APPENDIX C

State Historic Preservation Office Submission

Submit by Email | Print Form

Department of Economic and Community Development

Connecticut still revolutionary

State Historic Preservation Office

One Constitution Plaza | Hartford, CT 06103 | 860.256.2800 | Cultureandtourism.org

PROJECT REVIEW COVER FORM

1. **This information relates to a previously submitted project.** ☐

You do not need to complete the rest of the form if you have been previously issued a SHPO Project Number. Please attach information to this form and submit.

SHPO Project Number _____
(Not all previously submitted projects will have project numbers)

Project Address _____
(Street Address and City or Town)

2. **This is a new Project.** ☒

If you have checked this box, it is necessary to complete ALL entries on this form .

Project Name Durham Solar Facility

Project Location 201 Main Street
Include street number, street name, and or Route Number. If no street address exists give closest intersection.

City or Town Durham
In addition to the village or hamlet name (if appropriate), the municipality must be included here.

County Middlesex
If the undertaking includes multiple addresses, please attach a list to this form.

Date of Construction (for existing structures) ca 1900

PROJECT DESCRIPTION SUMMARY (include full description in attachment):

Pfister Energy proposes the installation of a 1.35 megawatt solar-based electric generating facility consisting of photovoltaic (PV) module technology. The Facility would be comprised of approximately 4194 340W Mission Solar MSE340SO6J PV modules, 24 SMA Corel 50kW Inverters, 1 SMA Tripower 15kW Inverter, and 2 underground service interconnection points tied directly into the Durham Manufacturing plant. The Facility would use a ground mounted, pile-driven, "Brilliant Rack" by Cantsink rack system.

TYPE OF REVIEW REQUESTED

a. Does this undertaking involve funding or permit approval from a State or Federal Agency?

☒ Yes ☐ No

Agency Name/Contact	Type of Permit/Approval	State	Federal
CT Siting Council	Petition for declaratory ruling that	☒	☐
US Army Corps of Engineers	No Certificate of Environmental	☐	☒
(Permit type TBD)	Compatibility and Public Need is required	☐	☐

	Yes	No
b. Have you consulted the SHPO and UCONN Dodd Center files to determine the presence or absence of previously identified cultural resources within or adjacent to the project area?	☒	☐
If yes: Was the project site wholly or partially located within an identified archeologically sensitive area?	☒	☐
Does the project site involve or is it substantially contiguous to a property listed or recommended for listing in the CT State or National Registers of Historic Places?	☐	☒
Does the project involve the rehabilitation, renovation, relocation, demolition or addition to any building or structure that is 50 years old or older?	☐	☒

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PROJECT REVIEW COVER FORM

The Historic Preservation Review Process in Connecticut Cultural Resource Review under the National Historic Preservation Act – Section 106 http://www.achp.gov/106summary.html involves providing technical guidance and professional advice on the potential impact of publicly funded, assisted, licensed or permitted projects on the state's historic, architectural and archaeological resources. This responsibility of the State Historic Preservation Office (SHPO) is discharged in two steps: (1) identification of significant historic, architectural and archaeological resources; and (2) advisory assistance to promote compatibility between new development and preservation of the state's cultural heritage.

Project review is conducted in two stages. First, the SHPO assesses affected properties to determine whether or not they are listed or eligible for listing in the Connecticut State or National Registers of Historic Places. If so, it is deemed "historic" and worthy of protection and the second stage of review is undertaken. The project is reviewed to evaluate its impact on the properties significant materials and character. Where adverse effects are identified, alternatives are explored to avoid, or reduce project impacts; where this is unsuccessful, mitigation measures are developed and formal agreement documents are prepared stipulating these measures. For more information and guidance, please see our website at: http://www.cultureandtourism.org/cct/cwp/view.asp?a=3933&q=293820

ALL PROJECTS SUBMITTED FOR REVIEW MUST INCLUDE THE FOLLOWING MATERIALS*:

☒ **PROJECT DESCRIPTION** Please attach a full description of the work that will be undertaken as a result of this project. Portions of environmental statements or project applications may be included. The project boundary of the project should be clearly defined**

☒ **PROJECT MAP** This should include the precise location of the project – preferably a clear color image showing the nearest streets or roadways as well as all portions of the project. Tax maps, Sanborn maps and USGS quadrangle maps are all acceptable, but Bing and Google Earth are also accepted if the information provided is clear and well labeled. The project boundary should be clearly defined on the map and affected legal parcels should be identified.

☒ **PHOTOGRAPHS** Clear, current images of the property should be submitted. Black and white photocopies will not be accepted. Include images of the areas where the proposed work will take place. May require: exterior elevations, detailed photos of elements to be repaired/replaced (windows, doors, porches, etc.) All photos should be clearly labeled.

For Existing Structures	Yes	N/A	Comments
Property Card	☒	☐	
For New Construction	**Yes**	**N/A**	**Comments**
Project plans or limits of construction (if available)	☒	☐	
If project is located in a Historic District include renderings or elevation drawings of the proposed structure	☐	☒	
Soils Maps http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm	☒	☐	
Historic Maps http://magic.lib.uconn.edu/	☒	☐	
For non-building-related projects (dams, culverts, bridge repair, etc)	**Yes**	**N/S**	**Comments**
Property Card	☐	☐	
Soils Map (see above)	☐	☐	
Historic Maps (see above)	☐	☐	

	Above	Date	Below	Date
Indicate date of Review and Initials of Reviewer				

PROJECT CONTACT

Name Michael Libertine Title Director of Siting and Permitting
Firm/Agency All-Points Technology Corporation, P.C.
Address 3 Saddlebrook Drive
City Killingworth State CT Zip 06419
Phone 860-663-1697 x102 Cell 860-983-5153 Fax 860-663-0935
Email mlibertine@allpointstech.com

*Note that he SHPO's ability to complete a timely project review depends largely on the quality of the materials submitted.
** Please be sure to include the project name and location on *each page* of your submission.

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PROJECT REVIEW COVER FORM

SHPO USE ONLY

Based on our review of the information provided to the State Historic Preservation Office, it is our opinion that:

☐ No historic properties will be affected by this project. No further review is requested.

☐ This project will cause no adverse effects to the following historic properties. No further review is requested:

☐ This project will cause no adverse effects to the following historic properties, conditional upon the stipulations included in the attached letter:

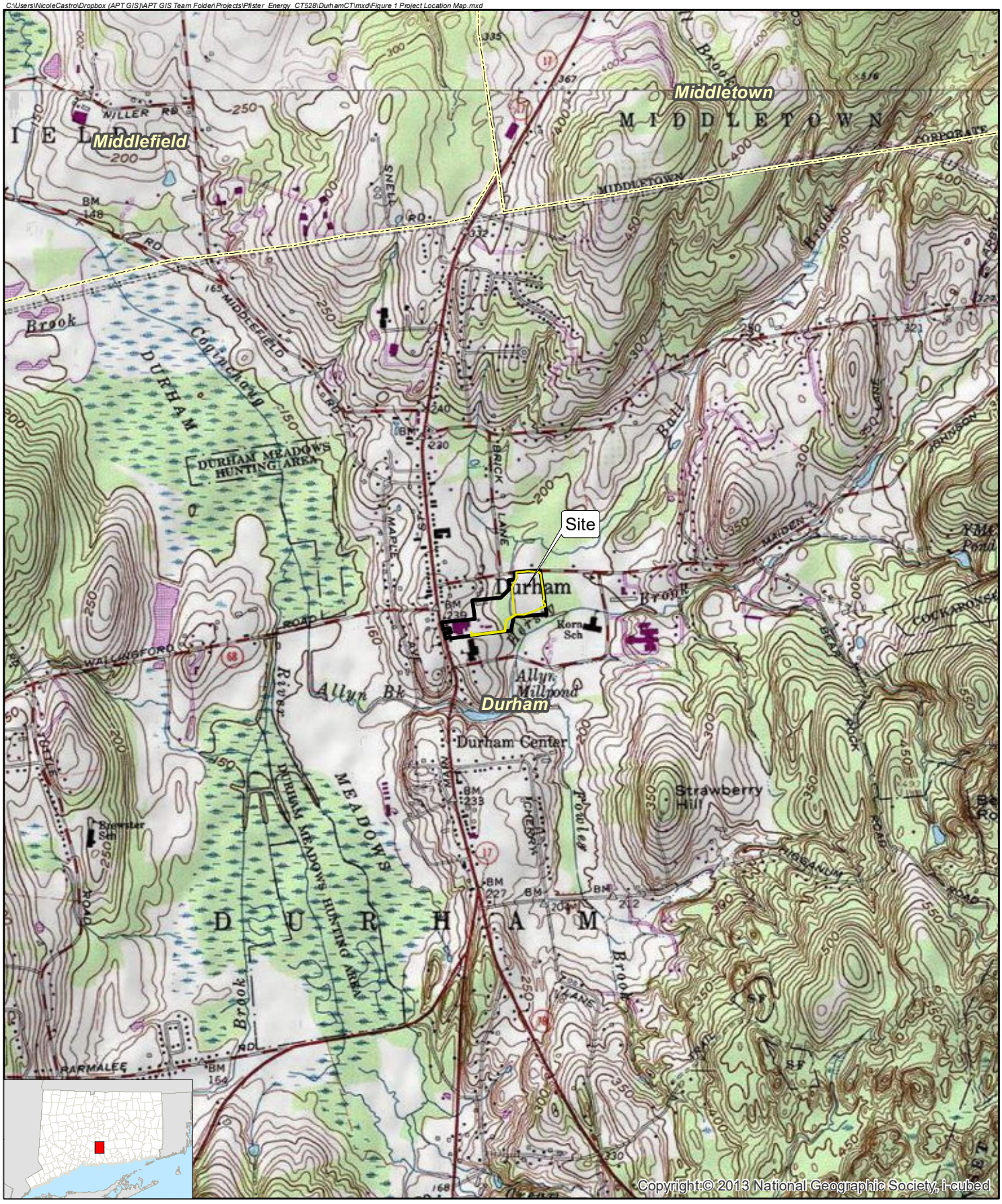
☐ Additional information is required to complete our review of this project. Please see the attached letter with our requests and recommendations.

☐ This project will adversely affect historic properties as it is currently designed or proposed. Please see the attached letter for further details and guidance.

Catherine Labadia — Date
Deputy State Historic Preservation Officer

Project Location Map

C:\Users\NicoleCastro\Dropbox (APT GIS)\APT GIS Team Folder\Projects\Pfister_Energy_CT526\DurhamCT\mxd\Figure 1 Project Location Map.mxd



Legend

- Approximate Subject Property
- Limit of Disturbance
- Municipal Boundary

Map Notes:
Base Map Source: USGS 7.5 Minute Topographic Quadrangle Maps: Durham, CT (1984)
Map Scale: 1:24,000
Map Date: January 2018

1,000 500 0 1,000 Feet

Figure 1
Project Location Map

Proposed Solar Facility
Durham Manufacturing Co.
201 Main Street
Durham, Connecticut

Pfister Energy
renewable energy systems

ALL-POINTS TECHNOLOGY CORPORATION

Project Description

Durham Solar Facility

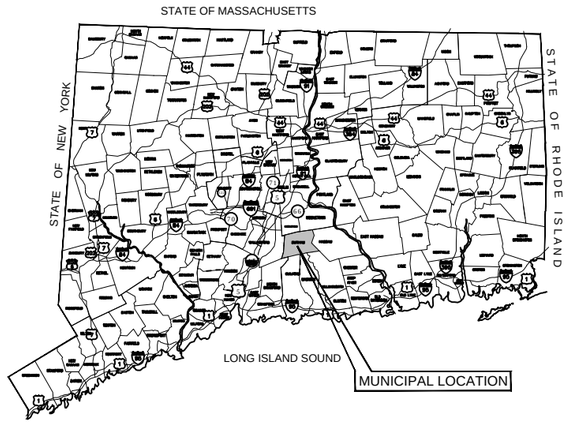
Project Description

Pfister Energy proposes the installation of a 1.35 megawatt solar-based electric generating facility (Facility) consisting of photovoltaic (PV) module technology to be located at 201 Main Street in Durham, Connecticut. The privately-owned Site consists of approximately 18.08 acres. The western portion of the Site is occupied by Durham Manufacturing's North American plant and offices. The eastern portion of the Site consists of a mostly open field most recently used as a tree farm. The Site is situated east of Main Street and south of Maiden Lane.

Upon its completion, the Facility would occupy approximately 4.72 acres of the Site. The Project has been designed to provide the Durham Manufacturing plant with approximately 80% of its daily electrical needs. The Facility would be comprised of approximately 4194 340W Mission Solar MSE340SO6J photovoltaic modules installed at a tilt angle of 30 degrees, 24 SMA Corel 50kW inverters, one (1) SMA Tripower 15 kW Inverter, and two (2) underground service interconnection points that would tie directly into the plant. The Facility would use a ground mounted, pile-driven, racking system and be enclosed by security fencing. An existing access originating off of Maiden Lane will be modified for entrance to the Facility, which will be surrounded by security fencing.

Aside from removal of Christmas trees that currently occupy the open fields, some tree clearing will be required along the perimeter, mainly in the southern and eastern portions of the fields to avoid shadow effect on the solar panels. The Site includes relatively level grades such that the development can be generally accomplished without significant cuts and/or fills. Once construction is complete, disturbed areas will be seeded for the establishment of permanent cover (turf).

Site Figures and Property Card



PFISTER ENERGY
"PROPOSED SOLAR FACILITY"

DURHAM MANUFACTURING CO.
201 MAIN STREET
DURHAM, CT 06422

LIST OF DRAWINGS

SITE INFORMATION

SITE NAME: "DURHAM MANUFACTURING CO."
LOCATION: 201 MAIN STREET
DURHAM, CT 06422

SITE TYPE/DESCRIPTION: GROUND MOUNTED SOLAR PANEL ARRAY (4,194 PANELS) W/ ASSOCIATED ACCESS DRIVE & EQUIPMENT. ADD CHAIN LINK FENCE TO SURROUND NEW SOLAR ARRAY & ELECTRIC INTERCONNECTION FROM NEW SOLAR FACILITY TO EXIST. DURHAM MANUFACTURING ELECTRICAL ROOM.

PROPERTY OWNER: DURHAM MANUFACTURING CO.
P.O. BOX 230
DURHAM, CT 06422

APPLICANT: PFISTER ENERGY
57 GOFFLE ROAD
HAWTHORNE, NJ 07506
(973) 653-9880

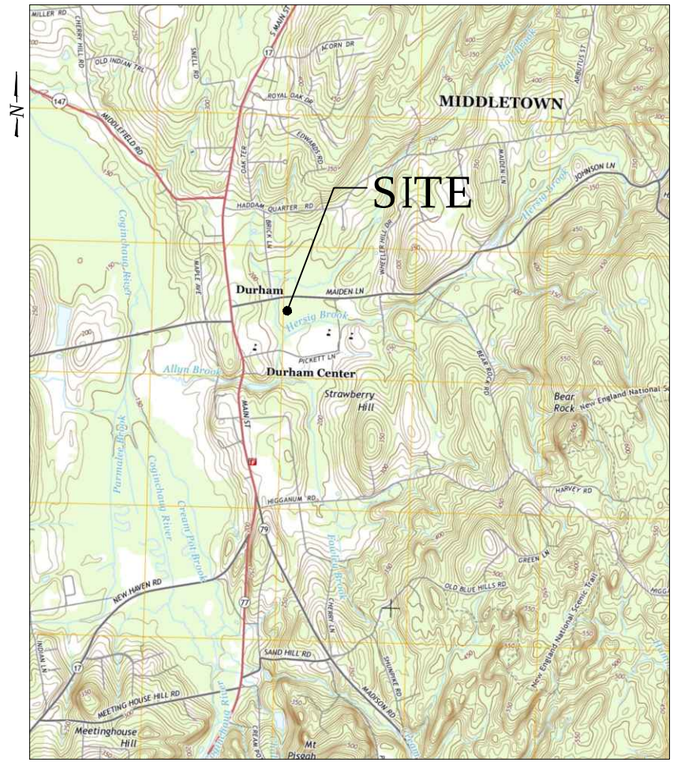
ENGINEER CONTACT: BRADLEY J. PARSONS, P.E., P.M.P.
(860) 663-1697 x208

LATITUDE: 41°28'43.36" N
LONGITUDE: 72°40'34.05" W
ELEVATION: 196'± AMSL

MAP/LOT: 38/46
ZONE: MR/FR
FEMAPANEL: #09007C0206G; EFFECTIVE DATE: AUG. 28, 2008

TOTAL SITE ACERAGE: 18.08 AC.
TOTAL DISTURBED AREA: 6.78 AC.

USGS TOPOGRAPHIC MAP



SCALE : 1" = 2000'± SOURCE: USGS 7.5 QUADRANGLE: DURHAM, CT 2015

PFISTER ENERGY
57 GOFFLE ROAD
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(973) 653-9880
www.pfisterenergy.com

ALL-POINTS TECHNOLOGY CORPORATION
3 SADDLEBROOK DRIVE PHONE: (860)-663-1697
KILLINGWORTH, CT 06419 FAX: (860)-663-0935
WWW.ALLPOINTSTECH.COM

CSC PETITION

NO	DATE	REVISION
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DESIGN PROFESSIONAL OF RECORD

PROF: BRADLEY J. PARSONS P.E.
COMP: ALL-POINTS TECHNOLOGY CORPORATION
ADD: 3 SADDLEBROOK DRIVE KILLINGWORTH, CT 06419

OWNER: DURHAM MANUFACTURING CO.
ADDRESS: P.O. BOX 230 DURHAM, CT 06422

DURHAM MANUFACTURING CO.

SITE ADDRESS: 201 MAIN STREET DURHAM, CT 06422

APT FILING NUMBER: CT528100

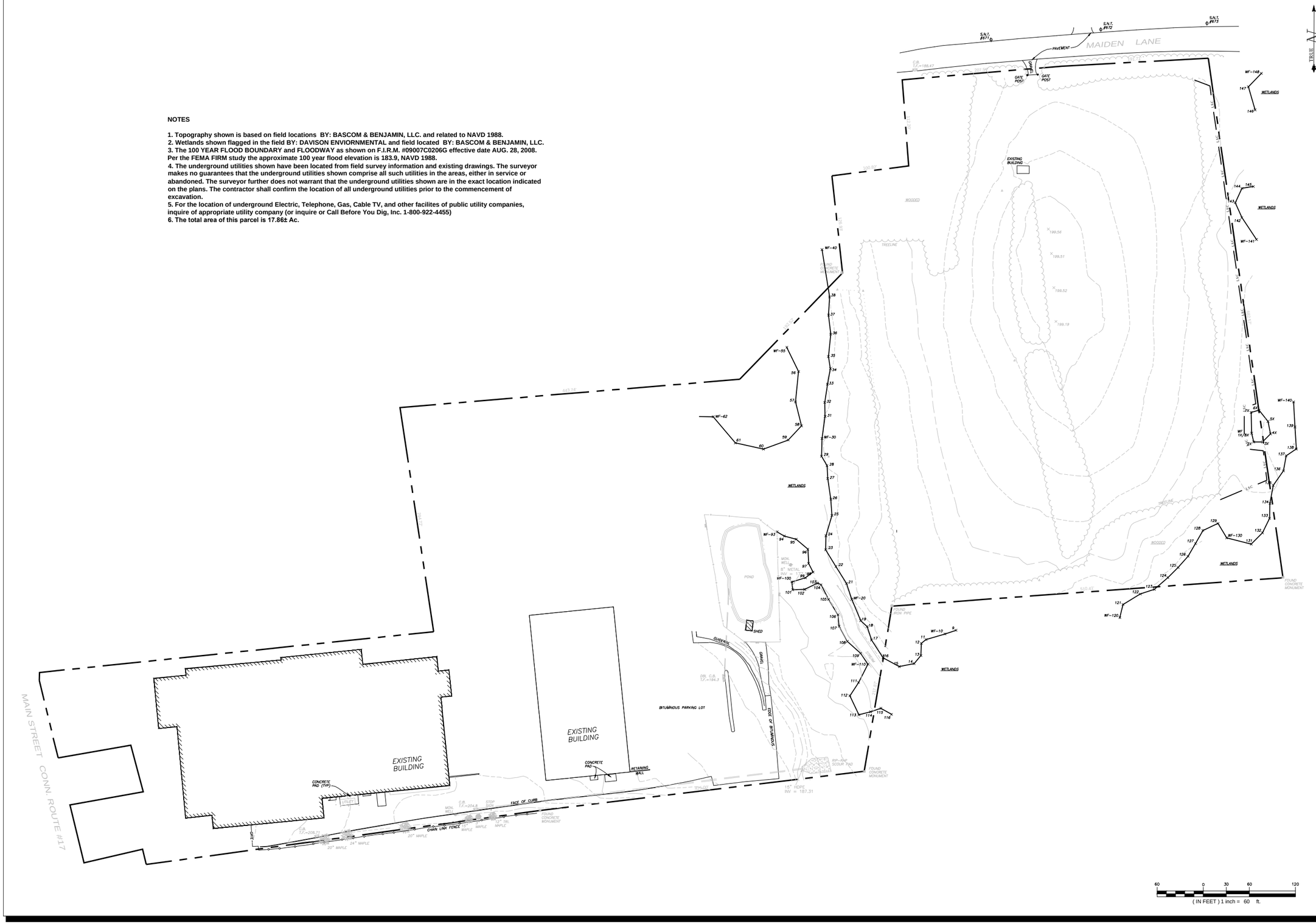
DRAWN BY: ELZ/JT
DATE: 1/22/2018 CHECKED BY: BJP

SHEET TITLE:
TITLE SHEET & INDEX

SHEET NUMBER:
T-1

NOTES

1. Topography shown is based on field locations BY: BASCOM & BENJAMIN, LLC. and related to NAVD 1988.
2. Wetlands shown flagged in the field BY: DAVISON ENVIORNMENTAL and field located BY: BASCOM & BENJAMIN, LLC.
3. The 100 YEAR FLOOD BOUNDARY and FLOODWAY as shown on F.I.R.M. #09007C0206G effective date AUG. 28, 2008. Per the FEMA FIRM study the approximate 100 year flood elevation is 183.9, NAVD 1988.
4. The underground utilities shown have been located from field survey information and existing drawings. The surveyor makes no guarantees that the underground utilities shown comprise all such utilities in the areas, either in service or abandoned. The surveyor further does not warrant that the underground utilities shown are in the exact location indicated on the plans. The contractor shall confirm the location of all underground utilities prior to the commencement of excavation.
5. For the location of underground Electric, Telephone, Gas, Cable TV, and other facilites of public utility companies, inquire of appropriate utility company (or inquire or Call Before You Dig, Inc. 1-800-922-4455)
6. The total area of this parcel is 17.86± Ac.



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DATE:

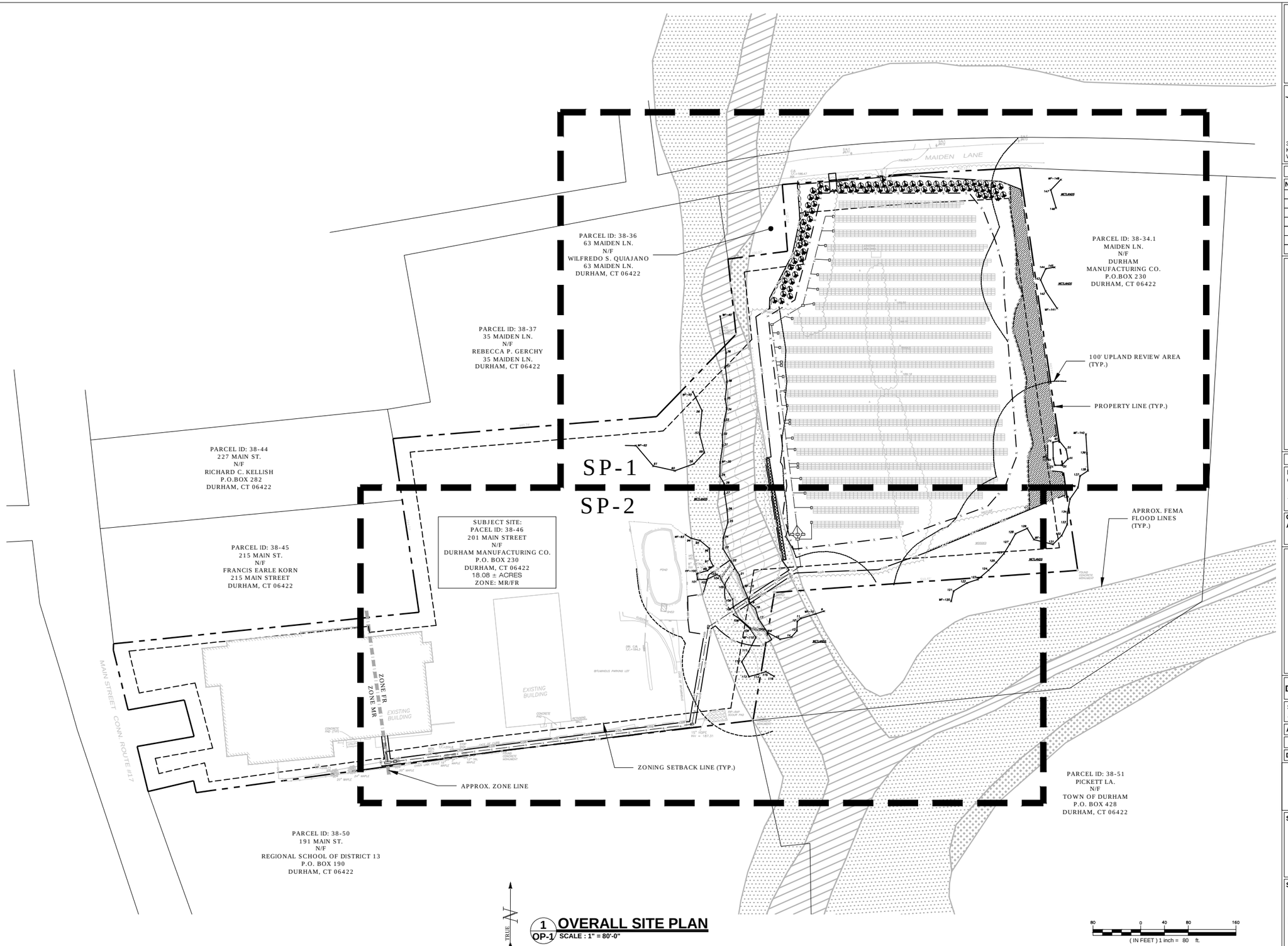
CHECKED BY:

SHEET TITLE:

EXISTING CONDITIONS PLAN

SHEET NUMBER:

EX-1



1 OP-1 **OVERALL SITE PLAN**
SCALE : 1" = 80'-0"

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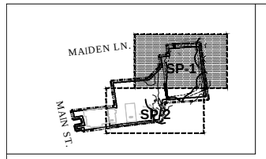
OVERALL SITE PLAN

SHEET NUMBER:
OP-1



KEY PLAN

MATCHLINE: SEE SHEET SP-2

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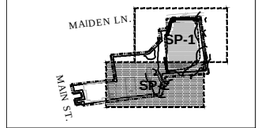
SITE PLAN

SHEET NUMBER:

SP-1



KEY PLAN

MATCHLINE: SEE SHEET SP-1

PROP. ELECTRICAL EQUIPMENT (SEE ELECTRICAL PLANS)

2 DN-1 PROP. SOLAR PANEL ARRAY (TYP.) (4,194 TOTAL PANELS)

3 DN-1 PROP. 6' HIGH CHAIN LINK FENCE (TYP.)

PROP. TEMPORARY DIVERSION AREA FOR UTILITY CROSSING (SEE EC-2C)

PROP. ELECTRICAL PULL BOX (TYP.) (SEE ELECTRICAL PLANS)

PROP. SAWCUT & PAVEMENT REPAIR

PROP. LIMIT OF DISTURBANCE (SEE SHEETS EC-1,2,3,4)

PROP. UNDERGROUND ELECTRICAL (SEE ELECTRICAL PLANS)

APPROX. 100 YEAR FEMA FLOOD LINE

APPROX. FEMA FLOODWAY

WETLANDS

POND

EXISTING BUILDING

BITUMINOUS PARKING LOT

100' UPLAND REVIEW AREA

PROP. UPLAND REVIEW AREA

510.41'

15" HDPE INV = 187.31

RIP-RAP SCOUR PAD

FOUND CONCRETE MONUMENT

CONCRETE PAD

RETAINING WALL

STOP SIGN

FACE OF CURB

CHAIN LINK FENCE

GUIDERAIL

DBL C.B. T.F.=194.3

EDGE OF BITUMINOUS

TREELINE

WOODED

294.72'

(IN FEET) 1 inch = 40 ft.

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SHEET TITLE:

SITE PLAN

SHEET NUMBER:

SP-2

PROP. CONSTRUCTION ENTRANCE 2 / DN-2

PROP. CLEARING - CLEARING ACTIVITIES INSIDE LOD INCLUDES THE CUTTING OF ALL CHRISTMAS TREES (NOT TO BE RELOCATED) AT GROUND AS TO NOT CAUSE TRIPPING HAZARD, STUMPS TO REMAIN. ALL OTHER BRUSH, TREES & STUMPS TO BE REMOVED. CLEARED MATERIAL TO BE CHIPPED & STOCKPILED. DISTURBED AREAS TO BE LOAMED & SEEDED. (TYP.)

4 / DN-2 PROP. SILT FENCE WING (TYP.)

PROP. PHASE 1 SELECTIVE CLEARING LIMITS (TOTAL CLEARING LIMITS - 0.46± ACRES 20,038± SF). CLEARING ACTIVITIES TO INCLUDE THE REMOVAL OF TREES TALLER THAN 20' ONLY TO GRADE. STUMPS ARE TO REMAIN. CLEARED MATERIAL TO BE CHIPPED & STOCKPILED, TO BE USED FOR TEMPORARY STABILIZATION.

SILT FENCE DRAINAGE AREAS

PROP. LIMIT OF DISTURBANCE (TYP.)

1 / DN-2 PROP. SILT FENCE (TYP.)

REMOVE TREES THAT CANNOT BE REMOVED DURING TRENCHING. STUMPS TO REMAIN UNTIL TRENCHING BEGINS

LIMIT OF PHASE 1 WORK

SF AREA 0.80 AC
SF AREA 0.86 AC
SF AREA 0.92 AC
SF AREA 0.56 AC
SF AREA 0.84 AC
SF AREA 0.62 AC
SF AREA 0.49 AC
SF AREA 0.69 AC

WETLANDS
WOODED
POND
EXISTING BUILDING
TREELINE
FOUND CONCRETE MONUMENT
FOUND IRON PIPE
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(IN FEET) 1 inch = 40 ft.

