

STATE OF CONNECTICUT  
CONNECTICUT SITING COUNCIL

IN RE:	:	
	:	
A PETITION FOR A DECLARATORY	:	PETITION NO. 1425
RULING THAT A CERTIFICATE OF	:	
ENVIRONMENTAL COMPATIBILITY AND	:	
PUBLIC NEED IS NOT REQUIRED FOR THE	:	
CONSTRUCTION, OPERATION AND	:	
MAINTENANCE OF A 1.9 MWAC SOLAR	:	
PHOTOVOLTAIC PROJECT AT 360	:	
GAYLORD MOUNTAIN ROAD IN HAMDEN,	:	
CONNECTICUT	:	DECEMBER 8, 2020

**LATE-FILED EXHIBITS RESPONSES OF  
GAYLORD MOUNTAIN SOLAR PROJECT 2019 LLC**

On November 17, 2020, the Connecticut Siting Council (“Council”) requested the Petitioner to submit responses to the following questions as late-filed exhibits. Below are the Petitioner’s responses.

(a) Clarify address of nearest property line to the solar field perimeter fence (22 feet northeast) is 380 Gaylord Mountain Road or 360 Gaylord Mountain Road – reference Petitioner’s response to Council Interrogatory No. 15 including Attachment 2.

**Response**

According to the Town of Hamden Geographic Information System (GIS) the property located 22 feet northeast of the solar field perimeter fence has a mailing address of 360 Gaylord Mountain Road and is owned by Thomas A. Talmadge. It is worth noting that the Town’s GIS system also identifies the subject parcel owned by Vertical Bridge LandCo LLC as 360 Gaylord Mountain Road. *See* the attached Town of Hamden Assessment Parcel map showing the Thomas Talmadge parcel, attached as Exhibit 1.

(b) Provide acres of solar field area located on slopes greater than 15 percent to include a site plan of such locations.

Response

Included in Exhibit 2 is a topographic map of the Project Site including the layout of the solar arrays as proposed in Petition No. 1425. This map illustrates how the Petitioner has avoided, to a significant extent, the installation of solar arrays on the steepest portions of the parcel where possible. Exhibit 2 shows that within the limits of the 8.59 acre fenced-area, where the solar arrays would be located, only 1.71 acres (approximately 20%) maintain slopes greater than 15% grade. As illustrated on the Exhibit 2 map, the area where the solar panels are located on steeper grades (greater than 15%) is only 0.34 acres, approximately 4% of the 8.59-acre fenced area.

It is important to note that the layout of the solar arrays and other Project features and elements has evolved, significantly, from the initial Project design to the design included in the Petition. Exhibit 3 is an early concept plan from March of 2020, prior to the completion all engineering and environmental reviews for the Project and prior to the Petitioner's meetings with individuals in the Stormwater Unit of the Connecticut Department of Energy and Environmental Protection ("DEEP") in May of 2020. Exhibit 3 shows the solar panels orientated to face due south, or zero-degree azimuth, a design which includes an additional 2,288 modules, an expansion of the fenced area around the solar arrays and significantly more solar panel coverage on slopes of up to 30%.

Between March and the end of April, the Petitioner continued to refine the Project design resulting in the layout shown in Exhibit 4, which was presented to DEEP at the May 10, 2020 meeting referenced in the Petition on page no. 9. As you can see, the layout shown in Exhibit 4

still had the solar panels orientated to face due south and included solar panel coverage on some of the site's steeper slopes (up to 30%). The layout shown in Exhibit 4, however, includes the addition of a construction access road from the north and a further reduction in the number of solar modules to 6,968, still 676 more modules than currently proposed. This layout also results in a loss of 0.645 MW and 15% of energy production over the layout presented in Exhibit 3.

As described in more detail in response to Council Interrogatory No. 56, the Petitioner met with DEEP on multiple occasions to review the Project layout and made further Project adjustments based on DEEP's recommendations. The current Project layout included in the Petition and as shown in Exhibit 2 illustrates the Petitioners willingness to make important compromises to reduce the Project's overall environmental effect, particularly those related to stormwater and soil erosion and sediment control which would minimize any potential impact the Project may have on water quality. Information regarding the effect these compromises have had on the energy output from the solar facility is included in the Petitioner's response to LFE (i) below.

