

November 18, 2022

Martha Taylor, Director of Planning
Planning Department
Newbury Town Hall
12 Kent Way
Byfield, MA 01922
(978) 465-0862X312 planningboard@townofnewbury.org

Re: Responses to Fire Department Reviews including Original approval – 1/22/2018 Letter from Douglas Janvrin, Fire Chief and Special Permit Modification – 10/7/22 Email from Martha Taylor with Items from Fire Department

Dear Ms. Taylor:

Waterstone Engineering, Inc. (Waterstone) is pleased to provide the Planning Board with these responses to the *Fire Department Reviews including Original approval – 1/22/2018 Letter from Douglas Janvrin, Fire Chief and Special Permit Modification – 10/7/22 Email from Martha Taylor with Items from Fire Department*. We believe we have addressed all items but one, as noted below.

Original approval – 1/22/2018 Letter from Douglas Janvrin, Fire Chief

These items were all included as conditions in the May 17, 2018 Special Permit approved by the Planning Board.

1. *The Fire Department will require a power shut-off for the array located just within the gated area labeled "shut off." The Fire Department will also require a shutoff which will shut down any back-feed power from the grid so that power from the units as well as any back flow from the service can be shut down.*

Response: Complete, see Sheet E-.0 and E-1.4

2. *We will also require a key box attached to the fence adjacent to the gate for the secure storage of keys which the Fire Department will need to gain access to the property and any locked emergency shutoffs. This will be at the expense of the owner.*

Response: These items are pending and will be completed when the system is live and connected to the grid.

3. *Accessibility will have to be maintained at all times, including snow removal and removal of over growth. I would like to see a plan in writing for these situations.*

Response: Please see attached Operations and Maintenance Plan, specifically Section 3 Vegetation Management and Emergency Access which states:

Growth of trees or other vegetation along roadways shall be maintained in a manner to provide clear access and prevent damage for emergency vehicles as per conditions of approval and MA Fire Code 527 CMR 18.2.3.4.1.1 with no less than 3' encroachment to travel path. That includes limbing of trees and removal of vegetation to a minimum width of 18 ft, 3 ft on either side of the 12 ft access road, to a height of 13'6".

4. *Lastly, the Fire Department would like to request training from the installer of the solar panels which would serve to educate us as to how to shut down units and work safely around them should there be an emergency situation.*

Response: Understood. These items are pending and will be completed when the system is live and connected to the grid.

Special Permit Modification – 10/7/22 Email from Martha Taylor with Items from Fire Department

1. *The Newbury Fire department shall enforce requirements set forth in 527 C.M.R. Access, All access roads shall be no less than 12' in width (18.2.3.4.1.1), with no less than 3' encroachment to the travel path.*

Response: This condition has been included in the design and vegetation management. It can be seen on Sheets C-2.1 and 2.2 Layout and Materials Plan, and C-3.0 Tree Clearing.

2. *Roads must be able to withstand 75,000 LBS (18.2.3.4.2), including turning radius of 36' (18.2.3.4.3.1).*

Response: This condition is met. The bridges are all designed for H20 loading. Two turnarounds are located at the end of the road that exceed 16'x45' each, see sheet C-5.2 Plan and Profile and C-7.3 Turning and Sweep Path Analyses.

3. *All access roads shall have an unobstructed vertical clearance of 13'6". (18.2.3.4.1.2)*

Response: This condition will be met. During vegetative clearing for the proposed project all clearance items will be dealt with for current and proposed roads. This is also discussed and addressed in the Operations and Maintenance Plan, Section 3 Vegetation Management and Emergency Access which states:

Growth of trees or other vegetation along roadways shall be maintained in a manner to provide clear access and prevent damage for emergency vehicles as per conditions of approval and MA Fire Code 527 CMR 18.2.3.4.1.1 with no less than 3' encroachment to travel path. That includes limbing of trees and removal of vegetation to a width of 18 ft, 3 ft on either side of the 12 ft access road, to a height of 13'6".

