

FEBRUARY 23, 2024

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Town of Sturbridge Planning Board
c/o Jean Bubon, AICP
Town Planner
301 Main Street, First Floor
Sturbridge, MA 01566

RE: Proposed Photovoltaic System, 200 Haynes Street, Response to Peer Review, Fire Department & Public Comments

Dear Jean,

BSC Group, Inc. (BSC) has reviewed the comments provided by CMG, as contained in correspondence to the Sturbridge Planning Board, dated February 13, 2024. In addition, this letter also provides responses to comments received from the Town Planner, as contained in a memorandum to the Sturbridge Planning Board, dated January 4, 2024. The original comments are shown below and the Applicant's responses follow in bold font.

Peer Review Comments from CMG

General Engineering & Stormwater Management Design Comments

10. Planting Plan notes planting of trees and shrubs in certain areas but does not provide planting details and/or planting list or schedule.

BSC 11/20/23 Response: The planting of trees is not proposed at this time. We feel that the site will be sufficiently screened, as indicated on the Planting Plan. Upon construction, if the Town Planner determines that screening is insufficient, trees will be provided at that time, as necessary. Tree planting details have been added to the site plans.

CMG Comment #2: Project proposes tree cutting to within 50 ft of the southern property line abutting a residential use and does not provide a 200 ft landscape buffer. Therefore, CMG recommends some form of additional landscape screening and/or tree plantings proposed to mitigate the visual impacts of the proposed solar facility and stormwater basin which border the Southern residential property line (Also see Comment #31).

BSC 1/31/24 Response: In this southern portion of the property there will be a lot of emergent Pine and Sweet Birch coming in naturally. We will supplement this by planting Grey Birches, Witch-hazel's, and Bottlebrush Buckey's to quickly thicken the understory in order to provide bird and pollinator support, and stay relatively resistant to deer browsing, as well as sufficiently screening the abutting residential property. Black Spruce trees are also proposed in the understory to provide additional screening.

CMG Comment #3: Planting Plan Sheet 7 of 9 adds twenty-one (21) trees within 50 ft. of the southern property line. Applicant must demonstrate how this will provide the equivalent screening for the adjacent residential condominium development as an alternative to providing a 200 ft. landscape buffer. CMG recommends the Applicant provide additional information to the Planning Board to justify the reduced landscape buffer.

The current species listed range from 10 to 40' height remaining dense at eye level. The additional species laurel, great laurel, will range from 3' to 10' and pine will range from 20-120'. Our goal is to add density to the understory at eye level obscuring the fence and panels while providing compatible but diverse habitat relatively resistant to browser damage. Developing an understory planting has the added benefit of limiting taller species that would require future removal and disruption as well as limiting the potential for invasive

species that take advantage of new clearing were control strategy forests are not adapted to clearing events lacking seedbank or are under increased pressure from browsers.

- How will runoff from the first 90± ft. of the proposed access driveway apron be routed and treated to prevent runoff flow into the Haynes Street roadway gutter line?

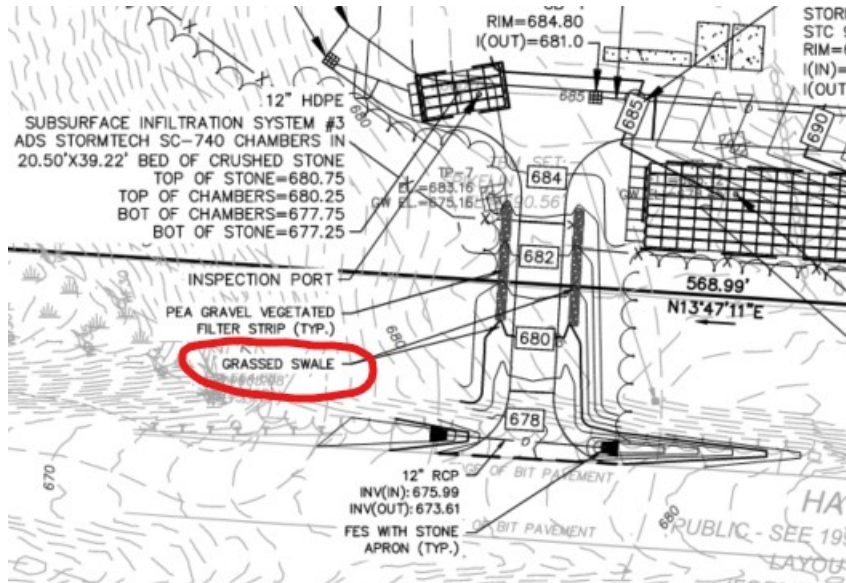
BSC 11/20/23 Response: The proposed access driveway is crowned, directing runoff to the proposed grassed channels on either side of the driveway.

CMG Comment #2: Proposed grass swales should be called out on the Grading & Drainage plan sheets and a construction detail provided.

BSC 1/31/24 Response: The Drainage Plan sheet now calls out the proposed grass swales, and a cross-section of the driveway with both swales is included on Sheet 8 of 9 of the plan set.

