Petition No. 1137
Amendment
July 6, 2017

Ecos Energy LLC is submitting on behalf of Windham Solar LLC ("Windham Solar") an amendment to and approved petition for declaratory ruling ("Petition") by the Connecticut Siting Council ("Council"). On March 5, 2015, the Council approved the development, construction, operation and maintenance of five (5) 1.0 megawatt and one (1) 1.1 megawatt solar photovoltaic renewable energy generating facilities ("Facilities") located at 1 Williams Crossing in the Town of Lebanon ("Property"). Council petition NO. 1137 was made pursuant to Section 16-50k(a) and Section 4-176(a) of the Connecticut General Statutes ("CGS") and Section 16-50j-38 *et seq.* of the Regulations of Connecticut State Agencies.

Since Council approval in March of 2015, the Facilities designs have evolved addressing newer technologies, specific utility design requirements and efficient electrical design footprints. Windham Solar is planning on constructing (5) 1.0 megawatt facilities, containing 3,000 photovoltaic modules per project and containing 18,000 modules in total. Several variables constituted the changes to the project footprint from the initial approval on March of 2015.

Eversource Easement:
The projects utility owned infrastructure is required to be within an easement from the developer to Eversource. A 60' easement along the projects main access drive, as well as encompassing each transformer and switchgear area has been recorded. This easement required the solar panels to be shifted further away from the roadway in comparison to the projects 2015 approvals. The recorded easement is attached as Exhibit A.

System DC Design and Racking:
The project when originally submitted in 2015, was designed as a 600-volt system, with 14 modules per string, industry standard at the time of submission. The solar modules in that site plan were efficiently laid out in blocks of 7x2 or 14x1 on solar racking with 2 modules in portrait. Over the past 2 years, allowable system voltage sizes have increased to 1000-volts, which increases string sizing to 18 modules. The revised project footprint incorporates this system architecture laid out in blocks of 9x4 on solar racking with 4 modules in landscape.

2 Modules in Portrait (2015 CSC Approval) vs 4 Modules in Landscape (Proposed)

Above is a photo comparison of the racking differences. The ground cover ratio for 4 modules in landscape, is like 2 modules in portrait, for the 72 cell modules approximately 3.25'wide x 6.5'long, thus the overall footprint of the racking is similar regardless of module orientation.

Ongoing Communication with Local Municipalities:
To efficiently design the projects to the new racking blocks and increased system string lengths, the project is proposed to encroach into the town of Franklin. The original Siting Council approval in 2015 was only for project construction in the town of Lebanon and no facilities were located on the small adjoining parcel in the town of Franklin. The revised 22.2-acre project footprint incorporates 1.1 acres of the project and approximately 750 of the 18,000 projects total modules into the town of Franklin.

The town of Franklin has been contacted relating to this proposed footprint change, and Windham Solar received initial comments from SECCOG as they performed a local review of the towns Zoning Regulations. These comments can be viewed as Exhibit B. Additional landscape screening along the franklin parcel has been added to the project per their comments.

The town of Lebanon has also been contacted relating to this proposed footprint change from the initial council approval, the town reviewed and "approved" the revisions per the attached conditions as Exhibit C.

Windham Solar understands that approval of the project is a decision that ultimately needs to be made by the Council. We reached out to the local municipalities to obtain endorsements of these changes, to aid in the Councils decision on the revisions.

Additional Site Access:
The 44-acre parcel only has one access point to the Facilities from Williams Crossing Road. Windham Solar has submitted for an additional access point to the site from Route 32 (Windham Road), for emergency and operational site access. A driveway permit application was submitted on June 02, 2017, to the Connecticut Department of Transportation, a decision on allowing access is forthcoming. The application can be viewed as Exhibit D.

Site Plan Comparison:
An exhibit has been created comparing the March 2015 site plan versus the revised site plan documenting the changes between the facility designs attached as Exhibit E.

Updated Public Notices:
A revised public notice of the project was made to the abutters and government officials via certified mail distributed on June 30th, 2017. On July 5th, 2017, a public notice was also printed in the Chronicle. Supporting document on the public notice is attached as Exhibit F.

NDDB Update:
On June 29, 2017 Windham Solar received revised correspondence from Connecticut Department of Energy and Environmental protection relating to the environmental review of the project. The document has been attached as Exhibit G. The recommended protection strategies, have also been incorporated into the projects SWPCP, and will be implemented during the construction of the Facilities.

Cultural Resources:
In the approval from March of 2015, SHPO requested that field surveys for prehistoric artifacts be constructed prior to site construction. Attached as Exhibit H, please find the technical report for the cultural assessment survey that was prepared for the Facilities. This document was also submitted to SHPO for their review and comment on July 6, 2017.

Project Civil Construction Documents & SWPCP:

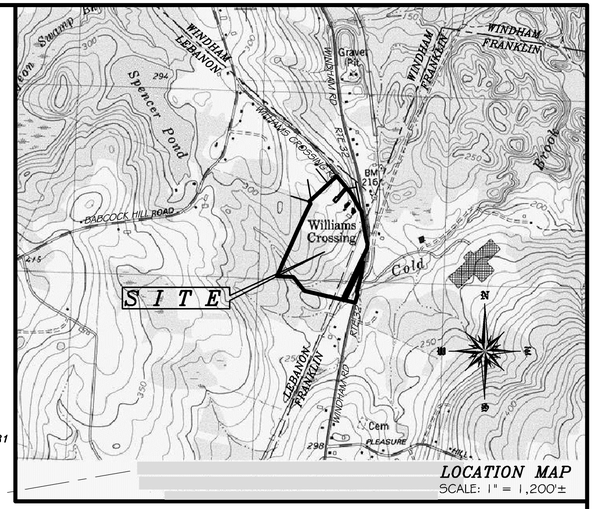
Updated civil construction documents have been prepared for the revised project footprint as well as a full Stormwater Pollution Control Plan. 3 copies of the 184 page SWPCP are submitted with this addendum, and the full SWPCP can be downloaded in the following link: https://ecosenergy.box.com/v/WindhamSolarCSCAmendment

The revised Civil Construction Documents, the major desing element of the SWPCP can be found attached as Exhibit I.

Exhibit A
Eversource Easement

LEGEND

- PROPERTY LINE
- LIMIT ELECTRIC DISTRIBUTION
- STONE WALL
- WIRE FENCE
- TREE WITH WIRE
- FENCE POST WITH WIRE
- ANGLE POINT
- 5/8" REBAR UNLESS NOTED
- CHD MONUMENT FOUND
- DRILL HOLE FOUND
- DRILL HOLE TO BE SET
- SURVEYOR CONTROL POINT



LOCATION MAP
SCALE: 1" = 1,200±

N/F NORTHEAST OIL AND PROPANE, INC. VOL. 195 / PG 003

N/F JANET EILEEN KARAGEORGOS VOL. 117 / PG 631

N/F FRANK EDWARDS VOL. 137 / PG 925

N/F FRANK EDWARDS VOL. 140 / PG 96

N/F NEW ENGLAND CENTRAL RAILROAD

N/F WILLIAMS CROSSING ASSOC.

N/F STATE OF CONNECTICUT

LEBANON FRANKLIN

TOWN LINE

CONN. ROUTE 32

WILLIAMS CROSSING ROAD

PROPOSED ROAD

LIMIT OF ELECTRIC DISTRIBUTION

TOTAL PARCEL 'A'

PARCEL 'B'

TOTAL AREA
PARCEL 'A' & 'B'
1,937,400± SQ.FT.
44.48± ACRES

DETAIL
NOT TO SCALE

BRIDGE

GRANITE MON.

MAP STANDARD NOTES:

1. THIS SURVEY (OR MAP) HAS BEEN PREPARED PURSUANT TO THE REGULATIONS OF CONNECTICUT STATE AGENCIES SECTIONS 20-300b-1 THRU 20-300b-20 AND THE "STANDARDS FOR SURVEYS AND MAPS IN THE STATE OF CONNECTICUT" AS ADOPTED BY THE CONNECTICUT ASSOCIATION OF LAND SURVEYORS, INC. ON SEPTEMBER 26, 1996; THE TYPE OF SURVEY IS A BOUNDARY SURVEY. BOUNDARY DETERMINATION IS BASED ON A RESURVEY OF PROPERTY AND CONFORMS TO THE "A-2 CLASS OF ACCURACY.
2. HORIZONTAL DATUM IS BASED ON ON GRID NORTH, CGS 1927 TIED TO MONUMENT 3096 AND STATE OF CONNECTICUT "RANDOM " MONUMENT.
4. THE INTENDED PURPOSE OF THIS MAP/SURVEY IS TO DEMONSTRATE A PROPOSED EASEMENT IN FAVOR OF EVERSOURCE RELATIVE TO THE PROPERTY BOUNDARY.

LEBANON TOWN PARCEL REFERENCE:

TOWN OF LEBANON VOL. 227 / PG. 708

MAP REFERENCES:

1. "BOUNDARY PERIMETER SURVEY PREPARED FOR MARION C. & JAMES J. BEAUSOLEIL, WILLIAMS COROSSING RD. & BABCOCK HILL RD., LEBANON,CONNECTICUT", SCALE 1" = 60', SHEET 1 OF 1, DATED NOV. 4, 2008 BY FILIP ASSOCIATES.
2. "BOUNDARY SURVEY PREPARED FOR DSD CEDAR HILL, RTE. 32 & WILLIAMS CROSSING RD., LEBANON/FRANKLIN, CT", SCALE 1" = 100', SHEET 1 OF 1, JOB 04-265, DATED JUNE 21, 2005 BY TOWNE ENGINEERING, INC. (Map # 1493 Lebanon Town Clerk office)
3. CONNECTICUT STATE HIGHWAY DEPARTMENT RIGHT OF WAY MAP, TOWN OF LEBANON, NORWICH-WILLIMANTIC ROAD FROM THE WINDHAM TOWN LINE SOUTHERLY TO THE FRANKLIN TOWN LINE, ROUTE NO 32, SCALE: 1" = 40', NO. 70-02-A, SHEET 1 OF 1, DATE APPROVED; JULY 21, 1947.
4. CONNECTICUT STATE HIGHWAY DEPARENT RIGHT OF WAY MAP, TOWN OF FRANKLIN, NORWICH-WILLIMANTIC ROAD FROM THE LEBANON TOWN LINE SOUTHERLY ABOUT 10,000 FEET, ROUTE NO. 32, SCALE: 1" = 40', NO. 52-04-A, SHEET 1 OF 3, DATE APPROVED; JULY 21, 1947.
5. CONNECTICUT STATE HIGHWAY DEPARMENT RIGHT OF WAY MAP, TOWN OF FRANKLIN, NORWICH-WILLIMANTIC ROAD FROM THE LEBANON TOWN LINE SOUTHERLY ABOUT 10,000 FEET, ROUTE NO. 32, SCALE: 1" = 40', NO. 52-04, SHEET 1 OF 3, DATE APPROVED; JAN 31, 1933.

GRAPHIC SCALE
-40' 0' 40' 80'
(IN FEET)
1 inch = 40 ft.

NO.	DATE	DESCRIPTION
2	4-11-17	ADD NORTHWEST SECTION TO EASEMENT
1	1-12-17	EVERSOURCE COMMENTS DATED 1-12-17

REVISIONS

ALL RIGHTS RESERVED
ANY REPRODUCTION, POSSESSION OR USE OF THIS DRAWING OR ANY PART THEREOF WITHOUT THE WRITTEN PERMISSION OF THE SURVEYOR INDICATED BELOW IS PROHIBITED. VIOLATORS WILL BE PROSECUTED TO THE FULL EXTENT OF THE LAW.

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

THIS DRAWING IS NOT VALID UNLESS IT BEARS AN ORIGINAL INK SIGNATURE AND EMBOSSED SEAL

ROBERT W. HELLSTROM, L.S. #13626

ROB HELLSTROM
LAND SURVEYING LLC
Mailing Address:
P.O. BOX 497
COLUMBIA, CT. 06237-0497
(860) 228-9853
(860) 228-1360 (FAX)
32 MAIN STREET HEBRON, CT. 06248
hellstromsurveying@yahoo.com
www.hellstromlandsurveying.com

COMPILATION PLAN

MAP SHOWING EASEMENT AREA TO BE GRANTED TO THE CONNECTICUT LIGHT AND POWER COMPANY dba EVERSOURCE ENERGY
ACROSS PROPERTY OF
PLH, LLC
RTE 32 & WILLIAMS CROSSING RD, LEBANON, CONNECTIUT

FILE NO. E6142

SHEET NO.: 1 OF 1		JOB NO.: 2014-099	
DATE: DECEMBER 14, 2016	BY: ROBIN H.	SCALE: 1" = 100'	FILE NO.: EC14099 EVERSOURCE

File No. E6142
After recording, return to:
Real Estate Department
Eversource
63R Myrock Avenue
Waterford, CT 06385

FINAL CERTIFICATE OF TITLE

KILLINGLY, Connecticut

JUNE 13, 2017

TO: THE CONNECTICUT LIGHT AND POWER COMPANY dba Eversource Energy

This is to certify that as of the date set forth and as disclosed by the land records of the Town of **Lebanon**, Connecticut, title to the easement rights situated on the **westerly** side of **Williams Crossing Road**, in the Town of **Lebanon**, as described in an Easement dated MARCH 3, 2017, recorded on JUNE 13, 2017 under document number 000793150002 in Book 303, Page 513, of the **Lebanon** Land Records, a certified copy of which is attached hereto and more particularly described on the map entitled **"Compilation Plan Map Showing Easement Area to be Granted to The Connecticut Light and Power Company dba Eversource Energy Across the Property of PLH, LLC Rte 32 & Williams Crossing Road, Lebanon, Connecticut File No. E6142 Date: December 14, 2016 Scale: 1"=100' Revision No. 1 1-12-17 Eversource Comments Dated 1-12-17"** which map has been filed in the office of the Town Clerk of said Town of **Lebanon**, Connecticut, as map number 1691, is vested in The Connecticut Light and Power Company dba Eversource Energy, free and clear of all encumbrances except:

(1) Any and all provisions of any ordinance, municipal regulation or public or private law.

(2) Installments of real property taxes to municipal authorities which are not yet due and payable.

(3) N/A

Counsel to Grantor has reviewed the above-mentioned exceptions to the title identified herein as item numbers 1, 2 and 3, and, based upon such review hereby represents and warrants that each such easement/agreement/encumbrance/lien does not adversely impact, impair, conflict with or limit any of the rights and easements to be granted to The Connecticut Light and Power Company dba Eversource Energy in the electric distribution easement to which this Certificate of Title pertains.

NICHOLAS R. SCOLA, LLC

NICHOLAS R. SCOLA, Attorney-at-law
State of Connecticut

File No. E6142
After recording, return to:
Real Estate Department
Eversource
63R Myrock Avenue
Waterford, CT 06385

Doc ID: 000793150002 Type: EASEMEN
BK 303 PG 513-514

ELECTRIC DISTRIBUTION EASEMENT

For a valuable consideration, receipt of which is hereby acknowledged, PLH, LLC hereinafter called Grantor, hereby grants to The Connecticut Light and Power Company dba Eversource Energy, a specially chartered Connecticut corporation with offices in Berlin, Connecticut, its successors and assigns, hereinafter called Grantee, with WARRANTY COVENANTS (except for the matters described in Schedule A if such schedule is attached), the non-exclusive and perpetual right to construct, maintain, replace, relocate, remove and rebuild on, across, over and under the land hereinafter described (Easement Area), an electric distribution system consisting of poles, guys, braces, wires, cables, conduits, transformers, transformer pads, pedestals, meters, structures for street lights and traffic signals, fixtures and other appurtenances useful for providing electric, communication, signal and streetlighting service (including wires, cables and conduits running from the poles, transformers and pedestals to any structures erected on the Grantor's lands); the right to provide electric, communication, signal and streetlighting service by means of the same; and the right to enter the Grantor's lands for the purpose of inspecting, maintaining or removing same and the right, after consultation with the Grantor when practicable, to trim and keep trim, cut and remove such trees or shrubbery as in the judgment of the Grantee are necessary to maintain its services.

Said Easement Area is located on the Grantor's lands on the **westerly** side of **Williams Crossing Road** in the Town of **Lebanon**, Connecticut, as more particularly described on a map entitled **"Compilation Plan Map Showing Easement Area to be Granted to The Connecticut Light and Power Company dba Eversource Energy Across the Property of PLH, LLC Rte 32 & Williams Crossing Road, Lebanon, Connecticut File No. E6142 Date: December 14, 2016 Scale: 1"=100' Revision No. 1 1-12-17 Eversource Comments Dated 1-12-17"** which map has been or will be filed in the office of the Town Clerk of said Town of **Lebanon**, Connecticut.

The Grantor agrees, except with the written permission of the Grantee, which permission shall not be unreasonably denied, delayed or withheld, that: (i) no building, structure, or other improvement or obstruction shall be located upon, there shall be no excavation, filling, flooding or grading of, and there shall be no parking of vehicles or planting of trees or shrubbery upon the Easement Area or outside the Easement Area within five (5) feet from any facilities or appurtenance installed to provide services to any structures erected on the Grantor's premises; and (ii) nothing shall be attached, temporarily or permanently, to any property of the Grantee installed by virtue of this easement. The Grantee may, without liability to the Grantor and at the expense of the Grantor, remove and dispose of any of the aforesaid made or installed in violation of the above and restore said land to its prior condition. In the event of damage to or destruction of any of said facilities of the Grantee by the Grantor or agents or employees thereof, all costs of repair or replacement shall be borne by the Grantor.

The Grantor, for itself and its successors and assigns, hereby reserves (a) the right to use the Easement Area for pedestrian and vehicular ingress and egress, including ingress and egress by commercial and industrial vehicles (hereinafter, the "Access Way"); and (b) the right to repair, replace, pave, re-pave, and otherwise improve the Access Way (collectively, items (a) & (b) are the "Grantor's Reserved Rights"); provided, however, that the exercise of the Grantor's Reserved Rights shall not interfere with the rights and privileges granted herein to the Grantee to access, construct, maintain, replace, relocate remove and rebuild an electric distribution system. Prior to commencing any improvement to the Access Way, the Grantor, its heirs, successors and assigns shall comply with the Grantee's Call Before You Dig procedure.

The Grantee further agrees, by the acceptance of this deed, that as long as and to the extent that the electric distribution system together with all appurtenances, located on said land pursuant to this easement are used to provide electric, communication, signal or streetlighting service, the Grantee will repair, replace and maintain such facilities at its own expense (except as otherwise provided herein) and in connection with any repair, replacement or maintenance of said system the Grantee shall promptly restore the premises to substantially the same condition as existed prior to such repair, replacement or maintenance, provided, however, that such restoration shall not include any structures, other improvements or plantings made by the Grantor contrary to the provisions of this easement.

If any portion of the above described land upon or under which said facilities or appurtenances thereto shall be located, is now or hereafter becomes a public street or highway or a part thereof, permission, as set forth in Section 16-234 of the General Statutes of Connecticut relating to adjoining landowners, is hereby given to the Grantee and to its successors and assigns, to use that portion of the land for the purposes and in the manner above described.

Any right herein described or granted, or any interest therein or part thereof, may be assigned to any communication or signal company by the Grantee, and the Grantor hereby agrees to and ratifies any such assignment and agrees that the interest so assigned may be used for the purposes described therein for communication or signal purposes.

The words "Grantor" and "Grantee" shall include lessees, heirs, executors, administrators, successors and assigns where the context so requires or permits.

TO HAVE AND TO HOLD the premises unto it, the said Grantee, its successors and assigns, forever.

I HEREBY CERTIFY THAT THIS IS A TRUE COPY OF VOL. 303 PG. 513-514 AS RECORDED IN THE TOWN OF LEBANON ON: June 13, 2017 ATTEST: Town Clerk

File No. E6142
After recording, return to:
Real Estate Department
Eversource
63R Myrock Avenue
Waterford, CT 06385

IN WITNESS WHEREOF, the Grantor has hereunto set its hand and seal this 3RD day of MARCH, 20 17.

Signed, sealed and delivered in the presence of:

Witness

Witness

Witness

Witness

PLH. LLC

By: _____ (L.S.)
CHRISTOPHER LITTLE
VICE PRESIDENT, DULY AUTHORIZED

_____ (L.S.)

ACKNOWLEDGMENT

STATE OF ~~CONNECTICUT~~ MINNESOTA

COUNTY OF HENNEPIN

S.S. _____

On this 3RD day of MARCH, 2017 before me, the undersigned officer, personally appeared CHRISTOPHER LITTLE who acknowledged him/herself to be the person whose name is subscribed to the within instrument and acknowledged that they, being duly authorized to do so, executed the same for the purposes therein contained said Grantor's free act and deed.

IN WITNESS WHEREOF, I hereunto set my hand and the official seal.

Blake C. Nicholson
Notary Public
Minnesota
My Commission Expires January 31, 2020

_____
Notary Public - Seal Required
My Commission Expires 1/31/2020

STATE OF _____

COUNTY OF _____

S.S. _____

On this _____ day of _____, 20___ before me, the undersigned officer, personally appeared _____ who acknowledged him/herself to be the person whose name is subscribed to the within instrument and acknowledged that they, being duly authorized to do so, executed the same for the purposes therein contained as said Grantor's free act and deed.

IN WITNESS WHEREOF, I hereunto set my hand and the official seal.

_____
Notary Public - Seal Required
My Commission Expires _____

Received for Record at Lebanon, CT
On 06/13/2017 At 10:18:10 am
Susan C. Coutu

CORPORATE RESOLUTION

I, Thomas Melone, President of PLH, LLC, a limited liability company organized and existing under the laws of the State of Indiana (hereinafter "Company"), hereby certify that:

1. Christopher Little (a/k/a Chris Little) is Vice President of PLH, LLC; and

2. Christopher Little is an Authorized Officer of the Company and as such is formally authorized to conduct business on behalf of the Company and is authorized to enter into contractual obligations solely on behalf of the Company, including but not limited to, agreements to acquire or sell real estate, mortgages, deeds, loans and promissory notes.

IN WITNESS HEREOF, the undersigned has affixed his signature this 8th day of August, 2014.

Thomas Melone
President

Exhibit B
Town of Franklin Planning Comments

SOUTHEASTERN CONNECTICUT COUNCIL OF GOVERNMENTS
5 Connecticut Avenue, Norwich, Connecticut 06360
(860) 889-2324/Fax: (860) 889-1222/Email: office@seccog.org

June 2, 2017

Planner Comments

To: Steve Broyer, P.E., Ecos Energy LLC

From: Samuel Alexander, Southeastern Connecticut Council of Governments

Subject: Application PZC #17-05 Windham Solar LLC

Mr. Broyer,

Thank you for providing more detail on the history of the proposed solar facility at Williams Crossing Road in Lebanon. In advance of the next meeting of the Franklin Planning & Zoning Commission, I am providing staff comments on the site plan currently before the commission.

- The proposed plan shows solar panels and racking within the minimum required setback of the C-2 Zone. In the past the commission has enforced setback requirements for these and similar structures.
- Additional required documents:
  - Erosion and Sediment Control Plan (Zoning Regulations, Section 11.4)
  - Copy of bond required by the Connecticut Siting Council
  - Connecticut Department of Transportation Encroachment Permit
  - Letter from Connecticut Siting Council approving project expansion into Franklin.
- I also expect that the commission may suggest vegetative screening, as was done in the Town of Lebanon and as is required for utility structures (a similar, permitted use) under Section 10.5 of the Zoning Regulations.
- The proposed use is not listed as an allowed use under the town's Zoning Regulations. If the commission approves the application, they will need to determine the proposal's similarity to another use permitted in the C-2 zone.

Respectfully,

Samuel S. Alexander
Planner II

cc: John McGuire, Chairman, Franklin Planning & Zoning Commission
Ron Chalecki, Zoning Enforcement Officer/Sanitarian
Sherry Pollard, Land Use Assistant

Exhibit C
Town of Lebanon Planning Approval

PLANNING AND ZONING COMMISSION
Town of Lebanon
579 Exeter Road, Lebanon, Connecticut 06249
(860) 642-6028, Fax (860) 642-2022

April 21, 2017

Mr. Steve Broyer, Sr. Project Mgr.
PLH, LLC
222 South 9th Street, Suite #1600
Minneapolis, MN 55403

Re: **PZ-17-6150**: PLH LLC, owner, 1 Williams Crossing Road, Assessors Map 218, Lot 19. Site plan approval for 5MW ground mounted solar facility. (Site plan revision date 8/9/2016)

Dear Mr. Broyer:

Please be advised that at a regular meeting of the Planning and Zoning Commission held on Monday, April 17, 2017, your application for site plan modification referenced above was **approved with the following conditions:**

1) **Black vinyl fence be placed along the full east side of the property abutting Route 32.**

2) **A landscaped opaque arborvitae screen be provided along Williams Crossing Road at the northwest side of the property between the fence and the road.**

Enclosed is a copy of the legal notice. If you have any questions, you may contact me at 860-642-6028.

Very truly yours,

Holli E. Pianka

Holli E. Pianka
Land Use Secretary

Enclosure

Exhibit D
Route 32 Access Permit Application

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY OPERATIONS AND MAINTENANCE

Date: 05/02/2017 Fee: (for DOT use)	PMT-1 Rev. 10/13 State of Connecticut Department of Transportation **APPLICATION FOR PERMIT**	Application form must be filled in completely and mailed or delivered to the corresponding District Office for the subject town.

LOCATION OF PROPOSED WORK:

(a) Town Lebanon/Franklin (b) Route 32 (c) Street Name & No. Windham Road

(d) (Circle One) N. S. E. W. side of Highway (e) Located Between Utility Poles No. 108 & No. 221

(f) Distance and direction from nearest intersecting road 0.02 Miles (N. S. E. W.) of _____ (St/Rd)

Application is hereby made to:(Describe fully & include sketch or attach plans) Class 4a, Driveway.

See Attached Documents.

PERMIT FEE can be paid only by check or money order payable to Treasurer- State of Conn.

Name of Surety Company & amount of Bond

Party whom Bond is issued:

Print Name

Signed Phone

Party to whom Insurance is issued:

Print Name

Signed

Approximate Time Required: 14 days

Desired Starting Date: 06/01/2017

Complete Plans and Specifications must be submitted for major encroachment permits. On other work a careful sketch shall be shown on space above or on back side of application.

Permit to be issued to:

Name Windham Solar LLC

&

Address 222 South 9th Street, Suite 1600

Town Minneapolis ZIP 55403

The owner of the property for whom this work is being performed agrees to accept all future maintenance responsibility for the work specified in the permit.

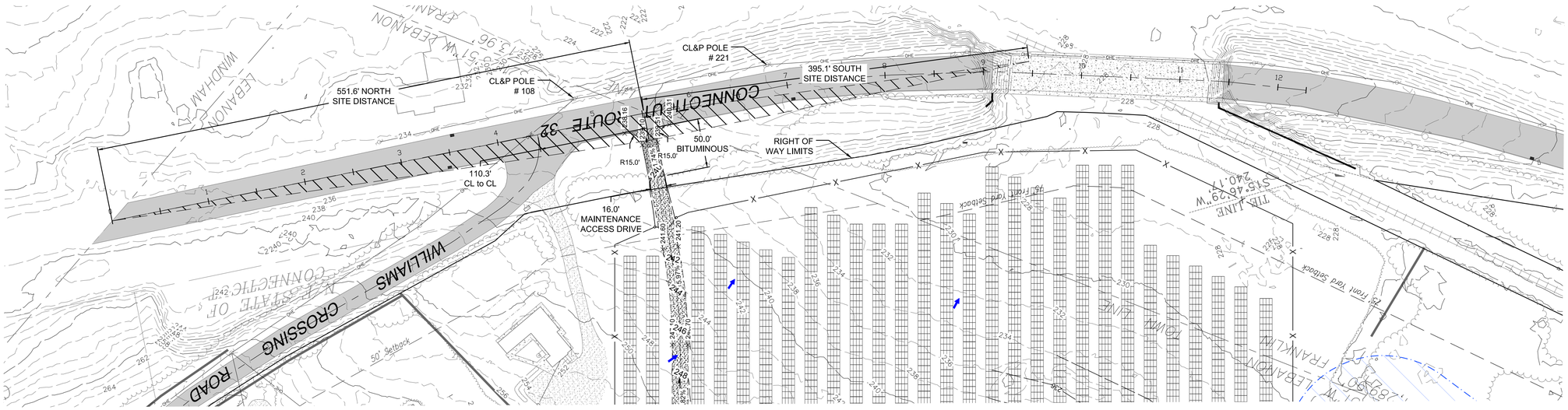
Print Owner's Name Steven Broyer

Address 222 South 9th St; Ste 1600 , Mpls, MN 55

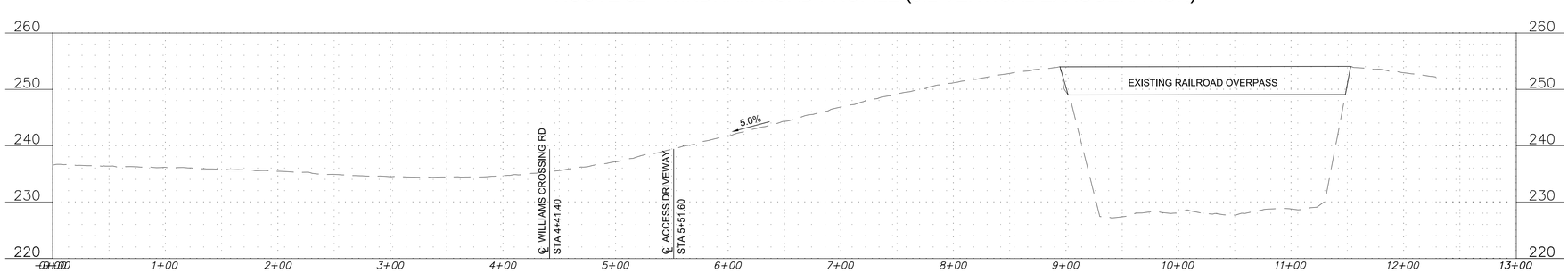
Signed Phone (612) 770-4645

© 2017 Westwood Professional Services, Inc.