(c) Provide Town of Hamden emergency responders feedback on the permanent access drive design accessibility with a slope of 15 percent.

### Response

The Petitioner's Project Engineer Brad Parsons met with Brian Dolan, Hamden's Fire Marshal on December 2, 2020 at the Project Site to discuss the proposed Gaylord Mountain solar facility and the permeant access driveway design.

Mr. Dolan's principal concern was understanding the proposed solar system, how the system could be shut down in case of emergency and where the shutdown equipment would be located. Mr. Parsons explained that there would be a manual disconnect switch located at the

equipment pad within the fenced area near the vehicle turnaround, approximately 300 feet into the Project Site along the proposed gravel access driveway from Gaylord Mountain Road.

Mr. Parsons also explained that the Petitioner would provide the Hamden Fire Department with training on the solar facility operations, facility safety features and emergency shutdown equipment after completion of the installation and before commercial operation. Mr. Parsons went on to explain that the Petitioner will also monitor the operation of the solar facility 24/7 and, if necessary, shut the system down remotely if problems arise. Mr. Dolan also noted that he would prefer the Petitioner install a Knox Box with a key rather than a Knox Padlock as currently proposed at Project Site entrance. The Petitioner agreed to make this change and will mount a Knox Box to a fence post adjacent to the gate or on its own pedestal.

Finally, Fire Marshal Dolan and Mr. Parsons reviewed the Project plans and walked the area where the access driveway would be constructed. Mr. Parsons explained that the Project Site access drive would be 15-foot wide compact gravel driveway that would maintain a grade of 15% extending into the Project Site from Gaylord Mountain Road. Mr. Dolan said that the 15% grade was acceptable to the Fire Department and noted that if the Department needed to access the Project Site it would likely do so with a brush truck or chief/captain's vehicle and any additional fire apparatus would remain on Gaylord Mountain Road.

- d) Provide meadow versus tree cover drainage calculation comparison.

#### Response

The ground cover comparison discussed at the November 17, 2020 evidentiary hearing and incorporated into the Stormwater Management Report for the Project is based on the United States Department of Agriculture, Natural Resources Conservation Service, Conservation Engineering Division, (formerly Soil Conservation Service or SCS) "curve number" method,

which is an empirical parameter used in hydrology for predicting infiltration or direct runoff from rainfall. The curve number or CN value is based on soils, plant cover, amount of impervious areas, interception, and service storage. The higher the curve number on a particular site, the higher the runoff amount would be for a given storm event. These numbers range from a low of 30 to a high of 98. The curve number for a paved parking lot for example is 98. The curve number for both “Meadow” or “Woods” (Good Condition) ground cover in hydrologic soil group A is 30. The following are the curve numbers for the Meadow and Woods (Good Condition) ground cover in hydrologic soil groups (“HSG”) A, B, C, & D:

	HSG - A	HSG - B	HSG - C	HSG - D
Meadow	30	58	71	78
Woods (Good Condition)	30	55	70	77

As shown above, the curve numbers for Meadow and Woods ground cover are virtually identical in each of the HSGs.<sup>1</sup> A Meadow is a natural area that, like Woods, helps to slow down and filter rain water allowing it to soak back into the ground. Similar to Woods, Meadows have many environmental benefits, including reducing soil erosion, increasing groundwater recharge, and enhancing air and water quality. Exhibit 5 is a photograph of a solar array with a well-established meadow growing beneath panels.

According to a 2018 study published by researchers at Oregon State College, certain grasses and plants flourish in the shade underneath solar panels. The study found that areas

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<sup>1</sup> In addition to the curve number, the drainage calculations also must consider the time of concentration of stormwater which is based on slope, surface roughness, and flow patterns at the Project Site. These factors together are the basis for the Project’s stormwater design, a design that is consistent with DEEP standards and requirements.

under the solar panels had a different microclimate than other exposed areas. Shaded areas were 328 percent more water efficient and maintained higher soil moisture throughout the heat of summer. This led to twice as much grass under the arrays as in the unshaded areas. The plants also had more nutritional value. Researchers also found a 90 percent increase in late-season plant mass in areas under solar panels. An article summarizing the findings of the Oregon State College study is available at <https://www.anthropocenemagazine.org/2018/11/solar-arrays-can-create-prolific-microclimates-on-dry-farmland/#:~:text=November%208%2C%202018-,Solar%20panels%20could%20increase%20productivity%20on%20pastures%20that%20are%20not,a%20significant%20change%20in%20moisture.>

e) Provide an update to the schedule for project development including phased construction timetables.