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SHEET TITLE:

SEDIMENTATION & EROSION CONTROL PLAN PHASE 1

SHEET NUMBER:

EC-1

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DRAWN BY: ELZ/JT

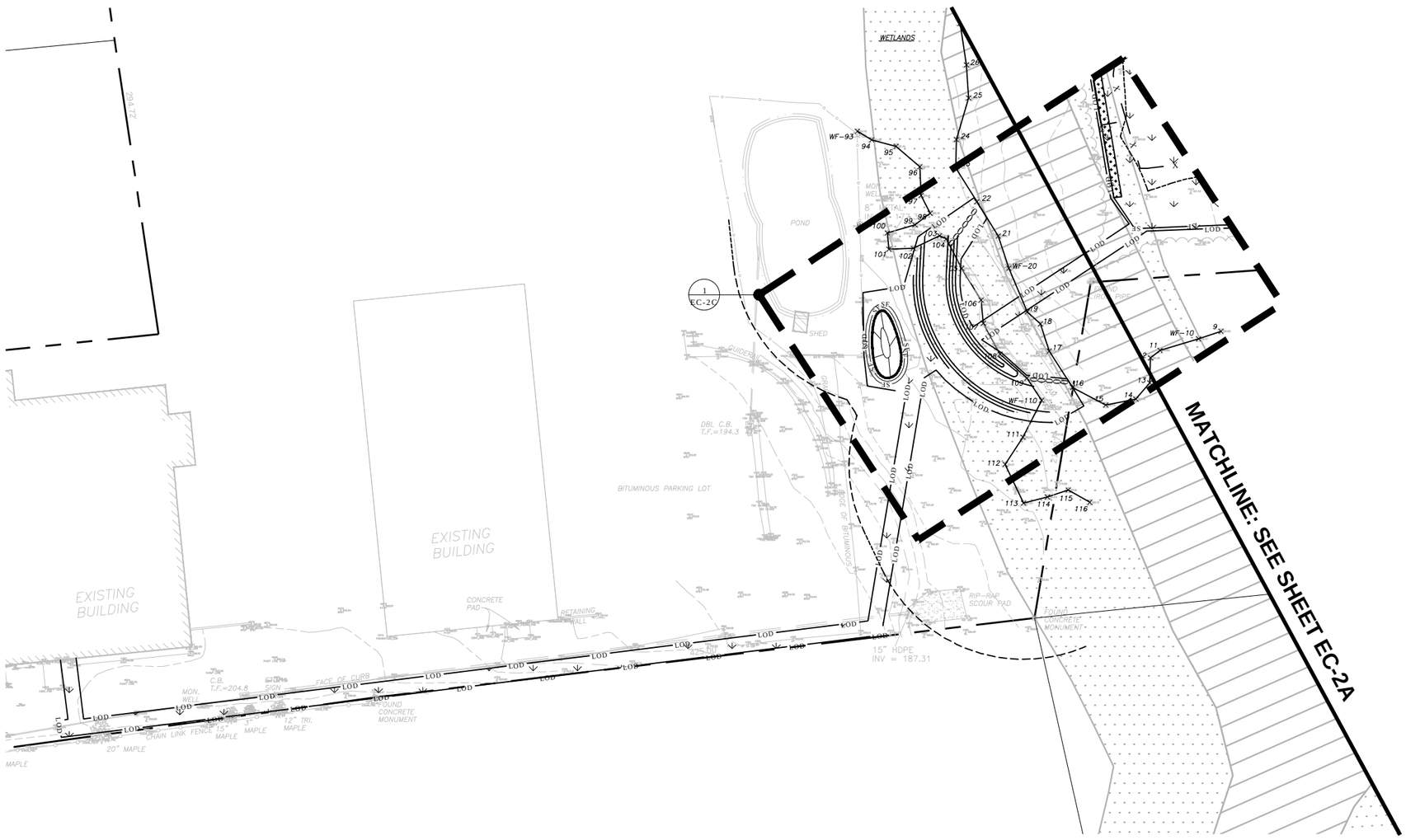
DATE: 1/22/2018 CHECKED BY: BJP

SHEET TITLE:

SEDIMENTATION & EROSION CONTROL PLAN PHASE 2

SHEET NUMBER:

EC-2A



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APT FILING NUMBER: CT528100

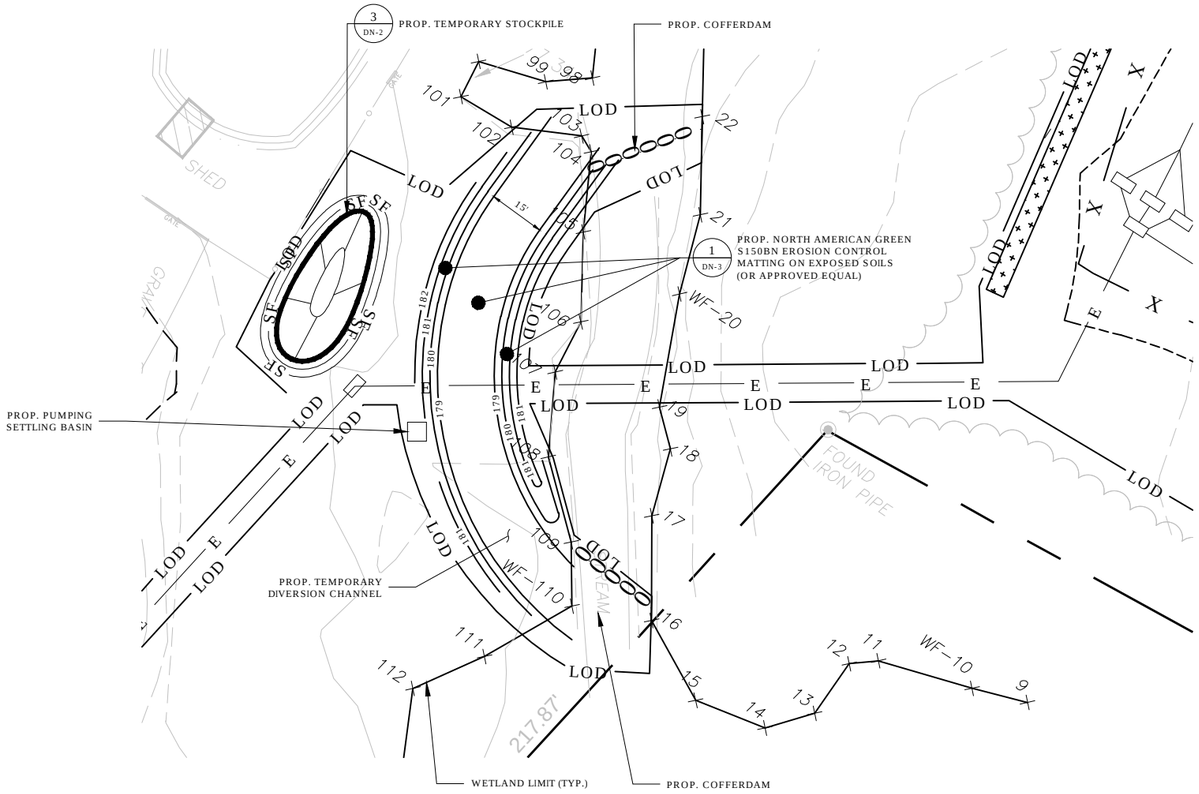
DRAWN BY: ELZ/JT
DATE: 1/22/2018
CHECKED BY: BJP

SHEET TITLE:

SEDIMENTATION & EROSION CONTROL PLAN PHASE 2

SHEET NUMBER:

EC-2B



1 EC-2C **TEMPORARY DIVERSION CHANNEL**

SCALE : 1" = 20'-0"

(IN FEET) 1 inch = 20 ft.

TEMPORARY DIVERSION CONSTRUCTION SEQUENCE

1. EXCAVATE DIVERSION CHANNEL WITH ENDS BLOCKED. INSTALL TEMPORARY CHANNEL LINING.
2. INSTALL TEMPORARY STREAM CROSSING AND PERIMETER E&S CONTROLS FOR DIVERSION CHANNEL.
3. OPEN DOWNSTREAM END OF DIVERSION, ALLOWING WATER PRESSURE TO EQUALIZE IN DIVERSION.
4. OPEN UPSTREAM END OF DIVERSION. SOME SEDIMENTATION WILL OCCUR.
5. CONSTRUCT NON-ERODABLE DAM IN THE UPSTREAM END OF THE EXISTING STREAM CHANNEL. CONSTRUCT PUMPING SETTLING BASIN.
6. CONSTRUCT NON-ERODABLE DAM IN THE DOWNSTREAM END OF THE EXISTING STREAM CHANNEL. DEWATER BLOCKED STREAM CHANNEL.
7. CONSTRUCT UTILITY ACROSS BLOCKED STREAMBED, DEWATERING AS NECESSARY.
8. AFTER RE-ESTABLISHING STREAM CHANNEL, REMOVE DAM FROM DOWNSTREAM END OF EXISTING CHANNEL.
9. REMOVE DAM FROM UPSTREAM END OF EXISTING CHANNEL. FILL IN DOWNSTREAM AND UPSTREAM END OF DIVERSION WITH NON-ERODABLE MATERIAL.
10. REMOVE TEMPORARY STREAM CROSSING FROM DIVERSION CHANNEL. FILL DIVERSION CHANNEL, CONTINUE UTILITY CONSTRUCTION AND STABILIZE DISTURBED SOILS.

Channel Report

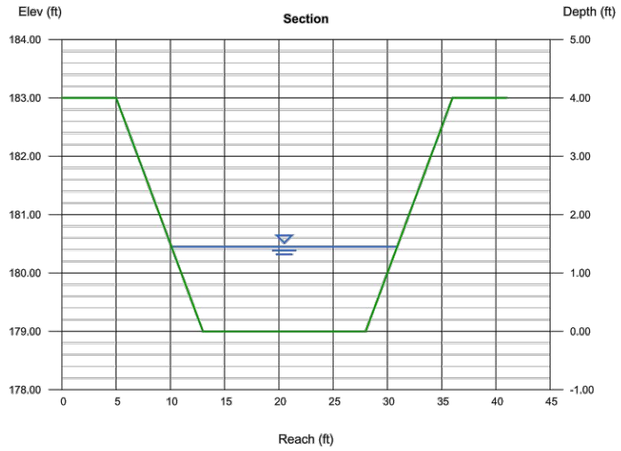
Hydraflow Express Extension for Autodesk® AutoCAD® Civil 3D® by Autodesk, Inc. Thursday, Jan 11 2018

<Name>

Trapezoidal		Highlighted	
Bottom Width (ft)	= 15.00	Depth (ft)	= 1.45
Side Slopes (z:1)	= 2.00, 2.00	Q (cfs)	= 103.00
Total Depth (ft)	= 4.00	Area (sqft)	= 25.95
Invert Elev (ft)	= 179.00	Velocity (ft/s)	= 3.97
Slope (%)	= 0.50	Wetted Perim (ft)	= 21.48
N-Value	= 0.030	Crit Depth, Yc (ft)	= 1.09
		Top Width (ft)	= 20.80
		EGL (ft)	= 1.69

Calculations

Compute by:	Known Q
Known Q (cfs)	= 103.00



PFISTER ENERGY

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3 SADDLEBROOK DRIVE PHONE: (860)-663-1697
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WWW.ALLPOINTSTECH.COM

CSC PETITION

NO	DATE	REVISION
0	01/22/18	FOR REVIEW: BJP
1		
2		
3		
4		
5		
6		

DESIGN PROFESSIONAL OF RECORD

PROF: BRADLEY J. PARSONS P.E.
COMP: ALL-POINTS TECHNOLOGY CORPORATION
ADD: 3 SADDLEBROOK DRIVE KILLINGWORTH, CT 06419

OWNER: DURHAM MANUFACTURING CO.
ADDRESS: P.O. BOX 230 DURHAM, CT 06422

DURHAM MANUFACTURING CO.

SITE ADDRESS: 201 MAIN STREET DURHAM, CT 06422

APT FILING NUMBER: CT528100

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SHEET TITLE:
TEMP. DIVERSION STREAM PLAN & CROSS SECTION

SHEET NUMBER:
EC-2C

PROP. PHASE 3 HYDROSEED AND TEMPORARY SURFACE STABILIZATION AREA AS NEEDED. APPROX. 6.59± AC (286,991 SF)

MAINTAIN SILT FENCE WING (TYP.)

PROP. LIMIT OF DISTURBANCE (TYP.)
(TOTAL PROJECT DISTURBANCE - 6.59± ACRES 286,990± SF)

MAINTAIN SILT FENCE (TYP.)

APPROX. LOCATION OF PROP. LOW SHRUB PLANTINGS

WETLANDS

WOODED

POND

SHED

FOUND CONCRETE MONUMENT

FOUND IRON PIPE

TREELINE

TRUE N

(IN FEET) 1 inch = 40 ft.

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DRAWN BY: ELZ/JT

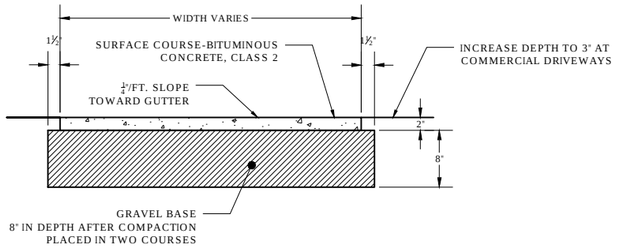
DATE: 1/22/2018 CHECKED BY: BJP

SHEET TITLE:

SEDIMENTATION & EROSION CONTROL PLAN PHASE 3

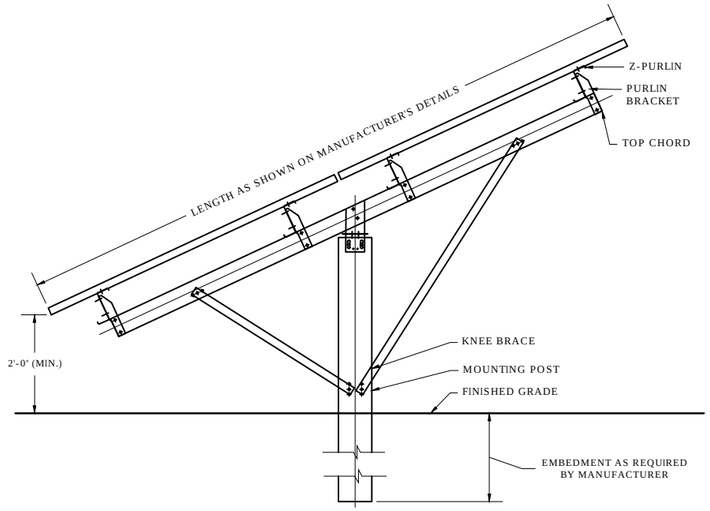
SHEET NUMBER:

EC-3



1 DN-1 PAVEMENT ENTRANCE SECTION

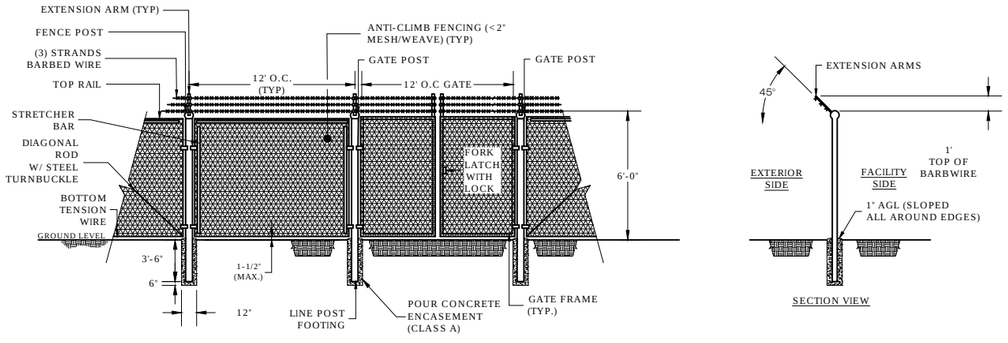
SCALE : N.T.S.



NOTES:
SEE MANUFACTURER'S DETAIL SHEETS FOR ADDITIONAL INFORMATION REGARDING RACKING SYSTEM REQUIREMENTS AND INSTALLATION PROCEDURES. RACKING SYSTEM TO BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS.

2 DN-1 TYPICAL POST MOUNTED RACKING SYSTEM

SCALE : N.T.S.



3 DN-1 CHAIN-LINK FENCING & GATE DETAIL

SCALE : N.T.S.

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DRAWN BY: ELZ/JT
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SHEET TITLE:

DETAIL SHEET

SHEET NUMBER:

DN-1

EROSION CONTROL NOTES

EROSION AND SEDIMENT CONTROL PLAN NOTES

1. THE CONTRACTOR SHALL CONSTRUCT ALL SEDIMENT AND EROSION CONTROLS IN ACCORDANCE WITH THE 2002 CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL, LATEST EDITION, IN ACCORDANCE WITH THE CONTRACT DOCUMENTS, AND AS DIRECTED BY THE CONNECTICUT DEPARTMENT OF ENERGY AND ENVIRONMENTAL PROTECTION (CT DEEP). THE CONTRACTOR SHALL KEEP A COPY OF THE CURRENT GUIDELINES ON-SITE FOR REFERENCE DURING CONSTRUCTION. ALL SEDIMENTATION AND EROSION CONTROL MEASURES, INCLUDING THE CONSTRUCTION OF TEMPORARY SEDIMENTATION TRAPS/BASINS, TEMPORARY DIVERSION SWALES AND ANTI-TRACKING PADS, SHALL BE INSTALLED PRIOR TO THE START OF CLEARING AND GRUBBING AND DEMOLITION OPERATIONS.
2. THESE DRAWINGS ARE ONLY INTENDED TO DESCRIBE THE SEDIMENT AND EROSION CONTROL MEASURES FOR THIS SITE. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHOWN ON THE EROSION & SEDIMENT CONTROL PLAN ARE SHOWN IN A GENERAL SIZE AND LOCATION ONLY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THAT ALL EROSION CONTROL MEASURES ARE CONFIGURED AND CONSTRUCTED IN A MANNER THAT WILL MINIMIZE EROSION OF SOILS AND PREVENT THE TRANSPORT OF SEDIMENTS AND OTHER POLLUTANTS TO STORM DRAINAGE SYSTEMS AND/OR WATERCOURSES. ACTUAL SITE CONDITIONS OR SEASONAL AND CLIMATIC CONDITIONS MAY WARRANT ADDITIONAL CONTROLS OR CONFIGURATIONS WHEN DIRECTED BY THE ENGINEER. SEE SEDIMENT AND EROSION CONTROL DETAILS AND SUGGESTED CONSTRUCTION SEQUENCE FOR MORE INFORMATION. REFER TO SITE PLAN FOR GENERAL INFORMATION AND OTHER CONTRACT PLANS FOR APPROPRIATE INFORMATION.
3. THE CONTRACTOR IS RESPONSIBLE FOR IMPLEMENTING THE SEDIMENT AND EROSION CONTROL PLAN. THIS RESPONSIBILITY INCLUDES THE PROPER INSTALLATION AND MAINTENANCE OF CONTROL MEASURES, INFORMING ALL PARTIES ENGAGED WITH CONSTRUCTION ON THE SITE OF THE REQUIREMENTS AND OBJECTIVES OF THIS PLAN, INFORMING THE GOVERNING AUTHORITY OR INLAND WETLANDS AGENCY OF ANY TRANSFER OF THIS RESPONSIBILITY, AND FOR CONVEYING A COPY OF THE SEDIMENT & EROSION CONTROL PLAN IF THE TITLE TO THE LAND IS TRANSFERRED. COMPLY WITH REQUIREMENTS OF CGS SECTION 22A, 430B FOR STORMWATER DISCHARGE FROM CONSTRUCTION ACTIVITIES AND WITH CT DEEP RECORD KEEPING AND INSPECTION REQUIREMENTS.
4. A BOND MAY BE REQUIRED TO BE POSTED WITH THE GOVERNING AUTHORITY FOR THE EROSION CONTROL INSTALLATION AND MAINTENANCE.
5. THE CONTRACTOR SHALL APPLY THE MINIMUM EROSION & SEDIMENT CONTROL MEASURES SHOWN ON THE PLAN IN CONJUNCTION WITH CONSTRUCTION SEQUENCING, SUCH THAT ALL ACTIVE WORK ZONES ARE PROTECTED. ADDITIONAL AND/OR ALTERNATIVE SEDIMENT AND EROSION CONTROL MEASURES MAY BE INSTALLED DURING THE CONSTRUCTION PERIOD IF FOUND NECESSARY BY THE CONTRACTOR, OWNER, SITE ENGINEER, MUNICIPAL OFFICIALS, OR ANY GOVERNING AGENCY. THE CONTRACTOR SHALL CONTACT THE OWNER AND APPROPRIATE GOVERNING AGENCIES FOR APPROVAL IF ALTERNATIVE CONTROLS OTHER THAN THOSE SHOWN ON THE PLANS ARE PROP. BY THE CONTRACTOR.
6. THE CONTRACTOR SHALL TAKE EXTREME CARE DURING CONSTRUCTION SO AS NOT TO DISTURB UNPROTECTED WETLAND AREAS OR SEDIMENTATION AND EROSION CONTROL MEASURES. THE CONTRACTOR SHALL INSPECT ALL SEDIMENT AND EROSION CONTROLS WEEKLY AND WITHIN 24 HOURS OF A STORM WITH A RAINFALL AMOUNT OF 0.2 INCHES OR GREATER TO VERIFY THAT THE CONTROLS ARE OPERATING PROPERLY AND MAKE REPAIRS WHERE NECESSARY.
7. THE CONTRACTOR SHALL KEEP A SUPPLY OF EROSION CONTROL MATERIAL (HAY BALES, SILT FENCE, JUTE MESH, ETC.) ON-SITE FOR PERIODIC MAINTENANCE AND EMERGENCY REPAIRS.
8. ALL FILL MATERIAL PLACED ADJACENT TO ANY WETLAND AREA SHALL BE GOOD QUALITY, WITH LESS THAN 5% FINES PASSING THROUGH A #200 SIEVE (BANK RUN), SHALL BE PLACED IN MAXIMUM ONE FOOT LIFTS, AND SHALL BE COMPACTED TO 95% MAX. DRY DENSITY MODIFIED PROCTOR OR AS SPECIFIED IN THE CONTRACT SPECIFICATIONS.
9. PROTECT EXISTING TREES THAT ARE TO BE SAVED BY FENCING AT THE DRIP LINE, OR AS DETAILED, WITH SNOW FENCE, ORANGE SAFETY FENCE, OR EQUIVALENT FENCING. ANY LIMB TRIMMING SHOULD BE DONE AFTER CONSULTATION WITH AN ARBORIST AND BEFORE CONSTRUCTION BEGINS IN THAT AREA; FENCING SHALL BE MAINTAINED AND REPAIRED DURING CONSTRUCTION.
10. ANTI-TRACKING PADS SHALL BE INSTALLED PRIOR TO ANY SITE EXCAVATION OR CONSTRUCTION ACTIVITY AND SHALL BE MAINTAINED THROUGHOUT THE DURATION OF ALL CONSTRUCTION. THE LOCATION OF THE TRACKING PADS MAY CHANGE AS VARIOUS PHASES OF CONSTRUCTION ARE COMPLETED.
11. ALL CONSTRUCTION SHALL BE CONTAINED WITHIN THE LIMIT OF DISTURBANCE, WHICH SHALL BE MARKED WITH SILT FENCE, SAFETY FENCE, HAY BALES, RIBBONS, OR OTHER MEANS PRIOR TO CLEARING. CONSTRUCTION ACTIVITY SHALL REMAIN ON THE UPHILL SIDE OF THE SEDIMENT BARRIER UNLESS WORK IS SPECIFICALLY CALLED FOR ON THE DOWNHILL SIDE OF THE BARRIER. STAKED HAY BALES OR SILT FENCES SHALL ALSO BE INSTALLED AT THE DOWNHILL SIDES OF BUILDING EXCAVATIONS, DEWATERING PUMP DISCHARGES, AND MATERIAL STOCKPILES.
12. WASHOUT OF APPLICATORS, CONTAINERS, VEHICLES AND EQUIPMENT FOR CONCRETE SHALL BE CONDUCTED IN A DESIGNATED WASHOUT AREA. NO SURFACE DISCHARGE OF WASHOUT WASTEWATERS FROM THE AREA WILL BE ALLOWED. ALL CONCRETE WASHWATER WILL BE DIRECTED INTO A CONTAINER OR PIT SUCH THAT NO OVERFLOWS CAN OCCUR. WASHOUT SHALL BE CONDUCTED IN AN ENTIRELY SELF-CONTAINED SYSTEM AND WILL BE CLEARLY DESIGNED AND FLAGGED OR SIGNED WHERE NECESSARY. THE WASHOUT AREA SHALL BE LOCATED OUTSIDE OF ANY BUFFERS AND AT LEAST 50 FEET FROM ANY STREAM, WETLAND OR OTHER SENSITIVE WATER OR NATURAL RESOURCES AS DETERMINED OR DESIGNATED BY THE ENGINEER.
13. TOPSOIL SHALL BE STRIPPED AND STOCKPILED FOR USE IN FINAL LANDSCAPING. ALL EARTH STOCKPILES SHALL HAVE HAY BALES OR SILT FENCE AROUND THE LIMIT OF PILE. PILES SHALL BE TEMPORARILY SEEDED IF PILE IS TO REMAIN IN PLACE AND UNDISTURBED FOR MORE THAN 30 DAYS.
14. NO CUT OR FILL SLOPES SHALL EXCEED 2:1 EXCEPT WHERE STABILIZED BY ROCK FACED EMBANKMENTS OR EROSION CONTROL BLANKETS AND VEGETATION. ALL SLOPES SHALL BE SEEDED, AND THE ROAD SHOULDER AND BANKS WILL BE STABILIZED IMMEDIATELY UPON COMPLETION OF FINAL GRADING UNTIL TURF IS ESTABLISHED.
15. DIRECT ALL DEWATERING PUMP DISCHARGE TO A SEDIMENT CONTROL DEVICE SUCH AS TEMPORARY SEDIMENT TRAPS OR GRASS FILTERS WITHIN THE APPROVED LIMIT OF DISTURBANCE. DISCHARGE TO STORM DRAINS OR SURFACE WATERS FROM SEDIMENT CONTROLS SHALL BE CLEAR AND APPROVED BY THE ENGINEER.
16. BLOCK THE OPEN UPSTREAM ENDS OF DETENTION BASIN/SEDIMENT TRAP OUTLET CONTROL ORIFICES UNTIL SITE IS STABILIZED AND BLOCK END OF STORM DRAINS IN EXPOSED TRENCHES WITH BOARDS AND SANDBAGS AT THE END OF EACH WORKING DAY WHEN RAIN IS EXPECTED.
17. THE CONTRACTOR SHALL MAINTAIN A CLEAN CONSTRUCTION SITE AND SHALL NOT ALLOW THE ACCUMULATION OF RUBBISH OR CONSTRUCTION DEBRIS ON THE SITE. PROPER SANITARY DEVICES SHALL BE MAINTAINED ON-SITE AT ALL TIMES. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO AVOID THE SPILLAGE OF FUEL OR OTHER POLLUTANTS ON THE CONSTRUCTION SITE AND SHALL ADHERE TO ALL APPLICABLE POLICIES AND REGULATIONS RELATED TO SPILL PREVENTION AND RESPONSE/CONTAINMENT.
18. MINIMIZE LAND DISTURBANCES. SEED AND MULCH DISTURBED AREAS WITH TEMPORARY MIX AS SOON AS PRACTICABLE USING PERENNIAL RYEGRASS AT 40 LBS PER ACRE. MULCH ALL CUT AND FILL SLOPES AND SWALES WITH LOOSE HAY AT A RATE OF 2 TONS PER ACRE. IF NECESSARY, REPLACE LOOSE HAY ON SLOPES WITH EROSION CONTROL BLANKETS OR JUTE CLOTH. MODERATELY GRADED AREAS, ISLANDS, AND TEMPORARY CONSTRUCTION STAGING AREAS MAY BE HYDROSEEDED WITH TACKIFIER.
19. SWEEP AFFECTED PORTIONS OF OFF SITE ROADS ONE OR MORE TIMES A DAY (OR LESS FREQUENTLY IF TRACKING IS NOT A PROBLEM) DURING CONSTRUCTION. FOR DUST CONTROL, PERIODICALLY MOISTEN EXPOSED SOIL SURFACES WITH WATER ON UNPAVED TRAVELWAYS TO KEEP THE TRAVELWAYS DAMP. CALCIUM CHLORIDE MAY ALSO BE APPLIED TO ACCESS ROADS. DUMP TRUCK LOADS EXITING THE SITE SHALL BE COVERED.
20. TURF ESTABLISHMENT SHALL BE PERFORMED OVER ALL DISTURBED SOIL, UNLESS THE AREA IS UNDER ACTIVE CONSTRUCTION, IT IS COVERED IN STONE OR SCHEDULED FOR PAVING WITHIN 30 DAYS. TEMPORARY SEEDING OR NON-LIVING SOIL PROTECTION OF ALL EXPOSED SOILS AND SLOPES SHALL BE INITIATED WITHIN THE FIRST 7 DAYS OF SUSPENDING WORK IN AREAS TO BE LEFT LONGER THAN 30 DAYS.
21. IF CONSTRUCTION ACTIVITIES ARE COMPLETE OR HAVE BEEN TEMPORARILY HALTED FOR 7 DAYS, STABILIZATION ACTIVITIES WILL BE IMPLEMENTED WITHIN 3 DAYS.
22. TWO WEEKS BEFORE THE FALL SEEDING SEASON BEGINS (AUGUST 15 TO OCTOBER 15), THE CONTRACTOR SHALL SCHEDULE A MEETING WITH OWNER TO DISCUSS STABILIZING THE SITE FOR WINTER MONTHS. MEASURES SUCH AS MULCHING AND/OR SEEDING MAY BE REQUIRED.
23. MAINTAIN ALL PERMANENT AND TEMPORARY SEDIMENT CONTROL DEVICES IN EFFECTIVE CONDITION THROUGHOUT THE CONSTRUCTION PERIOD. UPON COMPLETION OF WORK SWEEP PARKING LOTS, CLEAN THE STORM DRAINAGE SYSTEMS AND REMOVE ALL TEMPORARY SEDIMENT CONTROLS ONCE THE SITE IS FULLY STABILIZED AND APPROVAL HAS BEEN RECEIVED FROM OWNER AND/OR ENGINEER.
24. SEEDING MIXTURES:
    A. NEW ENGLAND EROSION CONTROL/ RESTORATION MIX FOR MOIST SITES SPREAD AT A RATE OF 35 LBS PER ACRE:VIRGINIA WILD RYE, (ELYMUS VIRGINICUS), CREEPING RED FESCUE, (FESTUCA RUBRA), LITTLE BLUESTEM,(SCHIZACHYRIUM SCOPARIUM), BIG BLUESTEM, (ANDROPOGON GERARDII), FOX SEDGE, (CAREX VULPINOIDEA), SWITCH GRASS, (PANICUM VIRGATUM), ROUGH BENTGRASS, (AGROSTIS SCABRA), NEW ENGLAND ASTER, (ASTER NOVAE-ANGLIAE), BONESET, (EUPATORIUM PERFOLIATUM), GRASS LEAVED GOLDENROD, (EUTHAMIA GRAMINIFOLIA), GREEN BULRUSH, (SCIRPUS ATROVIRENS), BLUE VERVAIN, (VERBENA HASTATA), SOFT RUSH, (JUNCUS EFFUSUS), WOOL GRASS, (SCIRPUS CYPERINUS).
    B. NEW ENGLAND EROSION CONTROL/RESTORATION MIX FOR DRY SITES SPREAD AT A RATE OF 35 LBS PER ACRE: CREEPING RED FESCUE, (FESTUCA RUBRA), CANADA WILD RYE, (ELYMUS CANADENSIS), ANNUAL RYEGRASS, (LOLIUM MULTIFLORUM), PERENNIAL RYEGRASS, (LOLIUM PERENNE), BLUE GRAMA, (BOUTELOUA GRACILIS), LITTLE BLUESTEM, (SCHIZACHYRIUM SCOPARIUM), INDIAN GRASS, (SORGHASTRUM NUTANS), ROUGH BENTGRASS, (AGROSTIS SCABRA), UPLAND BENTGRASS, (AGROSTIS PERENNANS).

SEDIMENT & EROSION CONTROL NARRATIVE

1. THE PROJECT INCLUDES THE CLEARING OF APPROXIMATELY 6.40± ACRES OF EXISTING WOODLAND AREA FOR THE INSTALLATION OF A GROUND MOUNTED SOLAR PANEL FACILITY WITH ASSOCIATED EQUIPMENT. ALL CLEARED AREAS ARE TO BE SEEDED AND STABILIZED PRIOR TO THE INSTALLATION OF THE PROP. PANELS. THE POST CONSTRUCTION RUNOFF WILL MIMIC PRE CONSTRUCTION RUNOFF CONDITIONS.