ROUTE 32 - WINDHAM ROAD ALIGNMENT

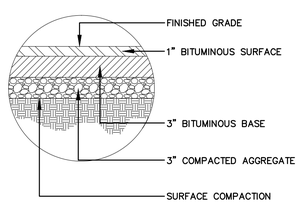


ROUTE 32 - WINDHAM ROAD PROFILE (5:1 VERTICAL EXAGGERATION)



LEGEND:

- EXISTING PROPERTY LINE
- PROPOSED FENCE
- PROPOSED GRAVEL ACCESS ROAD
- PROPOSED AC DISTRIBUTION
- PROPOSED SILT FENCE
- PROPOSED LIMITS OF GRADING
- EXISTING CONTOUR
- PROPOSED CONTOUR
- PROPOSED DRAINAGE DIRECTION
- 36 SOLAR MODULE BOCK
- 100' WETLAND BUFFER AREA
- WETLAND DELINEATION LINE/AREA



NOTES:
1. ALL MATERIALS AND THEIR PLACEMENT SHOULD BE IN ACCORDANCE WITH CURRENT ConnDOT SPECIFICATIONS.
2. CONTRACTOR TO COMPACT AGGREGATE TO 98% MAXIMUM DRY DENSITY
3. FINAL 1" LIFT SHALL BE CONSTRUCTED AT THE END OF PROJECT CONSTRUCTION
4. COORDINATE ALL CONSTRUCTION WITH THE TOWN OF LEBANON

ENTRANCE DRIVEWAY PAVEMENT

VIEW NORTH FROM PROPOSED ACCESS

VIEW SOUTH FROM PROPOSED ACCESS

Westwood nc.

Phone (952) 937-5150 7699 Anagram Drive
Fax (952) 937-5822 Eden Prairie, MN 55344
Toll Free (888) 937-5150 westwoodps.com

Westwood Professional Services, Inc.

STATE OF CONNECTICUT
AUGUST D. CHRISTENSEN
LICENSED PROFESSIONAL ENGINEER
5-19-17

Designed:	ADC
Checked:	SAW
Drawn:	SJB
Record Drawing by/date:	

Revisions:

#	DATE	DESCRIPTION
-	4/12/2017	LEBANON SITE PLAN SUBMISSION
-	5/9/2017	FRANKLIN SITE PLAN SUBMISSION
-	5/10/2017	BID/PERMIT SUBMISSION

Prepared for:

ecos ENERGY
222 SOUTH 9TH STREET
SUITE 1600
MINNEAPOLIS, MN 55402

0' 60' 120' 180'

WINDHAM SOLAR

1 WILLIAMS CROSSING DR.
LEBANON, CT 06249
NEW LONDON COUNTY

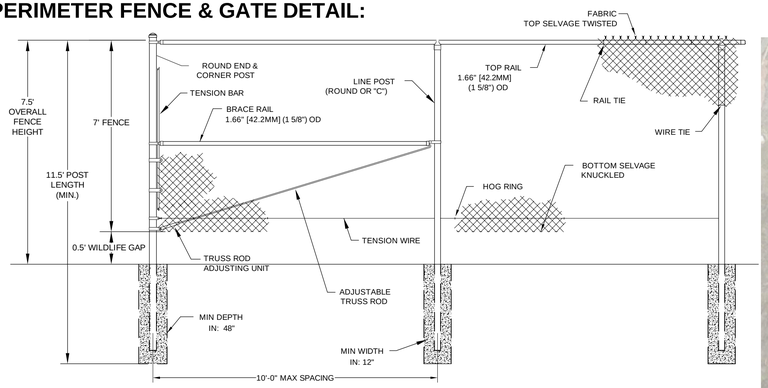
ROUTE 32 ACCESS PROFILE

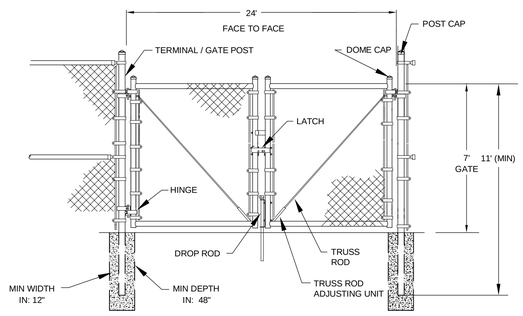
DATE: 5/10/2017
SHEET: 11 of 11

Exhibit E
Site Plan Comparison

© 2017 Westwood Professional Services, Inc.

PERIMETER FENCE & GATE DETAIL:





FENCING NOTES:
1. FENCING PARALLEL WITH WILLIAMS CROSSING ROAD AND ROUTE 32 SHALL BE BLACK VINYL COATED.
2. ALL 3 FENCE GATES SHALL BE BLACK VINYL COATED.
3. FENCE DETAILS REPRESENTED ARE CONCEPTUAL, FENCE CONTRACTOR TO SUBMIT ACTUAL SHOP DRAWINGS PRIOR TO CONSTRUCTION

LEGEND:

- EXISTING PROPERTY LINE
- CSC APPROVAL PROJECT FENCE
- PROPOSED PROJECT FENCE LINE REVISION
- 100' WETLAND BUFFER AREA
- WETLAND DELINEATION LINE

PROJECT INFORMATION:

EXISTING ZONING:
LIGHT INDUSTRIAL

PROPOSED USE :
SOLAR FACILITY

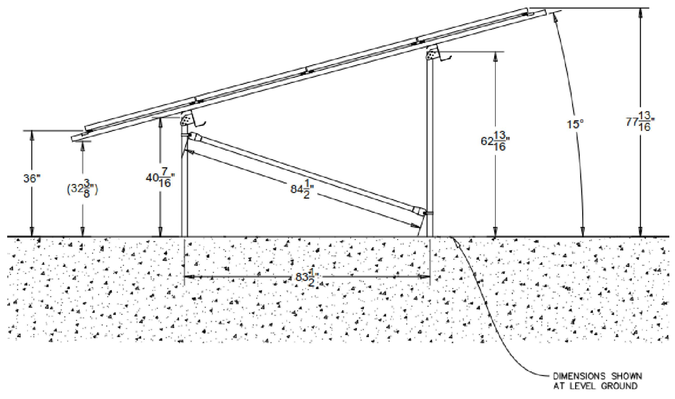
PROJECT AREAS & IMPACTS:

TOWN OF LEBANON PARCEL 219-19 = 39.04 ACRES
TOWN OF FRANKLIN PARCEL 53-3-1 = 3.99 ACRES
TOTAL PARCEL AREA = 44.03 ACRES

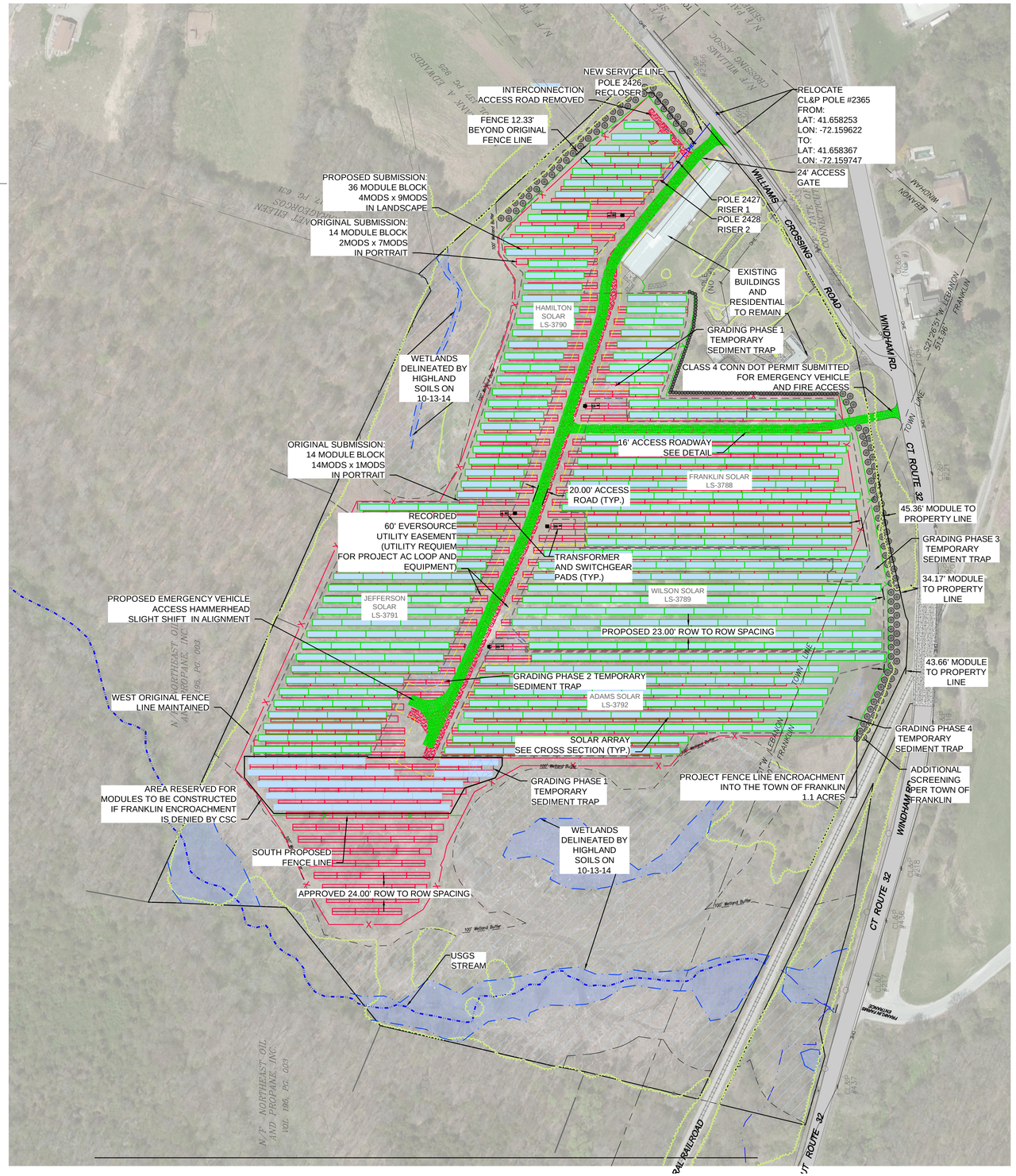
SOLAR ARRAY FOOTPRINT (FENCE LIMITS) = 22.2 AC
ARRAY FOOTPRINT ON PARCEL 219-19 = 21.1 AC
ARRAY FOOTPRINT ON PARCEL 53-3-1 = 1.1 AC

PROPOSED IMPERVIOUS:
GRAVEL ACCESS ROADS = 0.93 AC
EQUIPMENT PADS = 0.05 AC

RACKING PROFILE DETAIL:



AERIAL SITE PLAN:



Westwood nc.

Phone (952) 937-5150 7699 Anagram Drive
Fax (952) 937-5822 Eden Prairie, MN 55344
Toll Free (888) 937-5150 westwoodps.com

Westwood Professional Services, Inc.

Designed: ADC
Checked: SAW
Drawn: SJB
Record Drawing by/date:

Revisions:

#	DATE	DESCRIPTION
-	4/12/2017	LEBANON SITE PLAN SUBMISSION
-	5/9/2017	FRANKLIN SITE PLAN SUBMISSION
-	5/10/2017	BID/PERMIT SUBMISSION
-	6/27/2017	CSC AMENDMENT SUBMISSION

Prepared for:

ecos ENERGY
222 SOUTH 9TH STREET
SUITE 1600
MINNEAPOLIS, MN 55402

0' 120' 240' 360'

WINDHAM SOLAR

WINDHAM ROAD &
WILLIAMS CROSSING DR.
LEBANON & FRANKLIN CT
PID: 219-19 & 53-3-1
NEW LONDON COUNTY

APPROVED (RED) VS PROPOSED (GREEN) SITE PLAN

DATE: 6/27/2017
SHEET: 1 of 1

Exhibit F
Public Notice Information

Property data updated June 29, 2017

Subject Properties

218-19	1 WILLIAMS CROSSING RD
3-1	ROUTE 32

Abutters

ID	Site Address	Owner Name	Owner Address	Owner City	Owner State	Owner Zip	Township
3-4	ROUTE 32	DSDM SCOTT LLC	PO BOX 900	DANIELSON	CT	06239	Franklin
3-3	906 ROUTE 32	DSDM SCOTT LLC	PO BOX 900	DANIELSON	CT	06239	Franklin
3-2	ROUTE 32	PLH, LLC	222 S 9TH ST STE 1600	MINNEAPOLIS	MN	55402	Franklin
1-2	ROUTE 32	HERNANDEZ OSCAR	121 WALNUT ST	WILLIMANTIC	CT	06226	Franklin
1-4	ROUTE 32	FRANKLIN FARMS INC	PO BOX 18	FRANKLIN	CT	06254	Franklin
6-13-188-18-1	34 WILLIAMS CROSSING RD	SEIBERT PAUL	34 WILLIAMS CROSSING RD	LEBANON	CT	06249	Windham
218-21	47 WILLIAMS CROSSING RD	WYSPIANSKI JOSEPH M	47 WILLIAMS CROSSING RD	LEBANON	CT	06249	Lebanon
218-16.002	48 WILLIAMS CROSSING RD	NORTHEAST CENTER FOR YOUTH & FAMILIES IN	203 EAST ST	EASTHAMPTON	MA	01027	Lebanon
218-22	59 WILLIAMS CROSSING RD	BEAUSOLEIL JAMES J & MARION C	59 WILLIAMS CROSSING RD	LEBANON	CT	06249	Lebanon
218-16	WILLIAMS CROSSING RD	DSD CEDAR HILL LLC	PO BOX 103 SOUTH	WINDHAM	CT	06266	Lebanon
218-16.001	WILLIAMS CROSSING RD	SEIBERT PAUL	PO BOX 103 SOUTH	WINDHAM	CT	06266	Lebanon
6-13-210-14	1182 WINDHAM RD	INTAGLIATA ANGELO & DEBRA J	2 WINDHAM RD	LEBANON	CT	06249	Windham
218-18	4 WINDHAM RD	HERNANDEZ OSCAR	121 WALNUT ST	WILLIMANTIC	CT	06226	Lebanon
218-20	WINDHAM RD	DSDM SCOTT LLC	PO BOX 900	DANIELSON	CT	06239	Lebanon
218-17	WINDHAM RD	INTAGLIATA ANGELO & DEBRA J	2 WINDHAM RD	LEBANON	CT	06249	Lebanon
3-7	931 Route 32	K BEST USA TRADING INC	99-05 59TH AVENUE APT 4C	CORONA	NY	11369	Franklin

Name	Title	Office	Address 1	Address 2	City	State	Zip
George C. Jepsen	Attorney General	Office of the Attorney General	55 Elm Street		Hartford	CT	06106
Dr. Raul Pino	Commissioner	Department of Public Health	410 Capitol Avenue	PO Box 340308	Hartford	CT	06134-0308
Steven K. Reviczky	Commissioner	Department of Agriculture	165 Capitol Avenue		Hartford	CT	06106
Benjamin Barnes	Secretary	Office of Policy and Management	450 Capitol Avenue		Hartford	CT	06106-1379
James P. Redeker	Commissioner	Department of Transportation	2800 Berlin Turnpike		Newington	CT	06131-7546
Michelle H Seagull	Commissioner	Department of Consumer Protection	State Office Building	165 Capitol Avenue, Room 103	Hartford	CT	06106
Scott D Jackson	Commissioner	Department of Labor	200 Folly Brook Blvd		Wethersfield	CT	06106-1114
Rob Klee	Commissioner	Department of Energy & Environmental Prot	79 Elm Street		Hartford	CT	06106-5127
Susan D. Merrow	Chair	Council on Environmental Quality	79 Elm Street		Hartford	CT	06106
Katie Dykes	Chairman	Public Utilities Regulatory Authority	Ten Franklin Square		New Britain	CT	06051
Catherine H. Smith	Commissioner	Department of Economic and Community D	505 Hudson Street		Hartford	CT	06106-7106
Dora B. Schriro	Commissioner	Department of Emergency Services and Pul	1111 Country Club Road		Middletown	CT	06457-2389
Melody A. Currey	Commissioner	Department of Administrative Services	State Office Building	165 Capitol Avenue, Room 427	Hartford	CT	06106
Doug Dubitsky	State Representative	CT State Representative District 047	Legislative Office Building	Room 4046	Hartford	CT	06106-1591
Catherine A. Osten	State Senator	CT State Senate District S19	Connecticut House Republican Office	L.O.B. Room 4200	Hartford	CT	06106
Betsy Petrie	First Selectman	Town of Lebanon	579 Exeter Rd		Lebanon	CT	06249
Jeffrey Walsh	Chairman	Zoning Board of Appeals	Town of Lebanon	579 Exeter Rd	Lebanon	CT	06249
James Jahoda	Chairman	Planning and Zoning Commission	Town of Lebanon	579 Exeter Rd	Lebanon	CT	06249
Philip Chester	Planner	Town of Lebanon	579 Exeter Rd		Lebanon	CT	06249
Marc Lang	Chairman	Conservation and Agriculture Commission	Town of Lebanon	579 Exeter Rd	Lebanon	CT	06249
James McCaw	Chairman	Inland Wetlands Commission	Town of Lebanon	579 Exeter Rd	Lebanon	CT	06249
Susan Coutu	Town Clerk	Town of Lebanon		579 Exeter Rd	Lebanon	CT	06249
Susan Allen	Chair	Agriculture and Conservation Commission	Town of Franklin	7 Meetinghouse Hill	Franklin	CT	06254
	Chair	Inland Wetlands Commission	Town of Franklin	7 Meetinghouse Hill	Franklin	CT	06254
Richard Matters	First Selectman	Town of Franklin	7 Meetinghouse Hill		Franklin	CT	06254
Ronald Chalecki	Zoning Enforement Officer	Town of Franklin	7 Meetinghouse Hill		Franklin	CT	06254
John McGuire	Planning and Zoning Commission	Town of Franklin	7 Meetinghouse Hill		Franklin	CT	06254
Bruce Dougherty	Zoning Board of Appeals	Town of Franklin	7 Meetinghouse Hill		Franklin	CT	06254
Matthew Vertefeuille	Director of Code Enforcement	Town of Windham	979 Main Street		Willimantic	CT	06226
James Finger	Planner	Town of Windham	979 Main Street		Willimantic	CT	06226
William Powers	Chairman	Board of Zoning Appeals	Town of Windham	979 Main Street	Willimantic	CT	06226
Ernest Eldridge	Mayor	Town of Windham	979 Main Street		Willimantic	CT	06226
Susan Johnson	Chair	Inland Wetlands Commission	Town of Windham	979 Main Street	Willimantic	CT	06226
	Chairman	Conservation, Open Space and Agriculture (	Town of Windham	979 Main Street	Willimantic	CT	06226
Paula Stahl	Chair	Planning and Zoning Commission	979 Main Street		Willimantic	CT	06226
James S. Butler	Executive Director	Southeastern Connecticut Council of Goverr	888 Washington Blvd	3rd Floor	Stamford	CT	06901

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PREPAID LEGALS
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Start: 07/05/2017 — Stop: 07/05/2017
Times Ord: 1 — Times Run: ***
LEG 3.00 X 2.41 Words: 126
Total LEG 7.23
Rate: LEG — Cost: 374.21
Class: 0005 LEGAL NOTICES

Contact:
Phone: (860)423-8466
Fax#: (000)000-0000
Email:
Agency:

Descript: LEGAL NOTICE WINDHAM SOL
Given by: *
Created: cldre 06/30/17 08:33
Last Changed: cldre 06/30/17 08:39

COMMENTS:
COPIED from AD 153989

PUB	ZONE	ED	TP	START	INS	STOP	SMTWTFS
CHR	A		97	S 07/05			

AUTHORIZATION

Under this agreement rates are subject to change with 30 days notice. In the event of a cancellation before schedule completion, I understand that the rate charged will be based upon the rate for the number of insertions used.

Steve Broyer
Name (print or type)

Name (signature)

.

Legal Notice

Windham Solar LLC is providing notice to the general public regarding its amendment to an approved Petition of Declaratory Ruling (Petition #1137) to the Connecticut Siting Council for the proposed development of five (5) 1.0 megawatt solar photovoltaic renewable energy generating facilities to be located on a 44 acre parcel in the SW corner of the intersection of Windham Road and Williams Crossing in the Town of Lebanon and Franklin. This notice is being given pursuant to Section 16-50(l) of the Connecticut General Statues. The Petition will be submitted on or after June 30th, 2017. Copies of the Petition will be available at the Connecticut Siting Council: Ten Franklin Square, New Britain, CT 06501 or at the Town Hall of the Town of Lebanon.

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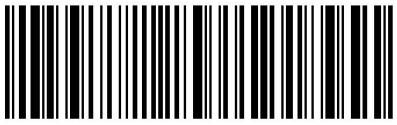

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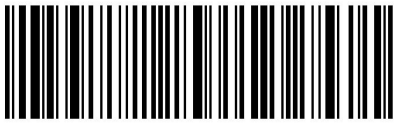

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DSD CEDAR HILL LLC
PO BOX 103
WINDHAM CT 06280-0103

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George C. Jepsen
55 ELM ST STE 1
HARTFORD CT 06106-1752

Petition for Declaratory Ruling for Windham Solar LLC

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Department of Public Health
Dr. Raul Pino
410 CAPITOL AVE
PO BOX 340308
HARTFORD CT 06106-1373

Petition for Declaratory Ruling for Windham Solar LLC

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Department of Agriculture
Steven K. Reviczky
165 CAPITOL AVE
HARTFORD CT 06106-1659

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Office of Policy and Management
Benjamin Barnes
450 CAPITOL AVE
HARTFORD CT 06106-1379

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Department of Transportation
James P. Redeker
2800 BERLIN TPKE
NEWINGTON CT 06111-4123

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Department of Consumer Protection
Michelle H Seagull
165 CAPITOL AVE STE 3
165 CAPITOL AVENUE ROOM 103
HARTFORD CT 06106-1630

Petition for Declaratory Ruling for Windham Solar LLC

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Department of Labor
Scott D Jackson
200 FOLLY BROOK BLVD
WETHERSFIELD CT 06109-1153

Petition for Declaratory Ruling for Windham Solar LLC

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Dept of Energy and Environmental Protection
Rob Klee
79 ELM ST
HARTFORD CT 06106-1650

Petition for Declaratory Ruling for Windham Solar LLC

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Council on Environmental Quality
Susan D. Merrow
79 ELM ST
HARTFORD CT 06106-1650

Petition for Declaratory Ruling for Windham Solar LLC

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Public Utilities Regulatory Authority
Katie Dykes
10 FRANKLIN SQ
NEW BRITAIN CT 06051-2655

Petition for Declaratory Ruling for Windham Solar LLC

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Dept of Economic and Community Development
Catherine H. Smith
505 HUDSON ST FL 4
HARTFORD CT 06106-7107

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Dept of Emergency Services and Public Protecti
Dora B. Schriro
1111 COUNTRY CLUB RD
MIDDLETOWN CT 06457-2389

Petition for Declaratory Ruling for Windham Solar LLC

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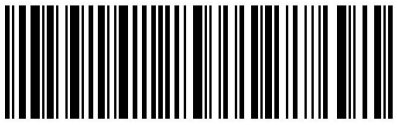

9414 8102 0079 3443 4507 65

Department of Administrative Services
Melody A. Currey
165 CAPITOL AVE RM 427
STATE OFFICE BUILDING
HARTFORD CT 06106-1629

Petition for Declaratory Ruling for Windham Solar LLC

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CT State Representative District 047
Doug Dubitsky
Legislative Office Building
Room 4046
HARTFORD CT 06106

Petition for Declaratory Ruling for Windham Solar LLC

Ecos Energy
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MINNEAPOLIS MN 55402-3382

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CT State Senate District S19
Catherine A. Osten
Connecticut House Republican Office
L.O.B. Room 4200
HARTFORD CT 06106

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Town of Lebanon
Betsy Petrie
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LEBANON CT 06249-1506

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Zoning Board of Appeals
Jeffrey Walsh
579 EXETER RD
TOWN OF LEBANON
LEBANON CT 06249-1506

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Planning and Zoning Commission
James Jahoda
579 EXETER RD
TOWN OF LEBANON
LEBANON CT 06249-1506

Petition for Declaratory Ruling for Windham Solar LLC

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Town of Lebanon
Philip Chester
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Conservation and Agriculture Commission
Marc Lang
579 EXETER RD
TOWN OF LEBANON
LEBANON CT 06249-1506

Petition for Declaratory Ruling for Windham Solar LLC

Ecos Energy
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Inland Wetlands Commission
James McCaw
579 EXETER RD
TOWN OF LEBANON
LEBANON CT 06249-1506

Petition for Declaratory Ruling for Windham Solar LLC

Ecos Energy
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Town of Lebanon
Susan Coutu
579 EXETER RD
LEBANON CT 06249-1506

Petition for Declaratory Ruling for Windham Solar LLC

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Agriculture and Conservation Commission
Susan Allen
7 MEETING HOUSE HILL RD
TOWN OF FRANKLIN
NORTH FRANKLIN CT 06254-1313

Petition for Declaratory Ruling for Windham Solar LLC

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Inland Wetlands Commission
Chair
7 MEETING HOUSE HILL RD
TOWN OF FRANKLIN
NORTH FRANKLIN CT 06254-1313

Petition for Declaratory Ruling for Windham Solar LLC

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Town of Franklin
Richard Matters
7 MEETING HOUSE HILL RD
NORTH FRANKLIN CT 06254-1330

Petition for Declaratory Ruling for Windham Solar LLC

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Town of Franklin
Ronald Chalecki
7 MEETING HOUSE HILL RD
NORTH FRANKLIN CT 06254-1330

Petition for Declaratory Ruling for Windham Solar LLC

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Town of Franklin
John McGuire
7 MEETING HOUSE HILL RD
NORTH FRANKLIN CT 06254-1330

Petition for Declaratory Ruling for Windham Solar LLC

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Town of Franklin
Bruce Dougherty
7 MEETING HOUSE HILL RD
NORTH FRANKLIN CT 06254-1330

Petition for Declaratory Ruling for Windham Solar LLC

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MINNEAPOLIS MN 55402-3382

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Town of Windham
Matthew Vertefeuille
979 MAIN ST
WILLIMANTIC CT 06226-2200

Petition for Declaratory Ruling for Windham Solar LLC

Ecos Energy
222 S 9TH ST STE 1600
MINNEAPOLIS MN 55402-3382

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Town of Windham
James Finger
979 MAIN ST
WILLIMANTIC CT 06226-2200

Petition for Declaratory Ruling for Windham Solar LLC

Ecos Energy
222 S 9TH ST STE 1600
MINNEAPOLIS MN 55402-3382

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Board of Zoning Appeals
William Powers
979 MAIN ST
TOWN OF WINDHAM
WILLIMANTIC CT 06226-2217

Petition for Declaratory Ruling for Windham Solar LLC

Ecos Energy
222 S 9TH ST STE 1600
MINNEAPOLIS MN 55402-3382

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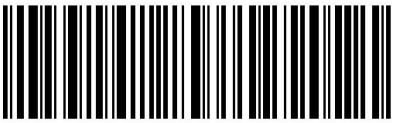

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Town of Windham
Ernest Eldridge
979 MAIN ST
WILLIMANTIC CT 06226-2200

Petition for Declaratory Ruling for Windham Solar LLC

Ecos Energy
222 S 9TH ST STE 1600
MINNEAPOLIS MN 55402-3382

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Inland Wetlands Commission
Susan Johnson
979 MAIN ST
TOWN OF WINDHAM
WILLIMANTIC CT 06226-2217

Petition for Declaratory Ruling for Windham Solar LLC

Ecos Energy
222 S 9TH ST STE 1600
MINNEAPOLIS MN 55402-3382

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Conservation Open Space and Ag Commission
Chair
979 MAIN ST
TOWN OF WINDHAM
WILLIMANTIC CT 06226-2217

Petition for Declaratory Ruling for Windham Solar LLC

Ecos Energy
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MINNEAPOLIS MN 55402-3382

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Planning and Zoning Commission
Paula Stahl
979 MAIN ST
WILLIMANTIC CT 06226-2217

Petition for Declaratory Ruling for Windham Solar LLC

Ecos Energy
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MINNEAPOLIS MN 55402-3382

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Southeastern CT Council of Governments
James S. Butler
888 WASHINGTON BLVD # 3
STAMFORD CT 06901-2902

Petition for Declaratory Ruling for Windham Solar LLC

Exhibit G
NDDB Updated Letter

Connecticut Department of

ENERGY &
ENVIRONMENTAL
PROTECTION

June 29, 2017

Blake Nicholson
Windham Solar LLC
222 South Nine Street, Suite 1600
Minneapolis, MN 55402
blake.nicholson@ecosrenewable.com

Project: Windham Solar Project Located at 1 Williams Crossing Road in Lebanon, Connecticut
NDDB Determination No.: 201705132 (update to NDDB 201500200)

Dear Blake,

I have re-reviewed Natural Diversity Data Base maps and files regarding the area delineated on the map you provided for the proposed Windham Solar Project Located at 1 Williams Crossing Road in Lebanon, Connecticut. As you are aware, according to our records we have known extant populations of State Special Concern *Glyptemys insculpta* (wood turtle) in the vicinity of the project site. Thank you for including the Windham Solar Projects Draft SWPCP for the projects Erosion, Sediment and Pollution Control Plan. The protection provisions addressing the wood turtle were outlined in section 6.0. (Page 14 of 184). I have included in this letter our best management practices to protect populations of wood turtles.

