Experience: View NE along Howe Street near #101

Howe Street Solar Array Visual Mitigation Analysis | *Ashland, MA*

Existing Conditions

Experience: View NE along Howe Street near #101

Howe Street Solar Array Visual Mitigation Analysis | *Ashland, MA*

Solar Array without Mitigation

Experience: View NE along Howe Street near #101

Howe Street Solar Array Visual Mitigation Analysis | *Ashland, MA*

Unplanted Berm

Experience: View NE along Howe Street near #101

Howe Street Solar Array Visual Mitigation Analysis | *Ashland, MA*

Planted Berm (looking Northwest along Howe Street)

BEALS+THOMAS

DATE: 11/23/2015
B+T FILE NO: 266900P002

AMERESCO Solar
Portland, ME

Experience: View NE along Howe Street near #109

Howe Street Solar Array Visual Mitigation Analysis | *Ashland, MA*

Existing Conditions

Experience: View NE along Howe Street near #101

Howe Street Solar Array Visual Mitigation Analysis | *Ashland, MA*

Solar Array without Mitigation

Experience: View NE along Howe Street near #101

Howe Street Solar Array Visual Mitigation Analysis | *Ashland, MA*

Unplanted Berm

Experience: View NE along Howe Street near #101

Howe Street Solar Array Visual Mitigation Analysis | *Ashland, MA*

Planted Berm (looking Northwest along Howe Street)

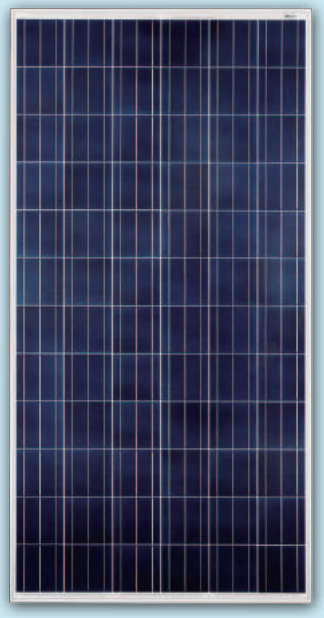
Appendix D – Solar Equipment Documentation

JA SOLAR

JAP6

72/295-315/3BB

MULTICRYSTALLINE SILICON MODULE



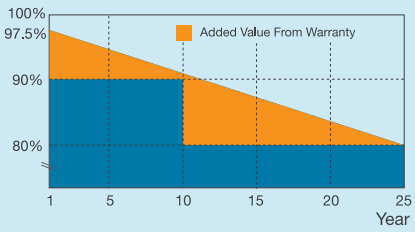
JA Solar Holdings Co., Ltd.

JA Solar Holdings Co., Ltd. is a world-leading manufacturer of high-performance photovoltaic products that convert sunlight into electricity for residential, commercial, and utility-scale power generation. The company was founded on May 18, 2005, and was publicly listed on NASDAQ on February 7, 2007. JA Solar is one of the world's largest producers of solar cells and modules. Its standard and high-efficiency product offerings are among the most powerful and cost-effective in the industry.

Add: NO.36, Jiang Chang San Road, Zhabei, Shanghai 200436, China
Tel: +86 21 6095 5888 / +86 21 6095 5999
Fax: +86 21 6095 5858 / +86 21 6095 5959
Email: sales@jasolar.com market@jasolar.com

Superior Warranty

- 10-year product warranty
- 25-year linear power output warranty



Key Features

- Multicrystalline modules designed for commercial and solar farm grid-tied applications
- High output, 16.25% highest conversion efficiency
- Designed for IEC DC 1000V applications
- Anti-reflective and anti-soiling surface reduces power loss from dirt and dust
- Outstanding performance in low-light irradiance environments
- Excellent mechanical load resistance: Certified to withstand high wind loads (2400Pa) and snow loads (5400Pa)
- High salt and ammonia resistance certified by TÜV NORD

Reliable Quality

- Positive power tolerance: 0~+5W
- 100% EL double-inspection ensures modules are defects free
- Modules binned by current to improve system performance
- Potential Induced Degradation (PID) Resistant

Comprehensive Certificates

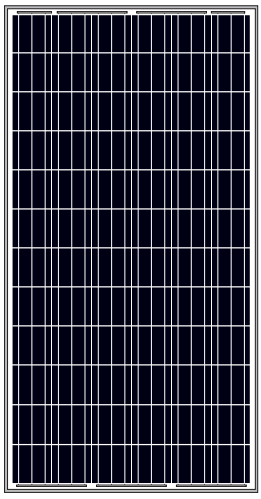
- IEC 61215, IEC 61730, UL1703, CEC Listed, MCS and CE
- ISO 9001: 2008: Quality management systems
- ISO 14001: 2004: Environmental management systems
- BS OHSAS 18001: 2007: Occupational health and safety management systems
- Environmental policy: The first solar company in China to complete Intertek's carbon footprint evaluation program and receive green leaf mark verification for our products

Specifications subject to technical changes and tests. JA Solar reserves the right of final interpretation.

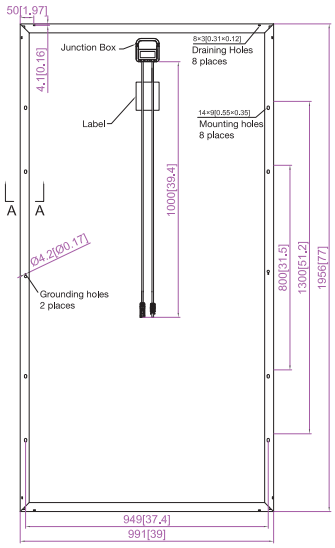
JAP6 72/295-315/3BB

JA SOLAR

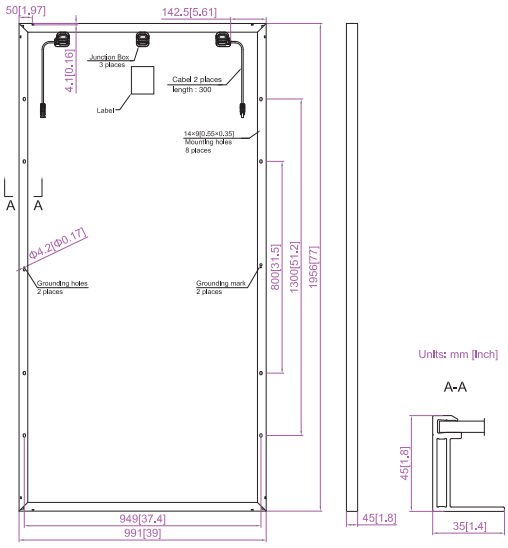
Engineering Drawings



■ Standard J-BOX design



■ Split J-BOX design



■ customized cable length available upon request

MECHANICAL PARAMETERS

Cell (mm)	Poly 156x156
Weight (kg)	22.5 (approx)
Dimensions (L×W×H) (mm)	1956×991×45
Cable Cross Section Size (mm^2)	4
No. of Cells and Connections	72 (6×12)
Junction Box	IP67, 3 diodes
Connector	MC4 Compatible
Packaging Configuration	23 Per Pallet