4. *Submitted access plans must include the approval and stamp of a registered professional engineer (18.1.1.5) and include a sweep path analysis (18.1.1.4). The sweep path analysis requires information from both: 1. 2020 KME 103 Tuff Truck, Severe duty cab, with Steertex NXT front suspension, and 2. 2015 KME (International 7400 SBA) 6x4 configuration with 230" WB.*

Response: This condition is partially met. A turning and sweep path analysis has been conducted for the 2 vehicles and stamped by a professional engineer (Sheet C-7.2 and 7.3). The 2015 KME 7400 SBA can access the point of interconnection at the transmission corridor. The 2020 KME 103 Tuff Truck cannot cross the bridge without significant bridge realignment. The entire purpose of the bridge is to eliminate wetland impacts and a realignment of the bridge would increase wetland impacts. For example, there are much more direct routes that were considered in the alternatives analysis for the wetlands permit, and this current path was chosen to reduce impacts as much as possible by following the existing farm road. It would require diverging from the farm road and increasing wetland impacts which has not been acceptable to the Conservation Commission. In 2019 the project received approval without access to the point of interconnection

within the transmission corridor. The point of interconnection has not changed since then. Rather the requirement from National Grid to provide a maintenance access road to the point of interconnection in the transmission corridor has been added and thus the requirement for a road. There has been no change in the electrical configuration or risk to public safety. The area can be accessed by the 2015 KME (International 7400 SBA) 6x4 configuration with 230" wheel base allowing for fire engines, tankers and pumpers.

5. *Dead ends in excess of 150' shall be provided with the approved turnarounds (16'x45') 18.2.3.4.4."*

Response: This condition is met with two turnarounds that exceed 16'x45', see sheet C-5.2 Plan and Profile and C-7.3 Turning and Sweep Path Analyses.

6. *Regarding the "Equipment refueling and petroleum storage area" shown on the drawings*

Response: All refueling and petroleum storage is temporary only and during the construction period. A refueling and petroleum storage area has been identified on the plans. This is addressed on sheet C-7.1 Equipment Storage Plan which provides a Spill Prevention Plan. Item 2.1 Fueling and Maintenance of Equipment or Vehicles states:

Petroleum storage management shall be accomplished before fueling of vehicles is allowed. Equipment fueling and maintenance-- Designate special areas that are not connected to any drainage system for vehicle fueling and repair. Inspect construction vehicles daily, and repair any leaks immediately. Dispose of all used oil, antifreeze, solvents and other automotive-related chemicals according to manufacturer instructions. These wastes require special handling and disposal. Used oil, antifreeze, and some solvents can be recycled at designated facilities, but other chemicals must be disposed of at a hazardous waste disposal site. Maintenance requirements-- The fueling areas will be inspected each day by the on-site superintendent and maintained as needed. Clean up spills and dispose of cleanup materials immediately. Inspect equipment and storage containers regularly to identify leaks or signs of deterioration.

Additionally, this is also addressed in the Stormwater Pollution Prevention Plan developed for the EPA Construction General Permit which has strict requirements for Equipment refueling and petroleum storage. This is listed in Section 5: Pollution Prevention Standards, 5.3 Fueling and Maintenance of Equipment or Vehicles, see attached.

Response to Comments from Fire Department
Planning Board, Town of Newbury, MA
November 18, 2022
Page 4



Please feel free to contact me with any questions or comments. I can be reached at (603) 686-2488 or by email at roseen@waterstone-eng.com

Sincerely,

Robert M. Roseen, Ph.D., P.E.^{NH, MA}, D.WRE., Principal



9 Gretas Way | Stratham, NH 03885
(603) 686-2488(c) | roseen@waterstone-eng.com

CC:

Kavy Yesair, 138 Main Street, Newbury, MA, 01951

Newbury Conservation Commission, Town Hall, 12 Kent Way, Newbury, MA 01922

Jared Connell, New Leaf Energy, 55 Technology Drive, Lowell, MA

Lauren Raheja, Borrego Solar, 55 Technology Drive, Suite 101, Lowell, MA

November 18, 2022



Martha Taylor, Director of Planning
Planning Department
Newbury Town Hall
12 Kent Way
Byfield, MA 01922
(978) 465-0862X312 planningboard@townofnewbury.org

Re: Response to Third Party Review by Joe Serwatka, PE, October 17, 2022, 140R Main Street Solar, Special Permit Modification

Dear Ms. Taylor:

Waterstone Engineering, Inc. (Waterstone) is pleased to provide the Planning Board with these responses to the *Third Party Review by Joe Serwatka, PE, October 17, 2022, 140R Main Street Solar, Special Permit Modification*. We appreciate the thorough review and have no concerns with any of the items raised and believe we have addressed all items as noted below. We do however note that the vast majority of markups would commonly apply to a final construction plan set, whereas the intention of this plan set is for permitting. We do humbly request that further “construction related” revisions be considered as a condition of approval subject to review by the town.

