BRUCE L. MCDERMOTT
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March 19, 2019

VIA ELECTRONIC MAIL
AND UPS NEXT DAY DELIVERY

Mr. James J. Murphy, Vice-Chairman
Connecticut Siting Council
Ten Franklin Square
New Britain, CT 06051

Re: Petition No. 1354 – Chatfield Solar Fund, LLC, petition for a declaratory ruling, pursuant to Connecticut General Statutes §4-176 and §16-50k, for the proposed construction, maintenance and operation of a 1.98-megawatt AC solar photovoltaic electric generating facility located in Killingworth, Connecticut

Dear Vice-Chairman Murphy:

Enclosed please find the original and fifteen (15) copies of Chatfield Solar Fund, LLC's responses to the Siting Council's Third Set of Interrogatories dated February 26, 2019 in connection with the above-referenced petition.

Please feel free to contact me with any questions concerning this submittal at (203) 772-7787.

Very truly yours,

Bruce L. McDermott

Enclosures

Murtha Cullina LLP
265 Church Street
New Haven, CT 06510
T 203.772.7700
F 203.772.7723

Interrogatory CSC-3-111

Chatfield Solar Fund, LLC

Witness: Alisa Morrison
George Andrews

Petition No. 1354

Q-CSC-3-111: What is the total amount of tree clearing required to develop the site? Different values were provided in Petitioner Exhibit 6.

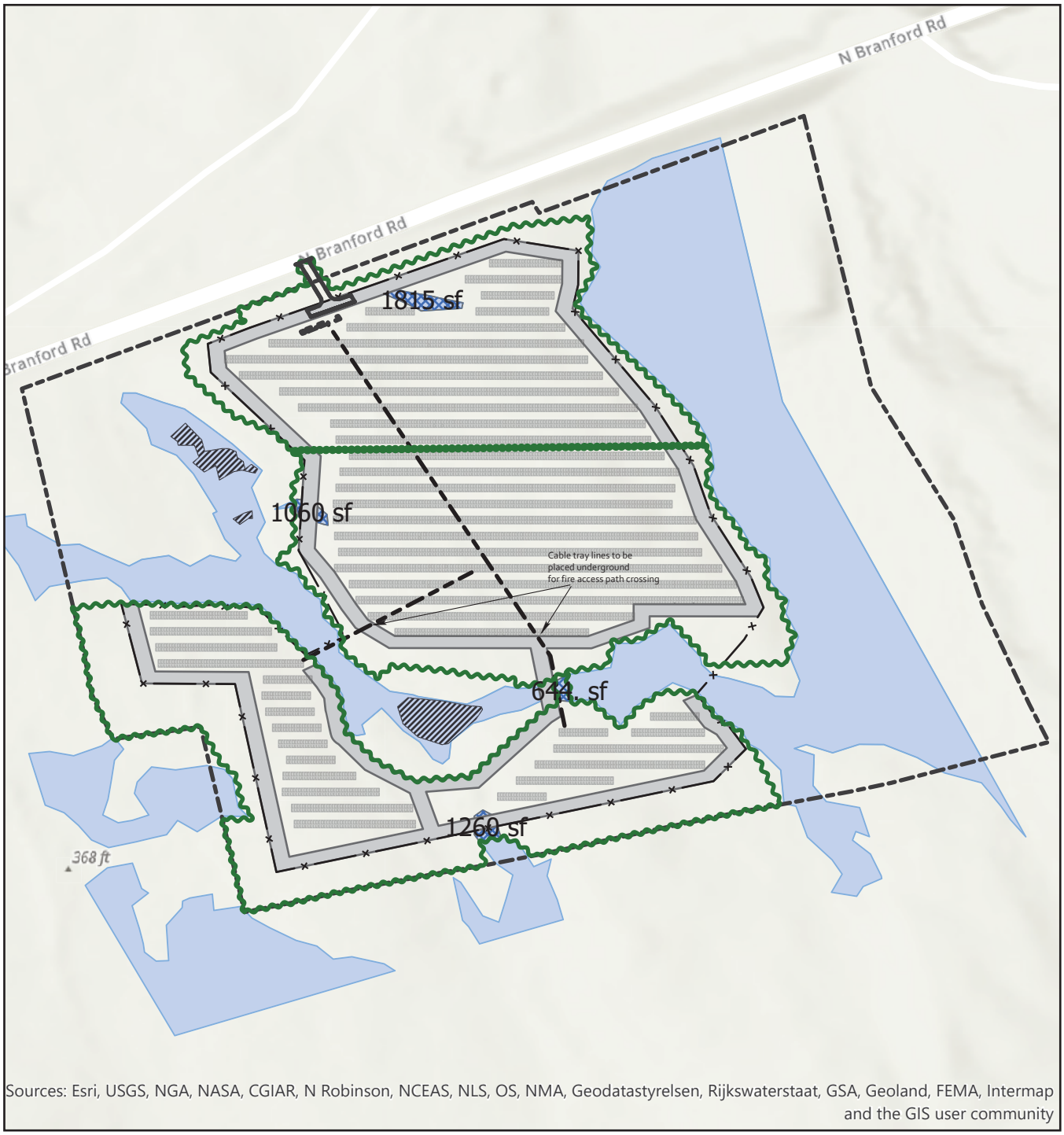
A-CSC-3-111: The amount of tree clearing proposed is 12.7 acres. The area of clearing was reduced in order to provide a buffer between the clearing line and the wetlands. In addition, the initial discrepancy occurred due to changing site layouts.

The clearing will be carried out as follows:

Phase 1 – 3.6 acres;
Phase 2 – 4.5 acres; and
Phase 3 – 4.6 acres.

See Attachment CSC-3-111 for the proposed conditions plan, which shows Chatfield's proposed tree clearing plans.

Attachment CSC-3-111



- Cable Tray
- Clearing Line
- Fence Line
- Equipment Pads and Driveway
- Wetlands
- VernalPools
- Modules
- Cleared Area in Wetlands
- 20' Fire Access Path

0 250 500 Feet

N
W E
S

Area of Parcel - 24.1 Acres
Area of Proposed Clearing - 12.7 Acres
Wetland Area within Clearing Limit - 0.1 Acres
Upland Area within Clearing Limit - 12.6 Acres

Proposed wetlands crossing to be located adjacent to southern cable tray location

Figure 3
Proposed Conditions Plan

Interrogatory CSC-3-112

Chatfield Solar Fund, LLC

Witness: Alisa Morrison
George Andrews

Petition No. 1354

Q-CSC-3-112: Submit revised detailed site plans (Exhibit 6, #102) that contain accurate information regarding the number of panels, clearing limits, wetland and vernal pool buffers, site landscaping/vegetative screening, and detailed construction sequence details per construction Phase. At the February 21, 2019 evidentiary hearing, the Petitioner's witness panel stated that the northern row of the South East Solar Field could be moved out of Wetland 1A. Please include this revision on the Site Plan.

A-CSC-3-112: The arrays in the southeastern portion of the site have shifted approximately 5 feet to the south, out of Wetland 1A. These arrays were moved to provide more of a buffer from the edge of the wetlands to the northernmost row of panels. In addition, a block of panels was moved from the northernmost row of the southeastern array area and relocated to the last row in the southwestern array area. This was done to reduce any potential damage that may have resulted from overhanging trees.

See Attachment CSC-3-112, which is the revised detailed Site Plan.

Attachment CSC-3-112

NOTES:

1. PROPERTY SURVEY, NORTH BRANFORD ROAD - ROUTE 80, KILLINGWORTH, CONNECTICUT, PREPARED FOR STANDARD SOLAR, SCALE 1"=100', DATED DEC. 4, 2018 BY LOUREIRO ENGINEERING ASSOCIATES, INC., WILLIAM J. NAGLE, JR. LS #70269.
2. HORIZONTAL DATUM: CONNECTICUT STATE PLANE NAD 1983.
3. THE ENTIRE SITE IS FORESTED.
4. WETLANDS WERE FLAGGED ON 8/22/2018 BY JMM WETLAND CONSULTING SERVICES, LLC AND FIELD LOCATED BY LOUREIRO ENGINEERING DURING THE MONTHS OF AUG. TO OCT. 2018.
5. CONTOURS OBTAINED FROM GIS SOURCES, Capitol Region Council of Governments. (2016). *2016 LiDAR DEM*. Retrieved from http://cteco.uconn.edu/data/flight2016/index.htm.

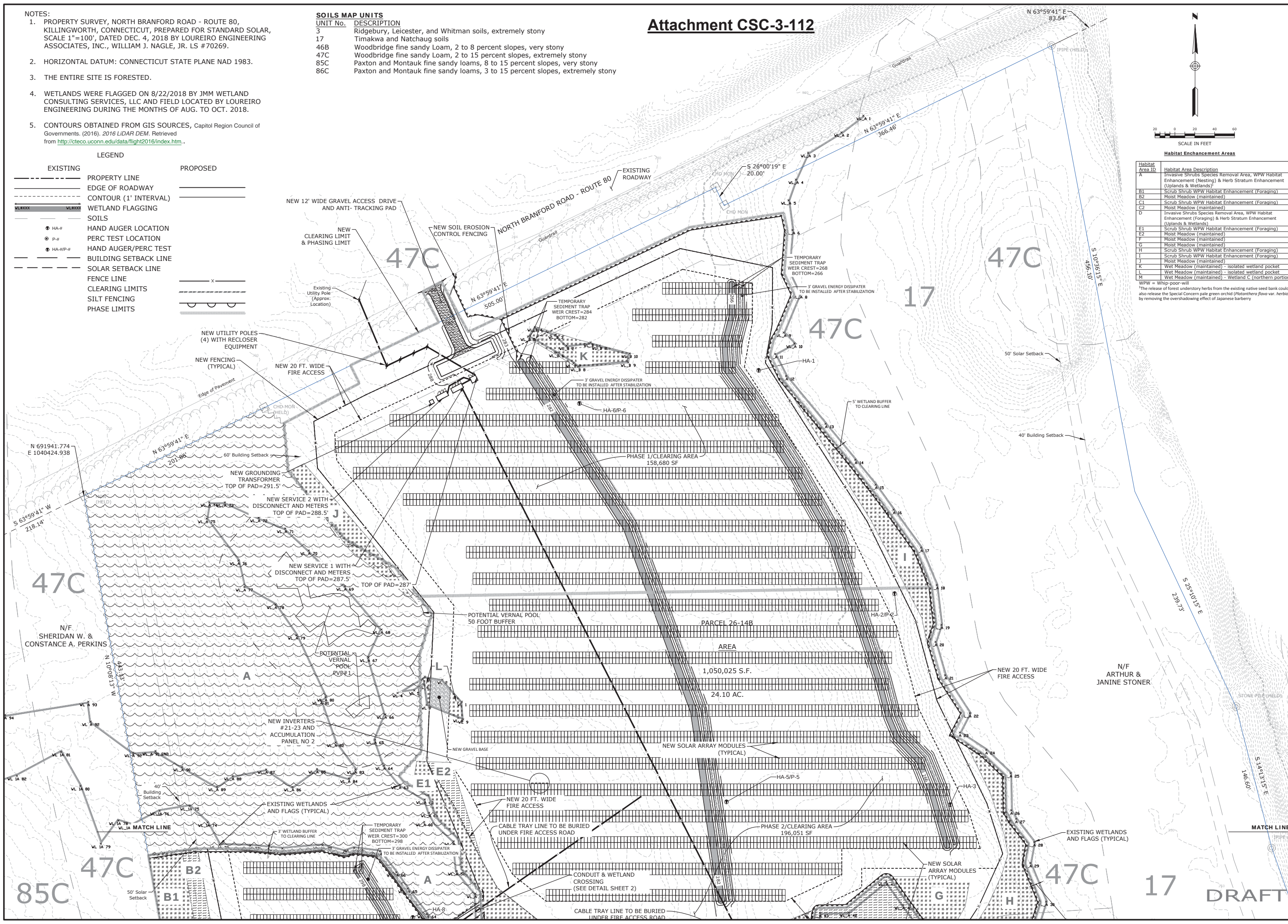
SOILS MAP UNITS

UNIT No.	DESCRIPTION
3	Ridgebury, Leicester, and Whitman soils, extremely stony
17	Timakwa and Natchaug soils
46B	Woodbridge fine sandy Loam, 2 to 8 percent slopes, very stony
47C	Woodbridge fine sandy Loam, 2 to 15 percent slopes, extremely stony
85C	Paxton and Montauk fine sandy loams, 8 to 15 percent slopes, very stony
86C	Paxton and Montauk fine sandy loams, 3 to 15 percent slopes, extremely stony

LEGEND

EXISTING / PROPOSED

- PROPERTY LINE
- EDGE OF ROADWAY
- CONTOUR (1' INTERVAL)
- WETLAND FLAGGING
- SOILS
- HAND AUGER LOCATION (HA-#)
- PERC TEST LOCATION (P-#)
- HAND AUGER/PERC TEST (HA-#/P-#)
- BUILDING SETBACK LINE
- SOLAR SETBACK LINE
- FENCE LINE
- CLEARING LIMITS
- SILT FENCING
- PHASE LIMITS



Habitat Enchancement Areas

Habitat Area ID	Habitat Area Description
A	Invasive Shrubs Species Removal Area, WPW Habitat Enhancement (Nesting) & Herb Stratum Enhancement (Uplands & Wetlands)[1]
B1	Scrub Shrub WPW Habitat Enhancement (Foraging)
B2	Moist Meadow (maintained)
C1	Scrub Shrub WPW Habitat Enhancement (Foraging)
C2	Moist Meadow (maintained)
D	Invasive Shrubs Species Removal Area, WPW Habitat Enhancement (Foraging) & Herb Stratum Enhancement (Uplands & Wetlands)
E1	Scrub Shrub WPW Habitat Enhancement (Foraging)
E2	Moist Meadow (maintained)
F	Moist Meadow (maintained)
G	Moist Meadow (maintained)
H	Scrub Shrub WPW Habitat Enhancement (Foraging)
I	Scrub Shrub WPW Habitat Enhancement (Foraging)
J	Moist Meadow (maintained)
K	Wet Meadow (maintained) - isolated wetland pocket
L	Wet Meadow (maintained) - isolated wetland pocket
M	Wet Meadow (maintained) - Wetland C (northern portion)

WPW = Whip-poor-will

[1]The release of forest understory herbs from the existing native seed bank could also release the Special Concern pale green orchid (*Platanthera flava* var. *herbiola*) by removing the overshadowing effect of Japanese barberry

REV. | DESCRIPTION OF REVISION | DATE | APPR.

STAMP

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SCALE	COMM. NO.	DRAWN BY	DATE	APPROVED BY	DATE
1" = 40'	80SS8.01.007	WJN/GFB	03/19/2019	GFA	

PROPOSED CONDITONS PLAN

SITING COUNCIL SUBMISSION-CHATFIELD SOLAR FARM

NORTH BRANFORD ROAD, KILLINGWORTH, CONNECTICUT

PREPARED FOR:

STANDARD SOLAR

DRAWING 1A

SHEET NO. 1 NO. OF SHEETS 1

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LEGEND

EXISTING		PROPOSED
	PROPERTY LINE	
	EDGE OF ROADWAY	
	CONTOUR (1' INTERVAL)	
WLXXXX	WETLAND FLAGGING	WLXXXX
	SOILS	
HA-#	HAND AUGER LOCATION	
P-#	PERC TEST LOCATION	
HA-#/P-#	HAND AUGER/PERC TEST	
	BUILDING SETBACK LINE	
	SOLAR SETBACK LINE	
	FENCE LINE	
	CLEARING LIMITS	
	SILT FENCING	
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WPW = Whip-poor-will

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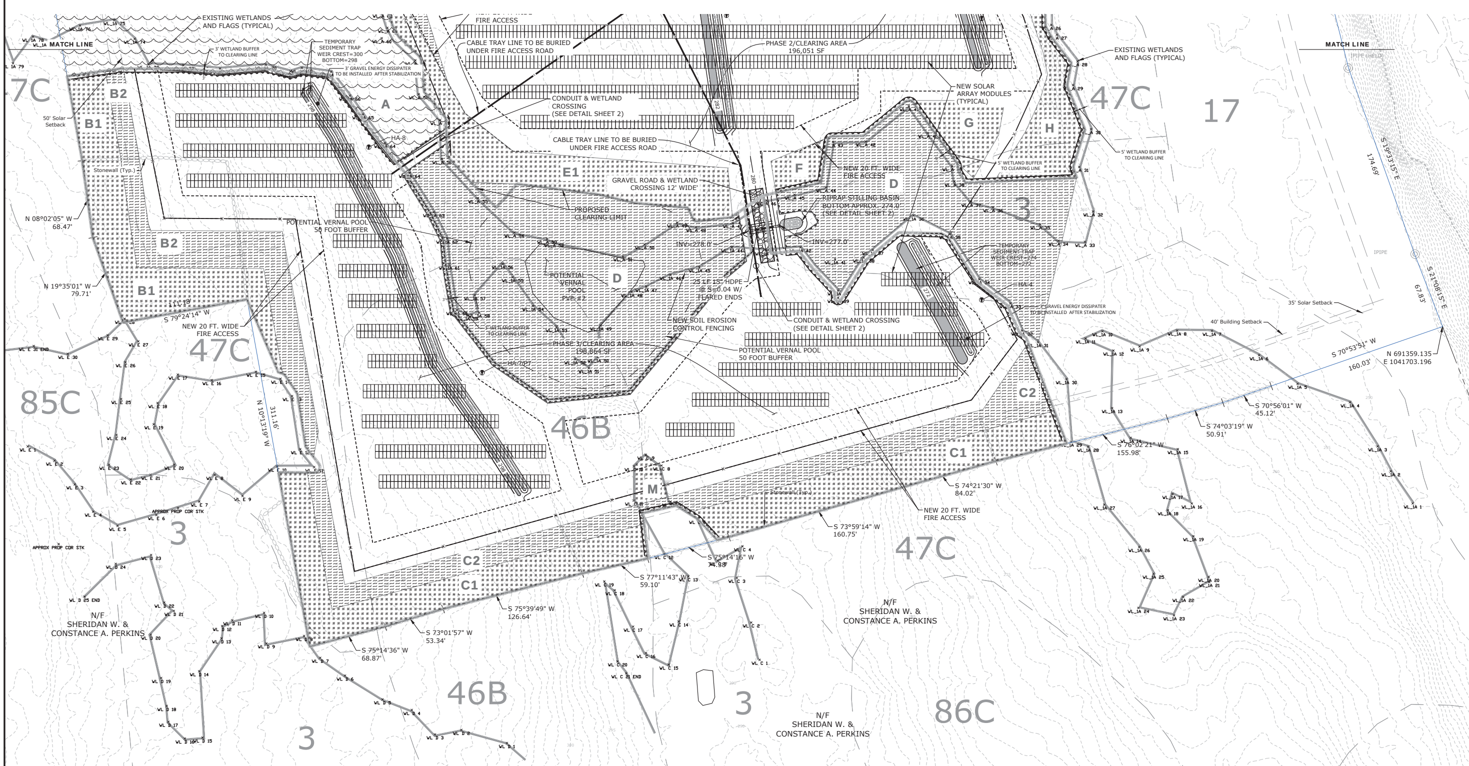

PROPOSED CONDITONS PLAN

SITING COUNCIL SUBMISSION-CHATFIELD SOLAR FARM

NORTH BRANFORD ROAD, KILLINGWORTH, CONNECTICUT

PREPARED FOR:

STANDARD SOLAR

SCALE	1" = 40'
COMM. NO.	80SS8.01.007
DRAWN BY	WJN/GFB
DATE	03/19/2019
APPROVED BY	GFA
DATE	

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DRAWING 1B

SHEET NO. 1 NO. OF SHEETS 1

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Interrogatory CSC-3-113

Chatfield Solar Fund, LLC | Witness: Charles Geppi

Petition No. 1354 |

Q-CSC-3-113: Petitioner Exhibit 6, response #99(a) states 2.1 acres of the site would require grubbing. Would the development of the 20-foot wide solar field perimeter access paths described in response #94 also require grubbing? If so, revise the total amount of grubbing and depict grubbing limits on the site plans (#112 above).

A-CSC-3-113: No grubbing will be required for the solar field perimeter access path. Instead, the existing trees will be flush cut to grade and then removed in stages. Clearing the trees in this manner will promote more stability on the edges of the property (where the access lane will be located) than if a non-stage grubbing process was to be implemented.