#### Response

As discussed at the November 17, 2020 hearing, the proposed solar facility will need to be in commercial operation by January 1, 2022 to conform to the Petitioner's Low Emission Renewable Energy Credit (LREC) award. Extensions to this existing deadline are available but would require the approval of the Connecticut Public Utilities Regulatory Authority.

Generally speaking, the Project can be placed in service approximately 120 days following the commencement of construction. If construction commences on April 1, 2021 for example, the Project schedule, with 30 to 60 days built in for site stabilization, could still be completed on or before October 1, 2021, well in advance of the current deadline for commercial operation.

- f) Identify locations for grading and soil deposits on the project site.

Response

The Project Plans included in the Environmental Assessment (Exhibit H in Petition No. 1425), show material stockpile areas in the northwest and southeast portions of the Project Site. Each stockpile area will maintain adequate soil erosion control measures. The Petitioner believes these two material stock pile areas are sufficient for Project development purposes. Excess materials that cannot be reasonably accommodated in these stock pile areas will be removed from the site.

- g) Provide information for on-site refueling and fuel storage.

Response

The Petitioner anticipates using open land and level areas near the existing telecommunications tower site to the west of the Eversource transmission line for material laydown and construction equipment storage. Any on-site refueling and fuel storage would occur in this portion of the landlord's property.

Pursuant to Appendix B – Resource Protection Plan in the Environmental Assessment, Subsection 3 – Petroleum Materials Storage and Spill Prevention, petroleum and hazardous materials storage, refueling restrictions, and spill response procedures are described and include the use of an impervious pad with secondary containments for all refueling operations.

- h) Provide specific language on the third-party independent inspector requirement per the Department of Energy and Environmental Protection General Permit.

## Response

The following are excerpts from the latest draft general permit, including Appendix I – Stormwater Management at Solar Arrays Construction Projects, that is currently under consideration by DEEP.

Section 5 (b)(4)(A) - Plan Implementation Inspections states:

Prior to commencement of each phase of the construction activity on the site, the permittee shall contact the designing qualified professional and, for solar arrays subject to Appendix I, the appropriate District to inspect the site. The site shall be inspected at least once within the first thirty (30) days of construction activity and no more than three times within the first ninety (90) days of construction activity to confirm compliance with the general permit and proper initial implementation of all control measures designated in the Plan for the initial phase of construction.

Section 5 (b)(4)(B)(iv) states:

Inspectors from the DEEP and the appropriate soil and water conservation district may inspect the site for compliance with this general permit at any time construction activities are ongoing and upon completion of construction activities to verify the final stabilization of the site and/or the installation of post-construction stormwater management measures pursuant to Section 6(a).

In addition, Appendix I to the General Permit includes the following language regarding inspections.

(1)(a) The Permittee shall retain the designing qualified professional and a qualified inspector (as those terms are defined in Section (2)) to conduct the Plan Implementation and Routine inspections pursuant to Section 5(b)(4), provided



that any qualified inspector shall be chosen by the designing qualified professional. Unless otherwise approved in writing by the Commissioner, such designing qualified professional and qualified inspector shall be retained for the duration of the construction project until the Notice of Termination has been submitted to the Commissioner and determined to be acceptable, as described below in paragraph (8) below.

- (b) Plan Implementation Inspections: Notwithstanding the schedule of inspections set forth in Section 5(b)(4) of the general permit, the Permittee shall ensure that the designing qualified professional and the qualified inspector chosen by such designing qualified professional conduct Plan Implementation Inspections beginning with the commencement of construction activities and through each phase of construction until all perimeter controls, initial erosion and sediment control measures, and construction stormwater traps, basins, swales, and other control measures associated with each phase have been installed and stabilized. In addition, once all of these measures have been installed and stabilized, the Permittee shall ensure that the designing qualified professional certifies in writing to their completion in the applicable inspection report in accordance with the Plan. The Permittee shall ensure that the designing qualified professional conducts a Plan Implementation Inspection of the site at least once a month and the qualified inspector chosen by such designing qualified professional conducts such inspection at least once a week. (The qualified inspector does not need to conduct a weekly inspection during the week the qualified designing professional conducts a monthly inspection).