   THE PROP. PROJECT INVOLVES THE FOLLOWING CONSTRUCTION:
   A. CONSTRUCTION OF 4,194 GROUND MOUNTED SOLAR PANELS AND ASSOCIATED EQUIPMENT.
   B. CONSTRUCTION OF GRAVEL ACCESS DRIVES.
   C. CONSTRUCTION OF SHALLOW INFILTRATION BASINS TO COLLECT STORMWATER RUNOFF.
   D. CONSTRUCTION OF A CHAIN LINK FENCE SURROUNDING THE SOLAR PANEL FACILITY.
   E. THE STABILIZATION OF PERVIOUS DISTURBED AREAS WITH PERMANENT GRASS AND LANDSCAPING TREATMENTS.
2. FOR THIS PROJECT, THERE ARE APPROXIMATELY 6.78± ACRES OF THE SITE BEING DISTURBED, WITH NO INCREASE IN IMPERVIOUS AREA OF THE SITE.
3. THE PROJECT SITE, AS MAPPED IN THE SOIL SURVEY OF MIDDLESEX COUNTY (SCS, 1976), CONTAINS TYPE C SOILS.
4. A GEOTECHNICAL ENGINEERING REPORT HAS BEEN COMPLETED BY AND IS AVAILABLE BY REQUEST.
5. THE PROJECT AREA WAS FOUND TO CONTAIN A BROAD COMPLEX OF WETLANDS THAT INCLUDES THE NORTHERLY EXTENT OF A LARGE WETLAND SYSTEM LOCALLY KNOWN AS ROBBINS SWAMP. ROBBINS SWAMP SURROUNDS SWAMP BROOK WHICH DRAINS TO THE HOLLENBECK RIVER (THE ON-SITE PORTION OF THIS AREA IS IDENTIFIED AS WETLAND 1). ROBBINS SWAMP REPRESENTS A REGIONALLY IMPORTANT WETLAND SYSTEM WHICH SUPPORTS A NUMBER OF RARE WETLAND-DEPENDENT SPECIES. TWO OTHER WETLAND AREAS WERE IDENTIFIED DURING THE SURVEY (IDENTIFIED AS WETLANDS 2 AND 3). WETLAND 2 IS A SMALL ISOLATED FORESTED WETLAND POCKET LOCATED EAST OF WETLAND 1, JUST SOUTH OF AN EXISTING RAIL LINE ON THE SITE. WETLAND 3 IS LOCATED IN THE SOUTHEAST CORNER OF THE SITE AND CONSISTS OF TWO DEPRESSIONAL WETLAND POCKETS THAT GENERALLY DRAIN EAST AND SOUTH AND ARE CONFINED BY AN EXISTING PAVED ACCESS ROAD AND ROUTE 7.
6. IT WILL BE IMPORTANT THAT THE EXISTING WETLAND RESOURCE AREAS BE PROTECTED DURING AND AFTER CONSTRUCTION FROM SEDIMENTATION AND POLLUTANTS TO THE EXTENT POSSIBLE. CUT AND FILL SLOPES WILL NEED TO BE STABILIZED BY VEGETATION, RIPRAP OR EROSION CONTROL GEOTEXTILES AS SOON AS POSSIBLE TO MINIMIZE SLOPE EROSION. ALL CUT AND FILL SLOPES 3:1 OR LESS WILL BE SEEDED, FERTILIZED AND MULCHED FOR TEMPORARY AND PERMANENT STABILIZATION. TOPSOIL AND EXCAVATED MATERIAL STOCKPILE AREAS MUST BE CONTAINED BY SILT FENCE AND HAY BALES AND STABILIZED BY VEGETATION IF LEFT UNDISTURBED FOR MORE THAN 30 DAYS. DEWATERING WASTEWATER FROM TRENCHING OPERATIONS SHALL BE ADDRESSED DURING CONSTRUCTION. ALL WATER FROM DEWATERING OPERATIONS SHALL BE DIRECTED TO DEWATERING PUMP SETTLING BASINS. CONSTRUCTION NEAR WETLANDS SHALL BE ISOLATED BY USE OF CONSTRUCTION FENCING OR A COFFERDAM AND THE TEMPORARY DISTURBED AREA SHALL BE KEPT TO A MINIMUM. WORK IN HIGH GROUNDWATER AREAS SHALL BE SCHEDULED, WHEN POSSIBLE, SO IT CAN BE COMPLETED IN A DRY PERIOD AND IN THE SHORTEST TIME POSSIBLE.
7. IT IS ANTICIPATED THAT CONSTRUCTION WILL BE COMPLETED IN APPROXIMATELY 4 MONTHS.
8. REFER TO THE CONSTRUCTION SEQUENCING AND EROSION AND SEDIMENTATION NOTES FOR INFORMATION REGARDING SEQUENCING OF MAJOR OPERATIONS IN THE ON-SITE CONSTRUCTION PHASES.
9. STORMWATER MANAGEMENT DESIGN CRITERIA UTILIZES THE APPLICABLE SECTIONS OF THE 2004 CONNECTICUT STORMWATER QUALITY MANUAL TO THE EXTENT POSSIBLE AND PRACTICABLE FOR THIS PROJECT ON THIS SITE. EROSION AND SEDIMENTATION MEASURES ARE BASED UPON ENGINEERING PRACTICE, JUDGEMENT AND THE APPLICABLE SECTIONS OF THE 2002 CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL.
10. DETAILS FOR THE TYPICAL EROSION AND SEDIMENTATION MEASURES ARE SHOWN ON PLAN SHEET DN-1 AND DN-2, OR PROVIDED AS SEPARATE SUPPORT DOCUMENTATION FOR REVIEW IN THIS PLAN.
11. THE CONTRACTOR SHALL ENSURE THAT THE PERIMETER SILT FENCE IS DIVIDED UP SUCH THAT NO SECTION OF SILT FENCE IS RECEIVING MORE THAN 1 ACRE OF DRAINAGE.
12. CONSERVATION PRACTICES TO BE USED DURING CONSTRUCTION AREA:
    A. STAGED CONSTRUCTION;
    B. MINIMIZE THE DISTURBED AREAS DURING CONSTRUCTION;
    C. STABILIZE DISTURBED AREAS AS SOON AS POSSIBLE WITH TEMPORARY OR PERMANENT MEASURES;
    D. MINIMIZE IMPERVIOUS AREAS;
    E. UTILIZE APPROPRIATE CONSTRUCTION EROSION AND SEDIMENTATION MEASURES.
13. THE FOLLOWING SEPARATE DOCUMENTS ARE TO BE CONSIDERED A PART OF THE EROSION AND SEDIMENTATION PLAN:
    A. STORMWATER MANAGEMENT REPORT FOR EXISTING AND PROP. PEAK FLOWS.

SUGGESTED CONSTRUCTION SEQUENCE

THE FOLLOWING SUGGESTED SEQUENCE OF CONSTRUCTION ACTIVITIES IS PROJECTED BASED UPON ENGINEERING JUDGEMENT AND BEST MANAGEMENT PRACTICES. THE CONTRACTOR MAY ELECT TO ALTER THE SEQUENCING TO BEST MEET THE CONSTRUCTION SCHEDULE, THE EXISTING SITE ACTIVITIES AND WEATHER CONDITIONS.

1. CONTACT THE OWNER TO SCHEDULE A PRE-CONSTRUCTION MEETING. PHYSICALLY FLAG THE LIMITS OF CLEARING IN THE FIELD AS NECESSARY TO FACILITATE THE PRE-CONSTRUCTION MEETING.
2. CONDUCT A PRE-CONSTRUCTION MEETING TO DISCUSS THE PROP. WORK AND EROSION AND SEDIMENTATION CONTROL MEASURES. THE MEETING SHOULD BE ATTENDED BY THE OWNER, THE OWNER REPRESENTATIVE(S), THE GENERAL CONTRACTOR, DESIGNATED SUB-CONTRACTORS AND THE PERSON, OR PERSONS, RESPONSIBLE FOR THE IMPLEMENTATION, OPERATION, MONITORING AND MAINTENANCE OF THE EROSION AND SEDIMENTATION MEASURES. THE CONSTRUCTION PROCEDURES FOR THE ENTIRE PROJECT SHALL BE REVIEWED AT THIS MEETING.
3. NOTIFY THE OWNER AT LEAST FORTY-EIGHT (48) HOURS PRIOR TO COMMENCEMENT OF ANY DEMOLITION, CONSTRUCTION OR REGULATED ACTIVITY ON THIS PROJECT. NOTIFY CALL BEFORE YOU DIG AT 1-800-922-4455.

PHASE 1

4. REMOVE EXISTING IMPROVEMENTS AS NECESSARY AND PROVIDE MINIMAL CLEARING AND GRUBBING TO INSTALL THE REQUIRED CONSTRUCTION ENTRANCES.
5. CLEAR AND GRUB PHASE 1 LIMITS AS REQUIRED AND PERFORM SELECTIVE CLEARING, TO INSTALL THE PERIMETER EROSION AND SEDIMENTATION CONTROL MEASURES AND, IF APPLICABLE, TREE PROTECTION. ALL WETLAND AREAS SHALL BE PROTECTED BEFORE MAJOR CONSTRUCTION BEGINS.
6. INSTALL PERIMETER EROSION AND SEDIMENTATION CONTROL MEASURES AS SHOWN ON THE EROSION AND SEDIMENTATION CONTROL PLANS.
7. CLEAR AND GRUB REMAINDER OF SITE.

PHASE 2

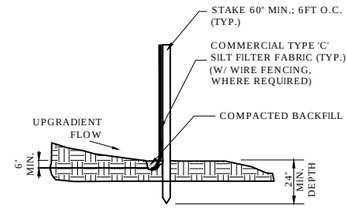
8. GRADE AREA IN CENTER OF SITE THAT WAS CLEARED AND GRUBBED IF REQUIRED PROVIDE TEMPORARY STABILIZATION.
9. INSTALL ELECTRICAL CONDUIT.
10. PERFORM TEMPORARY DIVERSION FOR UTILITY STREAM CROSSING.
11. INSTALL GROUND MOUNTED SOLAR PANELS.
12. INSTALL PAVED ACCESS DRIVES.
13. FINE GRADE, RAKE, SEED AND MULCH ALL REMAINING DISTURBED AREAS.

PHASE 4

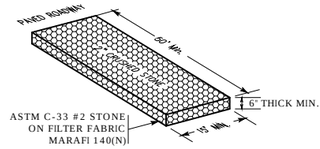
14. INSTALL PERIMETER CHAIN LINK FENCE AS SHOWN ON THE PLANS.
15. AFTER THE SITE IS STABILIZED AND WITH THE APPROVAL OF THE OWNER, REMOVE PERIMETER EROSION AND SEDIMENTATION CONTROLS.
16. PERFORM PROJECT CLEANUP

CONSTRUCTION OPERATION AND MAINTENANCE PLAN - BY CONTRACTOR

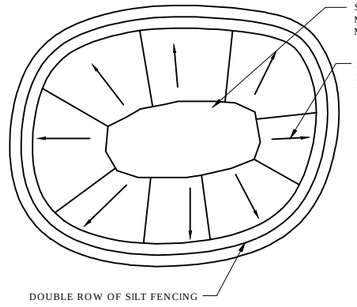
E&S MEASURE	INSPECTION SCHEDULE	MAINTENANCE REQUIRED
CONSTRUCTION ENTRANCE	DAILY	PLACE ADDITIONAL STONE, EXTEND THE LENGTH OR REMOVE AND REPLACE THE STONE. CLEAN PAVED SURFACES OF TRACKED SEDIMENT.
COMPOST FILTER SOCK	WEEKLY & WITHIN 24 HOURS OF RAINFALL > 0.2"	REPAIR/REPLACE WHEN FAILURE, OR OBSERVED DETERIORATION, IS OBSERVED. REMOVE SILT WHEN IT REACHES 1/2 THE HEIGHT OF THE FENCE.
SILT FENCE	WEEKLY & WITHIN 24 HOURS OF RAINFALL > 0.2"	REPAIR/REPLACE WHEN FAILURE, OR OBSERVED DETERIORATION, IS OBSERVED. REMOVE SILT WHEN IT REACHES 1/2 THE HEIGHT OF THE FENCE.
TOPSOIL/BORROW STOCKPILES	DAILY	REPAIR/REPLACE SEDIMENT BARRIERS AS NECESSARY.
TEMPORARY SOIL PROTECTION	WEEKLY & WITHIN 24 HOURS OF RAINFALL > 0.2"	REPAIR ERODED OR BARE AREAS IMMEDIATELY. RESEED AND MULCH.



1 DN-2 **SILT FENCE DETAIL**
SCALE : N.T.S.



2 DN-2 **CONSTRUCTION ENTRANCE DETAIL**
SCALE : N.T.S.



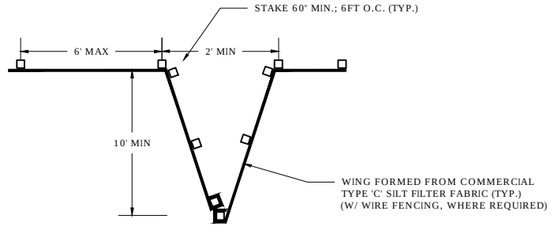
NOTES:
1. ALL EXISTING EXCAVATED MATERIAL THAT IS NOT TO BE REUSED IN THE WORK IS TO BE IMMEDIATELY REMOVED FROM THE SITE AND PROPERLY DISPOSED OF.

2. SOIL/AGGREGATE STOCKPILE SITES TO BE WHERE SHOWN ON THE DRAWINGS.

3. RESTORE STOCKPILE SITES TO PRE-EXISTING PROJECT CONDITION AND RESEED AS REQUIRED.

4. STOCKPILE HEIGHTS MUST NOT EXCEED 35'. STOCKPILE SLOPES MUST BE 2:1 OR FLATTER.

3 DN-2 **MATERIALS STOCKPILE DETAIL**
SCALE : N.T.S.



NOTES:
1. WRAP SILT FENCE AT ENDS.

2. NO JOINING FENCE SECTIONS SHALL BE INSTALLED WITHIN 30 FEET OF WING.

4 DN-2 **SILT FENCE WING DETAIL**
SCALE : N.T.S.

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DESIGN PROFESSIONAL OF RECORD

PROF: BRADLEY J. PARSONS P.E.
COMP: ALL-POINTS TECHNOLOGY CORPORATION
ADD: 3 SADDLEBROOK DRIVE KILLINGWORTH, CT 06419

OWNER: DURHAM MANUFACTURING CO.
ADDRESS: P.O. BOX 230 DURHAM, CT 06422

DURHAM MANUFACTURING CO.

SITE ADDRESS: 201 MAIN STREET DURHAM, CT 06422

APT FILING NUMBER: CT528100

DRAWN BY: ELZ/JT
DATE: 1/22/2018 CHECKED BY: BJP

SHEET TITLE:
SEDIMENTATION & EROSION CONTROL NOTES & DETAIL SHEET

SHEET NUMBER:
DN-2

SITE PLAN NOTES

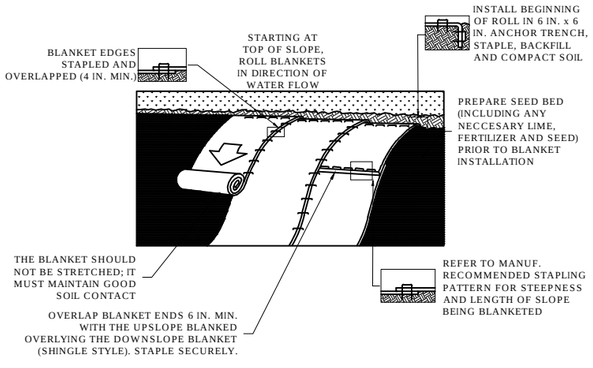
1. ALL CONSTRUCTION SHALL COMPLY WITH OWNER STANDARDS, TOWN OF DURHAM STANDARDS, CONNECTICUT DEPARTMENT OF TRANSPORTATION STANDARDS AND SPECIFICATIONS IN THE ABOVE REFERENCED INCREASING HIERARCHY. IF SPECIFICATIONS ARE IN CONFLICT, THE MORE STRINGENT SPECIFICATION SHALL APPLY. ALL CONSTRUCTION SHALL BE PERFORMED IN ACCORDANCE WITH ALL APPLICABLE OSHA, FEDERAL, STATE AND LOCAL REGULATIONS.
2. THE OWNER IS RESPONSIBLE FOR OBTAINING ALL NECESSARY ZONING PERMITS REQUIRED BY GOVERNMENT AGENCIES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL OBTAIN ALL TOWN OF DURHAM CONSTRUCTION PERMITS, INCLUDING CONNECTICUT DOT PERMITS. THE CONTRACTOR SHALL POST ALL BONDS, PAY ALL FEES, PROVIDE PROOF OF INSURANCE AND PROVIDE TRAFFIC CONTROL NECESSARY FOR THIS WORK.
3. REFER TO PLANS, DETAILS AND REPORTS PREPARED BY ALL-POINTS TECHNOLOGY CORPORATION FOR ADDITIONAL INFORMATION. THE CONTRACTOR SHALL VERIFY ALL SITE CONDITIONS IN THE FIELD AND CONTACT THE ENGINEER IF THERE ARE ANY QUESTIONS OR CONFLICTS REGARDING THE CONSTRUCTION DOCUMENTS AND/OR FIELD CONDITIONS SO THAT APPROPRIATE REVISIONS CAN BE MADE PRIOR TO BIDDING/CONSTRUCTION. ANY CONFLICT BETWEEN THE DRAWINGS AND SPECIFICATIONS SHALL BE CONFIRMED WITH THE OWNER'S CONSTRUCTION MANAGER PRIOR TO CONSTRUCTION.
4. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS OF ALL PRODUCTS, MATERIALS PER PLANS AND SPECIFICATIONS TO THE OWNER FOR REVIEW AND APPROVAL PRIOR TO FABRICATION OR DELIVERY TO THE SITE. ALLOW A MINIMUM OF 14 WORKING DAYS FOR REVIEW.
5. THE CONTRACTOR SHALL FOLLOW THE RECOMMENDED SEQUENCE OF CONSTRUCTION NOTES PROVIDED ON THE EROSION CONTROL PLAN OR SUBMIT AN ALTERNATE PLAN FOR APPROVAL BY THE ENGINEER PRIOR TO CONSTRUCTION.
6. SHOULD ANY UNKNOWN OR INCORRECTLY LOCATED EXISTING PIPING OR OTHER UTILITY BE UNCOVERED DURING EXCAVATION, CONSULT THE ENGINEER IMMEDIATELY FOR DIRECTIONS BEFORE PROCEEDING FURTHER WITH WORK IN THIS AREA.
7. DO NOT INTERRUPT EXISTING UTILITIES SERVICING FACILITIES OCCUPIED AND USED BY THE OWNER OR OTHERS DURING OCCUPIED HOURS, EXCEPT WHEN SUCH INTERRUPTIONS HAVE BEEN AUTHORIZED IN WRITING BY THE OWNER AND THE LOCAL MUNICIPALITY. INTERRUPTIONS SHALL ONLY OCCUR AFTER ACCEPTABLE TEMPORARY SERVICE HAS BEEN PROVIDED.
8. THE CONTRACT LIMIT IS THE PROPERTY LINE UNLESS OTHERWISE SPECIFIED OR SHOWN ON THE CONTRACT DRAWINGS.
9. THE CONTRACTOR SHALL ABIDE BY ALL OSHA, FEDERAL, STATE AND LOCAL REGULATIONS WHEN OPERATING CRANES, BOOMS, HOISTS, ETC. IN CLOSE PROXIMITY TO OVERHEAD ELECTRIC LINES. IF CONTRACTOR MUST OPERATE EQUIPMENT CLOSE TO ELECTRIC LINES, CONTACT POWER COMPANY TO MAKE ARRANGEMENTS FOR PROPER SAFEGUARDS. ANY UTILITY COMPANY FEES SHALL BE PAID FOR BY THE CONTRACTOR.
10. THE CONTRACTOR SHALL COMPLY WITH OSHA CFR 29 PART 1926 FOR EXCAVATION TRENCHING AND TRENCH PROTECTION REQUIREMENTS.
11. THE CONTRACTOR SHALL RESTORE ANY DRAINAGE STRUCTURE, PIPE, CONDUIT, PAVEMENT, CURBING, SIDEWALKS, LANDSCAPED AREAS OR SIGNAGE DISTURBED DURING CONSTRUCTION TO THEIR ORIGINAL CONDITION OR BETTER, AS APPROVED BY THE ENGINEER.
12. THE CONTRACTOR SHALL PROVIDE AS-BUILT RECORDS OF ALL CONSTRUCTION (INCLUDING UNDERGROUND UTILITIES) TO THE OWNER AT THE END OF CONSTRUCTION.
13. THE ENGINEER IS NOT RESPONSIBLE FOR SITE SAFETY MEASURES TO BE EMPLOYED DURING CONSTRUCTION. THE ENGINEER HAS NO CONTRACTUAL DUTY TO CONTROL THE SAFEST METHODS OR MEANS OF THE WORK, JOB SITE RESPONSIBILITIES, SUPERVISION OF PERSONNEL OR TO SUPERVISE SAFETY AND DO NOT VOLUNTARILY ASSUME ANY SUCH DUTY OR RESPONSIBILITY.
14. EXISTING TOPOGRAPHY IS BASED ON CAD FILE PROVIDED BY BASCOM & BENJAMIN, LLC ON 11/13/2017
15. ALTERNATIVE METHODS AND PRODUCTS, OTHER THAN THOSE SPECIFIED, MAY BE USED IF REVIEWED AND APPROVED BY THE OWNER, ENGINEER, AND APPROPRIATE REGULATORY AGENCY PRIOR TO INSTALLATION DURING THE BIDDING/CONSTRUCTION PROCESS.
16. INFORMATION ON EXISTING UTILITIES AND STORM DRAINAGE SYSTEMS HAS BEEN COMPILED FROM AVAILABLE INFORMATION INCLUDING UTILITY PROVIDER AND MUNICIPAL RECORD MAPS AND/OR FIELD SURVEY AND IS NOT GUARANTEED CORRECT OR COMPLETE. UTILITIES AND STORM DRAINAGE SYSTEMS ARE SHOWN TO ALERT THE CONTRACTOR TO THEIR PRESENCE AND THE CONTRACTOR IS SOLELY RESPONSIBLE FOR DETERMINING ACTUAL LOCATIONS AND ELEVATIONS OF ALL UTILITIES AND STORM DRAINAGE SYSTEMS INCLUDING SERVICES. PRIOR TO DEMOLITION OR CONSTRUCTION, THE CONTRACTOR SHALL CONTACT 'CALL BEFORE YOU DIG' 72 HOURS BEFORE COMMENCEMENT OF WORK AT '1-800-922-4455' AND VERIFY ALL UTILITY AND STORM DRAINAGE SYSTEM LOCATIONS.
17. THE CONTRACTOR SHALL COMPLY WITH THE PROVISIONS OF SECTION 22A-174-18(b)(3)(c) OF THE REGULATIONS OF CONNECTICUT STATE AGENCIES THAT LIMIT IDLING OF MOBILE SOURCES TO THREE MINUTES.
18. THE CONTRACTOR SHALL USE OFF-ROAD CONSTRUCTION EQUIPMENT THAT MEETS THE LATEST EPA OR CALIFORNIA AIR RESOURCES BOARD OF STANDARDS. IF NOT ABLE TO MEET THESE, THE CONTRACTORS EQUIPMENT SHALL HAVE THE BEST AVAILABLE CONTROLS ON DIESEL EMISSIONS INCLUDING BUT NOT LIMITED TO RETRO-FITTING WITH DIESEL OXIDATION CATALYSTS PARTICULATE FILTERS AND USE OF ULTRA LOW SULFUR FUEL.
19. NO CONSTRUCTION OR DEMOLITION SHALL BEGIN UNTIL APPROVAL OF THE FINAL PLANS IS GRANTED BY ALL GOVERNING AND REGULATORY AGENCIES.
20. THE CENTER OF THE EXISTING PROPERTY IS LOCATED WITHIN A FEMA DESIGNATED FLOOD HAZARD AREA. THE ELECTRICAL INTERCONNECTION WILL CROSS THROUGH THIS AREA.
21. THERE ARE WETLANDS LOCATED ON THE SITE AS INDICATED ON THE PLANS. WETLAND BOUNDARIES WERE FLAGGED AND LOCATED BY ERIC DAVISON, A CONNECTICUT REGISTERED PROFESSIONAL SOIL SCIENTIST, ON OCTOBER 17, 2017.

GRADING AND DRAINAGE NOTES

1. REFER TO SITE PLANS AND EROSION AND SEDIMENT CONTROL PLANS, FOR GENERAL INFORMATION, AND DETAIL SHEETS FOR DETAILS.
2. THE CONTRACTOR SHALL PRESERVE EXISTING VEGETATION WHERE POSSIBLE AND/OR AS NOTED ON THE DRAWINGS. REFER TO EROSION CONTROL PLAN FOR LIMIT OF DISTURBANCE AND EROSION CONTROL NOTES.
3. TOPSOIL SHALL BE STRIPPED AND STOCKPILED ON SITE FOR USE IN FINAL LANDSCAPING.
4. VERTICAL DATUM IS NGV DATUM 88.
5. CLEARING LIMITS SHALL BE PHYSICALLY MARKED IN THE FIELD AND APPROVED BY THE OWNER PRIOR TO THE START OF WORK ON THE SITE.
6. PROPER CONSTRUCTION PROCEDURES SHALL BE FOLLOWED ON ALL IMPROVEMENTS WITHIN THIS PARCEL SO AS TO PREVENT THE SILTING OF ANY WATERCOURSE OR WETLANDS IN ACCORDANCE WITH THE REGULATIONS 2002 CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENT POLLUTION CONTROL MANUAL. IN ADDITION, THE CONTRACTOR SHALL STRICTLY ADHERE TO THE 'EROSION CONTROL PLAN' CONTAINED HEREIN. THE CONTRACTOR SHALL BE RESPONSIBLE TO POST ALL BONDS AS REQUIRED BY THE LOCAL MUNICIPALITIES WHICH WOULD GUARANTEE THE PROPER IMPLEMENTATION OF THE PLAN.
7. ALL SITE WORK, MATERIALS OF CONSTRUCTION, AND CONSTRUCTION METHODS FOR EARTHWORK AND STORM DRAINAGE WORK, SHALL CONFORM TO THE SPECIFICATIONS AND DETAILS AND APPLICABLE SECTIONS OF THE PROJECT SPECIFICATIONS MANUAL. OTHERWISE THIS WORK SHALL CONFORM TO THE STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION AND PROJECT GEOTECHNICAL REPORT IF THERE IS NO PROJECT SPECIFICATIONS MANUAL. ALL FILL MATERIAL UNDER STRUCTURES AND PAVED AREAS SHALL BE PER THE ABOVE STATED APPLICABLE SPECIFICATIONS, AND/OR PROJECT GEOTECHNICAL REPORT, AND SHALL BE PLACED IN ACCORDANCE WITH THE APPLICABLE SPECIFICATIONS UNDER THE SUPERVISION OF A QUALIFIED PROFESSIONAL ENGINEER. MATERIAL SHALL BE COMPACTED IN 6" LIFTS TO 95% OF THE MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D 1557 AT 95% PERCENT OF OPTIMUM MOISTURE CONTENT.
8. ALL DISTURBANCE INCURRED TO PUBLIC, MUNICIPAL, COUNTY, STATE PROPERTY DUE TO CONSTRUCTION SHALL BE RESTORED TO ITS PREVIOUS CONDITION OR BETTER, TO THE SATISFACTION OF THE TOWN OF DURHAM AND STATE OF CONNECTICUT.
9. IF IMPACTED OR CONTAMINATED SOIL IS ENCOUNTERED BY THE CONTRACTOR, THE CONTRACTOR SHALL SUSPEND EXCAVATION WORK OF IMPACTED SOIL AND NOTIFY THE OWNER AND/OR OWNER'S ENVIRONMENTAL CONSULTANT PRIOR TO PROCEEDING WITH FURTHER WORK IN THE IMPACTED SOIL LOCATION UNTIL FURTHER INSTRUCTED BY THE OWNER AND/OR OWNER'S ENVIRONMENTAL CONSULTANT.