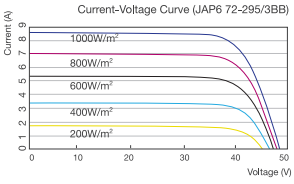
WORKING CONDITIONS

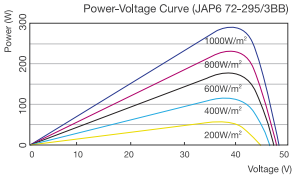
Maximum System Voltage	DC 1000V (IEC)
Operating Temperature	-40℃~+85℃
Maximum Series Fuse	15A
Maximum Static Load, Front (e.g., snow and wind) Maximum Static Load, Back (e.g., wind)	5400Pa (112 lb/ft^2) 2400Pa (50 lb/ft^2)
NOCT	45±2℃
Application Class	Class A

ELECTRICAL PARAMETERS

TYPE	JAP6 72-295/3BB	JAP6 72-300/3BB	JAP6 72-305/3BB	JAP6 72-310/3BB	JAP6 72-315/3BB
Rated Maximum Power at STC (W)	295	300	305	310	315
Open Circuit Voltage (Voc/V)	45.00	45.20	45.35	45.45	45.60
Maximum Power Voltage (Vmp/V)	36.25	36.41	36.71	37.00	37.28
Short Circuit Current (Isc/A)	8.65	8.73	8.79	8.85	8.91
Maximum Power Current (Imp/A)	8.14	8.24	8.31	8.38	8.45
Module Efficiency [%]	15.22	15.48	15.73	15.99	16.25
Power Tolerance (W)	-0~+5W				
Temperature Coefficient of Isc (αIsc)	+0.058%/℃				
Temperature Coefficient of Voc (βVoc)	-0.330%/℃				
Temperature Coefficient of Pmax (γPmp)	-0.430%/℃				
STC	Irradiance 1000W/m^2, Module Temperature 25℃, Air Mass 1.5				

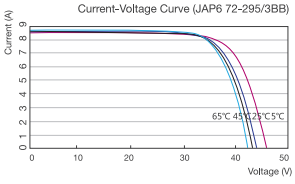
I-V CURVE





NOCT

TYPE	JAP6 72-295/3BB	JAP6 72-300/3BB	JAP6 72-305/3BB	JAP6 72-310/3BB	JAP6 72-315/3BB
Max Power (Pmax) [W]	214.17	217.80	221.43	225.06	228.69
Open Circuit Voltage (Voc) [V]	42.14	42.31	42.47	42.58	42.63
Max Power Voltage (Vmp) [V]	33.57	33.77	33.91	34.05	34.08
Short Circuit Current (Isc) [A]	6.84	6.89	6.93	6.99	7.06
Max Power Current (Imp) [A]	6.38	6.45	6.53	6.61	6.71
Condition	Under Normal Operating Cell Temperature, Irradiance of 800 W/m^2, spectrum AM 1.5, ambient temperature 20℃, wind speed 1 m/s				



Electrical data in this catalog do not refer to a single module and they are not part of the offer. They only serve for comparison among different module types.

3-PH TRANSFORMERLESS
STRING INVERTERS

PVI **14TL**
PVI **20TL**
PVI **23TL**
PVI **28TL**
PVI **36TL**

FEATURES

- 600 or 1000 VDC
- Best-in-class efficiency
- Touch-safe fuses
- Quick and easy installation
- Dual MPP tracking zones
- Wide MPPT range
- Lightweight, compact design
- Modbus communications
- User-interactive LCD
- Integrated DC fused string combiner
- DC arc-fault protection

OPTIONS

- Web-based monitoring
- Shade cover
- DC/AC disconnect covers
- Roof mount array bracket
- DC combiners bypass

3-PH TRANSFORMERLESS STRING INVERTERS

Solectria Renewables' PVI 14TL, PVI 20TL, PVI 23TL, PVI 28TL, and PVI 36TL are compact, transformerless three-phase inverters with a dual MPP tracker. These inverters come standard with AC and DC disconnects, user-interactive LCD, and an 8-position string combiner. Its small, lightweight design makes for quick and easy installation and maintenance. These inverters include an enhanced DSP control, comprehensive protection functions, and advanced thermal design enabling highest reliability and uptime. They also come with a standard 10 year warranty with options for 15 and 20 years. Options include web-based monitoring, shade cover, DC/AC disconnect covers, DC combiners bypass, and roof mount array bracket.

Built for the real world

SPECIFICATIONS	PVI 14TL	PVI 20TL	PVI 23TL	PVI 28TL	PVI 36TL
DC Input					
Absolute Maximum Open Circuit Voltage	600 VDC		1000 VDC		
Operating Voltage Range (MPPT)	180-580 VDC	260-580 VDC	300-900 VDC		280-950 VDC
Max Power Input Voltage Range (MPPT)	300-540 VDC	300-550 VDC	480-800 VDC	500-800 VDC	540-800 VDC
MPP Trackers	2 with 4-fused inputs per tracker				
Maximum Operating Input Current	25 A per MPPT (50 A)	35 A per MPPT (70 A)	25 A per MPPT (50 A)	29 A per MPPT (58 A)	37.5 A per MPPT (75 A)
Maximum Short Circuit Current	45 A per MPPT (90 A)	45.5 A per MPPT (91 A)	41 A per MPPT (82 A)	48 A per MPPT (96 A)	60 A per MPPT (120 A)
Maximum PV Power (per MPPT)	9.5 kW	13.5 kW	15.5 kW	19 kW	27 kW
Strike Voltage	300 V		330 V		
AC Output					
Nominal Output Voltage	208 VAC, 3-Ph	480 VAC, 3-Ph			
AC Voltage Range (Standard)	-12%/+10%				
Continuous Output Power (VAC)	14 kW	20 kW	23 kW	28 kW	36 kW
Maximum Output Current (VAC)	39 A	24 A	27.7 A	33.7 A	43 A
Maximum Backfeed Current	0 A				
Nominal Output Frequency	60 Hz				
Output Frequency Range	59.3-60.5 Hz (adjustable 55-65 Hz)				57-63 Hz
Power Factor	Unity, ›0.99 (±0.8 adjustable)	Unity, ›0.99 (±0.9 adjustable)	Unity, ›0.99 (±0.8 adjustable)		
Total Harmonic Distortion (THD) @ Rated Load	‹ 3%				
Grid Connection Type	3ø+/N/GND				
Efficiency					
Peak Efficiency	96.9%	97.4%	98.6%	98.5%	
CEC Efficiency	96.0%	97.0%	98.0%		
Tare Loss	4 W	2 W	1 W		
Integrated String Combiner					
8 Fused Positions (4 positions per MPPT)	15 A (fuse by-pass available)				15 or 30 A (30 A only for combined inputs)
Temperature					
Ambient Temperature Range	-13°F to +140°F (-25°C to +60°C) Derating occurs over +50°C		-13°F to +140°F (-25°C to +60°C) Derating occurs over +45°C		
Storage Temperature Range	-22°F to +158°F (-30°C to +70°C)				-58°F to +158°F (-50°C to +70°C)
Relative Humidity (non-condensing)	0-95%				
Operating Altitude	13,123 ft/4000 m (derating from 6,562 ft/2000 m)				
Data Monitoring					
Optional SolrenView Web-based Monitoring	Integrated				
Optional Revenue Grade Monitoring	External				
External Communication Interface	RS-485 Modbus RTU				
Testing & Certifications					
Safety Listings & Certifications	UL 1741/IEEE 1547, CSA C22.2#107.1, FCC part 15 B				
Testing Agency	ETL				
Warranty					
Standard	10 year				
Optional	15, 20 year; extended service agreement				
Enclosure					
dBA (Decibel) Rating	‹ 50 dBA @ 1m				
AC/DC Disconnect	Standard, fully-integrated				
Dimensions (H x W x D)	41.6 in. x 21.4 in. x 8.5 in. (1057 mm x 543 mm x 216 mm)		39.4 in. x 23.6 in. x 9.1 in. (1000 mm x 600 mm x 230 mm)		
Weight	141 lbs (64 kg)	132 lbs (60 kg)	104 lbs (47.3 kg)		
Enclosure Rating	Type 4				
Enclosure Finish	Polyester powder coated aluminum				

