



CROSSMAN ENGINEERING

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TECHNICAL MEMORANDUM

To: James Lamphere
Town Planner

From: Lynda Rogers
Landscape Architect
Crossman Engineering

Date: July 26, 2021

Re: Review of Screening Revised Landscape Plan for Palmer Circle Solar Farm

In response to our Landscape Plan Review Memorandum dated July 13, 2021, Terraink Landscape Architecture and Planning of Arlington Massachusetts provided the following updated documents for review:

- Screening Planting, dated July 23, 2021
- Letter dated July 22, 2021 to Mr. Jim Lamphere, Town Planner, Hopkinton, RI

Upon review, we concur that the latest revised plan accurately denotes appropriate plantings needed to replace the complex plant habitat which has been destroyed and recommend approval.

TECHNICAL MEMORANDUM

To: James Lamphere
Town Planner

From: Lynda Rogers
Landscape Architect
Crossman Engineering

Date: July 13, 2021

Re: Review of Screening Revised Landscape Plan for Palmer Circle Solar Farm

Crossman Engineering has been retained to perform an independent review of the proposed landscaping plan at the Palmer Circle Solar project located at 65 Palmer Circle in Hope Valley, Rhode Island. The purpose of this review is to determine if the planting plan reflects adequate replacement of the existing woodland removed during the construction clearing.

Terraink Landscape Architecture and Planning of Arlington Massachusetts has provided Crossman Engineering (CE) with the following revised documents for review:

- Screening Planting, dated May 26, 2021, Revision 1 05-26-2021
- Letter dated July 1, 2021 to Mr. Jim Lamphere, Town Planner, Hopkinton, RI

Following is a summary of our observations/comments on the revised material received:

1. ***The proposed buffer is not adequate to provide year-round screening of the panels from the road. Most of the screening consists of one to two rows of deciduous shrubs.***

Native evergreen shrubs, such as Inkberry (*Ilex glabra*), Mountain Laurel (*Kalmia latifolia*), and Rosebay Rhododendron (*Rhododendron maximum*) should be included in the proposed shrub masses.

Revised plan: Only six (6) Rhododendrons have been added to the shrubs. Inkberries are commonly used along shorelines, roadway edges, and parking lot as a low-maintenance evergreen shrub. This is a long expanse of disturbance for the addition of only six (6) additional shrubs.

2. ***The proposed erosion control grass does not have the same diverse benefits for wildlife as that which existed in the previous woodland setting.***

Native Hay-Scented Ferns (*Dennstaedtia punctiloba*) and Orange Daylilies (*Hemerocallis fulva*), are two (2) suggestions for natural masses of groundcover. These spread into masses naturally. Blueberry (*Vaccinium angustifolia*) and Bearberry (*Arctostaphylos uva-ursi*) are small shrubs for natural groundcover. It is advised that some masses of these plants are added to promote part of the native understory where they have been removed, as found in the local woods.

Revised Plan: Thirty-six (36) Daylilies have been added to the plan covering approximately one thousand and fifteen (1,015) sf.

3. ***The proposed New England Erosion Control seed mix lacks benefits to bees and other insects as well as hummingbirds.***

A New England native wildflower seed mix should be used (at least in part) for hydroseeded areas to benefit wildlife. The seed mix should include appropriate grasses that will not overtake the wildflower seed, and a maintenance schedule should be provided. Meadows do require occasional mowing to promote establishment, particularly in the first year.

Revised Plan: The revised seed mix is acceptable for the benefit of pollinators; the application rate of 23 pounds per acre is the recommended rate from the supplier. Notes should be added to reflect the process of loaming and seeding on the plan. Use the latest methods given in the Rhode Island Department of Transportation Standard Specifications for Road and Bridge Development, Section L.01-Loam, Plantable Soil and High Organic Soil and Section L.02-Seeding (“the *Blue Book*”) for loaming, mulching and application for wildflower seed, using the proposed mix from NE Wetland Seed mix. The proposed mix is similar to RIDOT, with more diversity. Denote on the revised plans these specifications for clarification during construction.

4. ***The proposed plantings leave large areas of open area meadow instead of woodland, lacking cover and food found in wooded areas.***

Use more shrubs with berries to provide food for wildlife, such as Winterberry (*Ilex verticillata*), Inkberry (*Ilex glabra*), Elderberry (*Sambucus canadensis*), and Blueberry (*Vaccinium corymbosum* and *angustifolia*).

Revised Plan: The proposed plantings have not been revised other than the addition of six (6) Rhododendrons. The aforementioned plant suggestions are found in a variety of conditions in Rhode Island, not only in wetlands, and are frequently used for more natural and drought tolerant landscapes. They are dependable and usually easy to procure.

5. ***More evergreen trees should be proposed to provide a more continuous evergreen screen.***

Trees specified on the planting plan include evergreen Eastern Red Cedar and American Holly. These trees are slow-growing to about 20'-30' at maturity, and are appropriate species for screening use.

6. ***Eastern Red Cedars were difficult to procure for projects in 2020.***

CE would advise also using some Green Giant Western Arborvitae (*Thuja plicata* 'Green Giant', 6-8' height, 8' o.c.) or White Pine (*Pinus strobes* 7' – 8' height minimum, 30' o.c. in triangular layout pattern) for the creation of the above-mentioned continuous screen. Using diverse tree species also aids in reducing the effects of disease and pest problems caused by monoculture.

Revised Plan: Eastern Red Cedars have been removed from the plan, and replaced with Green Giant Arborvitae and White Pine. Six (6) additional White Pines have been added to the screen.

