IN RE: PETITION FOR SPECIAL EXCEPTION (15009 Hanover Pike) 4th Election District 3rd Council District Shafi Javid MD *Legal Owner* ICFTS MD Solar, LLC *Lessee* Petitioners	*	BEFORE THE OFFICE OF ADMINISTRATIVE HEARINGS FOR BALTIMORE COUNTY Case No. 2019-0141-X

* * * * * * * * * * *

OPINION AND ORDER

This matter comes before the Office of Administrative Hearings (OAH) for consideration of a Petition for Special Exception filed on behalf of Shafi Javid, MD, legal owner and ICFTS MD Solar, LLC, lessee ("Petitioners"). The special exception petition was filed pursuant to Sections 4F-101 *et. seq.* of the Baltimore County Zoning Regulations ("BCZR") to approve a solar facility.

Jodi Hunt, Kerri Neary, Stephanie Sienkowski and Mitch Kellman appeared in support of the petition. Timothy M. Kotroco, Esq. represented the Petitioners. Several neighbors attended the hearing and opposed the request. Substantive Zoning Advisory Committee ("ZAC") comments were received from the Department of Environmental Protection and Sustainability ("DEPS"), the Bureau of Development Plans Review ("DPR"), the State Highway Administration ("SHA") and the Department of Planning ("DOP").

The subject property is 41.38 acres in size and split-zoned RC-2 and BM-CR. The property is unimproved and has been used for agricultural purposes. Farming will continue on the portions of the property outside of the fenced solar panel enclosures shown on the site plan. Pets.' Ex. 1A.

Special Exception

Under Maryland law, a special exception use enjoys a presumption that it is in the interest of the general welfare, and therefore, valid. *Schultz v. Pritts*, 291 Md. 1 (1981). The *Schultz* standard was revisited in *Attar v. DMS Tollgate, LLC*, 451 Md. 272 (2017), where the court of appeals discussed the nature of the evidentiary presumption in special exception cases. The court again emphasized a special exception is properly denied only when there are facts and circumstances showing that the adverse impacts of the use at the particular location in question would be above and beyond those inherently associated with the special exception use.

Counsel proffered the testimony of Mitchell Kellman and Jodi Hunt, and resumes were submitted for both witnesses. Pets.' Ex. Nos. 2 & 3. Petitioners described the site plan and the proposed solar facility, which would be situated on approximately 12 acres of the 41.38 acre parcel. The solar panels will be less than 7 ft. in height and will rotate to track the movement of the sun. Petitioners noted the SHA has already constructed a storm water management facility on the site as well as roadways to access same, which would also be used by Petitioners to access the proposed facility. Both witnesses opined Petitioners satisfied the requirements set forth at BCZR §502.1 and that the solar facility would not have a greater detrimental impact at this location as opposed to any other RC-2 parcel in the vicinity.

Among other issues, citizens at the hearing expressed concern with whether the solar facility would have a detrimental impact upon sensitive trout streams or other environmental resources in the vicinity. Ms. Hunt testified there are no toxic substances used in the solar panels, racking systems or inverters. She noted the transformer at the facility would use either vegetable oil or mineral oil, not PCBs or other toxic chemicals.

Petitioners conceded the panels would get hot when exposed to the sun. Although they could not provide a precise figure for the operating temperature of a solar panel, they noted the panels would get no hotter than a car windshield or other glass object exposed to the sun. Neighbors worried the heated panels would elevate the temperature of storm water runoff, which could harm fish and other aquatic creatures. While this is a valid concern, it is one that is addressed by proper storm water management (SWM). Petitioners submitted a guidance document provided by the Maryland Department of the Environment (Ex. 10) which discusses how SWM systems for solar facilities should be designed. Prior to issuance of permits DEPS will review the plan to verify Petitioners have complied with all environmental regulations. In addition, both the Circuit Court for Baltimore County and the Baltimore County Board of Appeals have held that storm water management and forest buffer/forest conservation plans are the means chosen by the State of Maryland and Baltimore County to address and prevent adverse impacts upon streams and other environmental features. *See, e.g., In Re: Burns Property*, Case No. 03-C-03-13020; *In Re: Smyth Property*, Case No. CBA-03-152.

THEREFORE, IT IS ORDERED this 12th day of **March, 2019**, by this Administrative Law Judge, that the Petition for Special Exception for a solar facility be and is hereby GRANTED.

The relief granted herein shall be subject to the following:

1. Petitioners may apply for necessary permits and/or licenses upon receipt of this Order. However, Petitioners are hereby made aware that proceeding at this time is at their own risk until 30 days from the date hereof, during which time an appeal can be filed by any party. If for whatever reason this Order is reversed, Petitioners would be required to return the subject property to its original condition.

2. Petitioners must comply with the ZAC comments submitted by DEPS, DOP & DPR, copies of which are attached hereto and made a part hereof.

3. No trees, other than those in poor condition or which present a hazard to public safety, may be removed from the site.

4. No barbed wire fencing or lighting shall be permitted in connection with the solar facility.

Any appeal of this decision must be made within thirty (30) days of the date of this Order.

JOHN E. BEVERUNGEN
Administrative Law Judge
for Baltimore County

JEB/sln

IN RE: PETITION FOR SPECIAL EXCEPTION (15009 Hanover Pike) 4th Election District 3rd Council District Shafi Javid MD *Legal Owner* ICFTS MD Solar, LLC *Lessee* Petitioners	*	BEFORE THE OFFICE OF ADMINISTRATIVE HEARINGS FOR BALTIMORE COUNTY Case No. 2019-0141-X

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ORDER RECEIVED FOR FILING
Date 3/12/19
By

Special Exception

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ORDER RECEIVED FOR FILING
Date 3/12/19
By

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ORDER RECEIVED FOR FILING
Date 3/12/19
By Den

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JOHN E. BEVERUNGEN
Administrative Law Judge
for Baltimore County

JEB/sln

ORDER RECEIVED FOR FILING
Date 3/12/19
By sln

15009

PETITION FOR ZONING HEARING(S)

To be filed with the Department of Permits, Approvals and Inspections

To the Office of Administrative Law of Baltimore County for the property located at:

Address Hanover Pike, Upperco, MD 21155 **which is presently zoned** RC2 and BM CR

Deed References: 06123/ 00683 10 Digit Tax Account # 0 4 0 8 0 6 7 0 4 0

Property Owner(s) Printed Name(s) Shafi Javid MD

(SELECT THE HEARING(S) BY MARKING X AT THE APPROPRIATE SELECTION AND PRINT OR TYPE THE PETITION REQUEST)

The undersigned legal owner(s) of the property situate in Baltimore County and which is described in the description and plan attached hereto and made a part hereof, hereby petition for:

1.____ **a Special Hearing** under Section 500.7 of the Zoning Regulations of Baltimore County, to determine whether or not the Zoning Commissioner should approve

2. X **a Special Exception** under the Zoning Regulations of Baltimore County to use the herein described property for The Upperco 2,000 kilowatt (kW) alternating current (AC) Photovoltaic (PV) Array. The proposed PV Solar Facility would be situated on approximately 12 acres of a larger 39.9-acre parcel of privately owned land.

3.____ **a Variance** from Section(s)

of the zoning regulations of Baltimore County, to the zoning law of Baltimore County, for the following reasons: **(Indicate below your hardship or practical difficulty or indicate below "TO BE PRESENTED AT HEARING". If you need additional space, you may add an attachment to this petition)**

Property is to be posted and advertised as prescribed by the zoning regulations.
I, or we, agree to pay expenses of above petition(s), advertising, posting, etc. and further agree to and are to be bounded by the zoning regulations and restrictions of Baltimore County adopted pursuant to the zoning law for Baltimore County.
Legal Owner(s) Affirmation: I / we do so solemnly declare and affirm, under the penalties of perjury, that I / We are the legal owner(s) of the property which is the subject of this / these Petition(s).

Contract Purchaser/Lessee:

Kerri Neary
Name- Type or Print

Signature

1400 Wilson Blvd., Suite 800 Arlington Virginia
Mailing Address City State

22201 / 484-554-3453 / kneary@srenergy.com
Zip Code Telephone # Email Address

Legal Owners (Petitioners):

Shafi Javid MD /
Name #1 – Type or Print Name #2 – Type or Print

M.J. Shafi /
Signature #1 Signature # 2

Mailing Address City State

/ / omer@shafi.com
Zip Code Telephone # Email Address

Attorney for Petitioner:

Name- Type or Print

Signature

Mailing Address City State

/ /
Zip Code Telephone # Email Address

ORDER RECEIVED FOR FILING
Date 3/12/19
By SLO

Representative to be contacted:

Jodi Hunt
Name – Type or Print

Jodi Hunt
Signature

1200 Scottsville Road, Building C, Suite 181, Rochester, NY
Mailing Address City State

14624 / 585-417-4007 / jodi.hunt@tetratech.com
Zip Code Telephone # Email Address

CASE NUMBER 2019-0141-X **Filing Date** 10/30/18 **Do Not Schedule Dates:** _____ **Reviewer** RD

REV. 10/4/11

PETITION FOR ZONING HEARING(S)

15009

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Legal Owner(s) Affirmation: I / we do so solemnly declare and affirm, under the penalties of perjury, that I / We are the legal owner(s) of the property which is the subject of this / these Petition(s).

Contract Purchaser/Lessee:

Kerri Neary
Name- Type or Print

Kerri Neary
Signature

1400 Wilson Blvd., Suite 800 Arlington Virginia
Mailing Address City State

22201 / 484-554-3453 / kneary@srenergy.com
Zip Code Telephone # Email Address

Legal Owners (Petitioners):

Shafi Javid MD / _____
Name #1 – Type or Print Name #2 – Type or Print

_____ / _____
Signature #1 Signature # 2

_____
Mailing Address City State

_____ / _____ / omer@shafi.com
Zip Code Telephone # Email Address

Attorney for Petitioner:

_____
Name- Type or Print

_____
Signature

_____
Mailing Address City State

_____ / _____ / _____
Zip Code Telephone # Email Address

ORDER RECEIVED FOR FILING
Date 3/2/19
By

Representative to be contacted:

Jodi Hunt
Name – Type or Print

Signature

1200 Scottsville Road, Building C, Suite 181, Rochester, NY
Mailing Address City State

14624 / 585-417-4007 / jodi.hunt@tetratech.com
Zip Code Telephone # Email Address

CASE NUMBER 2019-0141-X **Filing Date** 10/30/18 **Do Not Schedule Dates:** _____ **Reviewer** BD

REV. 10/4/11

2.0 SITE DESCRIPTION

The Site, located on Hanover Pike, Maryland, consists of one tax parcel assigned Tax PIN number 0408067040, totaling an area of approximately 39.9 acres. According to Baltimore County Zoning Maps, the majority of the parcel, approximately 34.09 acres, is zoned RC-2 for agricultural use. Approximately 7.29 acres of the parcel on the west side are zoned BM-CR for Business Major/Large Scale Commercial use. According to Baltimore County Tax Information, the parcel is located within the unincorporated community of Upperco, Maryland. The Site is bounded by residential properties to the north; Maryland State Highway 30 (Hanover Pike), commercial properties and rural residential properties to the west; several farm fields and commercial/residential properties to the east and south; and an agricultural field followed by Old Hanover Road to the east. The Site is located within the Piney Run Rural Legacy Area, but the subject tax parcel does not have a rural legacy area deed restriction limiting development of the property. A portion of the Site is utilized for storm water management consisting of a storm water management pond and associated outlet and control structures constructed and maintained by the Maryland Department of Transportation. The proposed solar project will not disturb this storm water management structures.

A map showing the location of the Site and adjacent land use is presented in *Attachment A;* A Site plan showing the physical layout is presented in *Attachment B;* A copy of the Lease Agreement is presented in *Attachment C.*

4th Election District
3rd Councilmanic District

ZONING PROPERTY DESCRIPTION FOR HANOVER PIKE, UPPERCO, MD

Western Portion

Beginning at a point, 159 feet on the east side of Maryland State Road 30 (Hanover Pike), which is 40 feet wide at the distance of 340 feet north of the centerline of the nearest improved intersecting street, 5th Avenue which is 15 feet wide. Thence the following courses and distances: (1st Point of Call – "POC") N77 10' 59" E. 67.62', (2nd POC) N90 00' 00" E. 50.70', (3rd POC) S1 18' 57" E. 79.35', (4th POC) S37 58' 22" E. 33.25', (5th POC) S0 00' 00" E. 471.02', (6th POC) S79 04' 24" W. 150.31', (7th POC) N90 00' 00" W. 46.82', (8th POC) N0 00' 00" E. 305.01', (9th POC) N82 18' 14" E. 53.52', (10th POC) N88 18' 48" E. 2.47', (11th POC) N0 00' 00" 277.81', back to the point of beginning as described, containing 2.2 acres. *This does not include a portion of the access road.* Located in the 4th Election District and 3rd Council District.

Eastern Portion

Beginning at a point, 711 feet on the east side of Maryland State Road 30 (Hanover Pike), which is 40 feet wide at the distance of 661 feet north of the centerline of the nearest improved intersecting street, 5th Avenue which is 15 feet wide. Thence the following courses and distances: (1st Point of Call – "POC") S89 34' 36" E. 50.83', (2nd POC) S89 23' 13" E. 58.93', (3rd POC) S7 13' 07" E. 234.99', (4th POC) S11 21' 04" E. 93.99', (5th POC) S9 45' 10" E. 109.21', (6th POC) S12 38' 48" E. 169.00', (7th POC) S5 50' 10" E. 181.94', (8th POC) S11 25' 36" E. 93.38', (9th POC) S9 41' 16" E. 182.43', (10th POC) S11 11' 35" E. 127.76', (11th POC) S0 00' 00" E. 219.90', (12th POC) N90 00' 00" W. 434.81', (13th POC) N0 03' 14" W. 208.56', (14th POC) N29 40' 28" E. 76.25', (15th POC) N0 30' 31" W. 67.51', (16th POC) N0 00' 00" E. 74.50', (17th POC) N22 13' 31" E. 48.78', (18th POC) N0 00' 00" E. 116.03', (19th POC) N0 00' 00" E. 92.77', (20th POC) S89 46' 04" W. 73.79', (21st POC) N0 00' 00" E. 55.36', (22nd POC) N26 46' 21" W. 41.07', (23rd POC) N0 00' 00" E. 307.53', (24th POC) N59 52' 09" E. 157.02', (25th POC) N56 48' 54" E. 36.71', (26th POC) N0 00' 00" W. 173.62', (27th POC) N0 37' 07" W. 53.86', back to the point of beginning as described, containing 10.24 acres. *This does not include a portion of the access road.* Located in the 4th Election District and 3rd Council District.

Property descriptions taken from publicly available mapping. Final property descriptions to be determined by a Maryland Professional Land Surveyor and field verified.

11/1/18

Professional certification. I hereby 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 Maryland, license no. 41078, expiration date: 9/14/19.

UPPERCO SOLAR

Hanover Pike
Upperco, MD 21155

Summit Ridge ENERGY

ICFTS MD SOLAR, LLC
1401 WILSON BLVD. SUITE 800
ARLINGTON, VA. 22209

Project Phase:
Discretionary Permitting

TETRA TECH

Item # 0141

JB 3-8-19 1:30 pm

Debra Wiley

From: Larry Pilson <lpilson@hotmail.com>
Sent: Monday, March 04, 2019 5:31 PM
To: Administrative Hearings
Subject: Fw: 2019-0141-X 15009 Hanover Pike Recertification
Attachments: Upperco Solar 2nd Recert.pdf; DSC_0789.JPG; DSC_0790.JPG

From: Larry Pilson
Sent: Sunday, March 3, 2019 4:31 PM
To: Kristen L Lewis; Stephanie Sienkowski
Subject: 2019-0141-X 15009 Hanover Pike Recertification

RECEIVED
MAR 0 5 2019
OFFICE OF
ADMINISTRATIVE HEARINGS

RECEIVED
MAR 0 5 2019
OFFICE OF
ADMINISTRATIVE HEARINGS

CERTIFICATE OF POSTING

Date: 3-3-19

RE: Case Number: 2019-0141-X RECERT

Petitioner/Developer: Neary

Date of Hearing/Closing: 3-8-19 1:30 PM

This is to certify under the penalties of perjury that the necessary sign(s) required by law were posted conspicuously on the property located at 15009 Hanover Pike

The signs(s) were posted on RECERT 3-3-19
(Month, Day, Year)

J Lawrence Pilson
(Signature of Sign Poster)

J. LAWRENCE PILSON
(Printed Name of Sign Poster)

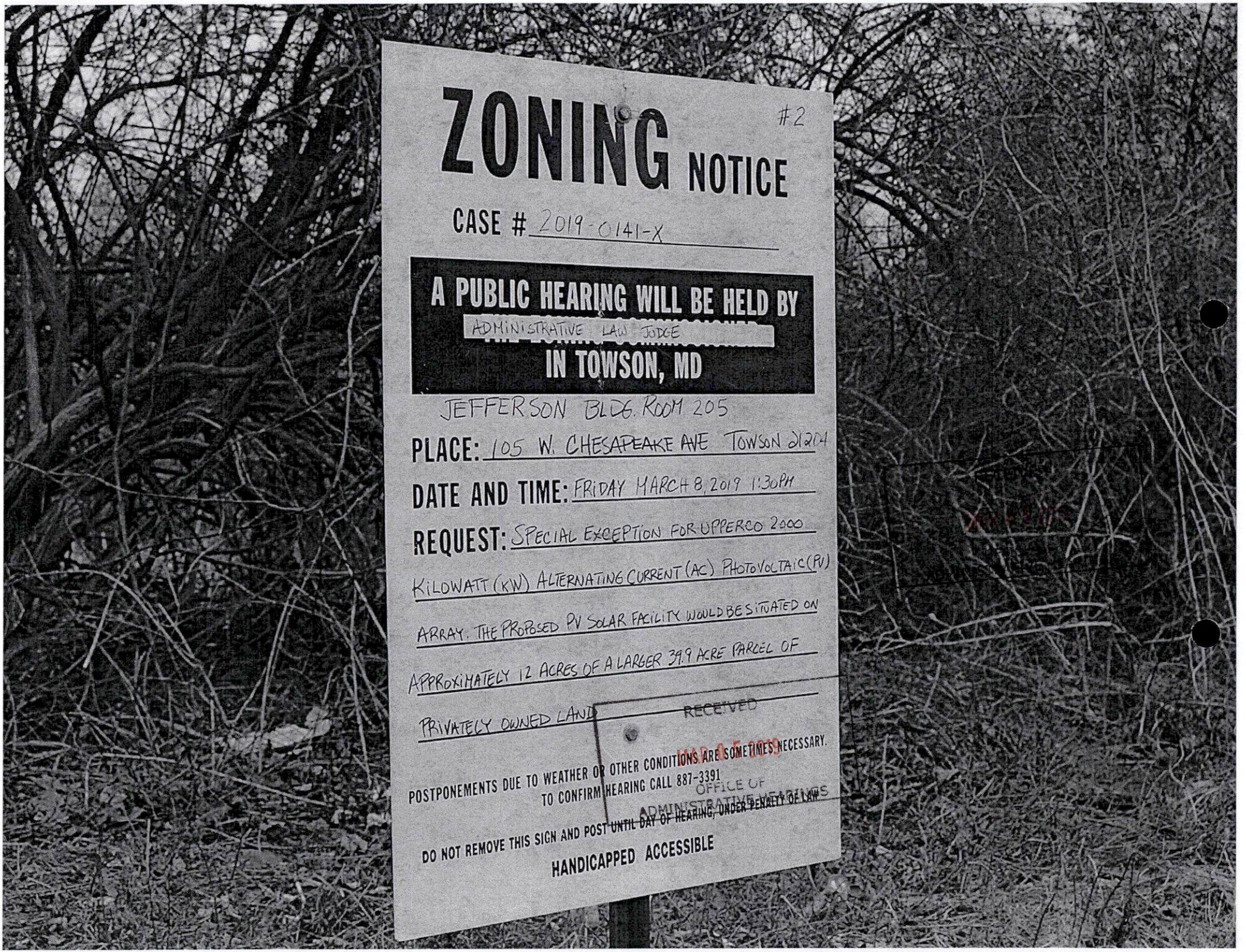
ATTACH PHOTGRAPH

1015 Old Barn Road
(Street Address of Sign Poster)

Parkton, MD 21120
(City, State, Zip Code of Sign Poster)

410-343-1443
(Telephone Number of Sign Poster)

#1
ZONING NOTICE
CASE # 2019-0141-X
A PUBLIC HEARING WILL BE HELD BY
ADMINISTRATIVE LAW JUDGE
IN TOWSON, MD
JEFFERSON BLDG, ROOM 205
PLACE: 105 W. CHESAPEAKE AVE, TOWSON, MD 21204
DATE AND TIME: FRIDAY MARCH 8, 2019 1:30PM
REQUEST: SPECIAL EXCEPTION FOR UPPERCO 2000
KILOWATT (KW) ALTERNATING CURRENT (AC) PHOTO VOL-
TAIC (PV) ARRAY. THE PROPSED PV SOLAR FACILITY
WOULD BE SITUATED ON APPROXIMATELY 12 ACRES OF A
LARGER 39.9 ACRE PARCEL OF PRIVATELY OWNED LAND
POSTPONEMENTS DUE TO WEATHER OR OTHER CONDITIONS ARE SOMETIMES NECESSARY.
TO CONFIRM HEARING CALL 887-3391
DO NOT REMOVE THIS SIGN AND POST UNTIL DAY OF HEARING, UNDER PENALTY OF LAW
HANDICAPPED ACCESSIBLE
RECEIVED
MAR 05 2019
ADMINISTRATIVE HEARINGS


ZONING NOTICE
#2
CASE # 2019-0141-X
A PUBLIC HEARING WILL BE HELD BY
ADMINISTRATIVE LAW JUDGE
IN TOWSON, MD
JEFFERSON BLDG. ROOM 205
PLACE: 105 W. CHESAPEAKE AVE TOWSON 21204
DATE AND TIME: FRIDAY MARCH 8, 2019 1:30PM
REQUEST: SPECIAL EXCEPTION FOR UPPERCO 2000
KILOWATT (KW) ALTERNATING CURRENT (AC) PHOTOVOLTAIC (PV)
ARRAY. THE PROPOSED PV SOLAR FACILITY WOULD BE SITUATED ON
APPROXIMATELY 12 ACRES OF A LARGER 39.9 ACRE PARCEL OF
PRIVATELY OWNED LAND
RECEIVED
POSTPONEMENTS DUE TO WEATHER OR OTHER CONDITIONS ARE SOMETIMES NECESSARY.
TO CONFIRM HEARING CALL 887-3391
OFFICE OF
ADMINISTRATIVE HEARINGS
DO NOT REMOVE THIS SIGN AND POST UNTIL DAY OF HEARING, UNDER PENALTY OF LAW
HANDICAPPED ACCESSIBLE

Sherry Nuffer

From: Kristen L Lewis
Sent: Tuesday, March 05, 2019 2:09 PM
To: Sherry Nuffer
Subject: FW: 2019-0141-X 15009 Hanover Pike Recertification
Attachments: Upperco Solar 2nd Recert.pdf; DSC_0789.JPG; DSC_0790.JPG

Hi Sherry,

There are the recerts for this week's hearings. Thanks!

Kristen Lewis
PAI – Zoning Review
410-887-3391

From: Larry Pilson [mailto:lpilson@hotmail.com]
Sent: Sunday, March 03, 2019 4:31 PM
To: Kristen L Lewis <klewis@baltimorecountymd.gov>; Stephanie Sienkowski <ssienkowski@srenergy.com>
Subject: 2019-0141-X 15009 Hanover Pike Recertification

RECEIVED
MAR 05 2019
OFFICE OF
ADMINISTRATIVE HEARINGS

CERTIFICATE OF POSTING

Date: 3-3-19

RE: Case Number: 2019-0141-X RECERT

Petitioner/Developer: Neary

Date of Hearing/Closing: 3-8-19 1:30 PM

This is to certify under the penalties of perjury that the necessary sign(s) required by law were posted conspicuously on the property located at 15009 Hanover Pike

The signs(s) were posted on RECERT 3-3-19
(Month, Day, Year)

J. Lawrence Pilson
(Signature of Sign Poster)

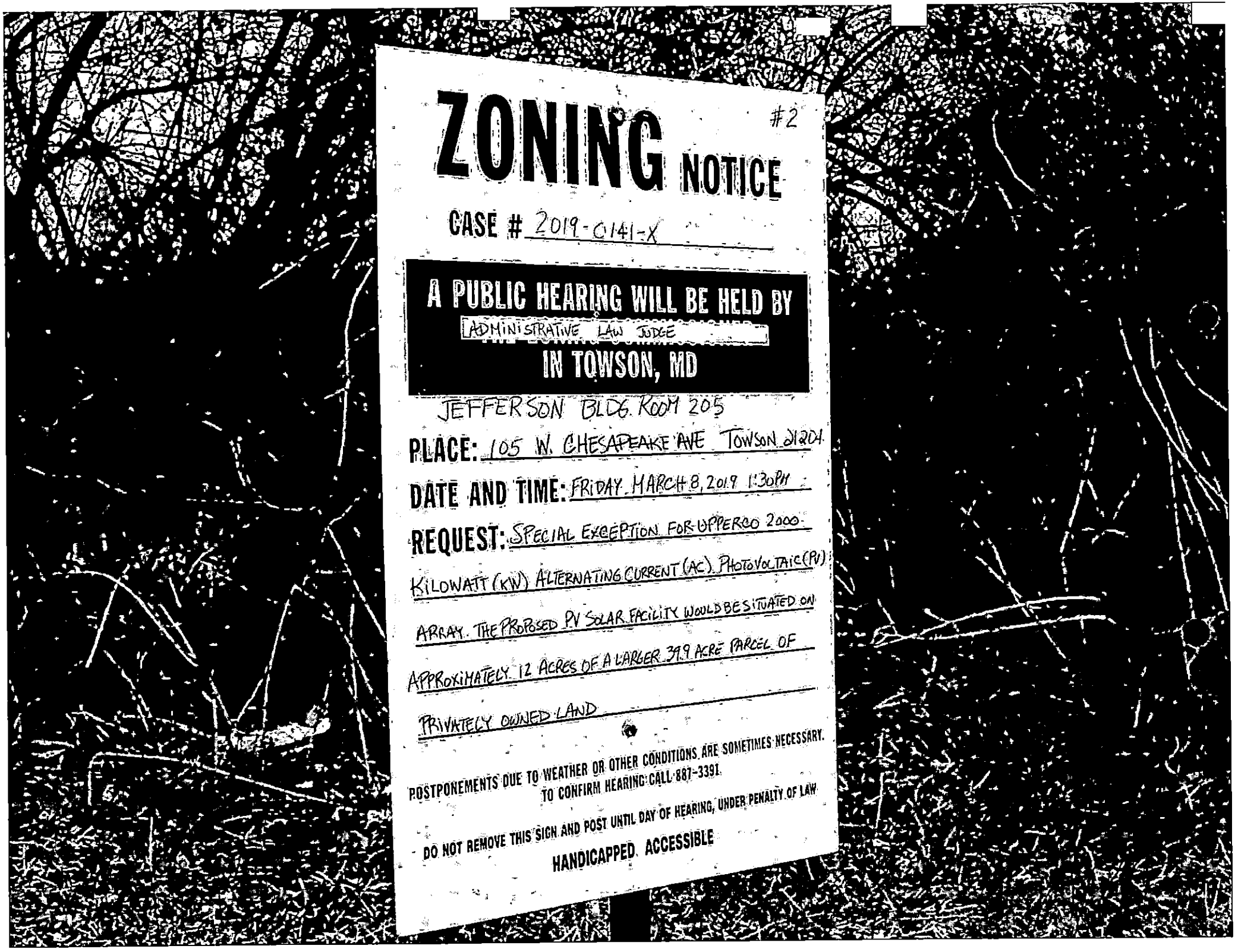
J. LAWRENCE PILSON
(Printed Name of Sign Poster)

ATTACH PHOTGRAPH

1015 Old Barn Road
(Street Address of Sign Poster)

Parkton, MD 21120
(City, State, Zip Code of Sign Poster)

410-343-1443
(Telephone Number of Sign Poster)



ZONING NOTICE

#2

CASE # 2019-0141-X

A PUBLIC HEARING WILL BE HELD BY
ADMINISTRATIVE LAW JUDGE
IN TOWSON, MD

JEFFERSON BLDG. ROOM 205

PLACE: 105 W. CHESAPEAKE AVE TOWSON 21204

DATE AND TIME: FRIDAY, MARCH 8, 2019 1:30PM

REQUEST: SPECIAL EXCEPTION FOR UPPERCO 2000 KILOWATT (KW) ALTERNATING CURRENT (AC) PHOTOVOLTAIC (PV) ARRAY. THE PROPOSED PV SOLAR FACILITY WOULD BE SITUATED ON APPROXIMATELY 12 ACRES OF A LARGER 39.9 ACRE PARCEL OF PRIVATELY OWNED LAND

POSTPONEMENTS DUE TO WEATHER OR OTHER CONDITIONS ARE SOMETIMES NECESSARY.
TO CONFIRM HEARING: CALL 887-3391.

DO NOT REMOVE THIS SIGN AND POST UNTIL DAY OF HEARING, UNDER PENALTY OF LAW.

HANDICAPPED ACCESSIBLE

#1

ZONING NOTICE

CASE # 2019-0141-X

A PUBLIC HEARING WILL BE HELD BY
ADMINISTRATIVE LAW JUDGE
IN TOWSON, MD

PLACE: JEFFERSON BLDG, ROOM 205
105 W. CHESAPEAKE AVE., TOWSON, MD 21204

DATE AND TIME: FRIDAY MARCH 8, 2019 1:30 PM

REQUEST: SPECIAL EXCEPTION FOR UPPERCO 2000 KILOWATT (KW) ALTERNATING CURRENT (AC) PHOTOVOLTAIC (PV) ARRAY. THE PROPOSED PV SOLAR FACILITY WOULD BE SITUATED ON APPROXIMATELY 12 ACRES OF A LARGER 39.9 ACRE PARCEL OF PRIVATELY OWNED LAND

POSTPONEMENTS DUE TO WEATHER OR OTHER CONDITIONS ARE SOMETIMES NECESSARY.
TO CONFIRM HEARING CALL 887-3391

DO NOT REMOVE THIS SIGN AND POST UNTIL DAY OF HEARING, UNDER PENALTY OF LAW

HANDICAPPED ACCESSIBLE

JOHN A. OLSZEWSKI, JR.
County Executive

MICHAEL MOHLER, *Director*
Department of Permits, Approvals & Inspections

January 30, 2019

NOTICE OF ZONING HEARING

The Administrative Law Judge of Baltimore County, by authority of the Zoning Act and Regulations of Baltimore County, will hold a public hearing in Towson, Maryland on the property identified herein as follows:

CASE NUMBER: 2019-0141-X
15009 Hanover Pike
E/s Hanover Pike, 600 ft. +/- s/of centerline of Emory Road
4th Election District – 3rd Councilmanic District
Legal Owners: Shafi Javid, MD
Contract Purchaser/Lessee: Kerri Neary

Special Exception for Upperco 2000 kilowatt (kw) alternating current (AC) Photovoltaic (PV) array. The proposed PV Solar Facility would be situated on approximately 12 acres of a larger 39.9 acre parcel of privately owned land.

Hearing: Friday, March 8, 2019 at 1:30 p.m. in Room 205, Jefferson Building, 105 West Chesapeake Avenue, Towson 21204

Mike Mohler
Director

AJ:kl

C: Kerri Neary, 1400 Wilson Point Blvd., Ste. 800, Arlington VA 22201
Jodi Hunt, 1200 Scottsville Road, Building C, Ste. 181, Rochester NY 14624
Timothy Kotroco, 305 Washington Avenue, Ste. 502, Towson 21204

NOTES: (1) **THE PETITIONER MUST HAVE THE ZONING NOTICE SIGN POSTED BY AN APPROVED POSTER ON THE PROPERTY BY SAT., FEBRUARY 16, 2018.**
(2) HEARINGS ARE HANDICAPPED ACCESSIBLE; FOR SPECIAL ACCOMMODATIONS PLEASE CALL THE ADMINISTRATIVE HEARINGS OFFICE AT 410-887-3868.
(3) FOR INFORMATION CONCERNING THE FILE AND/OR HEARING, CONTACT THE ZONING REVIEW OFFICE AT 410-887-3391.

CERTIFICATE OF POSTING

Date: 2-14-19

RE: Case Number: 2019-0141-X

Petitioner/Developer: Kerri Neary

Date of Hearing/Closing: March 8, 2019 1:30 PM

This is to certify under the penalties of perjury that the necessary sign(s) required by law were posted conspicuously on the property located at 15009 Hanover Pike

The signs(s) were posted on 2-14-19
(Month, Day, Year)

J. Lawrence Pilson
(Signature of Sign Poster)

J. LAWRENCE PILSON
(Printed Name of Sign Poster)

ATTACH PHOTGRAPH

1015 Old Barn Road
(Street Address of Sign Poster)

Parkton, MD 21120
(City, State, Zip Code of Sign Poster)

410-343-1443
(Telephone Number of Sign Poster)

#2

ZONING NOTICE

CASE # 2019-0141-X

A PUBLIC HEARING WILL BE HELD BY
ADMINISTRATIVE LAW JUDGE
IN TOWSON, MD

JEFFERSON BLDG ROOM 205

PLACE: 105 W. CHESAPEAKE AVE TOWSON 21204

DATE AND TIME: FRIDAY MARCH 8, 2019 1:30PM

REQUEST: SPECIAL EXCEPTION FOR UPPERCO 2000 KILOWATT (KW) ALTERNATING CURRENT (AC) PHOTOVOLTAIC (PV) ARRAY THE PROPOSED PV SOLAR FACILITY WOULD BE SITUATED ON APPROXIMATELY 12 ACRES OF A LARGER 39.9 ACRE PARCEL OF PRIVATELY OWNED LAND

POSTPONEMENTS DUE TO WEATHER OR OTHER CONDITIONS ARE SOMETIMES NECESSARY. TO CONFIRM HEARING CALL 887-3391

DO NOT REMOVE THIS SIGN AND POST UNTIL DAY OF HEARING, UNDER PENALTY OF LAW

HANDICAPPED ACCESSIBLE

#1

ZONING NOTICE

CASE # 2019-0141-X

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ADMINISTRATIVE LAW JUDGE
IN TOWSON, MD

JEFFERSON BLDG, ROOM 205

PLACE: 105 W. CHESAPEAKE AVE., TOWSON, MD 21204

DATE AND TIME: FRIDAY MARCH 8, 2019 1:30 PM

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TO CONFIRM HEARING CALL 887-3391

DO NOT REMOVE THIS SIGN AND POST UNTIL DAY OF HEARING, UNDER PENALTY OF LAW

HANDICAPPED ACCESSIBLE

CERTIFICATE OF POSTING

Date: 1-12-19

RE: Case Number: 2019-0141-X RECERT

Petitioner/Developer: Kerri Neary

RECEIVED
JAN 14 2018
OFFICE OF
ADMINISTRATIVE HEARINGS

Date of Hearing/Closing: Thurs Jan 17, 2019 10AM

This is to certify under the penalties of perjury that the necessary sign(s) required by law were posted conspicuously on the property located at 15009 Hanover Pike

The signs(s) were posted on RECERT 1-12-19
(Month, Day, Year)

J. Lawrence Pilson
(Signature of Sign Poster)

J. LAWRENCE PILSON
(Printed Name of Sign Poster)

ATTACH PHOTGRAPH

1015 Old Barn Road
(Street Address of Sign Poster)

Parkton, MD 21120
(City, State, Zip Code of Sign Poster)

410-343-1443
(Telephone Number of Sign Poster)

#1
ZONING NOTICE
CASE # 2019-0141-X
A PUBLIC HEARING WILL BE HELD BY
ADMINISTRATIVE LAW JUDGE
IN TOWSON, MD
JEFFERSON BLDG, ROOM 205
PLACE: 105 W. CHESAPEAKE AVE., TOWSON, MD 21204
DATE AND TIME: THURS. JAN. 17, 2019 10AM
REQUEST: SPECIAL EXCEPTION FOR UPPERCO. 2000
KILOWATT (KW) ALTERNATING CURRENT (AC) PHOTO VOL-
TAIC (PV) ARRAY. THE PROPOSED PV SOLAR FACILITY
WOULD BE SITUATED ON APPROXIMATELY 12 ACRES OF A
LARGER 39.9 ACRE PARCEL OF PRIVATELY OWNED LAND
POSTPONEMENTS DUE TO WEATHER OR OTHER CONDITIONS ARE SOMETIMES NECESSARY.
TO CONFIRM HEARING CALL 887-3391
DO NOT REMOVE THIS SIGN AND POST UNTIL DAY OF HEARING, UNDER PENALTY OF LAW
HANDICAPPED ACCESSIBLE

#2

ZONING NOTICE

CASE # 2019-0141-X

A PUBLIC HEARING WILL BE HELD BY
ADMINISTRATIVE LAW JUDGE
IN TOWSON, MD

JEFFERSON BLDG. ROOM 205

PLACE: 105 W CHESAPEAKE AVE TOWSON 21204

DATE AND TIME: THURS. JAN 17, 2019 10 AM

REQUEST: SPECIAL EXCEPTION FOR UPPERCO 2000 KILOWATT (KW) ALTERNATING CURRENT (AC) PHOTOVOLTAIC (PV) ARRAY. THE PROPOSED PV SOLAR FACILITY WOULD BE SITUATED ON APPROXIMATELY 12 ACRES OF A LARGER 319 ACRE PARCEL OF PRIVATELY OWNED LAND

POSTPONEMENTS DUE TO WEATHER OR OTHER CONDITIONS ARE SOMETIMES NECESSARY.
TO CONFIRM HEARING CALL 887-3391

DO NOT REMOVE THIS SIGN AND POST UNTIL DAY OF HEARING, UNDER PENALTY OF LAW.

HANDICAPPED ACCESSIBLE

JOHN A. OLSZEWSKI, JR.
County Executive

DIRECTOR
Department of Permits, Approvals & Inspections

January 15, 2019

Kerri Neary
1400 Wilson Boulevard, Ste. 800
Arlington, VA 22201

RE: Case Number: 2019-0141-X, Address: 15009 Hanover Pike

To Whom It May Concern:

The above referenced petition was accepted for processing **ONLY** by the Bureau of Zoning Review, Department of Permits, Approvals, and Inspection (PAI) on October 30, 2018. This letter is not an approval, but only a **NOTIFICATION.**

The Zoning Advisory Committee (ZAC), which consists of representatives from several approval agencies, has reviewed the plans that were submitted with your petition. All comments submitted thus far from the members of the ZAC are attached. These comments are not intended to indicate the appropriateness of the zoning action requested, but to ensure that all parties (zoning commissioner, attorney, petitioner, etc.) are made aware of plans or problems with regard to the proposed improvements that may have a bearing on this case. All comments will be placed in the permanent case file.

If you need further information or have any questions, please do not hesitate to contact the commenting agency.

Very truly yours,

W. Carl Richards Jr.

W. Carl Richards, Jr.
Supervisor, Zoning Review

WCR: kll

Enclosures

c: People's Counsel
Jodi Hunt, 1200 Scottsville Road, Bldg. C, Ste. 181, Rochester NY 14624

November 29, 2018

Ms. Kristen Lewis
Baltimore County Department of
Permits, Approvals and Inspections
County Office Building, Room 109
111 West Chesapeake Avenue
Towson, Maryland 21204

Dear Ms. Lewis:

Thank you for the opportunity to review the site plan to accompany the petition for a special exception to allow a solar facility on the subject property. The Maryland Department of Transportation State Highway Administration (MDOT SHA) has reviewed the submittal listed below and is pleased to respond.

Upperco Solar Project - 15009 Hanover Pike
Site Plan Review for Special Exception
Case No. 2019-0141-X
MD 30 (east side) 500' south of Emory Road
Mile Post 0.83
Baltimore County

The proposed entrances to this this site will be subject to the terms of an access permit to construct paved aprons on MD 30. That permit may be obtained by contacting Mr. Brian Gneiting, Resident Maintenance Engineer – Hereford Shop at 410-329-6752. A copy of the plan will be forwarded to his office.

If there are any questions, please contact Mr. Richard Zeller at 410-229-2332 or toll free (in Maryland only), 1-866-998-0367 (x2332) or by email at (rzeller@sha.state.md.us).

Sincerely,

Wendy Wolcott, P.L.A.
Metropolitan District Engineer
Maryland Department of Transportation
State Highway Administration
District 4 - Baltimore and Harford Counties

cc: Tetra Tech / 1200 Scottsville Road, Building C, Suite 320, Rochester, NY 14624
ICFTS MD Solar, LLC / 1401 Wilson Boulevard, Suite 800, Arlington, VA 22209
Mr. Brian Gneiting, MDOT SHA Resident Maintenance Engineer – Hereford Shop

BALTIMORE COUNTY, MARYLAND

INTEROFFICE CORRESPONDENCE

TO: Arnold Jablon, Director
Department of Permits, Approvals
And Inspections

DATE: December 5, 2018

FROM: Vishnu Desai, Supervisor
Bureau of Development Plans Review

SUBJECT: Zoning Advisory Committee Meeting
For November 19, 2018
Item No. 2019-0141-X

The Bureau of Development Plans Review has reviewed the subject zoning items and we have the following comments.

If Special Exception is granted a landscape plan is required per the requirements of the Landscape Manual, Bill No. 37-17 and the CMDP. Specific landscape comments:

1. Hanover Pike is a Baltimore County Scenic Route,
2. Perimeter landscape buffers are required,
3. Must minimize tree and vegetation removal,
4. Perimeter landscape buffers required along Hanover Pike and along the eastern property line.
5. The planting needs to be set back from the existing overhead power lines to allow the diversity of screen plant materials to mature and not be effected by standard vegetation maintenance typically associated with existing overhead power line. This planting should also be located and follow higher contours to capitalize and maximize screening potential.
6. Perimeter landscape buffers need to be designed to include a diversity of plant materials.
7. Solar panels are considered a utility and should be designed and located to harmonize with the surroundings and to create the least visual impact.
8. Proposed perimeter fence shall be black vinyl-coated chain-link fence,
9. Perimeter landscape buffers should address adjacent property views to provide maximum screening potential when it relates to the proposed solar facility. Including but not limited to 5239 Byerly Road, 15115, 15123, 15200, 15202 15204, 15206, 15208, 15212 and 15214 Old Hanover Road.
10. Proposed access road(s) may need to have a chicane or bends to assure screening of the solar array field from Hanover Pike views if landscape screening does not,
11. More comments may be rendered during review of the landscape plan,

The on-site access road back from Hanover Pike back to the equipment pad shall be dustless and durable.

Developer/Owner to complete a 100-Year Flood Study on property to determine the floodplain boundary on the site.

* * * * *

VKD: can
cc: file

BALTIMORE COUNTY, MARYLAND
INTER-OFFICE MEMORANDUM

TO: Arnold Jablon
Deputy Administrative Officer and
Director of Permits, Approvals and Inspections

DATE: 12/7/2018

FROM: Andrea Van Arsdale
Director, Department of Planning

RECEIVED
DEC 11 2018
OFFICE OF
ADMINISTRATIVE HEARINGS

SUBJECT: **ZONING ADVISORY COMMITTEE COMMENTS**
Case Number: 19-141

INFORMATION:
Property Address: 15009 Hanover Pike
Petitioner: Javid Shafi
Zoning: RC 2
Requested Action: Special Exception

The Department of Planning has reviewed the petition for a special exception to use the property for a solar facility.

A site visit was conducted on 11/19/2018. Hanover Pike is a Baltimore County Master Plan designated scenic road presenting generally an "enclosed view" as defined in the Comprehensive Manual of Development Policies (CMDP pg.177). When developing on a scenic route, CMDP development guidelines instructs one to *"maintain a buffer between the road and the new development"* (CMDP pg. 180). These guidelines are reinforced by the aforementioned Hanover Pike Corridor Study.

- The Department supports the Baltimore County Landscape Architect in planting requirements deemed necessary to include interior contour screening and other planting schemes that will mitigate the visual impact of the special exception proposal upon the scenic route.

The Department has no objection to granting the petitioned zoning relief conditioned upon the following:

- Upon completion of construction, the facility entrances shall be brought to a condition characteristic of a residential driveway in terms of width and appearance enhanced with naturalistic plantings consisting of evergreen and deciduous trees, shrubs and wildflowers.
- The submitted glare analysis indicates the potential for yellow (blinding) glare at locations (7 and 8) along Hanover Pike north of the subject property in the month of December. In keeping with the special exception conditions established in BCZR §502.1, petitioners shall maintain and or supplement evergreen trees of sufficient height and depth to block any glare emanating from the site that may impact southbound motorists.
- Proposed perimeter fence shall be black vinyl coated chain-link fence.
- Pursuant to BCZR §502.1.A, petitioners shall demonstrate to the satisfaction of the Administrative Law Judge that the facility will not be detrimental to the adjacent residential properties as a result of glare emanating from the facility.
- Petitioners shall note on the plan that the proposed solar facility will be subject to BCZR §4E-107.

- Petitioners shall certify by note on the plan that the proposed solar facility will not exceed the maximum permitted number of facilities allowed in its respective councilmanic district. If approved, Petitioners shall submit to this Department at the time of building permit application the final fixed location and area of the facility by coordinate data so that an inventory may be kept.
- Lighting shall be limited to what is required for security purposes only and will be sited in such a way as to have minimal spillage onto neighboring properties.
- Signage shall be limited to that which is necessary for safety and security purposes.
- No deliveries or outdoor maintenance which may generate excessive noise may occur on-site between the hours of 6 P.M. through 6 A.M.

For further information concerning the matters stated herein, please contact Wally Lippincott at 410-887-3480.

Prepared by:

Lloyd T. Moxley

Division Chief:

Jenifer G. Nugent

AVA/JGN/LTM/

c: Joseph Wiley
James Hermann, R.L.A., Department of Permits, Approvals and Inspections
Jodi Hunt
Office of the Administrative Hearings
People's Counsel for Baltimore County

RECEIVED
NOV 29 2018
OFFICE OF
ADMINISTRATIVE HEARINGS

BALTIMORE COUNTY, MARYLAND

Inter-Office Correspondence

TO: Hon. Lawrence M. Stahl; Managing Administrative Law Judge
Office of Administrative Hearings

FROM: Jeff Livingston, Department of Environmental Protection and Sustainability (EPS) - Development Coordination

DATE: November 29, 2018

SUBJECT: DEPS Comment for Zoning Item # 2019-0141-X
Address 15009 Hanover Pike
(Javid Shafi, MD Property)

Zoning Advisory Committee Meeting of **November 19, 2018**.

X The Department of Environmental Protection and Sustainability offers the following comments on the above-referenced zoning item:

X Development of the property must comply with the Regulations for the Protection of Water Quality, Streams, Wetlands and Floodplains (Sections 33-3-101 through 33-3-120 of the Baltimore County Code).

X Development of this property must comply with the Forest Conservation Regulations (Sections 33-6-101 through 33-6-122 of the Baltimore County Code).

Additional Comments:

There appear to be extensive streams and wetlands onsite. All streams, wetlands, and Forest Buffer Easements (FBE) must be delineated and approved by EPS. A variance is required impact the FBE as proposed. There is no guarantee of variance approval.

Reviewer: Glenn Shaffer

BALTIMORE COUNTY, MARYLAND

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Office of Administrative Hearings

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Reviewer: Glenn Shaffer

BALTIMORE COUNTY, MARYLAND

Inter-Office Correspondence

TO: Kristen Lewis
Office of Zoning Review

DATE: January 18, 2019

FROM: Sherry Nuffer
Office of Administrative Hearings

SUBJECT: **Case No. 2019-0141-X**
15009 Hanover Pike

Please be advised that the above mention case was opened and continued by ALJ Beverungen on January 17, 2019.

Community members expressed their concerns with the failure of Baltimore County to properly notify the community.

Per Mike Mohler's e-mail the case was to be opened and continued. Several community members appeared and a sign in sheet reflecting the names of the individuals in attendance is located in the file.

Mr. Kotroco will work with the community members and notify them of a new date.

Per ALJ John Beverungen no further postings or advertising is required.

RECEIVED
NOV 29 2018
OFFICE OF
ADMINISTRATIVE HEARINGS

BALTIMORE COUNTY, MARYLAND

Inter-Office Correspondence

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Office of Administrative Hearings

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DATE: November 29, 2018

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Reviewer: Glenn Shaffer

ORDER RECEIVED FOR FILING
Date 3/12/19
By

C:\Users\snuffer\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.Outlook\WPHS9SSK\ZAC 19-0141-X 15009 Hanover Pike.doc

BALTIMORE COUNTY, MARYLAND
INTER-OFFICE MEMORANDUM

TO: Arnold Jablon
Deputy Administrative Officer and
Director of Permits, Approvals and Inspections

DATE: 12/7/2018

FROM: Andrea Van Arsdale
Director, Department of Planning

SUBJECT: **ZONING ADVISORY COMMITTEE COMMENTS**
Case Number: 19-141

INFORMATION:
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Petitioner: Javid Shafi
Zoning: RC 2
Requested Action: Special Exception

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ORDER RECEIVED FOR FILING
Date 3/12/19
By SLH

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Prepared by:

Lloyd T. Moxley

Division Chief:

Jenifer G. Nugent

AVA/JGN/LTM/

c: Joseph Wiley
James Hermann, R.L.A., Department of Permits, Approvals and Inspections
Jodi Hunt
Office of the Administrative Hearings
People's Counsel for Baltimore County

ORDER RECEIVED FOR FILING
Date 3/12/19
By

BALTIMORE COUNTY, MARYLAND

INTEROFFICE CORRESPONDENCE

TO: Arnold Jablon, Director
Department of Permits, Approvals
And Inspections

DATE: December 5, 2018

FROM: Vishnu Desai, Supervisor
Bureau of Development Plans Review

SUBJECT: Zoning Advisory Committee Meeting
For November 19, 2018
Item No. 2019-0141-X

The Bureau of Development Plans Review has reviewed the subject zoning items and we have the following comments.

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The on-site access road back from Hanover Pike back to the equipment pad shall be dustless and durable.

Developer/Owner to complete a 100-Year Flood Study on property to determine the floodplain boundary on the site.

* * * * *

VKD: can
cc: file

ORDER RECEIVED FOR FILING
Date 3/12/19
By

TIMOTHY M. KOTROCO, Esq.
305 Washington Avenue, Suite 502
Towson, Maryland 21204
410-299-2943
Tkotroco@gmail.com

May 6, 2020

The Honorable Paul Mayhew
Administrative Law Judge for Baltimore County
105 West Chesapeake Avenue, Suite 103
Towson, Maryland 21204

Re: Request for Extension of Time for Utilization of Special Exception 15009 Hanover Pike, Case No. 2019-0141-X

Dear Judge Mayhew:

In accordance with section 502.3 of the Baltimore County zoning regulations, (copy attached) I am hereby requesting an extension of time for utilization of the special exception granted in case number 2019-0141-X.

This particular special exception request came in for a hearing before the Honorable John E. Beverungen. Judge Beverungen approved the special exception request for a solar facility on the subject property by order dated the 12th day of March 2019. No appeal was filed from the granting of this special exception. (A copy of that decision is attached to this letter.)

Given the current state of our economy, the delays and problems associated with the COVID-19 pandemic and for other matters impacting the development process and issuance of permits for this property I am requesting a three year extension of time from the date of this Order within which to utilize this special exception. The new date within which to utilize this special exception request shall be March 12, 2024.

Thank you for your consideration of this request.

Very truly yours,

Timothy Kotroco

Timothy M. Kotroco

After considering this request for extension and for good cause stated, I hereby grant an additional extension of time of 3 years from the date of Judge Beverungen's decision. The new expiration date within which to utilize this special exception shall be March 12, 2024.

Paul Mayhew, Administrative Law Judge

§ 502.3. - Time limit for utilization of special exception; extensions.

[Bill Nos. 42-1962; 85-1967; 68-1968; 172-1993]

A special exception which has not been utilized within a period of two years from the date of the final order granting same, or such longer period not exceeding five years, as may have been specified therein, shall thereafter be void. The Zoning Commissioner or, on appeal, the County Board of Appeals, in connection with the grant of any special exception, shall fix within the aforegoing limits the period of time for its utilization. Any party to the proceedings may, by so specifying, appeal from either the order of the Zoning Commissioner or of the County Board of Appeals as the case may be, solely as to the reasonableness of the period of time allowed or, alternatively, may have such question determined in conjunction with any appeal from the grant or refusal of the application for a special exception. After a final order granting a special exception, the Zoning Commissioner, at any time prior to expiration of the period of time authorized for its utilization, may grant one or more extensions of such period, provided that a maximum time for utilization of the special exception is not thereby extended for a period of more than five years from the date of the final order granting same.

A special exception which requires any construction for its utilization shall be deemed to have been used within its authorized time if such construction shall have commenced during the authorized period, or any extension thereof, provided said construction is thereafter pursued to completion with reasonable diligence.

Notwithstanding the above provisions, in any case where a special exception in effect on or after January 1, 1957, cannot be utilized within the maximum allowable time because of inadequacy or unavailability of public sewer or water facilities, the Zoning Commissioner shall extend such time for utilization to a date 18 months after such facilities become adequate and available, as evidenced by the ability to obtain a public works agreement permitting exercise of the special exception. A copy of the extension order shall be sent by the Zoning Commissioner to the Director of Public Works, who shall give certified or registered mail notice when such public works agreement is obtainable, to the party, and for the property, named in the extension order at the address shown in said order, except that the party named in the extension order, by certified or registered mail notice to the Director of Public Works and the Zoning Commissioner, may change the name of the party to receive such notice from the Public Works Director, or the address to which said notice is to be sent, or both. The date on which the notice is sent by the Director of Public Works to the last party of record within, at the last address furnished, shall be the commencement date for the running of the eighteen-month extension period in which there must be utilization of the special exception.

PLEASE PRINT CLEARLY

CASE NAME
CASE NUMBER 2019-141-X
DATE March 8 2019

CITIZEN'S SIGN - IN SHEET

NAME	ADDRESS	CITY, STATE, ZIP	E - MAIL
BRIAN Shipley	15007 HANOVER PIKE UPPERCO 21155	UPPERCO MD 21155	NONE
George Harman	5429 Weywood Dr.	Reisterstown, MD 21136	harmangeorge@hotmail
Mike Pierce	7448 Bradshaw Rd	Kingsville 21087	MPIERCE1@AOL.COM
Paul Merritt	14527 Hanover Pike	Upperco, MD 21155	x14100@aol.com

PLEASE PRINT CLEARLY

CASE NAME
CASE NUMBER 2019-141-X
DATE

PETITIONER'S SIGN-IN SHEET

NAME	ADDRESS	CITY, STATE, ZIP	E - MAIL
Tim Kokoco	305 Wash Ave Ste 502	Towson MD 21204	TKokoco@gmail.com
Jodi Hunt	3136 Winton Rd. Rochester NY		Jodi.Hunt@tetratech.com
Kerri Neary	1401 Wilson Blvd, ~~Arlington VA~~	Arlington VA 22209	KNeary@srenergy.com
Stephanie Sienkawski	1401 Wilson Blvd, Arlington VA		ssienkawski@srenergy.com
Mitch Kellman	501 Fairmount Ave, Suite 300	Towson MD 21286	MKellman@dmaa.com

JOHN A. OLSZEWSKI, JR.
County Executive

ADMINISTRATIVE LAW JUDGE
Office of Administrative Hearings

March 8, 2019

To Whom It May Concern:

RE: Brian Shipley

This is to confirm that Mr. Brian Shipley appeared March 8, 2019 for an Administrative Hearing located at 105 W. Chesapeake Avenue, Room 205, Towson, Maryland 21204.

In the event you have any questions, please feel free to contact our office at 410-887-3868.

Sincerely,

JOHN E. BEVERUNGEN
Administrative Law Judge
for Baltimore County

JEB: sln

PLEASE PRINT CLEARLY

CASE NAME
CASE NUMBER 2019-0141-X
DATE 1-17-2019

PETITIONER'S SIGN-IN SHEET

NAME	ADDRESS	CITY, STATE, ZIP	E - MAIL
Tim Kotroco	305 Washington Ave Ste 502	Towson 21204	TKotroco@gmail.com
GLENN ELSEROAD	5423 MT GILEAD Rd	REISTERSTOWN 21136	SGELSEROAD@VERIZON.NET

PLEASE PRINT CLEARLY

CASE NAME
CASE NUMBER 2019-0141-X
DATE 1-17-2019

CITIZEN'S SIGN - IN SHEET

NAME	ADDRESS	CITY, STATE, ZIP	E - MAIL
Paul Merritt	14527 Hanover Pike	Upperco, Maryland 21155	x14100@aol.com
George Harman	5429 Weyward Dr.	Reisterstown 21136	harmangeorge@hotmail.com
Teresa Moore	PO Box 5422	Towson 21204	teresa@truvpe.org

Debra Wiley

From: Debra Wiley
Sent: Wednesday, January 16, 2019 12:42 PM
To: 'Virginia Terhune'
Cc: Timothy M. Kotroco Esq. (tkotroco@gmail.com)
Subject: Case Nos. 2019-0141-X and 2019-0142-X (Jan. 17th)

Good Afternoon,

In reference to your inquiry regarding the above hearings scheduled for tomorrow, Jan. 17th, please be advised that they have both been postponed. Counsel for Petitioners, Timothy Kotroco, Esq., will let you and Ms. Pieper know when they have been rescheduled.

Thank you.

From: Mike Mohler
Sent: Friday, January 11, 2019 1:12 PM
To: John E. Beverungen <jbeverungen@baltimorecountymd.gov>; Kathleen Pieper <kathie@stoneponyrestoration.com>
Cc: Debra Wiley <dwiley@baltimorecountymd.gov>; Kristen L Lewis <klewis@baltimorecountymd.gov>; tkotroco@wtplaw.com
Subject: RE: Administrative Hearings Confusion

Ms. Pieper and Judge Beverungen,
I have researched the issue and you are correct there was an issue with the posting as required by law. We had an issue in our OIT department which we are working on to correct. I apologize on behalf of the department and hope we have corrected the issue.

Given that I have decided that the cases be "opened and continued" to a later date. It will be necessary for at least 1 person to attend BOTH hearings. As we discussed there may be an individual that was scheduled to be at both hearings negating you or your representative having to be in Towson all day.

We will post the new hearing date as soon as scheduled and will contact you via e-mail to ensure all are notified.

I thank the community and Judge Beverungen for your understanding.

From: John E. Beverungen
Sent: Thursday, January 10, 2019 11:00 AM
To: Kathleen Pieper <kathie@stoneponyrestoration.com>
Cc: Mike Mohler <mmohler@baltimorecountymd.gov>; Debra Wiley <dwiley@baltimorecountymd.gov>; Kristen L Lewis <klewis@baltimorecountymd.gov>
Subject: RE: Administrative Hearings Confusion

Ms. Pieper,

I am in receipt of your motion for postponement in the captioned zoning cases, which you filed on January 8, 2019. Since the request was filed more than 5 business days prior to the hearing, the Zoning Commissioner's Rules specify the Director of PAI (who is copied on this email) shall consider the request.

Sherry Nuffer

From: John E. Beverungen
Sent: Thursday, January 17, 2019 11:40 AM
To: Timothy M. Kotroco
Cc: Sherry Nuffer; Teresa Moore; George Harman; xl4100@aol.com
Subject: Case # 2019-141-X
Attachments: 20190117113508333.pdf

Mr. Kotroco,

Attached is the sign-in sheet from this morning's hearing, which as you know was postponed. Please make sure these individuals are notified when the case is rescheduled.

John Beverungen
ALJ

Debra Wiley

From: Debra Wiley
Sent: Wednesday, January 16, 2019 12:42 PM
To: 'Virginia Terhune'
Cc: Timothy M. Kotroco Esq. (tkotroco@gmail.com)
Subject: Case Nos. 2019-0141-X and 2019-0142-X (Jan. 17th)

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Subject: RE: Administrative Hearings Confusion

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Subject: RE: Administrative Hearings Confusion

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CASE NO. 2019-0141-X

CHECKLIST

Comment Received	Department	Support/Oppose/ Conditions/ Comments/ No Comment
12/5	DEVELOPMENT PLANS REVIEW (if not received, date e-mail sent _____)	Comment
11/29	DEPS (if not received, date e-mail sent _____)	Comment
_____	FIRE DEPARTMENT	_____
12/7	PLANNING (if not received, date e-mail sent _____)	Comment
11/29	STATE HIGHWAY ADMINISTRATION	Comment
_____	TRAFFIC ENGINEERING	_____
10/30	Memo Dave Duvall	
_____	COMMUNITY ASSOCIATION	_____
_____	ADJACENT PROPERTY OWNERS	_____

ZONING VIOLATION (Case No. _____)

PRIOR ZONING (Case No. _____)

NEWSPAPER ADVERTISEMENT Date: 12/28/18

SIGN POSTING (1st) Date: 12/26/18 by Pulson

SIGN POSTING (2nd) Date: 1/2/19 by Pulson

PEOPLE'S COUNSEL APPEARANCE Yes ☒ No ☐

PEOPLE'S COUNSEL COMMENT LETTER Yes ☐ No ☐

Comments, if any: _____

Real Property Data Search

Search Result for BALTIMORE COUNTY

View Map	View GroundRent Redemption	View GroundRent Registration

Tax Exempt:	**Special Tax Recapture:**		
Exempt Class:	AGRICULTURAL TRANSFER TAX		
Account Identifier:	District - 04 Account Number - 0408067040		

Owner Information

Owner Name:	SHAFI JAVAID M MD PA	**Use:**	AGRICULTURAL
		Principal Residence:	NO
Mailing Address:	13008 GLEN RD NORTH POTOMAC MD 20878-	**Deed Reference:**	/06123/ 00683

Location & Structure Information

Premises Address:	HANOVER RD UPPERCO 21155-	**Legal Description:**	38.17 AC ES HANOVER 600 S EMORY RD

Map:	Grid:	Parcel:	Sub District:	Subdivision:	Section:	Block:	Lot:	Assessment Year:	Plat No:
0031	0004	0046		0000				2019	Plat Ref:

Special Tax Areas:	**Town:**	NONE	
	Ad Valorem:		
	Tax Class:		

Primary Structure Built	Above Grade Living Area	Finished Basement Area	Property Land Area	County Use
			41.3800 AC	05

Stories	Basement	Type	Exterior	Full/Half Bath	Garage	Last Major Renovation

Value Information

	Base Value	Value As of 01/01/2016	Phase-In Assessments As of 07/01/2018	As of 07/01/2019
Land:	9,500	9,500		
Improvements	0	0		
Total:	9,500	9,500	9,500	
Preferential Land:	9,500			

Transfer Information

Seller: KLAWANS WARREN A G USE 83-84	**Date:** 01/07/1980	**Price:** $130,000
Type: ARMS LENGTH IMPROVED	**Deed1:** /06123/ 00683	**Deed2:**
Seller:	**Date:**	**Price:**
Type:	**Deed1:**	**Deed2:**
Seller:	**Date:**	**Price:**
Type:	**Deed1:**	**Deed2:**

Exemption Information

Partial Exempt Assessments:	Class	07/01/2018	07/01/2019
County:	000	0.00	
State:	000	0.00	
Municipal:	000	0.00	0.00

Tax Exempt:	**Special Tax Recapture:**
Exempt Class:	AGRICULTURAL TRANSFER TAX

Homestead Application Information

Homestead Application Status: No Application

Homeowners' Tax Credit Application Information

Homeowners' Tax Credit Application Status: No Application **Date:**

JB 1-17-19
(2019-0141-X) 10 AM

Debra Wiley

From: Mike Mohler
Sent: Friday, January 11, 2019 1:12 PM
To: John E. Beverungen; Kathleen Pieper
Cc: Debra Wiley; Kristen L Lewis; tkotroco@wtplaw.com
Subject: RE: Administrative Hearings Confusion

Ms. Pieper and Judge Beverungen,
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Given that I have decided that the cases be "opened and continued" to a later date. It will be necessary for at least 1 person to attend BOTH hearings. As we discussed there may be an individual that was scheduled to be at both hearings negating you or your representative having to be in Towson all day.

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I thank the community and Judge Beverungen for your understanding.

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Subject: RE: Administrative Hearings Confusion

Ms. Pieper,

I am in receipt of your motion for postponement in the captioned zoning cases, which you filed on January 8, 2019. Since the request was filed more than 5 business days prior to the hearing, the Zoning Commissioner's Rules specify the Director of PAI (who is copied on this email) shall consider the request.

The OAH does not yet have the files for these zoning cases; as such, I do not know if an attorney has entered his/her appearance in either or both cases. I would ask Ms. Lewis (also copied on this email) to please ensure the attorney(s) are notified of the Director's decision.

John Beverungen
ALJ

From: Kathleen Pieper [mailto:kathie@stoneponyrestoration.com]
Sent: Tuesday, January 08, 2019 6:47 PM
To: John E. Beverungen <jbeverungen@baltimorecountymd.gov>
Subject: Administrative Hearings Confusion
Importance: High

Judge Beverungen,

This requests that administrative hearings for cases numbered 2019-0141-X and 2019-0142-X be rescheduled due to failure of Baltimore County to properly notify the community.

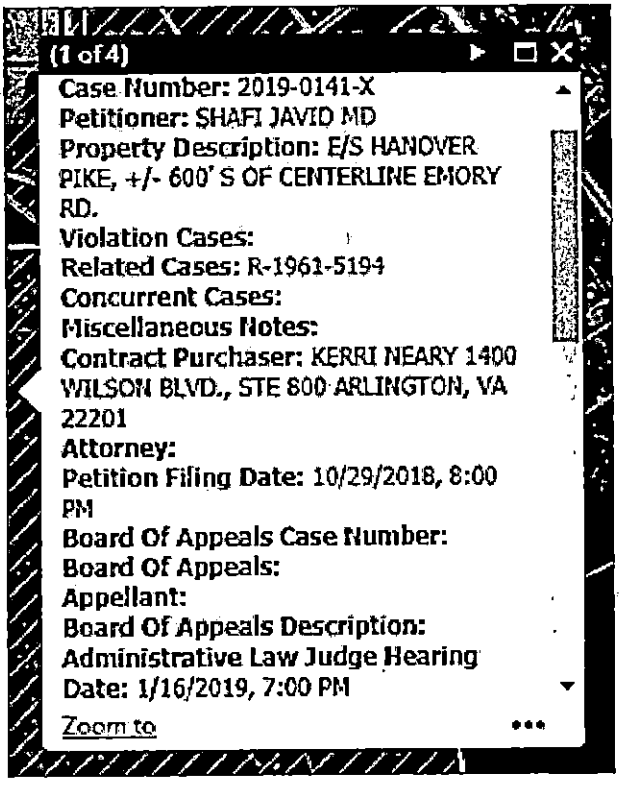
1. **Bill 6-18: Administrative Hearings Notice** requires Baltimore County to post scheduling information on the Zoning and Development Hearings Calendar and the Community Update Newsletter at least 15 days before the hearing.
   - As you can see from the screen shot below, neither hearing is included on January 17, 2019. Note the screenshot is date stamped in the lower right corner with today's date.
   - Information on the hearings was not included in the most recent Community Update Newsletter for District 3 (Dated January 1, 2019) https://www.baltimorecountymd.gov/Agencies/communityupdates/d3/190101d3.html

2. A community member was informed by a Baltimore County official that the hearings are scheduled for January 17, 2019, with 2019-0141-X (15009 Hanover Pike) at 10 am and 2019-0142-X (19620 Resh Road) at 1:30 pm.

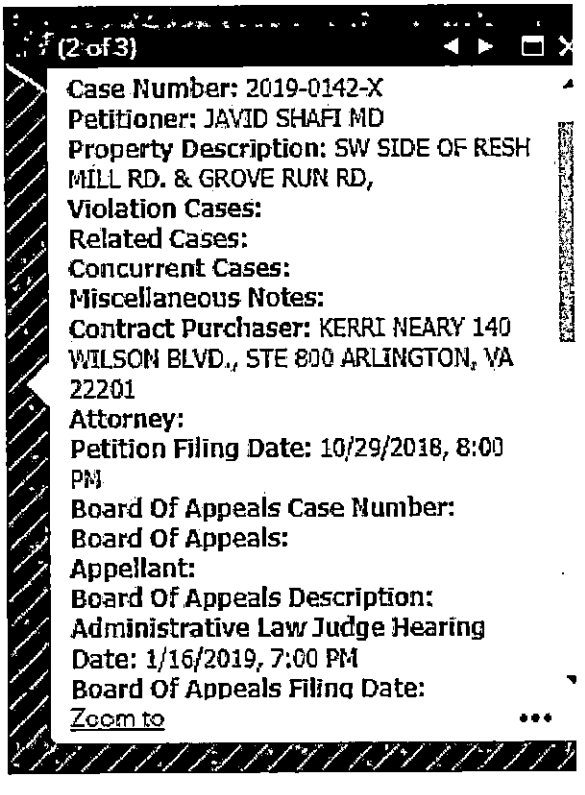
3. Information posted on My Neighborhood (https://bcgis.baltimorecountymd.gov/myneighborhood) shows both cases scheduled for January 16, 2019 at the same time.

Please advise your decision as quickly as possible so that I can help clear confusion within our community.

Kathleen Pieper
President
North County Community Group


(1 of 4)

Case Number: 2019-0141-X
Petitioner: SHAFI JAVID MD
Property Description: E/S HANOVER PIKE, +/- 600' S OF CENTERLINE EMORY RD.
Violation Cases:
Related Cases: R-1961-5194
Concurrent Cases:
Miscellaneous Notes:
Contract Purchaser: KERRI NEARY 1400 WILSON BLVD., STE 800 ARLINGTON, VA 22201
Attorney:
Petition Filing Date: 10/29/2018, 8:00 PM
Board Of Appeals Case Number:
Board Of Appeals:
Appellant:
Board Of Appeals Description:
Administrative Law Judge Hearing Date: 1/16/2019, 7:00 PM
Zoom to


(2 of 3)

Case Number: 2019-0142-X
Petitioner: JAVID SHAFI MD
Property Description: SW SIDE OF RESH MILL RD. & GROVE RUN RD,
Violation Cases:
Related Cases:
Concurrent Cases:
Miscellaneous Notes:
Contract Purchaser: KERRI NEARY 140 WILSON BLVD., STE 800 ARLINGTON, VA 22201
Attorney:
Petition Filing Date: 10/29/2018, 8:00 PM
Board Of Appeals Case Number:
Board Of Appeals:
Appellant:
Board Of Appeals Description:
Administrative Law Judge Hearing Date: 1/16/2019, 7:00 PM
Board Of Appeals Filing Date:
Zoom to

Development, Zoning Hearings & Meetings

◄		Jan 2019				►
30	31	1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31	1	2

Show Events By: Day Week Month RSS

Thursday, January 17, 2019

No events today

CALENDAR FILTER

Location:

-- All Event Locations --
1st Council District
2nd Council District
3rd Council District
4th
4th Council District
5th Council District
6th Council District
7th

Type:

-- All Event Types --
Event or Activity
meet
Meeting
Meeting or Hearing

Keyword(s):

GO

Revised September 29, 2016

JB 1-17-19
10 AM

Debra Wiley

From: Larry Pilson <lpilson@hotmail.com>
Sent: Saturday, January 12, 2019 4:54 PM
To: Administrative Hearings; Stephanie Sienkowski
Subject: Fw: 2019-0141-X Recertification
Attachments: DSC_0764.JPG; DSC_0765.JPG; Upperco Solar Recert.pdf

---

From: Larry Pilson
Sent: Saturday, January 12, 2019 4:16 PM
To: administrativehearings@baltimorecountymd.gov; Stephanie Sienkowski
Subject: 2019-0141-X

RECEIVED
JAN 14 2018
OFFICE OF
ADMINISTRATIVE HEARINGS

JB 1-17-19
10 Am

Debra Wiley

From: Larry Pilson <lpilson@hotmail.com>
Sent: Saturday, January 12, 2019 4:17 PM
To: Administrative Hearings; Stephanie Sienkowski
Subject: 2019-0141-X
Attachments: DSC_0764.JPG; DSC_0765.JPG; Upperco Solar Recert.pdf

RECEIVED
JAN 14 2018
OFFICE OF
ADMINISTRATIVE HEARINGS

CERTIFICATE OF POSTING

Date: 1-12-19

RE: Case Number: 2019-0141-X RECERT

Petitioner/Developer: Kerri Neary

Date of Hearing/Closing: Thurs Jan 17, 2019 10AM

This is to certify under the penalties of perjury that the necessary sign(s) required by law were posted conspicuously on the property located at 15009 Hanover Pike

The signs(s) were posted on RECERT 1-12-19
(Month, Day, Year)

J. Lawrence Pilson
(Signature of Sign Poster)

J. LAWRENCE PILSON
(Printed Name of Sign Poster)

ATTACH PHOTGRAPH

1015 Old Barn Road
(Street Address of Sign Poster)

Parkton, MD 21120
(City, State, Zip Code of Sign Poster)

410-343-1443
(Telephone Number of Sign Poster)

RECEIVED
JAN 14 2018
OFFICE OF
ADMINISTRATIVE HEARINGS

#2

ZONING NOTICE

CASE # 2019-0141-X

A PUBLIC HEARING WILL BE HELD BY
ADMINISTRATIVE LAW JUDGE
IN TOWSON, MD

JEFFERSON BLDG ROOM 205

PLACE: 105 W. CHESAPEAKE AVE TOWSON 21204

DATE AND TIME: THURS JAN 17, 2019 10 AM

REQUEST: SPECIAL EXCEPTION FOR UPPER CO 2000 KILOWATT (KW) ALTERNATING CURRENT (AC) PHOTOVOLTAIC (PV) ARRAY. THE PROPOSED PV SOLAR FACILITY WOULD BE SITUATED ON APPROXIMATELY 12 ACRES OF A LARGER 319 ACRE PARCEL OF PRIVATELY OWNED LAND

POSTPONEMENTS DUE TO WEATHER OR OTHER CONDITIONS ARE SOMETIMES NECESSARY.
TO CONFIRM HEARING CALL 887-3391

DO NOT REMOVE THIS SIGN AND POST UNTIL DAY OF HEARING, UNDER PENALTY OF LAW.

