TOWN OF BROOKLYN
PLANNING AND ZONING COMMISSION
Regular Meeting Agenda
Wednesday, October 6, 2021 6:30 p.m.

3 WAYS TO ATTEND: IN-PERSON, ONLINE, AND BY PHONE

In-Person: **Clifford B. Green Meeting Center, Suite 24, 69 South Main Street, Brooklyn, CT** **All attending in person are required to wear masks.**		
Online: **Click link below:** https://townofbrooklyn.my.webex.com/townofbrooklyn.my/j.php?MTID=m03cff485e32a4158afe905fc971a3c27	**OR**	**Go to www.webex.com,** **click Sign In** **On the top right, click Join a Meeting** **Enter meeting ID: 126 815 8731** **Enter meeting password: First**
Phone: Dial 1-415-655-0001 **Enter meeting number: 126 815 8731** **Enter meeting password: 34778** **You can bypass attendee number by pressing #**		

I. **Call to Order**
II. **Roll Call**
III. **Seating of Alternates**
IV. **Adoption of Minutes:** Regular Meeting September 21, 2021
V. **Public Commentary**
VI. **Unfinished Business:**
- a. **Reading of Legal Notices: None.**
- b. **New Public Hearings: None.**
- c. **Continued Public Hearings: See below.**
- d. **Other Unfinished Business**:
  1. **SP 21-002:** Special Permit Application for Multi-Family Development (51 Condominium units) on south side of Louise Berry Drive (Assessor's Map 33, Lot 19), 13.5 acres, R-30 Zone, Applicant: Shane Pollack. ***Public Hearing continued to October 19, 2021. Need to reschedule site walk.***
  2. **SPR 21-003:** Site Plan Review Application for ground-mounted solar panels at 80 South Street, 8.6 acres, RA Zone, Applicant: Consolidated Edison Solutions, Inc.
  3. **SPR 21-004:** Site Plan Review Application for ground-mounted solar panels at 5 Front Street and 29 Tiffany Street, 1.8 acres, R-10 Zone, Applicant: CHIP Fund 6 LLC & CHIP Fund 8 LLC.

VII. **New Business:**
- a. **Applications: None.**
- b. **Other New Business:**
  1. Preliminary Discussion with Lori Corriveau and Sara Mooney of Little Dipper Farm (formerly the Golden Lamb).

VIII. **Reports of Officers and Committees:**
- a. Staff Reports
- b. Budget Update
- c. Correspondence.
- d. Chairman's Report

IX. **Public Commentary**
X. **Adjourn**

Michelle Sigfridson, Chairman

PLANNING AND ZONING COMMISSION
TOWN OF BROOKLYN
CONECTICUT

Received Date 9/2/21
Action Date_____

Application #SPR 21-003
Check# 22425

APPLICATION FOR SITE PLAN REVIEW

Name of Applicant Consolidated Edison Solutions Inc. - Amaris Jattan Phone (203) 512-4500
Mailing Address 38 Beaver Brook Road, Danbury, CT 06810 Phone (203) 616-4211

Name of Owner Paul Cristofori Phone (860) 917-8331
Mailing Address 80 South Street, Brooklyn, CT Phone_____

Name of Engineer/Surveyor Solar Foundations USA
Address 1142 River Road, New Castle, DE 19720
Contact Person Jim Douglas Phone (855) 738-7200 Fax_____

Property location/address 80 South Street, Brooklyn, CT
Map # 40 Lot # 129-9 Zone RA Total Acres 8.6

Proposed Activity Ground mounted solar utilizing helical piles. PV installation consists of (42) LG375N1C-A6 modules tied to (1) SolarEdge SE11400H-US inverter. Trenching from array to home will be back-fill with existing earth.

Change of Use: Yes____ No X If Yes, Previous Use_____
Area of Proposed Structure(s) or Expansion _____

Utilities - Septic: On Site_____ Municipal _____ Existing_____ Proposed_____
Water: Private_____ Public _____ Existing_____ Proposed_____

Compliance with Article 4, Site Plan Requirements

The following shall accompany the application when required:

Fee$ 460.00 **State Fee ($60.00)** _____ 3 copies of plans_____ Sanitary Report_____
4.5.5 Application/ Report of Decision from the Inland Wetlands Commission
4.5.5 Applications filed with other Agencies
12.1 Erosion and Sediment Control Plans
See also Site Plan Review Worksheet

Variances obtained_____ Date_____

The owner and applicant hereby grant the Brooklyn Planning and Zoning Commission, the Board of Selectman, Authorized Agents of the Planning and Zoning Commission or Board of Selectman, permission to enter the property to which the application is requested for the purpose of inspection and enforcement of the Zoning regulations and the Subdivision regulations of the Town of Brooklyn

Applicant: _____ Date 8/19/2021

Owner: DocuSigned by: Paul Cristofori AB295404DB86456... Date 8/19/2021

* Note: Any consulting fees will be paid by the applicant

PHOTOVOLTAIC SOLAR SYSTEM
For 80 South St. Brooklyn, CT 06234

SYSTEM DESCRIPTION

(42) SOLAR MODULE:LG375N1C-A6 (15.75 kW)
INVERTER: SOLAREDGE SE11400H-US W/P370 OPTIMIZERS (x42)
RACKING SYSTEM: PANEL CLAW FR10 ST BALLASTED RACKING
TOTAL DC SIZE: 15.75 kW DC
TOTAL AC SIZE: 11.4 kW AC

GENERAL NOTE

NOTE: CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS PRIOR TO INSTALLATION.

APPLICABLE CODES

RELEVANT CODES AND STANDARDS: ALL WORK PERFORMED BY THE CONTRACTOR SHALL MEET OR EXCEED WITH ALL RELEVANT LOCAL, STATE, AND NATIONAL CODES AND STANDARDS AND COMPLY WITH THE AUTHORITIES HAVING JURISDICTION (AHJ.) THESE CODES AND STANDARDS SHALL INCLUDE, AT A MINIMUM, THE FOLLOWING:

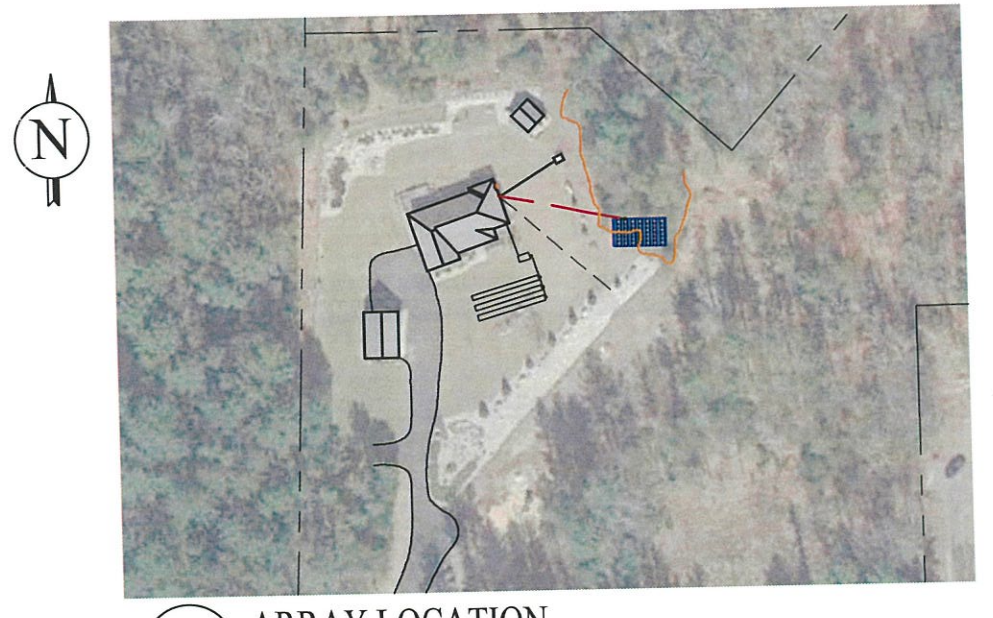
a.	ACI 318-14	ACI
b.	2015 IBC	ICC
c.	AISC 360-10	AISC
d.	AISC 303-10	AISC
e.	ASCE 7-10	ASCE
f.	ATS-2013	NETA
g.	IEEE 1547	IEEE
h.	2015 IFC	ICC
i.	NESC 2012	IEEE
j.	NFPA 70: NEC, THE LATER OF 2014 OR AS ADOPTED BY THE AHJ	NFPA
k.	UL 1703	UL
l.	UL 1741	UL
m.	THE REQUIREMENTS OF DUKE ENERGY IN PUBLICATIONS	

IN THE CASE OF CONFLICTS BETWEEN THE CODES AND STANDARDS AND THE PLANS, THE MOST STRINGENT SHALL TAKE PRECEDENCE. WHERE THE PLANS EXCEED THE REQUIREMENTS OF THE CODES AND STANDARDS, THE PLANS SHALL TAKE PRECEDENCE. NO EXTRA PAYMENTS WILL BE MADE FOR WORK OR CHANGES REQUIRED BY AHJ'S.

