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February 26, 2016

Shrewsbury Zoning Board of Appeals
c/o Shrewsbury Office of Planning and Economic Development
100 Maple Avenue
Shrewsbury, MA 01545

Via: Email: msarcione@shrewsburyma.gov

Reference: Application for Comprehensive Permit- Response to Peer Review Comments
The Pointe At Hills Farm
Shrewsbury, Massachusetts
WDA JN 0927.01 & .02

Dear Chairman Rosen and Members of the Board:

On behalf of the Applicant, Smart Growth Design, LLC, we are submitting herein our response to the Peer Review Comments of *"Preliminary Plan Review prepared by Graves Engineering, Inc. dated January 16, 2016.* On February 19th, Mr. Jeff Walsh, PE of Graves Engineering, Inc. (GEI) participated in a conference call with Waterman Design Associates, Inc. (WDA) to review the letter and engage in a technical discussion of the review comments and of the plans and calculations. As discussed at a previous hearing with the ZBA, Peer Review and Development Team Consultants were provided authorization to communicate with the understanding that such communications would be fully transparent and that there would be no findings rendered or opinions offered. Following our discussion with Mr. Walsh, WDA emailed Mr. Sarcione and Mr. Walsh to provide a brief overview of the content of the discussion and to seek confirmation from GEI of our understanding of what had been discussed. GEI responded via email and concurred with our understanding. For the Board's convenience, we have included the GEI comments in *"Italics"* and the WDA responses in standard font:

1.1 Zoning By-Law

1. *The Zoning By-Law requires "one and one-half (1-1/2) parking spaces for each dwelling unit therein and sufficient off-street parking for visitors and employees..." The plans propose parking for the dwelling units but no additional parking for visitors and employees, except for one additional parking space in Phase II. (§VII.D.1.a)*

The project includes 270 parking spaces for 180 apartment style units at Phase I, and 151 parking spaces for 100 apartment style units at Phase II. The Shrewsbury Zoning Bylaw requires 1.5 parking spaces per dwelling unit plus additional parking for employees and visitors. It is our opinion, based on the analysis presented below, that the currently proposed parking supply at both Phases will suffice for the intended site development and that additional parking spaces for this project would be excessive. It is the Applicant's desire not to construct parking spaces that would result in the reduction of green space for parking spaces that will not be utilized.

As approximately 45 percent of the 280 apartment units are one bedroom units, it is anticipated that many of the apartment units will be occupied by single individuals owning one vehicle. The proposed site plan provides 1.5 parking spaces per unit. In order to confirm that this parking ratio will accommodate the parking demand

generated by residents, visitors and employees associated with the proposed 280 apartment units, national parking ratios were reviewed.

Parking Generation, 4th Edition (Institute of Transportation Engineers, 2010) provides parking ratios for various land uses including apartment buildings. These ratios are based on parking surveys conducted at numerous locations throughout the United States. For land use code 221 – Low/Mid-Rise Apartments, parking demand ratios are reported for both urban and suburban settings. The average parking ratio for 21 suburban apartment complexes (with an average of 311 units) was measured at 1.23 vehicles per unit. The parking supply proposed for the Pointe at Hills Farm project will exceed this national rate by providing 1.50 parking spaces per unit. In effect, at 1.50 parking spaces per unit roughly 20% of the parking provided in each phase is available for visitors and employees.

2. *For both project phases, the plans are missing existing structures within 200 feet of the project. The building on the n/f Yellow Freight property is missing from the Phase I plans and the northern building on the n/f South Willow Realty Trust property is missing from Sheet C2.00 of the Phase II plans. (§VII.F.3.f.9)*

The Site Plans will be revised to include structures within 200 feet of the project to comply with Shrewsbury Zoning Bylaw §VII.F.3.f.9.

3. *On Sheet C2.01 five accessible parking are proposed whereas the Massachusetts Architectural Access Board (MAAAB) requirement for 151 spaces is six accessible spaces. (§VII.F.3.f.11)*

The Site Plans will be revised to provide six accessible spaces to comply with the Massachusetts Architectural Access Board (MAAB) requirement for 151 spaces.