Sheet T-1, Title Page

1. General note 16 refers to “trees may grow during the life of the system and impact the production” and appears to be a leftover note from the solar panel project.

Response: Revised

Sheet C-0.0, Civil Notes

1. General note 3 states that “the wetlands on the site were delineated by Chris Lucas of Lucas Environmental in March and April 2014”. This note should be updated if there is a more recent delineation.

Response: Revised

2. Section III, note 3 refers to “Paul X. Tivan Drive” and is likely an error.

Response: Revised

3. Section V, note 9 refers to maximum slopes along gravel roads not exceeding 10:1, but the plan sections appear to show much steeper (i.e. 1:1) slopes. This note should be corrected as necessary.

Response: Revised

Sheet C-2.0 through C-2.2, Layout and Materials Plans

1. A construction entrance is labeled at Main Street. The plan should refer to a detail for dimensions and stone size requirements.

Response: Revised, note added, detail exists on sheet C7.0 detail 9.



2. *The plan calls for 1485 s.f. of wetland restoration with the removal of the existing cart path. There was some discussion during the site walk as to whether the Army Corps would approve of the removal. The board may want to be updated on this matter.*

Response: This is the plan until determined otherwise. The Conservation Commission appears to be generally in support of the removal of wetland fill. If the Conservation Commission approves the project, the ACOE permit application will be submitted. We would expect, as a matter of routine, that an approval condition would include receiving all necessary federal and state permits. Any changes required with any subsequent permitting would be brought back to the Conservation Commission.

3. *The “50’ crane swing area” extends up to the edge of wetlands, and about 15’ past the proposed treeline on both sides. The engineer should address whether this is correct.*

Response: Revised

4. *It would be helpful to show the proposed grading on the 30 scale plans, as grading does not appear to be shown on the 50 scale grading plans. Of particular concern is the 30’ X 200’ crane pad and laydown area. The specified crane appears to need at least 30’ between outriggers. This area had exposed rock and steep slopes on the eastern side, so the board may want the engineer to demonstrate how much grading is required to flatten this area.*

Response: Revised, the roadway cross-sections have been revised to include the temporary construction road and the laydown area. Roadway plan and profile are shown on C-5.1 and 5.2 and grading is shown on roadway cross-sections every 100 ft on C-5.3 and 5.4. Specifically, C-5.4 addresses this area where the ledge exists. The maximum cut expected is less than 2 feet and should accommodate a laydown area. Specifically, the ledge is further uphill and the width of the laydown area includes the road, therefore only extending uphill approximately 20 ft, sufficient distance from the ledge.

5. *The board may want the engineer to show vehicle turning movements along the proposed 20’ temporary construction road for the most restrictive vehicle, which may be the crane at over 60’ long.*

Response: Revised, vehicle turning plan, C-7.4. The plan is for the crane to back into the laydown area and then drive forward to exit. The turning analyses show that the road is sufficient. The crane company has visited the site and had input as to the approach and plans.

6. *The board may want the engineer to address whether the construction equipment listed on sheet C-7.1 can, or will need to, pass each other on the proposed 20’ construction road. The rock truck is over 12’ wide, and the other pieces are 9-10’ wide. Further, the board may want the engineer to address whether the proposed construction vehicles will be able to reverse direction on the construction road, or will have to reverse to exit. The rock truck, for example is about 34’ long and needs a 30’ turning radius.*

Response: Revised, this is addressed in the vehicle turning plan, C7.2. Specifically, per conditions of NGRID, a passing area is provided every 300 ft. The temporary construction road is 20ft wide to allow for crane access. There are 4 passing locations located at which point the road is 24’ wide, sufficient for 2 vehicles to pass. Additionally, there are 3 locations



mid-way that a vehicle can back up and turn around, at station 4+50 and 10+25. The pullout at 4+50 has been extended to allow for better back in and turning.

