.

   (a) The working threaded parts of the operating mechanism shall not have any steel or iron parts against steel or iron parts. The threaded portion of the operating stem or the stem nut (or sleeve) shall be made of bronze or stainless steel.

   (b) Details and materials for the dry-top construction shall be subject to the approval of the Commission.

4. Hydrant operating mechanism assembly shall be housed in a compact housing with an integral lubrication chamber.

   (a) Two (2) O-rings shall be provided to seal the lubrication chamber from water in the hydrant barrel from entering the lubricating chamber under pressure.

   (b) An additional O-ring shall be used in the hold down nut to prevent dirt, condensation or atmospheric contamination entering the lubrication chamber from outside.

   (c) The moving surface against which these two "O"-rings bear upon to create the seal must be of bronze or stainless steel.

5. A travel stop nut or similar device may, but is not required, be used to limit main valve travel and to prevent putting main stem into over compression.

6. The upper operating assembly shall be compatible with the "Custodian" vandal proof device as manufactured by Hydra-Shield Manufacturing, Inc. The

"Custodian" device must be able to be installed without further machining or modification to the hydrant.

7. The upper and lower operating rods may be made of cold roll steel (CRS), hot rolled steel (HRS), stainless steel (SS), or other material approved by the Commission. The lower operating rod shall not protrude past the lower barrel

8. The operating rods shall be connected with frangible coupling designed so that in the event of accident, damage, or breaking of the hydrant above or near the ground line the main valve will remain closed.

   (a) The frangible coupling shall be held in place to the operating rods with at least one (1) stainless steel pin or bolt in each rod.

   (b) Details and materials for the frangible connections shall be subject to the approval of the Commission.

3.11.9 Main Valve Assembly

1. Hydrant valve opening 5-1/4" minimum as sized by seat ring internal opening.

2. The hydrant main valve may be either three (3) piece design or one (1) piece design, as follows:

3. Three (3) piece design includes a top plate, main valve, and bottom plate:

   (a) The valve top plate may be high strength ductile iron ASTM A-536 grade 65-45-12, high strength Cast Iron ASTM 126A Class B, bronze, or other material approved by the Commission.

   (b) The valve bottom plate may be high strength ductile iron ASTM A-536 grade 65-45-12, high strength Cast Iron ASTM 126A Class B, bronze, or other material approved by the Commission.

   (c) The valve bottom plate shall be fully epoxy coated by a fusion or thermal bonding in accordance with AWWA C-550. Bronze or stainless steel valve bottom plates do not require epoxy coating.

   (d) The main valve may be high strength ductile iron ASTM A-536 grade 65-45-12, high strength Cast Iron ASTM 126A Class B, bronze, or other material approved by the Commission fully encapsulated in a rubber compound for water service, molded, not split and glued, constructed of styrene butadiene rubber (SBR) or Nitrile (Buna-N) compounds, and must meet or exceed ASTM D-2000 3 BA 715 and ANSI A21.11/AWWA C-111, latest revision. No bare metal shall be left exposed.

4. One (1) piece design is a single piece:

   (a) The main valve may be high strength ductile iron ASTM A-536 grade 65-45-12, high strength Cast Iron ASTM 126A Class B, steel, or other material approved by the Commission.

   (b) The main valve shall be fully encapsulated in a rubber compound for water service, molded, not split and glued, constructed of ethylene propylene diene Monomer (EPDM) rubber in accordance with ASTM standard D-1418, styrene butadiene rubber (SBR) or Nitrile (Buna-N) compounds in accordance with ASTM D-2000 3 BA 715 and ANSI A21.11/AWWA C-111, latest revision. No bare metal shall be left exposed.

5. The main valve assembly shall have a bronze sub-seat and a bronze seat ring.

6. The mechanically installed sub-seat of the hydrant shall be constructed of bronze, and be an integral part of the bottom shoe/elbow.

   - The sub-seat shall be mechanically installed with threads, lock rings, or other Commission approved method.