CMG Comment #3: Minor plan revision: still need to label grass swales on the plans.

The grass swales were already labeled on the Drainage Plan (Sheet 6 of 9, see screen clip below).



- Site's interior gravel access road appears to be super elevated with proposed catch basin locations on the high side of the road. Catch basins should be located on the low side in order to collect roadway runoff. In addition, CMG recommends catch basin grates be constructed with concrete collars and a detail provided for all locations within the gravel access road.

BSC 11/20/23 Response: Catch basins have been relocated to the low side of the road.

CMG Comment #2: Catch basin grates should be constructed with concrete collars and a construction detail provided for all locations within the gravel access road. The area downgradient of Catch Basin CB-3 should be bermed to prevent larger storms from bypassing and running towards the property to the South as the gravel driveway will not have a curb.

BSC 1/31/24 Response: A concrete collar detail is shown on Sheet 8 of 9. The detail includes a table that specifies the required length of the collar on each side of the grate. Catch Basin 3 is now bermed at the south end, as shown in the Grading Plan.

CMG Comment #3: Minor plan revision: CB-3 rim grade and "berm" are shown as the same elevation and should be revised to define an adequate berm height.

The catch basin rim is to be elevation 720.5 and the top of the berm is elevation 721. The plans have been revised accordingly.

14. Rational method pipe sizing calculations are not included in the submitted stormwater report for the proposed drain pipes.

BSC 11/20/23 Response: Rational method pipe sizing calculations are included in the Stormwater Report.

CMG Comment #2: The culvert sizing calculations provided in Stormwater Report Section 7.06 do not provide the correct design flow rate necessary to evaluate proper culvert sizing (Also see Comment #5).

BSC 1/31/24 Response: The culvert sizing calculations provided in Stormwater Report Section 7.06 have been revised to include the correct design flow rate and they now include the portion of Haynes Street that discharges to the roadside drainage swale.

CMG Comment #3: Minor Stormwater Report revision: report is missing rational method calculations for the other four (4) drain pipes which were included in the previous report.

The missing calculations are included in the revised Stormwater Report.

21. The Site is > 1 Acre therefore an NPDES SWPPP is required to be submitted prior to construction. CMG recommends the Planning Board make this a condition of approval.

BSC 11/20/23 Response: The Applicant is aware of the NPDES Phase II requirements and will comply fully.

CMG Comment #2: Condition of Approval for Planning Board consideration.

BSC 1/31/24 Response: No further action required.

CMG Comment#3: Condition of Approval for Planning Board consideration.

No further action required.

28. §300-10.3.B.(4) – Applicant proposes to utilize an anti-reflective coating on the solar panel's front glass to mitigate glint and glare. Applicant should provide manufacturer's specifications indicating the specific properties of the anti-reflective coating to document there will be "no" glare. Otherwise, CMG recommends a glare analysis be provided.

BSC 11/20/23 Response: Please see the attached letter which specifies the glare/reflection required by the manufacturer.

CMG Comment #2: Condition of Approval for Planning Board consideration – Applicant is providing two documents entitled "Statement about modules' reflection" date 11/07/23 and "Solar Glare Hazard and Evaluation Methodology" System Bulletin No 2 date October 2014 for Planning Board review and consideration.

BSC 1/31/24 Response: No further action required.

CMG Comment#3: Condition of Approval for Planning Board consideration. Condition of Approval for Planning Board consideration – Applicant is providing two documents entitled "Statement about modules' reflection" date 11/07/23 and "Solar Glare Hazard and Evaluation Methodology" System Bulletin No 2 date October 2014 for Planning Board review and consideration.

No further action required.

31. §300-10.5.B – The project does not meet the 200' buffer setback from a residential use for the Sturbridge Crossing Condominiums property located to the South.

BSC 11/20/23 Response: The site plans have been revised accordingly.

CMG Comment #2: Project proposes tree cutting within 50-ft of the southern property line abutting residential use and does not provide 200-ft landscape buffer. Therefore, CMG recommends some form of additional landscape screening and/or tree plantings be proposed to mitigate the visual impacts of the proposed solar facility and stormwater basin which border the South residential property line (Also see Comment #10).

BSC 1/31/24 Response: In this southern portion of the property there will be a lot of emergent Pine and Sweet Birch coming in naturally. We will supplement this by planting Grey Birches, Witch-hazel's, and Bottlebrush Buckey's to quickly thicken the understory in order to provide bird and pollinator support, and stay relatively resistant to deer drowsing, as well as sufficiently screening the abutting residential property. Black Spruce trees are also proposed in the understory to provide additional screening. (See response to Comment #10).

CMG Comment #3: *See Comment 10, regarding Planting Plan.

See BSC response to Comment 10 and to that of the Town Planner's 2/20/24 email correspondence.

36. §365-3.4B & 365-6.2 – Tree cutting is proposed within the 100' to 200' wetland buffer along the north end of the project. Applicant should document compliance with this section based on discussions with the Conservation Commission.

BSC 11/20/23 Response: The Applicant is aware of this requirement and has discussed the proposed tree clearing with the Conservation Agent.