Distribution Transformers

COOPER Power Systems

Electrical Apparatus

Three-Phase Pad-mounted Compartmental Type Transformer

210-12

GENERAL

At Cooper Power Systems, we are constantly striving to introduce new innovations to the transformer industry, bringing you the highest quality, most reliable transformers. Cooper Power Systems Transformer Products are ISO 9001 compliant, emphasizing process improvement in all phases of design, manufacture, and testing. In order to drive this innovation, we have invested both time and money in the Thomas A. Edison Technical Center, our premier research facility in Franksville, Wisconsin. Headquarters for the Systems Engineering Group of Cooper Power Systems, such revolutionary products as distribution-class UltraSIL™ Polymer-Housed Evolution™ surge arresters and Envirotemp™ FR3™ fluid have been developed at our Franksville lab.

With transformer sizes ranging from 45 kVA to 12 MVA and high voltages ranging from 2400 V to 46 kV, Cooper Power Systems has you covered. From fabrication of the tanks and cabinets to winding of the cores and coils, to production of arresters, switches, tap changers, expulsion fuses, current limit fuses, bushings (live and dead) and molded rubber goods, Cooper Power Systems does it all. Cooper Power Systems transformers are available with our patented Envirotemp FR3 fluid, a less-flammable and bio-degradable fluid or electrical grade mineral oil. Electrical codes recognize the advantages of using Envirotemp FR3 fluid both indoors and outdoors for fire sensitive applications. Envirotemp FR3 fluid-filled units meet Occupational Safety and Health Administration (OSHA) and Section 450.23 NEC Requirements.

Figure 1.
Three-phase pad-mounted transformer.

PRODUCT SCOPE

Type	Three Phase, 50 or 60 Hz, 65 ºC Rise (55 ºC, 55 ºC/65 ºC)
Fluid Type	Envirotemp™ FR3™ or Mineral oil
Size	45 – 12,000 kVA
Primary Voltage	2, 400 – 46,000 V
Secondary Voltage	208Y/120 V to 14,400 V
Specialty Designs	Inverter/Rectifier Bridge
	K-Factor (up to K-19)
	Vacuum Fault Interrupter (VFI)
	UL Listed & Labeled and Classified
	Factory Mutual (FM) Approved
	Solar/Wind Designs
	Differential Protection
	Seismic Applications (including OSHPD)