Interrogatory CSC-3-114

Chatfield Solar Fund, LLC

Witness: Alisa Morrison
George Andrews

Petition No. 1354

Q-CSC-3-114: Petitioner Exhibit 6, response #105, and Petitioner Exhibit 4 provide different values for vernal pool buffers. Please clarify.

A-CSC-3-114: There is no proposed clearing within 50 feet of the vernal pools. The clearing area was reduced in order to provide a 50 foot buffer around each vernal pool.

Interrogatory CSC-3-115

Chatfield Solar Fund, LLC

Witness: Alisa Morrison
George Andrews

Petition No. 1354

Q-CSC-3-115: Referring to Petitioner Exhibit 2, response #55 (f), revise the vernal pool impact table to account for changes in the Project design.

A-CSC-3-115: The vernal pool depression and surrounding envelope (VPE, 0-100') and the critical terrestrial habitat (CTH, 0-750') are important regions for vernal pool breeding amphibians. General guidance for conservation strategies is to avoid disturbance within the VPE and to limit disturbance to less than 25% of the CTH. These guidelines are provided in the U.S. Army Corps of Engineer Vernal Pool BMPs set forth on Attachment CSC-3-115.

For the project, there is no disturbance within 50 feet of the vernal pools; and within the 750-foot limit (CTH) the percent disturbance is between 27.2% and 30.2%.

In addition to leaving the 50 foot buffer as undisturbed, there are suitable directional corridors of unfragmented forest connecting these vernal pools and allowing amphibian terrestrial passages. Directional corridors allow for a more strategy for preserving habitat. The corridors provide a link between habitats such as the breeding pools, forested wetlands and forested uplands. The vernal pools on site are linked by the undisturbed forested wetland as well as the undisturbed forested upland, which conserves the same amount of land as the CTH although not in a circular direction.

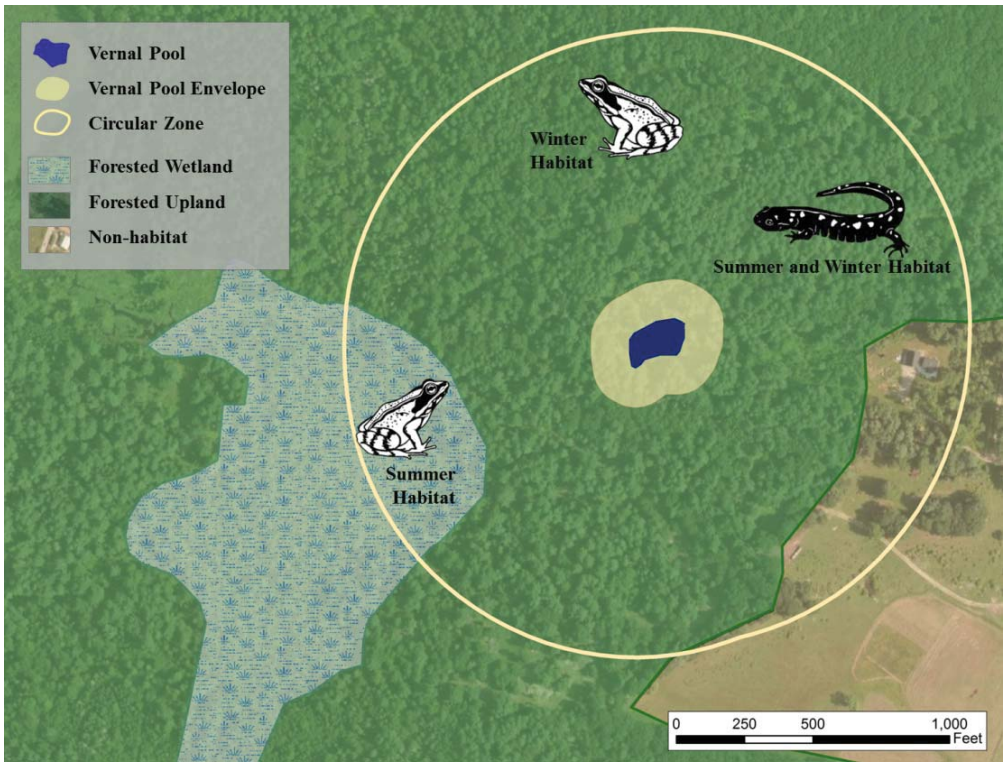
	750' foot buffer				100' Buffer		
VP ID	Buffer Area	Dist. Area	% of CTH		Buffer Area	Dist. Area	% of VPE
PVP 2	45.6	12.56	27.54		1.5	0.66	44.00
PVP 1B (SOUTHERN OF THE TWO NORTHERN VPS)	41.78	12.64	30.25		0.89	0.15	16.85
PVP1A (NORTHERNMOST VP)	45.74	12.45	27.22		1.5	0.33	22.00

Attachment CSC-3-115

US Army Corps of Engineers ®
New England District

Vernal Pool
Best Management Practices (BMPs)

Vernal pool-breeding amphibians[1] depend upon both the vernal pool (VP) depression and surrounding envelope and critical terrestrial habitat[1] (CTH) for survival. The envelope and CTH support the non-larval life-cycle stages of VP-breeding amphibian species and protect the water quality of the VP. Adult amphibians spend as little as two or less weeks in breeding pools before they move back into the forests where they spend the vast majority of their lifecycle (feeding and hibernating). Adult pool-breeding amphibians typically travel as much as 750 feet (and often ≥1 mile) to reach non-breeding habitats. Juvenile dispersing amphibians may move many miles to reach new breeding pools.



During their life cycle, some species require two or more distinct habitats. For example, in southern and central Maine, the wood frog uses VPs to breed, forested wetlands and moist stream bottoms to summer, and well-drained uplands to hibernate (Figure 1). Spotted salamanders typically breed in VPs and rely on small mammal burrows (often shrews) in upland forests for both summer habitat and for hibernating.

Figure 1

Direct, secondary, and cumulative adverse effects to all VPs, including their envelopes and CTH, should be avoided and minimized[2] to the maximum extent practicable. The Corps may require certain designs or special conditions for avoidance, minimization and compensatory mitigation measures.

The concentric circle (Figure 2) and directional corridor concepts [Figures 3(a)-3(c)] are management tools used to protect vernal pools. The concentric circle concept is outlined in the documents in Endnotes 2(a) and (b). The document at Endnote 2(a) includes the following conservation recommendations using the concentric circle concept:

1. Avoid disturbance within the VP depression and envelope (extends 0-100 feet from the VP depression's edge)

2. Limit development to less than 25% of the CTH (extends 100-750 feet from the VP depression's edge).
3. Exclude roads and driveways from the VP envelope.
4. Establish directional corridors consisting of unfragmented forest with at least a partly-closed canopy of overstory (>50% cover) trees to provide shade, deep litter and woody debris. Maintain duff layer, native understory vegetation and downed woody debris in the VP depression, envelope, CTH, and corridors connecting wetlands and VPs.
5. Minimize impedance to amphibian terrestrial passage. Cape Cod style-curbing[3] or no curbing options should be used for new road construction.

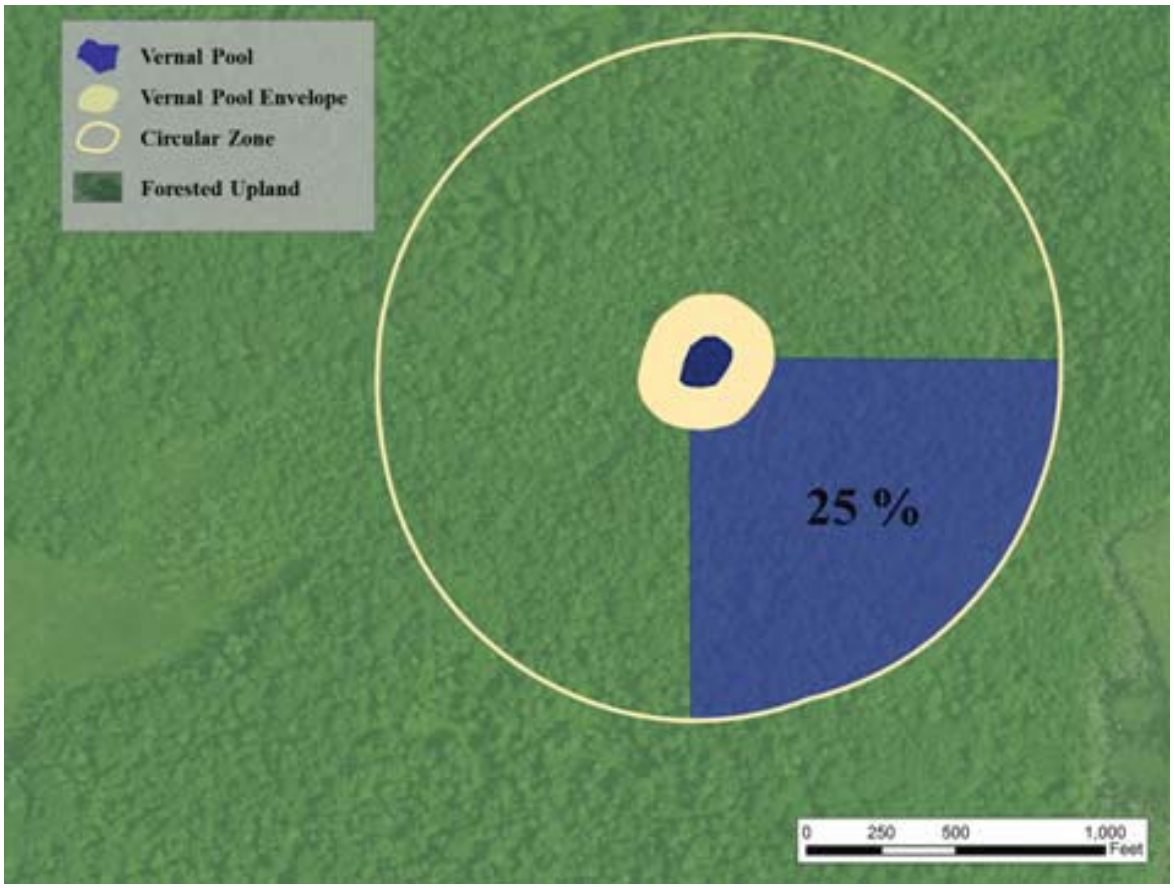


Figure 2

Directional corridors allow a flexible approach to conserving pool-breeding amphibian habitat, focus resources on conserving more essential habitat, and provide a balance between the human and amphibian communities and an alternative to circular zones, which often do not meet the terrestrial habitat needs of VP species. Directional corridors are designed to link habitats used by pool-breeding amphibians (i.e., breeding pools, forested wetlands, forested uplands) with forested travel corridors at appropriate migration scales (750 feet or greater). Landowners, consultants, and regulators can work together to design a corridor that is site-specific. This flexible approach considers pool-breeding amphibian habitat as a network of connected habitat elements. It can be better tailored to individual landowner needs by changing the shape of protected land so the landowner is not responsible for conserving non-habitat. See Fig. 2 on page 448 and the "Conservation Planning" section beginning on Page 449 of the attached paper for more details. Directional corridors may not work when landowners do not control the property and in that case the concentric circle concept is a useful biological guideline.

Figure 3a shows the envelope and CTH, which is a circular zone around a VP. This includes field habitat that is not suitable for VP-breeding amphibians (they are forest-dwelling species). The method of limiting development to 25% of this CTH and conserving 75% would ineffectively include land unsuitable for amphibians but suitable for development.

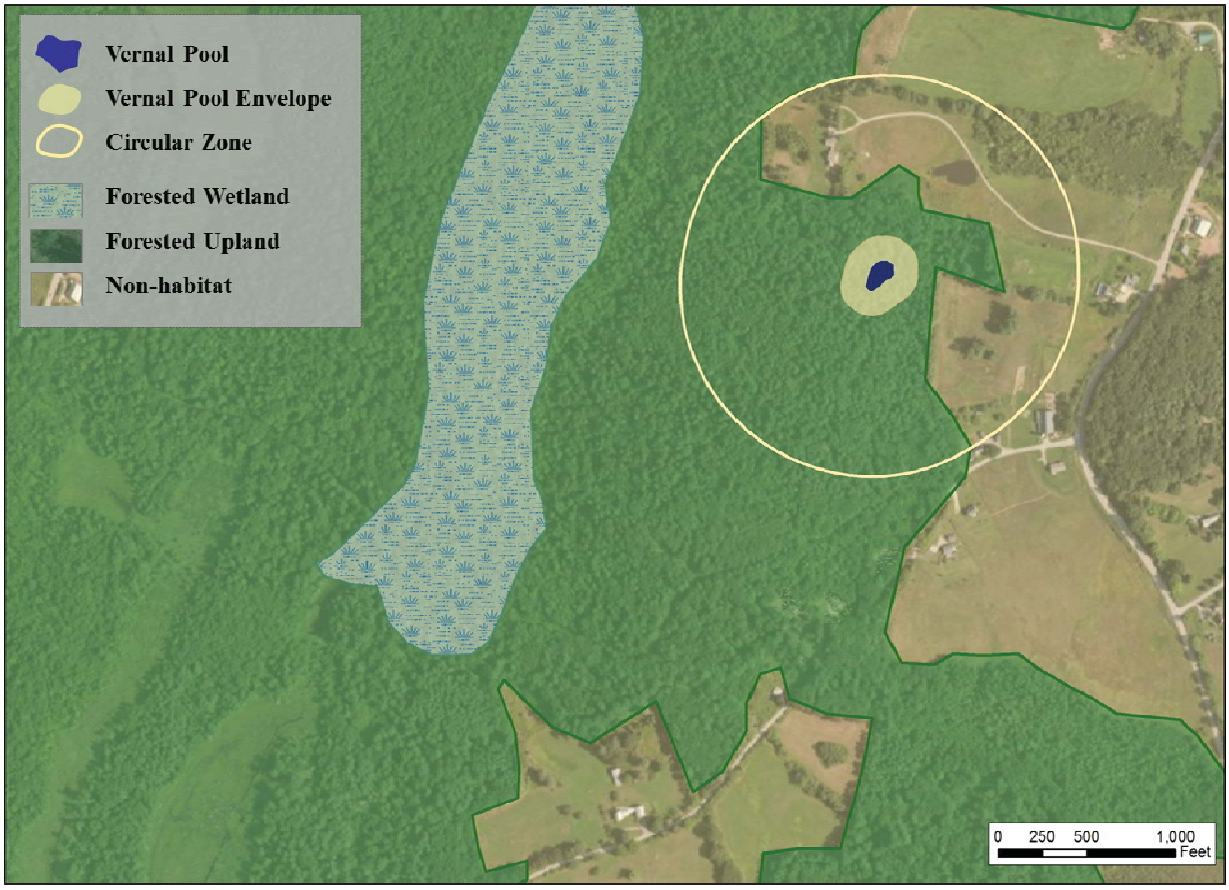


Figure 3a

Conversely, the Wood Frog Directional Corridor in Figure 3b illustrates an alternative where a zone is shaped to connect other elements of amphibian habitat for wood frogs in southern and central Maine. Here, the VP is linked to forested wetlands used by wood frogs in the summer and includes a habitat corridor of forested uplands that is suitable upland habitat for hibernation. The directional corridor could be expanded (see dashed yellow line) to capture additional, suitable, upland habitat, however the Wood Frog Directional Corridor shows an approach that conserves the same amount of land as a circular zone.

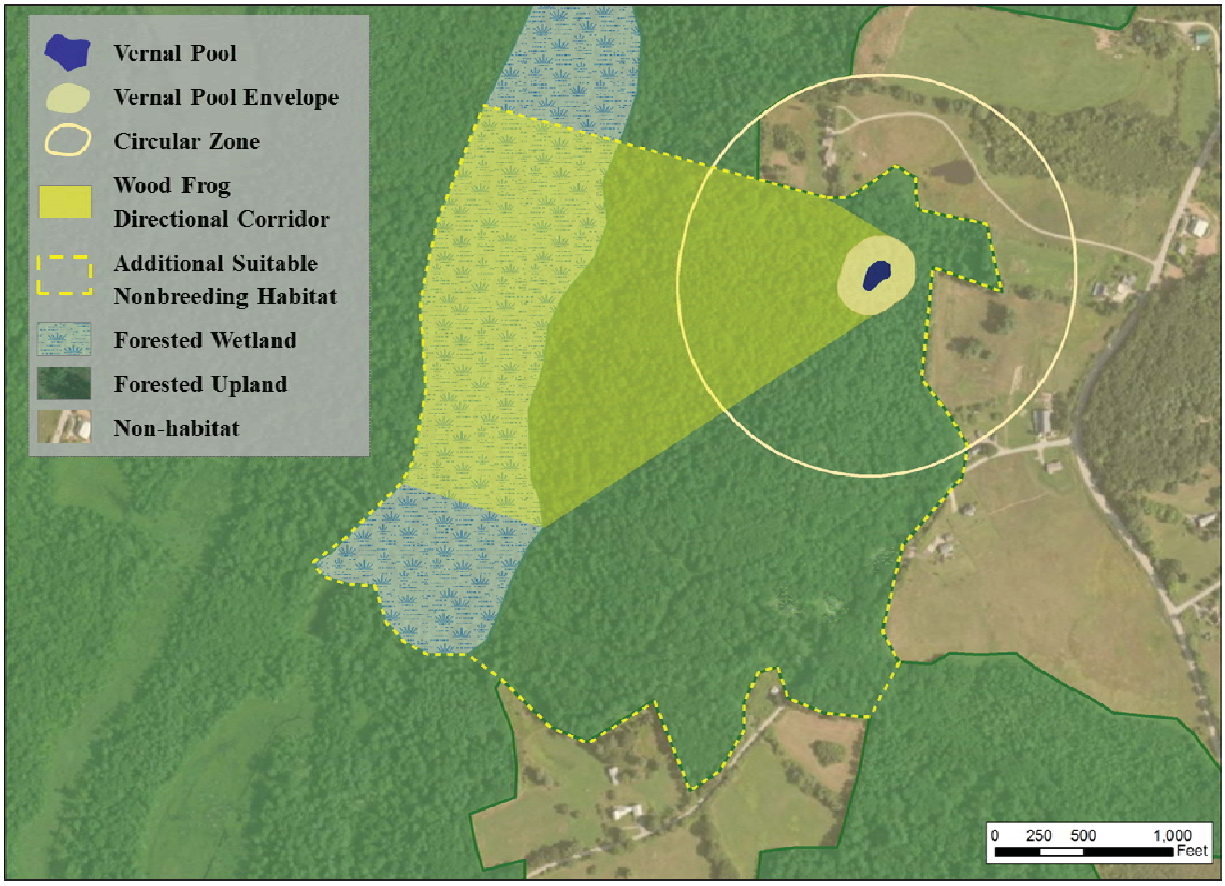


Figure 3b

The Spotted Salamander Directional Corridor in Figure 3c shows suitable upland habitat for a spotted salamander in New England that is equivalent in area to that of the circular zone area, while the dashed blue line shows additional suitable upland habitat that exceeds the area of the circular zone.

Other site-specific directional corridors may connect VPs to other VPs or to good forested upland habitat. Directional corridors must be tailored to the target species of the VP being managed. The habitat needs of the target species post-breeding depend on where the VP is geographically located. For example, wood frogs in Maine utilize all 3 habitat elements (breeding pools, forested wetlands, forested uplands) (Figure 3b), while spotted salamanders may rely more heavily on the breeding pools and forested uplands for foraging and hibernation (Figure 3c). The best available scientific data for species in a particular geographic region must be used. Potential directional corridors may be determined initially by using aerial photography, but habitat quality should be determined on the ground.