HANDICAPPED ACCESSIBLE

#1
ZONING NOTICE
CASE # 2019-0141-X
A PUBLIC HEARING WILL BE HELD BY
ADMINISTRATIVE LAW JUDGE
IN TOWSON, MD
JEFFERSON BLDG, ROOM 205
PLACE: 105 W. CHESAPEAKE AVE. TOWSON, MD 21204
DATE AND TIME: THURS. JAN. 17, 2019 10AM.
REQUEST: SPECIAL EXCEPTION FOR UPPERCO. 2000 KILOWATT (KW) ALTERNATING CURRENT (AC) PHOTO VOL-TAIC (PV) ARRAY. THE PROPSED PV SOLAR FACILITY WOULD BE SITUATED ON APPROXIMATELY 12 ACRES OF A LARGER 39.9 ACRE PARCEL OF PRIVATELY OWNED LAND
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TO CONFIRM HEARING CALL 887-3391
DO NOT REMOVE THIS SIGN AND POST UNTIL DAY OF HEARING, UNDER PENALTY OF LAW.
HANDICAPPED ACCESSIBLE

CERTIFICATE OF POSTING

RECEIVED
JAN 16 2019
OFFICE OF
ADMINISTRATIVE HEARINGS

Date: 12-26-18

RE: Case Number: 2019-0141-X

Petitioner/Developer: Kerri Neary

Date of Hearing/Closing: Thurs Jan 17, 2019 10AM

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(Month, Day, Year)

J. Lawrence Pilson
(Signature of Sign Poster)

J. LAWRENCE PILSON
(Printed Name of Sign Poster)

ATTACH PHOTGRAPH

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(Street Address of Sign Poster)

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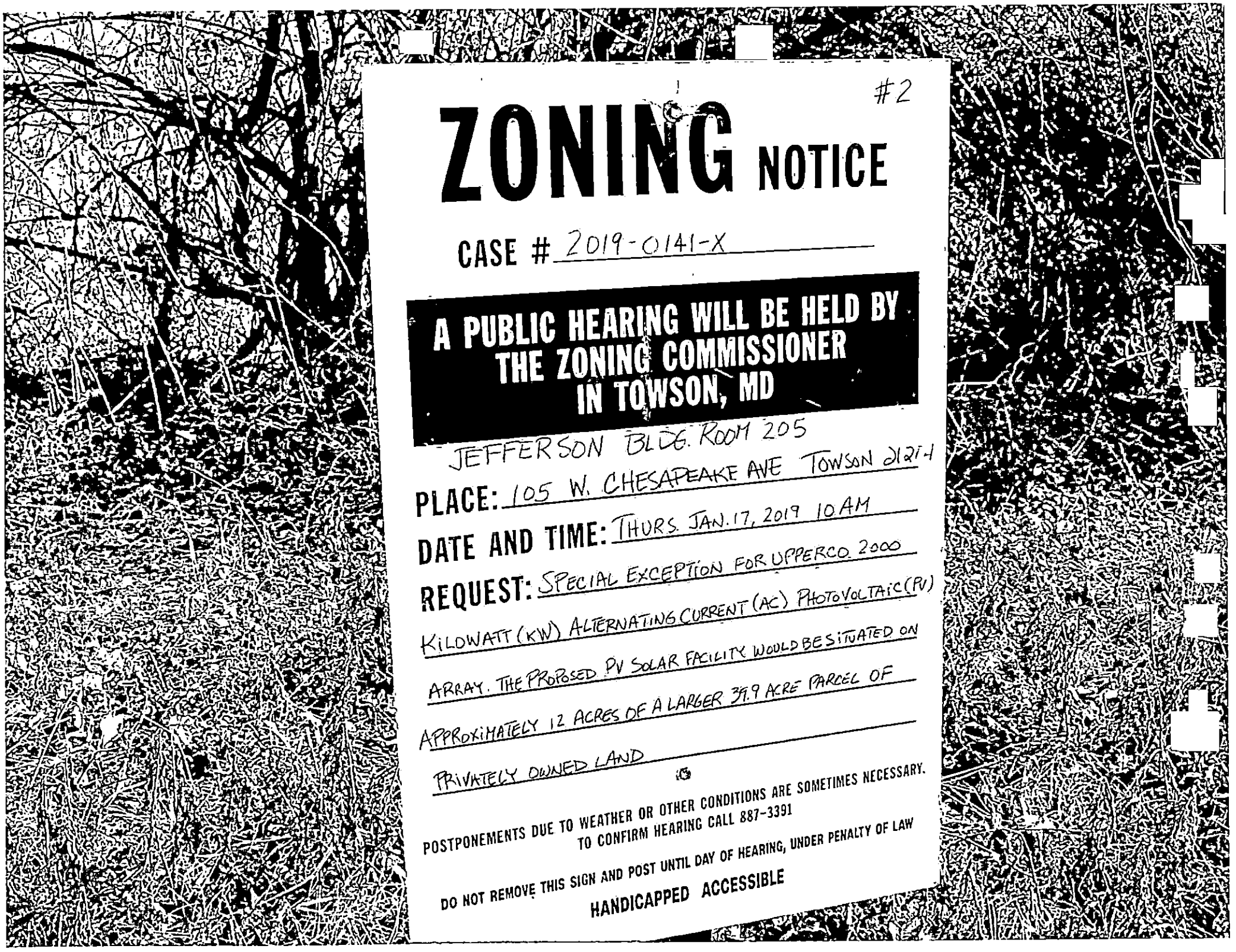
410-343-1443
(Telephone Number of Sign Poster)



#2

ZONING NOTICE

CASE # 2019-0141-X

A PUBLIC HEARING WILL BE HELD BY THE ZONING COMMISSIONER IN TOWSON, MD

PLACE: JEFFERSON BLDG. ROOM 205 105 W. CHESAPEAKE AVE TOWSON 21204

DATE AND TIME: THURS. JAN. 17, 2019 10 AM

REQUEST: SPECIAL EXCEPTION FOR UPPERCO 2000 KILOWATT (KW) ALTERNATING CURRENT (AC) PHOTOVOLTAIC (PV) ARRAY. THE PROPOSED PV SOLAR FACILITY WOULD BE SITUATED ON APPROXIMATELY 12 ACRES OF A LARGER 39.9 ACRE PARCEL OF PRIVATELY OWNED LAND

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HANDICAPPED ACCESSIBLE

#1

ZONING NOTICE

CASE # 2019-0141-X

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PLACE: JEFFERSON BLDG, ROOM 205. 105 W. CHESAPEAKE AVE., TOWSON, MD 21204

DATE AND TIME: THURS. JAN. 17, 2019 10 AM

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DO NOT REMOVE THIS SIGN AND POST UNTIL DAY OF HEARING UNDER PENALTY OF LAW

HANDICAPPED ACCESSIBLE

The Daily Record

11 East Saratoga Street
Baltimore, MD 21202-2199
(443) 524-8100
http://www.thedailyrecord.com

Order #: 11665729
Case #: 2019-0141-X
Description:

NOTICE OF ZONING HEARING CASE NUMBER: 2019-0141-X

PUBLISHER'S AFFIDAVIT

We hereby certify that the annexed advertisement was published in **The Daily Record**, a daily newspaper published in the State of Maryland 1 times on the following dates:

12/28/2018

Darlene Miller

Darlene Miller, Public Notice Coordinator
(Representative Signature)

Baltimore County

NOTICE OF ZONING HEARING

The Administrative Law Judge of Baltimore County, by authority of the Zoning Act and Regulations of Baltimore County, will hold a public hearing in Towson, Maryland on the property identified herein as follows:

CASE NUMBER: 2019-0141-X
15009 Hanover Pike
E/s Hanover Pike, 600 ft. +/- s/of centerline of Emory Road
4th Election District - 3rd Councilmanic District
Legal Owners: Shafi Javid, MD
Contract Purchaser/Lessee: Kerri Neary

Special Exception for Upperco 2000 kilowatt (kw) alternating current (AC) Photovoltaic (PV) array. The proposed PV Solar Facility would be situated on approximately 12 acres of a larger 39.9 acre parcel of privately owned land.

Hearing: Thursday, January 17, 2019 at 10:00 a.m. in Room 205, Jefferson Building, 105 West Chesapeake Avenue, Towson 21204

Arnold Jablon
Director of Permits, Approvals and Inspections for Baltimore County

NOTES: (1) HEARINGS ARE HANDICAPPED ACCESSIBLE; FOR SPECIAL ACCOMODATIONS, PLEASE CONTACT THE ADMINISTRATIVE HEARINGS OFFICE AT 410-887-3868.

(2) FOR INFORMATION CONCERNING THE FILE AND/OR HEARING, CONTACT THE ZONING REVIEW OFFICE AT 410-887-3391.

d28

JOHN A. OLSZEWSKI, JR.
County Executive

DIRECTOR
Department of Permits, Approvals & Inspections

December 14, 2018

NOTICE OF ZONING HEARING

The Administrative Law Judge of Baltimore County, by authority of the Zoning Act and Regulations of Baltimore County, will hold a public hearing in Towson, Maryland on the property identified herein as follows:

CASE NUMBER: 2019-0141-X
15009 Hanover Pike
E/s Hanover Pike, 600 ft. +/- s/of centerline of Emory Road
4th Election District – 3rd Councilmanic District
Legal Owners: Shafi Javid, MD
Contract Purchaser/Lessee: Kerri Neary

Special Exception for Upperco 2000 kilowatt (kw) alternating current (AC) Photovoltaic (PV) array. The proposed PV Solar Facility would be situated on approximately 12 acres of a larger 39.9 acre parcel of privately owned land.

Hearing: Thursday, January 17, 2019 at 10:00 a.m. in Room 205, Jefferson Building, 105 West Chesapeake Avenue, Towson 21204

Arnold Jablon
Director

AJ:kl

C: Kerri Neary, 1400 Wilson Point Blvd., Ste. 800, Arlington VA 22201
Jodi Hunt, 1200 Scottsville Road, Building C, Ste. 181, Rochester NY 14624

NOTES: (1) **THE PETITIONER MUST HAVE THE ZONING NOTICE SIGN POSTED BY AN APPROVED POSTER ON THE PROPERTY BY FRIDAY, DECEMBER 28, 2018.**
(2) HEARINGS ARE HANDICAPPED ACCESSIBLE; FOR SPECIAL ACCOMMODATIONS PLEASE CALL THE ADMINISTRATIVE HEARINGS OFFICE AT 410-887-3868.
(3) FOR INFORMATION CONCERNING THE FILE AND/OR HEARING, CONTACT THE ZONING REVIEW OFFICE AT 410-887-3391.

TO: THE DAILY RECORD
Friday, December 28, 2018 - Issue

Please forward billing to:
Kerri Neary 484-554-3453
1400 Wilson Blvd., Ste. 800
Arlington, VA 22201

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Director of Permits, Approvals and Inspections for Baltimore County

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(2) FOR INFORMATION CONCERNING THE FILE AND/OR HEARING, CONTACT THE ZONING REVIEW OFFICE AT 410-887-3391.

RE:	PETITION FOR SPECIAL EXCEPTION 15009 Hanover Pike; E/S Hanover Pike, 600' S of C/line of Emory Road 4th Election & 3rd Councilmanic Districts Legal Owner(s): Javid Shafi, M.D. Contract Purchaser(s): Kerri Neary Petitioner(s)	*	BEFORE THE OFFICE OF ADMINSTRATIVE HEARINGS FOR BALTIMORE COUNTY 2019-141-X

* * * * * * * * * * * * *

ENTRY OF APPEARANCE

Pursuant to Baltimore County Charter § 524.1, please enter the appearance of People's Counsel for Baltimore County as an interested party in the above-captioned matter. Notice should be sent of any hearing dates or other proceedings in this matter and the passage of any preliminary or final Order. All parties should copy People's Counsel on all correspondence sent and all documentation filed in the case.

RECEIVED
NOV 15 2018

Peter Max Zimmerman

PETER MAX ZIMMERMAN
People's Counsel for Baltimore County

Carole S Demilio

CAROLE S. DEMILIO
Deputy People's Counsel
Jefferson Building, Room 204
105 West Chesapeake Avenue
Towson, MD 21204
(410) 887-2188

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that on this 15th day of November, 2018, a copy of the foregoing Entry of Appearance was mailed to Jodi Hunt, 1200 Scottsville Road, Building C, Suite 181, Rochester, NY 14624, Representative for Petitioner(s).

Peter Max Zimmerman

PETER MAX ZIMMERMAN
People's Counsel for Baltimore County

BALTIMORE COUNTY, MARYLAND
INTER-OFFICE CORRESPONDENCE

DATE: October 30, 2018

TO: John E. Beverungen, Administrative Law Judge
Office of Administrative Hearings

FROM: R. David Duvall, Planner II, Zoning Review Office
Department of Permits, Approvals and Inspections

SUBJECT: Recommendation for Zoning Case # 2019-0141-X

Pursuant to Section 4F-102.B.4, BCZR:

"Upon reaching the threshold of 10 solar facilities in a councilmanic district, no additional permits shall be issued for a solar facility in that district unless an existing facility previously approved under this article has been removed pursuant to Section 4F-107."

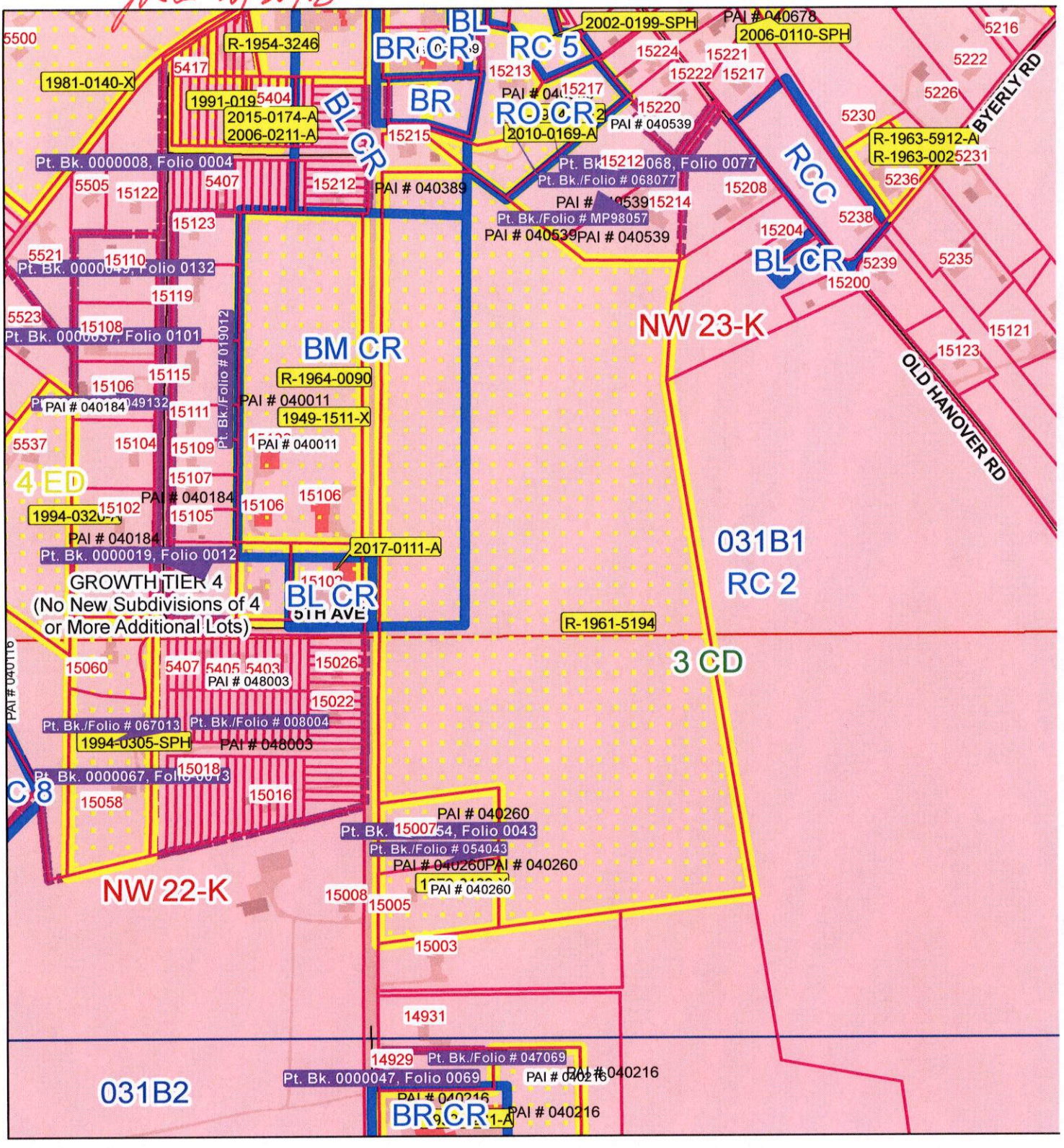
Since this case would be the "twelfth" petition filed in the 3rd Councilmanic District, the Zoning Review Office recommends that an advisory statement (i.e., a restriction) be included in any order granting the special exception that states:

"The granting of this special exception by the ALJ or the Board of Appeals upon appeal, does not guarantee that a building permit will ultimately be available for construction of this solar facility, pursuant to Section 4F-102.B.4, BCZR."

If you have any questions, please feel free to contact me at extension 3391.

#15009 JRC 10/30/18

Hanover Road, Tax #04-08 67-040



Publication Date: 10/30/2018

Publication Agency: Permits, Approvals & Inspections
Projection/Datum: Maryland State Plane,
FIPS 1900, NAD 1983/91 HARN, US Foot

N W E S

0 112.5 225 450 675 900 Feet

1 inch = 400 feet

Item #0141

PROPOSED PRINCIPAL USE SOLAR FACILITIES BY COUNCIL DISTRICT (Maximum 10)

	1st CD	2nd CD	3rd CD **	4th CD	5th CD	6th CD	7th CD
1.)			2017-0344-X (Refiled 3/7/18) Granted 4/25/18 14503 Green Rd No Permits as of 5/7/18	2018-0077-X (Filed 9/11/17) Hearing 12/4/17 No Decision as of 5/7/18 2316 Ridge Rd (No Permit)	2018-0127-X (Filed 11/3/17) Hearing 5/7/18 10790 Raphel Rd No Permits as of 5/7/18	2018-0095-SPHXA (Filed 9/27/17) Granted In Part & Dismissed w/o Prejudice In Part on 12/29/17 11956 Philadelphia Rd No Permits as of 5/7/18	
2.)			2018-0030-X (Filed 7/24/17) Hearing 5/4/18 1139 Monkton Rd No Permits as of 5/7/18	2018-0078-X (Filed 9/11/17) Granted12/7/2017 9155 Old Court Rd No Permits as of 5/7/18			
3.)			2018-0047-X (Filed 8/10/2017) Granted 12/21/17 Bd. Of App. Filing 1/18/18 15637 York Rd No Permits as of 5/7/18	2018-0123-SPHXA (Filed 11/1/17) Granted 1/26/18 9203 Dogwood Rd No Permits as of 5/7/18			
4.)			2018-0052-XA (Filed 8/14/17) Granted 10/13/17 Bd. Of App. Filing 11/9/17 15700 Hanover Pike No Permits as of 5/7/18	2018-0124-SPHX (Filed 11/1/17) Granted 1/26/18 10021 Old Court Rd No Permits as of 5/7/18			
5.)			2018-0072-X (Filed 9/1/17) Granted in Part & Denied in Part 1/3/18 (See Order) Mot. For Recon. 2/16/18 Bd. Of App. Filing 3/15/18 19735 Graystone Road No Permits as of 5/7/18				
6.)			2018-0194-X (Filed 1/25/18) Granted 4/3/18 Bd. Of App. Filing 4/30/18 632 Freeland Rd No Permits as of 5/7/18				
7.)			2017-0107-X (Re-filed 6/11/18 Case Now Subject to Council Bill # 37-17) Hearing 8/28/18 5298 Frye Road No Permits as of 7/26/18				
8.)			2019-0056-X (Filed 8/20/18) 20135 Old York Road No Permits as of 8/22/18				
9.)			2019-0057-X (Filed 8/20/18) 20920 Old York Road No Permits as of 8/22/18				
10.)			2019-0099-SPHXA (Filed 9/28/18) 4618 Jolly Acres Road No Permits as of 10/26/18				
11.)			2019-0138-X (Filed 10/29/18) 21138 Old York Road No Permits as of 10/29/18 **				

** ANY ADDITIONAL PETITION FILINGS IN THE 3RD COUNCILMANIC DISTRICT WILL INCLUDE A SAMPLE INTER-OFFICE MEMO, SIMILAR TO THE ATTACHED.

Item #0141

Revised 10/30/18

THE FOLLOWING SOLAR FACILITY ZONING CASES WERE FILED BEFORE THE OCTOBER 18, 2016 RETROACTIVE DATE REFERENCED IN COUNCIL BILL # 37-17, SECTION 3, AND THEREBY NOT INCLUDED IN COUNCIL DISTRICT TOTALS. (THESE ARE LISTED BELOW FOR HISTORIC INFORMATION PURPOSES ONLY!)

			2016-0335-X (Filed 6/24/16) Denied by Bd. Of Appeals 4/28/18 as solar array not being a "Public Utility Use" (See Refiled Case # 2018-0052-XA Above) 15700 Hanover Pike		2016-0086-X (Filed 10/5/15) Granted 12/16/15 11121 Pfeffers Road	2017-0101-X (Filed 10/12/16) Withdrawn 10/27/17 (See Refiled Case # 2018-0095-SPHXA Above) 11956 Philladelphia Road	
			2017-0104-X (Filed 10/13/16) Petition Withdrawn (See Refiled Case # 2018-0194-A Above) 632 Freeland Road				
			2017-0107-X (Filed 10/17/16) (See 6/11/18 Refiled Case Above Subject to Council Bill # 37-17) 5298 Frye Road				
			2017-0108-X (Filed 10/17/16) Granted 1/22/18 20450 Middletown Road				

Real Property Data Search (w3)

Search Result for BALTIMORE COUNTY

View Map | View GroundRent Redemption | View GroundRent Registration

Tax Exempt: **Special Tax Recapture:**
Exempt Class: AGRICULTURAL TRANSFER TAX

Account Identifier: **District -** 04 **Account Number -** 0408067040

Owner Information

Owner Name:	SHAFI JAVAID M MD PA	**Use:**	AGRICULTURAL
		Principal Residence:	NO
Mailing Address:	13008 GLEN RD NORTH POTOMAC MD 20878-	**Deed Reference:**	/06123/ 00683

Location & Structure Information

Premises Address: 15009 HANOVER ~~RD~~ PIKE
UPPERCO 21155-

Legal Description: 38.17 AC ES HANOVER
600 S EMORY RD

Map:	Grid:	Parcel:	Sub District:	Subdivision:	Section:	Block:	Lot:	Assessment Year:	Plat No:
0031	0004	0046		0000				2019	Plat Ref:

Special Tax Areas: **Town:** NONE
Ad Valorem:
Tax Class:

Primary Structure Built	Above Grade Living Area	Finished Basement Area	Property Land Area	County Use
			41.3800 AC	05

Stories	Basement	Type	Exterior	Full/Half Bath	Garage	Last Major Renovation

Value Information

	Base Value	Value As of 01/01/2016	Phase-in Assessments As of 07/01/2018	As of 07/01/2019
Land:	9,500	9,500		
Improvements	0	0		
Total:	9,500	9,500	9,500	
Preferential Land:	9,500			

Transfer Information

Seller: KLAWANS WARREN A G USE 83-84	**Date:** 01/07/1980	**Price:** $130,000
Type: ARMS LENGTH IMPROVED	**Deed1:** /06123/ 00683	**Deed2:**
Seller:	**Date:**	**Price:**
Type:	**Deed1:**	**Deed2:**
Seller:	**Date:**	**Price:**
Type:	**Deed1:**	**Deed2:**

Exemption Information

Partial Exempt Assessments:	Class	07/01/2018	07/01/2019
County:	000	0.00	
State:	000	0.00	
Municipal:	000	0.00	0.00

Tax Exempt: **Special Tax Recapture:**
Exempt Class: AGRICULTURAL TRANSFER TAX

Item #0141

DEPARTMENT OF PERMITS, APPROVALS AND INSPECTIONS
ZONING REVIEW OFFICE

ADVERTISING REQUIREMENTS AND PROCEDURES FOR ZONING HEARINGS

The Baltimore County Zoning Regulations (BCZR) require that notice be given to the general public/neighboring property owners relative to property which is the subject of an upcoming zoning hearing. For those petitions which require a public hearing, this notice is accomplished by posting a sign on the property (responsibility of the legal owner/petitioner) and placement of a notice in a newspaper of general circulation in the County, both at least twenty (20) days before the hearing.

Zoning Review will ensure that the legal requirements for advertising are satisfied. However, the legal owner/petitioner is responsible for the costs associated with these requirements. The newspaper will bill the person listed below for the advertising. This advertising is due upon receipt and should be remitted directly to the newspaper.

OPINIONS MAY NOT BE ISSUED UNTIL ALL ADVERTISING COSTS ARE PAID.

For Newspaper Advertising:

Case Number: 2019-0141-X

Property Address: Hanover Pike (15009) Tax #04-08-067-046

Property Description: east of Hanover Pike, +/-600' south of Emory Rd

Legal Owners (Petitioners): Shafi Javid, MD

Contract Purchaser/Lessee: _____

PLEASE FORWARD ADVERTISING BILL TO:

Name: Kerri Neary

Company/Firm (if applicable): ICFT S MD Solar LLC

Address: 1401 Wilson Blvd. Suite 800
Arlington, VA

Telephone Number: (484) 554-3453

Revised 7/9/2015

Zoning Special Use Application

OF

Proposed Upperco Solar Site
Hanover Pike
Upperco, Maryland

October 30, 2018

Prepared by:

Tetra Tech, Inc.
1200 Scottsville Road, Bldg. C, Suite 181
Rochester, NY 14624
Phone: (585) 417-4007

Prepared for:

ICFTS MD Solar, LLC
1401 Wilson Blvd., Suite 800
Arlington, VA 22201

Item #0141

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ATTACHMENT I – VEGETATIVE MAINTENANCE PLAN
ATTACHMENT J – DECOMMISIONING PLAN

1.0 PROJECT OVERVIEW

ICFTS MD Solar, LLC (Summit Ridge) is seeking a Zoning Special Use Permit and Site Plan approval for the construction of the Upperco Solar approximately 2.09 Megawatt (MW) direct current (DC) Photovoltaic Array located at Hanover Pike (Route 30), Upperco, Maryland (hereafter referred to as the "Site"). Summit Ridge proposes the development of approximately 12.9 acres of a larger 39.9-acre parcel of private land in Upperco, Baltimore County into a ground-mounted photovoltaic (PV) solar energy generating facility.

The proposed project would be capable of delivering approximately 2.09 MW of DC into the electrical power grid, which is sufficient to provide renewable energy to approximately 300 households. The PV panels proposed for this project are single-axis tracking panels that would be placed on a racking system that is pile driven into the ground surface. The solar panels will be directly interconnected to, and provide energy to, Baltimore Gas and Electric's local electric distribution grid via an overhead electrical service. Prior to utility interconnection, DC electrical power generated by the solar panels will be transformed to alternating current (AC) power and modified as necessary to connect to Baltimore Gas and Electric's electrical power supply. The project would also include an equipment pad, a gravel access road, a vegetative soil cover, and it will be surrounded by a chain-linked security fence as per the applicable electric building codes and requirements.

The following sections address the Zoning Special Exception Permit/Solar Energy System Development Criteria cited in the Baltimore County, Maryland ordinance, regulating development of solar energy systems (Ordinance Part 4F), The Baltimore County Code Section 33-3-108, and the Zoning Checklist for Non-Residential Permits and/or Zoning Public Hearing Applications.

2.0 SITE DESCRIPTION

The Site, located on Hanover Pike, Maryland, consists of one tax parcel assigned Tax PIN number 0408067040, totaling an area of approximately 39.9 acres. According to Baltimore County Zoning Maps, the majority of the parcel, approximately 34.09 acres, is zoned RC-2 for agricultural use. Approximately 7.29 acres of the parcel on the west side are zoned BM-CR for Business Major/Large Scale Commercial use. According to Baltimore County Tax Information, the parcel is located within the unincorporated community of Upperco, Maryland. The Site is bounded by residential properties to the north; Maryland State Highway 30 (Hanover Pike), commercial properties and rural residential properties to the west; several farm fields and commercial/residential properties to the east and south; and an agricultural field followed by Old Hanover Road to the east. The Site is located within the Piney Run Rural Legacy Area, but the subject tax parcel does not have a rural legacy area deed restriction limiting development of the property. A portion of the Site is utilized for storm water management consisting of a storm water management pond and associated outlet and control structures constructed and maintained by the Maryland Department of Transportation. The proposed solar project will not disturb this storm water management structures.

A map showing the location of the Site and adjacent land use is presented in *Attachment A;* A Site plan showing the physical layout is presented in *Attachment B;* A copy of the Lease Agreement is presented in *Attachment C.*

3.0 COMMUNITY CHARACTER AND SURROUNDING LAND USE

The general area around the Site consists of residential, commercial and agricultural development. The portions of the property which are not proposed for solar development are anticipated to be continued to be used for storm water management by the Maryland Department of Transportation. The Site is located within a mixed-use area of the unincorporated community of Upperco, Baltimore County, Maryland. The Site is bounded by residential and commercial properties followed by Emory Road to the north; Maryland State Highway 30 (Hanover Pike), commercial properties and rural residential properties to the west; several farm fields and commercial/residential properties to the east and south; and an agricultural field followed by Old Hanover Road to the east.

Table 3-1 Adjacent Properties and Addresses

Tax Account No.	Street Address	Owner	Zoning
0406000670	15215 Hanover Road	Ronald C. Price	BL-CR
2200026232	15217 Hanover Pike	Eric J. Norris	RO-CR
2300007009	15212 Old Hanover Road	Wayne E. Sauter	RC-2
2300007008	15214 Old Hanover Road	David Schneider	RC-2
0407015379	15208 Old Hanover Road	Bruce M. Smith	RC-2
0415069435	15206 Old Hanover Road	Vola H. Osborn	RC-2
0411000526	15202 Old Hanover Road	Jere J. Hunt	RC-2
0402058901	14914 Old Hanover Pike	Glenn S. Elseroad	RC-2
1600011102	Hanover Road	Dale S. Trump	RC-2
0414001100	15003 Hanover Pike	Richard B. Isaac Trustee	RC-2
2000006704	15005 Hanover Road	Roy L. Johnson	RC-2
2000006703	15007 Hanover Road	Brian E. Shipley	RC-2
0416015840	Hanover Road	Joshua H. Larrimore	RC-2
0408065954	15022 Hanover Road	Dinah L. Hoffman	RC-2
0407058500	15026 Hanover Pike	James A. Houston Jr.	RC-2
0402085875	15102 Hanover Road	Laker Capital Group, LLC	BL-CR
0418048000	15106 Hanover Road	Eleanor H. Rhode Rev. Trust	BM-CR
0401074400	15212 Hanover Road	Calvin W. Armacost Trustee	BL-CR

The installation and operation of a solar facility is consistent with the Baltimore County Comprehensive Plan's (BCCP) goal of encouraging the responsible use of natural resources to meet current needs without degrading the supply and quality of those resources for the future. A specific policy identified in that regard is to continue to adapt to and mitigate impacts of climate change on the environment (BCCP Sustainable Environment).

The proposed project is harmonious with the existing zoning of nearby parcels, will not depreciate or alter those properties' essential character, and presents no conflict with residentially zoned areas

of the County. The BCZR (Section 502 Special Exceptions) outlines nine points that determine the nature of consistency between a proposed Special Use and the surrounding area. The standards are represented as follows:

The proposed Special Use shall not be detrimental to the health, safety, or general welfare of the area.

The proposed project is intended to provide a clean source of green energy into the local electrical power grid. Baltimore County, as well as the State of Maryland have regulations in place to ensure the security of solar facilities including the requirements for perimeter fencing and monitoring. To deter theft, a security fence with barbed wire has been proposed to both deter crime and protect the community. The project is set off the road, with a vegetative buffer along Route 30, and is located on private property.

According to the U.S. Department of Energy, few power-generating technologies have as little environmental impact as photovoltaic solar panels. The solar panels proposed for this project are made of crystalline silicon, typically from quartz or sand. Crystalline silicon semiconductors are also utilized in the manufacture of integrated circuits and microchips used in personal computers, cellular telephones and other modern electronics.

The outer glass cover constitutes the largest share of the total mass of a finished crystalline photovoltaic module, followed by the aluminum frame, the ethylene vinyl acetate encapsulant, the polyvinyl fluoride substrate, and the junction box. The solar cells themselves only represent about four percent of the mass of a finished module.

Additional materials proposed for the project consist of steel for the panel support (racking) system, powder-coated aluminum for the inverters, a crushed gravel access road, and a standard chain-link security fence pursuant to applicable electrical codes. Additional information on the specifications for the proposed equipment are located in Section 5.0.

The proposed Special Use shall not create congestion in roads, streets, or alleys.

Traffic impacts are generally limited to the project construction period, which is estimated to last approximately 3 to 4 months. Once the facility is operational, traffic is typically limited to less than 10 visits per year to monitor operation, provide maintenance/repair, and maintain vegetation, as necessary.

The proposed Special Use shall not create a potential hazard from fire, panic, or other dangers.

The proposed solar arrays are designed to withstand extreme weather conditions. The risk of a fire associated with electrical equipment is no greater than regular substations. Coordination with emergency services is an important part of any Site development process and this coordination will be conducted as part of Baltimore County Building Permit application process. Local

emergency services will be provided with notification that the Site is undergoing review and invited to visit the Site property. Equipment specifications will be provided to responders during the building permit application and implementation process.

The proposed Special Use shall not overcrowd land and cause an undue concentration of population.

The proposed project will be located on approximately 12.9 acres of a larger 39.9-acre parcel of private land. Solar projects of this type are quiet, low-profile and don't contribute to an increase in population or traffic.

The proposed Special Use shall not interfere with adequate provisions for schools, parks, water, sewerage, transportation, or other public requirements, conveniences, or improvements.

The proposed project is not expected to incur public expenses for emergency response or other community provisions. Once constructed, the Site will operate without personnel except for site maintenance outlined in the *Vegetative Maintenance Plan (Section 8.0) and Operation and Maintenance Plan (Section 9.0).* Operation of the Site will not require the use of public utilities such as water or sewerage.

The proposed Special Use shall not impair an adequate supply of light and air to adjacent properties.

The proposed solar arrays will not provide shade nor restricted airflow to the surrounding properties. The proposed array panels will not exceed seven feet above ground surface and will be constructed with approximately 18 feet between panel rows to allow sufficient wind passage and the project is approximately 300 feet from the nearest residence.

The proposed Special Use shall not be inconsistent with the spirit and intent of the BCZR.

The proposed solar facility is consistent with the County's intent to permit solar facilities in parts of the rural and commercial areas in a way that balances the benefits of solar energy production with the need to protect the community, agricultural land, forests, waterways and other natural resources. As cited in BCZR Article 4F-101A - Solar Facilities, "Solar energy is recognized as an abundant, renewable, and environmentally sustainable source of electricity generation that will lead to greater local grid resiliency and security, and produce clean, renewable energy and reduce air and water pollution caused by the burning of traditional fossil fuels".

The proposed Special Use shall not be inconsistent with the impermeable surface and vegetative provisions of the BCZR.

A Stormwater Pollution Prevention Plan (SWPPP) for the Site will be submitted as required by the County during the building permit process. The SWPPP will include stormwater controls that attenuate runoff generated during 1-, 10-, and 100-year 24-hour rainfall events so that the peak

flow at design points on site will not exceed the flow that existed prior to development of the Project. Stormwater is expected to flow off the array panels and infiltrate into surface soils on the Site, not effecting the storm water runoff patterns of the surrounding properties.

The property has an existing storm water management control pond and associated control structures constructed and maintained by the Maryland Department of Transportation. The project will not interfere with these storm water controls. Once the project is completed the anticipated storm water runoff will be less than the existing agricultural use of the property.

The proposed Special Use shall not be detrimental to the environmental and natural resources of the Site and vicinity including forests, streams, wetlands, aquifers, and floodplains.

One of the first steps in determining the viability of a potential project location is to screen the property for environmental factors such as soil depth and character, wetlands, waterbodies, endangered/protected species, flood plains and archeological resources. Additionally, the property is screened for community character, local zoning ordinances, visual impact, and glare. As a part of this screening process, numerous Federal, State, and local agencies are consulted for information on the proposed location. Additional information regarding the various agency consultations can be found in Section 4 and Section 5, below.

4.0 NATURAL AND CULTURAL RESOURCES

4.1 Threatened and Endangered Species

Targeted Ecological Areas

Tetra Tech, on behalf of Summit Ridge, reviewed the Baltimore County Geographic Information System's Targeted Ecological Areas (TEA) for the proposed site location. TEAs are defined as lands and watersheds of high ecological value that have been identified as conservation priorities by the Maryland Department of Natural Resources (DNR) for natural resource protection. These areas represent the most ecologically valuable areas in the State. The review concluded that there is no record of State listed TEAs in the vicinity of the Site.

State of Maryland Listed Threatened and Endangered Species

There are 36 listed wildlife species known to occur within Baltimore County. Desktop analysis of land cover data and aerial imagery suggest that 30 of the 36 listed species are unlikely to occur within the Project area due to lack of adequate on-site or adjacent habitat. Northern harrier, yellow-crowned night heron, and pied-billed grebe could potentially utilize portions of the Site as foraging habitat, with the pied-billed grebe potentially using it during migration and winter foraging. The brown spiketail, yellow-sided skimmer, and appalachian snaketail could also potentially utilize a portion of the Site as core and foraging habitat.

There are 146 state-listed threatened or endangered plants known to occur in Baltimore County. The probability of these species occurring within the Site is low considering that the majority of the Site is has been developed or managed as farmland or storm water control structures, providing little to no undisturbed natural habitat. Additional information is provided in Table 4.1, below.

Table 4.1. Potential Federal & State Listed Wildlife Species within in the Project Area[1]

English Name	Scientific Name	Federal State Status[2]	Species-Habitat Associations	Habitat Present in Project Vicinity	Likelihood of Occurrence[4]
Birds					
Northern Harrier	*Circus cyaneus*	SI	Found in large open areas including marshes, grasslands, and meadows. Foraging range is typically 12 to 15 miles/day but may be up to up to 100 miles/day.	Foraging habitat	Moderate
Yellow-crowned Night Heron	*Nyctanassa violacea*		Found foraging along shallow creeks, rivers, ponds, lakes, and swamps, and occasionally on lawns, plowed fields, and other upland sites.	Winter foraging habitat	Low
Pied-billed Grebe	*Podilymbus podiceps*		Found in freshwater wetlands, wet fields, bays, sloughs, marshes, lakes, slow-moving rivers, and even sewage ponds. Pied-billed Grebes can nest in moderately to heavily populated areas. They occupy similar habitats during migration and winter.	Migration/Winter Foraging Habitat	Low
Insects					
Brown Spiketail	*Cordulegaster bilineata*		Found at small, sunlit forested streams and seepages. Uses grasses and shrubs in clearings, meadow edges and open forest edges.	Core/Foraging habitat	Low-Moderate
Yellow-sided skimmer	*Libellula flavida*		Found at bog ponds and other acidic bodies of water, slower sections of streams, vegetated ditches, and seeps.	Core/Foraging Habitat	Low-Moderate
Appalachian Snaketail	*Ophiogomphus incurvatus*	SE	Found at Piedmont or mountain streams with a sandy or gravelly bottom. They are often found feeding in open fields near the streams they utilize.	Core/Foraging Habitat	Low

1. Sharp-shinned Hawk (*Accipiter striatus)*, Triangle Floater (*Alasmidonta undulata)*, Brook Floater (*Alasmidonta varicosa)*, Upland Sandpiper (*Bartramia longicauda)*, American Bittern (*Botaurus lentiginosus)*, Northern Barrens Tige Beetle (*Cicindela patruela)*, Splendid Tiger Beetle (*Cicindela splendida*), Alder Flycatcher (*Empidonax alnorum)*, Atlantic Bluet (*Enallagma doubledayi)*, Mottled Duskywing (*Erynnis martialis)*, Bog Turtle (*Glyptemys muhlenbergii)*, Rapids Clubtail (*Gomphus quadricolor)*, Northern Map Turtle (*Graptemys geographica)*, Bald Eagle (*Haliaeetus leucocephalus)*, Least Bittern (*Ixobrychus exilis),* Eastern Lampmussel (*Lampsilis radiata)*, Loggerhead Shrike (*Lanius ludovicianus)*, Black Rail (*Laterallus jamaicensis)*, Eastern Sedge Barrens Leafhopper (*Limotettix minuendus*), Hooded Merganser (*Lophodytes cucullatus)*, Edwards' Hairstreak (*Satyrium edwardsii)*, Northern Oak Hairstreak (*Satyrium favonius ontario)*, Smoky Shrew (*Sorex fumeus)*, Southern Pygmy Shrew (*Sorex hoyi winnemana)*, A Hydrophilid Beetle (*Sperchopsis tessellatus)*, Regal Fritillary (*Speyeria idalia)*, Least Tern (*Sternula antillarum)*, Pizzini's Cave Amphipod (*Stygobromus pizzinii)*, Slender Amphipod (*Stygobromus tenuis tenuis)*, and Laura's Clubtail (*Stylurus laurae)* are also documented in the County but are not likely to occur on Project Site due to lack of suitable habitat.
2. FE = Federal Endangered, SE = State Endangered, ST = State Threatened, SI = State In Need of Conservation.
3. S1 = Highly State Rare, S2 = State Rare, S3 = Watchlist, S4 = Apparently Secure, B = Breeding Rank.

Likelihood of Occurrence: Low– species range overlaps with Project Site and marginally suitable habitat in Project vicinity; Moderate– species range overlaps with Project Site and suitable habitat present in Project Site, or species known to occur in habitat similar to Project Site; High– highly suitable habitat present in Project Site, or known populations exist in Project vicinity.

Federal Listed Threatened and Endangered Species

Tetra Tech submitted a consultation request to the United States Department of the Interior Fish and Wildlife Service (USFWS) on October 24, 2018. The USFWS responded that there are no threatened or endangered species of mammals or plants present in the vicinity of the project Site (*Attachment D)*. As the project will be located on currently active agricultural land, it will have no significant impacts on fish, wildlife, animal or plant species or habitats, and will not degrade natural resources or ecosystems.

4.2 Cultural Resources

The Baltimore County Historic Preservation online mapping system revealed that the project area is not located within an area designated as sensitive for archaeological sites. In addition, Tetra Tech Tetra Tech, on behalf of Summit Ridge, reviewed the National Register of Historic Places (NRHP) database for previously recorded cultural resources investigations, archaeological sites, historic structures, and historic properties listed within the proposed project site. The background research did not identify the presence of cultural resources on the Site.

5.0 OPERATION AND MAINTENANCE CONSIDERATIONS

Photovoltaic solar facilities of this size are typically considered to be fairly low-maintenance. However, routine O&M services will be done per industry codes and manufacturer's specifications, ensuring the equipment is operating safely and efficiently. The system will be continuously monitored such that unexpected problems can be addressed immediately. An Operation & Maintenance Plan (O&M) is included as *Attachment E* and Manufacturer Specifications for Site Equipment is provided as *Attachment F.*

5.1 Utility Interconnection

In general, the greatest challenge in siting economically viable solar generating facilities is associated with utility interconnection capacity and requirements. Summit Ridge has been working in close coordination with the local utility provider (Baltimore Gas and Electric) and an interconnection evaluation request has been submitted.

5.2 Traffic Impacts

Traffic impacts are generally limited to the project construction period, which is estimated to last approximately three to four months. Once the facility is operational, traffic is typically limited to less than 10 visits per year to monitor operation, provide maintenance/repair, and maintain vegetation, as necessary.

Dust may be generated during the construction process, but it will be temporary in nature. Driveway construction and revegetation of the disturbed portions of the Site will minimize any dust impacts during the facility's operation. The long-term dust generation from the Site will be less than the current agricultural use of the Site since the area will remain vegetated on a year around basis. Maintaining a year-around vegetated area of approximately 20 acres may also reduce soil erosion and sedimentation of nearby existing storm water control features, streams and water bodies.

5.3 Noise

There may be some noise associated with facility construction – truck entry/exit, earthmoving equipment, etc. – but it is expected to be temporary in duration and limited to normal working hours.

The solar collection panels themselves are quiet. The greatest potential source of noise is anticipated to be the power inverters at the Site. The power inverters will be located within the array of solar panels and more than 500 feet from the nearest residential receptor and commercial

receptors. Noise levels at a typical inverter will be approximately 55 decibels at a distance of three feet and the noise will dissipate quickly as distance from the inverter increases. As a point of comparison, engaging in normal face-to-face conversation generates a noise level of approximately 60 decibels, and typical city traffic inside of a car has a noise level of approximately 80 decibels (Center for Disease Control and Prevention, 2017). At a distance of 40 feet, which is much closer than the nearest receptors, the inverter's noise level calculates to approximately 35 decibels, which is comparable to a soft whisper. Thus, noise impacts from the facility's operation are expected to be insignificant.

5.4 Solid Waste

Some minor amount of solid waste generation may occur during the construction process, but it will be disposed of offsite at an appropriate location. Once operational, the facility will not generate an appreciable amount of solid waste.

5.5 Odors

There are no odors generated by the facility's equipment. Odors generated by construction equipment during the construction process will be minor and temporary in nature.

5.6 Glare

With growing numbers of solar energy systems being proposed and installed throughout the United States, the potential impact of glint and glare from photovoltaic modules is receiving increased attention. GlareGauge, the program procured for the glare analysis, is a service distributed by ForgeSolar that uses the SGHT developed by Sandia National Laboratories.

Sandia developed SGHAT v. 3.0, a web-based tool and methodology to evaluate potential glint/glare hazards associated with solar energy installations. The validated tool provides a quantified assessment of when and where glare will occur, as well as information about potential ocular impacts. The tool can also be used for design optimization (tilt and orientation) to evaluate alternative configurations, orientations, and locations of solar installations that not only mitigate the impacts of glint/glare, but also optimize energy production (Sandia Laboratories, 2016).

The SGHAT (GlareGauge) was utilized to evaluate the potential for glare at several locations along nearby roads, residences, and commercial facilities. The panels to be used on the proposed project site are smooth glass surface material with an anti-reflection coating (ARC), which is noted in the glare analysis. The panels will be on an east-facing, single axis tracking array with an approximate height not to exceed seven feet from the ground surface. The panels will have a maximum 60-degree tilt. Two separate glare analyses were conducted for a panel height of seven feet (maximum

height) with applicable panel specifications. One analysis was run to simulate a driver's height above the ground in a standard automobile or in a first-floor building at five feet and six feet respectively. A second analysis was run to simulate a driver's height above the ground in a commercial truck at nine feet or in a second-floor building at 16 feet. The SGHAT Report is included as *Attachment G.*

The Federal Aviation Administration (FAA) Notice Criteria Tool allows the user to determine if a proposed structure would require a formal submission to the FAA under CFR Title 14 Part 77.9 (Safe, Efficient Use, and Preservation of the Navigable Airspace). This online tool was utilized to determine if the proposed solar facility would require formal filing to the FAA. The FAA Notice Criteria Tool Report is included as *Appendix H.*

5.7 Fire Protection and Emergency Access

Coordination with emergency services is an important part of any Site development process and this coordination will be conducted as part of the Building Permit application process. Local emergency services will be provided with notification that the Site is undergoing review and invited to visit the Site property. Equipment specifications will be provided to responders during the building permit application and implementation process.

The following measures will be taken regarding response to potential emergencies at the proposed facility:

- Local emergency responders will be invited to tour the site during construction and after construction is completed. The site tour will agenda will include descriptions of the system components, emergency shut-down, system isolation, etc.;
- The facility will be provided with a 'Knox-Box" or other similar locking mechanism to provide Site access to emergency responders;
- Emergency telephone numbers will be posted on the perimeter fence;
- System components will be marked in order to provide emergency responders with appropriate warning and guidance with respect to isolating the electrical systems; and
- Site access road will be maintained to allow emergency vehicle access to the Site.

6.0 VEGETATIVE MAINTENANCE PLAN

Following construction of the solar facility, disturbed grounds will be re-established with a grass seed mixture as ground cover on a year-round basis. The vegetative maintenance contractor will be responsible for inspecting and maintaining the vegetative integrity of the solar facility. The contractor will conduct onsite activities during growing months on an as-needed basis. The site maintenance frequency may be adjusted based on time of year and weather conditions. To avoid rutting, erosion, and soil compaction, weather forecasts will be consulted, and on-site field inspections will be conducted prior to mowing or cutting to ensure that these practices occur when the site is able to withstand this type of activity. Current agricultural practices on the Site remove the vegetation at the end of the growing season. The vegetative maintenance plan will ensure a vegetative ground cover on a year-round basis which will result in less dust and soil erosion than the current site use.

This scope of work covers work along the access road and within the fence line of the project. Remaining lands outside the fence are anticipated to be utilized for storm water management maintained by the Maryland Department of Transportation and as a vegetative buffer for the Site from Maryland Route 30 maintained by the landowner or their representative. The full Site Operation and Vegetative Maintenance Plan is included as *Attachment I.*

7.0 DECOMMISIONINGING PLAN

The Decommissioning Plan (the "Plan") describes anticipated activities and process for decommissioning of the proposed facility following its useful life. The purpose of decommissioning is to restore the Site to its original condition for continued use by the landowner.

Decommissioning consists of the removal of above-ground and below-ground facility components, management of excess materials as well as the restoration of Project lands, as applicable. Decommissioning activities are expected to take two to four months to complete. The full Decommissioning Plan is included as *Attachment J.*

8.0 REFERENCES

Adolf Goetzberger and Volker Hoffman (2005). "Photovoltaic Solar Energy Generation." Springer, New York.

The Federal Aviation Administration (FAA) developed *Technical Guidance for Evaluating Selected Solar Technologies on Airports* in 2010

Fthenakis, V.M. (2003). Practical Handbook of Photovoltaics: Fundamentals and Applications: Overview of Potential Hazards. Available at http://www.bnl.gov/pv/files/pdf/art_170.pdf .

U.S. Dept. of Energy (2010). "Photovoltaic Basics." Available at http://www1.eere.energy.gov/solar/pv_basics.html .

Vasilis Fthenakis, Hyung Chul Kim and Erik Alsema (2008). "Emissions from Photovoltaic Life-Cycles." *Environmental Science and Technology* 2008 42 (6):2168-2174. Available at: http://pubs.acs.org/doi/full/10.1021/es071763q .

9.0 ATTACHMENTS

ATTACHMENT A – SITE LOCATION MAP
ATTACHMENT B – SITE PLAN
ATTACHMENT C – LEASE AND EASEMENTS
ATTACHMENT D – USFWS THREATENED AND ENDANGERED SPECIES
ATTACHMENT E – OPERATION & MAINTENANCE PLAN
ATTACHMENT F – SITE EQUIPMENT MANUFACTURER SPECIFICATIONS
ATTACHMENT G – GLARE ANALYSIS
ATTACHMENT H – FEDERAL AVIATION ADMINSTRATION SCREEN
ATTACHMENT I – VEGETATIVE MAINTENANCE PLAN
ATTACHMENT J – DECOMMISIONING PLAN

ATTACHMENT A

SITE LOCATION MAP

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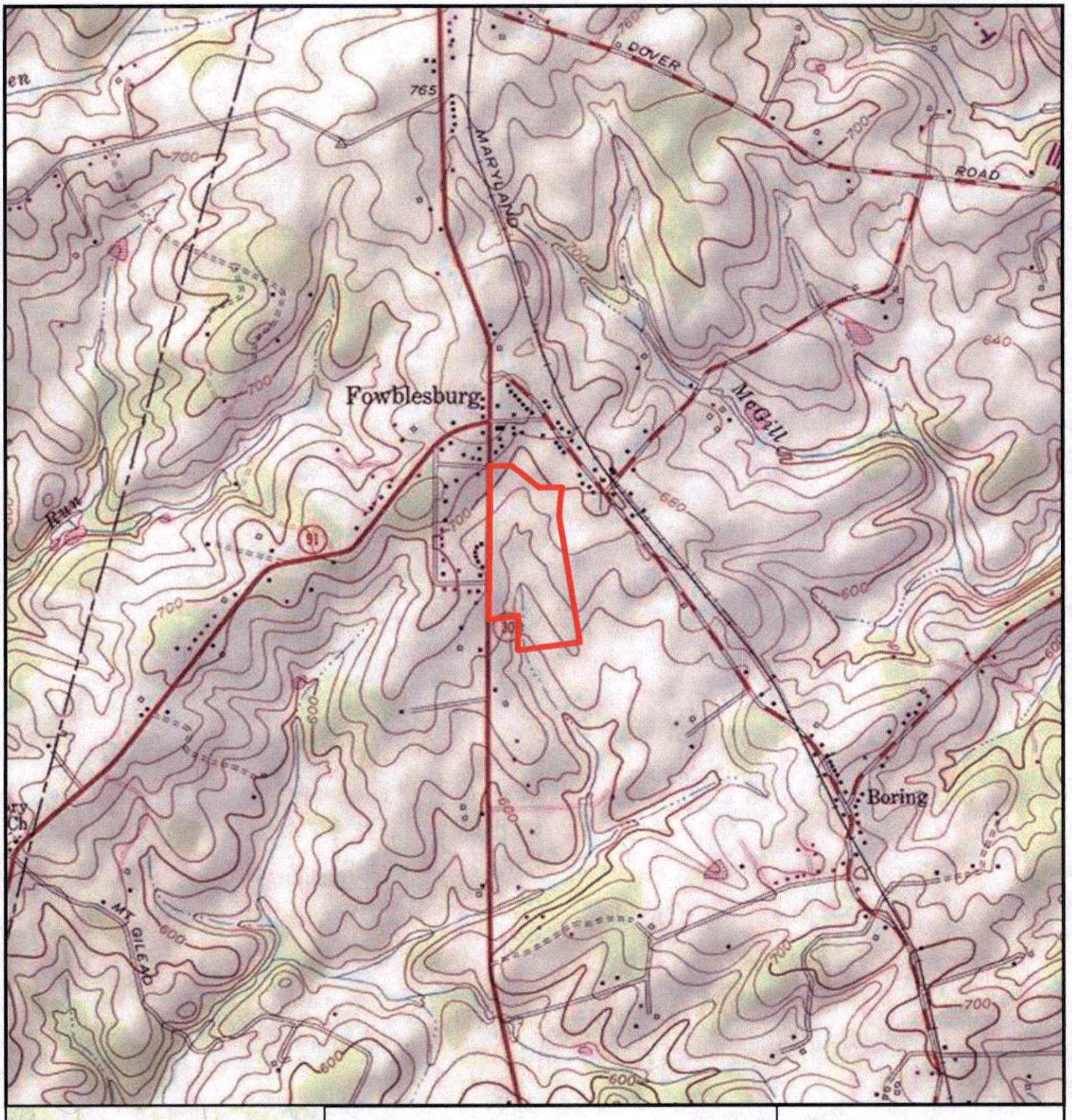


Legend

Approximate project location

TETRA TECH

Summit Ridge ENERGY

Attachment 1
Project Location
Upperco Solar

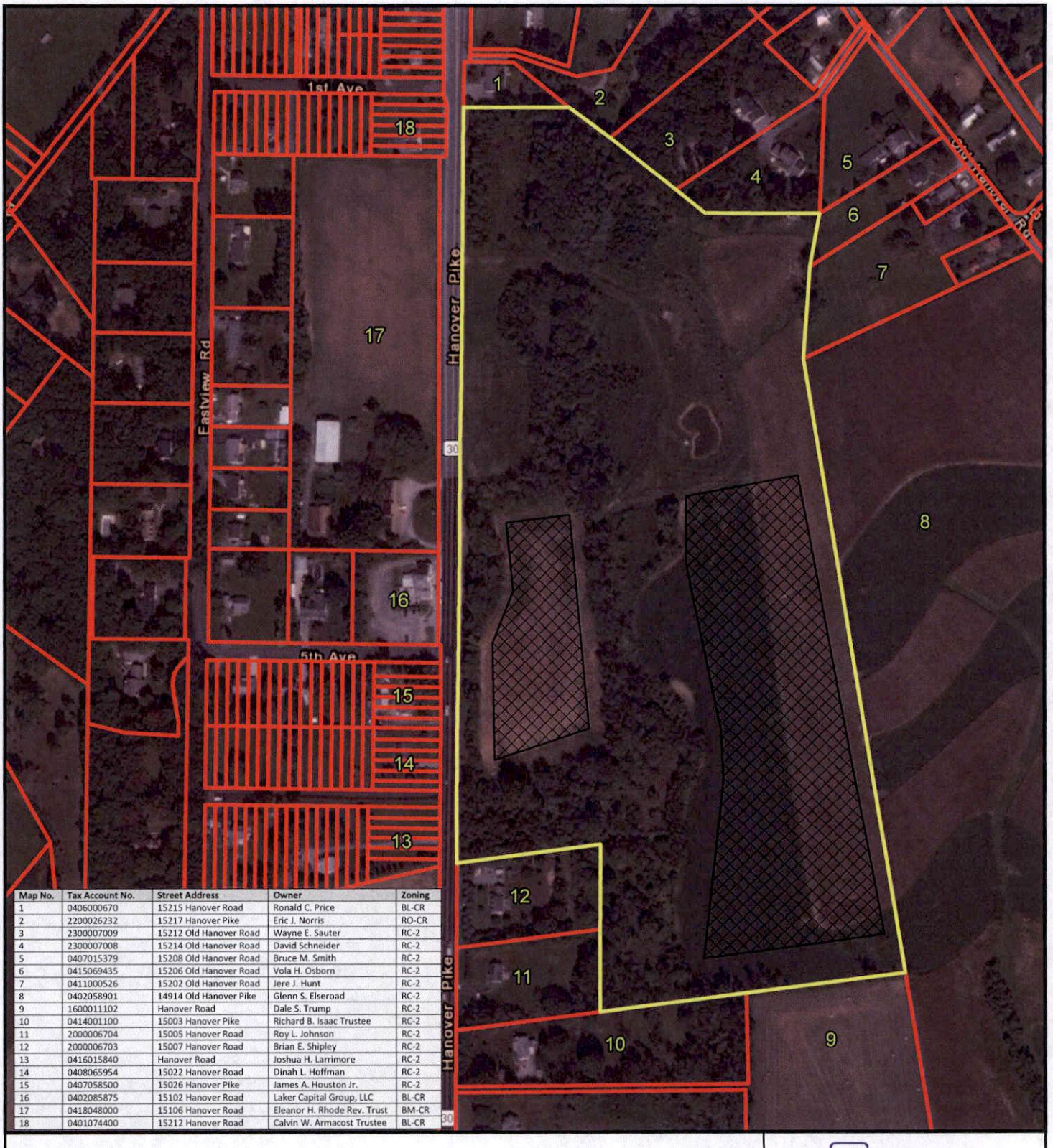
Approximate Scale:

0 750 1,500 3,000 Feet

600 South Emory Road
Upperco, MD

Service Layer Credits: Service Layer Credits: U.S. Geological Survey, 20180220, USGS US Topo 7.5-minute map for Worden, IL 2018: USGS - National Geospatial Technical Operations Center (NGTOC).

Copyright: Tetra Tech 10/24/2018 4:34:13 PM



Map No.	Tax Account No.	Street Address	Owner	Zoning
1	0406000670	15215 Hanover Road	Ronald C. Price	BL-CR
2	2200026232	15217 Hanover Pike	Eric J. Norris	RO-CR
3	2300007009	15212 Old Hanover Road	Wayne E. Sauter	RC-2
4	2300007008	15214 Old Hanover Road	David Schneider	RC-2
5	0407015379	15208 Old Hanover Road	Bruce M. Smith	RC-2
6	0415069435	15206 Old Hanover Road	Vola H. Osborn	RC-2
7	0411000526	15202 Old Hanover Road	Jere J. Hunt	RC-2
8	0402058901	14914 Old Hanover Pike	Glenn S. Elseroad	RC-2
9	1600011102	Hanover Road	Dale S. Trump	RC-2
10	0414001100	15003 Hanover Pike	Richard B. Isaac Trustee	RC-2
11	2000006704	15005 Hanover Road	Roy L. Johnson	RC-2
12	2000006703	15007 Hanover Road	Brian E. Shipley	RC-2
13	0416015840	Hanover Road	Joshua H. Larrimore	RC-2
14	0408065954	15022 Hanover Road	Dinah L. Hoffman	RC-2
15	0407058500	15026 Hanover Pike	James A. Houston Jr.	RC-2
16	0402085875	15102 Hanover Road	Laker Capital Group, LLC	BL-CR
17	0418048000	15106 Hanover Road	Eleanor H. Rhode Rev. Trust	BM-CR
18	0401074400	15212 Hanover Road	Calvin W. Armacost Trustee	BL-CR

Legend

*Proposed project parcel located in Council District 3 and Election District 4

Approximate project parcel boundary (zoned RC-2 and BM-CR)

Approximate project area

Approximate surrounding property parcels

Approximate scale:

0 300 600 1,200 Feet

TETRA TECH

Summit Ridge ENERGY

Surrounding Properties
Upperco Solar Project

600 South Emory Road
Upperco, MD 21155

Service Layer Credits: Esri, HERE, Garmin, © OpenStreetMap contributors
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community Mason County GIS data (http://www.masoncountyil.org/assessment.htm)

ATTACHMENT B

SITE PLAN

ATTACHMENT C

LEASE AND EASEMENTS

ATTACHMENT D

USFWS THREATENED AND ENDANGERED SPECIES

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Chesapeake Bay Ecological Services Field Office
177 Admiral Cochrane Drive
Annapolis, MD 21401-7307
Phone: (410) 573-4599 Fax: (410) 266-9127
http://www.fws.gov/chesapeakebay/
http://www.fws.gov/chesapeakebay/endsppweb/ProjectReview/Index.html

In Reply Refer To:
Consultation Code: 05E2CB00-2019-SLI-0181
Event Code: 05E2CB00-2019-E-00411
Project Name: Upperco Solar

October 24, 2018

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. This species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries
- Wetlands

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Chesapeake Bay Ecological Services Field Office
177 Admiral Cochrane Drive
Annapolis, MD 21401-7307
(410) 573-4599

Project Summary

Consultation Code: 05E2CB00-2019-SLI-0181

Event Code: 05E2CB00-2019-E-00411

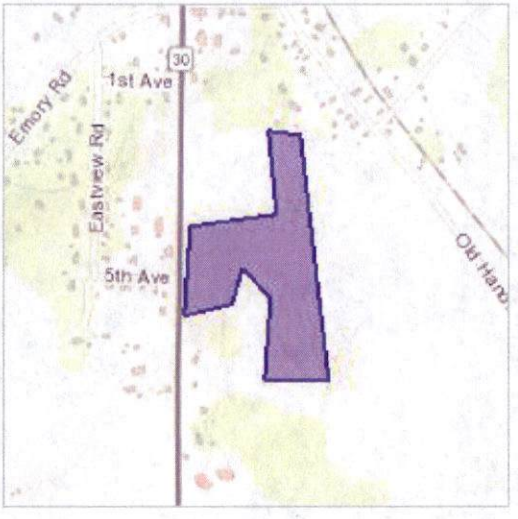
Project Name: Upperco Solar

Project Type: SPECIAL USE PERMIT

Project Description: Tetra Tech, Inc., on behalf of SRE Solar Origination 1, LLC is initiating consultation with the USFWS to determine potential impacts to federally-listed threatened and endangered species for a proposed commercial solar facility.

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/39.539342979152764N76.83593122958192W



Counties: Baltimore, MD

Endangered Species Act Species

There is a total of 0 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

USFWS National Wildlife Refuge Lands And Fish Hatcheries

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

Wetlands

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

FRESHWATER FORESTED/SHRUB WETLAND

- PSS1/EM5A
- PSS1B

ATTACHMENT E

OPERATION & MAINTENANCE PLAN

SCOPE OF MAINTENANCE SERVICES

During the term, Provider shall provide the services at the frequency indicated below, in accordance with the terms and conditions of this Agreement (as set forth in further detail below). It is expected that Provider shall exert best efforts to note items of concern outside the scope of scheduled visits; inspecting and assessing items that seem to be problematic even if not part of the scheduled visits and later discussing with the owner to seek remedy.

Item #	Service	Service Description	Frequency
1. Monitoring, Reporting, and Inventory			
1.1	Active Site Monitoring	Monitor inverters and meter output data for issues and alarms.	Daily
1.2	Annual Maintenance Plan	Provision of Annual Maintenance Plan, including baseline schedule for all maintenance services contemplated to occur in such year	Annually, by November 1 of each calendar year during the Term
1.3	Monthly Reporting	Provide monthly operating report for the projects including a summary of (i) operations; (ii) weather data, power and environmental attributes; (iii) Project performance; (iv) reports of any environmental or site disturbances; (v) safety/accident reports; (vi) Non-Covered Services; (vii) maintenance and inspection reporting; and (viii) any scheduled or recommended maintenance for the upcoming month.	Monthly, by the 15th day of the following month
1.4	Annual Reporting	Provide annual maintenance/inspection reports for the Project for the preceding calendar year	Annually, by February 1 of each calendar year during the Term
1.5	Emergency Services and Incident Reporting	Provide written report (in .pdf format) on any event involving Emergency Services, personnel injury associated with the Projects, or material damage to any Project or any part thereof.	No later than five (5) business days after the occurrence, or immediately for OSHA recordable events, but no later than 24 hours after obtaining knowledge of the event.
1.6	Security Incident Reporting	Notify Project Owner following provider receiving information indicative of a security issue on site	Immediately, but no later than 24 hours after obtaining

Item #	Service	Service Description	Frequency
			knowledge of the event.
1.7	Maintain Spare Parts	Store, maintain, and replenish spare parts inventory at Project Owner's expense. Inventory will be stored, at Provider's option either on-site in an O&M storage structure or off-site at a centralized storage facility or warehouse.	As Needed
2. Site Property Inspection/Maintenance			
2.1	Vegetation Management	Maintain vegetation and debris removal/control and landscaping, for all property within the fence line and all property immediately surrounding fencing (within reason), specifically ensuring vegetation does not encroach on modules.	2 X per year, maximum
2.2	Perimeter and Fence Inspection	Inspect all fencing for signs of damage, intrusion, and overgrowth of vegetation. Inspect signage to ensure all originally installed signs are present and legible	2 X per year
2.3	Roads	Inspect all roads for soil erosion concerns	2 X per year
2.4	Site Security Systems	Inspect security systems (if installed) for proper operation according to original security plan and design. Inspect entire site for general vandalism or other signs of security related issues.	2 X per year
3. DC Systems			
3.1	Racking Inspection	Inspect all racking, racking mounts and conduits on racking for damage, corrosion, settling and stability	1 X per year
3.2	Module Inspections	Visually inspect a 25% sampling of modules for soiling, breakage, delamination, discoloring and hot spots (only via aerial thermal audits). Inspections may be done either on the ground or via aerial visual analysis and aerial thermal imaging. If systemic issues are identified, notify Project Owner and propose a corrective action plan to be implemented as needed.	1 X per year
3.3	Broken Module Replacement	Replace modules that have previously been identified as broken (within reason), or identified as broken at the time of inspection. The cost of replacement modules (either for immediate use or to replenish spare parts) will be paid for by the Project Owner as needed. The procurement of replacement modules is conditional to Project Owner approval.	As Needed
3.4	Wire Inspection	Visually inspect for proper wire management and any possible damage on exposed conductors.	2 X per year

Item #	Service	Service Description	Frequency
3.5	Combiner Box and Re-Combiner Inspections	Electrical/mechanical inspection of combiners & disconnects. Visually inspect bonding bushings and grounding, check for wire damage especially at entrance/exit locations, terminal corrosion, any discoloration, and inspect fuses for proper functionality. Remove insects/pest debris from all enclosures.	2 X per year
3.6	Combiner Box and Re-Combiner Torque Inspections	Confirm and correct terminal torque settings for both sides of all fuse holders, grounded (negative) terminal bar, grounding bar, PV output circuit and DC Disconnects.	1 X per year
4. AC Systems			
4.1	Inverters	Perform annual inverter preventative maintenance work for all inverters per manufacturer's recommendations and manufacturer's warranty requirements.	Per Manufacturer's Recommendations and Manufacturer's Warranty Requirements
4.2	Inverter Air Filters and Transformer heat sinks	Inspect inverter air-filters and heat sinks, and clean or replace air filters if necessary.	2 X per year or Per Manufacturers Recommendations, whichever is more frequent.
4.3	Transformers	Visually inspect and clean all transformers per manufacturer recommendations, including but not limited to oil level measurement and clearing heat sink of debris.	1 X per year
4.4	AC Disconnect (if applicable)	Inspection of latches and seals on enclosure, verify proper operation of disconnect, visually inspect terminations and confirm and correct terminal torque settings. Check for signs of arcing.	1 X per year
5. DAS/SCADA Inspections			
5.1	General DAS Inspection	Perform monitoring system maintenance per manufacturer's specifications; verify orientation and attachment of pyranometers and module temperature sensors and MET station, and verify back up power supply functionality.	1 X per year
5.2	Pyranometers	Clean pyranometer domes with a soft cloth.	All scheduled & unscheduled site visits

Item #	Service	Service Description	Frequency
5.3	Pyranometer Calibration	Coordinate with Project Owner to cause calibration of pyranometers per manufacturer's specifications.	Per manufacturer specifications
5.4	Data/Instrument Accuracy and Communication s Verification	Test MET station sensors (GHI and POA pyranometers, ambient temperature, back-of-module, anemometer, Revenue Grade Meter (including current transducers), and inverter direct	1 X per year
6. Testing			
6.1	Aerial Thermal Audits	100% Aerial Thermal Audits	1 X per year
6.2	Thermal Imaging	Thermal imaging of all: overcurrent protection devices (OCPD) and bolted electrical connections including terminations in combiners and all disconnects, inverters and transformers	1 X per year
6.3	Transformer Oil Testing	Conduct transformer oil sampling and testing per nationally and/or internationally recognized testing standards	1 X per two years
6.4	Point-to-Point Testing	For 5% random sampling of combiner boxes, inspect grounding from modules & rack to combiners for wear, corrosion, and secure connections, and test the point-to-point resistance between modules, rack and EGC per NETA-ATS 2013 Section 7.13; document location, measure resistance and record results. Investigate point-to-point resistance readings that exceed 0.5 ohms. Notify Project Owner of any issues identified and propose a corrective action plan to be implemented as needed.	1 X per year

ATTACHMENT F

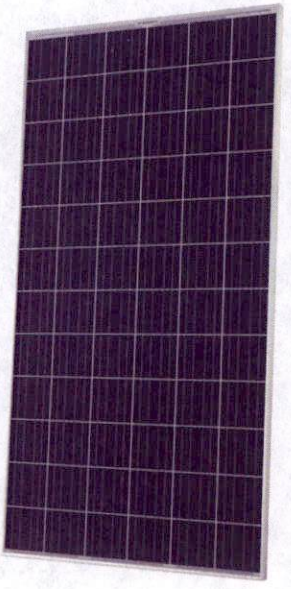
SITE EQUIPMENT MANUFACTURER SPECIFICATIONS

powered by Q.ANTUM

Q.PLUS L-G4.2 340-355

Q.ANTUM SOLAR MODULE

The Q.ANTUM solar module Q.PLUS L-G4.2 with power classes up to 355 Wp is the strongest module of its type on the market globally. Powered by 72 Q CELLS solar cells Q.PLUS L-G4.2 was specially designed for large solar power plants to reduce BOS costs. Only Q CELLS offers German engineering quality with our unique triple Yield Security.



LOW ELECTRICITY GENERATION COSTS

Higher yield per surface area and lower BOS costs thanks to higher power classes and an efficiency rate of up to 18.1 %.

INNOVATIVE ALL-WEATHER TECHNOLOGY

Optimal yields, whatever the weather with excellent low-light and temperature behavior.

ENDURING HIGH PERFORMANCE

Long-term yield security with Anti-PID Technology[1], Hot-Spot-Protect and Traceable Quality Tra.Q™.

EXTREME WEATHER RATING

High-tech aluminum alloy frame, certified for high snow (5400 Pa) and wind loads (2400 Pa).

A RELIABLE INVESTMENT

Inclusive 12-year product warranty and 25-year linear performance guarantee[2].

EUPD RESEARCH TOP BRAND PV MODULES EUROPE 2017

Q CELLS YIELD SECURITY
- ANTI PID TECHNOLOGY (APT)
- HOT-SPOT PROTECT (HSP)
- TRACEABLE QUALITY (TRA.Q™)

Photon
Q CELLS
Best polycrystalline solar module 2014
Q.PRO-G2 235
174 modules tested

[1] APT test conditions: Cells at -1500 V against grounded, with conductive metal foil covered module surface, 25 °C, 168 h

[2] See data sheet on rear for further information.

THE IDEAL SOLUTION FOR:

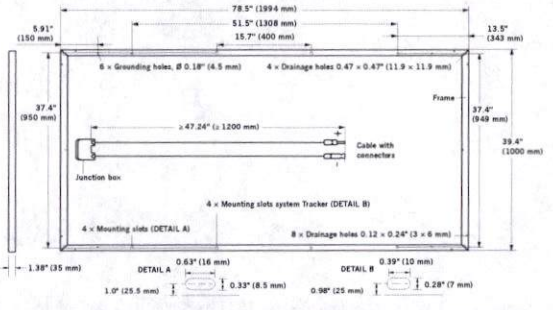
Ground-mounted solar power plants

Engineered in **Germany**

Q CELLS

MECHANICAL SPECIFICATION

Format	78.5 in × 39.4 in × 1.38 in (including frame) (1994 mm × 1000 mm × 35 mm)
Weight	52.9 lbs (24 kg)
Front Cover	0.13 in (3.2 mm) thermally pre-stressed glass with anti-reflection technology
Back Cover	Composite film
Frame	Anodized aluminum
Cell	6 × 12 Q.ANTUM solar cells
Junction box	3.35-4.53 in × 2.36-3.15 in × 0.59-0.75 in (85-115 × 60-80 × 15-19 mm), Protection class ≥ IP67, with bypass diodes
Cable	4 mm² Solar cable; (+) ≥ 47.24 in (1200 mm), (-) ≥ 47.24 in (1200 mm)
Connector	MC4 or MC4-EVO 2, IP65 and IP68

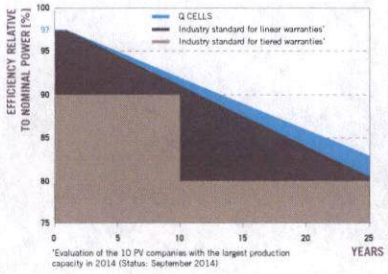


ELECTRICAL CHARACTERISTICS

POWER CLASS				340	345	350	355
MINIMUM PERFORMANCE AT STANDARD TEST CONDITIONS, STC[1] (POWER TOLERANCE +5 W / -0 W)							
Minimum	Power at MPP[2]	P_{MPP}	[W]	340	345	350	355
	Short Circuit Current*	I_{SC}	[A]	9.59	9.64	9.69	9.74
	Open Circuit Voltage*	V_{OC}	[V]	47.07	47.46	47.71	47.97
	Current at MPP*	I_{MPP}	[A]	9.03	9.09	9.15	9.21
	Voltage at MPP*	V_{MPP}	[V]	37.63	37.93	38.23	38.52
	Efficiency[2]	η	[%]	≥17.1	≥17.3	≥17.6	≥17.8
MINIMUM PERFORMANCE AT NORMAL OPERATING CONDITIONS, NOC[3]							
Minimum	Power at MPP[2]	P_{MPP}	[W]	252.1	255.8	259.5	263.2
	Short Circuit Current*	I_{SC}	[A]	7.73	7.77	7.81	7.85
	Open Circuit Voltage*	V_{OC}	[V]	43.92	44.29	44.53	44.77
	Current at MPP*	I_{MPP}	[A]	7.09	7.14	7.19	7.24
	Voltage at MPP*	V_{MPP}	[V]	35.56	35.83	36.10	36.36

[1] 1000 W/m², 25 °C, spectrum AM 1.5 G [2] Measurement tolerances STC ±3%; NOC ±5% [3] 800 W/m², NOCT, spectrum AM 1.5 G * typical values, actual values may differ

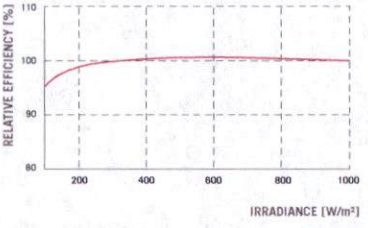
Q CELLS PERFORMANCE WARRANTY



At least 97 % of nominal power during first year. Thereafter max. 0.6 % degradation per year.
At least 92 % of nominal power up to 10 years.
At least 83 % of nominal power up to 25 years.