TABLE OF CONTENTS

SHEET #	SHEET NAME	DRAWING TITLE	REV	INT	PER	CON
1	TS-1	TITTLE SHEET		X	X	
2	SP-1	SITE PLAN		X	X	
3	PV-1	ARRAY LAYOUT AND TECHNICAL DATA			X	
4	SP-E1	EQUIPMENT LOCATION AND CONDUIT RUN			X	
5	SP-E2	GROUND MOUNT SETBACK			X	
6	SP-C	ELECTRICAL EXISTING			X	
7	E1/E3	ELECTRICAL DESIGN		X	X	
8	WM-1	STRING LAYOUT				
9	LD-1	LABELING DIAGRAM				
1	APPENDIX	PLACARD				
2	APPENDIX	ENGINEER LETTER (STRUCTURAL UPGRADES NOT REQUIRED)			X	
3	APPENDIX	ML- MATERIAL LIST			X	

*INT= INTERCONNECTION - PER= PERMITTING - CON= CONSTRUCTION



1 / TS-1 ARRAY LOCATION
NTS

conEdison Solutions®
a Con Edison Clean Energy Business
38 Beaver Brook Road
DANBURY, CT 06810
www.conedsolutions.solar
PH: 203.512.4500

REVISION

REV:	BY:	DATE:	ISSUED FOR / DESCRIPTION:	CHECKED:	DATE:
#1					
#2					
#3					
#4					
#5					
#6					
#7					
#8					
#9					

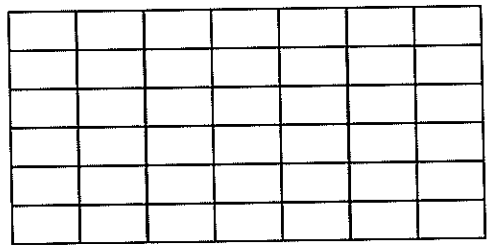
DRAWING TITLE: TITTLE SHEET

PROJECT NAME AND ADDRESS:
Paul L. Cristofori
80 South St
Brooklyn CT 06234
(860) 917-8331
Deltek# DS2100038

DESIGNED BY: Andrei Belov
DRAWN BY: Leandro
APPROVED BY: Andy Mayshar
CREATED DATE: 05/02/2021

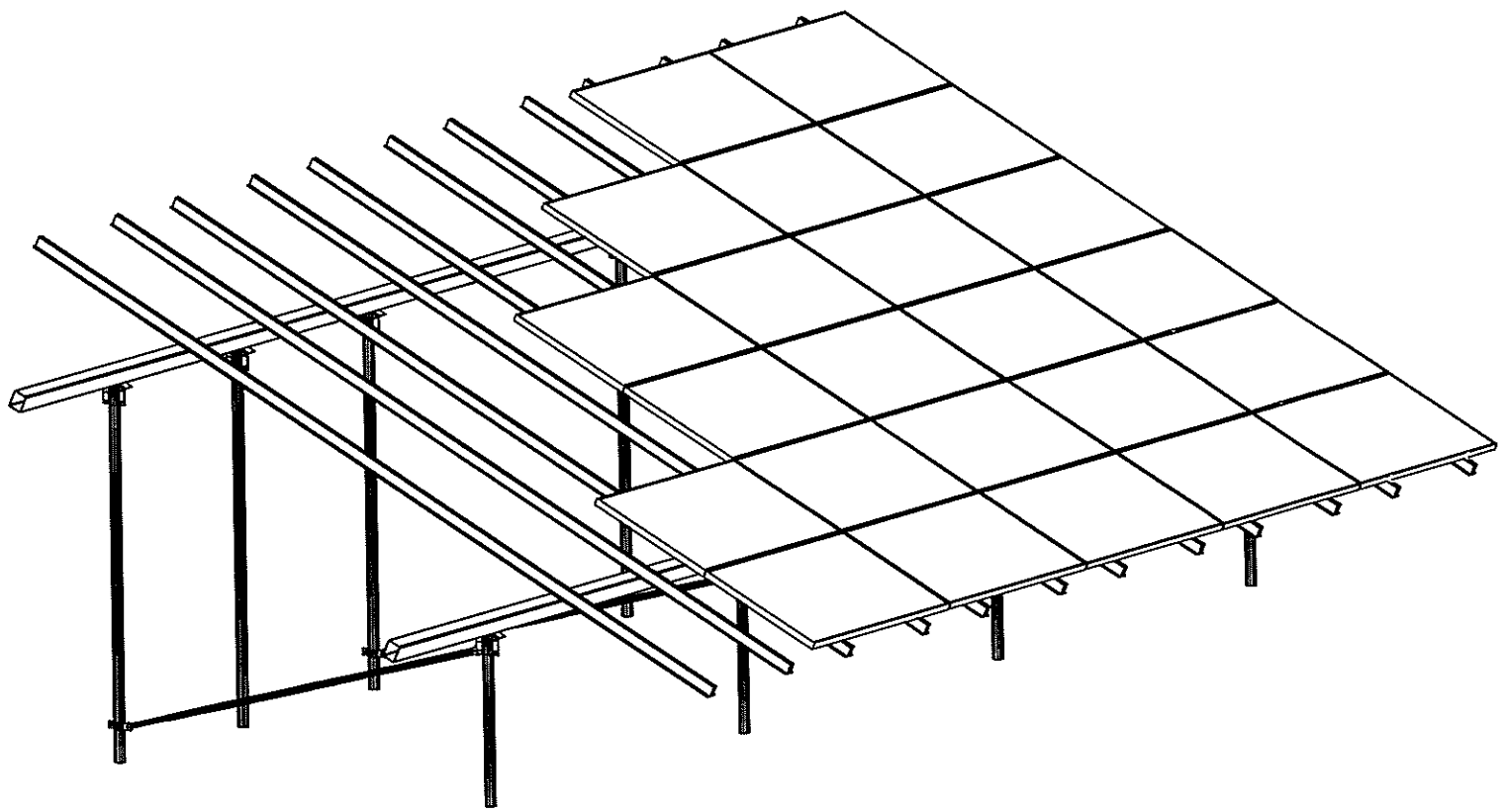
SHEET NUMBER
TS-1

SHEET 1 OF 10



Plan View

NOT TO SCALE



Site Design Conditions

Basic Wind Speed: (Risk Category II)	120 MPH	Max. Leg Axial Bearing:	4,480 lbs.
Basic Wind Speed: (Risk Category I)	110 MPH	Max. Leg Uplift:	1,690 lbs.
Exposure Category:	B	Max. Lateral Resistance:	1,400 lbs.
Ground Snow Load:	35 PSF	Top Rail Max. Loading:	117.6 plf
Flat Roof Snow Load: (if applicable)	30 PSF	Helical Pile Depth:	60" Min
Site Contour:	<5 Degree Slope	Lateral Resistance Plate Size:	Not Req'd

All design work has been performed in accordance with the 2018 Connecticut State Building Code including but not limited to the 2015 International Building Code with state directed amendments in Chapter 16 and Appendix N for wind and snow load design parameters.

Net design pressures were calculated in accordance with ASCE 7-10 section 27.4.3, "Open Buildings with Monoslope, Pitched, or Troughed Roofs". All load cases were evaluated in determining the limiting design conditions. The data table above provides the results for the limiting load case. Maximum leg reaction forces represent the highest load condition seen by any leg in the structure. All legs in the structure are designed to meet the maximum load conditions.

6Lx7C Sub-Array Design Conditions

Front Leg Height:	42"	Array Tilt Angle:	26 Degrees
Rear Leg Height:	104¾"	Overall Array East-West Dim:	40'-2"
North-South Leg Spacing:	127⅜"	Number of Modules/Sub-Array:	42
West Span Leg Spacing:	10'-9"	Number of Sub-Arrays:	1
East Span Leg Spacing:	10'-9"	Module Columns/Sub-Array:	7
Quantity Center Spans:	1	Number of Module Rows:	6
Center Span Leg Spacing:	10'-6"	Module Orientation:	Landscape
East & West Overhang:	3'-3"	Module Column Spacing	⅜"
Overall Beam Length:	38'-6"	Module Row Spacing	1"
Front Edge Ground Clearance:	28"	Module Model:	LG375N1C-A6
Horizontal Rail Material:	5"x4"x⅛" HSS	Module Size:	41.02" x 68.50"
Top Rail Material:	SF Rails	Individual Module Rating:	375 watt
Qty Rails per Panel:	2	Sub Array Power Rating:	15.75 kw
Top Rail Length:	254"	Total Power Rating:	15.75 kw
Top Rail Center Span:	142"		
Top Rail Overhangs:	56"		

1 Additional North Column is to be installed per field direction. The Column is to support equipment mounting needs. It is not required for North beam support.