UTILITIES NOTES

1. CONTRACTOR IS RESPONSIBLE FOR CONTACTING THE TOWN OF DURHAM TO SECURE CONSTRUCTION PERMITS AND FOR PAYMENT OF FEES FOR STREET CUTS AND CONNECTIONS TO EXISTING UTILITIES.
2. REFER TO DRAWINGS BY OWNER FOR INTERCONNECTION TO EXISTING ELECTRICAL GRID. SITE CONTRACTOR SHALL SUPPLY AND INSTALL PIPE ADAPTERS AS NECESSARY AT BUILDING CONNECTION POINT OR AT EXISTING UTILITY OR PIPE CONNECTION POINT. THESE DETAILS ARE NOT INCLUDED IN THE THIS DEVELOPMENT AND MANAGEMENT PLANS.
3. THE CONTRACTOR SHALL VISIT THE SITE AND VERIFY THE ELEVATION AND LOCATION OF ALL UTILITIES BY VARIOUS MEANS PRIOR TO BEGINNING ANY EXCAVATION. TEST PITS SHALL BE DUG AT ALL LOCATIONS WHERE PROP. SANITARY SEWERS AND WHERE PROP. STORM PIPING WILL CROSS EXISTING UTILITIES, AND THE HORIZONTAL AND VERTICAL LOCATIONS OF THE UTILITIES SHALL BE DETERMINED. THE CONTRACTOR SHALL CONTACT THE ENGINEER IN THE EVENT OF ANY DISCOVERED OR UNFORESEEN CONFLICTS BETWEEN EXISTING AND PROP. SANITARY SEWERS, STORM PIPING AND UTILITIES SO THAT AN APPROPRIATE MODIFICATION MAY BE MADE.
4. UTILITY CONNECTION DESIGN AS REFLECTED ON THE PLAN MAY CHANGE SUBJECT TO UTILITY PROVIDER AND GOVERNING AUTHORITY STAFF REVIEW.
5. THE CONTRACTOR SHALL ENSURE THAT ALL UTILITY PROVIDERS AND GOVERNING AUTHORITY STANDARDS FOR MATERIALS AND CONSTRUCTION METHODS ARE MET. THE CONTRACTOR SHALL PERFORM PROPER COORDINATION WITH THE RESPECTIVE UTILITY PROVIDER.
6. THE CONTRACTOR SHALL ARRANGE FOR AND COORDINATE WITH THE RESPECTIVE UTILITY PROVIDERS FOR SERVICE INSTALLATIONS AND CONNECTIONS. THE CONTRACTOR SHALL COORDINATE WORK TO BE PERFORMED BY THE VARIOUS UTILITY PROVIDERS AND SHALL PAY ALL FEES FOR CONNECTIONS, DISCONNECTIONS, RELOCATIONS, INSPECTIONS, AND DEMOLITION UNLESS OTHERWISE STATED IN THE PROJECT SPECIFICATIONS MANUAL AND/OR GENERAL CONDITIONS OF THE CONTRACT.
7. ALL EXISTING PAVEMENT WHERE UTILITY PIPING IS TO BE INSTALLED SHALL BE SAW CUT. AFTER UTILITY INSTALLATION IS COMPLETED, THE CONTRACTOR SHALL INSTALL TEMPORARY AND/OR PERMANENT PAVEMENT REPAIR AS DETAILED ON THE DRAWINGS OR AS REQUIRED BY THE OWNER HAVING JURISDICTION.
8. ALL PIPES SHALL BE LAID ON STRAIGHT ALIGNMENTS AND EVEN GRADES USING A PIPE LASER OR OTHER ACCURATE METHOD.
9. RELOCATION OF UTILITY PROVIDER FACILITIES, SUCH AS POLES, SHALL BE DONE IN ACCORDANCE WITH THE REQUIREMENTS OF THE UTILITY PROVIDER.
10. THE CONTRACTOR SHALL COMPACT PIPE BACKFILL IN 8" LIFTS ACCORDING TO THE PIPE BEDDING DETAILS. TRENCH BOTTOM SHALL BE STABLE IN HIGH GROUNDWATER AREAS. A PIPE FOUNDATION SHALL BE USED PER THE TRENCH DETAILS AND IN AREAS OF ROCK EXCAVATION.
11. CONTRACTOR TO PROVIDE STEEL SLEEVES AND ANNULAR SPACE SAND FILL FOR UTILITY PIPE AND CONDUIT CONNECTIONS UNDER FOOTINGS.
12. BUILDING UTILITY PENETRATIONS AND LOCATIONS ARE SHOWN FOR THE CONTRACTOR'S INFORMATION AND SHALL BE VERIFIED WITH THE BUILDING MEP DRAWINGS AND WITH THE OWNER'S CONSTRUCTION MANAGER.
13. ALL UTILITY CONSTRUCTION IS SUBJECT TO INSPECTION FOR APPROVAL PRIOR TO BACKFILLING, IN ACCORDANCE WITH THE APPROPRIATE UTILITY PROVIDER REQUIREMENTS.
14. A ONE-FOOT MINIMUM VERTICAL CLEARANCE BETWEEN WATER, GAS, ELECTRICAL, AND TELEPHONE LINES AND STORM PIPING SHALL BE PROVIDED. A SIX-INCH MINIMUM CLEARANCE SHALL BE MAINTAINED BETWEEN STORM PIPING AND SANITARY SEWER. A 6-INCH TO 18-INCH VERTICAL CLEARANCE BETWEEN SANITARY SEWER PIPING AND STORM PIPING SHALL REQUIRE CONCRETE ENCASEMENT OF THE PROP. SANITARY PIPING.
15. SITE CONTRACTOR SHALL PROVIDE ALL BENDS, FITTINGS, ADAPTERS, ETC., AS REQUIRED FOR PIPE CONNECTIONS TO BUILDING STUB OUTS, INCLUDING ROOF/FOOTING DRAIN CONNECTIONS TO ROOF LEADERS AND TO STORM DRAINAGE SYSTEM.
16. THE CONTRACTOR SHALL RESTORE ANY UTILITY STRUCTURE, PIPE, CONDUIT, PAVEMENT, CURBING, SIDEWALKS, DRAINAGE STRUCTURE, SWALE OR LANDSCAPED AREAS DISTURBED DURING CONSTRUCTION, TO THEIR ORIGINAL CONDITION OR BETTER TO THE SATISFACTION OF THE OWNER AND TOWN OF DURHAM.
17. INFORMATION ON EXISTING UTILITIES AND STORM DRAINAGE HAS BEEN COMPILED FROM AVAILABLE INFORMATION INCLUDING UTILITY PROVIDER AND MUNICIPAL RECORD MAPS AND/OR FIELD SURVEY, AND IS NOT GUARANTEED CORRECT OR COMPLETE. UTILITIES AND STORM DRAINAGE ARE SHOWN TO ALERT THE CONTRACTOR TO THEIR PRESENCE. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR DETERMINING ACTUAL LOCATIONS AND ELEVATIONS OF ALL UTILITIES AND STORM DRAINAGE INCLUDING SERVICES. CONTACT 'CALL BEFORE YOU DIG' AT (800) 922-4455 72 HOURS PRIOR TO CONSTRUCTION AND VERIFY ALL UNDERGROUND AND OVERHEAD UTILITY AND STORM DRAINAGE LOCATIONS. THE CONTRACTOR SHALL EMPLOY THE USE OF A UTILITY LOCATING COMPANY TO PROVIDE SUBSURFACE UTILITY ENGINEERING CONSISTING OF DESIGNATING UTILITIES AND STORM PIPING ON PRIVATE PROPERTY WITHIN THE CONTRACT LIMIT AND CONSISTING OF DESIGNATING AND LOCATING WHERE PROP. UTILITIES AND STORM PIPING CROSS EXISTING UTILITIES AND STORM PIPING WITHIN THE CONTRACT LIMITS.
18. THE CONTRACTOR SHALL ARRANGE AND COORDINATE WITH UTILITY PROVIDERS FOR WORK TO BE PERFORMED BY UTILITY PROVIDERS. THE CONTRACTOR SHALL PAY ALL UTILITY FEES UNLESS OTHERWISE STATED IN THE PROJECT SPECIFICATION MANUAL AND GENERAL CONDITIONS, AND REPAIR PAVEMENTS AS NECESSARY.
19. ELECTRIC SERVICES SHALL BE INSTALLED UNDERGROUND. THE CONTRACTOR SHALL PROVIDE AND INSTALL AND BACKFILL PVC CONDUITS FOR ELECTRIC SERVICE. REFER TO ELECTRICAL PLANS AND WIRE SCHEDULE FOR ACTUAL NUMBER AND LOCATION OF CONDUITS. SERVICES MAY BE INSTALLED IN A COMMON TRENCH WITH 12" CLEAR SPACE BETWEEN. MINIMUM COVER IS 36" ON ELECTRIC CONDUITS. SERVICES SHALL BE MARKED WITH MAGNETIC LOCATOR TAPE AND SHALL BE BEDDED, INSTALLED, AND BACKFILLED IN ACCORDANCE WITH ELECTRIC UTILITY PROVIDER COMPANY STANDARDS. GALVANIZED STEEL ELECTRICAL CONDUIT SHALL BE USED AT POLE AND TRANSFORMER LOCATIONS. INSTALL HANDHOLES AS REQUIRED TO FACILITATE INSTALLATION AND AS REQUIRED BY UTILITY PROVIDER. INSTALL CONCRETE ENCASEMENT ON PRIMARY ELECTRIC CONDUITS IF REQUIRED BY ELECTRIC PROVIDER.
20. ALTERNATIVE METHODS AND PRODUCTS OTHER THAN THOSE SPECIFIED MAY BE USED IF REVIEWED AND APPROVED BY THE OWNER, ENGINEER, AND APPROPRIATE REGULATORY AGENCIES PRIOR TO INSTALLATION.
21. THE CONTRACTOR SHALL MAINTAIN ALL FLOWS AND UTILITY CONNECTIONS TO EXISTING BUILDINGS WITHOUT INTERRUPTION UNLESS/UNTIL AUTHORIZED TO DISCONNECT BY THE OWNERS, THE CIVIL ENGINEER, UTILITY PROVIDERS AND GOVERNING AUTHORITIES.



SEQUENCE OF CONSTRUCTION

1. PREPARE SOIL BEFORE INSTALLING ROLLED EROSION CONTROL PRODUCTS (RECPS), INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED.
2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE RECPS IN A 6" DEEP X 6" WIDE TRENCH WITH APPROXIMATELY 12" OF RECPS EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE RECPS WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO THE COMPACTED SOIL AND FOLD THE REMAINING 12" PORTION OF RECPS BACK OVER THE SEED AND COMPACTED SOIL. SECURE RECPS OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" APART ACROSS THE WIDTH OF THE RECPS.
3. ROLL THE RECPS DOWN HORIZONTALLY ACROSS THE SLOPE. RECPS WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL RECPS MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE.
4. THE EDGES OF PARALLEL RECPS MUST BE STAPLED WITH APPROXIMATELY 2" - 5" OVERLAP DEPENDING ON THE RECPS TYPE.
5. CONSECUTIVE RECPS SPLICED DOWN THE SLOPE MUST BE END OVER END (SHINGLE STYLE) WITH AN APPROXIMATE 3" OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" APART ACROSS ENTIRE RECPS WIDTH.

NOTES:

1. PROVIDE ANCHOR TRENCH AT TOE OF SLOPE IN SIMILAR FASHION AS AT TOP OF SLOPE.
2. SLOPE SURFACE SHALL BE FREE OF ROCKS, CLODS, STICKS, AND GRASS.
3. BLANKET SHALL HAVE GOOD CONTINUOUS CONTACT WITH UNDERLYING SOIL THROUGHOUT ENTIRE LENGTH. LAY BLANKET LOOSELY AND STAKE OR STAPLE TO MAINTAIN DIRECT CONTACT WITH SOIL. DO NOT STRETCH BLANKET.
4. THE BLANKET SHALL BE STAPLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
5. BLANKETED AREAS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT UNTIL PERENNIAL VEGETATION IS ESTABLISHED TO A MINIMUM UNIFORM 70% COVERAGE THROUGHOUT THE BLANKETED AREA. DAMAGED OR DISPLACED BLANKETS SHALL BE RESTORED OR REPLACED WITHIN 4 CALENDAR DAYS.

1 DN-3 EROSION CONTROL BLANKET STEEP SLOPES

SCALE : N.T.S.

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DESIGN PROFESSIONAL OF RECORD

PROF: BRADLEY J. PARSONS P.E.
COMP: ALL-POINTS TECHNOLOGY CORPORATION
ADD: 3 SADDLEBROOK DRIVE KILLINGWORTH, CT 06419

OWNER: DURHAM MANUFACTURING CO.
ADDRESS: P.O. BOX 230 DURHAM, CT 06422

DURHAM MANUFACTURING CO.

SITE ADDRESS: 201 MAIN STREET DURHAM, CT 06422

APT FILING NUMBER: CT528100

DRAWN BY: ELZ/JT

DATE: 1/22/2018 CHECKED BY: BJP

SHEET TITLE:

NOTES & SPECIFICATIONS

SHEET NUMBER:

DN-3

ENVIRONMENTAL NOTES

NOTED TO BE ADDED - PENDING NDDB REVIEW

PFISTER ENERGY

57 GOFFLE ROAD
HAWTHORNE, NJ 07506
(973) 653-9880
www.pfisterenergy.com

ALL-POINTS TECHNOLOGY CORPORATION

3 SADDLEBROOK DRIVE PHONE: (860)-663-1697
KILLINGWORTH, CT 06419 FAX: (860)-663-0935
WWW.ALLPOINTSTECH.COM

CSC PETITION

NO	DATE	REVISION
0	01/22/18	FOR REVIEW: BJP
1		
2		
3		
4		
5		
6		

DESIGN PROFESSIONAL OF RECORD

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SHEET TITLE:

ENVIRONMENTAL NOTES & SPECIFICATIONS

SHEET NUMBER:

DN-4

Property Card: **MAIDEN LA**

Town of Durham, CT

Parcel ID: 38-34-1
Account #: M0155600

Owner: DURHAM MANUFACTURING CO
Mailing Address: POB 230
DURHAM, CT 06422-0230

General Information

State Class: 130
Class: R
Census-Tract: 5851
District No.:
Neighborhood: 75
Zone: FR
Total Acres: 7.1

Assessed Value

Land: $84,400
Buildings: $0

Total: $2,310

Sale History

Book/Page: 149-1053
Deed Date: 19960610
Sale Date:
Sale Type: 0
Sale Price: 0

Building Details

Living Units: 0
Style: 0
Year Built: 0
Effective Year Built: 0
Ture TLA: 0
Stories: 0
Total Rooms: 0
Total Bedrooms: 0
Number Full Baths: 0
Number Half Baths: 0
WB/FP Openings: 0
Heating Type: 0
Heating Fuel Type: 0

Basement: 0
FBLA Size: 0
Attic: 0
Exterior Walls: 0
Basement / Garage: 0

BUILDING SKETCH

Descriptor/Area

Property Card: **201 MAIN ST**

Town of Durham, CT

Parcel ID: 38-46
Account #: D0080000

Owner: DURHAM MANUFACTURING CO
Mailing Address: POB 230
DURHAM, CT 06422-0230

General Information

State Class: 400
Class: I
Census-Tract: 5851
District No.:
Neighborhood: 100
Zone: MR/FR
Total Acres: 18.08

Assessed Value

Land: $608,100
Buildings: $1,514,400

Total: $1,257,550

Sale History

Book/Page: 263-686
Deed Date: 20131120
Sale Date:
Sale Type: 0
Sale Price: 0

Building Details

Living Units: 0
Style:
Year Built:
Effective Year Built:
Ture TLA: 0
Stories: 0
Total Rooms:
Total Bedrooms:
Number Full Baths:
Number Half Baths:
WB/FP Openings:
Heating Type:
Heating Fuel Type:

Basement:
FBLA Size: 0
Attic:
Exterior Walls:
Basement / Garage:

State Class: 400	**Land:** $608,100
Class: I	**Buildings:** $1,514,400
Census-Tract: 5851	
District No.:	**Total:** $1,257,550
Neighborhood: 100	
Zone: MR/FR	
Total Acres: 18.08	

Sale History

Book/Page: 263-686	
Deed Date: 20131120	
Sale Date:	
Sale Type:	
Sale Price: 0	

Building Details

Living Units: 0	**Basement:**
Style:	**FBLA Size:** 0
Year Built:	**Attic:**
Effective Year Built:	**Exterior Walls:**
Ture TLA: 0	**Basement / Garage:**
Stories: 0	
Total Rooms:	
Total Bedrooms:	
Number Full Baths:	
Number Half Baths:	
WB/FP Openings:	
Heating Type:	
Heating Fuel Type:	

State Class: 400	**Land:** $608,100
Class: I	**Buildings:** $1,514,400
Census-Tract: 5851	
District No.:	**Total:** $1,257,550
Neighborhood: 100	
Zone: MR/FR	
Total Acres: 18.08	

Sale History

Book/Page: 263-686	
Deed Date: 20131120	
Sale Date:	
Sale Type:	
Sale Price: 0	

Building Details

Living Units:	0	**Basement:**	
Style:		**FBLA Size:**	0
Year Built:		**Attic:**	
Effective Year Built:		**Exterior Walls:**	
Ture TLA:	0	**Basement / Garage:**	
Stories:	0		
Total Rooms:			
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State Class:	400	**Land:**	$608,100
Class:	I	**Buildings:**	$1,514,400
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District No.:		**Total:**	$1,257,550
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Total Acres:	18.08		

Sale History

Book/Page:	263-686
Deed Date:	20131120
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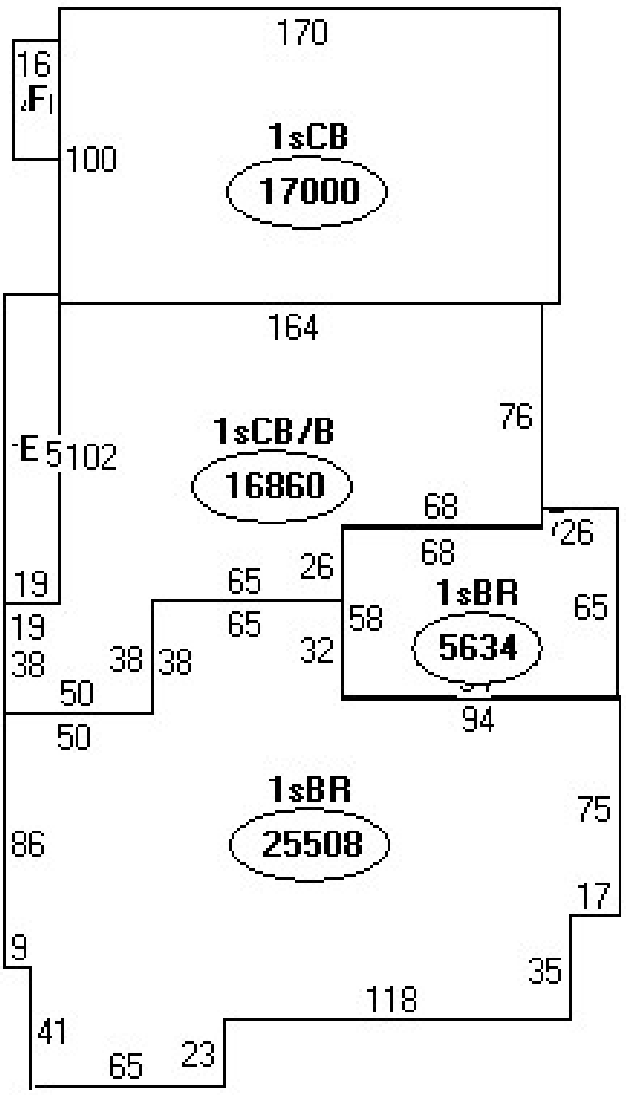
Sale Type:	
Sale Price:	0

Building Details

Living Units:	0	**Basement:**	
Style:		**FBLA Size:**	0
Year Built:		**Attic:**	
Effective Year Built:		**Exterior Walls:**	
Ture TLA:	0	**Basement / Garage:**	
Stories:	0		
Total Rooms:			
Total Bedrooms:			
Number Full Baths:			
Number Half Baths:			
WB/FP Openings:			
Heating Type:			
Heating Fuel Type:			

BUILDING SKETCH



Descriptor/Area

A: 1sBR
25508 sqft

B: 1sCB/B
16860 sqft

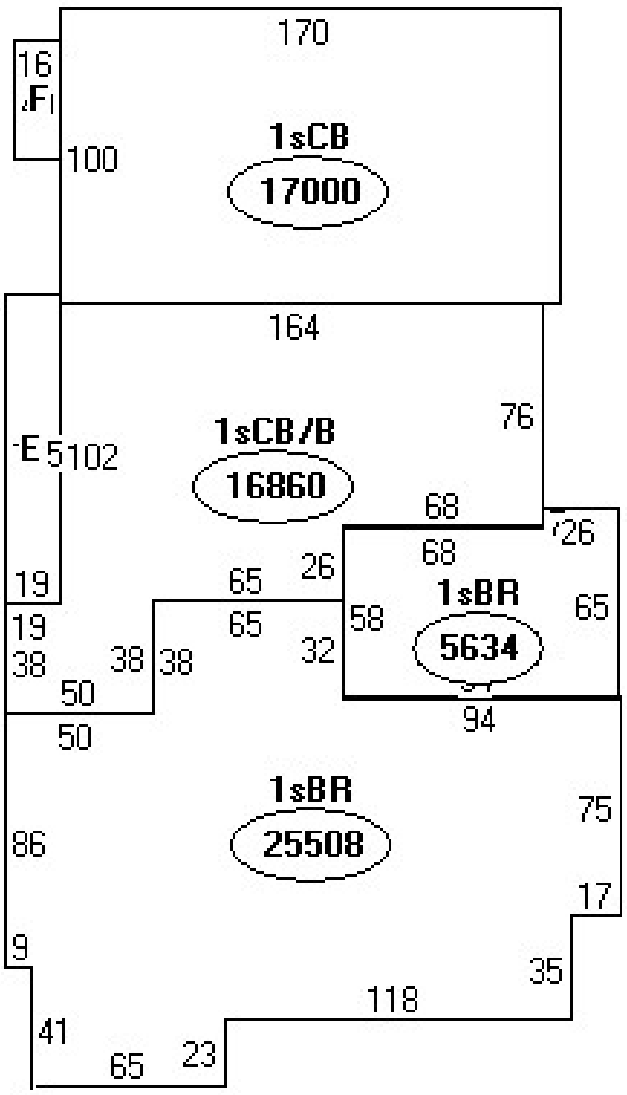
C: 1sBR
5634 sqft

D: 1sCB
17000 sqft

E: 1sCB/B
1995 sqft

F: MTL UTIL S
640 sqft

BUILDING SKETCH



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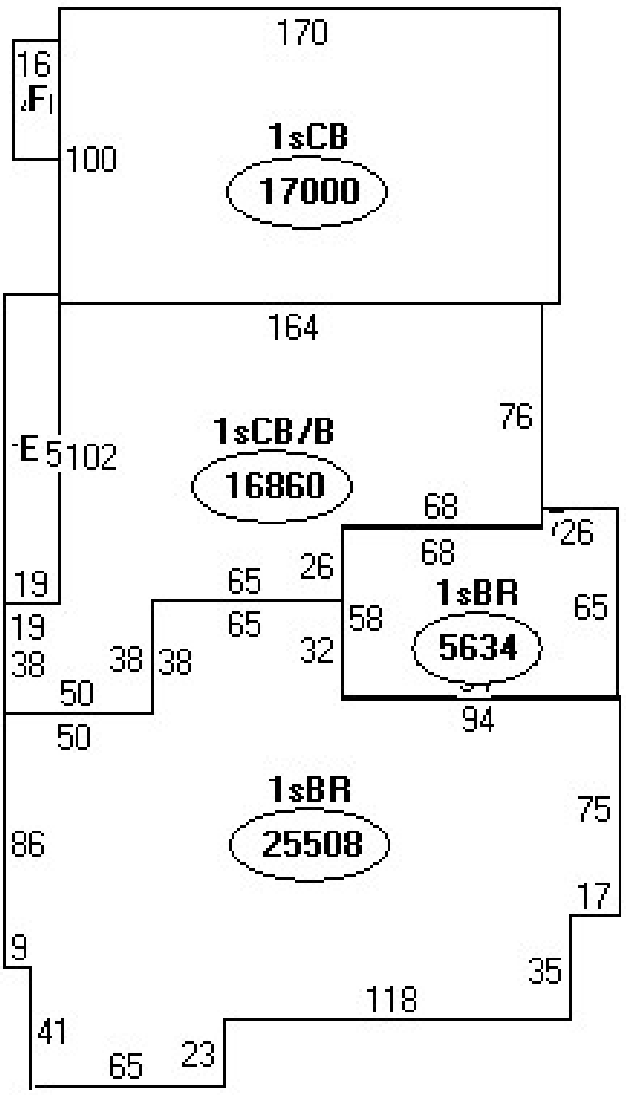
BUILDING SKETCH



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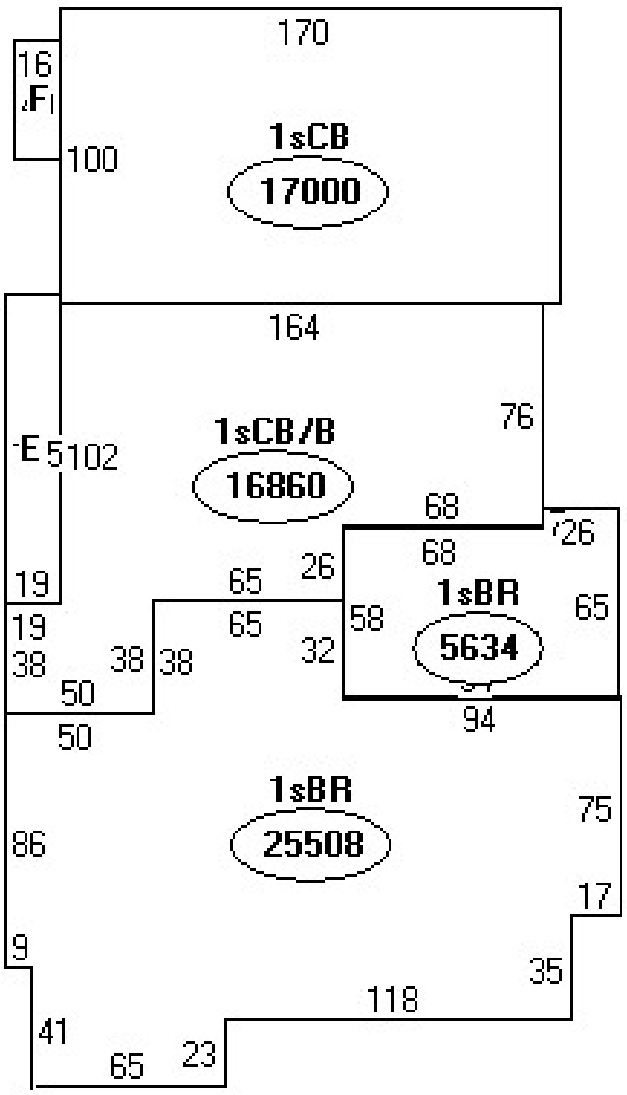
BUILDING SKETCH



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25508 sqft

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16860 sqft

C: 1sBR
5634 sqft

D: 1sCB
17000 sqft

E: 1sCB/B
1995 sqft

F: MTL UTIL S
640 sqft

Preliminary Archeological Assessment

JANUARY 2018

PHASE IA CULTURAL RESOURCES ASSESSMENT SURVEY OF THE DURHAM SOLAR FACILITY IN DURHAM, CONNECTICUT

PREPARED FOR:

ALL-POINTS TECHNOLOGY CORPORATION

3 SADDLEBROOK DRIVE,
KILLINGLY, CONNECTICUT 06419

PREPARED BY:

HERITAGE CONSULTANTS, LLC

P.O. BOX 310249
NEWINGTON, CONNECTICUT 06131

ABSTRACT

This report presents the results of a Phase IA cultural resources assessment survey for the proposed Durham Solar Facility Center in Durham, Connecticut, which will consist of a 1.35 MW solar photovoltaic electric generating facility at 201 Main Street (the "Property"). The Property is owned by Durham Manufacturing (DMC). It is located near the center of Durham with frontage on both Route 17 (Main St) and Maiden Lane. The facility will be located on the same parcel occupied by the DMC manufacturing facility. The DMC operations are located on the western portion of the 18-acre property. The proposed facility will be located on the eastern portion of the property, which has been intermittently used as a seasonal Christmas tree business. The facility and related improvements, including access, construction staging and laydown areas, will occupy an approximately 6-acre area in the eastern portion of the Property (the "Project Area"). Access to the facility will be from Maiden Lane, which abuts the northern edge of the eastern portion of the property where the facility will be located. DMC intends to install the following facilities: 4194 340W Mission Solar MSE340SO6J photovoltaic modules at a tilt angle of 30 degrees; (24) SMA Core1 50kW Inverters; a SMA Tripower 15kW Inverter; two service interconnection points via solar breakers on "Front Service" and "Rear Service"; a post driven rack system; and security (perimeter) fencing.

The current Phase IA cultural resources assessment survey consisted of the completion of the following tasks: 1) a contextual overview of the area's prehistory, history, and natural setting (e.g., soils, ecology, hydrology, etc.); 2) a literature search to identify and discuss previously recorded archaeological sites, as well as National and State Register of Historic Places properties/districts, in the vicinity of the project area; 3) a review of readily available historic maps and aerial imagery depicting the project area to identify potential historic resources and/or areas of past disturbance; 4) pedestrian survey and photo-documentation of the project area to determine its archaeological sensitivity, as well as to record any historic built resources within the project area; and 5) preparation of the current Phase IA assessment survey report.

The review of historic maps and aerial images of the project area, files maintained by the Connecticut State Historic Preservation Office, and pedestrian survey of the proposed Durham Solar Facility Center revealed that it is located near the Main Street Historic District and four State Register of Historic Places properties. However, based on either distance from these resources or intervening vegetation, modern buildings, and/or topography, no impacts to these historic resources are anticipated by the construction of the proposed facility. In addition, the proposed facility is located adjacent to a single historic structure, the H. Tucker House, which is located adjacent to the northwestern corner of the proposed solar array. This house, which dates from the nineteenth century, has been altered over time and no longer retains much of it historical character. Thus, it is not eligible for listing on the National Register of Historic Places and will not be impacted adversely by the proposed project.

In terms of archaeological potential, pedestrian survey of the 6-acre parcel that will house the solar array was found to be largely undisturbed, contain sandy-loamy soils, and was proximal to Allyn Brook and Hersig Brook. Thus, it was determined to retain a moderate/high archaeological sensitivity. It is recommended that this area be subjected to Phase IB cultural resources reconnaissance survey prior to construction, and that the methods for the survey be determined in consultation with the Connecticut State Historic Preservation Office. Finally, pedestrian survey of the proposed interconnect area revealed that is has been disturbed in the past. No additional archaeological examination of this area is recommended prior to construction of the Durham Solar Facility Center.

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CHAPTER I

INTRODUCTION

This report presents the results of a Phase IA cultural resources assessment survey for a proposed solar facility in Durham, Connecticut (Figure 1). Durham Manufacturing Company (DMC), working through its contractor, All-Points Technology Corporation, P.C. (All-Points), has requested that Heritage Consultants, LLC (Heritage) complete the current assessment survey as part of the planning process for the proposed solar energy facility. Heritage completed this investigation in December of 2017 and January of 2018. All work associated with this investigation was performed in accordance with National Historic Preservation Act of 1966, as amended; the National Environmental Policy Act of 1969, as amended, and; the *Environmental Review Primer for Connecticut's Archaeological Resources* (Poirier 1987) promulgated by the Connecticut Historic Commission, State Historic Preservation Office.

Project Description and Methods Overview

The proposed undertaking will consist of the construction of 1.35 MW solar photovoltaic electric generating facility on 201 Main Street in Durham, Connecticut (the "Property"). The Property is owned by Durham Manufacturing (DMC). On business days or days when operations at DMC are ongoing, all of the power generated by the facility will be utilized by DMC. The facility will provide power to the grid on weekends or otherwise when DMC is not in operation. The Property is located near the center of Durham with frontage on both Route 17 (Main St) and Maiden Lane. The facility will be located on the same parcel occupied by the DMC manufacturing facility. The DMC operations are located in/on the western portion of the 18-acre property. The proposed facility will be located on the eastern portion of the property, which has been intermittently used as a seasonal Christmas tree business (Figure 2).

The facility and related improvements, including access, construction staging and laydown areas, will occupy an approximately 6-acre area in the eastern portion of the Property (the "Project Area"). Access to the facility will be from Maiden Lane, which abuts the northern edge of the eastern portion of the property where the facility will be located. Durham Manufacturing Company intends to install the following facilities:

- 4194 340W Mission Solar MSE340SO6J photovoltaic modules at a tilt angle of 30 degrees
- (24) SMA Core1 50kW Inverters
- SMA Tripower 15kW Inverter
- Two Service Interconnection points via solar breakers on "Front Service" and "Rear Service"
- A post driven rack system
- Security (perimeter) fencing

Transformers will not be required due to the fact that Service Voltage and Solar Inverter Voltage are both 480VAC.

This Phase IA cultural resources assessment survey consisted of the completion of the following tasks: 1) a contextual overview of the area's prehistory, history, and natural setting (e.g., soils, ecology, hydrology, etc.); 2) a literature search to identify and discuss previously recorded archaeological sites, as well as National and State Register of Historic Places properties/districts, in the vicinity of the project area; 3) a

review of readily available historic maps and aerial imagery depicting the project area to identify potential historic resources and/or areas of past disturbance; 4) pedestrian survey and photo-documentation of the project area to determine its archaeological sensitivity, as well as to record any historic built resources within the project area; and 5) preparation of the current Phase IA assessment survey report.

Project Results and Management Recommendations Overview

During the current Phase IA cultural resources assessment survey, Heritage reviewed historic maps and aerial images of the study area, examined files maintained by the Connecticut State Historic Preservation Office, and completed a pedestrian survey of the study area. The results of this effort indicated that the proposed Durham Solar Facility Center is located near the Main Street Historic District and four other State Register of Historic Places properties (see Chapter V). However, based on either distance from these resources or intervening vegetation, modern buildings, and/or topography, no impacts to these historic resources are anticipated by the construction of the proposed facility. In addition, the proposed facility is located adjacent to a single historic structure, the H. Tucker House, which is located adjacent to the northwestern former of the proposed solar array. This house, which dates from the nineteenth century, has been altered over time and no longer retains much of it historical character. Thus, it is not eligible for listing on the National Register of Historic Places and will not be impacted adversely by the proposed project.

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Project Personnel

Key personnel for this project included Mr. David R. George, M.A., R.P.A, who acted as Principal Investigator. He was assisted by Mr. Antonio Medina, B.A., who assisted in the field review portion of the project. Mr. George also was assisted by Mr. William Keegan, B.A., who provided GIS support services and project mapping. Finally, Ms. Kristen Keegan completed this historic background research of the project and contributed to the final report.

Organization of the Report

The natural setting of the region encompassing the project area is presented in Chapter II; it includes a review of the geology, hydrology, and soils, of the project region. The prehistory of the project region is outlined in Chapter III. The history of the region encompassing the project area is discussed in Chapter IV, while previously identified cultural resources near the project area are reviewed in Chapter V. The methods used to complete this investigation are discussed in Chapter VI. Finally, the results of this investigation are presented in Chapter VII, and management recommendations are contained in Chapter VIII.

CHAPTER II

NATURAL SETTING

Introduction

This chapter provides a brief overview of the natural setting of the region containing the proposed solar project. Previous archaeological research has documented that a few specific environmental factors can be associated with both prehistoric and historic period site selection. These include general ecological conditions, as well as types of fresh water sources, soils, and slopes present in the area. The remainder of this section provides a brief overview of the ecology, hydrological resources, and soils present within the project area and the larger region in general.

Ecoregions of Connecticut

Throughout the Pleistocene and Holocene Periods, Connecticut has undergone numerous environmental changes. Variations in climate, geology, and physiography have led to the "regionalization" of Connecticut's modern environment. It is clear, for example, that the northwestern portion of the state has very different natural characteristics than the coastline. Recognizing this fact, Dowhan and Craig (1976), as part of their study of the distribution of rare and endangered species in Connecticut, subdivided the state into various ecoregions. Dowhan and Craig (1976:27) defined an ecoregion as:

> "an area characterized by a distinctive pattern of landscapes and regional climate as expressed by the vegetation composition and pattern, and the presence or absence of certain indicator species and species groups. Each ecoregion has a similar interrelationship between landforms, local climate, soil profiles, and plant and animal communities. Furthermore, the pattern of development of plant communities (chronosequences and toposequences) and of soil profile is similar in similar physiographic sites. Ecoregions are thus natural divisions of land, climate, and biota."