All data within measurement tolerances. Full warranties in accordance with the warranty terms of the Q CELLS sales organization of your respective country.

PERFORMANCE AT LOW IRRADIANCE



Typical module performance under low irradiance conditions in comparison to STC conditions (25 °C, 1000 W/m²).

TEMPERATURE COEFFICIENTS

Temperature Coefficient of I_{SC}	α	[%/K]	+0.04	Temperature Coefficient of V_{OC}	β	[%/K]	−0.29
Temperature Coefficient of P_{MPP}	γ	[%/K]	−0.40	Normal Operating Cell Temperature	NOCT	[°F]	113 ± 5.4 (45 ± 3 °C)

PROPERTIES FOR SYSTEM DESIGN

Maximum System Voltage V_{SYS}	[V]	1500 (IEC) / 1500 (UL)	Safety Class	II
Maximum Series Fuse Rating	[A DC]	20	Fire Rating	C (IEC) / TYPE 1 (UL)
Design load, push (UL)[2]	[lbs/ft²]	75 (3600 Pa)	Permitted module temperature on continuous duty	-40 °F up to +185 °F (-40 °C up to +85 °C)
Design load, pull (UL)[2]	[lbs/ft²]	33 (1600 Pa)	[2] safety factor of 1.5 included, see installation manual	

QUALIFICATIONS AND CERTIFICATES

IEC 61215 (Ed. 2); IEC 61730 (Ed. 1), Application class A

C Certified US UL 1703 (254141)

PACKAGING INFORMATION

Number of Modules per Pallet	29
Number of Pallets per 53' Container	26
Number of Pallets per 40' Container	22
Pallet Dimensions (L × W × H)	81.3 × 45.3 × 46.9 in (2065 × 1150 × 1190 mm)
Pallet Weight	1671 lbs (758 kg)

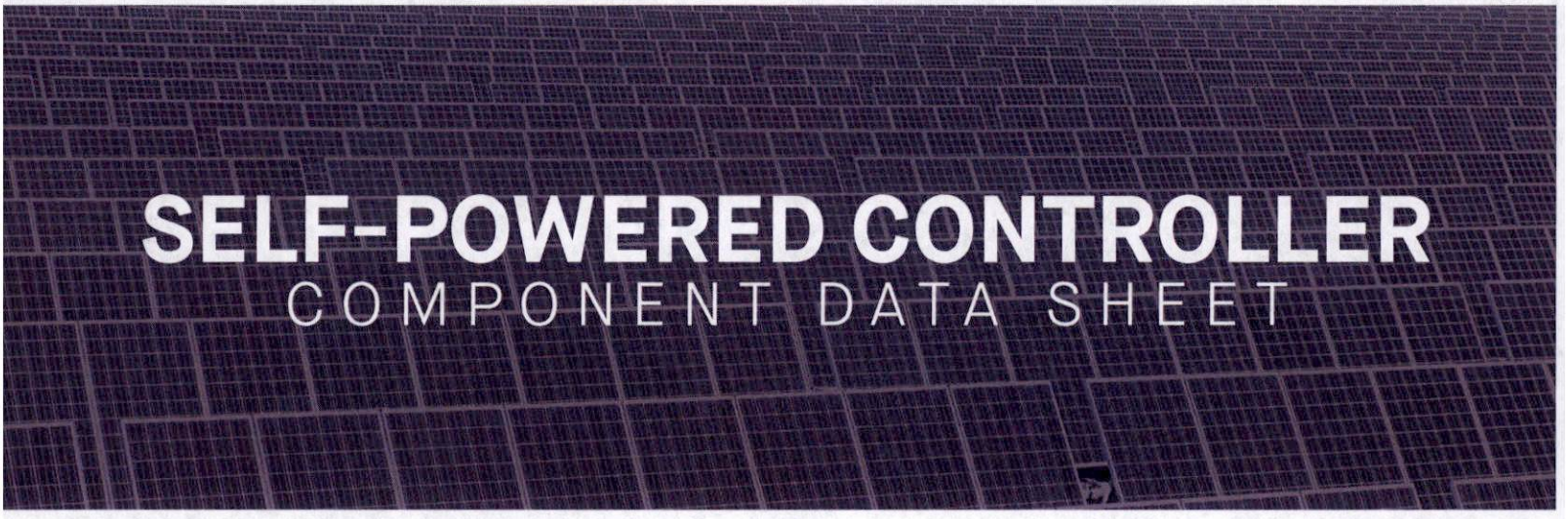
NOTE: Installation instructions must be followed. See the installation and operating manual or contact our technical service department for further information on approved installation and use of this product.

Hanwha Q CELLS America Inc.
300 Spectrum Center Drive, Suite 1250, Irvine, CA 92618, USA | TEL +1 949 748 59 96 | EMAIL inquiry@us.q-cells.com | WEB www.q-cells.us

Engineered in **Germany**

Specifications subject to technical changes © Hanwha Q CELLS Q.PLUS L-G4.2_340-355_2017-05_Rev01_NA

NEXTracker
A Flex Company



SELF-POWERED CONTROLLER
COMPONENT DATA SHEET

CONTROL SYSTEM OVERVIEW

With over 5GW of solar trackers delivered on five continents, NEXTracker's NX Horizon™ is the world's leading single-axis tracker. NX Horizon includes a comprehensive communications and control system for maximum tracker accuracy and system reliability. This consists of three types of control units, all networked together via ZigBee® wireless mesh communications.

SELF-POWERED CONTROLLER

Our patent-pending Self-Powered Controller (SPC) is mounted on each tracker row and autonomously commands the tracker to follow the sun throughout the day. Tracker operation is derived from on-board GPS, clock, and inclinometer, ensuring superior tracking accuracy. The SPC is powered by a small, dedicated PV panel and includes a backup battery to eliminate the need for any tracker power wiring. All SPCs communicate over a ZigBee wireless mesh network for monitoring and global control functions.

NETWORK CONTROL UNIT

A Network Control Unit (NCU) aggregates communication and control for up to 100 SPCs via the same ZigBee network. Each NCU monitors real-time SPC parameters and issues global commands to its associated SPCs. During wind or snow events, stowing commands are generated and issued automatically based on real-time data from Weather Stations located on-site. Manual operator-generated commands are available via local switches on the NCU.

Each NCU is accessible via a Modbus interface for SCADA integration. NCUs are typically located at inverter pads with other electrical equipment to easily connect to the required AC power. As with the SPCs, a battery backup is built into each NCU unit.

WEATHER STATION

A Weather Station measures real-time wind speed and snow depth and reports this data to the NCUs over the ZigBee network. When conditions warrant, the NCUs will propagate a stowing command out to their associated SPCs within seconds. Like the SPCs, each Weather Station is powered by a small, dedicated PV panel and includes a backup battery eliminating the need for power wiring. The quantity and location of Weather Stations is defined on a per project basis.

TRACKER CONTROLLER SPECIFICATIONS (GEN 2)

INPUT	
Max PV Input Power	80W
Max PV Input Voltage	$30V_{DC}$
Maximum PV Input Current	3.5A
MPPT Voltage Range	16-27V
Battery Nom. Voltage/Range	14.5V/12-16V

OUTPUT	
Rated Power	150W
Motor Voltage (Nominal / Range)	24V/0-24V
Motor Typical Operating Current	1.0-2.0A
Motor Peak Current	10A

COMMUNICATIONS	
Interface to NCU	ZigBee (2.4GHz)

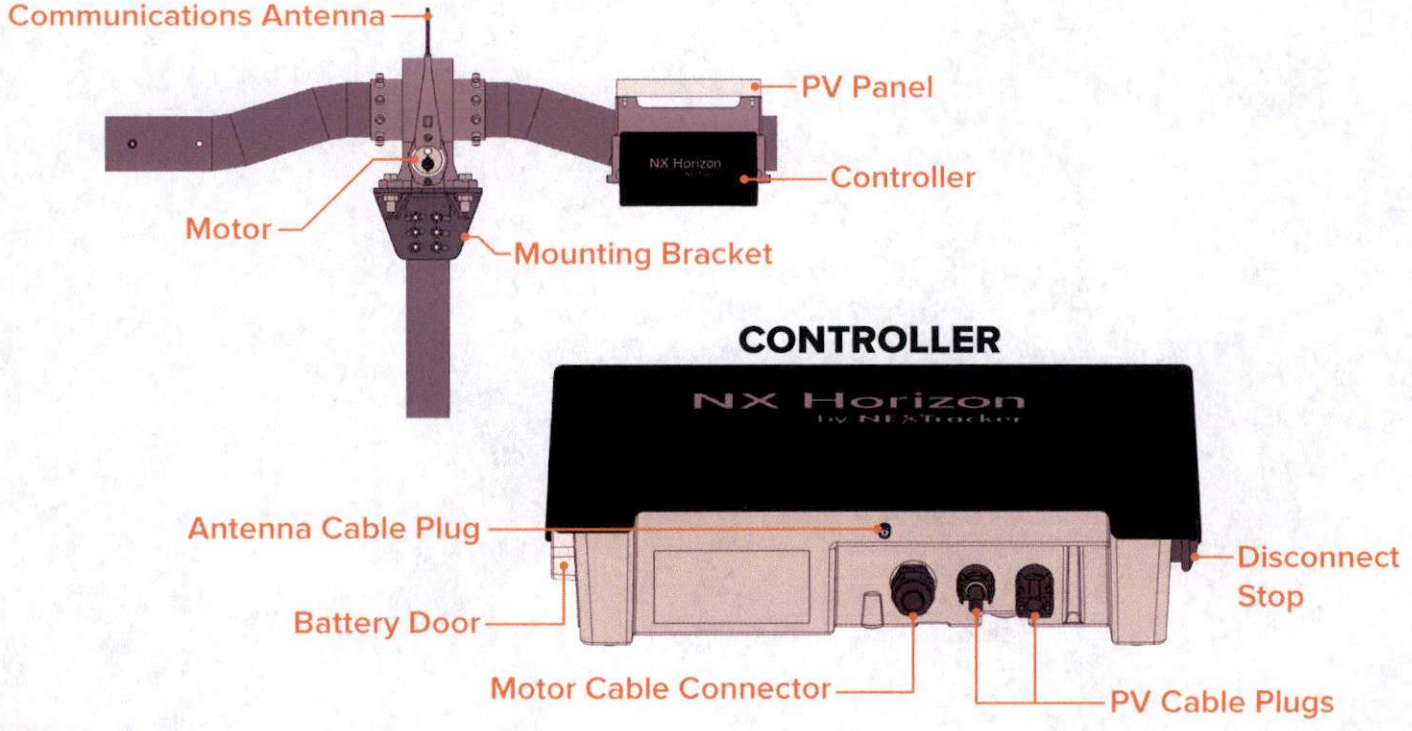
OPERATING PERFORMANCE	
Tracking Range	+/- 60 degrees
Standby Consumption	<0.5W

MECHANICAL	
Enclosure Rating	NEMA 4X / IP65
Dimensions (LxWxD)	14"x8"x4"
Weight	<9 lbs.
Enclosure Material	Polymer
EMI Compliance	FCC Part 15 Subpart B EN 55022: 2010 AS/NZS CISPR
Safety Compliance	UL 3703 in USA

ENVIRONMENT	
Operating Temperature	-30C to 60C
Storage Temperature	0C to 40C
Relative Humidity	0-95%

BACKUP BATTERY	
Battery Technology	Lithium Ion
Expected Battery Life	10 years
Backup Storage Capacity	3 days

SELF-POWERED CONTROLLER



WEATHER STATION CONTROLLER SPECIFICATIONS

INPUT

Max PV Input Power	65W
Max PV Input Voltage	$30V_{DC}$
Maximum PV Input Current	3A
MPPT Voltage Range	10-25V
Battery Nom. Voltage/Range	14.5V/12-16V

COMMUNICATIONS

Interface to NCU	ZigBee (2.4GHz)

WEATHER STATION SENSORS

Wind	NovaLynx Wind Sonic 65
Snow/Flood	NovaLynx 260-700

MECHANICAL

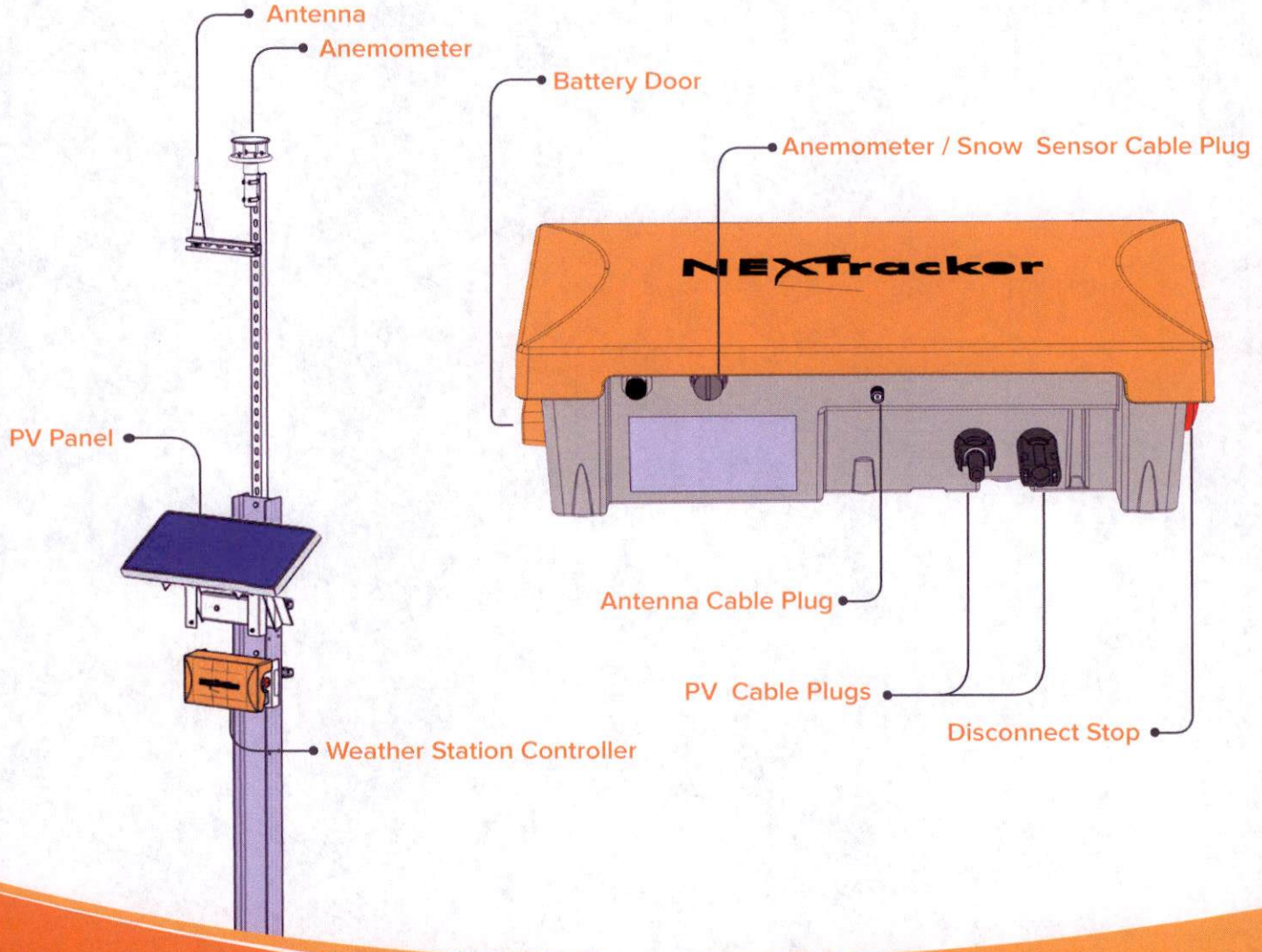
Enclosure Rating	NEMA 4X / IP65
Dimensions (LxWxD)	20"x6"x5"
Weight	<25 lbs.

ENVIRONMENT

Operating Temp. - Standard	0C to 50C
Operating Temp. - Optimal	-30C to 50C
Storage Temperature	0C to 40C
Relative Humidity	0-95%

BACKUP BATTERY

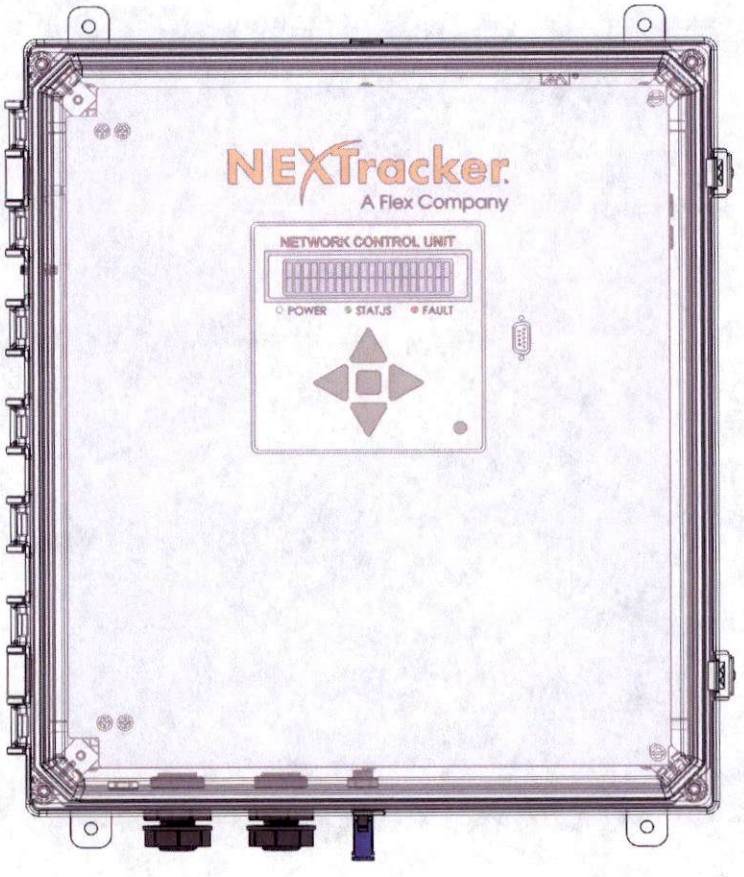
Battery Technology	Lithium Ion
Expected Battery Life	10 years
Backup Storage Capacity	3 days



NETWORK CONTROL UNIT SPECIFICATIONS

INPUT		MECHANICAL	
AC Input Voltage	100-265VAC	Enclosure Rating	NEMA 4X
Operational Power Consumption	<10W	Dimension in mm. (LxWxD)	491x452x200
Min. Over Current Device Rating	1A	Weight	<20 lbs.
BACKUP BATTERY		ENVIRONMENT	
Battery Technology	Lithium Ion	Operating Temperature	-30C to 60C
Expected Battery Life	10 years	Storage Temperature	0C to 40C
Backup Storage Capacity	3 days	Relative Humidity	0-95%
Shelf Life (In Storage)	3 months	HARDWARE	
COMMUNICATIONS		CPU (Processor)	Cortex A8
Remote Interface	ZigBee (2.4GHz)	On board Storage	4GB
Local Control Switches	Auto/Manual; Wash Position	Additional Storage Option	SD Slot
Network Interface	Ethernet RJ45	Onboard Screen	VFD

NETWORK CONTROL UNIT



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Illustrations are examples only. Actual product may vary.

NEXTracker
A Flex Company

MECHANICAL SYSTEMS OVERVIEW
COMPONENT DATA SHEET

With over 5GW of solar trackers delivered on five continents, NEXTracker's NX Horizon™ is the world's leading single-axis tracker. The NX Horizon is a self-powered, decentralized tracking system where each row is independent of one another - an industry first. Prior to this pioneering innovation, single-axis trackers included a drive shaft connecting each row, which impeded overall operations and maintenance of solar power plants. For NX Horizon, each row is driven by a brushless DC motor coupled to a slew gear. Power for the motor is provided by our patent-pending Self-Powered Controller (SPC) and a dedicated PV module.

BRUSHLESS DC MOTOR SPECIFICATIONS

MECHANICAL	
Protection Class	IP 65
Isolation Class	EN62114 (120C)
Certification	UL 1004-1
Operating Temperature	-40°C to 85°C
Motor Type	Brushless
Weight	1.7kg
Relative Humidity	0-95%

POWER RATINGS	
Nominal Voltage	24 V DC
Motor Continuous Current (85C)	< 6.25 A
No load Current at 24VDC (85C)	< 1 A
Max Power at Rated Torque	150 W

OUTPUT	
Rated Gear Output Torque (1 hr. continuous)	150 N-m

BRUSHLESS MOTOR

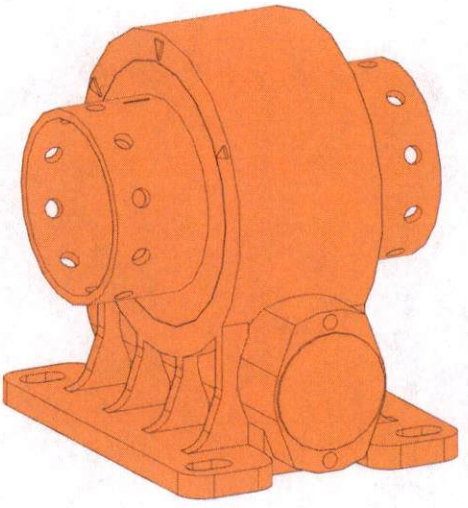
SLEW GEAR SPECIFICATIONS

MECHANICAL

Protection Class	IP 55 per IEC60529
Ambient Temp. Range	-40C to 60C
Housing Material	Ductile Iron
Rotation Range	±65°
Weight	77.5kg

LOAD RATINGS

Normal Output Torque, min	± 2000 N-m
High Output Torque, min	± 5000 N-m



SLEW GEAR

The NX Horizon slew gear is a single stage, worm gear speed reducer. The slew gear is designed to adjust the tracker tilt position to follow the sun each day, as well as hold the tracker position fixed during periods of wind stow. The brushless motor is directly coupled to the input worm shaft of the slew gear, with the tracker torque tubes permanently connected to the output collars. The slew gear is sealed and requires no scheduled maintenance for the life of the product.

NX Horizon Solar Tracker
UL 2703 & 3703 Certified

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Illustrations are examples only. Actual product may vary.

ATTACHMENT G

GLARE ANALYSIS

FORGESOLAR GLARE ANALYSIS

Project: **Summit Ridge Maryland**
Site configuration: **Upperco**
Analysis conducted by Jodi Hunt (jodi.hunt@tetratech.com) at 20:51 on 24 Oct, 2018.

U.S. FAA 2013 Policy Adherence

The following table summarizes the policy adherence of the glare analysis based on the 2013 U.S. Federal Aviation Administration Interim Policy 78 FR 63276. This policy requires the following criteria be met for solar energy systems on airport property:

- No "yellow" glare (potential for after-image) for any flight path from threshold to 2 miles
- No glare of any kind for Air Traffic Control Tower(s) ("ATCT") at cab height.
- Default analysis and observer characteristics (see list below)

ForgeSolar does not represent or speak officially for the FAA and cannot approve or deny projects. Results are informational only.

COMPONENT	STATUS	DESCRIPTION
Analysis parameters	PASS	Analysis time interval and eye characteristics used are acceptable
Flight path(s)	N/A	No flight paths analyzed
ATCT(s)	N/A	No ATCT receptors designated

Default glare analysis and observer eye characteristics are as follows:

- Analysis time interval: 1 minute
- Ocular transmission coefficient: 0.5
- Pupil diameter: 0.002 meters
- Eye focal length: 0.017 meters
- Sun subtended angle: 9.3 milliradians

FAA Policy 78 FR 63276 can be read at https://www.federalregister.gov/d/2013-24729

SITE CONFIGURATION

Analysis Parameters

DNI: peaks at 1,000.0 W/m^2
Time interval: 1 min
Ocular transmission coefficient: 0.5
Pupil diameter: 0.002 m
Eye focal length: 0.017 m
Sun subtended angle: 9.3 mrad
Site Config ID: 22117.3820

PV Array(s)

Name: PV array 1
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0°
Tracking axis tilt: 0.0°
Tracking axis panel offset: 30.0°
Max tracking angle: 60.0°
Resting angle: 60.0°
Rated power: -
Panel material: Smooth glass with AR coating
Reflectivity: Vary with sun
Slope error: correlate with material

Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	39.540002	-76.835767	656.10	7.00	663.10
2	39.539662	-76.835714	653.27	7.00	660.27
3	39.539513	-76.835939	649.09	7.00	656.09
4	39.538612	-76.835681	641.28	7.00	648.28
5	39.538165	-76.835542	637.36	7.00	644.36
6	39.536890	-76.835606	623.02	7.00	630.02
7	39.537031	-76.833933	637.97	7.00	644.97
8	39.540291	-76.834608	679.80	7.00	686.80

Name: PV array 2
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0°
Tracking axis tilt: 0.0°
Tracking axis panel offset: 30.0°
Max tracking angle: 60.0°
Resting angle: 60.0°
Rated power: -
Panel material: Smooth glass with AR coating
Reflectivity: Vary with sun
Slope error: correlate with material

Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	39.539960	-76.836722	655.91	7.00	662.91
2	39.539877	-76.837312	662.21	7.00	669.21
3	39.539348	-76.837226	664.79	7.00	671.79
4	39.539100	-76.837398	674.76	7.00	681.76
5	39.538256	-76.837344	660.67	7.00	667.67
6	39.538463	-76.836400	638.51	7.00	645.51

Discrete Observation Receptors

Name	ID	Latitude (°)	Longitude (°)	Elevation (ft)	Height (ft)
OP 1	1	39.541878	-76.833415	701.29	6.00
OP 2	2	39.539768	-76.830786	667.09	5.00
OP 3	3	39.537989	-76.829123	658.88	5.00
OP 4	4	39.536334	-76.837137	640.04	6.00
OP 5	5	39.538759	-76.837760	679.65	5.00
OP 6	6	39.538294	-76.838135	685.12	6.00
OP 7	7	39.541047	-76.837744	680.98	5.00
OP 8	8	39.542412	-76.838044	719.17	6.00

GLARE ANALYSIS RESULTS

Summary of Glare

PV Array Name	Tilt (°)	Orient (°)	"Green" Glare min	"Yellow" Glare min	Energy kWh
PV array 1	SA tracking	SA tracking	13	152	-
PV array 2	SA tracking	SA tracking	182	333	-

Total annual glare received by each receptor

Receptor	Annual Green Glare (min)	Annual Yellow Glare (min)
OP 1	13	152
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	127
OP 8	182	206

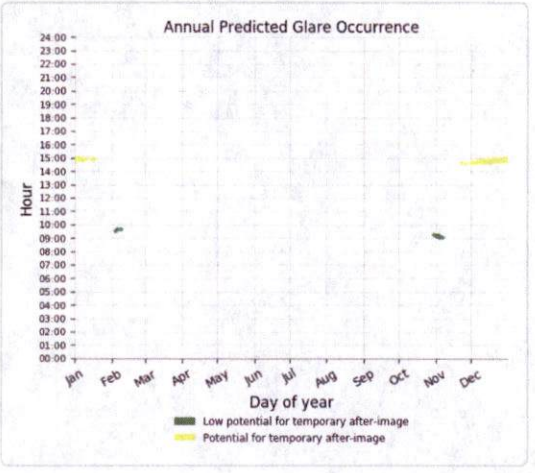
Results for: PV array 1

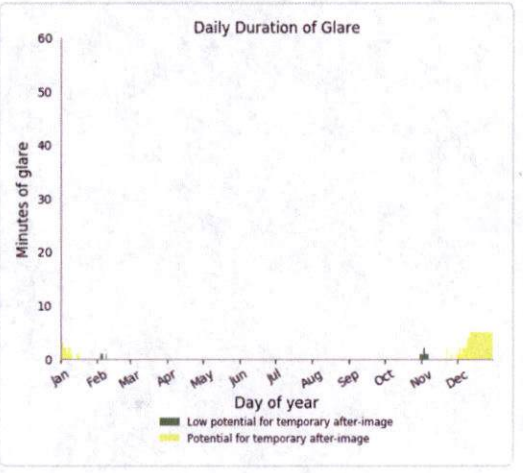
Receptor	Green Glare (min)	Yellow Glare (min)
OP 1	13	152
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	0
OP 8	0	0

Point Receptor: OP 1

152 minutes of yellow glare

13 minutes of green glare





Point Receptor: OP 2

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 3

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 4

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 5

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 6

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 7

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 8

0 minutes of yellow glare
0 minutes of green glare

Results for: PV array 2

Receptor	Green Glare (min)	Yellow Glare (min)
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	127
OP 8	182	206

Point Receptor: OP 1

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 2

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 3

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 4

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 5

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 6

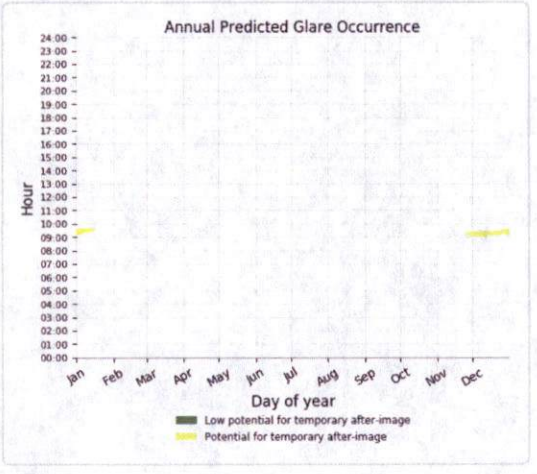
0 minutes of yellow glare

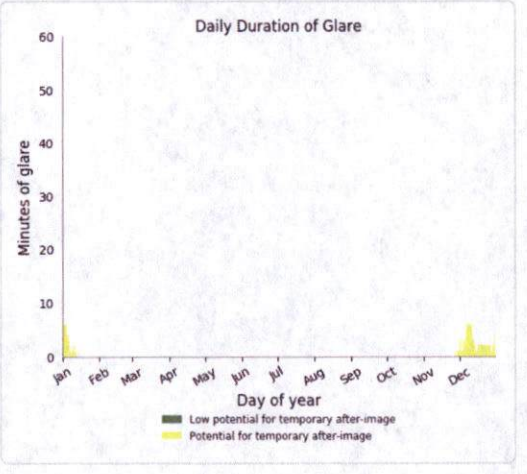
0 minutes of green glare

Point Receptor: OP 7

127 minutes of yellow glare

0 minutes of green glare

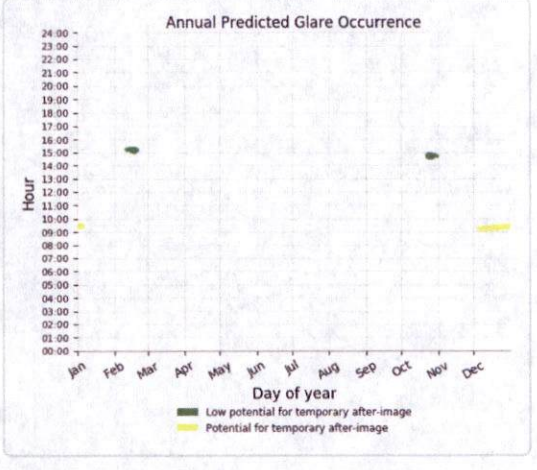


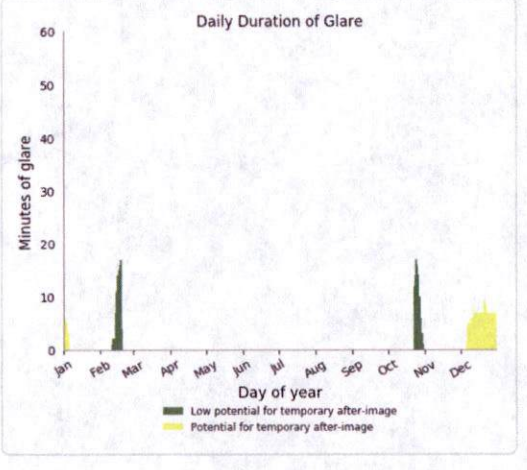


Point Receptor: OP 8

206 minutes of yellow glare

182 minutes of green glare





Assumptions

"Green" glare is glare with low potential to cause an after-image (flash blindness) when observed prior to a typical blink response time.
"Yellow" glare is glare with potential to cause an after-image (flash blindness) when observed prior to a typical blink response time.
Times associated with glare are denoted in Standard time. For Daylight Savings, add one hour.
Glare analyses do not account for physical obstructions between reflectors and receptors. This includes buildings, tree cover and geographic obstructions.
The glare hazard determination relies on several approximations including observer eye characteristics, angle of view, and typical blink response time. Actual values may differ.
Hazard zone boundaries shown in the Glare Hazard plot are an approximation and visual aid based on aggregated research data. Actual ocular impact outcomes encompass a continuous, not discrete, spectrum.

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FORGESOLAR GLARE ANALYSIS

Project: **Summit Ridge Maryland**
Site configuration: **Upperco**
Analysis conducted by Jodi Hunt (jodi.hunt@tetratech.com) at 20:57 on 24 Oct, 2018.

U.S. FAA 2013 Policy Adherence

The following table summarizes the policy adherence of the glare analysis based on the 2013 U.S. Federal Aviation Administration Interim Policy 78 FR 63276. This policy requires the following criteria be met for solar energy systems on airport property:

- No "yellow" glare (potential for after-image) for any flight path from threshold to 2 miles
- No glare of any kind for Air Traffic Control Tower(s) ("ATCT") at cab height.
- Default analysis and observer characteristics (see list below)

ForgeSolar does not represent or speak officially for the FAA and cannot approve or deny projects. Results are informational only.

COMPONENT	STATUS	DESCRIPTION
Analysis parameters	PASS	Analysis time interval and eye characteristics used are acceptable
Flight path(s)	N/A	No flight paths analyzed
ATCT(s)	N/A	No ATCT receptors designated

Default glare analysis and observer eye characteristics are as follows:

- Analysis time interval: 1 minute
- Ocular transmission coefficient: 0.5
- Pupil diameter: 0.002 meters
- Eye focal length: 0.017 meters
- Sun subtended angle: 9.3 milliradians

FAA Policy 78 FR 63276 can be read at https://www.federalregister.gov/d/2013-24729

SITE CONFIGURATION

Analysis Parameters

DNI: peaks at 1,000.0 W/m^2
Time interval: 1 min
Ocular transmission coefficient: 0.5
Pupil diameter: 0.002 m
Eye focal length: 0.017 m
Sun subtended angle: 9.3 mrad
Site Config ID: 22117.3820

PV Array(s)

Name: PV array 1
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0°
Tracking axis tilt: 0.0°
Tracking axis panel offset: 30.0°
Max tracking angle: 60.0°
Resting angle: 60.0°
Rated power: -
Panel material: Smooth glass with AR coating
Reflectivity: Vary with sun
Slope error: correlate with material

Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	39.540002	-76.835767	656.10	7.00	663.10
2	39.539662	-76.835714	653.27	7.00	660.27
3	39.539513	-76.835939	649.09	7.00	656.09
4	39.538612	-76.835681	641.28	7.00	648.28
5	39.538165	-76.835542	637.36	7.00	644.36
6	39.536890	-76.835606	623.02	7.00	630.02
7	39.537031	-76.833933	637.97	7.00	644.97
8	39.540291	-76.834608	679.80	7.00	686.80

Name: PV array 2
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0°
Tracking axis tilt: 0.0°
Tracking axis panel offset: 30.0°
Max tracking angle: 60.0°
Resting angle: 60.0°
Rated power: -
Panel material: Smooth glass with AR coating
Reflectivity: Vary with sun
Slope error: correlate with material

Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	39.539960	-76.836722	655.91	7.00	662.91
2	39.539877	-76.837312	662.21	7.00	669.21
3	39.539348	-76.837226	664.79	7.00	671.79
4	39.539100	-76.837398	674.76	7.00	681.76
5	39.538256	-76.837344	660.67	7.00	667.67
6	39.538463	-76.836400	638.51	7.00	645.51

Discrete Observation Receptors

Name	ID	Latitude (°)	Longitude (°)	Elevation (ft)	Height (ft)
OP 1	1	39.541878	-76.833415	701.29	16.00
OP 2	2	39.539768	-76.830786	667.09	9.00
OP 3	3	39.537989	-76.829123	658.88	9.00
OP 4	4	39.536334	-76.837137	640.04	16.00
OP 5	5	39.538759	-76.837760	679.65	9.00
OP 6	6	39.538294	-76.838135	685.12	16.00
OP 7	7	39.541047	-76.837744	680.98	9.00
OP 8	8	39.542412	-76.838044	719.17	16.00

GLARE ANALYSIS RESULTS

Summary of Glare

PV Array Name	Tilt (°)	Orient (°)	"Green" Glare min	"Yellow" Glare min	Energy kWh
PV array 1	SA tracking	SA tracking	20	0	-
PV array 2	SA tracking	SA tracking	482	331	-

Total annual glare received by each receptor

Receptor	Annual Green Glare (min)	Annual Yellow Glare (min)
OP 1	20	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	138
OP 8	482	193

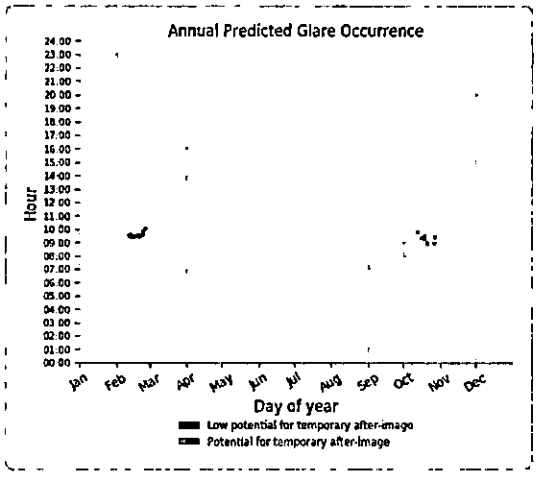
Results for: PV array 1

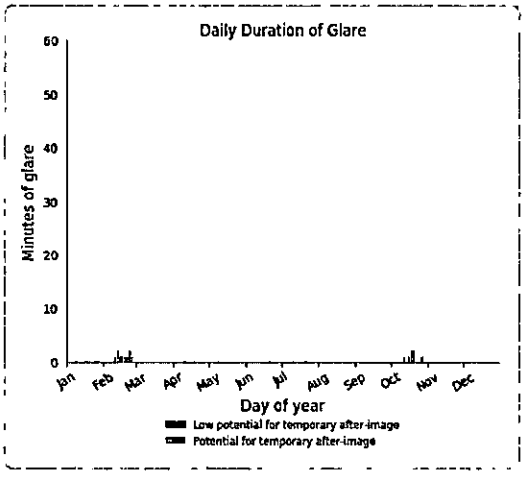
Receptor	Green Glare (min)	Yellow Glare (min)
OP 1	20	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	0
OP 8	0	0

Point Receptor: OP 1

0 minutes of yellow glare

20 minutes of green glare





Point Receptor: OP 2

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 3

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 4

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 5

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 6

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 7

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 8

0 minutes of yellow glare
0 minutes of green glare

Results for: PV array 2

Receptor	Green Glare (min)	Yellow Glare (min)
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	138
OP 8	482	193

Point Receptor: OP 1

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 2

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 3

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 4

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 5

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 6

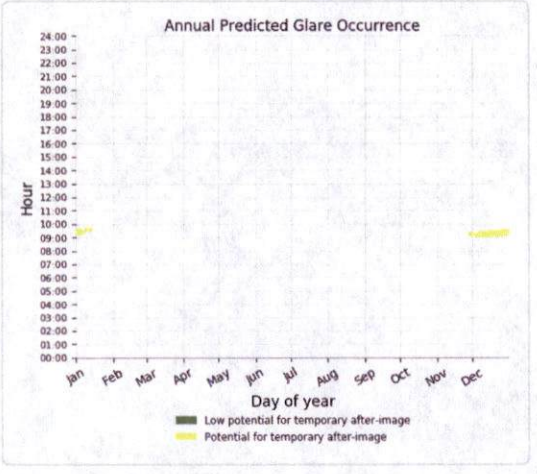
0 minutes of yellow glare

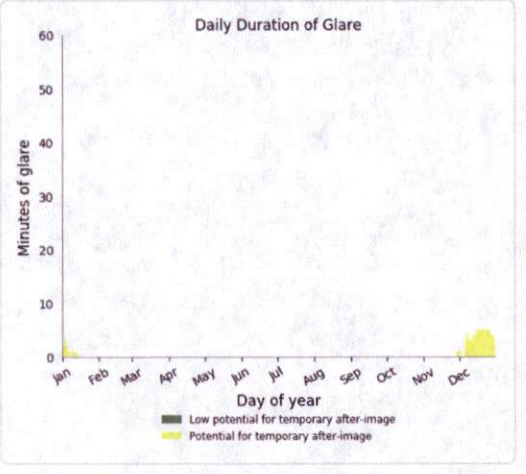
0 minutes of green glare

Point Receptor: OP 7

138 minutes of yellow glare

0 minutes of green glare

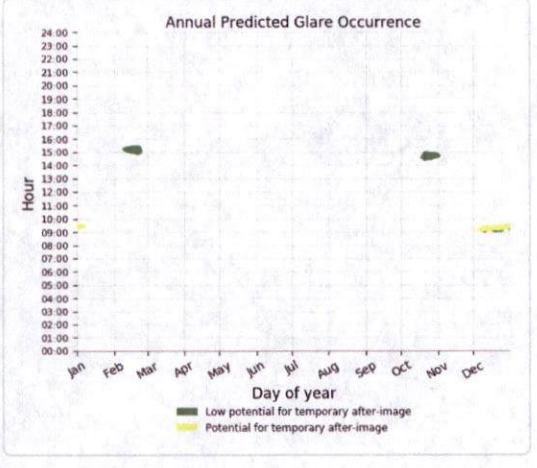


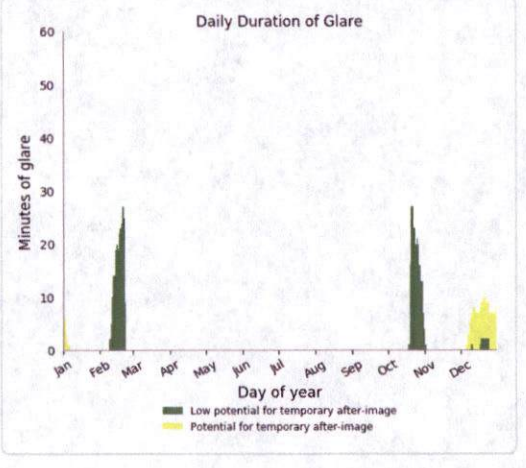


Point Receptor: OP 8

193 minutes of yellow glare

482 minutes of green glare





Assumptions

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ATTACHMENT H

FEDERAL AVIATION ADMINISTRATION SCREEN

Federal Aviation Administration

« OE/AAA

Notice Criteria Tool

Notice Criteria Tool - Desk Reference Guide V_2014.2.0

The requirements for filing with the Federal Aviation Administration for proposed structures vary based on a number of factors: height, proximity to an airport, location, and frequencies emitted from the structure, etc. For more details, please reference CFR Title 14 Part 77.9.

You must file with the FAA at least 45 days prior to construction if:

- your structure will exceed 200ft above ground level
- your structure will be in proximity to an airport and will exceed the slope ratio
- your structure involves construction of a traverseway (i.e. highway, railroad, waterway etc...) and once adjusted upward with the appropriate vertical distance would exceed a standard of 77.9(a) or (b)
- your structure will emit frequencies, and does not meet the conditions of the FAA Co-location Policy
- your structure will be in an instrument approach area and might exceed part 77 Subpart C
- your proposed structure will be in proximity to a navigation facility and may impact the assurance of navigation signal reception
- your structure will be on an airport or heliport
- filing has been requested by the FAA

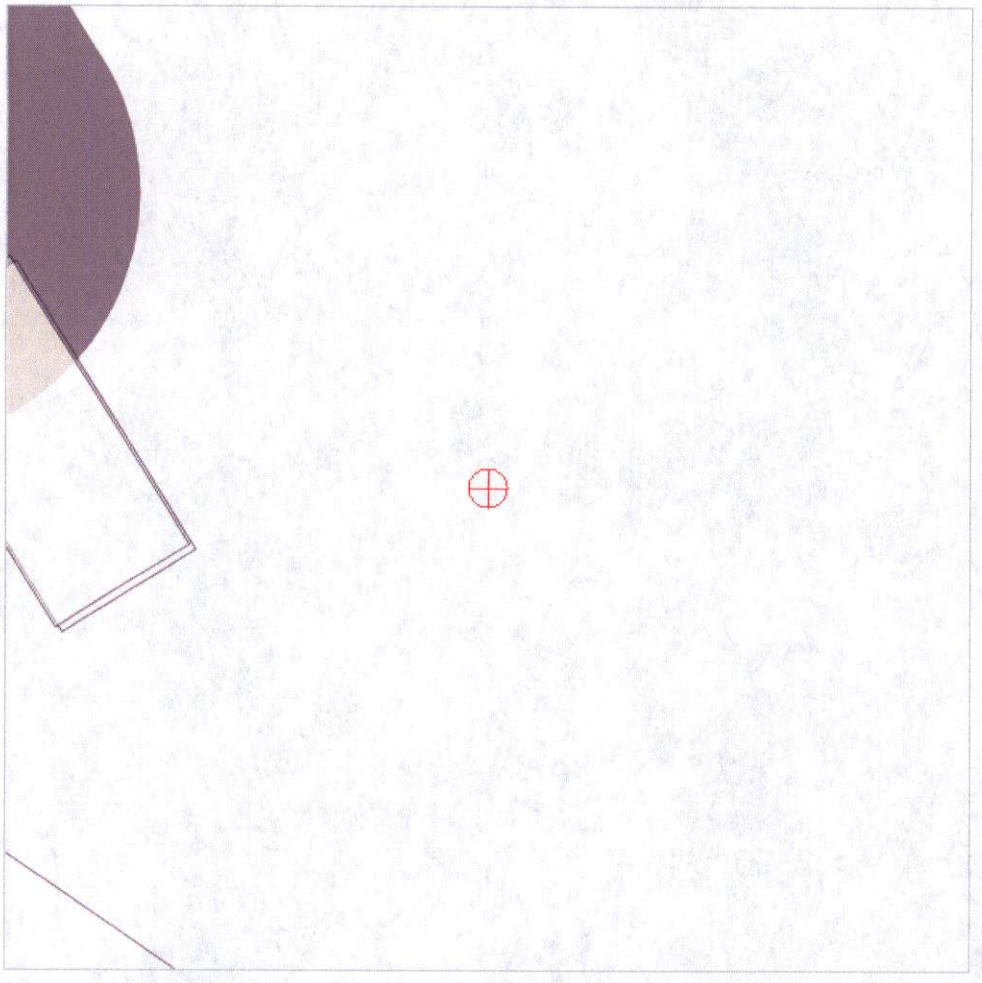
If you require additional information regarding the filing requirements for your structure, please identify and contact the appropriate FAA representative using the Air Traffic Areas of Responsibility map for Off Airport construction, or contact the FAA Airports Region / District Office for On Airport construction.

The tool below will assist in applying Part 77 Notice Criteria.

Latitude:	39 Deg 32 M 20.78 S N ▼
Longitude:	76 Deg 50 M 06.33 S W ▼
Horizontal Datum:	NAD83 ▼
Site Elevation (SE):	657 (nearest foot)
Structure Height :	7 (nearest foot)
Traverseway:	No Traverseway ▼ (Additional height is added to certain structures under 77.9(c)) User can increase the default height adjustment for Traverseway, Private Roadway and Waterway
Is structure on airport:	(•) No ( ) Yes

Results

You do not exceed Notice Criteria.



ATTACHMENT I

VEGETATIVE MAINTENANCE PLAN

Summit Ridge ENERGY

VEGETATIVE MAINTENANCE

2.09 MWdc Ground Mounted Project

Project Information

Project Name:	Upperco
Address:	Hanover Pike, Upperco, Baltimore County, Maryland
Project Area:	Approximately 12.6 acres

Background

Following construction of the solar facility, disturbed grounds will be re-established with low growth/low maintenance ground cover. The vegetative maintenance contractor will be responsible for inspecting and maintaining the vegetative integrity of the solar facility. The contractor will conduct on-site activities during growing months at the frequency of approximately 2-3 times per year. The contractor is expected to adjust site maintenance frequency based on time of year and weather conditions. To avoid rutting, erosion, and soil compaction, weather forecasts will be consulted and on-site field inspections will be conducted prior to mowing or cutting to ensure that these practices occur when the site is able to withstand this type of activity.

It is important to note this scope of work covers work along the access road and w/in the fence line of the project. Remaining lands outside the fence will continue to be utilized for agricultural purposes and maintained by the landowner or their representative.

Site Activities

- Perimeter Maintenance
  - The perimeter fence line will be inspected for items of trash, that may have accumulated since the previous site visit. These items will be collected and disposed of offsite. Vegetative growth along the fence line will also be trimmed and maintained to prevent the growth of weeds or tall grasses.
- Mowing
  - Mowing is a three-step process. First, the mower or bush hog trims the large areas. Second, trimmers are used to cut around structural elements and other places the mower couldn't reach. Finally, any vegetation that was thrown and stuck to the modules will be cleaned off. Additionally, spot-mowing is recommended for reducing invasive plants while native species are becoming established. Spot-mowing should be done at a raised height to avoid damaging native plants.

- Site Inspections
    - During each maintenance visit, the site will be inspected for signs of erosion. Any areas of concern will be immediately communicated to the project owner/developer to evaluate and implement corrective measures. Should the contractor observe a non-typical condition or change in site conditions the project owner/developer will be immediately notified.
- Screening Maintenance
    - Should vegetative screening be installed at the PV facility, the contractor will be responsible for monitoring the general health of each plant. If any plant succumbs and fails to establish its self, contractor will work with the responsible nursery to redeem the warranty and replace the deceased plant with another of the same species.
- Access Road Maintenance
    - During maintenance activities, the access road will be inspected and maintained to ensure that vegetative creep does not occur. This will include the mowing of at least a 3-foot strip paralleling each side of the road. Additionally, any observed vegetative creep within the road will be removed.

Table 1: Scope of Work

Activity	Frequency	Timing
Perimeter Maintenance	8-12 Weeks	May - October
Mowing	8-12 Weeks	May - October
Site Inspections	8-12 Weeks	May - October
Screening Maintenance*	4-8 Weeks	May - October
Access Road Maintenance	8-12 Weeks	May - October

*Two years only to ensure vegetation planted for screening is adequately established

ATTACHMENT J

DECOMMISIONING PLAN

DECOMMISSIONING PLAN

Upperco: 2 MWDC Ground Mounted Solar Project

ICFTS MD Solar, LLC
1401 Wilson Blvd., Suite 800
Arlington, VA 22209

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Equipment Removal 5
Site Restoration 6
3. PERMITTING 7
4. DECOMMISSIONING ASSURANCE 8
Use of Assurance 8

1. BACKGROUND

Facility Description

ICFTS MD Solar, LLC (Summit Ridge) proposes to develop a solar photovoltaic (PV) facility (the "Project") with a total maximum nameplate capacity of two megawatts direct current (2 MWdc), located on private property on Hanover Pike, Baltimore County, Maryland, (the "Property"), as shown in Figure 1.

The Project occupies approximately 12.9 acres of a larger 41.38-acre parcel of private land located in the Upperco Township, County of Baltimore. The Project will produce electricity delivered to Baltimore Gas and Electric's local distribution system utilizing existing lines. Interconnection to Baltimore Gas and Electric's system will include both underground and overhead wires along with new utility poles located on the Property.

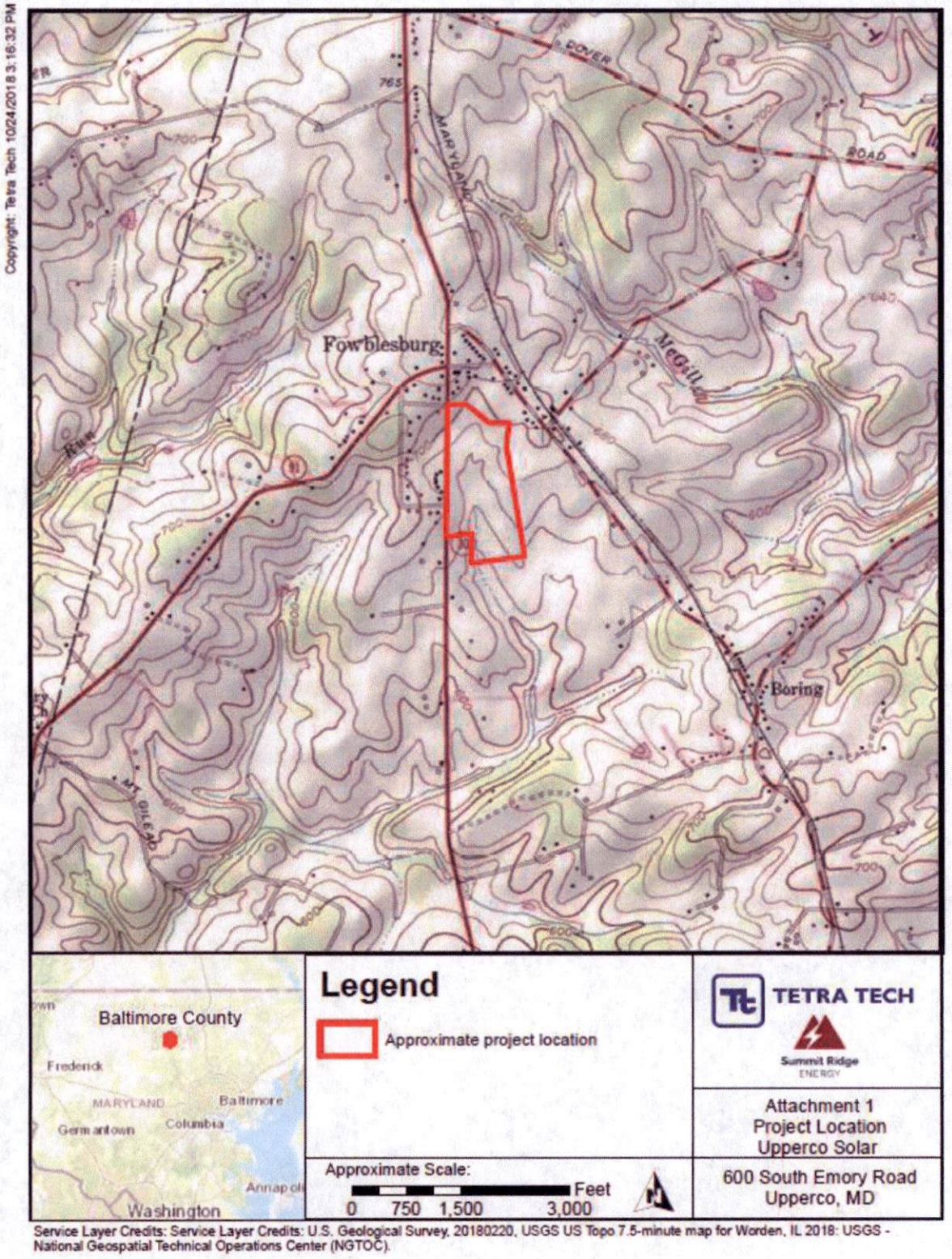
The solar PV modules will be installed on single-axis metal racking structures secured to the ground utilizing either direct push or anchor screw technology. Direct Current (DC) wiring with the Project will be secured behind the modules, collected at a common point and transition underground from the string inverters to the transformer. From the transformer pad, AC wiring will run underground until a point before the interconnection where it will surface and connect to a series of utility poles on the Property before connecting to the existing grid.

Access to the Project will be from Hanover Pike utilizing a 20-foot wide crushed stone road constructed for access to the facility.

The transformer skid will be mounted on a concrete pad located within the array. The pad used for a skid unit will be approximately 13-feet x 13-feet.

The site will be secured with a perimeter chain link fence.

Figure 1: **Project Location**



Service Layer Credits: Service Layer Credits: U.S. Geological Survey, 20180220, USGS US Topo 7.5-minute map for Worden, IL 2018: USGS - National Geospatial Technical Operations Center (NGTOC).

2. DECOMMISSIONING ACTIVITIES

Introduction

The Decommissioning Plan (the "Plan") describes anticipated activities and process for decommissioning of the proposed facility following its useful life. The purpose of decommissioning is to restore the property to a clean, safe and, usable condition for continued use by the landowner.

Decommissioning consists of the removal of above-ground and below-ground facility components, management of excess materials and waste as well as the restoration of Project lands, as applicable. Activities are expected to take between 8-10 weeks but no longer than four-months.

Potential negative environmental effects from decommissioning of the facility will be mitigated through use of erosion and sediment control measures, limiting the use of heavy machinery (where possible), and maintaining a buffer from natural features. These control measures, as well as other mitigation measures used during construction will be re-implemented during the decommissioning phase and until the site is stabilized.

Future consultation will occur with the municipality prior to decommissioning to discuss preferences and commitments to restore the Project to its pre-construction condition or a similar state. All decommissioning and restoration activities will adhere to the requirements set forth by Occupational Health and Safety Administration (OSHA) and will be in accordance with all applicable federal, state and local permitting requirements. As with the construction phase, an onsite manager responsible for safety will be present on-site (generally the contractor's project manager) while decommissioning activities are taking place.

The decommissioning plan is based on current procedures and experience. These procedures may be subject to revision based on new experiences and requirements over time. At the time of decommissioning, various options and procedures will be re-evaluated to ensure that decommissioning is safe and beneficial to the environment.

Equipment Removal

A significant amount of the components of the Project will include recyclable or re-saleable components, including copper, aluminum, galvanized steel, and modules. Due to their resale monetary value, these components will be dismantled and disassembled rather than being demolished and disposed of.

Following coordination with the local utility company regarding timing and required procedures for disconnecting the Facility from the private utility, electrical connections to the system will be disconnected and connections will be tested locally to confirm that no electric current is running through them before proceeding. Electrical connections to the panels will be cut at the panel and then removed from their framework by cutting or dismantling the connections to the supports. Inverters, transformers, and switchgear will be lifted, secured onto flat beds, and transported off-site for processing.

Modules will be detached from the racking system and stacked for removal. In the event of a module fracture, the silicon-based module will be disposed of at a landfill as non-hazardous waste.

The metal piling systems used to secure the PV system in the ground will be removed entirely. If full removal is not possible, the piling will be terminated at a depth greater than four-feet from grade or at bedrock whichever is shallower. The piling materials will be collected and recycled. Additionally, all associated metal mounting structures along with the metal perimeter fencing and gates will be removed and either reused or sent for recycling.

Grade slabs will be broken, removed, and disposed of off-site or recycled. Unless requested by the landowner for the access road to remain, materials from road construction will be removed, shipped off-site for either re-use or disposal. If necessary, the former road bed will be backfilled and graded with material native to the region to blend it with the immediately adjacent and existing topography.

Aboveground utility poles owned by the Project will be completely removed and disposed of off-site in accordance with utility best practices. Overhead wires will be removed from the area of the solar modules and terminated at the point of interconnection. Underground wiring at depths of less than four-feet will be removed and recycled.

Prior to final demobilization, a final walkthrough of the Project area and the property will be completed to ensure all debris is collected and removed.

Site Restoration

Those areas disturbed during decommissioning activities will be graded as necessary to ensure a uniform slope for proper storm water management, prevent the ponding of waters and address any rutting or other depressions caused by removal equipment. The disturbed areas will then be seeded either by hand or via hydro seeding to reestablish vegetation compatible with the property and region. It is anticipated that a seed mix native to the area will be used by the decommissioning contractor, unless the landowner instructs that they will begin using the property for agricultural purposes and will reestablish the area with agricultural vegetation.

3. PERMITTING

Permitting & Approvals

Prior to the initiation of decommissioning activities, local code will be reviewed for applicability with decommissioning activities. The municipality will be consulted to confirm and applications made for appropriate permits and approvals, if any. At a minimum, it is anticipated that a new storm water pollution prevention plan (SWPPP) will be required along with a building permit. It is assumed that neither a new or revised site plan nor special use permit would be necessary because decommissioning activities are associated with the originally issued approvals.

Throughout the decommissioning process, the municipality will be provided with regular updates and notice upon completing the restoration activities.

4. DECOMMISSIONING ASSURANCE

Form of Assurance

The Operator/Owner will secure a bond as assurance for decommissioning of the project if the Solar Energy System ceases to be used for its intended purpose for 150 consecutive days and the Operator/Owner does not provide reasonable evidence of intent to restart operations within six (6) months thereafter. Removal of the Solar Energy System, obsolete and/or unused structures shall be completed within three (3) months thereafter or as soon as feasible due to weather restrictions. The bond will be maintained and upon Town's request, within thirty (30) days prior to the end of each five (5)-year period after the establishment of the bond, the Operator/Owner shall provide the Town with an updated Removal Letter setting forth an updated estimate for the removal of such obsolete and or unused structures and the bond shall be altered to reflect the updated estimate for such removal. The bond will remain in place through the completion of decommissioning activities at the Project.

Use of Assurance

In the event that the Operator/Owner fails to undertake decommissioning activities within the established period of the Agreement, the municipality shall have the right to undertake decommissioning activities and make a claim against the decommissioning assurance. In such circumstances, the municipality shall have such access to the Property as may be necessary to allow its qualified contractors to conduct decommissioning activities.

Zoning Special Use Application

OF

Proposed Upperco Solar Site
Hanover Pike
Upperco, Maryland

October 30, 2018

Prepared by:

Tetra Tech, Inc.
1200 Scottsville Road, Bldg. C, Suite 181
Rochester, NY 14624
Phone: (585) 417-4007

Prepared for:

Summit Ridge ENERGY

ICFTS MD Solar, LLC
1401 Wilson Blvd., Suite 800
Arlington, VA 22201

Item #0141

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ATTACHMENT H – FEDERAL AVIATION ADMINSTRATION SCREEN
ATTACHMENT I – VEGETATIVE MAINTENANCE PLAN
ATTACHMENT J – DECOMMISIONING PLAN

1.0 PROJECT OVERVIEW

ICFTS MD Solar, LLC (Summit Ridge) is seeking a Zoning Special Use Permit and Site Plan approval for the construction of the Upperco Solar approximately 2.09 Megawatt (MW) direct current (DC) Photovoltaic Array located at Hanover Pike (Route 30), Upperco, Maryland (hereafter referred to as the "Site"). Summit Ridge proposes the development of approximately 12.9 acres of a larger 39.9-acre parcel of private land in Upperco, Baltimore County into a ground-mounted photovoltaic (PV) solar energy generating facility.

The proposed project would be capable of delivering approximately 2.09 MW of DC into the electrical power grid, which is sufficient to provide renewable energy to approximately 300 households. The PV panels proposed for this project are single-axis tracking panels that would be placed on a racking system that is pile driven into the ground surface. The solar panels will be directly interconnected to, and provide energy to, Baltimore Gas and Electric's local electric distribution grid via an overhead electrical service. Prior to utility interconnection, DC electrical power generated by the solar panels will be transformed to alternating current (AC) power and modified as necessary to connect to Baltimore Gas and Electric's electrical power supply. The project would also include an equipment pad, a gravel access road, a vegetative soil cover, and it will be surrounded by a chain-linked security fence as per the applicable electric building codes and requirements.

The following sections address the Zoning Special Exception Permit/Solar Energy System Development Criteria cited in the Baltimore County, Maryland ordinance, regulating development of solar energy systems (Ordinance Part 4F), The Baltimore County Code Section 33-3-108, and the Zoning Checklist for Non-Residential Permits and/or Zoning Public Hearing Applications.

2.0 SITE DESCRIPTION

The Site, located on Hanover Pike, Maryland, consists of one tax parcel assigned Tax PIN number 0408067040, totaling an area of approximately 39.9 acres. According to Baltimore County Zoning Maps, the majority of the parcel, approximately 34.09 acres, is zoned RC-2 for agricultural use. Approximately 7.29 acres of the parcel on the west side are zoned BM-CR for Business Major/Large Scale Commercial use. According to Baltimore County Tax Information, the parcel is located within the unincorporated community of Upperco, Maryland. The Site is bounded by residential properties to the north; Maryland State Highway 30 (Hanover Pike), commercial properties and rural residential properties to the west; several farm fields and commercial/residential properties to the east and south; and an agricultural field followed by Old Hanover Road to the east. The Site is located within the Piney Run Rural Legacy Area, but the subject tax parcel does not have a rural legacy area deed restriction limiting development of the property. A portion of the Site is utilized for storm water management consisting of a storm water management pond and associated outlet and control structures constructed and maintained by the Maryland Department of Transportation. The proposed solar project will not disturb this storm water management structures.

A map showing the location of the Site and adjacent land use is presented in *Attachment A;* A Site plan showing the physical layout is presented in *Attachment B;* A copy of the Lease Agreement is presented in *Attachment C.*

3.0 COMMUNITY CHARACTER AND SURROUNDING LAND USE

The general area around the Site consists of residential, commercial and agricultural development. The portions of the property which are not proposed for solar development are anticipated to be continued to be used for storm water management by the Maryland Department of Transportation. The Site is located within a mixed-use area of the unincorporated community of Upperco, Baltimore County, Maryland. The Site is bounded by residential and commercial properties followed by Emory Road to the north; Maryland State Highway 30 (Hanover Pike), commercial properties and rural residential properties to the west; several farm fields and commercial/residential properties to the east and south; and an agricultural field followed by Old Hanover Road to the east.

Table 3-1 Adjacent Properties and Addresses

Tax Account No.	Street Address	Owner	Zoning
0406000670	15215 Hanover Road	Ronald C. Price	BL-CR
2200026232	15217 Hanover Pike	Eric J. Norris	RO-CR
2300007009	15212 Old Hanover Road	Wayne E. Sauter	RC-2
2300007008	15214 Old Hanover Road	David Schneider	RC-2
0407015379	15208 Old Hanover Road	Bruce M. Smith	RC-2
0415069435	15206 Old Hanover Road	Vola H. Osborn	RC-2
0411000526	15202 Old Hanover Road	Jere J. Hunt	RC-2
0402058901	14914 Old Hanover Pike	Glenn S. Elseroad	RC-2
1600011102	Hanover Road	Dale S. Trump	RC-2
0414001100	15003 Hanover Pike	Richard B. Isaac Trustee	RC-2
2000006704	15005 Hanover Road	Roy L. Johnson	RC-2
2000006703	15007 Hanover Road	Brian E. Shipley	RC-2
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0408065954	15022 Hanover Road	Dinah L. Hoffman	RC-2
0407058500	15026 Hanover Pike	James A. Houston Jr.	RC-2
0402085875	15102 Hanover Road	Laker Capital Group, LLC	BL-CR
0418048000	15106 Hanover Road	Eleanor H. Rhode Rev. Trust	BM-CR
0401074400	15212 Hanover Road	Calvin W. Armacost Trustee	BL-CR

The installation and operation of a solar facility is consistent with the Baltimore County Comprehensive Plan's (BCCP) goal of encouraging the responsible use of natural resources to meet current needs without degrading the supply and quality of those resources for the future. A specific policy identified in that regard is to continue to adapt to and mitigate impacts of climate change on the environment (BCCP Sustainable Environment).

The proposed project is harmonious with the existing zoning of nearby parcels, will not depreciate or alter those properties' essential character, and presents no conflict with residentially zoned areas

of the County. The BCZR (Section 502 Special Exceptions) outlines nine points that determine the nature of consistency between a proposed Special Use and the surrounding area. The standards are represented as follows:

The proposed Special Use shall not be detrimental to the health, safety, or general welfare of the area.

The proposed project is intended to provide a clean source of green energy into the local electrical power grid. Baltimore County, as well as the State of Maryland have regulations in place to ensure the security of solar facilities including the requirements for perimeter fencing and monitoring. To deter theft, a security fence with barbed wire has been proposed to both deter crime and protect the community. The project is set off the road, with a vegetative buffer along Route 30, and is located on private property.

According to the U.S. Department of Energy, few power-generating technologies have as little environmental impact as photovoltaic solar panels. The solar panels proposed for this project are made of crystalline silicon, typically from quartz or sand. Crystalline silicon semiconductors are also utilized in the manufacture of integrated circuits and microchips used in personal computers, cellular telephones and other modern electronics.

The outer glass cover constitutes the largest share of the total mass of a finished crystalline photovoltaic module, followed by the aluminum frame, the ethylene vinyl acetate encapsulant, the polyvinyl fluoride substrate, and the junction box. The solar cells themselves only represent about four percent of the mass of a finished module.

Additional materials proposed for the project consist of steel for the panel support (racking) system, powder-coated aluminum for the inverters, a crushed gravel access road, and a standard chain-link security fence pursuant to applicable electrical codes. Additional information on the specifications for the proposed equipment are located in Section 5.0.

The proposed Special Use shall not create congestion in roads, streets, or alleys.

Traffic impacts are generally limited to the project construction period, which is estimated to last approximately 3 to 4 months. Once the facility is operational, traffic is typically limited to less than 10 visits per year to monitor operation, provide maintenance/repair, and maintain vegetation, as necessary.

The proposed Special Use shall not create a potential hazard from fire, panic, or other dangers.

The proposed solar arrays are designed to withstand extreme weather conditions. The risk of a fire associated with electrical equipment is no greater than regular substations. Coordination with emergency services is an important part of any Site development process and this coordination will be conducted as part of Baltimore County Building Permit application process. Local

emergency services will be provided with notification that the Site is undergoing review and invited to visit the Site property. Equipment specifications will be provided to responders during the building permit application and implementation process.

The proposed Special Use shall not overcrowd land and cause an undue concentration of population.

The proposed project will be located on approximately 12.9 acres of a larger 39.9-acre parcel of private land. Solar projects of this type are quiet, low-profile and don't contribute to an increase in population or traffic.

The proposed Special Use shall not interfere with adequate provisions for schools, parks, water, sewerage, transportation, or other public requirements, conveniences, or improvements.

The proposed project is not expected to incur public expenses for emergency response or other community provisions. Once constructed, the Site will operate without personnel except for site maintenance outlined in the *Vegetative Maintenance Plan (Section 8.0) and Operation and Maintenance Plan (Section 9.0).* Operation of the Site will not require the use of public utilities such as water or sewerage.

The proposed Special Use shall not impair an adequate supply of light and air to adjacent properties.

The proposed solar arrays will not provide shade nor restricted airflow to the surrounding properties. The proposed array panels will not exceed seven feet above ground surface and will be constructed with approximately 18 feet between panel rows to allow sufficient wind passage and the project is approximately 300 feet from the nearest residence.

The proposed Special Use shall not be inconsistent with the spirit and intent of the BCZR.

The proposed solar facility is consistent with the County's intent to permit solar facilities in parts of the rural and commercial areas in a way that balances the benefits of solar energy production with the need to protect the community, agricultural land, forests, waterways and other natural resources. As cited in BCZR Article 4F-101A - Solar Facilities, "Solar energy is recognized as an abundant, renewable, and environmentally sustainable source of electricity generation that will lead to greater local grid resiliency and security, and produce clean, renewable energy and reduce air and water pollution caused by the burning of traditional fossil fuels".

The proposed Special Use shall not be inconsistent with the impermeable surface and vegetative provisions of the BCZR.

A Stormwater Pollution Prevention Plan (SWPPP) for the Site will be submitted as required by the County during the building permit process. The SWPPP will include stormwater controls that attenuate runoff generated during 1-, 10-, and 100-year 24-hour rainfall events so that the peak

flow at design points on site will not exceed the flow that existed prior to development of the Project. Stormwater is expected to flow off the array panels and infiltrate into surface soils on the Site, not effecting the storm water runoff patterns of the surrounding properties.

The property has an existing storm water management control pond and associated control structures constructed and maintained by the Maryland Department of Transportation. The project will not interfere with these storm water controls. Once the project is completed the anticipated storm water runoff will be less than the existing agricultural use of the property.

The proposed Special Use shall not be detrimental to the environmental and natural resources of the Site and vicinity including forests, streams, wetlands, aquifers, and floodplains.

One of the first steps in determining the viability of a potential project location is to screen the property for environmental factors such as soil depth and character, wetlands, waterbodies, endangered/protected species, flood plains and archeological resources. Additionally, the property is screened for community character, local zoning ordinances, visual impact, and glare. As a part of this screening process, numerous Federal, State, and local agencies are consulted for information on the proposed location. Additional information regarding the various agency consultations can be found in Section 4 and Section 5, below.

4.0 NATURAL AND CULTURAL RESOURCES

4.1 Threatened and Endangered Species

Targeted Ecological Areas

Tetra Tech, on behalf of Summit Ridge, reviewed the Baltimore County Geographic Information System's Targeted Ecological Areas (TEA) for the proposed site location. TEAs are defined as lands and watersheds of high ecological value that have been identified as conservation priorities by the Maryland Department of Natural Resources (DNR) for natural resource protection. These areas represent the most ecologically valuable areas in the State. The review concluded that there is no record of State listed TEAs in the vicinity of the Site.

State of Maryland Listed Threatened and Endangered Species

There are 36 listed wildlife species known to occur within Baltimore County. Desktop analysis of land cover data and aerial imagery suggest that 30 of the 36 listed species are unlikely to occur within the Project area due to lack of adequate on-site or adjacent habitat. Northern harrier, yellow-crowned night heron, and pied-billed grebe could potentially utilize portions of the Site as foraging habitat, with the pied-billed grebe potentially using it during migration and winter foraging. The brown spiketail, yellow-sided skimmer, and appalachian snaketail could also potentially utilize a portion of the Site as core and foraging habitat.

There are 146 state-listed threatened or endangered plants known to occur in Baltimore County. The probability of these species occurring within the Site is low considering that the majority of the Site is has been developed or managed as farmland or storm water control structures, providing little to no undisturbed natural habitat. Additional information is provided in Table 4.1, below.

