BUILDING SYSTEMS NARRATIVES

CIVIL NARRATIVE

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MEMORANDUM

TO: Vladimir Lyubetsky, Drumney Rosane Anderson, Inc.

FROM: Nicholas O. Botts, P.E., Nitsch Engineering
David M. Conway, P.E., Nitsch Engineering

DATE: June 16, 2021

RE: Northeast Metropolitan Regional Vocational School - Site Narrative

Stormwater

Storm drainage for the site will comply with Massachusetts Stormwater Management standards. Massachusetts Stormwater Management standards require that the rate of stormwater flows leaving the site not be increased in the developed conditions. The standards also require that the quality and quantity of stormwater be addressed by treating the stormwater to remove possible contaminants. Areas that experience vehicular traffic will have their stormwater quality addressed through mechanical means such as water quality structures or the implementation of other green infrastructure. Runoff from roofs and landscaped areas are considered clean and treatment prior to recharge or discharge is not required.

Stormwater flows from the parking, driveway, and roadway areas will be collected in deep sump catch basins routed to Stormceptor (or similar) water quality units to address stormwater quality. The catch basins and water quality structures are part of a new closed-drainage system that also consists of new drain manholes and non-infiltrating stormwater detention systems. Collected stormwater runoff from throughout the site will be directed to sub-surface detention systems located under a proposed parking lot, the proposed football field, and the proposed soccer field.

The first of the three stormwater management systems, located under the parking lot on the south side of the proposed school building, will consist of 258 ADS N-12 chambers in a bed of crushed stone and will not be connected to the same system as the other two systems. Another of the systems will be installed underneath the proposed soccer field and will include 574 ADS N-12 chambers in a bed of crushed stone. The last of the three systems, located under the proposed football field, will also consist of 574 ADS N-12 chambers in a bed of crushed stone and will be connected to the system under the soccer field.

All three systems create subsurface storage volumes so that flows from the developed site can be detained and decreased to meet the pre-development conditions. The southern system with the single sub-surface system in the parking lot, will all be connected to onsite bio-retention which will discharge into existing on-site wetlands to the south. The other connected system will discharge to the wetlands east of the project. Due to the existing soil characteristics on site and recommendations from the Geotechnical Engineer, none of the systems will not be infiltrating into the native soil below.

All stormwater pipes will be a minimum of 12” in diameter to meet the town guidelines for design.

Water

Water mains will need to be extended around the new school building. The extended water mains will be 6-inch ductile iron pipe and be connected to the existing system below the driveway entrance to the project site. Site fire hydrants will be connected to the extended main with 6-inch services and are scattered throughout the site to provide access to all corners of the building and parking lots. The new building will be

served via a 6-inch domestic and a 4-inch fire services. The existing water mains servicing the existing baseball and track fields will remain in-service.

Sanitary Sewer

A new sanitary sewer system consisting of 6-inch PVC pipe will be constructed to collect sanitary flows from the new building. A new exterior, 4,000-gallon, precast concrete grease trap will be required for flows from the cafeteria. The new sanitary sewer system will be connected to the town system through an existing manhole north east of the existing school building. Existing portions of the sewer system that are to be reused will be video inspected and, if needed, spot repaired or slip-lined.

Natural Gas

Gas service, will be sized by the project's MEP consultant in conjunction with the utility provider. External gas meter assemblies will need to be protected from vehicles by concrete-filled, steel bollards.

Permitting

Utilities - Permitting for the required utility improvements consists of review and approval for the utility improvements with the Town of Wakefield Department of Public Works. Review material would be submitted to the DPW for review and comment during the Construction Documents Phase, with preliminary meetings and consultations at the start of Design Development. Review typically takes two weeks with an additional two weeks required to revise the drawings and address comments for a typical permitting time of one month from submission.

Wetlands -The Massachusetts Wetlands Protection Act grants local Conservation Commission jurisdiction over work within 100' of most wetland resources (within 200' of a river or perennial stream). Work in any jurisdictional areas will require the filing of a Notice of Intent (NOI) with the Wakefield Conservation Commission.

Northeast Metropolitan Regional Vocational School site will require the filing of an NOI due to the presence of wetlands on the site. There are various wetlands throughout the site, including a potential vernal pool. An Abbreviated Notice of Resource Area Delineation (ANRAD) has already been submitted and approved by the Town of Wakefield Conservation Commission. As a result of the approved ANRAD the limits of the resource areas are defined for three years.

Filing of a Notice of Intent with the Wakefield Conservation Commission will be done at the beginning of the Construction Documents Phase. Following the submission of the Notice of Intent, the wetlands permitting for a project of this type is expected to take four to five months.