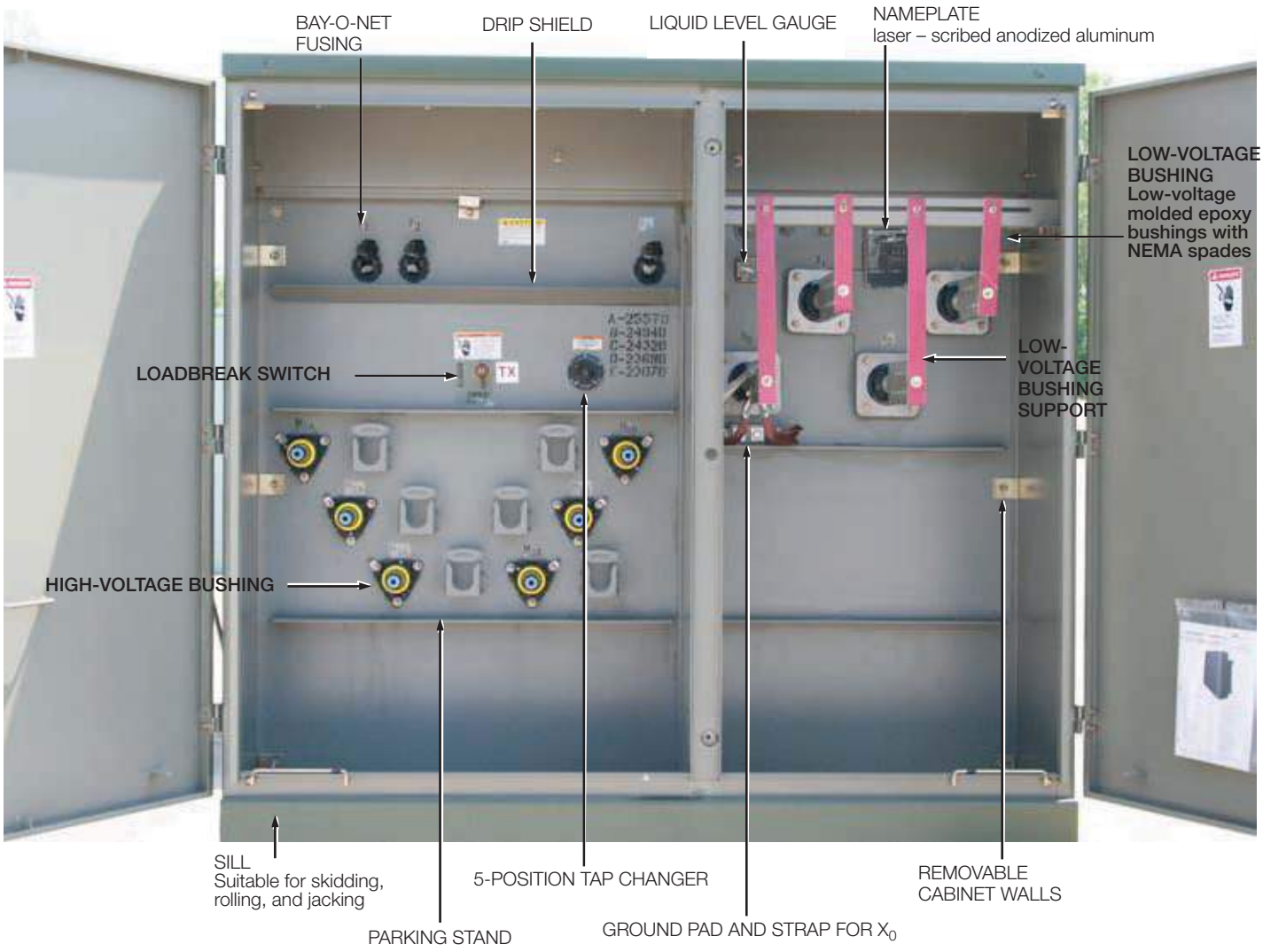
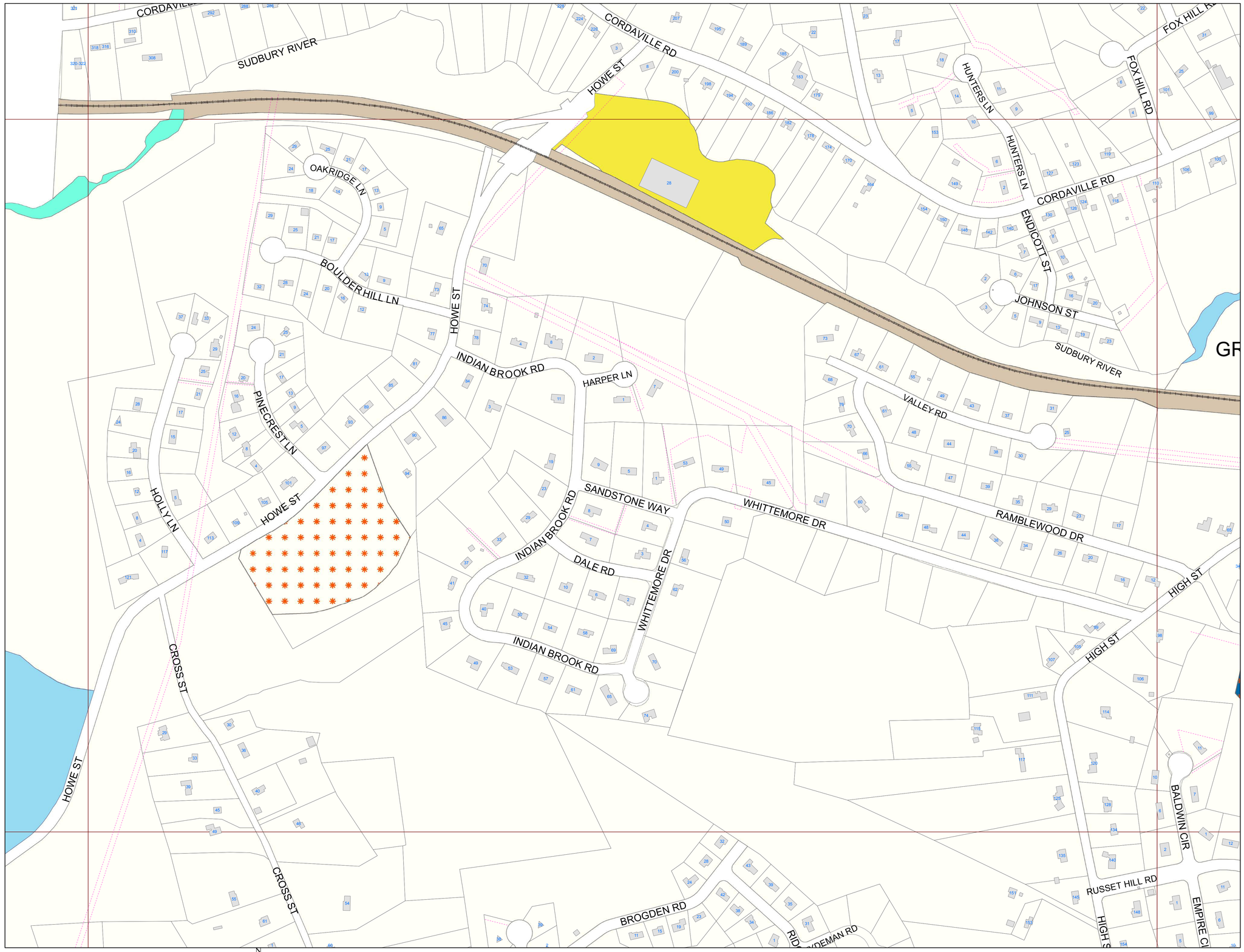


Figure 2.
Three-phase pad-mounted compartmental type transformer.

Appendix E – Zoning Maps



ZONING DISTRICTS

RESIDENTIAL
- RESIDENTIAL A RA
- RESIDENTIAL B RB
- RESIDENTIAL MULTI_FAMILY RM

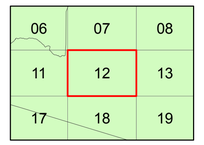
COMMERCIAL
- ADD -"A" OVERLAY
- ADD - "B"
- ADD - "C"
- DOWNTOWN COMMERCE CD
- HIGHWAY COMMERCE CH
- OFFICE COMMERCE CO
- VILLAGE COMMERCE CV
- NEIGHBORHOOD COMMERCE CN

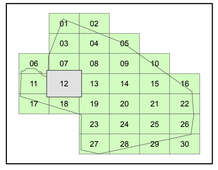
INDUSTRIAL
- INDUSTRIAL

RAIL TRANSIT DISTRICT
- RTD "A"
- RTD "B"
- RTD "C"
- RTD "D"
- RTD "E"
- RTD "F"

WILDWOOD MIXED USE DISTRICT
- WMUSD "A"
- WMUSD "B"
- WMUSD "C"
- WMUSD "D"
- WMUSD "E"
- WMUSD "BUFFER"
- QUARRY REMEDIATION DISTRICT

OTHER
- POND ST MIXED USE OVERLAY
- GROUNDWATER PROTECTION OVERLAY
- SOLAR OVERLAY
- SURFACE WATER BODY
- RIVER
- TRAIN LINE
- TRAIN RIGHT OF WAY
- EASEMENT
- BUILDINGS
- PARCELS