Addendum to the original comments from CE:

Terraink Landscape Architecture and Planning has brought attention to the “open, full sun, and upland” site conditions. Their field visit on April 14, 2021 notes that “existing vegetation to the northwest includes dense, high canopy deciduous tree cover including oaks, beech trees and maples with a low herbaceous layer.” As Palmer Circle heads south, the “deciduous forest cover expands to include evergreen understory below the tree canopies....outside of the aggressive clearing.”

The initially submitted plans indicated that this area of “aggressive clearing” have “*selectively cut shade trees taller than 10 feet outside of fence line. Stumps and undergrowth to remain, unless otherwise noted.*”

Had the stumps and undergrowth remained, there would not be “*open, full sun, and upland site conditions.*” Saplings under 10' in height would have remained to provide a forest canopy in the future. Seedlings, a low herbaceous layer and any existing evergreens in the understory below the tree canopies would have remained.

CE suggests an addition to the revisions of more native Red Maples, Oaks, Tupelo or Beech to truly reflect more of what the Owner has removed from the general native woodland. These saplings should be varied species, to replace the stumps and saplings in this aggressively cleared area. Fifteen (15) saplings should be planted approximately 30' on center throughout the disturbed area, and sized a minimum 7' height to maximum 10' height. This would more accurately replace the stripped woodland in like kind to what the initial plan proposed. “The naturally occurring *Kalmia, Ilex, Rhododendron, etc.* will have a greater chance of populating the screen plantings once the canopy trees...create a partially shaded site condition...” There are currently not enough deciduous trees on the plan to create that partially shaded site condition in the future.

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Planting and Seeding details and notes are to be added to the plan following RIDOT details. To further insure the survival of the new plantings and seeding, CE also recommends following the use of the latest methods given in the Rhode Island Department of Transportation Standard Specifications for Road and Bridge Development, Section L.07.03.2 Watering (“the *Blue Book*”). All plant material and seeding shall be guaranteed for one (1) year following completion.

Summary:

The revised landscape plan dated May 26, 2021 does not make a good representation of the existing woodland that has been “aggressively cleared”. The aforementioned revisions to the design will help to form a more accurate re-creation of the cleared woodland, provide more value for wildlife, and reduce the overall insidious effects of disease and pests.

TECHNICAL MEMORANDUM

To: James Lamphere
Town Planner

From: Lynda Rogers
Landscape Architect
Crossman Engineering

Date: May 10, 2021

Re: Review of Screening Landscape Plan for Palmer Circle Solar Farm

Crossman Engineering (CE) has been retained to perform an independent review of the proposed landscaping plan at the Palmer Circle Solar project in Hope Valley, Rhode Island. The purpose of this review is to determine if the planting plan reflects adequate replacement of the existing woodland removed during the construction clearing.

Terraink Landscape Architecture and Planning of Arlington Massachusetts has provided Crossman Engineering (CE) with the following documents for review:

- Screening Planting, dated April 22, 2021

Following is a summary of our observations/comments on the material received:

1. ***The proposed buffer is not adequate to provide year-round screening of the panels from the road. Most of the screening consists of one to two rows of deciduous shrubs.***
Native evergreen shrubs, such as Inkberry (*Ilex glabra*), Mountain Laurel (*Kalmia latifolia*), and Rosebay Rhododendron (*Rhododendron maximum*) should be included in the proposed shrub masses.
2. ***The proposed erosion control grass does not have the same diverse benefits for wildlife as that which existed in the previous woodland setting.***
Native Hay-Scented Ferns (*Dennstaedtia punctiloba*) and Orange Daylilies (*Hemerocallis fulva*), are two suggestions for natural masses of groundcover. These spread into masses naturally. Blueberry (*Vaccinium angustifolia*) and Bearberry (*Arctostaphylos uva-ursi*) are small shrubs for natural groundcover. It is advised that some masses of these plants are added to promote part of the native understory where they have been removed, as found in the local woods.
3. ***The proposed New England Erosion Control seed mix lacks benefits to bees and other insects as well as hummingbirds.***

A New England native wildflower seed mix should be used (at least in part) for hydroseeded areas to benefit wildlife. The seed mix should include appropriate grasses that will not overtake the wildflower seed, and a maintenance schedule should be provided. Meadows do require occasional mowing to promote establishment, particularly in the first year.

4. ***The proposed plantings leave large areas of open area meadow instead of woodland, lacking cover and food found in wooded areas.***
Use more shrubs with berries to provide food for wildlife, such as Winterberry (*Ilex verticillata*), Inkberry (*Ilex glabra*), Elderberry (*Sambucus canadensis*), and Blueberry (*Vaccinium corymbosum* and *angustifolia*).
5. ***More evergreen trees should be proposed to provide a more continuous evergreen screen.***
Trees specified on the planting plan include evergreen Eastern Red Cedar and American Holly. These trees are slow-growing to about 20'-30' at maturity, and are appropriate species for screening use.
6. ***Eastern Red Cedars were difficult to procure for projects in 2020.***
CE would advise also using some Green Giant Western Arborvitae (*Thuja plicata* 'Green Giant', 6'-8' height, 8' o.c.) or White Pine (*Pinus strobus* 7'-8' height, 12' o.c.) for the creation of the above-mentioned continuous screen. Using diverse tree species also aids in reducing the effects of disease/pests problems caused by monoculture.

Summary:

The landscape plan dated April 22, 2021 does not make a good representation of the existing woodland that has been cleared. The aforementioned revisions to the design will help to form a more accurate re-creation of the removed woodland, provide more value for wildlife, and reduce the overall insidious effects of disease and pests.