



MILLENNIUM ENGINEERING, INC.
Land Surveyors and Civil Engineers

November 9, 2021

Methuen Zoning Board of Appeals
City Hall, Searles Building
41 Pleasant Street
Methuen, MA. 01844

Attn: Matthew D'Agostino, Chair

Re: YWCA Residences at Ingalls Court, Methuen, MA
Response to Peer Review Comments provided by
TEC, Inc, dated September 28, 2021

Mr. D'Agostino,

The following provides our response to peer review comments referenced above. We have included the peer review comments and our response to facilitate the Commission's review.

<i>Comment / Response</i>	
List of Waivers	
<i>Comment 1:</i>	<i>Section 10.0 of the Application Letter outlines the request for waivers from local Regulations of the City. In general, TEC recommends against granting of blanket waivers. TEC recommends that a detailed list of waivers be provided with narrative explanation of why the regulation cannot be met.</i>
Response:	The Applicant has provided a detailed list of waivers in their cover submission. The list will be updated and finalized after the Board determines there are no further changes to the plans.
Comment:	<i>Comment on-going, pending review comments by the Zoning Board.</i>
Response:	No response required.
Site Plan Review	
<i>Comment 2:</i>	<i>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.</i>
Response:	A formal ANR Plan will be provided and submitted as part of this approval process.
Comment:	<i>Comment on-going, pending submission of an ANR Plan.</i>
Response:	An ANR Plan has been submitted with this revision.
<i>Comment 3:</i>	<i>The Existing Conditions Plan should provide additional information on Lot 2.</i>
Response:	The Existing Conditions Plan has been updated to show additional information on Lot 2.



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Comment:	<i>TEC recommends that the Existing Conditions Plan be expanded to cover the extents of Lot 2.</i>
Response:	The Existing Conditions Plan has been updated to include additional information on Lot 2.
Comment 4:	<i>The Zoning Summary on the Cover Sheet shows that the lot line adjustments will cause Lot C to be further out of compliance with respect to Lot Coverage. The existing lot coverage is shown as 41.3%, and the proposed lot coverage is 49.7%. It is unclear if zoning relief would be required for Lot C under this condition.</i>
Response:	The Application requests a modification to the existing conditions of Lot C and shows that the lot coverage ratio will change as a result of the lot line change. A waiver for said impact has been requested.
Comment:	TEC defers to the Zoning Board to determine if a waiver for lot coverage is justified.
Response:	No response required.
Comment 5:	<i>The full extent of the access/egress easements across Lot 2 (to Broadway) should be documented on the Existing Conditions Plan.</i>
Response:	All existing easements will be referenced on the plan set.
Comment:	Comment on-going, pending submission of revised plans.
Response:	All existing easements have been added to the plan set.
Comment 6:	<i>The Existing Conditions Plan should be revised to locate mature trees (>8" diameter) within the City of Methuen's right of way, within buffers to abutting parcels, and within the Riverfront Area.</i>
Response:	Mature trees >8" will be added to the plans in within areas where work is proposed.
Comment:	Comment on-going, pending submission of revised plans.
Response:	Mature trees >8" have been added to the plans.
Comment 7:	<i>A portion of land on site, adjacent to the Spicket River, is within the 100-year floodplain, according to the City of Methuen's MIMAP GIS database. The limits of the 100-year floodplain should be shown on the Existing Conditions Plan.</i>
Response:	The limit of the 100-yr floodplain has been added to the plan set.
Comment:	Comment addressed.
Response:	No response required.
Comment 8:	<i>The Existing Conditions Plan should show the 200-foot Riverfront Area as well as buffer zones to wetland resource areas.</i>
Response:	The 200-ft Riverfront Area has been added to the Existing Conditions Plan.
Comment:	Comment addressed. TEC defers to the Conservation Commission to confirm that the Riverfront Area is shown accurately.
Response:	No response required.
Comment 9:	<i>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.</i>



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	<i>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.</i>
Response:	A Demolition Plan will be provided.
Comment:	<i>Comment on-going, pending submission of revised plans.</i>
Response:	A Demolition Plan has been added to the plan set.
Comment 10:	<i>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.</i>
Response:	A parking table has been added to the plans along with accessible spaces and parking space dimensions.
Comment:	<i>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).</i>
Response:	The parking table has been revised accordingly.
Comment 11:	<i>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.</i>
Response:	A parking breakdown has been provided designating the number of spots on each lot.
Comment:	<i>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).</i>
Response:	The parking table has been revised accordingly.
Comment 12:	<i>The Applicant should coordinate with the City of Methuen's Fire Department for site access, preferred locations and sign requirements for fire lanes within the site (if needed) and confirmation of hydrant quantity and locations</i>
Response:	The plan has been reviewed and approved by the Fire Department for access.
Comment:	<i>Comment addressed.</i>
Response:	No response required.
Comment 13:	<i>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).</i>
Response:	All required signage will be added to the plan set.
Comment:	<i>Comment on-going, pending submission of revised plans.</i>
Response:	All required signage has been added to the plan set.
Comment 14:	<i>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:</i>