Dowhan and Craig defined nine major ecoregions for the State of Connecticut. They are based on regional diversity in plant and animal indicator species (Dowhan and Craig 1976). Only one of the ecoregions is germane to the current investigation: South-Central Hills Ecoregion. A summary of this ecoregion is presented below. It is followed by a discussion of the hydrology and soils found in and adjacent to the project area.

<u>South-Central Hills Ecoregion</u>

The South-Central Lowlands ecoregion consist of "a rolling area of low average elevation, crossed by several north-trending ridge systems; streams and river systems with broad, well developed flood plains, from which the land surface generally rises to the bases of the ridges (Dowhan and Craig 1976)." Elevations average less than 60 m (200 ft), but can reach approximately 300 m (1,000 ft) in height. The region's bedrock is sedimentary, consisting of sandstones, basalt, and traprock. Soils vary from clayey glacial till in the uplands of the region, to sand, gravel, silt, and clay in the lowlands.

Hydrology of the Study Region

The project area is located within close proximity to several streams, ponds and wetlands. These fresh water sources include Allyn Brook, Ball Brook, Hersig Brook, as well as the Coginchaug River, and Allyn Millpond. Allyn Brook, Ball Brook, Hersig Brook and a small unnamed pond are all located within 180 m (600 ft) of the current project area. Allyn Millpond is located within 610 m (2000 ft) to the south of the

project area (Figure 1). Previously completed archaeological investigations in Connecticut have demonstrated that streams, rivers, and wetlands were focal points for prehistoric occupations because they provided access to transportation routes, sources of freshwater, and abundant faunal and floral resources. These water sources also provided the impetus for the construction of water powered mill facilities during the eighteenth and nineteenth centuries.

Soils Comprising the Project area

Soil formation is the direct result of the interaction of several variables, including climate, vegetation, parent material, time, and organisms present (Gerrard 1981). Once archaeological deposits are buried within the soil, they are subject to many diagenic processes. Different classes of artifacts may be preferentially protected, or unaffected by these processes, whereas others may deteriorate rapidly. Cyclical wetting and drying, freezing and thawing, and compression can accelerate chemically and mechanically the decay processes for animal bones, shells, lithics, ceramics, and plant remains. Lithic and ceramic artifacts are largely unaffected by soil pH, whereas animal bones and shells decay more quickly in acidic soils such as those that are present in within the current project area. In contrast, acidic soils enhance the preservation of charred plant remains.

A review of the soils within the project area is presented below. The project area is characterized predominantly by Wethersfield loam occurring on 3 to 8 percent slopes and to a lesser extent Ludlow silt loam occurring on 3 to 8 percent slopes (Figure 3).

Wethersfield Soils: The Wethersfield loam soil series (87B) is typically found on gently sloping hills or drumlins on uplands. The soil is generally deep and well drained. Parent material consists of coarse, loamy till derived from basalt and/or sandstone. This soil is typically well suited for orchards. Soils in the proposed testing area of this project fall within this category. The area proposed for testing currently holds a Christmas Tree farm. Typical sequence, depth and composition of this soil is as follows:

Oe--0 to 3 cm; black (10YR 2/1) moderately decomposed plant material; **A**--3 to 8 cm; dark brown (7.5YR 3/2) loam; moderate medium granular structure; friable; many fine and medium roots; 10 percent gravel; strongly acid; clear wavy boundary; **Bw1**--8 to 22 cm; reddish brown (5YR 4/4) loam; weak medium subangular blocky structure; friable; common fine and medium roots; 10 percent gravel; strongly acid; clear wavy boundary; **Bw2**--22 to 69 cm; dark reddish brown (5YR 3/3) gravelly loam; weak medium subangular blocky structure; friable; few medium roots; 15 percent gravel and cobbles; strongly acid; clear wavy boundary; **Cd**--69 to 165 cm; reddish brown (2.5YR 4/4) gravelly loam; weak thick platy structure; very firm, brittle; few silt films and black coatings on some plates; 20 percent gravel and cobbles; strongly acid.

Ludlow Soils: The Ludlow silt loam series (40B) is typically found on gently sloping hills or drumlins in upland areas. The soil is generally very deep and moderately well drained. Parent material consists of coarse-loamy till derived from basalt and/or sandstone and shale. Much of this soil is located in wooded areas. This soil is also found in community developments and farmland although this is limited due to seasonal high-water table. Typical sequence, depth and composition of this soil is as follows:

Ap--0 to 20 cm inches; dark brown (7.5YR 3/2) silt loam, pinkish gray (7.5YR 6/2) dry; weak coarse granular structure; friable; many fine roots; 8 percent gravel; strongly acid; clear wavy boundary; **Bw1**-20 to 50 cm; reddish brown (5YR 4/4) silt loam; weak coarse subangular blocky structure; friable; few fine roots; 10 percent gravel; strongly acid; gradual wavy boundary; **Bw2**--50 to 66 cm; dark reddish brown (5YR 3/4) silt loam; weak coarse subangular blocky structure; friable; few fine roots; 12 percent gravel; common medium distinct pinkish gray (5YR 6/2) iron depletions and common medium prominent strong brown (7.5YR 5/8) masses of iron concentration; strongly acid; clear wavy boundary; **Cd**--66 to 167 cm; dark reddish brown (2.5YR 3/4) gravelly loam; weak thick platy structure; very firm,

brittle; thin patchy silt films and black (10YR 2/1) manganese coatings on some plates; 20 percent gravel and cobbles; few fine distinct reddish gray (5YR 5/2) iron depletions; strongly acid.

Summary

A review of mapping, geological data, ecological conditions, soils, slopes, and proximity to freshwater, suggests that portions of the project area appear to be favorable to both prehistoric and historic period occupations. This includes areas of low to moderate slopes with well drained soils located near freshwater sources. Types of Native American sites that may be contained in these areas include seasonal base camps and may include areas of lithic tool manufacturing, hearths, post-molds and storage pits. Historic resources that may be encountered include the buried remains of outbuildings, wells, and small family cemeteries. Based on the close proximity to streams, it is possible that the area may contain architectural remains related to early Durham industry such as mills, tanneries, ash production and timber harvesting. A walkover of the project area resulted in the identification of the northeastern portion of the project area currently containing the tree farm, as an area having a moderate/high probability to contain both Native American and historic archaeological resources based on the criteria mentioned above.

CHAPTER III

PREHISTORIC SETTING

Introduction

Prior to the late 1970s and early 1980s, very few systematic archaeological surveys of large portions of the state of Connecticut had been undertaken. Rather, the prehistory of the region was studied at the site level. As a result, a skewed interpretation of the prehistory of Connecticut was developed. It was suggested that the upland portions of the state, i.e., the northeastern and northwestern hills ecoregions, were little used and rarely occupied by prehistoric Native Americans, while the coastal zone, i.e., the eastern and western coastal and the southeastern and southwestern hills ecoregions, were the focus of settlements and exploitation in the prehistoric era. This interpretation remained unchallenged until the 1970s and 1980s when several town-wide and regional archaeological studies were completed. These investigations led to the creation of several archaeological phases that subsequently were applied to understand the prehistory of Connecticut. The remainder of this chapter provides an overview of the prehistoric setting of the region encompassing the current project area.

Paleo-Indian Period (12,000-10,000 B.P.)

The earliest inhabitants of the area encompassing the State of Connecticut, who have been referred to as Paleo-Indians, arrived in the area by ca. 12,000 B.P. (Gramly and Funk 1990; Snow 1980). Due to the presence of large Pleistocene mammals at that time and the ubiquity of large fluted projectile points in archaeological deposits of this age, Paleo-Indians often have been described as big-game hunters (Ritchie and Funk 1973; Snow 1980); however, as discussed below, it is more likely that they hunted a broad spectrum of animals.

While there have been numerous surface finds of Paleo-Indian projectile points throughout the State of Connecticut, only two sites, the Templeton Site (6-LF-21) in Washington, Connecticut and the Hidden Creek Site (72-163) in Ledyard, Connecticut, have been studied in detail and dated using the radiocarbon method (Jones 1997; Moeller 1980). The Templeton Site (6-LF-21) is in Washington, Connecticut and was occupied between 10,490 and 9,890 years ago (Moeller 1980). In addition to a single large and two small fluted points, the Templeton Site produced a stone tool assemblage consisting of gravers, drills, core fragments, scrapers, and channel flakes, which indicates that the full range of stone tool production and maintenance took place at the site (Moeller 1980). Moreover, the use of both local and non-local raw materials was documented in the recovered tool assemblage, suggesting that not only did the site's occupants spend some time in the area, but they also had access to distant stone sources, the use of which likely occurred during movement from region to region.

The only other Paleo-Indian site studied in detail in Connecticut is the Hidden Creek Site (72-163) (Jones 1997). The Hidden Creek Site is situated on the southeastern margin of the Great Cedar Swamp on the Mashantucket Pequot Reservation in Ledyard, Connecticut. While excavation of the Hidden Creek Site produced evidence of Terminal Archaic and Woodland Period components (see below) in the upper soil horizons, the lower levels of the site yielded artifacts dating from the Paleo-Indian era. Recovered Paleo-Indian artifacts included broken bifaces, side-scrapers, a fluted preform, gravers, and end-scrapers. Based on the types and number of tools present, Jones (1997:77) has hypothesized that the Hidden Creek Site

represented a short-term occupation, and that separate stone tool reduction and rejuvenation areas were present.

While archaeological evidence for Paleo-Indian occupation is scarce in Connecticut, it, combined with data from the West Athens Road and King's Road Site in the Hudson drainage and the Davis and Potts Sites in northern New York, supports the hypothesis that there was human occupation of the area not long after ca. 12,000 B.P. (Snow 1980). Further, site types currently known suggest that the Paleo-Indian settlement pattern was characterized by a high degree of mobility, with groups moving from region to region in search of seasonally abundant food resources, as well as for the procurement of high quality raw materials from which to fashion stone tools.

Archaic Period (10,000 to 2,700 B.P.)

The Archaic Period, which succeeded the Paleo-Indian Period, began by ca., 10,000 B.P. (Ritchie and Funk 1973; Snow 1980), and it has been divided into three subperiods: Early Archaic (10,000 to 8,000 B.P.), Middle Archaic (8,000 to 6,000 B.P.), and Late Archaic (6,000 to 3,400 B.P.). These periods were devised to describe all non-farming, non-ceramic producing populations in the area. Regional archeologists recently have recognized a final "transitional" Archaic Period, the Terminal Archaic Period (3,400-2,700 B.P.), which was meant to describe those groups that existed just prior to the onset of the Woodland Period and the widespread adoption of ceramics into the toolkit (Snow 1980; McBride 1984; Pfeiffer 1984, 1990; Witthoft 1949, 1953).

Early Archaic Period (10,000 to 8,000 B.P.)

To date, very few Early Archaic sites have been identified in southern New England. As a result, researchers such as Fitting (1968) and Ritchie (1969) have suggested a lack of these sites likely is tied to cultural discontinuity between the Early Archaic and preceding Paleo-Indian Period, as well as a population decrease from earlier times. However, with continued identification of Early Archaic sites in the region, and the recognition of the problems of preservation, it is difficult to maintain the discontinuity hypothesis (Curran and Dincauze 1977; Snow 1980).

Like their Paleo-Indian predecessors, Early Archaic sites tend to be very small and produce few artifacts, most of which are not temporally diagnostic. While Early Archaic sites in other portions the United States are represented by projectile points of the Kirk series (Ritchie and Funk 1973) and by Kanawha types (Coe 1964), sites of this age in southern New England are identified recognized on the basis of a series of ill-defined bifurcate-based projectile points. These projectile points are identified by the presence of their characteristic bifurcated base, and they generally are made from high quality raw materials. Moreover, finds of these projectile points have rarely been in stratified contexts. Rather, they occur commonly either as surface expressions or intermixed with artifacts representative of later periods. Early Archaic occupations, such as the Dill Farm Site and Sites 6LF64 and 6LF70 in Litchfield County, and are represented by camps that were relocated periodically to take advantage of seasonally available resources (McBride 1984; Pfeiffer 1986). In this sense, a foraging type of settlement pattern was employed during the Early Archaic Period.

Middle Archaic Period (8,000 to 6,000 B.P.)

By the onset of the Middle Archaic Period, essentially modern deciduous forests had developed in the region (Davis 1969). It is at this time that increased numbers and types of sites are noted in Connecticut (McBride 1984). The most well-known Middle Archaic site in New England is the Neville Site, which is in Manchester, New Hampshire and studied by Dincauze (1976). Careful analysis of the Neville Site indicated that the Middle Archaic occupation dated from between ca. 7,700 and 6,000 years ago. In fact, Dincauze (1976) obtained several radiocarbon dates from the Middle Archaic component of the Neville Site. The dates, associated with the then-newly named Neville type projectile point, ranged from 7,740$\pm$280 and 7,015$\pm$160 B.P. (Dincauze 1976).

In addition to Neville points, Dincauze (1976) described two other projectile point styles that are attributed to the Middle Archaic Period: Stark and Merrimac projectile points. While no absolute dates were recovered from deposits that yielded Stark points, the Merrimac type dated from 5,910±180 B.P. Dincauze argued that both the Neville and later Merrimac and Stark occupations were established to take advantage of the excellent fishing that the falls situated adjacent to the site area would have afforded Native American groups. Thus, based on the available archaeological evidence, the Middle Archaic Period is characterized by continued increases in diversification of tool types and resources exploited, as well as by sophisticated changes in the settlement pattern to include different site types, including both base camps and task-specific sites (McBride 1984:96)

Late Archaic Period (6,000 to 3,700 B.P.)

The Late Archaic Period in southern New England is divided into two major cultural traditions that appear to have coexisted. They include the Laurentian and Narrow-Stemmed Traditions (Funk 1976; McBride 1984; Ritchie 1969a and b). Artifacts assigned to the Laurentian Tradition include ground stone axes, adzes, gouges, ulus (semi-lunar knives), pestles, atlatl weights, and scrapers. The diagnostic projectile point forms of this time period in southern New England include the Brewerton Eared-Notched, Brewerton Eared and Brewerton Side-Notched varieties (McBride 1984; Ritchie 1969a; Thompson 1969). In general, the stone tool assemblage of the Laurentian Tradition is characterized by flint, felsite, rhyolite and quartzite, while quartz was largely avoided for stone tool production.

In terms of settlement and subsistence patterns, archaeological evidence in southern New England suggests that Laurentian Tradition populations consisted of groups of mobile hunter-gatherers. While a few large Laurentian Tradition occupations have been studied, sites of this age generally encompass less than 500 m^2 (5,383 ft^2). These base camps reflect frequent movements by small groups of people in search of seasonally abundant resources. The overall settlement pattern of the Laurentian Tradition was dispersed in nature, with base camps located in a wide range of microenvironments, including riverine as well as upland zones (McBride 1978, 1984:252). Finally, subsistence strategies of Laurentian Tradition focused on hunting and gathering of wild plants and animals from multiple ecozones.

The second Late Archaic tradition, known as the Narrow-Stemmed Tradition, is unlike the Laurentian Tradition, and it likely represents a different cultural adaptation. The Narrow-Stemmed tradition is recognized by the presence of quartz and quartzite narrow stemmed projectile points, triangular quartz Squibnocket projectile points, and a bipolar lithic reduction strategy (McBride 1984). Other tools found in Narrow-Stemmed Tradition artifact assemblages include choppers, adzes, pestles, antler and bone projectile points, harpoons, awls, and notched atlatl weights. Many of these tools, notably the projectile points and pestles, indicate a subsistence pattern dominated by hunting and fishing, as well the collection of a wide range of plant foods (McBride 1984; Snow 1980:228; Wiegand 1978, 1980).

The Terminal Archaic Period (3,700 to 2,700 B.P.)

The Terminal Archaic, which lasted from ca. 3,700 to 2,700 BP, is perhaps the most interesting, yet confusing of the Archaic Periods in southern New England prehistory. Originally termed the "Transitional Archaic" by Witthoft (1953) and recognized by the introduction of technological innovations, e.g., broadspear projectile points and soapstone bowls, the Terminal Archaic has long posed problems for regional archeologists. While the Narrow-Stemmed Tradition persisted through the Terminal Archaic and into the Early Woodland Period, the Terminal Archaic is coeval with what appears to be a different technological adaptation, the Susquehanna Tradition (McBride 1984; Ritchie 1969b). The Susquehanna Tradition is recognized in southern New England by the presence of a new stone tool industry that was based on the use of high quality raw materials for stone tool production and a settlement pattern different from the "coeval" Narrow-Stemmed Tradition.

The Susquehanna Tradition is based on the classification of several Broadspear projectile point types and

associated artifacts. There are several local sequences within the tradition, and they are based on projectile point type chronology. Temporally diagnostic projectile points of these sequences include the Snook Kill, Susquehanna Broadspear, Mansion Inn, and Orient Fishtail types (Lavin 1984; McBride 1984; Pfeiffer 1984). The initial portion of the Terminal Archaic Period (ca., 3,700-3,200 BP) is characterized by the presence of Snook Kill and Susquehanna Broadspear projectile points, while the latter Terminal Archaic (3,200-2,700 BP) is distinguished by the use Orient Fishtail projectile points (McBride 1984:119; Ritchie 1971).

In addition, it was during the late Terminal Archaic that interior cord marked, grit tempered, thick walled ceramics with conoidal (pointed) bases made their initial appearance in the Native American toolkit. These are the first ceramics in the region and they are named Vinette I (Ritchie 1969a; Snow 1980:242); this type of ceramic vessel appears with much more frequency during the ensuing Early Woodland Period. In addition, the adoption and widespread use of soapstone bowls, as well as the implementation subterranean storage, suggests that Terminal Archaic groups were characterized by reduced mobility and longer-term use of established occupation sites (Snow 1980:250).

Finally, while settlement patterns appeared to have changed, Terminal Archaic subsistence patterns were analogous to earlier patterns. The subsistence pattern still was diffuse in nature, and it was scheduled carefully. Typical food remains recovered from sites of this period consist of fragments of white-tailed deer, beaver, turtle, fish and various small mammals. Botanical remains recovered from the site area consisted of *Chenopodium* sp., hickory, butternut and walnut (Pagoulatos 1988:81). Such diversity in food remains suggests at least minimal use of a wide range of microenvironments for subsistence purposes.

Woodland Period (2,700 to 350 B.P.)

Traditionally, the advent of the Woodland Period in southern New England has been associated with the introduction of pottery; however, as mentioned above, early dates associated with pottery now suggest the presence of Vinette I ceramics appeared toward the end of the preceding Terminal Archaic Period (Ritchie 1969a; McBride 1984). Like the Archaic Period, the Woodland Period has been divided into three subperiods: Early, Middle, and Late Woodland. The various subperiods are discussed below.

Early Woodland Period (ca., 2,700 to 2,000 B.P.)

The Early Woodland Period of the northeastern United States dates from ca. 2,700 to 2,000 B.P. and it has thought to have been characterized by the advent of farming, the initial use of ceramic vessels, and increasingly complex burial ceremonialism (Griffin 1967; Ritchie 1969a and 1969b; Snow 1980). In the Northeast, the earliest ceramics of the Early Woodland Period are thick walled, cord marked on both the interior and exterior, and possess grit temper.

Careful archaeological investigations of Early Woodland sites in southern New England have resulted in the recovery of narrow stemmed projectile points in association with ceramic sherds and subsistence remains, including specimens of White-tailed deer, soft and hard-shell clams, and oyster shells (Lavin and Salwen: 1983; McBride 1984:296-297; Pope 1952). McBride (1984) has argued that the combination of the subsistence remains and the recognition of multiple superimposed cultural features at various sites indicates that Early Woodland Period settlement patterns were characterized by multiple re-use of the same sites on a seasonal basis by small co-residential groups.

Middle Woodland Period (2,000 to 1,200 B.P.)

The Middle Woodland Period is marked by an increase in the number of ceramic types and forms utilized (Lizee 1994a), as well as an increase in the amount of exotic lithic raw material used in stone tool manufacture (McBride 1984). The latter suggests that regional exchange networks were established, and that they were used to supply local populations with necessary raw materials (McBride 1984; Snow 1980). The Middle Woodland Period is represented archaeologically by narrow stemmed and Jack's Reef projectile points; increased amounts of exotic raw materials in recovered lithic assemblages, including chert, argillite, jasper, and hornfels; and conoidal ceramic vessels decorated with dentate stamping. Ceramic types indicative of the Middle Woodland Period includes Linear Dentate, Rocker Dentate, Windsor Cord Marked, Windsor Brushed, Windsor Plain, and Hollister Stamped (Lizee 1994a:200).

In terms of settlement patterns, the Middle Woodland Period is characterized by the occupation of village sites by large co-residential groups that utilized native plant and animal species for food and raw materials in tool making (George 1997). These sites were the principal place of occupation, and they were positioned close to major river valleys, tidal marshes, estuaries, and the coastline, all of which would have supplied an abundance of plant and animal resources (McBride 1984:309). In addition to villages, numerous temporary and task-specific sites were utilized in the surrounding upland areas, as well as in closer ecozones such as wetlands, estuaries, and floodplains. The use of temporary and task-specific sites to support large village populations indicates that the Middle Woodland Period was characterized by a resource acquisition strategy that can best be termed as logistical collection (McBride 1984:310).

Late Woodland Period (ca., 1,200 to 350 B.P.)

The Late Woodland Period in southern New England dates from ca., 1,200 to 350 B.P., and it is characterized by the earliest evidence for the use of corn in the lower Connecticut River Valley (Bendremer 1993; Bendremer and Dewar 1993; Bendremer et al. 1991; George 1997; McBride 1984); an increase in the frequency of exchange of non-local lithics (Feder 1984; George and Tryon 1996; McBride 1984; Lavin 1984); increased variability in ceramic form, function, surface treatment, and decoration (Lavin 1980, 1986, 1987; Lizee 1994a, 1994b); and a continuation of a trend towards larger, more permanent settlements in riverine, estuarine, and coastal ecozones (Dincauze 1974; McBride 1984; Snow 1980; Wiegand 1983).

Stone tool assemblages associated with Late Woodland occupations, especially village-sized sites, are functionally variable and they reflect plant and animal resource processing and consumption on a large scale. Finished stone tools recovered from Late Woodland sites include Levanna and Madison projectile points; drills; side-, end-, and thumbnail scrapers; mortars and pestles; nutting stones; netsinkers; and celts, adzes, axes, and digging tools. These tools were used in activities ranging from hide preparation to plant processing to the manufacture of canoes, bowls, and utensils, as well as other settlement and subsistence-related items (McBride 1984; Snow 1980). Finally, ceramic assemblages recovered from Late Woodland sites are as variable as the lithic assemblages. Ceramic types identified include Windsor Fabric Impressed, Windsor Brushed, Windsor Cord Marked, Windsor Plain, Clearview Stamped, Sebonac Stamped, Selden Island, Hollister Plain, Hollister Stamped, and Shantok Cove Incised (Lavin 1980, 1988a, 1988b; Lizee 1994a; Pope 1953; Rouse 1947; Salwen and Ottesen 1972; Smith 1947). These types are more diverse stylistically than their predecessors, with incision, shell stamping, punctation, single point, linear dentate, rocker dentate stamping, and stamp and drag impressions common (Lizee 1994a: 216).

Summary of Connecticut Prehistory

In sum, the prehistory of Connecticut spans from ca. 12,000 to 350 B.P., and it is characterized by numerous changes in tool types, subsistence patterns, and land use strategies. For most of the prehistoric era, local Native American groups practiced a subsistence pattern based on a mixed economy of hunting and gathering wild plant and animal resources. It is not until the Late Woodland Period that

incontrovertible evidence for the use of domesticated species is available. Further, settlement patterns throughout the prehistoric era shifted from seasonal occupations of small co-residential groups to large aggregations of people in riverine, estuarine, and coastal ecozones. In terms of the region containing the proposed project area, a variety of prehistoric site types may be expected. These range from seasonal camps utilized by Archaic populations to temporary and task-specific sites of the Woodland era.

CHAPTER IV

HISTORIC OVERVIEW

The proposed project area is located in the central portion of Durham, Connecticut, near the historic downtown area. This area has a long history of occupation and use by both Native American and Colonial populations, which has been documented between the seventeenth and early twentieth centuries. Historically, it has been the scene of small farmsteads, commercial enterprises, and municipal uses. An overview, history of the region is presented in the first part of this chapter, followed by more specific historical information related to the former use and ownership of the proposed project parcel itself.

Native American History

In the 1630s, when the first colonial settlements were being made in Connecticut, Mattabesett – the area now known as Middletown – was the stronghold of a Native American group led by a man named Sowheag. Originally, Sowheag resided near the place that Wethersfield was set up, but moved to Mattabesett before long. Sowheag's relations with the colonists were not especially friendly, as can be seen by a 1639 incident when the General Assembly planned to send 100 men to apprehend a group of Pequot Indians that Sowheag was harboring, though they may not have actually done so (De Forest 1852; Crofut 1937; Cleary 1979). According to Spiess, Sowheag's tribe included three sub-groups, the Wangunk, Mattabesec, and Machamoodus; their territory covered what are now the Towns of Wethersfield, Newington, Rocky Hill, Cromwell, Middletown, Middlefield, Durham, Haddam, East Haddam, East Hampton, Portland, as well as parts of Glastonbury, Marlborough, and Colchester (Spiess 1934). Exactly when and by whom all this land was sold to the colonists is mostly unclear.

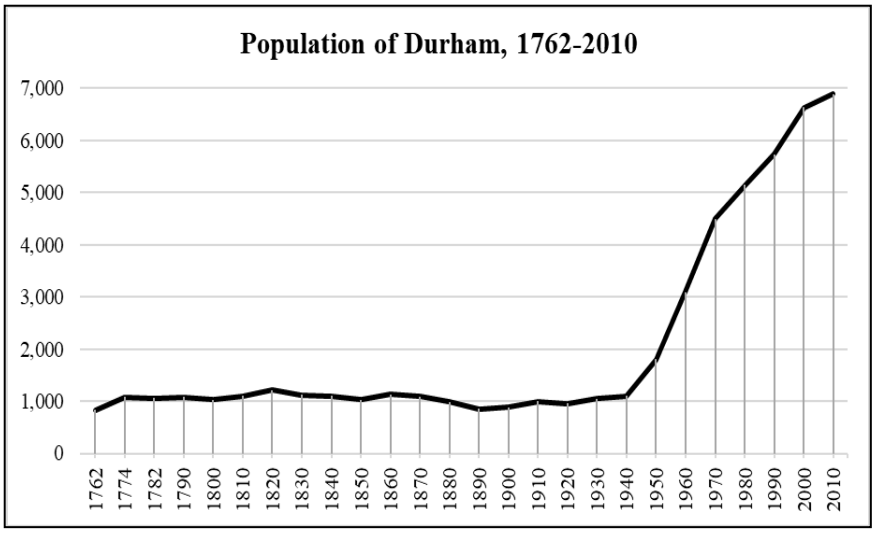
In 1651, the General Court granted a white colony at "Mattabeseck" town privileges, and in 1653 named it Middletown. Apparently, there were enough irregularities in previous land purchases for this area that in 1672 the General Assembly acquired a confirmatory Native American deed to the land between Wethersfield and Haddam, running eastward from the river six mile and westward as far as the town's bounds. Two reservations were held back from this re-sale: 300 acres on the east bank of the river (now Portland), and another tract on the west side, north of the present center of Middletown in the area known as Newfields. A number of the Wangunks remained on these reservations, in Newfield at least through 1713. In 1764, there were still 30 or 40 members in the tribe, though some had moved elsewhere, and a colonists' committee began selling their lands in order to support aged and infirm members; by 1785 they appeared to have entirely vanished (De Forest 1852; Crofut 1937). Sowheag's main fort is said to have been at Indian Hill, now a large cemetery on the western edge of the city of Middletown (Crofut 1937; Hughes and Allen 1976).

According to the colonial records, the Native Americans called the area that would become Durham Cocinchaug, and they sold it to the colonists in 1672. The Native signatories included key leader Tarramugus and nine others, including five women. The deed description specifically referred to four individual buyers who had the legislature's prior permission to make the purchase of this territory (Newton 1884).

Colonial Era History (to 1790)

In addition to the large 1672 purchase by John Talcott, James Richards, Samuel Wyllys, and John Allyn, multiple other individuals had legislatively granted rights to acquire land in Cocinchaug. It appears that

not many people moved there, however, until 1699, when a group of men from Guilford petitioned the legislature to create a new town out of the area. The legislature granted the petition and had a survey completed to establish a "town plat" or official residential section, but this was redone in a different, apparently better, place in 1703, and that one did become the town center. The main street was laid out as eight rods (132 ft) in width and a number of other streets were also laid out in the area. Consistent with Connecticut's practice at the time, the town's residents were required to build a house on their official house lot in this town plat. In 1704, the legislature gave the new settlement the name Durham. By negotiation, the adjoining town of Killingworth was convinced to give up some of its territory to the new town in 1708, and the legislature gave Durham an official land patent (Fowler 1866; Newton 1884).



There were 34 patentees, or proprietors named in the 1708 grant, and they were considered the official owners of the town's territory and had the right to divide the land (or that part of it that did not already belong to someone else) among themselves; a number of others were added in afterward (Newton 1884). After a bit more than a half-century, in 1762, a census found 830 residents in Durham; this number rose to 1,076 in 1774, but was still only 1,079 as of 1790 (see population chart below; Keegan 2012). In addition to giving land to themselves, the proprietors also made grants to support the Congregational ministry in general, the first Congregational minister (a Mr. Chauncey), for a burying ground on the main street, and for a Congregational meeting house (Fowler 1866; Newton 1884). In all these things, Durham was a typical inland colonial Connecticut town, its families focused on agricultural production mainly for their own use, but also for some small amount trade whenever possible. These goods were traded locally or as far as Boston or the West Indies (Fowler 1866).

Early National and Industrializing Period History (1790 to 1930)

Throughout this period, Durham's population stayed around 1,000 people, until in 1880 it fell to 990, then to 959 in 1920 before beginning to recover to 1,044 in 1930 (see the population chart above; Keegan 2012). In 1819, a gazetteer reported that Durham's main agricultural products were rye, corn, and flax, and a number of households engaged in making shoes that found a market in the southern states. The overall agricultural focus, however, was reflected in the presence of tanneries, grain mills, saw mills, a wool-carding machine, and a cider distillery, but no factories. The town's small population supported three churches: Congregational, Episcopalian, and Methodist (Pease and Niles 1819). An 1837 overview of the town could only add that Durham was well-known for its cattle (Barber 1837). Despite its small population, in the 1820s the town had four turnpikes – roads maintained by private corporations in exchange for the right to chart tolls – terminating or passing through it (Newton 1884). Within a few

decades these companies would fall victim to competition from the railroads, though none of the latter had a station in Durham.

The town has a "Quarry District" from which stones for buildings and gravestones were taken. In the 1850s, the Merriam Manufacturing Company was established to make tinware items in Durham, which was still at work in 1884; in that same year, there was also a factory making Pond's Extract, a skin cream (Newton 1884). As noted above, however, these factories were not large enough to prevent the town's population from falling at the end of the century. Both the 1859 and 1874 historic maps of the town show large areas with no roads or marked structures, and no manufacturing-based villages (Figures 4 and 5). The industrializing trend of many other towns in Connecticut passed this one by.

Modern History (1930 to Present)

According to a 1932 summary of town information, Durham's principal industries were "agriculture and the manufacture of cash boxes, safe deposit boxes and various kinds of metal boxes" (Connecticut 1932:275). After 1940, when the automobile and the suburban residential trend began to encourage people to live in more rural areas, the town saw a gradual increase in population, reaching 6,889 as of 2010 (see the population chart above; Keegan 2012). In part, this lower level of growth can be attributed to the fact that none of the state's limited-access highways passes through the town, which has also inhibited industrial and commercial development. Over 23 percent of Durham's land area is still devoted to agriculture, and the town considers it an essential part of its economy and way of life (Durham 2016). Only modest future population growth is anticipated in Durham, and the town's development priority of preserving its rural and historic character will almost certainly discourage any rapid growth.