CMG Comment #2: Condition of Approval for Planning Board Consideration.

BSC 1/31/24 Response: No further action required.

CMG Comment #3: Condition of Approval for Planning Board consideration.

No further action required.

38. §365-3.7.C – Stormwater maintenance plans must be submitted to and approved by the DPW Director before the Sturbridge Conservation Commission will accept them.

BSC 11/20/23 Response: Stormwater maintenance plans shall be submitted to the Sturbridge DPW director.

CMG Comment #2: "Vehicle Washing Controls" section shown on the first page of the O&M Plan should be deleted.

BSC 1/31/24 Response: This section has been deleted from the O&M Plan.

CMG Comment #3: Condition of Approval for Planning Board consideration.

No further action required.

Summarized Town Planner Comments from 1/4/24 Memorandum to Planning Board

1. This comment is regarding the reference to "200 Route 15" on the site plans and in the documents.

The references to Route 15 have been revised to Haynes Street.

2. This comment expresses concern regarding the 200' buffer on the southern side of the proposed development and land clearing in proximity to the infiltration basin.

Please see response to Town Planner 2/20/24 email on the following pages.

3. Traffic Study and plan scale waiver requests.

The Planning Board has granted the requested waivers. No further action required.

4. Continuation dates.

The Planning Board public hearing has been continued to March 12, 2024. No further action required.

5. The Town Planner and CMG did not feel the decommissioning bond amount was sufficient and made recommendations, including the incorporation of a 15% contingency.

The applicant has agreed to a decommissioning bond amount of \$328,019.19, as recommended.

Email Response/Comments from Town Planner dated 2/20/24

I have had a chance to look at this and discuss this with Dave and he agrees with me that one row of one species is not really acceptable. Normally, we do not allow just a row of a particular species of evergreen. Even our subdivision regulations require a mix of street trees with no more than 25% of any one species so that survival rate is better if there is a particular pest or disease that wipes out a certain species.

We agree and have provided a mix of native understory species with that goal in mind.

We think you would be better served with at least two rows staggered of different broadleaf evergreen plants and evergreen trees that are native to Massachusetts. Mountain Laurel and white pine, planted in staggered rows may be better selections;

Our selections specifically exclude the dominant successional species White Pine because it is a high-risk target and one that will also exceed eye level, lose its understory and limit replacement understory species that would function as screening in the long term. We have added White Pine as the second layer of the buffer, but feel that as a ruderal strategy successional species, the existing seed bank of White Pine will respond to the new clearing and fill in comparably than most transplanted material. We will also include Mountain Laurel but feel it will not reach sufficient size to provide visual screening for many years. We propose to include Great Laurel, the native rhododendron, maximum for its size, diminishing presence in landscape trade, habitat value and in response to shifting hardiness zones.

perhaps you should discuss this with BSC's Landscape Architect and he/she could provide recommendations. I am not a Landscape Architect but I do not think the northern white cedar is not native to Massachusetts although there are some isolated populations to be found and I am not sure how deer resistant they may be – so you may want to research that.

The above statement refers to a question posed by the applicant to the Town Planner. The proposed plan does not include cedar. If the buffer were on the north edge of the site where it would get full sun, we could have included red cedar or White cedar 'arborvitae' but these are a target for browsers. The commercially prevalent 'Green Giant' white cedar is a sterile hybrid of the arborvitae and the Japanese western cedar, it has aesthetic quality and is less interesting to deer but has low habitat value and no regenerative capability. These remain full to the ground and can provide solid screening but are also associated with 'screening' which by itself detracts from forest visual texture.

Finally, the other mix of plantings you proposed contain Black Spruce, from everything I am reading on that it seems it likes wet conditions better although it says they may grow in sandy conditions. I think this is something else you may want to review with your Landscape Architect.

Black spruce was selected as an alternative to hemlock filling a similar niche for moths and boring beetles that create habitat for cavity nesting native beetles. It is associated with wetlands because it naturalizes in bogs, owing to the fact it requires part sun and can tolerate low oxygen environments that keep pine out. It fails to compete in pine oak forests due to light limitations that do not limit hemlock. The permanent clearing provided by the solar field will provide the right light conditions for Black Spruce. New bio control beetle has been released by

USDA that will bring the adelgid under control and should allow for the return of hemlock over the next generation. As our spruce pass maturity, hemlock understory should replace their function.

In all, I think you are heading in the right direction, you just need to rethink the plant materials and incorporate a mix of plant types. We have had so many species decimated in recent years from pests of some type, I think it pays to be more cautious when considering plant materials.

In summary, we have expanded the mix of species and doubled the density per your comments. We feel that these modifications are consistent with the intent of the Zoning Bylaws and address all of the concerns raised by the Town Planner and CMG.

Please do not hesitate to contact us should you have further questions or concerns. We look forward to discussing the revised site plans at the next public hearing.

Sincerely,

BSC Group, Inc.



Brian G. Yergatian, P.E., LEED AP

Manager of Civil Engineering, Senior Associate