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	<ul style="list-style-type: none"> • 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
Response:	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.
Comment:	<i>TEC recommends that proposed contours be shown within the limits of work.</i>
Response:	All proposed grading within the Limit of Work is shown on the plan set.
Comment 15:	<i>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.</i>
Response:	Sewer inverts will be added to the utilities plan.
Comment:	<i>Comment on-going, pending submission of revised plans.</i>
Response:	Sewer inverts have been added to the plan set.
Comment 16:	<i>The Utilities Plan should show locations for all proposed utilities including electric, telephone and cable, if proposed. The Utilities Plan should also show where proposed utility lines will tie into existing infrastructure on Granite Street or elsewhere if applicable.</i>
Response:	The Utilities Plan has been revised to show the additional utilities and connection locations.
Comment:	<i>Comment addressed.</i>
Response:	No response required.
Comment 17:	<i>The Graphic Scale on Sheets 2-4 indicate a scale of 1" = 40' and the Graphic Scale for the remaining sheets show a 1" = 50' scale. The size of all site layout sheets appears to be the same scale upon measurement throughout the plan set. The applicant should verify the scale on all plans and revise if necessary.</i>
Response:	The scales have been revised:
Comment:	<i>Comment addressed.</i>
Response:	No response required.
Comment 18:	<i>The Site Plans should include a legend with abbreviations for all applicable sheets within the set.</i>
Response:	A legend has been added to the plan set.
Comment:	<i>Comment addressed.</i>
Response:	No response required.
Comment 19:	<i>The Site Plans should designate an area for loading/deliveries. It is unclear if a centralized mail/delivery area will be used as part of the project.</i>



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Response:	A loading/delivery area has been designated on the plan set.
Comment:	Comment addressed.
Response:	No response required.
<i>Comment 20:</i>	<i>The Site Plans should provide the 'Final Floor' elevations and door locations for the proposed Phase 1 and Phase 2 buildings.</i>
Response:	The final floor elevation and door locations have been added to the plan set.
Comment:	Comment addressed.
Response:	No response required.
<i>Comment 21:</i>	<i>The Applicant should provide a legend for the hatched areas within the proposed landscaped areas either within the Site Plan set or the Architectural Plans.</i>
Response:	A legend for the hatched areas has been added.
Comment:	Comment addressed.
Response:	No response required.
<i>Comment 22:</i>	<i>The Site Plans should include snow storage areas that are clear of drive aisles and parking spots on site.</i>
Response:	Snow storage areas have been added to the plan set.
Comment:	<i>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.</i>
Response:	The snow storage areas have been revised.
<i>Comment 23:</i>	<i>Given the increased usage of electric vehicles in Massachusetts, TEC suggests providing electric vehicle charging stations.</i>
Response:	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.
Comment:	Comment on-going, pending submission of revised plans.
Response:	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.
<i>Comment 24:</i>	<i>The project is located within 100-feet of wetland resource areas and will require permitting with the City of Methuen's Conservation Commission and Massachusetts Department of Environmental Protection for approval.</i>
Response:	A Notice of Intent will be filed with the Methuen Conservation Commission and Ma DEP.
Comment:	Comment on-going, pending submission of an NOI.
Response:	A Notice of Intent will be filed with the Methuen Conservation Commission and Ma DEP.
<i>Comment 25:</i>	<i>The project shows a proposed building, expansion of existing pavement, and expansion of a rip rap pad within the 200-foot Riverfront Area. TEC recommends that the Site Plans be reconfigured to avoid and minimize impacts to this jurisdictional resource area.</i>



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Response:	The project has been designed to meet the requirements for disturbance within the 200-foot Riverfront Area. A Notice of Intent will be filed with the Methuen Conservation Commission and MA DEP.
Comment:	<i>TEC defers to the Conservation Commission for review of work within the Riverfront Area.</i>
Response:	No response required.
Stormwater Management Review	
<i>Comment 26:</i>	<i>The Applicant should provide a stormwater report to document conformance with the Massachusetts Stormwater Standards.</i>
Response:	A Stormwater Report has been submitted with this submittal.
Comment:	Comment addressed.
Response:	No response required.
<i>Comment 27:</i>	<i>The proposed drainage system should include the length, classification, type and diameter of each drainpipe.</i>
Response:	Information on the drainage system has been added to the Grading and Drainage sheet of the plan set.
Comment:	Comment addressed.
Response:	No response required.
<i>Comment 28:</i>	<i>A hydraulic analysis should be provided as backup for pipe sizing. The pipe sizing should be designed to meet the flows of a 10-year design storm at a minimum.</i>
Response:	A hydraulic analysis has been provided as part of the Stormwater Report.
Comment:	Comment addressed.
Response:	No response required.
<i>Comment 29:</i>	<i>The Grading and Drainage Plan should provide rim and invert elevations for the proposed outlet control structures, Stormtech systems, gutter down spouts and the proposed CDS unit.</i>
Response:	All rims and inverts have been added.
Comment:	Comment addressed.
Response:	No response required.
<i>Comment 30:</i>	<i>The project is proposing a combination of deep sump hooded catch basins, a water quality unit and subsurface infiltration basin to capture, treat, and recharge stormwater.</i>
Response:	No response required.
Comment:	Comment addressed.
Response:	No response required.
<i>Comment 31:</i>	<i>Rip rap sizing calculations should be provided for the drainage outfall near Wetland Flag C-4 in accordance with Standard 1 of the Massachusetts Stormwater Standards.</i>
Response:	Rip-rap sizing is typically sized for a 10-Yr storm event; however, this outlet does not discharge during a 10-yr storm event.