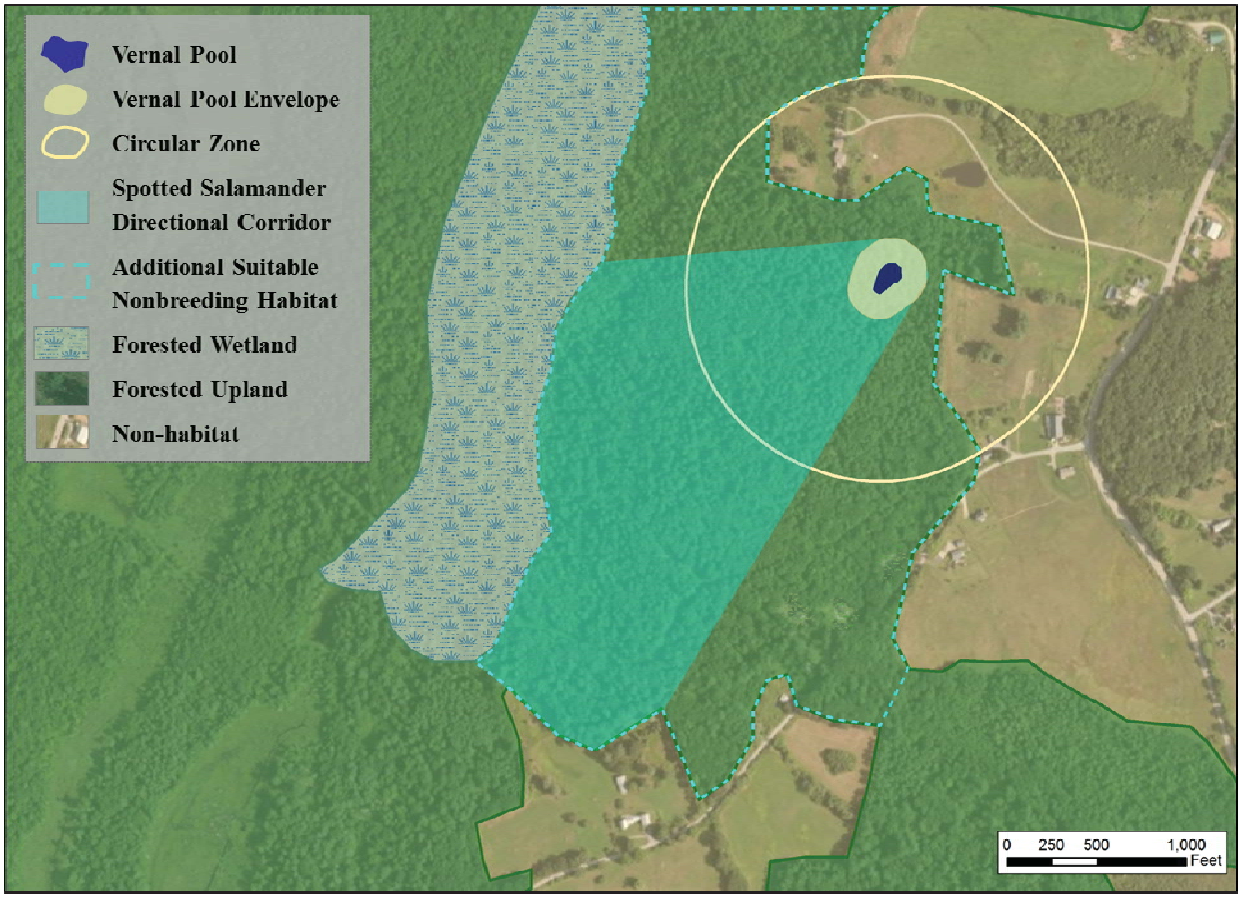


Figure 3c

[1] The Corps state general permits list the following as obligate VP indicator species: wood frog, spotted salamander, blue-spotted salamander, marbled salamander, Jefferson's salamander and fairy shrimp. See the state general permits for the definition of a VP. Vernal pool areas are:

- Depression (includes the VP depression up to the spring or fall high water mark, and includes any vegetation growing within the depression),
- Envelope (area within 0-100 feet of the VP depression's edge), and
- Critical terrestrial habitat (area within 100-750 feet of the VP depression's edge).

The envelope and CTH protect the water quality of the breeding site (e.g., providing shade, leaf litter, and coarse woody material) and support the non-larval life-cycle stages of amphibian species.

[2] The following documents also provide avoidance and minimization practices, and conservation recommendations, and are located at www.nae.usace.army.mil/missions/regulatory.aspx >> Vernal Pools:

a. Science and Conservation of Vernal Pools in Northeastern North America, Calhoun and deMaynadier, 2008. Chapter 12, Conservation Recommendations section, Page 241, is particularly relevant.

b. Best Development Practices: Conserving pool-breeding amphibians in residential and commercial development in the northeastern U.S., Calhoun and Klemens, 2002. Chapter III, Management Goals and Recommendations, Pages 15 – 26, is particularly relevant.

[3] Cape Cod Curbing: For smaller roads and driveways, the most important design feature to consider is curbing. Granite curbs and some traditional curbing can act as a barrier to amphibian and hatchling turtle movements. Large numbers of salamanders have been intercepted in their migrations by curbs and catch basins. Use of Cape Cod curbs rather than traditional curbing may be one solution. Alternatively, where stormwater management systems require more traditional curbing, it may be possible to design in escape ramps on either side of each catch basin. Cape Cod curbing is shown on Page 35 of the document cited in Footnote 2(b) above. Bituminous material is not required; other materials such as granite are acceptable.

Interrogatory CSC-3-116

Chatfield Solar Fund, LLC

Witness: Alisa Morrison
George Andrews

Petition No. 1354

Q-CSC-3-116: Petitioner Exhibit 6, response #101 shows the limits of Project tree clearing as occurring up to the edge of several wetland areas.

a) What is the total length (linear feet) of Project tree clearing that would occur up to the edge of a wetland?

b) For tree clearing that occurs within wetlands, provide the total amount of tree clearing within each wetland (in sq. ft.).

A-CSC-3-116: a) There is no longer clearing up to the edge of the wetlands. The clearing line has been moved from directly along the wetlands edge to a minimum of 3 feet, which occurs in the area of the southeastern arrays. There is approximately 770 linear feet of clearing within 3 feet of the wetlands and approximately 1,540 linear feet of clearing within 5 feet of the wetlands. Not including the 3 and 5 foot buffer areas, the average buffer from the wetlands to the clearing line is approximately 33 feet.

b) There will be 4,780 ft^2 of tree clearing within wetlands (see Attachment CSC-3-111). This includes (1) the 644 ft^2 of clearing for the gravel access drive in the southern portion of the site; and (2) the wetlands crossing, which consists of a 12 foot wide gravel road that is 40 feet long.

Interrogatory CSC-3-117

Chatfield Solar Fund, LLC

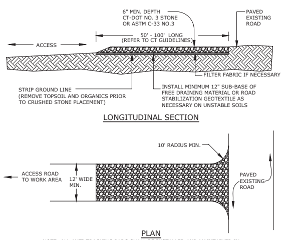
Witness: Alisa Morrison
George Andrews

Petition No. 1354

Q-CSC-3-117: Provide a cross-section diagram of the post-construction infiltration trenches/sediment traps, including outlet detail. What design standard and associated calculations were used to appropriately design these features? Describe procedures for trench maintenance to ensure the designed stormwater infiltration rate is maintained for the life of the project.

A-CSC-3-117: See Attachment CSC-3-117, which is a cross-section diagram of the post-construction infiltration trenches/sediment traps and includes the trench maintenance information.

Attachment CSC-3-117

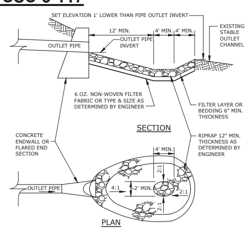


NOTE: ALL ANTI-TRACKING PADS SHALL BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH 2002 CT GUIDELINES FOR SOIL EROSION & SEDIMENT CONTROL, AS AMENDED.

Reference: 2002 CT Guidelines for Erosion and Sediment Control, DEEP Bulletin 34, Chapter 12, Figure CE-2, errata date 3/17/06.

ANTI-TRACKING PAD DETAIL

SCALE: NONE

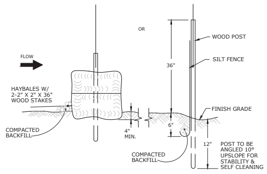


NOTES:
1. SEE PLAN FOR EXACT LOCATION AND DIMENSIONS.
2. RIPRAP SIZE AND THICKNESS SHALL VARY AS DETERMINED BY ENGINEER.
3. THE CONTRACTOR SHALL APPLY CEMENTIOUS GROUT IN THE RIPRAP TO PREVENT VANDALISM AND FACILITATE SEDIMENT AND DEBRIS CLEANOUT.
4. ALL OUTLET PROTECTION STRUCTURES SHALL BE FURNISHED, INSTALLED AND MAINTAINED IN ACCORDANCE WITH 2002 CT GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROLS, AS AMENDED.

TYPICAL OUTLET PROTECTION DETAIL RIPRAP STILLING BASIN DETAIL

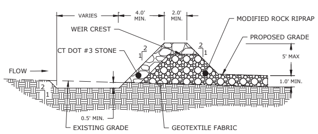
SCALE: NONE

Reference: 2002 CT Guidelines for Erosion and Sediment Control, DEEP Bulletin 34, Chapter 5-10, Figure OP-3.



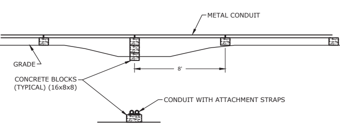
TYPICAL SEDIMENT BARRIER DETAIL

NOT TO SCALE



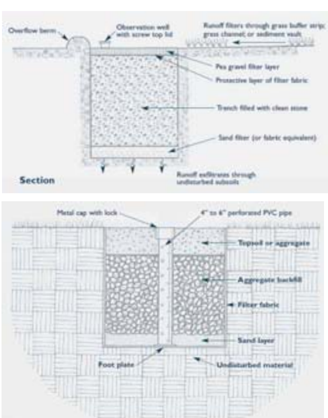
TEMPORARY SEDIMENT TRAP OUTLET DETAIL

SCALE: NONE



CHATFIELD CONDUIT CROSSING DETAIL

SCALE: NONE



RUNOFF FILTERS THROUGH GRASS SHEET FLOW DETAILS

SCALE: NONE

Reference: CT 2004 Stormwater Quality Manual.

MAINTENANCE OF EROSION CONTROL DEVICES:

A. HAY BALE BARRIERS/GEOTEXTILE SILT FENCES:

1. INSPECT HAY BALE BARRIERS/GEOTEXTILE SILT FENCE AT LEAST ONCE PER WEEK AND WITHIN 24 HOURS AFTER THE END OF A STORM WITH A RAINFALL AMOUNT OF 0.5 INCHES OR GREATER TO DETERMINE MAINTENANCE NEEDS.
2. REMOVE SEDIMENT DEPOSITS OR INSTALL A SECONDARY BARRIER/FENCE WHEN SEDIMENT DEPOSITS REACH APPROXIMATELY ONE HALF HEIGHT OF THE BARRIER/FENCE.
3. REPLACE OR REPAIR THE BARRIER/FENCE WITHIN 24 HOURS OF OBSERVED FAILURE. IF REPETITIVE FAILURE OCCURS, CONSULT 2002 GUIDELINES FOR TROUBLESHOOTING FAILURES.
4. MAINTAIN THE HAY BALE BARRIER/SILT FENCE UNTIL THE CONTRIBUTING AREA IS STABILIZED
5. AFTER UPSLOPE AREAS HAVE PERMANENTLY STABILIZED, REMOVE STAKES FROM HAY BALES, PULL UP FENCE SUPPORT POSTS AND CUT OFF GEOTEXTILE AT GROUND. UNLESS OTHERWISE REQUIRED, HAY BALES MAY BE LEFT IN PLACE OR BROKEN UP FOR GROUND COVER. IF ACCUMULATE SEDIMENT EXCEEDS 6 INCHES, REGRADE OR REMOVE SEDIMENT. STABILIZE ANY DISTURBED SOILS.

B. CONSTRUCTION ENTRANCE

1. MAINTAIN THE ENTRANCE IN A CONDITION WHICH WILL PREVENT TRACKING AND WASHING OF SEDIMENTS ON TO PAVED SURFACES
2. PROVIDE PERIODIC TOP DRESSING AND ADDITIONAL STONE OR LENGTH AS NECESSARY.
3. IMMEDIATELY REMOVE ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PAVED SURFACES AND ROADS ADJACENT TO THE CONSTRUCTION SITE.
4. PAVED SURFACES AND ROAD ADJACENT TO THE SITE SHALL BE LEFT CLEAN EVERY DAY.

C. TEMPORARY SEDIMENT TRAPS

1. INSPECTIONS SHALL BE AT THE SAME INTERVALS AS ABOVE.
2. HEIGHT OF STONE EMBANKMENT SHALL BE MAINTAINED. SEDIMENT ACCUMULATION AND FILTRATION PERFORMANCE SHOULD BE OBSERVED.
3. WHEN SEDIMENTS HAVE ACCUMULATED TO ONE HALF OF THE MINIMUM REQUIRED STORAGE VOLUME, REMOVE SEDIMENTS, RESTORE TRAP TO ORIGINAL DIMENSIONS AND DISPOSE OF SEDIMENT AT A LOCATION AND MANNER THAT WILL NOT RESULT IN EROSION OR SEDIMENTATION.
4. AFTER THE CONTRIBUTING ARE IS STABILIZED, REMOVE SEDIMENT AS DESCRIBED ABOVE, REGRADE AND STABILIZE AREA FOR INTENDED USE AS SHOWN ON PLAN.

INFILTRATION BASIN NOTES:

THE TRENCH SHOULD BE FILLED WITH CLEAN, WASHED AGGREGATE WITH A DIAMETER OF 1.5 TO 3 INCHES (POROSITY OF 40 PERCENT).

THE SURFACE OF THE TRENCH SHOULD BE LINED WITH PERMEABLE FTLTER FABRIC AND ADDITIONAL WASHED PEA GRAVEL OR SIMILAR AGGREGATE TO IMPROVE SEDIMENT FILTERING IN THE TOP OF THE TRENCH.

THE SIDES OF THE TRENCH SHOULD BE LINED WITH FILTER FABRIC. THE FILTER FABRIC SHOULD BE COMPATIBLE WITH THE SOIL TEXTURES AND APPLICATION.

THE BOTTOM OF THE TRENCH CAN BE LINED WITH FILTER FABRIC OR 6 TO 12 INCHES OF CLEAN SAND. CLEAN SAND IS PREFERRED OVER FILTER FABRIC SINCE CLOGGING CAN OCCUR AT THE FILTER FABRIC LAYER, AND SAND RESTRICTS DOWNWARD FLOW LESS THAN FABRIC. SAND ALSO ENCOURAGES DRAINAGE AND PREVENTS COMPACTION OF THE NATIVE SOIL WHILE THE STONE AGGREGATE IS ADDED.

AN OBSERVATION WELL SHOULD BE INSTALLED ALONG THE TRENCH CENTERLINE TO MONITOR THE WATER DRAINAGE IN THE SYSTEM. THE WELL SHOULD CONSIST OF A WELLANCHORED, VERTICAL PERFORATED PVC PIPE WITH A LOCKABLE ABOVEGROUND CAP (SEE DETAIL).

THE AREA OF THE INFILTRATION PRACTICES SHOULD BE ROPED OFF AND FLAGGED TO PREVENT SOIL COMPACTION BY HEAVY EQUIPMENT.

LIGHT EARTH-MOVING EQUIPMENT (BACKHOES OR WHEEL AND LADDER TYPE TRENCHERS) SHOULD BE USED TO EXCAVATE INFILTRATION TRENCHES.

COMPACTION OF THE INFILTRATION AREA AND SURROUNDING SOILS DURING CONSTRUCTION SHOULD BE AVOIDED.

SMEARING OF SOIL AT THE INTERFACE OF THE BASIN OR TRENCH FLOOR AND SIDES SHOULD BE AVOIDED.

THE SIDES AND BOTTOM OF AN INFILTRATION TRENCH SHOULD BE RAKED OR SCARIFIED AFTER THE TRENCH IS EXCAVATED TO RESTORE INFILTRATION RATES.

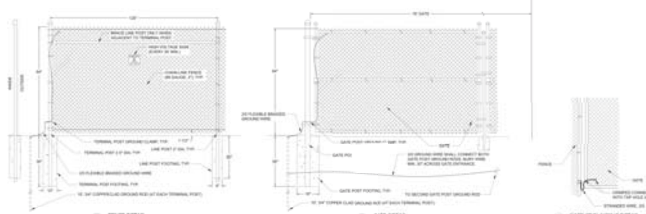
INSPECTION AND MAINTENANCE

FOR THE FIRST FEW MONTHS AFTER CONSTRUCTION, INFILTRATION TRENCHES AND BASINS SHOULD BE INSPECTED AFTER EVERY MAJOR STORM. INSPECTIONS SHOULD FOCUS ON THE DURATION OF STANDING WATER IN THE OBSERVATION WELL OF A TRENCH AFTER A STORM. PONDING WATER AFTER 48 HOURS INDICATES THAT THE BOTTOM OF THE INFILTRATION STRUCTURE MAY BE CLOGGED. IF THE BOTTOM OF THE TRENCH BECOMES CLOGGED, ALL OF THE STONE AGGREGATE AND FILTER FABRIC MUST BE REMOVED AND REPLACED WITH NEW MATERIAL. THE BOTTOM OF THE TRENCH MAY NEED TO BE TILLED TO ENHANCE INFILTRATION. WATER PONDED AT THE SURFACE OF A TRENCH MAY INDICATE ONLY SURFACE CLOGGING.

INSPECTIONS SHOULD BE PERFORMED AT LEAST TWICE PER YEAR AND SHOULD INCLUDE CHECKING FOR ACCUMULATED SEDIMENT, LEAVES AND DEBRIS IN THE PRETREATMENT DEVICE, CLOGGING OF INLET AND OUTLET PIPES, AND PONDED WATER INSIDE AND ON THE SURFACE OF THE TRENCH. REFER TO APPENDIX E OF THE CONNECTICUT 2004 STORMWATER MANUAL FOR THE MAINTENANCE INSPECTION CHECKLIST.

GRASS CLIPPINGS, LEAVES, AND ACCUMULATED SEDIMENT SHOULD BE REMOVED ROUTINELY FROM THE SURFACE OF INFILTRATION TRENCHES.

THE UPPER LAYER OF STONE AND FILTER FABRIC MAY NEED TO BE REPLACED TO REPAIR SURFACE CLOGGING.



SOIL EROSION AND SEDIMENTATION CONTROL PLAN

NARRATIVE

1. THE FOLLOWING SOIL EROSION AND SEDIMENTATION CONTROL (E&S) NOTES APPLY TO THE CONSTRUCTION OF A SOLAR-BASED ELECTRIC GENERATING FACILITY LOCATED ON A 24.1 ACRE PARCEL OF PROPERTY IN KILLINGWORTH, CONNECTICUT. THE PROJECT INVOLVES THE REMOVAL OF EXISTING VEGETATION BY FLUSH-CUTTING, INSTALLATION OF 6552 SOLAR PANELS AND ASSOCIATED EQUIPMENT, A 12' X 55' GRAVEL ACCESS DRIVE.
2. UPLAND SOILS AT THE SITE CONSIST OF MODERATELY WELL DRAINED WOODBRIDGE EXTREMELY STONY FINE SANDY LOAM. GIVEN THE RELATIVELY STEEP SLOPES IN THE AREA OF CONSTRUCTION THESE SOILS ARE SUSCEPTIBLE TO EROSION DURING RAINFALL EVENTS.
3. EROSION CONTROL MEASURES INTENDED TO MINIMIZE SOIL EROSION AND TO CONTROL SEDIMENTATION DURING CONSTRUCTION INCLUDE:

- THE INSTALLATION OF SILT FENCES AROUND GRUBBED AREAS.
- THE INSTALLATION OF A TEMPORARY CONSTRUCTION ENTRANCE AND ACCESS ROAD.
- THE INSTALLATION OF TEMPORARY SEDIMENT TRENCHES.
- STABILIZATION OF ALL DISTURBED AREAS.