- (c) Routine Inspections: Following the completion of the Plan Implementation Inspections (i.e., after the designing qualified professional has certified that stormwater control measures have been installed and stabilized) and notwithstanding the requirements of Section 5(b)(4)(B) of the general permit, either the designing qualified professional or the qualified inspector shall conduct weekly Routine Inspections pursuant to Section 5(b)(4)(B) of the general permit, provided that the designing qualified professional shall inspect the site at least once a month, or more frequently if necessary, to confirm that the site is in compliance with the general permit and determine if it is necessary to install, modify, maintain, or repair such controls and/or measures to improve the quality of stormwater discharges.
- (d) In addition to any requirements of Section 5(b)(4)(B) of the general permit, the designing qualified professional shall seal and certify to the truth and accuracy of each inspection undertaken pursuant to this section regardless of whether the inspection is performed by such designing qualified professional or the qualified inspector. On or before five (5) days after the completion of each inspection, the Permittee shall ensure that certified inspection reports of all inspections undertaken pursuant to this section are provided by the designing qualified professional directly to the Permittee and shall ensure that a copy of the certified inspection report of each such inspection is provided to the appropriate District personnel and submitted electronically to the Department via email at DEEP.stormwaterstaff@ct.gov.

i) Provide percent loss of energy production based on the shift of solar panels that are proposed to face in a more easterly direction.

Response

At the November 17, 2020 evidentiary hearing, the Petitioner's witness Matthew Gabor testified that he anticipated an approximately 5% reduction in energy production due directly to the reorientation of the solar panels. After further consideration it was determined that the reduction in energy production is approximately 8%.

While lowering the energy yield is not preferred, the reorientation of the solar panel and other associated modifications made during the early planning phases of this Project allowed the Petitioner to: 1) reduce the amount of tree clearing on site; 2) avoid development on the steepest slopes within the Project Site; 3) allow filter socks to be installed across (parallel to) site contours and to stay in place throughout construction and beyond, to protect from cross grade construction and/or maintenance traffic and reduce the potential for soil erosion; 4) enable more sunlight to reach areas beneath the solar modules, especially in the afternoon, allowing for the growth and vitality of the site stabilizing meadow vegetation; and 5) reduce inter-row shading because every row of solar panels are approximately 2.8 feet higher than the one in front of it.

CERTIFICATE OF SERVICE

I hereby certify that on the 8<sup>th</sup> day of December 2020, a copy of the foregoing was sent,  
via electronic mail, to:

Jenny Nicolas, Development Project Manager  
Gaylord Mountain Solar Project 2019, LLC  
200 Harborside Drive, Suite 200  
Schenectady, NY 12305  
jenny.nicolas@dsdrenewables.com

Bruce L. McDermott, Esq.  
Murtha Cullina LLP  
265 Church Street  
New Haven, CT 06510  
bmcdermott@murthalaw.com

John Hudak  
Regional Water Authority  
90 Sargent Drive  
New Haven, CT 06511  
jhudak@rwater.com