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Comment:	<i>Rip-rap sizing calculations should be provided for the 100-year storm event.</i>
Response:	Rip-rap sizing calculations have been provided.
Comment 32:	<i>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.</i>
Response:	Watershed maps have been included as part of the Stormwater Report.
Comment:	<i>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</i>
Response:	The total area shown on the watershed maps is 5.3 acres which matches the total area in HydroCAD.
Comment 33:	<p><i>More detailed information is required to determine if the project meets Standard 3 of the MA Stormwater Standards. TEC requests the following:</i></p> <ul style="list-style-type: none"> • <i>Test pits within each infiltration basin (1 test pit per 5,000 square feet of infiltration area)</i> • <i>HydroCAD Pond Volume tables</i> • <i>Detailed design of each outlet control structure</i>
Response:	Test pits have been performed and located on the plan set. A hydroCAD report is included as part of the Stormwater Report.
Comment:	<i>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.</i>
Response:	Cross-sections of the subsurface areas have been added to Sheet xx of the plan set.
Comment 34:	<i>TSS removal calculations for each treatment train should be provided with the Stormwater report to verify that Standard 4 of the Massachusetts Stormwater Standards is met.</i>
Response:	TSS removal calculations have been included as part of the Stormwater Report.
Comment:	<i>The subsurface basins achieve 80% TSS removal with adequate pretreatment. TEC recommends the installation of water quality units prior to each subsurface basin.</i>
Response:	Water Quality Units are proposed prior to each subsurface infiltration area. The labels have been revised to clarify the location of the WQU.
Comment 35:	<i>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.</i>
Response:	Calculations have been provided as part of the Stormwater Report.
Comment:	<i>The MassDEP guidance referenced above states that all proprietary treatment devices should be installed offline.</i>



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Response:	The locations of the Water Quality Units have been labeled on the Grading and Drainage sheet of the plan set.
<i>Comment 36:</i>	<i>The project will disturb over an acre of land and therefore will require the development of a Stormwater Pollution Prevention Plan prior to the start of land disturbance. The information provided should meet the requirements for Standard 8 of the MA Stormwater Standards.</i>
Response:	No response required.
Comment:	Comment addressed.
Response:	No response required.
<i>Comment 37:</i>	<i>In conformance with Standard 8 of the Massachusetts Stormwater Standards, the Site Plan set should include a detailed erosion control plans for each phase of construction. These plans should show a stabilized construction exit/entrance, silt fences, compost filter tubes, silt sacks and all other erosion controls proposed.</i>
Response:	An Erosion Control Plan has been included as part of the plan set.
Comment:	Comment addressed.
Response:	No response required.
<i>Comment 38:</i>	<i>An Operations & Maintenance Plan should be provided to ensure that stormwater management system function as designed on site and to meet the requirements of Standard 9 of the Massachusetts Stormwater Standards.</i>
Response:	An O&M has been included as part of the Stormwater Report.
Comment:	Comment addressed.
Response:	No response required.
<i>Comment 39:</i>	<i>An illicit discharges statement should be provided with a Stormwater report to meet the requirements of Standard 10 of the Massachusetts Stormwater Standards.</i>
Response:	An illicit discharge statement is included as part of the Stormwater Report.
Comment:	Comment addressed.
Response:	No response required.
<i>Comment 40:</i>	<i>A Stormwater Report Checklist should be stamped by a Professional Engineer in the State of Massachusetts to be included in the Stormwater Report.</i>
Response:	A Stormwater checklist has been included as part of the Stormwater Report.
Comment:	Comment addressed.
Response:	No response required.
<i>Comment 41:</i>	<i>In several areas of the plan, it appears that trees are being proposed near the subsurface infiltration basins. TEC does not recommend any tree plantings in vicinity to these underground structures which are vital to the performance of the stormwater system.</i>
Response:	The Landscape Plan has been revised to address this comment.
Comment:	Comment addressed.
Response:	No response required.
New Comment	




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Comment:	<i>44% TSS removal should be provided prior to discharge to Infiltration Structure #1 because it is located within an area with a rapid infiltration rate.</i>
Response:	44% TSS removal is provided prior to the subsurface infiltration areas and calculations have been provided.
Comment:	<i>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.</i>
Response	The location of Subsurface Infiltration Area 2 has been revised and is completely located within the sand layer.

We trust this response letter provides the necessary information for the Board's consideration of the request for completeness. If you have any questions or comments, please feel free to contact our office at your convenience.

Sincerely,

Millennium Engineering, Inc.


James Melvin, P.E.
Project Manager

w/ Attachments