Appendix A – Site Plan Review Application

TOWN OF ASHLAND, MASSACHUSETTS
PLANNING BOARD
APPLLICATION FOR APPROVAL OF
SITE PLAN REVIEW
FORM - SP

DATE: 1/4/2016
Application Fee enclosed: _____

The undersigned applies for **A SITE PLAN REVIEW** pursuant to the terms of the Code of the Town of Ashland, Chapter 282 (Zoning) Sub-Section 9.4 for the land/premises located at 102 Howe Street, which is in a Residential A Zoning District, and is shown on the Assessors' Map as SHEET 12, LOT 0223, Registry of Deed's BOOK 06479, PAGE 0554 - owned by Town of Ashland.

1. PURPOSE OF SITE PLAN REVIEW AND DESIGN REVIEW

   Application for solar photovoltaic (PV) development on the closed Ashland Landfill.

2. TYPE OF BUSINESS OR GENERAL characteristics to which uses on the site shall conform:

   Solar PV array.

3. SAID SITE PLAN REVIEW and DESIGN PLAN REVIEW will be some substantial benefit and serve some need of the Town

   The proposed project will allow for the creation of a new, sustainable, revenue stream for the town. The project will support Ashland's designation as a Massachusetts Green Community and will further reduce the Town's carbon footprint and emissions.

4. Applicant is {owner} {lessee of} {under agreement to purchase} {under agreement to lease} {under agreement to access and construct }
   (Please circle which applies)

5. REQUEST FOR WAIVERS YES (NO) NEED FOR SPECIAL PERMIT (YES) NO
   (If Yes, written request should be attached)

6. TEN (10) certified copies of the Site Plan and/or Design Plan must accompany the applicant.

7. **Payment enclosed for engineering review with application** $ _____

Applicant: Ameresco, Inc. (d/b/a Ashland Howe Street Solar LLC)
Address: 111 Speen St. Suite 410, Framingham, MA 01701
Tel: (508) 661-2200
e-mail address: mzimmer@ameresco.com

By: Rob Bukowski, AMEC Massachusetts, Inc.
Agent or Attorney (please print or type)
Telephone (978) 392-5307
Attorney e-mail: rob.bukowski@amecfw.com

NOTE: APPLICATION SHALL NOT BE ACCEPTED FOR HEARING WITHOUT COMPLETE DOCUMENTATION AND ALL REAL ESTATE TAXES ARE PAID.

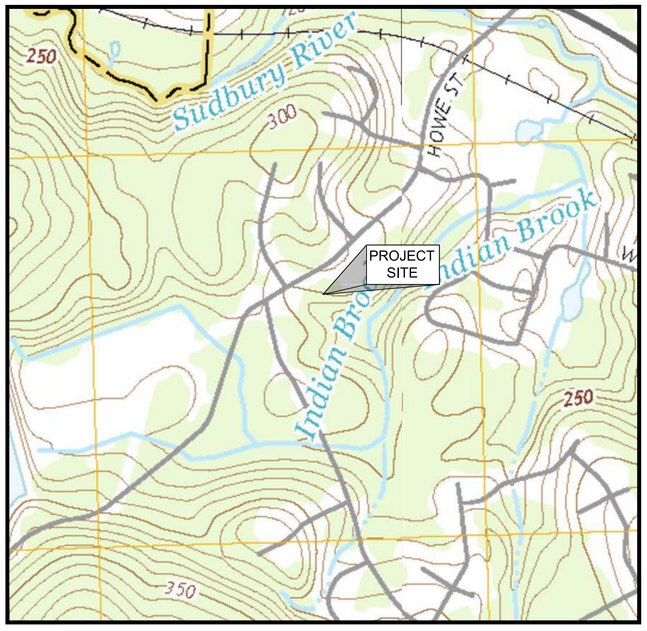
Signed: _____ as agent for Ashland Howe Street Solar LLC
Attorney or Agent

6/3/14

Appendix B – Project Plans and Landscape Architectural Plan

TOWN OF ASHLAND

ASHLAND LANDFILL 907 KW SOLAR PV DEVELOPMENT
ASHLAND, MASSACHUSETTS
JANUARY, 2016
ISSUED FOR SITE PLAN REVIEW



LOCUS MAP
NOT TO SCALE

AERIAL IMAGE
NOT TO SCALE

DRAWING INDEX

SHEET NUMBER	DRAWING TITLE	DRAWING NUMBER
	COVER SHEET	
1	CONSTRUCTION, EROSION, SEDIMENTATION CONTROL NOTES, AND LEGEND	G-001
2	EXISTING CONDITIONS PLAN	V-101
3	PROPOSED SITE PLAN	C-101
4	DETAILS	C-501
5	LANDSCAPE PLAN	L-101
6	LANDSCAPE DETAILS	L-501

DEVELOPED BY

AMERESCO, INC.
(d/b/a ASHLAND HOWE STREET SOLAR LLC)
AMERESCO
Green • Clean • Sustainable
111 SPEEN STREET
FRAMINGHAM, MA 01701

PREPARED BY

amec foster wheeler

AMEC MASSACHUSETTS, INC.
271 MILL ROAD
CHELMSFORD, MASSACHUSETTS 01824

PROJECT PROPONENT:

AMERESCO, INC. (D/B/A ASHLAND HOWE STREET SOLAR LLC)
111 SPEEN STREET
SUITE 410
FRAMINGHAM, MA 01701
PHONE: (508) 661-2200

PROPERTY OWNER:

TOWN OF ASHLAND
101 MAIN STREET
ASHLAND, MA 01721

AGENT REPRESENTING PROJECT:

AMEC MASSACHUSETTS, INC.
271 MILL ROAD
CHELMSFORD, MA 01824
PHONE: (978) 692-9090

BEALS+THOMAS

BEALS AND THOMAS, INC.
Reservoir Corporate Center
144 Turnpike Road
Southborough, Massachusetts 01772-2104
T 508.366.0560 | www.bealsandthomas.com

MATERIAL SPECIFICATIONS AND PLACEMENT REQUIREMENTS:

1.1 DENSE GRADED CRUSHED STONE.

DENSE GRADED CRUSHED STONE SHALL BE PLACED DIRECTLY BENEATH THE BALLASTS AS SHOWN ON THE DRAWINGS, AND SHALL MEET THE REQUIREMENTS OF A MATERIAL SUCH AS MASSDOT SPECIFICATION M2.01.7 CRUSHED STONE, OR APPROVED EQUAL. THIS MATERIAL SHALL BE PLACED AT A MINIMUM THICKNESS OF 6-INCHES AND SHALL BE IN DIRECT CONTACT WITH THE BALLAST BLOCKS. THIS MATERIAL SHALL CONSIST OF CLEAN HARD, DURABLE CRUSHED ROCK OR CRUSHED GRAVEL STONE, FREE FROM LOAM AND CLAY AND DELETERIOUS MATERIAL AND NO MORE THAN 10 PERCENT PASSING THE U.S. NO. 200 SIEVE. THIS MATERIAL SHALL MEET THE FOLLOWING GRADATION:

SIEVE DESIGNATION	PERCENT PASSING
2-INCH	100
1.5-INCH	70-100
¾-INCH	50-85
NO. 4	30-55
NO. 50	8-24
NO. 200	3-10

PRIOR TO USE, THE DENSE GRADED CRUSHED STONE SHALL BE TESTED FOR APPROVAL AS DESCRIBED BELOW IN SECTION 2.0 AND SHALL BE PLACED AS DESCRIBED BELOW IN SECTION 3.0.

1.2 GRANULAR FILL MATERIAL

CLEAN GRANULAR FILL MAY BE USED BENEATH THE MINIMUM 6-INCH LAYER OF CRUSHED STONE FOR FILL OR GRADING MATERIAL. GRANULAR FILL SHALL CONSIST OF MASSDOT MATERIAL M1.03.0, GRAVEL BORROW, TYPE C, OR APPROVED EQUAL, AND MEET THE FOLLOWING GRADATION:

SIEVE DESIGNATION	PERCENT PASSING
2-INCH	100
½-INCH	50-85
NO. 4	40-75
NO. 50	8-28
NO. 200	0-10

PRIOR TO USE, THE GRANULAR FILL SHALL BE TESTED FOR APPROVAL AS DESCRIBED IN SECTION 2.0 AND SHALL BE PLACED AS DESCRIBED IN SECTION 3.0.

1.3 GEOTEXTILE FABRIC

GEOTEXTILE FABRIC SHALL BE PLACED ABOVE LANDFILL COVER SOILS AS SHOWN ON THE DRAWINGS. FIBERS USED IN MANUFACTURING OF THE GEOTEXTILES SHALL CONSIST OF POLYPROPYLENE, POLYVINYL CHLORIDE, NYLON, POLYOLEFINS, POLYAMIDES, OR POLYESTER. THE FIBERS SHALL BE FORMED INTO NETWORK SUCH THAT THE FILAMENTS OR YARNS RETAIN DIMENSIONAL STABILITY RELATIVE TO EACH OTHER, INCLUDING SELVAGES. THE GEOTEXTILE SHALL CONTAIN STABILIZERS AND/OR INHIBITORS TO MAKE THE FIBERS RESISTANT TO DETERIORATION RESULTING FROM EXPOSURE TO SUNLIGHT, WATER, OR HEAT. THE GEOTEXTILE SHALL BE FREE OF DEFECTS OR FLAWS WHICH WILL AFFECT ITS PHYSICAL PROPERTIES. PROVIDE A GEOTEXTILE MEETING THE PROPERTIES LISTED IN TABLE-1:

TABLE 1
REQUIRED PHYSICAL PROPERTIES OF GEOTEXTILE FABRIC

PROPERTY	TEST METHOD	NONWOVEN	WOVEN
MASS PER UNIT AREA (OZ/YD3)	D 5261	6	N/A
TENSILE STRENGTH (LBS)	D 4632	160	7200
ELONGATION (%)	D 4632	50	N/A
PUNCTURE STRENGTH (LBS)	D 4833	90	N/A
TRAPEZOID TEAR (LBS)	D 4533	65	N/A
PERMITTIVITY (SEC^{-1})	D 4491	1.50	0.23
ULTRAVIOLET STABILITY (% FOR MIN. 500 HRS)	D 4355	70	80
APPARENT OPENING SIZE (AOS) (STANDARD SIEVE)	D 4751	70	30

TABLE NOTES:

1. ALL NUMERICAL VALUES EXCEPT AOS AND ULTRAVIOLET STABILITY REPRESENT MINIMUM AVERAGE ROLL VALUES (MARV), IN THE WEAKER PRINCIPAL DIRECTION.
2. AOS VALUE IS A MAXIMUM AVERAGE ROLL VALUE OR MAXARV.
3. ULTRAVIOLET STABILITY IS MEASURED AS A MINIMUM AVERAGE PERCENTAGE.

2.0 BORROW SOURCE TESTING REQUIREMENTS

PRIOR TO USE, BORROW SOURCE TESTING, INCLUDING GEOTECHNICAL CHARACTERIZATION REQUIREMENTS, SHALL BE CONDUCTED ON ALL SOIL MATERIALS PROPOSED FOR CONSTRUCTION AND SUBMITTED TO ENGINEER TO ASSESS CONFORMANCE TO MATERIAL SPECIFICATIONS.

