

Mr. Matthew D'Agostino, Chair  
Zoning Board of Appeals  
City of Methuen  
41 Pleasant Street  
Methuen, MA 01844

December 23, 2021

Re: YWCA Residences at Ingalls Court, Methuen, MA  
Civil Engineering & Stormwater Peer Review #4

Dear Mr. D'Agostino and Members of the Zoning Board:

On behalf of the Town of Methuen, TEC, Inc. has reviewed response to comments from Millennium Engineering Inc. for the proposed redevelopment at Ingalls Court, Methuen MA provided on December 9, 2021. The following documents were considered in TEC's responses:

- *Site Plan for YWCA Residents at Ingalls Court in Methuen, MA*, prepared by Millennium Engineering, dated June 30, 2021, revised December 8, 2021.
- *YWCA Residence at Ingalls Court, Methuen MA – Response to Peer Review Comments* provided by TEC, Inc, dated December 10, 2021.

Upon review of the documents and plans, TEC has compiled the following comments for the Board's consideration. For brevity, comments that were previously addressed have been removed from the letter:

### **Site Plan Review**

2. *TEC recommends that a formal Approval Not Required (ANR) Plan be prepared for review. The ANR Plan should outline zoning compliance for all new/adjusted parcels.*

Millennium: A formal ANR Plan will be provided and submitted as part of this approval process.

**TEC: Comment on-going, pending submission of an ANR Plan.**

Millennium: An ANR Plan has been submitted with this revision.

**TEC: The ANR Plan creates lots that do not meet the Zoning Requirements.**

Millennium: Zoning relief has been requested for the lots.

**TEC: TEC defers to the Zoning Board to determine if requested relief is justified.**

3. *The Existing Conditions Plan should provide additional information on Lot 2.*

Millennium: The Existing Conditions Plan has been updated to show additional information on Lot 2.

**TEC: TEC recommends that the Existing Conditions Plan be expanded to cover the extents of Lot 2.**

Millennium: The Existing Conditions Plan has been updated to include additional information on Lot 2.

**TEC: Comment not addressed. The Existing Conditions Plan does not show the extents of Lot 2.**

Millennium: The Existing Conditions Plan has been revised to show the extents of the lot.

**TEC: The Existing Conditions Plan does not show the extents of Lot 2, however, the Lot Line Adjustment Plan does. Comment addressed.**

5. *The full extent of the access/egress easements across Lot 2 (to Broadway) should be documented on the Existing Conditions Plan.*

Millennium: All existing easements will be referenced on the plan set.

**TEC: Comment on-going, pending submission of revised plans.**

Millennium: All existing easements have been added to the plan set.

**TEC: The full extent of Lot 2 is not shown on the Existing Conditions Plan nor does it show access/egress easements to Broadway. Additionally, proposed easements should be added to the Plan set.**

Millennium: All existing easements have been added to the plan set.

**TEC: The Applicant has agreed to finalize all easements at a future date. TEC recommends a condition of approval requiring that all easements be provided and reviewed by the City prior to issuance of a building permit.**

9. *TEC recommends the inclusion of a Demolition Plan in the plan set to clearly identify buildings, paved areas, utilities, etc. that will be removed as part of the project. Being a phased construction project, the Demolition Plan should show the work within each phase. In proximity to the existing building on Lot 1, there are several utilities that may conflict with future work including the water, sewer, and electrical services to the building.*

Millennium: A Demolition Plan will be provided.

**TEC: Comment on-going, pending submission of revised plans.**

Millennium: A demolition Plan has been added to the plan set.

**TEC: The Demolition Plan should include work on Lot 2.**

Millennium: The Demolition Plan has been revised to show the limit of work on Lot 2.

**TEC: Comment addressed.**

10. *The Site Plan set should provide a parking count and table in accordance with the City of Methuen's Zoning Ordinance, Section VIII – Parking and Loading Requirements. Additionally, the plans should show proposed accessible parking spaces and parking space dimensions.*

Millennium: A parking table has been added to the plans along with accessible spaces and parking space dimensions.

**TEC: The parking table has been added, however TEC is not able to interpret where the spaces are being provided. The Parking Table should be broken down by each Lot (A, B, C).**

Millennium: The parking table has been revised accordingly.

**TEC: Calculations for ADA/accessible parking on site shall be added to the Parking Calculations Table.**

Millennium: The number of required and proposed ADA spaces have been added to the parking tables.

**TEC: TEC recommends a condition of approval requiring that final plans be provided and reviewed prior to issuance of a building permit.**

11. *It appears that a portion of the parking spaces intended for the Phase 1 building are located on Lot C. It is unclear if this is allowed under the Zoning Ordinance or if this impacts conformance with the parking requirements for Lot C.*

Millennium: A parking breakdown has been provided designating the number of spots on each lot.