7. The seat ring shall also be of bronze and shall be a working component of the main valve assembly.

8. Seal between seating and sub-seat shall consist of “o” rings located in machined grooves, above and below the drainage channel.

9. There shall be a minimum of two (2) drain ports one hundred and eighty-degrees apart. The drain ports shall be provided in the bottom barrel, bottom shoe/elbow, or between the bottom barrel and bottom shoe/elbow.

10. All "O" rings shall seal against bronze.

3.11.10Bottom Shoe/Elbow

1. The bottom shoe/elbow shall be made of high strength ductile iron ASTM A-536 grade 65-45-12.

2. The bottom shoe/elbow shall be provided with flat cast bottom to set the hydrant on.

3. The bottom shoe/elbow shall be provided with 6-inch mechanical joint connection in accordance with ANSI/AWWA C111/A21.11.

3.11.11Coatings

1. Coatings require proper surface preparation in order for the coating systems to adhere to the component being coated. At a minimum the components shall be mechanically blast cleaned and/or immersed in a chemical cleaner or heat cleaned in a furnace in order to insure a properly prepared surface that is clean and clear of any grease, oil, dirt, etc., in accordance with AWWA C502 and C-550, latest versions.

2. The bonnet shall be fully epoxy coated by a fusion or thermal bonding, a polyester powder coat, or an epoxy wet or electrodesposition coat primer with a polyurethane top coat paint system in accordance with AWWA C502 and C-550, latest versions, and shall be applied to the interior (excluding lubricating chamber) and exterior of the bonnet.

   (a) The color shall be a gloss aluminum/silver in accordance with Federal Standard 595 Paint Specification FS 17178.

   (b) All threads and/or functional openings and surfaces shall be protected prior to coating and the barrel delivered without coating on the threads and/or functional openings and surfaces.

3. The upper barrel shall be fully epoxy coated by a fusion or thermal bonding, a polyester powder coat, or an epoxy wet or an electrodesposition coat primer with a polyurethane top coat paint system in accordance with AWWA C502 and C-550, latest versions, and shall be applied to the interior and exterior of the upper barrel.

   (a) The color shall be gloss blue angels yellow in accordance with Federal Standard 595 Paint Specification FS 13655 or RBG Hex Code FDD31D.

   (b) All threads and/or functional openings and surfaces shall be protected prior to coating and the barrel delivered without coating on the threads and/or functional openings and surfaces.

4. The lower barrel may be covered with two (2) coats of asphaltic tar coatings, the first being allowed to dry before the second is applied or may be fully epoxy coated by a fusion or thermal bonding or coated in accordance with AWWA C-502 and C-550, latest version, and shall be applied to the interior and exterior of the lower barrel.

5. The nozzle caps shall be fully epoxy coated by a fusion or thermal bonding, a polyester powder coat, or a epoxy wet or electrodesposition coat primer with a polyurethane top coat paint system in accordance with AWWA C502 and C-550, latest versions, and shall be applied to the interior and exterior of the nozzle caps.

(a) The color shall be a gloss aluminum/silver in accordance with Federal Standard 595 Paint Specification FS 17178.

(b) All threads and/or functional openings and surfaces shall be protected prior to coating and the barrel delivered without coating on the threads and/or functional openings and surfaces.

6. The bottom shoe/elbow shall be fully epoxy coated by a fusion or thermal bonding in accordance with AWWA C-502 and C-550 and shall be applied to the interior and exterior of the bottom shoe/elbow.

3.11.12 Manuals, Spare Parts, Tools, Touch-up Paint, Training, Repairs

1. The requirements of this section are for Commission Price Agreements and are not for Commission Approved Contractors or Commission Capital Projects, unless specifically asked for in the project.

2. The manufacturer shall provide four (4) 24-inches by 36-inches (vertical) cut sheets showing all the hydrant components, component material, and component part numbers with the first delivery. The vertical cut sheets shall be laminated.

3. The manufacturer shall provide six (6) complete sets catalogue or manual for parts, repair and maintenance with the first delivery.