Wood turtle: Wood turtles require riparian habitats bordered by floodplain, woodland or meadows. They hibernate in the banks of the river in submerged tree roots. Their summer habitat includes pastures, old fields, woodlands, powerline cuts and railroad beds bordering or adjacent to streams and rivers. This species has been negatively impacted by the loss of suitable habitat.

Recommended Protection Strategies for Turtles:

Work should occur when these turtles are active (April 1st to September 30th). Conducting land clearing while the turtle is active will allow the animal to move out of harm's way and minimize mortality to hibernating individuals. I recommend the additional following protection strategies in order to protect these turtles:

- Hiring a qualified herpetologist to be on site to ensure these protection guidelines remain in effect and prevent turtles from being run over when moving heavy equipment. This is especially important in the month of June when turtles are selecting nesting sites.
- Exclusionary practices will be required to prevent any turtle access into construction areas. These measures will need to be installed at the limits of disturbance.
- Exclusionary fencing must be at least 20 in tall and must be secured to and remain in contact with the ground and be regularly maintained (at least bi-weekly and after major weather events) to secure any gaps or openings at ground level that may let animal pass through. Do not use plastic or netted silt-fence.
- All staging and storage areas, outside of previously paved locations, regardless of the duration of time they will be utilized, must be reviewed to remove individuals and exclude them from re-entry.

- All construction personnel working within the turtle habitat must be apprised of the species description and the possible presence of a listed species, and instructed to relocate turtles found inside work areas or notify the appropriate authorities to relocate individuals.
- Any turtles encountered within the immediate work area shall be carefully moved to an adjacent area outside of the excluded area and fencing should be inspected to identify and remove access point.
- In areas where silt fence is used for exclusion, it shall be removed as soon as the area is stable to allow for reptile and amphibian passage to resume.
- No heavy machinery or vehicles may be parked in any turtle habitat.
- Special precautions must be taken to avoid degradation of wetland habitats including any wet meadows and seasonal pools.
- The Contractor and consulting herpetologist must search the work area each morning prior to any work being done.
- When felling trees adjacent to brooks and streams please cut them to fall away from the waterway and do not drag trees across the waterway or remove stumps from banks.
- Avoid and limit any equipment use within 50 feet of streams and brooks.

- Any confirmed sightings of box, wood or spotted turtles should be reported and documented with the NDDB (nddbrequestdep@ct.gov) on the appropriate special animal form found at (http://www.ct.gov/deep/cwp/view.asp?a=2702&q=323460&depNav_GID=1641)

If these protection strategies are followed then the proposed activities will lessen the impact on this state-listed species. This determination is good for two years. Please re-submit an NDDB Request for Review if the scope of work changes or if work has not begun on this project by June 29, 2019.

Natural Diversity Data Base information includes all information regarding critical biological resources available to us at the time of the request. This information is a compilation of data collected over the years by the Department of Energy and Environmental Protection's Natural History Survey and cooperating units of DEEP, private conservation groups and the scientific community. This information is not necessarily the result of comprehensive or site-specific field investigations. Consultations with the Data Base should not be substitutes for on-site surveys required for environmental assessments. Current research projects and new contributors continue to identify additional populations of species and locations of habitats of concern, as well as, enhance existing data. Such new information is incorporated into the Data Base as it becomes available.

Please contact me if you have further questions at (860) 424-3592, or dawn.mckay@ct.gov . Thank you for consulting the Natural Diversity Data Base. A more detailed review may be conducted as part of any subsequent environmental permit applications submitted to DEEP for the proposed site.

Sincerely,

Dawn M. McKay

Dawn M. McKay
Environmental Analyst 3

WILDLIFE IN CONNECTICUT

STATE SPECIES OF SPECIAL CONCERN

Wood Turtle

Glyptemys insculpta

Background

Wood turtles may be found throughout Connecticut, but they have become increasingly rare due to their complex habitat needs. Wood turtles also have become more scarce in Fairfield County due to the fragmentation of suitable habitat by urban development.

© PAUL J. FUSCO

Range

Wood turtles can be found across the northeastern United States into parts of Canada. They range from Nova Scotia through New England, south into northern Virginia, and west through the Great Lakes region into Minnesota.

Description

The scientific name of the wood turtle, *Glyptemys insculpta*, refers to the deeply sculptured or chiseled pattern found on the carapace (top shell). This part of the shell is dark brown or black and may have an array of faint yellow lines radiating from the center of each chiseled, pyramid-like segment due to tannins and minerals accumulating between ridges. These segments of the carapace, as well as those of the plastron (bottom shell), are called scutes. The carapace also is keeled, with a noticeable ridge running from front to back. The plastron is yellow with large dark blotches in the outer corners of each scute. The black or dark brown head and upper limbs are contrasted by brighter pigments ranging from red and orange to a pale yellow on the throat and limb undersides. Orange hues are most typical for New England's wood turtles. The hind feet are only slightly webbed, and the tail is long and thick at the base. Adults weigh approximately 1.5 to 2.5 pounds and reach a length of 5 to 9 inches.

Habitat and Diet

Wood turtles use aquatic and terrestrial habitats at different times of the year. Their habitats include rivers and large streams, riparian forests (adjacent to rivers), wetlands, hayfields, and other early successional habitats. Terrestrial habitat that is usually within 1,000 feet of a suitable stream or river is most likely used. Preferred stream conditions include moderate flow, sandy or gravelly bottoms, and muddy banks.

Wood turtles are omnivorous and opportunistic. They are not picky eaters and will readily consume slugs, worms, tadpoles, insects, algae, wild fruits, leaves, grass, moss, and carrion.

Life History

From late spring to early fall, wood turtles can be found roaming their aquatic or terrestrial habitats. However, once temperatures drop in autumn, the turtles retreat to rivers and large streams for hibernation. The winter

is spent underwater, often tucked away below undercut riverbanks within exposed tree roots. Dissolved oxygen is extracted from the water, allowing the turtle to remain submerged entirely until the arrival of spring. Once warmer weather sets in, the turtles will become increasingly more active, eventually leaving the water to begin foraging for food and searching for mates. Travel up or down stream is most likely, as turtles seldom stray very far from their riparian habitats.

Females nest in spring to early summer, depositing anywhere from 4 to 12 eggs into a nest dug out of soft soil, typically in sandy deposits along stream banks or other areas of loose soil. The eggs hatch in late summer or fall and the young turtles may either emerge or remain in the nest for winter hibernation. As soon as the young turtles hatch, they are on their own and receive no care from the adults.

Turtle eggs and hatchlings are heavily preyed upon by a wide variety of predators, ranging from raccoons to birds and snakes. High rates of nest predation and hatchling mortality, paired with the lengthy amount of time it takes for wood turtles to reach sexual maturity, present a challenge to maintaining sustainable populations. Wood turtles live upwards of 40 to 60 years, possibly more.

Conservation Concerns

Loss and fragmentation of habitat are the greatest threats to wood turtles. Many remaining populations in Connecticut are low in numbers and isolated from one another by human-dominated landscapes. Turtles forced to venture farther and farther from appropriate habitat to find mates and nesting sites are more likely to be run over by cars, attacked by predators, or collected by people as pets.

Other sources of mortality include entanglements in litter and debris left behind by people, as well as strikes from mowing equipment used to maintain hayfields and other early successional habitats.

The wood turtle is imperiled throughout a large portion of its range and was placed under international trade regulatory protection through the Convention on International Trade in Endangered Species (CITES) in 1992. Wood turtles also have been included on the International Union for Conservation of Nature's (IUCN) Red List as a vulnerable species since 1996. They are listed as a species of special concern in Connecticut and protected by the Connecticut Endangered Species Act.

How You Can Help

- *Conserve riparian habitat. Maintaining a buffer strip of natural vegetation (minimum of 100 feet) along the banks of streams and rivers will protect wood turtle habitat and also help improve the water quality of the stream system. Stream banks that are manicured (cleared of natural shrubby and herbaceous vegetation) or armored by rip rap or stone walls will not be used by wood turtles or most other wildlife species.*
- *Do not litter. Wood turtles and other wildlife may accidentally ingest or become entangled in garbage and die.*
- *Leave turtles in the wild. They should never be kept as pets. Whether collected singly or for the pet trade, turtles that are removed from the wild are no longer able to be a reproducing member of a population. Every turtle removed reduces the ability of the population to maintain itself.*
- *Never release a captive turtle into the wild. It probably would not survive, may not be native to the area, and could introduce diseases to wild populations.*
- *As you drive, watch out for turtles crossing the road. Turtles found crossing roads in June and July are often pregnant females. They should* ***not*** *be collected but can be helped on their way. Without creating a traffic hazard or compromising safety, drivers are encouraged to avoid running over turtles that are crossing roads. Also, still keeping safety precautions in mind, you may elect to pick up turtles from the road and move them onto the side in the direction they are headed. Never relocate a turtle to another area that is far from where you found it.*
- *Learn more about turtles and their conservation concerns, and educate others.*
- *If you see a wood turtle, leave it in the wild, take a photograph, record the location where it was seen, and contact the Connecticut Department of Environmental Protection (DEP) Wildlife Division at dep.wildlife@ct.gov, or call 860-424-3011 to report your observation.*

State of Connecticut
Department of Environmental Protection
Bureau of Natural Resources
Wildlife Division
www.ct.gov/dep

4/2011

Exhibit H
Cultural Resource Assessment Survey

AHS CULTURAL RESOURCE MANAGEMENT

ARCHAEOLOGICAL AND
HISTORICAL SERVICES, INC.
569 Middle Turnpike
P.O. Box 543
Storrs, CT 06268
www.ahs-inc.biz

July 6, 2017

Ms. Catherine Labadia
State Historic Preservation Office
One Constitution Plaza
Hartford, CT 06103

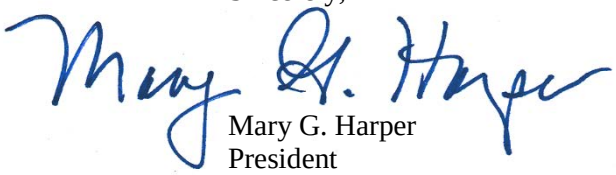
Re: Cultural Resource Assessment Survey
Windham Solar Project
1 Williams Crossing Road
Lebanon, CT

Dear Ms. Labadia:

Please find enclosed our Phase IA Cultural Resource Assessment Survey report prepared for the above-referenced project. On behalf of our client, Ecos Energy, we ask that you review and comment on the report.

Should you have any questions, please do not hesitate to contact me.

Sincerely,



Mary G. Harper
President

MGH/rlb
Enclosure (via e-mail)
cc: S. Broyer/Ecos Energy

TECHNICAL REPORT

PHASE I(A) CULTURAL RESOURCE ASSESSMENT SURVEY

WINDHAM SOLAR PROJECT

LEBANON, CONNECTICUT

Prepared for

Ecos Energy
222 S 9th Street
Suite 1600
Minneapolis, MN 55402

By

Archaeological and Historical Services, Inc.
569 Middle Turnpike
P.O. Box 543
Storrs, CT 06268

Authors:

Sarah Sportman
Bruce Clouette

June 13, 2017

I. INTRODUCTION AND SCOPE OF WORK

A. Introduction

Ecos Energy is proposing to construct the Windham Solar Project solar voltaic facility on a 43-acre parcel located in the Southwest corner of the intersection of Windham Road (Route 32) and Williams Crossing Road located in the Towns of Lebanon and Franklin. The project fence limits will be approximately 22.2 acres and the facility will be constructed upland from the wetlands on the south portion of the site. Of the 22.2-acre project limits, 15.8 acres of the solar facility footprint will be scarified and graded prior to facility construction (Figure 1). The proposed facility will entail the construction of solar modules on ground-mounted racking structures that will remain in a fixed position. The racking system will not require a concrete foundation, but will be supported by steel beams driven or screwed into the ground. Ancillary features include an access road, underground conduits, and an equipment pads (Figure 2). A farmhouse complex on the parcel will remain in place and be undisturbed (Figure 2; Photograph 1).

Because the project involves approval by the Connecticut Siting Council, it must comply with the Connecticut Environmental Protection Act (CEPA). Under CEPA, the project was reviewed by the State Historic Preservation Office (CTSHPO) regarding potential effects of the project on historic properties. The CTSHPO noted that:

> there are no previously reported archaeological sites or properties listed in the State or National Registers of Historic Places recorded within or immediately adjacent to the project parcel. SHPO, however, does not have enough information to make a determination regarding the effects of the project on historic properties. SHPO therefore requested that a cultural resources assessment of the proposed project be completed. The recommended investigation should provide sufficient information to determine if the existing house and farm complex are eligible for listing in the National Register of Historic Places, and if any potentially significant archaeological features or deposits are likely to be present within the areas of anticipated ground disturbance. The technical report summarizing the assessment should provide recommendations for subsequent investigations or documentation of the property, if warranted. All archaeological investigations should be completed in accordance with SHPO's *Environmental Review Primer for Connecticut's Archaeological Resources*. No ground-disturbance activities should be initiated until SHPO has had an opportunity to review and comment upon the recommended assessment (Dunne 2015).

B. Scope of Work

The purpose of the cultural resources assessment survey is to assess the potential of the project area to contain significant buried archaeological resources and to evaluate the National Register eligibility of the existing house/farm complex on the property. The cultural and historical resource assessment of the proposed Windham solar project area included historical and archaeological background research in available sources including the CTSHPO/Office of State Archaeology (CTOSA) site files; historical and environmental records and maps; a walkover and visual assessment that included several hand-powered soil core samples; and a summary of the findings relating to the past land use of the project.

C. Project Personnel

Senior Archaeologists Sarah Sportman and Ross Harper conducted the field survey, including a visual assessment and the collection of 17 hand-powered soil cores/probes. Senior Architectural Historian Bruce Clouette evaluated the farm complex relative to potential historic significance. Sportman carried out the environmental, pre-colonial, and historic-period background research, and compiled the technical report. David Leslie prepared the maps and figures. Mary G. Harper served as project manager and Robyn Beausoleil as editor.

II. RESEARCH DESIGN AND METHODS

AHS compiled and reviewed existing information related to archaeological sensitivity in the project area vicinity. This included research in the files of documented archaeological sites at the offices of the CTSHPO and CTOSA, published local histories (Anderson 1983; Crofut 1937; Federal Writers Program 1938; Hurd 1882) and historical maps (Walling 1854; Beers 1868; USGS 1895) We also examined a variety of sources on environmental and ecological setting of the project area, including USDA soil maps and historical aerial survey photographs to assess the potential for intact archaeological sites in the project area.

AHS personnel conducted a walkover survey and visual assessment of the project area and an evaluation of the eligibility of the standing farmhouse for listing in the National Register of Historic Places (NRHP). Senior archaeologists examined the ground surface for signs of archaeological sites (such as surface artifact finds) and soil disturbance and took a series of 17 small-diameter (1-inch) hand-powered soil probes to assess the integrity of the soils and their potential for containing significant archaeological remains. AHS's Senior Architectural Historian inspected and photographed the farmhouse in the northern part of the project area, and researched the ownership and land use history of the property.

III. RESULTS

A. Background Research

The project area is located at the corner of Route 32 and Williams Crossing in Lebanon. Both are historic-period roads that are depicted on 19th-century maps (Figures 3-5). The New England Central railroad runs along a portion of the eastern edge of the project area. The farmhouse in the project area is depicted on the 1854 and 1868 maps. The maps show the house as the property of the Downer family (Figures 3 and 4), who were middling farmers (see below). The house also appears on the 1895 and 1940 USGS maps (Figures 5 and 7). In more recent times, the property functioned as a chicken farm, and a chicken house still stands on the property (see Photograph 1).

Based on USDA soil surveys, the soils in the project area consist almost entirely of Canton and Charlton sandy loams, 3 to 8% slopes. These soils are well-drained and form on ridges, hills, and moraines from coarse-loamy over sandy melt-out till derived from gneiss, granite, and/or schist. Such well-drained soils were attractive to Native Americans, as they are easy to dig into to build hearths, roasting pits, and storage features, and they provided largely dry, comfortable settlement or camping areas. A small part of the eastern portion of the project area, near State Route 32 and the railroad tracks, contains Scarboro muck, a very poorly-drained soil that forms in depressions, outwash terraces, drainageways, outwash deltas. This soil type, which is associated with wetlands, has low archaeological potential.

Cold Brook drains from the Shetucket River down to wetlands south of the southeast corner of the project area. There are two ponds associated with another brook that drains from the Shetucket, located northwest of the project area, and Pigeon Swamp is located a short distance west of the ponds. There are also wetlands located immediately south of the project area boundary (Figure 2). Due to past development, including road and railroad construction, the configuration of these wetlands has likely changed from the pre-contact period; however, water and wetland resources would likely have been readily available in the project area in the pre-contact and historic periods.

There are no documented archaeological sites within the project area. Four pre-contact archaeological sites (53-1, 163-8, 163-27, and 163-29) are located within one mile of the project area, north of the project area, along the Shetucket River (Figure 1). Two additional sites (163-7 and 163-28) fall just outside of the one-mile radius. The presence of these sites indicates that the river was an important part of local Native American settlement patterns in the pre-contact period. Several additional sites are located south of the project area (71-16, 71-17, 71-20) (Figure 1) and a cluster of additional, primarily Archaic period sites, were recently identified by PAL, Inc. along the Susquetonscut Brook during an archaeological survey conducted for a pipeline (Doucette 2017; Elquist 2017; Jeremiah 2017).

The location and environmental characteristics of the project area, as well as the presence of numerous nearby pre-contact archaeological sites, suggests that there is a moderate to high potential for Native American archaeological resources in intact portions of the project area. The project area is also considered moderately sensitive for historic-period archaeological resources, based on the age of the associated roads (Williams Crossing and Route 32) and the extant 19th century farmhouse.

B. Walkover and Visual Assessment

AHS personnel began the walkover and visual assessment of the project area in the northwest corner of the project area, moving south, then east, and finally north. A series of 17

hand-powered soil cores was collected across the project area to evaluate soil integrity, and changes in the surface vegetation were also noted, as certain plants serve as indicators of disturbed soils. The locations of the soil cores were recorded by hand and using a hand-held GPS. Much of the project area contained pervasively disturbed soils, likely the result of past gravelling. A dirt farm track circles through the central portion of the project area (Photograph 2).

The northwest portion of the project area, west of the chicken house (Photograph 3) consisted of agricultural field with tall goldenrod and ragweed. Soils cores/probes in this area (C-1, C-2, and C-4) indicate pervasive soil disturbance (Figure 8; Appendix III). The soils consisted of an apparently redeposited dark brown sandy loam A_p over a layer of very gravelly soil. The A_p was approximately 15-20 cm deep. No evidence of B horizon soils was encountered in the probes in this area. A little farther south, in the central western part of the project area soil core C-5 encountered a layer fill, suggesting this part of the project area is also disturbed (Figure 8). The north-central part of the project area, near soil core C-3 (Figure 8) is visibly disturbed. The ground surface is uneven and there are several obvious push piles. The visible disturbance in this area extends to the northern extent of the proposed solar field. Soil core C-3 contained a thin layer of brown fine sandy loam topsoil over a deep stratum of gray brown coarse loamy sand (Appendix III). Vegetation in these areas is similar to that in the northwest part of the project area.

One small area in the central part of the project area, in the vicinity of C-6 (Figure 8) appears to be a remnant area of intact soils. This area is located on a small rise and the vegetation here consisted primarily of winter wheat (Figure 8; Photograph 4).

Much of the southern and southwestern portions of the project area were found to contain intact soils. This part of the project area was, until recently, apparently somewhat wooded. There is evidence of recent tree-cutting in the form of numerous stumps, small logs, and branches on the ground surface (Photograph 5). There was no evidence of stumping or grubbing and the soil cores in this part of the project area (C-7 – C-12) encountered intact, natural soil profiles (Figure 8; Appendix III). There is a stone wall that marks the southern boundary of the project area. Much of it appears to have been recently constructed (Photograph 6), although there is an older portion of the wall in the southwestern corner of the project area. There are visible wetland areas south of the wall.

The southeastern and eastern portions of the project area are largely disturbed, and the southeast corner is quite low and wet. Soil probes C-13 – C-15 contained an approximately 15-20cm-deep layer of redeposited topsoil/A_p over what appears to be light gray, sandy C horizon soil (Figure 8; Appendix III). The vegetation across much of this area consisted of a mix of goldenrod and ragweed. The central part of the project area, in the vicinity of soil cores C-16 and C-17, is also disturbed. A large area of push piles, stones, and other debris was visible east of C-16 and C-17 (Photograph 7).

Based on the results of the walkover, visual assessment and soil cores, most of the project area has been extensively disturbed by gravelling or a similar process. Only the portion of the project area that was recently wooded and clear-cut contained intact soils.

C. National Register Evaluation of 1 Williams Crossing Road

The 1 ½-story house at 1 Williams Crossing Road in Lebanon, Connecticut, has the form of an early 19th-century dwelling, but the visible architectural materials are almost entirely Victorian (Photograph 8). The main block of the house, 24’ by 30’ in plan, has a five-bay façade, the height of which suggests framing with 12’ posts. This construction technique became common ca.1800, probably offering the advantage of added height for the upper level because of the knee

walls. The house's foundation is brick, and the exterior is covered with clapboards. There is a partial return of the simple cornice across the gable ends (Photograph 9). The entry is sheltered by a flat roof carried on small scroll brackets, the sides of which are incised in a simple stylized vine pattern (Photograph 10). Windows have 2-over-2 sash. On the left side is a one-story gable-roofed extension with an enclosed porch across the front. Small brick chimneys appear on both the main part of the house and the one-story extension.

The property also includes a two-story building with a garage on the lower level, dated 1950 in the assessor records, and a poultry house located some distance to the rear (Photographs 11 and 12). Evidence from aerial photographs indicates the poultry house was constructed sometime between 1951 and 1965.

A house appears in this location on both the 1854 and 1868 maps. The notation "D. & S. Downer" on the earlier map indicates its ownership by Sidney Downer (1809-1882) and his brother Dudson Downer (1803-1856). The Downer brothers were farmers and appear to have owned the farm in two equal shares worth $1500 each (U.S. Census, 1850). Due to his brother's death, Sidney Downer was the sole owner at the time of the later map. Sidney Downer appears as a farmer in the 1870 population census and as a retired farmer in the 1880 census. Details recorded in the 1870 census of agriculture indicate a small farm used for generalized agriculture:

> Acreage: 58 improved, 25 unimproved, value $3000
> Livestock: 1 horse, 3 cows, 1 team of oxen, 11 sheep
> Production: 12 tons of hay, 50 bushels corn, 100 bushels wheat, 100 bushels potatoes, 230 lbs. butter, 80 lbs. cheese, $113 worth of slaughtered animals

The Downer genealogy described the property as "the old Joseph Downer homestead at Williams' Crossing, partly in Lebanon, Franklin, South Windham." (Downer 1900: 69). Joseph Downer was Sidney Downer's great grandfather, suggesting that the property (but not this specific house) was in the Downer family since the early 18th century.

As a 19th-century dwelling associated with a Lebanon farming family, the house at 1 Williams Crossing Road has some local historical interest, but it is unlikely that the CTSHPO would find that it rises to the level of eligibility for the National Register of Historic Places, even on the local level of significance. Although this house is adjacent to some open fields, National Register Criterion A, association with broad patterns of history, would seem to be better fulfilled by the many other properties in Lebanon that include an historic-period barn and other agriculture outbuildings. The outbuildings associated with this house are much more modern that the house itself.

Architecturally, the house does not have a consistent character that might qualify it under Criterion C, distinctive characteristics of a type, period, or method of construction. It could be considered an example of a rural dwelling from the early 19th century, but the windows, entry detail, and cornice treatment are all Victorian period, obscuring the house's earlier origin. As a Victorian house, it is very plain compared to the typical house of the period, and does little to illustrate the defining characteristics of Victorian architecture (density and variety of ornamentation, asymmetry, eclectic stylistic sources). One of the key focuses of Victorian detail, the front porch, has been enclosed.

IV. CONCLUSIONS AND RECOMMENDATIONS

AHS conducted a Phase IA cultural resources assessment of the proposed Windham Solar project area. The investigation consisted of environmental and historical background research, a walkover and visual assessment of the project area that included 17 hand-powered soil cores/probes, and an evaluation of the National Register eligibility of the standing farmhouse and farm complex on the property. As noted above, CTSHPO asked that the technical report, "provide recommendations for subsequent investigations or documentation of the property, if warranted" (Dunne 2015). AHS's conclusions and recommendations are provided below.

A. Archaeological Resources

Based on the results of the walkover and soil cores, AHS determined that the soils across a large part of the project area are pervasively disturbed. Of the 17 soil cores collected within the project area, only seven (C-6 – C-12; Figure 8) encountered intact soils. The area of intact soils seems to be limited to the southwestern portion of the project area, primarily in the areas where trees were recently cut (Figure 9). This area is considered to have moderate to high potential for archaeological resources.

AHS recommends that a Phase IB archaeological survey, consisting of 50cm by 50cm shovel test pits placed at 15-meter intervals, be conducted in the eight-acre archaeologically sensitive portion of the project area as denoted on Figure 9, prior to construction-related ground disturbance. The purpose of Phase IB survey is to locate buried archaeological sites through systematic shovel-test-pit investigations. Approximately 144 shovel test pits, spaced at 15-meter intervals (18 pits/acre), would be required to test the archaeologically sensitive portion of the project area. A block of 24 additional STPs should be reserved for array pits to be excavated at 2-meter intervals around artifact find spots and/or judgement test pits that will be placed in areas that look particularly sensitive for archaeological resources but do not fall within the 15-meter STP grid.

The soils in the remainder of the project area are too disturbed to contain intact archaeological remains. No archaeological survey is recommended in the areas AHS identified as disturbed (Figure 9).

B. Evaluation of 1 Williams Crossing Road

Based on the evaluation of the house and farm complex at 1 Williams Crossing Road, AHS determined that it is not eligible for listing in the NRHP. Although the early 19th-century house may of local historical interest, it does not meet any of the criteria required for National Register eligibility. The structure was substantially altered, likely in the Victorian period, and the associated outbuildings are quite modern. As such, AHS recommends no additional evaluation of the house and farm complex.