**TEC: The parking table has been added, however TEC is not able to interpret where the spaces are being provided. The Parking Table should be broken down by each Lot (A, B, C).**

Millennium: The parking table has been revised accordingly.

**TEC: Comment not addressed. Lot C parking is reduced by 20 spaces without explanation. It is unclear how many spaces are required for Lot C. The parking table should be updated to show the required number of spaces. Additionally, the Site Plan Phase I & II do not identify the proposed use for the buildings. The proposed use and associated square footage for each use should be added to these plan sheets.**

Millennium: The Nevins Nursing Home currently exceeds the number of required parking. The surfaces spaces on lots A and B will be available for both Nevins and Element Care use. The Site Plans for Phase 1 and 2 have been revised to show the intended uses of the buildings. The square footage for the non-residential use has been provided.

**TEC: TEC recommends a condition of approval requiring that final plans be provided and reviewed prior to issuance of a building permit.**

13. *The Site Plans should include all traffic signage and pavement markings to be installed as part of the project within the Site Plans. A sign summary shall also be included which depicts the sign legend, sign size, and sign lettering dimensions in compliance with the Manual on Uniform Traffic Control Devices (MUTCD).*

Millennium: All required signage will be added to the plan set.

**TEC: Comment on-going, pending submission of revised plans.**

Millennium: All required signage has been added to the plan set.

**TEC: Stop signs, do not enter signs, stop bars and lane striping should be added to the Site Plan sheets.**

Millennium: Stop signs have been added to the Site Plans. No "Do Not Enter" signs or lane striping are proposed.

**TEC: Comment addressed.**

14. *The Grading and Utility Plan should be revised to incorporate additional grading information. There are large areas of the plan that do not provide any proposed grading information, including:*

- *Within areas of proposed pavement on Lot B*
- *Within walkways/sidewalks on Lot B*
- *Retaining Walls on Lot B*
- *West of the Phase 2 Building*
- *West of the Phase 1 Building*
- *Within walkways/sidewalks on Lot A*

Millennium: Some additional grading has been added to Lot B, however most of the grades will remain the same as existing. Grading has been added along the west of Phase 1 and Phase 2 buildings.

**TEC: TEC recommends that proposed contours be shown within the limits of work.**

Millennium: All proposed grading within the Limit of Work is shown on the plan set.

**TEC: Comment not addressed. Proposed grading information is required in the following areas:**

- ***Within areas of proposed pavement on Lot B***
- ***Within walkways/sidewalks on Lot B***
- ***West of the Phase 2 Building***
- ***West of the Phase 1 Building***

Millennium: Additional grading has been provided in these areas.

**TEC: TEC recommends a condition of approval requiring that final plans be provided and reviewed prior to issuance of a building permit.**

15. *Detailed utility plans should be provided to show that the sewer system will function appropriately. Sewer manhole invert elevations should be provided to confirm functionality of the system.*

Millennium: Sewer inverts will be added to the utilities plan.

**TEC: Comment on-going, pending submission of revised plans.**

Millennium: Sewer inverts have been added to the plan set.

**TEC: It appears that the phased project will connect into an one sewer line with multiple (3) changes in direction and no manholes. The existing sewer connection from Lot 1 is 471 feet in length. TEC recommends that the condition of the existing sewer connection be inspected by camera. TEC also recommends that new manholes be installed where changes in direction occur in the existing pipe.**

Millennium: The existing manholes have been shown on the plan.

**TEC: TEC recommends a condition of approval requiring that final plans be provided and reviewed prior to issuance of a building permit.**

22. *The Site Plans should include snow storage areas that are clear of drive aisles and parking spots on site.*

Millennium: Snow storage areas have been added to the plan set.

**TEC: It appears that the snow storage area to the east of the site is not in a practical location. It is located behind a guard rail and within a wooded area.**

Millennium: The snow storage areas have been revised.

**TEC: Comment not addressed. No snow storage has been shown on Lot A.**

Millennium: Some snow storage will be available near the entrance to the garage and will be shown on the plan prior to final building permit approval. Any additional snow will have to be moved to lot B or removed from the site.

**TEC: TEC recommends a condition of approval requiring that final plans be provided and reviewed prior to issuance of a building permit.**

23. *Given the increased usage of electric vehicles in Massachusetts, TEC suggests providing electric vehicle charging stations.*

Millennium: The project intends to provide EV Ready parking spaces with chargers and have a certain number of EV capable parking spaces which will have the ability to add additional

chargers. The specific quantities of each type are yet to be determined, but our initial analysis anticipates 2 EV Ready spaces in Phase I.