0 100 200 400 600 800 1,000 Feet

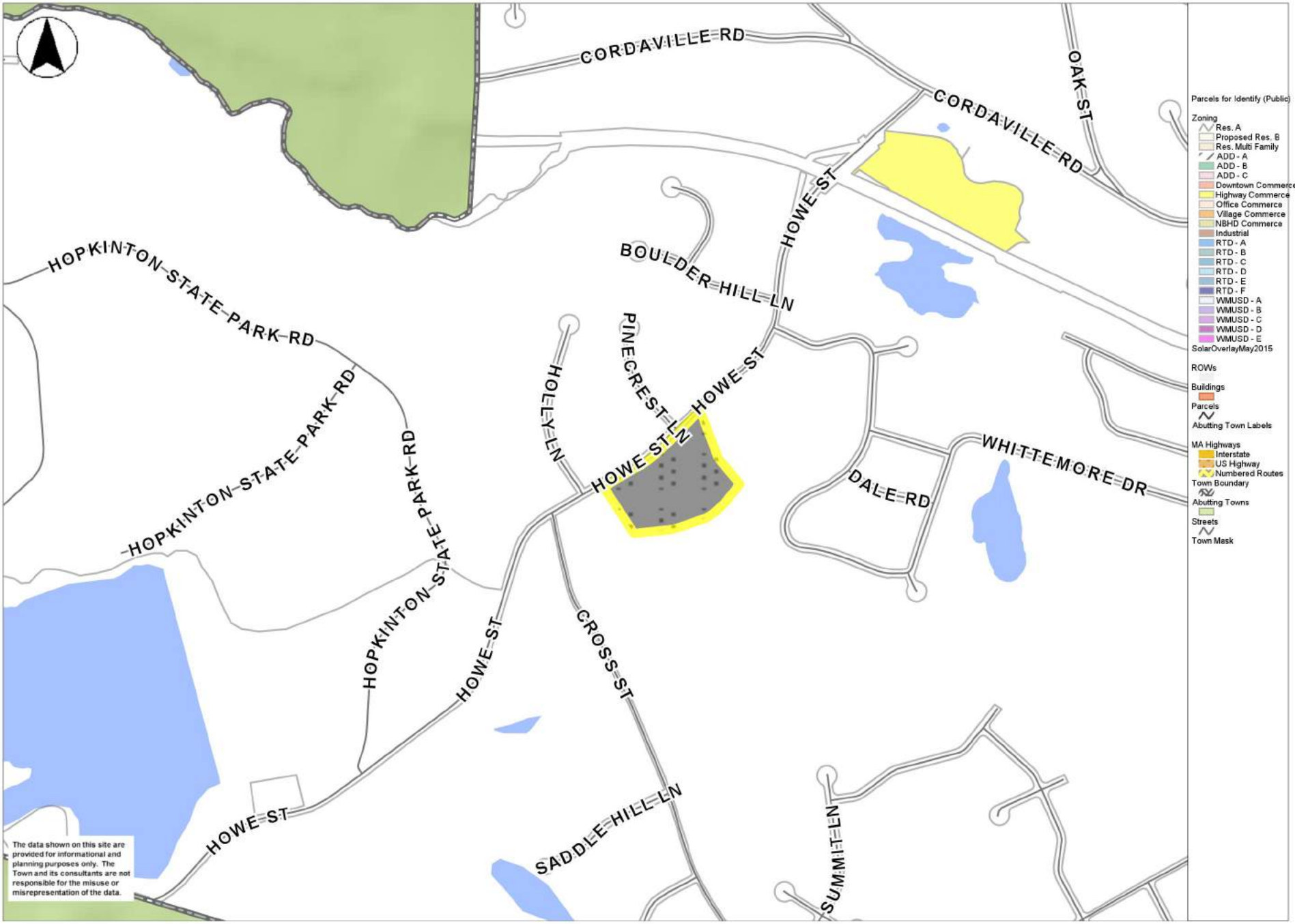
N W E S

TOWN OF ASHLAND - ZONING & TAX PARCEL FY 2014

Information shown on this map is from the Ashland GIS database. The Town of Ashland does not guarantee the accuracy of the information. Users are responsible for determining its suitability for their intended use or purpose. Parcel lines depict approximate boundaries of land ownership and should not be used to support any legal determination of boundaries related to rights or interests in real property.

May, 2014

12



0 1000 2000 ft

Printed on 10/20/2015 at 01:24 PM

MapsOnline

Appendix F – Liability Insurance

Client#: 2793 AMERESCO

ACORD™ CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY) 9/08/2015

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER	CONTACT NAME:	
William Gallagher Associates Insurance Brokers, Inc. 470 Atlantic Avenue Boston, MA 02210	PHONE (A/C, No, Ext): 617 261-6700	FAX (A/C, No): 617-646-0400
	E-MAIL ADDRESS:	

INSURER(S) AFFORDING COVERAGE	NAIC #
INSURER A : Zurich-American Insurance Compa	27855
INSURER B : Nat'l Union Fire Insurance Co.	
INSURER C : Steadfast Insurance Company	26387
INSURER D :	
INSURER E :	
INSURER F :	

INSURED
Ameresco, Inc.
111 Speen Street
Suite 410
Framingham, MA 01701

COVERAGES **CERTIFICATE NUMBER:** **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSR	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
A	GENERAL LIABILITY			GLO585238802	11/30/2014	11/30/2015	EACH OCCURRENCE	$2,000,000
	X COMMERCIAL GENERAL LIABILITY						DAMAGE TO RENTED PREMISES (Ea occurrence)	$500,000
	CLAIMS-MADE X OCCUR						MED EXP (Any one person)	$10,000
							PERSONAL & ADV INJURY	$2,000,000
							GENERAL AGGREGATE	$4,000,000
	GEN'L AGGREGATE LIMIT APPLIES PER:						PRODUCTS - COMP/OP AGG	$4,000,000
	POLICY X PRO-JECT LOC							$
A	AUTOMOBILE LIABILITY			BAP585238702	11/30/2014	11/30/2015	COMBINED SINGLE LIMIT (Ea accident)	$1,000,000
	X ANY AUTO						BODILY INJURY (Per person)	$
	ALL OWNED AUTOS / SCHEDULED AUTOS						BODILY INJURY (Per accident)	$
	X HIRED AUTOS / X NON-OWNED AUTOS						PROPERTY DAMAGE (Per accident)	$
								$
B	X UMBRELLA LIAB X OCCUR			8766186	11/30/2014	11/30/2015	EACH OCCURRENCE	$5,000,000
	EXCESS LIAB CLAIMS-MADE						AGGREGATE	$5,000,000
	DED RETENTION $							$
A	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY Y / N	N / A		WC595394501	11/30/2014	11/30/2015	X WC STATU-TORY LIMITS / OTH-ER	
	ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? N						E.L. EACH ACCIDENT	$1,000,000
	(Mandatory in NH)						E.L. DISEASE - EA EMPLOYEE	$1,000,000
	If yes, describe under DESCRIPTION OF OPERATIONS below						E.L. DISEASE - POLICY LIMIT	$1,000,000
C	Professional Liability			EOC669274304	11/30/2014	11/30/2015	$2,000,000 agg/occ $1,000,000 SIR	

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (Attach ACORD 101, Additional Remarks Schedule, if more space is required)
Evidence of Insurance

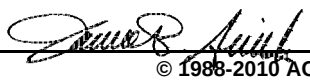
CERTIFICATE HOLDER

Ameresco, Inc.
111 Speen Street,Suite 410
Framingham, MA 01701

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE



Appendix G – Operation and Maintenance Plan

PV Projects Operational and Maintenance Service Procedures



AMERESCO
Green • Clean • Sustainable

Connect to Smarter Energy Solutions.

Integrity ■ Flexibility ■ Independence ■ Innovation

Main Office:
111 Speen Street, Suite 410
Framingham, MA 01701

Phone: (508) 661-2256
Fax: (508) 661-2201

Table of Contents

Introduction

The purpose of this document is to outline PV Projects Operational and Maintenance Service Procedures for requesting service, response to alarms and performing Annual Preventive Maintenance for the life of the Power Purchase Agreements (PPA) with our Customers. The AMERESCO Yearly Operations and Maintenance Checklist- PV Systems included here within provides guidelines for recommended routine maintenance that should be followed throughout the life of the contract. The equipment operational date begins on the date that the customer signed the Certificate of Acceptance for that system. These dates are indicated in Table 1.