4. IT IS ANTICIPATED THAT SITE WORK WILL BEGIN IN THE SPRING OF 2019 AND WILL BE COMPLETED BY SUMMER OF 2019.

GENERAL E&S REQUIREMENTS

1. THE CONTRACTOR SHALL INSTALL SILT FENCING AS SHOWN ON THE E & S CONTROL PLAN PRIOR TO INITIATING CONSTRUCTION.
2. A TEMPORARY CONSTRUCTION ENTRANCE SHALL BE INSTALLED BEFORE CONSTRUCTION TRAFFIC INTO AND OUT OF THE PROJECT AREA BEGINS.
3. THE CONTRACTOR SHALL COMPLETE PERMANENT SEEDING BETWEEN SEPTEMBER 15TH THROUGH NOVEMBER 15TH. APPLY PERMANENT SOIL STABILIZATION MEASURES TO ALL GRUBBED AREAS WITHIN 7 DAYS OF ESTABLISHING FINAL GRADE.
4. E&S CONTROL MEASURES SHALL BE INSTALLED IN ACCORDANCE WITH THE LATEST EDITION OF THE STATE OF CONNECTICUT SOIL EROSION AND SEDIMENT CONTROL HANDBOOK. ALL MEASURES SHALL BE MAINTAINED AND UPGRADED TO ACHIEVE PROPER SEDIMENT CONTROL DURING CONSTRUCTION.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR IMPLEMENTING AND INSPECTING THE E&S CONTROL MEASURES PER THIS PLAN AND SHALL INFORM ALL SUBCONTRACTORS OF THE OBJECTIVES AND REQUIREMENTS OF THE PLAN. THE CONTRACTOR SHALL NOTIFY THE PROPER TOWN AGENCY OF ANY TRANSFER OF RESPONSIBILITY AND SHALL ADVISE THE TOWN REGARDING THE NEED FOR IMPLEMENTING ADDITIONAL CONTROL MEASURES AS DEEMED NECESSARY DURING CONSTRUCTION.
6. IF NECESSARY DURING CONSTRUCTION, THE CONTRACTOR SHALL INSTALL ADDITIONAL CONTROL MEASURES AS REQUIRED. INSPECTIONS SHALL BE CONDUCTED WEEKLY AND/OR WITHIN 24 HOURS OF THE END OF A STORM HAVING A RAINFALL AMOUNT OF ½ INCH OR GREATER. MONTHLY WRITTEN REPORTS SHALL BE PREPARED DESCRIBING OBSERVATIONS, MAINTENANCE, AND CORRECTIVE ACTIONS.

CONSTRUCTION SEQUENCE

THE CONSTRUCTION WILL BE COMPLETED IN THREE PHASES, WITH EACH PHASE CONSISTING OF LESS THAN 5 ACRES OF DISTURBED LAND. EACH PHASE WILL BE COMPLETED AND THE LAND STABILIZED PRIOR TO BEGINNING THE NEXT PHASE. THE AREAS FOR EACH PHASE AND THE ESTIMATED TIME TO COMPLETE ARE AS FOLLOWS;

- PHASE 1 - 3.6 AC (2-3 WEEKS)
- PHASE 2 - 4.5 AC (4 WEEKS)
- PHASE 3 - 4.6 AC (4 WEEKS)

PRIOR TO BEGINNING CONSTRUCTION, THERE WILL BE A PRE-CONSTRUCTON MEETING TO DISCUSS THE PHASING PLANS AND THE OVER-ALL PLANS AND TIME LINE FOR CONSTRUCTION OF THE ENTIRE PROJECT. FOR EACH INDIVIDUAL PHASE OF THE PROJECT, THE CONSTRUCTION SEQUENCE WILL BE AS FOLLOWS:

- FLAG LIMITS OF CONSTRUCTION AND CLEARING LIMIT LINE.
- HOLD PRE-CONSTRUCTION ON-SITE MEETING.
- INSTALL TEMPORARY CONSTRUCTION ENTRANCE/GRAVEL ACCESS DRIVE. (PHASE I)
- INSTALL ALL SILT FENCING AS SHOWN ON THE PLAN.
- PLACE TEMPORARY CONSTRUCTION MATS ACROSS WETLANDS FOR VEHICULAR ACCESS. (PHASE 3)
- FIELD SURVEY LAYOUT FOR ALL ROWS FOR FOUNDATION PLACEMENT.
- TREES TO BE GRUBBED SHALL BE FLAGGED PRIOR TO START OF CONSTRUCTION.
- INSTALL SILT FENCE AT GRUBBING LOCATIONS PRIOR TO INITIATING EARTHWORK.
- INSTALL PERIMETER FENCE.
- INSTALL TEMPORARY SEDIMENT TRAPS.
- CLEAR AND GRUB AREA FOR CONCRETE PAD AND FLUSH-CUT TREES AND BRUSH WITHIN THE LIMITS OF DISTURBANCE AS REQUIRED FOR CONSTRUCTION. CHIP BRUSH AND SLASH, STOCKPILE CHIPS FOR FUTURE USE OR REMOVE OFF SITE.
- PLACE SOLAR RACKING SYSTEM AND MODULES AT EACH ROW FOR DISTRIBUTION.
- INSTALL RACKING STEEL AND PV MODULES.
- INSTALL CABLE TRAY, CONDUIT, AND WIRING USING SKIDSTEER TO MOVE MATERIALS AROUND THE SITE AND INSTALL USING SMALL TOOLS.
- COMPLETE ARRAY WIRING USING SKIDSTEER AND HAND TOOLS.
- PLACE DRIVEWAY FILL AND IMMEDIATELY FINAL GRADE, SEED AND MULCH FILL SLOPE.
- INSTALL CONCRETE PADS USING SMALL EXCAVATOR AND IMMEDIATELY FINAL GRADE ALL DISTURBED AREAS, PLACE TOPSOIL, SEED, LANDSCAPING AND MULCH.
- WIRE EQUIPMENT PAD EQUIPMENT.
- ONCE CONSTRUCTION OF SOLAR ARRAY IS COMPLETED IN SOUTHEASTERN PORTION OF THE SITE, REMOVE TEMPORARY CONSTRUCTION PADS USED FOR WETLANDS CROSSING.
- RELOCATE SILT FENCE FOR CONSTRUCTION OF PERMANENT WETLANDS CROSSING IF NEEDED AND INSTALL CULVERT AND GRAVEL ACCESS DRIVE OVER WETLANDS. (PHASE 3)
- CLEAN OUT TEMPORARY SEDIMENT TRAP (AS NEEDED THROUGHOUT CONSTRUCTION)
- REMOVE TEMPORARY SEDIMENT TRAP BERM AND REGRADE AREA FOR WATER QUALITY BASIN AT SAME LOCATION.
- INSTALL GRAVEL RIP RAP APRON ALONG DOWNSTREAM EDGE OF WATER QUALITY BASINS.
- UPON COMPLETE STABILIZATION OF THE SITE, REMOVE ALL SILT FENCES, HAYBALES AND OTHER E&S MEASURES.

DRAFT

REV.	DESCRIPTION OF REVISION	DATE	APPR.

STAMP

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SCALE: AS NOTED	COMM. NO.: 80SS8.01
DRAWN BY: PJA	DATE: 3/13/2019
APPROVED BY: GFA	DATE:

DETAILS AND NOTES

SITING COUNCIL SUBMISSION-CHATFIELD SOLAR FARM

NORTH BRANFORD ROAD, KILLINGWORTH, CONNECTICUT

PREPARED FOR:

STANDARD SOLAR

DRAWING 2

SHEET NO. 1 NO. OF SHEETS 1

V:\CT\KILLINGWORTH\NORTH BRANFORD ROAD\STANDARD SOLAR\CAD\KILLINGWORTH DETAILS&NOTES.DWG Tab: 2 Saved: 3/14/2019 3:09 PM Plotted: 3/14/2019 3:09 PM

Interrogatory CSC-3-118

Chatfield Solar Fund, LLC

Witness: Alisa Morrison
George Andrews

Petition No. 1354

Q-CSC-3-118: What thermal effects to wetlands and surface waters could occur from rainwater running off of the solar panels and from stormwater that would not be captured within the post-construction infiltration trenches/sediment traps?

A-CSC-3-118: The solar arrays will only increase the effective impervious surface of the site by 11.5% based on the Minnesota Stormwater Calculator as adopted by the CT DEEP to determine effective imperviousness of solar arrays. Although the panels themselves are impervious, the rain will run across the panel and fall onto the ground surface. From there, the water will either infiltrate or run downstream. The Minnesota calculation method recognizes the vegetation under the panels and factors this into its consideration for the impervious area of the solar panels by allowing for infiltration between and under the panels. A full description of the methodology is attached in Attachment CSC-3-118. This increase in impervious area will not increase the runoff at the site because the ground surface will remain pervious and vegetated, but this increase used to calculate the Water Quality Volume in order to properly design stormwater management practices.

By maintaining the natural ground cover as an herbaceous meadow, as well as the surface slope, the rainfall will follow the same runoff patterns as before construction—allowing the water to infiltrate as it sheet flows toward the wetlands. The temperature of the stormwater falling on the solar panels will conservatively reach a steady state after 1" of rainfall, at which point the solar panels will have cooled and the potential thermal impacts of the heated water will therefore be eliminated.

Water Quality Basins ("WQB") have been provided as shown on the Site Plan Drawings 1A and 1B (Attachment CSC-3-112). The purpose of these basins is to capture the initial 1" of water (first flush) and detain it in order to mitigate any potential impacts from the rainfall running off the panels directly into the wetland areas and to allow time for any heated water to cool to ambient air temperature before discharging to the wetlands. As the stormwater runs off the panels, it will sheet flow toward the WQB where it will be captured and retained. This surface water will then infiltrate back into the soil.

The WQB will prevent the initial flush of heated water from entering the wetland. After 1" of rainfall, water falling on the panels will no longer be subject to thermal impacts as the panels have been cooled by the initial rainfall event. At this point, stormwater will (1) sheet flow along its natural drainage patterns; (2) be intersected by the WQB; and (3) be slowed down by means of the level spreader along the downstream side of the basins. The WQB have been designed in accordance with the 2004 Stormwater Quality Manual and the calculations are attached (see Attachment CSC-3-118).

Prior to and throughout the duration of construction, sedimentation and erosion controls will be installed and maintained in accordance with the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control. Silt fences or hay bales will be installed downstream of any grubbing operations and along the downslope edge of the proposed access drive and maintenance pads. A gravel anti-tracking construction entrance will be installed at the same location as the access drive to prevent any sediment transport to North Branford Road during construction activities. Soil Erosion and Sediment Controls are shown on Drawings 1A and 1B (Attachment CSC-3-112), and Attachment CSC-3-117.

Attachment CSC-3-118

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Sheet 1 of 1

Date: 3/14/2019 Calculated ACM

Water Quality Volume Calculations Checked b GFA

Pollutant Reduction	***Water Quality Volume (WQV)***
	Volume of runoff generated by one inch of rainfall on the site
	WQV = (1")(R)(A)/12
	WQV = water quality volume (ac-ft) R = volumetric runoff coefficient = 0.05+0.009(I) I = percent impervious cover A = site area in acres

R	0.05	
I	0	
A	12.70	acres (cleared land)
WQV	0.05	acre-feet
WQV	2305.05	cf

From MN Solar	1.28 cf/panel	*see provided spreadsheet			
Number of panels	6552.00				
WQV	4193.28	cf			
Required Bottom Area of Trench	12*WQV/Pnt	12*(4193)/((1.9	1379.28		
Wet Volume					
Length of Trench	640	600	80	420	
Bottom Width (Provided)	5.25	6.50	9.00	2.50	
Surface area of trench bottom	3360.000	3900.000	720.000	1050.000	
total surface area of trench bottom	9030.0				

Trench Surface Area and Depth ❍ The bottom area of the trench should be sized to allow for infiltration of the entire water quality volume within 48 hours. The trench bottom area can be calculated using the following equation (Metropolitan Council, 2001):
A = 12WQV Pnt
where: A = effective bottom area of trench (ft2) WQV = water quality volume (ft3) P = design infiltration rate of soil (in/hr) (one-half the minimum field measured infiltration rate) n = porosity of storage media (0.4 for 1.5- to 3-inch diameter clean washed stone) t = maximum drain time (48 hours)

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Project: Chatfield Solar

Sheet 1 of 1
Calculated ACM Date: 12/19/2018
Checked b GFA Date:

Sediment Trap Calculations

Wet storage volume may be approximated as follows:

$$Vw = 0.85 \times A_w \times D_w$$

where,

V_w = the wet storage volume in cubic feet
A_w = the surface area of the flooded area at the base of the stone outlet in square feet
D_w = the maximum depth in feet, measured from the low point in the trap to the base of the stone outlet.

Dry storage volume may be approximated as follows:

$$V_d = \frac{(A_s + A_d)}{2} \times D_d$$

where,

V_d = the dry storage volume
A_w = the surface area of the flooded area at the base of the stone outlet in square feet.
A_d = the surface area of the flooded area at the top fo the stone outlet (over flow mechanism), in square feet
D_d = the depth in feet, measured from the base of the stone outlet to the top of the stone outlet

Note: Conversion between cubic feet and cubic yards is: cubic feet x 0.037 = cubic yards.

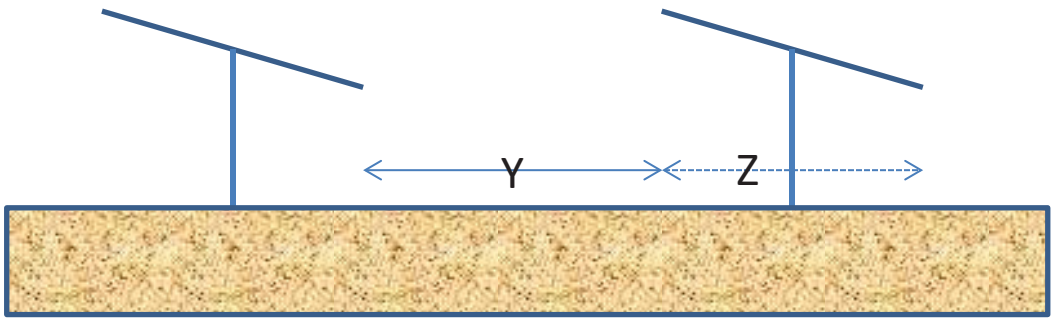
	TRENCH 1	TRENCH 2	TRENCH 3	TRENCH 4
Ave. length of row	180	200	200	100
Number of rows	22	22	4	14
Drainage Area	1.09	1.21	0.22	0.39
Required Vol (total) cy	146.18	162.42	29.53	51.68
Required Vol (total) cf	3946.91	4385.45	797.36	1395.37
Required Wet Vol cf	1973.45	2192.73	398.68	697.69
Wet Volume				
Length of Trench	640	600	80	420
Bottom width - required	5.17	6.31	8.97	2.32
A_w Cross sectional area requir	3.08	3.65	4.98	1.66
Bottom Width (Provided)	5.25	6.50	9.00	2.50
Cross-sectional Wet Area	3.125	3.750	5.000	1.750
D_w	0.5	0.5	0.5	0.5
V_w	2000.000	2250.000	400.000	735.000
Dry Volume				
$A_{d\text{ - dry}}$ cross sectional area	4.125	4.750	6.000	2.750
D_d	0.500	0.500	0.500	0.500
V_d	2640.000	2850.000	480.000	1155.000
Total Volume	4640.000	5100.000	880.000	1890.000
Required VoL (total) cf	**3946.909**	**4385.455**	**797.355**	**1395.372**

The initial storage volume of each trap shall be 134 cy per acre of drainage area. Half of this volume shall be wet storage and the remaining volume shall be dry storage to provide extended settling time.

The drainage area for each trench is equal to the width of each panel (12') times the average length of the panels times the number of rows of panels.

This spreadsheet makes calculations for an individual solar panel.

Enter values in blue cells		
Soil	C	
I/P ratio	0.444	
Term	**Value**	**Units**
Pervious area	87.75	square feet
Impervious area (area of solar panel)	39.00	square feet
Runoff depth from pervious areas	6.10	inches
Redirected runoff depth from solar panel (called average annual runoff depth)	7.34	inches
Runoff depth from solar panel	22.50	inches
Performance goal	1.00	inches
SUMMARY		
Pre-disconnection		
Runoff from impervious	73	ft3
Runoff from pervious	45	ft3
Total runoff	118	ft3
Post-disconnection		
Total runoff	78	ft3
Total runoff reduced	40	ft3
Runoff from pervious	45	ft3
Runoff from impervious	33	ft3
Adjusted impervious	17.559	square feet
Performance Goal Summary		
Performance goal	**3.25**	ft3
BMP volume credit ($BMP_{volume\ credit}$)	**1.97**	ft3
% of performance goal achieved	**60.7**	%
Remaining water quality volume to be treated (per panel)	**1.28**	ft3
Pervious area = (Y + Z) * W; where W is the width of the solar panel and Z is the average horizontal distance		
Impervious area = Z * W; where W is the width of the solar panel and Z is the average horizontal distance o		



select from dropdown; determine soil on site								
calculated								
user entered; determine on site								
user entered; determine on site								
default = 4.4 for A soil, 5.7 for B, 6.1 for C, 7.2 for D								
determine from plot called ***Average annual runoff depth***								
default = 22.5 inches								
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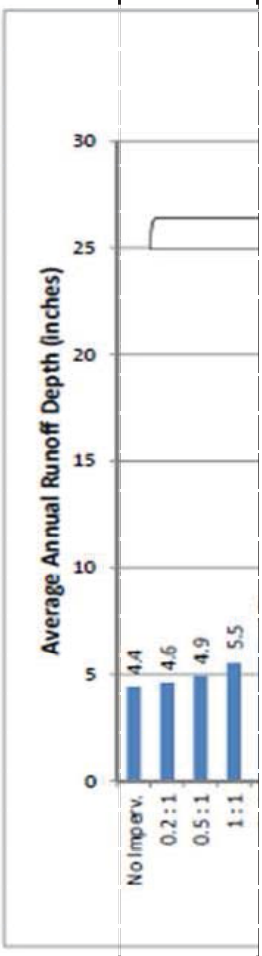
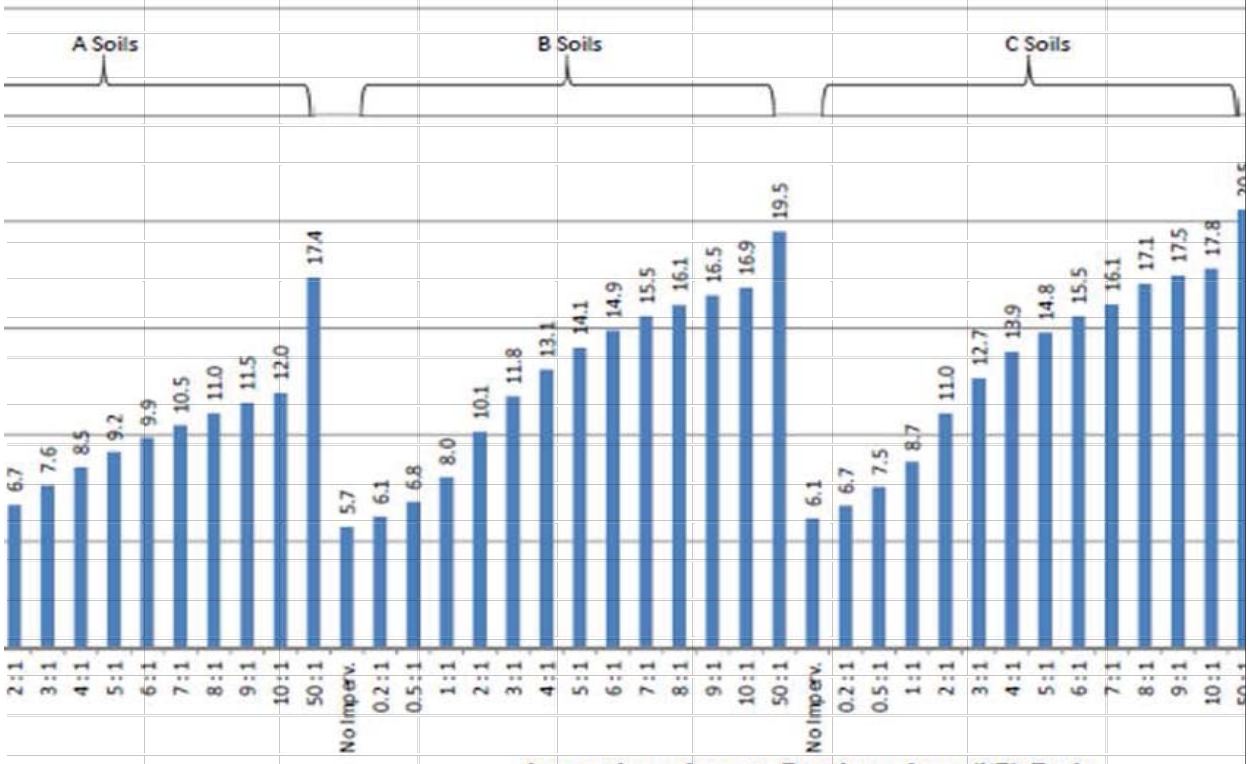
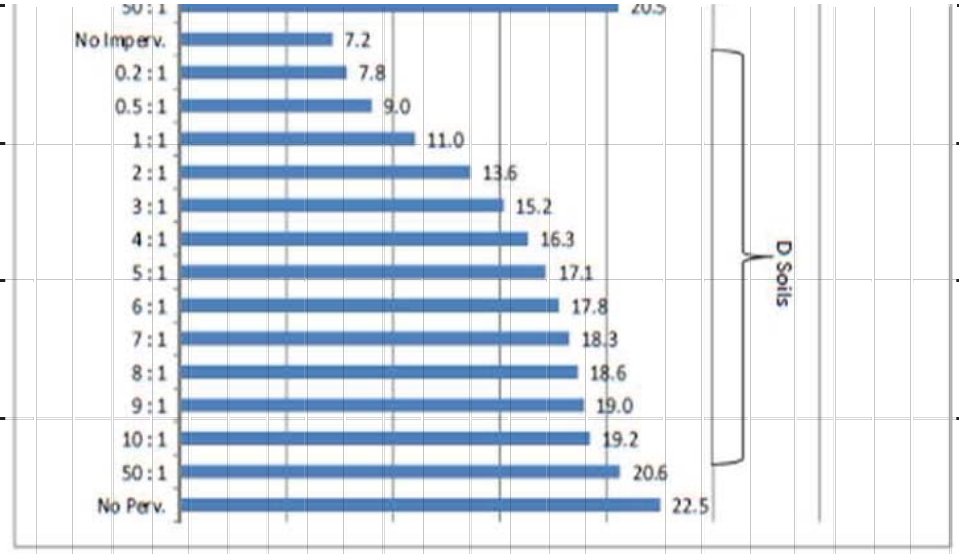


Average Annual Runoff Depth
1972-2006 (35 years)



Impervious Area to Pervious Area (I/P) Ratio


No Imperv.
7.2
0.2 : 1
7.8
0.5 : 1
9.0
1 : 1
11.0
2 : 1
13.6
3 : 1
15.2
4 : 1
16.3
5 : 1
17.1
6 : 1
17.8
7 : 1
18.3
8 : 1
18.6
9 : 1
19.0
10 : 1
19.2
50 : 1
20.6
No Perv.
22.5
D Soils

Interrogatory CSC-3-119

Chatfield Solar Fund, LLC

Witness: Alisa Morrison
George Andrews

Petition No. 1354

Q-CSC-3-119: Referring to the Petition Environmental Assessment, provide the following:

a) Section 2.10 - what is the effective date of the referenced FEMA Map?

b) Section 2.7.1 - under State of CT definition, are there surface waters on the proposed site? If so, provide their location.

c) Section 3.12 - revise the carbon debt analysis to account for changes to the amount of site tree clearing.