4. *Snow storage has not been addressed yet. At a minimum, the applicant should develop a concept for managing snow and show the snow storage areas on the plans. (§VII.F.3.f.14)*

As discussed at the January 25th Public Hearing, snow storage will be managed in a manner typical of multi-family developments.

5. *The large trees proposed within the detention basin areas should be relocated outside of the basins. Any revisions should also not propose large trees on the earth-fill slopes. (§VII.F.3.f.16)*

The Site Plans will be revised to reflect large trees to be located out of the basins and not on earth fill slopes.

Rules Relative to the Submission and Review of a Comprehensive Permit Application

6. *GEI has no issues relative to compliance with these rules.*

Acknowledged

Rules and Regulations Governing Special Permits & Site Plan Review

7. *GEI has no issues relative to compliance with these rules and regulations.*

Acknowledged

Subdivision Rules and Regulations

8. *Not applicable. The driveways within the project will not become public ways.*

Acknowledged

Hydrology, Hydraulic Calculations & Stormwater Management Policy

11. *GEI reviewed the hydrology computations. We found the computations to be in order except as noted in the following two comments.*
12. *On the Phase I - Existing Hydrology Plan, the subcatchment delineation of E102S and on the Proposed Hydrology Plan, the subcatchment delineation of P103S were not shown in their entirety. The delineation of all subcatchments need to be shown in their entirety.*

The Existing Conditions Hydrology Plan will be revised to show all subcatchments in their entirety.

13. *On the Phase 1 – Proposed Hydrology Plan, there are two subcatchments labeled “P103S” and no Subcatchment “P102S”; this appears to be a typographic error but should be corrected. In the post-development hydrology calculations, Subcatchment P102S was modeled as discharging to Infiltration System INF-102. However, it seems that once the subcatchment labeling is revised, it will be found that Subcatchment P102S will not discharge to INF-102. If so, the hydrology calculations will also have to be revised.*

The Proposed Conditions Hydrology Plan will be revised accordingly as will the hydrologic calculations.

14. *The preliminary plans do not include all of the drainage pipes modeled in HydroCAD (such as outlets for P301P, P102P, P105P, P108P, P110P, P302P and P304P). It would be helpful if the plans included these pipes.*

The Site Plans will be revised to include the pipe numbers.

15. *GEI reviewed the plans and supporting documents for compliance with MADEP Stormwater Standards in the context of a preliminary plan submittal. Documentation for compliance with certain standards (peak rate attenuation, groundwater recharge and water quality) that pertain to project viability were reviewed whereas other Standards (e.g. construction-phase erosion controls, long-term operation and maintenance plans and illicit discharge statements) apply to the preparation of construction documents. The following four comments pertain to project viability.*

Acknowledged

16. *The following items were not included with this submission and therefore could not be reviewed for compliance: required recharge volume calculations, drawdown time calculations, water quality calculations and sediment forebay sizing calculations. At a minimum, the design engineer should provide pertinent calculations to demonstrate that at a preliminary plan level the stormwater standards could be satisfied if the project is approved. We recognize that these computations may be subject to update during the preparation of construction plans.*

As discussed with GEI, the application before the Board meets the local and state requirements for Comprehensive Permit Application submittals. The project will be subject to the filing of a Notice of Intent with the Conservation Commission, which will occur well in advance of the ZBA closing the Public Hearing for the project. As required by 310 CMR 10.000 (Wetlands Act) and the MassDEP Stormwater Management

Regulations, the filing with the Commission will include the necessary calculations to demonstrate compliance with the State Regulations.

17. *In the Standard 4 discussion on Page 8, the Stormwater Report states that “Water quality measures will be designed to provide a minimum of 80% Total Suspend Solids (TSS) removal and to treat 0.5 of runoff prior to discharging to the upland areas of the sites.” The value of 0.5 inches is appropriate for Phase II, however a value of 1.0 inch must be used for Phase I if this portion of the project is considered a land use with higher potential pollutant loads (LUHPPLS) as stated in Standard 5 on Page 9 of the Stormwater Report.*

Please refer to response to comment 16.