4. The manufacturer shall provide at no additional cost four (4) complete sets of assembly/disassembly tools with the first delivery of hydrants.

5. The manufacturer shall provide two (2) quarts of touch-paint or coating that is compatible with the factory applied coating with the first delivery.

6. The manufacturer shall provide training to Commission construction and maintenance staff every two (2) years. Training shall be by a factory trained representative at the Commission's Customer Service Office at 71 Colton Street, Springfield Massachusetts during normal business hours. The first training shall be provided within 30-days of the first delivery unless otherwise scheduled by the Commission.

7. The manufacturer and/or vendor shall provide the Commission with contact information for a factory trained representative who shall be responsible to respond to complaints from the Commission about defects in material, coatings, and workmanship under normal use of the product within ten (10) working days.

3.11.13Miscellaneous

1. All fasteners, excluding joint accessories, installed below the ground line shall be made of Grade 304 stainless steel. Bolts shall meet ASTM A193 grade B8, latest revision. Nuts shall be in accordance with ASTM A194 grade 8, latest revision. Bolts and nuts shall be Unified National Coarse (UNC) rolled thread and heavy-duty hex nuts. Bolts installed into castings shall be provided with one (1) Grade 304 stainless steel flat washer and nuts and bolts shall be provided with two (2) Grade 304 stainless steel flat washers so that the epoxy coating is not damaged. At a minimum, nuts shall be coated with fluorocarbon, epoxy, zinc, or other anti-corrosion coating to help prevent galling.

2. All fasteners installed above the ground line shall be made of medium carbon steel and supplied with a rust proof coating. Bolts shall of medium carbon steel, per ASTM A193, grade B7. Nuts shall be heavy hex nuts made of medium carbon steel, ASTM A194, grade 2H. All bolts and nuts shall be Unified National Coarse (UNC) rolled thread. Bolts installed into castings shall be provided with one (1) medium carbon steel flat washer and nuts and bolts shall be provided with two (2) medium carbon steel flat washers so that the epoxy coating is not damaged. All the medium carbon steel bolts, nuts, and washers installed above the ground line shall be rust proof coated or plated. Nuts and/or bolts shall be provided with two (2) Grade B steel flat washers so that the epoxy coating is not damaged.

3. To prevent galling; all stainless steel bolts shall be coated on the outside of all threads and the stainless steel nuts or castings on the inside of all threads at the factory, with an anti-seizing material such as provided by Henkel Technologies, Rocky Hill, Connecticut - product name: Loctite Nickel Anti-Seize Lubricant; Chesterton Technical Products, Stoneham, Massachusetts – product name: Chesterton 772 Premium Nickel Anti-Seize Compound; Permatex Inc. Hartford, Connecticut – product name: Permatex Nickel Anti-Seize Lubricant or equal product of another manufacturer and as specified in Section 3.18 of these Specifications.

4. The exterior design of the bonnet and upper barrel shall be of the “traditional design” and must meet and be subject to the approval of the Commission’s aesthetic judgment.

3.11.14 Hydrant Makes and Models Approved for use by the Commission

The following products have been approved for use by the Commission. Any change in any component(s) of the product that does not allow for interchangeability of the component(s) shall result in the product no longer being approved and removed from this list.

1. American Flow Control – B-84-B-5,
2. AVK – 2780,
3. Clow – Medallion – F2545,
4. Kennedy - Guardian – K81,
5. M & H – 6129,
6. Mueller – Super Centurion,
7. U.S. Pipe - Metropolitan 250 – Model M-94,
8. East Jordan Iron Works – Watermaster 5CD250, or
9. Equal provided the Hydrants are manufactured as per these specifications.

3.11.15Private Hydrants installed after a Back Flow Prevention Device

1. In addition to the Material Specifications for Public Hydrants Section 3.11.1 Private Hydrants installed after a back flow prevention device shall meet the following requirements:

2. Private Hydrants installed after a Back Flow Prevention Device shall be “two (2) way” and as follows:

   (a) The upper barrel shall be equipped with (2) two each 2-1/2-inch hose nozzles, no greater than 180 degrees apart.