7. *The detail noted or the “low water crossing” is incorrect. It should refer to sheet C-7.0.*

Response: Revised

8. *An 800s.f. wetland creation area is shown, but the plan does not depict access between this area and the construction road. The board may want access to be shown, with adequate grading.*

Response: Revised, as per conversations with the conservation commission, the wetland creation has been relocated to the vicinity of road station 3+00 at the low water crossing and reduced to 240 sf. Access will be simple and through the area that will be restored as part of the reduction of the 20’ temporary construction road back to 12’ access road.

9. *The wetland creation should refer to sheet C-7.0, not C-5.0.*

Response: Revised

10. *The plan appears to depict a rock covered area on the south side of the proposed bridge. The board may want this area described, and proposed grading shown.*

Response: Revised, this area is depicted in Sheets C-5.2 Plan and Profile and C-5.4 Cross-Sections, see cross-section #10 – 11+49.84. This area is required as such for 2 reasons: NGRID requires access to all poles with clearance and the fire department requires a turn around that can accommodate 35’ diameter radius. The area of rock cover had been reduced to the turnaround area.

11. *After reviewing the plans, I am unclear as to when in the construction schedule the existing cart path gets removed. Bridge abutments need to be installed at each end of the bridge, so will the cart path be utilized, or will a construction road be built? Cribbing may also need to be installed. I am also unclear as to how the cart path will be removed if it is currently holding back a significant amount of water. The plans call for dewatering, but that would only occur in the work area, not the wetlands. The board may want the engineer to elaborate on these issues.*

Response: Revised. Notes added to Sheet C-2.0 titled Site Specific Construction Sequence.

Additionally, sheet C-2.2 includes notes for Cart Path Removal and Wetland Restoration and listed under item 2. Restoration Elements, and 3. Requirements for Construction Phasing.

Discussion and specifications of the use of cribbing, and anticipated dewatering are described including the location of dewatering pits outside of the wetland areas. The plans require the submittal of a construction phasing plan. The plans do not depict or require a particular construction sequencing, but rather require certain elements of the restoration and phasing. This is to allow the contractor the flexibility to determine how best to accomplish construction. The full note set is attached to this response and listed under item 2.

Restoration Elements, and 3. Requirements for Construction Phasing. Critical elements include the anticipated use of timber mats that will be placed during the removal of the cart path, and then removed sequentially as the excavator backs out of area, removing timber mats, removing wetland fill (existing), and placing temporary timber cribbing and bedding stone at 5 locations where the bridge sections will be placed and assembled. This will allow a machine to be in the cart path area during restoration and bridge construction, and



importantly will not require a machine to be in this area to remove the timber cribbing. All of the cribbing will be placed such that it can be pulled out by use of the crane from the shoreland. No work will be done outside the designated restoration area defined by turbidity curtains.

Sheet C-3.0, Tree Clearing Plan

1. *The plan calls for a 28' clearing width along the construction road and a total of 103 trees to be cut. The plan should address the sequence of tree clearing versus construction road installation. The feller and skidder will need adequate driving surfaces.*

Response: Revised. Notes added to Sheet C-2.0 titled Site Specific Construction Sequence. Tree clearing must occur prior to road construction because the clearing is for the road widening. The plan is to use the existing farm road for the feller and skidder. This is the same set of farm roads that were used in 2020 for tree clearing prior to the solar facility installation.

2. *The board may want the plan to address where the cut trees will be stockpiled, cut, chipped, loaded onto trucks, etc. Perhaps this will occur in the vehicle storage and laydown area shown on previous plans.*

Response: Notes added to Sheet C-2.0 titled Site Specific Construction Sequence

Sheets C-3.1 & 3.2, Revegetation Plan-North/South

1. *The "Laydown Area Restoration" addresses gravel removal, but not any ledge removal and grading that will likely occur along the east side of this area.*

Response: No ledge removal is anticipated as noted above on page 2, #4. The laydown area is expected not to extend into ledge area and will be adjusted as needed if ledge is encountered.