History of the Area of Potential Effect

The proposed project area has a moderately complex history, having been divided among multiple owners and associated structures. At present, the parcel's western boundary on Main Street includes an indent around the Durham Volunteer Ambulance company's building, which reportedly was constructed in 1933. Immediately to the south of this building, on the subject property, is an office building of the Durham Manufacturing Company. Although this structure clearly was designed to blend in with the historic streetscape, its concrete foundation confirms that it was built in 1940. The building immediately south of that is the Lemuel Camp Tavern, built in 1806 (Cunningham 1985). The proximity of the latter building to the project area suggests that it might be an associated structure, but one of the nineteenth-century historic maps suggest otherwise. The inset portion of the 1874 map of downtown indicates that the Camp Tavern was occupied by Mrs. Camp and Miss M. J. Camp, and that their property line was immediately north of their house. The next lot to the north, roughly equivalent to the western end of the project area, had a house at its northern end labeled S. Cooper (Figure 6). The 1859 map indicates that at that time, this house was owned or occupied by L. L. Parsons & Cooper, and that there was a store associated either with it or with Miss S. Camp's house to the south (Figure 7). In the 1827 map, what is probably this house is labeled 23, owned by Dr. Kirtland, while Lemuel Camp still owned the tavern building (#24) (Figure 8).

This Kirtland/Cooper/Parsons house is no longer extant. According to a 1933 map of the downtown area, what is probably this house is labeled F. Stone (with Dr. J. S. Wall at the probable Camp Tavern) (Figure 9). Durham Manufacturing was also in place at that time, but set back from the street; the ambulance company and office building were not yet present as of 1933. The Durham Manufacturing Company produces metal storage, shelving, and other items; it was established in 1922 (Durham Manufacturing 2014). The 1934 aerial photography also shows an early configuration of the factory buildings, which changed many times over the years. It also shows that there was no office building yet, and it does not appear that the ambulance company building had been constructed by that time; however, it appears that the Kirtland/Cooper/Parsons house was still there (Figure 10). It was also still there in 1949, and the new office building (much smaller than in later periods) had been built by then (Figure 11). By 1963, however,

the Kirtland/Cooper/Parsons house had been demolished a driveway had been built over it (Figure 12). Succeeding aerial photographs, discussed in more detail below, show how over the years the manufacturing buildings and parking areas gradually increased in size, number, and the amount of the western end of the lot that they encompassed.

The central portion of the project parcel, located to the south of Maiden Lane, is historically associated with a house that is marked W. H. Walkley in the 1859 map and S. G. Camp in the 1874 map (Figures 4 and 6). The house and its immediate surroundings are not within the proposed project area, but the 1934 aerial photograph shows a barn or shed that was arguably within the subject parcel, with what might be some smaller sheds as well (Figure 10). According to the 1860 census, William H. Walkley was a 46-year-old machinist who owned $3,000 in real estate and $3,000 in personal estate; his household included his wife Marietta P. (age 40) and four sons aged 2 to 21; the oldest two were a student (Webster A.) and a clerk (Lucius V.) (U.S. Census 1860). By 1870, S. G. and Fannie M. Camp had taken over the property. The census records indicate that they were farmers, aged 44 and 33, who reported $4,500 in real estate and $450 in personal estate. The Camps had a two-year-old daughter in 1870 (U.S. Census 1870). By 1880, the couple had added two sons to their family, and Samuel's widowed father (age 80) had come to live with them (U.S. Census 1880). According to the 1900 census, the now-elderly couple (age 74 and 63) lived alone and were still farming, and Fannie reported that only one of her three children was still living. This was probably William P. Camp, age 28, who lived next door and worked as a shipping clerk. His wife was Grace A., aged 24, and they had a one-year-old son (U.S. Census 1900). As of 1910, William had been promoted to superintendent of a tin box factory, but his parents were no longer listed in the census (U.S. Census 1910). In 1920, however, the William P. and Grace Camp family had switched to dairy farming as an occupation, aided by sons Percy (age 20) and Russel (age 18); their youngest, Irving, was only 13 at the time (U.S. Census 1920). In the 1930 census, however, there were no families called Camp to be found in Durham. Nevertheless, as noted above, the presumed Camp Farmstead was a busy place according to the 1934 aerial photograph. In the 1949 aerial photograph, there were two rows of five small structures, purpose unknown, within the bounds of the subject property, and the long barns to the north of them may have been on the subject property as well (Figure 11). The 1963 and 1971 aerial photographs of the area are not very clear, but in contrast to the earlier ones, seem to show that there were no longer any buildings in this area (Figures 12 and 13). By 1980, 2004, and 2016, there was no longer any sign that farm buildings had been there (Figures 14 through 16).

Turning to the eastern end of the parcel, where the majority of the planned work is to be done, 1874 map indicates that the parcel was associated with the house that stands on Maiden Lane just outside the subject property. This residence was owned or occupied by H. Tucker in 1874 (as was another structure three doors down to the west, and a third a short way down Maiden Lane to the east) (Figure 6). Presumably at least two of these were being rented out, if they belonged to the same "H," but we do not know which they were, or to whom they were rented. The 1859 map also shows H. Tucker in approximately the same place, with no extra houses (Figure 4). The 1860 census reported that Henry and Rosella R. Tucker were prosperous farmers, who owned $8,000 in real estate and $1,470 in personal estate. They were 48 and 44 years old and had eight children between the ages of 1 and 20; the oldest, Mary G., was a schoolteacher (U.S. Census 1860). In 1870, there were still four children at home (aged 7 to 18, the eldest a farm laborer son), and the family wealth was $10,500 in real estate and $2,500 in personal estate (U.S. Census 1870). By 1880, the three children at home were aged 17 to 24; the eldest two, son James (24) and daughter Cynthia (21) were both teachers. Next door, according to the census – and consistent with the 1874 map, which shows C. Tucker across from the more eastern H. Tucker house – was farmer son Charles (now age 36), wife Eliza H. (age 35), and three children ages 7 to 11 (U.S. Census 1880). In 1900, there were two Tucker families in the area. Charles G. and wife Eliza H., farmers now in their 50s, lived with daughter Ruth M. (age 15). Lemmie Tucker, age 28 – last seen as Lemuel, 7-year-old son of Charles – was working as a teamster and had married Sarah M.; they had four children between the ages of 7 months and 6 years (U.S. Census 1900). The 1910 census shows Eliza H. Tucker as a widowed farmer, living

with her schoolteacher daughter Ruth M. (age 24). Lemuel R. and Sarah M. Tucker were now farmers with seven children at home, aged 7 months to 16 years (U.S. Census 1910). By 1920, however, Lemuel Tucker was no longer listed; his young son Willis was living with a cousin's family (U.S. Census 1920).

In the 1934 aerial photograph, the rear section of the subject property was simply a cleared agricultural field (Figure 10). This image does not suggest that any farmstead outbuildings stood on the field at this time, but the possibility that there were some in the past cannot be discounted. In 1949, the aerial photography suggests a small building near the center of the field (Figure 11). In the later photographs, a line of trees grew up the center of the field (see Figures 12 through 14). By 2004, the Christmas tree plantings that still occupied the area in 2016 were in place (Figures 15 and 16).

Conclusion

The northern section of the central part of the proposed project area may contain evidence of the *circa* 1934-1949 farm uses shown by the aerial photographs, and the possibility of earlier structures there cannot be completely discounted. The northwestern corner of the eastern section of the project parcel may also once have had farm outbuildings on it, due to its proximity to the house standing just outside the property line. Near Main Street, the northern driveway leading to the factory is almost certainly built over a nineteenth-century or older house. Outside of these portions and of course the historic and modern factory areas, the project area has been used for farming and may contain minor remnants of such uses as stone walls.

CHAPTER V

PREVIOUS INVESTIGATIONS

Introduction

This chapter presents an overview of previous cultural resources identified within the vicinity of the proposed project area in Durham, Connecticut (Figures 17 through 19). This discussion provides the comparative data necessary for assessing the results of the current Phase IA cultural resources assessment survey, and it insures that the potential impacts to all previously recorded cultural resources located within and adjacent to the proposed project area are taken into consideration. Specifically, this chapter reviews all previously identified archaeological sites, as well as National and State Register of Historic Places properties, within 0.8 km (0.5 mi) of the project area. The discussions presented below are based on information currently on file at the Connecticut State Historic Preservation Office in Hartford, Connecticut. In addition, the electronic site files maintained by Heritage were examined during this investigation. Both the quantity and quality of the information contained in the State of Connecticut archaeological site files, as well as National and State Register of Historic Places, forms are reflected below.

Previously Recorded Cultural Resources Within the Vicinity of the Project area

A review of data currently on file at the Connecticut State Historic Preservation Office revealed that there is a single National Register of Historic Places district (Main Street Historic District) and four structures listed on the State Register of Historic Places in the region encompassing the project area (Figures 18 and 19). Each of the previously identified resources is reviewed briefly below.

Main Street Historic District

A Historic District Ordinance Referendum was passed in Durham by electors on June 25, 1973. The referendum created a Historic District and a Historic District Commission for the Town of Durham and became effective on July 17, 1973. The Main Street Historic District was then listed on the National Register of Historic Places in 1986. As its name suggest, Main Street is the principal street in the district; however, several parallel streets located on the other side of Main Street also lie within the historic district. These include Brick Lane and Cherry Lane on the east and Maple Avenue and Town House Road on the west. The latter street borders the Town Green in the southern portion of the district. Portions of several cross streets, including Talcott Lane, Maiden Lane, Wallingford Road, and Fowler Avenue, are also included within the district. According to the National Register of Historic Places nomination form, this area contains 135 buildings, of which 112 and were built between 1708-1935. The remaining 23 buildings were built after 1935 and are non-contributing elements.

The District contains numerous examples of eighteenth century, colonial period houses and public buildings erected in the Greek Revival style also represent the development of the town through its more than 200-year history. Also notable is the cross section of social classes and occupations represented in the Historic District. These include the more elaborate homes built by the descendants of the original European settlers, but also includes the more-simple dwellings of craftsmen, farmers, and housing built to accommodate laborers in the town's various industries. Also included are examples of stores, shops, hotels, and taverns. The Main Street Historic District is considered significant because it displays an exceptional degree of architectural integrity and craftsmanship. "Of particular note is the unusual number

of well-preserved eighteenth-century houses, as well as the quality of the public buildings erected in the Greek Revival style" (Gombach Group 2010).

General James Wadsworth House

The General James Wadsworth House, which is listed on the State Register of Historic Places and located within the Main Street Historic District described above, is a post-and-beam, two-and-a-half story Colonial period building dating from 1755 and located at #127 Main Street (Figure 19 and Photo 25). The house was built by Israel Goddard who purchased the land from Nathaniel Chauncy between 1751 and 1752. The historic structure is sometimes referred to as the Goddard-Wadsworth House. Goddard, who became a Tory during the Revolutionary War, had his property confiscated and was deported to Nova Scotia. The property was purchased by General James Noyes Wadsworth after the war. General Noyes Wadsworth added a second story with a gable roof and an ell addition. The house remained in the Wadsworth family until 1834 when it was sold to William Lyman. From 1860 to 1927, the house was in the possession of W.C. Fowler, the author of Durham's History, published in 1866. The General James Wadsworth house is located well to the south of the proposed project area and will not be impacted by construction of the proposed solar facility, either directly or indirectly.

Daniel Merwin House

The Daniel Merwin House, also referred to as the Merwin-Parmelee House, is a Colonial period Georgian style house built in 1740 (Figure 19 and Photo 26). This house is listed on both the State Register of Historic Places and within the Main Street Historic District. Daniel Merwin settled in Durham from Milford, Connecticut in 1722. The house is built on a mortared sandstone foundation and has a wood shingled gabled roof. It remained in the Merwin family for several generations before it was sold to the Atwell family in 1776. By 1800 the property belonged to Phineas Squire. Squire built a new home on the north half and sold the remainder to Josiah Jewett. The house and lot became the property of Phineas Parmelee, who was a Durham shoe manufacturer, in 1817. The house remained in the Parmelee family until the last quarter of the nineteenth century. The Daniel Merwin House is located well to the northwest of the proposed project area and it will not be impacted by construction of the proposed solar facility, either directly or indirectly.

Moses Austin House

The Moses Austin House is a Colonial Style home dating to 1750 and located at #256 Main Street (Photo 27). This building is also listed on the State Register of Historic Places and located within the Main Street Historic District. This timber-framed, post-and-beam residence is built on a mortared sandstone foundation. Moses Austin purchased the home from Ebenezer Steadman in 1754. Moses lived, and kept a store on the property until the 1890s when he set out with his brother-in-law, Moses Bates first to Virginia and then to St. Genevieve, New Spain (modern day Missouri) to engage in a lead mining venture. The panic of 1819 brought financial misfortune and the two switched gears to real estate. Moses Austin purchased a large land grant from the Mexican government but died before he was able to settle it. His son, Stephen Austin went on to become a notable Texas pioneer. The Moses Auston House remained in the Austin family until 1791. The was subsequently purchased by shoemaker Joseph P. Camp. With Chauncy and Elizur Hall, Joseph P. Camp started the J.P. Camp & Company and became one of the leading figures in Durham's shoe making industry. The Moses Austin House is located well to the northwest of the proposed project area and will not be impacted by construction of the proposed solar facility, either directly or indirectly.

Chauncy Elnathan House

The Chauncy Elnathan house is a Colonial Period structure located at #20 Fowler Avenue (Figure 19 and Photo 28). The post-and-beam, Georgian style structure sits on a mortared sandstone foundation, and dates to ca. 1755; it too is listed on the State Register of Historic Places and located within the Main Street Historic District described above, though it is currently abandoned and in a poor state of repair. The

house has a gambrel roof, clapboard siding, and side lights on the main entrance door. The Chauncy Elnathan house is significant as one of the best examples of a Colonial period house in Durham and for its association with the Durham Book Company, which was established in 1733 and is known to be one of the earliest lending libraries in the colony. The Chauncy Elnathan building is located well to the south of the proposed project area and will not be impacted by construction of the proposed solar facility, either directly or indirectly.

Other historic standing structures located within proximity to the current project include the H. Tucker House (Photo 24), the T.B. Strong House located at #24 Maiden Lane (Photo 29), the H.H. Newton House at #36 Maiden Lane (Photo 13), and the S.G. Camp House at #35 Maiden Lane (Photo 12). The H. Tucker House is situated adjacent to the proposed project area. This house has undergone significant changes through time, including the addition of new windows, a new roof, and vinyl siding. The H. Tucker House is not eligible for listing to the National Register of Historic Places and the proposed project will have no impact on the property. The remainder of this historic homes noted during pedestrian survey are located at greater distances from the project area than the H. Tucker House. Due to intervening vegetation and modern buildings, no viewshed impacts from the proposed project area anticipated.

Summary and Interpretations

The review of the previously identified cultural resources in the vicinity of the proposed project area indicates that the region possesses a long history of both prehistoric Native American and historic period occupation and use. Prehistoric archaeological sites recorded in the project region appear to date from at least the Late Woodland period and probably earlier. Moreover, the data noted in the previously identified prehistoric sites indicate that the area was used for a variety of tasks and for variable amounts of time, ranging from task specific and temporary occupations to seasonal camps. This suggests that prehistoric sites may be expected in those undisturbed portions of the project area that are in close proximity to nearby freshwater sources, have level slopes, and that have not been heavily disturbed in the past. In addition, the historic resources in the area also suggest that the larger study region was settled by Euro-Americans early on and that by the mid-nineteenth century farming and industry was important to the local economy. It is possible that historic archaeological sites may be identified within the project area. These may include foundations associated with outbuildings, wells or features associated with early industry in the Town of Durham such as saw mills, grist mills and tanneries.

CHAPTER VI

METHODS

Introduction

This chapter describes the research design and field methodology used to complete the Phase IA cultural resources assessment survey of the project area in Durham, Connecticut. The following tasks were completed during this investigation: 1) study of the region's prehistory, history, and natural setting, as presented in Chapters II through IV; 2) a literature search to identify and discuss previously completed cultural resources surveys and all previously recorded cultural resources in the area encompassing the project area; 3) a review of historic maps, topographic quadrangles, and aerial imagery depicting the project area in order to identify potential historic resources and/or areas of past disturbance; and 4) pedestrian survey and photo-documentation of the project area in order to determine its archaeological sensitivity. These methods are in keeping with those required by the Connecticut State Historic Preservation Office in the document entitled: *Environmental Review Primer for Connecticut's Archaeological Resources* (Poirier 1987).

Research Framework

The current Phase IA cultural resources assessment survey was designed to assess the historical and archaeological sensitivity of the proposed project area, as well as to visually examine the project area and record any prehistoric or historic resources noted during pedestrian survey. The undertaking was comprehensive in nature, and project planning considered the distribution of previously recorded cultural resources located within and near the project area, and a visual assessment of the subject parcel. The methods used to complete this investigation were designed to provide coverage of all portions of the project area. The fieldwork portion of this undertaking entailed pedestrian survey, photo-documentation, and project area mapping (see below).

Archival Research & Literature Review

Background research for this project included a review of a variety of historic maps depicting the proposed project area; an examination of USGS 7.5' series topographic quadrangles; an examination of aerial images dating from 1934 through 2016; and a review of all National and State Register of Historic Places properties and previously identified archaeological sites on file with the Connecticut State Historic Preservation Office, as well as electronic cultural resources data maintained by Heritage. The intent of this review was to identify all previously recorded cultural resources situated in and adjacent to the project area and to provide a natural and cultural context for the proposed project area. This information then was used to develop the archaeological context of the project area, and to assess its sensitivity with respect to producing intact cultural resources.

Background research materials, including historic maps, aerial imagery, and information related to previous archaeological investigations, were gathered from the Durham Public Library, Durham Town Hall, the Connecticut State Library, the Homer Babbidge Library on the Storrs Campus of the University of Connecticut, and the Connecticut State Historic Preservation Office. Finally, electronic databases and Geographic Information System files maintained by Heritage were employed during this project, and they provided valuable data related to the project area, as well as data concerning previously identified archaeological sites within the general vicinity of the project area.

Field Methodology and Data Synthesis

Heritage also performed fieldwork for the Phase IA cultural resources assessment survey of the project area associated with the proposed Solar project in Durham, Connecticut. This included pedestrian survey, photo-documentation, and mapping of the project area. During the completion of the pedestrian survey, representatives from Heritage visually reconnoitered and photo-documented the project area using digital media. Heritage also obtained GIS files depicting the proposed solar development from All-Points, contractor for the project sponsor, DMC. The digital files were imported into ESRI's ArcGIS 10.2, the geographic information system (GIS) employed by Heritage. The inclusion of the digital files in the project GIS streamlined the research process and it ensured that all portions of the project area that may be impacted by the proposed solar project were examined during the investigation and mapped accurately. Finally, the GIS files were employed to output the maps and drawings included in this report.

Curation

Following the completion and acceptance of the final report, all cultural material, drawings, maps, photographs, and field notes will be curated with:

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CHAPTER VII

RESULTS OF THE INVESTIGATION

Introduction

As mentioned in Chapter I of this report, the current Phase IA cultural resources assessment survey consisted of the completion of the following tasks: 1) a contextual overview of the area's prehistory, history, and natural setting (e.g., soils, ecology, hydrology, etc.); 2) a literature search to identify and discuss previously completed cultural resources surveys and previously recorded archaeological sites, National and State Register of Historic Places properties/districts, and historic standing structures more than 50 years in age within the region encompassing the project area; 3) a review of readily available historic maps and aerial imagery depicting the project area to identify potential cultural resources and/or areas of past disturbance; and 4) pedestrian survey and photo-documentation of the project area to determine its archaeological sensitivity, as well as to record any prehistoric historic built resources. Tasks 1 and 2 of this list were completed and presented in Chapters II through V. The results of Tasks 3 and 4 are presented below.

Results of Pedestrian Survey and Photo-Documentation of the Project Items

As discussed throughout the report, the Durham Manufacturing Solar Center will be built in the Town of Durham, Connecticut. Heritage completed the pedestrian survey and photo documentation of the proposed project area in December of 2017. The pedestrian survey involved a walkover of the entire site and included photo documentation of existing conditions, buildings and landforms. The project parcel in Durham consists of a roughly 18-acre area that includes the existing DMC facility, part of which falls inside the Main Street Historic District, but also includes a roughly 6-acre field currently used as a Christmas Tree farm (Photos 1 through 10). It is this 6-acre parcel where the proposed solar facility will be located. It will be connected to the DMC building via a narrow interconnect corridor. The project area is bound to the north by Maiden Lane – a road alignment seen in both the 1859 and 1874 historic maps of the project area referenced above. Photo-documentation of the Maiden Lane area adjacent to the project area shows that it retains much of its rural character (Photos 11 through 14).

The western edge of the project area is bound by Main Street, also known as Route 17 (Photos 15). The Main Street alignment dates to the earliest Euro-American settlement in this area (Photos 16 and 17). The nearest road to the south of the project area is Pickett Lane. This road alignment first appears in an excerpt from a detail of an 1874 map of Durham and connected Main Street to Allyn Brook (Figure 6). It does not appear on an earlier 1859 map (Figure 5). Currently, the north side of Pickett Lane contains a school, adjoining playground, and fields (Photo 18). The south side of Pickett Lane contains at least one historic structure now associated with a school (Photo 19). Further east on Pickett Lane there is the Pickett Lane/Allyn Brook bridge crossing (Photo 20). Just north of the bridge crossing is the confluence of the Allyn Brook and Hersig Brook stream alignments (Photo 21).

The Main Street Historic District boundary encompasses the western one-third of the entire project area. This area, however, is limited to a currently paved area containing the DMC facility (Photo 22). The DMC building is a modern, twentieth century brick building that faces Main Street to the west. Proposed impacts to the portion of the project area contained inside the Main Street Historic District consists of a roughly 45 m (150 ft) long segment of buried interconnect beneath an existing paved driveway (Figure 2 and Photo 23). Although this short segment of interconnect falls inside of the Main Street Historic District boundary, it has been bulldozed, is currently paved, and contains a no/low probability to contain intact cultural resources. No additional archaeological examination of this area is recommended for this area prior to installation of this portion of the interconnect. The remaining path of the interconnect will run to the east and outside of the Main Street Historic District boundary to the west. It will travel from the DMC facility east roughly 130 m (450 ft) beneath a paved driveway before crossing Allyn Brook and entering the field containing the tree farm (Figure 2). Pedestrian survey of this portion of the interconnect revealed that it too has been disturbed in the past and no longer retains archaeological sensitivity. No additional examination of this area is recommended prior to construction of the proposed solar facility.

Much of the project impacts will occur inside the roughly 6-acre field containing the tree farm. The tree farm is bounded to the north by Maiden Lane, to the east by a wooded area, to the west by Allyn Brook and to the south by Hersig Brook. The two brooks converge to form one stream just south of the project area. The stream continues running south and passes beneath Pickett Lane at the Pickett Lane bridge crossing. It ultimately drains into Allyn Millpond located between Pickett Lane and Fowler Avenue to the south of the project area. Pedestrian survey of this area failed to reveal any historic period surface features, but it did indicate that the field containing the Christmas tree farm is little disturbed other than possibly historic era plowing. As discussed in Chapter II of this report, this area is characterized by Wethersfield loam. This soil type is well drained and positively correlated with prehistoric occupations. Thus, the presence of Wethersfield soils and the nearby stream indicates that this area should be considered a moderate/high archaeologically sensitive zone.

Overall Sensitivity of the Proposed Project area and Project Recommendations

In addition to the above-referenced research, the field data collected during the pedestrian survey was used in conjunction with the analysis of topographic and soils mapping to stratify the project area into zones of no/low, moderate, and high archaeological sensitivity. As seen above, historic sites are generally easy to find on the landscape because the features associated with them tend to be relatively permanent above-ground constructions (e.g., building foundations, wells, pens, etc.). Prehistoric sites, on the other hand, are less often identified during pedestrian survey, and predicting their locations relies more on environmental factors that would have informed Native American site choices. Much of the current project area is already built-up and contains existing structures and pavement. Impacts to these existing structures is not anticipated and therefore no additional survey is recommended for the portion of the project area located within the Main Street Historic District, or the central portion of the project area which will contain the buried interconnect. The field located in the northeast third of the project area, however, has the potential to contain historic features such as historic trash pits, buried foundations, wells, and other architectural features that may relate to Durham's early colonial history, agriculture, and industry.

With respect to the potential for identifying prehistoric archaeological sites, the project area was divided into areas of no/low or moderate/high archaeological potential by analyzing landform types, slope, aspect, soils, and distance to water. In general, areas located less than 300 m (1,000 ft) and no more than 600 m (2,000 ft) from a freshwater source and that contain slopes of less than 8 percent and well-drained soils possess a moderate/high potential for producing prehistoric archaeological deposits. This is in keeping with broadly based interpretations of prehistoric settlement and subsistence models that are supported by decades of previous archaeological research throughout the region. It is also expected that there may be variability of prehistoric site types found in the moderate/high sensitivity zones. For example, large

Woodland period village sites and Archaic period seasonal camps may be expected along large river floodplains, on upland terraces, and near stream/river confluences. Smaller temporary or task specific sites may be expected on level areas with well-drained soils that are situated more than 300 m (1,000 ft) but less than 600 m (2,000 ft) from a water source. Finally, steeply sloping areas, poorly drained soils, or areas of previous disturbance are deemed to retain a no/low archaeological sensitivity. Based on natural features (e.g., well drained soils, low slopes, and proximity to freshwater), the area also may yield occupations dating from Connecticut's prehistoric era.

CHAPTER VIII

SUMMARY AND MANAGEMENT RECOMMENDATIONS

The review of historic maps and aerial images of the project area, files maintained by the Connecticut State Historic Preservation Office, and pedestrian survey of the proposed Durham Solar Facility Center revealed that it is located near the Main Street Historic District and four State Register of Historic Places properties. However, based on either distance from these resources or intervening vegetation, modern buildings, and/or topography, no impacts to these historic resources are anticipated by the construction of the proposed facility. In addition, the proposed facility is located adjacent to a single historic structure, the H. Tucker House, which is located adjacent to the northwestern corner of the proposed solar array. This house, which dates from the nineteenth century, has been altered over time and no longer retains much of it historical character. Thus, it is not eligible for listing on the National Register of Historic Places and will not be impacted adversely by the proposed project.

In terms of archaeological potential, pedestrian survey of the 6-acre parcel that will house the solar array was found to be largely undisturbed, contain sandy-loamy soils, and was proximal to Allyn Brook and Hersig Brook. Thus, it was determined to retain a moderate/high archaeological sensitivity. It is recommended that this area be subjected to Phase IB cultural resources reconnaissance survey prior to construction, and that the methods for the survey be determined in consultation with the Connecticut State Historic Preservation Office. Finally, pedestrian survey of the proposed interconnect area revealed that is has been disturbed in the past. No additional archaeological examination of this area is recommended prior to construction of the Durham Solar Facility Center.

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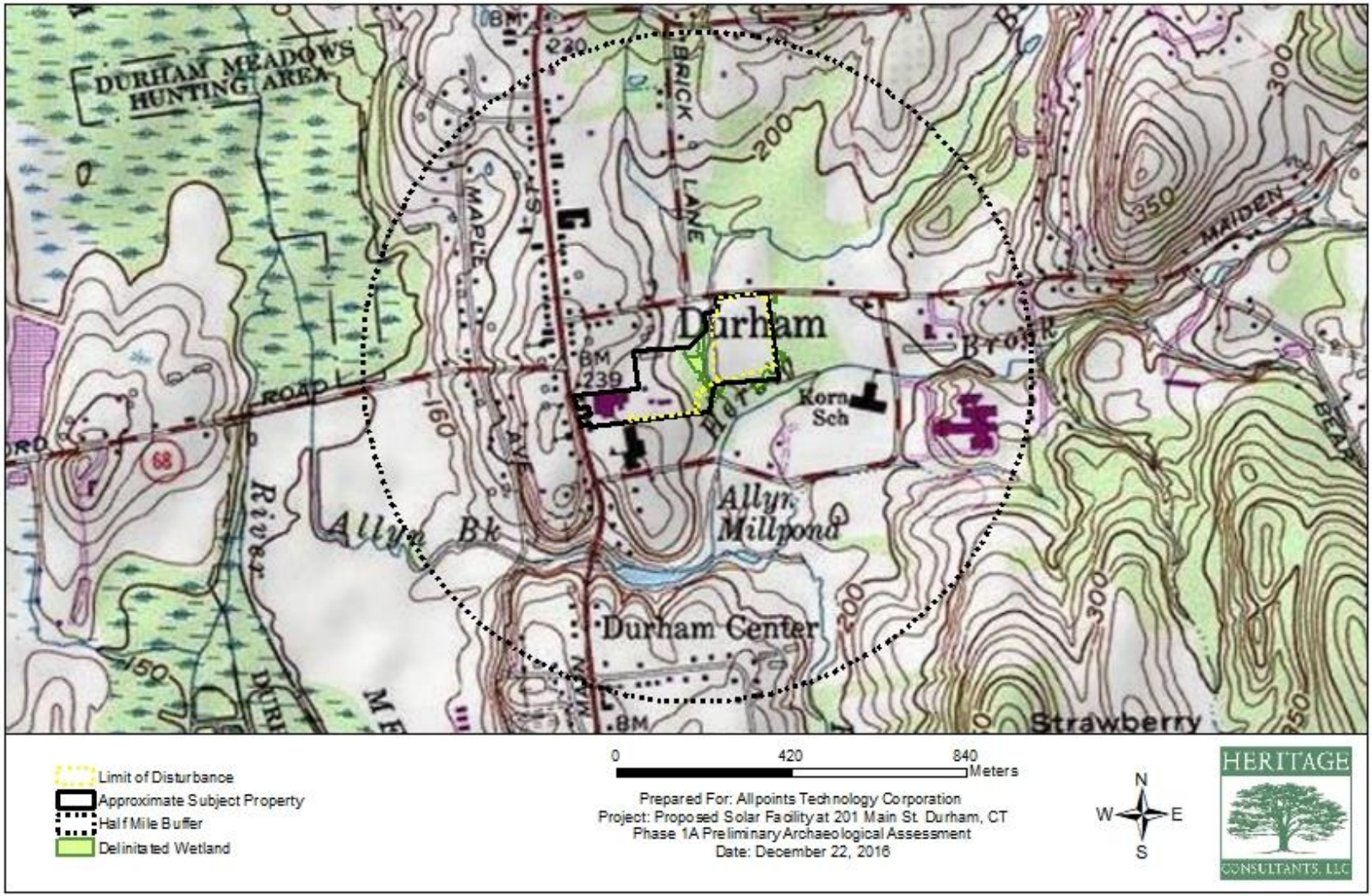

Figure 1. Excerpt from a USGS 7.5' series topographic quadrangle image showing the location of the proposed solar facility in Durham, Connecticut.