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APPENDIX I

Figures

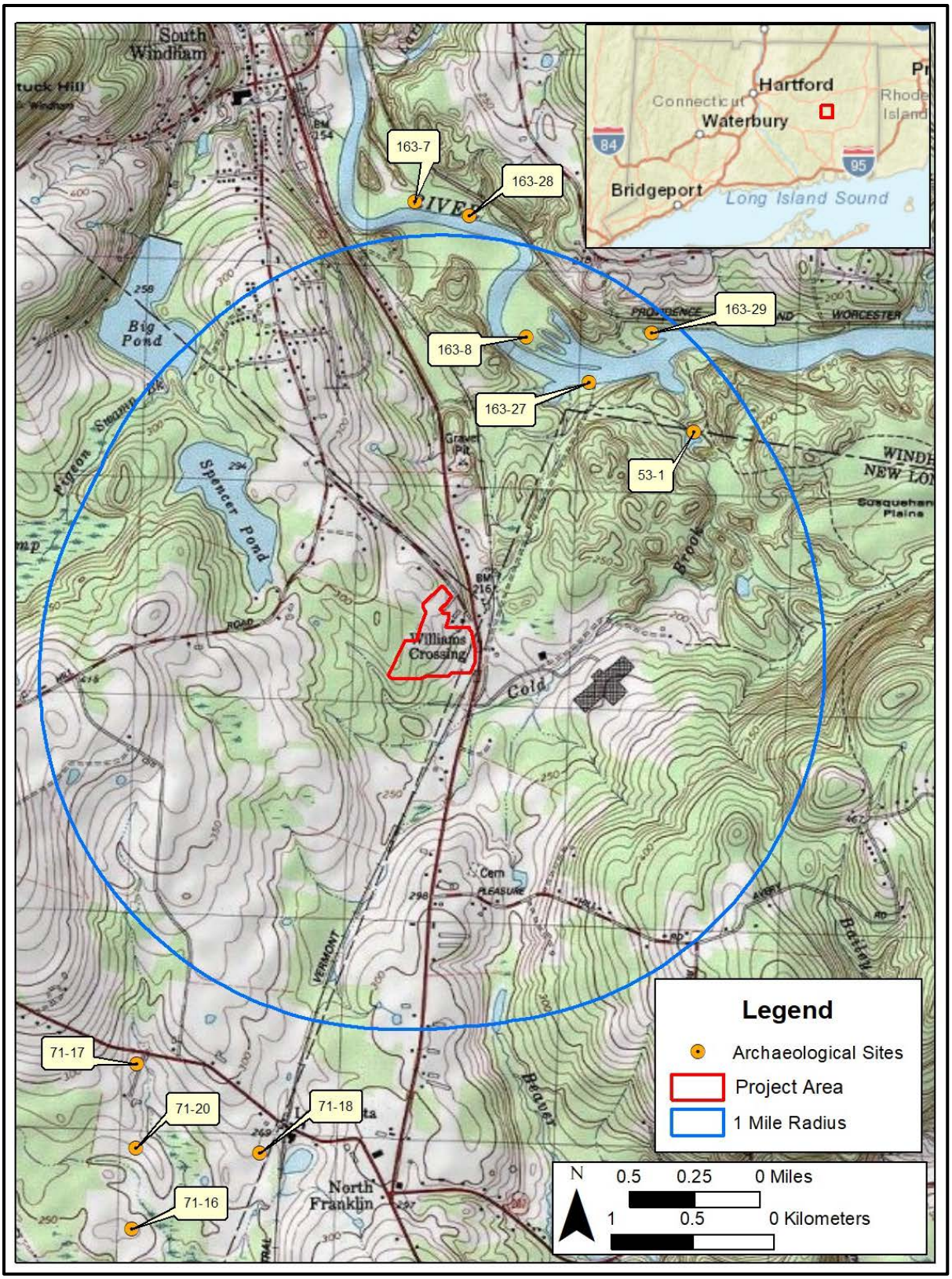

Figure 1: USGS topographic map, showing the Windham Solar project area and identified archaeological sites within a one-mile radius

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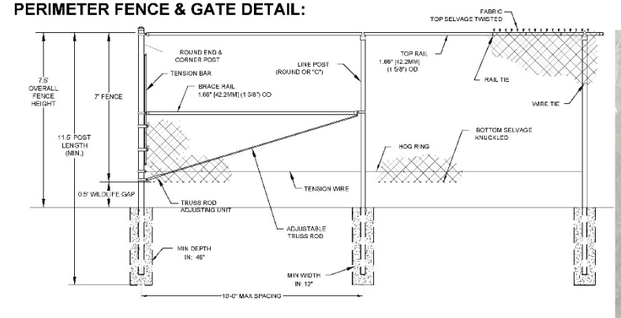
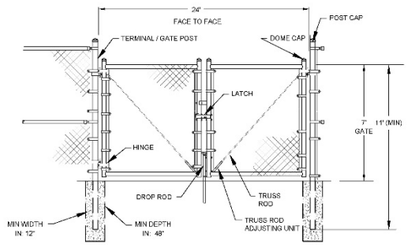
PERIMETER FENCE & GATE DETAIL:





FENCING NOTES:
1. FENCING PARALLEL WITH WILLIAMS CROSSING ROAD AND ROUTE 32 SHALL BE BLACK VINYL COATED.
2. ALL 3 FENCE GATES SHALL BE BLACK VINYL COATED.
3. FENCE DETAILS REPRESENTED ARE CONCEPTUAL. FENCE CONTRACTOR TO SUBMIT ACTUAL SHOP DRAWINGS PRIOR TO CONSTRUCTION

LEGEND:

- EXISTING PROPERTY LINE
- PROPOSED PROJECT FENCE
- PROPOSED GRAVEL ACCESS ROAD
- M/V PROPOSED AC DISTRIBUTION
- 100' WETLAND BUFFER AREA
- WETLAND DELINEATION LINE
- INDIVIDUAL SOLAR FACILITY LIMITS

PROJECT INFORMATION:

EXISTING ZONING:
LIGHT INDUSTRIAL

PROPOSED USE :
SOLAR FACILITY

PROJECT AREAS & IMPACTS:

ARRAY FOOTPRINT (FENCE LIMITS) = 22.2 AC

PROPOSED IMPERVIOUS:
GRAVEL ACCESS ROADS = 0.93 AC
EQUIPMENT PADS = 0.05 AC

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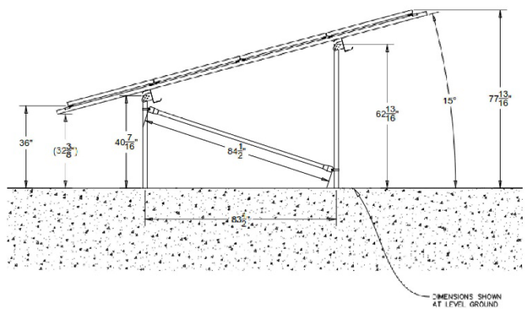

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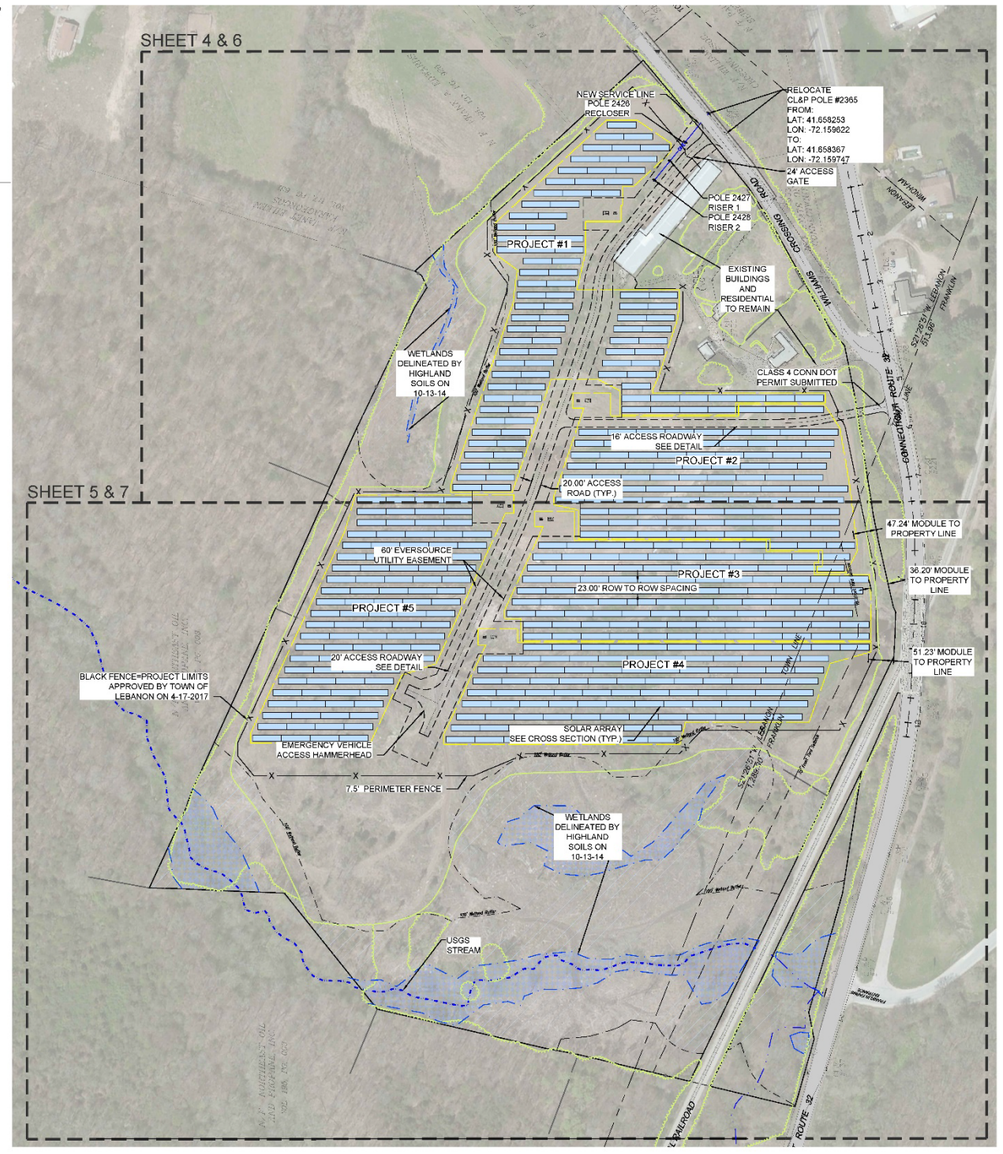

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Drawn:	SJB
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Revisions

#	DATE	DESCRIPTION
-	4/12/2017	LEBANON SITE PLAN SUBMISSION
-	5/9/2017	FRANKLIN SITE PLAN SUBMISSION
-	5/10/2017	BID/PERMIT SUBMISSION

Prepared for:

ecos ENERGY
222 SOUTH 9TH STREET
SUITE 1600
MINNEAPOLIS, MN 55402

0' 120' 240' 360'

WINDHAM SOLAR

1 WILLIAMS CROSSING DR.
LEBANON, CT 06249
NEW LONDON COUNTY

OVERALL SITE PLAN

DATE: 5/10/2017
SHEET: 3 of 11

Figure 2: Project Plans.

Figure 3: Detail of the 1854 Walling Map of New London County, showing the approximate location of the project area (red star).

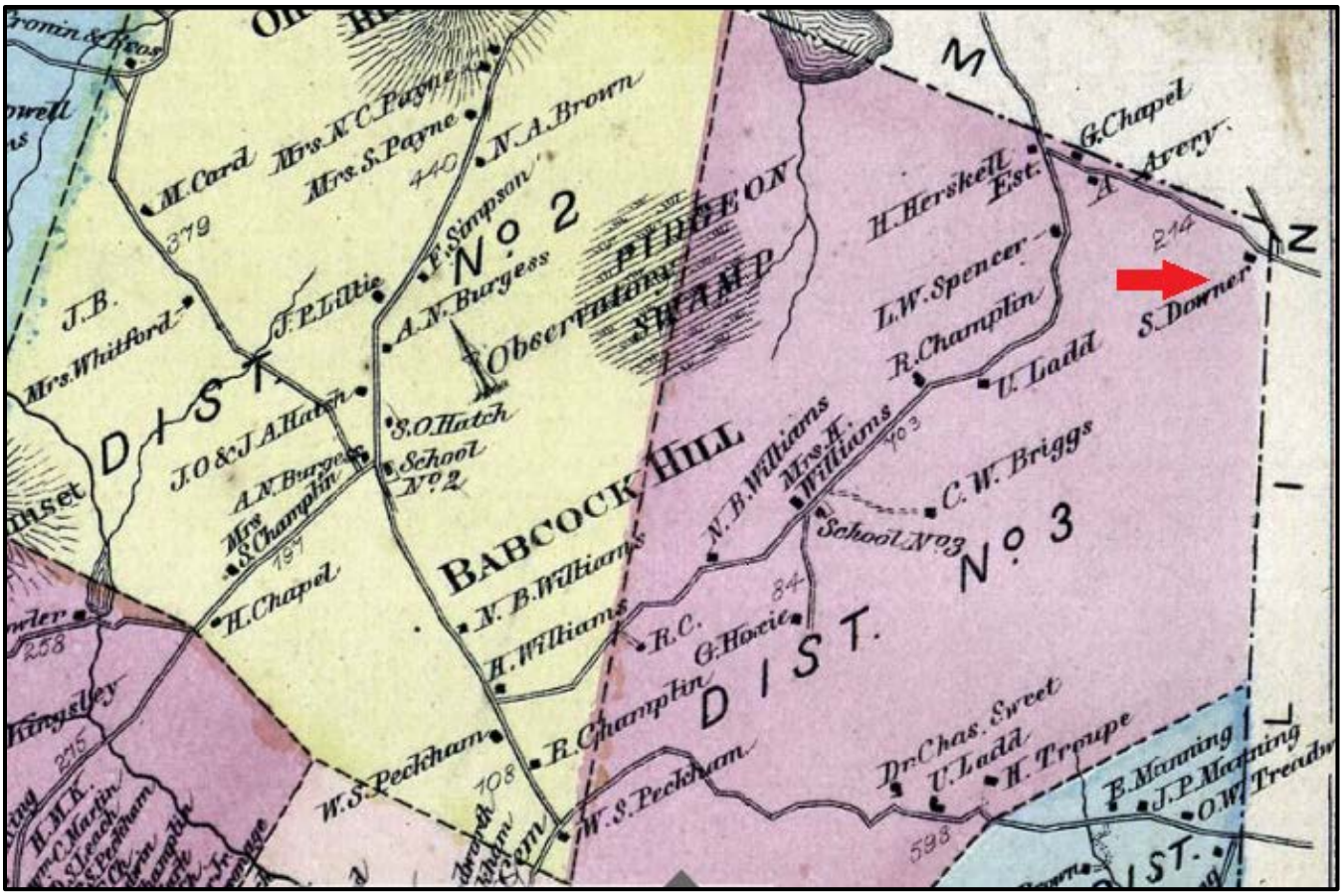

Figure 4: Detail of the 1868 Beers map of Lebanon, showing the approximate location of the project area (red arrow).

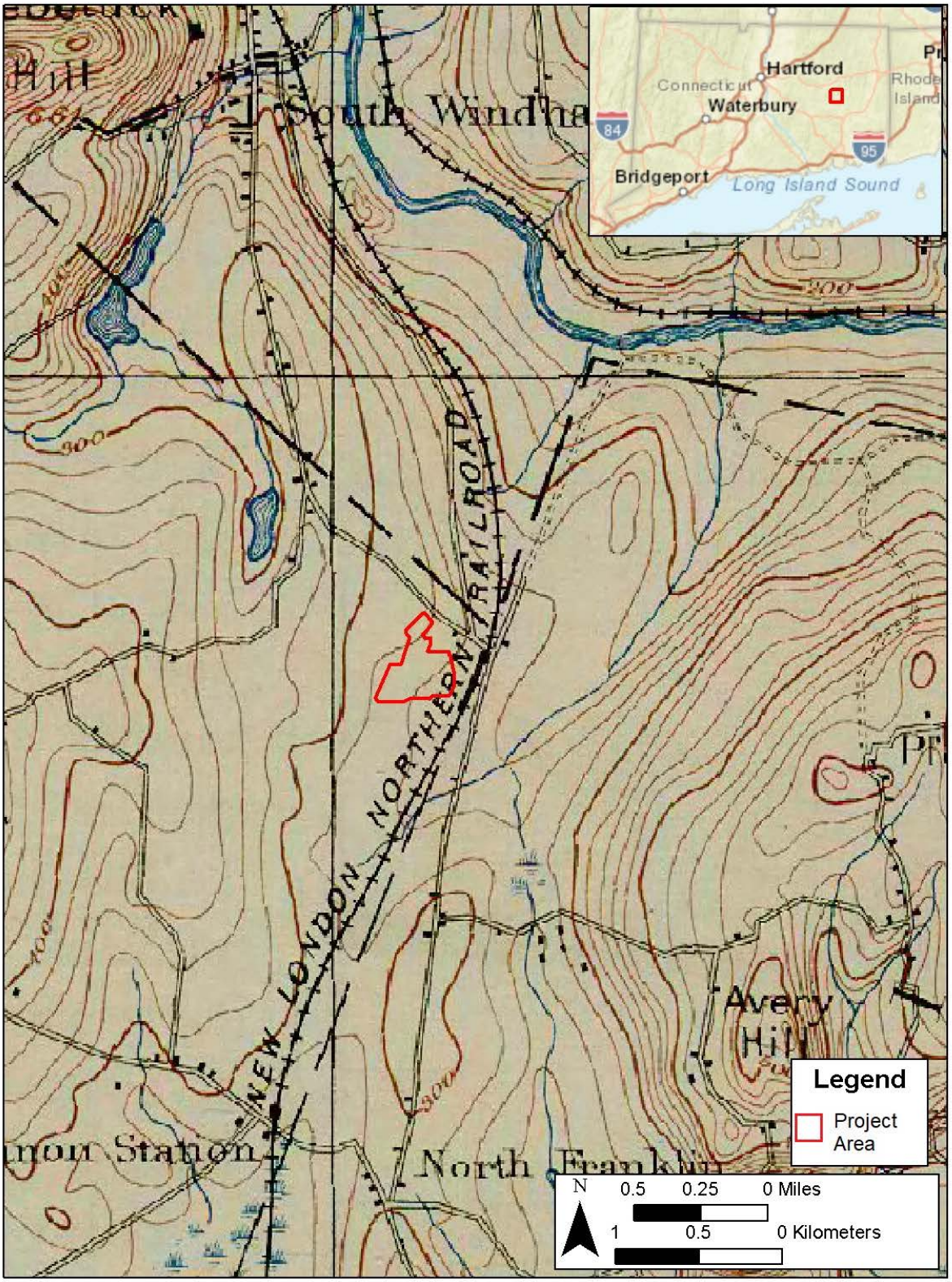

Figure 5: Detail of the 1895 USGS topographic map, showing the geo-referenced project area in red.

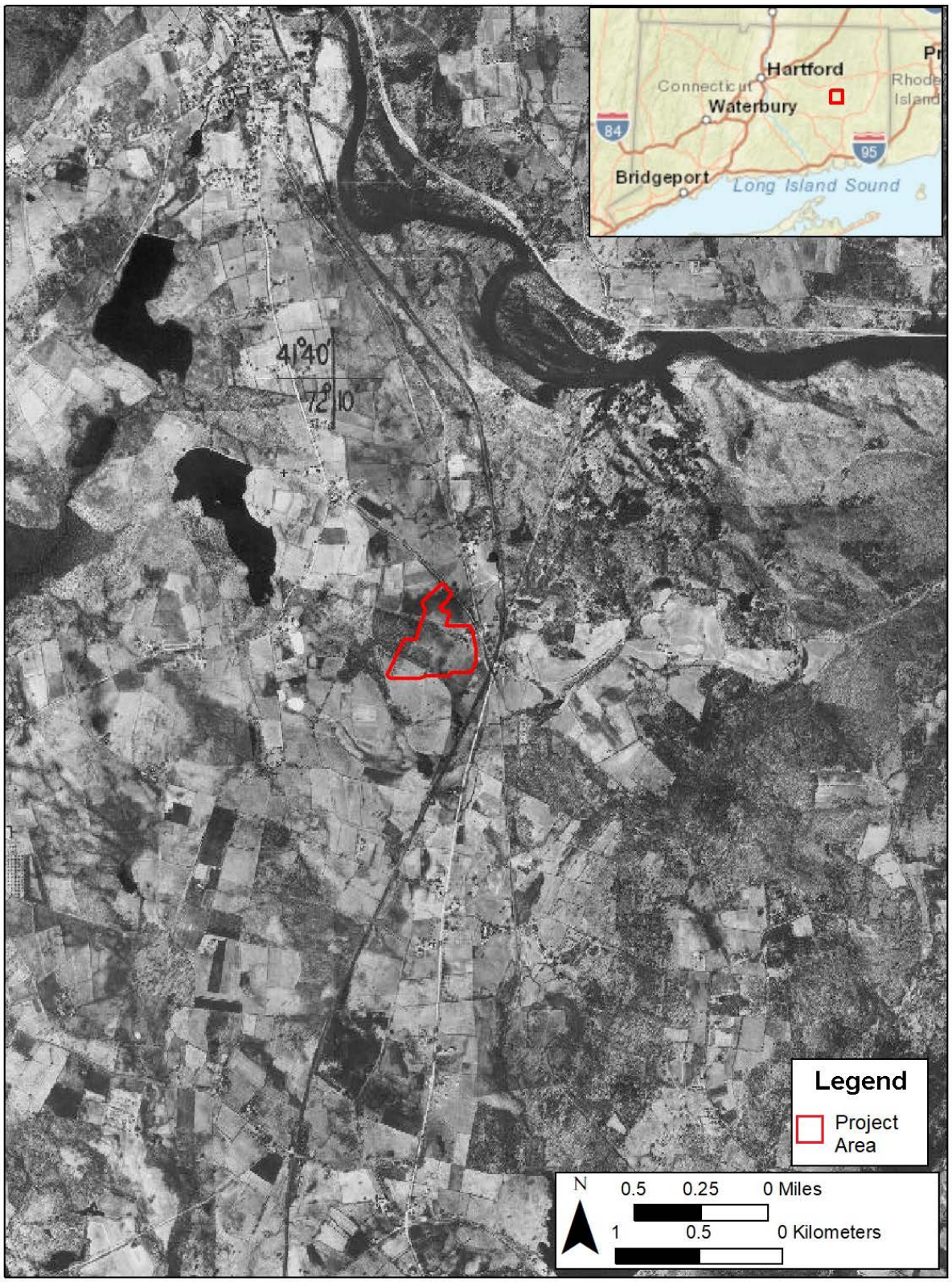

Figure 6: Detail of 1934 Fairchild Series aerial photograph, showing the geo-referenced project area in red.

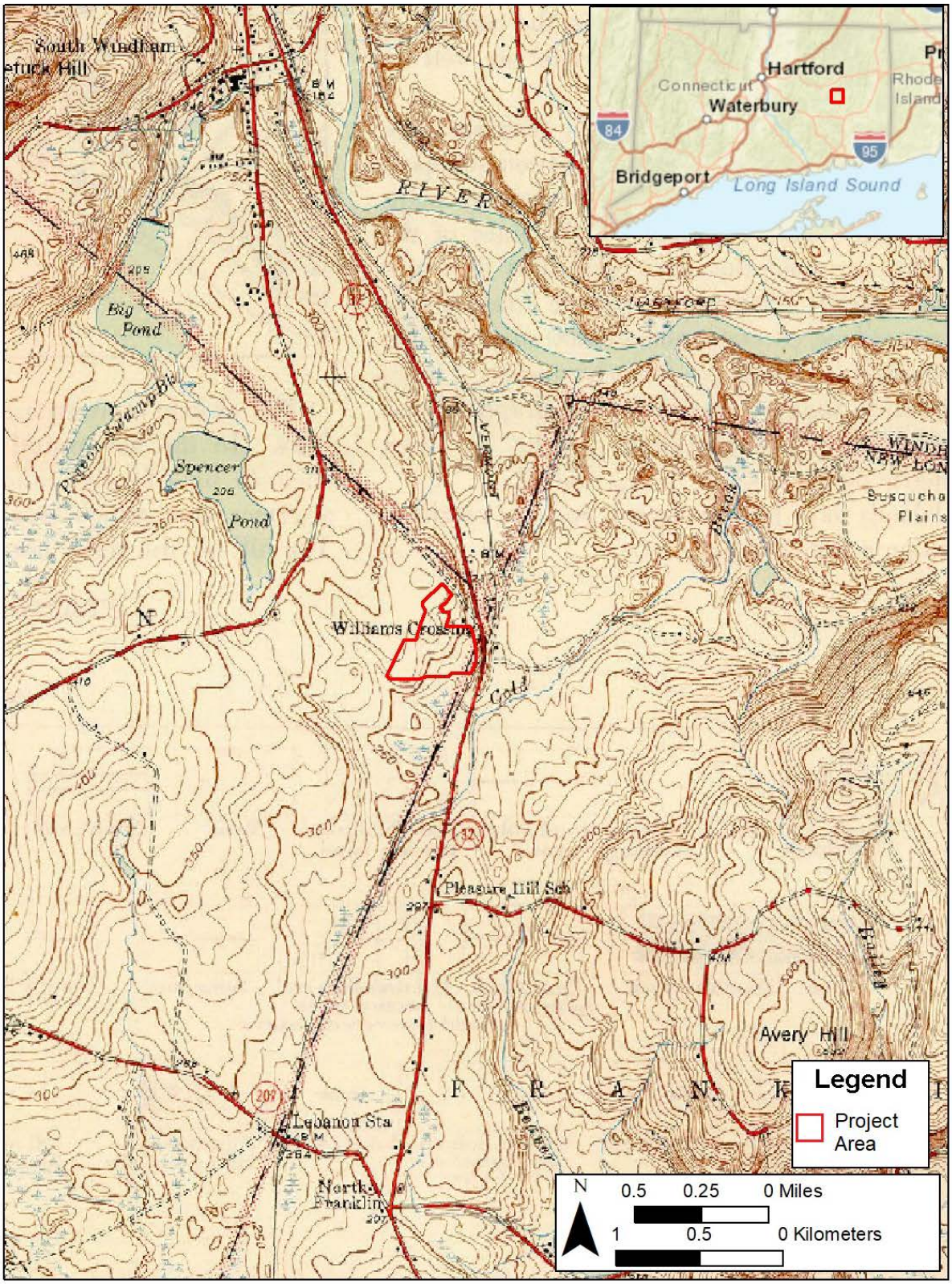

Figure 7: Detail of 1940 USGS topographic map, showing the geo-referenced project area in red.

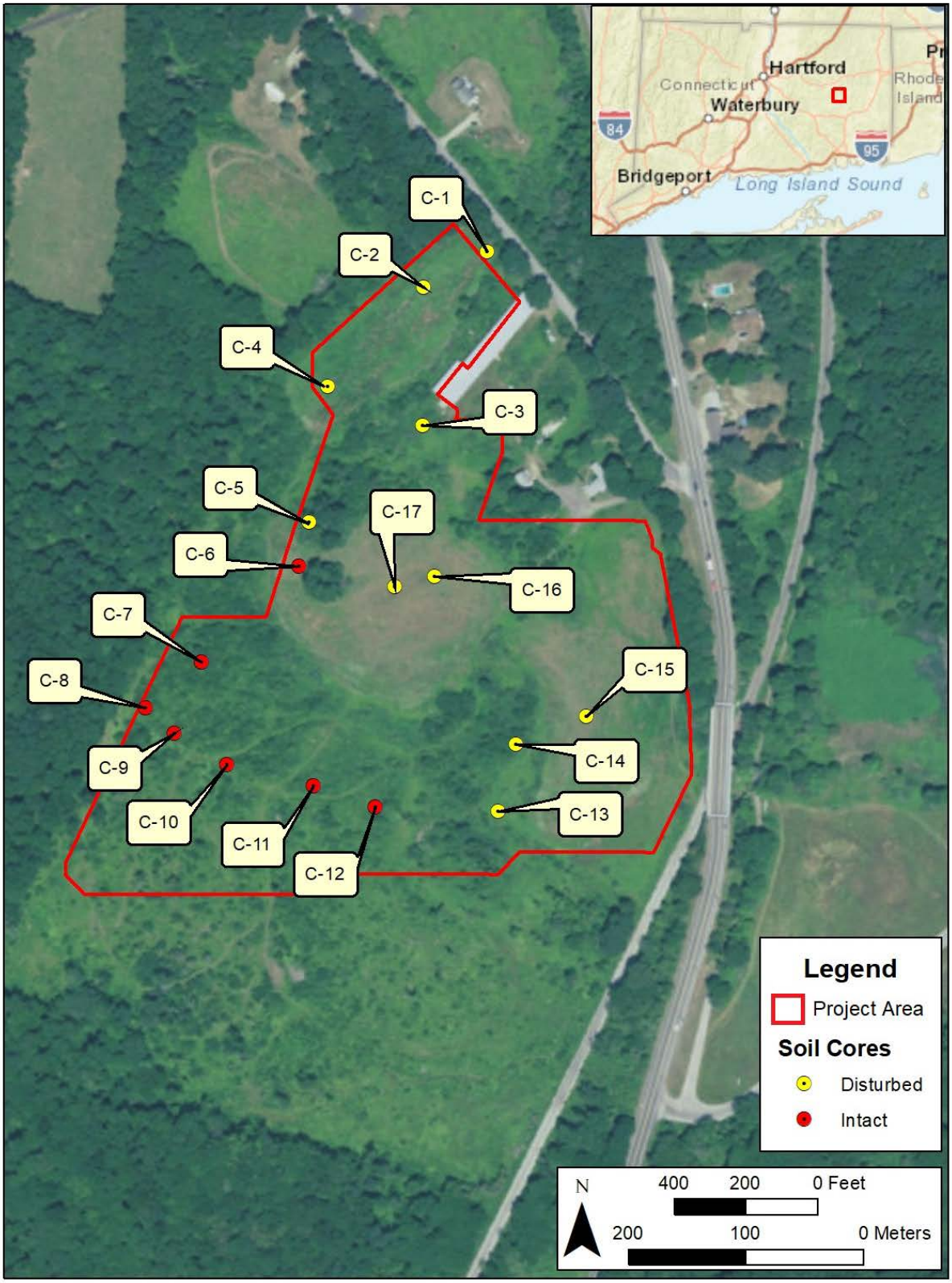

Figure 8: Aerial photograph, showing the locations of soil cores taken during the walkover and visual assessment.