Sheet 1 of 3

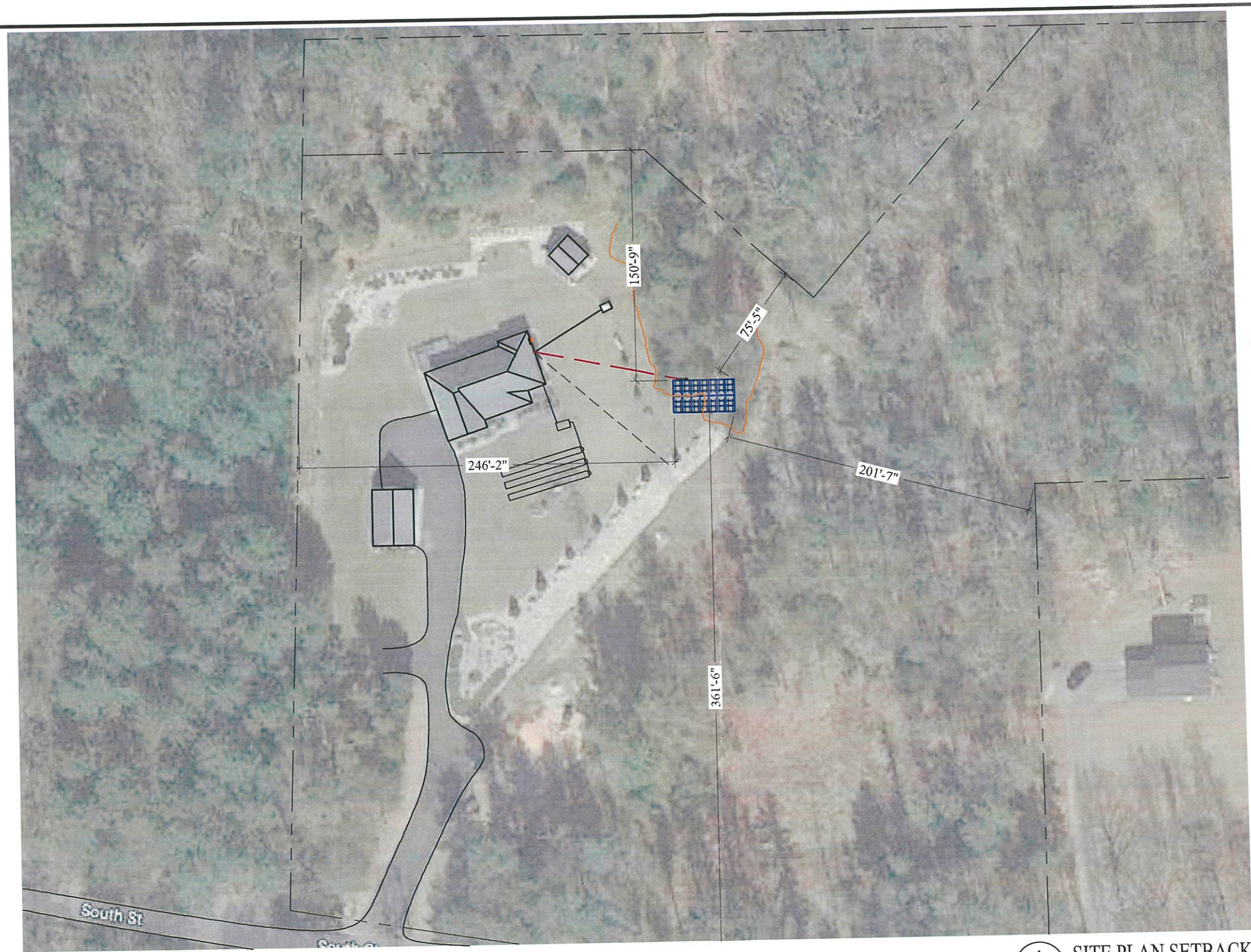
Date	Revision	Drawn By:	Review By:
06/16/2021	Original	MM	JD

Consolidated Edison Solutions Inc.

Project:
Cristofori Residence
80 South St
Brooklyn, CT 06234

Solar Foundations USA

1142 River Road, New Castle, DE 19720 Ph: (855) 738-7200 Fax: (866) 644-5665



1 SP-E2 **SITE PLAN SETBACK**
SCALE: 1/64" = 1'-0"

THIS DESIGN SHALL BE VIEWED AS AN ADDENDUM TO CUSTOMER'S ORIGINAL CONTRACT: INVERTERS AND/OR PANELS MAY HAVE BEEN MODIFIED FROM YOUR ORIGINAL CONTRACT. THESE CHANGES MAY HAVE OCCURRED TO ADDRESS: SHADING, STRUCTURAL, ELECTRICAL PRODUCTION OR EQUIPMENT AVAILABILITY THESE EQUIPMENT MODIFICATIONS DO NOT CHANGE THE CONTRACT PRICE. "BY SIGNING THIS DOCUMENT YOU AGREE TO THE ABOVE SYSTEM DESIGN AND ANY EQUIPMENT MODIFICATIONS TO THE ORIGINAL CONTRACT. CONTRACT PRICE DOES NOT CHANGE UNLESS AGREED TO IN WRITING BY BOTH THE CUSTOMER AND CES. IF YOU HAVE ANY QUESTIONS OR CONCERNS PLEASE CONTACT OUR OFFICE AT 203-512 4500 dl-CESDanburydesignteam@ConEdCEB.com"

conEdison Solutions
a Con Edison Clean Energy Business
38 Beaver Brook Road
DANBURY, CT 06810
www.conedsolutions.solar
PH: 203.512.4500

REVISION				
REV:	BY:	DATE:	ISSUED FOR / DESCRIPTION:	CHECKED: DATE:
#1				
#2				
#3				
#4				
#5				
#6				
#7				
#8				
#9				

DRAWING TITLE: GROUND MOUNT SETBACK

PROJECT NAME AND ADDRESS: Paul L. Cristofori
80 South St
Brooklyn CT 06234
(860) 917-8331
Deltek# DS2100038

CUSTOMER APPROVAL: _____ DATE: ___/___/___

DESIGNED BY: Andrei Belov
DRAWN BY: Leandro
APPROVED BY: Andy Mayshar
CREATED DATE: 05/02/2021
SHEET NUMBER: SP-E2

From: Mayshar, Andy <MaysharA@conedceb.com>
Sent: Tuesday, September 21, 2021 3:05 PM
To: Jana Roberson
Cc: Olimpieri, Jim; Jattan, Amaris; Carvalho, Leandro
Subject: RE: 80 South Street
Attachments: Reflection from Solar farm projects near airports.pdf

Hi Jana

To answer your questions

1) We are not currently planning on any screening as the array is located so far from the road with
no visibility from the road.
2) Please see attached report on Solar Panel Glare. Solar Panels are designed and coated to
absorb the majority of the incident light such that there is minimum glare. Also keep in mind
that the angle of reflection equals the angle of incidence such that any light hitting the panels
which are a 26 degree tilt would be reflected off at 56 degrees.
3) The max height at the rear of the array is 10 feet 9 inches.

Please let me know if you have any other questions

Thanks

Andy

Andy Mayshar
Manager Engineering & Design
ConEdison Solutions
38 Beaver Brook Road
Danbury CT 06810
203 616-4213
860 974-2321 cell
mayshara@conedceb.com

From: Jana Roberson <J.Roberson@Brooklynct.org>
Sent: Tuesday, September 21, 2021 1:29 PM
To: Jattan, Amaris <JattanA@conedceb.com>
Subject: 80 South Street

forward message to Email Check)
Amaris,

Some questions about the proposal for 80 South Street in Brooklyn, CT.

1) Is any kind of screening will be provided?
2) How has glare been addressed?
3) What is the max height of the structure?

Thank you.

Jana Butts Roberson, AICP
Director of Community Development/Town Planner
Town of Brooklyn, CT

j.roberson@brooklynct.org
(860)779-3411 x.14
PO Box 356
Clifford B. Green Memorial Building, Suite 22
69 South Main Street
Brooklyn, CT 06234

Solar farm projects near airports: Is glare an issue?

The Canberra Times recently published a piece about the concerns about potential glare from the solar panels of the proposed 4 megawatt (MW) Mount Majura Solar Farm, given its proximity to Canberra Airport. This article addresses concerns about glare from solar panels in aviation and examines a number of similar case studies both internationally and elsewhere in Australia.

1. Solar panels are designed to absorb light, and accordingly reflect only reflect a small amount of the sunlight that falls on them compared to most other everyday objects. Most notably, solar panels reflect significantly less light than flat water.