2. *11 trees and 45 shrubs are proposed to be planted in the laydown area. The board may want the plan to specify a minimum caliper and or gallon container.*

Response: The intention of trees and shrubs is to reuse existing trees and shrubs in the areas of disturbance. There will be an excess of trees and shrubs disturbed in the clearing that, along with soils and wetland vegetation, can be stockpiled, and reused for restoration.

Sheet C-4.0, Wetland Crossing Plan and Detail

1. *The plan shows an existing 10' grade change (elev. 60-70) across the temporary pad and crane laydown area. Assuming this area needs to be relatively flat, the board may want the engineer to show proposed grading, and address how this will occur.*

Response: Revised. Sheet C-3.4 and 5.4 now also include a cross-section for the temporary road. The elevation change of 10' within the laydown area will not all be graded, rather it is limited to less than 4'. The area with the greatest cross slope is in the vicinity of the laydown area (shown in cross-section #8, 8+00, Sheet C5.4) with a cut of 2.8'. In no instances is regrading of 9-10 ft occurring. The grading is limited to the roadway as shown along C-5.2 Plan and Profile and C5.4. There is minimal grading expected outside of the roadway, rather the area in the laydown area will be cleared and stabilized with stone and used for storage



and laydown. There is similarly a lot of grade change along the road profile. The road profile on C-5.2 shows the grading up to the bridge deck at approximately 63.3' and includes a maximum fill area at the southern abutment of less than 4 ft. The majority of the grading is less than 18" along the length of the road as shown in C-5.1 to C-5.4.

2. *Construction will likely involve the pumping of a significant amount of ground/surface water so that work can proceed "in the dry". The board may want additional detail as to where this water will be pumped and allowed to settle before entering the resource areas.*

Response: Recent geotechnical investigation and test pits found no groundwater at either footing location and excellent materials. Excerpt from report reads, *"Based on the data collected during the field explorations, laboratory testing, and subsequent analyses using the information provided to us, the bridge can be supported on the native soil using the standard "Contech" ell shaped abutments. The abutments would be placed on ¾ inch crushed stone placed on the proof-rolled native soil. Due to the competency of the soil and relative elevations of the abutment base elevation and existing and finished grades, a bin wall structure will not be necessary."* See attached Geotechnical Report.

As such no bin walls will be used and the final bridge construction drawings to be completed by the manufacturer will revise the footings. In the event that dewatering is required, these details are provided on sheet C-2.2. The dewatering location is identified and notes are provided under section 4. Construction Dewatering.

3. *Two bridge abutments will be installed, each taking about 60+ yards of concrete. The southerly abutment can be poured via the construction road, but I am unclear as to how equipment and cement trucks will access the northerly abutment. The board may want the engineer to expound upon this issue.*

Response: The bridge abutments will be using precast concrete slabs. No concrete trucks will be needed for the bridge construction.

Sheet C-5.0, Grading and Erosion Control Plan

1. *This plan shows a construction entrance/exit off the solar project road, but sheet C-2.0 showed it off Main Street. The engineer should address whether there will be two.*

Response: Sheet C-2.0 shows two (2) construction entrances, one on Main Street, the other off the solar project road at the beginning of the new maintenance access road.

2. *Item 4 in the "temporary" measures refers to "building pad" and "parking areas" which likely do not apply to this project.*

Response: Revised

3. *The plan does not, in fact, appear to show any proposed grading, and it would be difficult to read at 50 scale anyway. The board may want 30 scale plans prepared showing all proposed grading.*

Response: Revised, sheet renamed as Erosion Control plan. Grading is shown on C-5.1 to C-5.4 plan, profile, and cross-sections. Grading is limited to roadway construction only, no overall



site grading. This presentation of grading and drawings has been reviewed with the contractor and confirmed that this is the preferred approach.

4. *It would appear that erosion control should be shown at the edge of the laydown area near the bridge, not well inside of it.*

Response: Revised

Sheets C-5.1 & 5.2, Plan and Profile

1. *As noted previously, proposed grading should be shown on the construction road and sideslopes. The plan does have lines along the road, but they are not labeled as anything.*

Response: Revised, grading is shown on C-5.1 to C-5.4 plan, profile, and cross-sections.

Grading is limited to roadway construction only, no overall site grading. This presentation of grading and drawings has been reviewed with the contractor and confirmed that this is the preferred approach.