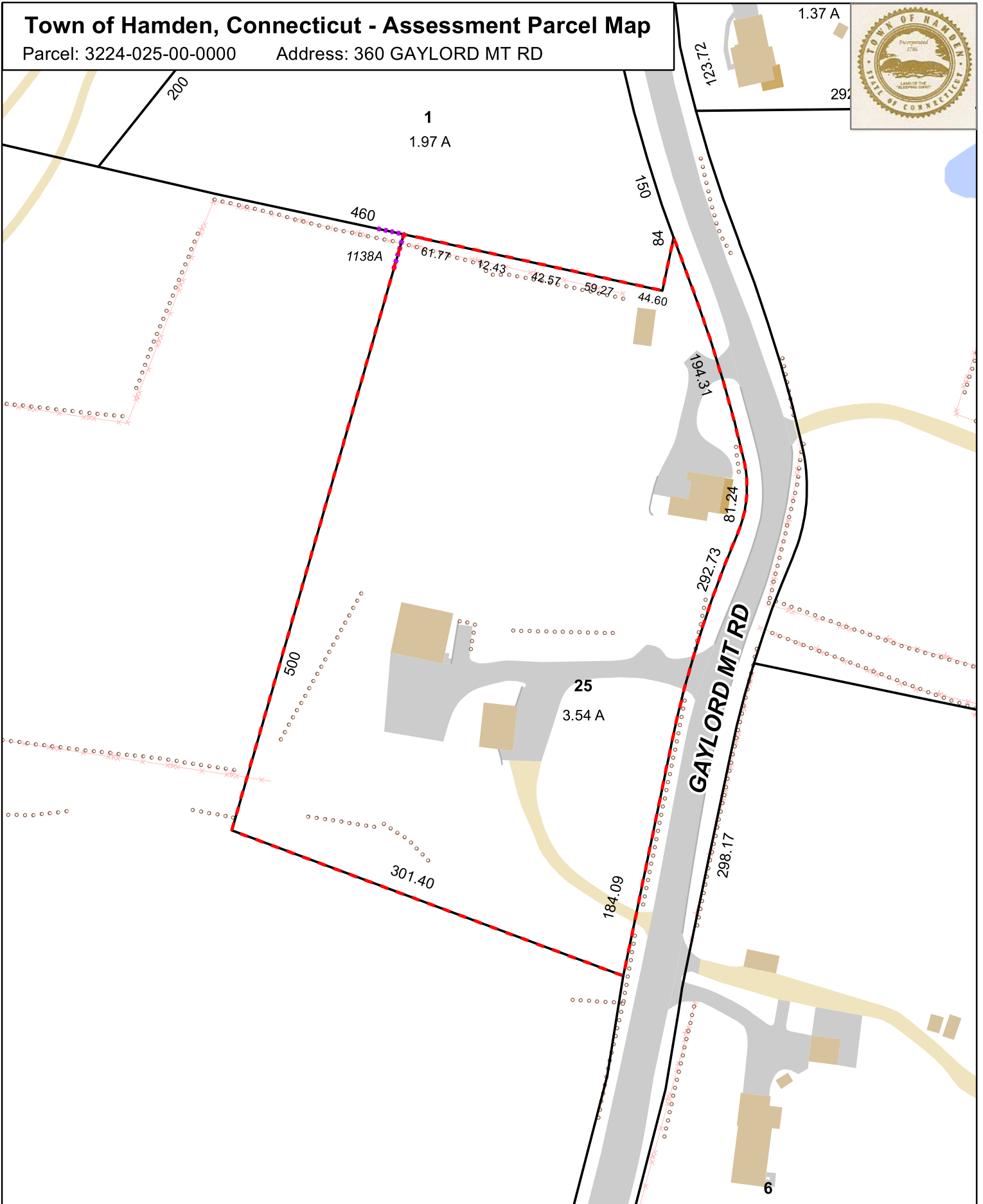
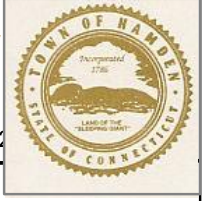
A handwritten signature in black ink, appearing to read 'Kenneth C. Baldwin', written over a horizontal line.

Kenneth C. Baldwin

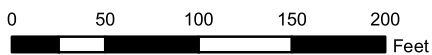
# Town of Hamden, Connecticut - Assessment Parcel Map

Parcel: 3224-025-00-0000

Address: 360 GAYLORD MT RD



Approximate Scale: 1 inch = 100 feet



Map Produced: October 2020

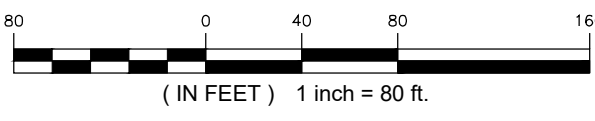
Disclaimer: This map is for informational purposes only.  
All information is subject to verification by any user.  
The Town of Hamden and its mapping contractors assume  
no legal responsibility for the information contained herein.





SLOPE ANALYSIS LEGEND	
SLOPE RANGE	COLOR
> 15%	Orange

1  
EXH-1A  
**SLOPE EXHIBIT**  
SCALE : 1" = 80'-0"



GAYLORD MOUNTAIN  
SOLAR PROJECT 2019, LLC  
  
200 HARBORSIDE DRIVE  
SUITE 200  
SCHENECTADY, NY 12305



ALL-POINTS  
TECHNOLOGY CORPORATION

567 VAUXHAUL STREET EXTENSION - SUITE 311  
WATERFORD, CT 06385    PHONE: (860)-663-1697  
WWW.ALLPOINTSTECH.COM    FAX: (860)-663-0935