3.0 MATERIAL PLACEMENT AND FIELD QUALITY CONTROL REQUIREMENTS

1. DO NOT PLACE FILL MATERIAL ON SURFACES THAT ARE MUDDY, FROZEN, OR CONTAIN FROST OR ICE.
2. SURFACES ON WHICH THE GEOTEXTILE WILL BE PLACED SHALL BE PREPARED TO A RELATIVELY SMOOTH SURFACE CONDITION. SURFACES SHALL BE FREE FROM OBSTRUCTION, DEBRIS, DEPRESSIONS, EROSION FEATURE, OR VEGETATION. ANY IRREGULARITIES SHALL BE REMOVED SO AS TO ENSURE CONTINUOUS, INTIMATE CONTACT OF THE GEOTEXTILE WITH THE SURFACE. ANY LOOSE MATERIAL, SOFT OR LOW DENSITY POCKETS OF MATERIAL, SHALL BE REMOVED, FILLED WITH SUITABLE SUBGRADE FILL, AND COMPACTED. EROSION FEATURES SUCH AS RILLS AND GULLIES MUST BE GRADED OUT OF THE SURFACE BEFORE GEOTEXTILE PLACEMENT.
3. AT THE TIME OF INSTALLATION, FABRIC SHALL BE REJECTED IF IT HAS DEFECTS, RIPS, HOLES, FLAWS, DETERIORATION OR DAMAGE INCURRED DURING MANUFACTURE, TRANSPORTATION OR STORAGE.
4. PLACE FABRIC WITH THE LONG DIMENSION PARALLEL TO THE CENTERLINE OF THE BALLASTS AND LAY SMOOTH AND FREE OF TENSION, STRESS, FOLDS, WRINKLES, OR CREASES.
5. CRUSHED STONE SHALL BE PLACED IN MAXIMUM 6-INCH LOOSE LIFTS AND COMPACTED WITH 3 PASSES, IN BOTH DIRECTIONS BY A SMOOTH DRUM ROLLER COMPACTOR (ACCESS ROAD) AND BY A PLATE COMPACTOR (BALLAST BLOCK AND SUPPORT BLOCK GRAVEL BASE) TO A FIRM AND NON-YIELDING CONDITION.
6. ALL MATERIAL AND BALLAST BLOCK PLACEMENT ON THE SURFACE OF THE LANDFILL (BEYOND THE LIMITS OF THE EXISTING AND PROPOSED ACCESS ROADS) SHALL BE PERFORMED USING LOW GROUND PRESSURE EQUIPMENT.
7. THE MAXIMUM ALLOWABLE CROSS-SLOPE (PERPENDICULAR TO THE BALLAST BLOCKS) IS 5%. AT LIMITED LOCATIONS WHERE EXISTING SLOPE BETWEEN THE 2 BALLAST BLOCKS ON THE SAME RACK IS GREATER THAN 5%, CONTRACTOR SHALL SHIM THE LOWER BLOCK USING ADDITIONAL GRAVEL OR RECYCLED CONCRETE MEETING THE SPECIFICATIONS OF SECTION 1.1.
8. THE MAXIMUM ALLOWABLE GROUND PRESSURE ON THE LANDFILL SURFACE IS 7 PSI. CONTRACTOR SHALL USE LOW GROUND PRESSURE EQUIPMENT ON ALL AREAS OF THE LANDFILL WITH THE EXCEPTION OF THE CONSTRUCTED ACCESS ROADS AND STAGING AREA.

EROSION AND SEDIMENTATION CONTROL PLAN:

THIS PLAN HAS BEEN DEVELOPED TO PROVIDE A STRATEGY FOR CONTROLLING SOIL EROSION AND SEDIMENTATION DURING AND AFTER CONSTRUCTION OF THE PROPOSED PROJECT.

THIS PLAN IS BASED ON STANDARDS AND SPECIFICATIONS FOR EROSION PREVENTION IN DEVELOPING AREAS AS CONTAINED IN MASSACHUSETTS EROSION AND SEDIMENT CONTROL GUIDELINES FOR URBAN AND SUBURBAN AREAS, 2003.

GENERAL EROSION AND SEDIMENTATION CONSTRUCTION DETAIL NOTES:

DURING CONSTRUCTION THE CONTRACTOR SHALL TAKE ALL REASONABLE MEASURES TO SCHEDULE EARTHWORK OPERATIONS SUCH THAT THE AREA OF EXPOSED AND DISTURBED SOIL IS MINIMIZED. CONSTRUCTION SHALL BE PHASED TO REDUCE THE AREA OF DISTURBED SOIL AT ANY ONE TIME. UPGRADIENT STORM WATER DIVERSION AND DISPERSION MEASURES SHALL BE INSTALLED WHERE APPROPRIATE. AFTER ACHIEVING ROUGH GRADE OF A PORTION OF THE SITE AND PRIOR TO EXTENDING EARTHWORK OPERATIONS, THE CONTRACTOR SHALL STABILIZE DISTURBED AREAS BY LAYING DOWN TEMPORARY MULCH UNTIL FINAL GRADE IS REACHED. ALL CUT AND FILL SLOPES SHALL BE STABILIZED UPON COMPLETION. THE FOLLOWING MEASURES WILL BE UNDERTAKEN TO PROVIDE MAXIMUM PROTECTION TO THE SOIL, WATER, AND ABUTTING LANDS:

1. NO EROSION/SEDIMENTATION CONTROL DEVICE SHALL PENETRATE THE EXISTING LANDFILL COVER MATERIALS WITHIN THE LIMITS OF WASTE
2. PRIOR TO GRUBBING OR ANY EARTH MOVING OPERATION, SEDIMENT BARRIERS, OR OTHER APPROPRIATE BEST MANAGEMENT PRACTICE (BMP) SHALL BE INSTALLED ACROSS THE SLOPE ON THE CONTOUR AT THE DOWNHILL LIMIT OF THE WORK AS PROTECTION AGAINST CONSTRUCTION RELATED EROSION. INSTALL ALL NECESSARY STORMWATER DIVERSIONS AND DISPERSION MEASURES.
3. PERMANENT SOIL EROSION CONTROL MEASURES FOR ALL SLOPES, OR ANY DISTURBED LAND AREA SHALL BE COMPLETED WITHIN FOURTEEN (14) CALENDAR DAYS AFTER FINAL GRADING HAS BEEN COMPLETED. WHEN IT IS NOT POSSIBLE OR PRACTICAL TO PERMANENTLY STABILIZE DISTURBED LAND, TEMPORARY EROSION CONTROL MEASURES SHALL BE IMPLEMENTED ON DISTURBED AREAS INCLUDING STOCKPILES WITHIN FOURTEEN (14) CALENDAR DAYS OF EXPOSURE OF SOIL OR FORMATION OF PILES UNLESS THESE AREAS ARE TO BE SUBSEQUENTLY SURFACED. ALL DISTURBED AREAS SHALL BE MULCHED FOR EROSION CONTROL UPON COMPLETION OF ROUGH GRADING.
4. ANY EXPOSED SLOPES 3:1 OR GREATER SHALL BE STABILIZED WITH EROSION CONTROL BLANKET TO PREVENT EROSION DURING CONSTRUCTION AND TO FACILITATE REVEGETATION AFTER TOPSOILING AND SEEDING. SEE DETAIL 7 ON C-502.
5. EXISTING TOPSOIL SHALL BE SAVED, STOCKPILED, AND REUSED AS MUCH AS POSSIBLE ON SITE. SEDIMENT BARRIER SHALL BE INSTALLED AT THE BASE OF STOCKPILES AT THE DOWNHILL LIMIT TO PROTECT AGAINST EROSION. STOCKPILES SHALL BE STABILIZED BY SEEDING AND MULCHING UPON FORMATION OF THE PILES. UPGRADIENT OF THE STOCKPILES, STABILIZED DITCHES AND/OR BERMS SHALL BE CONSTRUCTED TO DIVERT STORMWATER RUNOFF AWAY FROM THE PILES.
6. INTERCEPTED SEDIMENT SHALL BE REMOVED AND SHALL BE DEPOSITED TO AN AREA THAT SHALL NOT CONTRIBUTE TO SEDIMENT OFF-SITE AND CAN BE PERMANENTLY STABILIZED.
7. ADDITIONAL EROSION CONTROL METHODS SHALL BE IMPLEMENTED IF CONSTRUCTION OCCURS AFTER DECEMBER 15TH. ALL DISTURBED AREAS SHALL BE MINIMIZED TO THE EXTENT POSSIBLE. PRIOR TO FREEZING, ADDITIONAL EROSION CONTROL DEVICES SHALL BE INSTALLED AS APPROPRIATE. INSPECTION OF THESE EROSION CONTROL ITEMS SHALL BE FREQUENT, WITH PARTICULAR ATTENTION PAID TO WEATHER PREDICTIONS TO ENSURE THAT THESE MEASURES ARE PROPERLY IN PLACE TO HANDLE LARGE QUANTITIES OF RUNOFF RESULTING FROM HEAVY RAINS OR EXCESSIVE THAWS.
8. GENERAL EROSION AND SEDIMENTATION CONTROL ACTIONS SHALL INCLUDE THE FOLLOWING:
   - MARK SOIL DISTURBANCE LIMITS
   - INSTALL SEDIMENT BARRIERS BEFORE DISTURBING ANY SOILS
   - DIVERT AND DISPERSE STORM WATER RUNOFF TO UNDISTURBED AREAS WHEREVER POSSIBLE
   - MULCH DISTURBED AREAS
   - PROTECT STEEP SLOPES
   - INSPECT AND REPAIR EROSION CONTROLS AND SEDIMENT BARRIERS

DUST CONTROL:

1. CONSTRUCTION ACTIVITIES SHALL BE SCHEDULED SO THAT A MINIMUM OF DISTURBED SOIL IS EXPOSED AT ONE TIME.
2. DUST SHALL BE CONTROLLED ON CONSTRUCTION ROUTES AND OTHER DISTURBED AREAS SUBJECT TO SURFACE DUST MOVEMENT AND DUST BLOWING.
3. MAINTAIN DUST CONTROL MEASURES PROPERLY THROUGH DRY WEATHER PERIODS UNTIL ALL DISTURBED AREAS HAVE BEEN PERMANENTLY STABILIZED.
4. DUST CONTROL METHODS SHALL INCLUDE VEGETATIVE COVER, MULCH (INCLUDING GRAVEL MULCH), WATER SPRINKLING, STONE, AND BARRIERS.
5. VEGETATIVE COVER - FOR DISTURBED AREAS NOT SUBJECT TO TRAFFIC, VEGETATION PROVIDES THE MOST PRACTICAL METHOD OF DUST CONTROL.
6. MULCH (INCLUDING GRAVEL MULCH) - WHEN PROPERLY APPLIED, MULCH OFFERS A FAST, EFFECTIVE MEANS OF CONTROLLING DUST.
7. SPRINKLING - THE SITE MAY BE SPRINKLED WITH WATER UNTIL THE SURFACE IS WET. SPRINKLING IS ESPECIALLY EFFECTIVE FOR DUST CONTROL ON HAUL ROADS AND OTHER TRAFFIC ROUTES.
8. STONE - USED TO STABILIZE CONSTRUCTION ROADS; CAN ALSO BE EFFECTIVE FOR DUST CONTROL.
9. BARRIERS - A BOARD FENCE, WIND FENCE, SEDIMENT FENCE, OR SIMILAR BARRIER CAN CONTROL AIR CURRENTS AND BLOWING SOIL. ALL OF THESE FENCES ARE NORMALLY CONSTRUCTED OF WOOD AND THEY PREVENT EROSION BY OBSTRUCTING THE WIND NEAR THE GROUND AND PREVENTING THE SOIL FROM BLOWING OFFSITE.

MONITORING PROGRAM:

1. EROSION AND SEDIMENTATION CONTROLS SHALL BE INSPECTED AT LEAST ONCE EVERY 7 CALENDAR DAYS AND WITHIN 24 HOURS OF THE END OF A STORM EVENT OF 0.25 INCHES OR GREATER. ALL STRUCTURES DAMAGED BY CONSTRUCTION EQUIPMENT, VANDALS, OR THE ELEMENTS SHALL BE REPAIRED IMMEDIATELY. ALL DAMAGED STRUCTURES SHALL BE REPAIRED AND/OR ADDITIONAL EROSION CONTROL STRUCTURES SHALL BE INSTALLED PRIOR TO CONTINUING THE CONSTRUCTION. TRAPPED SEDIMENT SHALL BE REMOVED BEFORE IT HAS ACCUMULATED TO ONE-HALF FOOT DEEP AT THE INSTALLED SEDIMENT BARRIER. DEVICES NO LONGER SERVICEABLE DUE TO SEDIMENT ACCUMULATION SHALL ALSO BE REPAIRED AND/OR REPLACED AS REQUIRED. RUTTING OR EXPOSED SOIL SHALL BE REPAIRED TO PREVENT EROSION AND OTHERWISE MITIGATED AS NECESSARY TO MINIMIZE FUTURE EROSION.
2. FOLLOWING THE FINAL SEEDING, THE SITE SHALL BE INSPECTED TO ENSURE THAT THE VEGETATION HAS BEEN ESTABLISHED (70% COVER ACHIEVED). IN THE EVENT OF ANY UNSATISFACTORY GROWTH, RESEEDING WILL BE CARRIED OUT, WITH FOLLOW-UP INSPECTION.
3. AFTER THE CONSTRUCTION INSPECTOR HAS DETERMINED THAT THE PROJECT AREA HAS BEEN STABILIZED, THE CONTRACTOR SHALL REMOVE ALL SEDIMENT BARRIERS, TEMPORARY SEDIMENTATION CONTROL RISERS AND ANY OTHER TEMPORARY EROSION CONTROL MEASURES.

SEEDING AND REVEGETATION PLAN:

UPON COMPLETION OF SITE CONSTRUCTION, ALL AREAS PREVIOUSLY DISTURBED SHALL BE TREATED AS STATED BELOW. THESE AREAS WILL BE CLOSELY MONITORED BY THE CONTRACTOR UNTIL SUCH TIME AS A SATISFACTORY GROWTH OF VEGETATION IS ESTABLISHED. SATISFACTORY GROWTH SHALL MEAN A MINIMUM OF 70% OF THE AREA IS VEGETATED WITH VIGOROUS GROWTH.