**TEC: Comment on-going, pending submission of revised plans.**

Millennium: All EV parking spaces will be located within the parking garages of the buildings. The layout of the parking for the garages are shown in the architectural plan set.

**TEC: Comment not addressed. EV parking spaces are not shown on the architectural plan set.**

Millennium: We are proposing 2 EV parking spaces within the garage. The final location of the spaces will be provided prior to the issuance of a building permit.

**TEC: TEC recommends a condition of approval requiring that final plans be provided and reviewed prior to issuance of a building permit.**

**Stormwater Management Review**

32. *Drainage maps depicting pre-development and post-development conditions along with HydroCAD analysis should be included to determine if the project meets Standard 2 of the MA Stormwater Standards.*

Millennium: Watershed maps have been included as part of the Stormwater Report.

**TEC: The watershed maps provide a total drainage study area of 4.9 acres, but the hydrocad reports show a total study area of 5.3 acres. The report should be reviewed to confirm the watershed areas are consistent.**

Millennium: The total area shown on the watershed map is 5.3 acres which matches the total area in HydroCAD.

**TEC: Comment not addressed. The Pre Development Watershed Plan shows a total watershed area of 4.9 acres. On the Post Development Watershed Plan, there is an area (approximately 20,000 SF) east of P4 that is not labeled. The Watershed Plans should be revised.**

Millennium: The pre and post watershed maps have been revised to show the same areas.

**TEC: TEC recommends a condition of approval requiring that final stormwater report be provided and reviewed prior to issuance of a building permit.**

33. *More detailed information is required to determine if the project meets Standard 3 of the MA Stormwater Standards. TEC requests the following:*

- *Test pits within each infiltration basin (1 test pit per 5,000 square feet of infiltration area)*
- *HydroCAD Pond Volume tables*
- *Detailed design of each outlet control structure*

Millennium: Test pits have been performed and located on the plan set. A hydro CAD report is included as part of the Stormwater Report.

**TEC: Based on the test pits results, it does not appear that a minimum of 2-feet of separation has been provided between the bottom of the basins and estimated seasonal high groundwater. TEC recommends that a cross section of each subsurface basin be drawn as a construction detail, including the separation to groundwater.**

Millennium: Cross-sections of the subsurface areas have been added to Sheet xx of the plan set.

**TEC: The lowest proposed grade above Area 1 is not drawn correctly. Elevation 92 contour is shown at the west edge of Area 1. This only provides 10" of cover above the top of chambers which does not meet manufacturer minimum requirements. SC740 chambers require a minimum of 18" cover from top of chamber to bottom of pavement section.**

Millennium: The grading has been revised to provide the minimum cover over the infiltration system. The cross-section has been revised to reflect the revised grading.

**TEC: Comment addressed.**

35. *Detailed calculations should be provided for each Water Quality Unit using the "Standard Method to Convert Required Water Quality Volume to a Discharge Rate for Sizing Flow Based Manufactured Proprietary Stormwater Treatment Practices" published by Massachusetts Department of Environmental Protection.*

Millennium: Calculations have been provided as part of the Stormwater Report.

**TEC: The MassDEP guidance referenced above states that all proprietary treatment devices should be installed offline.**

Millennium: The locations of the Water Quality Units have been labeled on the Grading and Drainage sheet of the plan set.

**TEC: Comment not addressed. The project will rely on proprietary water quality units for pre-treatment. Per MassDEP guidance, the units "shall be installed offline" in order to take credit for the pretreatment.**

Millennium: We will review the guidance and make any required revisions prior to issuance of a building permit.

**TEC: TEC recommends a condition of approval requiring that final stormwater report be provided and reviewed prior to issuance of a building permit.**

43. *It appears that Infiltration Structure #2 has been modeled with an infiltration rate of 8.27 inches/hour, corresponding to a "sand" soil type. Test pits show that the infiltration structure #2 is located above sandy loam material, which should be modeled with an infiltration rate of 1.02 inches/hour.*

Millennium: The location of Subsurface Infiltration Area 2 has been revised and is completed located within the sand layer.

**TEC: Comment not addressed. Test Pit 21-1 shows a sandy loam soil as the underlying material below Area 2. An infiltration rate of 1.02 inches/hour should be used.**

Millennium: The infiltration rate has been revised to 1.02 in/hr.

**TEC: TEC recommends a condition of approval requiring that final stormwater report be provided and reviewed prior to issuance of a building permit.**

Please do not hesitate to contact us directly if you have any questions concerning our comments at 978-794-1792. Thank you for your consideration.

Sincerely,  
TEC, Inc.  
*"The Engineering Corporation"*



Peter F. Ellison, PE  
Director of Strategic Land Planning