Table 4.1. Potential Federal & State Listed Wildlife Species within in the Project Area[1]

English Name	Scientific Name	Federal State Status[2]	Species-Habitat Associations	Habitat Present in Project Vicinity	Likelihood of Occurrence[4]
Birds					
Northern Harrier	*Circus cyaneus*	SI	Found in large open areas including marshes, grasslands, and meadows. Foraging range is typically 12 to 15 miles/day but may be up to up to 100 miles/day.	Foraging habitat	Moderate
Yellow-crowned Night Heron	*Nyctanassa violacea*		Found foraging along shallow creeks, rivers, ponds, lakes, and swamps, and occasionally on lawns, plowed fields, and other upland sites.	Winter foraging habitat	Low
Pied-billed Grebe	*Podilymbus podiceps*		Found in freshwater wetlands, wet fields, bays, sloughs, marshes, lakes, slow-moving rivers, and even sewage ponds. Pied-billed Grebes can nest in moderately to heavily populated areas. They occupy similar habitats during migration and winter.	Migration/Winter Foraging Habitat	Low
Insects					
Brown Spiketail	*Cordulegaster bilineata*		Found at small, sunlit forested streams and seepages. Uses grasses and shrubs in clearings, meadow edges and open forest edges.	Core/Foraging habitat	Low-Moderate
Yellow-sided skimmer	*Libellula flavida*		Found at bog ponds and other acidic bodies of water, slower sections of streams, vegetated ditches, and seeps.	Core/Foraging Habitat	Low-Moderate
Appalachian Snaketail	*Ophiogomphus incurvatus*	SE	Found at Piedmont or mountain streams with a sandy or gravelly bottom. They are often found feeding in open fields near the streams they utilize.	Core/Foraging Habitat	Low

1. Sharp-shinned Hawk (*Accipiter striatus)*, Triangle Floater (*Alasmidonta undulata)*, Brook Floater (*Alasmidonta varicosa)*, Upland Sandpiper (*Bartramia longicauda)*, American Bittern (*Botaurus lentiginosus)*, Northern Barrens Tige Beetle (*Cicindela patruela)*, Splendid Tiger Beetle (*Cicindela splendida*), Alder Flycatcher (*Empidonax alnorum)*, Atlantic Bluet (*Enallagma doubledayi)*, Mottled Duskywing (*Erynnis martialis)*, Bog Turtle (*Glyptemys muhlenbergii)*, Rapids Clubtail (*Gomphus quadricolor)*, Northern Map Turtle (*Graptemys geographica)*, Bald Eagle (*Haliaeetus leucocephalus)*, Least Bittern (*Ixobrychus exilis),* Eastern Lampmussel (*Lampsilis radiata)*, Loggerhead Shrike (*Lanius ludovicianus)*, Black Rail (*Laterallus jamaicensis)*, Eastern Sedge Barrens Leafhopper (*Limotettix minuendus*), Hooded Merganser (*Lophodytes cucullatus)*, Edwards' Hairstreak (*Satyrium edwardsii)*, Northern Oak Hairstreak (*Satyrium favonius ontario)*, Smoky Shrew (*Sorex fumeus)*, Southern Pygmy Shrew (*Sorex hoyi winnemana)*, A Hydrophilid Beetle (*Sperchopsis tessellatus)*, Regal Fritillary (*Speyeria idalia)*, Least Tern (*Sternula antillarum)*, Pizzini's Cave Amphipod (*Stygobromus pizzinii)*, Slender Amphipod (*Stygobromus tenuis tenuis)*, and Laura's Clubtail (*Stylurus laurae)* are also documented in the County but are not likely to occur on Project Site due to lack of suitable habitat.
2. FE = Federal Endangered, SE = State Endangered, ST = State Threatened, SI = State In Need of Conservation.
3. S1 = Highly State Rare, S2 = State Rare, S3 = Watchlist, S4 = Apparently Secure, B = Breeding Rank.

Likelihood of Occurrence: Low– species range overlaps with Project Site and marginally suitable habitat in Project vicinity; Moderate– species range overlaps with Project Site and suitable habitat present in Project Site, or species known to occur in habitat similar to Project Site; High– highly suitable habitat present in Project Site, or known populations exist in Project vicinity.

Federal Listed Threatened and Endangered Species

Tetra Tech submitted a consultation request to the United States Department of the Interior Fish and Wildlife Service (USFWS) on October 24, 2018. The USFWS responded that there are no threatened or endangered species of mammals or plants present in the vicinity of the project Site (*Attachment D)*. As the project will be located on currently active agricultural land, it will have no significant impacts on fish, wildlife, animal or plant species or habitats, and will not degrade natural resources or ecosystems.

4.2 Cultural Resources

The Baltimore County Historic Preservation online mapping system revealed that the project area is not located within an area designated as sensitive for archaeological sites. In addition, Tetra Tech Tetra Tech, on behalf of Summit Ridge, reviewed the National Register of Historic Places (NRHP) database for previously recorded cultural resources investigations, archaeological sites, historic structures, and historic properties listed within the proposed project site. The background research did not identify the presence of cultural resources on the Site.

5.0 OPERATION AND MAINTENANCE CONSIDERATIONS

Photovoltaic solar facilities of this size are typically considered to be fairly low-maintenance. However, routine O&M services will be done per industry codes and manufacturer's specifications, ensuring the equipment is operating safely and efficiently. The system will be continuously monitored such that unexpected problems can be addressed immediately. An Operation & Maintenance Plan (O&M) is included as *Attachment E* and Manufacturer Specifications for Site Equipment is provided as *Attachment F.*

5.1 Utility Interconnection

In general, the greatest challenge in siting economically viable solar generating facilities is associated with utility interconnection capacity and requirements. Summit Ridge has been working in close coordination with the local utility provider (Baltimore Gas and Electric) and an interconnection evaluation request has been submitted.

5.2 Traffic Impacts

Traffic impacts are generally limited to the project construction period, which is estimated to last approximately three to four months. Once the facility is operational, traffic is typically limited to less than 10 visits per year to monitor operation, provide maintenance/repair, and maintain vegetation, as necessary.

Dust may be generated during the construction process, but it will be temporary in nature. Driveway construction and revegetation of the disturbed portions of the Site will minimize any dust impacts during the facility's operation. The long-term dust generation from the Site will be less than the current agricultural use of the Site since the area will remain vegetated on a year around basis. Maintaining a year-around vegetated area of approximately 20 acres may also reduce soil erosion and sedimentation of nearby existing storm water control features, streams and water bodies.

5.3 Noise

There may be some noise associated with facility construction – truck entry/exit, earthmoving equipment, etc. – but it is expected to be temporary in duration and limited to normal working hours.

The solar collection panels themselves are quiet. The greatest potential source of noise is anticipated to be the power inverters at the Site. The power inverters will be located within the array of solar panels and more than 500 feet from the nearest residential receptor and commercial

receptors. Noise levels at a typical inverter will be approximately 55 decibels at a distance of three feet and the noise will dissipate quickly as distance from the inverter increases. As a point of comparison, engaging in normal face-to-face conversation generates a noise level of approximately 60 decibels, and typical city traffic inside of a car has a noise level of approximately 80 decibels (Center for Disease Control and Prevention, 2017). At a distance of 40 feet, which is much closer than the nearest receptors, the inverter's noise level calculates to approximately 35 decibels, which is comparable to a soft whisper. Thus, noise impacts from the facility's operation are expected to be insignificant.

5.4 Solid Waste

Some minor amount of solid waste generation may occur during the construction process, but it will be disposed of offsite at an appropriate location. Once operational, the facility will not generate an appreciable amount of solid waste.

5.5 Odors

There are no odors generated by the facility's equipment. Odors generated by construction equipment during the construction process will be minor and temporary in nature.

5.6 Glare

With growing numbers of solar energy systems being proposed and installed throughout the United States, the potential impact of glint and glare from photovoltaic modules is receiving increased attention. GlareGauge, the program procured for the glare analysis, is a service distributed by ForgeSolar that uses the SGHT developed by Sandia National Laboratories.

Sandia developed SGHAT v. 3.0, a web-based tool and methodology to evaluate potential glint/glare hazards associated with solar energy installations. The validated tool provides a quantified assessment of when and where glare will occur, as well as information about potential ocular impacts. The tool can also be used for design optimization (tilt and orientation) to evaluate alternative configurations, orientations, and locations of solar installations that not only mitigate the impacts of glint/glare, but also optimize energy production (Sandia Laboratories, 2016).

The SGHAT (GlareGauge) was utilized to evaluate the potential for glare at several locations along nearby roads, residences, and commercial facilities. The panels to be used on the proposed project site are smooth glass surface material with an anti-reflection coating (ARC), which is noted in the glare analysis. The panels will be on an east-facing, single axis tracking array with an approximate height not to exceed seven feet from the ground surface. The panels will have a maximum 60-degree tilt. Two separate glare analyses were conducted for a panel height of seven feet (maximum

height) with applicable panel specifications. One analysis was run to simulate a driver's height above the ground in a standard automobile or in a first-floor building at five feet and six feet respectively. A second analysis was run to simulate a driver's height above the ground in a commercial truck at nine feet or in a second-floor building at 16 feet. The SGHAT Report is included as *Attachment G.*

The Federal Aviation Administration (FAA) Notice Criteria Tool allows the user to determine if a proposed structure would require a formal submission to the FAA under CFR Title 14 Part 77.9 (Safe, Efficient Use, and Preservation of the Navigable Airspace). This online tool was utilized to determine if the proposed solar facility would require formal filing to the FAA. The FAA Notice Criteria Tool Report is included as *Appendix H.*

5.7 Fire Protection and Emergency Access

Coordination with emergency services is an important part of any Site development process and this coordination will be conducted as part of the Building Permit application process. Local emergency services will be provided with notification that the Site is undergoing review and invited to visit the Site property. Equipment specifications will be provided to responders during the building permit application and implementation process.

The following measures will be taken regarding response to potential emergencies at the proposed facility:

- Local emergency responders will be invited to tour the site during construction and after construction is completed. The site tour will agenda will include descriptions of the system components, emergency shut-down, system isolation, etc.;
- The facility will be provided with a 'Knox-Box" or other similar locking mechanism to provide Site access to emergency responders;
- Emergency telephone numbers will be posted on the perimeter fence;
- System components will be marked in order to provide emergency responders with appropriate warning and guidance with respect to isolating the electrical systems; and
- Site access road will be maintained to allow emergency vehicle access to the Site.

6.0 VEGETATIVE MAINTENANCE PLAN

Following construction of the solar facility, disturbed grounds will be re-established with a grass seed mixture as ground cover on a year-round basis. The vegetative maintenance contractor will be responsible for inspecting and maintaining the vegetative integrity of the solar facility. The contractor will conduct onsite activities during growing months on an as-needed basis. The site maintenance frequency may be adjusted based on time of year and weather conditions. To avoid rutting, erosion, and soil compaction, weather forecasts will be consulted, and on-site field inspections will be conducted prior to mowing or cutting to ensure that these practices occur when the site is able to withstand this type of activity. Current agricultural practices on the Site remove the vegetation at the end of the growing season. The vegetative maintenance plan will ensure a vegetative ground cover on a year-round basis which will result in less dust and soil erosion than the current site use.

This scope of work covers work along the access road and within the fence line of the project. Remaining lands outside the fence are anticipated to be utilized for storm water management maintained by the Maryland Department of Transportation and as a vegetative buffer for the Site from Maryland Route 30 maintained by the landowner or their representative. The full Site Operation and Vegetative Maintenance Plan is included as *Attachment I.*

7.0 DECOMMISIONINGING PLAN

The Decommissioning Plan (the "Plan") describes anticipated activities and process for decommissioning of the proposed facility following its useful life. The purpose of decommissioning is to restore the Site to its original condition for continued use by the landowner.

Decommissioning consists of the removal of above-ground and below-ground facility components, management of excess materials as well as the restoration of Project lands, as applicable. Decommissioning activities are expected to take two to four months to complete. The full Decommissioning Plan is included as *Attachment J.*

8.0 REFERENCES

Adolf Goetzberger and Volker Hoffman (2005). "Photovoltaic Solar Energy Generation." Springer, New York.

The Federal Aviation Administration (FAA) developed *Technical Guidance for Evaluating Selected Solar Technologies on Airports* in 2010

Fthenakis, V.M. (2003). Practical Handbook of Photovoltaics: Fundamentals and Applications: Overview of Potential Hazards. Available at http://www.bnl.gov/pv/files/pdf/art_170.pdf .

U.S. Dept. of Energy (2010). "Photovoltaic Basics." Available at http://www1.eere.energy.gov/solar/pv_basics.html .

Vasilis Fthenakis, Hyung Chul Kim and Erik Alsema (2008). "Emissions from Photovoltaic Life-Cycles." *Environmental Science and Technology* 2008 42 (6):2168-2174. Available at: http://pubs.acs.org/doi/full/10.1021/es071763q .

9.0 ATTACHMENTS

ATTACHMENT A – SITE LOCATION MAP
ATTACHMENT B – SITE PLAN
ATTACHMENT C – LEASE AND EASEMENTS
ATTACHMENT D – USFWS THREATENED AND ENDANGERED SPECIES
ATTACHMENT E – OPERATION & MAINTENANCE PLAN
ATTACHMENT F – SITE EQUIPMENT MANUFACTURER SPECIFICATIONS
ATTACHMENT G – GLARE ANALYSIS
ATTACHMENT H – FEDERAL AVIATION ADMINSTRATION SCREEN
ATTACHMENT I – VEGETATIVE MAINTENANCE PLAN
ATTACHMENT J – DECOMMISIONING PLAN

ATTACHMENT A

SITE LOCATION MAP

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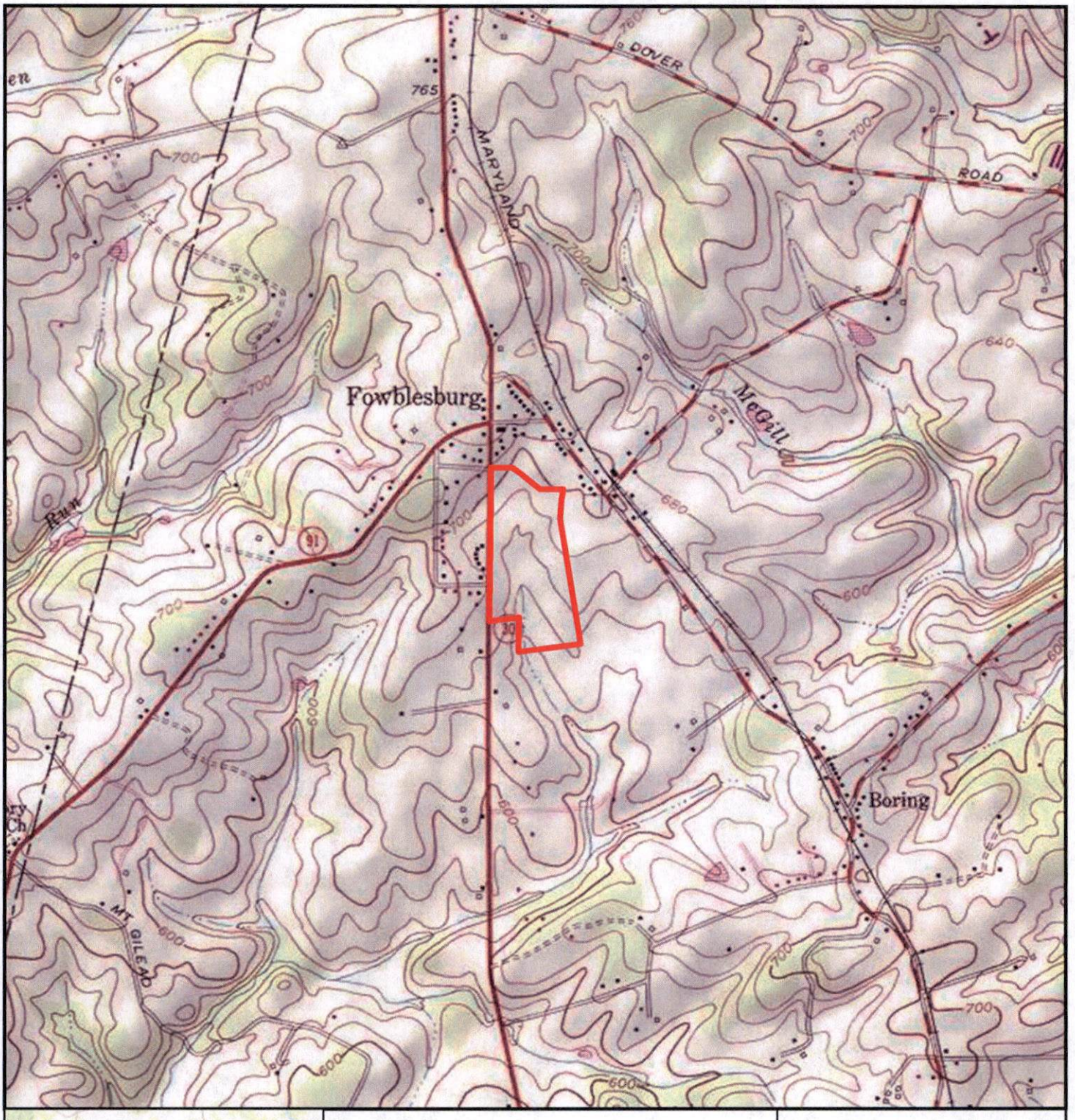

Legend

Approximate project location

Approximate Scale:

0 750 1,500 3,000 Feet

TETRA TECH

Summit Ridge ENERGY

Attachment 1
Project Location
Upperco Solar

600 South Emory Road
Upperco, MD

Service Layer Credits: Service Layer Credits: U.S. Geological Survey, 20180220, USGS US Topo 7.5-minute map for Worden, IL 2018: USGS - National Geospatial Technical Operations Center (NGTOC).

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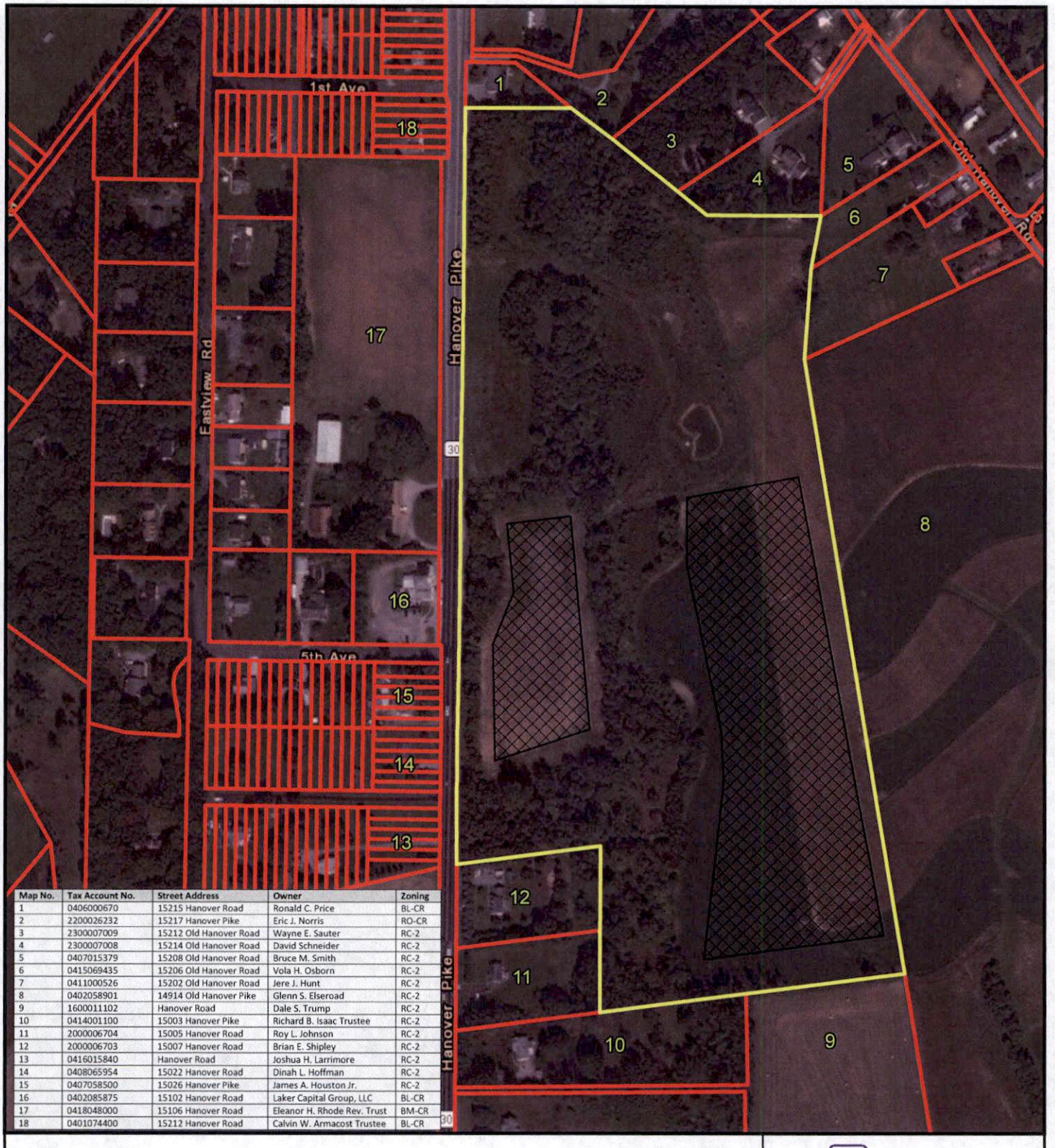

Map No.	Tax Account No.	Street Address	Owner	Zoning
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17	0418048000	15106 Hanover Road	Eleanor H. Rhode Rev. Trust	BM-CR
18	0401074400	15212 Hanover Road	Calvin W. Armacost Trustee	BL-CR

Legend

*Proposed project parcel located in Council District 3 and Election District 4

Approximate project parcel boundary (zoned RC-2 and BM-CR)

Approximate project area

Approximate surrounding property parcels

Approximate scale:

0 300 600 1,200 Feet

TETRA TECH

Summit Ridge ENERGY

Surrounding Properties
Upperco Solar Project

600 South Emory Road
Upperco, MD 21155

Service Layer Credits: Esri, HERE, Garmin, © OpenStreetMap contributors
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community Mason County GIS data (http://www.masoncountyil.org/assessment.htm)

ATTACHMENT B

SITE PLAN

ATTACHMENT C

LEASE AND EASEMENTS

ATTACHMENT D

USFWS THREATENED AND ENDANGERED SPECIES

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Chesapeake Bay Ecological Services Field Office
177 Admiral Cochrane Drive
Annapolis, MD 21401-7307
Phone: (410) 573-4599 Fax: (410) 266-9127
http://www.fws.gov/chesapeakebay/
http://www.fws.gov/chesapeakebay/endsppweb/ProjectReview/Index.html

In Reply Refer To:
Consultation Code: 05E2CB00-2019-SLI-0181
Event Code: 05E2CB00-2019-E-00411
Project Name: Upperco Solar

October 24, 2018

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. This species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries
- Wetlands

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Chesapeake Bay Ecological Services Field Office
177 Admiral Cochrane Drive
Annapolis, MD 21401-7307
(410) 573-4599

Project Summary

Consultation Code: 05E2CB00-2019-SLI-0181

Event Code: 05E2CB00-2019-E-00411

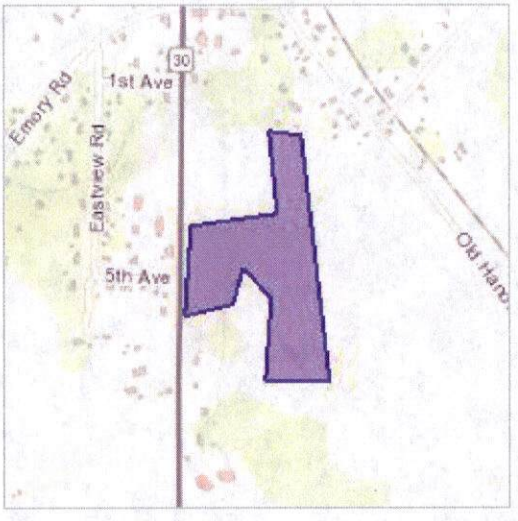
Project Name: Upperco Solar

Project Type: SPECIAL USE PERMIT

Project Description: Tetra Tech, Inc., on behalf of SRE Solar Origination 1, LLC is initiating consultation with the USFWS to determine potential impacts to federally-listed threatened and endangered species for a proposed commercial solar facility.

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/39.539342979152764N76.83593122958192W



Counties: Baltimore, MD

Endangered Species Act Species

There is a total of 0 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

---

1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

USFWS National Wildlife Refuge Lands And Fish Hatcheries

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

Wetlands

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

FRESHWATER FORESTED/SHRUB WETLAND

- PSS1/EM5A
- PSS1B

ATTACHMENT E

OPERATION & MAINTENANCE PLAN

SCOPE OF MAINTENANCE SERVICES

During the term, Provider shall provide the services at the frequency indicated below, in accordance with the terms and conditions of this Agreement (as set forth in further detail below). It is expected that Provider shall exert best efforts to note items of concern outside the scope of scheduled visits; inspecting and assessing items that seem to be problematic even if not part of the scheduled visits and later discussing with the owner to seek remedy.

Item #	Service	Service Description	Frequency
1. Monitoring, Reporting, and Inventory			
1.1	Active Site Monitoring	Monitor inverters and meter output data for issues and alarms.	Daily
1.2	Annual Maintenance Plan	Provision of Annual Maintenance Plan, including baseline schedule for all maintenance services contemplated to occur in such year	Annually, by November 1 of each calendar year during the Term
1.3	Monthly Reporting	Provide monthly operating report for the projects including a summary of (i) operations; (ii) weather data, power and environmental attributes; (iii) Project performance; (iv) reports of any environmental or site disturbances; (v) safety/accident reports; (vi) Non-Covered Services; (vii) maintenance and inspection reporting; and (viii) any scheduled or recommended maintenance for the upcoming month.	Monthly, by the 15th day of the following month
1.4	Annual Reporting	Provide annual maintenance/inspection reports for the Project for the preceding calendar year	Annually, by February 1 of each calendar year during the Term
1.5	Emergency Services and Incident Reporting	Provide written report (in .pdf format) on any event involving Emergency Services, personnel injury associated with the Projects, or material damage to any Project or any part thereof.	No later than five (5) business days after the occurrence, or immediately for OSHA recordable events, but no later than 24 hours after obtaining knowledge of the event.
1.6	Security Incident Reporting	Notify Project Owner following provider receiving information indicative of a security issue on site	Immediately, but no later than 24 hours after obtaining

Item #	Service	Service Description	Frequency
			knowledge of the event.
1.7	Maintain Spare Parts	Store, maintain, and replenish spare parts inventory at Project Owner's expense. Inventory will be stored, at Provider's option either on-site in an O&M storage structure or off-site at a centralized storage facility or warehouse.	As Needed
2. Site Property Inspection/Maintenance			
2.1	Vegetation Management	Maintain vegetation and debris removal/control and landscaping, for all property within the fence line and all property immediately surrounding fencing (within reason), specifically ensuring vegetation does not encroach on modules.	2 X per year, maximum
2.2	Perimeter and Fence Inspection	Inspect all fencing for signs of damage, intrusion, and overgrowth of vegetation. Inspect signage to ensure all originally installed signs are present and legible	2 X per year
2.3	Roads	Inspect all roads for soil erosion concerns	2 X per year
2.4	Site Security Systems	Inspect security systems (if installed) for proper operation according to original security plan and design. Inspect entire site for general vandalism or other signs of security related issues.	2 X per year
3. DC Systems			
3.1	Racking Inspection	Inspect all racking, racking mounts and conduits on racking for damage, corrosion, settling and stability	1 X per year
3.2	Module Inspections	Visually inspect a 25% sampling of modules for soiling, breakage, delamination, discoloring and hot spots (only via aerial thermal audits). Inspections may be done either on the ground or via aerial visual analysis and aerial thermal imaging. If systemic issues are identified, notify Project Owner and propose a corrective action plan to be implemented as needed.	1 X per year
3.3	Broken Module Replacement	Replace modules that have previously been identified as broken (within reason), or identified as broken at the time of inspection. The cost of replacement modules (either for immediate use or to replenish spare parts) will be paid for by the Project Owner as needed. The procurement of replacement modules is conditional to Project Owner approval.	As Needed
3.4	Wire Inspection	Visually inspect for proper wire management and any possible damage on exposed conductors.	2 X per year

Item #	Service	Service Description	Frequency
3.5	Combiner Box and Re-Combiner Inspections	Electrical/mechanical inspection of combiners & disconnects. Visually inspect bonding bushings and grounding, check for wire damage especially at entrance/exit locations, terminal corrosion, any discoloration, and inspect fuses for proper functionality. Remove insects/pest debris from all enclosures.	2 X per year
3.6	Combiner Box and Re-Combiner Torque Inspections	Confirm and correct terminal torque settings for both sides of all fuse holders, grounded (negative) terminal bar, grounding bar, PV output circuit and DC Disconnects.	1 X per year
4. AC Systems			
4.1	Inverters	Perform annual inverter preventative maintenance work for all inverters per manufacturer's recommendations and manufacturer's warranty requirements.	Per Manufacturer's Recommendations and Manufacturer's Warranty Requirements
4.2	Inverter Air Filters and Transformer heat sinks	Inspect inverter air-filters and heat sinks, and clean or replace air filters if necessary.	2 X per year or Per Manufacturers Recommendations, whichever is more frequent.
4.3	Transformers	Visually inspect and clean all transformers per manufacturer recommendations, including but not limited to oil level measurement and clearing heat sink of debris.	1 X per year
4.4	AC Disconnect (if applicable)	Inspection of latches and seals on enclosure, verify proper operation of disconnect, visually inspect terminations and confirm and correct terminal torque settings. Check for signs of arcing.	1 X per year
5. DAS/SCADA Inspections			
5.1	General DAS Inspection	Perform monitoring system maintenance per manufacturer's specifications; verify orientation and attachment of pyranometers and module temperature sensors and MET station, and verify back up power supply functionality.	1 X per year
5.2	Pyranometers	Clean pyranometer domes with a soft cloth.	All scheduled & unscheduled site visits

Item #	Service	Service Description	Frequency
5.3	Pyranometer Calibration	Coordinate with Project Owner to cause calibration of pyranometers per manufacturer's specifications.	Per manufacturer specifications
5.4	Data/Instrument Accuracy and Communications Verification	Test MET station sensors (GHI and POA pyranometers, ambient temperature, back-of-module, anemometer, Revenue Grade Meter (including current transducers), and inverter direct	1 X per year
6. Testing			
6.1	Aerial Thermal Audits	100% Aerial Thermal Audits	1 X per year
6.2	Thermal Imaging	Thermal imaging of all: overcurrent protection devices (OCPD) and bolted electrical connections including terminations in combiners and all disconnects, inverters and transformers	1 X per year
6.3	Transformer Oil Testing	Conduct transformer oil sampling and testing per nationally and/or internationally recognized testing standards	1 X per two years
6.4	Point-to-Point Testing	For 5% random sampling of combiner boxes, inspect grounding from modules & rack to combiners for wear, corrosion, and secure connections, and test the point-to-point resistance between modules, rack and EGC per NETA-ATS 2013 Section 7.13; document location, measure resistance and record results. Investigate point-to-point resistance readings that exceed 0.5 ohms. Notify Project Owner of any issues identified and propose a corrective action plan to be implemented as needed.	1 X per year

ATTACHMENT F

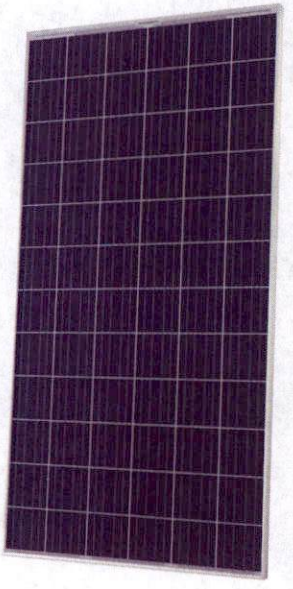
SITE EQUIPMENT MANUFACTURER SPECIFICATIONS

powered by Q.ANTUM

Q.PLUS L-G4.2 340-355

Q.ANTUM SOLAR MODULE

The Q.ANTUM solar module Q.PLUS L-G4.2 with power classes up to 355 Wp is the strongest module of its type on the market globally. Powered by 72 Q CELLS solar cells Q.PLUS L-G4.2 was specially designed for large solar power plants to reduce BOS costs. Only Q CELLS offers German engineering quality with our unique triple Yield Security.



LOW ELECTRICITY GENERATION COSTS

Higher yield per surface area and lower BOS costs thanks to higher power classes and an efficiency rate of up to 18.1 %.

INNOVATIVE ALL-WEATHER TECHNOLOGY

Optimal yields, whatever the weather with excellent low-light and temperature behavior.

ENDURING HIGH PERFORMANCE

Long-term yield security with Anti-PID Technology[1], Hot-Spot-Protect and Traceable Quality Tra.Q™.

EXTREME WEATHER RATING

High-tech aluminum alloy frame, certified for high snow (5400 Pa) and wind loads (2400 Pa).

A RELIABLE INVESTMENT

Inclusive 12-year product warranty and 25-year linear performance guarantee[2].

EUPD RESEARCH TOP BRAND PV MODULES EUROPE 2017

Q CELLS YIELD SECURITY
- ANTI PID TECHNOLOGY (APT)
- HOT-SPOT PROTECT (HSP)
- TRACEABLE QUALITY (TRA.Q™)

Photon
Q CELLS
Best polycrystalline solar module 2014
Q.PRO-G2 235
174 modules tested

[1] APT test conditions: Cells at -1500 V against grounded, with conductive metal foil covered module surface, 25 °C, 168 h

[2] See data sheet on rear for further information.

THE IDEAL SOLUTION FOR:

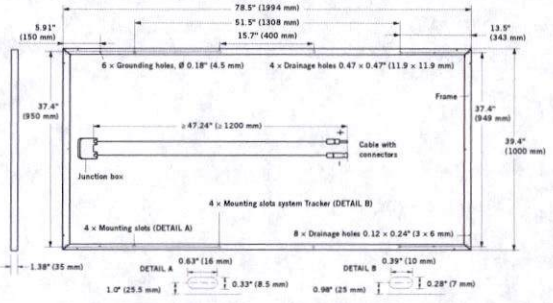
Ground-mounted solar power plants

Engineered in **Germany**

Q CELLS

MECHANICAL SPECIFICATION

Format	78.5 in × 39.4 in × 1.38 in (including frame) (1994 mm × 1000 mm × 35 mm)
Weight	52.9 lbs (24 kg)
Front Cover	0.13 in (3.2 mm) thermally pre-stressed glass with anti-reflection technology
Back Cover	Composite film
Frame	Anodized aluminum
Cell	6 × 12 Q.ANTUM solar cells
Junction box	3.35-4.53 in × 2.36-3.15 in × 0.59-0.75 in (85-115 × 60-80 × 15-19 mm), Protection class ≥ IP67, with bypass diodes
Cable	4 mm² Solar cable; (+) ≥ 47.24 in (1200 mm), (-) ≥ 47.24 in (1200 mm)
Connector	MC4 or MC4-EVO 2, IP65 and IP68

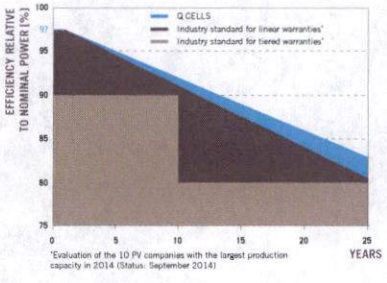


ELECTRICAL CHARACTERISTICS

POWER CLASS				340	345	350	355
MINIMUM PERFORMANCE AT STANDARD TEST CONDITIONS, STC[1] (POWER TOLERANCE +5 W / -0 W)							
Minimum	Power at MPP[2]	P_{MPP}	[W]	340	345	350	355
	Short Circuit Current*	I_{SC}	[A]	9.59	9.64	9.69	9.74
	Open Circuit Voltage*	V_{OC}	[V]	47.07	47.46	47.71	47.97
	Current at MPP*	I_{MPP}	[A]	9.03	9.09	9.15	9.21
	Voltage at MPP*	V_{MPP}	[V]	37.63	37.93	38.23	38.52
	Efficiency[2]	η	[%]	≥17.1	≥17.3	≥17.6	≥17.8
MINIMUM PERFORMANCE AT NORMAL OPERATING CONDITIONS, NOC[3]							
Minimum	Power at MPP[2]	P_{MPP}	[W]	252.1	255.8	259.5	263.2
	Short Circuit Current*	I_{SC}	[A]	7.73	7.77	7.81	7.85
	Open Circuit Voltage*	V_{OC}	[V]	43.92	44.29	44.53	44.77
	Current at MPP*	I_{MPP}	[A]	7.09	7.14	7.19	7.24
	Voltage at MPP*	V_{MPP}	[V]	35.56	35.83	36.10	36.36

[1] 1000 W/m², 25 °C, spectrum AM 1.5 G [2] Measurement tolerances STC ±3%; NOC ±5% [3] 800 W/m², NOCT, spectrum AM 1.5 G * typical values, actual values may differ

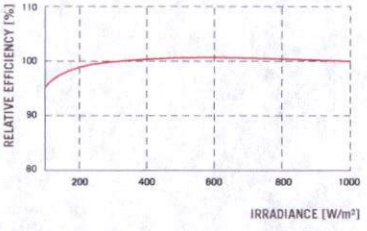
Q CELLS PERFORMANCE WARRANTY



At least 97 % of nominal power during first year. Thereafter max. 0.6 % degradation per year.
At least 92 % of nominal power up to 10 years.
At least 83 % of nominal power up to 25 years.

All data within measurement tolerances. Full warranties in accordance with the warranty terms of the Q CELLS sales organization of your respective country.

PERFORMANCE AT LOW IRRADIANCE



Typical module performance under low irradiance conditions in comparison to STC conditions (25 °C, 1000 W/m²).

TEMPERATURE COEFFICIENTS

Temperature Coefficient of I_{SC}	α	[%/K]	+0.04	Temperature Coefficient of V_{OC}	β	[%/K]	-0.29
Temperature Coefficient of P_{MPP}	γ	[%/K]	-0.40	Normal Operating Cell Temperature	NOCT	[°F]	113 ± 5.4 (45 ± 3 °C)

PROPERTIES FOR SYSTEM DESIGN

Maximum System Voltage V_{SYS}	[V]	1500 (IEC) / 1500 (UL)	Safety Class	II
Maximum Series Fuse Rating	[A DC]	20	Fire Rating	C (IEC) / TYPE 1 (UL)
Design load, push (UL)[2]	[lbs/ft²]	75 (3600 Pa)	Permitted module temperature on continuous duty	-40 °F up to +185 °F (-40 °C up to +85 °C)
Design load, pull (UL)[2]	[lbs/ft²]	33 (1600 Pa)	[2] safety factor of 1.5 included, see installation manual	

QUALIFICATIONS AND CERTIFICATES

IEC 61215 (Ed. 2); IEC 61730 (Ed. 1), Application class A

C Certified UL 1703 (254141) US

PACKAGING INFORMATION

Number of Modules per Pallet	29
Number of Pallets per 53' Container	26
Number of Pallets per 40' Container	22
Pallet Dimensions (L × W × H)	81.3 × 45.3 × 46.9 in (2065 × 1150 × 1190 mm)
Pallet Weight	1671 lbs (758 kg)

NOTE: Installation instructions must be followed. See the installation and operating manual or contact our technical service department for further information on approved installation and use of this product.

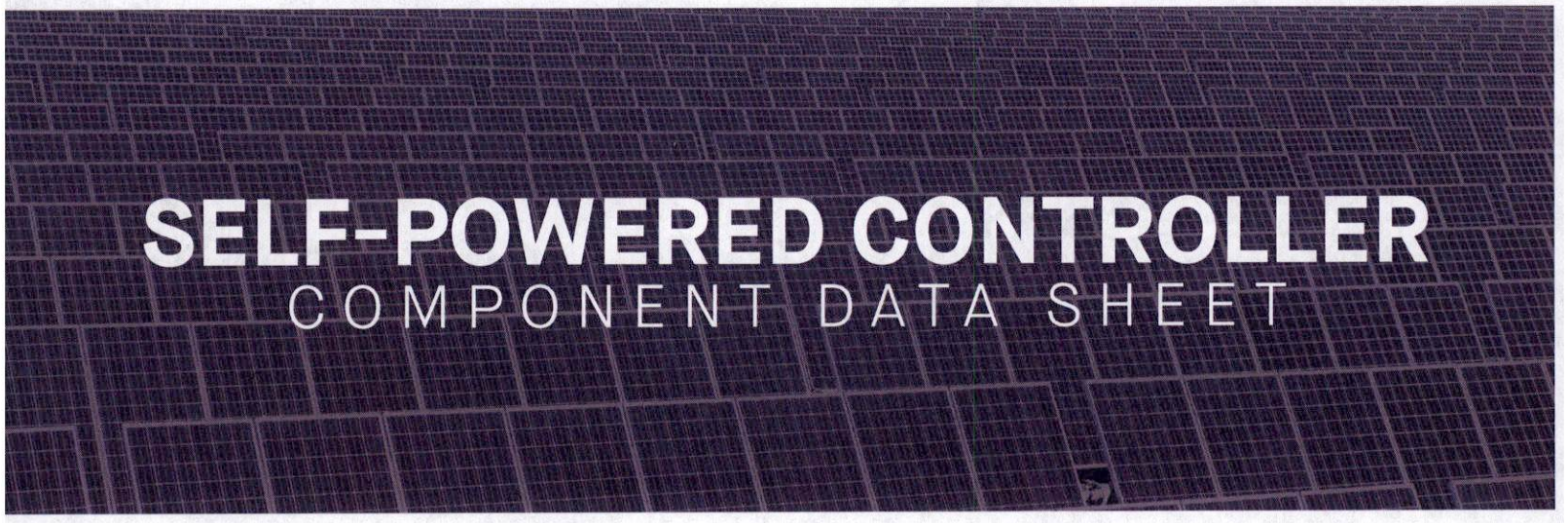
Hanwha Q CELLS America Inc.
300 Spectrum Center Drive, Suite 1250, Irvine, CA 92618, USA | TEL +1 949 748 59 96 | EMAIL inquiry@us.q-cells.com | WEB www.q-cells.us

Engineered in **Germany**

Q CELLS

Specifications subject to technical changes © Hanwha Q CELLS Q.PLUS L-G4.2_340-355_2017-05_Rev01_NA

NEXTracker
A Flex Company



SELF-POWERED CONTROLLER
COMPONENT DATA SHEET

CONTROL SYSTEM OVERVIEW

With over 5GW of solar trackers delivered on five continents, NEXTracker's NX Horizon™ is the world's leading single-axis tracker. NX Horizon includes a comprehensive communications and control system for maximum tracker accuracy and system reliability. This consists of three types of control units, all networked together via ZigBee® wireless mesh communications.

SELF-POWERED CONTROLLER

Our patent-pending Self-Powered Controller (SPC) is mounted on each tracker row and autonomously commands the tracker to follow the sun throughout the day. Tracker operation is derived from on-board GPS, clock, and inclinometer, ensuring superior tracking accuracy. The SPC is powered by a small, dedicated PV panel and includes a backup battery to eliminate the need for any tracker power wiring. All SPCs communicate over a ZigBee wireless mesh network for monitoring and global control functions.

NETWORK CONTROL UNIT

A Network Control Unit (NCU) aggregates communication and control for up to 100 SPCs via the same ZigBee network. Each NCU monitors real-time SPC parameters and issues global commands to its associated SPCs. During wind or snow events, stowing commands are generated and issued automatically based on real-time data from Weather Stations located on-site. Manual operator-generated commands are available via local switches on the NCU.

Each NCU is accessible via a Modbus interface for SCADA integration. NCUs are typically located at inverter pads with other electrical equipment to easily connect to the required AC power. As with the SPCs, a battery backup is built into each NCU unit.

WEATHER STATION

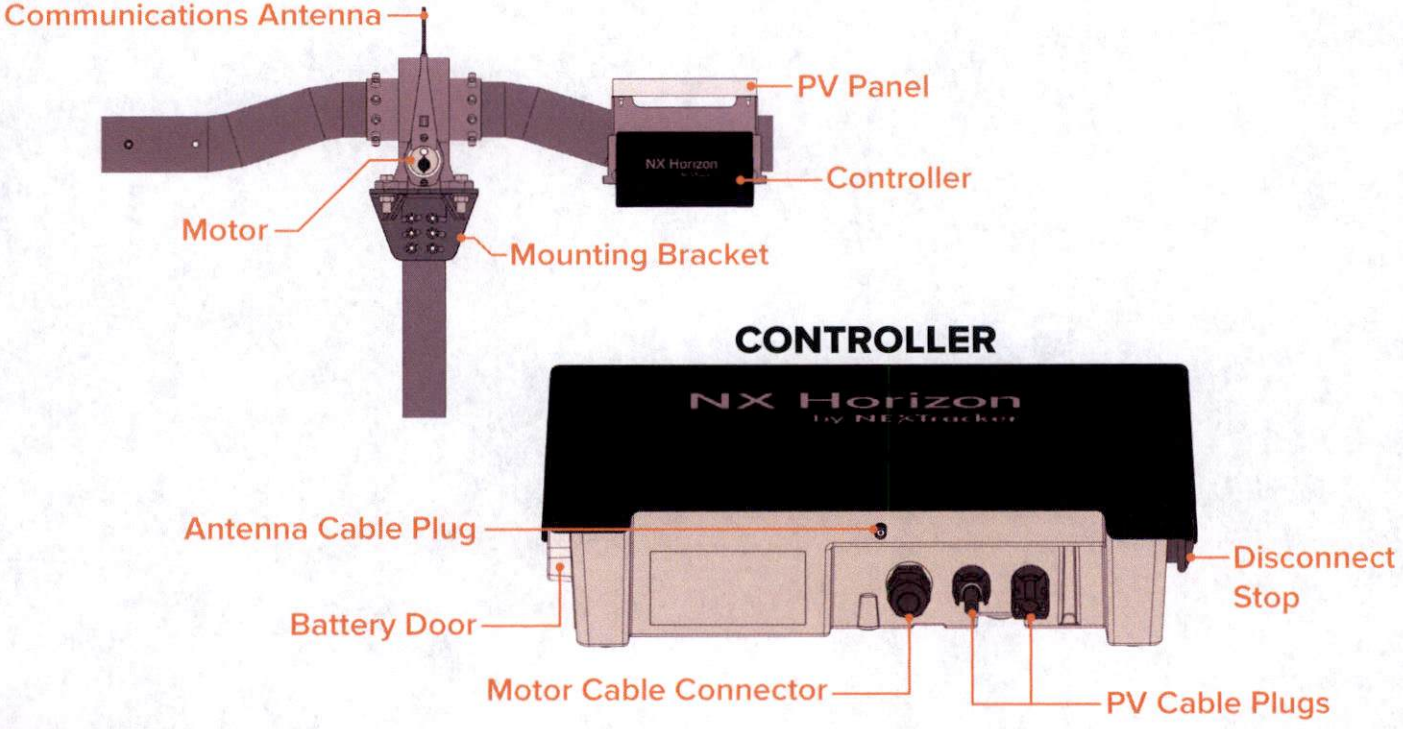
A Weather Station measures real-time wind speed and snow depth and reports this data to the NCUs over the ZigBee network. When conditions warrant, the NCUs will propagate a stowing command out to their associated SPCs within seconds. Like the SPCs, each Weather Station is powered by a small, dedicated PV panel and includes a backup battery eliminating the need for power wiring. The quantity and location of Weather Stations is defined on a per project basis.

TRACKER CONTROLLER SPECIFICATIONS (GEN 2)

INPUT	
Max PV Input Power	80W
Max PV Input Voltage	$30V_{DC}$
Maximum PV Input Current	3.5A
MPPT Voltage Range	16-27V
Battery Nom. Voltage/Range	14.5V/12-16V
OUTPUT	
Rated Power	150W
Motor Voltage (Nominal / Range)	24V/0-24V
Motor Typical Operating Current	1.0-2.0A
Motor Peak Current	10A
COMMUNICATIONS	
Interface to NCU	ZigBee (2.4GHz)
OPERATING PERFORMANCE	
Tracking Range	+/- 60 degrees
Standby Consumption	<0.5W

MECHANICAL	
Enclosure Rating	NEMA 4X / IP65
Dimensions (LxWxD)	14"x8"x4"
Weight	<9 lbs.
Enclosure Material	Polymer
EMI Compliance	FCC Part 15 Subpart B EN 55022: 2010 AS/NZS CISPR
Safety Compliance	UL 3703 in USA
ENVIRONMENT	
Operating Temperature	-30C to 60C
Storage Temperature	0C to 40C
Relative Humidity	0-95%
BACKUP BATTERY	
Battery Technology	Lithium Ion
Expected Battery Life	10 years
Backup Storage Capacity	3 days

SELF-POWERED CONTROLLER



WEATHER STATION CONTROLLER SPECIFICATIONS

INPUT

Max PV Input Power	65W
Max PV Input Voltage	$30V_{DC}$
Maximum PV Input Current	3A
MPPT Voltage Range	10-25V
Battery Nom. Voltage/Range	14.5V/12-16V

COMMUNICATIONS

Interface to NCU	ZigBee (2.4GHz)

WEATHER STATION SENSORS

Wind	NovaLynx Wind Sonic 65
Snow/Flood	NovaLynx 260-700

MECHANICAL

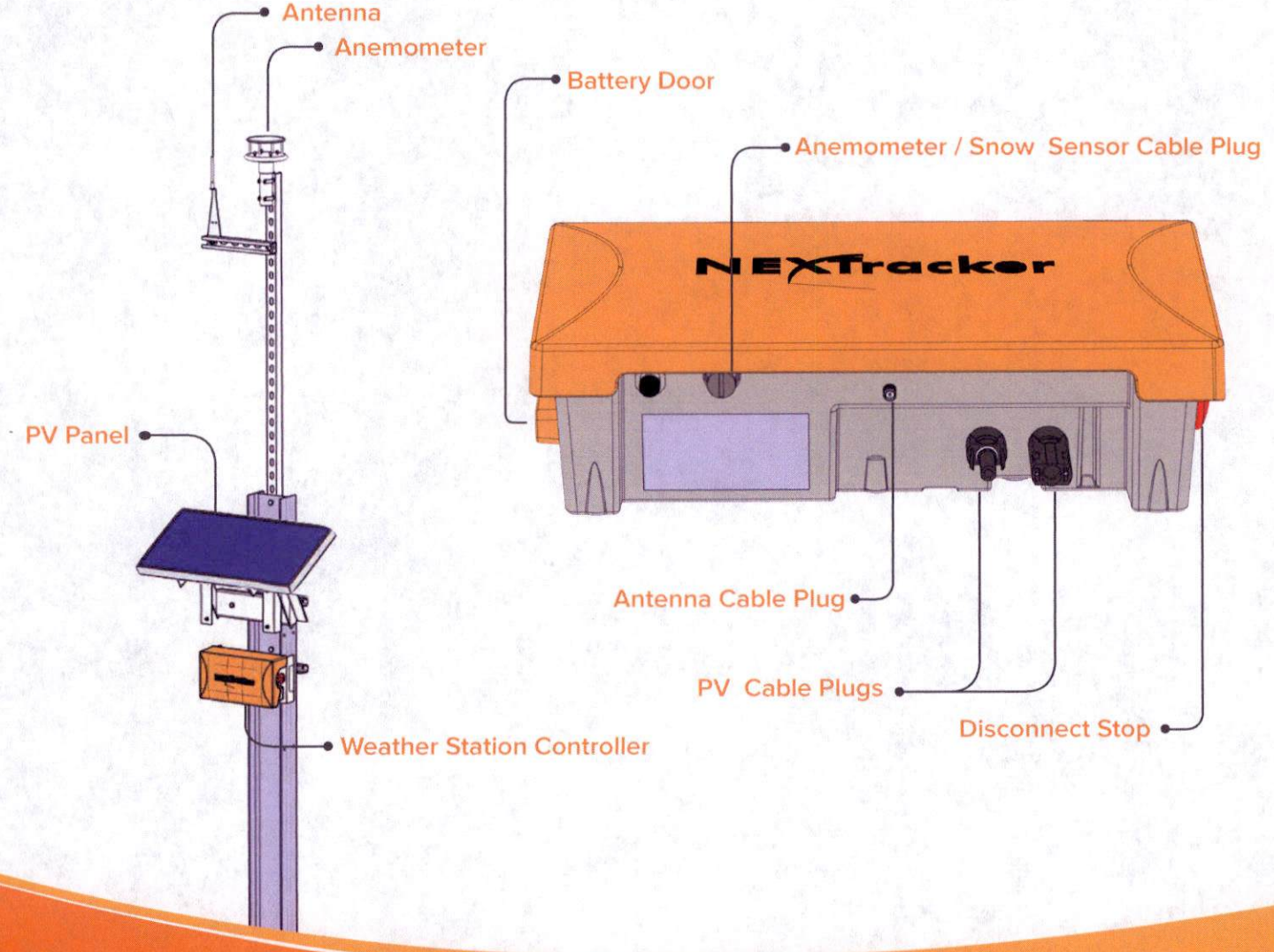
Enclosure Rating	NEMA 4X / IP65
Dimensions (LxWxD)	20"x6"x5"
Weight	<25 lbs.

ENVIRONMENT

Operating Temp. - Standard	0C to 50C
Operating Temp. - Optimal	-30C to 50C
Storage Temperature	0C to 40C
Relative Humidity	0-95%

BACKUP BATTERY

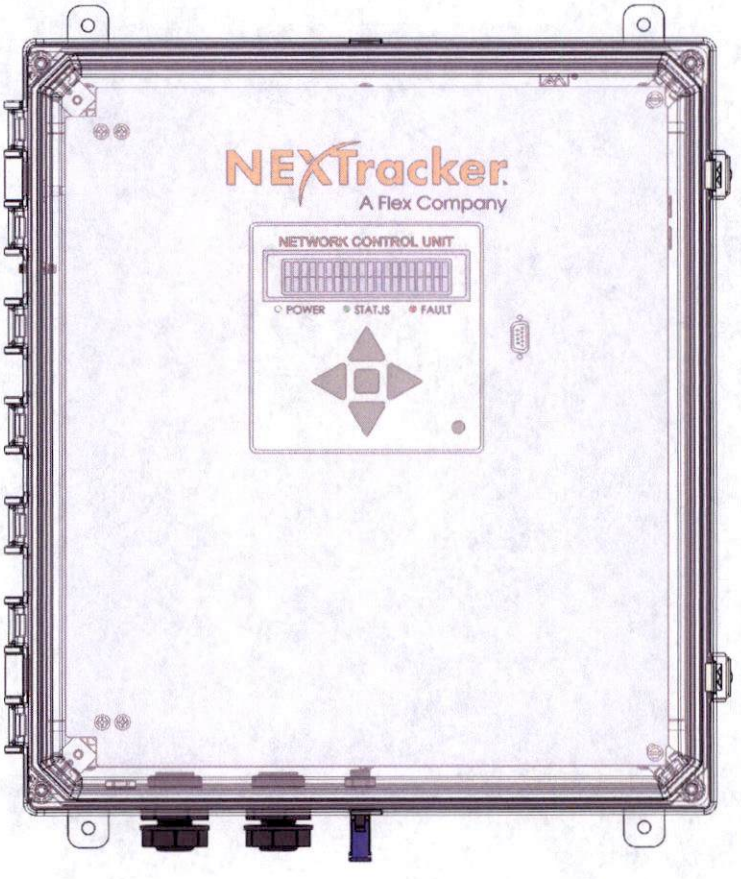
Battery Technology	Lithium Ion
Expected Battery Life	10 years
Backup Storage Capacity	3 days



NETWORK CONTROL UNIT SPECIFICATIONS

INPUT		MECHANICAL	
AC Input Voltage	100-265VAC	Enclosure Rating	NEMA 4X
Operational Power Consumption	<10W	Dimension in mm. (LxWxD)	491x452x200
Min. Over Current Device Rating	1A	Weight	<20 lbs.
BACKUP BATTERY		ENVIRONMENT	
Battery Technology	Lithium Ion	Operating Temperature	-30C to 60C
Expected Battery Life	10 years	Storage Temperature	0C to 40C
Backup Storage Capacity	3 days	Relative Humidity	0-95%
Shelf Life (In Storage)	3 months	HARDWARE	
COMMUNICATIONS		CPU (Processor)	Cortex A8
Remote Interface	ZigBee (2.4GHz)	On board Storage	4GB
Local Control Switches	Auto/Manual; Wash Position	Additional Storage Option	SD Slot
Network Interface	Ethernet RJ45	Onboard Screen	VFD

NETWORK CONTROL UNIT



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Illustrations are examples only. Actual product may vary.

NEXTracker
A Flex Company

MECHANICAL SYSTEMS OVERVIEW
COMPONENT DATA SHEET

With over 5GW of solar trackers delivered on five continents, NEXTracker's NX Horizon™ is the world's leading single-axis tracker. The NX Horizon is a self-powered, decentralized tracking system where each row is independent of one another - an industry first. Prior to this pioneering innovation, single-axis trackers included a drive shaft connecting each row, which impeded overall operations and maintenance of solar power plants. For NX Horizon, each row is driven by a brushless DC motor coupled to a slew gear. Power for the motor is provided by our patent-pending Self-Powered Controller (SPC) and a dedicated PV module.

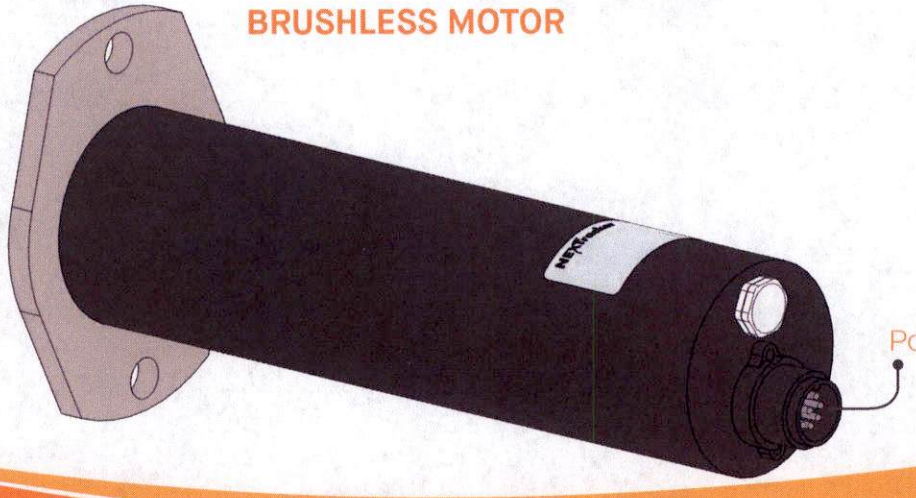
BRUSHLESS DC MOTOR SPECIFICATIONS

MECHANICAL	
Protection Class	IP 65
Isolation Class	EN62114 (120C)
Certification	UL 1004-1
Operating Temperature	-40°C to 85°C
Motor Type	Brushless
Weight	1.7kg
Relative Humidity	0-95%

POWER RATINGS	
Nominal Voltage	24 V DC
Motor Continuous Current (85C)	< 6.25 A
No load Current at 24VDC (85C)	< 1 A
Max Power at Rated Torque	150 W

OUTPUT	
Rated Gear Output Torque (1 hr. continuous)	150 N-m

BRUSHLESS MOTOR



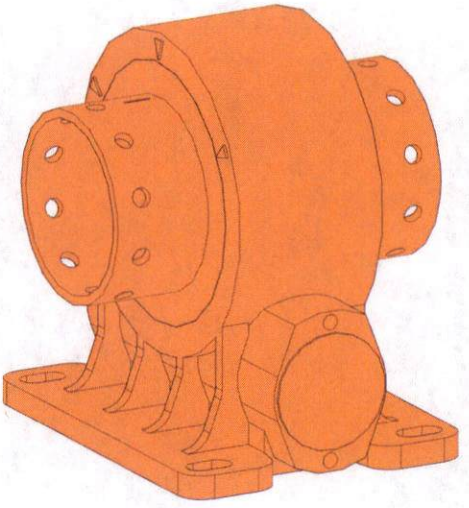
SLEW GEAR SPECIFICATIONS

MECHANICAL

Protection Class	IP 55 per IEC60529
Ambient Temp. Range	-40C to 60C
Housing Material	Ductile Iron
Rotation Range	±65°
Weight	77.5kg

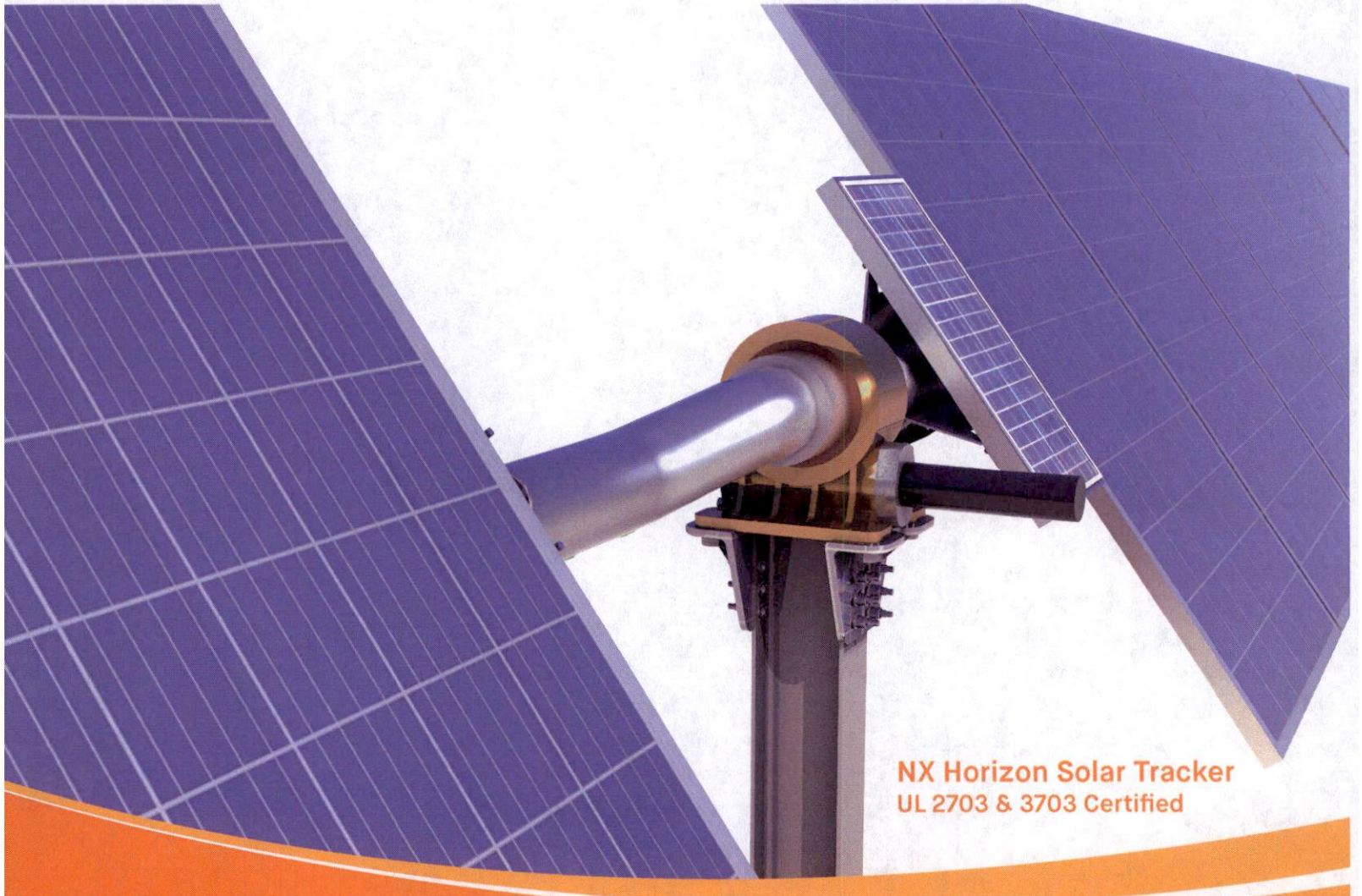
LOAD RATINGS

Normal Output Torque, min	± 2000 N-m
High Output Torque, min	± 5000 N-m



SLEW GEAR

The NX Horizon slew gear is a single stage, worm gear speed reducer. The slew gear is designed to adjust the tracker tilt position to follow the sun each day, as well as hold the tracker position fixed during periods of wind stow. The brushless motor is directly coupled to the input worm shaft of the slew gear, with the tracker torque tubes permanently connected to the output collars. The slew gear is sealed and requires no scheduled maintenance for the life of the product.



NX Horizon Solar Tracker
UL 2703 & 3703 Certified

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Illustrations are examples only. Actual product may vary.

ATTACHMENT G

GLARE ANALYSIS

FORGESOLAR GLARE ANALYSIS

Project: **Summit Ridge Maryland**
Site configuration: **Upperco**
Analysis conducted by Jodi Hunt (jodi.hunt@tetratech.com) at 20:51 on 24 Oct, 2018.

U.S. FAA 2013 Policy Adherence

The following table summarizes the policy adherence of the glare analysis based on the 2013 U.S. Federal Aviation Administration Interim Policy 78 FR 63276. This policy requires the following criteria be met for solar energy systems on airport property:

- No "yellow" glare (potential for after-image) for any flight path from threshold to 2 miles
- No glare of any kind for Air Traffic Control Tower(s) ("ATCT") at cab height.
- Default analysis and observer characteristics (see list below)

ForgeSolar does not represent or speak officially for the FAA and cannot approve or deny projects. Results are informational only.

COMPONENT	STATUS	DESCRIPTION
Analysis parameters	PASS	Analysis time interval and eye characteristics used are acceptable
Flight path(s)	N/A	No flight paths analyzed
ATCT(s)	N/A	No ATCT receptors designated

Default glare analysis and observer eye characteristics are as follows:

- Analysis time interval: 1 minute
- Ocular transmission coefficient: 0.5
- Pupil diameter: 0.002 meters
- Eye focal length: 0.017 meters
- Sun subtended angle: 9.3 milliradians

FAA Policy 78 FR 63276 can be read at https://www.federalregister.gov/d/2013-24729

SITE CONFIGURATION

Analysis Parameters

DNI: peaks at 1,000.0 W/m^2
Time interval: 1 min
Ocular transmission coefficient: 0.5
Pupil diameter: 0.002 m
Eye focal length: 0.017 m
Sun subtended angle: 9.3 mrad
Site Config ID: 22117.3820

PV Array(s)

Name: PV array 1
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0°
Tracking axis tilt: 0.0°
Tracking axis panel offset: 30.0°
Max tracking angle: 60.0°
Resting angle: 60.0°
Rated power: -
Panel material: Smooth glass with AR coating
Reflectivity: Vary with sun
Slope error: correlate with material

Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	39.540002	-76.835767	656.10	7.00	663.10
2	39.539662	-76.835714	653.27	7.00	660.27
3	39.539513	-76.835939	649.09	7.00	656.09
4	39.538612	-76.835681	641.28	7.00	648.28
5	39.538165	-76.835542	637.36	7.00	644.36
6	39.536890	-76.835606	623.02	7.00	630.02
7	39.537031	-76.833933	637.97	7.00	644.97
8	39.540291	-76.834608	679.80	7.00	686.80

Name: PV array 2
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0°
Tracking axis tilt: 0.0°
Tracking axis panel offset: 30.0°
Max tracking angle: 60.0°
Resting angle: 60.0°
Rated power: -
Panel material: Smooth glass with AR coating
Reflectivity: Vary with sun
Slope error: correlate with material

Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	39.539960	-76.836722	655.91	7.00	662.91
2	39.539877	-76.837312	662.21	7.00	669.21
3	39.539348	-76.837226	664.79	7.00	671.79
4	39.539100	-76.837398	674.76	7.00	681.76
5	39.538256	-76.837344	660.67	7.00	667.67
6	39.538463	-76.836400	638.51	7.00	645.51

Discrete Observation Receptors

Name	ID	Latitude (°)	Longitude (°)	Elevation (ft)	Height (ft)
OP 1	1	39.541878	-76.833415	701.29	6.00
OP 2	2	39.539768	-76.830786	667.09	5.00
OP 3	3	39.537989	-76.829123	658.88	5.00
OP 4	4	39.536334	-76.837137	640.04	6.00
OP 5	5	39.538759	-76.837760	679.65	5.00
OP 6	6	39.538294	-76.838135	685.12	6.00
OP 7	7	39.541047	-76.837744	680.98	5.00
OP 8	8	39.542412	-76.838044	719.17	6.00

GLARE ANALYSIS RESULTS

Summary of Glare

PV Array Name	Tilt (°)	Orient (°)	"Green" Glare min	"Yellow" Glare min	Energy kWh
PV array 1	SA tracking	SA tracking	13	152	-
PV array 2	SA tracking	SA tracking	182	333	-

Total annual glare received by each receptor

Receptor	Annual Green Glare (min)	Annual Yellow Glare (min)
OP 1	13	152
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	127
OP 8	182	206

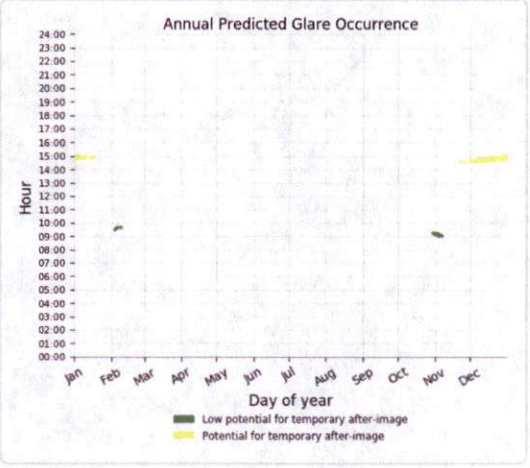
Results for: PV array 1

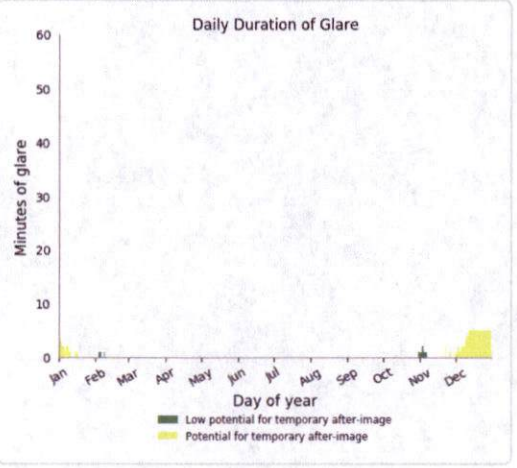
Receptor	Green Glare (min)	Yellow Glare (min)
OP 1	13	152
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	0
OP 8	0	0

Point Receptor: OP 1

152 minutes of yellow glare

13 minutes of green glare





Point Receptor: OP 2

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 3

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 4

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 5

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 6

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 7

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 8

0 minutes of yellow glare
0 minutes of green glare

Results for: PV array 2

Receptor	Green Glare (min)	Yellow Glare (min)
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	127
OP 8	182	206

Point Receptor: OP 1

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 2

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 3

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 4

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 5

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 6

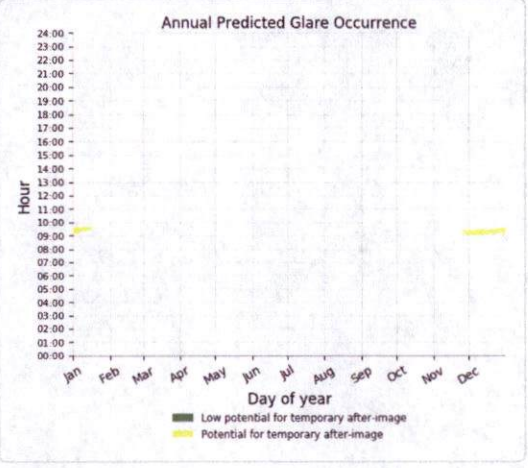
0 minutes of yellow glare

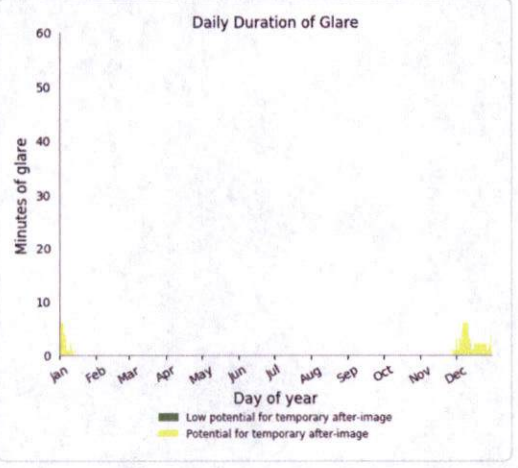
0 minutes of green glare

Point Receptor: OP 7

127 minutes of yellow glare

0 minutes of green glare

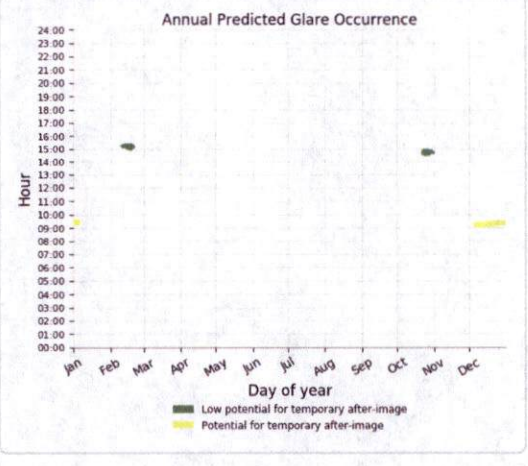


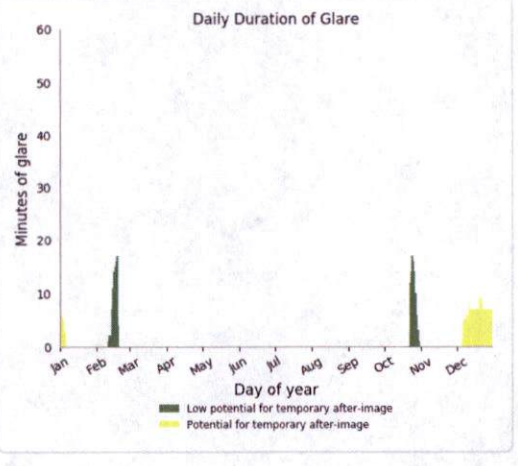


Point Receptor: OP 8

206 minutes of yellow glare

182 minutes of green glare





Assumptions

"Green" glare is glare with low potential to cause an after-image (flash blindness) when observed prior to a typical blink response time.
"Yellow" glare is glare with potential to cause an after-image (flash blindness) when observed prior to a typical blink response time.
Times associated with glare are denoted in Standard time. For Daylight Savings, add one hour.
Glare analyses do not account for physical obstructions between reflectors and receptors. This includes buildings, tree cover and geographic obstructions.
The glare hazard determination relies on several approximations including observer eye characteristics, angle of view, and typical blink response time. Actual values may differ.
Hazard zone boundaries shown in the Glare Hazard plot are an approximation and visual aid based on aggregated research data. Actual ocular impact outcomes encompass a continuous, not discrete, spectrum.

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FORGESOLAR GLARE ANALYSIS

Project: **Summit Ridge Maryland**
Site configuration: **Upperco**
Analysis conducted by Jodi Hunt (jodi.hunt@tetratech.com) at 20:57 on 24 Oct, 2018.