1. TOPSOIL WILL BE SPREAD OVER ALL DISTURBED AREAS TO BE REVEGETATED AND SHALL BE GRADED TO A DEPTH OF FOUR (4) TO SIX (6) INCHES.
2. FERTILIZER AT A 18-24-12 PROPORTION SHALL BE MIXED WITH THE HYDROSEED AT A RATE OF 150 LBS. PER ACRE.
3. WOOD FIBER MULCH SHALL BE APPLIED AT A RATE OF 2,000 LBS. PER ACRE FOR MAXIMUM MOISTURE RETENTION RESULTS.
4. DISTURBED AREAS SHALL BE SEEDED USING ONE OF THE FOLLOWING MIXES AS DIRECTED BY THE OWNER AND ENGINEER DEPENDING ON THE TIME OF YEAR AND AMOUNT OF SEEDING REQUIRED:
   - 4.1. AT THE RATE OF 10 LBS. PER 1,000 SQ. FT. OF THE FOLLOWING MIXTURE: 25% RED FESCUE, 25% CANADA BLUEGRASS , 25% PERENNIAL RYEGRASS, AND 25% RED TOP. SEEDING SHOULD BE PLANTED TO A DEPTH OF 1/4 TO 1/8 INCHES. SEEDING METHODS MAY BE DRILL SEEDINGS, BROADCASTS AND ROLLED, CULTIPACKED, OR TRACKED WITH A SMALL TRACK PIECE OF CONSTRUCTION EQUIPMENT, OR HYDROSEEDING, WITH SUBSEQUENT TRACKING. TACKIFIER SHALL BE USED IN HYDROSEED TO HELP IT ADHERE TO THE SOIL AND ANY SLOPES PROPERLY.
   - 4.2. AT THE RATE OF 225 LBS. PER ACRE OF THE FOLLOWING MIXTURE: 25% WENDY JEAN CREEPING RED FESCUE, 15% TREAZURE II CHEWINGS FESCUE, 20% AURORA II HARD FESCUE, 20% BERKSHIRE HARD FESCUE, AND 20% LITTLE BIGHORN (BLUE AMERICAN SHEEP FESCUE). METHOD SHALL BE HYDROSEEDING. TACKIFIER SHALL BE USED IN HYDROSEED TO HELP IT ADHERE TO THE SOIL AND ANY SLOPES PROPERLY.
5. SEEDING SHALL BE COMPLETED BETWEEN THE DATES OF APRIL 1 AND OCTOBER 15. WATERING MAY BE REQUIRED DURING DRY PERIODS.
6. STEEP SLOPES (3:1 AND STEEPER) SHALL BE STABILIZED BY INSTALLING EROSION CONTROL BLANKET (E.G., NORTH AMERICAN GREEN OR EXCELSIOR).
7. IF FINAL SEEDING OF THE DISTURBED AREA IS NOT COMPLETED BY OCTOBER 1ST OF THE YEAR OF CONSTRUCTION THEN, WITHIN THE NEXT 10 CALENDAR DAYS, THESE AREAS SHALL BE GRADED AND SMOOTHED, THEN SEEDED TO A WINTER COVER CROP OF WINTER RYE AT A RATE OF 3 LBS. PER 1,000 SQ. FT. THE FOLLOWING SHALL BE INCORPORATED INTO THE SOIL PRIOR TO WINTER RYE SEEDING: GROUND LIMESTONE AT A RATE OF 100 LBS. PER 1,000 SQ. FT., FOLLOWED BY A 10-10-10 FERTILIZER AT A RATE OF 14 LBS. PER 1,000 SQ. FT. HAY MULCH SHALL BE APPLIED AT A RATE OF 100 LBS. PER 1,000 SQ. FT. FOLLOWING SEEDING. IF THE WINTER RYE SEEDING CANNOT BE COMPLETED BY OCTOBER 1, OR DOES NOT MAKE ADEQUATE GROWTH BY NOVEMBER 1, THEN ON THAT DATE, HAY MULCH SHALL BE APPLIED AT THE RATE OF 100 LBS. PER 1,000 SQ. FT. A SUITABLE BINDER SUCH AS CURASOL OR RMB PLUS SHALL BE USED ON HAY MULCH FOR WIND CONTROL. EROSION CONTROL BLANKET WILL BE INSTALLED ON STEEP SLOPES (3:1 AND STEEPER) AND ON AREAS OF CONCENTRATED FLOWS.
8. INSPECT SEEDED AREAS FOR FAILURE AND MAKE NECESSARY REPAIRS AND RESEED IMMEDIATELY. CONDUCT A FOLLOW-UP SURVEY AFTER ONE YEAR AND RESEED WHERE NECESSARY.
9. IF THERE ARE AREAS WITH LESS THAN 40% COVER, REEVALUATE CHOICE OF PLANT MATERIALS AND QUANTITIES OF LIME AND FERTILIZER. IF THE SEASON PREVENTS RESOWING, MULCH OR JUTE NETTING IS AN EFFECTIVE TEMPORARY COVER.
10. SEEDED AREAS SHOULD BE FERTILIZED DURING THE SECOND GROWING SEASON.
11. LIME AND FERTILIZE THEREAFTER AT PERIODIC INTERVALS, AS NEEDED.
12. ALL SEDIMENT CONTROL STRUCTURES WILL REMAIN IN PLACE UNTIL VEGETATION IS ESTABLISHED. ESTABLISHED MEANS A MINIMUM OF 70% AS DETERMINED BY CONSTRUCTION INSPECTOR OF THE AREA IS VEGETATED WITH VIGOROUS GROWTH.

ISSUED FOR SITE PLAN REVIEW

amec foster wheeler
AMEC MASSACHUSETTS, INC.
271 MILL ROAD
CHELMSFORD MASSACHUSETTS 01824
TELEPHONE: (978) 692-9090
FAX: (978) 692-6633
WEB: WWW.AMECFW.COM

REVISION	DATE	ISSUE / REVISION DESCRIPTION	ISSUED BY	APPROVED
0	01/04/2016	ISSUED FOR SITE PLAN REVIEW	APV	RJB

PROJECT: ASHLAND LANDFILL SOLAR PV DEVELOPMENT
ASHLAND, MASSACHUSETTS

TITLE: CONSTRUCTION, EROSION, SEDIMENTATION CONTROL NOTES, AND LEGEND

CLIENT: AMERESCO
111 SPEEN STREET
FRAMINGHAM, MA 01701

AMERESCO Green • Clean • Sustainable

SEAL:

COMMONWEALTH OF MASSACHUSETTS
ROBERT J. BUKOWSKI
CIVIL
No. 41492
REGISTERED PROFESSIONAL ENGINEER
1/4/16

DESIGNED BY:	DRAWN BY:
APV	DED
CHECKED BY:	SCALE:
TD	NONE

PROJECT NUMBER: 3652150029
DRAWING NUMBER: G-001
SHEET NUMBER: 1 OF 6

U:\-CAD Projects\Ameresco\Ashland - 3652150029\7.0 CAD\7.01 Site Plan\Sheets\1 - 3652150021 - G-001 Site Plan.dwg - G-001 - Jan. 04, 2016 2:55pm - dana.dempsey

HOLLY LANE
(50' - PUBLIC)

N/F
BAKER, HENRY A., JR.
KRISTEN L. BAKER
TAX MAP 12
LOT 022

N/F
SWIEDER, NICHOLAS M.
WHEELER, DAWN M.
TAX MAP 12
LOT 023

N/F
LYONS, ROBERT M.
MARJORIE A. LYONS
TAX MAP 12
LOT 024

N/F
SCHAEFER, DYRICK A. & ALICE TRUSTEES
ALICE SCHAEFER 2011 FAMILY TRUST
TAX MAP 12 LOT 025

PINECREST LANE
(VARIABLE - PUBLIC)

N/F
WILE, MICHAEL D.
SIGRID A. WILE
TAX MAP 12 LOT 038

N/F
MEADE, PAUL
DIANE M. MEADE
TAX MAP 12
LOT 039

N/F
BURNS, RYAN J.
JENNIFER J. BURNS
TAX MAP 12
LOT 040

HOWE STREET
(VARIABLE - PUBLIC)

UTILITY POLE
(NO NUMBER)

CONTROL
POINT 101
EL. 254.02

UTILITY POLE
#39

SMALL TREES
APROX. 30'
ALONG ROCKS

UNDERGROUND
GAS
(MARKED)

2 SMALL
TREES

3 SMALL
TREES

UTILITY POLE
#24/40

4 SMALL
TREES

SMALL BIRCH
TREE

UTILITY POLE
#41 WITH UE

CATCH BASIN
RIM 259.98

UTILITY POLE
#43 WITH METER
AND UE

EXISTING
BIT WALK

LARGE BOULDERS
(TYP)

UTILITY POLE
#15

5/8" REBAR FOUND

WETLAND
BOUNDARY
(TYP)

WA1
WA2
WA3
WA4
WA5
WA6
WA7
WA8
WA9
WA10
WA11
WA12
WA13
WA14
WA15
WA16
WA17
WA18
WA19

STEEL
ROD 4'

N/F
BOY SCOUTS OF ASHLAND, INC.
C/O JORGENSON, ROBERT & PETERSON, STUART
TAX MAP 12
LOT 222

WB1
WB2
WB3
WB4
WB5
WB6
WB7
WB8
WB9
WB10
WB11

100'
WETLAND
BUFFER

DRAIN CHANNEL OUTLET
SMALL STONE RIPRAP

12" RCP

STEEL ROD 4'

WC1
WC2
WC3
WC4
WC5
WC6
WC7
WC8
WC9
WC10
WC11
WC12
WC13
WC14
WC15
WC16
WC17
WC18
WC19
WC20
WC21
WC21A
WC22
WC23
WC24

RIPRAP

WETLAND
BOUNDARY (TYP)

8" CPP
INV OUT 213.18

VENT
VENT 1
VENT 2
VENT 4
VENT 5
VENT 6

GUY

CONTROL POINT
BASE 100
EL. 255.21

CONTROL POINT
103 EL. 256.59

CONTROL POINT 2
EL. 245.92

EXISTING
EARTH
BERM

N/F
ZHAO, YANG
HEPING ZHAO
TAX MAP 12
LOT 224

200' OFFSET FROM
INDIAN BROOK

N/F
TREVELONI REALTY TRUST
PETER R. TREVELONI TRUSTEE
TAX MAP 12
LOT 226

EDGE OF GEOCOMPOSITE
(TYP) (SEE PLAN REFERENCE 1
SHEET 1)

N/F
KOHN, WILLIAM B.
GENEVIEVE D. KOHN
TAX MAP 12
LOT 234

6"x6" GRANITE MONUMENT
FOUND (2')

6"x6" GRANITE
MONUMENT
FOUND (2')

N/F
GRAGEN, ZACHARY
GRANDJEAN, KATHERINE
TAX MAP 12
LOT 235

N/F
BOY SCOUTS OF ASHLAND, INC.
C/O JORGENSON, ROBERT & PETERSON, STUART
TAX MAP 12
LOT 222

EDGE OF INDIAN BROOK TAKEN
FROM PLAN REFERENCE 1

LEGEND:

- PROPERTY LINE
- APPROXIMATE LOCATION OF JOINING PROPERTY LINE
- APPROXIMATE LOCATION OF GEOMEMBRANE
- 50-FT YARD SETBACK
- APPROXIMATE LOCATION OF WASTE LIMIT
- TOE DRAIN
- TREE LINE
- OE — OVERHEAD ELECTRIC LINE
- UNDERGROUND ELECTRIC LINE
- UNDERGROUND VENT GAS LINE
- 255 — MAJOR CONTOUR
- 257 — MINOR CONTOUR
- WETLAND LINE
- WA1 — WETLAND FLAG
- VENT WITH 6' HIGH CHAIN LINK FENCE ENCLOSURE
- HYDRANT
- UTILITY POLE
- MONITORING WELL
- BOULDERS

GENERAL NOTES

1. BOUNDARY INFORMATION SHOWN IS PER PLAN REFERENCE 1.
2. WETLANDS DELINEATION PERFORMED BY AMEC MASSACHUSETTS, INC. ON AUGUST 12, 2015.
3. TOPOGRAPHIC SURVEY PERFORMED BY AMEC MASSACHUSETTS AUGUST 2015.
4. HORIZONTAL DATUM BASED ON MASSACHUSETTS STATE GRID COORDINATE SYSTEM NAD 83 (CORS 96) AND IS BASED ON SURVEY GRADE GPS OBSERVATIONS WITH AN OPUS SOLUTION. VERTICAL DATUM IS BASED ON NAVD88.
5. UNDERGROUND UTILITIES SHOWN ARE BASED ON SURFACE EVIDENCE AND AVAILABLE RECORDS. LOCATIONS ARE APPROXIMATE. ACTUAL LOCATIONS MUST BE DETERMINED IN THE FIELD BEFORE DESIGNING, EXCAVATING OR OTHER CONSTRUCTION ACTIVITIES. CALL "DIG SAFE" AT 1-888-344-7233. AMEC FOSTER WHEELER ASSUMES NO RESPONSIBILITY FOR DAMAGES INCURRED AS A RESULT OF UTILITIES OMITTED OR INACCURATELY SHOWN.
6. SEE FIRM PANEL "MIDDLESEX COUNTY, MASSACHUSETTS (ALL JURISDICTIONS) PANEL 494 OF 656 - MAP NUMBER NUMBER 25017C0494F WITH A LATEST REVISION DATE OF JUNE 07, 2014.
7. ZONING DISTRICT: RESIDENTIAL A (RA)
   PHOTOVOLTAIC INSTALLATION OVERLAY
8. PROPERTY OWNER: TOWN OF ASHLAND, 101 MAIN STREET, ASHLAND, MA 01721.