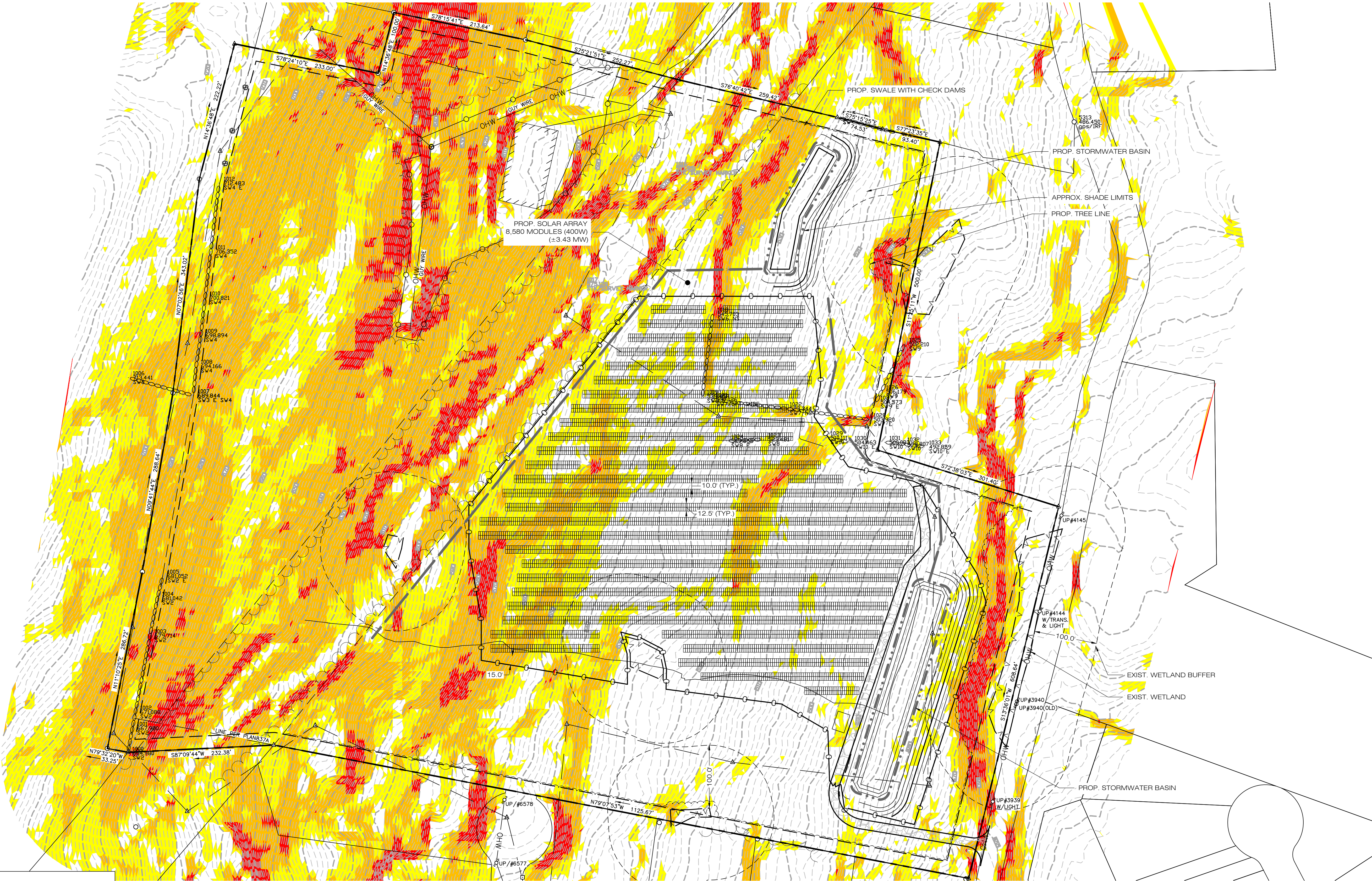
EXHIBIT		
NO	DATE	REVISION
0	11/30/20	FOR REVIEW: BJP
1		
2		
3		
4		
5		
6		

DESIGN PROFESSIONAL OF RECORD  
PROF: BRADLEY J. PARSONS, P.E.  
COMP: ALL-POINTS TECHNOLOGY CORPORATION  
ADD: 567 VAUXHAUL STREET  
EXTENSION - SUITE 311  
WATERFORD, CT 06385  
  