   (b) The location of the center line of the upper barrel nozzles shall be at least 16-inches above the bury line so that a 15-inch wrench can freely turn 360-degrees without hitting the ground.

3. The upper barrel shall be fully epoxy coated by a fusion or thermal bonding, a polyester powder coat, or an epoxy wet or electro-disposition coat primer with a polyurethane top coat paint system in accordance with AWWA C502 and C-550, latest versions, and shall be applied to the interior and exterior of the upper barrel.

   (a) The color shall be gloss red in accordance with Federal Standard 595 Paint Specification FS 11105 or RBG Hex Code B51F11.

   (b) All threads and/or functional openings and surfaces shall be protected prior to coating and the barrel delivered without coating on the threads and/or functional openings and surfaces.

4. The rest of the components shall be coated as required in Section 3.11.11 of these Material Specifications.

3.11.16 Private Hydrants installed before a Back Flow Prevention Device

1. In addition to the Material Specifications for Public Hydrants Section 3.11.1 Private Hydrants installed before a back flow prevention device shall meet the following requirements:

2. The upper barrel shall be fully epoxy coated by a fusion or thermal bonding, a polyester powder coat, or an epoxy wet or electro-disposition coat primer with a polyurethane top coat paint system in accordance with AWWA C502 and C-550, latest versions, and shall be applied to the interior and exterior of the upper barrel.

   (a) The color shall be gloss red in accordance with Federal Standard 595 Paint Specification FS 11105 or RBG Hex Code B51F11.

   (b) All threads and/or functional openings and surfaces shall be protected prior to coating and the barrel delivered without coating on the threads and/or functional openings and surfaces.

3. The rest of the components shall be coated as required in Section 3.11.11 of these Material Specifications.

3.11.17Vandal Proof Device for Operating Fire Hydrants

1. Vandal Proof Device for Operating Fire Hydrants provided to the Commission or Installer shall be manufactured, tested, inspected and delivered in full compliance with this Specification.

2. Device Description

   (a) A vandal proof device (Trade Name "Custodian") to prevent unauthorized use of fire hydrants. The device shall readily attach to the existing fire hydrant housing or opening mechanism. Materials shall be strong enough to withstand acts of vandalism and weather extremes and still provide smooth fire hydrant operation. The device shall be unique in that only a special magnetic wrench can open or close the fire hydrant.

   (b) The vandal proof device shall be made to be installed on any hydrant in the Springfield Water and Sewer Commission's Service Area..

   (c) The vandal proof device shall be made to order, for specific makes and models of hydrants.

3. Device Construction

   An inner barrel constructed of high tensile manganese bronze shall be designed to fit over the existing fire hydrant operating nuts. An outer housing constructed of stainless steel shall be installed over the inner barrel so as to swivel freely until a special key wrench is used. Attachment of the outer housing shall be a special snap ring groove designed to withstand repeated blows by a sledge hammer without shearing.

4. Device Mating Collar

   A mating collar shall be installed between the outer housing fire hydrant top for a weather seal and to prevent removal of the swivel housing by pry bars or other tools available to vandals. The mating collar shall extend up the sides of the swivel housing and to a height sufficient to provide added protection of the hydrant operating nut and to withstand repeated blows by sledge without failing.

5. Device Operating Wrench

   A special magnetic operating wrench shall be constructed of an aluminum-magnesium alloy with handles extending from both sides for easy operation. The wrench shall incorporate a unique permanent magnet which will engage an activator located inside the outer housing. The magnet's inductive magnet can engage the activator. Performance must not be affected by local environment

temperature ranges or weather conditions. The special key wrench shall be the only means of opening or closing the hydrant. As an added convenience, the opposite side of the wrench shall contain a conventional 1-1/8" pentagon recess that will work on standard hydrant nuts.

6. The manufacturer/vendor/shipper must use care in preparing the vandal proof device for shipment and in handling during shipment and delivery, to insure that the vandal proof devices are delivered without damage. Damaged vandal proof devices will not be accepted.