PLAN REFERENCES:

1. PLAN ENTITLED "FINAL GRADING PLAN (AS BUILT)" PREPARED BY ENVIRONMENTAL COMPLIANCE SERVICES, INC. 10 STATE STREET WOBURN, MA. LAST REVISED 8/7/2015.
2. PLAN ENTITLED "AS BUILT PLAN" PREPARED BY ENVIRONMENTAL COMPLIANCE SERVICES, INC. 10 STATE STREET WOBURN, MA. LAST REVISED 9/2/14.
3. PLAN ENTITLED "ANR SUBDIVISION PLAN HOWE STREET ASHLAND, MASSACHUSETTS PREPARED FOR TOWN OF ASHLAND" PREPARED BY WSP-SEELS TRANSPORTATION & INFRASTRUCTURE, 155 MAIN DUNSTABLE ROAD, NASHUA, NH.
4. PLAN ENTITLED "EXISTING CONDITIONS PLAN HOWE STREET ASHLAND, MASSACHUSETTS PREPARED FOR NORTH COASTAL ENVIRONMENTAL, INC.," PREPARED BY CHAS. H. SELLS, INC., 155 MAIN DUNSTABLE ROAD, NASHUA, NH.

0' 20' 40' 60'
1" = 40'

ISSUED FOR SITE PLAN REVIEW

amec foster wheeler
AMEC MASSACHUSETTS, INC.
271 MILL ROAD
CHELMSFORD MASSACHUSETTS 01824
TELEPHONE: (978) 692-9090
FAX: (978) 692-6633
WEB: WWW.AMECFW.COM

REVISION	DATE	ISSUE / REVISION DESCRIPTION	ISSUED BY	APPROVED
0	01/04/2016	ISSUED FOR SITE PLAN REVIEW	APV	RJB

PROJECT:
ASHLAND LANDFILL SOLAR PV DEVELOPMENT
ASHLAND, MASSACHUSETTS

TITLE:
EXISTING CONDITIONS PLAN

CLIENT:
AMERESCO
111 SPEEN STREET
FRAMINGHAM, MA 01701
AMERESCO Green • Clean • Sustainable

SEAL:
COMMONWEALTH OF MASSACHUSETTS
ROBERT J. BUKOWSKI
CIVIL
No. 41402
REGISTERED PROFESSIONAL ENGINEER
1/4/16

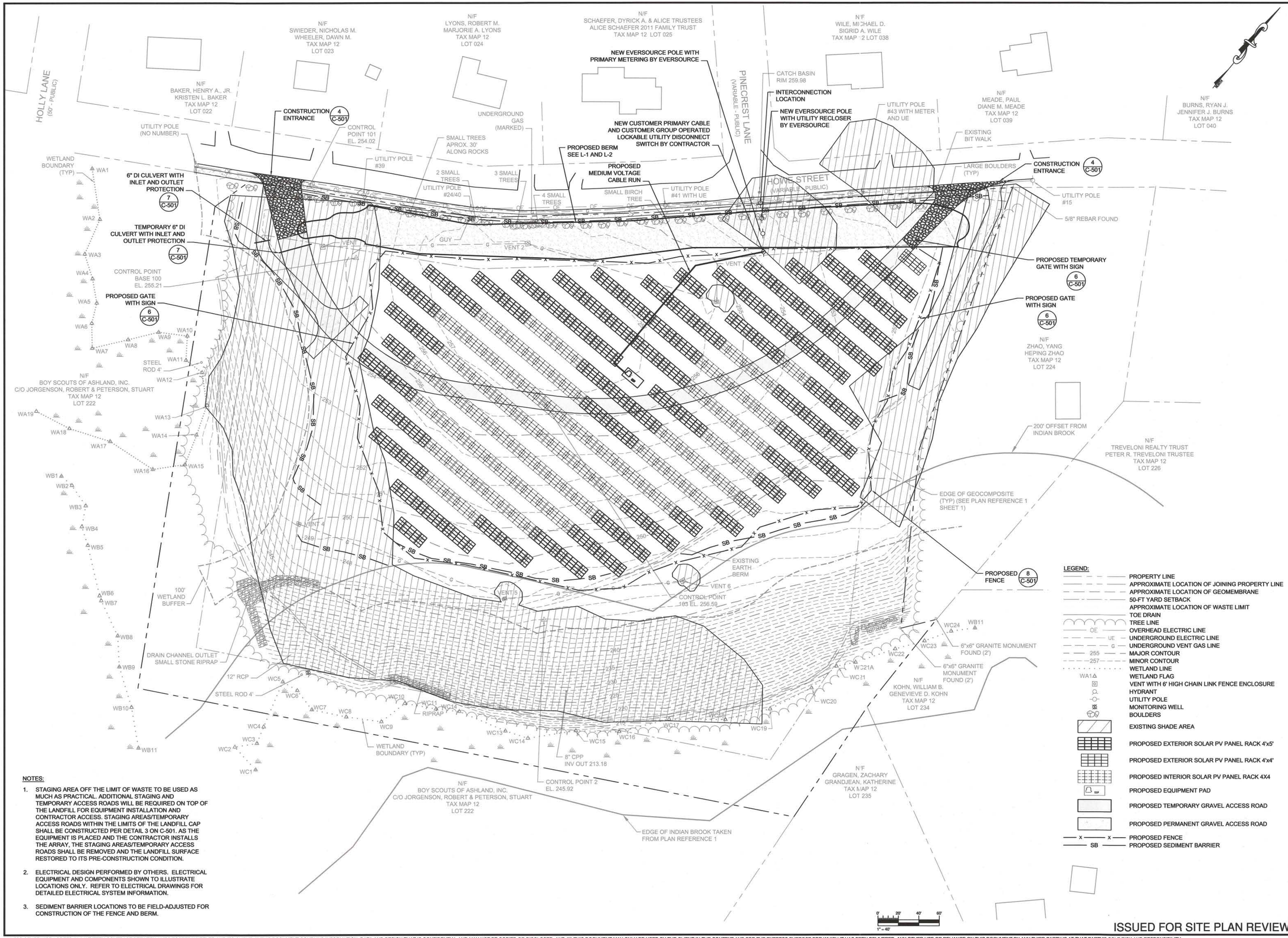
DESIGNED BY:	DRAWN BY:
APV	DED
CHECKED BY:	SCALE:
TD	AS SHOWN

PROJECT NUMBER:
3652150029

DRAWING NUMBER:
V-101

SHEET NUMBER:
2 OF 6

U:\- CAD Projects\Ameresco\Ashland - 3652150029\7.0 CAD\7.01 Site Plan\Sheets\2 - 3652150021 - V-101 Site Plan.dwg - V-101 - Jan. 04, 2016 2:22pm - diana.dempsey



NOTES:

1. STAGING AREA OFF THE LIMIT OF WASTE TO BE USED AS MUCH AS PRACTICAL. ADDITIONAL STAGING AND TEMPORARY ACCESS ROADS WILL BE REQUIRED ON TOP OF THE LANDFILL FOR EQUIPMENT INSTALLATION AND CONTRACTOR ACCESS. STAGING AREAS/TEMPORARY ACCESS ROADS WITHIN THE LIMITS OF THE LANDFILL CAP SHALL BE CONSTRUCTED PER DETAIL 3 ON C-501. AS THE EQUIPMENT IS PLACED AND THE CONTRACTOR INSTALLS THE ARRAY, THE STAGING AREAS/TEMPORARY ACCESS ROADS SHALL BE REMOVED AND THE LANDFILL SURFACE RESTORED TO ITS PRE-CONSTRUCTION CONDITION.
2. ELECTRICAL DESIGN PERFORMED BY OTHERS. ELECTRICAL EQUIPMENT AND COMPONENTS SHOWN TO ILLUSTRATE LOCATIONS ONLY. REFER TO ELECTRICAL DRAWINGS FOR DETAILED ELECTRICAL SYSTEM INFORMATION.
3. SEDIMENT BARRIER LOCATIONS TO BE FIELD-ADJUSTED FOR CONSTRUCTION OF THE FENCE AND BERM.

ISSUED FOR SITE PLAN REVIEW

amec foster wheeler
AMEC MASSACHUSETTS, INC.
271 MILL ROAD
CHELMSFORD MASSACHUSETTS 01824
TELEPHONE: (978) 692-9090
FAX: (978) 692-6633
WEB: WWW.AMECFW.COM

REVISION	DATE	ISSUE / REVISION DESCRIPTION	ISSUED BY	APPROVED
0	01/04/2016	ISSUED FOR SITE PLAN REVIEW	APV	RJB

PROJECT: ASHLAND LANDFILL SOLAR PV DEVELOPMENT ASHLAND, MASSACHUSETTS

TITLE: PROPOSED SITE PLAN

CLIENT: AMERESCO 111 SPEEN STREET FRAMINGHAM, MA 01701

AMERESCO Green • Clean • Sustainable

SEAL: COMMONWEALTH OF MASSACHUSETTS — ROBERT J. BUKOWSKI — CIVIL — No. 41492 — REGISTERED PROFESSIONAL ENGINEER — 1/4/16

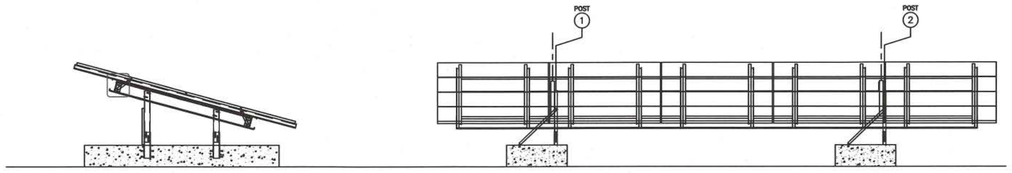
DESIGNED BY:	DRAWN BY:
APV	DED
CHECKED BY:	SCALE:
TD	AS SHOWN

PROJECT NUMBER: 3652150029

DRAWING NUMBER: C-101

SHEET NUMBER: 3 OF 6

U:\ CAD Projects\Ameresco\Ashland - 3652150029\7.0 CAD\7.01 Site Plan\Sheets\3 - 3652150021 - C-101 Site Plan.dwg - 3 - 3652150029 - C-101 - Jan. 04, 2016 3:26pm - dana.dempsey

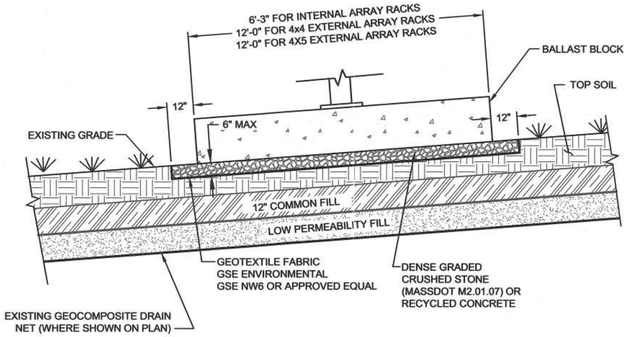


BALLAST BLOCK

NOTES:

1. DESIGN FOR FOUNDATIONS, RACKING, AND MODULES BY OTHERS. DETAILS SHOWN FOR ILLUSTRATION PURPOSES ONLY.
2. SEE DETAIL 2 THIS SHEET FOR INTERIOR AND EXTERIOR BLOCK DIMENSIONS.