OWNER: VERTICAL BRIDGE LANCO LLC  
ADDRESS: 750 PARK OF COMMERCE DR  
S200  
BOCA RATON, FL 33487

HAMDEN SOLAR  
SITE 360 GAYLORD MOUNTAIN RD  
ADDRESS: HAMDEN, CT  
APT FILING NUMBER: CT619100  
DATE: 11/30/20  
DRAWN BY: JT  
CHECKED BY: BJP

SHEET TITLE:  
**SLOPE EXHIBIT**  
  
SHEET NUMBER:  
**EXH-1A**



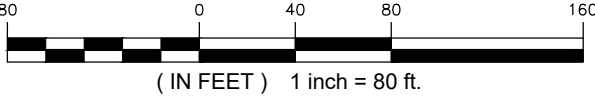


DESIGN TABLE:

MODULE MODEL - Q PEAK DUO L-G5.3 (400W)
PROP. TILT - 20 DEGREES
INTER-ROW SPACING - 10 FEET
MODULE STRINGING - 26 MODULES/STRING
DC OUTPUT - 3.43 MW
TOTAL NUMBER OF MODULES - 8,580 MODULES

Minimum Slope	Maximum Slope	Scheme: Reds
15.0000%	20.0000%	
20.0000%	30.0000%	
30.0000%	9411.2857%	

1  
CP-2  
**CONCEPT PLAN**  
SCALE: 1" = 80'-0"



DISTRIBUTED SOLAR  
OPERATIONS, LLC

200 HARBORSIDE DRIVE  
SUITE 200  
SCHENECTADY, NY 12305



567 VAUXHAUL STREET EXTENSION - SUITE 311  
WATERFORD, CT 06385 PHONE: (860)-863-1697  
WWW.ALLPOINTSTECH.COM FAX: (860)-663-0935

CONCEPT

NO	DATE	REVISION
0	03/18/20	FOR REVIEW: BJP
1	03/23/20	FOR REVIEW: BJP
2	03/26/20	FOR REVIEW: BJP
3		
4		
5		
6		

DESIGN PROFESSIONAL OF RECORD

PROF: BRADLEY J. PARSONS P.E.  
COMP: ALL-POINTS TECHNOLOGY  
CORPORATION  
ADD: 567 VAUXHAUL STREET  
EXTENSION - SUITE 311  
WATERFORD, CT 06385

OWNER: ---

ADDRESS: ---

HAMDEN SOLAR

SITE 360 GAYLORD MOUNTAIN RD  
ADDRESS: HAMDEN, CT

APT FILING NUMBER: CT619100

DATE: 03/18/20 DRAWN BY: JT  
CHECKED BY: BJP

SHEET TITLE:  
**CONCEPT PLAN  
WITH SLOPES**

SHEET NUMBER:  
**CP-2**



DISTRIBUTED SOLAR  
OPERATIONS, LLC

200 HARBORSIDE DRIVE  
SUITE 200  
SCHENECTADY, NY 12305

ALL-POINTS  
TECHNOLOGY CORPORATION

567 VAUXHAUL STREET EXTENSION - SUITE 311  
WATERFORD, CT 06385    PHONE: (860)-863-1937  
WWW.ALLPOINTSTECH.COM    FAX: (860)-863-0935

CONCEPT		
NO	DATE	REVISION
0	03/18/20	FOR REVIEW: BJP
1	03/23/20	FOR REVIEW: BJP
2	03/26/20	FOR REVIEW: BJP
3	04/03/20	FOR REVIEW: BJP
4	04/21/20	FOR REVIEW: BJP
5	04/28/20	FOR REVIEW: BJP
6		

DESIGN PROFESSIONAL OF RECORD

PROF: BRADLEY J. PARSONS P.E.  
COMP: ALL-POINTS TECHNOLOGY CORPORATION  
ADD: 567 VAUXHAUL STREET  
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WATERFORD, CT 06385