7. The manufacturer and/or vendor, on request, shall provide the purchaser with an affidavit for each and every delivery of an order, stating that the vandal proof device and all materials in its construction exactly conform to the applicable requirements of these specifications to include the applicable AWWA Standards.

8. References

   The Supplier shall provide references, on request, which shall list a minimum of three (3) Municipalities/Utilities that were, supplied this product, in the last two (2) years. The listing is to include:

   (a) Name of Municipality/Utility

   (b) Total amount of product bid on and amount delivered

   (c) Date the bid was accepted and date the product was delivered

   (d) Reference person with address and desk top phone number whom the Commission has authorization to contact regarding the product

3.11.18Diffusers for Fire Hydrants

1. Fire Hydrant Diffusers shall be provided to the Commission or Installer shall be manufactured, tested, inspected and delivered in full compliance with this Specification.

2. Fire Hydrant Diffusers shall be for use with chemically treated (4 ppm or less chlorine/chloramine) potable water.

3. Fire Hydrant Diffusers shall be provided with 2-1/2-inch NPT Coupling that accepts any 2-1/2" NPT Male Iron Pipe Adapter.

4. Fire Hydrant Diffusers shall be 18-inches in length x 8-inches x 8-inches at the discharge

5. Fire Hydrant Diffusers shall weight 33-pounds.

6. Fire Hydrant Diffusers shall be used with 81% Sodium Sulfite tablets

7. Fire Hydrant Diffusers shall have an eleven (11) Tablet Capacity and use approximately one (1) Tablet per 2,500-gallons.

8. Fire Hydrant Diffusers shall be as currently manufactured by Pollardwater – Model LPD-250, or equal provided the Fire Hydrant Diffusers are manufactured as per these specifications.

9. The manufacturer/vendor/shipper must use care in preparing the above product for shipment and in handling during shipment and delivery, to insure that the products are delivered without damage. Damaged vandal proof devices will not be accepted.

10. The manufacturer and/or vendor, on request, shall provide the purchaser with an affidavit for each and every delivery of an order, stating that the above product and all materials in its construction exactly conform to the applicable requirements of these specifications to include the applicable AWWA Standards.

11. References

    The Supplier shall provide references, on request, which shall list a minimum of three (3) Municipalities/Utilities that were, supplied this product, in the last two (2) years. The listing is to include:

    (a) Name of Municipality/Utility

    (b) Total amount of product bid on and amount delivered

    (c) Date the bid was accepted and date the product was delivered

(d) Reference person with address and desk top phone number whom the Commission has authorization to contact regarding the product.

3.11.19 Private Yard Hydrant

1. Private Yard Hydrants provided to the Springfield Water and Sewer Commission (Commission) or installer shall be manufactured, tested, inspected and delivered in full compliance with this Specification.

2. The product(s) shall have all parts cast and assembled in North America or meet the requirements of the American Iron & Steel (AIS), as follows;

   (a) North America shall mean the United States, Canada, and Mexico,

   (b) Cast shall mean molten metals poured into a mold to create Casting(s) for a finished product,

   (c) Formed shall mean metals rolled or pressed or machined to create a finished product,

   (d) Incidental parts may be purchased/obtained from other counties to provide a finished product , in accordance with these Material Specifications, and

   (e) Assembled shall mean castings and sourced parts are put together to build a finished product, or

   (f) The finished product shall meet all the requirements of the AIS language, and all guidance issued by the EPA. For any Massachusetts State Revolving Fund (SRF) project this requirement governs.

3. Inspection:

   (a) All finished product(s) furnished shall be subject to inspection by the Commission at the place of manufacture and shall be subject to inspection after delivery to the Commission.

   (b) Cost of re-inspection of materials or fabricated finished product(s) caused by the non-compliance of the manufacturer with the provisions of the specifications, shall be paid for by the manufacturer, and shall be deductible from the price paid for the finished products.