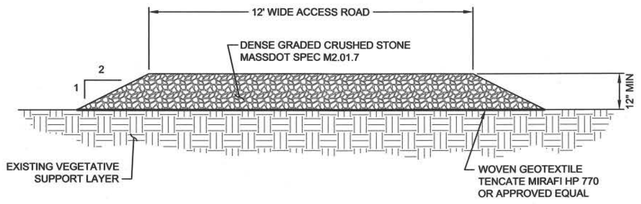
SOLAR PV ARRAY 1
NOT TO SCALE



NOTES:

1. INTERIOR BLOCKS ARE 6'-3"L x 4'-0"W x 1'-6"H. EXTERIOR BLOCKS (4x4) ARE 12'-0"L x 4'-0"W x 1'-6"H AND (4x5) 12'-0"L x 4'-0"W x 1'-6"H.
2. VEGETATION TO BE STRIPPED FROM CAP PRIOR TO ANY GRADING ACTIVITIES.
3. TOPSOIL TO BE STRIPPED FOR REUSE PRIOR TO PLACEMENT OF GRANULAR FILL OR CRUSHED STONE.
4. MINIMUM 6" DENSE GRADED CRUSHED STONE TO BE PLACED 1' BEYOND ALL SIDES OF THE BLOCK.
5. SEE SHEET 1 FOR MATERIAL SPECIFICATIONS AND PLACEMENT REQUIREMENTS.
6. MINIMUM OF 6" OF DENSE GRADED CRUSHED STONE OR RECYCLED CONCRETE IS REQUIRED; HOWEVER, A MAXIMUM EXCAVATION DEPTH OF 6" IS ALLOWED. SHOULD ADDITIONAL STONE BE REQUIRED BEYOND THE EXCAVATION DEPTH TO ATTAIN THE 6" THICKNESS, THE STONE SHALL BE PLACED ABOVE EXISTING GROUND SURFACE ELEVATION.
7. AS AN ALTERNATIVE INSTALLATION, CONTRACTOR MAY INSTALL 6" OF DENSE GRADED CRUSHED STONE ON TOP OF THE EXISTING VEGETATIVE SUPPORT LAYER AFTER CUTTING EXISTING VEGETATION AS SHORT AS POSSIBLE AND PLACING NON-WOVEN GEOTEXTILE FABRIC (SEE FABRIC SPECIFICATION ON DETAIL).

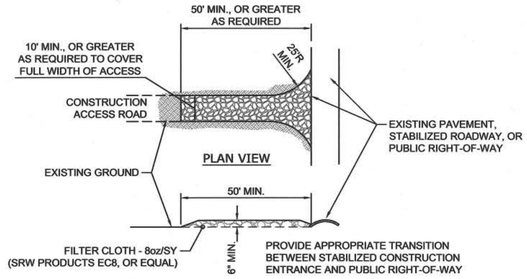
BALLAST INSTALLATION 2
NOT TO SCALE



NOTES:

1. ACCESS ROAD TO BE CONSTRUCTED OF A MINIMUM 12" OF DENSE GRADED CRUSHED STONE.
2. WOVEN GEOTEXTILE TO BE PLACED BETWEEN THE GROUND SURFACE AND THE CRUSHED STONE.

ACCESS ROAD 3
NOT TO SCALE

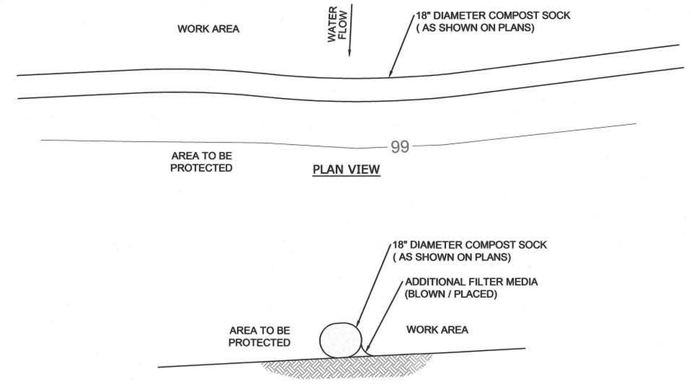


SECTION VIEW

NOTES:

1. STONE TO BE 1"-3" STONE, RECLAIMED STONE, OR RECYCLED CONCRETE EQUIVALENT.
2. LENGTH - AS REQUIRED, BUT NOT LESS THAN 50 FT.
3. THICKNESS - NOT LESS THAN SIX (6) INCHES.
4. WIDTH- TEN (10) FT. MIN, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS.
5. FILTER CLOTH - SHALL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE.
6. SURFACE WATER - ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCE SHALL BE PIPED ACROSS OR BENEATH THE ENTRANCE.
7. MAINTENANCE - THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.
8. WASHING - WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHTS-OF-WAY. IF WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
9. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN.

STABILIZED CONSTRUCTION ENTRANCE 4
NOT TO SCALE

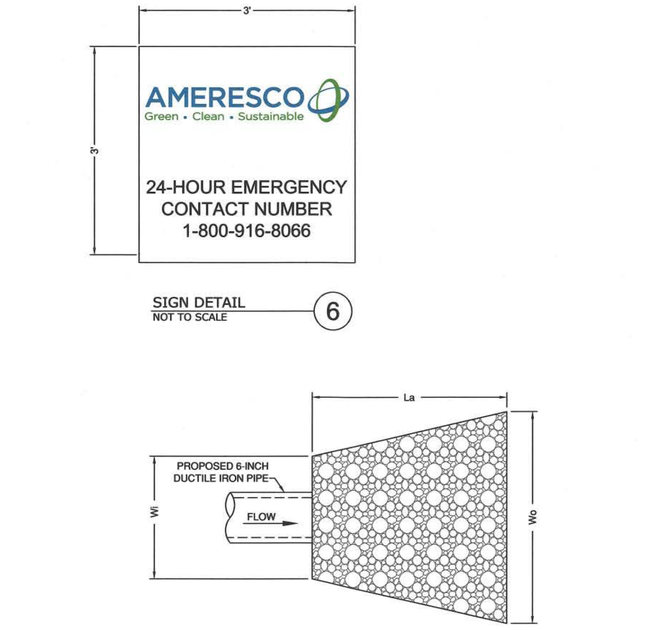


SECTION VIEW

NOTES:

1. COMPOST SOCK TO BE USED FOR SEDIMENT CONTROL ON THE LANDFILL CAP SURFACE IN PLACE OF SILT FENCE WHERE PENETRATION OF THE CAP MATERIAL BY SUPPORT POSTS IS UNACCEPTABLE.
2. NO EROSION/SEDIMENTATION CONTROL DEVICE SHALL PENETRATE THE EXISTING LANDFILL CAP MATERIAL.
3. COMPOST SOCK TO BE FILTREXX SOXX OR APPROVED EQUAL.
4. FILTER MEDIA FILL TO MEET MANUFACTURER'S REQUIREMENTS.
5. SAND BAGS TO BE INSTALLED IF REQUIRED TO SECURE COMPOST SOCKS IN PLACE.
6. UPON COMPLETION, COMPOST MATERIAL TO BE DISPERSED ON SITE AS DETERMINED BY ENGINEER.

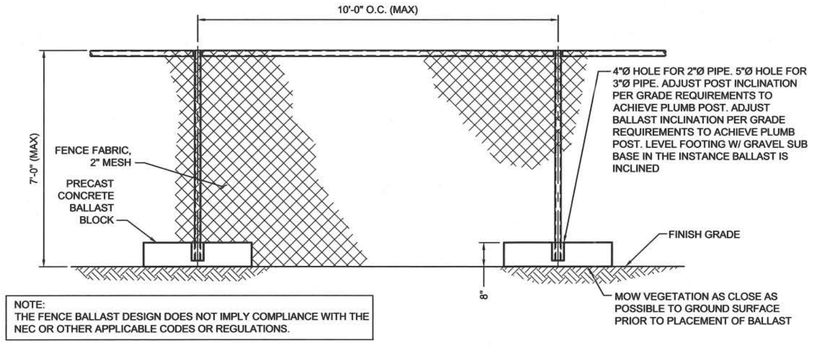
SEDIMENT BARRIER - COMPOST SOCK 5
NOT TO SCALE



SIGN DETAIL 6
NOT TO SCALE

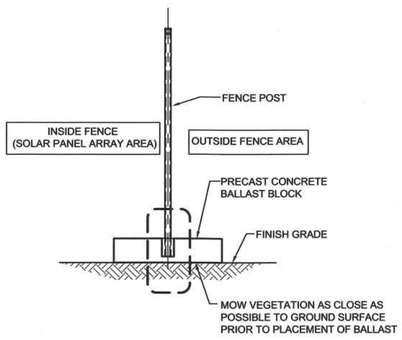
PIPE SIZE	La	Wo	Wi	Dstone
6-INCH	4-FEET	5.5-FEET	1.5-FEET	4-INCH MINUS

INLET AND OUTLET PROTECTION 7
NOT TO SCALE



NOTE:
THE FENCE BALLAST DESIGN DOES NOT IMPLY COMPLIANCE WITH THE NEC OR OTHER APPLICABLE CODES OR REGULATIONS.

CHAIN LINK FENCE 8
NOT TO SCALE



ISSUED FOR SITE PLAN REVIEW

amec foster wheeler
AMEC MASSACHUSETTS, INC.
271 MILL ROAD
CHELMSFORD MASSACHUSETTS 01824
TELEPHONE: (978) 692-9090
FAX: (978) 692-6633
WEB: WWW.AMECFW.COM

REVISION	DATE	ISSUE / REVISION DESCRIPTION	ISSUED BY	APPROVED
0	01/04/2016	ISSUED FOR SITE PLAN REVIEW	APV	RJB

PROJECT: ASHLAND LANDFILL SOLAR PV DEVELOPMENT
ASHLAND, MASSACHUSETTS

TITLE: DETAILS

CLIENT: AMERESCO
111 SPEEN STREET
FRAMINGHAM, MA 01701

SEAL: COMMONWEALTH OF MASSACHUSETTS — ROBERT J. BUKOWSKI — CIVIL — No. 41492 — REGISTERED PROFESSIONAL ENGINEER — 1/4/16

DESIGNED BY:	DRAWN BY:
APV	DED
CHECKED BY:	SCALE:
TD	AS SHOWN

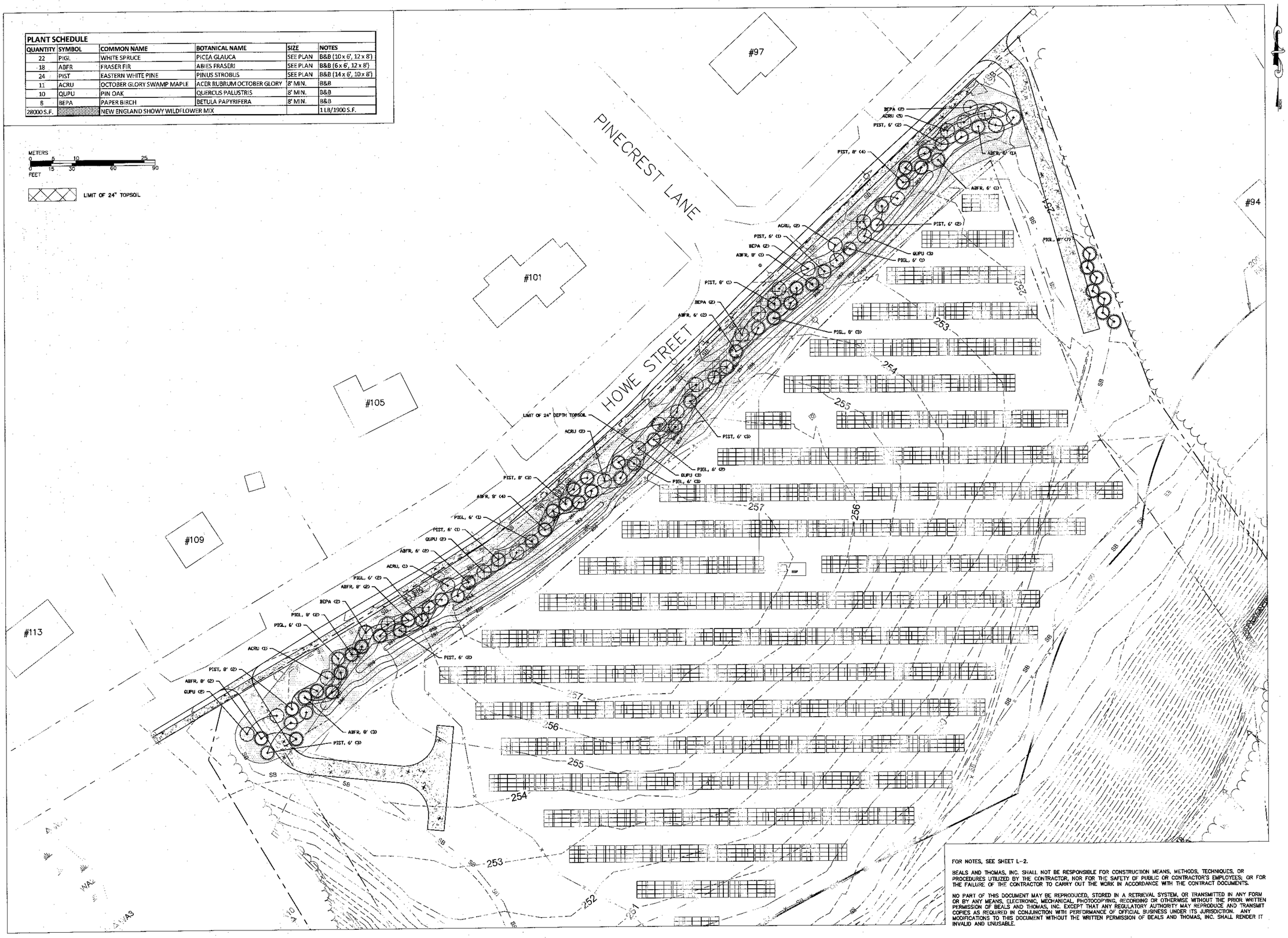
PROJECT NUMBER: 3652150029
DRAWING NUMBER: C-501
SHEET NUMBER: 4 OF 6

U:\CAD Projects\Ameresco\Ashland - 3652150029\07.0 CAD\7.01 Site Plan\Sheets\4 - 3652150021 - C-501 Site Plan.dwg - C-501 - Jan. 04, 2016 3:26pm - dana.dempsey

PLANT SCHEDULE					
QUANTITY	SYMBOL	COMMON NAME	BOTANICAL NAME	SIZE	NOTES
22	PIGL	WHITE SPRUCE	PICEA GLAUCA	SEE PLAN	B&B (10 x 6', 12 x 8')
18	ABFR	FRASER FIR	ABIES FRASERI	SEE PLAN	B&B (6 x 6', 12 x 8')
24	PIST	EASTERN WHITE PINE	PINUS STROBUS	SEE PLAN	B&B (14 x 6', 10 x 8')
11	ACRU	OCTOBER GLORY SWAMP MAPLE	ACER RUBRUM OCTOBER GLORY	8' MIN.	B&B
10	QUPU	PIN OAK	QUERCUS PALUSTRIS	8' MIN.	B&B
8	BEPA	PAPER BIRCH	BETULA PAPYRIFERA	8' MIN.	B&B
28000 S.F.		NEW ENGLAND SHOWY WILDFLOWER MIX			1 LB/1900 S.F.