A-CSC-3-119: a) The effective date is August 28, 2008, see Attachment CSC-3-119-1.

b) Yes, pursuant the Regulations of Connecticut State Agencies Section 22a-426-1, "surface waters" in Connecticut are defined as follows:

> waters of Long Island Sound, its harbors, embayments, tidal wetlands and creeks; rivers and streams, brooks, waterways, lakes, ponds, marshes, swamps, bogs, federal jurisdictional wetlands, and other natural or artificial, public or private, vernal or intermittent bodies of water, excluding groundwater.

Based on this definition there are surface waters at the property.

One grouping of these features is the wetlands along the eastern of the property that is connected to another wetland area (running from the southeastern portion of the site in a northwesterly direction). Another grouping of these features is the two small isolated wetlands on the site, one in the northern portion near the access drive and the second on the western edge of the large array area (1,815 ft^2 and 1,167 ft^2 respectively).

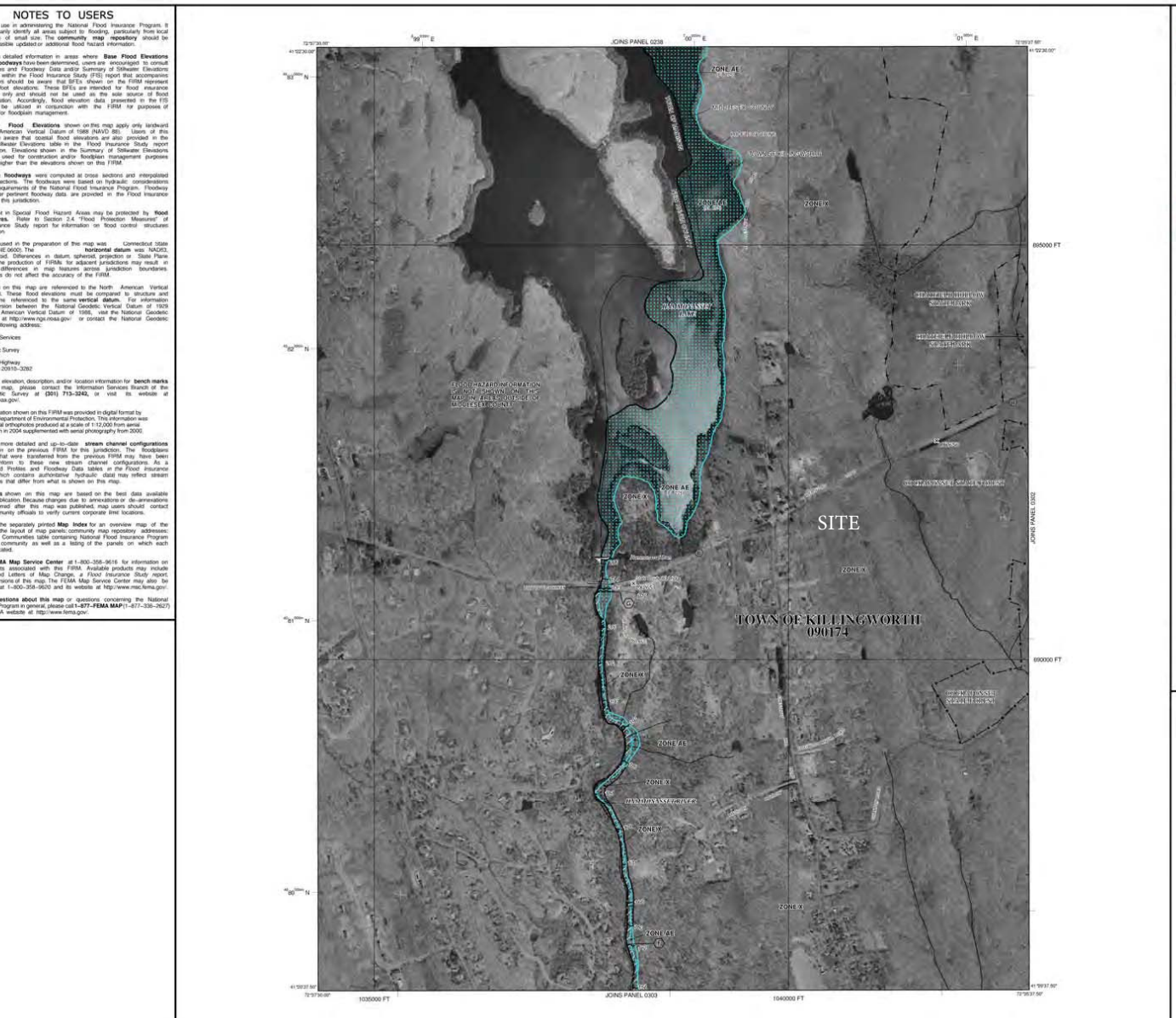
Another grouping of these features is the two other small wetlands on the site in the southern portion and the southwestern portion, are connected to larger off-site wetland systems. Another one of these features is a small farm pond (a vernal pool of 5,320 ft^2) located in the central southern portion of the site.

Another one of these features is a perennial to semi-perennial stream along the eastern property boundary associated with the wetlands, which appears to be between 4–8 feet based on available aerial photography (CT Spring 4 band 2016 three inch Imagery from CT ECO). This stream is joined from the west by an intermittent watercourse that is associated with a wetland corridor located within the western and southern section of the site. This stream does not have a clearly defined channel. There are two vernal pools located in the northern portion of the site (3,070 ft^2 and 270 ft^2).

It is important to note however, that the generally accepted professional practice of hydrologists for site assessments in Connecticut is to make determinations about surface waters based on the surface water data provided by DEEP for that site. Professional hydrologists obtain this surface water data from DEEP's database and then run the data through standard GIS mapping software, which shows what (if any) surface waters are extant at the subject site (see Attachment CSC-3-119-2, which shows the site and the DEEP data mapping for the site). These practices were implemented here by Chatfield's hydrologist and are the reason for Chatfield's initial statement that no surface waters are located at the site. The closest surface water body under this DEEP data set classification is Lake Hammonassett, located approximately 0.25 miles to the northwest of the parcel. Lake Hammonassett is designated as Class AA, supporting existing or proposed drinking water supply, fish and wildlife habitat, recreational use (which may be restricted), and agricultural and industrial supply.

c) See Attachment CSC-3-119-3.

Attachment CSC-3-119-1



Attachment CSC-3-119-2

WATER QUALITY CLASSIFICATIONS KILLINGWORTH, CT

SURFACE WATER QUALITY CLASSES

A	A
AA	AA
B, B*	B, B*
SA	SA
SB	SB

NOTES:
Surface Water Classifications beginning with S refer to Coastal and Marine Surface Water.
B* is a subset of Class B where no direct wastewater discharges are allowed other than those consistent with Class AA, A and SA surface waters.

GROUND WATER QUALITY CLASSES

GA (white background)
GAA, GAAs
GA, GAA may not meet current standards
GB
GC

Area of Contribution to Public Supply Well

Final Aquifer Protection Area (Level A)
Major Basin Boundary

EXPLANATION

WATER QUALITY CLASSIFICATIONS (WQC) MAPS are one of the elements of the Water Quality Standards (WQS) for the State of Connecticut. The WQS are a part of Connecticut's clean water program and are essential for protecting and improving water quality. The WQS follow the principles of Connecticut's Clean Water Act which is in Chapter 446K of the Connecticut General Statutes. The WQS provide policy guidance in many areas, for example decisions on acceptable discharges to water resources, siting of landfills, remediation or prioritization of municipal sewerage system projects. The first two elements of the WQS are the Standards, which set an overall policy for management of water quality, and the Criteria, which are descriptive and numerical standards that describe the allowable parameters and goals for various water quality classifications. A discussion of these two elements is found in the Water Quality Standards document available on the CT DEEP website. The third element is the Classifications and the Water Quality Classification Maps which show the Classification assigned to each surface and groundwater resource throughout the State. The WQS are adopted using a public participation process. The WQC maps are also adopted using a public participation process but go through hearings separately from the Standards and Criteria hearings. Revision and adoption of the WQC data occurs in accordance with the public participation procedures contained in Section 22a-426 of the Connecticut General Statutes. Ground WQC is subject to Connecticut regulation and changes must be reviewed and adopted. All changes to the Surface WQC require an adoption process which is subject to federal review and approval in addition to CT regulation. The adoption dates for the WQC by major drainage basin are: Housatonic River, Hudson River and Southwest Coastal Basins - March 1999; Connecticut River and South Central Coastal Basins - February 1993; Thames River, Pawcatuck River and Southeast Coastal Basins - December 1986. Surface Water Classifications do not change after the adoption date until the next major revision. Ground Water Classifications may change after the adoption date under specific circumstances. The map may have more than one WQC adoption date because a town may be in more than one major drainage basin.

SURFACE WATERS in Connecticut are divided into freshwater classified as AA, A, B or B* and saline waters classified as SA or SB. Class AA designated uses are existing or proposed drinking water supplies; habitat for fish and other aquatic life and wildlife; recreation; and water supply for industry and agriculture. Class A designated uses are habitat for fish and other aquatic life and wildlife; potential drinking water supplies; recreation; navigation; and water supply for industry and agriculture. Class SA designated uses are habitat for marine fish, other aquatic life and wildlife; shellfish harvesting for direct human consumption; recreation; industrial water supply; and navigation. Class B designated uses are habitat for fish and aquatic life and wildlife; recreation; navigation; and industrial and agricultural water supply. Class B*, applicable to Candlewood Lake, is a subset of Class B and is identical in all ways to the designated uses, criteria and standards for Class B waters except for the restriction on direct discharges. Class SB designated uses are habitat for marine fish and aquatic life and wildlife; commercial shellfish harvesting; recreation; industrial water supply; and navigation.

Surface waters which are not specifically classified shall be considered as Class A or Class AA. Surface waters in GA ground water areas are assumed Class A or Class SA unless otherwise indicated. Surface waters in GAA ground water areas are assumed Class AA unless otherwise indicated.

On the WQC map a surface water quality goal of A is represented by blue colored water bodies. Surface water quality goal of AA is represented by purple colored water bodies. Surface water quality goal of B is represented by gold colored water bodies.

GROUND WATERS in Connecticut are classified as GAA, GA, GB and GC. Class GAA designated uses are existing or potential public supply of water suitable for drinking without treatment and baseflow for hydraulically-connected surface water bodies. The Class GAAs is a subclass of GAA for ground water that is tributary to a public water supply reservoir. The area of contribution to a public water supply well is represented by a 500-foot radius around the well and is assumed to be Class GAA unless otherwise classified. Class GA designated uses are existing private and potential public or private supplies of water suitable for drinking without treatment and baseflow for hydraulically-connected surface water bodies. All ground waters not specifically classified are considered as Class GA. Class GB designated uses are industrial process water and cooling waters and baseflow for hydraulically-connected water bodies and is presumed not suitable for human consumption without treatment. Class GC designated uses are assimilation of discharges authorized by the Commissioner pursuant to Section 22a-430 of the General Statutes.

On the WQC map GA is represented by white colored land areas. Class GAA and class GAAs are represented by blue colored land areas. The area of contribution to a public water supply well is shown by a blue cross-hatch overprint. A notation of GAA followed by a state abbreviation indicates a watershed that contributes to the public water supply for a state other than Connecticut. Class GA or Class GAA areas that currently may not be meeting the GA or GAA standards are represented on the WQC maps by tan colored land areas. Class GB is represented by green colored land areas. Class GC is represented by magenta colored land areas.

FINAL AQUIFER PROTECTION AREAS (Level A) are included on the WQC maps for informational purposes. These areas are anticipated to be reclassified GAA during the next major basin updates, subject to public participation. The Aquifer Protection Program helps protect Connecticut's public drinking water resources by delineating aquifer protection areas (also called wellhead protection areas) for public supply wells and establishing land use regulations within these areas. These areas represent the land area contributing ground water to active public water supply wells or well fields that serve more than 1000 people and are set in sand and gravel aquifers (stratified drift deposits).

DATA SOURCES

WATER QUALITY CLASSIFICATIONS DATA – Water quality classifications shown on this map are based on information from the following digital spatial datasets that are typically shown together – Ground Water Quality Classifications Poly, Surface Water Quality Classifications Line, and Surface Water Quality Classifications Poly. The map legend above reflects the content of these three data sources. These WQC data were initially compiled on 1:24,000-scale 7.5 minute USGS topographic quadrangle maps and later digitized at 1:24,000 scale. For example, the Surface Water Quality Classifications Line and Surface Water Quality Classifications Poly digital data assigns surface water quality classifications to water bodies such as rivers, streams, reservoirs, lakes, ponds and coves found in 1:24,000-scale hydrography data available from CT DEEP. The hydrography may not include all the waterbodies in Connecticut. The Ground Water Quality Classifications Poly data assigns ground water quality classifications, at 1:24,000 scale, to the remaining land areas in Connecticut.

AQUIFER PROTECTION AREA DATA – Aquifer Protection Areas shown on this map are from the Aquifer Protection Area digital dataset which contains polygon data intended to be used at 1:24,000 scale. The dataset contains regulated areas classified as Level A Aquifer Protection Area (Final) and Level B Aquifer Protection Area (Preliminary). The Level B areas are not shown on the WQC maps. The data was collected from 1991 to the present and is actively updated as Final area mapping replaces earlier Preliminary areas. The Aquifer Protection Areas are delineated by the individual water companies owning the well fields and submitted to the CT DEEP for approval. Preliminary mapping provides a general estimate of the area contributing ground water to the well field. Final mapping is based on extensive, site-specific, detailed modeling of the ground water flow system. CT DEEP may adjust Final area boundaries to be consistent with 1:24,000 scale topography and base map data where appropriate during the approval process.

MAJOR DRAINAGE BASIN DATA – Major drainage basins shown on this map are from Major Basin Line data developed by CT DEEP and intended to be used at 1:24,000 scale.

BASE MAP DATA - Based on data originally from 1:24,000-scale USGS 7.5 minute topographic quadrangle maps published between 1969 and 1992. It includes political boundaries, railroads, airports, hydrography, geographic names and geographic places. Streets and street names are from Tele Atlas® copyrighted data. Base map information is neither current nor complete.

RELATED INFORMATION
This map is intended to be printed at its original dimensions in order to maintain the 1:24,000 scale (1 inch = 2000 feet).
WATER QUALITY STANDARDS - Go to the CT DEEP website for a summary and the full text of the "Water Quality Standards" and for other information on water quality.
AQUIFER PROTECTION AREAS - Go to the CT DEEP website for more information.

ADOPTED DATES

Water Quality Standards
February 25, 2011

Thames River, Pawcatuck River and Southeast Coastal Basins: December 1986

Connecticut River and South Central Coastal Basins: February 1993

Housatonic River, Hudson River and Southwest Coastal Basins: March 1999

MAP LOCATION

MAJOR BASINS
1 Pawcatuck
2 Southeast Coast
3 Thames
4 Connecticut
5 South Central Coast
6 Housatonic
7 Southwest Coast
8 Hudson

State Plane Coordinate System of 1983, Zone 3526
Lambert Conformal Conic Projection
North American Datum of 1983

SCALE 1:24,000 (1 inch = 2000 feet) when map is printed at original size

STATE OF CONNECTICUT
DEPARTMENT OF
ENERGY & ENVIRONMENTAL PROTECTION
79 Elm Street
Hartford, CT 06106-5127

Map created by CT DEEP
October 2018

Map is not colorfast
Protect from light and moisture

*Note: Site location is approximate

Attachment CSC-3-119-3

Chatfield Solar Farm – Killingworth, CT - Carbon Debt Analysis

A carbon debt analysis was performed for the proposed solar facility. The purpose of the analysis was to determine whether the Project can have a net improvement in carbon reduction compared to the loss of 12.7-acres of trees. The project site is 24.1-acres and will require removing 12.7-acres of trees, representing 53% of the Site.

The analysis relied upon a US Environmental Protection Agency (US EPA) conversion factor to identify the amount of carbon sequestered in one year by one acre of average U.S. forest: 0.85 metric tons (MT) CO2 (Greenhouse Gases Equivalencies Calculator and References website). As the Project requires the removal of approximately 12.7-acres of trees, the associated "carbon debt" is estimated to be 10.79 MT CO2 per year. Over 20 years, this would equate to the sequestration of 216 MT CO2.

The Project is expected to produce approximately 3,026 MWh of energy in its first year of operation. Using the US EPA Greenhouse Gas Equivalencies Calculator (www.epa.gov/energy/greenhouse-gas-equivalencies-calculator), the estimated annual carbon offset of the Project is 2,140 MT CO2. Appendix B provides greenhouse gas equivalencies for this estimated offset, examples of which include:

- 454 passenger vehicles driven for one year;
- 240,783 gallons of gasoline consumed; and
- 256 homes' energy use for one year.

Anticipating an annual "carbon debt" of 10.79 MT CO2 and an annual carbon offset of 2,140 MT CO2, the following calculation were performed to determine the duration of time to offset the carbon debt of the tree clearing:

Offset Time in days= Annual Carbon Debt/(Annual MT CO2 Offset/days per year)

Using this formula, it would take approximately 1.84 days to produce a net improvement in carbon reduction. It would take approximately 36 days to recover the loss of carbon sequestration by the 12.7 acres of cleared trees over 20 years.

This analysis does not account for energy used as part of solar panel and equipment manufacturing and production and project installation, including the act of land clearing. It also does not include the carb dioxide that is expected to be released from the trees upon removal.