4. Delivery shall be made by truck in minimum truckload quantity to locations designated in the Commission's service area in and near Springfield, Massachusetts. The low bidder shall notify the Commission of the quantity comprising a minimum truckload. The Commission reserves the right to mix depth of buries to reach a full truckload.

5. The manufacturer/vendor/shipper must use care in preparing finished product(s) for shipment and in handling during shipment and delivery, to insure that the

finished(s) are delivered without damage. Particular attention must be directed at protecting the protective coating from damage. Damaged finished(s) will not be accepted.

6. The manufacturer and/or vendor, on request, shall provide the purchaser with an affidavit for each and every delivery of an order, stating that the finished product(s) and all materials in its construction exactly conform to the applicable requirements of these specifications and the applicable AWWA Standards.

7. Submittals are required at time of bid award, at time of purchase, or as required by the Commission's Purchasing Agent.

8. The manufacturer and/or vendor shall furnish three (3) sets of 8-1/2-inch by 11-inch certified shop drawings for all materials to be used. All components shall be provided in accordance to these drawings. The drawings shall show the following:

   (a) Cross sectional drawings of the fittings showing overall dimensions,

   (b) Material specifications for each component,

   (c) Coating applied to each component, if applicable,

   (d) Rated working pressure and hydrostatic test pressure of each finished product(s), and

   (e) Country of origin for each component.

9. The manufacturer at the Commission's request shall furnish three (3) sets of coating specification(s) of each component that has a coating applied identifying component surface preparation, primer (if applicable), type of coating(s), color of coating(s), manufacturer of coating(s), part number of the coating(s), and a sample on a 3-inch by 5-inch chip.

10. The manufacturer shall furnish a letter certifying the product meets all the requirements of the AIS, an explanation, in the letter, of how the products meets the AIS requirements, and signed by the Owner or President of the Company.

11. The manufacturer shall furnish a warranty for the finished Fittings that states that the Fittings shall be free from all defects in material and workmanship and from handling during delivery under normal use of the product for a minimum one (1) year time period from time of delivery. The manufacturer shall replace and/or repair defective parts or the whole coupling for a minimum one (1) year time period from time of delivery. Coating failures caused by Installer will not be a cause of coating failure

12. The manufacturer shall furnish a certified statement that the required tests on the various materials and on the completed Fittings have been made, and the results of all tests conform to the requirements of the appropriate ANSI/AWWA standard.

13. The manufacturer and/or vendor shall furnish references, on request, which shall list a minimum of three (3) Municipalities/Utilities that were, supplied this product, in the last two (2) years. The listing is to include:

    (a) Name of Municipality/Utility

    (b) Total amount of product bid on and amount delivered

    (c) Date the bid was accepted and date the product was delivered

    (d) Reference person with address and desk top phone number whom the Commission has authorization to contact regarding the product

14. The Springfield Water and Sewer Commission will mark one (1) set of plans and coating specification "Approved", "Approved as Noted", or "Rejected-Resubmit" and return to the manufacturer and/or vendor.

    (a) Approved means the contractor can supply the material as shown on the drawing(s).

    (b) Approved as Noted means the contractor can supply the material as shown on the drawing(s), but with the changes as noted.

    (c) Rejected – Resubmit means the contractor must resubmit three (3) sets of new shop drawings for correct materials to be used.

15. Private Yard Hydrants shall be non-freezing type and provided so as to be self-draining and a depth of bury of 5-feet 6-inches minimum.

16. Private Yard Hydrants will be furnished with a 2" female iron pipe (FIP) inlet and a 2-1/2" national standard thread (NST) outlet.

17. Private Yard Hydrants shall have a non-turning operating rod and shall open to the left.

18. Private Yard Hydrants shall be painted red.

19. All working parts of Private Yard Hydrants shall be bronze to bronze design and be serviceable from above grade with no digging.

20. The following products have been approved for use by the Commission. Any change in any component(s) of the product that does not allow for

interchangeability of the component(s) shall result in the product no longer being approved and removed from this list.

(a) Kupferle – #80WD, or

(b) Equal provided the products are manufactured as per these specifications.