Procedures for handling Warranty, Service and Alarms are provided in the body of this document.

Table 1:
Site Location Operational and Acceptance Dates

Site Location	Equipment Operational and Acceptance Dates

AMERESCO Yearly Operational and Maintenance Checklist- PV Systems

The AMERESCO Yearly Operational and Maintenance will be used in effort to maximize the output of the system maintain complete functionality of the system. Included in these Services are the following:

- Annual Preventative Maintenance via **AMERESCO Web Based Service Delivery System (ASDS)**
- Complete Maintenance Checklist Documents as shown within
- Confirm that the system/equipment is functional and operating as intended.
- Review current O&M practices to ensure compliance with the contract requirements.
- Review current or past problems with Equipment.

AMERESCO Annual Operations and Maintenance Checklist- PV Systems

Project #_____

I. Array

Date:_____

Performed by: Name:_____ Company:_____

a) Panel

- ☐ WASH GLASS COVERS
- ☐ CLEAR DEBRIS/FOLIAGE SHADING MODULES
- ☐ CLEAR DEBRIS/FOLIAGE LYING UNDERNEATH ARRAY
- ☐ INSPECT GLASS COVERS

Note markings/chips/laminate inconsistencies, degree of damage, string & array number of damages, & position on module:
Notes:_____

_____

_____

_____

_____

- ☐ REPLACE SEVERELY BROKEN/CRACKED COVERS OR FRAME SECTIONS

b) Mounting

- ☐ ADJUST TILT ANGLE OF ARRAY (IF APPLICABLE)
- ☐ INSPECT RACKS AND STRUCTURAL MOUNTS FOR BENDING, CORROSION
- ☐ TIGHTEN MOUNTING FASTENERS
- ☐ INSPECT AND REPAIR PENETRATIONS TO THE ROOF FOR LEAKAGE
- ☐ REPLACE DAMAGED OR SEVERELY RUSTED/CORRODED COMPONENTS
- ☐ USE SILICON SEALANT ON REPLACEMENTS TO PREVENT FUTURE CORROSION

Note severe structural damage of components, extent of damage, & location within system:
Notes:_____

_____

_____

_____

c) Electrical Components

- ☐ REPLACE DETERIORATED WEATHER SEALS
- ☐ REPLACE DETERIORATED/CRACKED INTER-MODULE CONNECTIONS
- ☐ TIE-UP LOOSE WIRING, ENSURE PROTECTION FROM ANIMALS/INSECTS
- ☐ REPLACE WIRING WITH DAMAGED INSULATION, CORROSION, OR FRAYING
- ☐ INSPECT AND REPAIR ELECTRICAL CONDUITS, COMBINER BOXES, AND JUNCTION BOXES:
- ☐ REPLACE BOX COVERS THAT DO NOT CLOSE TIGHTLY
- ☐ REPLACE DEFORMED CONDUITS IF LOOSE WITHIN CONNECTION POINTS
- ☐ REPLACE DEFORMED GASKETS
- ☐ USE NOALOX ON REPLACEMENT ALUMINUM COMPONENTS THAT DEFORMED UNDER EXPANSION/CONTRACTION

Notes:_____

_____

_____

_____

II. Inverter

Date:_____

Performed by: Name:_____ Company:_____

a) Air flow/heat removal equipment

- ☐ CLEAN HEAT SINKS OF DEBRIS/DUST WITH A DRY CLOTH OR BRUSH
- ☐ CLEAN EXTERNAL COOLING FANS OF DEBRIS/DUST
- ☐ CLEAN INTERNAL CIRCULATION FANS OF DEBRIS/DUST
- ☐ CLEAN INDUCTOR ENCLOSURE FANS OF DEBRIS/DUST

Note the severity of debris build-up, to determine the frequency of cleaning necessary:

Notes:_____

_____

_____

_____

- ☐ ENSURE ALL FANS ARE OPERATING AND THAT AIR FLOWS IN THE PROPER DIRECTION

b) Operation

- ☐ CONFIRM OPERATION OF THE INVERTER; OBSERVE LED INDICATORS OR OTHER DISPLAYS
- ☐ CHECK FUNCTIONALITY OF THE STAND-BY MODE BY DISCONNECTING LOADS
- ☐ ENSURE CONSISTENCY OF AC LOADS

Note any additional loads added to the system:

Notes:_____

_____

_____

_____

_____

c) Enclosures, Electrical/Mechanical Components

- ☐ INSPECT THE SEAL OF THE ENCLOSURE ACCESS PANEL; REPLACE WITH EQUIVALENT CLOSED CELL FOAM GASKET IF NECESSARY
- ☐ REMOVE ACCESS PANELS ON THE INDUCTOR ENCLOSER TO CLEAR DEBRIS/DUST
- ☐ INSPECT COMPRESSION-TYPE CABLE TERMINATIONS AND BOX-TYPE CONNECTIONS WITHIN THE FOLLOWING ENCLOSURES FOR DAMAGE DUE TO HIGH TEMPERATURES:
  - ☐ AC AND DC INTERFACE ENCLOSURE
  - ☐ MAIN INVERTER ENCLOSURES
  - ☐ TRANSFORMER ENCLOSER
- ☐ REPLACE CORRODED/BURNT/FRAYED WIRING, TERMINATIONS, AND CONNECTIONS
- ☐ TIGHTEN ELECTRICAL CONNECTIONS IN ACCORDANCE WITH TERMINATION TORQUE SPECS FOR AC AND DC CONNECTIONS. THIS MUST BE DONE SEMI- ANNUAL
- ☐ TIGHTEN MECHANICAL CONNECTIONS, CHECK CONDUCTION SURFACES FOR CORROSION AND DUST
- ☐ *Five Year thermal scan of all connections to make sure there is no overheating of connections. Re-torque as needed.*

Notes:_____

_____

_____

_____

_____

_____

_____

****** SEE INVERTER MANUFACTURE O&M MANUALS FOR ANY ADDITIONAL REQUIREMENTS THAT APPLY.***

III. Grounding Maintenance

Date:_____

Performed by: Name:_____ Company:_____

- ☐ CONFIRM GROUNDING OF ALL EQUIPMENT. THE FOLLOWING EXPOSED NON-CURRENT-CARRYING METALS SHOULD BE GROUNDED TOGETHER TO AN EARTH GROUND ROD:
  - ☐ FRAMES/RACKS
  - ☐ CONDUITS
  - ☐ JUNCTION/COMBINER BOXES
- ☐ USE AN OHMMETER TO CONFIRM ALL SYSTEM COMPONENTS ARE PROPERLY ATTACHED TO THE GROUNDING LINE
- ☐ INSPECT GROUNDING LUGS; CHECK FOR CORROSION AND APPLY NOALOX AS NEEDED
- ☐ INSPECT EXPOSED COPPER CONDUCTORS FOR SIGNS OF SERIOUS CORROSION AND OXIDIZATION
- ☐ THE GROUNDING CONDUCTOR SHOULD BE COLORED WHITE, THE EQUIPMENT GROUNDING WIRE SHOUD BE GREEN OR BARE