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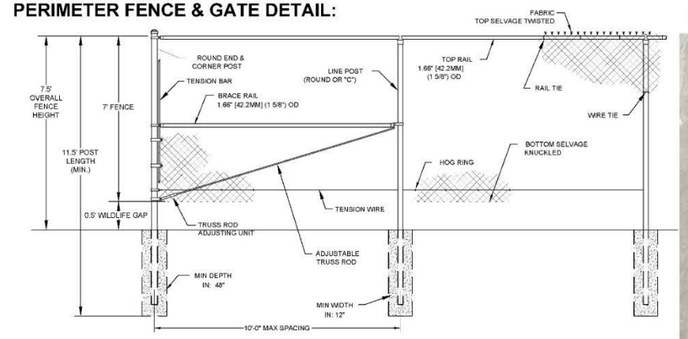
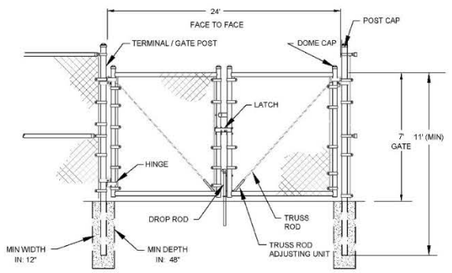
PERIMETER FENCE & GATE DETAIL:





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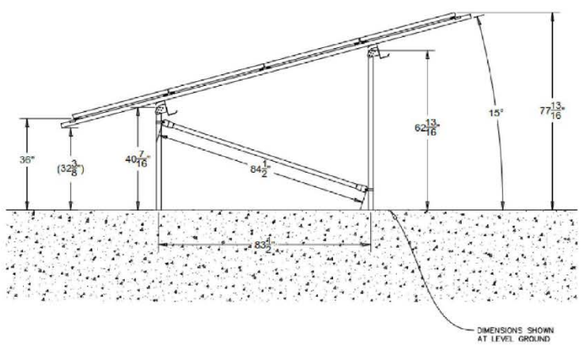

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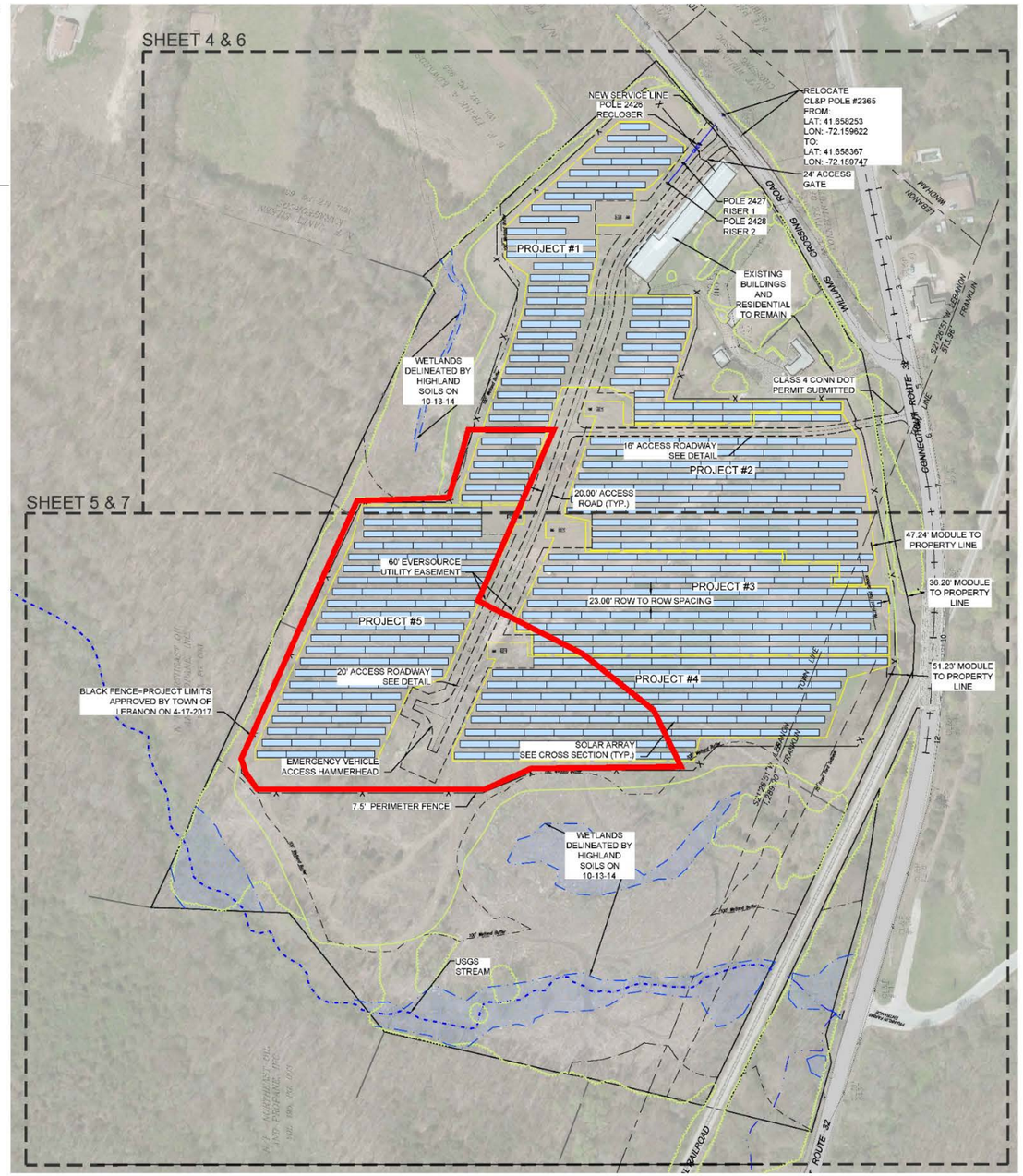

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NEW LONDON COUNTY

OVERALL SITE PLAN

DATE: 5/10/2017
SHEET: 3 of 11

Figure 9: Detail of project plans, showing the archaeologically sensitive portion of the project area outlined in red.

APPENDIX II

Photographs

Photograph 1: Farm complex at 1 Williams Crossing Road, view north from central portion of the project area near C-16.

Photograph 2: Section of farm track in the southern portion of the project area, view east.

Photograph 3: Northwest portion of the project area, with chicken house to the right (east). View north/northwest.

Photograph 4: Small intact rise in the location of C-6, view west.

Photograph 5: Evidence of recently cut trees (stumps, branches) in the southwestern and southern portions of the project area. View southwest.

Photograph 6: Modern stone wall in the southern/southwestern portion of the project area, view west.

Photograph 7: Area of extensive disturbance in the eastern part of the project area, view east.

Photograph 8: Nineteenth-century farm house at 1 Williams Crossing, view south.

Photograph 9: House at 1 Williams Crossing, showing the partial return of the simple cornice across the gable ends.

Photograph 10: Entrance to the house at 1 Williams Crossing, showing a flat roof carried on small scroll brackets, the sides of which are incised in a simple stylized vine pattern.

Photograph 11: Two-story garage (ca. 1950) associated with the house at 1 Williams Crossing.

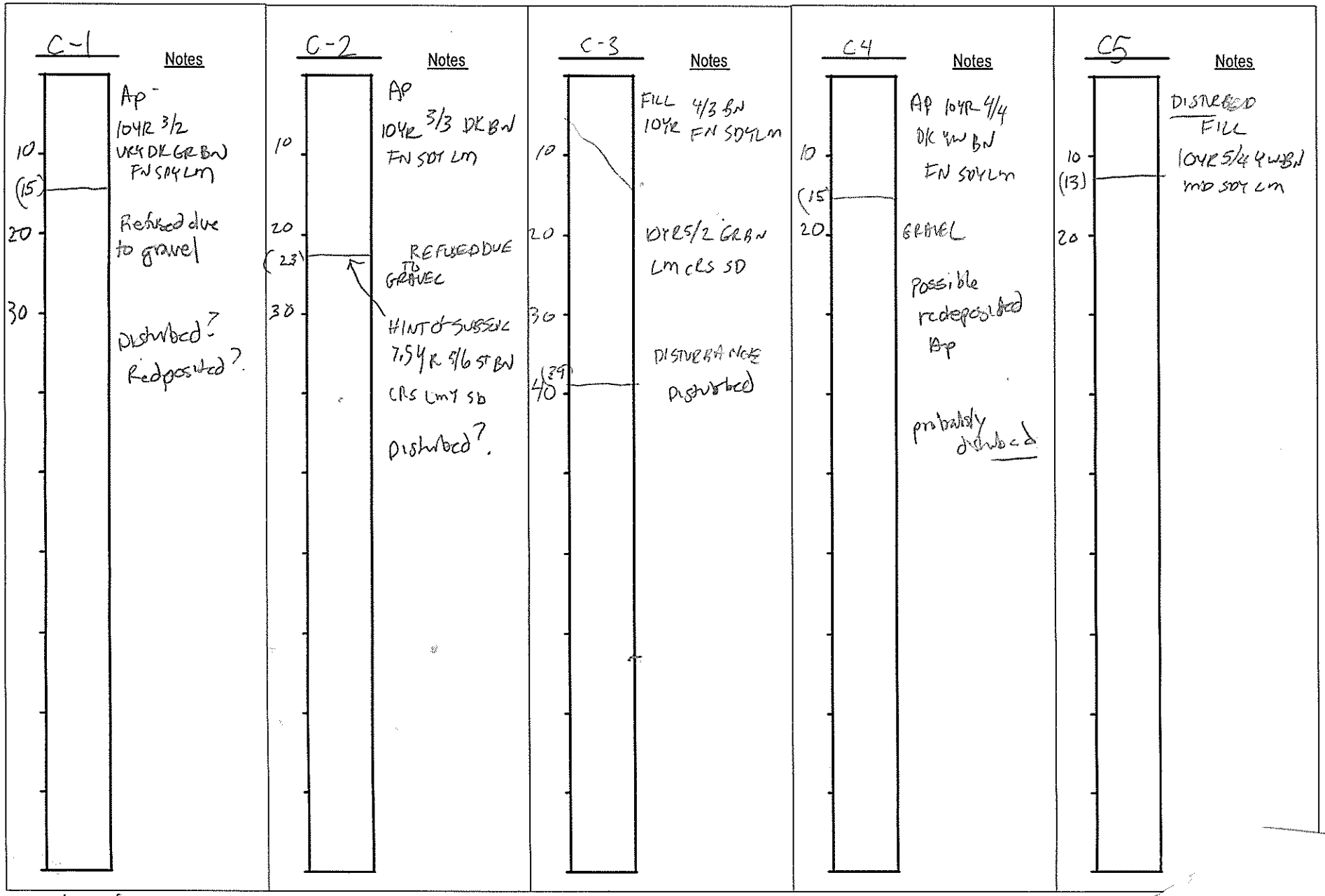
Photograph 12: Poultry house associated with 1 Williams Crossing. Evidence from aerial photographs indicates the poultry house was constructed sometime between 1951 and 1965.

APPENDIX III

Soil Core Profiles

AHS, Inc. **Soil Probe Log** Pg 1 of ___

Project: Lebanon Solar **Site:** **Town:** Lebanon, CT **Phase:** LA **Exc.** RH/SS **Date:** 5/31/16



North end of APE - NEAR ROAD

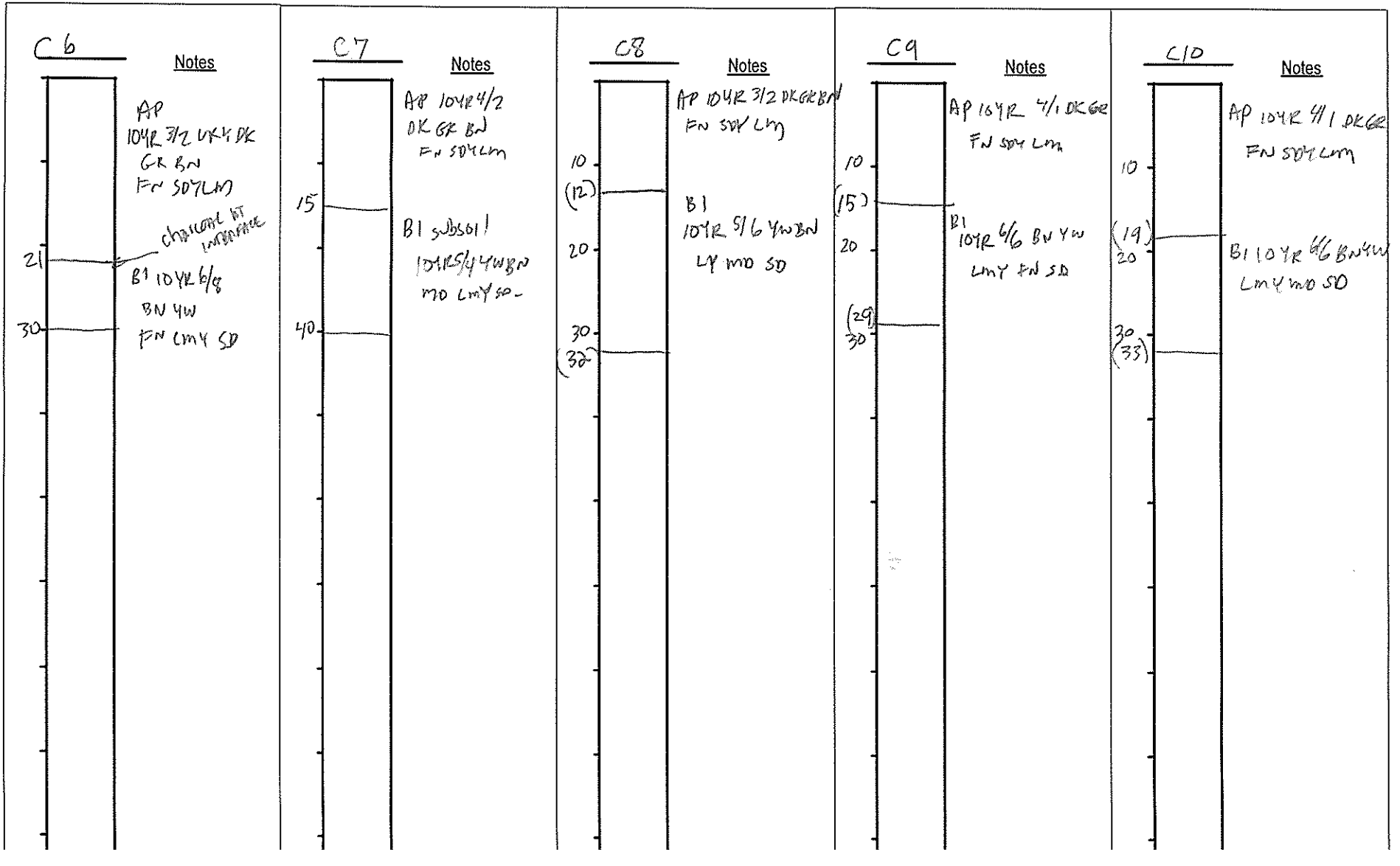
NORTH END - ABOUT MIDDLE of LONG OUTBUILDING

SOUTH END OF OUTBUILDING

Disturbed?

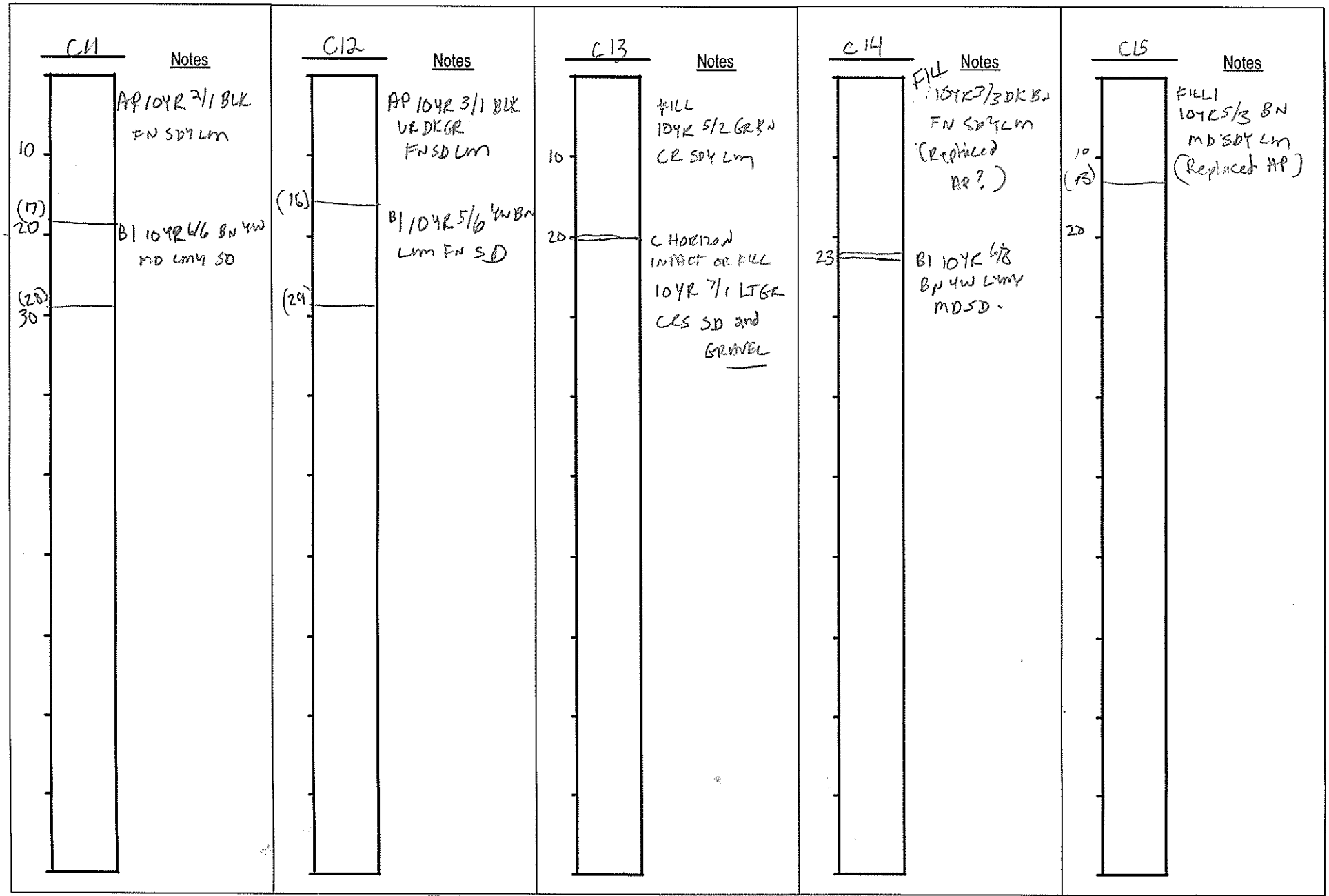
AHS, Inc. **Soil Probe Log** Pg 2 of ___

Project: Lebanon Solar **Site:** **Town:** Lebanon, CT **Phase:** 1A **Exc:** R4/5 **Date:** 5/31/



AHS, Inc. **Soil Probe Log** Pg 3 of ___

Project: Lebanon, Solar **Site:** **Town:** Lebanon, CT **Phase:** 1A **Exc.** RH/55 **Date:** 5/31/17



AHS, Inc. **Soil Probe Log** Pg 4 of ___

Project: Lebanon Solar **Site:** **Town:** Lebanon, CT **Phase:** LA **Exc.** RH/SS **Date:** 5/31

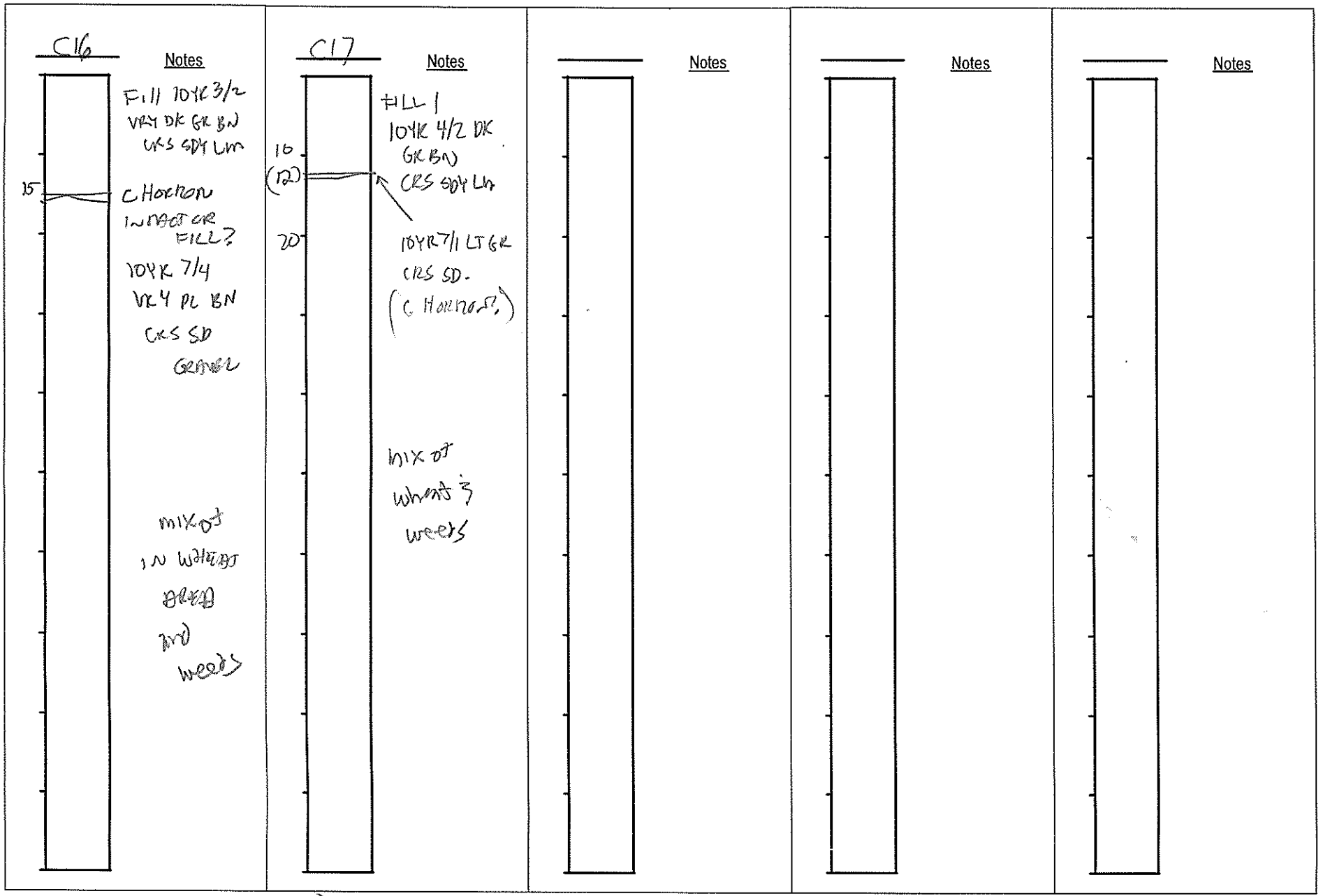


Exhibit I
Civil Construction Documents

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WINDHAM SOLAR
CONSTRUCTION DOCUMENTS

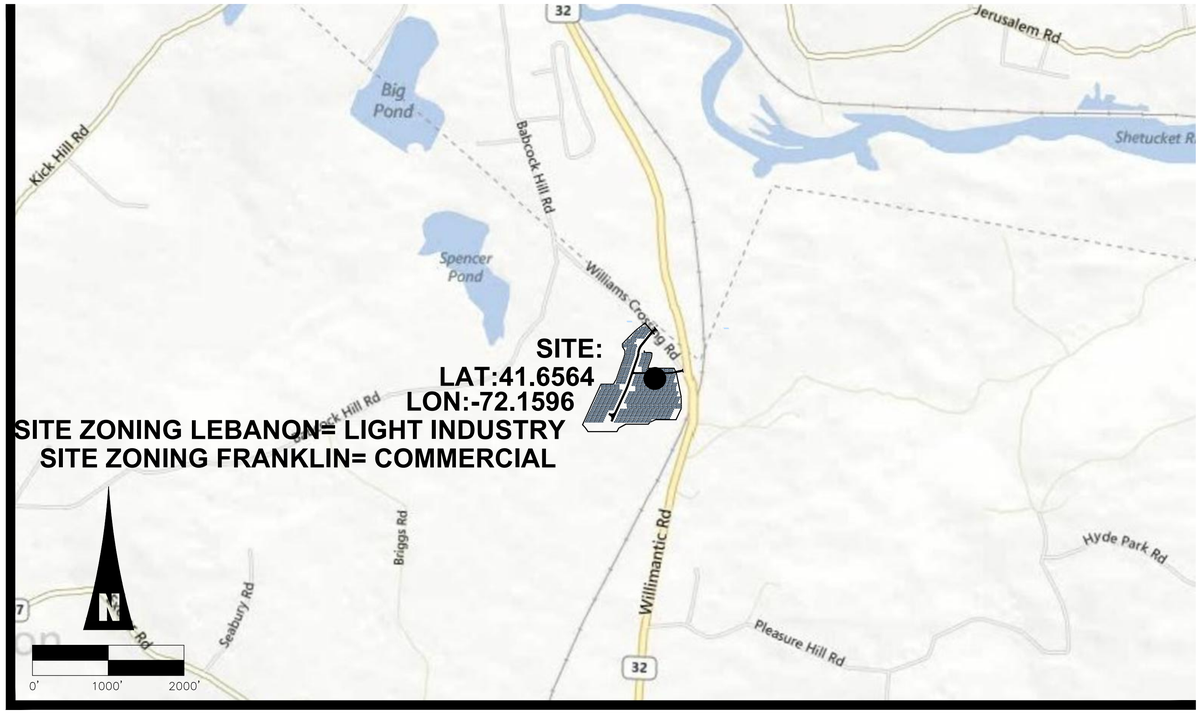
FOR

Site/Electrical Layout, Grading/Drainage/Erosion Control/Landscaping

IN

LEBANON, CONNECTICUT

LOCATION MAP



SHEET INDEX

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●		6/27/2017	6	NORTH SITE & GRADING PLAN - 1"=50'
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●		6/27/2017	8	OVERALL LANDSCAPE PLAN
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●		6/27/2017	11	ROUTE 32 ACCESS PROFILE

DRAWING INDEX LEGEND

FILLED CIRCLE INDICATES DRAWING INCLUDED WITHIN THIS ISSUE
MOST RECENT REVISION NUMBER
MOST RECENT ISSUE OR REVISION DATE

○	-	X/XX/201X	X	SHEET TITLE

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PLH, LLC
77 WATER STREET
8TH FLOOR
NEW YORK, NY 10005

OWNER/DEVELOPER:
WINDHAM SOLAR, LLC
222 SOUTH 9TH STREET
SUITE 1600
MINNEAPOLIS, MN 55402

CIVIL ENGINEER:
WESTWOOD PROFESSIONAL SERVICES
7699 ANAGRAM DRIVE
EDEN PRAIRIE, MN 55344

SURVEYOR:
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HEBRON, CT 06248

WETLAND DELINEATION:
HIGHLAND SOILS
P.O. BOX 337
STORRS, CT 06268

GEOTECHNICAL ENGINEER:
TERRACON
201 HAMMER MILL ROAD
ROCKY HILL, CT 06067

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STATE OF CONNECTICUT · ROBERT D. CHRISTIE · 0030668 · LICENSED · PROFESSIONAL ENGINEER

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-	5/9/2017	FRANKLIN SITE PLAN SUBMISSION
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-	6/27/2017	CSC AMENDMENT SUBMISSION

Prepared for:

ecos ENERGY
222 SOUTH 9TH STREET
SUITE 1600
MINNEAPOLIS, MN 55402

WINDHAM SOLAR
WINDHAM ROAD &
WILLIAMS CROSSING DR.
LEBANON & FRANKLIN CT
PID: 219-19 & 53-3-1
NEW LONDON COUNTY

COVER SHEET

DATE: 6/27/2017
SHEET: 1 of 11

LEGEND

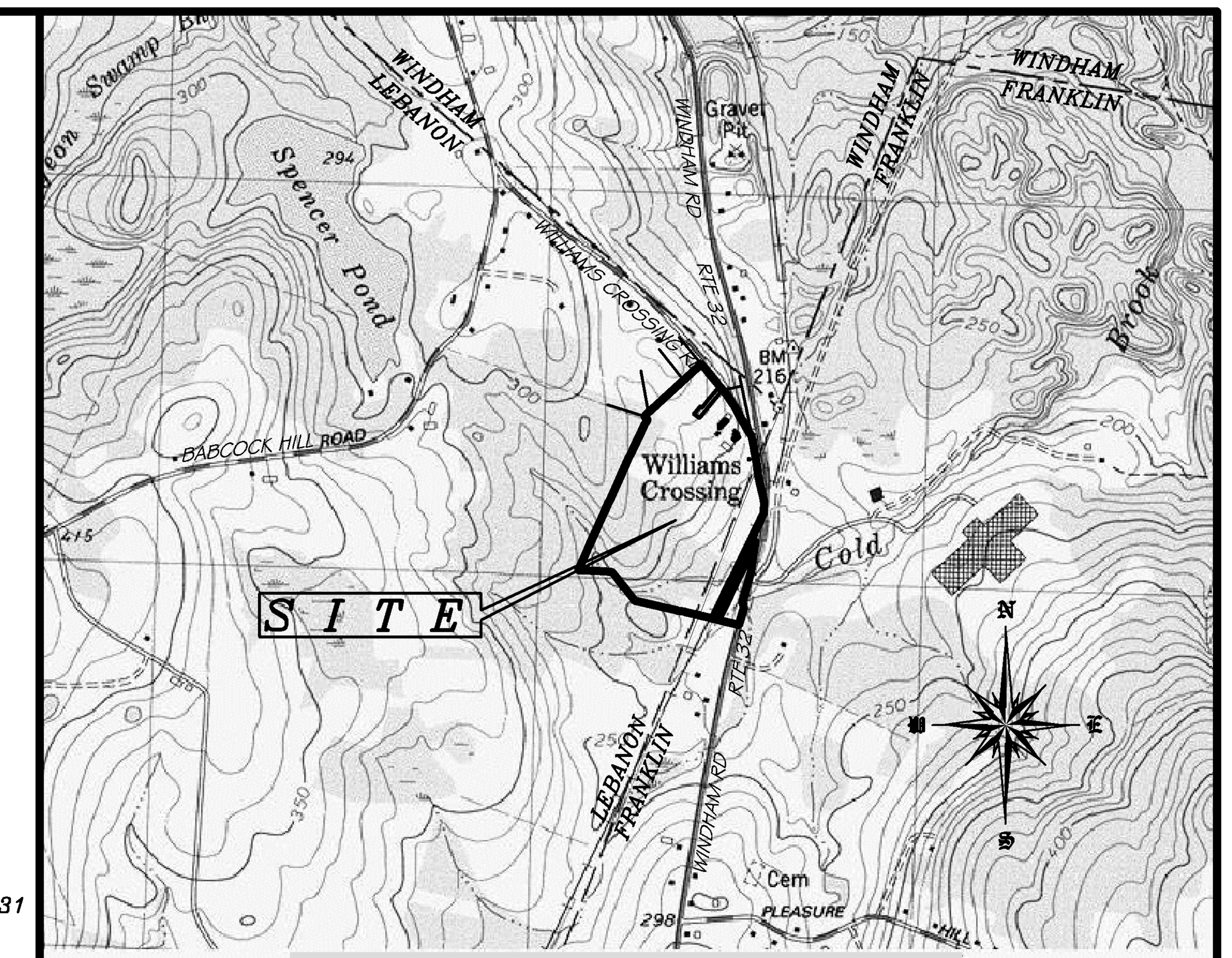
- PROPERTY LINE
- STONE WALL
- WIRE FENCE
- EDGE BRUSH OR CLEARING
- GUARDRAIL
- BOX WIRE FENCE
- TREE WITH WIRE
- FENCE POST WITH WIRE
- ANGLE POINT
- 5/8" REBAR UNLESS NOTED
- CHD MONUMENT FOUND
- DRILL HOLE FOUND
- DRILL HOLE TO BE SET
- SURVEYOR CONTROL POINT

ZONING TABLE TOWN OF FRANKLIN – ZONE 'C2'

MIXED COMMERCIAL & LIGHT INDUSTRIAL
MIN. LOT AREA = 100,000 SQ.FT. W/O SEWERS
60,000 SQ.FT. W SEWERS
MIN. FRONTAGE = 200'
MIN. LOT WIDTH = 200'
BUILDING SETBACKS: FRONT YARD = 100' FROM CL RD; 75' FROM ROW; SIDE & REAR YARD = 25' (ADDITIONAL 25' BUFFER STRIP MAY BE POSSIBLE WHERE ABUTTING RESIDENTIAL DISTRICT)
MAXIMUM LOT COVERAGE: BUILDINGS, LOADING, STORAGE & ALL PAVED ARES = 65%

ZONING TABLE TOWN OF LEBANON – ZONE 'I'

ZONE 'I' – LIGHT INDUSTRY
MIN. LOT AREA = 1 ACRE
MIN. FRONTAGE = 200'
BUILDING SETBACKS: FRONT YARD = 50'; SIDE YARD = 50'; REAR YARD = 25'
MAXIMUM BUILDING COVERAGE = 25%
MAXIMUM BUILDING HEIGHT = 40'
REQUIRED MINIMUM PARKING:
INDUSTRIAL BUILDINGS - (1) SPACE PER
(4) EMPLOYEES ANY ONE SHIFT



LOCATION MAP
SCALE: 1" = 1,200'±

GENERAL NOTES:

1. THE BOUNDARY LINES ABUTTING THE NEW ENGLAND CENTRAL RAILROAD ARE SHOWN PER MAP REFERENCE #2.
2. PARCEL B IS SUBJECT TO A DRAINAGE RIGHTS AS CONVEYED TO THE STATE OF CONNECTICUT IN VOL 15 / PG 297 OF THE FRANKLIN LAND RECORDS. FOR A MORE PARTICULAR DESCRIPTION OF THESE RIGHTS SEE SAID DEED.
3. PARCEL A IS SUBJECT TO A DRAINAGE RIGHTS AS CONVEYED TO THE STATE OF CONNECTICUT IN VOL 15 / PG 297 OF THE FRANKLIN LAND RECORDS. FOR A MORE PARTICULAR DESCRIPTION OF THESE RIGHTS SEE SAID DEED.
4. THIS PARCEL IS SUBJECT TO A POLE EASEMENT CONVEYED TO THE SOUTHERN NEW ENGLAND TELEPHONE COMPANY IN VOL 10 / PG 391 OF THE FRANKLIN LAND RECORDS. FOR A MORE PARTICULAR DESCRIPTION OF THESE RIGHTS SEE SAID DEED.