U.S. FAA 2013 Policy Adherence

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- Default analysis and observer characteristics (see list below)

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COMPONENT	STATUS	DESCRIPTION
Analysis parameters	PASS	Analysis time interval and eye characteristics used are acceptable
Flight path(s)	N/A	No flight paths analyzed
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Default glare analysis and observer eye characteristics are as follows:

- Analysis time interval: 1 minute
- Ocular transmission coefficient: 0.5
- Pupil diameter: 0.002 meters
- Eye focal length: 0.017 meters
- Sun subtended angle: 9.3 milliradians

FAA Policy 78 FR 63276 can be read at https://www.federalregister.gov/d/2013-24729

SITE CONFIGURATION

Analysis Parameters

DNI: peaks at 1,000.0 W/m^2
Time interval: 1 min
Ocular transmission coefficient: 0.5
Pupil diameter: 0.002 m
Eye focal length: 0.017 m
Sun subtended angle: 9.3 mrad
Site Config ID: 22117.3820

PV Array(s)

Name: PV array 1
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0°
Tracking axis tilt: 0.0°
Tracking axis panel offset: 30.0°
Max tracking angle: 60.0°
Resting angle: 60.0°
Rated power: -
Panel material: Smooth glass with AR coating
Reflectivity: Vary with sun
Slope error: correlate with material

Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	39.540002	-76.835767	656.10	7.00	663.10
2	39.539662	-76.835714	653.27	7.00	660.27
3	39.539513	-76.835939	649.09	7.00	656.09
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6	39.536890	-76.835606	623.02	7.00	630.02
7	39.537031	-76.833933	637.97	7.00	644.97
8	39.540291	-76.834608	679.80	7.00	686.80

Name: PV array 2
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0°
Tracking axis tilt: 0.0°
Tracking axis panel offset: 30.0°
Max tracking angle: 60.0°
Resting angle: 60.0°
Rated power: -
Panel material: Smooth glass with AR coating
Reflectivity: Vary with sun
Slope error: correlate with material

Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	39.539960	-76.836722	655.91	7.00	662.91
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3	39.539348	-76.837226	664.79	7.00	671.79
4	39.539100	-76.837398	674.76	7.00	681.76
5	39.538256	-76.837344	660.67	7.00	667.67
6	39.538463	-76.836400	638.51	7.00	645.51

Discrete Observation Receptors

Name	ID	Latitude (°)	Longitude (°)	Elevation (ft)	Height (ft)
OP 1	1	39.541878	-76.833415	701.29	16.00
OP 2	2	39.539768	-76.830786	667.09	9.00
OP 3	3	39.537989	-76.829123	658.88	9.00
OP 4	4	39.536334	-76.837137	640.04	16.00
OP 5	5	39.538759	-76.837760	679.65	9.00
OP 6	6	39.538294	-76.838135	685.12	16.00
OP 7	7	39.541047	-76.837744	680.98	9.00
OP 8	8	39.542412	-76.838044	719.17	16.00

GLARE ANALYSIS RESULTS

Summary of Glare

PV Array Name	Tilt (°)	Orient (°)	"Green" Glare min	"Yellow" Glare min	Energy kWh
PV array 1	SA tracking	SA tracking	20	0	-
PV array 2	SA tracking	SA tracking	482	331	-

Total annual glare received by each receptor

Receptor	Annual Green Glare (min)	Annual Yellow Glare (min)
OP 1	20	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	138
OP 8	482	193

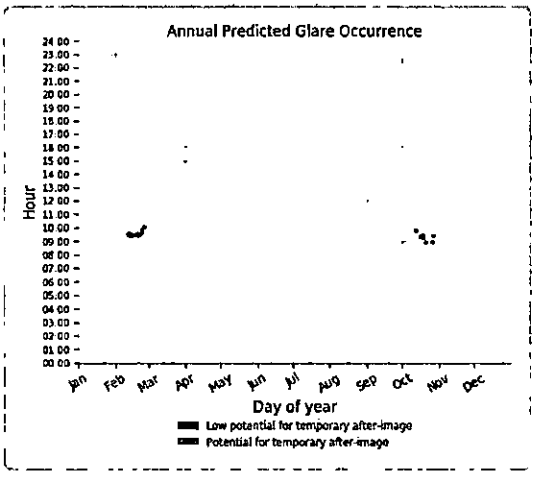
Results for: PV array 1

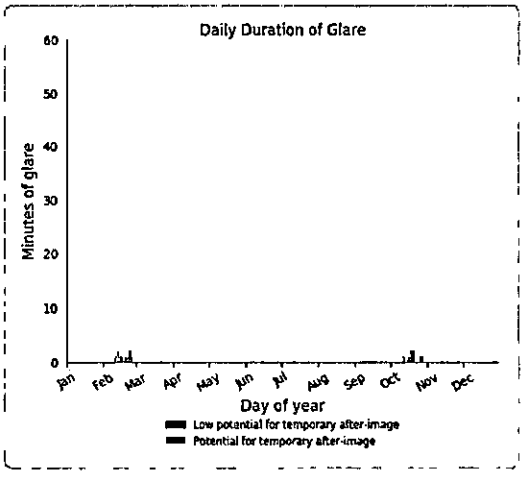
Receptor	Green Glare (min)	Yellow Glare (min)
OP 1	20	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	0
OP 8	0	0

Point Receptor: OP 1

0 minutes of yellow glare

20 minutes of green glare





Point Receptor: OP 2

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 3

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 4

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 5

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 6

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 7

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 8

0 minutes of yellow glare
0 minutes of green glare

Results for: PV array 2

Receptor	Green Glare (min)	Yellow Glare (min)
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	138
OP 8	482	193

Point Receptor: OP 1

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 2

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 3

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 4

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 5

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 6

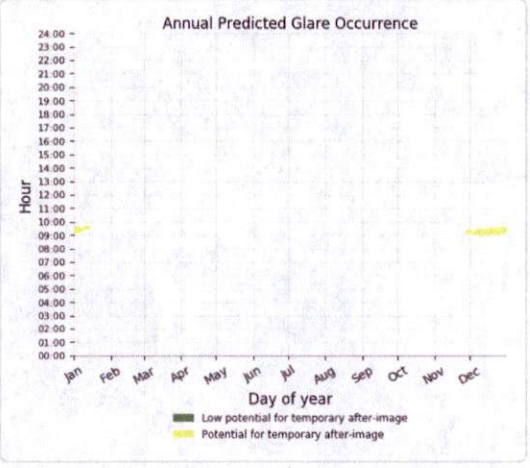
0 minutes of yellow glare

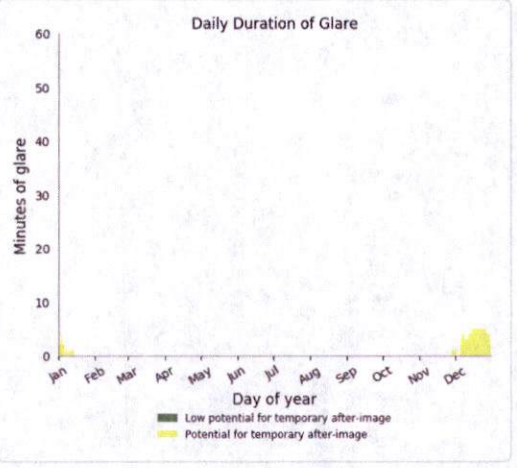
0 minutes of green glare

Point Receptor: OP 7

138 minutes of yellow glare

0 minutes of green glare

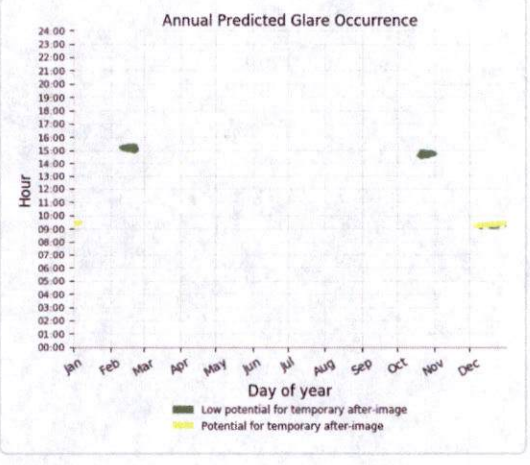


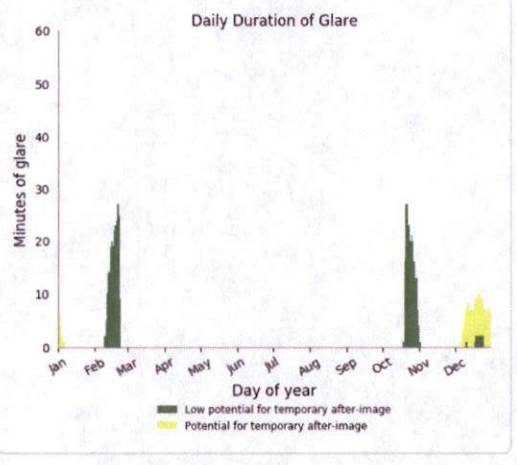


Point Receptor: OP 8

193 minutes of yellow glare

482 minutes of green glare





Assumptions

"Green" glare is glare with low potential to cause an after-image (flash blindness) when observed prior to a typical blink response time.
"Yellow" glare is glare with potential to cause an after-image (flash blindness) when observed prior to a typical blink response time.
Times associated with glare are denoted in Standard time. For Daylight Savings, add one hour.
Glare analyses do not account for physical obstructions between reflectors and receptors. This includes buildings, tree cover and geographic obstructions.
The glare hazard determination relies on several approximations including observer eye characteristics, angle of view, and typical blink response time. Actual values may differ.
Hazard zone boundaries shown in the Glare Hazard plot are an approximation and visual aid based on aggregated research data. Actual ocular impact outcomes encompass a continuous, not discrete, spectrum.

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ATTACHMENT H

FEDERAL AVIATION ADMINISTRATION SCREEN

Federal Aviation Administration

« OE/AAA

Notice Criteria Tool

Notice Criteria Tool - Desk Reference Guide V_2014.2.0

The requirements for filing with the Federal Aviation Administration for proposed structures vary based on a number of factors: height, proximity to an airport, location, and frequencies emitted from the structure, etc. For more details, please reference CFR Title 14 Part 77.9.

You must file with the FAA at least 45 days prior to construction if:

- your structure will exceed 200ft above ground level
- your structure will be in proximity to an airport and will exceed the slope ratio
- your structure involves construction of a traverseway (i.e. highway, railroad, waterway etc...) and once adjusted upward with the appropriate vertical distance would exceed a standard of 77.9(a) or (b)
- your structure will emit frequencies, and does not meet the conditions of the FAA Co-location Policy
- your structure will be in an instrument approach area and might exceed part 77 Subpart C
- your proposed structure will be in proximity to a navigation facility and may impact the assurance of navigation signal reception
- your structure will be on an airport or heliport
- filing has been requested by the FAA

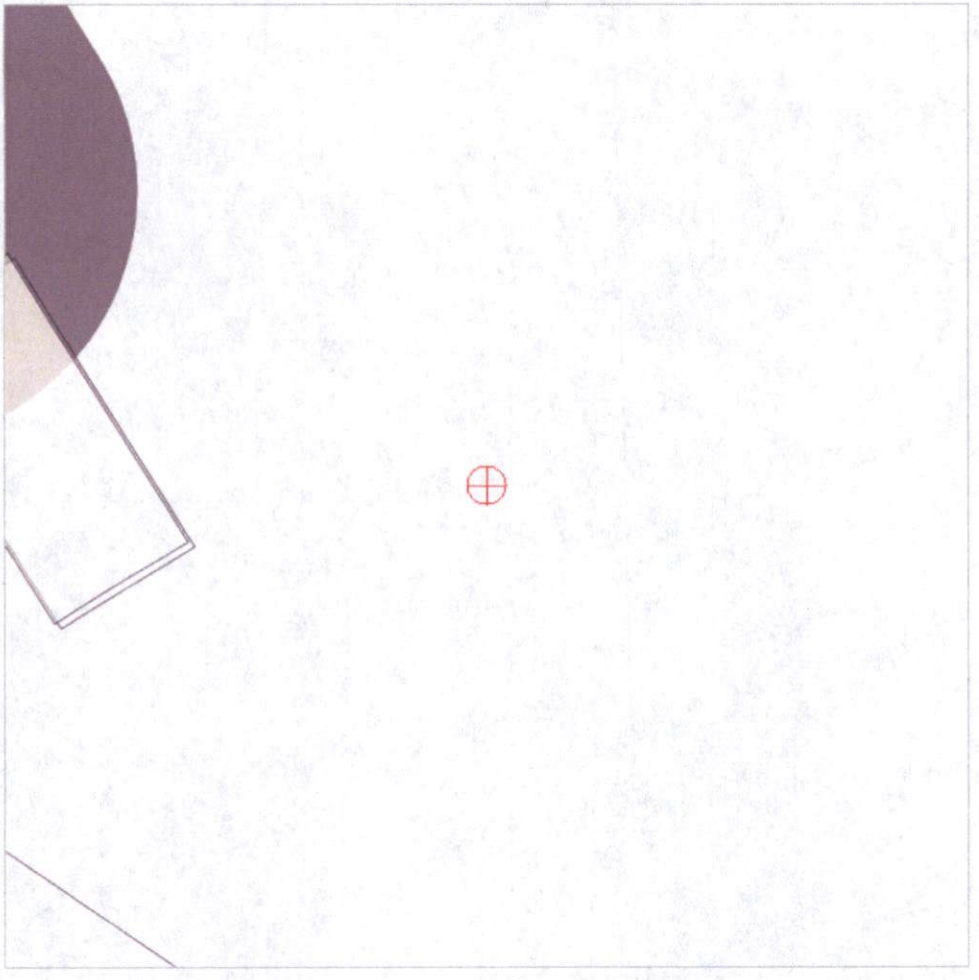
If you require additional information regarding the filing requirements for your structure, please identify and contact the appropriate FAA representative using the Air Traffic Areas of Responsibility map for Off Airport construction, or contact the FAA Airports Region / District Office for On Airport construction.

The tool below will assist in applying Part 77 Notice Criteria.

Latitude:	39 Deg 32 M 20.78 S N ▼
Longitude:	76 Deg 50 M 06.33 S W ▼
Horizontal Datum:	NAD83 ▼
Site Elevation (SE):	657 (nearest foot)
Structure Height :	7 (nearest foot)
Traverseway:	No Traverseway ▼ (Additional height is added to certain structures under 77.9(c)) User can increase the default height adjustment for Traverseway, Private Roadway and Waterway
Is structure on airport:	(•) No ( ) Yes

Results

You do not exceed Notice Criteria.



ATTACHMENT I

VEGETATIVE MAINTENANCE PLAN

Summit Ridge
ENERGY

VEGETATIVE MAINTENANCE

2.09 MWdc Ground Mounted Project

Project Information

Project Name:	Upperco
Address:	Hanover Pike, Upperco, Baltimore County, Maryland
Project Area:	Approximately 12.6 acres

Background

Following construction of the solar facility, disturbed grounds will be re-established with low growth/low maintenance ground cover. The vegetative maintenance contractor will be responsible for inspecting and maintaining the vegetative integrity of the solar facility. The contractor will conduct on-site activities during growing months at the frequency of approximately 2-3 times per year. The contractor is expected to adjust site maintenance frequency based on time of year and weather conditions. To avoid rutting, erosion, and soil compaction, weather forecasts will be consulted and on-site field inspections will be conducted prior to mowing or cutting to ensure that these practices occur when the site is able to withstand this type of activity.

It is important to note this scope of work covers work along the access road and w/in the fence line of the project. Remaining lands outside the fence will continue to be utilized for agricultural purposes and maintained by the landowner or their representative.

Site Activities

- Perimeter Maintenance
    - The perimeter fence line will be inspected for items of trash, that may have accumulated since the previous site visit. These items will be collected and disposed of offsite. Vegetative growth along the fence line will also be trimmed and maintained to prevent the growth of weeds or tall grasses.
- Mowing
    - Mowing is a three-step process. First, the mower or bush hog trims the large areas. Second, trimmers are used to cut around structural elements and other places the mower couldn't reach. Finally, any vegetation that was thrown and stuck to the modules will be cleaned off. Additionally, spot-mowing is recommended for reducing invasive plants while native species are becoming established. Spot-mowing should be done at a raised height to avoid damaging native plants.

- Site Inspections
    - During each maintenance visit, the site will be inspected for signs of erosion. Any areas of concern will be immediately communicated to the project owner/developer to evaluate and implement corrective measures. Should the contractor observe a non-typical condition or change in site conditions the project owner/developer will be immediately notified.
- Screening Maintenance
    - Should vegetative screening be installed at the PV facility, the contractor will be responsible for monitoring the general health of each plant. If any plant succumbs and fails to establish its self, contractor will work with the responsible nursery to redeem the warranty and replace the deceased plant with another of the same species.
- Access Road Maintenance
    - During maintenance activities, the access road will be inspected and maintained to ensure that vegetative creep does not occur. This will include the mowing of at least a 3-foot strip paralleling each side of the road. Additionally, any observed vegetative creep within the road will be removed.

Table 1: Scope of Work

Activity	Frequency	Timing
Perimeter Maintenance	8-12 Weeks	May - October
Mowing	8-12 Weeks	May - October
Site Inspections	8-12 Weeks	May - October
Screening Maintenance*	4-8 Weeks	May - October
Access Road Maintenance	8-12 Weeks	May - October

*Two years only to ensure vegetation planted for screening is adequately established

ATTACHMENT J

DECOMMISIONING PLAN

DECOMMISSIONING PLAN

Upperco: 2 MWDC Ground Mounted Solar Project

ICFTS MD Solar, LLC
1401 Wilson Blvd., Suite 800
Arlington, VA 22209

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1. BACKGROUND

Facility Description

ICFTS MD Solar, LLC (Summit Ridge) proposes to develop a solar photovoltaic (PV) facility (the "Project") with a total maximum nameplate capacity of two megawatts direct current (2 MWdc), located on private property on Hanover Pike, Baltimore County, Maryland, (the "Property"), as shown in Figure 1.

The Project occupies approximately 12.9 acres of a larger 41.38-acre parcel of private land located in the Upperco Township, County of Baltimore. The Project will produce electricity delivered to Baltimore Gas and Electric's local distribution system utilizing existing lines. Interconnection to Baltimore Gas and Electric's system will include both underground and overhead wires along with new utility poles located on the Property.

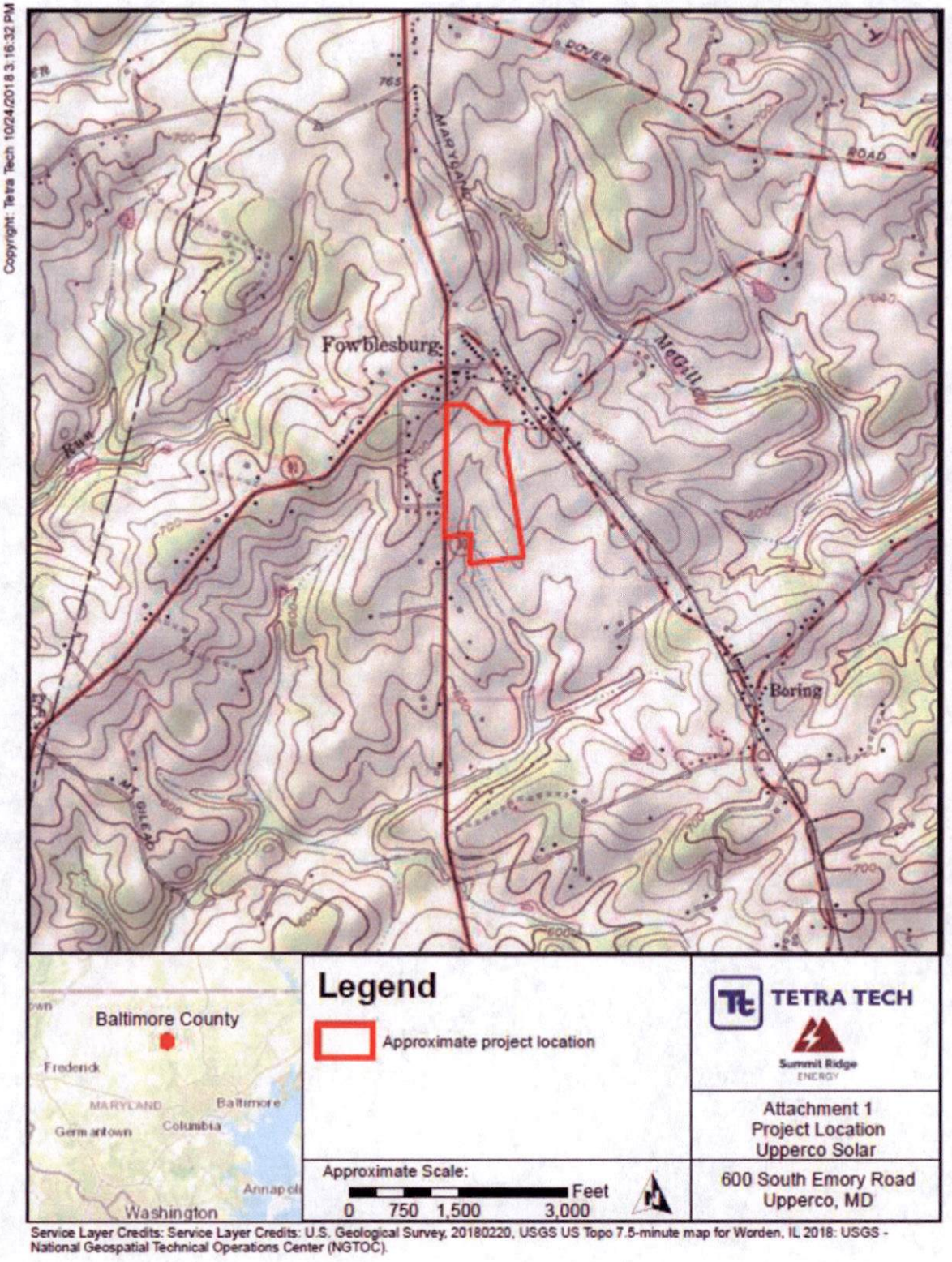
The solar PV modules will be installed on single-axis metal racking structures secured to the ground utilizing either direct push or anchor screw technology. Direct Current (DC) wiring with the Project will be secured behind the modules, collected at a common point and transition underground from the string inverters to the transformer. From the transformer pad, AC wiring will run underground until a point before the interconnection where it will surface and connect to a series of utility poles on the Property before connecting to the existing grid.

Access to the Project will be from Hanover Pike utilizing a 20-foot wide crushed stone road constructed for access to the facility.

The transformer skid will be mounted on a concrete pad located within the array. The pad used for a skid unit will be approximately 13-feet x 13-feet.

The site will be secured with a perimeter chain link fence.

Figure 1: **Project Location**



Service Layer Credits: Service Layer Credits: U.S. Geological Survey, 20180220, USGS US Topo 7.5-minute map for Worden, IL 2018: USGS - National Geospatial Technical Operations Center (NGTOC).

2. DECOMMISSIONING ACTIVITIES

Introduction

The Decommissioning Plan (the "Plan") describes anticipated activities and process for decommissioning of the proposed facility following its useful life. The purpose of decommissioning is to restore the property to a clean, safe and, usable condition for continued use by the landowner.

Decommissioning consists of the removal of above-ground and below-ground facility components, management of excess materials and waste as well as the restoration of Project lands, as applicable. Activities are expected to take between 8-10 weeks but no longer than four-months.

Potential negative environmental effects from decommissioning of the facility will be mitigated through use of erosion and sediment control measures, limiting the use of heavy machinery (where possible), and maintaining a buffer from natural features. These control measures, as well as other mitigation measures used during construction will be re-implemented during the decommissioning phase and until the site is stabilized.

Future consultation will occur with the municipality prior to decommissioning to discuss preferences and commitments to restore the Project to its pre-construction condition or a similar state. All decommissioning and restoration activities will adhere to the requirements set forth by Occupational Health and Safety Administration (OSHA) and will be in accordance with all applicable federal, state and local permitting requirements. As with the construction phase, an onsite manager responsible for safety will be present on-site (generally the contractor's project manager) while decommissioning activities are taking place.

The decommissioning plan is based on current procedures and experience. These procedures may be subject to revision based on new experiences and requirements over time. At the time of decommissioning, various options and procedures will be re-evaluated to ensure that decommissioning is safe and beneficial to the environment.

Equipment Removal

A significant amount of the components of the Project will include recyclable or re-saleable components, including copper, aluminum, galvanized steel, and modules. Due to their resale monetary value, these components will be dismantled and disassembled rather than being demolished and disposed of.

Following coordination with the local utility company regarding timing and required procedures for disconnecting the Facility from the private utility, electrical connections to the system will be disconnected and connections will be tested locally to confirm that no electric current is running through them before proceeding. Electrical connections to the panels will be cut at the panel and then removed from their framework by cutting or dismantling the connections to the supports. Inverters, transformers, and switchgear will be lifted, secured onto flat beds, and transported off-site for processing.

Modules will be detached from the racking system and stacked for removal. In the event of a module fracture, the silicon-based module will be disposed of at a landfill as non-hazardous waste.

The metal piling systems used to secure the PV system in the ground will be removed entirely. If full removal is not possible, the piling will be terminated at a depth greater than four-feet from grade or at bedrock whichever is shallower. The piling materials will be collected and recycled. Additionally, all associated metal mounting structures along with the metal perimeter fencing and gates will be removed and either reused or sent for recycling.

Grade slabs will be broken, removed, and disposed of off-site or recycled. Unless requested by the landowner for the access road to remain, materials from road construction will be removed, shipped off-site for either re-use or disposal. If necessary, the former road bed will be backfilled and graded with material native to the region to blend it with the immediately adjacent and existing topography.

Aboveground utility poles owned by the Project will be completely removed and disposed of off-site in accordance with utility best practices. Overhead wires will be removed from the area of the solar modules and terminated at the point of interconnection. Underground wiring at depths of less than four-feet will be removed and recycled.

Prior to final demobilization, a final walkthrough of the Project area and the property will be completed to ensure all debris is collected and removed.

Site Restoration

Those areas disturbed during decommissioning activities will be graded as necessary to ensure a uniform slope for proper storm water management, prevent the ponding of waters and address any rutting or other depressions caused by removal equipment. The disturbed areas will then be seeded either by hand or via hydro seeding to reestablish vegetation compatible with the property and region. It is anticipated that a seed mix native to the area will be used by the decommissioning contractor, unless the landowner instructs that they will begin using the property for agricultural purposes and will reestablish the area with agricultural vegetation.

3. PERMITTING

Permitting & Approvals

Prior to the initiation of decommissioning activities, local code will be reviewed for applicability with decommissioning activities. The municipality will be consulted to confirm and applications made for appropriate permits and approvals, if any. At a minimum, it is anticipated that a new storm water pollution prevention plan (SWPPP) will be required along with a building permit. It is assumed that neither a new or revised site plan nor special use permit would be necessary because decommissioning activities are associated with the originally issued approvals.

Throughout the decommissioning process, the municipality will be provided with regular updates and notice upon completing the restoration activities.

4. DECOMMISSIONING ASSURANCE

Form of Assurance

The Operator/Owner will secure a bond as assurance for decommissioning of the project if the Solar Energy System ceases to be used for its intended purpose for 150 consecutive days and the Operator/Owner does not provide reasonable evidence of intent to restart operations within six (6) months thereafter. Removal of the Solar Energy System, obsolete and/or unused structures shall be completed within three (3) months thereafter or as soon as feasible due to weather restrictions. The bond will be maintained and upon Town's request, within thirty (30) days prior to the end of each five (5)-year period after the establishment of the bond, the Operator/Owner shall provide the Town with an updated Removal Letter setting forth an updated estimate for the removal of such obsolete and or unused structures and the bond shall be altered to reflect the updated estimate for such removal. The bond will remain in place through the completion of decommissioning activities at the Project.

Use of Assurance

In the event that the Operator/Owner fails to undertake decommissioning activities within the established period of the Agreement, the municipality shall have the right to undertake decommissioning activities and make a claim against the decommissioning assurance. In such circumstances, the municipality shall have such access to the Property as may be necessary to allow its qualified contractors to conduct decommissioning activities.

Zoning Special Use Application

OF

Proposed Upperco Solar Site
Hanover Pike
Upperco, Maryland

October 30, 2018

Prepared by:

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Item #0141

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1.0 PROJECT OVERVIEW

ICFTS MD Solar, LLC (Summit Ridge) is seeking a Zoning Special Use Permit and Site Plan approval for the construction of the Upperco Solar approximately 2.09 Megawatt (MW) direct current (DC) Photovoltaic Array located at Hanover Pike (Route 30), Upperco, Maryland (hereafter referred to as the "Site"). Summit Ridge proposes the development of approximately 12.9 acres of a larger 39.9-acre parcel of private land in Upperco, Baltimore County into a ground-mounted photovoltaic (PV) solar energy generating facility.

The proposed project would be capable of delivering approximately 2.09 MW of DC into the electrical power grid, which is sufficient to provide renewable energy to approximately 300 households. The PV panels proposed for this project are single-axis tracking panels that would be placed on a racking system that is pile driven into the ground surface. The solar panels will be directly interconnected to, and provide energy to, Baltimore Gas and Electric's local electric distribution grid via an overhead electrical service. Prior to utility interconnection, DC electrical power generated by the solar panels will be transformed to alternating current (AC) power and modified as necessary to connect to Baltimore Gas and Electric's electrical power supply. The project would also include an equipment pad, a gravel access road, a vegetative soil cover, and it will be surrounded by a chain-linked security fence as per the applicable electric building codes and requirements.

The following sections address the Zoning Special Exception Permit/Solar Energy System Development Criteria cited in the Baltimore County, Maryland ordinance, regulating development of solar energy systems (Ordinance Part 4F), The Baltimore County Code Section 33-3-108, and the Zoning Checklist for Non-Residential Permits and/or Zoning Public Hearing Applications.

2.0 SITE DESCRIPTION

The Site, located on Hanover Pike, Maryland, consists of one tax parcel assigned Tax PIN number 0408067040, totaling an area of approximately 39.9 acres. According to Baltimore County Zoning Maps, the majority of the parcel, approximately 34.09 acres, is zoned RC-2 for agricultural use. Approximately 7.29 acres of the parcel on the west side are zoned BM-CR for Business Major/Large Scale Commercial use. According to Baltimore County Tax Information, the parcel is located within the unincorporated community of Upperco, Maryland. The Site is bounded by residential properties to the north; Maryland State Highway 30 (Hanover Pike), commercial properties and rural residential properties to the west; several farm fields and commercial/residential properties to the east and south; and an agricultural field followed by Old Hanover Road to the east. The Site is located within the Piney Run Rural Legacy Area, but the subject tax parcel does not have a rural legacy area deed restriction limiting development of the property. A portion of the Site is utilized for storm water management consisting of a storm water management pond and associated outlet and control structures constructed and maintained by the Maryland Department of Transportation. The proposed solar project will not disturb this storm water management structures.

A map showing the location of the Site and adjacent land use is presented in *Attachment A;* A Site plan showing the physical layout is presented in *Attachment B;* A copy of the Lease Agreement is presented in *Attachment C.*

3.0 COMMUNITY CHARACTER AND SURROUNDING LAND USE

The general area around the Site consists of residential, commercial and agricultural development. The portions of the property which are not proposed for solar development are anticipated to be continued to be used for storm water management by the Maryland Department of Transportation. The Site is located within a mixed-use area of the unincorporated community of Upperco, Baltimore County, Maryland. The Site is bounded by residential and commercial properties followed by Emory Road to the north; Maryland State Highway 30 (Hanover Pike), commercial properties and rural residential properties to the west; several farm fields and commercial/residential properties to the east and south; and an agricultural field followed by Old Hanover Road to the east.

Table 3-1 Adjacent Properties and Addresses

Tax Account No.	Street Address	Owner	Zoning
0406000670	15215 Hanover Road	Ronald C. Price	BL-CR
2200026232	15217 Hanover Pike	Eric J. Norris	RO-CR
2300007009	15212 Old Hanover Road	Wayne E. Sauter	RC-2
2300007008	15214 Old Hanover Road	David Schneider	RC-2
0407015379	15208 Old Hanover Road	Bruce M. Smith	RC-2
0415069435	15206 Old Hanover Road	Vola H. Osborn	RC-2
0411000526	15202 Old Hanover Road	Jere J. Hunt	RC-2
0402058901	14914 Old Hanover Pike	Glenn S. Elseroad	RC-2
1600011102	Hanover Road	Dale S. Trump	RC-2
0414001100	15003 Hanover Pike	Richard B. Isaac Trustee	RC-2
2000006704	15005 Hanover Road	Roy L. Johnson	RC-2
2000006703	15007 Hanover Road	Brian E. Shipley	RC-2
0416015840	Hanover Road	Joshua H. Larrimore	RC-2
0408065954	15022 Hanover Road	Dinah L. Hoffman	RC-2
0407058500	15026 Hanover Pike	James A. Houston Jr.	RC-2
0402085875	15102 Hanover Road	Laker Capital Group, LLC	BL-CR
0418048000	15106 Hanover Road	Eleanor H. Rhode Rev. Trust	BM-CR
0401074400	15212 Hanover Road	Calvin W. Armacost Trustee	BL-CR

The installation and operation of a solar facility is consistent with the Baltimore County Comprehensive Plan's (BCCP) goal of encouraging the responsible use of natural resources to meet current needs without degrading the supply and quality of those resources for the future. A specific policy identified in that regard is to continue to adapt to and mitigate impacts of climate change on the environment (BCCP Sustainable Environment).

The proposed project is harmonious with the existing zoning of nearby parcels, will not depreciate or alter those properties' essential character, and presents no conflict with residentially zoned areas

of the County. The BCZR (Section 502 Special Exceptions) outlines nine points that determine the nature of consistency between a proposed Special Use and the surrounding area. The standards are represented as follows:

The proposed Special Use shall not be detrimental to the health, safety, or general welfare of the area.

The proposed project is intended to provide a clean source of green energy into the local electrical power grid. Baltimore County, as well as the State of Maryland have regulations in place to ensure the security of solar facilities including the requirements for perimeter fencing and monitoring. To deter theft, a security fence with barbed wire has been proposed to both deter crime and protect the community. The project is set off the road, with a vegetative buffer along Route 30, and is located on private property.

According to the U.S. Department of Energy, few power-generating technologies have as little environmental impact as photovoltaic solar panels. The solar panels proposed for this project are made of crystalline silicon, typically from quartz or sand. Crystalline silicon semiconductors are also utilized in the manufacture of integrated circuits and microchips used in personal computers, cellular telephones and other modern electronics.

The outer glass cover constitutes the largest share of the total mass of a finished crystalline photovoltaic module, followed by the aluminum frame, the ethylene vinyl acetate encapsulant, the polyvinyl fluoride substrate, and the junction box. The solar cells themselves only represent about four percent of the mass of a finished module.

Additional materials proposed for the project consist of steel for the panel support (racking) system, powder-coated aluminum for the inverters, a crushed gravel access road, and a standard chain-link security fence pursuant to applicable electrical codes. Additional information on the specifications for the proposed equipment are located in Section 5.0.

The proposed Special Use shall not create congestion in roads, streets, or alleys.

Traffic impacts are generally limited to the project construction period, which is estimated to last approximately 3 to 4 months. Once the facility is operational, traffic is typically limited to less than 10 visits per year to monitor operation, provide maintenance/repair, and maintain vegetation, as necessary.

The proposed Special Use shall not create a potential hazard from fire, panic, or other dangers.

The proposed solar arrays are designed to withstand extreme weather conditions. The risk of a fire associated with electrical equipment is no greater than regular substations. Coordination with emergency services is an important part of any Site development process and this coordination will be conducted as part of Baltimore County Building Permit application process. Local

emergency services will be provided with notification that the Site is undergoing review and invited to visit the Site property. Equipment specifications will be provided to responders during the building permit application and implementation process.

The proposed Special Use shall not overcrowd land and cause an undue concentration of population.

The proposed project will be located on approximately 12.9 acres of a larger 39.9-acre parcel of private land. Solar projects of this type are quiet, low-profile and don't contribute to an increase in population or traffic.

The proposed Special Use shall not interfere with adequate provisions for schools, parks, water, sewerage, transportation, or other public requirements, conveniences, or improvements.

The proposed project is not expected to incur public expenses for emergency response or other community provisions. Once constructed, the Site will operate without personnel except for site maintenance outlined in the *Vegetative Maintenance Plan (Section 8.0) and Operation and Maintenance Plan (Section 9.0).* Operation of the Site will not require the use of public utilities such as water or sewerage.

The proposed Special Use shall not impair an adequate supply of light and air to adjacent properties.

The proposed solar arrays will not provide shade nor restricted airflow to the surrounding properties. The proposed array panels will not exceed seven feet above ground surface and will be constructed with approximately 18 feet between panel rows to allow sufficient wind passage and the project is approximately 300 feet from the nearest residence.

The proposed Special Use shall not be inconsistent with the spirit and intent of the BCZR.

The proposed solar facility is consistent with the County's intent to permit solar facilities in parts of the rural and commercial areas in a way that balances the benefits of solar energy production with the need to protect the community, agricultural land, forests, waterways and other natural resources. As cited in BCZR Article 4F-101A - Solar Facilities, "Solar energy is recognized as an abundant, renewable, and environmentally sustainable source of electricity generation that will lead to greater local grid resiliency and security, and produce clean, renewable energy and reduce air and water pollution caused by the burning of traditional fossil fuels".

The proposed Special Use shall not be inconsistent with the impermeable surface and vegetative provisions of the BCZR.

A Stormwater Pollution Prevention Plan (SWPPP) for the Site will be submitted as required by the County during the building permit process. The SWPPP will include stormwater controls that attenuate runoff generated during 1-, 10-, and 100-year 24-hour rainfall events so that the peak

flow at design points on site will not exceed the flow that existed prior to development of the Project. Stormwater is expected to flow off the array panels and infiltrate into surface soils on the Site, not effecting the storm water runoff patterns of the surrounding properties.

The property has an existing storm water management control pond and associated control structures constructed and maintained by the Maryland Department of Transportation. The project will not interfere with these storm water controls. Once the project is completed the anticipated storm water runoff will be less than the existing agricultural use of the property.

The proposed Special Use shall not be detrimental to the environmental and natural resources of the Site and vicinity including forests, streams, wetlands, aquifers, and floodplains.

One of the first steps in determining the viability of a potential project location is to screen the property for environmental factors such as soil depth and character, wetlands, waterbodies, endangered/protected species, flood plains and archeological resources. Additionally, the property is screened for community character, local zoning ordinances, visual impact, and glare. As a part of this screening process, numerous Federal, State, and local agencies are consulted for information on the proposed location. Additional information regarding the various agency consultations can be found in Section 4 and Section 5, below.

4.0 NATURAL AND CULTURAL RESOURCES

4.1 Threatened and Endangered Species

Targeted Ecological Areas

Tetra Tech, on behalf of Summit Ridge, reviewed the Baltimore County Geographic Information System's Targeted Ecological Areas (TEA) for the proposed site location. TEAs are defined as lands and watersheds of high ecological value that have been identified as conservation priorities by the Maryland Department of Natural Resources (DNR) for natural resource protection. These areas represent the most ecologically valuable areas in the State. The review concluded that there is no record of State listed TEAs in the vicinity of the Site.

State of Maryland Listed Threatened and Endangered Species

There are 36 listed wildlife species known to occur within Baltimore County. Desktop analysis of land cover data and aerial imagery suggest that 30 of the 36 listed species are unlikely to occur within the Project area due to lack of adequate on-site or adjacent habitat. Northern harrier, yellow-crowned night heron, and pied-billed grebe could potentially utilize portions of the Site as foraging habitat, with the pied-billed grebe potentially using it during migration and winter foraging. The brown spiketail, yellow-sided skimmer, and appalachian snaketail could also potentially utilize a portion of the Site as core and foraging habitat.

There are 146 state-listed threatened or endangered plants known to occur in Baltimore County. The probability of these species occurring within the Site is low considering that the majority of the Site is has been developed or managed as farmland or storm water control structures, providing little to no undisturbed natural habitat. Additional information is provided in Table 4.1, below.

Table 4.1. Potential Federal & State Listed Wildlife Species within in the Project Area[1]

English Name	Scientific Name	Federal State Status[2]	Species-Habitat Associations	Habitat Present in Project Vicinity	Likelihood of Occurrence[4]
Birds					
Northern Harrier	*Circus cyaneus*	SI	Found in large open areas including marshes, grasslands, and meadows. Foraging range is typically 12 to 15 miles/day but may be up to up to 100 miles/day.	Foraging habitat	Moderate
Yellow-crowned Night Heron	*Nyctanassa violacea*		Found foraging along shallow creeks, rivers, ponds, lakes, and swamps, and occasionally on lawns, plowed fields, and other upland sites.	Winter foraging habitat	Low
Pied-billed Grebe	*Podilymbus podiceps*		Found in freshwater wetlands, wet fields, bays, sloughs, marshes, lakes, slow-moving rivers, and even sewage ponds. Pied-billed Grebes can nest in moderately to heavily populated areas. They occupy similar habitats during migration and winter.	Migration/Winter Foraging Habitat	Low
Insects					
Brown Spiketail	*Cordulegaster bilineata*		Found at small, sunlit forested streams and seepages. Uses grasses and shrubs in clearings, meadow edges and open forest edges.	Core/Foraging habitat	Low-Moderate
Yellow-sided skimmer	*Libellula flavida*		Found at bog ponds and other acidic bodies of water, slower sections of streams, vegetated ditches, and seeps.	Core/Foraging Habitat	Low-Moderate
Appalachian Snaketail	*Ophiogomphus incurvatus*	SE	Found at Piedmont or mountain streams with a sandy or gravelly bottom. They are often found feeding in open fields near the streams they utilize.	Core/Foraging Habitat	Low

1. Sharp-shinned Hawk (*Accipiter striatus)*, Triangle Floater (*Alasmidonta undulata)*, Brook Floater (*Alasmidonta varicosa)*, Upland Sandpiper (*Bartramia longicauda)*, American Bittern (*Botaurus lentiginosus)*, Northern Barrens Tige Beetle (*Cicindela patruela)*, Splendid Tiger Beetle (*Cicindela splendida*), Alder Flycatcher (*Empidonax alnorum)*, Atlantic Bluet (*Enallagma doubledayi)*, Mottled Duskywing (*Erynnis martialis)*, Bog Turtle (*Glyptemys muhlenbergii)*, Rapids Clubtail (*Gomphus quadricolor)*, Northern Map Turtle (*Graptemys geographica)*, Bald Eagle (*Haliaeetus leucocephalus)*, Least Bittern (*Ixobrychus exilis),* Eastern Lampmussel (*Lampsilis radiata)*, Loggerhead Shrike (*Lanius ludovicianus)*, Black Rail (*Laterallus jamaicensis)*, Eastern Sedge Barrens Leafhopper (*Limotettix minuendus*), Hooded Merganser (*Lophodytes cucullatus)*, Edwards' Hairstreak (*Satyrium edwardsii)*, Northern Oak Hairstreak (*Satyrium favonius ontario)*, Smoky Shrew (*Sorex fumeus)*, Southern Pygmy Shrew (*Sorex hoyi winnemana)*, A Hydrophilid Beetle (*Sperchopsis tessellatus)*, Regal Fritillary (*Speyeria idalia)*, Least Tern (*Sternula antillarum)*, Pizzini's Cave Amphipod (*Stygobromus pizzinii)*, Slender Amphipod (*Stygobromus tenuis tenuis)*, and Laura's Clubtail (*Stylurus laurae)* are also documented in the County but are not likely to occur on Project Site due to lack of suitable habitat.
2. FE = Federal Endangered, SE = State Endangered, ST = State Threatened, SI = State In Need of Conservation.
3. S1 = Highly State Rare, S2 = State Rare, S3 = Watchlist, S4 = Apparently Secure, B = Breeding Rank.

Likelihood of Occurrence: Low– species range overlaps with Project Site and marginally suitable habitat in Project vicinity; Moderate– species range overlaps with Project Site and suitable habitat present in Project Site, or species known to occur in habitat similar to Project Site; High– highly suitable habitat present in Project Site, or known populations exist in Project vicinity.

Federal Listed Threatened and Endangered Species

Tetra Tech submitted a consultation request to the United States Department of the Interior Fish and Wildlife Service (USFWS) on October 24, 2018. The USFWS responded that there are no threatened or endangered species of mammals or plants present in the vicinity of the project Site (*Attachment D)*. As the project will be located on currently active agricultural land, it will have no significant impacts on fish, wildlife, animal or plant species or habitats, and will not degrade natural resources or ecosystems.

4.2 Cultural Resources

The Baltimore County Historic Preservation online mapping system revealed that the project area is not located within an area designated as sensitive for archaeological sites. In addition, Tetra Tech Tetra Tech, on behalf of Summit Ridge, reviewed the National Register of Historic Places (NRHP) database for previously recorded cultural resources investigations, archaeological sites, historic structures, and historic properties listed within the proposed project site. The background research did not identify the presence of cultural resources on the Site.

5.0 OPERATION AND MAINTENANCE CONSIDERATIONS

Photovoltaic solar facilities of this size are typically considered to be fairly low-maintenance. However, routine O&M services will be done per industry codes and manufacturer's specifications, ensuring the equipment is operating safely and efficiently. The system will be continuously monitored such that unexpected problems can be addressed immediately. An Operation & Maintenance Plan (O&M) is included as *Attachment E* and Manufacturer Specifications for Site Equipment is provided as *Attachment F.*

5.1 Utility Interconnection

In general, the greatest challenge in siting economically viable solar generating facilities is associated with utility interconnection capacity and requirements. Summit Ridge has been working in close coordination with the local utility provider (Baltimore Gas and Electric) and an interconnection evaluation request has been submitted.

5.2 Traffic Impacts

Traffic impacts are generally limited to the project construction period, which is estimated to last approximately three to four months. Once the facility is operational, traffic is typically limited to less than 10 visits per year to monitor operation, provide maintenance/repair, and maintain vegetation, as necessary.

Dust may be generated during the construction process, but it will be temporary in nature. Driveway construction and revegetation of the disturbed portions of the Site will minimize any dust impacts during the facility's operation. The long-term dust generation from the Site will be less than the current agricultural use of the Site since the area will remain vegetated on a year around basis. Maintaining a year-around vegetated area of approximately 20 acres may also reduce soil erosion and sedimentation of nearby existing storm water control features, streams and water bodies.

5.3 Noise

There may be some noise associated with facility construction – truck entry/exit, earthmoving equipment, etc. – but it is expected to be temporary in duration and limited to normal working hours.

The solar collection panels themselves are quiet. The greatest potential source of noise is anticipated to be the power inverters at the Site. The power inverters will be located within the array of solar panels and more than 500 feet from the nearest residential receptor and commercial

receptors. Noise levels at a typical inverter will be approximately 55 decibels at a distance of three feet and the noise will dissipate quickly as distance from the inverter increases. As a point of comparison, engaging in normal face-to-face conversation generates a noise level of approximately 60 decibels, and typical city traffic inside of a car has a noise level of approximately 80 decibels (Center for Disease Control and Prevention, 2017). At a distance of 40 feet, which is much closer than the nearest receptors, the inverter's noise level calculates to approximately 35 decibels, which is comparable to a soft whisper. Thus, noise impacts from the facility's operation are expected to be insignificant.

5.4 Solid Waste

Some minor amount of solid waste generation may occur during the construction process, but it will be disposed of offsite at an appropriate location. Once operational, the facility will not generate an appreciable amount of solid waste.

5.5 Odors

There are no odors generated by the facility's equipment. Odors generated by construction equipment during the construction process will be minor and temporary in nature.

5.6 Glare

With growing numbers of solar energy systems being proposed and installed throughout the United States, the potential impact of glint and glare from photovoltaic modules is receiving increased attention. GlareGauge, the program procured for the glare analysis, is a service distributed by ForgeSolar that uses the SGHT developed by Sandia National Laboratories.

Sandia developed SGHAT v. 3.0, a web-based tool and methodology to evaluate potential glint/glare hazards associated with solar energy installations. The validated tool provides a quantified assessment of when and where glare will occur, as well as information about potential ocular impacts. The tool can also be used for design optimization (tilt and orientation) to evaluate alternative configurations, orientations, and locations of solar installations that not only mitigate the impacts of glint/glare, but also optimize energy production (Sandia Laboratories, 2016).

The SGHAT (GlareGauge) was utilized to evaluate the potential for glare at several locations along nearby roads, residences, and commercial facilities. The panels to be used on the proposed project site are smooth glass surface material with an anti-reflection coating (ARC), which is noted in the glare analysis. The panels will be on an east-facing, single axis tracking array with an approximate height not to exceed seven feet from the ground surface. The panels will have a maximum 60-degree tilt. Two separate glare analyses were conducted for a panel height of seven feet (maximum

height) with applicable panel specifications. One analysis was run to simulate a driver's height above the ground in a standard automobile or in a first-floor building at five feet and six feet respectively. A second analysis was run to simulate a driver's height above the ground in a commercial truck at nine feet or in a second-floor building at 16 feet. The SGHAT Report is included as *Attachment G.*

The Federal Aviation Administration (FAA) Notice Criteria Tool allows the user to determine if a proposed structure would require a formal submission to the FAA under CFR Title 14 Part 77.9 (Safe, Efficient Use, and Preservation of the Navigable Airspace). This online tool was utilized to determine if the proposed solar facility would require formal filing to the FAA. The FAA Notice Criteria Tool Report is included as *Appendix H.*

5.7 Fire Protection and Emergency Access

Coordination with emergency services is an important part of any Site development process and this coordination will be conducted as part of the Building Permit application process. Local emergency services will be provided with notification that the Site is undergoing review and invited to visit the Site property. Equipment specifications will be provided to responders during the building permit application and implementation process.

The following measures will be taken regarding response to potential emergencies at the proposed facility:

- Local emergency responders will be invited to tour the site during construction and after construction is completed. The site tour will agenda will include descriptions of the system components, emergency shut-down, system isolation, etc.;
- The facility will be provided with a 'Knox-Box" or other similar locking mechanism to provide Site access to emergency responders;
- Emergency telephone numbers will be posted on the perimeter fence;
- System components will be marked in order to provide emergency responders with appropriate warning and guidance with respect to isolating the electrical systems; and
- Site access road will be maintained to allow emergency vehicle access to the Site.

6.0 VEGETATIVE MAINTENANCE PLAN

Following construction of the solar facility, disturbed grounds will be re-established with a grass seed mixture as ground cover on a year-round basis. The vegetative maintenance contractor will be responsible for inspecting and maintaining the vegetative integrity of the solar facility. The contractor will conduct onsite activities during growing months on an as-needed basis. The site maintenance frequency may be adjusted based on time of year and weather conditions. To avoid rutting, erosion, and soil compaction, weather forecasts will be consulted, and on-site field inspections will be conducted prior to mowing or cutting to ensure that these practices occur when the site is able to withstand this type of activity. Current agricultural practices on the Site remove the vegetation at the end of the growing season. The vegetative maintenance plan will ensure a vegetative ground cover on a year-round basis which will result in less dust and soil erosion than the current site use.

This scope of work covers work along the access road and within the fence line of the project. Remaining lands outside the fence are anticipated to be utilized for storm water management maintained by the Maryland Department of Transportation and as a vegetative buffer for the Site from Maryland Route 30 maintained by the landowner or their representative. The full Site Operation and Vegetative Maintenance Plan is included as *Attachment I.*

7.0 DECOMMISIONINGING PLAN

The Decommissioning Plan (the "Plan") describes anticipated activities and process for decommissioning of the proposed facility following its useful life. The purpose of decommissioning is to restore the Site to its original condition for continued use by the landowner.

Decommissioning consists of the removal of above-ground and below-ground facility components, management of excess materials as well as the restoration of Project lands, as applicable. Decommissioning activities are expected to take two to four months to complete. The full Decommissioning Plan is included as *Attachment J.*

8.0 REFERENCES

Adolf Goetzberger and Volker Hoffman (2005). "Photovoltaic Solar Energy Generation." Springer, New York.

The Federal Aviation Administration (FAA) developed *Technical Guidance for Evaluating Selected Solar Technologies on Airports* in 2010

Fthenakis, V.M. (2003). Practical Handbook of Photovoltaics: Fundamentals and Applications: Overview of Potential Hazards. Available at http://www.bnl.gov/pv/files/pdf/art_170.pdf .

U.S. Dept. of Energy (2010). "Photovoltaic Basics." Available at http://www1.eere.energy.gov/solar/pv_basics.html .

Vasilis Fthenakis, Hyung Chul Kim and Erik Alsema (2008). "Emissions from Photovoltaic Life-Cycles." *Environmental Science and Technology* 2008 42 (6):2168-2174. Available at: http://pubs.acs.org/doi/full/10.1021/es071763q .

9.0 ATTACHMENTS

ATTACHMENT A – SITE LOCATION MAP
ATTACHMENT B – SITE PLAN
ATTACHMENT C – LEASE AND EASEMENTS
ATTACHMENT D – USFWS THREATENED AND ENDANGERED SPECIES
ATTACHMENT E – OPERATION & MAINTENANCE PLAN
ATTACHMENT F – SITE EQUIPMENT MANUFACTURER SPECIFICATIONS
ATTACHMENT G – GLARE ANALYSIS
ATTACHMENT H – FEDERAL AVIATION ADMINSTRATION SCREEN
ATTACHMENT I – VEGETATIVE MAINTENANCE PLAN
ATTACHMENT J – DECOMMISIONING PLAN

ATTACHMENT A

SITE LOCATION MAP

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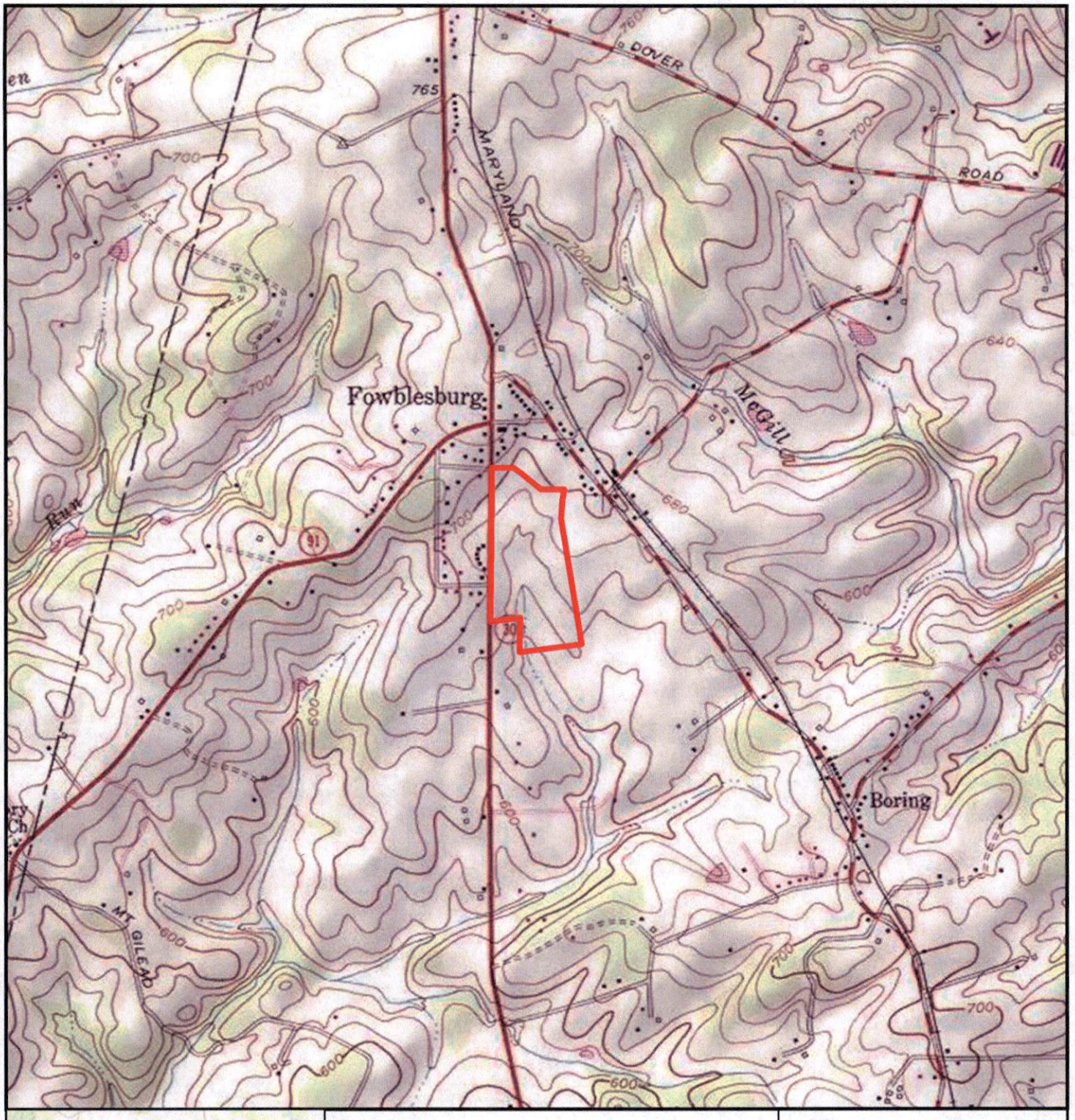


Legend

Approximate project location

Approximate Scale:

0 750 1,500 3,000 Feet

TETRA TECH

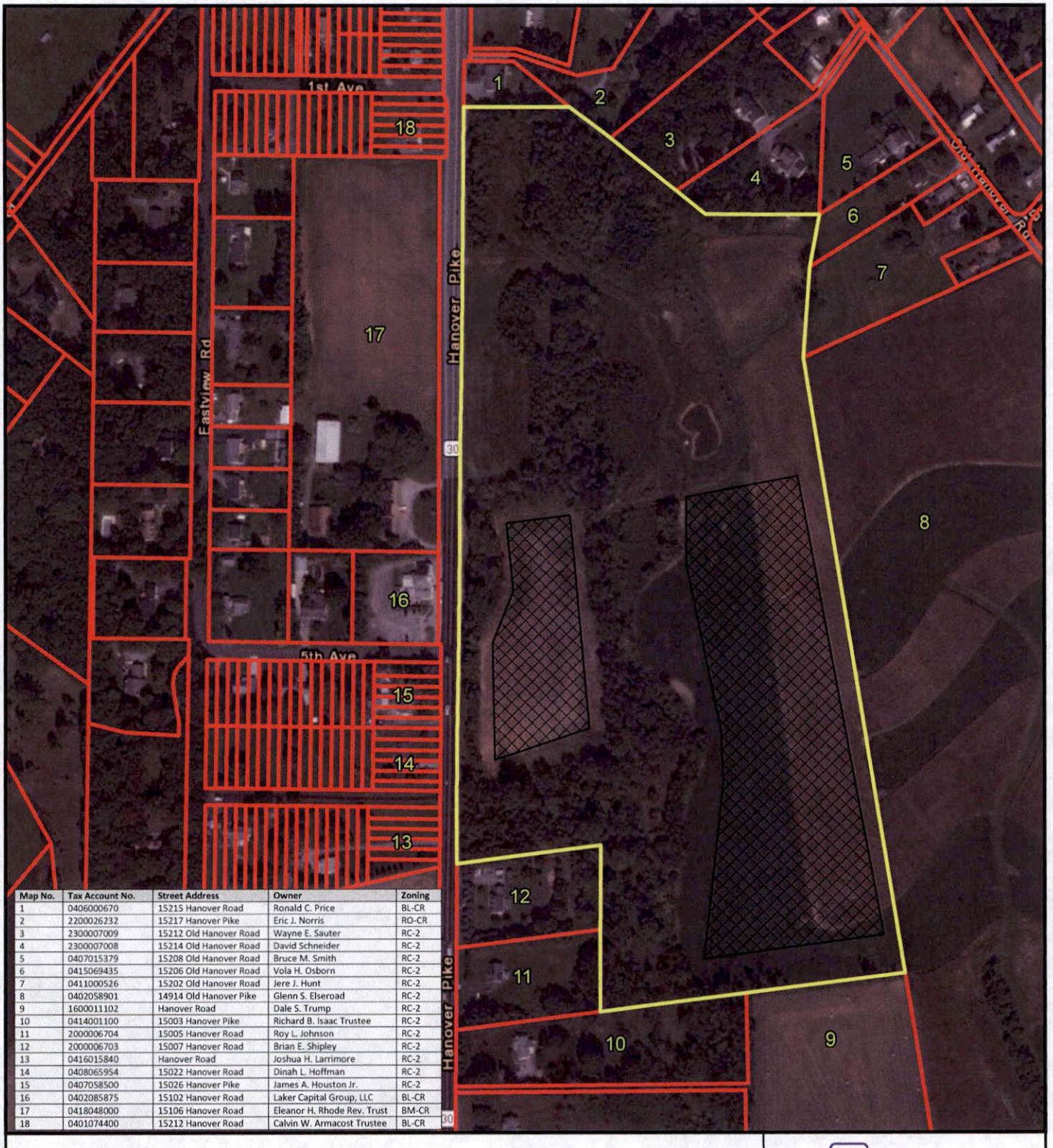
Summit Ridge ENERGY

Attachment 1
Project Location
Upperco Solar

600 South Emory Road
Upperco, MD

Service Layer Credits: Service Layer Credits: U.S. Geological Survey, 20180220, USGS US Topo 7.5-minute map for Worden, IL 2018: USGS - National Geospatial Technical Operations Center (NGTOC).

Copyright: Tetra Tech 10/24/2018 4:34:13 PM



Map No.	Tax Account No.	Street Address	Owner	Zoning
1	0406000670	15215 Hanover Road	Ronald C. Price	BL-CR
2	2200026232	15217 Hanover Pike	Eric J. Norris	RO-CR
3	2300007009	15212 Old Hanover Road	Wayne E. Sauter	RC-2
4	2300007008	15214 Old Hanover Road	David Schneider	RC-2
5	0407015379	15208 Old Hanover Road	Bruce M. Smith	RC-2
6	0415069435	15206 Old Hanover Road	Vola H. Osborn	RC-2
7	0411000526	15202 Old Hanover Road	Jere J. Hunt	RC-2
8	0402058901	14914 Old Hanover Pike	Glenn S. Elseroad	RC-2
9	1600011102	Hanover Road	Dale S. Trump	RC-2
10	0414001100	15003 Hanover Pike	Richard B. Isaac Trustee	RC-2
11	2000006704	15005 Hanover Road	Roy L. Johnson	RC-2
12	2000006703	15007 Hanover Road	Brian E. Shipley	RC-2
13	0416015840	Hanover Road	Joshua H. Larrimore	RC-2
14	0408065954	15022 Hanover Road	Dinah L. Hoffman	RC-2
15	0407058500	15026 Hanover Pike	James A. Houston Jr.	RC-2
16	0402085875	15102 Hanover Road	Laker Capital Group, LLC	BL-CR
17	0418048000	15106 Hanover Road	Eleanor H. Rhode Rev. Trust	BM-CR
18	0401074400	15212 Hanover Road	Calvin W. Armacost Trustee	BL-CR

Legend

*Proposed project parcel located in Council District 3 and Election District 4

Approximate project parcel boundary (zoned RC-2 and BM-CR)

Approximate project area

Approximate surrounding property parcels

Approximate scale:

0 300 600 1,200 Feet

TETRA TECH

Summit Ridge ENERGY

Surrounding Properties
Upperco Solar Project

600 South Emory Road
Upperco, MD 21155

Service Layer Credits: Esri, HERE, Garmin, © OpenStreetMap contributors
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community Mason County GIS data (http://www.masoncountyil.org/assessment.htm)

ATTACHMENT B

SITE PLAN

ATTACHMENT C

LEASE AND EASEMENTS

ATTACHMENT D

USFWS THREATENED AND ENDANGERED SPECIES

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Chesapeake Bay Ecological Services Field Office
177 Admiral Cochrane Drive
Annapolis, MD 21401-7307
Phone: (410) 573-4599 Fax: (410) 266-9127
http://www.fws.gov/chesapeakebay/
http://www.fws.gov/chesapeakebay/endsppweb/ProjectReview/Index.html

In Reply Refer To:
Consultation Code: 05E2CB00-2019-SLI-0181
Event Code: 05E2CB00-2019-E-00411
Project Name: Upperco Solar

October 24, 2018

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. This species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries
- Wetlands

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Chesapeake Bay Ecological Services Field Office
177 Admiral Cochrane Drive
Annapolis, MD 21401-7307
(410) 573-4599

Project Summary

Consultation Code: 05E2CB00-2019-SLI-0181

Event Code: 05E2CB00-2019-E-00411

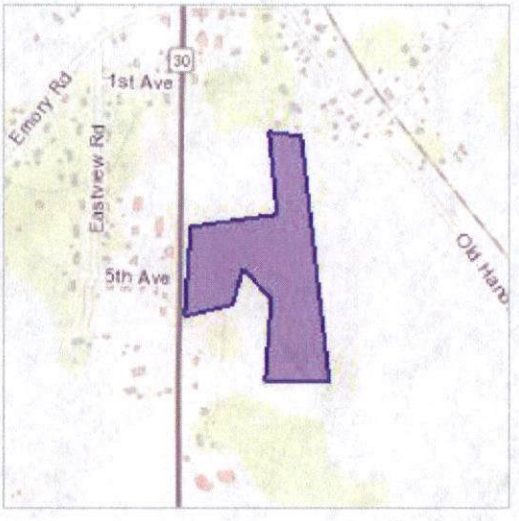
Project Name: Upperco Solar

Project Type: SPECIAL USE PERMIT

Project Description: Tetra Tech, Inc., on behalf of SRE Solar Origination 1, LLC is initiating consultation with the USFWS to determine potential impacts to federally-listed threatened and endangered species for a proposed commercial solar facility.

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/39.539342979152764N76.83593122958192W



Counties: Baltimore, MD

Endangered Species Act Species

There is a total of 0 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

USFWS National Wildlife Refuge Lands And Fish Hatcheries

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

Wetlands

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

FRESHWATER FORESTED/SHRUB WETLAND

- PSS1/EM5A
- PSS1B

ATTACHMENT E

OPERATION & MAINTENANCE PLAN

SCOPE OF MAINTENANCE SERVICES

During the term, Provider shall provide the services at the frequency indicated below, in accordance with the terms and conditions of this Agreement (as set forth in further detail below). It is expected that Provider shall exert best efforts to note items of concern outside the scope of scheduled visits; inspecting and assessing items that seem to be problematic even if not part of the scheduled visits and later discussing with the owner to seek remedy.

Item #	Service	Service Description	Frequency
1. Monitoring, Reporting, and Inventory			
1.1	Active Site Monitoring	Monitor inverters and meter output data for issues and alarms.	Daily
1.2	Annual Maintenance Plan	Provision of Annual Maintenance Plan, including baseline schedule for all maintenance services contemplated to occur in such year	Annually, by November 1 of each calendar year during the Term
1.3	Monthly Reporting	Provide monthly operating report for the projects including a summary of (i) operations; (ii) weather data, power and environmental attributes; (iii) Project performance; (iv) reports of any environmental or site disturbances; (v) safety/accident reports; (vi) Non-Covered Services; (vii) maintenance and inspection reporting; and (viii) any scheduled or recommended maintenance for the upcoming month.	Monthly, by the 15th day of the following month
1.4	Annual Reporting	Provide annual maintenance/inspection reports for the Project for the preceding calendar year	Annually, by February 1 of each calendar year during the Term
1.5	Emergency Services and Incident Reporting	Provide written report (in .pdf format) on any event involving Emergency Services, personnel injury associated with the Projects, or material damage to any Project or any part thereof.	No later than five (5) business days after the occurrence, or immediately for OSHA recordable events, but no later than 24 hours after obtaining knowledge of the event.
1.6	Security Incident Reporting	Notify Project Owner following provider receiving information indicative of a security issue on site	Immediately, but no later than 24 hours after obtaining

Item #	Service	Service Description	Frequency
			knowledge of the event.
1.7	Maintain Spare Parts	Store, maintain, and replenish spare parts inventory at Project Owner's expense. Inventory will be stored, at Provider's option either on-site in an O&M storage structure or off-site at a centralized storage facility or warehouse.	As Needed
2. Site Property Inspection/Maintenance			
2.1	Vegetation Management	Maintain vegetation and debris removal/control and landscaping, for all property within the fence line and all property immediately surrounding fencing (within reason), specifically ensuring vegetation does not encroach on modules.	2 X per year, maximum
2.2	Perimeter and Fence Inspection	Inspect all fencing for signs of damage, intrusion, and overgrowth of vegetation. Inspect signage to ensure all originally installed signs are present and legible	2 X per year
2.3	Roads	Inspect all roads for soil erosion concerns	2 X per year
2.4	Site Security Systems	Inspect security systems (if installed) for proper operation according to original security plan and design. Inspect entire site for general vandalism or other signs of security related issues.	2 X per year
3. DC Systems			
3.1	Racking Inspection	Inspect all racking, racking mounts and conduits on racking for damage, corrosion, settling and stability	1 X per year
3.2	Module Inspections	Visually inspect a 25% sampling of modules for soiling, breakage, delamination, discoloring and hot spots (only via aerial thermal audits). Inspections may be done either on the ground or via aerial visual analysis and aerial thermal imaging. If systemic issues are identified, notify Project Owner and propose a corrective action plan to be implemented as needed.	1 X per year
3.3	Broken Module Replacement	Replace modules that have previously been identified as broken (within reason), or identified as broken at the time of inspection. The cost of replacement modules (either for immediate use or to replenish spare parts) will be paid for by the Project Owner as needed. The procurement of replacement modules is conditional to Project Owner approval.	As Needed
3.4	Wire Inspection	Visually inspect for proper wire management and any possible damage on exposed conductors.	2 X per year

Item #	Service	Service Description	Frequency
3.5	Combiner Box and Re-Combiner Inspections	Electrical/mechanical inspection of combiners & disconnects. Visually inspect bonding bushings and grounding, check for wire damage especially at entrance/exit locations, terminal corrosion, any discoloration, and inspect fuses for proper functionality. Remove insects/pest debris from all enclosures.	2 X per year
3.6	Combiner Box and Re-Combiner Torque Inspections	Confirm and correct terminal torque settings for both sides of all fuse holders, grounded (negative) terminal bar, grounding bar, PV output circuit and DC Disconnects.	1 X per year
4. AC Systems			
4.1	Inverters	Perform annual inverter preventative maintenance work for all inverters per manufacturer's recommendations and manufacturer's warranty requirements.	Per Manufacturer's Recommendations and Manufacturer's Warranty Requirements
4.2	Inverter Air Filters and Transformer heat sinks	Inspect inverter air-filters and heat sinks, and clean or replace air filters if necessary.	2 X per year or Per Manufacturers Recommendations, whichever is more frequent.
4.3	Transformers	Visually inspect and clean all transformers per manufacturer recommendations, including but not limited to oil level measurement and clearing heat sink of debris.	1 X per year
4.4	AC Disconnect (if applicable)	Inspection of latches and seals on enclosure, verify proper operation of disconnect, visually inspect terminations and confirm and correct terminal torque settings. Check for signs of arcing.	1 X per year
5. DAS/SCADA Inspections			
5.1	General DAS Inspection	Perform monitoring system maintenance per manufacturer's specifications; verify orientation and attachment of pyranometers and module temperature sensors and MET station, and verify back up power supply functionality.	1 X per year
5.2	Pyranometers	Clean pyranometer domes with a soft cloth.	All scheduled & unscheduled site visits

Item #	Service	Service Description	Frequency
5.3	Pyranometer Calibration	Coordinate with Project Owner to cause calibration of pyranometers per manufacturer's specifications.	Per manufacturer specifications
5.4	Data/Instrument Accuracy and Communication s Verification	Test MET station sensors (GHI and POA pyranometers, ambient temperature, back-of-module, anemometer, Revenue Grade Meter (including current transducers), and inverter direct	1 X per year
6. Testing			
6.1	Aerial Thermal Audits	100% Aerial Thermal Audits	1 X per year
6.2	Thermal Imaging	Thermal imaging of all: overcurrent protection devices (OCPD) and bolted electrical connections including terminations in combiners and all disconnects, inverters and transformers	1 X per year
6.3	Transformer Oil Testing	Conduct transformer oil sampling and testing per nationally and/or internationally recognized testing standards	1 X per two years
6.4	Point-to-Point Testing	For 5% random sampling of combiner boxes, inspect grounding from modules & rack to combiners for wear, corrosion, and secure connections, and test the point-to-point resistance between modules, rack and EGC per NETA-ATS 2013 Section 7.13; document location, measure resistance and record results. Investigate point-to-point resistance readings that exceed 0.5 ohms. Notify Project Owner of any issues identified and propose a corrective action plan to be implemented as needed.	1 X per year

ATTACHMENT F

SITE EQUIPMENT MANUFACTURER SPECIFICATIONS

powered by Q.ANTUM

Q.PLUS L-G4.2 340-355

Q.ANTUM SOLAR MODULE

The Q.ANTUM solar module Q.PLUS L-G4.2 with power classes up to 355 Wp is the strongest module of its type on the market globally. Powered by 72 Q CELLS solar cells Q.PLUS L-G4.2 was specially designed for large solar power plants to reduce BOS costs. Only Q CELLS offers German engineering quality with our unique triple Yield Security.

LOW ELECTRICITY GENERATION COSTS

Higher yield per surface area and lower BOS costs thanks to higher power classes and an efficiency rate of up to 18.1 %.

INNOVATIVE ALL-WEATHER TECHNOLOGY

Optimal yields, whatever the weather with excellent low-light and temperature behavior.

ENDURING HIGH PERFORMANCE

Long-term yield security with Anti-PID Technology[1], Hot-Spot-Protect and Traceable Quality Tra.Q™.

EXTREME WEATHER RATING

High-tech aluminum alloy frame, certified for high snow (5400 Pa) and wind loads (2400 Pa).

A RELIABLE INVESTMENT

Inclusive 12-year product warranty and 25-year linear performance guarantee[2].

EUPD RESEARCH TOP BRAND PV MODULES EUROPE 2017

Q CELLS YIELD SECURITY
- ANTI PID TECHNOLOGY (APT)
- HOT-SPOT PROTECT (HSP)
- TRACEABLE QUALITY (TRA.Q™)

Photon Q CELLS Best polycrystalline solar module 2014 Q.PRO-G2 235 174 modules tested

[1] APT test conditions: Cells at -1500 V against grounded, with conductive metal foil covered module surface, 25 °C, 168 h

[2] See data sheet on rear for further information.