18. *In Phase II, Stormwater Basin DB-304 was designed with vertical retaining walls surrounding it. Even though the shorter retaining walls are proposed to be 2.4 feet high, the basin should have slopes for egress from the basin for both persons and for animals. Furthermore, the taller retaining wall on the north side of the basin will prohibit maintenance access to the basin.*

The Site Plans will be revised to address these concerns.

19. *Sheet C1.02 of the plans proposes a new drain pipe to convey stormwater across Stoney Hill Road. During my site visit, I viewed the accumulation of ice on the Stoney Hill Road sidewalk about ten to twenty feet north of the proposed pipe location. This ice was a result of stormwater runoff from the site. In short, the concept of collecting stormwater before it enters the Stoney Hill Road right-of-way doesn't seem unreasonable. However, further consideration of this proposal is warranted. The applicant should elaborate about the ability to obtain permission from the land owner(s) on the southwest side of Stoney Hill Road to install a new pipe and its discharge. Also, the design engineer should provide adequate information to demonstrate that negative impacts downstream of this new discharge point will not occur. Finally, the location of the new drainage pipe's inlet and the drainage system's detailed design will have to be addressed. This level of detail could be done during the preparation of construction plans if the project goes forward.*

As presented at the ZBA Hearing on January 25th, the property owner obtained an easement from the downstream property owner for the purposes of stormwater. The Easement Pan was recorded at the Worcester District Registry of Deeds on 11/12/15 in Plan Book 916, Plan 98. The Applicant secured this easement in part to assist the Town in mitigating the existing drainage problem noted in GEI's comment above.

20. *In Phase II, Stormwater Basin DB-302 was designed and modeled such that stormwater will be discharged from the emergency spillway during a 100-year storm event. Use of the emergency spillway should be reserved for emergency conditions; water should be discharged through the basin's primary outlets during storm events up to and including a 100-year storm event. This level of detail could be addressed during the preparation of construction plans if the project goes forward.*

Please refer to response to comment 16.

21. *The concept of perimeter erosion controls was shown on Sheets C1.02 and C2.02. If the project is approved, the Board may wish to consider a condition of approval that requires the applicant to prepare a more detailed erosion control plan during the preparation of construction plans.*

Please refer to response to comment 16.

22. *The parking area at the west side of Phase II is roughly 30,500 sq. ft. or 0.7 acres in size. The plans proposes one single inlet catch basin to drain this parking area. The parking area may need greater catch basin inlet capacity.*

This is a hydraulic issue and not a hydrologic issue. This level of detail could be evaluated during the preparation of construction plans if the project goes forward.

The Site Plans will be revised to include a catch basin inlet grate of increased hydraulic capacity.

General Engineering Comments

23. *On Sheet C2.02 there is an 8% grade between the proposed 500 contour and the existing 498 contour at the Phase II exit to Stoney Hill Road. An 8% grade at the intersection approach is too steep.*

The Site Plans will be revised to address this concern.

24. *The proposed 498 contour at the southeast radius of the Phase II project exit to Stoney Hill Road needs to tie into the existing 498 contour at the edge of the Stoney Hill Road pavement. As currently drawn, the location of the proposed 498 contour at the curb line represents a curb instead of a smooth transition from the driveway to Stoney Hill Road.*

The Site Plans will be revised to address this concern.

25. *We defer to the Town of Shrewsbury whether fences should be provided around the stormwater facilities to deter access to these facilities. If fences are to be required, they should either be shown on the preliminary plans or addressed as a condition in the Comprehensive Permit.*

It is the preference of WDA to avoid the installation of fences along the perimeter of privately owned stormwater basins. While we design the facilities primarily for the purposes of attenuating stormwater, we recognize that, if properly designed they can serve as a site amenity as well as an open area ideal for wildlife habitat and migration. In lieu of fences, we propose a natural vegetative barrier to serve as physical impediment unpleasant to physical human contact such as native thorn laden or similar shrubs. The vegetation would be located along the inside slope of the basin and comprised of indigenous species that could sustain periods of stormwater inundation.