MAP STANDARD NOTES:

1. THIS SURVEY (OR MAP) HAS BEEN PREPARED PURSUANT TO THE REGULATIONS OF CONNECTICUT STATE AGENCIES SECTIONS 20-300b-1 THRU 20-300b-20 AND THE "STANDARDS FOR SURVEYS AND MAPS IN THE STATE OF CONNECTICUT" AS ADOPTED BY THE CONNECTICUT ASSOCIATION OF LAND SURVEYORS, INC. ON SEPTEMBER 26, 1996; THE TYPE OF SURVEY IS A BOUNDARY SURVEY. BOUNDARY DETERMINATION IS BASED ON A RESURVEY OF PROPERTY AND CONFORMS TO THE 'A-2' CLASS OF ACCURACY.
2. HORIZONTAL DATUM IS BASED ON ON GRID NORTH, CGS 1927 TIED TO MONUMENT 3096 AND STATE OF CONNECTICUT "RANDOM " MONUMENT.
3. TOPOGRAPHIC FEATURES WERE PREPARED IN ACCORDANCE WITH CLASS T-3. ELEVATIONS ARE BASED ON NAVD 88 . BENCH MARK #2205
4. THE INTENDED PURPOSE OF THIS MAP/SURVEY IS TO SHOW BOUNDARY, WETLAND LOCATION AND TOPOGRAPHY.
5. PARCELS ARE NOT LOCATED IN A FLOOD ZONE AS DETERMINED PER THE NATIONAL FLOOD INSURANCE PROGRAM, FIRM, NEW LONDON COUNTY, MAP PANEL 43 OF 554, MAP NO. 09011190007D, EFF. DATE JULY 18, 2011 & MAP NO. 090110004IG WHICH IS LABELED BY FEMA "PANEL NOT PRINTED".

I HEREBY DECLARE THAT THE WETLANDS SHOWN ON THIS MAP (PLAN) ARE SUBSTANTIALLY CORRECT.

JOHN IANNI
SOIL SCIENTIST

LEBANON TOWN PARCEL REFERENCE:

TOWN OF LEBANON VOL. 227 / PG. 708

FRANKLIN TOWN PARCEL REFERENCE:

TOWN OF FRANKLIN VOL. 70 / PG. 208

MAP REFERENCES:

1. "BOUNDARY PERIMETER SURVEY PREPARED FOR MARION C. & JAMES J. BEAUSOLEIL, WILLIAMS COROSSING RD. & BABCOCK HILL RD., LEBANON,CONNECTICUT", SCALE 1" = 60', SHEET 1 OF 1, DATED NOV. 4, 2008 BY FILIP ASSOCIATES.
2. "BOUNDARY SURVEY PREPARED FOR DSD CEDAR HILL, RTE. 32 & WILLIAMS CROSSING RD., LEBANON/FRANKLIN, CT", SCALE 1" = 100', SHEET 1 OF 1, JOB 04-265, DATED JUNE 21, 2005 BY TOWNE ENGINEERING, INC. (Map # 1493 Lebanon Town Clerk office)
3. CONNECTICUT STATE HIGHWAY DEPARTMENT RIGHT OF WAY MAP, TOWN OF LEBANON, NORWICH-WILLIMANTIC ROAD FROM THE WINDHAM TOWN LINE SOUTHERLY TO THE FRANKLIN TOWN LINE, ROUTE NO 32, SCALE: 1" = 40', NO. 70-02-A, SHEET 1 OF 1, DATE APPROVED; JULY 21, 1947.
4. CONNECTICUT STATE HIGHWAY DEPARENT RIGHT OF WAY MAP, TOWN OF FRANKLIN, NORWICH-WILLIMANTIC ROAD FROM THE LEBANON TOWN LINE SOUTHERLY ABOUT 10,000 FEET, ROUTE NO. 32, SCALE: 1" = 40', NO. 52-04-A, SHEET 1 OF 3, DATE APPROVED; JULY 21, 1947.
5. CONNECTICUT STATE HIGHWAY DEPARTMENT RIGHT OF WAY MAP, TOWN OF FRANKLIN, NORWICH-WILLIMANTIC ROAD FROM THE LEBANON TOWN LINE SOUTHERLY ABOUT 10,000 FEET, ROUTE NO. 32, SCALE: 1" = 40', NO. 52-04, SHEET 1 OF 3, DATE APPROVED; JAN 31, 1933.

GRAPHIC SCALE

-40' 0' 40' 80'

(IN FEET)
1 inch = 40 ft.

NO.	DATE	DESCRIPTION

R E V I S I O N S

COMMITMENT FOR TITLE INSURANCE NOTE:

OLD REPUBLIC NATIONAL TITLE INSURANCE COMPANY OWNER'S POLICY
REFERENCE "File No.: 14-145"
POLICY NUMBER: OX-09442008
DATE OF POLICY: OCT. 30, 2014

SEE SCHEDULE B OF THE POLICY OR POLICIES WHICH CONTAINS EXCEPTIONS, EXCEPTIONS: 1. THROUGH 11.

ALTA/ACSM LAND TITLE SURVEY CERTIFICATION:

TO PLH, LLC AN INDIANA LIMITED LIABILITY COMPANY & OLD REPUBLIC NATIONAL TITLE INSURANCE COMPANY:

THIS IS TO CERTIFY THAT THIS MAP OR PLAT AND THE SURVEY ON WHICH IT IS BASED WERE MADE IN ACCORDANCE WITH THE "MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/ACSM LAND TITLE SURVEYS", JOINTLY ESTABLISHED AND ADOPTED BY ALTA AND NSPS IN 2005, AND INCLUDES ITEMS 2 - 8, 11, 13, 18 - 20 & 21 OF TABLE 'A' THEREOF. PURSUANT TO THE ACCURACY STANDARDS AS ADOPTED BY ALTA AND NSPS AND IN EFFECT ON THE DATE OF THIS CERTIFICATION, UNDERSIGNED FURTHER CERTIFIES THAT IN MY PROFESSIONAL OPINION, AS A LAND SURVEYOR REGISTERED IN THE STATE OF CONNECTICUT, THE RELATIVE POSITIONAL ACCURACY OF THIS SURVEY DOES NOT EXCEED THAT WHICH IS SPECIFIED THEREIN.

ALL RIGHTS RESERVED
ANY REPRODUCTION, POSSESSION OR USE OF THIS DRAWING OR ANY PART THEREOF WITHOUT THE WRITTEN PERMISSION OF THE SURVEYOR INDICATED BELOW IS PROHIBITED. VIOLATORS WILL BE PROSECUTED TO THE FULL EXTENT OF THE LAW.

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

THIS DRAWING IS NOT VALID UNLESS IT BEARS AN ORIGINAL INK SIGNATURE AND EMBOSSED SEAL

ROBERT W. HELLSTROM, L.S. #13626

ROB HELLSTROM LAND SURVEYING LLC
Mailing Address:
P.O. BOX 497
COLUMBIA, CT. 06237-0497
(860) 228-9853
(860) 228-1360 (FAX)
32 MAIN STREET HEBRON, CT., 06248
hellstromsurveying@yahoo.com
www.hellstromlandsurveying.com

DATE: NOVEMBER 6, 2014

BOUNDARY SURVEY

– PREPARED FOR –

ECOS ENERGY LLC

ROUTE 32 & WILLIAMS CROSSING ROAD

LEBANON/FRANKLIN CONNECTICUT

SHEET NO.: 1 OF 1		JOB NO.: 2014-099
BY: ROBIN H.	SCALE: 1" = 100'	FILE NO.: EC14099

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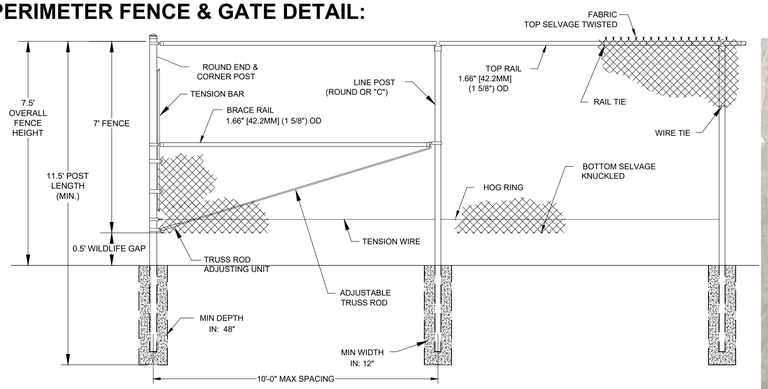
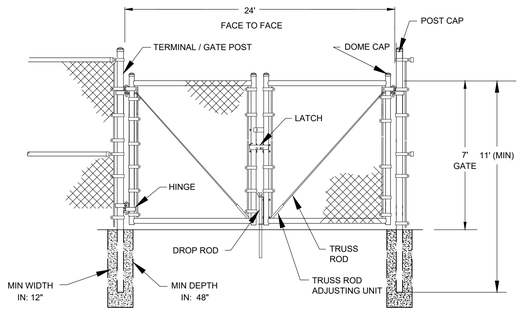
PERIMETER FENCE & GATE DETAIL:





FENCING NOTES:
1. FENCING PARALLEL WITH WILLIAMS CROSSING ROAD AND ROUTE 32 SHALL BE BLACK VINYL COATED.
2. ALL 3 FENCE GATES SHALL BE BLACK VINYL COATED.
3. FENCE DETAILS REPRESENTED ARE CONCEPTUAL, FENCE CONTRACTOR TO SUBMIT ACTUAL SHOP DRAWINGS PRIOR TO CONSTRUCTION

LEGEND:

- EXISTING PROPERTY LINE
- x PROPOSED PROJECT FENCE
- PROPOSED GRAVEL ACCESS ROAD
- M/V PROPOSED AC DISTRIBUTION
- 100' WETLAND BUFFER AREA
- WETLAND DELINEATION LINE
- INDIVIDUAL SOLAR FACILITY LIMITS

PROJECT INFORMATION:

EXISTING ZONING:
LIGHT INDUSTRIAL

PROPOSED USE :
SOLAR FACILITY

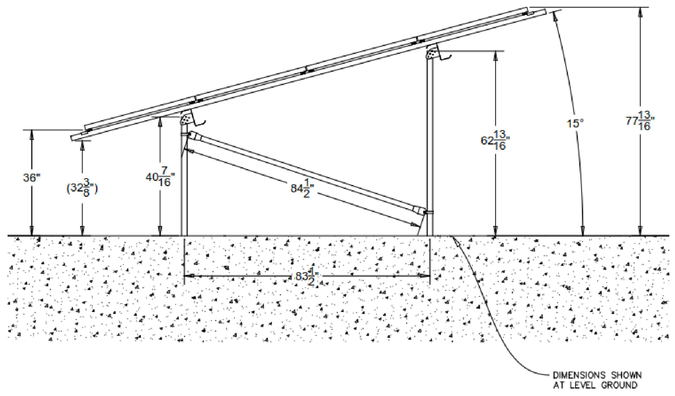
PROJECT AREAS & IMPACTS:

TOWN OF LEBANON PARCEL 219-19 = 39.04 ACRES
TOWN OF FRANKLIN PARCEL 53-3-1 = 3.99 ACRES
TOTAL PARCEL AREA = 44.03 ACRES

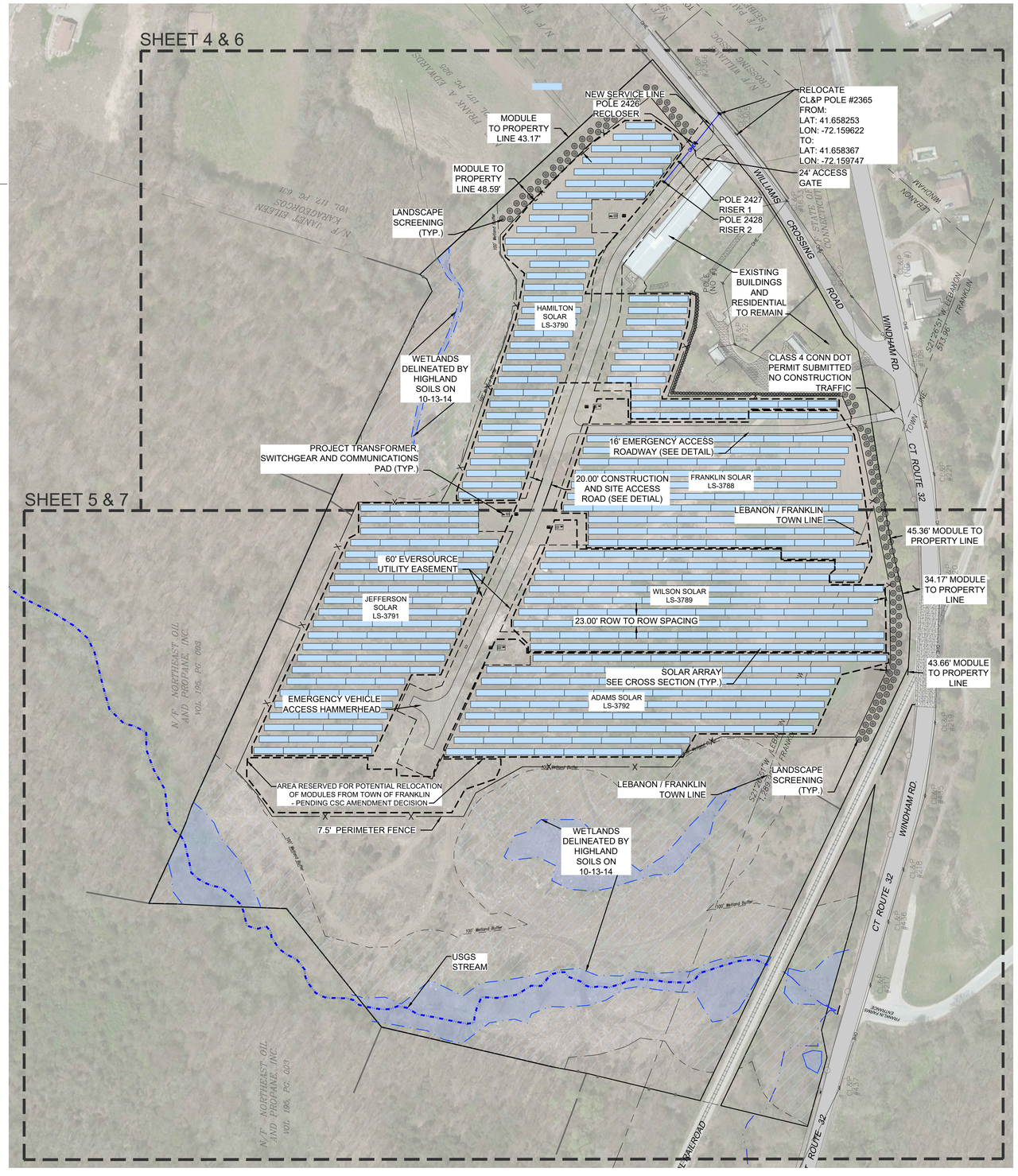
SOLAR ARRAY FOOTPRINT (FENCE LIMITS) = 22.2 AC
ARRAY FOOTPRINT ON PARCEL 219-19 = 21.1 AC
ARRAY FOOTPRINT ON PARCEL 53-3-1 = 1.1 AC

PROPOSED IMPERVIOUS:
GRAVEL ACCESS ROADS = 0.93 AC
EQUIPMENT PADS = 0.05 AC

RACKING PROFILE DETAIL:



AERIAL SITE PLAN:



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STATE OF CONNECTICUT · ROBERT D. CHRISTIE · 0030668 · LICENSED PROFESSIONAL ENGINEER

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Drawn:	SJB
Record Drawing by/date:	

Revisions:

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-	5/9/2017	FRANKLIN SITE PLAN SUBMISSION
-	5/10/2017	BID/PERMIT SUBMISSION
-	6/27/2017	CSC AMENDMENT SUBMISSION

Prepared for:

ecos ENERGY
222 SOUTH 9TH STREET
SUITE 1600
MINNEAPOLIS, MN 55402

0' 120' 240' 360'

WINDHAM SOLAR

WINDHAM ROAD &
WILLIAMS CROSSING DR.
LEBANON & FRANKLIN CT
PID: 219-19 & 53-3-1
NEW LONDON COUNTY

OVERALL SITE PLAN

DATE: 6/27/2017
SHEET: 3 of 11

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PROJECT FOOTPRINT REMOVAL NOTES

AREAS WITHIN THE PROJECT FOOTPRINT WERE CLEARED IN JANUARY OF 2017. NO GRUBBING AT THE TIME OF CLEARING OCCURRED.

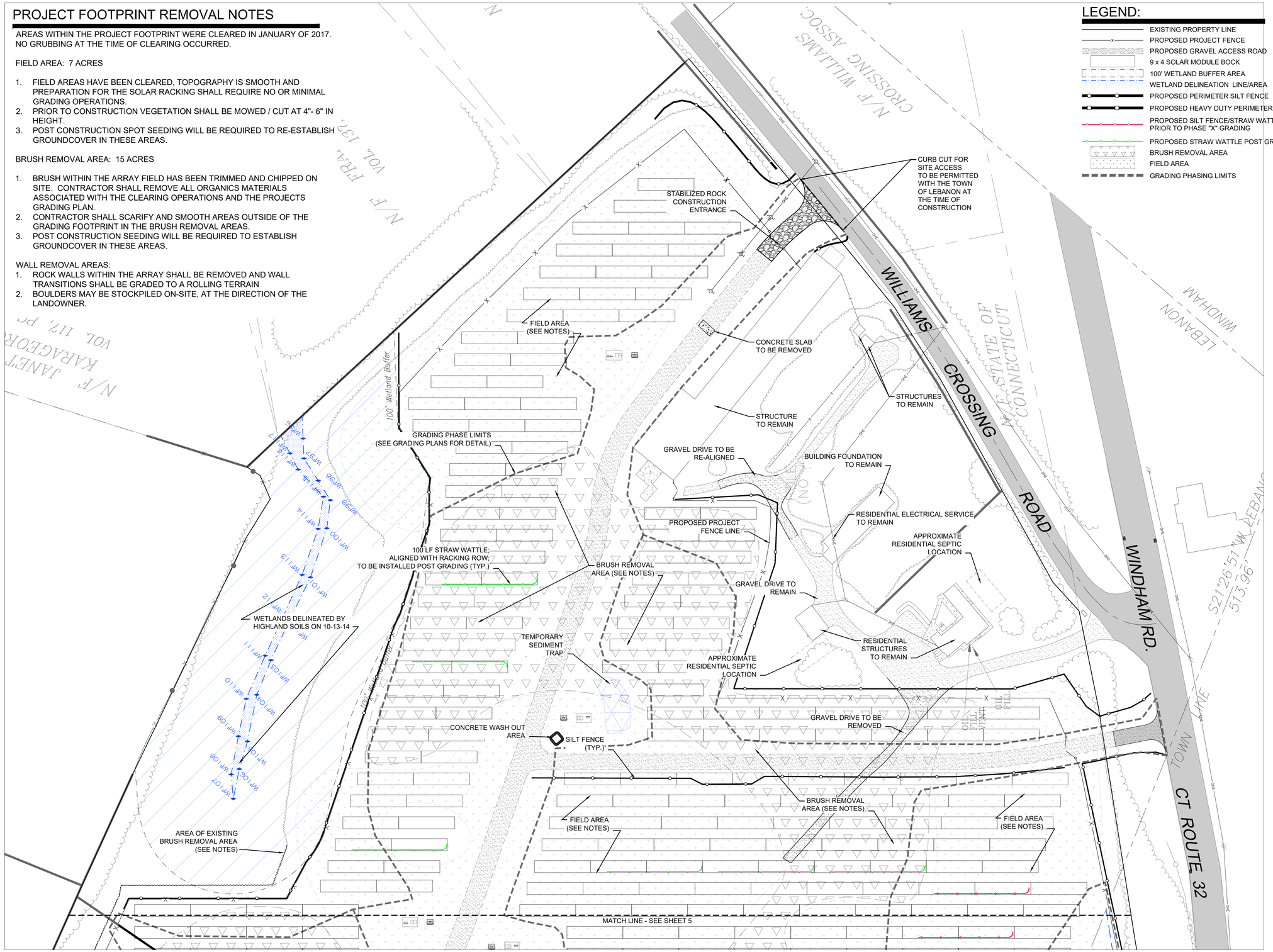
FIELD AREA: 7 ACRES

1. FIELD AREAS HAVE BEEN CLEARED, TOPOGRAPHY IS SMOOTH AND PREPARATION FOR THE SOLAR RACKING SHALL REQUIRE NO OR MINIMAL GRADING OPERATIONS.
2. PRIOR TO CONSTRUCTION VEGETATION SHALL BE MOWED / CUT AT 4"- 6" IN HEIGHT.
3. POST CONSTRUCTION SPOT SEEDING WILL BE REQUIRED TO RE-ESTABLISH GROUNDCOVER IN THESE AREAS.

BRUSH REMOVAL AREA: 15 ACRES

1. BRUSH WITHIN THE ARRAY FIELD HAS BEEN TRIMMED AND CHIPPED ON SITE. CONTRACTOR SHALL REMOVE ALL ORGANICS MATERIALS ASSOCIATED WITH THE CLEARING OPERATIONS AND THE PROJECTS GRADING PLAN.
2. CONTRACTOR SHALL SCARIFY AND SMOOTH AREAS OUTSIDE OF THE GRADING FOOTPRINT IN THE BRUSH REMOVAL AREAS.
3. POST CONSTRUCTION SEEDING WILL BE REQUIRED TO ESTABLISH GROUNDCOVER IN THESE AREAS.

WALL REMOVAL AREAS:
1. ROCK WALLS WITHIN THE ARRAY SHALL BE REMOVED AND WALL TRANSITIONS SHALL BE GRADED TO A ROLLING TERRAIN
2. BOULDERS MAY BE STOCKPILED ON-SITE, AT THE DIRECTION OF THE LANDOWNER.



LEGEND:

- EXISTING PROPERTY LINE
- PROPOSED PROJECT FENCE
- PROPOSED GRAVEL ACCESS ROAD
- 9 x 4 SOLAR MODULE BOCK
- 100' WETLAND BUFFER AREA
- WETLAND DELINEATION LINE/AREA
- PROPOSED PERIMETER SILT FENCE
- PROPOSED HEAVY DUTY PERIMETER SILT FENCE
- PROPOSED SILT FENCE/STRAW WATTLE PRIOR TO PHASE "X" GRADING
- PROPOSED STRAW WATTLE POST GRADING
- BRUSH REMOVAL AREA
- FIELD AREA
- GRADING PHASING LIMITS

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STATE OF CONNECTICUT — KRISTI D. CHRISTENSEN — 0030668 — LICENSED PROFESSIONAL ENGINEER

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0' 50' 100' 150'

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WINDHAM ROAD &
WILLIAMS CROSSING DR.
LEBANON & FRANKLIN CT
PID: 219-19 & 53-3-1
NEW LONDON COUNTY

NORTH REMOVAL & EROSION CONTROL PLAN

DATE: 6/27/2017
SHEET: 4 of 11

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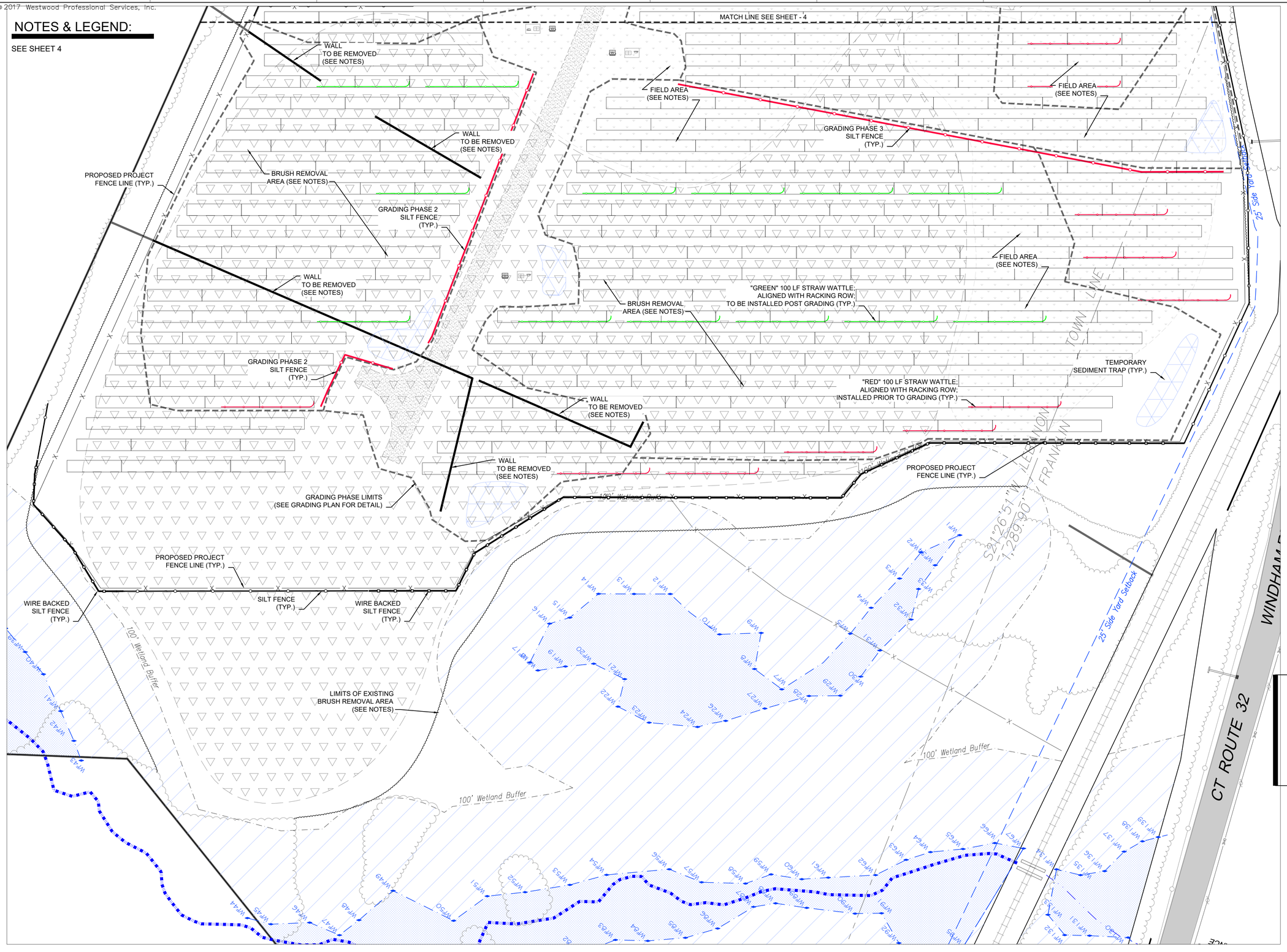
NOTES & LEGEND:

SEE SHEET 4



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STATE OF CONNECTICUT — CHRISTOPHER S. WILLIAMS — 0030668 — LICENSED PROFESSIONAL ENGINEER

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Prepared for:

ecos ENERGY
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0' 50' 100' 150'

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LEBANON & FRANKLIN CT
PID: 219-19 & 53-3-1
NEW LONDON COUNTY

SOUTH REMOVAL & EROSION CONTROL PLAN

DATE: 6/27/2017
SHEET: 5 of 11

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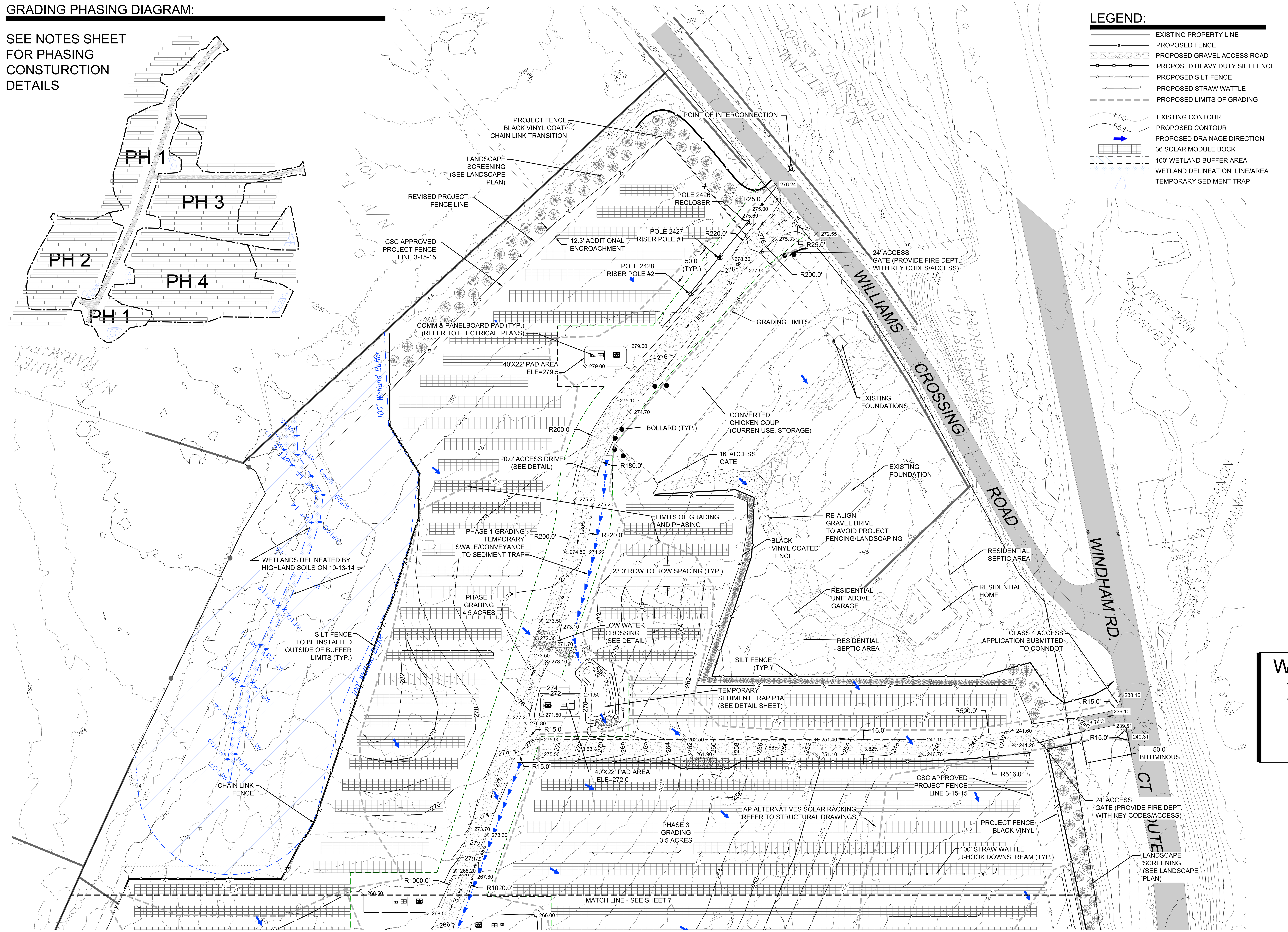
GRADING PHASING DIAGRAM:

SEE NOTES SHEET FOR PHASING CONSTRUCTION DETAILS


PH 1
PH 3
PH 2
PH 4
PH 1
PROJECT FENCE BLACK VINYL COAT/ CHAIN LINK TRANSITION
POINT OF INTERCONNECTION
LANDSCAPE SCREENING (SEE LANDSCAPE PLAN)
REVISED PROJECT FENCE LINE
POLE 2426 RECLOSER
POLE 2427 RISER POLE #1
POLE 2428 RISER POLE #2
12.3' ADDITIONAL ENCROACHMENT
CSC APPROVED PROJECT FENCE LINE 3-15-15
24' ACCESS GATE (PROVIDE FIRE DEPT. WITH KEY CODES/ACCESS)
GRADING LIMITS
COMM & PANELBOARD PAD (TYP.) (REFER TO ELECTRICAL PLANS)
40'X22' PAD AREA ELE=279.5
100' Wetland Buffer
EXISTING FOUNDATIONS
CONVERTED CHICKEN COUP (CURREN USE, STORAGE)
BOLLARD (TYP.)
20.0' ACCESS DRIVE (SEE DETAIL)
16' ACCESS GATE
EXISTING FOUNDATION
LIMITS OF GRADING AND PHASING
RE-ALIGN GRAVEL DRIVE TO AVOID PROJECT FENCING/LANDSCAPING
BLACK VINYL COATED FENCE
PHASE 1 GRADING TEMPORARY SWALE/CONVEYANCE TO SEDIMENT TRAP
WETLANDS DELINEATED BY HIGHLAND SOILS ON 10-13-14
23.0' ROW TO ROW SPACING (TYP.)
RESIDENTIAL SEPTIC AREA
RESIDENTIAL UNIT ABOVE GARAGE
RESIDENTIAL HOME
PHASE 1 GRADING 4.5 ACRES
LOW WATER CROSSING (SEE DETAIL)
SILT FENCE TO BE INSTALLED OUTSIDE OF BUFFER LIMITS (TYP.)
RESIDENTIAL SEPTIC AREA
CLASS 4 ACCESS APPLICATION SUBMITTED TO CONNDOT
SILT FENCE (TYP.)
TEMPORARY SEDIMENT TRAP P1A (SEE DETAIL SHEET)
40'X22' PAD AREA ELE=272.0
50.0' BITUMINOUS
CHAIN LINK FENCE
CSC APPROVED PROJECT FENCE LINE 3-15-15
AP ALTERNATIVES SOLAR RACKING REFER TO STRUCTURAL DRAWINGS
PHASE 3 GRADING 3.5 ACRES
24' ACCESS GATE (PROVIDE FIRE DEPT. WITH KEY CODES/ACCESS)
PROJECT FENCE BLACK VINYL
100' STRAW WATTLE J-HOOK DOWNSTREAM (TYP.)
LANDSCAPE SCREENING (SEE LANDSCAPE PLAN)
MATCH LINE - SEE SHEET 7
WILLIAMS CROSSING ROAD
WINDHAM RD.
CT ROUTE
LEBANON WINDHAM

LEGEND:

- EXISTING PROPERTY LINE
- PROPOSED FENCE
- PROPOSED GRAVEL ACCESS ROAD
- PROPOSED HEAVY DUTY SILT FENCE
- PROPOSED SILT FENCE
- PROPOSED STRAW WATTLE
- PROPOSED LIMITS OF GRADING
- EXISTING CONTOUR
- PROPOSED CONTOUR
- PROPOSED DRAINAGE DIRECTION
- 36 SOLAR MODULE BOCK
- 100' WETLAND BUFFER AREA
- WETLAND DELINEATION LINE/AREA
- TEMPORARY SEDIMENT TRAP

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MINNEAPOLIS, MN 55402

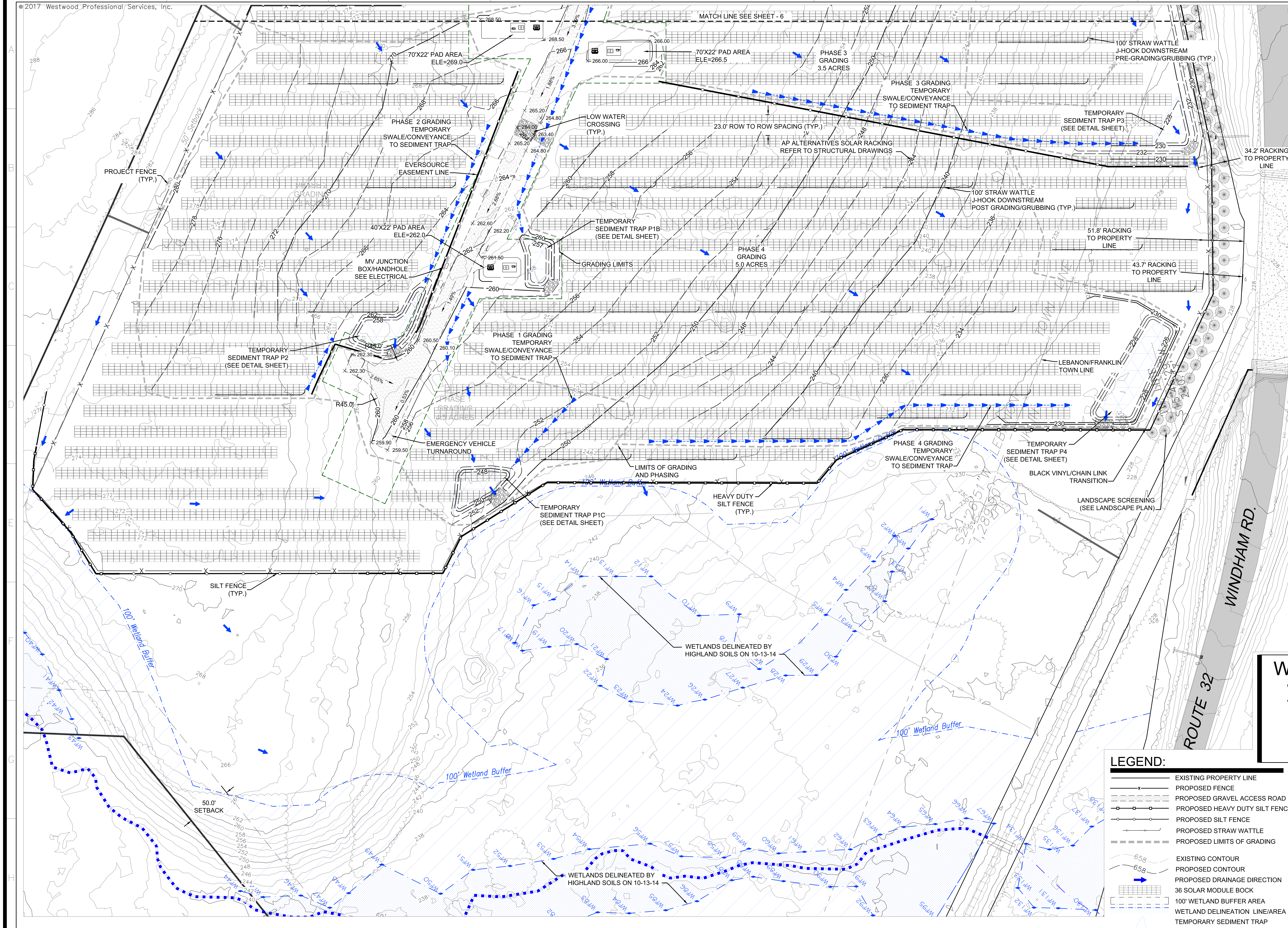
0' 50' 100' 150'

WINDHAM SOLAR

WINDHAM ROAD & WILLIAMS CROSSING DR.
LEBANON & FRANKLIN CT
PID: 219-19 & 53-3-1
NEW LONDON COUNTY

NORTH SITE & GRADING PLAN

DATE: 6/27/2017
SHEET: 6 of 11



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Designed: ADC
Checked: SAW
Drawn: SJB
Record Drawing by/date:

Revisions:

#	DATE	DESCRIPTION
-	4/12/2017	LEBANON SITE PLAN SUBMISSION
-	5/9/2017	FRANKLIN SITE PLAN SUBMISSION
-	5/10/2017	BID/PERMIT SUBMISSION
-	6/27/2017	CSC AMENDMENT SUBMISSION

Prepared for:

ecos ENERGY
222 SOUTH 9TH STREET
SUITE 1600
MINNEAPOLIS, MN 55402

WINDHAM SOLAR

WINDHAM ROAD &
WILLIAMS CROSSING DR.
LEBANON & FRANKLIN CT
PID: 219-19 & 53-3-1
NEW LONDON COUNTY

SOUTH SITE/GRADING/ EROSION CONTROL PLAN

DATE: 6/27/2017
SHEET: 7 of 11

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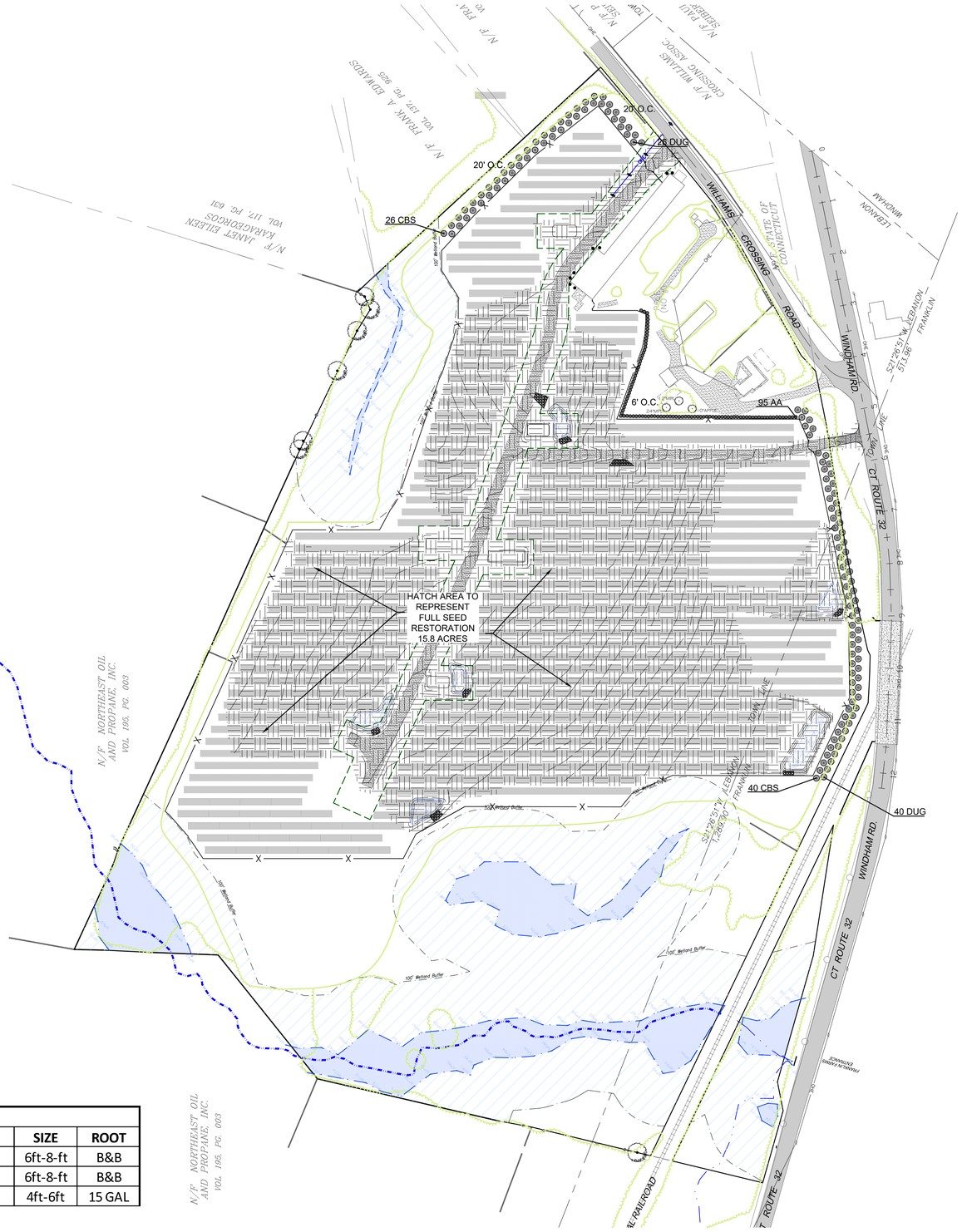
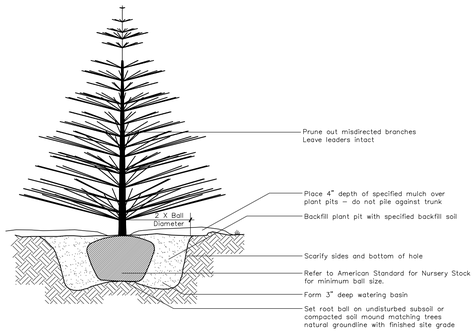


SEEDING NOTES:

1. THE CONTRACTOR SHALL HYDROSEED (OR APPLY BY OTHER METHODS) ALL DISTURBED AREAS ASSOCIATED WITH THE CONSTRUCTION OF THE SOLAR FACILITY. CONTRACTOR SHALL USE AN APPROVED LOW GROWTH LOW MAINTENANCE SEED MIX APPROVED BY THE APPROPRIATE GOVERNING AUTHORITY.

EVERGREEN TREE DETAIL



PLANT SCHEDULE					
CODE	QTY.	COMMON NAME	BOTANICAL NAME	SIZE	ROOT
CBS	66	Colorado Blue Spruce	Picea pungens	6ft-8-ft	B&B
DUG	66	Douglasfir	Pseudotsuga menziesii var. glauca	6ft-8-ft	B&B
AA	95	American Arborvitae	Thuja occidentalis	4ft-6ft	15 GAL

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Prepared for:

ecos ENERGY
222 SOUTH 9TH STREET
SUITE 1600
MINNEAPOLIS, MN 55402

N

0' 120' 240' 360'

WINDHAM SOLAR

WINDHAM ROAD &
WILLIAMS CROSSING DR.
LEBANON & FRANKLIN CT
PID: 219-19 & 53-3-1
NEW LONDON COUNTY

LANDSCAPE PLAN

DATE: 6/27/2017
SHEET: 8 of 11

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STORMWATER POLLUTION CONTROL PLAN (SWPCP):

1. REFER TO THE SWPCP PREPARED BY WESTWOOD PROFESSIONAL SERVICES DATED JUNE 2017 FOR DETAILED SEDIMENT AND EROSION CONTROL PROCEDURES, LOCATIONS OF BMPs, AND INSPECTION INFORMATION.
2. ALL AREAS DISTURBED DURING CONSTRUCTION ACTIVITIES AND NOT COVERED BY ROAD SURFACING MATERIALS, SHALL BE SEEDED IN ACCORDANCE WITH THE SWPCP PLAN.
3. TEMPORARY EROSION CONTROL SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. THE TEMPORARY EROSION CONTROL PLAN SHALL BE IN ACCORDANCE WITH STATE OF CONNECTICUT, THE EPA, AND THE SWPCP ON FILE.

EROSION CONTROL NOTES

1. TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED BEFORE ANY SOIL DISTURBANCE.
2. THE AREA OF DISTURBANCE SHALL BE KEPT TO A MINIMUM. DISTURBED AREAS REMAINING IDLE FOR MORE THAN 14 DAYS SHALL BE STABILIZED.
3. MEASURES SHALL BE TAKEN TO CONTROL EROSION WITHIN THE PROJECT AREA. SEDIMENT IN RUNOFF WATER SHALL BE TRAPPED AND RETAINED WITHIN THE PROJECT AREA USING APPROVED MEASURES.
4. WETLAND AREAS AND SURFACE AREAS SHALL BE PROTECTED FROM SEDIMENT. OFF-SITE SURFACE WATER AND RUNOFF FROM UNDISTURBED AREAS SHALL BE DIVERTED AWAY FROM DISTURBED AREAS WHERE FEASIBLE OR CARRIED THROUGH THE PROJECT AREA WITHOUT CAUSING EROSION. INTEGRITY OF DOWNSTREAM DRAINAGE SYSTEMS SHALL BE MAINTAINED.
5. ALL TEMPORARY EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE REMOVED AFTER FINAL SITE STABILIZATION. STABILIZATION MEASURES SUCH AS HYDROSEEDING OR APPLICATION OF HAY/MULCH OR SOIL NETTING SHALL BE APPLIED PRIOR TO REMOVAL OF TEMPORARY EROSION MEASURES AND INSPECTED WEEKLY UNTIL STABILIZATION IS COMPLETE. TEMPORARY EROSION CONTROL MEASURES MAY BE REMOVED ONCE STABILIZATION OF ALL SITE SOILS HAS BEEN ACHIEVED AND WRITTEN AUTHORIZATION TO DO SO HAS BEEN PROVIDED BY THE STORMWATER AUTHORITY. TRAPPED SEDIMENT SHALL BE REMOVED IMMEDIATELY WITH TEMPORARY EROSION CONTROL METHODS AND LAWFULLY DISPOSED OF OFF-SITE. OTHER DISTURBED SOIL AREAS RESULTING FROM THE REMOVAL OF TEMPORARY MEASURES SHALL BE PERMANENTLY STABILIZED WITHIN THIRTY DAYS.

GRADING PHASING NOTES

PHASE 1 GRADING:

1. CLEAR PHASING AREA OF ORGANIC MATERIALS FROM SITE TREE AND BRUSH REMOVAL OPERATION (ORGANICS MAY BE STOCKPILED ON SITE FOR MULCHING AND TEMPORARY BMP MATTING DURING THE ELECTRICAL FACILITY CONSTUCTION)
2. GRADE SEDIMENT TRAP AREAS P1A, P1B, P1C
3. CONSTRUCT SEDIMENT TRAP DIVERSIONARY SWALES WITH ONE OF THE FOLLOWING METHODS:
   - 3.1. COMPOST FILTER SOCKS DIVERTING FLOW
   - 3.2. GRADE 4' WIDE 1' DEEP TEMPORARY SWALE
   - 3.3. GRADE 1' DIVERSIONARY BERM
4. GRADE N-S ACCESS ROADWAY TO SUBBASE AND TRANSFORMER/SWITCHGEAR PAD AREAS
5. INSTALL CONDUITS FOR AC UTILITY LOOP (REFER TO AC ELECTRICAL DOCUMENTS PREPARED BY AMERICAN ELECTRICAL TESTING DATED JULY 2017).
6. INSTALL 4" OF AGGREGATE FOR THE CONSTRUCTION PHASE OF THE PROJECT

PHASE 2 GRADING:

1. CLEAR PHASING AREA OF ORGANIC MATERIALS FROM SITE TREEAND BRUSH REMOVAL OPERATION PRIOR TO PERFORMING PHASE 2 GRADING
2. CONSTRUCT SEDIMENT TRAP AREA P2
3. CONSTRUCT SEDIMENT TRAP DIVERSIONARY SWALE TO P2 WITH THE PREVIOUSLY IDENTIFIED METHODS
4. GRADE SOLAR ARRAY FIELD PER THE PROJECTS GRADING PLAN

PHASE 3 GRADING:

1. CLEAR PHASING AREA OF ORGANIC MATERIALS FROM SITE TREE AND BRUSH REMOVAL OPERATION PRIOR TO PERFORMING PHASE 3 GRADING
2. CONSTRUCT SEDIMENT TRAP AREA P3
3. CONSTRUCT SEDIMENT TRAP DIVERSIONARY SWALE TO P3 WITH THE PREVIOUSLY IDENTIFIED METHODS
4. GRADE E-W ACCESS ROADWAY TO ROUTE 32 (WINDHAM ROAD)
5. INSTALL 4" OF AGGREGATE FOR THE CONSTRUCTION PHASE OF THE PROJECT
6. GRADE SOLAR ARRAY FIELD PER THE PROJECTS GRADING PLAN

PHASE 4 GRADING:

1. CLEAR PHASING AREA OF ORGANIC MATERIALS FROM SITE TREE AND BRUSH REMOVAL OPERATION PRIOR TO PERFORMING PHASE 4 GRADING
2. CONSTRUCT SEDIMENT TRAP AREA P4
3. CONSTRUCT SEDIMENT TRAP DIVERSIONARY SWALE TO P4 WITH THE PREVIOUSLY IDENTIFIED METHODS
4. GRADE SOLAR ARRAY FIELD PER THE PROJECTS GRADING PLAN

SOLAR ARRAY CONSTRUCTION NOTES:

1. SOLAR ARRAY RACKING AND MODULE INSTALLATION MAY OCCUR IN A GRADING PHASE ONCE TEMPORARY SEDIMENT TRAP(S) AND DIVERSIONARY SWALE(S) ARE CONSTRUCTED.
2. CONTRACTOR MAY MULCH AND SPREAD STRIPPED ON SITE ORGANIC MATERIALS FOR TEMPORARY MATTING BETWEEN SOLAR RACKING ROWS DURING ELECTRICAL CONSTRUCTION.
3. CONTRACTOR SHALL MAINTAIN DRAINAGE DIRECTIONS AND DIVERSIONARY SWALES DURING TRENCHING OPERATIONS WITHIN EACH GRADING PHASE OF THE PROJECT.
4. TEMPORARY SEDIMENT TRAPS MAY REMAIN AS CONSTRUCTED UPON COMPLETION OF PROJECT
5. RUTTING AND EARTH DISTURBANCES BETWEEN SOLAR RACKING ROWS FROM ELECTRICAL PROJECT CONSTRUCTION AND DIVERSIONARY SWALES ASSOCIATED WITH GRADING PHASING SHALL BE BACKFILLED, COMPACTED AND SEEDED TO MAINTAIN NATURAL OVERLAND DRAINAGE PATTERNS AFTER COMPLETION OF SOLAR FACILTY CONSTRUCTION FOR EACH GRADING PHASE.

ROAD DESIGN PARAMETERS

1. ROAD MAINTENANCE CAN BE EXPECTED OVER THE LIFE OF THE PERMANENT FACILITY.

SPECIAL PROVISIONS FOR GRADING AND EROSION CONTROL

THE CONTRACTOR SHALL PROVIDE EROSION CONTROL MEASURES AS PLANNED AND SPECIFIED FOLLOWING BEST MANAGEMENT PRACTICES AS OUTLINED BY THE STATE OF CONNECTICUT AND BEING IN CONFORMANCE WITH THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) GENERAL STORMWATER PERMIT. SEE THE STORMWATER POLLUTION PREVENTION PLAN (SWPPP) FOR EROSION CONTROL AND RESTORATION SPECIFICATIONS. UNLESS OTHERWISE NOTED OR MODIFIED HEREIN, ALL SECTIONS OF THE GENERAL CONDITIONS SHALL APPLY.

EXECUTION

1. CLEARING AND GRUBBING
   - A. THE CONTRACTOR SHALL BE REQUIRED TO REMOVE ALL TREES, STUMPS, BRUSH, AND DEBRIS WITHIN THE PROJECT FENCE LIMITS SHOWN ON THE PLANS.
2. TOPSOIL STRIPPING
   - A. TOPSOIL SHALL BE STRIPPED FROM ALL ROADWAY AREAS THROUGH THE ROOT ZONE. TOPSOIL SHALL NOT BE STRIPPED OUTSIDE OF THE DESIGNATED DISTURBANCE AREAS.
   - B. ANY TOPSOIL, THAT HAS BEEN STRIPPED, SHALL BE RE-SPREAD OR STOCKPILED WITHIN GRADING AREAS AND/OR USED AS FILL OUTSIDE OF THE DISTURBANCE AREAS, AS DIRECTED BY THE ENGINEER.
3. EMBANKMENT CONSTRUCTION.
   - A. EMBANKMENT CONSTRUCTION SHALL CONSIST OF THE PLACING OF SUITABLE FILL MATERIAL, AFTER TOPSOIL STRIPPING, ABOVE THE EXISTING GRADE. GENERALLY, EMBANKMENTS SHALL HAVE COMPACTED SUPPORT SLOPES OF TWO AND A HALF FEET HORIZONTAL TO ONE FOOT VERTICAL. THE MATERIAL FOR EMBANKMENT CONSTRUCTION SHALL BE OBTAINED FROM THE ACCESS ROAD EXCAVATION (SEE GEOTECHNICAL REPORT FOR RESTRICTIONS), OR ANY SUITABLE, APPROVED SOIL OBTAINED OFFSITE BY CONTRACTOR, AS DIRECTED OR APPROVED BY THE ENGINEER. THIS MATERIAL SHALL BE PLACED IN LIFTS NOT TO EXCEED 9".
   - B. SIDE SLOPES GREATER THAN 2.5:1 WILL NOT BE PERMITTED, UNLESS OTHERWISE NOTED ON THE PLAN.