METERS 0 5 10 25
FEET 0 15 30 60 90

LIMIT OF 24" TOPSOIL



FOR NOTES, SEE SHEET L-2.

BEALS+THOMAS
Civil Engineers + Landscape Architects +
Land Surveyors + Planners +
Environmental Specialists

BEALS AND THOMAS, INC.
Reservoir Corporate Center
144 Turnpike Road
Southborough, Massachusetts 01772-2104
T 508.366.0560 | www.bealsandthomas.com

REVISION	DATE	REV	ISSUE / REVISION DESCRIPTION	ISSUED BY	APPROVED
0	01/04/2016	AML	ISSUED FOR PERMITTING/NOT FOR CONSTRUCTION		

PROJECT:
ASHLAND LANDFILL SOLAR PV
DEVELOPMENT
ASHLAND, MASSACHUSETTS

TITLE:
LANDSCAPE PLAN

CLIENT:
AMERESCO
111 SPEEN STREET
FRAMINGHAM, MA 01701

SEAL:
COMMONWEALTH OF MASSACHUSETTS
ROBERT E. WEIDMANN
No. 887
REGISTERED LANDSCAPE ARCHITECT
11/5/2016

DESIGNED BY:	DRAWN BY:
AML	AML
CHECKED BY:	SCALE:
REW	1" = 30'

PROJECT NUMBER: 2669P001

DRAWING NUMBER: **L-101**

SHEET NUMBER: **5 OF 6**

GENERAL NOTES

THE CONTRACTOR SHALL MAKE ALL NECESSARY CONSTRUCTION NOTIFICATIONS AND APPLY FOR AND OBTAIN ALL NECESSARY CONSTRUCTION PERMITS. THE CONTRACTOR SHALL ALSO PAY ALL FEES AND POST ALL BONDS ASSOCIATED WITH THE SAME, AND COORDINATE WITH THE ENGINEER AND LANDSCAPE ARCHITECT AS REQUIRED.

CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR JOB SITE SAFETY AND ALL CONSTRUCTION MEANS AND METHODS.

LIMIT OF WORK SHALL BE EROSION CONTROL BARRIERS, LIMIT OF GRADING AND SITE PROPERTY LINES AND/OR AS INDICATED ON DRAWINGS.

PORTIONS OF THE ROADWAY, SIDEWALK AND ROADSIDE AREA DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE RESTORED TO THEIR CONDITIONS PRIOR TO DISTURBANCE.

CONTRACTOR TO VERIFY UTILITY STUB LOCATIONS AND ELEVATIONS IN THE FIELD PRIOR TO COMMENCING WORK.

ANY ALTERATION TO THESE DRAWINGS MADE IN THE FIELD DURING CONSTRUCTION SHALL BE RECORDED BY THE CONTRACTOR ON RECORD DOCUMENTS.

ANY AREA OUTSIDE THE LIMIT OF WORK THAT IS DISTURBED SHALL BE RESTORED TO ITS ORIGINAL CONDITION AT NO COST TO OWNER.

EXISTING TREES AND SHRUBS OUTSIDE THE LIMITS OF GRADING SHALL BE REMOVED ONLY UPON PRIOR APPROVAL OF THE OWNER.

FOR DRAWING LEGIBILITY, ALL EXISTING TOPOGRAPHIC FEATURES, EXISTING UTILITIES, PROPERTY BOUNDARIES, EASEMENTS, ETC. MAY NOT BE SHOWN ON ALL DRAWINGS. REFER TO ALL REFERENCED DRAWINGS AND OTHER DRAWINGS IN THIS SET FOR ADDITIONAL INFORMATION.

NEW EXCAVATION AND TRENCH SAFETY REGULATIONS ARE IN EFFECT AS OF MARCH 1, 2015. (REFER TO 520 CMR 14.00) ALL EXCAVATORS OR CONTRACTORS MUST OBTAIN A TRENCH PERMIT PRIOR TO ANY CONSTRUCTION RELATED TRENCHES ON SITE.

PLANTING AND LIGHTING NOTES

ALL PLANT MATERIAL SHALL CONFORM TO THE MINIMUM GUIDELINES ESTABLISHED BY THE AMERICAN STANDARD FOR NURSERY STOCK PUBLISHED BY THE AMERICAN NURSERY AND LANDSCAPE ASSOCIATION.

ANY PROPOSED SUBSTITUTIONS OF PLANT MATERIAL SHALL BE MADE WITH MATERIAL EQUIVALENT TO THE DESIRED MATERIAL IN OVERALL FORM, HEIGHT, BRANCHING HABIT, FLOWER, LEAF, COLOR, FRUIT AND CULTURE. PROPOSED SUBSTITUTIONS WILL ONLY BE CONSIDERED IF SUBMITTED WITH ENUMERATED REASONS WHY SUBSTITUTIONS ARE PROPOSED.

CAUTION SHALL BE USED NOT TO EXTEND MULCH LAYER ABOVE SOIL LEVEL AT TRUNKS/STEMS OF INSTALLED PLANT MATERIAL.

PROVIDE FIVE (5) FOOT DIAMETER MULCH CIRCLE AROUND ALL INDIVIDUAL TREE PLANTINGS AND CONTINUOUS MULCH BED AROUND SHRUB PLANTINGS.

VERIFY ALL EXISTING UTILITY LINES PRIOR TO PLANTING AND REPORT ANY CONFLICTS TO THE OWNER OR HIS REPRESENTATIVE.

NO PLANT SHALL BE PLANTED BEFORE ACCEPTANCE OF ROUGH GRADING.

PLANT MATERIALS SHALL BEAR SAME RELATIONSHIP TO GRADE AS THEY BORE TO GRADE IN THE NURSERY.

ALL PLANT MATERIALS SHALL BE GUARANTEED FOR ONE YEAR FOLLOWING DATE OF FINAL ACCEPTANCE.

LOAM AND SEED ALL DISTURBED AREAS UNLESS OTHERWISE INDICATED.

REGRADE STOCKPILE AREA AFTER REMOVAL OF SURPLUS MATERIALS (SEE SITE WORK SPECIFICATIONS). LOAM AND SEED THE DISTURBED AREA.

TOPSOIL STRIPPED FROM THE SITE AND PROPERLY STOCKPILED PRIOR TO APPLICATION MAY, UPON APPROVAL OF THE LANDSCAPE ARCHITECT, BE USED FOR PREPARATION OF LAWNS AND PLANTING BEDS. IT SHOULD BE FREE OF LARGE (ONE (1) INCH OR GREATER) COBBLES, ROOTS, OLD SOD, TRASH, WOOD OR OTHER CONTAMINANTS AND BE OF A FRIABLE CONSISTENCY AND SUITABLE FOR PLANT GROWTH.

THE LANDSCAPE CONTRACTOR SHALL FURNISH TOPSOIL. TOPSOIL SHALL BE FERTILE, FRIABLE, NATURAL AND PRODUCTIVE TOPSOIL OF GOOD CLAY-LOAM TYPE. IT SHALL BE FREE OF WEED SEEDS. TOPSOIL SHALL BE WITHOUT ADMIXTURE OF SUBSOIL AND SHALL BE REASONABLY FREE OF STONES, LUMPS, ROOTS, STICKS AND OTHER FOREIGN MATTER. TOPSOIL SHALL NOT BE WORKED OR APPLIED IN A MUDDY OR WET CONDITION.

TOPSOIL SHALL BE SPREAD TO A MINIMUM DEPTH OF SIX (6) INCHES AFTER SETTING ON ALL STRIPPED PLANTED AREAS INCLUDING SLOPE STABILIZATION, LAWN AREAS AND PLANTING BEDS AFTER FILLS ARE PROPERLY SETTLED AND SUBGRADE HAS BEEN APPROVED BY THE OWNER. THE SETTLED TOPSOIL SHALL BE UP TO THE FINISHED GRADE AS CALLED FOR ON THE DRAWINGS. SCARIFY SUBGRADE TO A DEPTH OF TWO (2) INCHES BEFORE PLACING TOPSOIL.

REMOVE ALL ROCKS AND DEBRIS FROM SOIL SURFACE AND GRADE TO AN EVEN SURFACE.

SPREAD 10-10-10 FERTILIZER AT A RATE OF TWENTY-TWO (22) POUNDS PER ONE THOUSAND (1,000) SQUARE FEET AND INCORPORATE INTO THE SOIL UNIFORMLY.

APPLY DOLOMITIC LIME AT THE RATE OF ONE HUNDRED (100) POUNDS PER ONE THOUSAND (1,000) SQUARE FEET THE AREAS BEING PREPARED FOR PLANTING.

PLANTING SEED SHALL BE SOWN IN SEASONAL CONDITIONS AS APPROPRIATE FOR GOOD SEED SURVIVAL, OR AT SUCH TIMES AS APPROVED BY THE OWNER. PROVIDE SUFFICIENT HOSE AND SPRINKLER HEADS FOR ADEQUATE WATERING TO MAINTAIN A MOIST SEED BED AT ALL TIMES.

WATER, MULCH AND SEED BED THOROUGHLY AND IMMEDIATELY AFTER COMPLETION OF MULCHING. SOIL SHALL BE MOISTENED TO A DEPTH OF FOUR (4) INCHES. CONTRACTOR SHALL INSTRUCT OWNERS REPRESENTATIVE ON APPROPRIATE WATERING PROCEDURES DURING INITIAL ESTABLISHMENT.

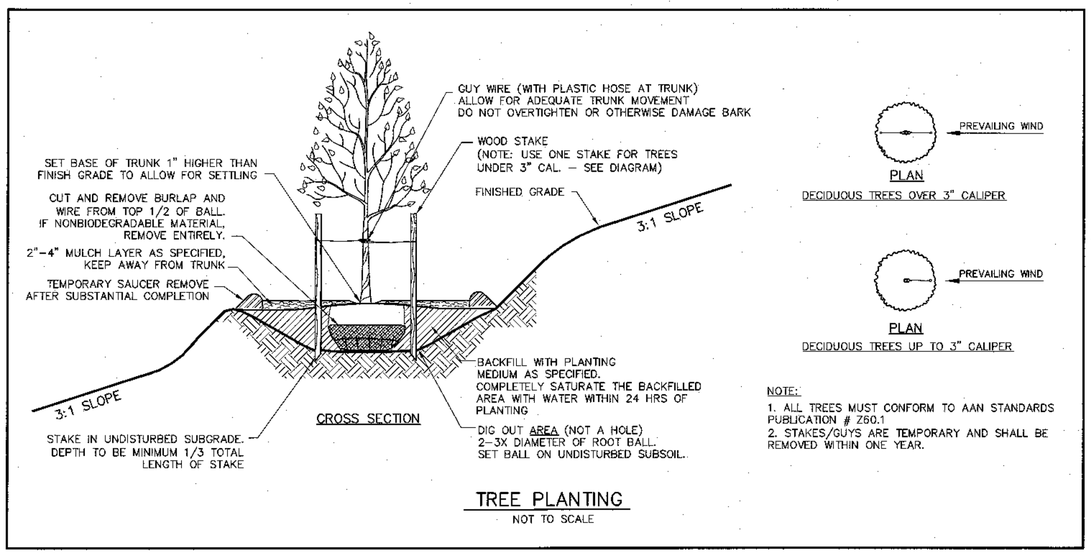
PROTECT NEWLY TOPSOILED, GRADED AND/OR SEEDED AREAS FROM TRAFFIC AND EROSION. KEEP AREAS FREE OF TRASH AND DEBRIS RESULTING FROM LANDSCAPE CONTRACTOR OPERATIONS.