2. *The engineer should verify that all proposed construction vehicles, especially loaded cement trucks, can traverse the slopes that are greater than ten percent.*

Response: The site contractor has verified the vehicle usage, and road grades, especially for the crane access. There are no loaded cement trucks to be used.

3. *Proposed grading should be shown in the laydown area, where the existing grade change is 9-10 feet, possibly in ledge.*

Response: As noted on page 4, Sheets C-3.1 & 3.2, Revegetation Plan-North/South, #1, the laydown area will have minimal regrading. It is denoted as such simply for disturbance purposes. Rather it will be cleared and stabilized and used for storage and laydown of crane components and materials. The proposed road elevation requires in most instances less than 1 ft of regrading. Near the bridge crossing the grade is raised to accommodate the existing stream bank and channel and generally requires less than 4' of regrading. The area with the greatest cross slope is in the vicinity of the laydown area (is shown in cross-section #8, 8+00, Sheet C5.4) has a cut of 2.8'. In no instances is regrading of 9-10 ft occurring.

4. *The area between station 10+00 to the end appears to be covered in stone, but this is not labeled. Any grade changes across the area should be shown with proposed contours.*

Response: Revised, this area is depicted in Sheets C-5.2 Plan and Profile and C-5.4 Cross-Sections, see cross-section #10 – 11+49.84. The area of rock cover had been reduced to the turnaround area.

Sheets C-5.3 & 5.4, Road Cross-Sections

1. *The plan scale noted is incorrect. It should be 1"=3' for vertical and horizontal.*

Response: The scale appears to be correct as shown 1"=6ft vertical, 1" = 30 ft horizontal

2. *Only the final 12' wide gravel road is shown, and not the 20' wide construction road which will have more impact. The board may want the engineer to show the impacts of the 20' road, and associated grading.*

Response: Revised



3. *The sideslopes appear to be at 1:1 which will require rip rap to prevent erosion. The board may want the engineer to show 3:1 sideslopes which allow for loaming and seeding.*

Response: Revised, side slopes are now 3:1.

4. *The section at 8+00 only show the final 12' access road, and does not account for the requirements of the 30' landing area. The board may want this shown as the grading impacts will likely be significant.*

Response: Revised, see response on page 4, Sheet C-4.0, Wetland Crossing Plan and Detail, #1.

Sheet C-7.0, Civil Details

1. *As noted previously, the plans and detail do not address how vehicles/equipment will access the wetland creation area.*

Response: Revised, see response on page 2, #8.

2. *The gravel access road detail shows a 12" layer of 6" minus stone topped with a 2" minimum layer that is not identified. The engineer should address the 2" layer.*

Response: Revised

Hydrology and Hydraulics Study

1. *The analysis is for the bridge in place with the cart path removed. The engineer should verify that the Army Corps has approved the removal of the cart path.*

Response: This should be a condition of approval. The Army Corps permit will not be applied for until the Conservation Commission has approved a design. This is a standard practice in which a condition of approval is to obtain all necessary federal and state permits.

Stormwater Management Report

1. *The Operations and Maintenance Plan is from 2017 and appears to be for the "protection of vernal pools and upland habitat", as noted. The board may want the plan updated for the proposed access road.*

Response: Revised

2. *The report lists Kavy Yesair as the party responsible for maintenance. The board may want the applicant listed as the responsible party.*

Response: Revised

Response to Comments from 3rd Party Review
Planning Board, Town of Newbury, MA
November 18, 2022
Page 8



Please feel free to contact me with any questions or comments. I can be reached at (603) 686-2488 or by email at roseen@waterstone-eng.com

Sincerely,

A handwritten signature in black ink, appearing to read "Robert M. Roseen", written in a cursive style.

Robert M. Roseen, Ph.D., P.E.^{NH, MA}, D.WRE., Principal



9 Gretas Way | Stratham, NH 03885
(603)686-2488(c) | roseen@waterstone-eng.com

CC:

Kavy Yesair, 138 Main Street, Newbury, MA, 01951
Newbury Conservation Commission, Town Hall, 12 Kent Way, Newbury, MA 01922
Jared Connell, New Leaf Energy, 55 Technology Drive, Suite 102, Lowell, MA
Lauren Raheja, Borrego Solar, 55 Technology Drive, Suite 101, Lowell, MA