

Memo

To: Ms. Beth Suedmeyer, Environmental Planner, Town of Sudbury

From: Raymond Willis, P.E.

CC: Chris Claussen, Quarry North Road, LLC

Date: April 28, 2020

Re: Cold Brook Crossing, Sudbury, MA

We are in receipt of the "Initial Peer Review of the Wastewater Treatment Facility Proposed for Cold Brook Crossing NRRD and SGOD Developments" prepared by Horsley Witten Group dated April 23, 2020. After reviewing the comments as they relate to Onsite Engineering's scope of work, we offer the following responses for Comments #5 through #15, #18, #21 and #23:

5. In accordance with the Project Specifications, the Contractor will be required to submit shop drawings by the precast concrete manufacturer for review and approval based on the tanks that are being provided. At that time, we will confirm that the tank's top slab thickness accounts for the cover over the tank while being capable of withstanding an H-20 load. In addition, we will add a note detailing this requirement on the revised drawings.
6. In accordance with the Project Specifications, the Contractor is required provide watertight access hatches. We will also revise the drawing details to reiterate that the access hatches shall be watertight.
7. As requested, the elevation settings will be added to the details of the flow equalization tank and final effluent pump chamber.
8. Based on our design experience and observation of numerous facilities, it is our preference to utilize PVC pipe instead of ductile iron pipe. In our opinion, PVC is appropriate because it is an inert material and is better suited for installation in these moisture-rich environments. For these installations, SCH 80 PVC pipe with a minimum pressure rating of 250 psi is proposed.
9. Normally when a screen system is included in a treatment system design, its intended purpose is primary treatment to remove coarse and fine material from raw sewage. Under those conditions, the screen system is placed within an isolated room because of Class I, Division I electrical design requirements and hydrogen sulfide generation.

This design includes pretreatment tanks installed in series, which will perform primary sedimentation and screening of the sewage instead of utilizing the provided screen system to accomplish this treatment step. Given that the pretreatment system will trap settleable solids

and anything that isn't soluble in water or that floats will come out of suspension in these tanks, MassDEP/NFPA Guidelines provide that downstream processes of properly sized pretreatment tanks do not need to meet Class 1, Division 1 requirements. At this facility, the screen system is being provided to meet the treatment system manufacturer's standard requirements in order to maintain the membranes' warranty. Essentially, because the wastewater directed into the screen is no longer classified as raw sewage, the Class I, Division I requirements are not applicable and the conditions that lead to hydrogen sulfide production are minimal, if not reduced entirely. Therefore, a dedicated screen room for the screen system is not required for this water resource recovery facility design.

10. We have reviewed the anticipated influent loading conditions based on our experience with previous water resource recovery facility designs and evaluation of facilities with TOC effluent limitations. Based on our experience, influent to GAC system after membrane filtering results in influent TOC concentrations typically at or below 5 mg/l. For this design, two (2) 2,000 lbs. GAC filters are proposed, which have been designed based on an influent TOC concentration of 8 mg/l and a flow rate of 45 gpm. In addition, this type of GAC system is expandable by simply modifying the piping, to provide additional GAC units in the future, should actual conditions differ substantially from design conditions.
11. We concur with this requirement. Based on information provided by Smith & Loveless, we have provided 16 feet of clearance from the top of MBR to ceiling. During the shop drawing review process, we will review this matter again to verify clear space requirements are met based on the equipment being supplied by the Contractor.
12. The sodium bicarbonate system has been specified to provide a 50 gallon tank within a larger 75 gallon tank. The drawings will be revised to reflect that the Micro-C tote will be placed on grating over a formed sump in the cast in place concrete floor for spill containment.
13. Floor drain(s) will be sited underneath the final location of the eye-wash/shower and will be reflected on the revised drawing set.
14. The schedule of elevations table will be revised to reflect 128.85.
15. The detail for the Final Effluent Pump Chamber was inadvertently omitted from the design drawings and will be added as part of the revised drawing set.
18. The reference to 37,380 gpd in the design calculations on sheet M-2 will be removed on the revised drawing set.
21. Based on our experience, by-passing of a pretreatment tank should not be necessary. With respect to the potential BOD loading initially, as is customary with projects of this nature, the operator will need to assess influent loading to the facility and consult with the system manufacturer to adjust settings, mixed liquor concentration, and wasting requirements if BOD loading is reduced during the initial start-up of the facility.

23. The drawings will be revised to include the sewer manhole detail shown on the Civil Design Group, LLC drawings.