REPAIR AND REESTABLISH GRADES IN SETTLED, ERODED AND RUTTED AREAS TO THE SPECIFIED GRADE AND TOLERANCES.

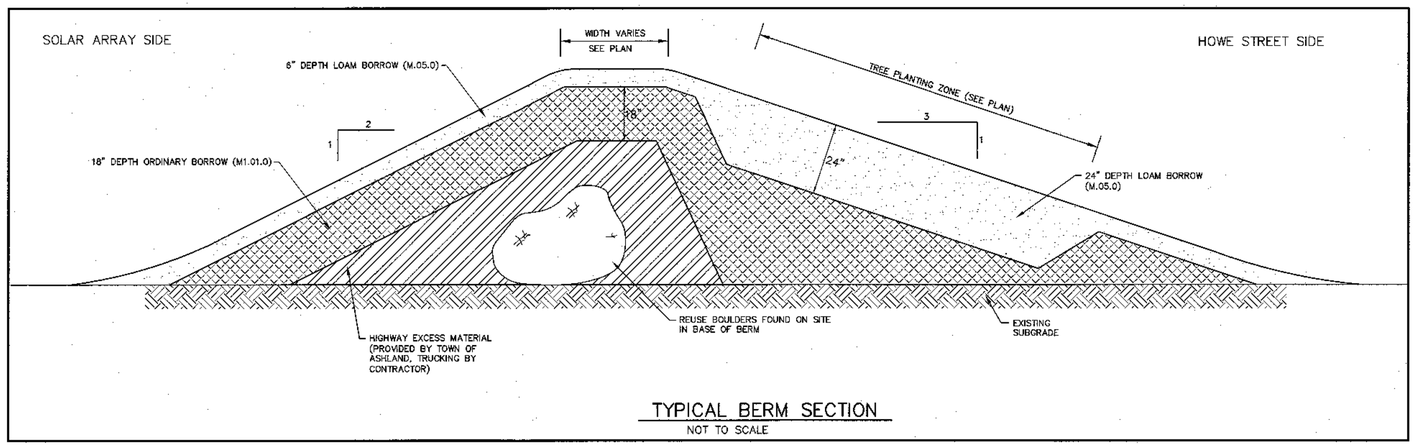
THE LANDSCAPE CONTRACTOR IS TO CLEAN UP AND REMOVE ANY DEBRIS FROM THE SITE CAUSED BY THE LANDSCAPE CONTRACTOR.

PLANT MATERIAL IS TO BE MAINTAINED BY THE LANDSCAPE CONTRACTOR WHILE THE PROJECT IS UNDERWAY.

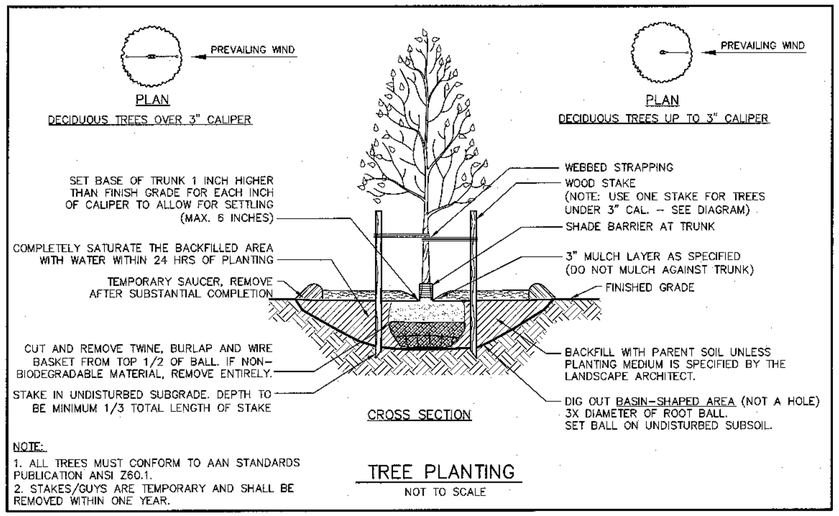
ALL TREES ALONG SIDEWALKS SHALL HAVE A MINIMUM SIX (6) FOOT BRANCHING HEIGHT.



TREE PLANTING
NOT TO SCALE



TYPICAL BERM SECTION
NOT TO SCALE



TREE PLANTING
NOT TO SCALE

BEALS + THOMAS
Civil Engineers + Landscape Architects +
Land Surveyors + Planners +
Environmental Specialists

BEALS AND THOMAS, INC.
Reservoir Corporate Center
144 Turnpike Road
Southborough, Massachusetts 01772-2104
T 508.366.0560 | www.bealsandthomas.com

REVISION	DATE	ISSUE / REVISION DESCRIPTION	ISSUED BY	APPROVED
0	01/04/2016	ISSUED FOR PERMITTING/NOT FOR CONSTRUCTION	AML	REW

PROJECT:
ASHLAND LANDFILL SOLAR PV DEVELOPMENT
ASHLAND, MASSACHUSETTS

TITLE:
LANDSCAPE DETAILS

CLIENT:
AMERESCO
111 SPEEN STREET
FRAMINGHAM, MA 01701

SEAL:

DESIGNED BY:	DRAWN BY:
AML	AML
CHECKED BY:	SCALE:
REW	1" = 30'

PROJECT NUMBER: 2659P001

DRAWING NUMBER: L-501

SHEET NUMBER: 6 OF 6

Appendix C – Beals and Thomas, Inc. Landscape Screening Management Plan and Photosimulations

B E A L S + T H O M A S
BEALS AND THOMAS, INC.
Reservoir Corporate Center
144 Turnpike Road
Southborough, MA 01772-2104

MEMORANDUM
T 508.366.0560
F 508.366.4391
www.bealsandthomas.com
Regional Office: Plymouth, MA

TO: Ashland Planning Board

FROM: Robert E. Weidknecht, RLA, Beals and Thomas, Inc.

DATE: December 23, 2015

REFERENCE: Howe Street Landfill
Ashland, Massachusetts
B+T Project No. 2669.00

Landscape Screening Management Plan

The purpose of the landscape maintenance plan is to ensure vegetative screening is maintained at a minimum height of eight (8) foot, screening the photovoltaic array from adjacent uses as required under local bylaw, Section 8.3.9 (3). The maintenance plan will also ensure vegetative improvements do not inhibit the safety of pedestrians or road users and are aesthetically consistent with the landscape architect's plans, specifications, and management recommendations. The period of maintenance shall be five years.

The Lessee shall perform or provide the maintenance services called for hereunder, at its sole cost and expense, and to do so it may: use its own present full or part-time employees; hire (permanently or otherwise) additional employees, full or part-time; engage independent contractors to carry out work called for in this Landscape Management Plan; hire its partners or their employees; subcontract with related and unrelated parties and entities; and generally employ in the manner it deems most appropriate any arid all persons and entities to carry out the work called for hereunder. Notwithstanding the foregoing, any individual who performs services under this Landscape Management Plan shall be expected to act in a professional manner. All individuals performing landscape maintenance activities shall be, or shall be closely supervised by, trained personnel with at least five years relevant experience and shall use current, accepted horticultural practices.

A. GENERAL MAINTENANCE

During the term of this Landscape Management Plan, and subject to its provisions, the Lessee shall perform the following tasks and services on, in and about the project site, commencing immediately upon substantial completion.

B. TREE, SHRUB AND GROUNDCOVER MAINTENANCE

Provide maintenance consistent with sound horticultural practice including:

1. Periodic watering as required to ensure initial establishment of vegetation.
2. Mulching to conserve moisture and prevent mower damage.
3. Weeding and edging.
4. Pruning, as needed.
5. Pest and disease control, recognizing that pesticides, herbicides and fungicides must be used sparingly. No pre-emergent (soil applied) and post emergent (foliar applied)

herbicides may be used without the permission of the Lessor. The application of pesticides, herbicides, insecticides, fungicides and other chemicals is permitted only if such application is conducted by licensed applicators in strict compliance with all existing state and federal laws and regulations, including but not limited to those administered by the Pesticide Bureau of the Massachusetts Department of Food and Agriculture (or any successor bureau or department).

6. Provide tree and shrub replacements, as needed to maintain effective screening.

C. GROUNDCOVER MAINTENANCE

Provide maintenance consistent with sound horticultural practice including:

1. Periodic watering as required to ensure establishment of vegetation.
2. Maintain wildflower meadows and ornamental grasses to assure a neat and orderly appearance, from the end of April to the end of October.
3. Restoring bare spots with soil and seed as needed.
4. Weed, pest and disease control, recognizing that pesticides, herbicides and fungicides must be used sparingly. No pre-emergent (soil applied) and post-emergent (foliar applied) herbicides may be used without the permission of the Grantees. The application of pesticides, herbicides, insecticides, fungicides, and other chemicals is permitted only if such application is conducted by licensed applicators in strict compliance with all existing state and federal laws and regulations, including but not limited to those administered by the Massachusetts Department of Agricultural Resources (or any successor bureau or department).

D. LEAF PICKUP

The area shall have a complete leaf raking between April 1 and April 30 and October 1 and November 15.

E. ROUTINE MAINTENANCE

1. Prune to remove dead, damaged or unsafe branches overhanging sidewalks semi-annually.
2. Monitor for plant-damaging insect activity and pathogenic diseases; treat as necessary using principles as set forth in above.

F. EMERGENCY MAINTENANCE

As soon as possible following storm events, clear major storm debris and prune trees overhanging sidewalks and clearings.

REW/cp/266900MR002

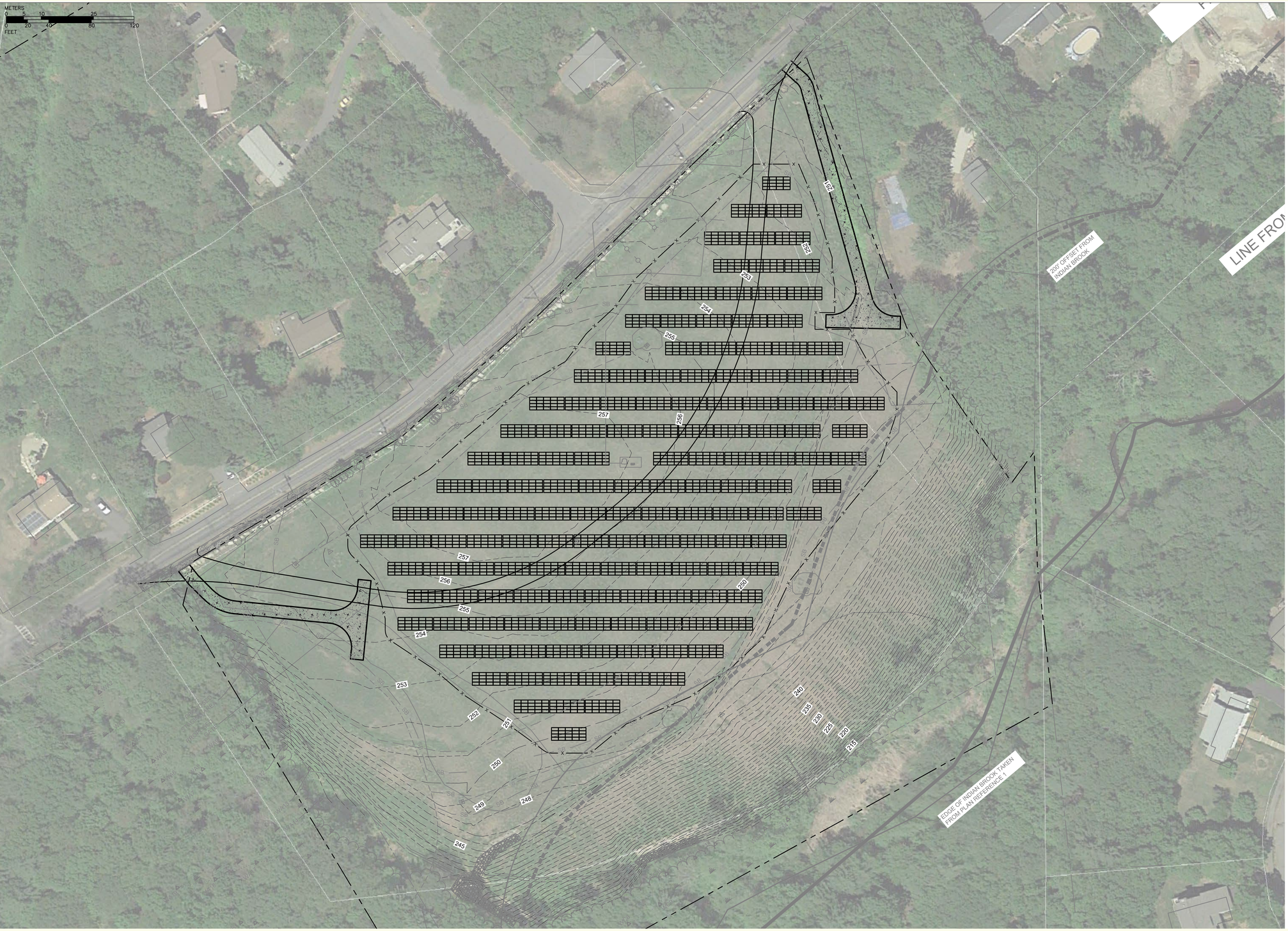
1. Existing Conditions
2. Viewshed Analysis & Mitigation Design Process
3. Landscape Berm Design
4. Planting Concept & Plant Selection
5. # 101 Howe Street Section: 10-Year Projected Tree Growth
6. Experience: View NE along Howe Street near #101