THE IDEAL SOLUTION FOR:

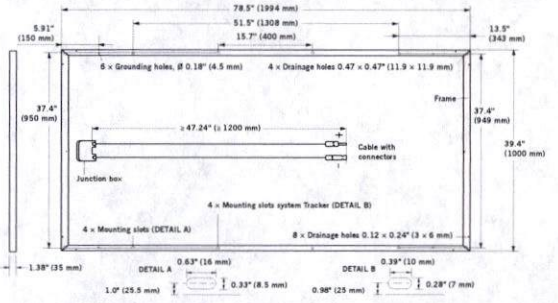
Ground-mounted solar power plants

Engineered in **Germany**

Q CELLS

MECHANICAL SPECIFICATION

Format	78.5 in × 39.4 in × 1.38 in (including frame) (1994 mm × 1000 mm × 35 mm)
Weight	52.9 lbs (24 kg)
Front Cover	0.13 in (3.2 mm) thermally pre-stressed glass with anti-reflection technology
Back Cover	Composite film
Frame	Anodized aluminum
Cell	6 × 12 Q.ANTUM solar cells
Junction box	3.35-4.53 in × 2.36-3.15 in × 0.59-0.75 in (85-115 × 60-80 × 15-19 mm), Protection class ≥ IP67, with bypass diodes
Cable	4 mm² Solar cable; (+) ≥ 47.24 in (1200 mm), (-) ≥ 47.24 in (1200 mm)
Connector	MC4 or MC4-EVO 2, IP65 and IP68

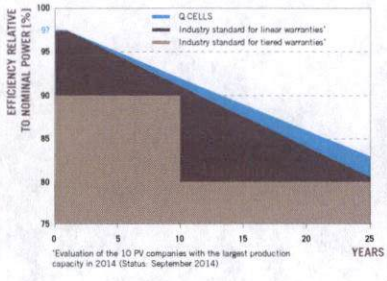


ELECTRICAL CHARACTERISTICS

POWER CLASS			340	345	350	355
MINIMUM PERFORMANCE AT STANDARD TEST CONDITIONS, STC[1] (POWER TOLERANCE +5 W / -0 W)						
Minimum	Power at MPP[2]	P_{MPP} [W]	340	345	350	355
	Short Circuit Current*	I_{SC} [A]	9.59	9.64	9.69	9.74
	Open Circuit Voltage*	V_{OC} [V]	47.07	47.46	47.71	47.97
	Current at MPP*	I_{MPP} [A]	9.03	9.09	9.15	9.21
	Voltage at MPP*	V_{MPP} [V]	37.63	37.93	38.23	38.52
	Efficiency[2]	η [%]	≥17.1	≥17.3	≥17.6	≥17.8
MINIMUM PERFORMANCE AT NORMAL OPERATING CONDITIONS, NOC[3]						
Minimum	Power at MPP[2]	P_{MPP} [W]	252.1	255.8	259.5	263.2
	Short Circuit Current*	I_{SC} [A]	7.73	7.77	7.81	7.85
	Open Circuit Voltage*	V_{OC} [V]	43.92	44.29	44.53	44.77
	Current at MPP*	I_{MPP} [A]	7.09	7.14	7.19	7.24
	Voltage at MPP*	V_{MPP} [V]	35.56	35.83	36.10	36.36

[1] 1000 W/m², 25 °C, spectrum AM 1.5 G [2] Measurement tolerances STC ± 3%; NOC ± 5% [3] 800 W/m², NOCT, spectrum AM 1.5 G * typical values, actual values may differ

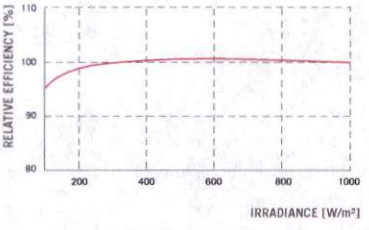
Q CELLS PERFORMANCE WARRANTY



At least 97 % of nominal power during first year. Thereafter max. 0.6 % degradation per year.
At least 92 % of nominal power up to 10 years.
At least 83 % of nominal power up to 25 years.

All data within measurement tolerances. Full warranties in accordance with the warranty terms of the Q CELLS sales organization of your respective country.

PERFORMANCE AT LOW IRRADIANCE



Typical module performance under low irradiance conditions in comparison to STC conditions (25 °C, 1000 W/m²).

TEMPERATURE COEFFICIENTS

Temperature Coefficient of I_{SC}	α	[%/K]	+0.04	Temperature Coefficient of V_{OC}	β	[%/K]	−0.29
Temperature Coefficient of P_{MPP}	γ	[%/K]	−0.40	Normal Operating Cell Temperature	NOCT	[°F]	113 ± 5.4 (45 ± 3 °C)

PROPERTIES FOR SYSTEM DESIGN

Maximum System Voltage V_{SYS}	[V]	1500 (IEC) / 1500 (UL)	Safety Class	II
Maximum Series Fuse Rating	[A DC]	20	Fire Rating	C (IEC) / TYPE 1 (UL)
Design load, push (UL)[2]	[lbs/ft²]	75 (3600 Pa)	Permitted module temperature on continuous duty	-40 °F up to +185 °F (-40 °C up to +85 °C)
Design load, pull (UL)[2]	[lbs/ft²]	33 (1600 Pa)	[2] safety factor of 1.5 included, see installation manual	

QUALIFICATIONS AND CERTIFICATES

IEC 61215 (Ed. 2); IEC 61730 (Ed. 1), Application class A

PACKAGING INFORMATION

Number of Modules per Pallet	29
Number of Pallets per 53' Container	26
Number of Pallets per 40' Container	22
Pallet Dimensions (L × W × H)	81.3 × 45.3 × 46.9 in (2065 × 1150 × 1190 mm)
Pallet Weight	1671 lbs (758 kg)

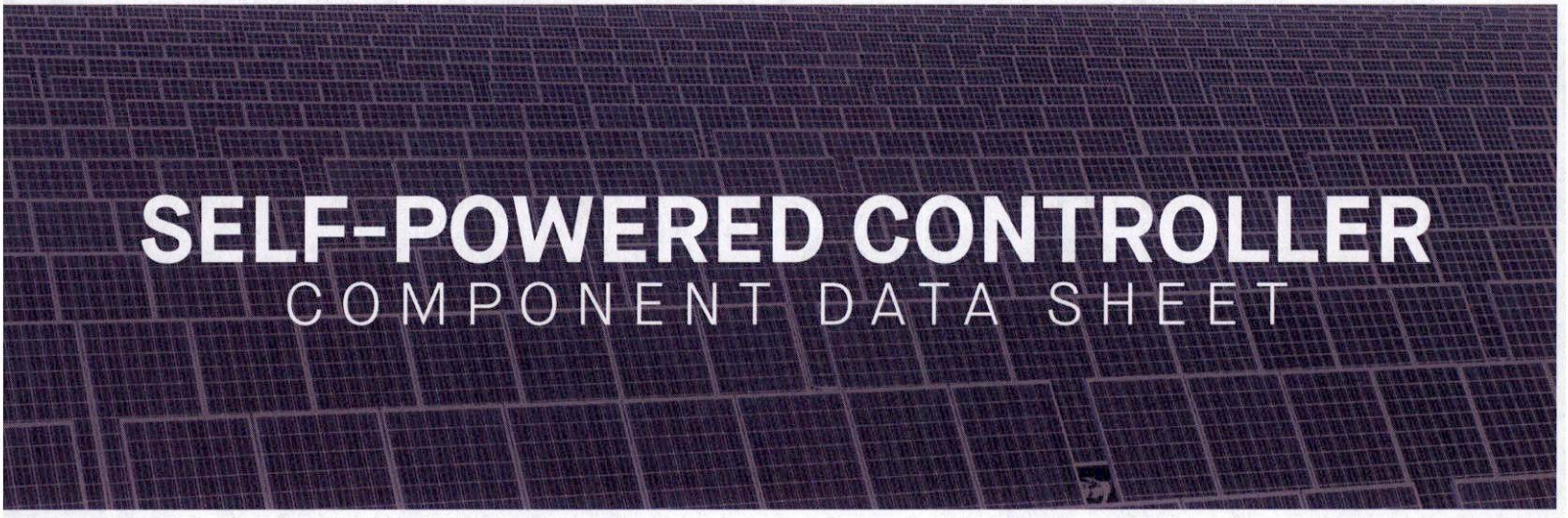
NOTE: Installation instructions must be followed. See the installation and operating manual or contact our technical service department for further information on approved installation and use of this product.

Hanwha Q CELLS America Inc.
300 Spectrum Center Drive, Suite 1250, Irvine, CA 92618, USA | TEL +1 949 748 59 96 | EMAIL inquiry@us.q-cells.com | WEB www.q-cells.us

Engineered in **Germany**

Specifications subject to technical changes © Hanwha Q CELLS Q.PLUS L-G4.2_340-355_2017-05_Rev01_NA

NEXTracker
A Flex Company



SELF-POWERED CONTROLLER
COMPONENT DATA SHEET

CONTROL SYSTEM OVERVIEW

With over 5GW of solar trackers delivered on five continents, NEXTracker's NX Horizon™ is the world's leading single-axis tracker. NX Horizon includes a comprehensive communications and control system for maximum tracker accuracy and system reliability. This consists of three types of control units, all networked together via ZigBee® wireless mesh communications.

SELF-POWERED CONTROLLER

Our patent-pending Self-Powered Controller (SPC) is mounted on each tracker row and autonomously commands the tracker to follow the sun throughout the day. Tracker operation is derived from on-board GPS, clock, and inclinometer, ensuring superior tracking accuracy. The SPC is powered by a small, dedicated PV panel and includes a backup battery to eliminate the need for any tracker power wiring. All SPCs communicate over a ZigBee wireless mesh network for monitoring and global control functions.

NETWORK CONTROL UNIT

A Network Control Unit (NCU) aggregates communication and control for up to 100 SPCs via the same ZigBee network. Each NCU monitors real-time SPC parameters and issues global commands to its associated SPCs. During wind or snow events, stowing commands are generated and issued automatically based on real-time data from Weather Stations located on-site. Manual operator-generated commands are available via local switches on the NCU.

Each NCU is accessible via a Modbus interface for SCADA integration. NCUs are typically located at inverter pads with other electrical equipment to easily connect to the required AC power. As with the SPCs, a battery backup is built into each NCU unit.

WEATHER STATION

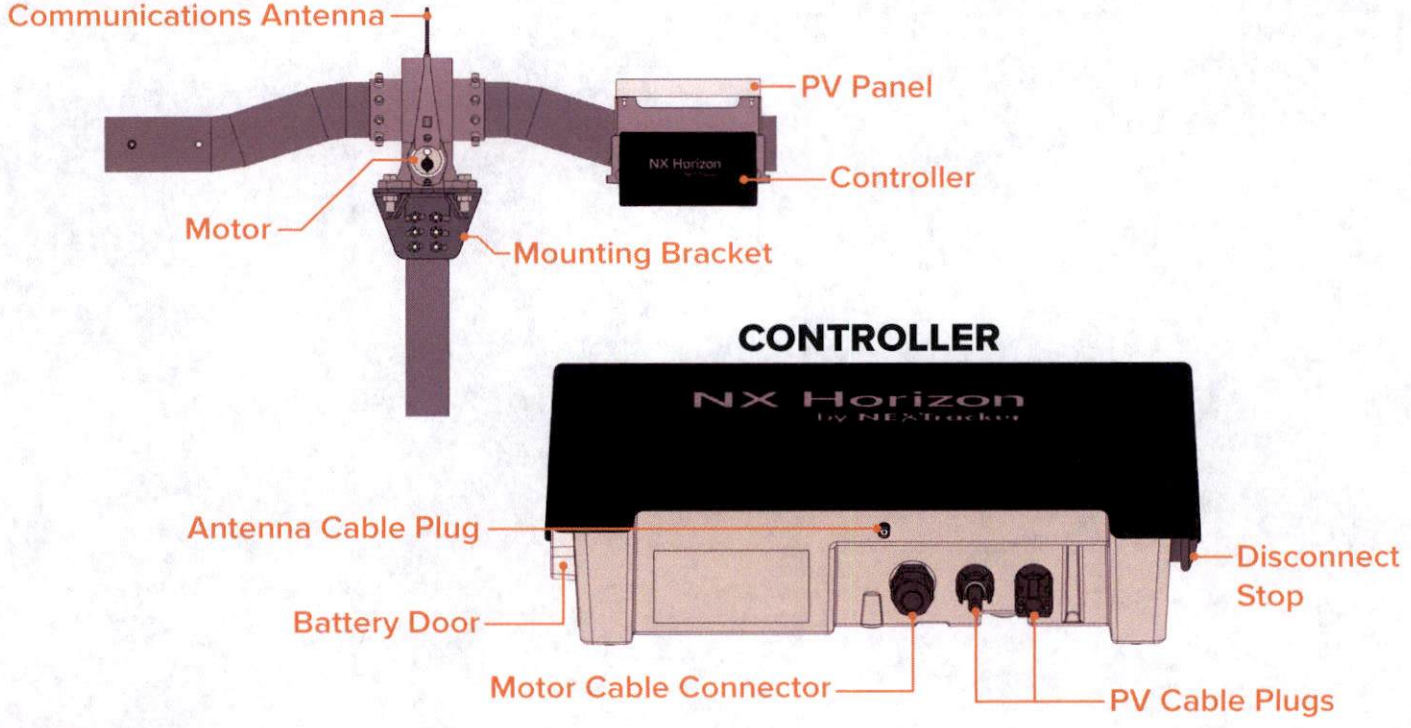
A Weather Station measures real-time wind speed and snow depth and reports this data to the NCUs over the ZigBee network. When conditions warrant, the NCUs will propagate a stowing command out to their associated SPCs within seconds. Like the SPCs, each Weather Station is powered by a small, dedicated PV panel and includes a backup battery eliminating the need for power wiring. The quantity and location of Weather Stations is defined on a per project basis.

TRACKER CONTROLLER SPECIFICATIONS (GEN 2)

INPUT	
Max PV Input Power	80W
Max PV Input Voltage	$30V_{DC}$
Maximum PV Input Current	3.5A
MPPT Voltage Range	16-27V
Battery Nom. Voltage/Range	14.5V/12-16V
OUTPUT	
Rated Power	150W
Motor Voltage (Nominal / Range)	24V/0-24V
Motor Typical Operating Current	1.0-2.0A
Motor Peak Current	10A
COMMUNICATIONS	
Interface to NCU	ZigBee (2.4GHz)
OPERATING PERFORMANCE	
Tracking Range	+/- 60 degrees
Standby Consumption	<0.5W

MECHANICAL	
Enclosure Rating	NEMA 4X / IP65
Dimensions (LxWxD)	14"x8"x4"
Weight	<9 lbs.
Enclosure Material	Polymer
EMI Compliance	FCC Part 15 Subpart B EN 55022: 2010 AS/NZS CISPR
Safety Compliance	UL 3703 in USA
ENVIRONMENT	
Operating Temperature	-30C to 60C
Storage Temperature	0C to 40C
Relative Humidity	0-95%
BACKUP BATTERY	
Battery Technology	Lithium Ion
Expected Battery Life	10 years
Backup Storage Capacity	3 days

SELF-POWERED CONTROLLER



WEATHER STATION CONTROLLER SPECIFICATIONS

INPUT	
Max PV Input Power	65W
Max PV Input Voltage	$30V_{DC}$
Maximum PV Input Current	3A
MPPT Voltage Range	10-25V
Battery Nom. Voltage/Range	14.5V/12-16V

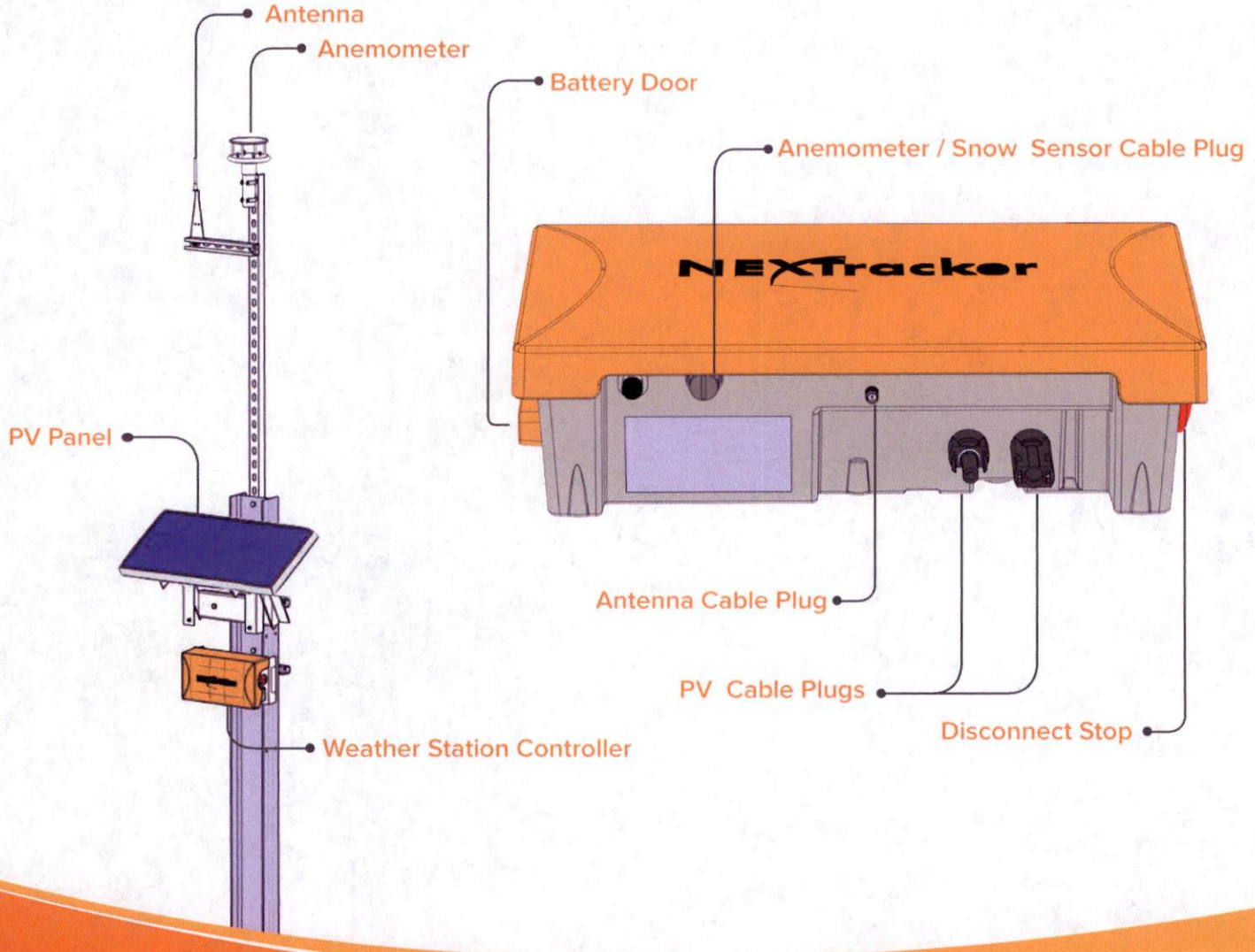
COMMUNICATIONS	
Interface to NCU	ZigBee (2.4GHz)

WEATHER STATION SENSORS	
Wind	NovaLynx Wind Sonic 65
Snow/Flood	NovaLynx 260-700

MECHANICAL	
Enclosure Rating	NEMA 4X / IP65
Dimensions (LxWxD)	20"x6"x5"
Weight	<25 lbs.

ENVIRONMENT	
Operating Temp. - Standard	0C to 50C
Operating Temp. - Optimal	-30C to 50C
Storage Temperature	0C to 40C
Relative Humidity	0-95%

BACKUP BATTERY	
Battery Technology	Lithium Ion
Expected Battery Life	10 years
Backup Storage Capacity	3 days



NETWORK CONTROL UNIT SPECIFICATIONS

INPUT		MECHANICAL	
AC Input Voltage	100-265VAC	Enclosure Rating	NEMA 4X
Operational Power Consumption	<10W	Dimension in mm. (LxWxD)	491x452x200
Min. Over Current Device Rating	1A	Weight	<20 lbs.
BACKUP BATTERY		ENVIRONMENT	
Battery Technology	Lithium Ion	Operating Temperature	-30C to 60C
Expected Battery Life	10 years	Storage Temperature	0C to 40C
Backup Storage Capacity	3 days	Relative Humidity	0-95%
Shelf Life (In Storage)	3 months	HARDWARE	
COMMUNICATIONS		CPU (Processor)	Cortex A8
Remote Interface	ZigBee (2.4GHz)	On board Storage	4GB
Local Control Switches	Auto/Manual; Wash Position	Additional Storage Option	SD Slot
Network Interface	Ethernet RJ45	Onboard Screen	VFD

NETWORK CONTROL UNIT

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Illustrations are examples only. Actual product may vary.

NEXTracker
A Flex Company

MECHANICAL SYSTEMS OVERVIEW
COMPONENT DATA SHEET

With over 5GW of solar trackers delivered on five continents, NEXTracker's NX Horizon™ is the world's leading single-axis tracker. The NX Horizon is a self-powered, decentralized tracking system where each row is independent of one another - an industry first. Prior to this pioneering innovation, single-axis trackers included a drive shaft connecting each row, which impeded overall operations and maintenance of solar power plants. For NX Horizon, each row is driven by a brushless DC motor coupled to a slew gear. Power for the motor is provided by our patent-pending Self-Powered Controller (SPC) and a dedicated PV module.

BRUSHLESS DC MOTOR SPECIFICATIONS

MECHANICAL

Protection Class	IP 65
Isolation Class	EN62114 (120C)
Certification	UL 1004-1
Operating Temperature	-40°C to 85°C
Motor Type	Brushless
Weight	1.7kg
Relative Humidity	0-95%

POWER RATINGS

Nominal Voltage	24 V DC
Motor Continuous Current (85C)	< 6.25 A
No load Current at 24VDC (85C)	< 1 A
Max Power at Rated Torque	150 W

OUTPUT

Rated Gear Output Torque (1 hr. continuous)	150 N-m

BRUSHLESS MOTOR

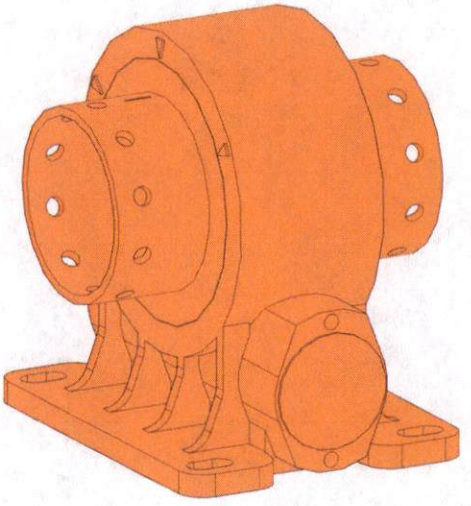
SLEW GEAR SPECIFICATIONS

MECHANICAL

Protection Class	IP 55 per IEC60529
Ambient Temp. Range	-40C to 60C
Housing Material	Ductile Iron
Rotation Range	±65°
Weight	77.5kg

LOAD RATINGS

Normal Output Torque, min	± 2000 N-m
High Output Torque, min	± 5000 N-m



SLEW GEAR

The NX Horizon slew gear is a single stage, worm gear speed reducer. The slew gear is designed to adjust the tracker tilt position to follow the sun each day, as well as hold the tracker position fixed during periods of wind stow. The brushless motor is directly coupled to the input worm shaft of the slew gear, with the tracker torque tubes permanently connected to the output collars. The slew gear is sealed and requires no scheduled maintenance for the life of the product.

NX Horizon Solar Tracker
UL 2703 & 3703 Certified

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Illustrations are examples only. Actual product may vary.
Document Number: PDM-000106 Revision: A

ATTACHMENT G

GLARE ANALYSIS

FORGESOLAR GLARE ANALYSIS

Project: **Summit Ridge Maryland**
Site configuration: **Upperco**
Analysis conducted by Jodi Hunt (jodi.hunt@tetratech.com) at 20:51 on 24 Oct, 2018.

U.S. FAA 2013 Policy Adherence

The following table summarizes the policy adherence of the glare analysis based on the 2013 U.S. Federal Aviation Administration Interim Policy 78 FR 63276. This policy requires the following criteria be met for solar energy systems on airport property:

- No "yellow" glare (potential for after-image) for any flight path from threshold to 2 miles
- No glare of any kind for Air Traffic Control Tower(s) ("ATCT") at cab height.
- Default analysis and observer characteristics (see list below)

ForgeSolar does not represent or speak officially for the FAA and cannot approve or deny projects. Results are informational only.

COMPONENT	STATUS	DESCRIPTION
Analysis parameters	PASS	Analysis time interval and eye characteristics used are acceptable
Flight path(s)	N/A	No flight paths analyzed
ATCT(s)	N/A	No ATCT receptors designated

Default glare analysis and observer eye characteristics are as follows:

- Analysis time interval: 1 minute
- Ocular transmission coefficient: 0.5
- Pupil diameter: 0.002 meters
- Eye focal length: 0.017 meters
- Sun subtended angle: 9.3 milliradians

FAA Policy 78 FR 63276 can be read at https://www.federalregister.gov/d/2013-24729

SITE CONFIGURATION

Analysis Parameters

DNI: peaks at 1,000.0 W/m^2
Time interval: 1 min
Ocular transmission coefficient: 0.5
Pupil diameter: 0.002 m
Eye focal length: 0.017 m
Sun subtended angle: 9.3 mrad
Site Config ID: 22117.3820

PV Array(s)

Name: PV array 1
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0°
Tracking axis tilt: 0.0°
Tracking axis panel offset: 30.0°
Max tracking angle: 60.0°
Resting angle: 60.0°
Rated power: -
Panel material: Smooth glass with AR coating
Reflectivity: Vary with sun
Slope error: correlate with material

Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	39.540002	-76.835767	656.10	7.00	663.10
2	39.539662	-76.835714	653.27	7.00	660.27
3	39.539513	-76.835939	649.09	7.00	656.09
4	39.538612	-76.835681	641.28	7.00	648.28
5	39.538165	-76.835542	637.36	7.00	644.36
6	39.536890	-76.835606	623.02	7.00	630.02
7	39.537031	-76.833933	637.97	7.00	644.97
8	39.540291	-76.834608	679.80	7.00	686.80

Name: PV array 2
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0°
Tracking axis tilt: 0.0°
Tracking axis panel offset: 30.0°
Max tracking angle: 60.0°
Resting angle: 60.0°
Rated power: -
Panel material: Smooth glass with AR coating
Reflectivity: Vary with sun
Slope error: correlate with material

Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	39.539960	-76.836722	655.91	7.00	662.91
2	39.539877	-76.837312	662.21	7.00	669.21
3	39.539348	-76.837226	664.79	7.00	671.79
4	39.539100	-76.837398	674.76	7.00	681.76
5	39.538256	-76.837344	660.67	7.00	667.67
6	39.538463	-76.836400	638.51	7.00	645.51

Discrete Observation Receptors

Name	ID	Latitude (°)	Longitude (°)	Elevation (ft)	Height (ft)
OP 1	1	39.541878	-76.833415	701.29	6.00
OP 2	2	39.539768	-76.830786	667.09	5.00
OP 3	3	39.537989	-76.829123	658.88	5.00
OP 4	4	39.536334	-76.837137	640.04	6.00
OP 5	5	39.538759	-76.837760	679.65	5.00
OP 6	6	39.538294	-76.838135	685.12	6.00
OP 7	7	39.541047	-76.837744	680.98	5.00
OP 8	8	39.542412	-76.838044	719.17	6.00

GLARE ANALYSIS RESULTS

Summary of Glare

PV Array Name	Tilt (°)	Orient (°)	"Green" Glare min	"Yellow" Glare min	Energy kWh
PV array 1	SA tracking	SA tracking	13	152	-
PV array 2	SA tracking	SA tracking	182	333	-

Total annual glare received by each receptor

Receptor	Annual Green Glare (min)	Annual Yellow Glare (min)
OP 1	13	152
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	127
OP 8	182	206

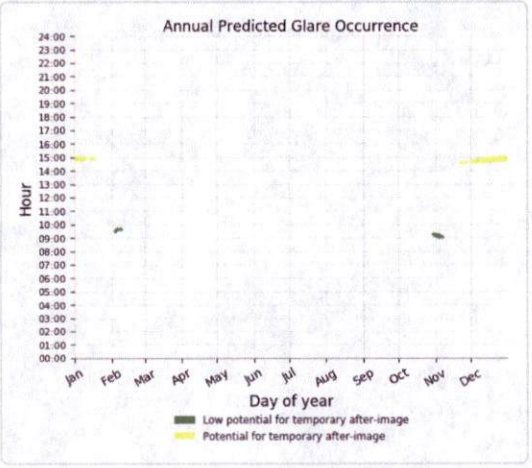
Results for: PV array 1

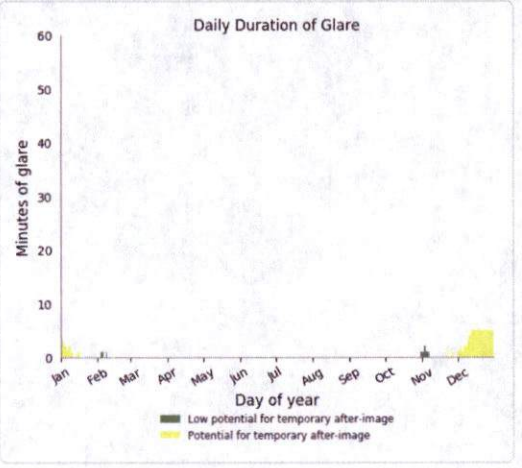
Receptor	Green Glare (min)	Yellow Glare (min)
OP 1	13	152
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	0
OP 8	0	0

Point Receptor: OP 1

152 minutes of yellow glare

13 minutes of green glare





Point Receptor: OP 2

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 3

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 4

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 5

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 6

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 7

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 8

0 minutes of yellow glare
0 minutes of green glare

Results for: PV array 2

Receptor	Green Glare (min)	Yellow Glare (min)
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	127
OP 8	182	206

Point Receptor: OP 1

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 2

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 3

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 4

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 5

0 minutes of yellow glare
0 minutes of green glare

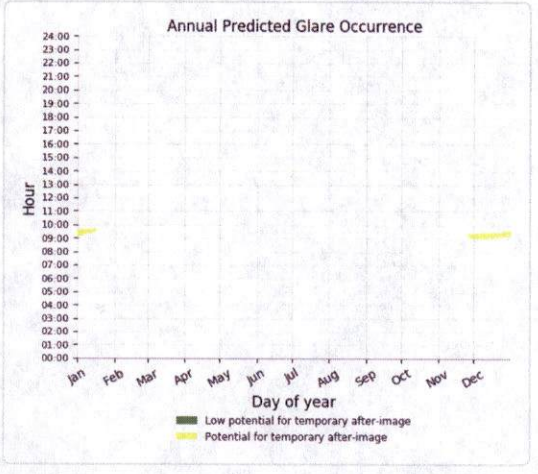
Point Receptor: OP 6

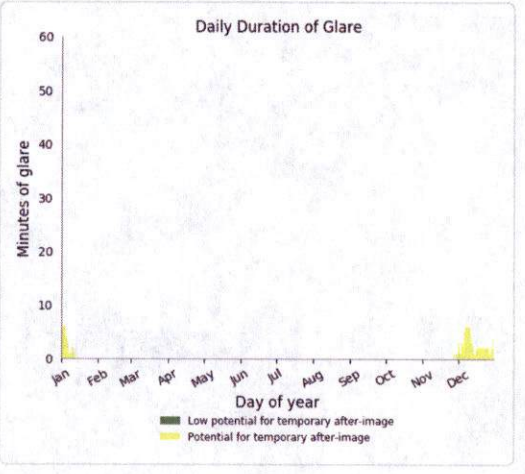
0 minutes of yellow glare

0 minutes of green glare

Point Receptor: OP 7

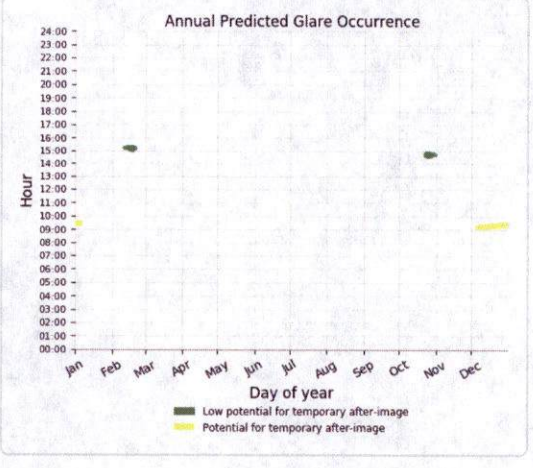
127 minutes of yellow glare
0 minutes of green glare

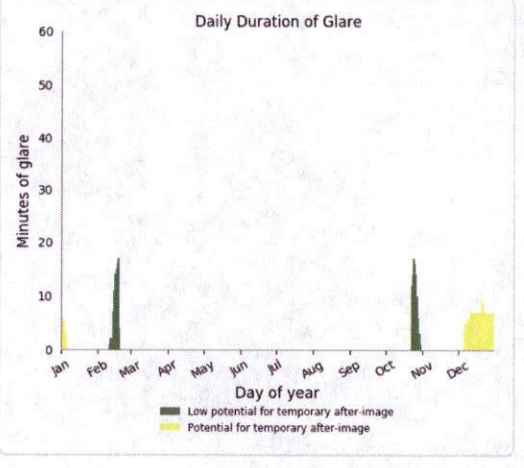




Point Receptor: OP 8

206 minutes of yellow glare
182 minutes of green glare





Assumptions

"Green" glare is glare with low potential to cause an after-image (flash blindness) when observed prior to a typical blink response time.
"Yellow" glare is glare with potential to cause an after-image (flash blindness) when observed prior to a typical blink response time.
Times associated with glare are denoted in Standard time. For Daylight Savings, add one hour.
Glare analyses do not account for physical obstructions between reflectors and receptors. This includes buildings, tree cover and geographic obstructions.
The glare hazard determination relies on several approximations including observer eye characteristics, angle of view, and typical blink response time. Actual values may differ.
Hazard zone boundaries shown in the Glare Hazard plot are an approximation and visual aid based on aggregated research data. Actual ocular impact outcomes encompass a continuous, not discrete, spectrum.

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FORGESOLAR GLARE ANALYSIS

Project: **Summit Ridge Maryland**
Site configuration: **Upperco**
Analysis conducted by Jodi Hunt (jodi.hunt@tetratech.com) at 20:57 on 24 Oct, 2018.

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Analysis parameters	PASS	Analysis time interval and eye characteristics used are acceptable
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Default glare analysis and observer eye characteristics are as follows:

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- Pupil diameter: 0.002 meters
- Eye focal length: 0.017 meters
- Sun subtended angle: 9.3 milliradians

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SITE CONFIGURATION

Analysis Parameters

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Eye focal length: 0.017 m
Sun subtended angle: 9.3 mrad
Site Config ID: 22117.3820

PV Array(s)

Name: PV array 1
Axis tracking: Single-axis rotation
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Tracking axis tilt: 0.0°
Tracking axis panel offset: 30.0°
Max tracking angle: 60.0°
Resting angle: 60.0°
Rated power: -
Panel material: Smooth glass with AR coating
Reflectivity: Vary with sun
Slope error: correlate with material

Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
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4	39.538612	-76.835681	641.28	7.00	648.28
5	39.538165	-76.835542	637.36	7.00	644.36
6	39.536890	-76.835606	623.02	7.00	630.02
7	39.537031	-76.833933	637.97	7.00	644.97
8	39.540291	-76.834608	679.80	7.00	686.80

Name: PV array 2
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0°
Tracking axis tilt: 0.0°
Tracking axis panel offset: 30.0°
Max tracking angle: 60.0°
Resting angle: 60.0°
Rated power: -
Panel material: Smooth glass with AR coating
Reflectivity: Vary with sun
Slope error: correlate with material

Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
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Discrete Observation Receptors

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OP 2	2	39.539768	-76.830786	667.09	9.00
OP 3	3	39.537989	-76.829123	658.88	9.00
OP 4	4	39.536334	-76.837137	640.04	16.00
OP 5	5	39.538759	-76.837760	679.65	9.00
OP 6	6	39.538294	-76.838135	685.12	16.00
OP 7	7	39.541047	-76.837744	680.98	9.00
OP 8	8	39.542412	-76.838044	719.17	16.00

GLARE ANALYSIS RESULTS

Summary of Glare

PV Array Name	Tilt (°)	Orient (°)	"Green" Glare min	"Yellow" Glare min	Energy kWh
PV array 1	SA tracking	SA tracking	20	0	-
PV array 2	SA tracking	SA tracking	482	331	-

Total annual glare received by each receptor

Receptor	Annual Green Glare (min)	Annual Yellow Glare (min)
OP 1	20	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	138
OP 8	482	193

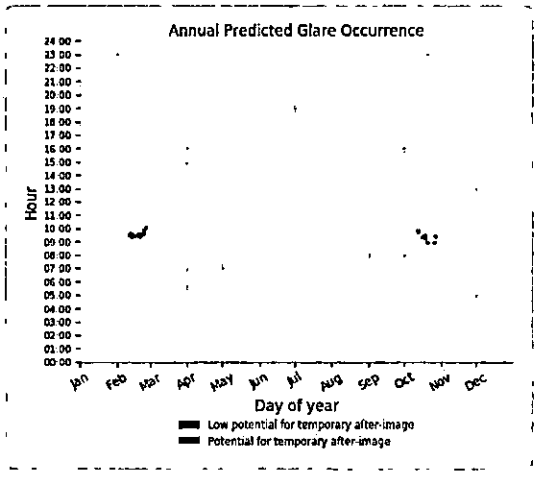
Results for: PV array 1

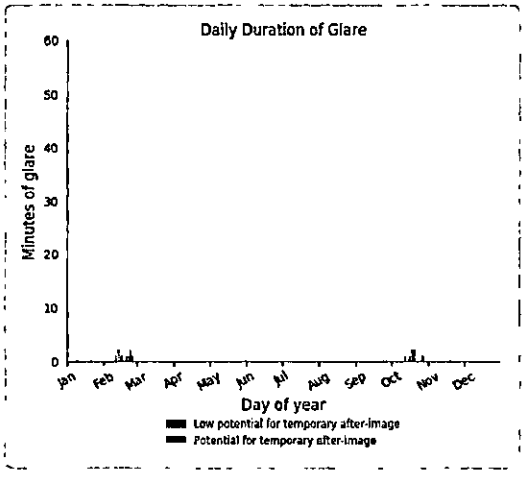
Receptor	Green Glare (min)	Yellow Glare (min)
OP 1	20	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	0
OP 8	0	0

Point Receptor: OP 1

0 minutes of yellow glare

20 minutes of green glare





Point Receptor: OP 2

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 3

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 4

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 5

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 6

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 7

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 8

0 minutes of yellow glare
0 minutes of green glare

Results for: PV array 2

Receptor	Green Glare (min)	Yellow Glare (min)
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	138
OP 8	482	193

Point Receptor: OP 1

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 2

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 3

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 4

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 5

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 6

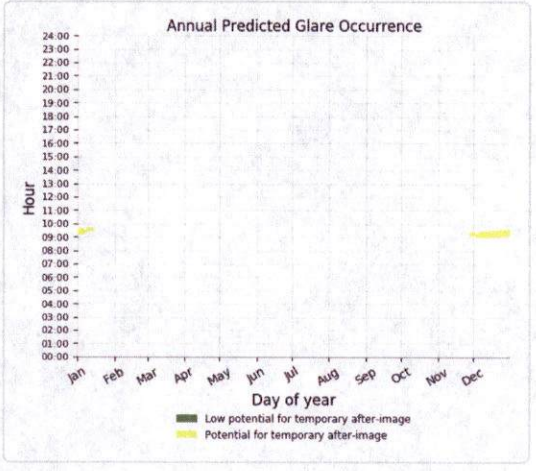
0 minutes of yellow glare

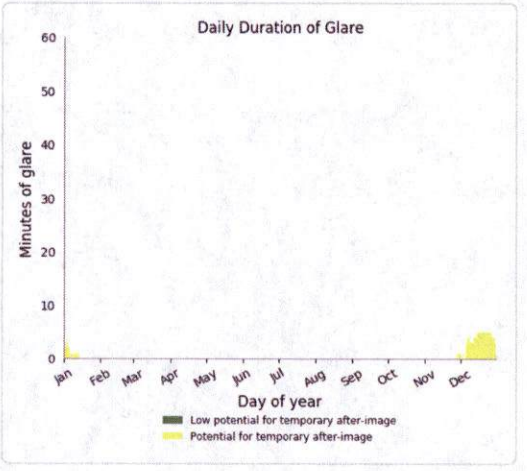
0 minutes of green glare

Point Receptor: OP 7

138 minutes of yellow glare

0 minutes of green glare

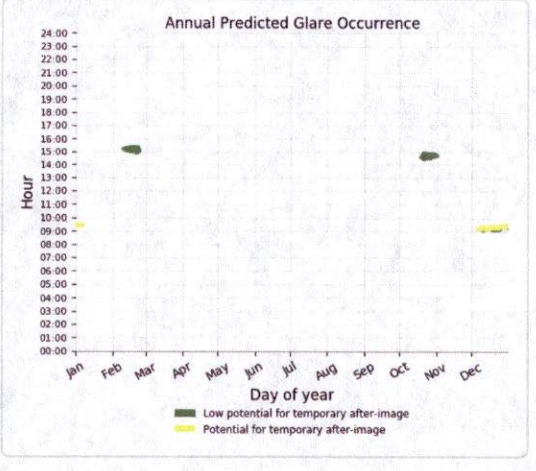


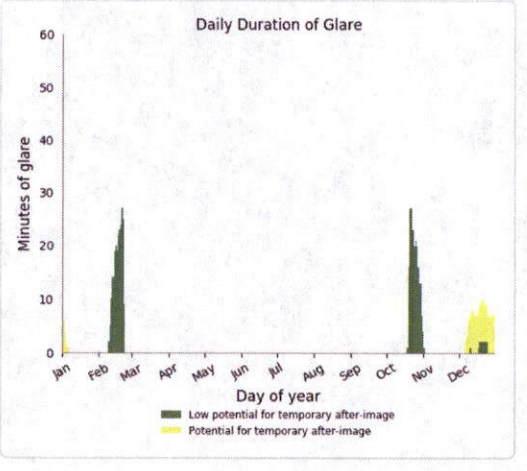


Point Receptor: OP 8

193 minutes of yellow glare

482 minutes of green glare





Assumptions

"Green" glare is glare with low potential to cause an after-image (flash blindness) when observed prior to a typical blink response time.
"Yellow" glare is glare with potential to cause an after-image (flash blindness) when observed prior to a typical blink response time.
Times associated with glare are denoted In Standard time. For Daylight Savings, add one hour.
Glare analyses do not account for physical obstructions between reflectors and receptors. This includes buildings, tree cover and geographic obstructions.
The glare hazard determination relies on several approximations including observer eye characteristics, angle of view, and typical blink response time. Actual values may differ.
Hazard zone boundaries shown in the Glare Hazard plot are an approximation and visual aid based on aggregated research data. Actual ocular impact outcomes encompass a continuous, not discrete, spectrum.

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ATTACHMENT H

FEDERAL AVIATION ADMINISTRATION SCREEN

Federal Aviation Administration

« OE/AAA

Notice Criteria Tool

Notice Criteria Tool - Desk Reference Guide V_2014.2.0

The requirements for filing with the Federal Aviation Administration for proposed structures vary based on a number of factors: height, proximity to an airport, location, and frequencies emitted from the structure, etc. For more details, please reference CFR Title 14 Part 77.9.

You must file with the FAA at least 45 days prior to construction if:

- your structure will exceed 200ft above ground level
- your structure will be in proximity to an airport and will exceed the slope ratio
- your structure involves construction of a traverseway (i.e. highway, railroad, waterway etc...) and once adjusted upward with the appropriate vertical distance would exceed a standard of 77.9(a) or (b)
- your structure will emit frequencies, and does not meet the conditions of the FAA Co-location Policy
- your structure will be in an instrument approach area and might exceed part 77 Subpart C
- your proposed structure will be in proximity to a navigation facility and may impact the assurance of navigation signal reception
- your structure will be on an airport or heliport
- filing has been requested by the FAA

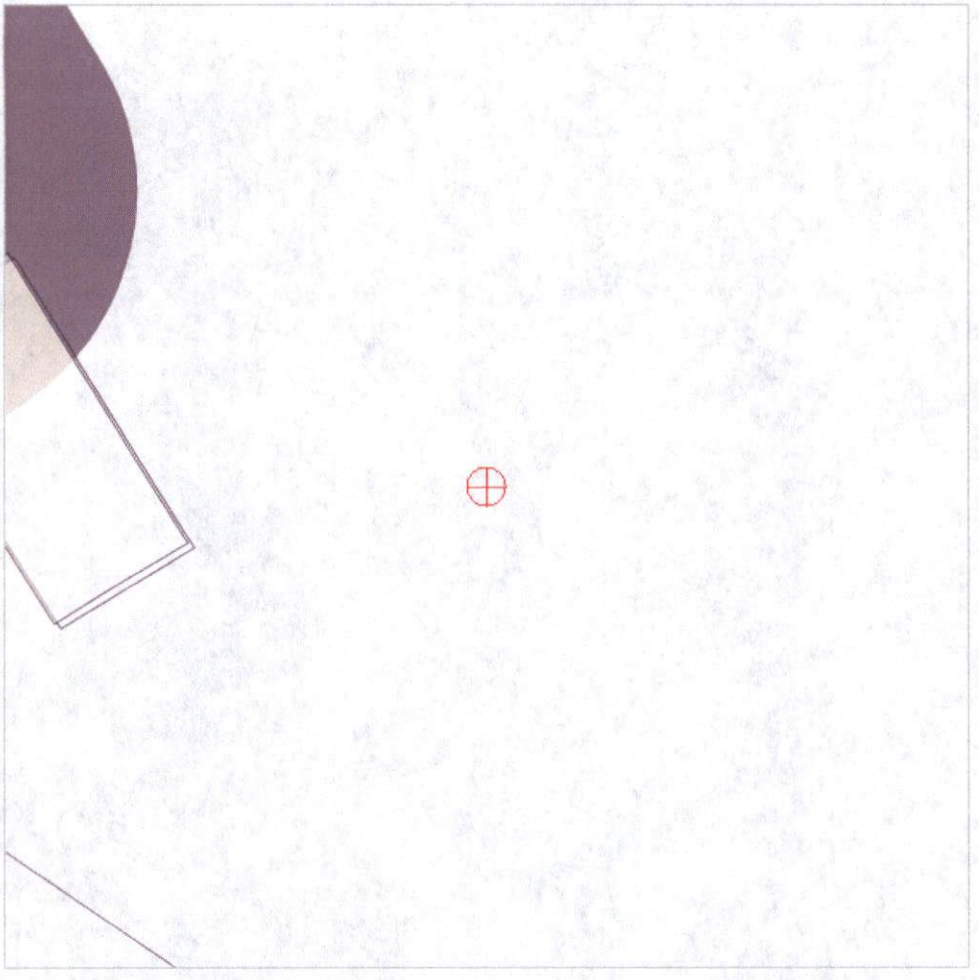
If you require additional information regarding the filing requirements for your structure, please identify and contact the appropriate FAA representative using the Air Traffic Areas of Responsibility map for Off Airport construction, or contact the FAA Airports Region / District Office for On Airport construction.

The tool below will assist in applying Part 77 Notice Criteria.

Latitude:	39 Deg 32 M 20.78 S N ▼
Longitude:	76 Deg 50 M 06.33 S W ▼
Horizontal Datum:	NAD83 ▼
Site Elevation (SE):	657 (nearest foot)
Structure Height :	7 (nearest foot)
Traverseway:	No Traverseway ▼ (Additional height is added to certain structures under 77.9(c)) User can increase the default height adjustment for Traverseway, Private Roadway and Waterway
Is structure on airport:	(•) No ( ) Yes

Results

You do not exceed Notice Criteria.



ATTACHMENT I

VEGETATIVE MAINTENANCE PLAN

Summit Ridge ENERGY

VEGETATIVE MAINTENANCE

2.09 MWdc Ground Mounted Project

Project Information

Project Name:	Upperco
Address:	Hanover Pike, Upperco, Baltimore County, Maryland
Project Area:	Approximately 12.6 acres

Background

Following construction of the solar facility, disturbed grounds will be re-established with low growth/low maintenance ground cover. The vegetative maintenance contractor will be responsible for inspecting and maintaining the vegetative integrity of the solar facility. The contractor will conduct on-site activities during growing months at the frequency of approximately 2-3 times per year. The contractor is expected to adjust site maintenance frequency based on time of year and weather conditions. To avoid rutting, erosion, and soil compaction, weather forecasts will be consulted and on-site field inspections will be conducted prior to mowing or cutting to ensure that these practices occur when the site is able to withstand this type of activity.

It is important to note this scope of work covers work along the access road and w/in the fence line of the project. Remaining lands outside the fence will continue to be utilized for agricultural purposes and maintained by the landowner or their representative.

Site Activities

- Perimeter Maintenance
    - The perimeter fence line will be inspected for items of trash, that may have accumulated since the previous site visit. These items will be collected and disposed of offsite. Vegetative growth along the fence line will also be trimmed and maintained to prevent the growth of weeds or tall grasses.
- Mowing
    - Mowing is a three-step process. First, the mower or bush hog trims the large areas. Second, trimmers are used to cut around structural elements and other places the mower couldn't reach. Finally, any vegetation that was thrown and stuck to the modules will be cleaned off. Additionally, spot-mowing is recommended for reducing invasive plants while native species are becoming established. Spot-mowing should be done at a raised height to avoid damaging native plants.

- Site Inspections
    - During each maintenance visit, the site will be inspected for signs of erosion. Any areas of concern will be immediately communicated to the project owner/developer to evaluate and implement corrective measures. Should the contractor observe a non-typical condition or change in site conditions the project owner/developer will be immediately notified.
- Screening Maintenance
    - Should vegetative screening be installed at the PV facility, the contractor will be responsible for monitoring the general health of each plant. If any plant succumbs and fails to establish its self, contractor will work with the responsible nursery to redeem the warranty and replace the deceased plant with another of the same species.
- Access Road Maintenance
    - During maintenance activities, the access road will be inspected and maintained to ensure that vegetative creep does not occur. This will include the mowing of at least a 3-foot strip paralleling each side of the road. Additionally, any observed vegetative creep within the road will be removed.

Table 1: Scope of Work

Activity	Frequency	Timing
Perimeter Maintenance	8-12 Weeks	May - October
Mowing	8-12 Weeks	May - October
Site Inspections	8-12 Weeks	May - October
Screening Maintenance*	4-8 Weeks	May - October
Access Road Maintenance	8-12 Weeks	May - October

*Two years only to ensure vegetation planted for screening is adequately established

ATTACHMENT J

DECOMMISIONING PLAN

DECOMMISSIONING PLAN

Upperco: 2 MWDC Ground Mounted Solar Project

ICFTS MD Solar, LLC
1401 Wilson Blvd., Suite 800
Arlington, VA 22209

Contents

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2. DECOMMISSIONING ACTIVITIES 5
Equipment Removal 5
Site Restoration 6
3. PERMITTING 7
4. DECOMMISSIONING ASSURANCE 8
Use of Assurance 8

1. BACKGROUND

Facility Description

ICFTS MD Solar, LLC (Summit Ridge) proposes to develop a solar photovoltaic (PV) facility (the "Project") with a total maximum nameplate capacity of two megawatts direct current (2 MWdc), located on private property on Hanover Pike, Baltimore County, Maryland, (the "Property"), as shown in Figure 1.

The Project occupies approximately 12.9 acres of a larger 41.38-acre parcel of private land located in the Upperco Township, County of Baltimore. The Project will produce electricity delivered to Baltimore Gas and Electric's local distribution system utilizing existing lines. Interconnection to Baltimore Gas and Electric's system will include both underground and overhead wires along with new utility poles located on the Property.

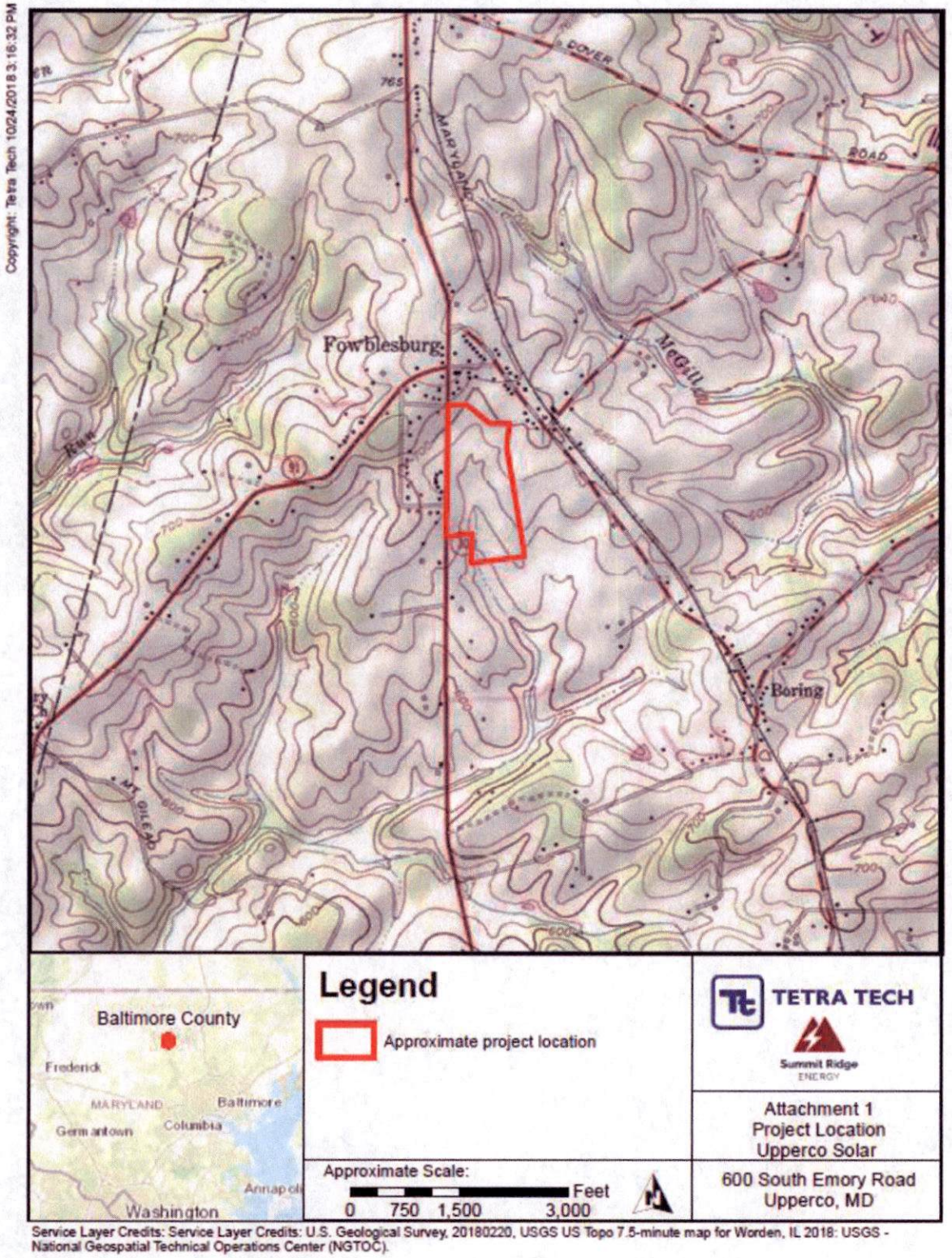
The solar PV modules will be installed on single-axis metal racking structures secured to the ground utilizing either direct push or anchor screw technology. Direct Current (DC) wiring with the Project will be secured behind the modules, collected at a common point and transition underground from the string inverters to the transformer. From the transformer pad, AC wiring will run underground until a point before the interconnection where it will surface and connect to a series of utility poles on the Property before connecting to the existing grid.

Access to the Project will be from Hanover Pike utilizing a 20-foot wide crushed stone road constructed for access to the facility.

The transformer skid will be mounted on a concrete pad located within the array. The pad used for a skid unit will be approximately 13-feet x 13-feet.

The site will be secured with a perimeter chain link fence.

Figure 1: **Project Location**



Service Layer Credits: Service Layer Credits: U.S. Geological Survey, 20180220, USGS US Topo 7.5-minute map for Worden, IL 2018: USGS - National Geospatial Technical Operations Center (NGTOC).

2. DECOMMISSIONING ACTIVITIES

Introduction

The Decommissioning Plan (the "Plan") describes anticipated activities and process for decommissioning of the proposed facility following its useful life. The purpose of decommissioning is to restore the property to a clean, safe and, usable condition for continued use by the landowner.

Decommissioning consists of the removal of above-ground and below-ground facility components, management of excess materials and waste as well as the restoration of Project lands, as applicable. Activities are expected to take between 8-10 weeks but no longer than four-months.

Potential negative environmental effects from decommissioning of the facility will be mitigated through use of erosion and sediment control measures, limiting the use of heavy machinery (where possible), and maintaining a buffer from natural features. These control measures, as well as other mitigation measures used during construction will be re-implemented during the decommissioning phase and until the site is stabilized.

Future consultation will occur with the municipality prior to decommissioning to discuss preferences and commitments to restore the Project to its pre-construction condition or a similar state. All decommissioning and restoration activities will adhere to the requirements set forth by Occupational Health and Safety Administration (OSHA) and will be in accordance with all applicable federal, state and local permitting requirements. As with the construction phase, an onsite manager responsible for safety will be present on-site (generally the contractor's project manager) while decommissioning activities are taking place.

The decommissioning plan is based on current procedures and experience. These procedures may be subject to revision based on new experiences and requirements over time. At the time of decommissioning, various options and procedures will be re-evaluated to ensure that decommissioning is safe and beneficial to the environment.

Equipment Removal

A significant amount of the components of the Project will include recyclable or re-saleable components, including copper, aluminum, galvanized steel, and modules. Due to their resale monetary value, these components will be dismantled and disassembled rather than being demolished and disposed of.

Following coordination with the local utility company regarding timing and required procedures for disconnecting the Facility from the private utility, electrical connections to the system will be disconnected and connections will be tested locally to confirm that no electric current is running through them before proceeding. Electrical connections to the panels will be cut at the panel and then removed from their framework by cutting or dismantling the connections to the supports. Inverters, transformers, and switchgear will be lifted, secured onto flat beds, and transported off-site for processing.

Modules will be detached from the racking system and stacked for removal. In the event of a module fracture, the silicon-based module will be disposed of at a landfill as non-hazardous waste.

The metal piling systems used to secure the PV system in the ground will be removed entirely. If full removal is not possible, the piling will be terminated at a depth greater than four-feet from grade or at bedrock whichever is shallower. The piling materials will be collected and recycled. Additionally, all associated metal mounting structures along with the metal perimeter fencing and gates will be removed and either reused or sent for recycling.

Grade slabs will be broken, removed, and disposed of off-site or recycled. Unless requested by the landowner for the access road to remain, materials from road construction will be removed, shipped off-site for either re-use or disposal. If necessary, the former road bed will be backfilled and graded with material native to the region to blend it with the immediately adjacent and existing topography.

Aboveground utility poles owned by the Project will be completely removed and disposed of off-site in accordance with utility best practices. Overhead wires will be removed from the area of the solar modules and terminated at the point of interconnection. Underground wiring at depths of less than four-feet will be removed and recycled.

Prior to final demobilization, a final walkthrough of the Project area and the property will be completed to ensure all debris is collected and removed.

Site Restoration

Those areas disturbed during decommissioning activities will be graded as necessary to ensure a uniform slope for proper storm water management, prevent the ponding of waters and address any rutting or other depressions caused by removal equipment. The disturbed areas will then be seeded either by hand or via hydro seeding to reestablish vegetation compatible with the property and region. It is anticipated that a seed mix native to the area will be used by the decommissioning contractor, unless the landowner instructs that they will begin using the property for agricultural purposes and will reestablish the area with agricultural vegetation.

3. PERMITTING

Permitting & Approvals

Prior to the initiation of decommissioning activities, local code will be reviewed for applicability with decommissioning activities. The municipality will be consulted to confirm and applications made for appropriate permits and approvals, if any. At a minimum, it is anticipated that a new storm water pollution prevention plan (SWPPP) will be required along with a building permit. It is assumed that neither a new or revised site plan nor special use permit would be necessary because decommissioning activities are associated with the originally issued approvals.

Throughout the decommissioning process, the municipality will be provided with regular updates and notice upon completing the restoration activities.

4. DECOMMISSIONING ASSURANCE

Form of Assurance

The Operator/Owner will secure a bond as assurance for decommissioning of the project if the Solar Energy System ceases to be used for its intended purpose for 150 consecutive days and the Operator/Owner does not provide reasonable evidence of intent to restart operations within six (6) months thereafter. Removal of the Solar Energy System, obsolete and/or unused structures shall be completed within three (3) months thereafter or as soon as feasible due to weather restrictions. The bond will be maintained and upon Town's request, within thirty (30) days prior to the end of each five (5)-year period after the establishment of the bond, the Operator/Owner shall provide the Town with an updated Removal Letter setting forth an updated estimate for the removal of such obsolete and or unused structures and the bond shall be altered to reflect the updated estimate for such removal. The bond will remain in place through the completion of decommissioning activities at the Project.

Use of Assurance

In the event that the Operator/Owner fails to undertake decommissioning activities within the established period of the Agreement, the municipality shall have the right to undertake decommissioning activities and make a claim against the decommissioning assurance. In such circumstances, the municipality shall have such access to the Property as may be necessary to allow its qualified contractors to conduct decommissioning activities.

MDE **Maryland Department of the Environment**

Stormwater Design Guidance – Solar Panel Installations

Revisions to Maryland's stormwater management regulations in 2010 require that environmental site design (ESD) be used to the maximum extent practicable (MEP) to mimic natural hydrology, reduce runoff to reflect forested wooded conditions, and minimize the impact of land development on water resources. This applies to any residential, commercial, industrial, or institutional development where more than 5,000 square feet of land area is disturbed. Consequently, stormwater management must be addressed even when permeable features like solar panel installations exceed 5,000 square feet of land disturbance.

Depending on local soil conditions and proposed imperviousness, the amount of rainfall that stormwater requirements are based on varies from 1.0 to 2.6 inches. However, addressing stormwater management does not mean that structural or micro-scale practices must be constructed to capture and treat large volumes of runoff. Using nonstructural techniques like disconnecting impervious cover reduces runoff by promoting overland filtering and infiltration. Commonly used with smaller or narrower impervious areas like driveways or open roads, the Disconnection of Non-Rooftop Runoff technique (see pp. 5.61 to 5.65 of the **2000 Maryland Stormwater Design Manual**[1]) is a low cost alternative for treating runoff in situations like rows of solar panels.

When non-rooftop disconnection is used to treat runoff, the following factors should be considered:

- The vegetated area receiving runoff must be equal to or greater in length than the disconnected surface (e.g., width of the row of solar panels)
- Runoff must sheet flow onto and across vegetated areas to maintain the disconnection
- Disconnections should be located on gradual slopes (≤ 5%) to maintain sheetflow. Level spreaders, terraces, or berms may be used to maintain sheetflow conditions if the average slope is steeper than 5%. However, installations on slopes greater than 10% will require an engineered plan that ensures adequate treatment and the safe and non-erosive conveyance of runoff to the property line or downstream stormwater management practice.
- Disconnecting impervious surfaces works best in undisturbed soils. To minimize disturbance and compaction, construction vehicles and equipment should avoid areas used for disconnection during installation of the solar panels.
- Groundcover vegetation must be maintained in good condition in those areas receiving disconnected runoff. Typically this maintenance is no different than other lawn or landscaped areas. However, areas receiving runoff should be protected (e.g., planting shrubs or trees along the perimeter) from future compaction.

Depending on the layout and number of panels installed, the disconnection of non-rooftop runoff technique may address some or all of the stormwater management requirements for an individual project. Where the imperviousness is high or there is other infrastructure (e.g., access roads, transformers), additional runoff may need to be treated. In these situations, other ESD techniques or micro-scale practices may be needed to provide stormwater management for these features.

PETITIONER'S
EXHIBIT NO. 10

Example 1 – Using Non-Rooftop Disconnection Where the Average Slope ≤ 5%

Several rows of solar panels will be installed in an existing meadow. The soils within the meadow are hydrologic soil group (HSG) B and the average slope does not exceed 5%. Each row of panels is 10 feet wide and the distance between rows is 20 feet. The rows of solar panels will be installed according to Figure 1 below. In this scenario, the disconnection length is the same as the distance between rows (20 feet) and is greater than the width of each row (10 feet). Therefore, each row of panels is adequately disconnected and the runoff from 1.0 inch of rainfall is treated.

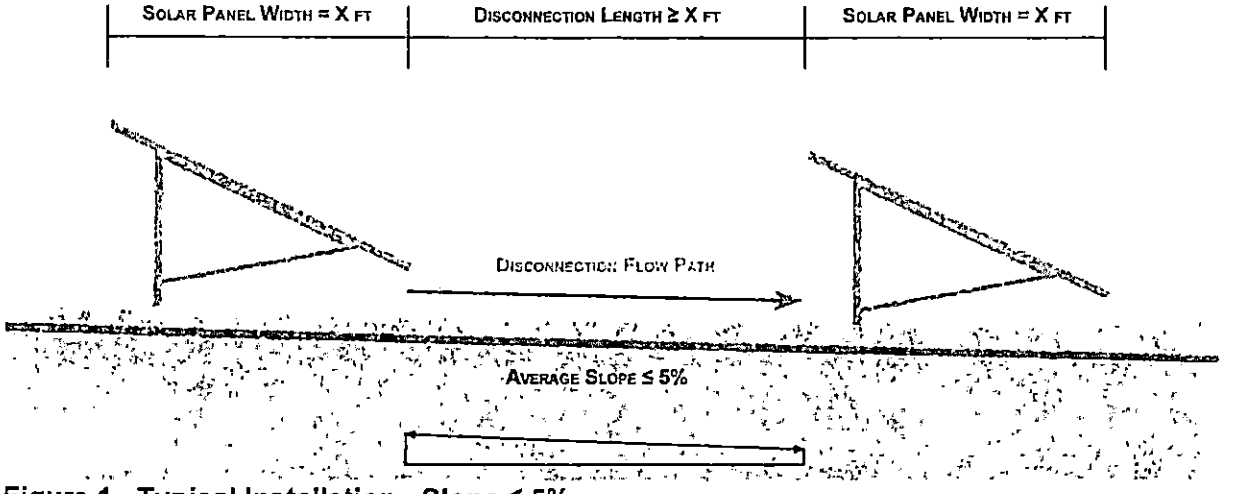


Figure 1. Typical Installation - Slope ≤ 5%

Example 2 – Using Non-Rooftop Disconnection Where the Average Slope ≥ 5% but ≤ 10%

Several rows of solar panels will be installed in an existing meadow. The soils within the meadow are hydrologic soil group (HSG) B and the average slope is greater than 5% but less than 10%. Each row of panels is 10 feet wide and the distance between rows is 20 feet. The rows of solar panels will be installed as shown in Figure 2 below. The disconnection length is the same as the distance between rows (20 feet) and is greater than the width of each row (10 feet). However, in this example, a level spreader (typically 1 to 2-foot wide and 1 foot deep) has been located at the drip edge of each row of panels to dissipate energy and maintain sheetflow.

Discussion

To meet State and local stormwater management requirements, ESD must be used to the MEP to reduce runoff to reflect forested conditions. While all reasonable options for implementing ESD must be investigated, minimally, the runoff from 1 inch of rainfall must be treated. In each of the examples above, there may be additional opportunities to implement ESD techniques or practices and reduce runoff that should be explored. However, simply disconnecting the runoff from the solar panel arrays captures and treats the runoff from 1.0 inch of rainfall. Where imperviousness is low and soil conditions less optimal (e.g., HSG C or D), this may be sufficient to completely address stormwater management requirements. In more dense applications or in sandy soils, additional stormwater management may be required.

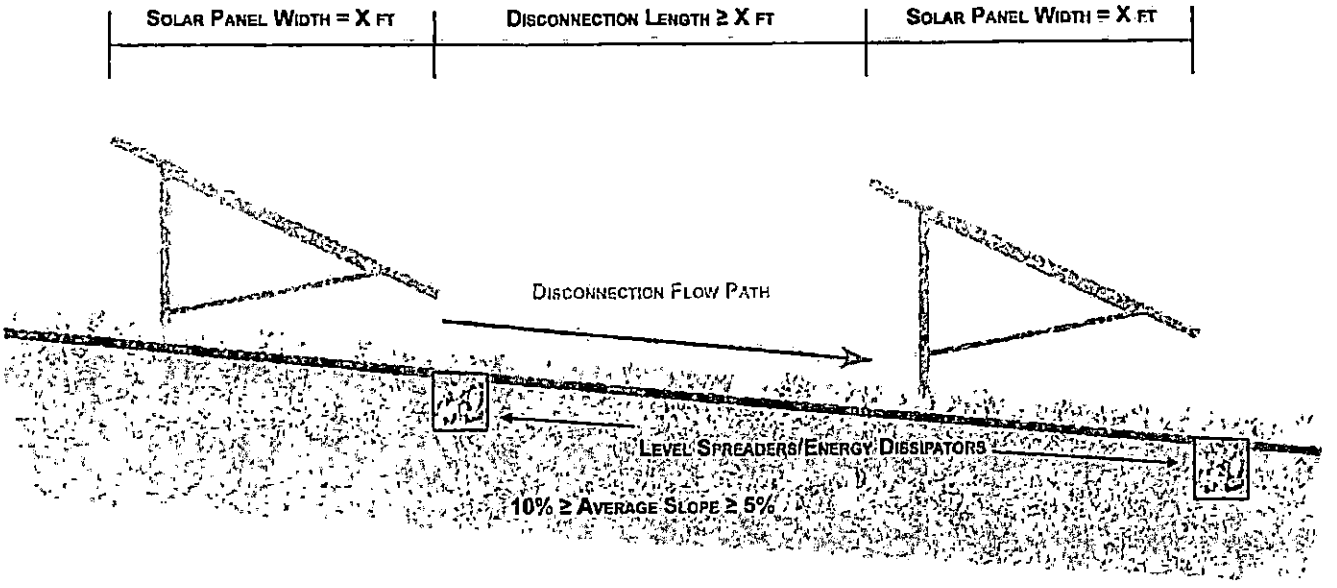


Figure 2. Typical Installation – Slope ≥ 5% but ≤ 10%

Conclusion

The primary purpose of Maryland's stormwater management program is to mimic natural hydrologic runoff characteristics and minimize the impact of land development on water resources. Any land development project that exceeds 5,000 square feet of disturbance, including solar panel projects, must address stormwater management. However, for solar panels, stormwater management may be provided in a cost-effective manner by disconnecting each row of panels and directing runoff over the vegetated areas between the individual rows.

Resources

[1] 2000 Maryland Stormwater Design Manual, Volumes I and II, MDE, October 2000 (http://www mde.state.md.us/programs/Water/StormwaterManagementProgram/MarylandStormwaterDesignManual/Pages/Programs/WaterPrograms/SedimentandStormwater/stormwater_design/index.aspx)

re County - My Neighborhood

Baltimore County - My Neighborhood

"Neighborhood or Locality"

1/9/19, 9:20 PM

PETITIONER'S
EXHIBIT NO. 11

Site

DOVER

Upperco

Boring

Emory Road

Hanover Pike

MD 30

MD 88

Black Rock Road

Park Road

Camp Fretterd

Westminster Pike

I 795

Butler Road

Butler Road
Worthington Avenue
MD 128
Sagamore Forest
Worthington Hillside II
St John Airport
Central Avenue
Reisterstown
9A-B
Main Street
Northwest Expressway
MD 129
Garrison Forest Road
Greenspring Ave
Owings Mills Boulevard
East Cherry Hill Road
Reisterstown Road
Gwynnbrook Wildlife Management Area
Heights Avenue
1mi
-76.835 39.574 Degrees
Map data © OpenStreetMap contributors, CC-BY-SA
POWERED BY esri

Bee Culture

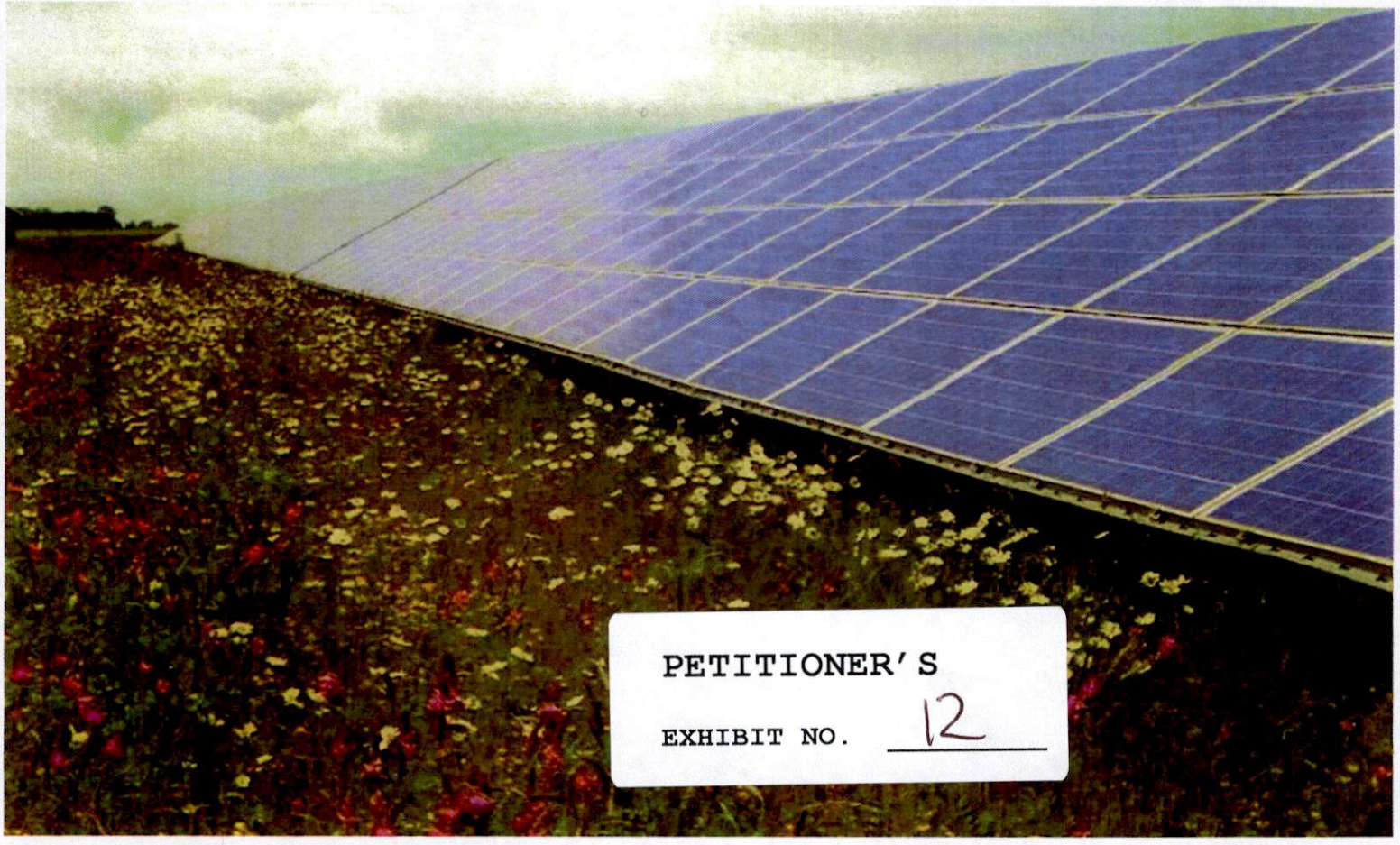
The Magazine of American Beekeeping

(http://www.beeculture.com/)

(http://www.beeculture.com/catch-buzz/)

JULY 25, 2016

CAN SOLAR SITES HELP SAVE THE BEES?



By: Rob Davis

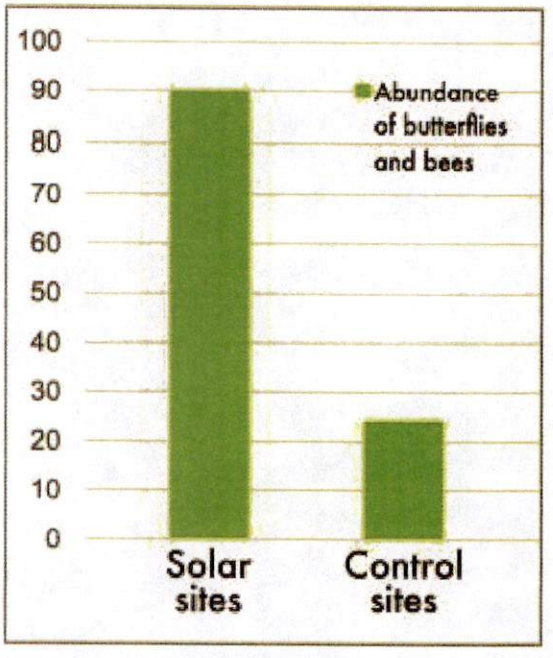
Rapid growth of ground-mounted solar presents opportunity to establish hundreds of millions of native plants.