IV. Site Inspection / Maintenance (To be performed semi-annually for ground mount and landfill installations)

Date: _____

Performed by: Name: _____ Company:_____

- ☐ INSPECT ALL SECURITY FENCING INCLUDING GATES AND LOCKING MECHANISMS. NOTE ANY DEFECTS THAT COULD IMPACT THE SECURITY OF THE SITE.
- ☐ INSPECT ALL WARNING SIGNAGE AROUND THE PERIMETER OF THE SITE TO ENSURE IT IS PROPERLY SECURED TO THE FENCE/GATES AND IS CLEARLY VISIBLE AND LEGIBLE.
- ☐ WALK EAST TO WEST ALONG EACH INTER-ARRAY PATHWAY CHECKING FOR INDICATIONS OF UNEVEN LOCALIZED SETTLEMENT, EROSION OF THE TOPSOIL OR VEGETATIVE LAYER AND/OR EXPOSURE OF THE IMPERVIOUS (CLAY) CAP OR MEMBRANE MATERIAL. NOTE ANY/ALL AREAS OF CONCERN ON THE SITE PLAN.
- ☐ MOW VEGETATIVE COVER INSIDE THE ENCLOSED (FENCED) AREA AND EXTENDING 3 FT. OUTSIDE THE FENCE AS NECESSARY TO MAINTAIN A MAXIMUM HEIGHT OF 24 INCHES ABOVE FINISHED GRADE AND TO ELIMINATE ANY/ALL SHADING OF THE PV MODULES.
- ☐ CUT ANY/ALL VINES/PLANTS GROWING ON THE SECURITY FENCE/GATES AND APPLY AN APPROVED VEGETATION RETARDANT ALONG THE LENGTH OF THE FENCE/GATES AS NECESSARY TO INHIBIT CONTINUED PLANT GROWTH.

AMERESCO Service Delivery System (ASDS)

In order to provide the fastest and best possible service with maximum efficiency, AMERESCO has instituted the **AMERESCO Service Delivery System (ASDS).** Ameresco's ASDS is a web based product through which we can log and track all Service Requests and Preventative Maintenance visits to ensure that each of our obligations are documented in our ASDS and tracked from inception to completion. When and alarm is generated from the PV system our ASDS coordinator, Alix Hidalgo will put a Work Order in to the system and will be assigned to the appropriate personnel. In addition all annual Preventative Maintenance will be schedule via this system. ASDS logging including work order documentation of all the work that is performed, with reporting available from our ASDS throughout the year. This will allow us to spot trends in your ASDS or track recurring problems.

Table 3:
Responsible Ameresco Operations Service Personnel during normal business hours

	Name –Title	Office Phone	Cell Phone	E-mail
1	Kevin Sullivan- *Operations Project Manager*	(508) 598-3028	(508)-308-5710	ksullivan@ameresco.com
2				
3				

Appendix H – Consultation with Eversource

EVERSOURCE

One NSTAR Way
Westwood, Massachusetts 02090

Exhibit G - Interconnection Service Agreement

1. Parties. This Interconnection Service Agreement ("Agreement"), dated as of **August 18, 2015** ("Effective Date") is entered into, by and between **Eversource**, a Massachusetts corporation with a principal place of business at **One NSTAR Way, Westwood, MA 02090** (hereinafter referred to as the "Company"), and **Ashland Howe St Solar LLC.** a corporation with a principal place of business at **111 Speen St, Suite 410, Framingham, MA 01701** ("Interconnecting Customer"). (The Company and Interconnecting Customer are collectively referred to as the "Parties"). Terms used herein without definition shall have the meanings set forth in Section 1.2 of the Interconnection Tariff which is hereby incorporated by reference. **WO#2071039, 728 kW**

2. Basic Understandings. This Agreement provides for parallel operation of an Interconnecting Customer's Facility with the Company EPS to be installed and operated by the Interconnecting Customer at **Howe Street, Ashland, MA 01721 Acct# 2932-533-0016** (Facility name, address, and end-use Customer account number, if applicable). A description of the Facility is located in Attachment 1. If the Interconnecting Customer is not the Customer, an Agreement between the Company and the Company's Retail Customer, attached as Exhibit H to the Interconnection Tariff, must be signed and included as an Attachment to this Agreement. If neither the Interconnecting Customer nor the Customer is the Landowner of the property where the Facility is sited, a Landowner Consent Agreement, attached as Exhibit I to the Interconnection Tariff, must be signed and included as an Attachment to this Agreement, unless the Company, in its sole discretion, waives this requirement.

   The Interconnecting Customer has the right to operate its Facility in parallel with the Company EPS immediately upon successful completion of the protective relays testing as witnessed by the Company and receipt of written notice from the Company that interconnection with the Company EPS is authorized ("Authorization Date").

3. Term. This Agreement shall become effective as of the Effective Date. The Agreement shall continue in full force and effect until terminated pursuant to Section 4 of this Agreement.

4. Termination.

   This Agreement may be terminated under the following conditions.

   4.1 a) The Parties agree in writing to terminate the Agreement.

      The Interconnecting Customer may terminate this agreement at any time by providing sixty (60) days written notice to Company.

   The Company may terminate this Agreement upon the occurrence of an Event of Default by the Interconnecting Customer as provided in Section 18 of this Agreement.

The Company may terminate this Agreement if the Interconnecting Customer either: (1) fails to energize the Facility within 12 months of the Authorization Date; or, (2) permanently abandons the Facility. Failure to operate the Facility for any consecutive 12 month period after the Authorization Date shall constitute permanent abandonment unless otherwise agreed to in writing between the Parties.

The Company, upon 30 days notice, may terminate this Agreement if there are any changes in Department regulations or state law that have a material adverse effect on the Company's ability to perform its obligations under the terms of this Agreement.

Survival of Obligations. The termination of this Agreement shall not relieve either Party of its liabilities and obligations, owed or continuing at the time of termination. Sections 5, 10, 12, 13, and 25 as it relates to disputes pending or for wrongful termination of this Agreement shall survive the termination of this Agreement.

Related Agreements. Any agreement attached to and incorporated into this Agreement shall terminate concurrently with this Agreement unless the Parties have agreed otherwise in writing. If the Interconnection Service Agreement is signed prior to a Detailed Study (if applicable), the System Modifications construction schedule from the Detailed Study when finalized shall be deemed a part of the signed Interconnection Service Agreement.

5. General Payment Terms. The Interconnecting Customer shall be responsible for the System Modification costs and payment terms identified in Attachment 3of this Agreement and any approved cost increases pursuant to the terms of the Interconnection Tariff. Interconnecting Customers shall not be required to pay any costs related to Company infrastructure upgrades or System Modifications upon execution of the Interconnection Service Agreement (or once the Interconnecting Customer receives the construction schedule). Interconnecting Customers shall have 120 Business Days from the date of execution of an Interconnection Service Agreement to pay 25 percent of those costs;if an Interconnecting Customer pays such cost within the 120 Business Day Time Frame, the Interconnecting Customer shall have an additional 120 Business Days from the date of first payment to pay the remainder of the costs. If the system modifications exceed $25,000, the Interconnecting Customer is eligible for a payment plan, including a payment and construction schedule with milestones for both parties, and any such payment plan shall be set forth in Attachment 3. The payment plan may include a payment schedule different than the 120 Business Day payment schedule requirements set forth in this paragraph above.