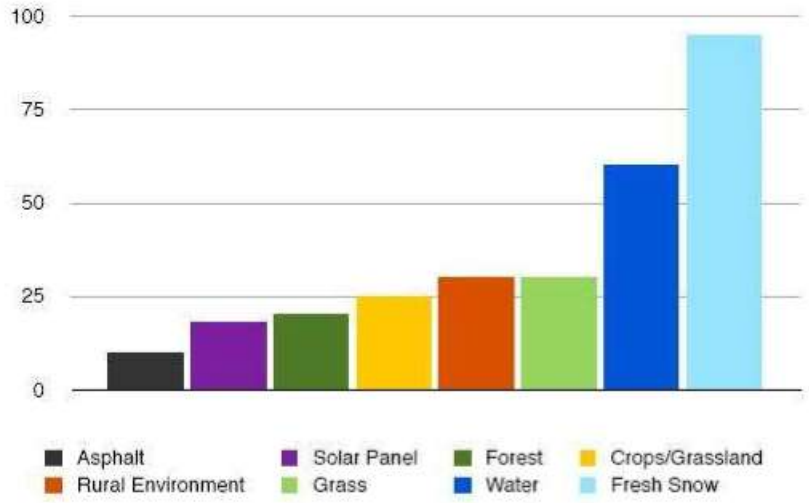
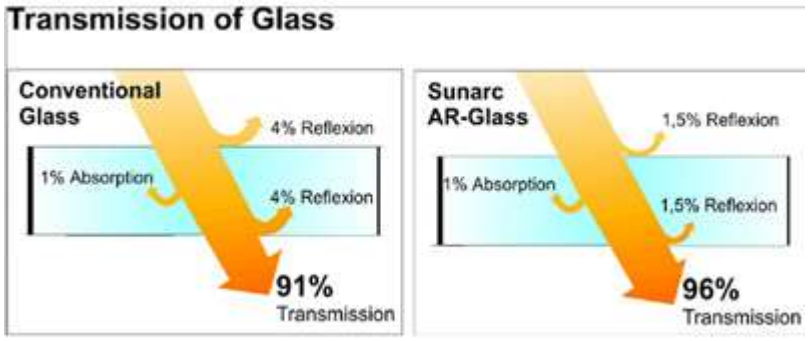


Figure 3: Comparative reflection analysis

In fact, glass, one of the uppermost and important components of a solar panel, reflects only a small portion of the light that falls on it–about 2-4%, depending on whether it has undergone an anti-reflective treatment. These days, to increase solar panel efficiency and power output, most panels are treated with some kind of anti-reflective coating. Below is an example of how Sunarc's antireflective technology–just one available on the market–can increase light transmission in glass and reduce reflection.



(Image via Sunarc.)

The chart below compares the reflectivity of smooth surfaces at different angles of sunlight. Solar panels treated with antireflective coating reflect a lower percentage of light than smooth water. Steel, a common building material, reflects far more incident sunlight than either.

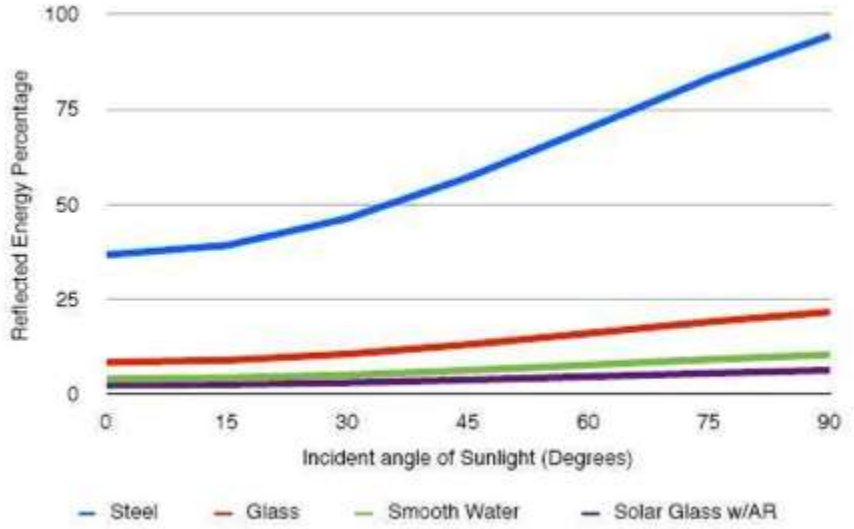


Figure 4: Analysis of typical material reflectivity with sunlight angle[3]

2. Of course, it may not seem fair to compare the quality of light reflected from grass to that reflected off of water or glass. Smooth surfaces such as glass and still water exhibit 'specular reflection'. This is when light hits the surface at one angle and 'bounces off' in another direction, much like a mirror. Specular reflection can be contrasted with 'diffuse reflection', which occurs when light reflects off of microscopically rough surfaces and scatters. Diffuse reflection is what happens when light hits virtually everything in our field of vision.

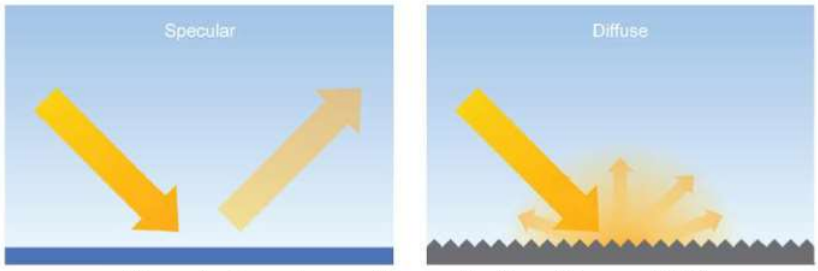


Figure 1: Specular vs diffuse reflections [Source: FAA]

When the sun is reflected on a smooth surface, it can result in glint (a quick reflection) or glare (a longer reflection) for those who are on the 'receiving' angle. In both cases the light reflected is diminished by having first hit the substrate that reflected it–unless that surface is a perfect mirror. When the sun is the original source of the light reflected off a reflective surface, the time and position at which glare or glint might occur depends on the original position of the sun in the sky in relation to the location of the viewer.
Pilots are familiar with this sort of reflection, usually from bodies of water (which, as noted above, has a higher level of reflectivity than glass or solar panels). Airports are commonly found in close proximity to lakes and the ocean (Sydney's Kingsford Smith being one such case).

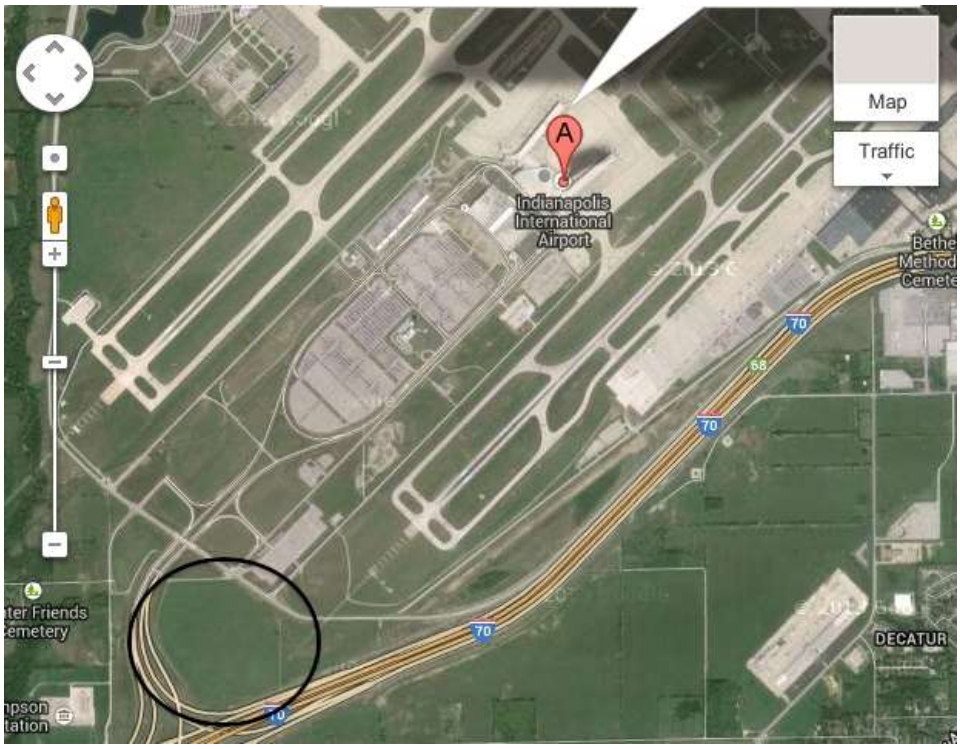
3. The biggest glare hazard in aviation is the sun itself–particularly when it is low on the horizon. In an international, comprehensive analysis of potential glare hazards (pdf – see section 7) in aviation from solar panels, the UK's Spaven Consulting points out that a trawl of UK and US aviation incident databases between the years 2000 and 2010 for accidents in which glare was cited as a factor reveals that in the overwhelming majority of these cases, the source of the glare was the sun itself. The handful of other cases were mainly related to glare from water on the tarmac or from a nearby body of water. In no case was glare from solar panels or 'similar facilities' cited as a contributing factor to an accident.