Across Minnesota workers are preparing dozens of sites in order to seed more than 30 million native, pollinator-friendly plants. These low-growing and shade-tolerant flowers and prairie grasses will be established where you might least expect — under and around ground-mounted solar panels.

Nationwide prices are plummeting for rooftop and ground-mounted solar panels, and large sites are popping up wherever there is low-cost land and access to an electrical substation. And with 25-year land leases frequently paying $700-$1,500 per acre, farmers and other land owners are increasingly interested in having solar on a portion of their property.

Recipient of the MacArthur Foundation's "Genius" award, Dr. Marla Spivak of the University of Minnesota Bee Lab, sees a promising opportunity. "It would be great to have pollinator habitat under and around solar panels and arrays."

The timing couldn't be better for commercial bees and wild pollinators, which have suffered massive population losses in our lifetimes in part because of dwindling access to food and habitat. For wild insects and managed bees these sites will be multi-acre buffets of nutritious, native plant pollen and nectar.



(http://www.beeculture.com/wp-content/uploads/2016/07/2Solar.jpg)

Bar chart An 11-site observational study found that solar sites with pollinator habitat have a statistically

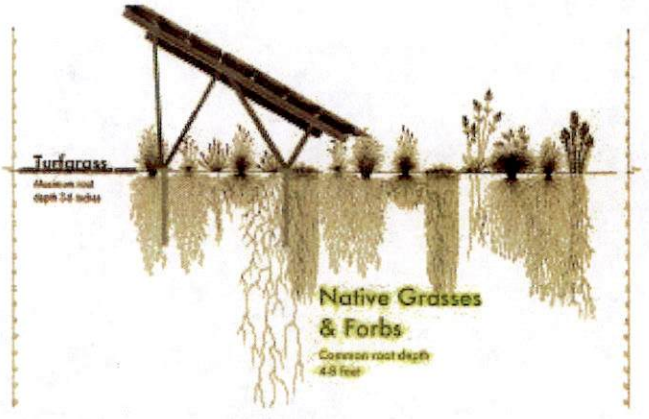
Energy policies vary state by state, but between just a handful of states — Florida, Georgia, Minnesota, Maryland, New York, North Carolina, and Oregon — more than 30,000 acres of solar sites are being built this year, and more than 19,000 acres are in development to be built next year. All together, solar projects could provide a world of good for pollinators — and landscape business including Prairie Restorations, Ernst Conservation Seeds, Prairie Moon, and American Native Plants have noticed.

significant increase in abundance of bees and butterflies (The Effects of Solar Farms on Local Biodiversity, Montag et. al., 2016).

"Within every habitat in North America there is a large variety of pollinator friendly plant species that can be used under solar panels. The panels do create a challenge of some height limitations which will slightly restrict the overall diversity of the plantings, but we can still provide a wide range of forbs and grasses that will be a delight to the pollinators and songbirds native to that area," said Ron Bowen, founder and CEO of Prairie Restorations, Inc. "The seasonal spectrum that can be planted beneath a solar array, and the fact that once it's installed, herbicides and pesticides aren't typically used, makes acreage near solar fields excellent locations for raising healthy bee colonies."

More Solar, More Privately Financed Pollinator Habitat

Beekeeper Oliver Collins has first-hand experience with colony collapse. "I probably own 20 percent of all the hives in the area — and lost around 65 percent of them this past winter. There's a strong watermelon industry here, but between the mites and native plants getting mowed or sprayed, my bees can't keep up." A roughly 150-acre solar site that includes abundant foraging habitat for pollinators was recently proposed for a county in Eastern Maryland where Mr. Collins lives and keeps



(http://www.beeculture.com/wp-content/uploads/2016/07/1Solar.jpg)

Cross section of solar with native plants. Not to be mistaken with concentrated solar, which uses heat, photovoltaic (PV) solar

panels get only as hot as a car parked in the sun. Original illustration by Heidi Natura, adapted with permission.

his bees. If approved by local and state authorities, the project will provide pollinator habitat equivalent to every household in a 5-county area having a 6'x12' pollinator garden. The solar project developer, OneEnergy Renewables, a socially conscious B-Corporation, is evaluating use of a pollinator-friendly seed mix for a number of its projects currently under development. "It's a great opportunity for the solar industry as a whole, and we're excited that our projects will provide so many benefits to the communities in which they're located," said Project Manager Gia Clark.

Agriculture, Community Taking Leading Roles

"Pollinators are an irreplaceable public resource. Insect pollinators, such as bees, butterflies, wasps, flies, and beetles, are critical for the pollination and production of crops and the health of native flora and landscapes," wrote Dave Fredrickson, commissioner of the Minnesota Department of Agriculture, in an email announcing the State's pollinator summit this year.

In fact, one of the Midwest's largest solar projects is leading the way. The Aurora solar project, being built in Minnesota by Enel Green Power North America (EGP-NA), will provide pollinator habitat equivalent to more than 500,000 homes having 6'x12' pollinator gardens. EGP-NA worked hand in hand with the Minnesota Department of Natural Resources to create a robust solar site vegetation plan that creates a biodiverse habitat for pollinator species while preserving the soil for future farming, and channeling stormwater down into the aquifer.

Noting this collaborative process, during the 2016 legislative session, Minnesota's agricultural leaders worked closely with conservation, energy policy, and business leaders to establish the nation's first standard for pollinator-friendly solar sites. Authored by Representative Rod Hamilton (R–Mountain Lake) and Senator Dan Sparks (DFL–Austin), the bill establishes robust and flexible vegetation management requirements for any solar project that is promoted as providing benefits to pollinators, songbirds, or game birds. The bill received broad rural, suburban, and metro support, passing the Minnesota House by a vote of 126-0 and the Minnesota Senate by a vote of 62-2. Governor Dayton signed the bill in to law on May 31.

Construction of the Aurora project and many others are underway and it will take time for the native plants to get established and bloom. Over the next several years, just about every state will build several thousand acres of solar sites that—based on collaboration with each community—may meet or exceed this new "pollinator-friendly solar" standard.

As you drive by these sites, don't just see them for the clean, fuel-free electricity they generate every day, but also notice the benefits provided by the vegetation under and around the panels. The United States has more than 280 million acres of rowcrops and just a tiny fraction will be used for solar sites, but these sites can provide a badly needed, and long-lasting, service in providing healthy food to the hardworking commercial and native bees that pollinate our crops.

Rob Davis is a director at Fresh Energy, an independent 501(c)3 energy nonprofit in St. Paul, Minnesota. Follow him ***@robfargo***(https://twitter.com/robfargo) *and* ***www.Fresh-Energy.org/author/rob.***(http://www.Fresh-Energy.org/author/rob)

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SHARES(#)

PETITIONER'S

EXHIBIT NO. 13

Division VI
Section A

SCENIC VIEWS

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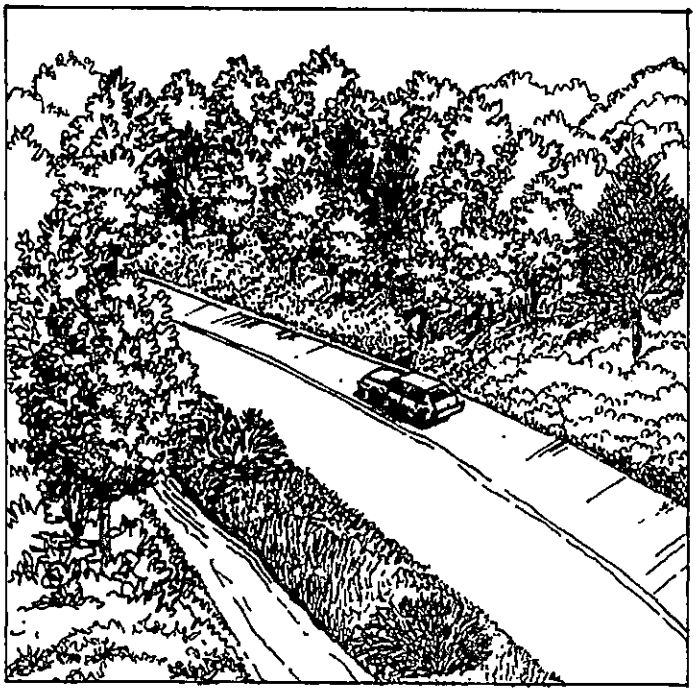
INTRODUCTION

The Baltimore County Master Plan 2010 identifies scenic routes, gateways and views. These scenic areas are important visual amenities worthy of preservation.

The benefits of a scenic program are many. Foremost is the preservation of the character that makes Baltimore County distinctive. This contributes to pride of place, a sense of ownership in the community, and an ethic of stewardship of community qualities. All of these are at the heart of stabilization of communities, a critical factor for the future of Baltimore County.



Baltimore County has regulations that provide a nucleus for a scenic routes program. Agricultural zoning, agricultural preservation districts, critical areas legislation, public open space systems, federal and local historic districts, and regulations of the Department of Environmental Protection and Resource Management which protect streams, wetlands, forest and slopes all implicitly preserve scenic qualities.

Designating scenic protection adds aesthetic-based standards to these resource-based ones, and makes the goal of preserving views from scenic routes explicit.

Development can be accommodated in scenic areas, and visual quality maintained, with sensitive site analysis and planning. The guidelines here present ways to achieve this goal through project designs that maintain the visual quality of these areas with no density losses. In addition, CIP projects which affect scenic routes should be evaluated in relation to their impact on the view.

Definitions

DEFINITIONS

Scenic Route: As adopted as part of the Master Plan, a scenic route is a road bordered, for the most part, by views which are in the public interest to protect.

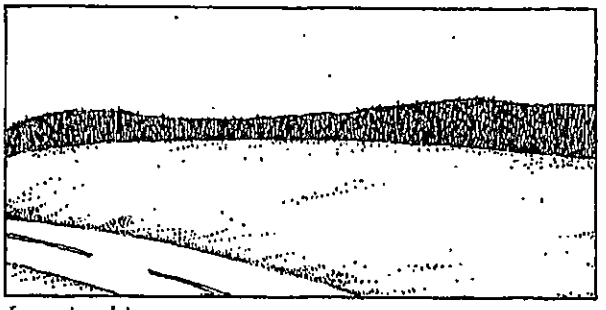
The following factors are considered in the designation of a scenic route:

1. Aesthetic quality:

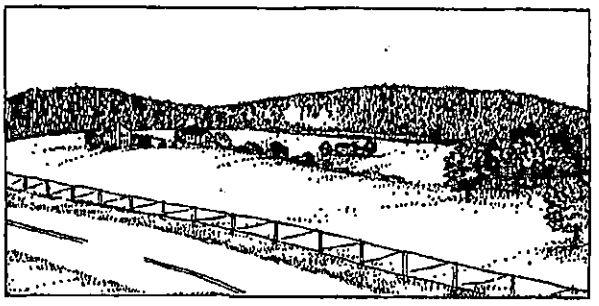
   a) Visual impact or visual memorability;

   b) Unity (the harmonious composition of the visual elements comprising the landscape); and/or

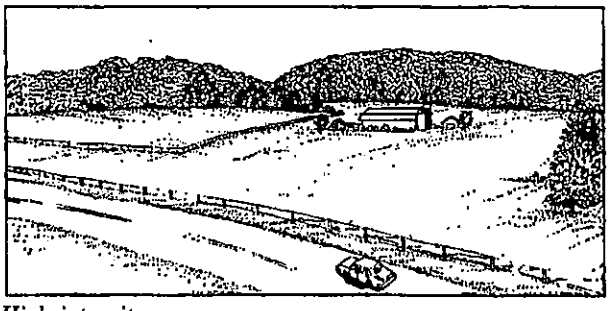
   c) Integrity (absence of visually distracting elements).



Low visual impact

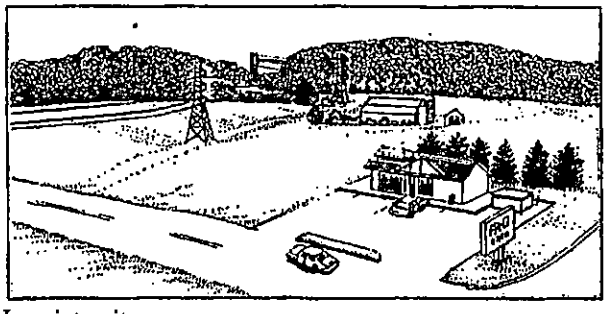


High visual impact

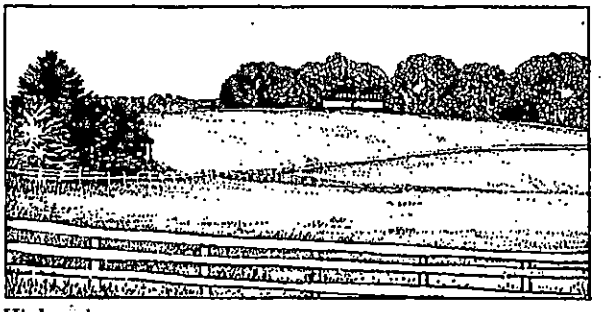


High integrity

Low unity

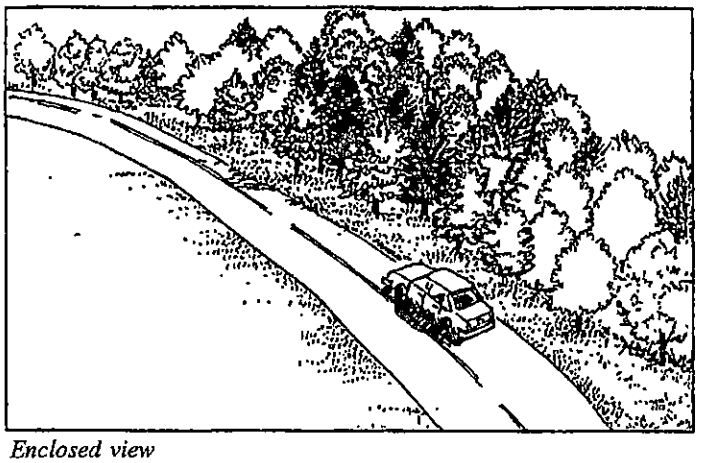


Low integrity

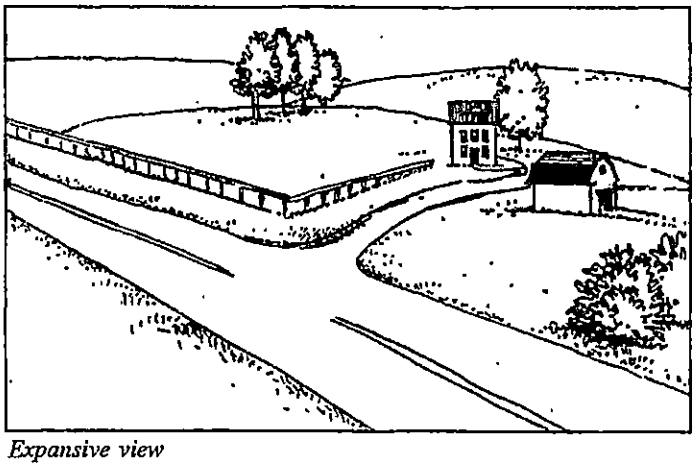


High unity

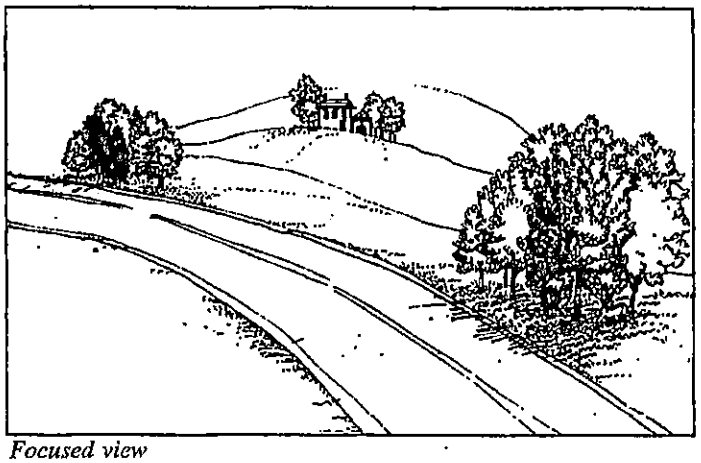
Definitions



Enclosed view



Expansive view



Focused view

2. Community interest in maintaining the visual character of the corridor.

3. Ability to be integrated with other scenic corridors to produce a largely continuous path of high visual quality.

Significant View: Particularly valued vistas along the scenic route, or isolated vistas along undesignated roads, as indicated in the Master Plan.

Enclosed, Expansive and Focused View: Baltimore County's varied landscapes produce different kinds of vistas which may be classified in general as either enclosed, expansive, or focused.

Enclosed view is limited to the road and the road functions as an integral part of the vista. The type of road is therefore an essential element of an enclosed vista. The elements which contain, or enclose, the vista can be vegetation (trees and/or large shrubs), steep slopes, or existing buildings.

Expansive view is a broad vista extending beyond the road edge. It may encompass open pastures or croplands, marshes, a body of water, etc. They may be totally panoramic and unobstructed extending to the horizon.

Focused view is an area where the primary interest is directed to a single feature of the landscape.

Development Guidelines

DEVELOPMENT GUIDELINES

These guidelines pertain to the development of any area within or adjacent to a designated scenic route or significant view. They also pertain to views created by new development.

For all scenic routes and significant views:

1. Minimize tree and vegetation removal. Clear selectively to open up obscured views or create filtered views of compatible development.

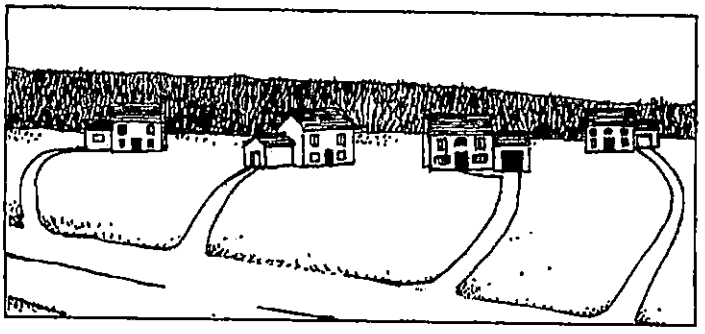
2. Minimize grading to preserve the quality of the existing landforms.

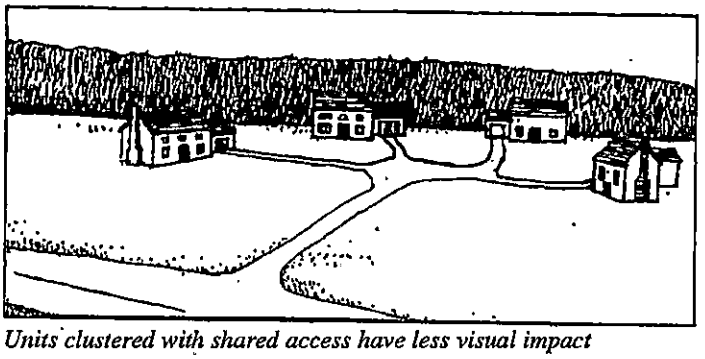
3. Minimize the number of access roads and driveways intersecting the scenic road. Where feasible, use shared driveways for individual lots.

4. Use the narrowest road pavement section possible while ensuring adequate public safety. Use shoulders and curbs appropriate to the character of the road. Maintain the existing vertical and horizontal road alignment when compatible with the design and approved by the Department of Public Works.

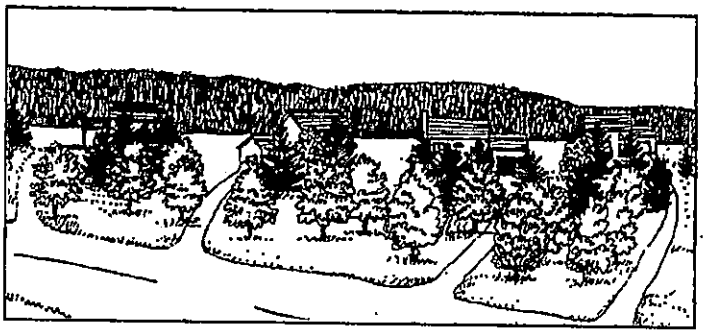
5. Design and locate utilities, drainage structures, bridges, lighting, signage, fences, walls and street furniture to harmonize with the surroundings and to create the least visual impact.

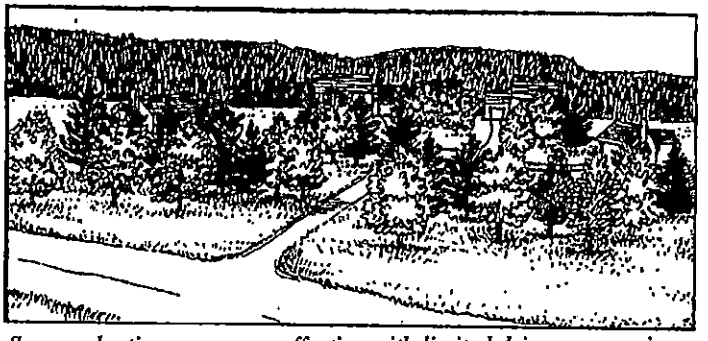
6. Design new structures to complement the site and surrounding community. This can be accomplished through the repetition of scale, proportion, mass, materials and/or details of the existing buildings on the site or in the community.





Units clustered with shared access have less visual impact





Screen plantings are more effective with limited driveway openings

7. Use indigenous species or ones commonly found in the area when landscaping. Planting designs should reinforce the character of the site, its ecologic significance, and its environmental function.

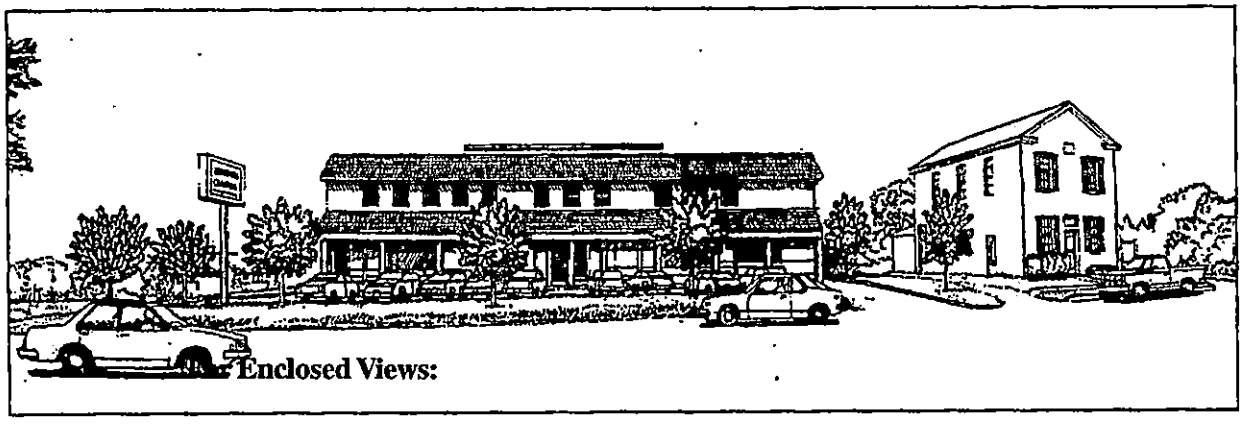
8. Complement existing vegetation with flowering or evergreen trees and shrubs, wildflowers, etc., for seasonal interest.

9. Use plant materials to frame particularly attractive views.

10. Create an interesting sequence of visual experiences with selective clearing and planting.

11. Locate parking, service and storage areas at the side or rear of the building(s), and screen them from the road to reduce their visual impact.

12. Encourage pedestrian or bike paths along scenic corridors.



Typical rural office building development

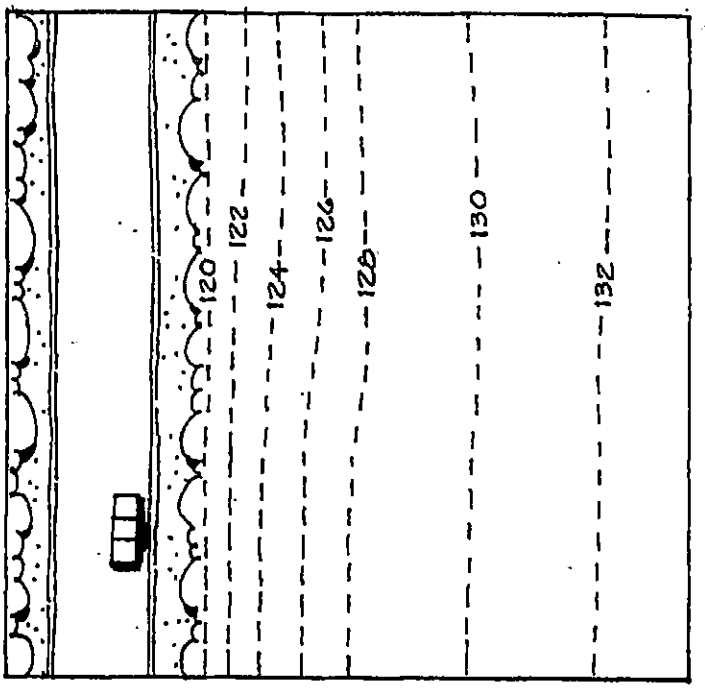
Sensitive development incorporates compatible architecture and signage, preserves existing trees, locates parking on the side and provides screening.

Development Guidelines

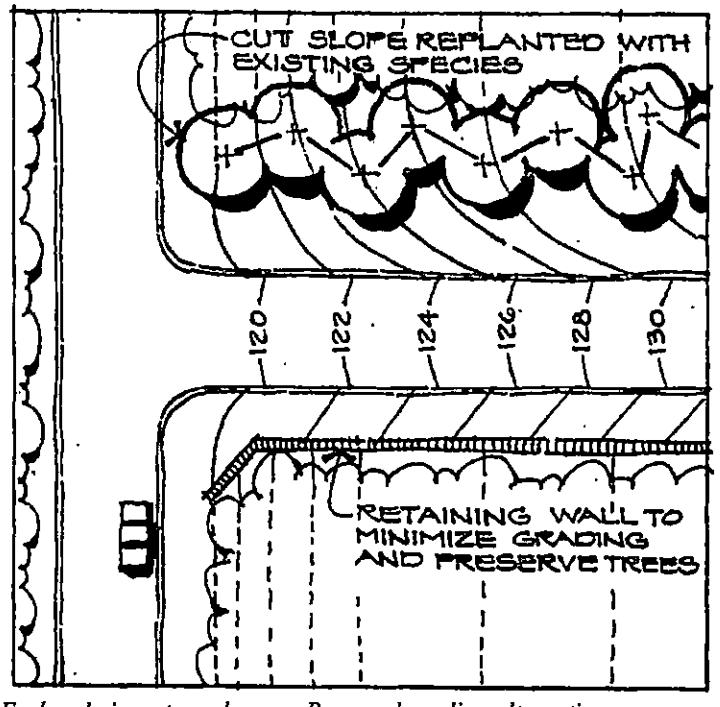
1. Maintain a buffer area between the road and the new development. The buffer should be wide enough to maintain the road's visual character, with a minimum width of at least 30 feet from the right-of-way.

2. Supplement a wooded buffer with evergreen trees and shrubs planted on the interior side to screen or partially screen new development.

3. Where the scenic road is bordered by residential or historic buildings, design new development to be compatible with the existing development in respect to building setbacks, height, scale, proportion, materials and design; site materials and design; paving design (vehicular and pedestrian) and landscaping, including street trees.



Enclosed view, steep slopes -- Existing condition



Enclosed view, steep slopes -- Proposed grading alternatives

1

2

Baltimore County - My Neighborhood

TETRA TECH

Jodi Hunt
Senior Permitting Specialist, Project Manager

EXPERIENCE SUMMARY

Ms. Jodi Hunt is a geologist and a project manager with 17 years of diversified environmental experience which includes both public and private sector work. Jodi was a geologist for approximately nine years with the New York State Department of Environmental Conservation (NYSDEC) Mineral Resources Program. Her experience includes a combination of site investigation and remediation, environmental law, compliance assurance, and permitting. After leaving the NYSDEC, Ms. Hunt worked as a Geologist/Project Manager focused on environmental auditing, Risk Management/Process Safety Management (RMP/PSM), chemical/petroleum bulk storage, erosion and sedimentation control, regulatory compliance, alternative energy, etc.

Areas of expertise include solar facility permitting and compliance assurance, glare/reflection analyses, solar site-suitability analysis, risk management, public outreach, regulatory applicability/compliance, construction oversight, sedimentation/erosion control, SEQR, etc.

Jodi has used this thorough knowledge of permitting and regulatory processes to develop solar power generating facilities in New York, Illinois, Maryland, and Massachusetts. Jodi has completed discretionary permitting on more than 50 solar development projects in the United States.

RELEVENT EXPERIENCE

Solar Development Environmental and Civil Due Diligence, Illinois: Clearway Energy Group (Formerly NRG)

Project Manager for portfolio feasibility analysis, regulatory applicability, risk evaluation, design considerations, site- suitability, environmental impact assessments, and discretionary permitting at the State, County and local level for approximately 60 proposed solar projects on agricultural and commercial sites. Due diligence efforts include environmental reviews, review of engineering design, critical issues analysis and land use constraints evaluation.

Solar Development Environmental Consulting Services, Illinois and Maryland:
Summit Ridge, LLC

Project Manager for geotechnical surveying, feasibility analysis, site-suitability, topographic and ALTA surveying, glare/reflection analyses, environmental impact assessments, and discretionary permitting at the State, County and local level for approximately 30 proposed solar projects on agricultural and commercial sites. Permitting efforts include project due diligence and environmental reviews, coordination of civil engineering design,

EDUCATION

BA, Geology & Environmental Sciences

Syracuse University, 2002

PROFESSIONAL AFFILIATIONS

NY Water Environmental Association (NYWEA)

Air & Waste Management Association (AWMA)

Society of Petroleum Engineers

Independent Oil & Gas Association (IOGA NY)

TRAINING/ CERTIFICATIONS

Environmental & Safety Supervisor, 2017

OSHA HAZWOPER 40 Hour, 2011

OSHA HAZWOPER C4 Supervisor

OSHA 30 Hour Construction

Contractor Quality Management, Army Corps of Engineers

Radiation Worker I and II Training

Sub-Surface Clearance Training

Process Safety Auditor (status pending)

EH&S Compliance Auditor Training

OFFICE

Rochester, New York

YEARS OF EXPERIENCE

17

PET. 2

meeting and corresponding with elected officials, presenting project details at Planning Board meetings, and representing the client during public hearings.

Solar Development Environmental Consulting Services, New York:
SunEdison/Forefront Power, LLC

Project Manager for geotechnical surveying, feasibility analysis, site- suitability, topographic and ALTA surveying, glare/reflection analyses, environmental impact assessments, and discretionary permitting at the State and local level for approximately 20 proposed solar projects on agricultural and commercial sites. Permitting efforts include meeting and corresponding with elected officials, presenting project details at Planning Board meetings, and representing the client during public hearings.

Solar Development Civil Design and Environmental Consulting Services, New York:
M+W Energy, Inc.

Project Manager for the preparation of civil engineering design documents for the purpose of obtaining building permits for approximately 10 proposed solar facilities. Finalized civil engineering design included geotechnical analysis, Stormwater management controls, construction specifications, and development of a Stormwater Pollution Prevention Plan (SWPPP) and submittal of the Notice of Intent (NOI) to apply for coverage under New York State's General Permit for Construction Activity.

Landfill Solar Development Services, Massachusetts:
Soltage, LLC

Project Manager for solar energy project development with a total energy potential of 16.5 MW of solar capacity at three closed and capped landfills in the Commonwealth of Massachusetts. Provided services include coordination of slope stability analyses, work plan development, correspondence with Massachusetts Department of Environmental Protection (MassDEP), and review of permitting documents.

Solar Energy Project Support Services, New York
Conti Enterprises

Subject Matter Expert for ten proposed utility scale, ground-mounted solar projects in New York State. Services provided include, environmental permitting support, environmental due diligence and wetland delineations.

Solar Energy Permitting Certification, Florida, New York, Vermont
Greenwood Energy

Provided third party permitting certification reviews for six ground mounted PV solar projects. Four of the solar projects are greenfield sites located in New York State and two of the projects are located on landfill sites in Florida.

Environmental Professional, Various Clients, Multiple Locations

As an Environmental Professional, prepared or assisted in the preparation of more than 30 Phase I ESAs in several states across the United States. The ESAs have included both public and private sector clients for commercial, industrial, and residential, properties.

PREVIOUS EXPERIENCE

In-Situ Thermal Remediation
Diaz Chemical Corporation Superfund Site, New York
U.S. Army Corps of Engineers

Project Lead and Site Safety and Health Officer (SSHO) for the remediation of a 5-acre former halogenated and specialty chemicals manufacturing plant. Project included in-situ thermal remediation (ISTR) of PCB, VOC and SVOC impacted soil and ground water on a select percentage of the site to establish a basis of design for full-scale implementation of ISTR. Project responsibilities included preparation of NYS Department of Environmental Conservation equivalency permits; coordination with local utilities and municipalities to communicate project objectives and secure permits; management of pre-design investigation tasks; management of pre-construction site preparation; full time health and safety oversight and CQA team; meeting the substantive requirements of the Record of Decision for the site and local ordinances.

Contaminated Site Management & Remediation
NoramPac/GreenPac Mill, New York

Team Lead for a Brownfield Cleanup Program (BCP) site to remediate an approximately 20,000 acre property contaminated with metal, VOCs, and elevated radioactivity. Remedial Investigation project work included subsurface assessment/investigation, excavation oversight, soil and water sampling, building demolition oversight, utility line and drainage structure excavation oversight, etc.

Regulatory Applicability Analysis/Compliance Assurance Services:
Amazon, Chevron, Pepsi Co., etc.

Subject matter expert on Compliance Assurance projects for several international companies. Developed and implemented permitting programs including SEQR, chemical/petroleum storage, construction/industrial stormwater, threatened and endangered species, navigable waters, due diligence, etc.

Upstream Oil & Gas Environmental Consulting Services:
Chevron

Acted as a subject matter expert on a Regulatory Compliance Assurance project for an Upstream Business Unit of a Major Oil Company. Project included: applicability assessment for eight states and federal laws using a top down approach; gathering of site data across the business unit by survey method; development of descriptions of standard work practices and roles and responsibilities; and compliance check development and review.

Process Safety Management/Risk Management Program Services (PSM/RMP)
Pepsi Co, Mueller Quaker, Amazon, Worthington Industries, etc.

Served as a subject matter expert in the development of PSM/RMP, audits, code reviews, and best management practice analysis for multiple local and international clients. Program development included the preparation of release scenario modeling, community impact reports, mechanical integrity, pre-start-up safety reviews, operating procedures, emergency response procedures and facilitation of a Process Hazards Analysis (PHA). Worked with several facilities to respond to EPA administrative orders associated with RMP/PSM/Emergency Response programs.

Spill Prevention, Control and Countermeasure (SPCC) Plan Development
Mueller Quaker, Pepsi Co, Amazon, Recycled Energy Development (RED)
Served as a subject matter expert in the development of numerous federally mandated SPCC Plans including spill response, emergency planning, secondary containment etc.

Natural Gas Pipeline Environmental Consulting Services
Chevron, Williams Companies, Inc.,
Managed erosion and sedimentation control measures for multiple natural gas gathering pipeline projects, requiring comprehensive environmental services ranging from siting/routing support, impact assessment, permitting and environmental inspection for active construction projects.

Spill Response and Environmental Services
Talisman Energy, Fortuna Energy
Spill response Team Lead for several international O&G Clients. Services included immediate deployment to spill location, spill delineation, regulatory agency notifications, sub-contractor management, soil and water analysis, etc. Organized the clean-up and potential plugging of leaking and/or abandoned oil production wells and their well pad locations.

Environmental Health & Safety Auditing Services
Confidential Client
Project manager and subject matter expert for EHS regulatory compliance audits, on-site and off-site hazardous analyses, emergency response training and program implementation, and code review for several facilities handling, corrosives, explosives and flammable propellants.

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION (NYSDEC), REGIONS 6, 7, 8, AND 9
Division of Mineral Resources, Bureau of Oil & Gas
Geologist
Performed technical and environmental evaluations on oil and gas well drilling permit applications and resolved technical deficiencies. Coordinated permit reviews within the New York State Department of Environmental Conservation (NYS DEC) and with local, State and Federal agencies. Performed field investigations and inspections on gas & oil wells in environmentally sensitive areas including wells over 6,000 feet deep, and high pressure wells. Monitored all phases of gas and oil well drilling, production and plugging operations including casing, cementing and stimulation to ensure adherence to rules, regulations and special permit conditions. Conducted detailed compliance inspections of drilling and production equipment and inspected underground natural gas storage and liquefied petroleum gas storage facilities. Investigated complaints and non-routine incidents involved with well drilling, completion, or production.

Field Technician/Geologist
Worked with the Regional Engineer to develop sampling guidelines, sampling sequences, spill site analyses, groundwater flow, sampling, etc. Performed technical and environmental review of cylinder gas audits, continuous emissions monitoring reports, Air State Facility Permits, and Title V Permits. Managed the Departments Air State Facility tracking program.

Mineral Resources Technician/Geologist
Worked with a Mined Land Reclamation Specialist in the regulation of mining activity. Performed SEQR reviews on mining permit applications, Mined Land Use Plans, Environmental Impact Statements, and SPDES Permits. Assisted in the delineation and enforcement of wetland boundaries through identification of plants and soils. Provided oversight for active mine operations.

Environmental Law Technician/Geologist
Worked with the Assistant Regional Attorney to draft consent orders and other legal documents pertaining to New York State's environmental Laws.

UNITED STATES PEACE CORPS

Project Manager/Extension Agent
Senegal, West Africa
Worked for more than two years in a remote African village to extend land reclamation and reforestation techniques to the local environmental sector. Evaluated potential remediation strategies for the reclamation of surficial salt mines and educated local authorities on sound environmental remediation techniques. Secured grants and funding necessary to construct water wells needed to supply the demand for fresh water. Provided construction oversight during well construction. Facilitated training sessions and group demonstrations to promote environmentally sound practices. Language proficiencies include African French and Sereere.

MITCHELL J. KELLMAN

VICE PRESIDENT - DIRECTOR OF ZONING SERVICES

Education

Towson University, BA, Geography and Environmental Planning, Urban Planning

Towson University, Masters, Geography and Environmental Planning, Urban Planning

Professional Summary

Mr. Kellman has over 30 years of experience working in zoning, subdivision, and development regulations for the public and private sector; 15 of those years were with the Baltimore County Office of Planning and Zoning. His responsibilities included review, approval and signatory powers on behalf of the Director of Final Development Plans and Record Plats. He represented the Zoning Office on the County Development Review Committee, a body reviewing the procedural compliance of all development submissions. Review of petitions and site plans filed for zoning hearing approvals were within his authority. Additionally, he supervised county review staff, met with professionals and the public on development project matters, and made determinations regarding developments and their compliance with county regulations. In working for DMW, he has extensive experience in testifying before the Baltimore County Zoning Commissioner, Hearing Officer, Administrative Law Judges, and Board of Appeals. He also regularly represents the company at the Baltimore County Development Review Committee meetings. He is also a member of Baltimore County's Design Review Panel, which formulates design recommendations to the Planning staff and Administrative Law Judges, and the Landmarks Preservation Commission.

Partial List of Projects

Saint Michael's Roman Catholic Church, Howard County, MD

Hunt Valley Towne Centre, Baltimore County, MD

Charlestown Retirement Community, Baltimore County, MD

Goucher College, Baltimore County, MD

Greenspring Quarry, Baltimore County, MD

Norris Acura West, Howard County, MD

Sheppard Pratt Health Systems (Elkridge Campus), Howard County, MD

Towson Town Center, Baltimore County, MD

Corridor 95 Business Park, Howard County, MD

Memberships and Associations

Baltimore County Landmarks Preservation Commission, 2014, 2015, 2016, 2017, 2018

Baltimore County Design Review Panel, 2012, 2013, 2014, 2015, 2016, 2017, 2018

Greater Towson Committee, Planning & Development Sub-Committee, 2012, 2013, 2014, 2015, 2016, 2017, 2018

Greater Towson Committee, Government Relations Sub-Committee Chair, 2013, 2014, 2015

Greater Towson Committee Board of Directors – 2014 (Secretary), 2015, 2016, 2017, 2018

Leadership Baltimore County, 2013

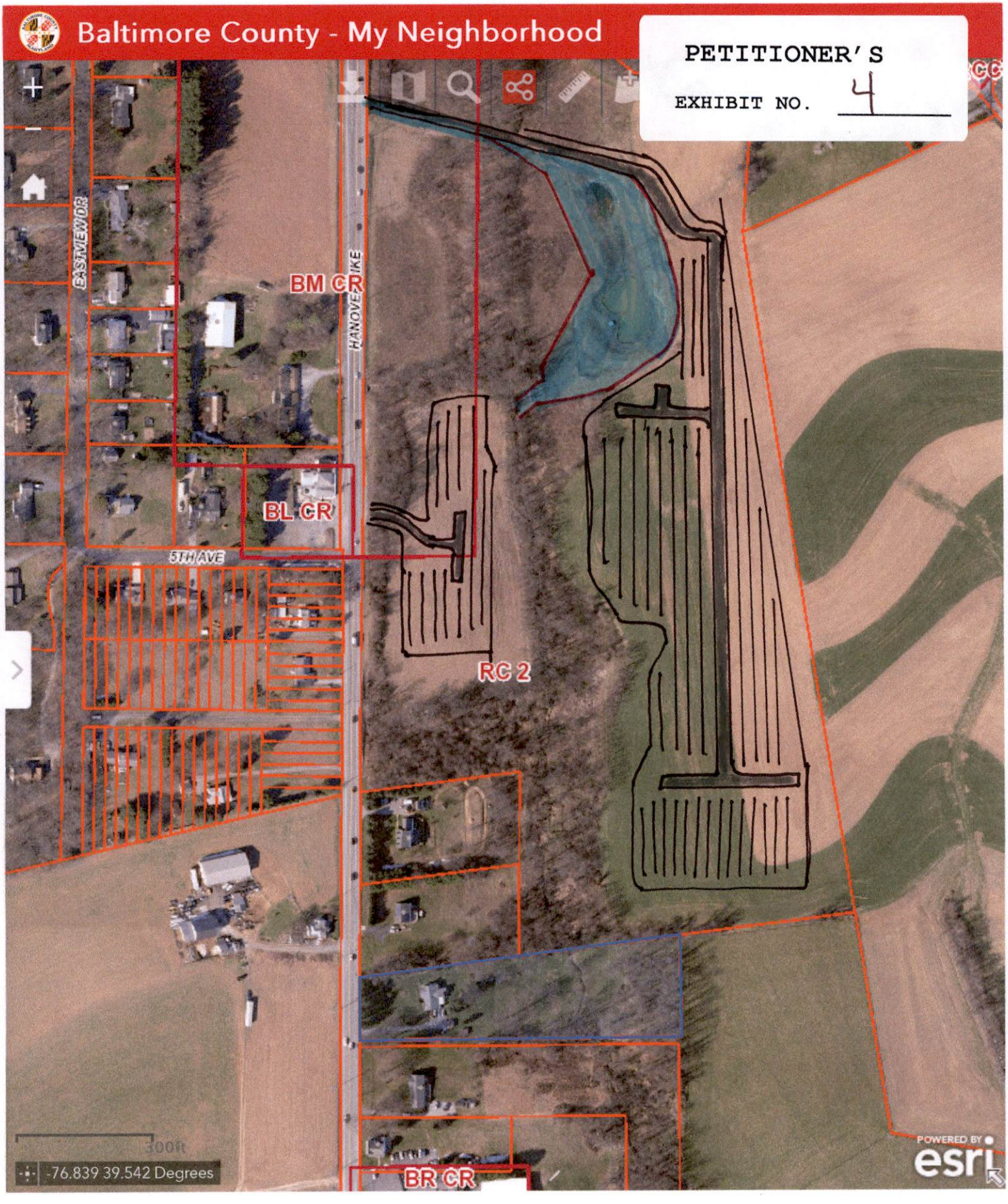
Leadership Baltimore County, Class Interviewer, Member, 2015

Professional Experience

Daft-McCune-Walker, Inc., Towson, MD: 2000-Present

Baltimore County Zoning Review Office, Towson, MD: 1985-2000

PET. 3


Baltimore County - My Neighborhood
PETITIONER'S
EXHIBIT NO. 4
EASTVIEW DR
HANOVER PIKE
BM CR
BL CR
5TH AVE
RC 2
BR CR
300ft
-76.839 39.542 Degrees
POWERED BY esri

1

14999 Hanover Pike
Upperco, Maryland
Google
Street View - Aug 2018
Hanover Pike
Google

2

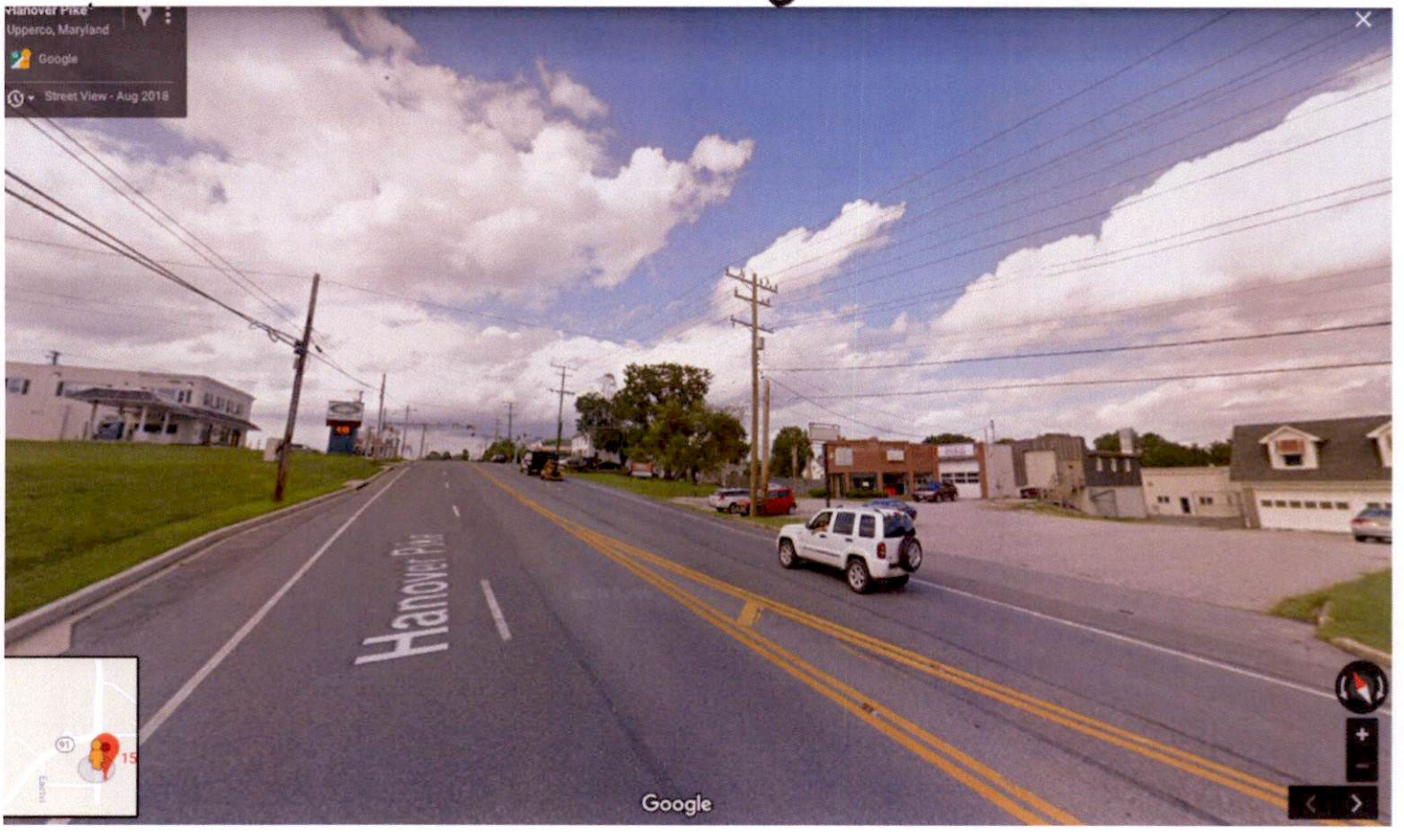
15100 MD-30
Upperco, Maryland
Google
Street View - Aug 2018
Colonial Inn
Google

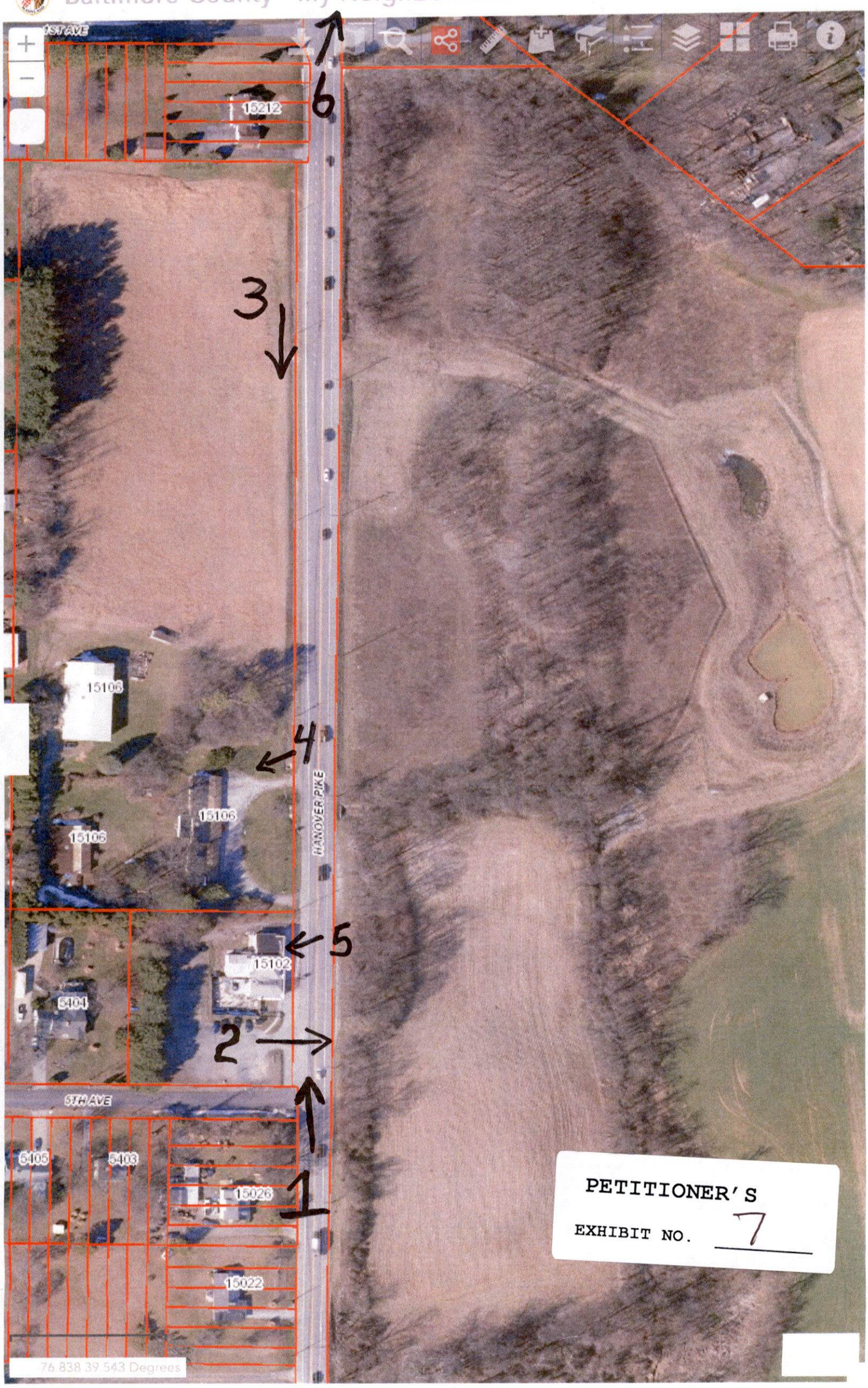
15130 Hanover Pike
Upperco, Maryland
Google
Street View - Aug 2018
15215 Hano
Google

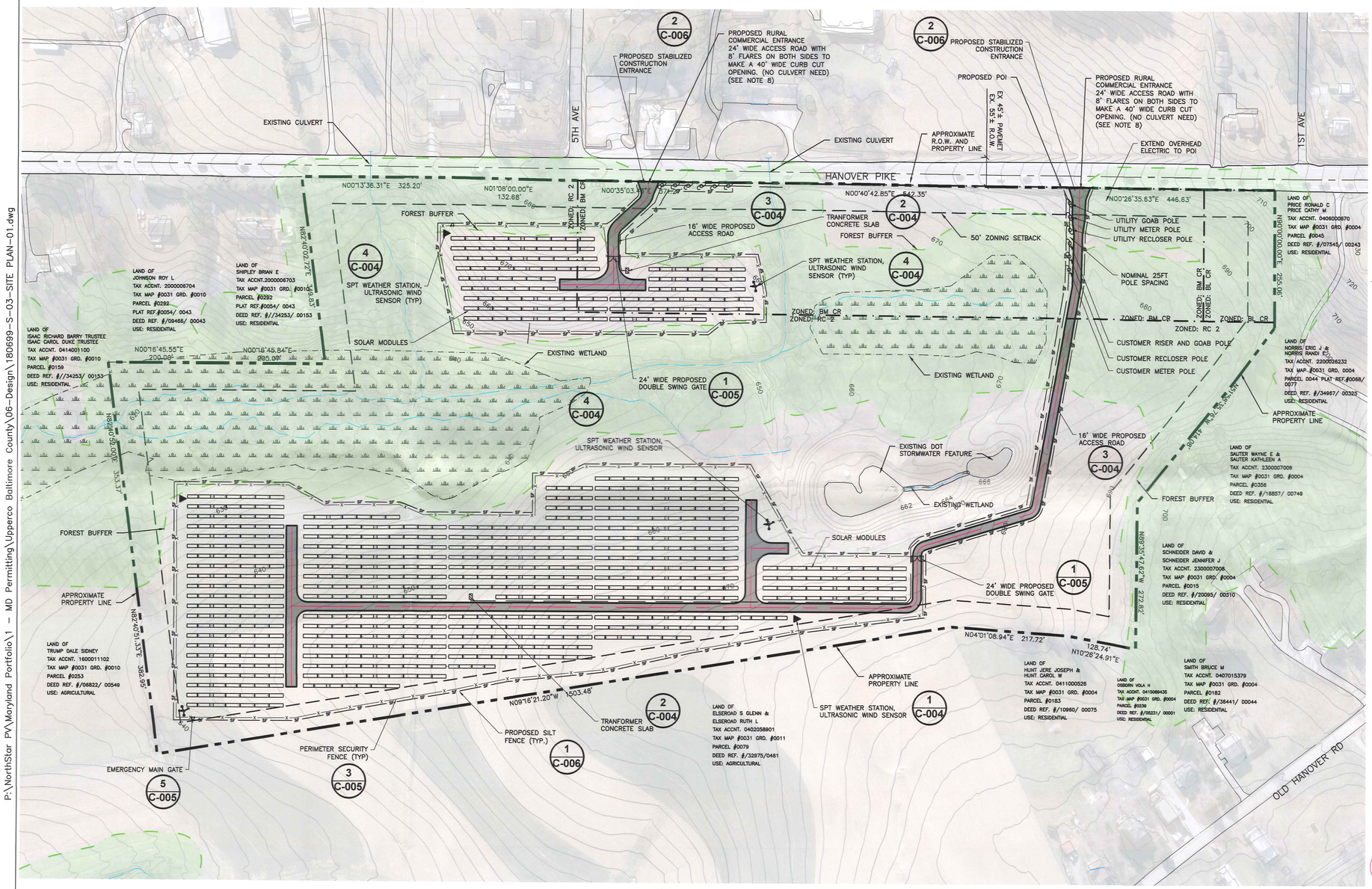
4

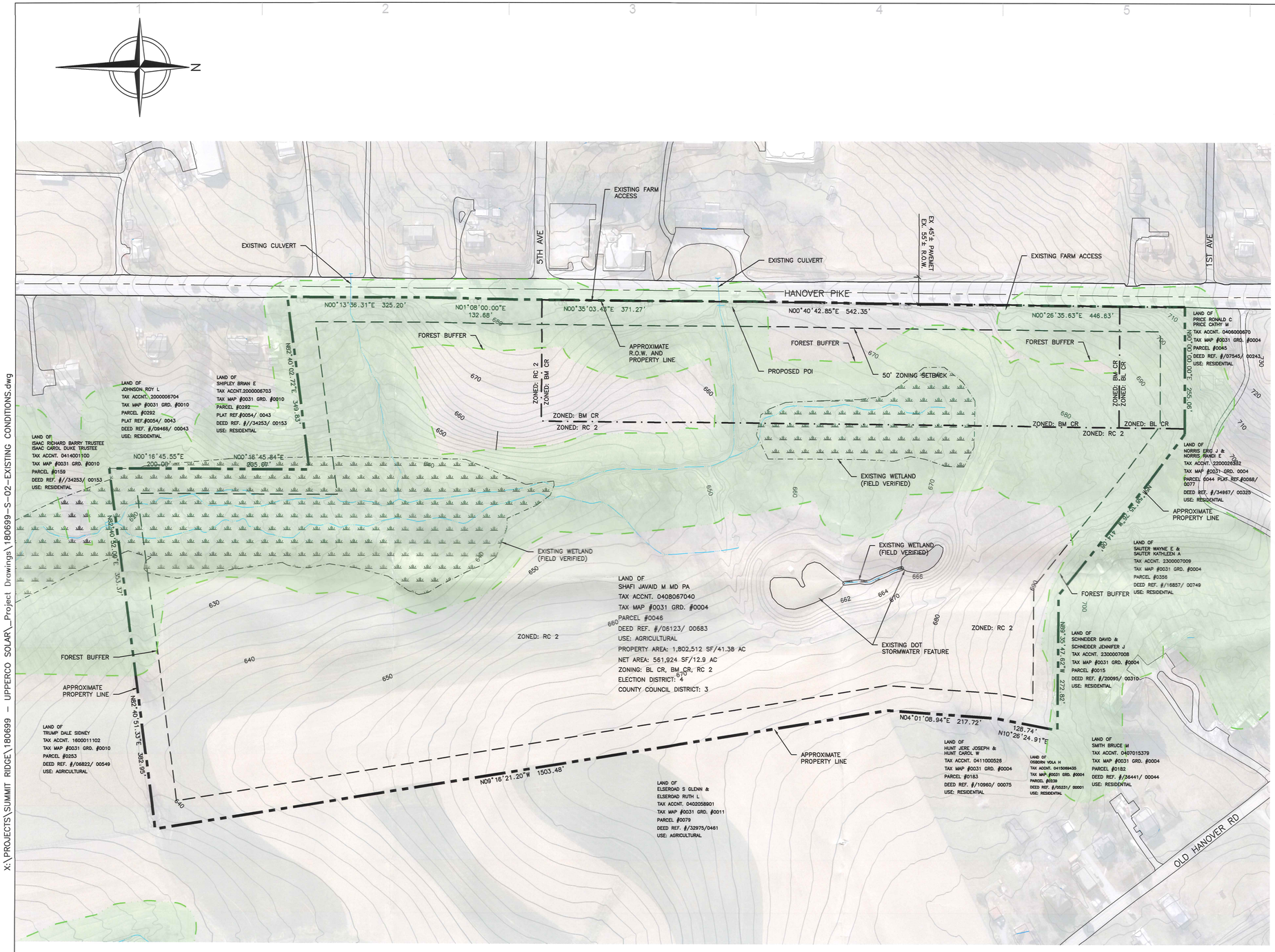
15130 Hanover Pike
Upperco, Maryland
Google
Street View - Aug 2018
El-Car
MOTEL
Colonial Inn
Google

15102 MD-30
Upperco, Maryland
Google
Street View - Aug 2018
Colonial Inn
MD 30
Google


Hanover Pike
Upperco, Maryland
Google
Street View - Aug 2018
Hanover Pike
Google


Baltimore County - My Neighborhood
1ST AVE
15212
6
3
15108
4
15106
15106
HANOVER PIKE
5
15102
5404
2
5TH AVE
5405
5403
15026
1
15022
76.838 39.543 Degrees
PETITIONER'S
EXHIBIT NO. 7


2 C-006
PROPOSED RURAL COMMERCIAL ENTRANCE 24' WIDE ACCESS ROAD WITH 8' FLARES ON BOTH SIDES TO MAKE A 40' WIDE CURB CUT OPENING. (NO CULVERT NEED) (SEE NOTE 8)
PROPOSED STABILIZED CONSTRUCTION ENTRANCE
EXISTING CULVERT
5TH AVE
HANOVER PIKE
PROPOSED POI
EX. 45' ± R/W
APPROXIMATE R.O.W. AND PROPERTY LINE
EXTEND OVERHEAD ELECTRIC TO POI
1ST AVE
N00°13'36.31"E 325.20'
N01°08'00.00"E 132.68'
N00°35'03.49"E 67.29'
N00°40'42.85"E 542.35'
N00°26'35.63"E 446.63'
3 C-004
2 C-004
4 C-004
FOREST BUFFER
16' WIDE PROPOSED ACCESS ROAD
TRANFORMER CONCRETE SLAB
50' ZONING SETBACK
SPT WEATHER STATION, ULTRASONIC WIND SENSOR (TYP)
SOLAR MODULES
EXISTING WETLAND
ZONED: BM CR
ZONED: RC 2
UTILITY GOAB POLE
UTILITY METER POLE
UTILITY RECLOSER POLE
NOMINAL 25FT POLE SPACING
CUSTOMER RISER AND GOAB POLE
CUSTOMER RECLOSER POLE
CUSTOMER METER POLE
24' WIDE PROPOSED DOUBLE SWING GATE
1 C-005
EXISTING DOT STORMWATER FEATURE
APPROXIMATE PROPERTY LINE
PROPOSED SILT FENCE (TYP.)
PERIMETER SECURITY FENCE (TYP)
3 C-005
EMERGENCY MAIN GATE
5 C-005
1 C-006
TRANFORMER CONCRETE SLAB
2 C-004
SPT WEATHER STATION, ULTRASONIC WIND SENSOR
1 C-004
N09°16'21.20"W 1503.48'
N04°01'08.94"E 217.72'
N10°26'24.91"E 128.74'
OLD HANOVER RD
LAND OF JOHNSON ROY L TAX ACCNT. 2000006704 TAX MAP #0031 GRD. #0010 PARCEL #0292 PLAT REF.#0054/ 0043 DEED REF. #//09468/ 00043 USE: RESIDENTIAL
LAND OF SHIPLEY BRIAN E TAX ACCNT.2000006703 TAX MAP #0031 GRD. #0010 PARCEL #0292 PLAT REF.#0054/ 0043 DEED REF. #//34253/ 00153 USE: RESIDENTIAL
LAND OF ISAAC RICHARD BARRY TRUSTEE ISAAC CAROL DUKE (TRUSTEE TAX ACCNT. 0414001100 TAX MAP #0031 GRD. #0010 PARCEL #0159 DEED REF. #//34253/ 00153 USE: RESIDENTIAL
LAND OF TRUMP DALE SIDNEY TAX ACCNT. 1600011102 TAX MAP #0031 GRD. #0010 PARCEL #0253 DEED REF. #/08822/ 00549 USE: AGRICULTURAL
LAND OF ELSEROAD S GLENN & ELSEROAD RUTH L TAX ACCNT. 0402058901 TAX MAP #0031 GRD. #0011 PARCEL #0079 DEED REF. #/32975/0461 USE: AGRICULTURAL
LAND OF HUNT JERE JOSEPH & HUNT CAROL W TAX ACCNT. 0411000526 TAX MAP #0031 GRD. #0004 PARCEL #0183 DEED REF. #/10960/ 00075 USE: RESIDENTIAL
LAND OF OSBORN VOLA H TAX ACCNT. 0415068435 TAX MAP #0031 GRD. #0004 PARCEL #0239 DEED REF. #/08231/ 00001 USE: RESIDENTIAL
LAND OF SMITH BRUCE M TAX ACCNT. 0407015379 TAX MAP #0031 GRD. #0004 PARCEL #0182 DEED REF. #/36441/ 00044 USE: RESIDENTIAL
LAND OF SCHNEIDER DAVID & SCHNEIDER JENNIFER J TAX ACCNT. 2300007008 TAX MAP #0031 GRD. #0004 PARCEL #0015 DEED REF. #/20095/ 00310 USE: RESIDENTIAL
LAND OF SAUTER WAYNE E & SAUTER KATHLEEN A TAX ACCNT. 2300007009 TAX MAP #0031 GRD. #0004 PARCEL #0356 DEED REF. #/16857/ 00749 USE: RESIDENTIAL
LAND OF PRICE RONALD C PRICE CATHY M TAX ACCNT. 0406000870 TAX MAP #0031 GRD. #0004 PARCEL #0045 DEED REF. #/07545/ 00243 USE: RESIDENTIAL
LAND OF NORRIS ERIC J & NORRIS RANDI E TAX ACCNT. 2200026232 TAX MAP #0031 GRD. 0004 PARCEL 0044 PLAT REF.#0068/ 0077 DEED REF. #/34987/ 00325 USE: RESIDENTIAL
APPROXIMATE PROPERTY LINE
FOREST BUFFER
SOLAR MODULES
APPROXIMATE PROPERTY LINE
FOREST BUFFER
N82°40'02.72"E 1249.83'
N00°16'45.55"E 200.08'
N00°16'45.84"E 265.09'
N28°40'13.43"E 382.39'
N28°40'13.43"W 353.37'
N82°40'02.72"E 1249.83'
N82°40'02.72"E 1249.83'
N28°40'13.43"W 272.87'
N82°40'02.72"E 1249.83'
N82°40'02.72"E 1249.83'
N82°40'02.72"E 1249.83



NOTES:

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2. FOREST BUFFER INFORMATION OBTAINED FROM BALTIMORE COUNTY GIS.
3. THIS DATA IS REFERENCED HORIZONTALLY TO THE HARN/MD MARYLAND STATE PLANE ZONE, US FOOT. VERTICALLY TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
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5. CONTOURS SHOWN HEREIN WERE FROM THE BALTIMORE COUNTY GIS DATA PORTAL.
6. BEARINGS AND DISTANCES SHOWN ARE LABELS PLACED ON GIS LINEWORK AND HAS NOT BEEN REVIEWED BY A LICENSED SURVEYOR TO MATCH THE DEED INFORMATION.
7. PROPERTY OWNERSHIP INFORMATION OBTAINED FROM BALTIMORE COUNTY REAL PROPERTY GIS DATA PORTAL.
8. THE PROPOSED SOLAR PROJECT WILL COMPLY WITH PART 4E OF THE BALTIMORE COUNTY ZONING REGULATIONS.
9. THE NUMBER OF SOLAR FACILITIES IN THE THIRD COUNCILMANIC DISTRICT SHALL NOT EXCEED 10.

NOT FOR CONSTRUCTION

Summit Ridge ENERGY

ICFTS MD SOLAR, LLC
1401 WILSON BLVD. SUITE 800
ARLINGTON, VA. 22209

TETRA TECH

PREPARED BY:
CORNERSTONE ENVIRONMENTAL GROUP, LLC
1200 SCOTTSVILLE ROAD, SUITE 320
ROCHESTER, NEW YORK 14624

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STAMP:

STATE OF MARYLAND
ADAM S. LARKY
No. 41078
PROFESSIONAL ENGINEER
11/1/18

11/1/18

ADAM S LARKY, P.E. DATE
MD. P.E. Lic. NO. 41078

PROFESSIONAL CERTIFICATION. I HEREBY 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 MARYLAND, LICENSE NO. 41078, EXPIRATION DATE: 9/14/19.

UPPERCO SOLAR

HANOVER PIKE
UPPERCO, MD 21155

PROJECT NUMBER:
194-6537.04.05

SHEET TITLE:
EXISTING CONDITIONS PLAN

SHEET SIZE:
ARCH "D"
24" X 36" (610 x 914)
0 ½" 1"

NO.	REVISION	DATE	INIT.
1	REMOVED PROPERTY DESCRIPTION	11/01/18	DSS

DATE:	10/26/2018
DRAWN BY:	DSS
ENGINEER:	AGB
APPROVED BY:	ASL

PROJECT PHASE:
DISCRETIONARY PERMITTING

SCALE:
1"=100'

SHEET NO.:
C-002

PETITIONER'S
EXHIBIT NO. 13

File: X:\PROJECTS\SUMMIT RIDGE\180699 - UPPERCO SOLAR_Project Drawings\180699-S-02-EXISTING CONDITIONS.dwg Layout: C-002 User: dsnd.stenehorn Nov 01, 2018 - 1:38pm
Printed: 11/1/2018 1:38 PM
X:\PROJECTS\SUMMIT RIDGE\180699 - UPPERCO SOLAR_Project Drawings\180699-S-02-EXISTING CONDITIONS.dwg

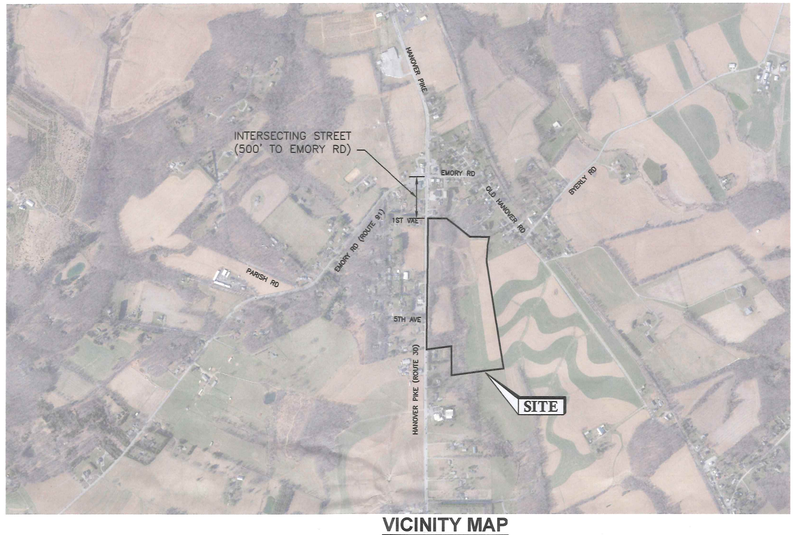
UPPERCO SOLAR PROJECT

HANOVER PIKE

BALTIMORE COUNTY, UPPERCO, MD 21155

DISCRETIONARY PERMITTING

PLAN TO ACCOMPANY ZONING HEARING FOR SPECIAL EXCEPTION PERMIT



VICINITY MAP
SCALE 1"=1000'

PROJECT DEVELOPER

ICFTS MD SOLAR, LLC
1401 WILSON BLVD.
SUITE 800
ARLINGTON, VA. 22209

CIVIL ENGINEER

TETRA TECH
1200 SCOTTSVILLE RD, BUILDING C, SUITE 320
ROCHESTER, NEW YORK 14624
(877) 294-9070

LICENSED ENGINEER:
ADAM S. LARKY, P.E.
MARYLAND PE No. 41078

SCOPE OF WORK

THIS DESIGN PACKAGE PROVIDES DRAWINGS FOR THE INSTALLATION OF A PHOTOVOLTAIC SYSTEM AT HANOVER PIKE, UPPERCO, BALTIMORE COUNTY, MARYLAND. ENVIRONMENTAL PLANS ARE NOT PART OF THE SCOPE OF THIS PLAN SET.

PROJECT DESCRIPTION

SYSTEM SIZE (DC)	2.09 MW
SYSTEM SIZE (AC)	--
MODULE TYPE.	HANWHA Q-CELL 345W SOLAR MODULES
MODULE QTY.	6058
INVERTERS	1
SEISMIC DESIGN CAT.	
SNOWLOAD	20 PSF
WINDSPEED	105 MPH
LATITUDE/LONGITUDE	39.5394792853521 / -76.8359754475013
AZIMUTH	180°
TILT	VARIABLE
PROJECT AREA	12.9 ACRES
RACKING TYPE	PILE DRIVEN

APPLICABLE CODES AND STANDARDS

- MARYLAND DEPARTMENT OF TRANSPORTATION, STATE HIGHWAY ADMINISTRATION, ACCESS MANUAL, LATEST EDITION.
- MARYLAND DEPARTMENT OF TRANSPORTATION, STATE HIGHWAY ADMINISTRATION, S.H.A.
- ENVIRONMENTAL GUIDE FOR ACCESS AND DISTRICT PERMIT APPLICANTS, JANUARY 2017.
- MARYLAND DEPARTMENT OF STATE POLICE, FIRE PREVENTION COMMISSION, STATE OF MARYLAND FIRE PREVENTION CODE, JANUARY 2016.
- MARYLAND DESIGN GUIDES, USDA NATURAL RESOURCES CONSERVATION SERVICE, LATEST EDITION.
- BALTIMORE COUNTY DEPARTMENT OF PERMITS, APPROVALS AND INSPECTIONS.

CIVIL SHEETS	
SHEET NUMBER	SHEET TITLE
C-001	CIVIL TITLE SHEET
C-002	EXISTING CONDITIONS PLAN
C-003	SITE PLAN
C-004	PROJECT DETAILS
C-005	FENCE AND GATE DETAILS
C-006	EROSION & SEDIMENT CONTROL DETAILS

ZONING SETBACKS		
SITE	TOWN	REQUIREMENTS
UPPERCO	BALTIMORE COUNTY	SETBACKS: FRONT -50 FT FROM TRACT BOUNDARY TO EQUIPMENT, REAR - 50 FT, SIDE - 50 FT

STANDARD	ZONE (RC-2-BM CR)	PROPOSED SOLAR FARM IN ZONE (RC-2-BM CR)
MINIMUM FRONT SETBACK	50 FT	50 FT (MIN.)
MAXIMUM FRONT SETBACK	NA	NA
MINIMUM SIDE SETBACK	50 FT	50 FT (MIN.)
MINIMUM REAR SETBACK	50 FT	50 FT (MIN.)

#2019-0141-X

NOT FOR CONSTRUCTION

Summit Ridge ENERGY

ICFTS MD SOLAR, LLC
1401 WILSON BLVD. SUITE 800
ARLINGTON, VA. 22209

TETRA TECH

PREPARED BY:
CORNERSTONE ENVIRONMENTAL GROUP, LLC
1200 SCOTTSVILLE ROAD, SUITE 320
ROCHESTER, NEW YORK 14624

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STATE OF MARYLAND
ADAM S LARKY
No. 41078
PROFESSIONAL ENGINEER
10/26/18

10/26/18
ADAM S LARKY, P.E. DATE
MD. P.E. Lic. NO. 41078

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UPPERCO SOLAR
HANOVER PIKE
UPPERCO, MD 21155

PROJECT NUMBER:
194-6537.04.05

SHEET TITLE:
CIVIL TITLE SHEET

SHEET SIZE:
ARCH "D"
24" X 36" (610 x 914)
0 ½" 1"

NO.	REVISION	DATE	INIT.