Construction estimates are valid for 60 Business Days from when they are delivered to the Interconnecting Customer. If an Interconnecting Customer payment is not received within 60 Business Days of receiving the Interconnection Service Agreement in the Expedited Process, or the Impact Study in the Standard Process, the Company has the right to reassess construction costs and Time Frames. In the event that the Interconnecting Customer fails to pay the Company within the Time Frame required by this provision, the Company will require the Interconnecting Customer to reapply for interconnection. Further, any fees paid will not be refunded. The construction schedule will commence once the Interconnecting

Customer's financial payment has been made in fullor as otherwise provided in Attachment 3. The Company's obligation to the construction schedule (as it appears in either the Interconnection Service Agreement or the Detailed Study, if the Interconnecting Customer has opted to sign the Interconnection Service Agreement without a Detailed Study) begins on the next Business Day after the Company receives full payment for such construction or as otherwise provided in Attachment 3.

Cost or Fee Adjustment Procedures.

The Company will, in writing, advise the Interconnecting Customer in advance of any cost increase for work to be performed up to a total amount of increase of 10% only. Interconnecting Customers who elected to execute an Interconnection Services Agreement following the completion of the Impact Study but prior to the commencement of any required Detailed Study, pursuant to Section 3.4(g) of the Interconnection Tariff, shall be responsible for any System Modifications costs, ±25%, as identified by the Company in the Impact Study.All costs that exceed the above caps will be borne solely by the Company. Any such changes to the Company's costs for the work shall be subject to the Interconnecting Customer's consent. The Interconnecting Customer shall, within thirty (30) Business Days of the Company's notice of increase, authorize such increase and make payment in the amount up to the above caps, or the Company will suspend the work and the corresponding agreement will terminate.

Final Accounting.

An Interconnecting Customer may request a final accounting report of any difference between (a) Interconnecting Customer's cost responsibility under this Agreement for the actual cost of the System Modifications, and (b) Interconnecting Customer's previous aggregate payments to the Company under the Interconnection Service Agreement for such System Modifications within 120 Business days after completion of the construction and installation of the System Modifications described in an attached exhibit to the Interconnection Service Agreement. Upon receipt of such a request from an Interconnecting Customer, the Company shall have 120 Business days to provide the requested final accounting report to the Interconnecting Customer. To the extent that Interconnecting Customer's cost responsibility in the Interconnection Service Agreement exceeds Interconnecting Customer's previous aggregate payments, the Company shall invoice Interconnecting Customer and Interconnecting Customer shall make payment to the Company within 45 Business Days. To the extent that Interconnecting Customer's previous aggregate payments exceed Interconnecting Customer's cost responsibility under this agreement, the Company shall refund to Interconnecting Customer an amount equal to the difference within forty five (45) Business Days of the provision of such final accounting report.

6. Operating Requirements.

General Operating Requirements.

Interconnecting Customer shall operate and maintain the Facility in accordance with the applicable manufacturer's recommended maintenance schedule, in compliance with all aspects of the Company's Interconnection Tariff. The Interconnecting Customer will continue to comply with all applicable laws and requirements after interconnection has occurred. In the event the Company has reason to believe that the Interconnecting Customer's installation may be the source of problems on the Company EPS, the Company has the right to install monitoring equipment at a mutually agreed upon location to determine the source of the problems. If the Facility is determined to be the source of the problems, the Company may require disconnection as outlined in Section 7.0 of this Interconnection Tariff. The cost of this testing will be borne by the Company unless the Company demonstrates that the problem or problems are caused by the Facility or if the test was performed at the request of the Interconnecting Customer.

No Adverse Effects; Non-interference.

Company shall notify Interconnecting Customer if there is evidence that the operation of the Facility could cause disruption or deterioration of service to other Customers served from the same Company EPS or if operation of the Facility could cause damage to Company EPS or Affected Systems. The deterioration of service could be, but is not limited to, harmonic injection in excess of IEEE Standard 1547-2003, as well as voltage fluctuations caused by large step changes in loading at the Facility. Each Party will notify the other of any emergency or hazardous condition or occurrence with its equipment or facilities which could affect safe operation of the other Party's equipment or facilities. Each Party shall use reasonable efforts to provide the other Party with advance notice of such conditions.

The Company will operate the EPS in such a manner so as to not unreasonably interfere with the operation of the Facility. The Interconnecting Customer will protect itself from normal disturbances propagating through the Company EPS, and such normal disturbances shall not constitute unreasonable interference unless the Company has deviated from Good Utility Practice. Examples of such disturbances could be, but are not limited to, single-phasing events, voltage sags from remote faults on the Company EPS, and outages on the Company EPS. If the Interconnecting Customer demonstrates that the Company EPS is adversely affecting the operation of the Facility and if the adverse effect is a result of a Company deviation from Good Utility Practice, the Company shall take appropriate action to eliminate the adverse effect.

Safe Operations and Maintenance.

Each Party shall operate, maintain, repair, and inspect, and shall be fully responsible for, the facility or facilities that it now or hereafter may own unless otherwise specified in this Agreement. Each Party shall be responsible for the maintenance, repair and condition of its respective lines and appurtenances on their respective side of the PCC. The Company and the Interconnecting Customer shall each provide equipment on its respective side of the PCC that adequately protects the Company's EPS, personnel, and other persons from damage and injury.

Access.

The Company shall have access to the disconnect switch of the Facility at all times.

6.4 a) Company and Interconnecting Customer Representatives.

Each Party shall provide and update as necessary the telephone number that can be used at all times to allow either Party to report an emergency.

6.4 b) Company Right to Access Company-Owned Facilities and Equipment.

If necessary for the purposes of the Interconnection Tariff and in the manner it describes, the Interconnecting Customer shall allow the Company access to the Company's equipment and the Company's facilities located on the Interconnecting Customer's or Customer's premises. To the extent that the Interconnecting Customer does not own all or any part of the property on which the Company is required to locate its equipment or facilities to serve the Interconnecting Customer under the Interconnection Tariff, the Interconnecting Customer shall secure and provide in favor of the Company the necessary rights to obtain access to such equipment or facilities, including easements if the circumstances so require. In addition to any rights and easements required by the Company in accordance with the above provision, the Interconnecting Customer shall obtain an executed Landowner Consent Agreement (Exhibit I) from the Landowner, unless the Company, in its sole discretion, waives this requirement.

6.4 c) Right to Review Information.

The Company shall have the right to review and obtain copies of Interconnecting Customer's operations and maintenance records, logs, or other information such as, unit availability, maintenance outages, circuit breaker operation requiring manual reset, relay targets and unusual events pertaining to Interconnecting Customer's Facility or its interconnection