Interrogatory CSC-3-120

Chatfield Solar Fund, LLC | Witness: Charles Geppi

Petition No. 1354 | Page 1 of 1

Q-CSC-3-120: Petitioner Exhibit 8 included two diagrams showing video locations. Please revise to include property and wetland boundaries.

A-CSC-3-120: See Attachment CSC-3-120.

Attachment CSC-3-120

STANDARD SOLAR
Clean Energy. Smart Business.
1355 Piccard Drive, Suite 300
Rockville, MD 20850
301-944-1200
www.StandardSolar.com

PROFESSIONAL ENGINEER CERTIFICATION

I CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF CONNECTICUT.

LICENSE #:
EXP. DATE:

PROJECT TITLE
CHATFIELD SOLAR FARM

PROJECT ADDRESS
14 RT.80, LOT 14B
KILLINGWORTH, CT 06419

SHEET TITLE
OVER ALL SITE PLAN

REVISIONS

DISCLAIMER

THIS DRAWING IS THE PROPERTY OF STANDARD SOLAR, INC. THIS INFORMATION IS CONFIDENTIAL AND IS TO BE USED ONLY IN CONNECTION WITH WORK DESCRIBED BY STANDARD SOLAR, INC. NO PART IS TO BE DISCLOSED TO OTHERS WITHOUT WRITTEN PERMISSION FROM STANDARD SOLAR, INC.

PROJECT NUMBER
18-A007

DRAWN BY
JM

APPROVED BY
--

DATE
12.12.2018

ORIGINAL SHEET SIZE
36X24
SHOULD MEASURE 1":

SCALE
1"=80'

DRAWING

Interrogatory CSC-3-121

Chatfield Solar Fund, LLC

Witness: Alisa Morrison
George Andrews

Petition No. 1354

Q-CSC-3-121: Referring to Petitioner Exhibit 2, response #20, is an undisturbed 20-foot wide forested buffer being maintained along property lines? If not, provide more detail as the type and heights of vegetative screening that would be installed along property lines that would not have a 20-foot wide undisturbed wooded buffer.

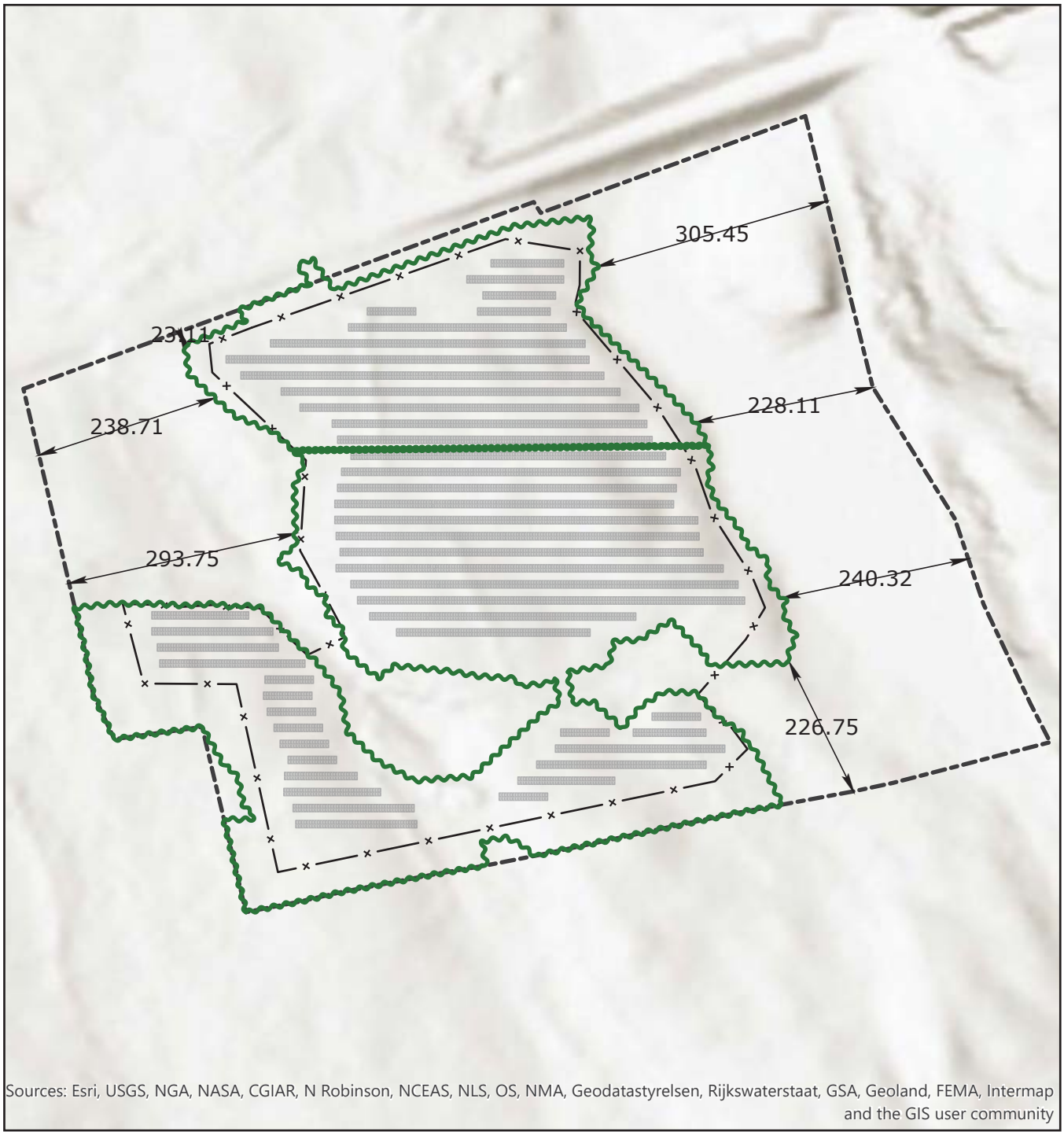
A-CSC-3-121: In an effort to provide and maintain a 50 feet buffer around the vernal pools, the project does have a reduced buffer for the wetlands (in some areas reduced to 3 feet). Clearing limits extend to the property line on the southwestern corner of the property. Due to the existing vegetation on neighboring properties and the distance to the nearest residence on that side (approximately 450 feet from the property line to the nearest house), no planting installation is proposed along this line.

A vegetative screen will be planted along the northern and northwestern property lines as shown on the Attachment CSC-3-121, which is Chatfield's Landscape Plan.

Between the property line and the clearing line, the approximate average buffers on Attachment CSC-3-121 are as follows:

- Eastern boundary - 240 foot buffer;
- Southwestern corner boundary - clearing up to the property line;
- Southeastern boundary - 225 foot buffer;
- Northwestern corner - 250 foot buffer; and
- Northern boundary - 25 foot buffer.

Attachment CSC-3-121



Distance from Property to Clearing

Clearing Line

Fence Line

Modules

Distance from Property Line to Clearing Line

N

W E

S

0 250 500 Feet

Interrogatory CSC-3-122

Chatfield Solar Fund, LLC

Witness: Alisa Morrison
George Andrews

Petition No. 1354

Q-CSC-3-122: Referring to Petitioner Exhibit 2, response #59, revise the diagram to account for changes in the Project design.

A-CSC-3-122: No change is required for response #59 or Exhibit 2. The project will proceed as shown on Petitioner Exhibit 2 and as described in response #59.

Interrogatory CSC-3-123

Chatfield Solar Fund, LLC

Witness: Alisa Morrison
George Andrews

Petition No. 1354

Q-CSC-3-123: Is Route 80 west of the site a State-designated scenic road?

A-CSC-3-123: Yes, but only a portion of Route 80 west in Madison is a Connecticut Scenic Road. Please refer to Attachment CSC-3-123, which is from the Connecticut Department of Transportation webpage entitled "Connecticut Scenic Roads". Attachment CSC-3-123 states that Route 80 is only a Connecticut Scenic Road for the portion 2 miles west of the Killingworth town line up to Squire's Road in the Town of Madison. The Connecticut Scenic Road portion is roughly half a mile from the westernmost boundary of the site.

Attachment CSC-3-123

CONNECTICUT STATE SCENIC ROADS

Revised October 1, 2018

ROUTE	TOWN	DATE DESIGNATED	MILES	LOCATION
1	Madison	October 14, 2008	2.30	From Neck Road #2 north to Lovers Lane
1	Old Lyme	June 8, 2012	1.00	From Lieutenant River Bridge (I-95) to Griswold Avenue
4 179	Farmington	March 26, 2013	3.98	From Huckleberry Hill Road/Perry Street, northerly to the Burlington/Canton town line
4	Sharon	July 26, 1990	3.10	From Route 7 west to Dunbar Road
4	Sharon	October 22, 1992	0.80	From Dunbar Road west to Old Sharon Road
4	Harwinton	July 29,1996	1.60	From Cooks Dam west to Route 118
118	Harwinton	July 29, 1996	0.10	From Route 4 west to Cemetery Road
7	Sharon	July 26, 1990	4.29	From the Cornwall Bridge crossing of the Housatonic River north to Route 128 at the covered bridge
7	Kent	October 17, 1991	10.50	From the New Milford town line north to the Cornwall town line
7	Cornwall	January 3, 2002	3.56	From Kent town line north to the North Canaan town line
7	Sharon, Salisbury, Canaan	January 3, 2002	10.26	From Route 128 north to the North Canaan town line
10	Farmington	April 13, 1999	1.00	From Route 4 south to Tunxis Street
14	Windham, Scotland	January 13, 1999	4.40	From the Windham Center School to 0.3 miles east of Scotland Center
14A	Sterling	February 2, 1995	0.70	From Route 49 east to Porter Pond Road
15*	Greenwich to Stratford	January 28, 1993	37.50	the Merritt Parkway from the New York state line to the Housatonic River Bridge
17	Durham	June 26, 2001	1.40	From Route 77 north to 125 feet north of Talcott Lane
27	Stonington, Groton	August 9, 2004	0.83	From 0.25 miles north of Jerry Browne Road north to Route 184
33	Wilton	November 3, 1997	4.90	From the Wilton/Ridgefield town line south to the intersection with Old Ridgewood Road #1
41	Sharon	July 26, 1990	4.00	From Boland Road north to Cole Road
41	Sharon	October 22, 1992	2.20	From Cole Road north to the Sharon/Salisbury town line
41	Sharon	October 22, 1992	2.20	From Boland Road south to the New York state line
41	Salisbury	December 20, 1993	8.01	From the Sharon/Salisbury town line north to the Massachusetts state line
44	Salisbury	December 20, 1993	8.83	From the New York state line east to the Salisbury/North Canaan town line
45	Washington	June 8, 2010	0.50	From the intersection with Route 202 northerly to the southern limit of the section noted below
45* SR 478**	Washington, Warren	December 26,1996	6.90	From Washington/Kent town line on SR 478, east to Route 45 north on Route 45 to the northern junction of SR 478 and west on SR 478 to Warren/Kent town line

ROUTE	TOWN	DATE DESIGNATED	MILES	LOCATION
SR 478**	Kent	December 6, 2000	1.00	From the Washington/Kent town line north to the Warren/Kent town line
49	North Stonington	February 2, 1995	10.90	From Route 184 north to 0.10 miles before Route 165
49	Voluntown	February 2, 1995	7.90	From the Boat Launch area north to Route 14A
53	Redding	December 18, 1992	2.03	From Redding/ Weston town line north to the southern junction of Route 107
58	Easton	May 6, 1994	3.14	From Fairfield/Easton town line north to Freeborn Road
63	Litchfield	January 4, 2002	3.37	From Morris town line north to Freeborn Road
67	Roxbury	November 14, 1993	0.87	From Ranny Hill Road south to 0.30 miles south of Route 317
67	Roxbury	August 23, 1996	2.90	From the Roxbury/Bridgewater town line east to Ranny Hill Road
69	Burlington	March 26, 2013	2.64	From the vicinity of Bradley Road, northerly to Saw Mill Road
74	Tolland	September 26, 2018	3.10	From the intersection with Merrow Road (Route195) westerly to 200 feet west of Gottier Road
75	Suffield	February 23, 2001	4.30	From the southern end of the bridge over Stony Brook north to the Massachusetts state line
77	Guilford	May 3, 1991	11.56	From Route 146 north to the Durham/Guilford town line
77	Durham	June 26, 2001	2.30	From the Durham/Guilford town line north to Route 17
80	Madison	December 17, 2010	2.00	From Killingworth town line westerly to Squire's Road
82	Haddam, East Haddam	February 17, 2004	0.29	From the Haddam shoreline of the Connecticut River east to Route 149 (includes the swing bridge)
97	Pomfret	April 11, 2001	4.50	From Route 44 north to Route 169
109	Washington	March 9, 2017	3.30	From Route 47, northerly to the intersection with Wood Creek Road
118	Litchfield	January 4, 2002	2.77	From Clark Road west to Route 63
136	Westport	July 6, 2016	1.82	From Route 1 to the intersection with Bridge Street, then westerly to the west abutment of the Sugatuck River Bridge
146	Branford Guilford	May 29, 1990	12.20	From Eades Street, Branford to US Route 1, Guilford
148	Chester	June 5, 2003	1.60	From the Chester shoreline, easterly via the Chester-Hadlyme Ferry to its intersection with Route 82 in Lyme
149	East Haddam	February 17, 2004	2.31	From Route 82 north to Creek Row
151	East Hampton	February 17, 2004	1.51	From 1.0 mile north of SSR 439/Hurd Park Road north
154	Haddam	January 13, 1994	9.16	From the Chester/Haddam town line north to the Haddam/Middletown town line
154	Old Saybrook	December 17, 2004	6.10	From Route 1 north to Old Boston Post Road
156	East Haddam	June 5, 2003	6.24	From Route 82 in East Haddam easterly to the Lyme/Old Lyme town line

ROUTE	TOWN	DATE DESIGNATED	MILES	LOCATION
160	Glastonbury	January 18, 1991	1.06	From the Roaring Brook Bridge west to the Connecticut River
164	Preston	February 1, 1994	2.58	From Old Shetucket Turnpike north to the Preston/Griswold town line
169*	Lisbon, Woodstock	April 15, 1991	32.10	From Rocky Hollow Road in Lisbon north to the Massachusetts state line
179	Canton	February 25, 1991	0.30	From the Burlington/Canton town line to the junction with SR 565
181	Barkhamsted	January 10, 1995	1.10	From Route 44 north to Route 318
183	Colebrook	May 20, 1994	3.10	From Route 182 north to Church Hill Road
195	Tolland	September 26, 2018	0.37	From 150 feet south of Cider Mill Connector, northerly to the intersection with Tolland Stage Road (Route 74)
202	New Hartford	August 12, 1991	5.10	From the Canton/New Hartford town line west to the Bakersville Methodist Church
202	Litchfield	January 4, 2002	0.47	From Route 118 west to Russell Street
202	Washington	June 8, 2010	2.80	From Rabbit Hill Road, southerly to Route 45
203	Windham	January 13m 1999	1.70	From Route 32 northerly to Route 14, Windham Center Green
219	Barkhamsted	January 10, 1995	2.60	From Route 318 south to the end of Lake McDonough Dam
219	New Hartford	September 24, 1998	0.70	From Lake McDonough Dam southerly to the south side of the "Green Bridge" (Br. No. 1561)
234	Stonington	February 20, 1990	3.16	From North Main Street west to Route 27
244	Pomfret	February 21, 2003	3.10	From Route 97 westerly to Ragged Hill Road
254	Litchfield	January 4, 2002	3.98	From Camp Hill Road in Northfield west to Route 118
272	Norfolk	May 13, 1996	11.00	From the Norfolk/Goshen town line north to the Massachusetts state line
317	Roxbury	November 14, 1990	0.40	From Painter Hill Road west to Route 67
318	Barkhamsted	January 10, 1995	2.60	From Route 181 to Route 219
SSR 431	Lyme	June 5, 2003	0.26	From its intersection with Route 148 in Lyme northerly to the Lyme/East Haddam town line
SSR 431	East Haddam	July 24, 2003	0.54	From the Lyme/East Haddam town line northerly to the entrance to Gillette Castle State Park
565	Canton	February 25, 1991	0.70	From Route 179 northeast to Allen Place
		TOTAL MILES	**314.39**	

* Nationally designated scenic road

**NOTE: Completes loop around Lake Waramaug

Interrogatory CSC-3-124

Chatfield Solar Fund, LLC | Witness: Eric Partyka

Petition No. 1354 |

Q-CSC-3-124: Please confirm whether this proposal is a LREC or ZREC Project. Explain how it qualifies for the utility–sponsored program.

A-CSC-3-124: This site and project has been awarded two ZREC contracts with Eversource. The contract numbers are L5-3814 and L5-3816. Specifically, Section 4 of these contracts, which is entitled "Prerequisites for Purchase of the ZREC Agreement":

> Buyer's obligation to begin the purchase of LRECs or ZRECs, as elected on the Cover Sheet, from Seller at the rates of payment specified in the Cover Sheet is contingent upon the satisfaction of all of the following conditions:
>
> 4.1.1 Seller is either (i) a distribution customer of record of Buyer with project site control, (ii) owner of the project site with permission of the distribution customer of record of the Buyer, or (iii) Authorized Developer;
>
> 4.1.2 Buyer has received evidence to its reasonable satisfaction that Seller has met the requirements of Section 4.1.1;
>
> 4.1.3 Buyer has received evidence to its reasonable satisfaction that the Facility's In-Service Date has occurred, or will occur, after July 1, 2011;
>
> 4.1.4 Seller has demonstrated that Facility is located on the customer side of the revenue meter and is interconnected to the distribution system of Buyer;
>
> 4.1.5 The Facility has a fully executed Interconnection Agreement;
>
> 4.1.6 Seller has provided Performance Assurance that satisfies the requirements of Section 9.1 and in an amount that is no less than the Performance Assurance amount listed in the Cover Sheet;
>
> 4.1.7 Buyer has received Regulatory Approval.

4.1.8 Seller has provided certification that no grants or rebates have been received from the Connecticut Green Bank or either of its predecessors the Clean Energy Finance and Investment Authority ("CEFIA") or the Connecticut Clean Energy Fund ("CCEF"). For purposes of clarification, this prohibition includes grants or rebates from CEFIA or the CCEF for the installation or construction of the Facility, but does not include projects that receive(d) (i) only predevelopment and/or feasibility funding from Connecticut Green Bank, or (ii) financing in accordance with Conn. Gen. Stat. § 16-245(n) through Connecticut Green Bank. For purposes of this section, the Companies may consult with Connecticut Green Bank regarding the above grants or rebates as they may be applicable to the Facility.

4.1.9 Seller has provided notice in a form acceptable to Buyer at its sole discretion, certifying: (a) that generation from the Project that will result in a qualifying LREC or ZREC has begun, (b) the name of the Project as it will appear on the LRECs or ZRECs, (c) the date that initial LREC or ZREC deliveries to Buyer under this Agreement are expected, (d) the Facility, as constructed, meets all of the low emission or zero emission (as applicable) generation facility requirements of the Energy Act, and (e) the final Facility size.

4.1.10 If Seller's Facility has been awarded this Agreement based, in part, on its use of Connecticut manufactured, researched or developed technologies as defined in Section 10.3.5 of this Agreement, Seller has provided an affidavit and accompanying proof that it has installed such Connecticut manufactured, researched or developed technologies.

4.1.11 The Delivery Term Start Date has occurred.

Interrogatory CSC-3-125

Chatfield Solar Fund, LLC | Witness: Jobin Michael

Petition No. 1354 |

Q-CSC-3-125: To expand upon Petitioner Exhibit 6, response #100, what is the capacity (MW AC) of each of the 3 solar field areas? (i.e. South East Field= 0.45 MW AC)

A-CSC-3-125:

- North Portion = 1.519 MW AC, 5,184 modules
- South West = .252 MW AC, 864 modules
- South East = .148 MW AC, 504 modules

Total = 1.920 MW AC, 6,552 modules.

Interrogatory CSC-3-126

Chatfield Solar Fund, LLC | Witness: Eric Partyka

Petition No. 1354 |

Q-CSC-3-126: Would the Project be viable if the South West Solar Field and/or South East Solar Field were eliminated?