4. Numerous airports around the world have solar installations *located on their premises.* Among those in Australia that have installed large arrays are Adelaide Airport, Alice Springs Airport, Newman Airport (WA), and Ballarat Airport. Internationally, solar arrays have been installed at or near airports in Singapore's Changi Airport, London's Gatwick Airport, California's San Jose Airport, Germany's Dusseldorf Airport, the US's Denver International

Airport, Nellis Air Force Base in Nevada, and Ontario's Thunder Bay Airport, to name a few. The preponderance of examples in which solar panels have been installed at, on or near airports is testament to fact that they are not automatically a hazard to pilots.

Particularly noteworthy and a close analogue to the Majura Solar Farm with regard to its position in relation to an airport is the Indiana Solar Farm. 2MW of solar panels facing due south are located under 1km south-west of runways. Stephen Barrett of US consultancy HMMH, which has undertaken glare assessments of numerous solar installations at or near airports across the US–including Indianapolis Airport–said that the majority of projects that HMMH had been involved in were developed by the airports themselves and were therefore careful to adhere to FAA guidance. He also noted that the FAA only requires glare assessments for developments that occur within 2 miles (about 3.22km) of touch-down.

The Indiana Solar Farm, less than 1km southwest of the landing strip at Indianapolis International Airport. (Photo by Alex Dierkman.)



The location (circled) of the Indiana Solar Farm in relation to Indianapolis Airport runways. Panels are not visible because the map is out of date. (Image via Google Maps.)

Dusseldorf International Airport, Germany (Image via AvaiationPros.)

Denver International Airport , Colorado, USA (Image via Worldwater & Solar.)

Nellis Air Force Base in Nevada, USA (Image via Nellis Air Force Base.)

The 8.5MW Thunder Bay Airport Solar Park (Image via Recharge News.)

Two Californian airports specifically noted in Spaven Consulting's report–Bakersfield and Oakland–have solar arrays directly adjacent to the tarmac or even between runways (images below). Both of these arrays underwent analysis during the planning process to ensure that glare was not an issue, and neither has reported complaints about glare from pilots since the arrays were installed.

Figure 5: Location of solar PV array at Oakland Airport

Figure 7: Bakersfield Airport showing location of solar array

5. The Spaven Consulting report notes that because of their low reflectivity solar developments 'en route' to an airport (but not actually located on the premises of an airport) are unlikely to warrant a glare analysis. In the event that such an analysis is deemed necessary, the above points (about the low reflectivity of panels) are should be taken into account. The Mount Majura Solar Farm will be located 7km north of the airport, making it unlikely that pilots flying in and out will experience any interference due to reflection of light from the panels. Furthermore, because the nose of a commercial aircraft is

tilted slightly upwards prior to landing, should any light be reflected off the panels during a landing, it is more likely to fall on the underside of the plane than shine into its cockpit.

PLANNING AND ZONING COMMISSION
TOWN OF BROOKLYN
CONECTICUT

RECEIVED
SEP 14 2021

Received Date _____
Action Date_____

Application #SPR 21-004
Check# 15685

APPLICATION FOR SITE PLAN REVIEW

Name of Applicant CHIP Fund 6 LLC & CHIP Fund 8 LLC Phone 203-257-5661
Mailing Address 18 Wells Hill Road, Easton, CT 06612 Phone_____

Name of Owner CHIP Fund 6 LLC & CHIP Fund 8 LLC Phone 203-257-5661
Mailing Address 18 Wells Hill Road, Easton, CT 06612 Phone_____

Name of Engineer/Surveyor Provost & Rovero, Inc.
Address P.O. Box 191, Plainfield, CT 06374
Contact Person David J. Held, P.E., L.S. Phone 860-234-3183 Fax 86-230-0860

Property location/address 5 Front Street & 29 Tiffany Street
Map # 47 Lot # 59, 60 Zone R-10 Total Acres 1.815

Proposed Activity Installation of a ground mounted solar array and solar carport array.

Change of Use: Yes____ No X If Yes, Previous Use_____
Area of Proposed Structure(s) or Expansion see attached site plans

Utilities - Septic: On Site_____ Municipal X Existing_____ Proposed_____
Water: Private_____ Public X Existing_____ Proposed_____

Compliance with Article 4, Site Plan Requirements

The following shall accompany the application when required:

Fee$ 400.00 **State Fee ($60.00)** _____ 3 copies of plans_____ Sanitary Report_____
4.5.5 Application/ Report of Decision from the Inland Wetlands Commission
4.5.5 Applications filed with other Agencies
12.1 Erosion and Sediment Control Plans
See also Site Plan Review Worksheet

Variances obtained N/A Date_____

The owner and applicant hereby grant the Brooklyn Planning and Zoning Commission, the Board of Selectman, Authorized Agents of the Planning and Zoning Commission or Board of Selectman, permission to enter the property to which the application is requested for the purpose of inspection and enforcement of the Zoning regulations and the Subdivision regulations of the Town of Brooklyn

Applicant: _____ Date 9/14/2021

Owner: _____ Date 9/14/2021

* Note: Any consulting fees will be paid by the applicant

Provost & Rovero, Inc.

Civil Engineering • Surveying • Site Planning • Structural • Mechanical • Architectural Engineering

P.O. Box 191
57 East Main Street
Plainfield, CT 06374

Telephone (860) 230-0856
Fax (860) 230-0860
www.prorovinc.com

September 14, 2021

Town of Brooklyn Planning & Zoning Commission
69 South Main Street, Suite 22
Brooklyn, CT 06234

RE: Proposed Solar Array – Front Street & Tiffany Street – Brooklyn, CT
P&R Job No. 213008

Dear Commissioners:

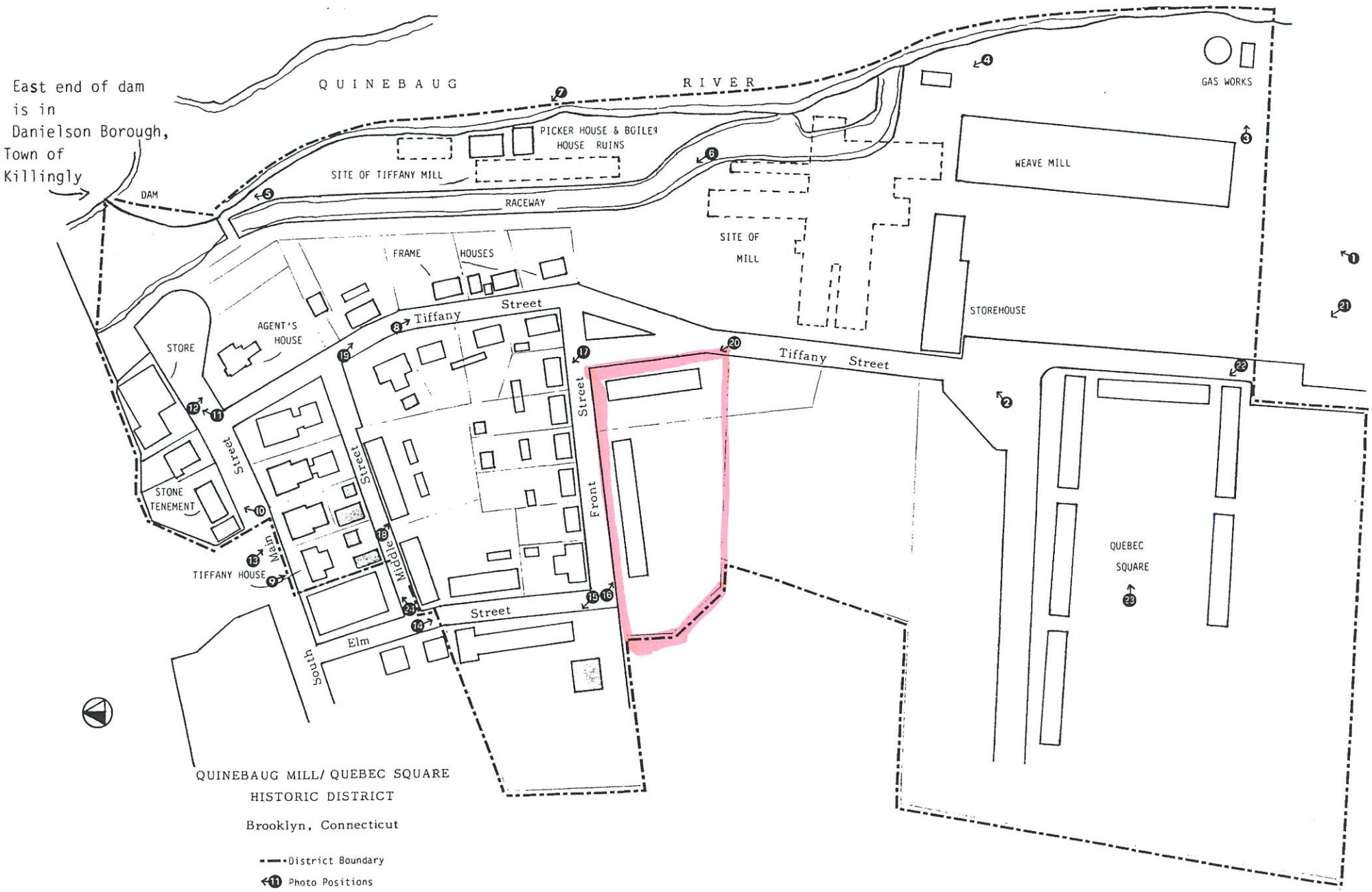
Attached hereto, please find a completed application form, $460.00 application fee and five (5) copies of site plans for a proposed solar array on property owned by CHIP Fund 8 LLC. The solar array is being proposed as part of the renovation of the existing 15 unit apartment building at 5 Front Street. The existing utility connection is located on 29 Tiffany Street, owned by CHIP Fund 6 LLC. It is anticipated that the solar array will provide power for both properties.