26. *We understand that the Shrewsbury Water Department and its consultant will review the proposed water utilities and will address the availability of water. Likewise, we understand that the Shrewsbury Sewer Water Department and its consultant will review the proposed sewer utilities and will address the availability of sewer capacity.*

Acknowledged.

27. *The plans propose fire hydrants located throughout the site. If not already done, the Applicant should solicit input from the Fire Department and Water Department relative to the proposed number and locations of the fire hydrants.*

As discussed with GEI, WDA met with Fire Chief Vuona on February 5th. Chief Vuona made recommendations that were referenced in his letter to the ZBA dated February 22nd. The Site Plans will be revised to incorporate the comments of Chief Vuona.

28. *In the Phase II portion of the project, the forebay for stormwater basin DB-302 (located at the eastern corner of the site) is within the municipal sewer easement and will inhibit the use of the easement for operating the sewer system. Also, water discharged to the forebay (above the sewer main) could infiltrate to the sewer pipe bedding*

stone and potentially infiltrate into the sewer system if there are any leaking joints in the pipe. Stormwater impoundments should be located away from the sewer system.

WDA will re-evaluate these areas of concerns and update the Site Plans accordingly.

29. *On Sheet C1.03, the water and sewer mains located southwest of Building 5 are only about six feet apart; a minimum separation of ten feet is required.*

The Site plans will be revised to meet the minimum required vertical and/or horizontal separation requirements.

30. *Although the proposed grading and the utilities are shown on separate plans, it appears that the 1:1 riprap slope in Phase II will encroach over the sewer manhole located near proposed Stormwater Basin DB-302. The 1:1 slope should not impede access to the manholes or use of the easement; a 1:1 slope around the manhole cover will make it difficult to stage personnel and equipment during sewer maintenance operations. Similarly, the 1:1 slope is proposed length-wise along the easement for approximately 100 feet and will occupy about half of the easement's width. We defer to the Town of Shrewsbury if this encroachment into the sewer easement is acceptable.*

The Site Plans will be revised accordingly and if necessary, this privately owned and maintained sewer easement and infrastructure, which serves the subject property and the property located at 495 Hartford Turnpike (Liberty Assembly of God Church) will be re-aligned.

31. *The retaining wall at the Phase I stormwater basin will have to be designed to withstand periodic inundation. Retaining wall structural designs are typically addressed prior to the start of construction.*

Acknowledged.

32. *In Phase II, a transformer pad is proposed adjacent Stoney Hill near Building 3. This area has a steep grade. The plans should be revised to show proposed grading and tree clearing limits to support the necessary grade changes or the transformer pad should be relocated.*

As discussed with GEI, the transformer pad will be relocated to an area of lesser topographic relief and will allow for retained or enhanced vegetative screening along Stoney Hill Road.

General Comments

33. *For both phases of the project, the "Zoning Summary Tables" include the requirements for the Route 20 Overlay District. This information should also be included within the permit application section labeled; "Section 9 List of Exceptions wavier requests."*

The Limited Industrial Zone District is the "By Right" (underlying) zone district from which the List of Waivers contained in the Comprehensive Permit Application was derived. The Route 20 Overlay District is not the "By Right" zone district as Uses within the overlay districts are not only subject to Site Plan Approval but Special Permit, both of which are administered through the Planning Board. You will also note that in the proponent's application to MassHousing, the By Right Plan from which the property value assessments was performed was based on the "By Right" (underlying) Limited Industrial Zone District only and not The Route 20 Overlay District.

Shrewsbury Zoning Board of Appeals
The Pointe At Hills Farm
February 26, 2016
Page 7

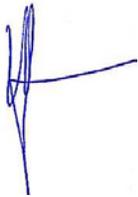
34. *The Phase II plans are missing the lines for the overhead wires located along the Hartford Turnpike frontage. The utility poles were shown.*

The Site Plans will be revised accordingly.

We trust that you will find these responses to the GEI Peer Review Comments acceptable and we look forward to meeting with The Board on February 29th.

Very truly yours,

WATERMAN DESIGN ASSOCIATES, INC.



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WATERMAN DESIGN ASSOCIATES, INC.

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