OWNER: VERTICAL BRIDGE LANCO LLC

ADDRESS: 750 PARK OF COMMERCE DR  
S200  
BOCA RATON, FL 33487

HAMDEN SOLAR

SITE 360 GAYLORD MOUNTAIN RD  
ADDRESS: HAMDEN, CT

APT FILING NUMBER: CT619100

DRAWN BY: JT

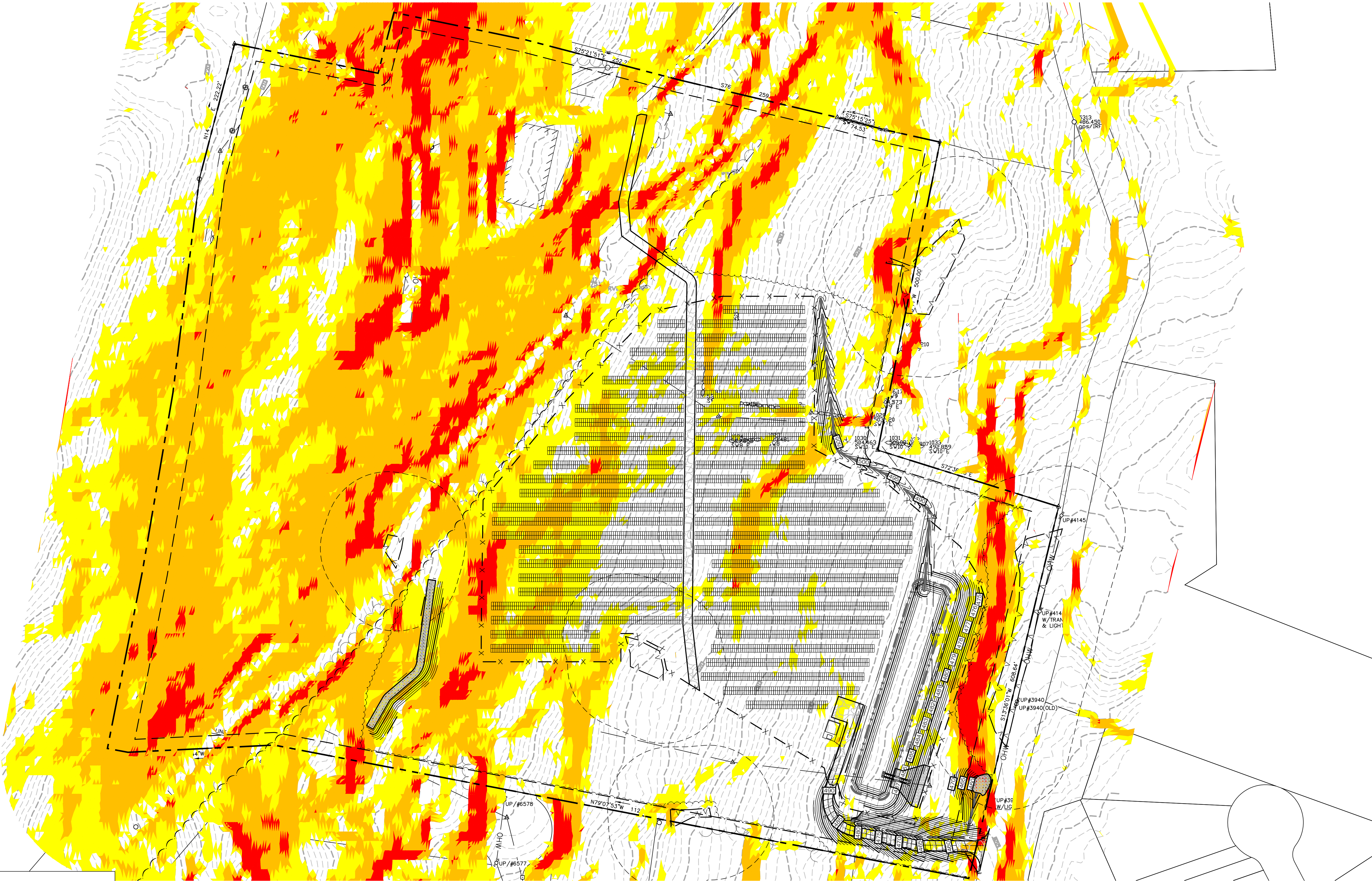
DATE: 03/18/20    CHECKED BY: BJP

SHEET TITLE:


CONCEPT PLAN  
WITH SLOPES

SHEET NUMBER:

CP-2



DESIGN TABLE:	
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1  
CP-2  
**CONCEPT PLAN**  
SCALE: 1" = 80'-0"