A-CSC-3-126: Chatfield is making every effort to avoid the impacts on sensitive wetland areas throughout the site. The South West and South East PV sections combined account for 21% of the system's overall size and subsequent energy production. A proposed elimination of either of these sections would likely make the project not viable. Please note substantial investments in fixed costs such as Interconnection, ZREC agreement acquisition, Civil Engineering, Site mobilization, land costs, O&M and administration must be spread across a limited revenue source which is capped by the ZREC agreement. Further, virtual Net Metering cap limitations currently prohibit PPAs with non-profit off-taker. Therefore, the ZREC revenue and the energy production must be maximized to move forward.

Interrogatory CSC-3-127

Chatfield Solar Fund, LLC | Witness: Jobin Michael

Petition No. 1354 |

Q-CSC-3-127: If there was a fire at the site, what Project materials/components would be at risk of combusting?

A-CSC-3-127: None of the materials/components of the project would be “at risk” of combusting. The major materials used in the array include PV racking, modules, wires and wire trays. PV racking and aboveground wire trays are comprised of steel and therefore present no fire concern. Regarding the PV modules, Chatfield’s modules are UL listed for Type 1 fire rating, which is the highest fire rating of photovoltaic modules in the market. Type 1 modules have the lowest spread of flame rating because such modules use a thin layer of encapsulant.

The specified wire connecting to the PV modules is listed as flame resistant, which will help block the spread of fire. In addition to these wires being flame resistant, the Inverters themselves are also equipped with Arc Flash sensing functionality. Arc flash (i.e., arcing) relates to exposed wiring. The Arc Flash sensing functionality will deter any arcing in the array because any arcing will be sensed by the inverters and then the inverter will turn off that circuit to prevent the continued current flow and arcing.

Interrogatory CSC-3-128

Chatfield Solar Fund, LLC | Witness: Eric Partyka

Petition No. 1354 |

Q-CSC-3-128: As corrected at the February 21, 2019 evidentiary hearing, the site parcel is in a residential zoning district. Provide the type of development and minimum lot acreage per the zoning designation.

A-CSC-3-128: See Attachment CSC-3-128.

ZONING REGULATIONS

500 Attachment 1

Town of Killingworth

Appendix 1
Schedule of Lot and Building Requirements
[Amended 8-2-2011]

District	Minimum Lot Area	Minimum Lot Rectangle (feet)	Minimum Front Yard (feet)	Minimum Side and Rear Yards (feet)	Maximum Lot Coverage	Maximum Building Height* (feet)	Maximum Impervious Surface Coverage
Rural Residence	2-acre equivalent minimum buildable lot area***	200 x 300	40	30	10%	35	20%
Commercial	1 acre	150 x 150	60	40	25%	35****	40%
Commercial Cluster	1 acre	150 x 150	20 to 80	40	25%	35****	40%
Industrial	2 acres	175 x 300	75	30**	15%	30	50%

NOTES:

* Exclusive of water towers and air-conditioning equipment.

** Except next to a residential use, where minimum side and rear yard requirement is 80 feet.

*** Minimum buildable lot area determined as defined in § 500-44.

**** In the Large Business Zone, the Commission may, at its discretion, to accomplish the purposes of § 500-187G, allow a maximum building height of 45 feet, provided that the base floor-to-ceiling height of space used for human occupancy does not exceed three floors and 35 feet.

§ 500-32. Building size.

A. No building in the Rural Residential District shall exceed 10,000 square feet in total floor area unless approved by a site plan review under § 500-43A2 or a special exception under § 500-43B. **[Amended 7-15-2014; 11-1-2016]**

B. No building in the Large Business Zone of the Commercial District shall be less than 5,000 square feet in total floor area or exceed 20,000 square feet in total floor area.

C. No building in the General Commercial Zone shall exceed 5,000 square feet in total floor area.

D. No building in the Industrial District shall exceed 20,000 square feet in total floor area.

§ 500-43. Uses permitted.

In the Rural Residence District there shall be permitted:

A. General principal uses. The following general principal uses and buildings: **[Amended 5-18-2004; 12-16-2008; 8-2-2011; 2-21-2012; 5-21-2013]**

(1) One-family dwellings.

(2) Two-family dwellings subject to the conditions of Article X.

(3) Customary home occupations, subject to the following conditions:

(a) The home occupation and the conduct thereof shall not impair the residential character of the premises nor impair the reasonable use, enjoyment, and value of other residential property in the neighborhood.

(b) Except for a permitted sign, there shall be no external evidence that the premises is being used for any purpose other than a residence. The home occupation shall be conducted in its entirety within an enclosed structure or area. There shall be no exterior structural modification of the residence to accommodate the customary home occupation.

(c) Such occupation shall not create any objectionable noise, lighting, smoke, odor, toxic fumes, vibration, radio interference, excessive traffic, or other unsuitable conditions.

(d) Patronage is limited to eight patron visits a day, which shall be between the hours of 8:00 a.m. and 9:00 p.m. **[Amended 11-1-2016]**

(e) Storage of any materials or products which are related to the home occupation shall not be permitted on the street side(s) of the dwelling. Any such storage shall be adequately screened from adjacent properties. There shall be no disposal of waste products on the site, except sanitary waste incidental to residential use.

(f) The home occupation must be conducted only by a family residing in the dwelling and not more than two additional nonresident full-time employees.

(g) Accessory to a home occupation, one business name sign, not exceeding four square feet in area, is permitted.

(h) Two car parking spaces and one car space for each employee shall be provided on the premises.

(i) A zoning administrative permit issued by the Zoning Enforcement Officer is required. **[Amended 11-1-2016]**

(4) Agriculture and farming, including cultivation of soil, vegetable and nursery gardening, raising or harvesting any agricultural or horticultural commodity, dairying, harvesting of maple sugar, and the raising of crops, fruits and livestock, including horses, cattle, sheep, goats, bees, and poultry. The foregoing provision shall not permit the keeping for commercial purposes of swine or fur-bearing animals other than rabbits.

(5) A vegetable stand accessory to a farm. **[Amended 11-1-2016]**

(6) Tag sales accessory to a dwelling. Such sales shall be limited to three per year. **[Amended 11-1-2016]**

(7) Animals. The keeping of animals shall be permitted subject to the following conditions and limitations. All animals shall be kept in such a manner so as not to create a public health hazard or have an adverse effect on the environmental quality of the surrounding area and community in general. Manure and other excrement piles shall be located and maintained so as to prevent runoff of manure and other polluting materials onto adjacent properties, roads, wells, or watercourses. Adequate fencing and structures shall be installed and maintained so as to confine all animals within the premises of the owner. Any barn, horse stable, or shelter for any animals shall be located not less than 50 feet from any property line. The keeping of animals shall conform to all applicable regulations of the Connecticut State Department of Public Health, the Department of Environmental Protection, the State Department of Agriculture, and the General Statutes.

(a) Poultry. The keeping of poultry is permitted, provided that no more than 20 fowl are kept on a lot of not less than two acres equivalent minimum buildable lot area. Ten additional fowl are permitted for each acre equivalent minimum buildable lot area in addition to the two acres equivalent minimum buildable lot area. Poultry shall be

maintained in such a manner as not to cause a nuisance by roaming at large, vicious disposition, excessive crowing, unsanitary conditions, or other disturbances. All poultry must not be allowed to run at large off of the owner's property. Any hen house shall be located not less than 50 feet from any property line.

(b) Swine. The keeping of swine for personal use is permitted provided that no more than three mature pigs, 10 weeks or older, and no more than one litter consisting of suckling pigs, 10 weeks of age or less, are kept.

(c)) Certain other animals. The keeping of horses, ponies, burros, donkeys, llamas, alpacas, sheep, goats and cattle is permitted, provided that no more than three such animals are kept on a lot of not less than two acres equivalent minimum buildable lot area. Three additional animals are permitted for each acre equivalent minimum buildable lot area in addition to the two acres equivalent minimum buildable lot area.

(d) Dogs. The keeping of up to four dogs as pets shall be permitted. The keeping of five or more dogs as pets or dogs kept for commercial purposes or boarding shall be subject to the provisions and requirements of Subsections A(9) and B(8). **[Amended 11-1-2016]**

(e) Rabbits. Not more than 100 rabbits may be kept on any premises at any one time.

(8) Family day-care home licensed by the State Department of Public Health.

(9) Private home kennel. Private home kennel under the ownership of the property owner for show, sport, or sale of dogs, provided that it complies with the following conditions:

(a) A private home kennel shall be located on residential property containing a minimum of three acres equivalent minimum buildable lot area.

(b) Not more than six adult dogs over six months of age may be kept and not more than two litters of dogs may be bred annually.

(c) Dogs shall be kept in buildings, enclosures, or runs located not less than 75 feet from property lines.

(d) Dogs shall be maintained in such a manner as not to cause a nuisance by roaming at large, vicious disposition, excessive barking, unsanitary conditions, or other disturbances.

(e) The keeping of dogs shall conform to all applicable regulations of the State Department of Public Health, Department of Environmental Protection, the State Department of Agriculture, and the General Statutes.

(f) A zoning permit issued by the Zoning Enforcement Officer is required.

(10) Outdoor wood-burning furnaces, subject to the following conditions:

(a) Installation of the outdoor wood-burning furnace is not less than 200 feet from the nearest residence not serviced by the outdoor wood-burning furnace and not less than 500 feet from any school, church, health-care facility, or municipal recreational facility. Setbacks shall be 100 feet from the front lot line and 75 feet from rear and side lot lines.

(b) Installation of the chimney of the outdoor wood-burning furnace is at a height that is two feet more than the height of the roof peaks of the residences that are located within 500 feet of the outdoor wood-burning furnace, which residences are not serviced by the outdoor wood-burning furnace, provided the chimney height is not more than 55 feet. Chimney height must be a minimum of four feet above the furnace owner's home roofline, and the chimney must have a spark arrestor.

(c) A plan shall be submitted by a licensed surveyor or professional engineer documenting the location of the outdoor wood-burning furnace, horizontal and vertical control distances to all residences within the five-hundred-foot radius, comparative heights of the chimney stack and residential rooflines, and the location of waste ash containment or storage facilities.

(d) No materials may be burned in outdoor wood-burning furnaces other than clean untreated wood, wood pellets made from clean untreated wood, or other EPA/DEEP approved forms of biomass. Wood that has chemical contaminants, paint, stains, or other types of coatings,

or has been treated with, including, but not limited to, copper chromium arsenate, creosote, or pentachlorophenol is prohibited.

(d.1) All waste ash generated by the outdoor wood-burning furnace shall be kept in such a manner so as not to create a public health hazard or have an adverse effect on the environmental quality of the surrounding area and community. Adequate containment or storage structures shall be installed and maintained so as to confine all ash within the property of the furnace owner and prevent waste ash run-off. Waste ash containment or storage structures shall be located not less than 50 feet from any property line. No more than three cubic yards of ash shall be stored on a single property at any time.

(e) Installation and operation of the outdoor wood-burning furnace is in accordance with the manufacturer's written instructions, provided such instructions do not conflict with the provisions of this subsection.

(f) The outdoor wood-burning furnace shall meet the provisions of § 22a-174k of the Connecticut General Statutes and qualify under the Environmental Protection Agency Phase I voluntary program.

(g) Particulate emission standard. The outdoor wood-burning furnace shall be certified to meet a particulate matter emission limit of 0.32 pound per million British thermal units (lb/MMBTU) heat input. All emissions testing shall be conducted by an accredited, qualified, and independent testing consultant who has no conflict of interest or financial gain in the outcome of the testing.

(h) Visible emission standard. The emission of a smoke plume from any outdoor wood-burning furnace may not exceed an average of twenty-percent opacity for six consecutive minutes in any one-hour period. Visible emissions may not exceed forty-percent opacity for one minute.

(i) Operation is permitted only between September 15 and June 1.

(j) A zoning administrative permit issued by the Zoning Enforcement Officer is required. Permits for outdoor wood-burning furnaces shall be issued for periods not to exceed three years and may be renewed without

reapplication if the Zoning Enforcement Officer, upon inspection, finds that the furnace remains in compliance with this subsection and applicable Connecticut statutes. **[Amended 11-1-2016]**

(k) This subsection shall apply to all districts in the Town of Killingworth.[1]

(11) An accessory apartment may be permitted in certain single-family residences in all districts subject to a zoning administrative permit issued by the Zoning Enforcement Officer and subject to the conditions prescribed in Article XXVI of these regulations, provided that it also complies with all applicable State and Town ordinances, codes and regulations as well as the standards in § 500-61. An accessory apartment is permitted without the five-year age requirement in an affordable housing subdivision provided it complies with the requirements of § 500-49A of these regulations and all other applicable requirements of this article. An application for an accessory apartment shall be prepared and submitted in the same manner as provided in Article XXVI. **[Added 11-1-2016]**

A1. (Reserved)

A2. Principal uses requiring site plan approval. The following principal uses and buildings only when specifically authorized in the particular instance by site plan approval by the Commission subject to the conditions prescribed in or pursuant to Article XXVI. An application for site plan review shall be prepared and submitted in the same manner as provided in Article XXVI for special exception applications. **[Added 5-21-2013; amended 11-1-2016]**

(1) Boarding stable, provided that it is located on a lot containing not less than five acres of minimum buildable lot area (Appendix B) belonging to Soil Class A, B, C or D (Appendix A).[2] No more than 12 horses may be kept on such a lot. Three additional horses are permitted for each acre equivalent minimum buildable lot area in addition to the five acres equivalent minimum buildable lot area. No barn or shelter shall be located and no animals housed less than 50 feet

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1. **Editor's Note: Former Subsection A(1)(l) and (m), regarding enforcement and penalties for violation of this subsection, respectively, which immediately followed this subsection, were repealed 11-1-2016.**

2. **Editor's Note: Appendix A, Soil Classes, and Appendix B, Procedure for Computing Minimum Buildable Lot Area, are included as attachments to this chapter.**

from any property line. Manure piles shall be located and maintained so as to prevent runoff of manure and other polluting materials onto adjacent properties, roads, wells, or watercourses. Adequate fencing and structures shall be installed and maintained so as to confine all animals to the premises of the owner. Adequate off-street parking shall be provided.

(2) (Reserved)[3]

(3) A commercial greenhouse, for wholesale purposes only, provided that it is located on a lot of not less than three acres and not less than 100 feet from any lot line.

(4) Bed-and-breakfast in a single-family dwelling unit in which the resident owner grants or offers to grant for hire no more than four individual sleeping accommodations, with or without meals, intended primarily for the accommodation of transients for a period of less than 14 days, to persons who are not members of the family of the resident owner. **[Amended 11-1-2016]**

B. Special principal uses requiring a special exception. The following special principal uses and buildings only when specifically authorized in the particular instance by a special exception granted by the Commission under Article XXVI: **[Amended 5-18-2004; 12-16-2008; 8-2-2011; 5-21-2013; 7-15-2014; 11-1-2016]**

(1) Child day-care center and group day-care homes, whether or not operated for profit, but not including a camp operated for profit.

(2) Clubs.

(3) Libraries, museums, auditoriums, community houses and public health nursing service facilities operated by a governmental or nonprofit corporation.

(4) Hospitals or convalescent homes, provided that the lot area is equivalent to not less than 2,000 square feet for each patient sleeping accommodation if the lot is served by public water supply and not less than 8,000 square feet if not served by public water supply.

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3. Editor's Note: Former Subsection A2(2), regarding accessory apartments, was repealed 11-1-2016.

(5) Veterinary hospitals, provided that they are located on lots of not less than three acres and that all animals are kept within a building which is located not less than 150 feet from any lot line.

(6) Commercial boarding stable, provided that it is located on a lot containing not less than five acres of minimum buildable lot area (Appendix B) belonging to Soil Class A, B, C or D (Appendix A).[4] No more than 12 horses may be kept on such a lot. Three additional horses are permitted for each acre equivalent minimum buildable lot area in addition to the five acres equivalent minimum buildable lot area. No barn or shelter shall be located and no animals housed less than 50 feet from any property line. Manure piles shall be located and maintained so as to prevent runoff of manure and other polluting materials onto adjacent properties, roads, wells, or watercourses. Adequate fencing and structures shall be installed and maintained so as to confine all animals to the premises of the owner. Adequate off-street parking shall be provided.

(7) A cemetery of a church corporation or cemetery association.

(8) Commercial kennel. Commercial kennel for the keeping of dogs for commercial purposes, including grooming, boarding, and breeding, provided that it complies with the following conditions:

(a) A commercial kennel shall be located on residential property containing not less than seven acres equivalent minimum buildable lot area.

(b) No more than 14 dogs shall be kept on a lot of not less than seven acres. Two additional dogs are permitted for each acre in addition to seven acres.

(c) Dogs shall be kept in buildings, enclosures, or runs located not less than 500 feet from any dwelling other than the dwelling on the lot of such use and not less than 300 feet from any property line.

(d) Dogs shall be maintained in such a manner as not to cause a nuisance by roaming at large, vicious disposition, excessive barking, unsanitary conditions, or other disturbances.

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4. Editor's Note: Appendix A, Soil Classes, and Appendix B, Procedure for Computing Minimum Buildable Lot Area, are included as attachments to this chapter.

(e) The keeping of dogs shall conform to all applicable regulations of the State Department of Public Health, Department of Environmental Protection, the State Department of Agriculture, and the General Statutes.

(9) Churches, parish houses, convents and similar religious buildings.

(10) Parks, playgrounds, forests, wildlife sanctuaries or refuges, boat landing areas and similar open reservations operated by governmental units or nonprofit organizations.

(11) Commercial hatchery, private fishery, game breeding, regulated hunting dog training area, regulated private shooting preserve, and structures accessory to these uses carried on under private or public ownership. Such uses are subject to all licenses, permits, and regulations required under Title 26, Fisheries and Game, of the General Statutes of Connecticut.

(a) In addition to the provisions and standards of Article XXVI, the following conditions shall apply to these uses:

[1] The minimum parcel size shall be 50 contiguous acres, except for private shooting preserves where the minimum parcel size shall be 300 contiguous acres.

[2] The parcel shall have owned frontage of at least 25 feet on a Town road or state highway and shall be accessed over such frontage on a Town road or state highway.

[3] A buffer zone of 200 feet shall be provided around the periphery of the parcel.

[4] Noise shall be so controlled as not to exceed Department of Environmental Protection standards for recreation areas.

[5] All other applicable local, state, and federal permits shall be obtained.

[6] The duration of a permit for any of the uses in this Subsection B(11) shall be for a period of at least one year but not more than five years. Permits are renewable. The Commission shall take into

consideration the past performance of the applicant in considering the renewal of any permit.

[7] Any retail sales shall be related specifically to the use granted and available solely for patrons of the private recreation area.

[8] Buildings may not be used for overnight use except as specified under Subsection A2(4).

[9] Uses not specified and expressly permitted by the Zoning Regulations are prohibited.

[10] Any expansion of an existing facility shall require a special exception under this section.

(b) Definitions. As used in this Subsection B(11), the following terms shall have the meaning indicated:

ACCESSORY STRUCTURES — Picnic tables, shelters, docks, boathouses, kennels, hatcheries, warming huts, any other buildings or structures, roads, parking lots, or any other improvements.

COMMERCIAL HATCHERY — An institution or place where legally acquired fish are held, hatched and reared for sale or where fish so acquired or hatched are stored or held for sale in waters which are under the complete control of the owner.

GAME BREEDING — Possession, breeding or propagation of any wild game bird or wild game quadruped or a species defined in § 26-40 of the General Statutes of Connecticut.

HUNTING DOG TRAINING AREA — Areas in which artificially propagated game birds and pigeons are liberated in connection with the training of hunting dogs.

PRIVATE FISHERY — An institution or place where a fee or membership is charged for the taking of fish in waters which are under the complete control of the owner.

PRIVATE SHOOTING PRESERVE — An area of not less than 300 contiguous acres used for the hunting of legally propagated game birds.

(12) Private recreation area, including picnicking, swimming, fishing, boating, horseback riding, hiking, cross-country

skiing, archery, clay target shooting, tennis, and golf course, and structures accessory to these uses.

(a) In addition to the provisions and standards of Article XXVI, the following conditions shall apply to private recreation areas:

[1] The minimum parcel size shall be 100 acres.

[2] The parcel shall have owned frontage of at least 25 feet on a state highway and shall be accessed over such frontage on a state highway.

[3] A buffer zone of 200 feet shall be provided around the periphery of the parcel.