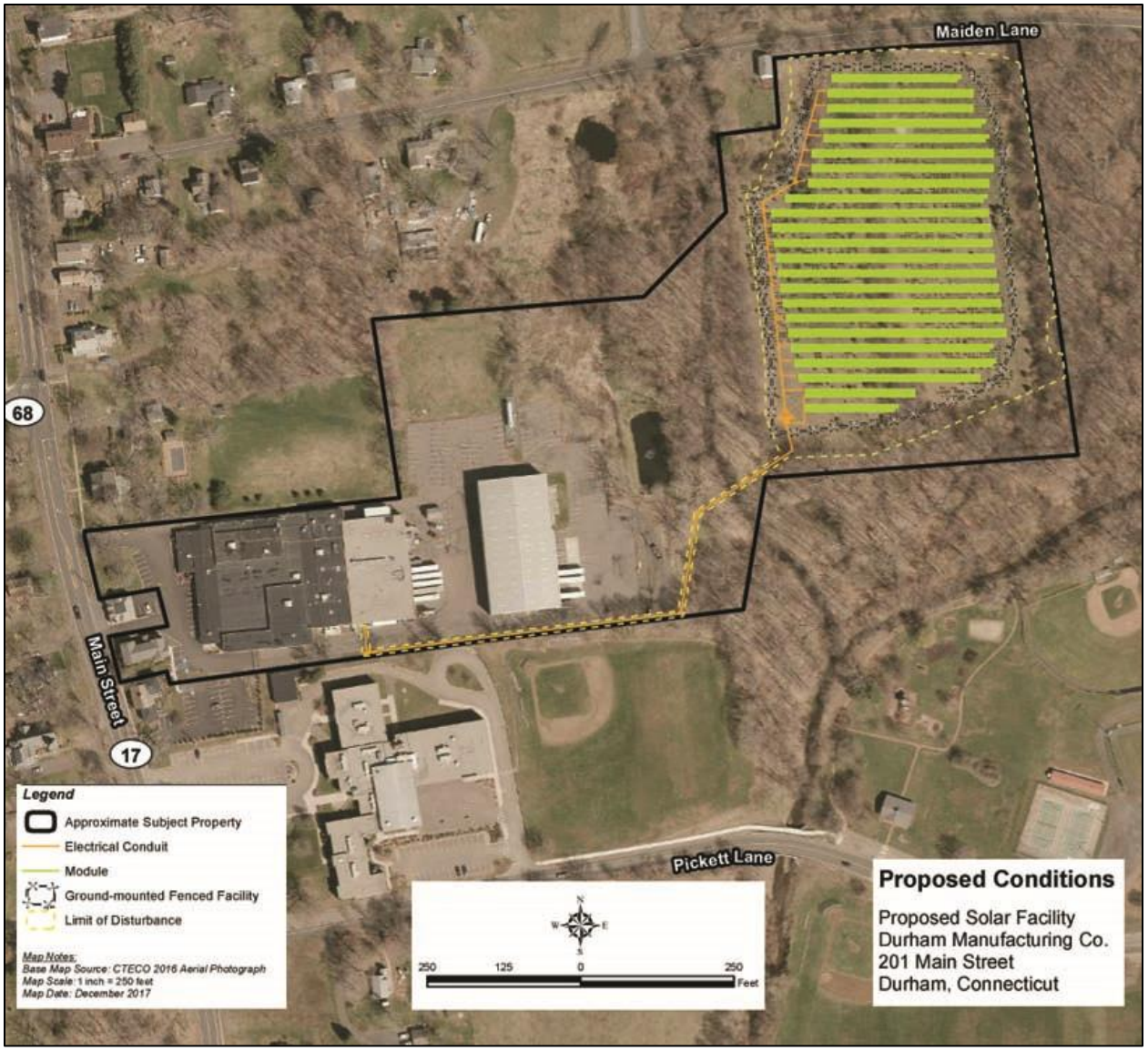

Figure 2. Excerpt from a 2016 aerial showing the location of the proposed solar facility in Durham, Connecticut.

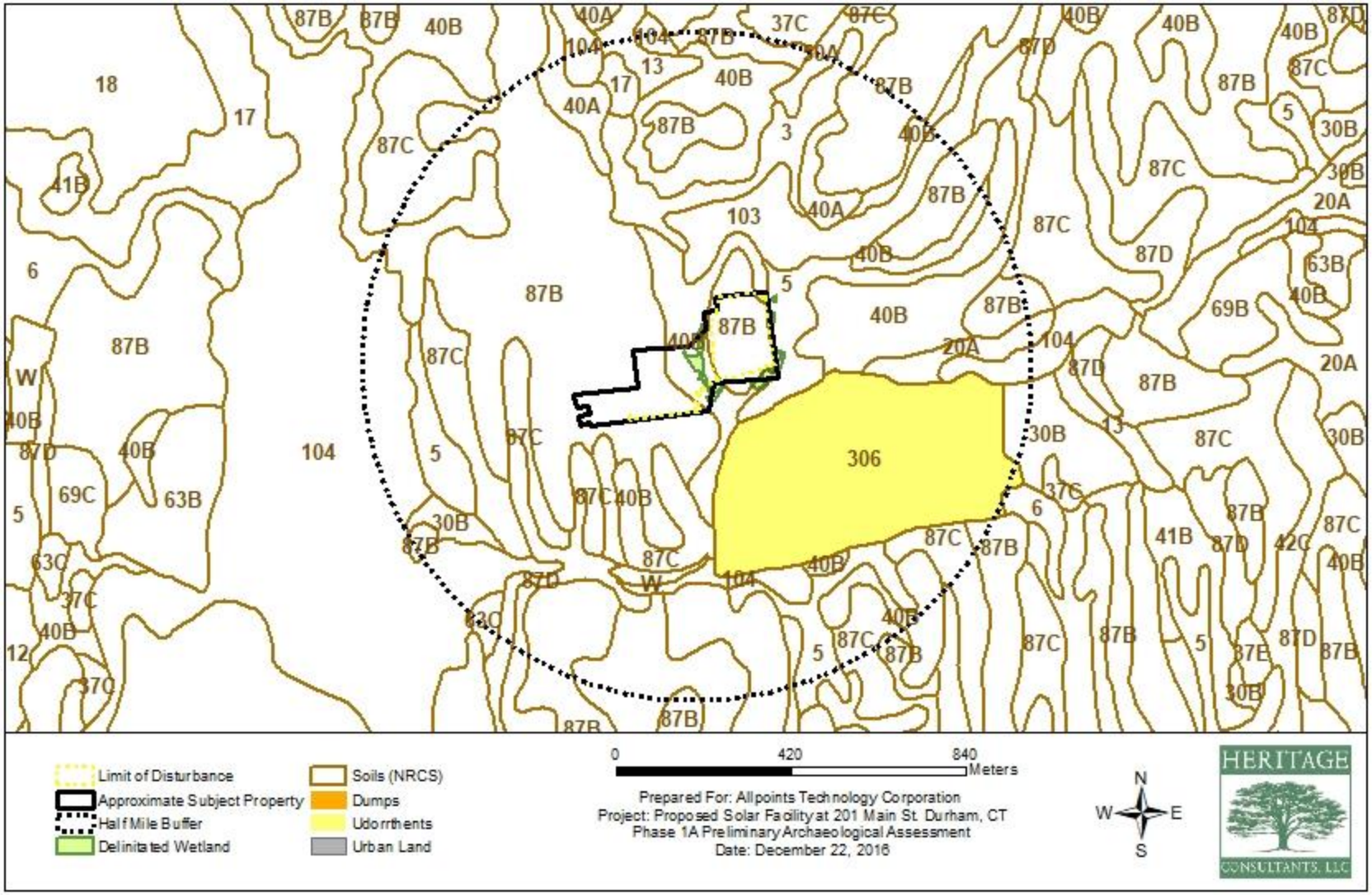

Figure 3. Digital map depicting the soil types present in the vicinity of proposed solar facility in Durham, Connecticut.

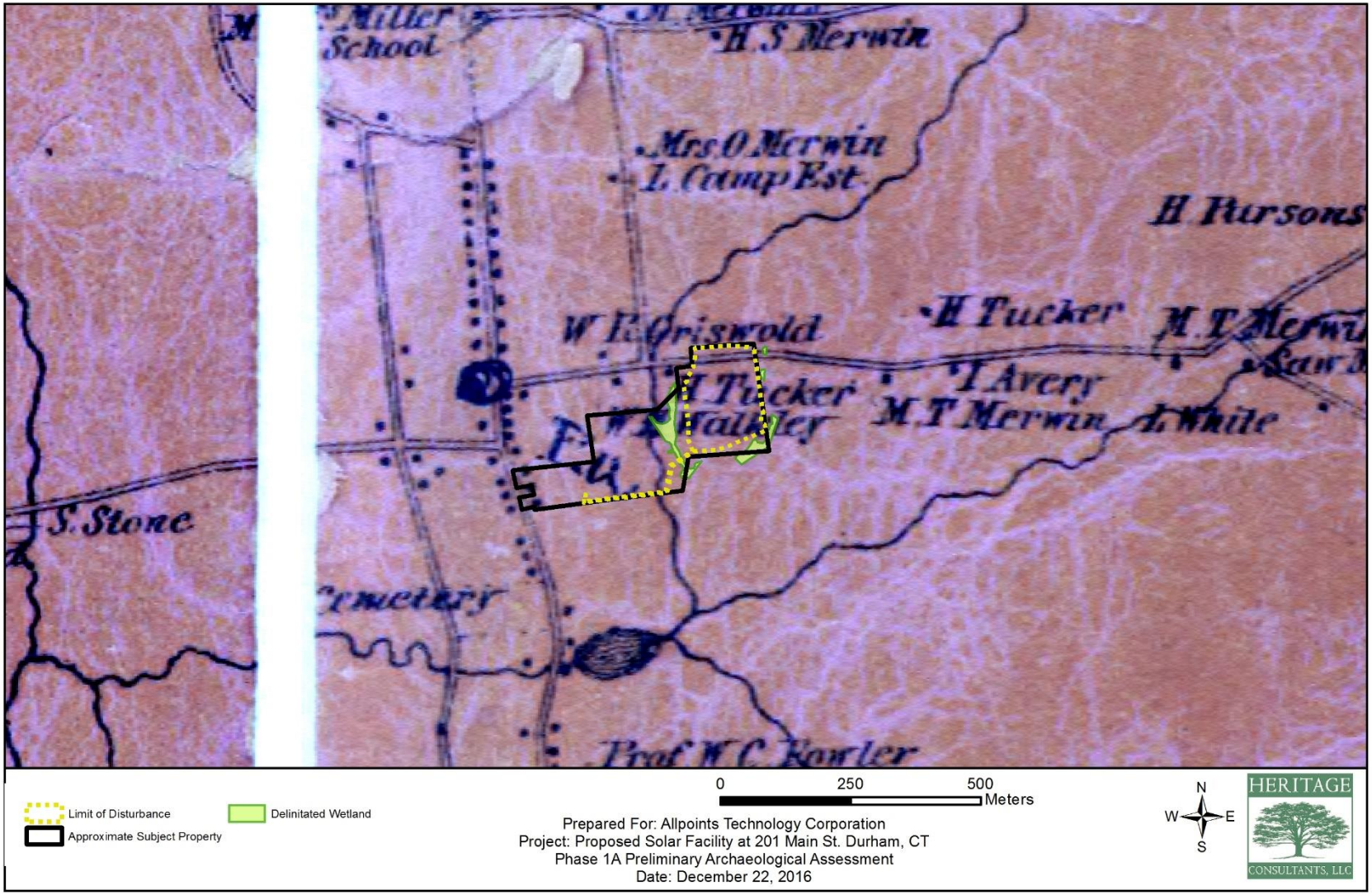

Figure 4. Excerpt from an 1859 map showing the proposed solar facility and surroundings in Durham, Connecticut.

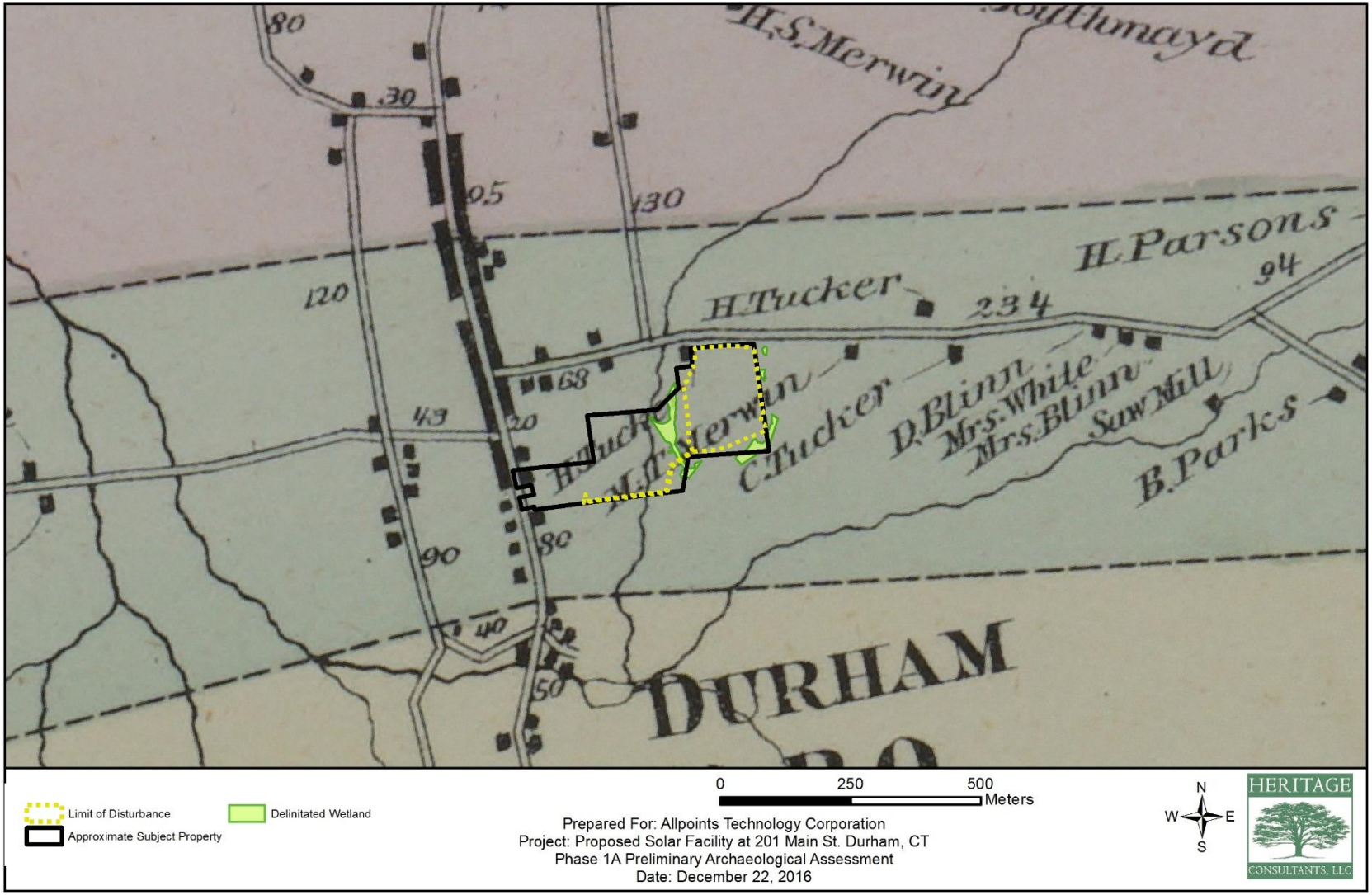

Figure 5. Excerpt from an 1874 map showing the proposed solar facility and surroundings in Durham, Connecticut.

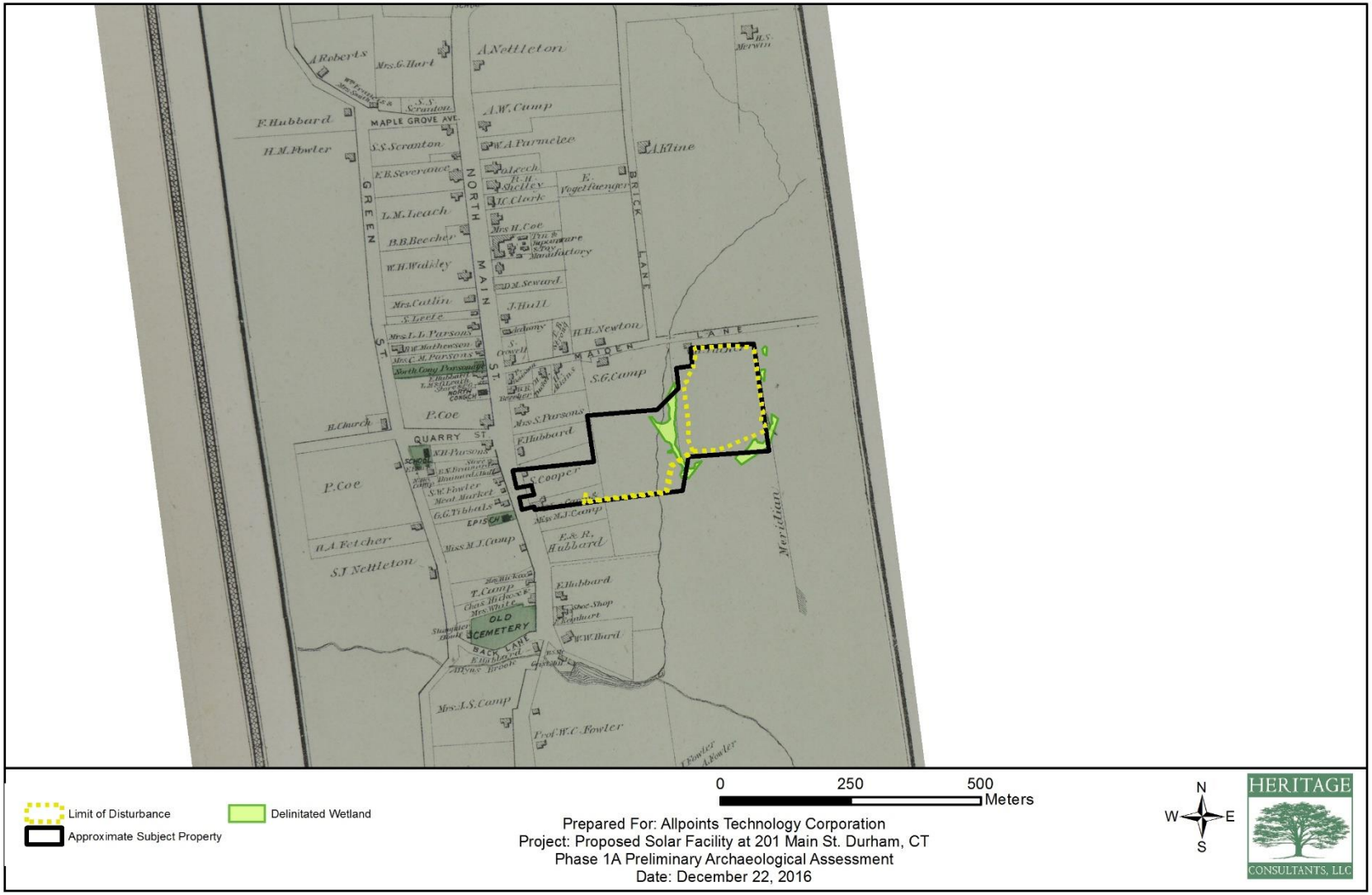

Figure 6. Excerpt from the inset to an 1874 map showing the proposed solar facility and surroundings in Durham, Connecticut.

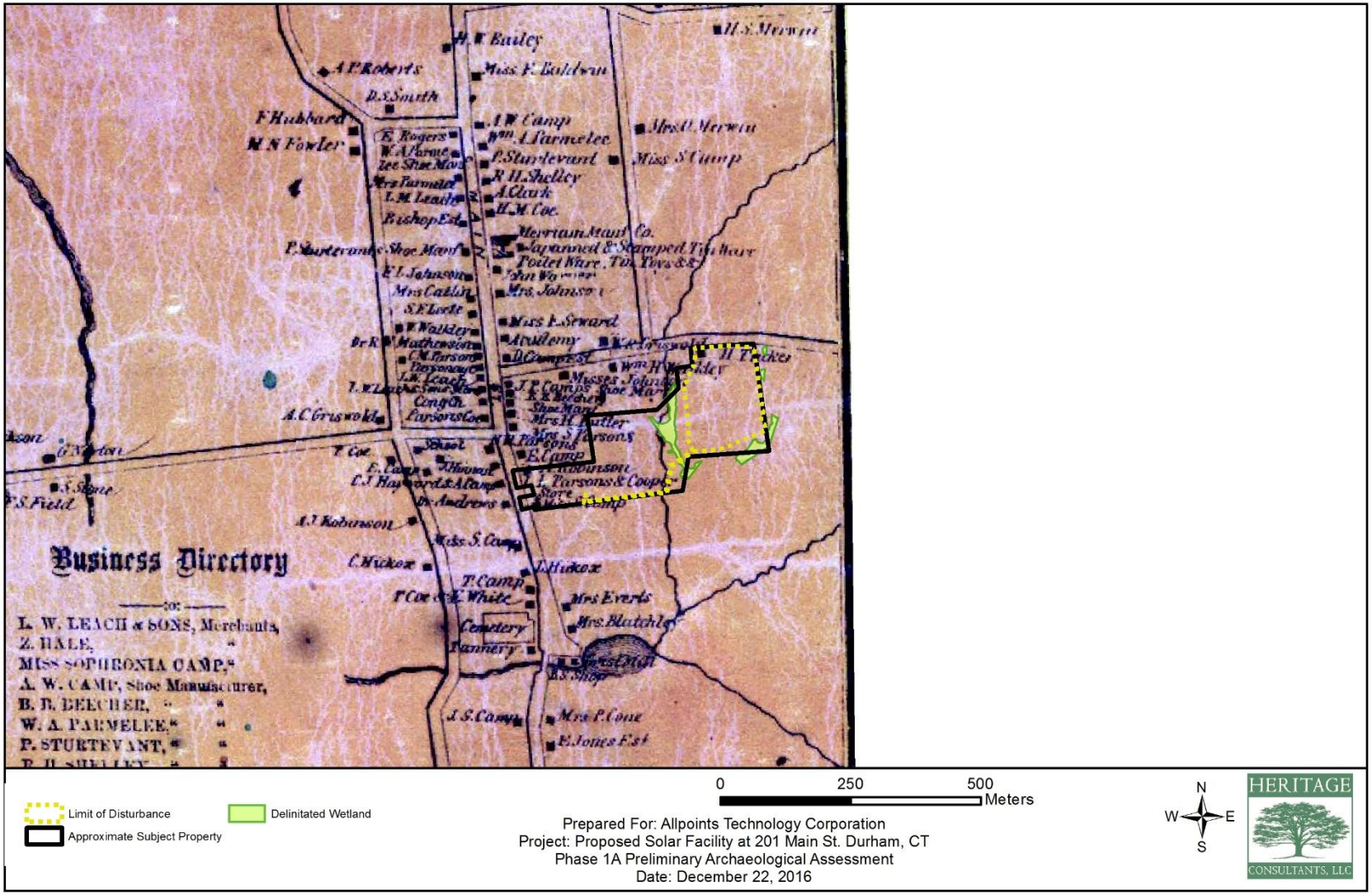

Figure 7. Excerpt from the inset to an 1859 map showing the proposed solar facility and surroundings in Durham, Connecticut.

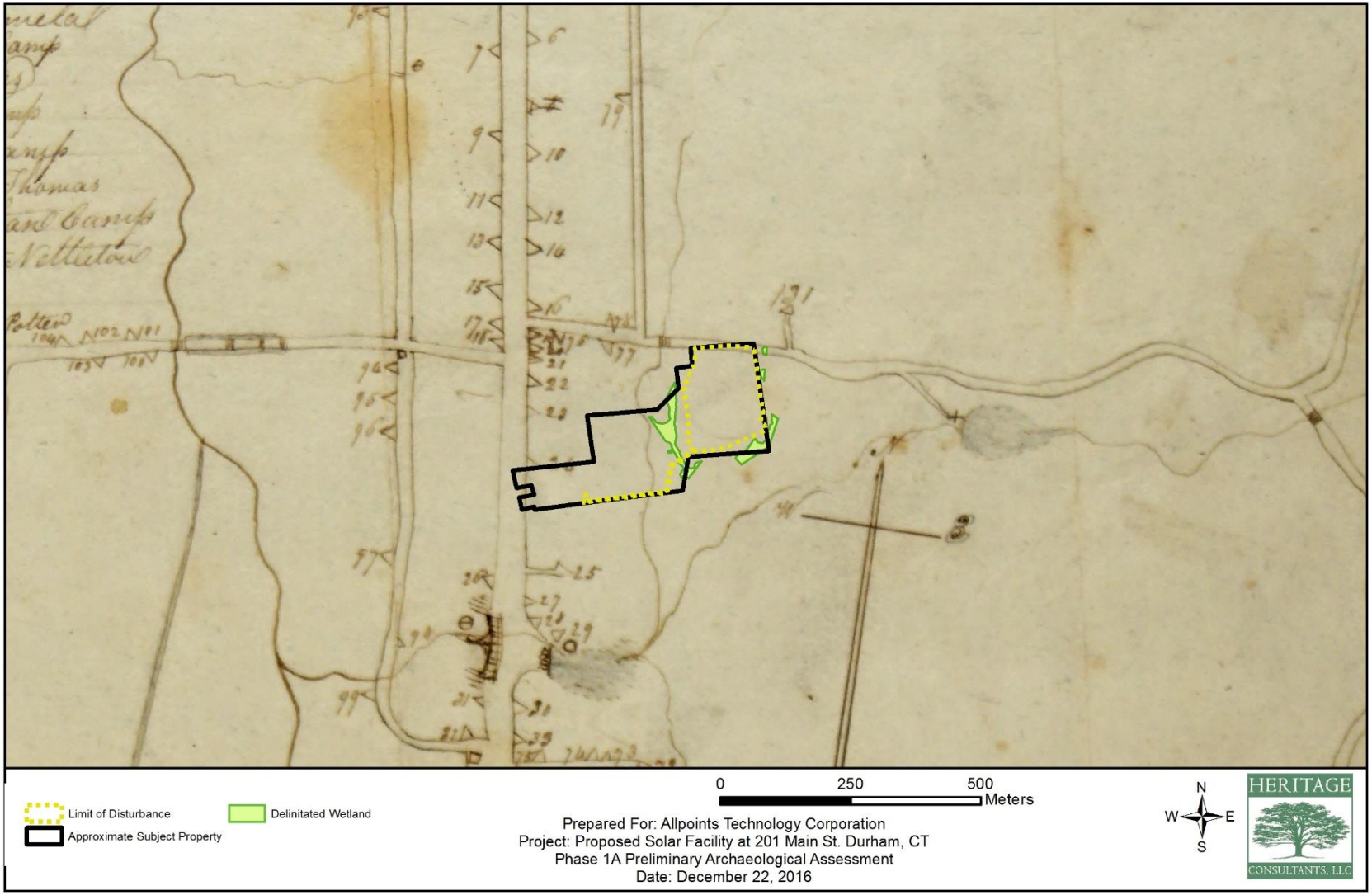

Figure 8. Excerpt from an 1827 map showing the proposed solar facility and surroundings in Durham, Connecticut.

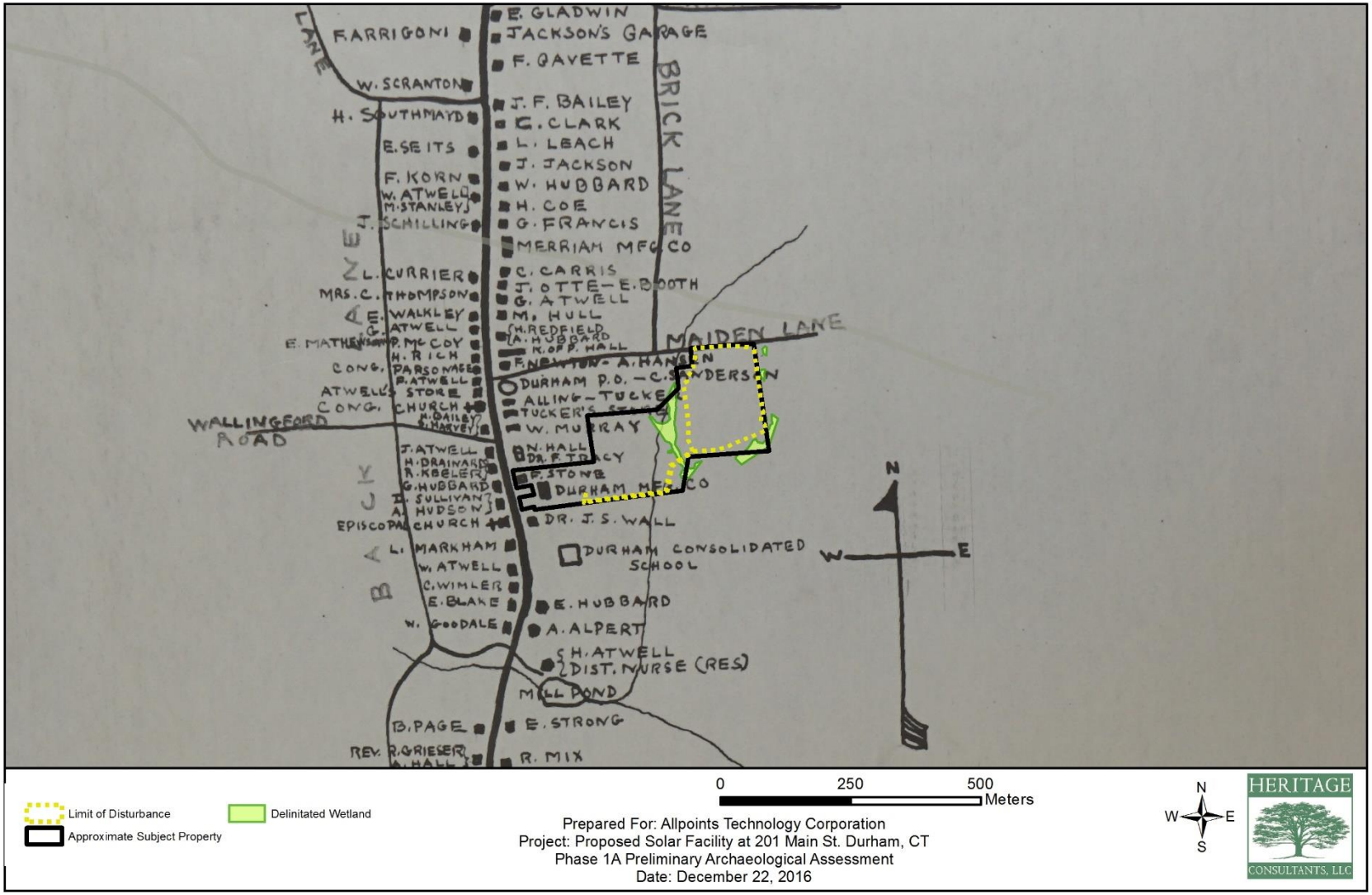

Figure 9. Excerpt from a 1933 map showing the proposed solar facility and surroundings in Durham, Connecticut.

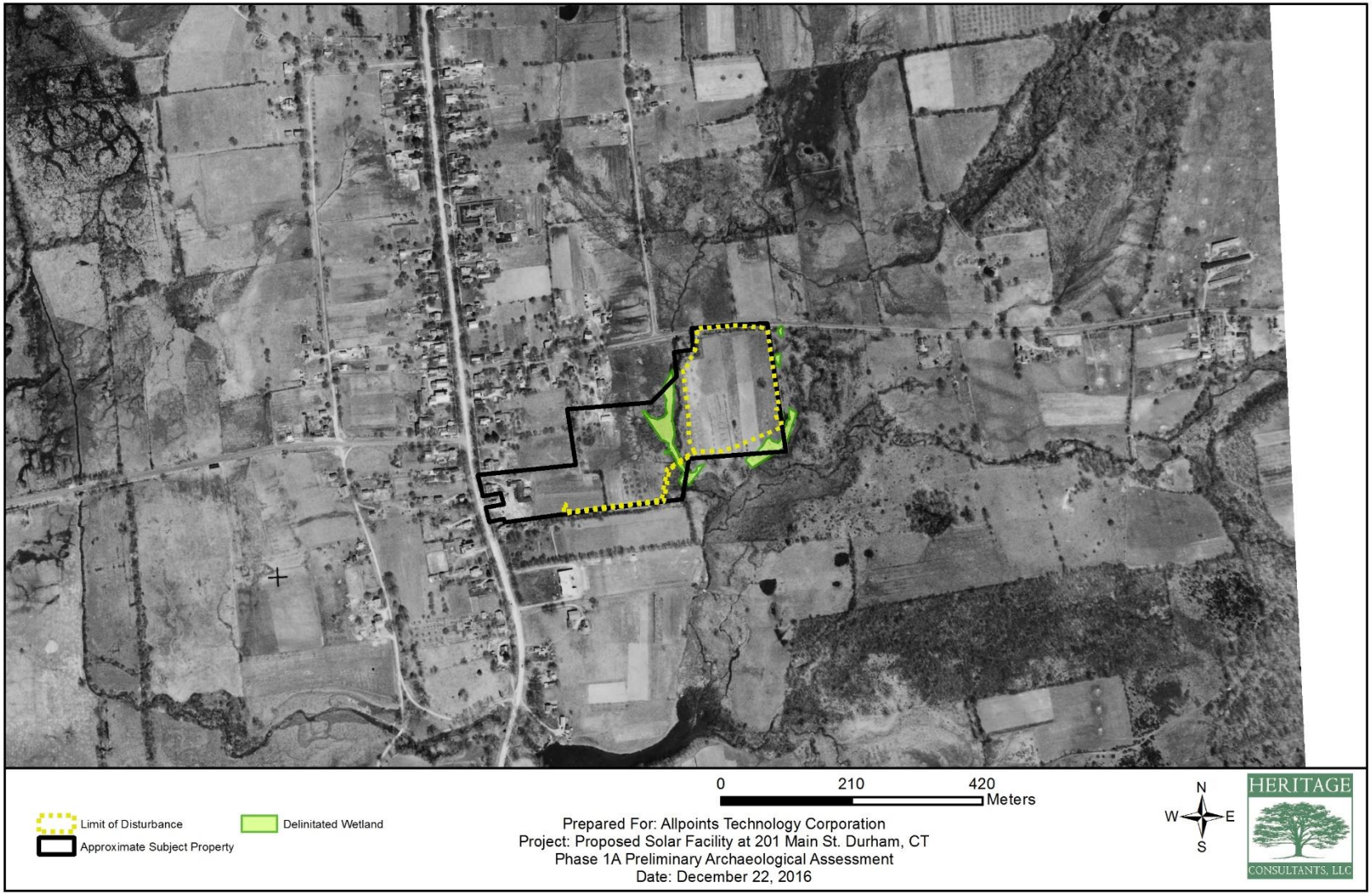

Figure 10. Excerpt from a 1934 aerial image showing the proposed solar facility and surroundings in Durham, Connecticut.