The proposed solar array includes three ground mounted racking rows and a carport array which will also provide covered parking spaces at 5 Front Street. There will be no reduction in parking spaces as a result of this project. The ground mounted array has been designed with a maximum ground coverage ratio (GCR) of 50% and as such, we are not assuming any increase in impervious surface as a result of this project. The ground mount racking is anticipated to utilize ground screw anchors or a similar foundation system.

Thank you for your consideration of this application. If you have any questions or need additional information, please do not hesitate to contact us at your convenience.

Sincerely,

David J. Held, P.E., L.S.
Provost & Rovero, Inc.

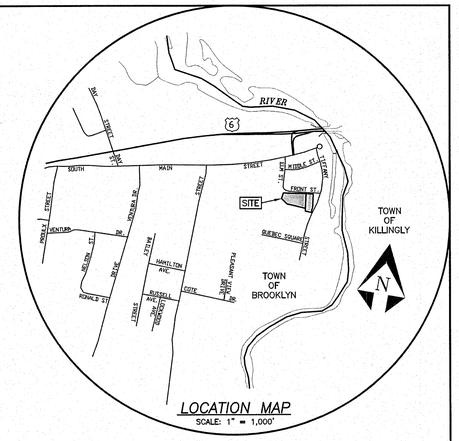

East end of dam is in Danielson Borough, Town of Killingly
QUINEBAUG RIVER
DAM
RACEWAY
SITE OF TIFFANY MILL
PICKER HOUSE & BOILER HOUSE RUINS
GAS WORKS
WEAVE MILL
SITE OF MILL
STOREHOUSE
FRAME HOUSES
AGENT'S HOUSE
STORE
STONE TENEMENT
TIFFANY HOUSE
Tiffany Street
Main Street
Middle Street
Front Street
South Street
Elm Street
QUEBEC SQUARE
QUINEBAUG MILL/ QUEBEC SQUARE HISTORIC DISTRICT
Brooklyn, Connecticut
District Boundary
Photo Positions
Noncontributing Structures
Structures No Longer Extant

NOTES:

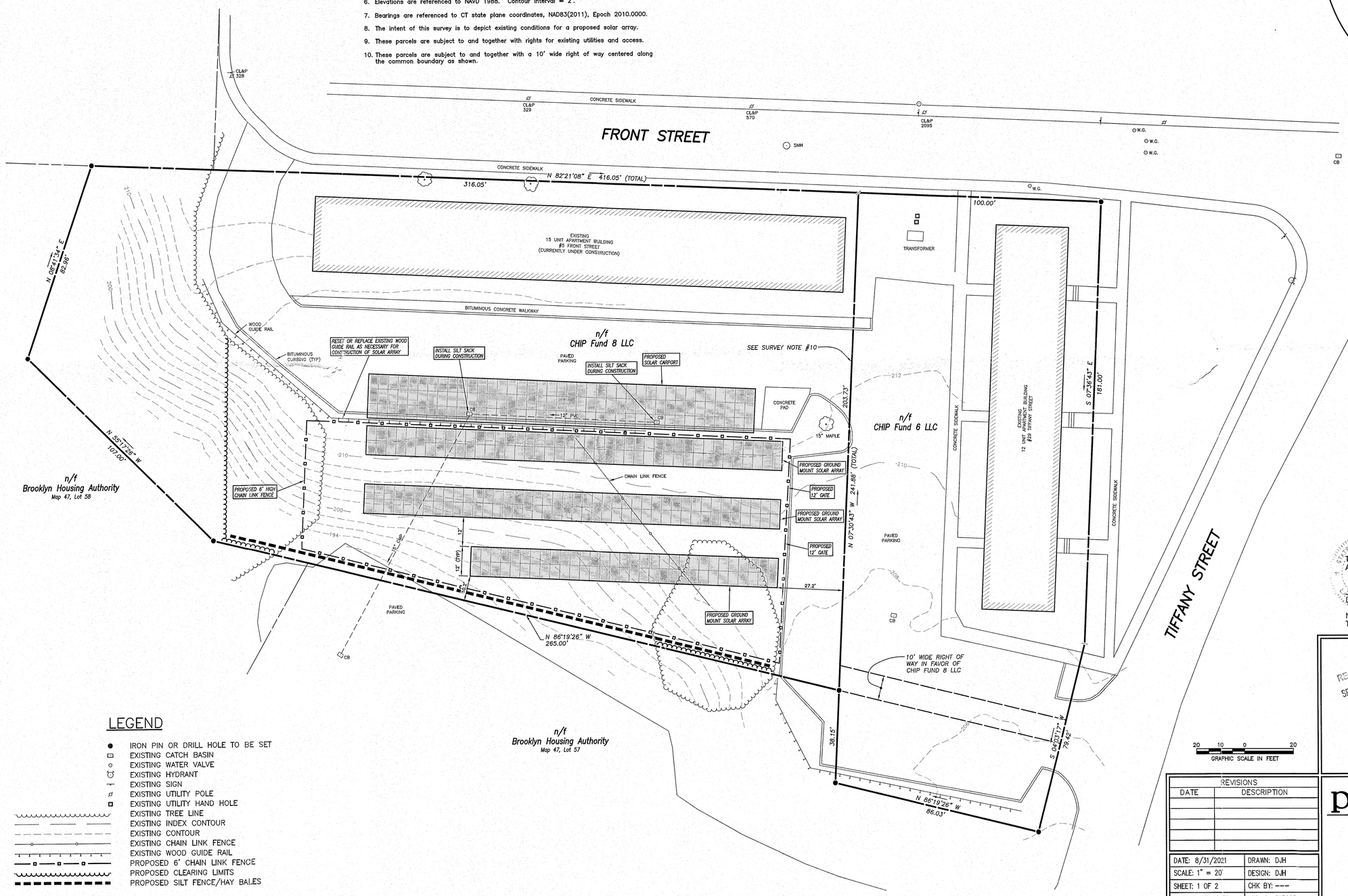
1. This survey has been prepared pursuant to the Regulations of Connecticut State Agencies Section 20-300b-1 through 20-300b-20 as amended on October 26, 2018;
   - This survey conforms to a Class "A-2" horizontal accuracy.
   - Topographic features conform to a Class "T-2" accuracy.
   - Boundary Determination Category: Resurvey.
   - Survey Type: Improvement Location Survey.
2. Zone = R-10.
3. Parcels are shown as Lots 59 and 60 on Assessors Map 47.
4. Owners of record: CHIP Fund 6 LLC & CHIP Fund 8 LLC
   18 Wells Hill Road
   Easton, CT 06612
5. The locations of existing utilities are based on surface evidence and other sources of information. Before any construction is to commence contact "CALL BEFORE YOU DIG" at 1-800-922-4455.
6. Elevations are referenced to NAVD 1988. Contour interval = 2'.
7. Bearings are referenced to CT state plane coordinates, NAD83(2011), Epoch 2010.0000.
8. The intent of this survey is to depict existing conditions for a proposed solar array.
9. These parcels are subject to and together with rights for existing utilities and access.
10. These parcels are subject to and together with a 10' wide right of way centered along the common boundary as shown.