[4] Noise shall be so controlled as not to exceed Department of Environmental Protection standards for recreation areas.

[5] All other applicable local, state, and federal permits shall be obtained.

[6] The duration of a private recreation area permit shall be for a period of at least one year but not more than five years. Permits are renewable. The Commission shall take into consideration the past performance of the applicant in considering the renewal of any permit.

[7] Any retail sales shall be related specifically to the use granted and available solely for patrons of the private recreation area.

[8] Buildings may not be used for overnight use except as specified under Subsection A2(4).

[9] Uses not specifically and expressly permitted by the Zoning Regulations are prohibited.

[10] Any expansion of an existing facility shall require a special exception under this section.

(b) Definitions. As used in this Subsection B(12), the following terms shall have the meaning indicated:

ACCESSORY STRUCTURES — Picnic tables, shelters, docks, boathouses, stables, warming huts, any other buildings or structures, roads, parking lots, or any other improvements.

ARCHERY — Bow and arrow shooting at targets used to simulate a live hunt.

BOATING — Travel on a lake by nonmotorized boats, canoes, or kayaks.

CLAY TARGET SHOOTING — Shotgun shooting at clay targets which provide a simulation of a bird in flight.

CROSS-COUNTRY SKIING — Skiing for recreational pleasure in woodlands on marked trails.

FISHING — Taking of fish from a lake by a fly rod, rod and reel and tip-ups for ice fishing.

GOLF COURSE — The ground or course over which golf is played. A minimum of nine regulation holes built according to the standards of the Professional Golfers Association is required.

HIKING — Walking for recreational pleasure in woodlands on marked trails.

HORSEBACK RIDING — Riding of horses for recreational pleasure in woodlands on marked trails.

PICNICKING — Tables set out for the purpose of eating meals brought into the site for personal use.

PRIVATE RECREATION AREA — A privately owned area for the recreational uses specified in this subsection and available to the public for a fee or membership.

SWIMMING — Swimming in a lake within a defined area and supervised by a certified lifeguard.

TENNIS — Courts for the purpose of playing tennis.

(13) Public, private, parochial or religious day schools for nursery, primary, and secondary academic education. In addition to the provisions and standards of Article XXVI, the following conditions shall apply to public, private, parochial or religious schools:

(a) Any school with an enrollment of 100 students or fewer will have a minimum buildable lot size of five acres equivalent. The minimum buildable lot size for any school with an enrollment in excess of 100 students shall increase by five acres equivalent for every additional 100 students, or portion thereof, enrolled. Accordingly, a school with an enrollment of 101 students or more but fewer than 201 students will have a minimum buildable

lot size of 10 acres equivalent; a school with an enrollment of 201 students or more but fewer than 301 students will have a minimum buildable lot size of 15 acres equivalent, etc. The size of the equivalent minimum buildable area will be calculated in accordance with the provisions of § 500-44 and Appendix B.[5]

(b) Front, side and rear setbacks for schools will be 100 feet.

(c) Schools must be served by a driveway entrance located upon a state highway.

(d) Schools will comply with all applicable federal, state and municipal statutes, ordinances, rules, codes and regulations.

(14) Ag-tivities/agritourism. The following activities are considered to be accessory to an established agriculture operation permitted under § 500-43A(4) and carried on under private ownership. These uses should be incidental and subordinate to the use of the property for farming. These regulations are intended to ensure that these activities are compatible with the permitted uses in the surrounding area.

(a) Definitions. As used in this Subsection B(14), the following terms shall have the meanings indicated:

AGRICULTURAL TOURISM — Refers to the act of visiting a working farm or any agricultural, horticultural or agribusiness operation for the purpose of enjoyment, agricultural educational instruction, demonstration of production of farm products, or active involvement in the activities of the farm or operation.

AG-TIVITIES — Appropriately scaled events of limited duration on a farm that are incidental to agricultural uses, including, but not limited to, hayrides, corn mazes, festivals and other similar activities; on-farm sales, such as farm stands and pick-your-own operations retailing farm and farm-related products; and on-farm processing operations, provided they comply with all applicable state and municipal health codes.

NON-AGRICULTURAL-RELATED USES — Activities that are part of an agricultural operation's overall offerings but are not incidental to agriculture or tied to agricultural

5. **Editor's Note: Appendix B, Procedure for Computing Minimum Buildable Lot Area, is included as an attachment to this chapter.**

buildings, structures, equipment, and/or fields. Such uses may include, but are not limited to, weddings, receptions, fee-based outdoor recreation such as bird watching, hiking, snow-shoeing, horseback riding, and other such passive recreational activities.

(b) General requirements. In addition to the provisions and standards of Article XXVI, the following conditions shall apply to these uses:

[1] Parcel size. The minimum parcel size shall be five contiguous net buildable acres.

[2] Frontage. The parcel shall have owned frontage of at least 25 feet on a Town road or state highway and shall be accessed over such frontage on a Town road or state highway.

[3] Neighboring premises. The proposed use and improvements shall not adversely affect the enjoyment, usefulness and value of premises in the general neighborhood thereof. The location of outdoor events and activities associated with agritourism and/or ag-tivities on the farm shall take into consideration the current use of surrounding properties. The Commission may require a specific separating distance and/or an appropriate buffer strip with plantings, fences, or walls that screen any such activity from the adjacent properties.

[4] Traffic. The proposed use and improvements shall not adversely affect the pattern, flow, intensity or character of traffic in the public streets or produce unsafe or inconvenient traffic congestion.

[5] Parking. Adequate off-street parking for agriculturally related and non-agricultural-related uses above shall be provided. Parking shall, to the maximum extent possible, be located in areas on the site where they will be the least visible from access roads and adjoining properties.

[6] Noise. Noise shall be so controlled as not to exceed Department of Environmental Protection standards for recreation areas and shall comply with the requirements of § 500-28.

[7] Lighting. Exterior lighting shall be of a style and character which is in harmony with the character of the district. Lighting standards shall not exceed 12 feet in height. Lighting or luminaires shall have shielded light sources to prevent glare, and no exterior lighting shall shine on adjacent properties or towards any roadways.

[8] Retail sales. Any retail sales shall be related specifically to the use granted and available solely for patrons of the farm.

[9] Number of events. The number of events to be held shall be specified. Non-agricultural-related uses shall be limited to six within a given calendar year, unless the applicant can demonstrate to the Commission that there will be no adverse impact on neighboring properties.

[10] Number of persons attending. The number of persons attending any ag-tivities/agritourism activities or event under this section shall not exceed 100.

[11] Hours of operation. The hours of operation of ag-tivities/agritourism activities shall not be allowed before 9:00 a.m. or after 6:00 p.m., Sunday through Thursday, and before 9:00 a.m. or after 10:00 p.m., Friday and Saturday.

[12] Temporary structures. Temporary accessory structures such as tents shall not exceed 1,200 square feet of floor area. Temporary structures must be put up no more than two days in advance of the event and removed from the property, unless it is to be stored in a permanent structure located on the site, no more than two days after the event for which they are first set up.

[13] Buildings. New accessory buildings and structures for ag-tivities/agritourism activities under this section shall not exceed 600 square feet of floor area. Buildings may not be used for overnight use except as specified under Subsection A2(4).

[14] Architectural design. The architectural design of buildings and signs, including the building materials and exterior elevations, shall be of such character as

to reflect or accent existing farm structures and to harmonize with the neighborhood.

[15] Uses not specified or expressly permitted by the Zoning Regulations are prohibited.

[16] The duration of a permit for any of the uses in this Subsection B(14) shall be for a period of at least one year but not more than five years. Permits are renewable. The Commission shall take into consideration the past performance of the applicant in considering the renewal of any permit.

[17] Any expansion of an existing facility shall require a special exception under this section.

[18] All other applicable local, state, and federal permits shall be obtained.

[19] Should the principal farm use be abandoned and/or discontinued, the accessory uses as provided in this section shall be terminated and shall not become the principal use.

(15) Accessory apartment within an existing detached structure. An accessory apartment may be permitted on certain single-family residential properties containing five or more buildable acres within an existing detached structure subject to the conditions prescribed in Article XXVI of these regulations and Commission approval, provided that it also complies with all applicable state and Town ordinances, codes and regulations as well as the standards in § 500-61.

(16) Accessory caretaker apartment. An accessory caretaker apartment may be permitted on certain single-family residential properties containing 20 or more buildable acres within a newly constructed detached structure subject to the conditions prescribed in Article XXVI of these regulations and Commission approval, provided that it also complies with all applicable state and Town ordinances, codes and regulations as well as the standards in § 500-61.

(17) Affordable housing subdivision subject to the conditions prescribed in or pursuant to Article VII.

(18) Conservation subdivision subject to the conditions prescribed in or pursuant to Article VIII.

(19)Retirement housing subdivision subject to the conditions prescribed in or pursuant to Article XXXIV.

C. Accessory uses. Accessory uses are clearly incidental and subordinate to the principal use and are located on the same lot with an approved principal use or building. The following accessory uses are allowed provided: **[Amended 8-2-2011; 7-15-2014]**

(1) Signs. Any sign in conformance with the requirements prescribed therefor in Article XVII, Signs, of these regulations.

(2) Vehicles; residence uses. The parking or storage of any commercial motor vehicle accessory to a use described in Subsection A or A2 shall not exceed one. Such vehicle is regularly used for transportation, does not exceed two tons' capacity, is used primarily for personal rather than business purposes and is usually parked or stored indoors.

(3) Vehicles; other uses. The parking or storage of any commercial motor vehicle accessory to a use described in Subsection B shall not exceed three, is regularly used for transportation, does not exceed two tons' capacity and its location on the lot of the principal use is not less than 100 feet from any street line and 50 feet from any lot line.

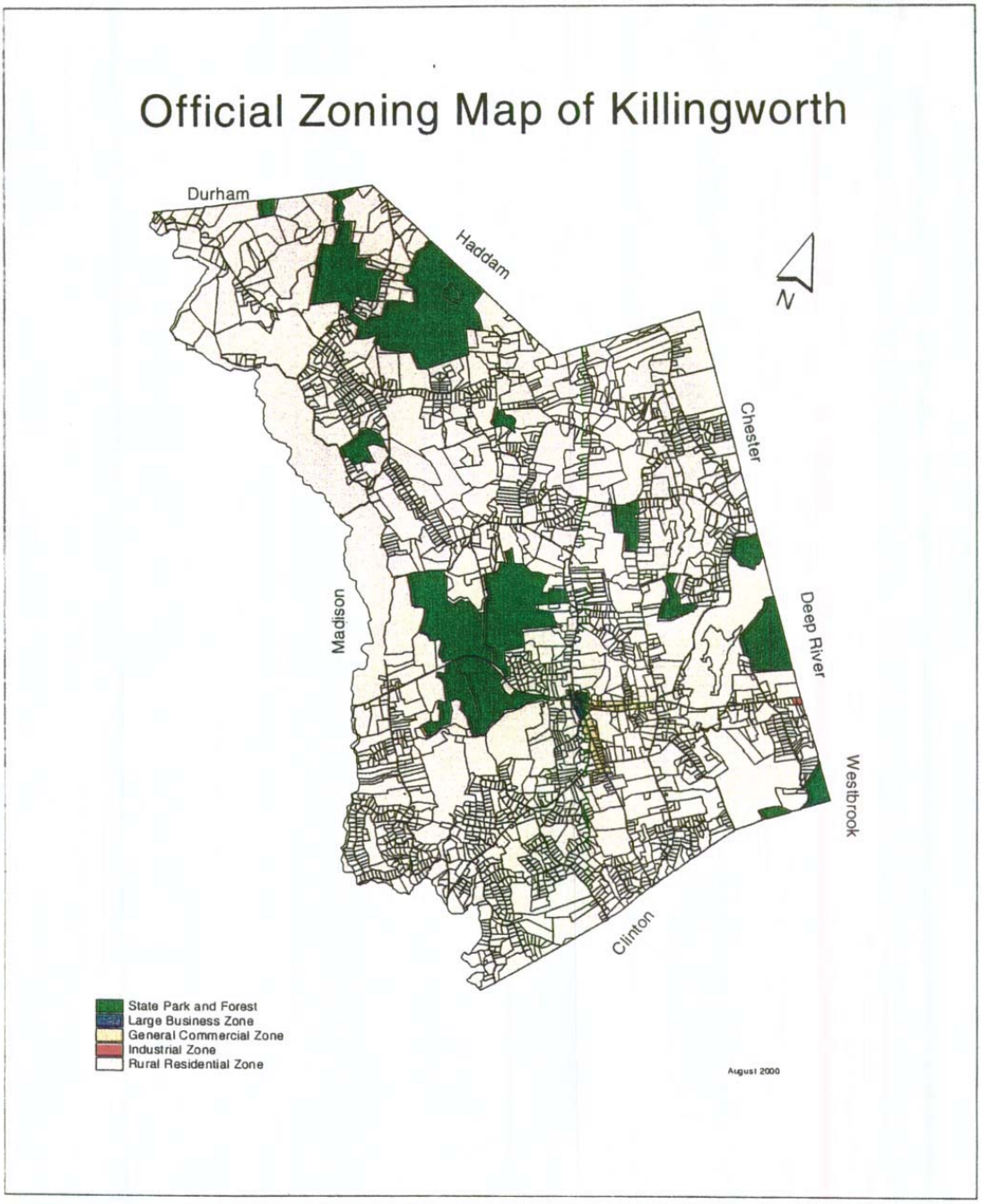
(4) Fences, pools, patios, decks and alternative energy sources in conformance with Town requirements and these regulations.

(5) Outbuildings. Accessory outbuildings, including but not limited to barns, garages, sheds, and greenhouses less than 2,000 square feet in area, in conformance with Town requirements and these regulations. All outbuildings shall be harmonious whenever possible in style, size, and proportion with architecture typical elsewhere in the Residential District, and employ building materials that are harmonious in appearance with those typical elsewhere in the Residential District. If the outbuilding is not harmonious with typical architecture, such as a hoop building, it shall be placed to the rear of the principal building or other major building in a neat and orderly manner and in the most inconspicuous location practicable, and generally not visible from any street. A zoning permit is required for all outbuildings.

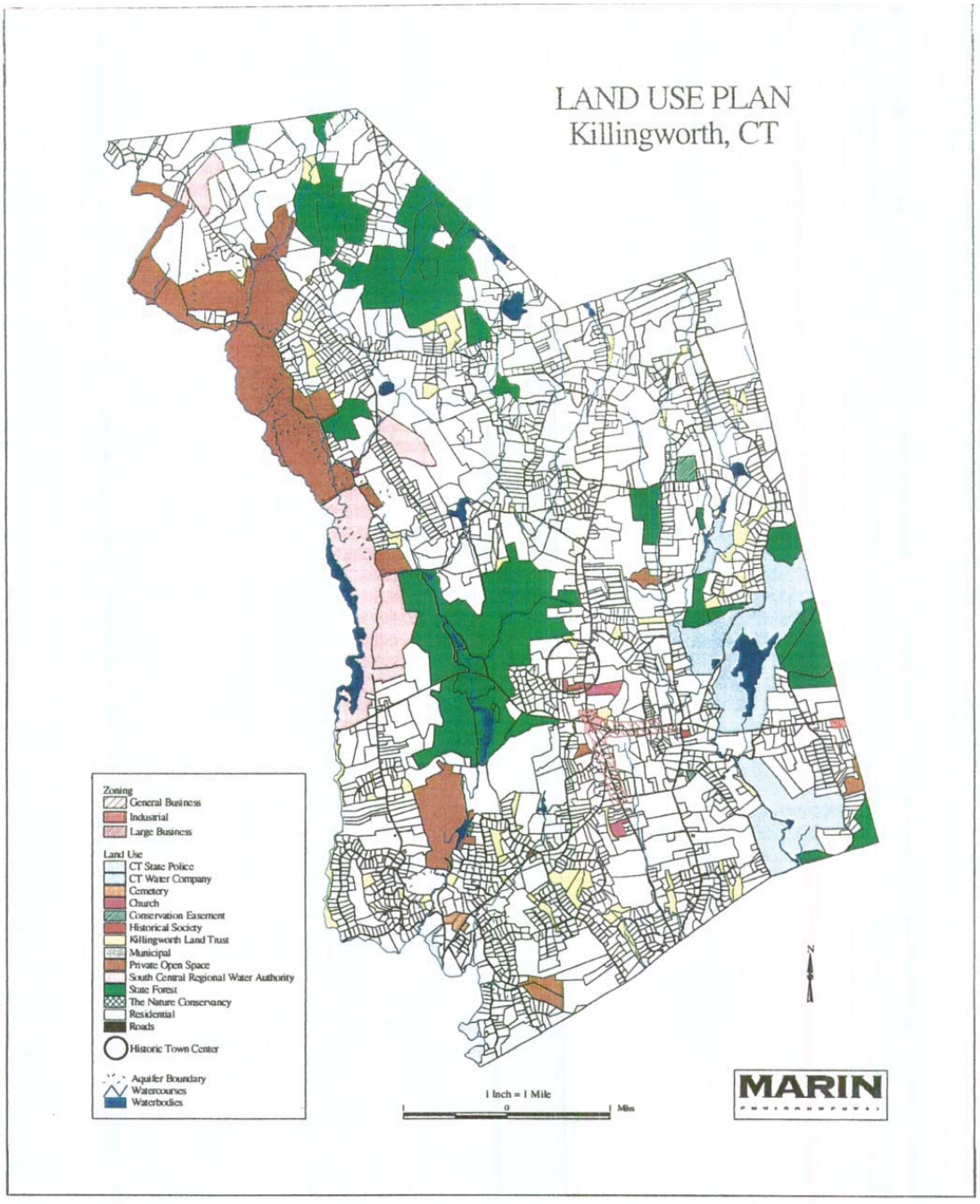
500 Attachment 4

Town of Killingworth
Zoning and Land Use Maps

ZONING MAP



LAND USE MAP


LAND USE PLAN
Killingworth, CT
Zoning
General Business
Industrial
Large Business
Land Use
CT State Police
CT Water Company
Cemetery
Church
Conservation Easement
Historical Society
Killingworth Land Trust
Municipal
Private Open Space
South Central Regional Water Authority
State Forest
The Nature Conservancy
Residential
Roads
Historic Town Center
Aquifer Boundary
Watercourses
Waterbodies
1 Inch = 1 Mile
0
1 Miles
N
MARIN

Interrogatory CSC-3-129

Chatfield Solar Fund, LLC | Witness: Charles Geppi

Petition No. 1354 |

Q-CSC-3-129: Referring to Petitioner Exhibit 6, response #99(b), have the two Projects listed been constructed? If so, when did they become operational?

A-CSC-3-129: Fort Indian Town Gap commenced operation on January 30, 2019, and West Orange Solar has not yet completed construction. However, upon further review of the Town Gap project, Chatfield has concluded that this project did not use the same clearing method as proposed for the project. Chatfield would like to direct the Council towards the clearing methods used in the projects in Poolesville, Maryland, and Stafford, Connecticut, which were all similar to the project.

West Orange Solar – construction to begin May 2019;
Poolesville, MD – operations began December 13, 2013; and
Stafford, CT – operations began July 19, 2016.

Interrogatory CSC-3-130

Chatfield Solar Fund, LLC

Witness: Alisa Morrison
George Andrews

Petition No. 1354

Q-CSC-3-130: How many linear feet of stones walls will be removed to develop the site?

A-CSC-3-130: There are approximately 3,375 linear feet of stone wall on the property. Chatfield estimates 2,430 linear feet will be removed within the clearing limits. A map showing the walls and removal is attached (see Attachment CSC-3-130).

Attachment CSC-3-130

Clearing Line
Fence Line
StoneWall
Stone Wall to be Removed
Cleared Area

Total Length of Stone Walls - 3375 lf
Length of Stone Walls to be Remove - 2450 lf

Location of walls was derived from Connecticut Statewide LiDAR 2016 and accessed via the CT ECO Image Service.
https://cteco.uconn.edu/ctraster/rest/services/

0 250 500 Feet

N W E S

Approximate Locations of Stone Walls to be Removed

Interrogatory CSC-3-131

Chatfield Solar Fund, LLC

Witness: Alisa Morrison
George Andrews

Petition No. 1354

Q-CSC-3-131: How many acres of the site will be enclosed by the security fence?

A-CSC-3-131: 11.50 acres as shown on Drawings 1A and 1B of the site plan (Attachment CSC-3-112).