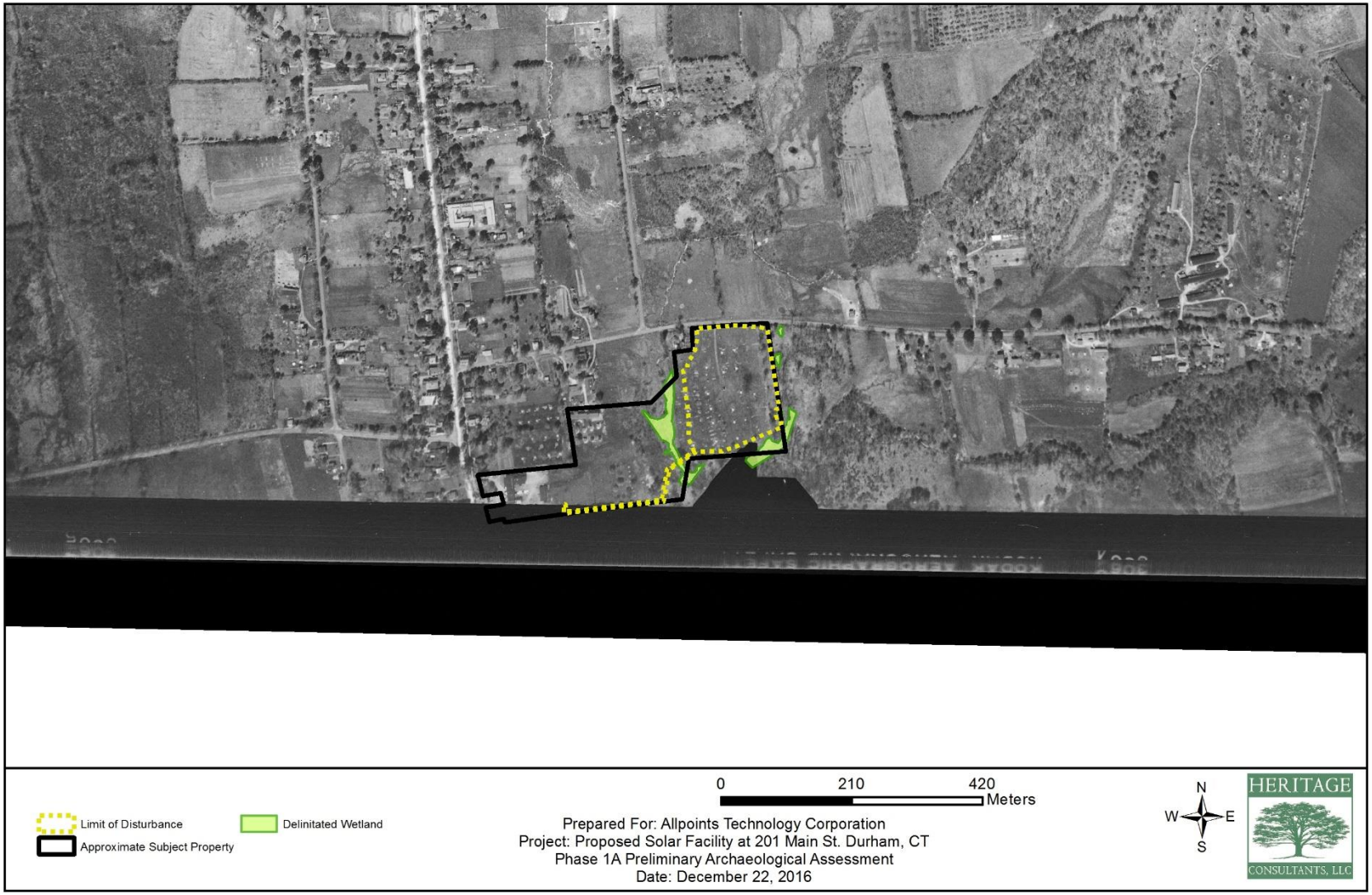

Figure 11. Excerpt from a 1949 aerial image showing the proposed solar facility and surroundings in Durham, Connecticut.

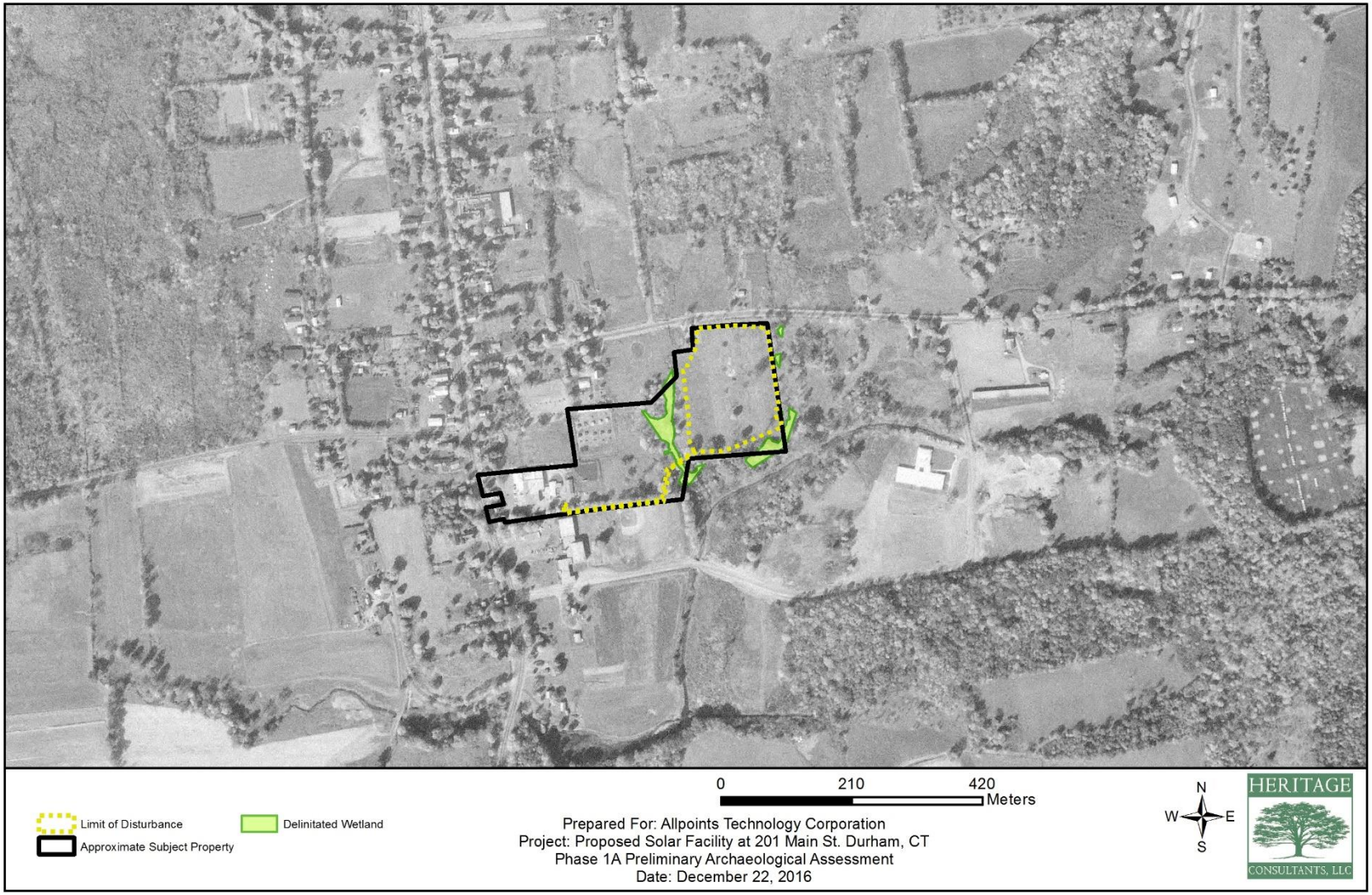

Figure 12. Excerpt from a 1963 aerial image showing the proposed solar facility and surroundings in Durham, Connecticut.

Figure 13. Excerpt from a 1971 aerial image showing the proposed solar facility and surroundings in Durham, Connecticut.

Figure 14. Excerpt from a 1980 aerial image showing the proposed solar facility and surroundings in Durham, Connecticut.

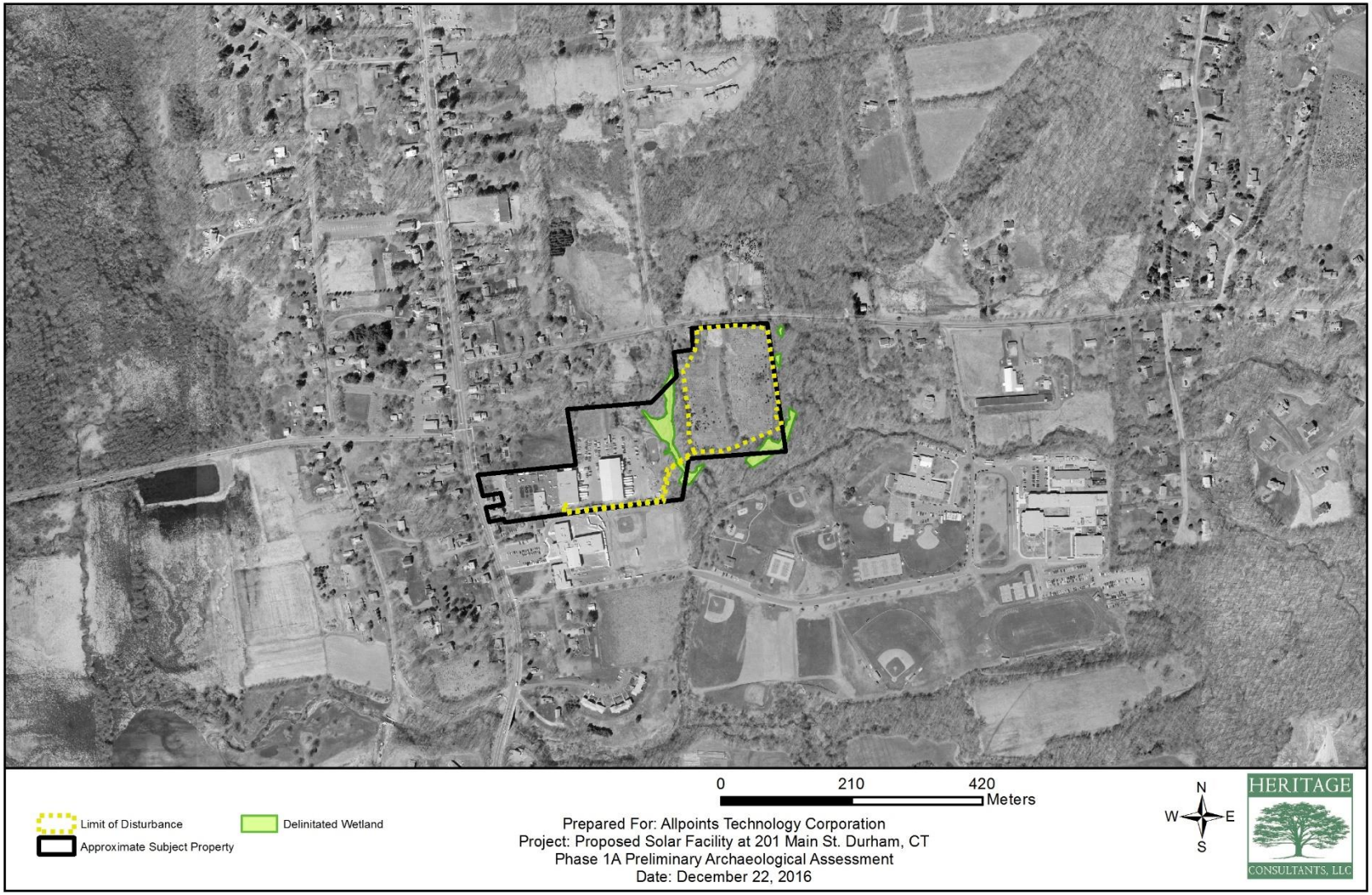

Figure 15. Excerpt from a 2004 aerial image showing the proposed solar facility and surroundings in Durham, Connecticut.

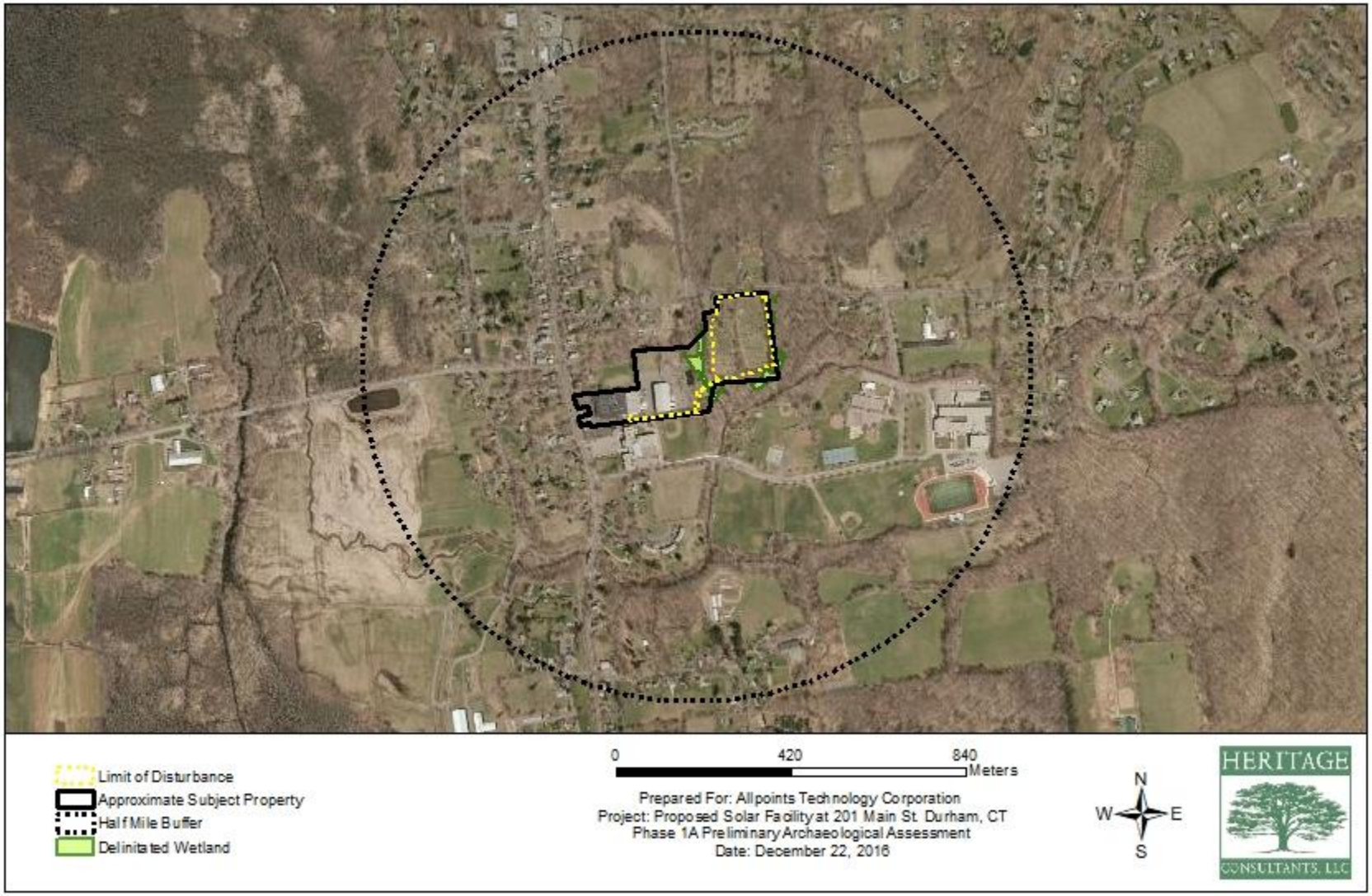

Figure 16. Excerpt from a 2016 aerial image showing the proposed solar facility and surroundings in Durham, Connecticut.

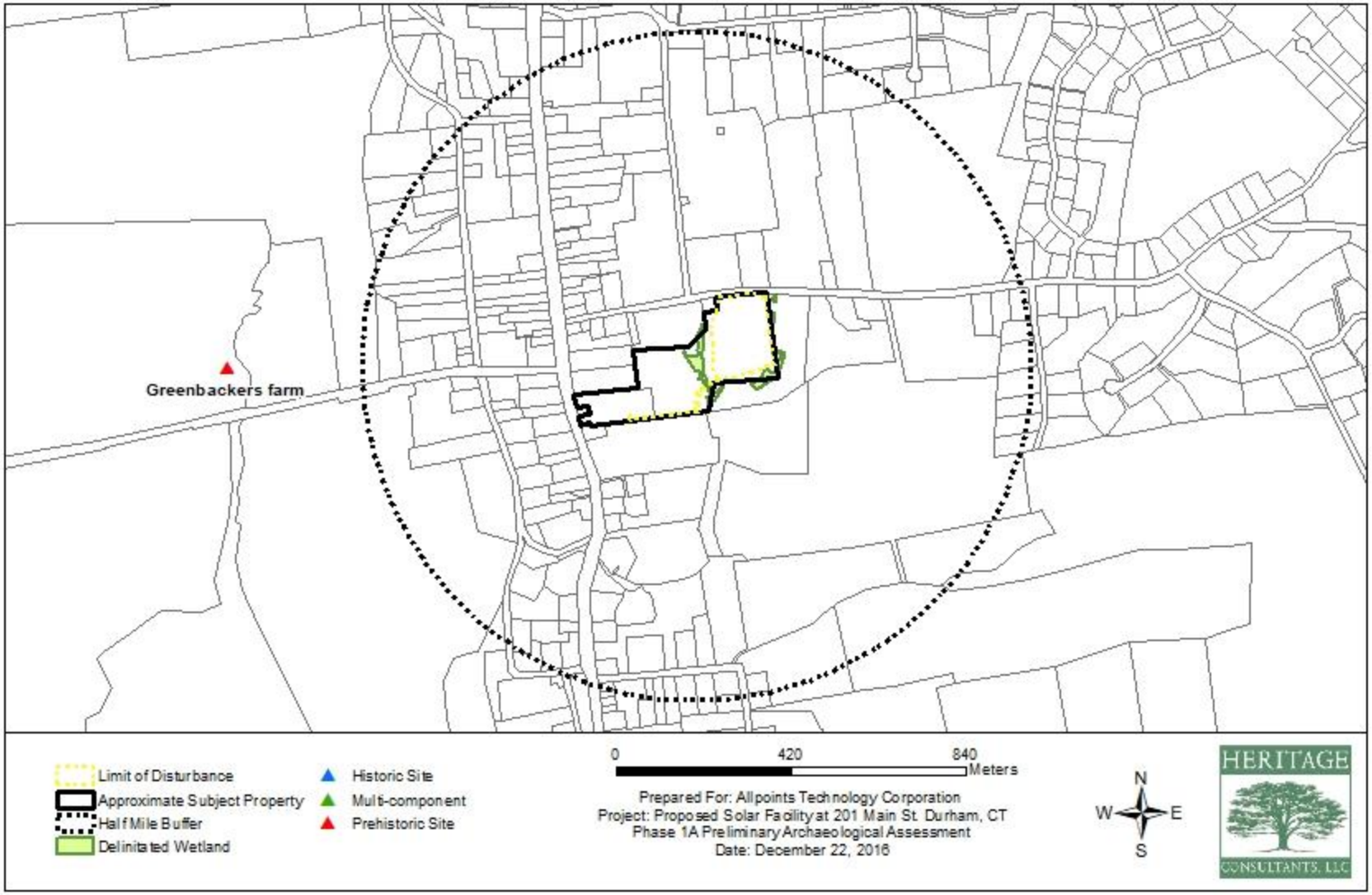

Figure 17. Digital map showing the location of previously identified archaeological sites in the vicinity of the proposed solar facility in Durham, Connecticut.

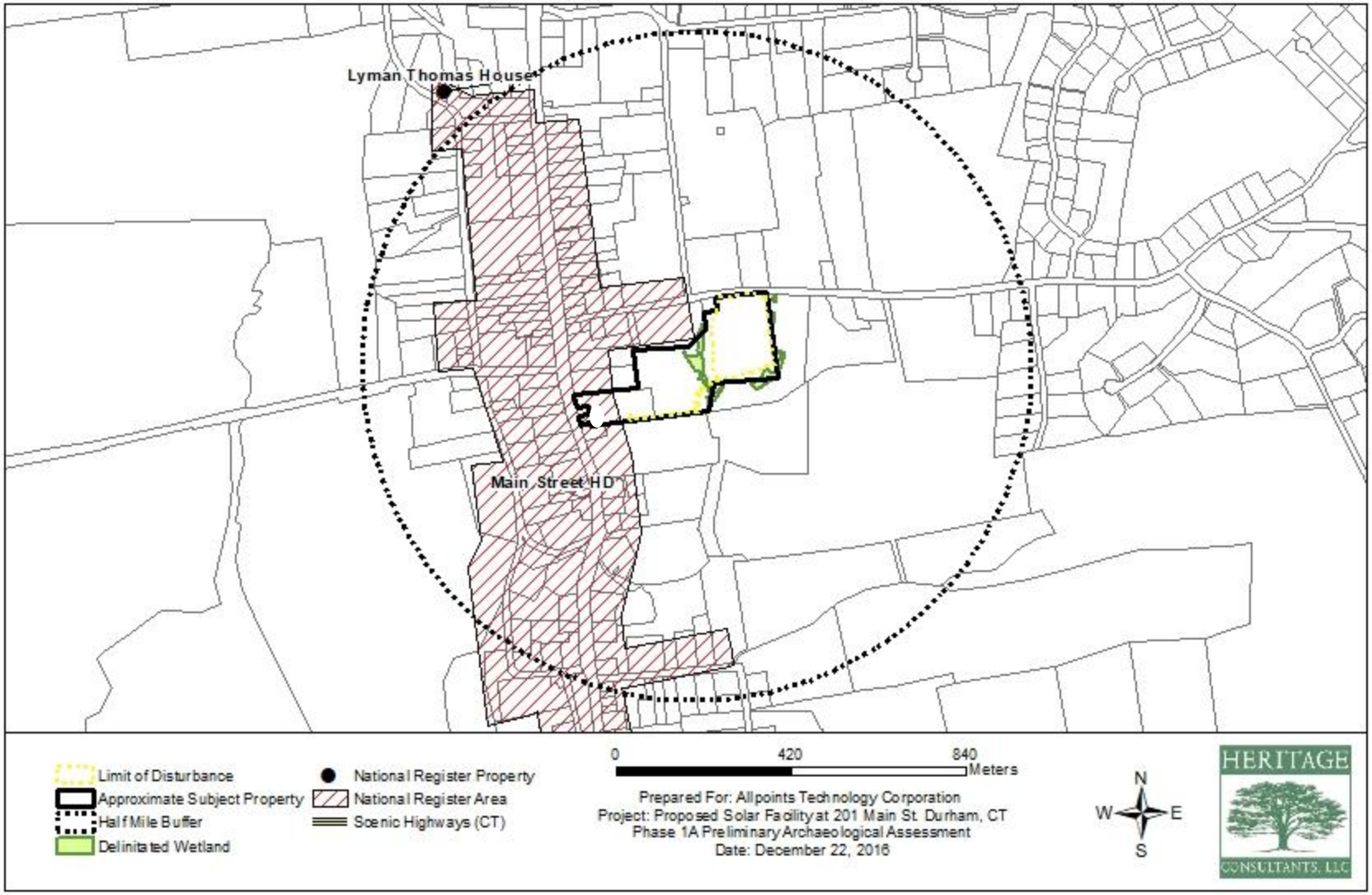

Figure 18. Digital map depicting the locations of previously identified National Register of Historic Places properties in the vicinity of the proposed solar facility in Durham, Connecticut.

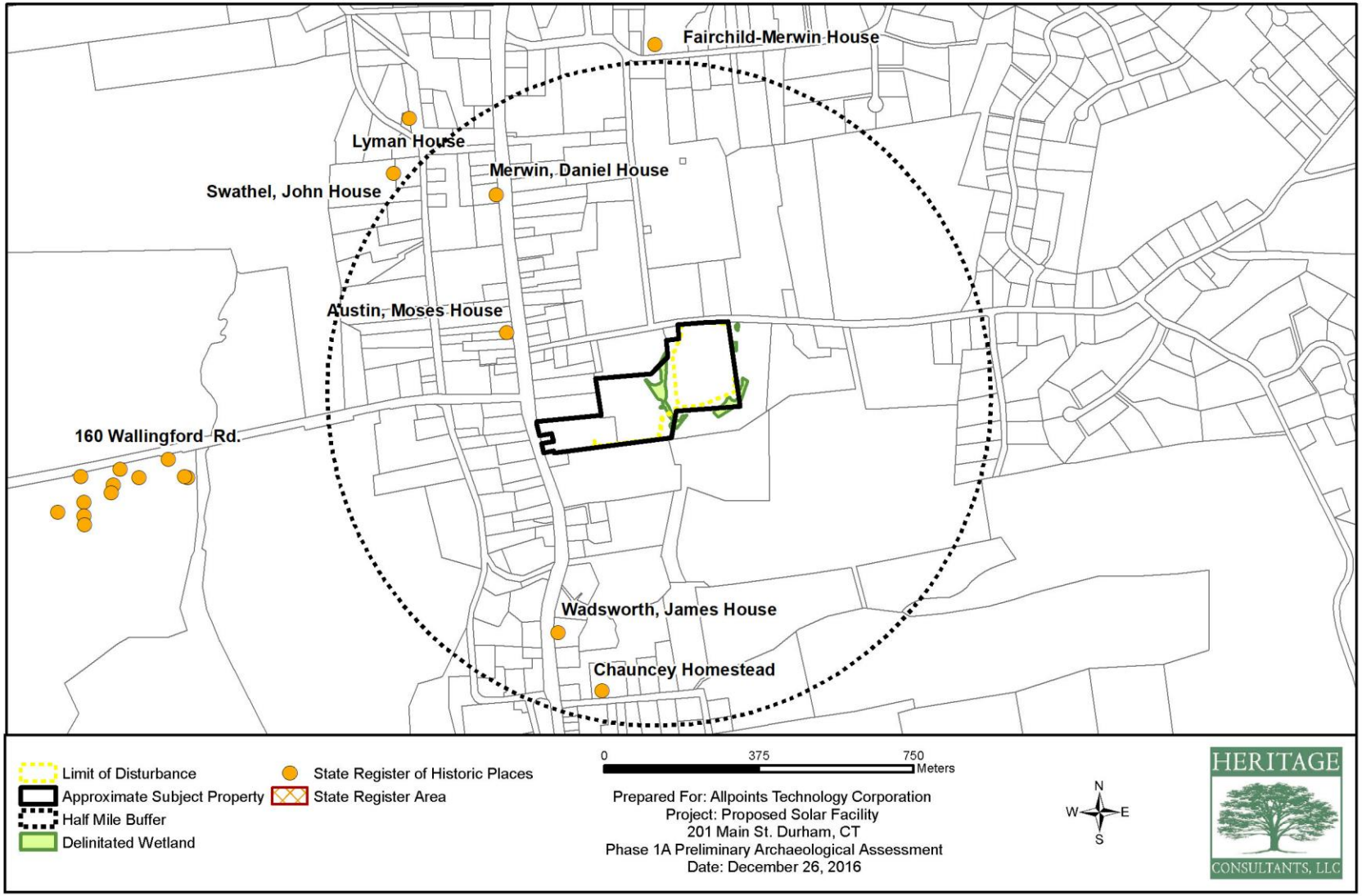

Figure 19. Digital map depicting the locations of previously identified State Register of Historic Places properties in the vicinity of the proposed solar facility in Durham, Connecticut.

Photo 1. Overview photo of the northern portion of the project area facing southwest.

Photo 2. Overview photo of the proposed project area facing east.

Photo 3. Overview photo showing western edge of existing Christmas Tree Farm.

Photo 4. Overview photo of existing tree farm facing northwest.

Photo 5. Overview photo taken from southeast corner of tree farm facing northwest.

Photo 6. Overview photo of central portion of project area facing east.

Photo 7. Overview phot of central portion of project area facing west.

Photo 8. Overview photo of project area facing northeast from interconnect location.

Photo 9. Overview photo of the interconnect area facing southwest towards stream crossing.

Photo 10. Overview photo of project area facing northeast from interconnect.

Photo 11. Overview photo taken from Maiden Lane facing southeast towards project area.

Photo 12. Southwest view from Maiden Lane showing the S.G. Camp House in background.

Photo 13. Northwest view from Maiden Lane showing the H.H. Newton house.

Photo 14. View from Maiden Lane toward the Durham Main Street National Register of Historic Places District facing east toward Brick Lane.

Photo 15. View south along the Durham Main Street Historic District and the Wallingford Road (Route 68) intersection.

Photo 16. Southwest view of Main Street from Pickett Lane.

Photo 17. View west of Main Street from Pickett Lane.

Photo 18. View north from Pickett Lane towards project area. School playground/field in foreground.

Photo 19. Southeast view of residence at 135 Pickett Lane.

Photo 20. View north of Allyn Brook from Pickett Lane.

Photo 21. Confluence of Allyn Brook and Hersig Brook just souh of project area. View is south.

Photo 22. View east of Durham Manufacturing facility

Photo 23. View east of proposed Interconnect route.

Photo 24. Overview photo home at 63 Maiden Lane (H. Tucker). Southeast view from Maiden Lane.

Photo 25. Southeast view General James Wadsworth House (#127 Main Street).

Photo 26. Northwest view of the Daniel Merwin House (#308 Main Street).

Photo 27. Northwest view of Moses Austin House (#256 Main Street).

Photo 28. Southern View of the Chauncey Elnathan House (#20 Fowler Avenue)

Photo 29. Northwest view of T.B. Strong House (#24 Maiden Lane).

Soils Map

Farmland Soils
Proposed Solar Facility
Durham Manufacturing Co.
201 Main Street
Durham, Connecticut

Legend

- Approximate Subject Property
- Ground-mounted Fenced Facility
- Limit of Disturbance
- Electrical Conduit
- Module
- 10-foot Contour Line
- 2-foot Contour Line
- Prime Farmland Soils
- Statewide Important Farmland Soils

N
W E
S

200 100 0 200 Feet

1 in = 200 ft

ALL-POINTS TECHNOLOGY CORPORATION

Map Sources:

Ortho Base Map: CTECO 2016 Aerial Imagery

CTDEEP's data library (http://www.ct.gov/deep)
Data layers are maintained and updated by CTDEEP and represent the most recent publications.

Map Date: January 2018

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