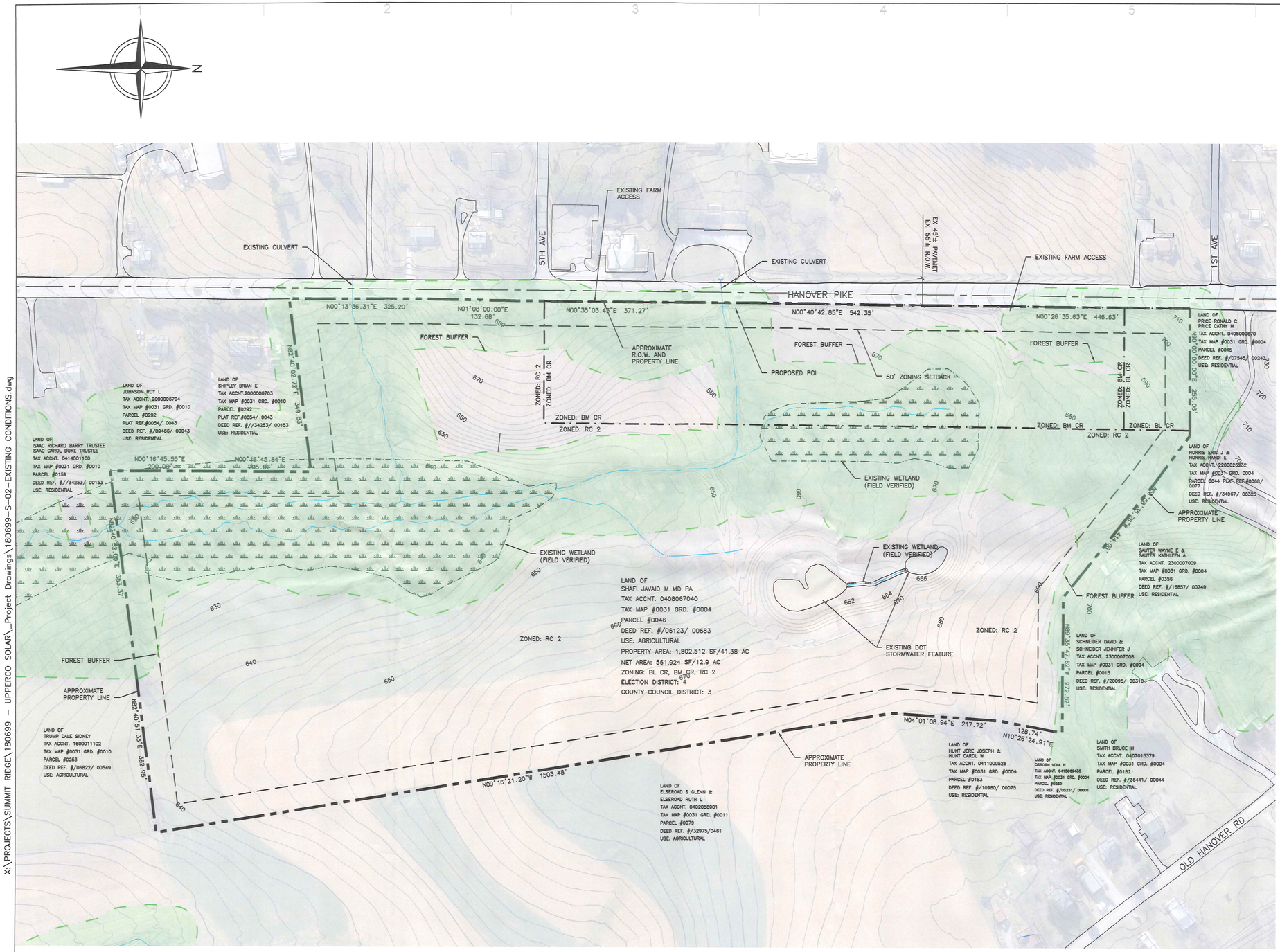
DATE:	10/26/2018
DRAWN BY:	DSS
ENGINEER:	AGB
APPROVED BY:	ASL

PROJECT PHASE:
DISCRETIONARY PERMITTING

SCALE:
AS SHOWN

SHEET NO.:
C-001

Printed: 10/26/2018 3:42 PM X:\PROJECTS\SUMMIT RIDGE\180699 - UPPERCO SOLAR_Project Drawings\180699-S-01-UPPERCO - COVR-00.dwg



0 100 200
SCALE IN FEET

LEGEND

- PROPERTY LINE
- ZONING SETBACK
- ROAD CENTERLINE
- 670 INDEX CONTOUR (EXISTING)
- 671 INTERMEDIATE CONTOUR (EXISTING)
- WATER COURSE (EXISTING)
- ZONING LIMITS (EXISTING)
- UTILITY POLE (EXISTING)
- FOREST BUFFER (EXISTING)
- WETLAND (EXISTING)

PROPERTY DESCRIPTION FOR

HANOVER PIKE, UPPERCO, MD 21155

BEGINNING AT A POINT ON THE EAST SIDE OF MARYLAND STATE ROAD 30, WHICH IS 40 FEET WIDE AT THE DISTANCE OF 50 FEET SOUTH OF THE CENTERLINE OF THE NEAREST IMPROVED INTERSECTING STREET, 1ST AVENUE WHICH IS 15 FEET WIDE, THENCE THE FOLLOWING COURSES AND DISTANCES: (1ST POINT OF CALL – "POC") N.00 26' 35.63'E. 446.63', (2ND POC) N.00 40' 42.85'E. 542.35', (3RD POC) N01 08' 00.00"E. 132.68', (4TH POC) N00 13' 36.31"E. 325.20', (5TH POC) N82 40' 02.72"E. 349.83', (6TH POC) N00 16' 45.84"E. 205.07', (7TH POC) N00 16' 45.55"E. 200.00', (8TH POC) N82 40' 52.00 E. 353.37', (9TH POC) N82 40' 51.33"E. 382.95', (10TH POC) N09 16' 21.20"W. 1503.48', (11TH POC) N04 01' 08.94"E. 217.72', (12TH POC) N10 26' 24.91"E. 128.74', (13TH POC) N89 35' 47.82"W. 272.82', (14TH POC) N51 58' 35.78"W. 417.08', (15TH POC) N90 00' 00.00"E. 255.06', BACK TO THE POINT OF BEGINNING AS DESCRIBED, CONTAINING 39.9 ACRES. LOCATED IN THE 4TH ELECTION DISTRICT AND 3RD COUNCIL DISTRICT.

NOTE: THE PROPERTY DESCRIPTIONS HEREIN WERE OBTAINED FROM BALTIMORE COUNTY GIS DATA.

NOTES:

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NOT FOR CONSTRUCTION

Summit Ridge ENERGY

ICFTS MD SOLAR, LLC
1401 WILSON BLVD. SUITE 800
ARLINGTON, VA. 22209

TETRA TECH

PREPARED BY:
CORNERSTONE ENVIRONMENTAL GROUP, LLC
1300 SCOTTSVILLE ROAD, SUITE 320
ROCHESTER, NEW YORK 14624
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UPPERCO SOLAR

HANOVER PIKE
UPPERCO, MD 21155

PROJECT NUMBER:
194-6537.04.05

SHEET TITLE:
EXISTING CONDITIONS PLAN

SHEET SIZE:
ARCH "D"
24" X 36" (610 x 914)
0 ½" 1"

NO.	REVISION	DATE	INIT.

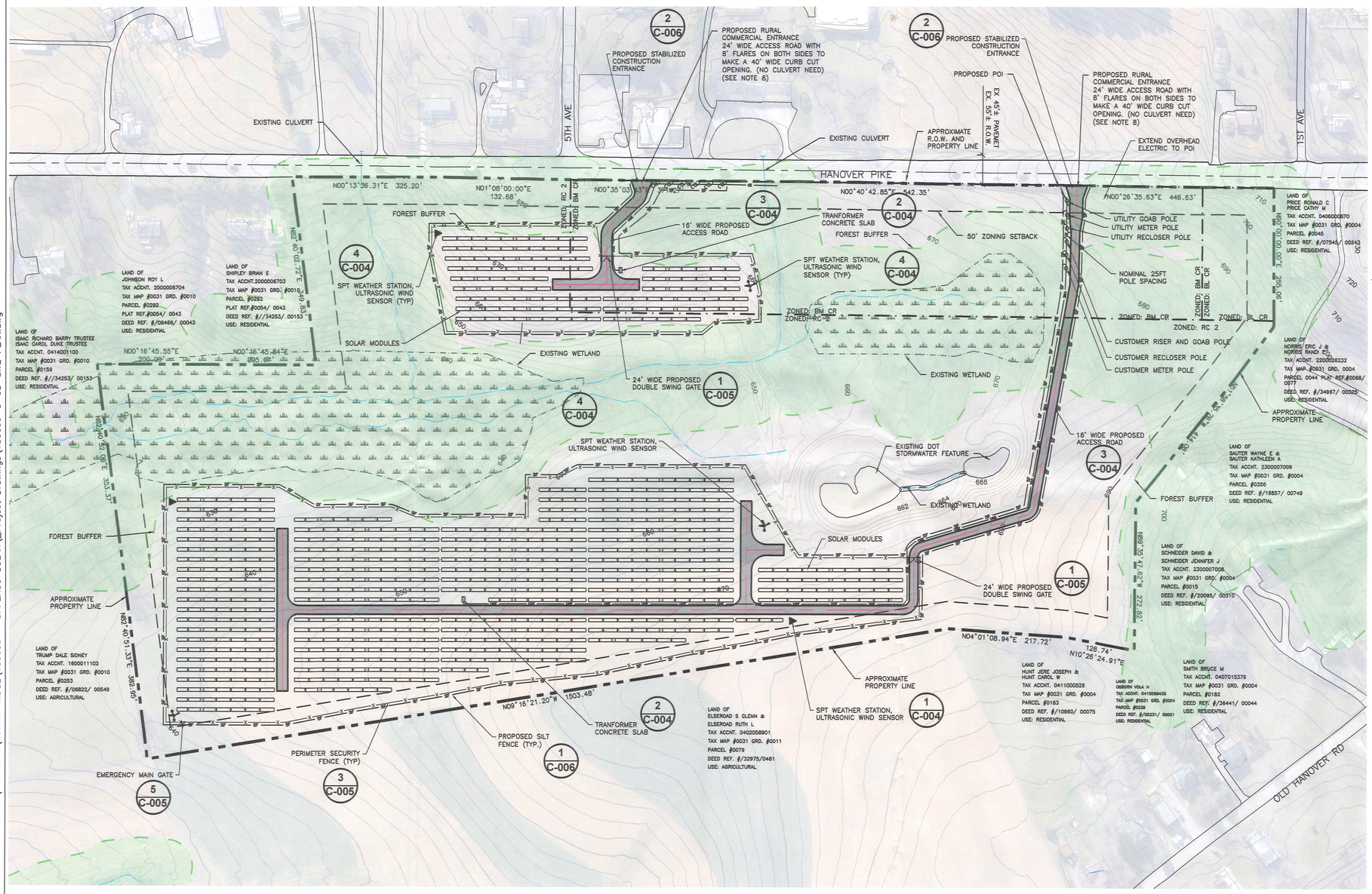
DATE:	10/26/2018
DRAWN BY:	DSS
ENGINEER:	AGB
APPROVED BY:	ASL

PROJECT PHASE:
DISCRETIONARY PERMITTING

SCALE:
1"=100'

SHEET NO.:
C-002

File: X:\PROJECTS\SUMMIT RIDGE\180699 – UPPERCO SOLAR_Project Drawings\180699-S-02-EXISTING CONDITIONS.dwg
Printed: 10/26/2018 3:42 PM
X:\PROJECTS\SUMMIT RIDGE\180699 – UPPERCO SOLAR_Project Drawings\180699-S-02-EXISTING CONDITIONS.dwg Layout: C-002 User: dsv4.dsteinhorn Oct 26, 2018 – 3:42pm



LEGEND

- PROPERTY LINE
- MUNICIPAL BOUNDARY
- ZONING LIMITS (EXISTING)
- ZONING SETBACK
- CENTERLINE
- WATER COURSE (EXISTING)
- UNDERGROUND ELECTRIC (PROPOSED)
- OVERHEAD ELECTRIC (PROPOSED)
- INDEX CONTOUR (EXISTING)
- INTERMEDIATE CONTOUR (EXISTING)
- EDGE OF ROAD / TRAIL (EXISTING)
- FENCE (EXISTING)
- FENCE (PROPOSED)
- WATER COURSE (EXISTING)
- UTILITY POLE (EXISTING)
- FOREST BUFFER (EXISTING)
- SILT FENCE (PROPOSED)
- WETLAND (EXISTING)
- UTILITY POLE (PROPOSED)
- ACCESS ROAD (PROPOSED)
- WEATHER STATION (PROPOSED)
- SOLAR MODULE (PROPOSED)

NOTES:

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7. PROPERTY OWNERSHIP INFORMATION OBTAINED FROM BALTIMORE COUNTY REAL PROPERTY GIS DATA PORTAL.
8. FINAL LOCATION AND DIMENSIONS OF ROADS, CULVERTS, AND ASSOCIATED ITEMS SHALL BE DESIGNED BY AN MARYLAND STATE PROFESSIONAL ENGINEER PRIOR TO CONSTRUCTION AND BE IN ACCORDANCE WITH ALL LOCAL AND STATE STANDARDS.
9. ANY PROPOSED SIGNS SHALL BE DESIGNED TO COMPLY WITH SECTION 450B(2)R OF THE BALTIMORE COUNTY ZONING REQUIREMENTS.
10. A LANDSCAPE BUFFER SHALL BE PROVIDED AROUND ANY PORTION OF THE SOLAR FACILITY THAT IS VISIBLE FROM ADJACENT RESIDENTIAL PROPERTY OR A PUBLIC STREET. LANDSCAPE BUFFER WILL BE DESIGNED IN ACCORDANCE WITH THE BALTIMORE COUNTY LANDSCAPE MANUAL.
11. THERE SHALL BE NO CLEARING, GRADING, CONSTRUCTION OR DISTURBANCE OF VEGETATION IN THE FOREST BUFFER, EXCEPT AS PERMITTED BY THE BALTIMORE COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION AND SUSTAINABILITY.
12. SILT FENCE MAY NEED TO BE EXTENDED BEYOND LIMITS SHOWN BASED ON FIELD CONDITIONS, FLOW PATHS ENCOUNTERED DURING CONSTRUCTION, AND ACTUAL DISTURBANCE LIMITS.
13. SEE ELECTRICAL/STRUCTURAL DRAWINGS (UNDER SEPARATE COVER) FOR INVERTER, ELECTRICAL UTILITY POLE AND CONNECTION DETAILS.

NOT FOR CONSTRUCTION

Summit Ridge ENERGY

ICFTS MD SOLAR, LLC
1401 WILSON BLVD. SUITE 800
ARLINGTON, VA. 22209

TETRA TECH

PREPARED BY:
CORNERSTONE ENVIRONMENTAL GROUP, LLC
1200 SCOTTSVILLE ROAD, SUITE 320
ROCHESTER, NEW YORK 14624

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STAMP:

STATE OF MARYLAND ADAM S LARKY No. 41078 PROFESSIONAL ENGINEER
10/26/18

10/26/18
ADAM S LARKY, P.E. DATE
MD. P.E. Lic. NO. 41078

PROFESSIONAL CERTIFICATION. I HEREBY 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 MARYLAND, LICENSE NO. 41078, EXPIRATION DATE: 9/14/19.

UPPERCO SOLAR

HANOVER PIKE
UPPERCO, MD 21155

PROJECT NUMBER:
194-6537.04.05

SHEET TITLE:
SITE PLAN

SHEET SIZE:
ARCH "D"
24" X 36" (610 x 914)
0 ½" 1"

NO.	REVISION	DATE	INIT.

DATE:	10/26/2018
DRAWN BY:	DSS
ENGINEER:	AGB
APPROVED BY:	ASL

PROJECT PHASE:
DISCRETIONARY PERMITTING

SCALE:
1"=100'

SHEET NO.:
C-003

File: X:\PROJECTS\SUMMIT RIDGE\180699 – UPPERCO SOLAR_Project Drawings\180699–S–03–SITE PLAN.dwg Layout: C–003 User: david.steinhorn Oct 26, 2018 – 3:44pm
Printed: 10/26/2018 3:44 PM
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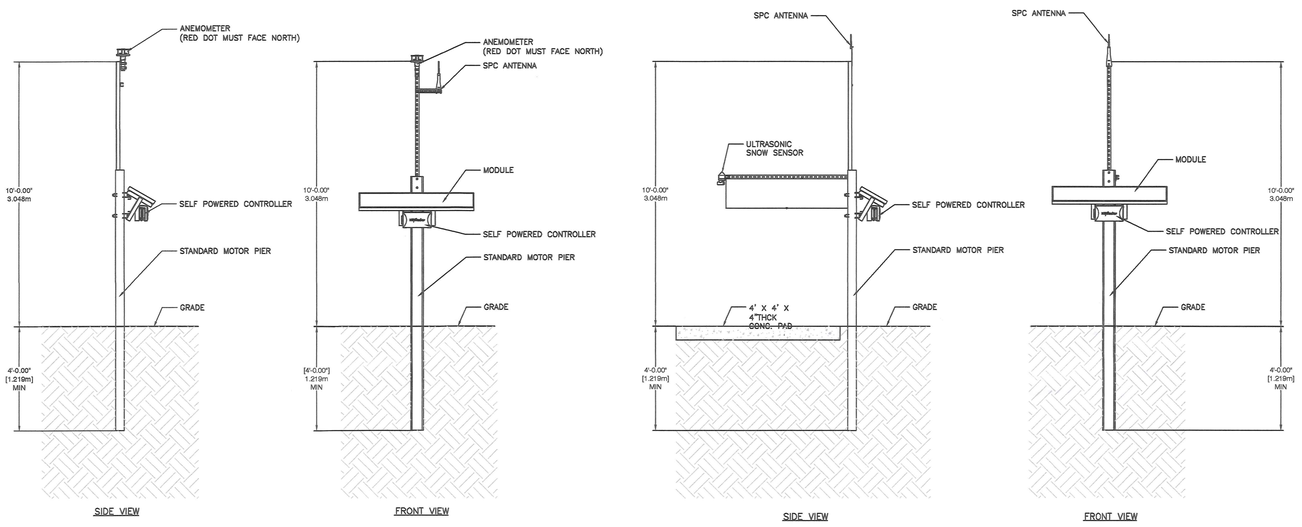
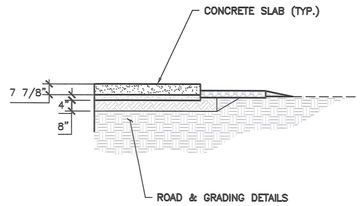


ULTRASONIC WIND SENSOR **SPT WEATHER STATION**

SPT WEATHER STATION, ULTRASONIC WIND SENSOR

DETAIL 1 / C-004

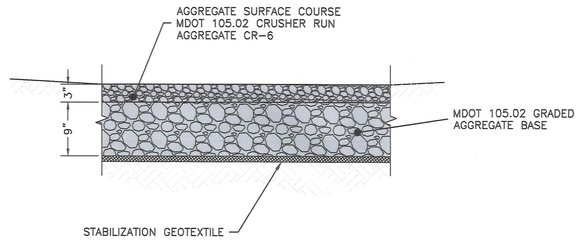
SCALE: N.T.S.



INVERTER CONCRETE SLAB

DETAIL 2 / C-004

SCALE: N.T.S.

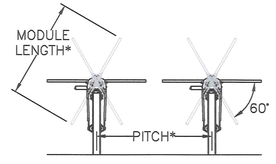


ACCESS ROAD

DETAIL 3 / C-004

SCALE: 1" = 1'

SYSTEM SPECIFICATIONS				
AC	–	MW	TOTAL MODULES	6058
DC	2.090	MW	MODULES PER STRING	VARIES
MODULE CAPACITY	345	W	NUMBER OF STRINGS	VARIES
INVERTER CAPACITY	–	MW	NUMBER OF INVERTERS	1
DC/AC	–		MODULE NAME	HANWHA
PITCH	18.50	FT	MODULE MODEL	Q.PLUS L-G4.2
MODULE(S) LENGTH	6.54	FT	GROUND COVER RATIO (GCR)%	35.36



*SEE SYSTEM SPECIFICATIONS

NEXTRACKER SYSTEM

DETAIL 4 / C-004

SCALE: N.T.S.

NOT FOR CONSTRUCTION

Summit Ridge ENERGY

ICFTS MD SOLAR, LLC
1401 WILSON BLVD. SUITE 800
ARLINGTON, VA. 22209

TETRA TECH

PREPARED BY:
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STATE OF MARYLAND · ADAM S. LARKY · No. 41078 · PROFESSIONAL ENGINEER · 10/26/18

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PROJECT PHASE:
DISCRETIONARY PERMITTING

SCALE:
AS SHOWN

SHEET NO.:
C-004

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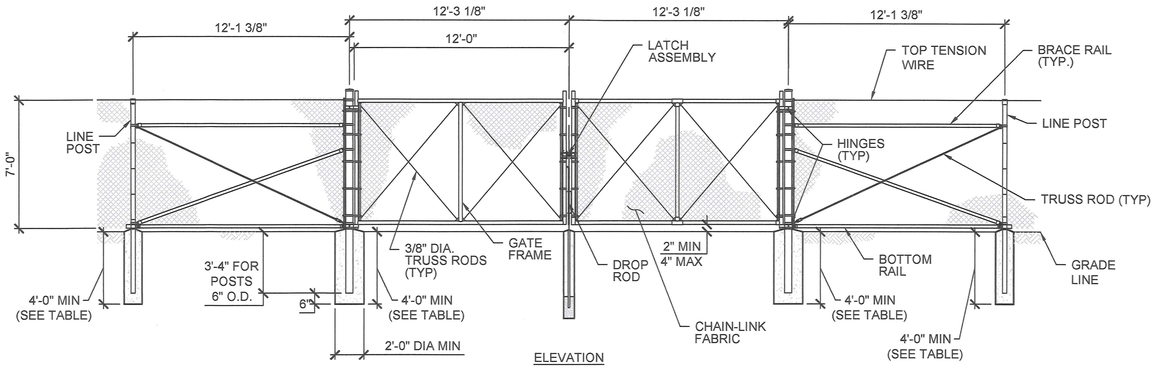

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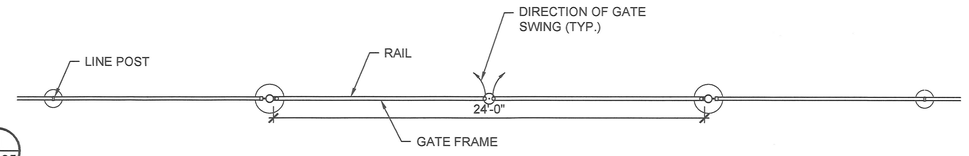
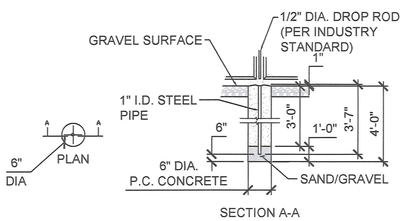


PLAN

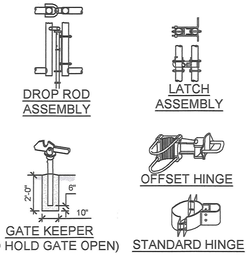
TYPICAL ACCESS GATE

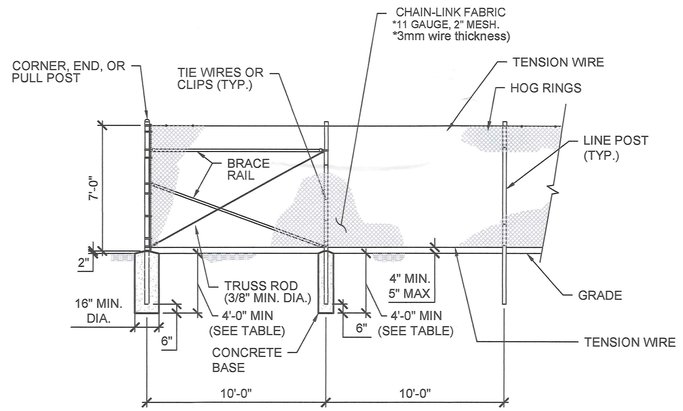
DETAIL 1 / C-005

SCALE: 1/4" = 1'-0"



DROP ROD FOUNDATION

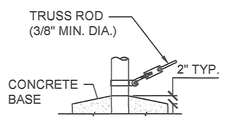




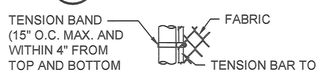
ACCESS GATE HARDWARE

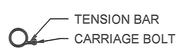
DETAIL 2 / C-005

SCALE: N.T.S.

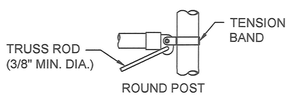


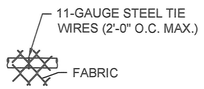
TRUSS ROD AND BAND





END OR GATE POST DETAIL

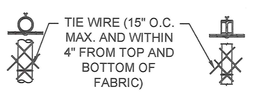




BOTTOM OR BRACE RAIL ATTACHMENT

BRACE RAIL CLAMP DETAILS

TENSION BAND DETAIL



ROUND POST ATTACHMENT

H-BEAM ATTACHMENT

CHAINLINK FENCE HARDWARE

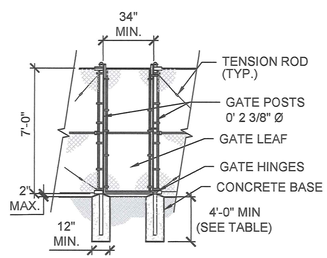
DETAIL 4 / C-005

SCALE: N.T.S.

PERIMETER FENCE

DETAIL 3 / C-005

SCALE: 1/4" = 1'-0"



EMERGENCY MAN GATE

DETAIL 5 / C-005

SCALE: 1/4" = 1'-0"

SHEET NOTES

1. WIRE TIES, RAILS, POSTS, AND BRACES SHALL BE CONSTRUCTED ON THE SECURE SIDE OF THE FENCE ALIGNMENT. CHAIN-LINK FABRIC SHALL BE PLACED ON THE OPPOSITE SIDE OF THE SECURE AREA.
2. SWING GATES SHALL BE CONSTRUCTED WITH DROP RODS, PADLOCKS, LATCH ASSEMBLY, AND GATE KEEPERS EXCEPT AS NOTED.
3. ALL GATE FRAMES SHALL BE ACCORDING TO STEEL POST SCHEDULE GATE FRAMES SHALL BE OF WELDED CONSTRUCTION OR SHALL BE ASSEMBLED USING HEAVY FITTINGS. AT THE CONTRACTOR'S OPTION A WELDED HORIZONTAL BRACE MAY BE USED IN LIEU OF TRUSS RODS TO BRACE ALL WELDED GATE FRAMES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER RIGID CONSTRUCTION OF ALL GATES SUPPLIED.
4. GATES SHALL BE DESIGNATED AS FOLLOWS:
   - FENCE TYPE - FE5, FE6, ETC.
   - FABRIC WIDTH - INCHES
   - TYPE OPENING - SO (SINGLE), DO (DOUBLE)
   - HINGE - RA (STANDARD), HO (OFFSET)
   - OPENING - INCHES (CLEAR OPENING BETWEEN GATE POSTS)
   - EXAMPLES: FE6-120-DO-RA-144, FE5-120-SO-HO-144
6. CHAIN-LINK FABRIC SHALL BE 11 GAUGE WITH 2" OPENINGS.
7. LINE POSTS SHALL BE 10 FEET LONG 1-7/8" SCHEDULE 40 GRADE 50 PIPE DIRECTLY DRIVEN 4 FEET INTO NATIVE SOIL.
8. SLATS NOT PERMITTED WITHOUT EOR APPROVAL AND SIGN-OFF.
9. SIGNAGE ON FENCING SHALL BE IN ACCORDANCE WITH COUNTY OF BALTIMORE ZONING CODE.

STEEL POST SCHEDULE	
USE AND SECTION	MINIMUN OUTSIDE DIMMENSIONS
CORNER-END AND PULL POSTS (TUBULAR ROUNDS)	0'-2 3/8"
LINE POST (TUBULAR) ROUND	0'-1 7/8"

SOIL TYPE	EMBEDMENT DEPTH (FT)		
	WIND SPEED (MPH)		
	90	105	120
SOFT CLAY	5.5	6	6.5
STIFF CLAY	4.5	5	5.5
VERY STILL CLAY	4	4.5	5
HARD CLAY	4	4	4.5
LOOSE SAND	6	6.5	7
Medium Dense Sand	5.5	6	6.5
Dense Sand	5	6	6.5

NOT FOR CONSTRUCTION

Summit Ridge ENERGY

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1401 WILSON BLVD. SUITE 800
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TETRA TECH

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UPPERCO SOLAR

HANOVER PIKE
UPPERCO, MD 21155

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194-6537.04.05

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FENCE AND GATE DETAILS

SHEET SIZE:
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0 ½" 1"

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ENGINEER:	ASL
APPROVED BY:	ASL

PROJECT PHASE:
DISCRETIONARY PERMITTING

SCALE:
AS SHOWN

SHEET NO.:
C-005

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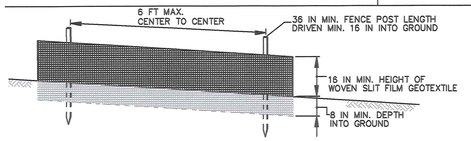
DETAIL E-1 SILT FENCE

STANDARD SYMBOL: SF



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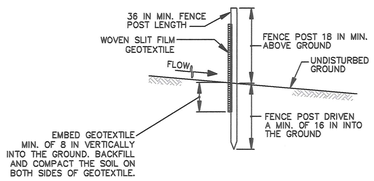
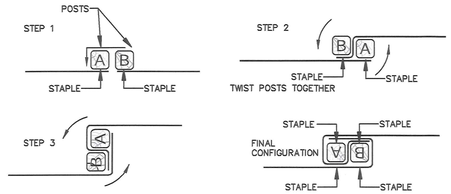


CROSS SECTION



JOINING TWO ADJACENT SILT FENCE SECTIONS (TOP VIEW)

CONSTRUCTION SPECIFICATIONS

1. USE WOOD POSTS 1¾ X 1¾ ± ⅛ INCH (MINIMUM) SQUARE CUT OF SOUND QUALITY HARDWOOD. AS AN ALTERNATIVE TO WOODEN POST USE STANDARD "T" OR "U" SECTION STEEL POSTS WEIGHING NOT LESS THAN 1 POUND PER LINEAR FOOT.
2. USE 36 INCH MINIMUM POSTS DRIVEN 16 INCH MINIMUM INTO GROUND NO MORE THAN 6 FEET APART.
3. USE WOVEN SLIT FILM GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS AND FASTEN GEOTEXTILE SECURELY TO UPSLOPE SIDE OF FENCE POSTS WITH WIRE TIES OR STAPLES AT TOP AND MID-SECTION.
4. PROVIDE MANUFACTURER CERTIFICATION TO THE AUTHORIZED REPRESENTATIVE OF THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT THE GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H-1 MATERIALS.
5. EMBED GEOTEXTILE A MINIMUM OF 8 INCHES VERTICALLY INTO THE GROUND. BACKFILL AND COMPACT THE SOIL ON BOTH SIDES OF FABRIC.
6. WHERE TWO SECTIONS OF GEOTEXTILE ADJOIN: OVERLAP, TWIST, AND STAPLE TO POST IN ACCORDANCE WITH THIS DETAIL.
7. EXTEND BOTH ENDS OF THE SILT FENCE A MINIMUM OF FIVE HORIZONTAL FEET UPSLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT TO PREVENT RUNOFF FROM GOING AROUND THE ENDS OF THE SILT FENCE.
8. REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN SILT FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN. IF UNDERMINING OCCURS, REINSTALL FENCE.

SILT FENCE

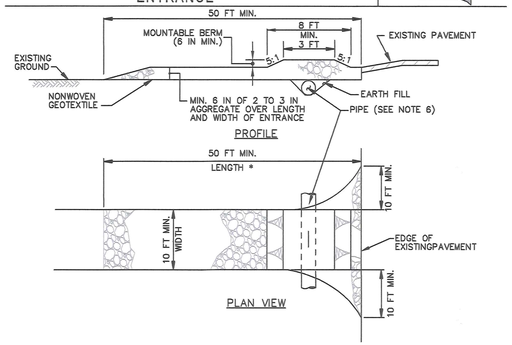
DETAIL

SCALE: N.T.S.

1 / C-006

DETAIL B-1 STABILIZED CONSTRUCTION ENTRANCE

STANDARD SYMBOL: SCE



CONSTRUCTION SPECIFICATIONS

1. PLACE STABILIZED CONSTRUCTION ENTRANCE IN ACCORDANCE WITH THE APPROVED PLAN. VEHICLES MUST TRAVEL OVER THE ENTIRE LENGTH OF THE SCE. USE MINIMUM LENGTH OF 50 FEET (*30 FEET FOR SINGLE RESIDENCE LOT). USE MINIMUM WIDTH OF 10 FEET. FLARE SCE 10 FEET MINIMUM AT THE EXISTING ROAD TO PROVIDE A TURNING RADIUS.
2. PIPE ALL SURFACE WATER FLOWING TO OR DIVERTED TOWARD THE SCE UNDER THE ENTRANCE, MAINTAINING POSITIVE DRAINAGE. PROTECT PIPE INSTALLED THROUGH THE SCE WITH A MOUNTABLE BERM WITH 5:1 SLOPES AND A MINIMUM OF 12 INCHES OF STONE OVER THE PIPE. PROVIDE PIPE AS SPECIFIED ON APPROVED PLAN. WHEN THE SCE IS LOCATED AT A HIGH SPOT AND HAS NO DRAINAGE TO CONVEY, A PIPE IS NOT NECESSARY. A MOUNTABLE BERM IS REQUIRED WHEN SCE IS NOT LOCATED AT A HIGH SPOT.
3. PREPARE SUBGRADE AND PLACE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS.
4. PLACE CRUSHED AGGREGATE (2 TO 3 INCHES IN SIZE) OR EQUIVALENT RECYCLED CONCRETE (WITHOUT REBAR) AT LEAST 6 INCHES DEEP OVER THE LENGTH AND WIDTH OF THE SCE.
5. MAINTAIN ENTRANCE IN A CONDITION THAT MINIMIZES TRACKING OF SEDIMENT. ADD STONE OR MAKE OTHER REPAIRS AS CONDITIONS DEMAND TO MAINTAIN CLEAN SURFACE, MOUNTABLE BERM, AND SPECIFIED DIMENSIONS. IMMEDIATELY REMOVE STONE AND/OR SEDIMENT SPILLED, DROPPED, OR TRACKED ONTO ADJACENT ROADWAY BY VACUUMING, SCRAPING, AND/OR SWEEPING. WASHING ROADWAY TO REMOVE MUD TRACKED ONTO PAVEMENT IS NOT ACCEPTABLE UNLESS WASH WATER IS DIRECTED TO AN APPROVED SEDIMENT CONTROL PRACTICE.

STABILIZED CONSTRUCTION ENTRANCE

DETAIL

SCALE: N.T.S.

2 / C-006

SEDIMENT AND EROSION CONTROL NOTES:

1. SOIL DISTURBANCE SHALL BE CONDUCTED IN SUCH A MANNER AS TO MINIMIZE EROSION. SOIL STABILIZATION MEASURES SHALL CONSIDER THE TIME OF YEAR, SITE CONDITIONS AND THE USE OF TEMPORARY OR PERMANENT MEASURES.
2. SOIL EROSION AND SEDIMENT CONTROL FEATURES SHALL BE CONSTRUCTED PRIOR TO THE COMMENCEMENT OF HYDROLOGIC DISTURBANCE OF UPLAND AREAS.
3. DISTURBED AREAS SHALL BE STABILIZED WITH TEMPORARY OR PERMANENT MEASURES WITHIN 7 CALENDAR DAYS OF THE END OF ACTIVE HYDROLOGIC DISTURBANCE OR REDISTURBANCE.
4. AREAS OR EMBANKMENTS HAVING SLOPES GREATER THAN OR EQUAL TO 3 HORIZONTAL: 1 VERTICAL SHALL BE STABILIZED WITH EROSION CONTROL BLANKET IN COMBINATION WITH SEEDING.
5. CONSTRUCTION DITCHES REQUIRED FOR CONSTRUCTION SHALL BE STABILIZED WITH EROSION CONTROL BLANKET IN COMBINATION WITH SEEDING.
6. ALL TEMPORARY AND PERMANENT EROSION CONTROL MEASURES MUST BE MAINTAINED AND REPAIRED AS NEEDED. CONTRACTOR SHALL ULTIMATELY BE RESPONSIBLE FOR MAINTENANCE AND REPAIR.
7. A STABILIZED CONSTRUCTION ENTRANCE SHALL BE LOCATED AT ANY POINT WHERE TRAFFIC WILL BE ENTERING OR LEAVING A CONSTRUCTION SITE TO OR FROM A PUBLIC RIGHT OF WAY, STREET OR PARKING AREA, ANY SEDIMENT OR SOIL REACHING AN IMPROVED PUBLIC RIGHT-OF-WAY, STREET, OR PARKING AREA SHALL BE REMOVED BY SCRAPING OR STREET CLEANING AS ACCUMULATIONS WARRANT AND TRANSPORTED TO A CONTROLLED SEDIMENT DISPOSAL AREA.
8. SOIL STOCKPILES SHALL HAVE SILT FENCE ERECTED AROUND THEM THAT ARE TO REMAIN EXPOSED FOR PERIODS LESS THAN 7 DAYS.
9. SOIL STOCKPILES SHALL NOT BE LOCATED IN A FLOOD PRONE AREA OR A DESIGNATED BUFFER PROTECTING WATERS OF THE UNITED STATES OR ISOLATED WATERS OF BALTIMORE COUNTY, ALL EXCESS EXCAVATED MATERIALS SHALL BE REMOVED FROM WATERS OF THE UNITED STATES OR ISOLATED WATERS OF BALTIMORE COUNTY IMMEDIATELY UPON COMPLETION OF THE RELATED CONSTRUCTION ACTIVITY.
10. IF DEWATERING SERVICES ARE USED, ADJOINING PROPERTIES AND DISCHARGE LOCATIONS SHALL BE PROTECTED FROM EROSION. DISCHARGES SHALL BE ROUTED THROUGH AN EFFECTIVE SEDIMENT CONTROL MEASURE SUCH AS A SEDIMENT TRAP, SEDIMENT BASIN OR OTHER APPROPRIATE MEASURE.
11. THE EROSION CONTROL MEASURES INDICATED ON THE PLANS ARE THE MINIMUM REQUIREMENTS, ADDITIONAL MEASURES MAY BE REQUIRED, AS DIRECTED BY THE ENGINEER OR GOVERNING AGENCY.

VEGETATIVE COVER SPECIFICATIONS

SITE PREPARATION:

1. INSTALL NEEDED WATER AND EROSION CONTROL MEASURES AND BRING AREA TO BE SEEDED TO DESIRED GRADES USING A MINIMUM OF 4 INCHES OF TOPSOIL
2. PREPARE SEEDBED BY LOOSENING SOIL TO A DEPTH OF AT LEAST 3–5 INCHES.
3. FERTILIZER OR LIME IS GENERALLY NOT RECOMMENDED FOR NATIVE VEGETATION ESTABLISHMENT UNLESS SOIL TESTS INDICATE A PH < 5.5. PHOSPHOROUS (P) < 15 LB./AC., OR POTASH (K) < 150 LB. /ACRES. IF LEVELS ARE BELOW THIS, APPLY LIME AND FERTILIZER ACCORDING TO A SOIL TEST AND THE NEED OF THE VEGETATION SELECTED.
4. APPLY LIME AND FERTILIZER INTO THE TOP 3–5 INCHES OF SOIL.
5. APPLY LIME FERTILIZER BETWEEN MARCH 1 AND MAY 30 OR AUGUST 1 AND SEPTEMBER 30TH.

TEMPORARY VEGETATIVE COVER (DURING CONSTRUCTION)

1. SEED WITH ANNUAL RYEGRASS AT A RATE OF 40 LBS/AC.
2. SEEDING TIMES: IN USDA PLANT HARDINESS ZONE 7A, THE PLANTING TIMES SHALL BE FEBRUARY 15 TO APRIL 30 AND AUGUST 15 TO NOVEMBER 30.
3. FERTILIZER RATE (10–20–20). 436 LBS/AC.
4. LIME RATE: 2 TONS/AC.
5. WHEN STABILIZATION IS REQUIRED OUTSIDE OF A SEEDING SEASON, APPLY SEED AND MULCH OR STRAW MULCH ALONE AND MAINTAIN UNTIL THE NEXT SEEDING SEASON.

PERMANENT VEGETATIVE COVER (AFTER CONSTRUCTION):

1. SEED MIXTURES

PROVIDE SEED MIXTURES CONFORMING TO THE FOLLOWING MIXTURES:MARYLAND DEPARTMENT OF THE ENVIRONMENT (MDE) CLASS 11 MIXTURE

SPECIES VARIETY	LBS/ACRE
CREEPING RED FESCUE	30
CHEWINGS FESCUE	30
KENTUCKY BLUEGRASS	20
ROUGH BLUEGRASS	15

2. SEEDING TIMES: IN USDA PLANT HARDINESS ZONE 7A, THE PLANTING TIMES SHALL BE FEBRUARY 15 TO APRIL 30 AND AUGUST 15 TO OCTOBER 31.
3. SEEDING DEPTH SHALL BE 1/4 TO 1/2 INCH.
4. FERTILIZER RATE (10–20–20). NITROGEN: 45 LBS/AC. PHOSPHOROUS PENTOXIDE: 90 LBS/AC. POTASSIUM OXIDE: 90 LBS/AC.
5. LIME RATE: 2 TONS/AC.

NOT FOR CONSTRUCTION

Summit Ridge ENERGY

ICFTS MD SOLAR, LLC
1401 WILSON BLVD. SUITE 800
ARLINGTON, VA. 22209

TETRA TECH

PREPARED BY:
CORNERSTONE ENVIRONMENTAL GROUP, LLC
1200 SCOTTSVILLE ROAD, SUITE 330
ROCHESTER, NEW YORK 14624

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STAMP:

STATE OF MARYLAND · ADAM S LARKY · No. 41078 · PROFESSIONAL ENGINEER

10/26/18

10/26/18

ADAM S LARKY, P.E. DATE
MD. P.E. Lic. NO. 41078

PROFESSIONAL CERTIFICATION. I HEREBY 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 MARYLAND, LICENSE NO. 41078, EXPIRATION DATE: 9/14/19.

UPPERCO SOLAR

HANOVER PIKE
UPPERCO, MD 21155

PROJECT NUMBER: 194-6537.04.05

SHEET TITLE: EROSION & SEDIMENT CONTROL DETAILS

SHEET SIZE: ARCH "D" 24" X 36" (610 x 914)

0 ½" 1"

NO.	REVISION	DATE	INIT.

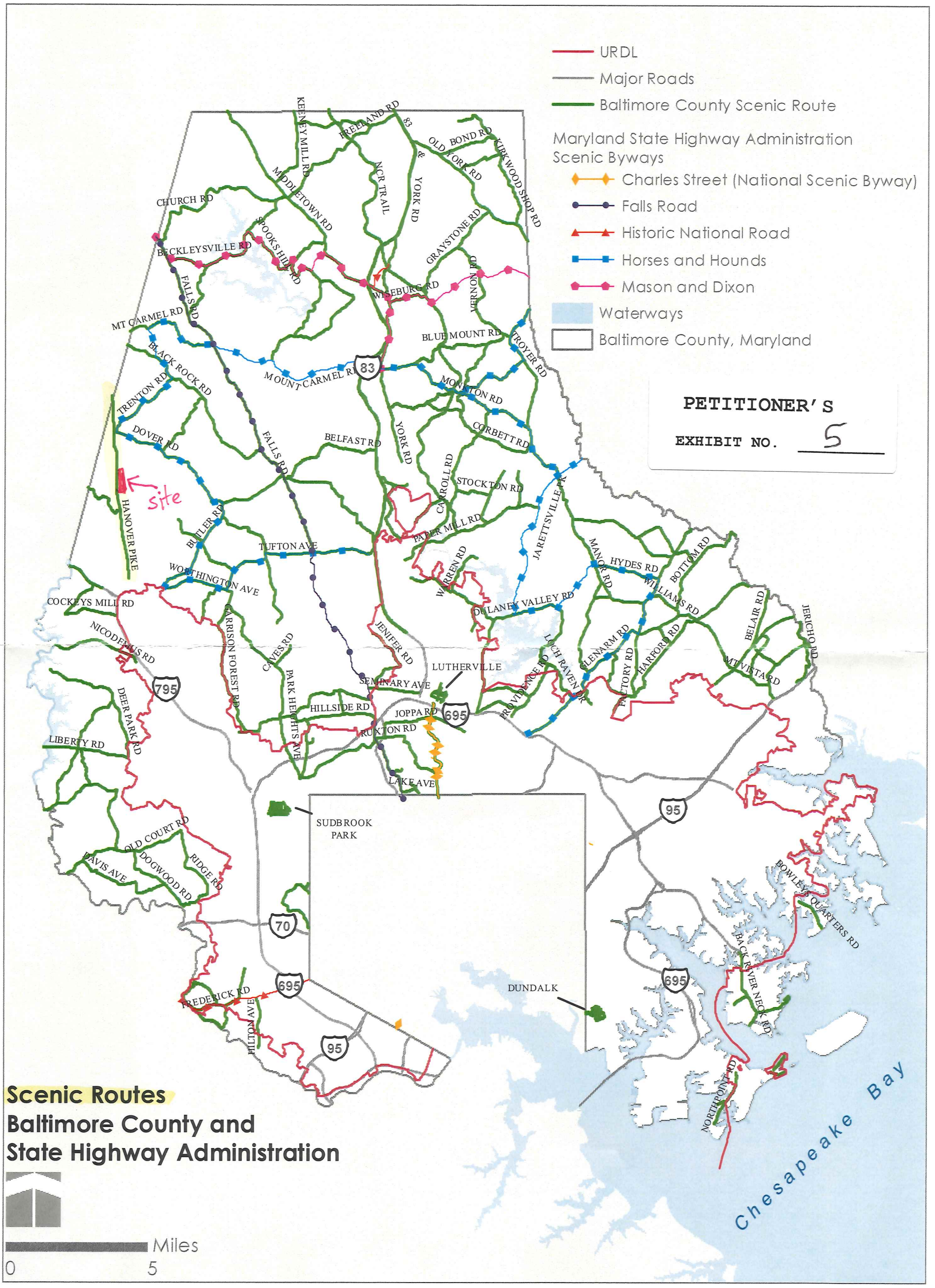
DATE:	10/26/2018
DRAWN BY:	DSS
ENGINEER:	AGB
APPROVED BY:	ASL

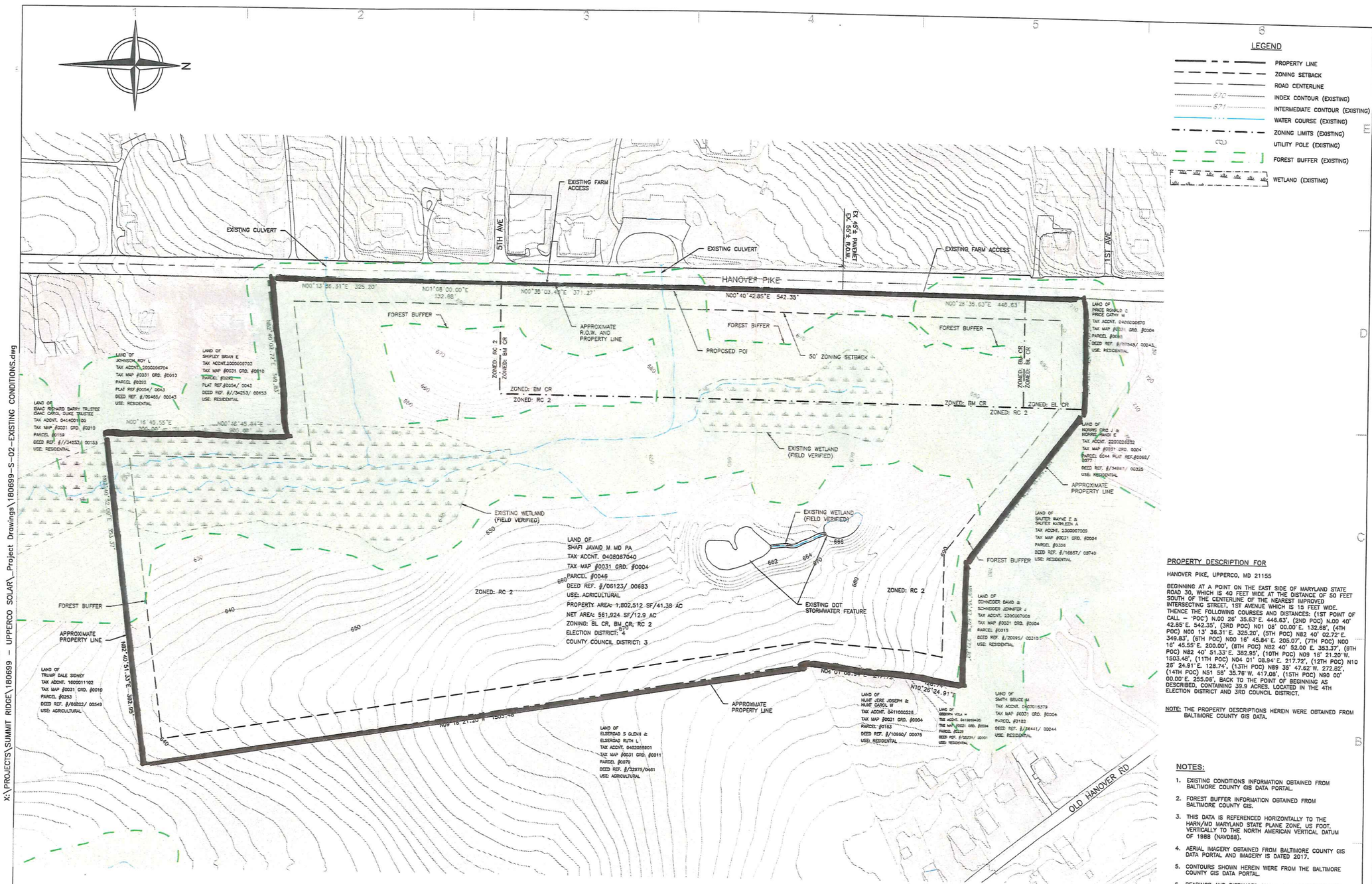
PROJECT PHASE: DISCRETIONARY PERMITTING

SCALE: AS SHOWN

SHEET NO.: C-006

Printed: 10/26/2018 3:44 PM X:\PROJECTS\SUMMIT RIDGE\180699 - UPPERCO SOLAR_Project Drawings\180699-S-06-EROSION CONTROL DETAILS.dwg


URDL
Major Roads
Baltimore County Scenic Route
Maryland State Highway Administration
Scenic Byways
Charles Street (National Scenic Byway)
Falls Road
Historic National Road
Horses and Hounds
Mason and Dixon
Waterways
Baltimore County, Maryland
PETITIONER'S
EXHIBIT NO. 5
site
KEENEY MILL RD
FREELAND RD
83
OLD YORK RD
BOND RD
KIRKWOOD SHOP RD
MIDDLETOWN RD
NCR TRAIL
YORK RD
CHURCH RD
BECKLEYSVILLE RD
SPOOKS HILL RD
GRAYSTONE RD
VERNON RD
WISEBURG RD
FALLS RD
MT CARMEL RD
BLACK ROCK RD
MOUNT CARMEL RD
BLUE MOUNT RD
TROYER RD
MONKTON RD
TRENTON RD
DOVER RD
BELFAST RD
CORBETT RD
CARROLL RD
STOCKTON RD
JARETTSVILLE RD
HANOVER PIKE
BUTLER RD
PAPER MILL RD
TUFTON AVE
WARREN RD
MANOR RD
HYDES RD
BOTTOM RD
WORTHINGTON AVE
DULANEY VALLEY RD
WILLIAMS RD
COCKEYS MILL RD
JENIFER RD
BELAIR RD
JERICHO RD
NICODEMUS RD
GARRISON FOREST RD
CAVES RD
LUTHERVILLE
LOCH RAVEN DR
GLENARM RD
FACTORY RD
HARFORD RD
MT VISTA RD
795
SEMINARY AVE
PROVIDENCE RD
PARK HEIGHTS AVE
HILLSIDE RD
JOPPA RD
695
RUXTON RD
DEER PARK RD
LIBERTY RD
LAKE AVE
SUDBROOK PARK
95
OLD COURT RD
DAVIS AVE
DOGWOOD RD
RIDGE RD
BOWLEYS QUARTERS RD
70
BACK RIVER NECK RD
FREDERICK RD
HILTON AVE
DUNDALK
NORTHPOINT RD
Chesapeake Bay
Scenic Routes
Baltimore County and
State Highway Administration
Miles
0
5



LEGEND

- PROPERTY LINE
- ZONING SETBACK
- ROAD CENTERLINE
- 670 INDEX CONTOUR (EXISTING)
- 671 INTERMEDIATE CONTOUR (EXISTING)
- WATER COURSE (EXISTING)
- ZONING LIMITS (EXISTING)
- UTILITY POLE (EXISTING)
- FOREST BUFFER (EXISTING)
- WETLAND (EXISTING)

PROPERTY DESCRIPTION FOR

HANOVER PIKE, UPPERCO, MD 21155

BEGINNING AT A POINT ON THE EAST SIDE OF MARYLAND STATE ROAD 30, WHICH IS 40 FEET WIDE AT THE DISTANCE OF 50 FEET SOUTH OF THE CENTERLINE OF THE NEAREST IMPROVED INTERSECTING STREET, 1ST AVENUE WHICH IS 15 FEET WIDE. THENCE THE FOLLOWING COURSES AND DISTANCES: (1ST POINT OF CALL – "POC") N.00 26' 35.63'E. 446.63', (2ND POC) N.00 40' 42.85'E. 542.35', (3RD POC) N01 08' 00.00'E. 132.68', (4TH POC) N00 13' 36.31'E. 325.20', (5TH POC) N82 40' 02.72'E. 349.83', (6TH POC) N00 16' 45.84'E. 205.07', (7TH POC) N00 16' 45.55'E. 200.00', (8TH POC) N82 40' 52.00 E. 353.37', (9TH POC) N82 40' 51.33'E. 382.95', (10TH POC) N09 16' 21.20'W. 1503.48', (11TH POC) N04 01' 08.94'E. 217.72', (12TH POC) N10 26' 24.91'E. 128.74', (13TH POC) N89 35' 47.62'W. 272.82', (14TH POC) N51 58' 35.76'W. 417.08', (15TH POC) N90 00' 00.00'E. 255.08', BACK TO THE POINT OF BEGINNING AS DESCRIBED, CONTAINING 39.9 ACRES. LOCATED IN THE 4TH ELECTION DISTRICT AND 3RD COUNCIL DISTRICT.

NOTE: THE PROPERTY DESCRIPTIONS HEREIN WERE OBTAINED FROM BALTIMORE COUNTY GIS DATA.

NOTES:

1. EXISTING CONDITIONS INFORMATION OBTAINED FROM BALTIMORE COUNTY GIS DATA PORTAL.
2. FOREST BUFFER INFORMATION OBTAINED FROM BALTIMORE COUNTY GIS.
3. THIS DATA IS REFERENCED HORIZONTALLY TO THE HARN/MD MARYLAND STATE PLANE ZONE, US FOOT. VERTICALLY TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
4. AERIAL IMAGERY OBTAINED FROM BALTIMORE COUNTY GIS DATA PORTAL AND IMAGERY IS DATED 2017.
5. CONTOURS SHOWN HEREIN WERE FROM THE BALTIMORE COUNTY GIS DATA PORTAL.
6. BEARINGS AND DISTANCES SHOWN ARE LABELS PLACED ON GIS LINEWORK AND HAS NOT BEEN REVIEWED BY A LICENSED SURVEYOR TO MATCH THE DEED INFORMATION.
7. PROPERTY OWNERSHIP INFORMATION OBTAINED FROM BALTIMORE COUNTY REAL PROPERTY GIS DATA PORTAL.

NOT FOR CONSTRUCTION

Summit Ridge Energy

ICFTS MD SOLAR, LLC
1401 WILSON BLVD SUITE 800
ARLINGTON, VA, 22209

TETRA TECH

PREPARED BY:
CORNERSTONE ENVIRONMENTAL GROUP, LLC
1356 SCOTTSVILLE ROAD, SUITE 209
ROCHESTER, NEW YORK 14624

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STAMP:

STATE OF MARYLAND
ADAM S LARKY
No. 41078
PROFESSIONAL ENGINEER
10/26/18

10/26/18
ADAM S LARKY, P.E. DATE
MD. P.E. Lic. NO. 41078

PROFESSIONAL CERTIFICATION. I HEREBY 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 MARYLAND, LICENSE NO. 41078, EXPIRATION DATE: 9 14 19

UPPERCO SOLAR

HANOVER PIKE
UPPERCO, MD 21155

PROJECT NUMBER:
194-6537.04.05

SHEET TITLE:
EXISTING CONDITIONS PLAN

SHEET SIZE:
ARCH "D"
24" X 36" (610 x 914)
0 ½" 1"

NO.	REVISION	DATE	INIT.

DATE:	10/26/2018
DRAWN BY:	DSS
ENGINEER:	AGB
APPROVED BY:	ASL

PROJECT PHASE:
DISCRETIONARY PERMITTING

SCALE:
1"=100'

SHEET NO.:
C-002

File: X:\PROJECTS\SUMMIT RIDGE\180699 – UPPERCO SOLAR_Project Drawings\180699–S–02–EXISTING CONDITIONS.dwg Layout: C–002 User: dss5.stevenson Oct 25, 2018 – 3:42pm
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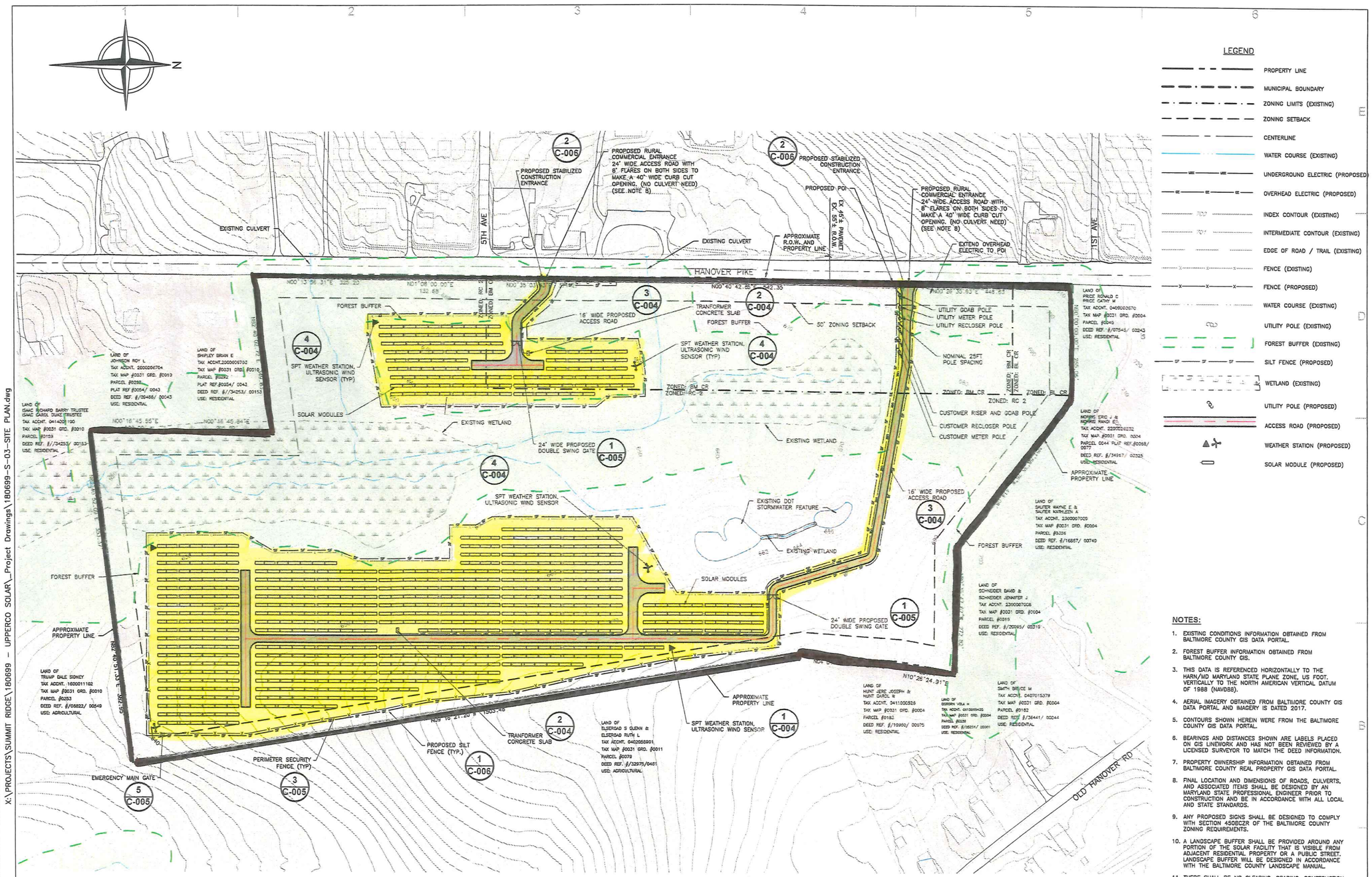

LEGEND

- PROPERTY LINE
- MUNICIPAL BOUNDARY
- ZONING LIMITS (EXISTING)
- ZONING SETBACK
- CENTERLINE
- WATER COURSE (EXISTING)
- UNDERGROUND ELECTRIC (PROPOSED)
- OVERHEAD ELECTRIC (PROPOSED)
- INDEX CONTOUR (EXISTING)
- INTERMEDIATE CONTOUR (EXISTING)
- EDGE OF ROAD / TRAIL (EXISTING)
- FENCE (EXISTING)
- FENCE (PROPOSED)
- WATER COURSE (EXISTING)
- UTILITY POLE (EXISTING)
- FOREST BUFFER (EXISTING)
- SILT FENCE (PROPOSED)
- WETLAND (EXISTING)
- UTILITY POLE (PROPOSED)
- ACCESS ROAD (PROPOSED)
- WEATHER STATION (PROPOSED)
- SOLAR MODULE (PROPOSED)

NOTES:

1. EXISTING CONDITIONS INFORMATION OBTAINED FROM BALTIMORE COUNTY GIS DATA PORTAL.
2. FOREST BUFFER INFORMATION OBTAINED FROM BALTIMORE COUNTY GIS.
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7. PROPERTY OWNERSHIP INFORMATION OBTAINED FROM BALTIMORE COUNTY REAL PROPERTY GIS DATA PORTAL.
8. FINAL LOCATION AND DIMENSIONS OF ROADS, CULVERTS, AND ASSOCIATED ITEMS SHALL BE DESIGNED BY AN MARYLAND STATE PROFESSIONAL ENGINEER PRIOR TO CONSTRUCTION AND BE IN ACCORDANCE WITH ALL LOCAL AND STATE STANDARDS.
9. ANY PROPOSED SIGNS SHALL BE DESIGNED TO COMPLY WITH SECTION 450B(C)2 OF THE BALTIMORE COUNTY ZONING REQUIREMENTS.
10. A LANDSCAPE BUFFER SHALL BE PROVIDED AROUND ANY PORTION OF THE SOLAR FACILITY THAT IS VISIBLE FROM ADJACENT RESIDENTIAL PROPERTY OR A PUBLIC STREET. LANDSCAPE BUFFER WILL BE DESIGNED IN ACCORDANCE WITH THE BALTIMORE COUNTY LANDSCAPE MANUAL.
11. THERE SHALL BE NO CLEARING, GRADING, CONSTRUCTION OR DISTURBANCE OF VEGETATION IN THE FOREST BUFFER, EXCEPT AS PERMITTED BY THE BALTIMORE COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION AND SUSTAINABILITY.
12. SILT FENCE MAY NEED TO BE EXTENDED BEYOND LIMITS SHOWN BASED ON FIELD CONDITIONS, FLOW PATHS ENCOUNTERED DURING CONSTRUCTION, AND ACTUAL DISTURBANCE LIMITS.
13. SEE ELECTRICAL/STRUCTURAL DRAWINGS (UNDER SEPARATE COVER) FOR INVERTER, ELECTRICAL UTILITY POLE AND CONNECTION DETAILS.

NOT FOR CONSTRUCTION

Summit Ridge ENERGY

ICFTS MD SOLAR, LLC
1401 WILSON BLVD. SUITE 800
ARLINGTON, VA. 22209

TETRA TECH

PREPARED BY:
CORNERSTONE ENVIRONMENTAL GROUP, LLC
1200 SCOTTSVILLE ROAD, SUITE 209
ROCHESTER, NEW YORK 14624

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STAMP:

STATE OF MARYLAND ADAM S. LARKY No. 41078 PROFESSIONAL ENGINEER 10/26/18

10/26/18
ADAM S LARKY, P.E. DATE
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UPPERCO SOLAR

HANOVER PIKE
UPPERCO, MD 21155

PROJECT NUMBER:
194-6537.04.05

SHEET TITLE:
SITE PLAN

SHEET SIZE:
ARCH "D"
24" X 36" (610 x 914)
0 ½" 1"

NO.	REVISION	DATE	INIT.

DATE:	10/26/2018
DRAWN BY:	DSS
ENGINEER:	AGB
APPROVED BY:	ASL

PROJECT PHASE:
DISCRETIONARY PERMITTING

SCALE:
1"=100'

SHEET NO.:
C-003

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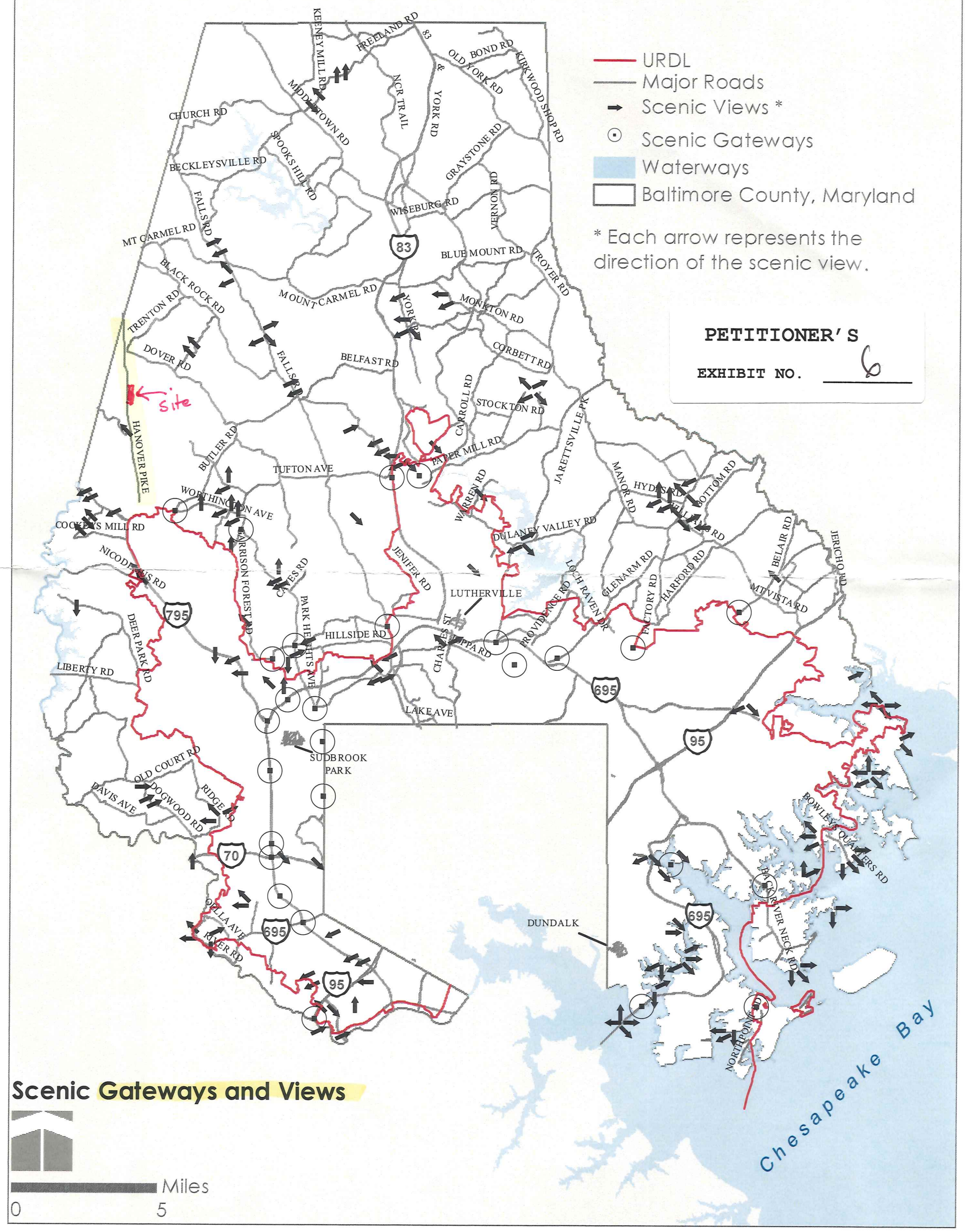
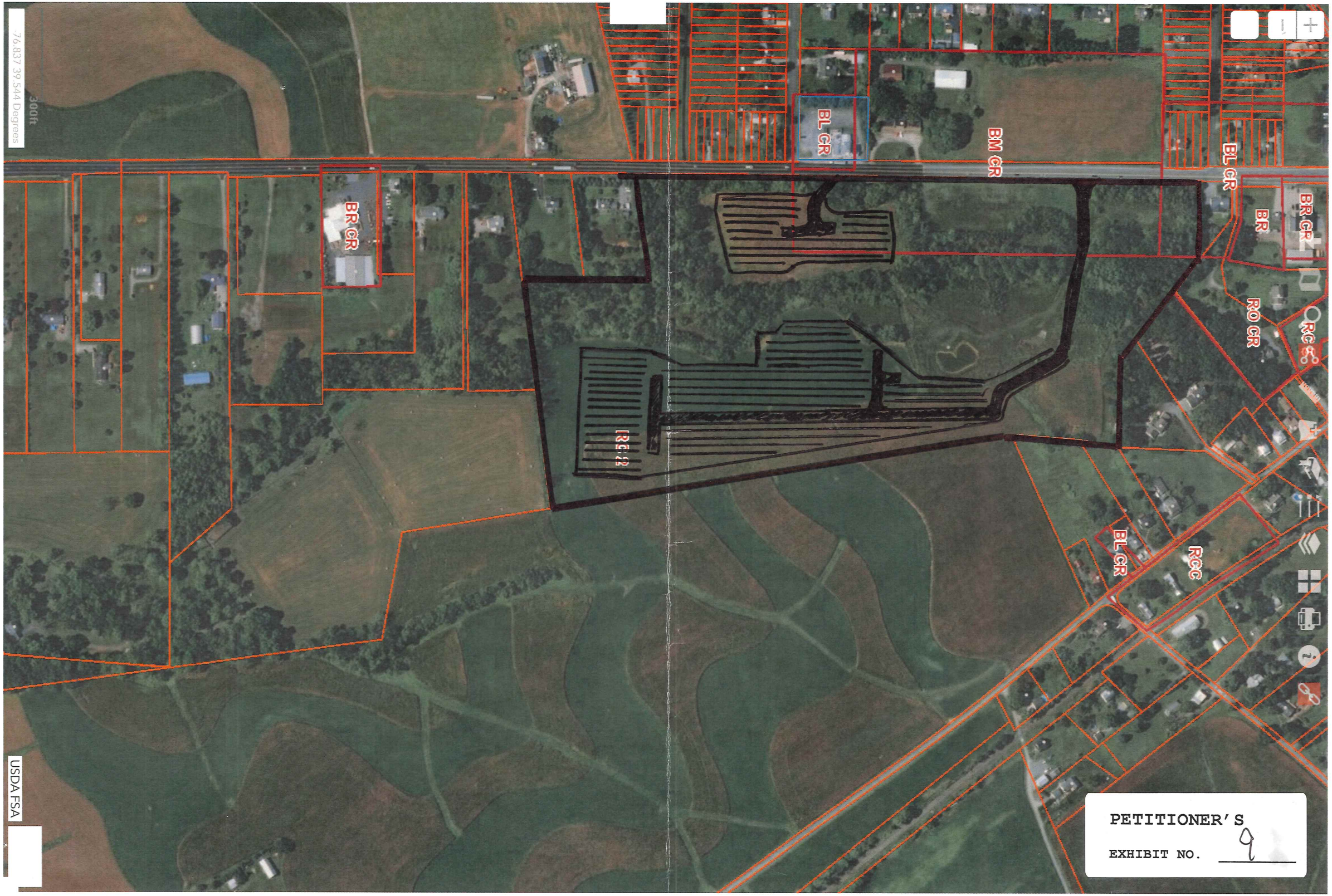

URDL
Major Roads
Scenic Views *
Scenic Gateways
Waterways
Baltimore County, Maryland
* Each arrow represents the direction of the scenic view.
PETITIONER'S
EXHIBIT NO. 6
site
KEENEY MILL RD
FREELAND RD
83
OLD YORK RD
BOND RD
KIRKWOOD SHOP RD
MIDDLETOWN RD
NCR TRAIL
YORK RD
CHURCH RD
SPOOKS HILL RD
GRAYSTONE RD
BECKLEYSVILLE RD
FALLS RD
WISEBURG RD
VERNON RD
MT CARMEL RD
BLUE MOUNT RD
TROYER RD
BLACK ROCK RD
MOUNT CARMEL RD
YORK RD
MONKTON RD
TRENTON RD
DOVER RD
BELFAST RD
CORBETT RD
STOCKTON RD
CARROLL RD
JARETTSVILLE PK
PAPER MILL RD
HANOVER PIKE
BUTLER RD
TUFTON AVE
WARREN RD
MANOR RD
HYDE PARK RD
BOTTOM RD
WORTHINGTON AVE
COCKEYS MILL RD
DULANEY VALLEY RD
JENIFER RD
BELAIR RD
JERICHO RD
NICODEMUS RD
HARRISON FOREST RD
CAVES RD
LUTHERVILLE
PROVIDENCE RD
LOCH RAVEN DR
GLENARM RD
HARFORD RD
FACTORY RD
MT VISTA RD
PARK HEIGHTS AVE
HILLSIDE RD
CHARLES ST
DEER PARK RD
LIBERTY RD
LAKE AVE
SUDBROOK PARK
OLD COURT RD
DAVIS AVE
DOGWOOD RD
RIDGE RD
OZELLA AVE
RIVER RD
BOWLEYS QUARTERS RD
BACK RIVER NECK RD
NORTH POINT RD
DUNDALK
795
70
695
95
Chesapeake Bay
Scenic Gateways and Views
Miles
0
5



PETITIONER'S

EXHIBIT NO. 9