TESTING REQUIREMENTS:

1. TESTING SHALL BE PERFORMED BY A DESIGNATED INDEPENDENT TESTING AGENCY.
2. SUBMIT TESTING AND INSPECTION RECORDS SPECIFIED TO THE CIVIL ENGINEER OF RECORD FOR REVIEW.
   - A. THE ENGINEER WILL REVIEW THE TESTING AND INSPECTION RECORDS TO CHECK CONFORMANCE WITH THE DRAWINGS AND SPECIFICATIONS. THE ENGINEER'S REVIEW DOES NOT RELIEVE THE CONSTRUCTION CONTRACTOR FROM THE RESPONSIBILITY FOR CORRECTING DEFECTIVE WORK.
3. PROOF ROLLING:
   - A. PROOF-ROLLING SHALL BE PERFORMED IN THE PRESENCE OF THE GEOTECHNICAL ENGINEER OR QUALIFIED GEOTECHNICAL REPRESENTATIVE USING A FULLY LOADED TANDEM AXLE DUMP TRUCK WITH A MINIMUM GROSS WEIGHT OF 25 TONS OR A FULLY LOADED WATER TRUCK WITH AN EQUIVALENT AXLE LOADING. PROOF-ROLLING ACCEPTANCE STANDARDS INCLUDE NO RUTTING GREATER THAN 1.5 INCHES, AND NO "PUMPING" OF THE SOIL BEHIND THE LOADED TRUCK.
4. SIEVE ANALYSIS:
   - A. SIEVE ANALYSIS SHALL BE CONDUCTED IN ACCORDANCE WITH AASHTO T27
5. PROCTOR:
   - A. PROCTORS SHALL BE DETERMINED IN ACCORDANCE WITH ASTM D-1557
6. ATTERBERG LIMITS:
   - A. ATTERBERG LIMITS SHALL BE DETERMINED IN ACCORDANCE WITH AASHTO T89 AND T90
7. MOISTURE DENSITY (NUCLEAR DENSITY):
   - A. MOISTURE DENSITY TESTING SHALL BE DONE IN ACCORDANCE WITH AASHTO T310

SUBGRADE COMPACTION, TEST ROLLING AND AGGREGATE BASE COMPACTION:

1. FILL MATERIAL:
   - A. SOILS USED AS FILL MATERIAL SHALL BE TESTED FOR GRAIN SIZE ANALYSIS, MOISTURE CONTENT, ATTERBERG LIMITS ON FINES CONTENT, AND PROCTOR TESTS (MODIFIED DRY MAXIMUM DENSITY).
     - a. FOR PLACED & COMPACTED FILLS, PROVIDE ONE COMPACTION TEST PER LIFT FOR EVERY 1000 FT OF ROAD LENGTH. INCLUDE THE LOCATION, DRY DENSITY, MOISTURE CONTENT, AND COMPACTION PERCENT BASED ON MODIFIED PROCTOR MAXIMUM DRY DENSITY.
   - B. IN ROADWAY CUT AREAS, OR WHERE EMBANKMENT CONSTRUCTION REQUIRES LESS THAN 12 INCHES OF FILL PLACEMENT, COMPACT TO A MINIMUM OF 95 PERCENT OF THE MATERIAL'S MODIFIED PROCTOR MAXIMUM DRY DENSITY.
2. COMPACTED SUBGRADE:
   - A. THE ENTIRE SUBGRADE SHALL BE PROOF-ROLLED PRIOR TO THE PLACEMENT OF THE AGGREGATE BASE TO IDENTIFY AREAS OF UNSTABLE SUBGRADE.
   - B. IF PROOF ROLLING DETERMINES THAT THE SUBGRADE STABILIZATION CANNOT BE ACHIEVED, THE FOLLOWING ALTERNATIVES WILL BE IMPLEMENTED:
     - a. REMOVE UNSUITABLE MATERIAL AND REPLACE WITH SUITABLE EMBANKMENT.
     - b. SCARIFY, DRY, AND RECOMPACT SUBGRADE AND PERFORM ADDITIONAL PROOF ROLL.
     - c. INCREASE ROAD BASE THICKNESS.
   - C. PROVIDE 1 MOISTURE DENSITY COMPACTION TESTS FOR EVERY 1000 L.F. OF ROAD LENGTH. COMPACTED SUBGRADE MUST BE COMPACTED TO A MINIMUM OF 95% MODIFIED PROCTOR MAXIMUM DRY DENSITY AT ±3% OF OPTIMUM MOISTURE CONTENT FOR GRANULAR SOILS AND AT -1 TO +3% OF OPTIMUM MOISTURE CONTENT FOR COHESIVE SOILS.
3. AGGREGATE BASE:
   - A. AGGREGATE BASE SHALL BE PROOF-ROLLED OVER THE ENTIRE LENGTH. PROVIDE 1 SIEVE ANALYSIS PER 2500 CY OF ROAD BASE PLACED.
     - a. IF PROOF ROLLING DETERMINES THAT THE ROAD IS UNSTABLE, ADDITIONAL AGGREGATE SHALL BE ADDED UNTIL THE UNSTABLE SECTION IS ABLE TO PASS A PROOF ROLL.

TABLE 1: TESTING SCHEDULE SUMMARY

LOCATION	TEST	FREQUENCY
STRUCTURAL FILL	GRAIN SIZE ANALYSIS, MOISTURE CONTENT, ATTERBERG LIMITS ON FINES CONTENT, AND PROCTOR	1 PER MAJOR SOIL TYPE
	MOISTURE DENSITY	1 PER 2,000 CY OR MIN. 1 PER LIFT
COMPACTED SUBGRADE	PROOF-ROLL	ENTIRE LENGTH
	MOISTURE DENSITY TEST (NUCLEAR DENSITY)	1 PER 1,000 FT OR MIN. 5 FOR THE SITE
AGGREGATE BASE	PROOF-ROLL	ENTIRE LENGTH
	SIEVE ANALYSIS	1 PER 2,500 CY

GENERAL NOTES:

1. THE PLANIMETRIC FEATURES, GROUND SURFACE CONTOURS ON A LIDAR SURFACE PROVIDED NOAA.
2. NO GRADING OR SOIL DISTURBANCE IS PERMITTED OUTSIDE OF THE GRADING LIMITS IDENTIFIED ON THE PLANS.
3. GRADE ALL PROPOSED ROADS TO THE SLOPES PROPOSED ON THE PLANS.
4. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING DRAINAGE THROUGHOUT THE CONSTRUCTION OF THIS PROJECT. CONSTRUCTION ACTIVITIES SHALL NOT BLOCK THE NATURAL OR MANMADE CREEKS OR DRAINAGE SWALES CAUSING RAINWATER TO POND. ADDITIONAL CULVERTS IN EXCESS OF THOSE ON THE PLANS MAY BE REQUIRED AS APPROVED BY THE ENGINEER.
5. THE CONTRACTOR SHALL NOTIFY DIGSAFE AT LEAST 48 HOURS BEFORE EXCAVATION ACTIVITIES COMMENCE.
6. WETLAND INFORMATION SHOWN ON THE PLAN WAS PROVIDED BY ROB HELLSTROM LAND SURVEYING AND FLAGGED BY HIGHLANDS SOILS. THE GENERAL CONTRACTOR SHALL VERIFY THAT ALL WETLAND PERMITS HAVE BEEN SUBMITTED AND APPROVED PRIOR TO CONSTRUCTION COMMENCING.
7. ELECTRICAL COLLECTION SYSTEM SHOWN ON THE PLAN SHALL BE CONSIDERED PRELIMINARY. CONTRACTOR SHALL REFER TO FINAL ELECTRICAL DESIGN PLANS FOR ACTUAL DESIGN LOCATIONS.

SLOPE STABILIZATION:

ALL AREAS DESIGNATED ON THE PLAN FOR SLOPE STABILIZATION SHALL BE GRADED AND COMPACTED, SMOOTH AND CLEAN TO THE FINISH CONTOURS SHOWN ON THE PLAN, WITH A MINIMUM OF 4 INCHES OF TOPSOIL PLACED ON THE AREA. STABILIZATION SHALL BE ACHIEVED IN ONE OF TWO MANNERS:

EITHER: 1) RIP-RAP
OR: 2) SEED WITH EROSION CONTROL AND REVEGITATION MAT (ECRM)

1. PLACEMENT OF RIP-RAP
   RIP-RAP SHALL CONSIST OF D50=8". BEFORE ANY RIP RAP IS PLACED, THE SURFACE TO BE COVERED SHALL BE FULLY COMPACTED AND GRADED TO THE REQUIRED SLOPE. PLACE MIRAFI TM8 OR APPROVED EQUAL GEOTEXTILE ON SLOPE. RIP RAP ON SLOPES SHALL NOT BE LESS THAN 12 INCHES THICK, MEASURED PERPENDICULAR TO THE SLOPE.
2. STABILIZATION WITH EROSION CONTROL AND REVEGITATION MAT (ECRM)
   1) AREA MUST BE GRADED SMOOTH AND CLEAN TO FINISH GRADES, AND COMPACTED.
   2) SEED AND MULCH AREA. USE SEED MIX APPROVED BY THE ENGINEER.
   3) INSTALL ECRM PER MANUFACTURER'S INSTRUCTIONS, HOWEVER THESE MUST INCLUDE THE FOLLOWING MINIMUM REQUIREMENTS:
      A) GRADE GROUND TO FINISH CONTOURS. REMOVE ALL ROCKS, DIRT CLODS, STUMPS, ROOTS, TRASH, AND OTHER OBSTRUCTIONS LYING IN DIRECT CONTACT WITH THE SOIL SURFACE.
      B) DIG MAT ANCHOR TRENCHES (MINIMUM 12"DEEP, 6" WIDE) AT TERMINAL ENDS AND PERIMETER SIDES WHERE MAT IS TO BE INSTALLED.
      C) INSTALL MAT BY ROLLING UPHILL PARALLEL TO WATER FLOW, STARTING AT TRENCH. OVERLAP ROLLS BY MINIMUM OF 3". FASTEN TO GROUND WITH 18" PINS AND 1 1/2" WASHERS, OR EQUIVALENT. PIN MAT AT ENDS, AND EVERY 3' TO 5' ALONG OVERLAPS. DO NO STRETCH MAT. SPLICING ROLLS SHOULD BE DONE IN A CHECK SLOT. BACKFILL TO COVER ENDS AND FASTENERS, ROLLING MAT ACROSS BACKFILL AND PIN AGAIN.
   FOR MAT USE MIRAFI MIRAMAT TM8 OR EQUIVALENT.

SEEDING:

1. COMPOSITION OF SEED MIX CHANGES YEARLY. SEED SPECIFICATIONS MUST BE SUBMITTED TO ENGINEER 2 WEEKS PRIOR TO INSTALLATION. ALL SPECIES MUST BE NATIVE.
2. RESTORED AREAS TO BE SEEDED WITH ABOVE MIX OR EQUAL (SUBJECT TO ENGINEERS APPROVAL). SEED TO BE LIGHTLY RAKED TO ALLOW FOR PROPER SEED/SOIL CONTACT.
3. CONTRACTOR SHALL OVERSEED AND/OR RE-MULCH AS NECESSARY TO ESTABLISH A GOOD COVER OF VEGETATION, WHETHER DUE TO POOR INITIAL COVER, INCLEMENT WEATHER BEFORE/DURING/AFTER SEEDING, OR THE ONSET OF WINTER.
4. RILLING, GULLIES, OR OTHER EROSION DUE TO POOR COVER SHALL BE RAKED AND/OR REFILLED AND REMULCH/RESEEDED.
5. CONTRACTOR SHALL WARRANTEE SEEDING, MULCHING AND EROSION CONTROL FABRIC FOR ONE YEAR FROM THE SUBSTANTIAL COMPLETION OF THE RELEVANT AREA OF WORK.

INVASIVE SPECIES:

1. ALL EQUIPMENT SHALL BE INSPECTED UPON ARRIVAL. EQUIPMENT ARRIVING WITH OBSERVABLE SOIL OR PLANT FRAGMENTS WILL BE REMOVED AND CLEANED.
2. HAY BALES ARE NOT BE USED ON SITE; ONLY WEED-FREE STRAW BALES ARE APPROVED.
3. OFF-SITE TOPSOIL MUST BE FREE OF INVASIVE SPECIES. THE ENGINEER SHALL BE NOTIFIED OF THE TOPSOIL SOURCE 6 WEEKS BEFORE DELIVERY.

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STATE OF CONNECTICUT · REGISTERED · CHRISTOPHER S. WARD · 0030668 · LICENSED PROFESSIONAL ENGINEER

Designed: ADC
Checked: SAW
Drawn: SJB
Record Drawing by/date:

Revisions:

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Prepared for:

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WINDHAM ROAD &
WILLIAMS CROSSING DR.
LEBANON & FRANKLIN CT
PID: 219-19 & 53-3-1
NEW LONDON COUNTY

CIVIL AND EROSION CONTROL NOTES

DATE: 6/27/2017
SHEET: 9 of 11

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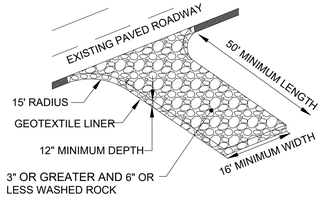
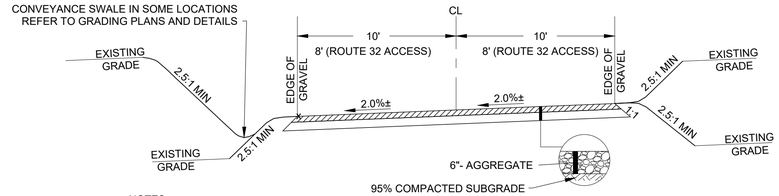


NOTE:

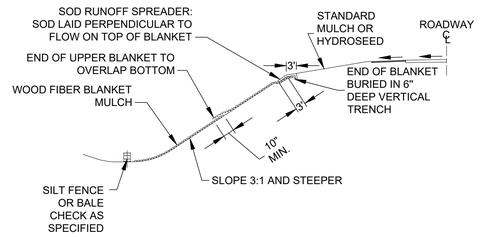
ROCK CONSTRUCTION ENTRANCE SHOULD BE A MINIMUM THICKNESS OF 1.0' AND CONTAIN MAXIMUM SIDE SLOPES OF 4:1. ROCK ENTRANCE SHOULD BE INSPECTED AND MAINTAINED REGULARLY. ROCK ENTRANCE LENGTH MAY NEED TO BE EXTENDED IN CLAY SOILS.

ROCK CONSTRUCTION ENTRANCE



NOTES:
1. CONTRACTOR TO SUBCUT ROADWAY TO EXISTING GRADE ELEVATION TO MAINTAIN EXISTING SITE DRAINAGE PATTERNS WHEREVER POSSIBLE.
2. IN FILL LOCATIONS CONTRACTOR TO GRADE TOE OF SLOPE TO EXISTING GRADE, AND MAINTAIN NATURAL DRAINAGE PATTERNS.
3. IN CUT LOCATIONS CONTRACTOR TO CREATE SWALE ON DOWNSTREAM SIDE, REFER TO GRADING PLANS FOR DETAILS.
4. CONTRACTOR TO COMPACT AGGREGATE TO 95% MAXIMUM DRY DENSITY.
5. REFER TO GEOTECHNICAL RECOMMENDATIONS FOR ADDITIONAL ROADWAY SECTION DESIGN INFORMATION.

ACCESS ROAD DETAIL



EROSION CONTROL BLANKET INSTALLATION ON AN INSLOPE
(WHEN REQUIRED)

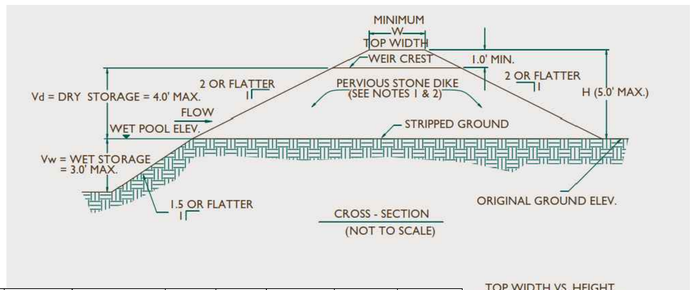
CATEGORY	SLOPE	VELOCITY
1	FLAT	-
2	3:1	< 5.0 fps
3	3:1	< 6.5 fps
4	2:1	< 7.0 fps

CATEGORY	ACCEPTABLE TYPES
1	STRAW RD 1S, WOOD FIBER RD 1S
2	STRAW 1S, WOOD FIBER 1S
3	STRAW 2S, WOOD FIBER 2S
4	STRAW/COCONUT 2S, WOOD FIBER HV 2S

THE LETTERING DESIGNATION SHALL BE DEFINED AS FOLLOWS:

1S - NETTING ON ONE SIDE
RD - RAPIDLY DEGRADABLE
2S - NETTING ON TWO SIDES
HV - HIGH VELOCITY

EROSION CONTROL BLANKET



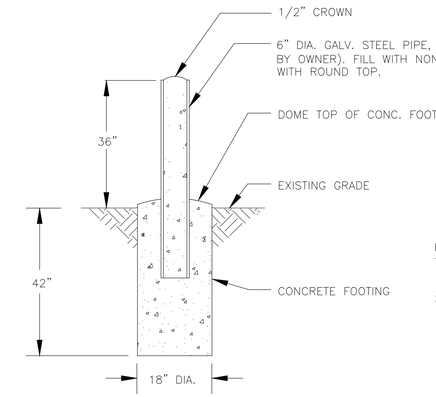
BMP (ID#)	DRAINAGE AREA AC	REQUIRED TRAP CAPACITY* CU.YD.	BOTTOM AREA SF	BOTTOM ELEVATION FT	OVERFLOW AREA SF	OVERFLOW ELEVATION FT	WET STORAGE CU.YD.	WIER LENGTH FT	TOP AREA SF	TOP BASIN FT	DRY STORAGE CU.YD.	TOTAL TRAP CAPACITY CU.YD.
P1A	1.9	259	1036	266	2040	269	171	20	2200	271	157	328
P1B	1.6	211	750	256	1630	259	132	20	2170	261	141	273
P1C	1.0	135	1320	248	2440	251	209	20	3080	252	102	311
P2	2.8	375	1680	258	2420	261	228	20	3270	263	211	439
P3	3.5	469	880	228	4370	231	292	20	8350	232	236	527
P4	5.0	670	3700	226	5570	229	515	20	9350	230	276	791

* TRAP CAPACITY IS CALCULATED AS 134 CU. YD. PER 1 ACRE OF DISTRUBANCE AREA

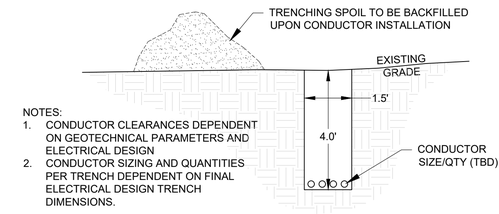
TOP WIDTH VS. HEIGHT
H = HEIGHT OF EMBANKMENT
W = TOP WIDTH OF EMBANKMENT

H (ft)	W(ft)
1.5	2.0
2.0	2.0
2.5	2.5
3.0	2.5
3.5	3.0
4.0	3.0
4.5	4.0
5.0	4.5

TEMPORARY SEDIMENT TRAP

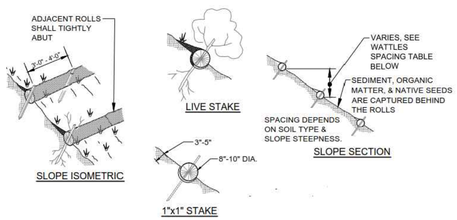


BOLLARD DETAIL



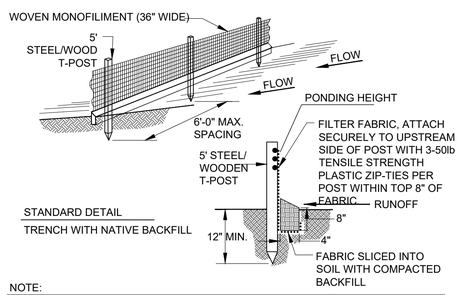
NOTES:
1. CONDUCTOR CLEARANCES DEPENDENT ON GEOTECHNICAL PARAMETERS AND ELECTRICAL DESIGN
2. CONDUCTOR SIZING AND QUANTITIES PER TRENCH DEPENDENT ON FINAL ELECTRICAL DESIGN TRENCH DIMENSIONS.

TRENCHING DETAIL



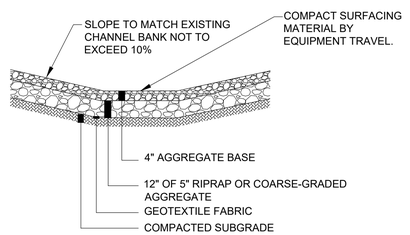
NOTES:
1. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
2. DO NOT SCALE DRAWINGS.
3. STRAW ROLL INSTALLATION REQUIRES THE PLACEMENT AND SECURE STAKING OF THE ROLL IN A TRENCH, 2" - 3" DEEP, DUG ON CONTOUR. RUNOFF MUST NOT BE ALLOWED TO RUN UNDER.
4. DRIVE STAKE SO THAT 2"-3" REMAINS EXPOSED.

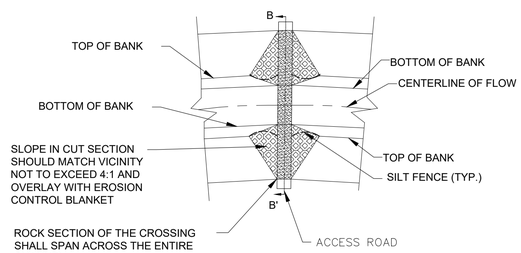
STRAW WATTLE DETAIL



NOTE:
1. INSPECT AND REPAIR FENCE AFTER EACH STORM EVENT AND REMOVE SEDIMENT WHEN ACCUMULATED TO 1/3 THE HEIGHT OF THE FABRIC OR MORE.
2. REMOVED SEDIMENT SHALL BE DEPOSITED TO AN AREA THAT WILL NOT CONTRIBUTE SEDIMENT OFF-SITE AND CAN BE PERMANENTLY STABILIZED.
3. SILT FENCE SHALL BE PLACED ON SLOPE CONTOURS TO MAXIMIZE PONDING EFFICIENCY.
4. ALL ENDS OF THE SILT FENCE SHALL BE WRAPPED UPSLOPE SO THE ELEVATION OF THE BOTTOM OF FABRIC IS HIGHER THAN "PONDING HEIGHT".
5. HEAVY DUTY SILT FENCE ON THE SOUTH SIDE OF THE PROJECT ADJACENT TO WETLAND BUFFERS SHALL ALSO BE BACKED WITH 4"X4" HOG WIRE

SILT FENCE





NOTE:
1. CROSSINGS SHALL HAVE THE TOP-MOST SURFACE LAYER EVEN OR BELOW THE ELEVATION OF THE EXISTING WETLAND.
3. THE ACCESS ROAD SHALL CROSS THE CONVEYANCE AT 90° ANGLE.
4. THE TOP BED OF THE ROCK CHANNEL CROSSING SHALL CONFORM TO THE EXISTING DITCH CROSS SECTIONAL SLOPES.
5. MATERIAL THICKNESSES MAY BE FIELD ADJUSTED TO ACHIEVE SUFFICIENT BEARING CAPACITIES AS ARE NECESSARY FOR ANTICIPATED ROAD USE.

LOW WATER CROSSING

Westwood nc.
Phone (952) 937-5150 7699 Anagram Drive
Fax (952) 937-5822 Eden Prairie, MN 55344
Toll Free (888) 937-5150 westwoodps.com
Westwood Professional Services, Inc.

STATE OF CONNECTICUT — KRISTI D. CHRIMES — 0030668 — LICENSED PROFESSIONAL ENGINEER

Designed: ADC
Checked: SAW
Drawn: SJB
Record Drawing by/date:

Revisions:

#	DATE	DESCRIPTION
-	4/12/2017	LEBANON SITE PLAN SUBMISSION
-	5/9/2017	FRANKLIN SITE PLAN SUBMISSION
-	5/10/2017	BID/PERMIT SUBMISSION
-	6/27/2017	CSC AMENDMENT SUBMISSION

Prepared for:

ecos ENERGY
222 SOUTH 9TH STREET
SUITE 1600
MINNEAPOLIS, MN 55402

N

0' 50' 100' 150'

WINDHAM SOLAR

WINDHAM ROAD &
WILLIAMS CROSSING DR.
LEBANON & FRANKLIN CT
PID: 219-19 & 53-3-1
NEW LONDON COUNTY

CIVIL AND EROSION CONTROL DETAILS

DATE: 6/27/2017
SHEET: 10 of 11

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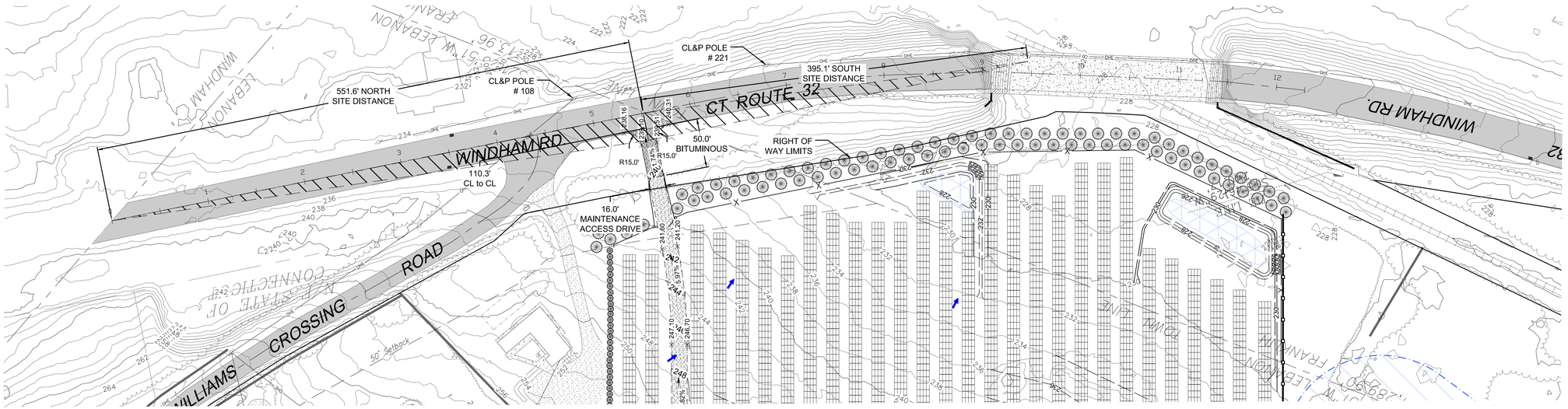
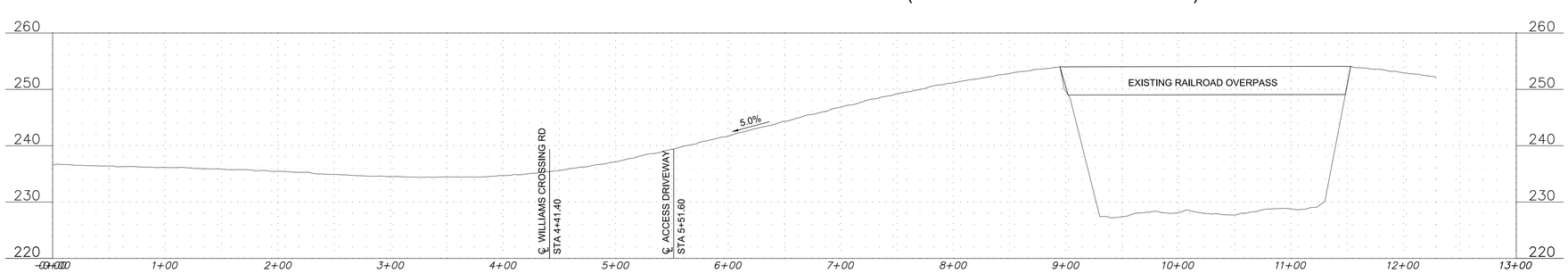
ROUTE 32 - WINDHAM ROAD ALIGNMENT

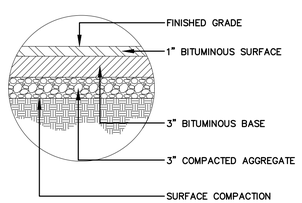


ROUTE 32 - WINDHAM ROAD PROFILE (5:1 VERTICAL EXAGGERATION)



LEGEND:

- EXISTING PROPERTY LINE
- PROPOSED FENCE
- PROPOSED GRAVEL ACCESS ROAD
- PROPOSED AC DISTRIBUTION
- PROPOSED SILT FENCE
- PROPOSED LIMITS OF GRADING
- EXISTING CONTOUR
- PROPOSED CONTOUR
- PROPOSED DRAINAGE DIRECTION
- 36 SOLAR MODULE BOCK
- 100' WETLAND BUFFER AREA
- WETLAND DELINEATION LINE/AREA



NOTES:
1. ALL MATERIALS AND THEIR PLACEMENT SHOULD BE IN ACCORDANCE WITH CURRENT ConnDOT SPECIFICATIONS.
2. CONTRACTOR TO COMPACT AGGREGATE TO 98% MAXIMUM DRY DENSITY
3. FINAL 1" LIFT SHALL BE CONSTRUCTED AT THE END OF PROJECT CONSTRUCTION
4. COORDINATE ALL CONSTRUCTION WITH THE TOWN OF LEBANON

ENTRANCE DRIVEWAY PAVEMENT

VIEW NORTH FROM PROPOSED ACCESS

VIEW SOUTH FROM PROPOSED ACCESS

Westwood nc.

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Fax (952) 937-5822 Eden Prairie, MN 55344
Toll Free (888) 937-5150 westwoodps.com

Westwood Professional Services, Inc.

STATE OF CONNECTICUT · JOSEPH D. CHRISTIE · 0030668 · LICENSED PROFESSIONAL ENGINEER

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0' 60' 120' 180'

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PID: 219-19 & 53-3-1
NEW LONDON COUNTY

ROUTE 32 ACCESS PROFILE

DATE: 6/27/2017
SHEET: 11 of 11