MAP REFERENCES:

1. "Plan in Subdivision – of – Dwellings and Land – of – Wauregan-Quinebaug Mills Inc. – at – East Brooklyn & Danielson, Conn. – Scale: 1" = 100' – Oct. 1934 – Wm. K. Pike, C.E."
2. "Plan of Land – to be Acquired by – Quebec Square Housing Inc. – Quebec Square – Brooklyn, Connecticut – Scale: 1" = 40' – Dated: Nov. 12, 1977 – Kieltyka, Woodis & Pike"
3. "Site Layout & Planting Plan – Tiffany Place – Tiffany Street – Brooklyn, CT – Scale: 1" = 40' – Dziki & Associates Architects"



LOCATION MAP
SCALE: 1" = 1,000'



LEGEND

- IRON PIN OR DRILL HOLE TO BE SET
- EXISTING CATCH BASIN
- EXISTING WATER VALVE
- EXISTING HYDRANT
- EXISTING SIGN
- EXISTING UTILITY POLE
- EXISTING UTILITY HAND HOLE
- EXISTING TREE LINE
- EXISTING INDEX CONTOUR
- EXISTING CONTOUR
- EXISTING CHAIN LINK FENCE
- EXISTING WOOD GUIDE RAIL
- PROPOSED 6' CHAIN LINK FENCE
- PROPOSED CLEARING LIMITS
- PROPOSED SILT FENCE/HAY BALES

ENGINEER 9/14/21 DATE

TO MY KNOWLEDGE AND BELIEF, THIS MAP IS SUBSTANTIALLY CORRECT AS NOTED HEREON,

DAVID J. HELD, L.S. LIC. NO. 24267 9/14/21 DATE

NO CERTIFICATION IS EXPRESSED OR IMPLIED UNLESS THIS MAP BEARS THE ORIGINAL SEAL AND SIGNATURE OF THE LAND SURVEYOR.

IMPROVEMENT LOCATION SURVEY
PROPOSED SOLAR ARRAY
PREPARED FOR

CHIP FUND 6 LLC & CHIP FUND 8 LLC

FRONT STREET & TIFFANY STREET
BROOKLYN, CONNECTICUT

RECEIVED SEP 14 2021

REVISIONS	
DATE	DESCRIPTION

DATE: 8/31/2021	DRAWN: DJH
SCALE: 1" = 20'	DESIGN: DJH
SHEET: 1 OF 2	CHK BY: ---
DWG. No: Client File	JOB No: 213008

Provost & Rovero, Inc.
Civil Engineering • Surveying • Site Planning
Structural • Mechanical • Architectural Engineering
57 East Main Street, P.O. Box 191
Plainfield, Connecticut 06374
(860) 230-0856 - FAX: (860) 230-0860
info@prorovinc.com
www.prorovinc.com

EROSION AND SEDIMENT CONTROL PLAN:

REFERENCE IS MADE TO:

1. Connecticut Guidelines for Soil Erosion and Sediment Control 2002 (2002 Guidelines).
2. Soil Survey of Connecticut, N.R.C.S.

SILT FENCE INSTALLATION AND MAINTENANCE:

1. Dig a 6" deep trench on the uphill side of the barrier location.
2. Position the posts on the downhill side of the barrier and drive the posts 1.5 feet into the ground.
3. Lay the bottom 6" of the fabric in the trench to prevent undermining and backfill.
4. Inspect and repair barrier after heavy rainfall.
5. Inspections will be made at least once per week and within 24 hours of the end of a storm with a rainfall amount of 0.5 inch or greater to determine maintenance needs.
6. Sediment deposits are to be removed when they reach a height of 1 foot behind the barrier or half the height of the barrier and are to be deposited in an area which is not regulated by the inland wetlands commission.
7. Replace or repair the fence within 24 hours of observed failure. Failure of the fence has occurred when sediment fails to be retained by the fence because:

– the fence has been overtopped, undercut or bypassed by runoff water,
– the fence has been moved out of position (knocked over), or
– the geotextile has decomposed or been damaged.

HAY BALE INSTALLATION AND MAINTENANCE:

1. Bales shall be placed as shown on the plans with the ends of the bales tightly abutting each other.
2. Each bale shall be securely anchored with at least 2 stakes and gaps between bales shall be wedged with straw to prevent water from passing between the bales.
3. Inspect bales at least once per week and within 24 hours of the end of a storm with a rainfall amount of 0.5 inches or greater to determine maintenance needs.
4. Remove sediment behind the bales when it reaches half the height of the bale and deposit in an area which is not regulated by the Inland Wetlands Commission.
5. Replace or repair the barrier within 24 hours of observed failure. Failure of the barrier has occurred when sediment fails to be retained by the barrier because:

– the barrier has been overtopped, undercut or bypassed by runoff water,
– the barrier has been moved out of position, or
– the hay bales have deteriorated or been damaged.

TEMPORARY VEGETATIVE COVER:

SEED SELECTION

Grass species shall be appropriate for the season and site conditions. Appropriate species are outlined in Figure TS–2 in the 2002 Guidelines.

TIMING CONSIDERATIONS

Seed with a temporary seed mixture within 7 days after the suspension of grading work in disturbed areas where the suspension of work is expected to be more than 30 days but less than 1 year.

SITE PREPARATION

Install needed erosion control measures such as diversions, grade stabilization structures, sediment basins and grassed waterways.

Grade according to plans and allow for the use of appropriate equipment for seedbed preparation, seeding, mulch application, and mulch anchoring.

SEEDBED PREPARATION

Loosen the soil to a depth of 3–4 inches with a slightly roughened surface. If the area has been recently loosened or disturbed, no further roughening is required. Soil preparation can be accomplished by tracking with a bulldozer, discing, harrowing, raking or dragging with a section of chain link fence. Avoid excessive compaction of the surface by equipment traveling back and forth over the surface. If the slope is tracked, the cleat marks shall be perpendicular to the anticipated direction of the flow of surface water.

If soil testing is not practical or feasible on small or variable sites, or where timing is critical, fertilizer may be applied at the rate of 300 pounds per acre or 7.5 pounds per 1,000 square feet of 10–10–10 or equivalent. Additionally, lime may be applied using rates given in Figure TS–1 in the 2002 Guidelines.

SEEDING

Apply seed uniformly by hand cyclone seeder, drill, cultipacker type seeder or hydroseeder at a minimum rate for the selected species. Increase seeding rates by 10% when hydroseeding.

MULCHING

Temporary seedings made during optimum seeding dates shall be mulched according to the recommendations in the 2002 Guidelines. When seeding outside of the recommended dates, increase the application of mulch to provide 95%–100% coverage.

MAINTENANCE

Inspect seeded area at least once a week and within 24 hours of the end of a storm with a rainfall amount of 0.5 inch or greater for seed and mulch movement and rill erosion.

Where seed has moved or where soil erosion has occurred, determine the cause of the failure. Repair eroded areas and install additional controls if required to prevent reoccurrence of erosion.

Continue inspections until the grasses are firmly established. Grasses shall not be considered established until a ground cover is achieved which is mature enough to control soil erosion and to survive severe weather conditions (approximately 80% vegetative cover).

PERMANENT VEGETATIVE COVER:

Refer to Permanent Seeding Measure in the 2002 Guidelines for specific applications and details related to the installation and maintenance of a permanent vegetative cover. In general, the following sequence of operations shall apply:

1. Topsoil will be replaced once the excavation and grading has been completed. Topsoil will be spread at a uniform depth approximating existing conditions on imported silt or suitable on–site materials.
2. Apply agricultural ground limestone. Apply fertilizer. Quantities shall be determined based on laboratory soil tests. Work lime and fertilizer into the soil to a depth of 4".
3. Inspect seedbed before seeding. If traffic has compacted the soil, retill compacted areas.
4. Apply the chosen grass seed mix. The recommended seeding dates are: April 1 to June 15 & August 15 – October 1.
5. Following seeding, firm seedbed with a roller. Mulch immediately following seeding. If a permanent vegetative stand cannot be established by September 30, apply a temporary cover on the topsoil such as netting, mat or organic mulch.

EROSION AND SEDIMENT CONTROL NARRATIVE:

PRINCIPLES OF EROSION AND SEDIMENT CONTROL

The primary function of erosion and sediment controls is to absorb erosional energies and reduce runoff velocities that force the detachment and transport of soil and/or encourage the deposition of eroded soil particles before they reach any sensitive area.

KEEP LAND DISTURBANCE TO A MINIMUM

The more land that is in vegetative cover, the more surface water will infiltrate into the soil, thus minimizing stormwater runoff and potential erosion. Keeping land disturbance to a minimum not only involves minimizing the extent of exposure at any one time, but also the duration of exposure. Phasing, sequencing and construction scheduling are interrelated. Phasing divides a large project into distinct sections where construction work over a specific area occurs over distinct periods of time and each phase is not dependent upon a subsequent phase in order to be functional. A sequence is the order in which construction activities are to occur during any particular phase. A sequence should be developed on the premise of "first things first" and "last things last" with proper attention given to the inclusion of adequate erosion and sediment control measures. A construction schedule is a sequence with time lines applied to it and should address the potential overlap of actions in a sequence which may be in conflict with each other.

– Limit areas of clearing and grading. Protect natural vegetation from construction equipment with fencing, tree armoring, and retaining walls or tree wells.
– Route traffic patterns within the site to avoid existing or newly planted vegetation.
– Phase construction so that areas which are actively being developed at any one time are minimized and only that area under construction is exposed. Clear only those areas essential for construction.
– Sequence the construction of storm drainage systems so that they are operational as soon as possible during construction. Ensure all outlets are stable before outletting storm drainage flow into them.
– Schedule construction so that final grading and stabilization is completed as soon as possible.

