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 July 19, 2022

Town of Wareham Planning Board

Memorial Town Hall

54 Marion Road

Wareham, MA 02571

 Re: Fearing Hill Solar

Attention: Michael King, Chairman 91 and 101 Fearing Hill Rd.

Dear Chairman King:

 I have reviewed the revised site plan for the above referenced project prepared by Atlantic Design dated and revised through June 14, 2022 along with a new drainage report of similar date. Also reviewed is the response letter from Atlantic Design dated June 16, 2022. The following comments are with respect to these documents.

Plans

Sheet 2 of 7

1. My letter of July 20, 2021 requested information to show that the site was tied to property monuments so that the location the property boundaries could be identified. This has been done. The notation for street monuments along Fearing Hill Road should be changed from MHB (Massachusetts Highway Bound) to PCHB (Plymouth County Highway Bound) since Fearing Hill Road is a 1930 County Layout.
2. The detail of the railroad bed shows only one culvert location. It is assumed that the other end of the culvert on the south side of Fearing Hill Road was not found.

Sheet 3 of 7

1. Buffers have been shown as 50 feet wide around most of the site with the exception of the area northerly of the Lewis A. Demello property where the buffer has been increased to a minimum of 71 feet. It is recommended that this buffer be increased. The type of vegetated screen noted on the plan is not identified as to depth, height or density and should be shown in detail for consideration.
2. Twelve-foot high sound barrier walls are shown around both equipment pad sites. Has any documentary evidence been provided to substantiate the need for these barriers and what they will consist of? Are structural components required for stability?

Sheet 4 of 7

1. The entrance road is shown with a construction entrance with details provided on Sheet 7 of 7. The detail should be revised to show minimum radii of 10 feet on each side rather than 2 feet and should be of 8” minimum depth. Four-inch stone at a depth of four inches will not be sufficient to lock stone in place.

Re: Fearing Hill Solar

91 and 101 Fearing Hill Rd.

Page two

Sheet 4 of 7, Cont’d

1. From Fearing Hill Road, the entrance road is at a five percent grade. It is recommended that the first 50 feet from Fearing Hill Road be paved. It is also recommended that the rest of the roadway be constructed with an exaggerated crown and with stone filled trenches on each side to capture runoff. A detail of the crown and trenches should be provided. A curb cut permit from Wareham Municipal Maintenance will be required for this road opening.
2. The plan shows a micropool within the detention basin 3 that is only twelve inches deep. It is recommended that this micropool be designed with a forebay that will trap potential sediment before it gets to the lowest discharge pipes to prevent their clogging. It is also recommended that the micropool be made with connecting stone and fabric lined trenches along the lower edges of the twenty-foot wide berms that will enhance surface runoff collection and prevent ponding.
3. The plan shows a proposed stone and pipe trench running across the slope toward detention basin 3. It crosses the access road at elevation 85.
4. It is recommended that the trench cut across the road include additional crushed stone at the surface to prevent the filter fabric from being displaced or damaged.
5. What prevents the filter fabric from becoming sediment filled in other parts of the trench where it is exposed to up-hill surfaces?

Sheet 5 of 7

1. Similar comments as were made for Sheet 4 are made for the micropool and immediate area shown on this sheet.
2. There is more than one-half acre of open land between the proposed twenty-foot wide access road and the discharge point of detention basin 2. This area could be re-vegetated with low bush type plantings that over time would spread and help to slow down and capture runoff from the larger areas above. It is recommended that additional plantings to meadow grass be considered for this area with options provided by a landscape architect.
3. Two stone lined swales are shown on the plan. These swales could be extended to the micropool to enhance runoff control and the removal of sediment.

Sheet 6 of 7

1. The small micropool for detention basin 1 shown on this sheet is small for the area of surface runoff collection. It should be built with sediment forebay control in order to protect it from clogging and blocking the discharge pipe. A detail should be provided.
2. It is recommended that the level spreader not include a section of concrete curb. The curb section would require the water level behind it to build up before being able to move down slope. Allowing the runoff from the discharge to filter through a complete stone spreader with no sump and consequently no build-up is recommended.
3. Comment 2 above also applies to spreaders for detention basins 2 and 3.

Re: Fearing Hill Solar

91 and 101 Fearing Hill Rd.

Page three

Sheet 7 of 7

1. It is recommended that the vegetated access road detail not show six (6) inches of loam and seed over the twelve (12) inch gravel driving surface. If additional protection is needed against erosion, it is recommended that crushed stone or recycled asphalt be used as a top driving surface instead.

Stormwater Calculations

1. The calculations for post runoff conditions for the detention basin on the southwest side of the site do not include any infiltration. The soil testing done at the corner of the previous drainage basin 2 showed a percolation rate of 2 minutes per inch, which is generally found in well drained soils. However, the same test site reported mottling at 20 inches, meaning that high ground water conditions that could negatively impact infiltration.
2. It is recommended that the design of drainage basin 2 be reconsidered to provide the following:
3. A forebay sediment collector to prevent sediment buildup in the micropool,
4. Making the micropool larger to trap sediment not caught in a primary sediment control area,
5. A secondary discharge pipe at a higher elevation than the current 8-inch pipe elevation of 69.0 which will provide emergency flow in case the lower pipe becomes clogged.
6. The plan does not show that the culvert pipe under Fearing Hill Road was located on the southerly side. The invert elevation noted on the north side is 56.26 and approximately 18” below the pavement. It is recommended that the culvert on the southerly side be found and cleaned out to allow runoff to leave the railbed and Fearing Hill Road more easily.

Other Recommendations

 In addition to several recommendations noted above, the following should be done as a means of monitoring ground water conditions before and after any construction on the subject property takes place.

1. The two monitoring wells on the north side of Fearing Hill Road, just east of the railbed should be kept in place, maintained and monitored on a regular basis.
2. An additional monitoring well should be placed on the northerly side of Fearing Hill Road near the proposed site access but so as not to be unduly influenced by surface runoff that may come from the access road itself.
3. The purpose of documenting the groundwater in these wells is to establish:
4. A base line against which to measure future changes in groundwater elevation and ground water quality as it relates to the project, should it be developed,

Re: Fearing Hill Solar

91 and 101 Fearing Hill Rd.

Page four

1. A basis for determining whether ground water elevations are changing due to rainstorm events or due to changes brought on by the development of the site,
2. To give nearby residents a means to determine if steps need to be taken to protect existing well water supplies or on-site septic systems, or both.
3. It is recommended that the third well be installed and activated along with the two wells near the railroad bed prior to any other work being done on the project, and with a schedule of monitoring and reporting to be established prior to any clearing of the site.

The monitoring program should be made part of any conditions of approval that the Planning Board may grant for the project.

 This concludes my review of the plans and other documents provided. Please feel free to contact me if you have any questions.

Very truly yours,

Charles L. Rowley

Charles L. Rowley, PE, PLS

Cc Board Members

 Ken Buckland, Town Planner

 Monique Baldwin, Asst. Planner

 Richard Tabaczynski,PE, Atlantic Design

 Neal Price, Horsley-Witten Group

 Joseph Shanahan