SLOW THE FLOW

Detachment and transport of eroded soil must be kept to a minimum by absorbing and reducing the erosive energy of water. The erosive energy of water increases as the volume and velocity of runoff increases. The volume and velocity of runoff increases during development as a result of reduced infiltration rates caused by the removal of existing vegetation, removal of topsoil, compaction of soil and the construction of impervious surfaces.

– Use diversions, stone dikes, silt fences and similar measures to break flow lines and dissipate storm water energy.
– Avoid diverting one drainage system into another without calculating the potential for downstream flooding or erosion.

KEEP CLEAN RUNOFF SEPARATED

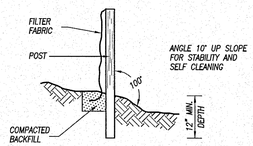
Clean runoff should be kept separated from sediment laden water and should not be directed over disturbed areas without additional controls. Additionally, prevent the mixing of clean off–site generated runoff with sediment laden runoff generated on–site until after adequate filtration of on–site waters has occurred.

– Segregate construction waters from clean water.
– Divert site runoff to keep it isolated from wetlands, watercourses and drainage ways that flow through or near the development until the sediment in that runoff is trapped or detained.

REDUCE ON SITE POTENTIAL INTERNALLY AND INSTALL PERIMETER CONTROLS

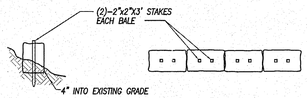
While it may seem less complicated to collect all waters to one point of discharge for treatment and just install a perimeter control, it can be more effective to apply internal controls to many small sub–drainage basins within the site. By reducing sediment loading from within the site, the chance of perimeter control failure and the potential off–site damage that it can cause is reduced. It is generally more expensive to correct off–site damage than it is to install proper internal controls.

– Control erosion and sedimentation in the smallest drainage area possible. It is easier to control erosion than to contend with sediment after it has been carried downstream and deposited in unwanted areas.
– Direct runoff from small disturbed areas to adjoining undisturbed vegetated areas to reduce the potential for concentrated flows and increase settlement and filtering of sediments.
– Concentrated runoff from development should be safely conveyed to stable outlets using rip rapped channels, waterways, diversions, storm drains or similar measures.
– Determine the need for sediment basins. Sediment basins are required on larger developments where major grading is planned and where it is impossible or impractical to control erosion at the source. Sediment basins are needed on large and small sites when sensitive areas such as wetlands, watercourses, and streets would be impacted by off–site sediment deposition. Do not locate sediment basins in wetlands or permanent or intermittent watercourses. Sediment basins should be located to intercept runoff prior to its entry into the wetland or watercourse.
– Grade and landscape around buildings and septic systems to divert water away from them.



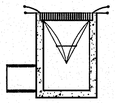
SILT FENCE

NOT TO SCALE

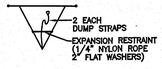


HAYBALE BARRIER

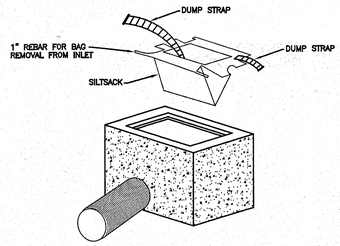
NOT TO SCALE



INSTALLATION DETAIL



BAG DETAIL



INLET SEDIMENT CONTROL DEVICE

NOT TO SCALE

INSTALLATION & MAINTENANCE

1. Install as directed by manufacturer.
2. Inspect the catch basin sediment device at least once a week (preferably twice) and after rainfall events of 0.5" or greater.
3. Remove sediment when the siltsack is 1/2 full. Sediment shall be deposited in an area which is not regulated by the Inland Wetlands Commission.
4. Replace or repair within 24–hours of observed failure. Failure may include:
   –Overtopping, or bypassed by runoff water.
   –The geotextile has decomposed or has been damaged.

STATE OF CONNECTICUT DEPARTMENT OF ENGINEERING LICENSED PROFESSIONAL ENGINEER

ENGINEER — DATE 9/14/21

DETAIL SHEET
PROPOSED SOLAR ARRAY
PREPARED FOR

CHIP FUND 6 LLC &
CHIP FUND 8 LLC

FRONT STREET & TIFFANY STREET
BROOKLYN, CONNECTICUT

REVISIONS	
DATE	DESCRIPTION

DATE: 8/31/2021	DRAWN: DJH
SCALE: AS SHOWN	DESIGN: DJH
SHEET: 2 OF 2	CHK BY: ---
DWG. No: Client File	JOB No: 213008

Provost & Rovero, Inc.

Civil Engineering • Surveying • Site Planning
Structural • Mechanical • Architectural Engineering

57 East Main Street, P.O. Box 191
Plainfield, Connecticut 06374
(860) 230-0856 - FAX: (860) 230-0860
info@prorovinc.com
www.prorovinc.com

Jana Roberson

From: David Held <dheld@prorovinc.com>
Sent: Wednesday, September 22, 2021 2:19 PM
To: Jana Roberson
Subject: RE: Ground-mount solar applications

Follow Up Flag: Follow up
Flag Status: Flagged

Hi Jana,

Please see responses below in red.

Thanks.

David J. Held, P.E., L.S.
Provost & Rovero, Inc.
57 East Main Street
P.O. Box 191
Plainfield, CT 06374
Phone (860) 230-0856
Cell (860) 234-3183
Fax (860) 230-0860
dheld@prorovinc.com
www.prorovinc.com

From: Jana Roberson [mailto:J.Roberson@Brooklynct.org]
Sent: Friday, September 17, 2021 10:33 AM
To: David Held <dheld@prorovinc.com>
Subject: RE: Ground-mount solar applications

Got it. Thank you.
I have a few questions:

1) Are you aware you need to meet all setbacks? Or seek a waiver. R-10 zone setback for an accessory structure in the rear yard and/or side yard is 10'. The provided side and rear setbacks are 10.2' and 27.2' respectively. I assume these are the appropriate setbacks to use since it's an accessory use/structure but please correct me if I'm wrong about that.
2) Could you clarify what kind of screening will be provided? There is no particular screening proposed. Other than a small part of Tiffany Street, the ground mount array should be hidden from view in a public right of way by the buildings. If you feel additional screening is warranted, we could add wood slats or something similar on the easterly perimeter fence around the array.
3) How has glare been addressed? Glare would only be a potential concern for the ground mount portion of the project. Since it's not directly facing a public right of way and it's up higher than the adjacent parking lot to the south, I don't think there's much potential for glare to be an issue. Please let me know if there's a specific concern or location related to glare.
4) What is the max height of the structure? For the ground mount array, the maximum height above grade will be approximately 12'. Most locations will be lower than that because of the southerly slope of the land. The carport structure will be a maximum of 14' above grade.

Jana Butts Roberson, AICP
Director of Community Development/Town Planner
Town of Brooklyn, CT

j.roberson@brooklynct.org
(860)779-3411 x.14
PO Box 356
Clifford B. Green Memorial Building, Suite 22
69 South Main Street
Brooklyn, CT 06234

From: David Held <dheld@prorovinc.com>
Sent: Thursday, September 16, 2021 10:10 PM
To: Jana Roberson <J.Roberson@Brooklynct.org>
Subject: RE: Ground-mount solar applications

Hi Jana,

I don't mind hanging around the public hearing and staying up late…my client is really hoping to get the approval as soon as possible to work it in with the renovation of the 15 apartment units. I also certainly understand the commission's ability to wait, but feel free to pass along to them that we're up for it if they're willing.

Thanks.

David J. Held, P.E., L.S.
Provost & Rovero, Inc.
57 East Main Street
P.O. Box 191
Plainfield, CT 06374
Phone (860) 230-0856
Cell (860) 234-3183
Fax (860) 230-0860
dheld@prorovinc.com
www.prorovinc.com

From: Jana Roberson [mailto:J.Roberson@Brooklynct.org]
Sent: Thursday, September 16, 2021 5:57 PM
To: Jattan, Amaris <JattanA@conedceb.com>; 'David Held' <dheld@prorovinc.com>
Subject: Ground-mount solar applications

To All,

I put your applications on the agenda for the next Brooklyn Planning and Zoning Commission meeting, but there is a big public hearing that night on a controversial application.
It is very unlikely that the Commission will do anything with your application other than receive it.
It is also difficult to say at this time when they will review and take action, but they must take action within 65 days of Sept. 21, 2021.
Please let me know if you have any concerns.

Jana Butts Roberson, AICP
Director of Community Development/Town Planner

Town of Brooklyn, CT

j.roberson@brooklynct.org
(860)779-3411 x.14
PO Box 356
Clifford B. Green Memorial Building, Suite 22
69 South Main Street
Brooklyn, CT 06234