Existing Conditions

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

Existing Conditions: Proposed Array Design

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



BEALS+THOMAS

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

AMERESCO Solar
Portland, ME

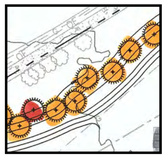
Viewshed Analysis & Mitigation Design Process

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

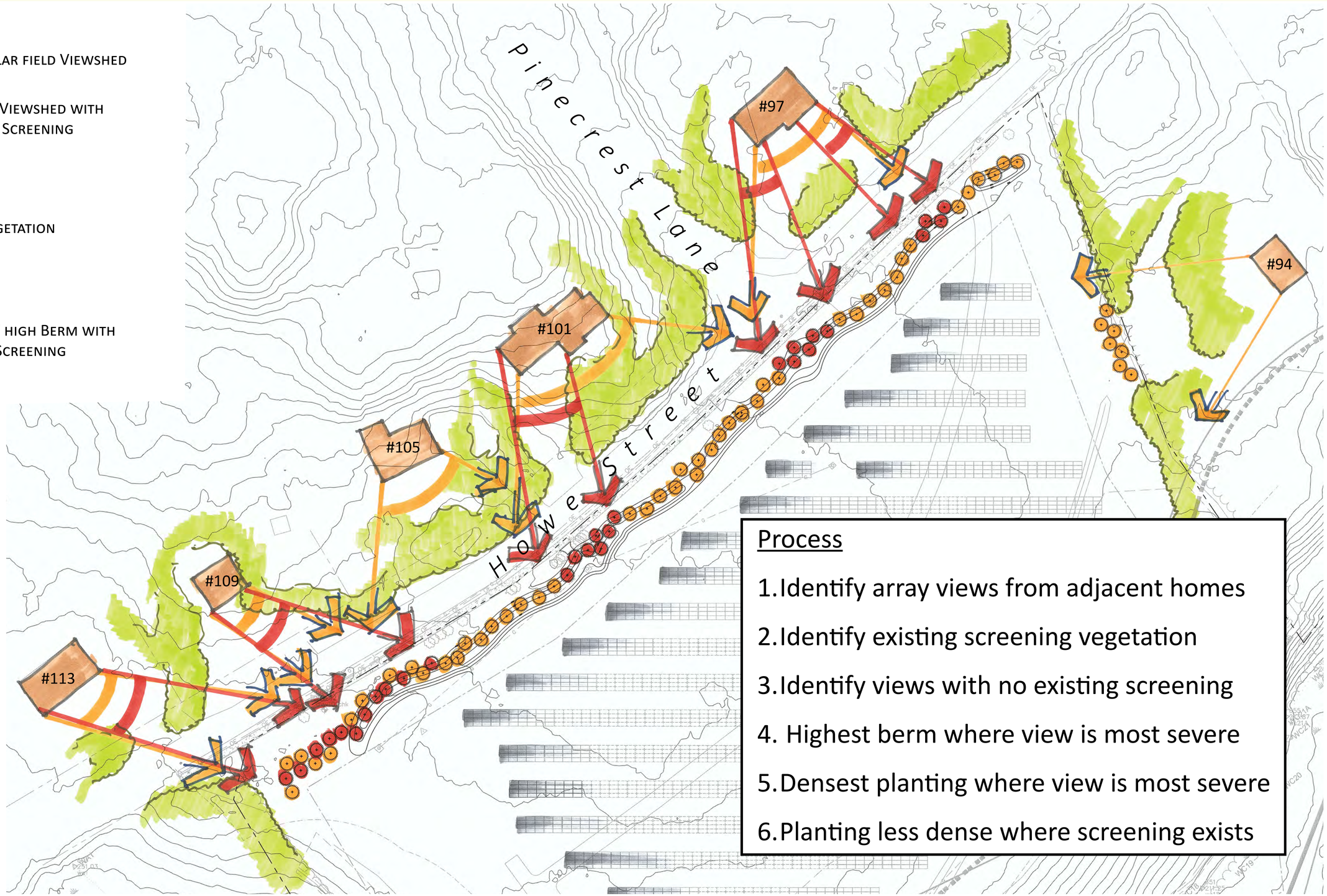
General Solar field Viewshed

Solar Field Viewshed with No Existing Screening

Existing Vegetation



proposed 6’ high Berm with Vegetative Screening

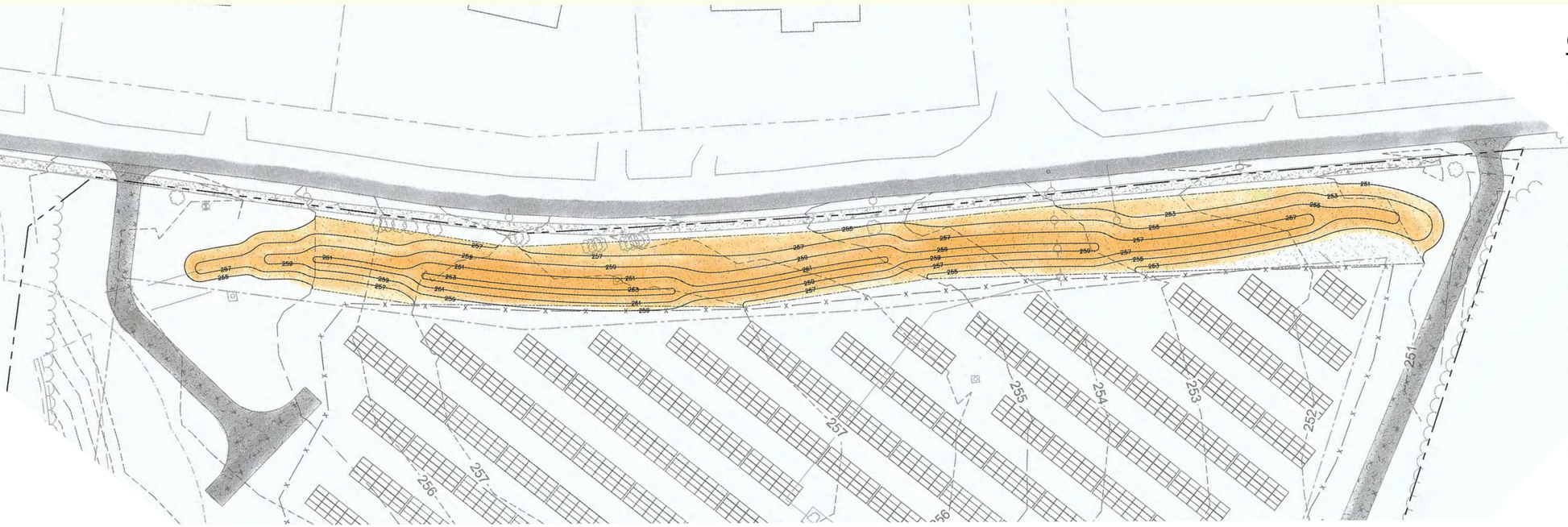


Process

1. Identify array views from adjacent homes
2. Identify existing screening vegetation
3. Identify views with no existing screening
4. Highest berm where view is most severe
5. Densest planting where view is most severe
6. Planting less dense where screening exists

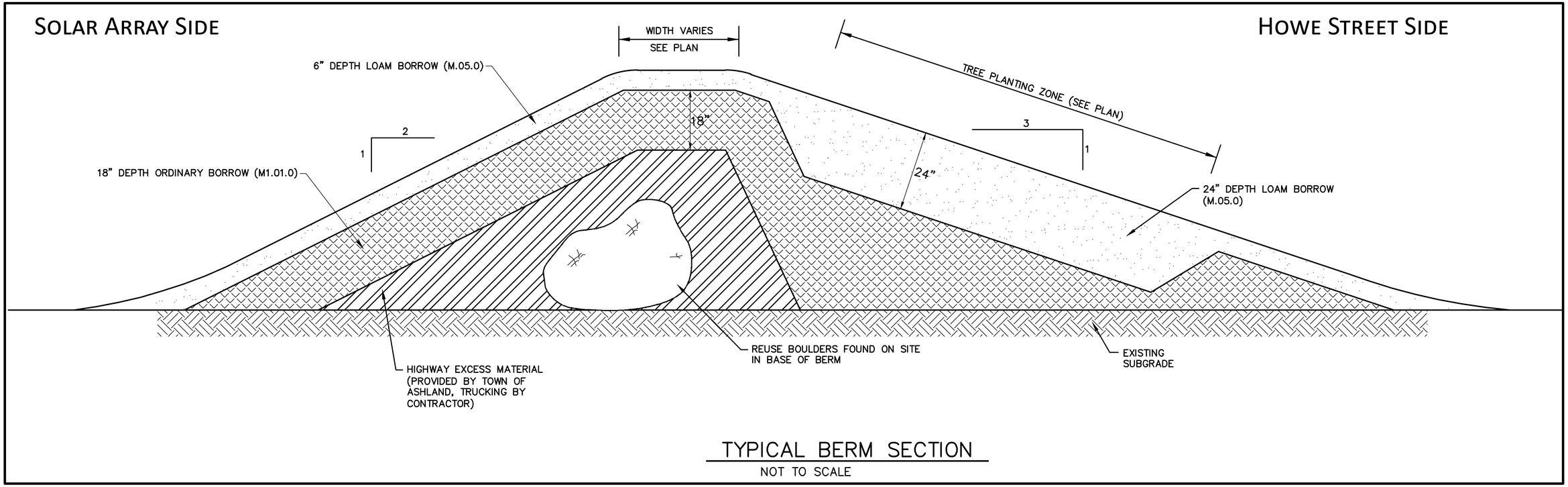
Landscape Berm Design

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



Grading Design Principles

- Berm 6’ high above existing grade
- Reuse boulders found on site
- Highway excess material provided by Town of Ashland
- 3:1 slope on Howe Street side
- 2:1 slope on solar array side
- Berm length ~670’
- Sweeping curves for more naturalistic appearance
- Berm height varies based on existing grade for more naturalistic appearance



TYPICAL BERM SECTION

NOT TO SCALE

Planting Concept & Plant Selection

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

Planting Design Principles

- Multiple evergreen and deciduous species for visual interest and naturalistic variation
- All trees 6 - 8’ at initial planting
- Trees clumped and distributed for naturalistic variation
- Evergreen species placed to maximize screening
- Deciduous species for color and seasonal visual interest

Evergreen Species:

Fraser Fir
(Abies fraseri)

Eastern White Pine
(Pinus strobus)

White Spruce
(Picea glauca)

Deciduous Species:

Pin Oak
(Quercus palustris)

Paper Birch
(Betula papyrifera)

October Glory Swamp Maple
(Acer rubrum

Groundcover:

New England Wildflower Meadow

101 Howe Street Section: 10-Year Projected Tree Growth

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

Plan showing Perspective View

BEALS+THOMAS

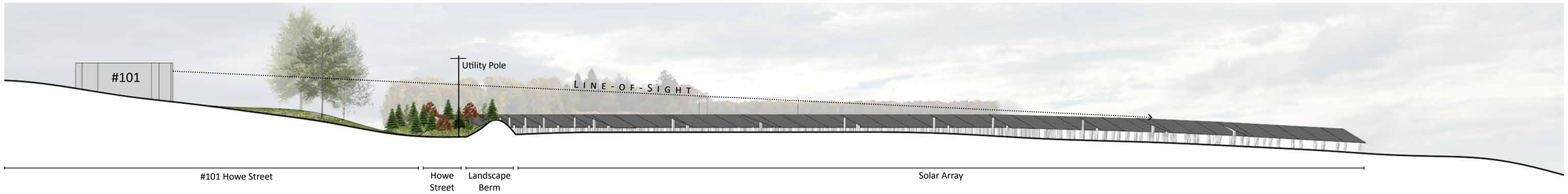
DATE: 11/23/2015
B+T FILE NO: 266900P002

AMERESCO Solar
Portland, ME

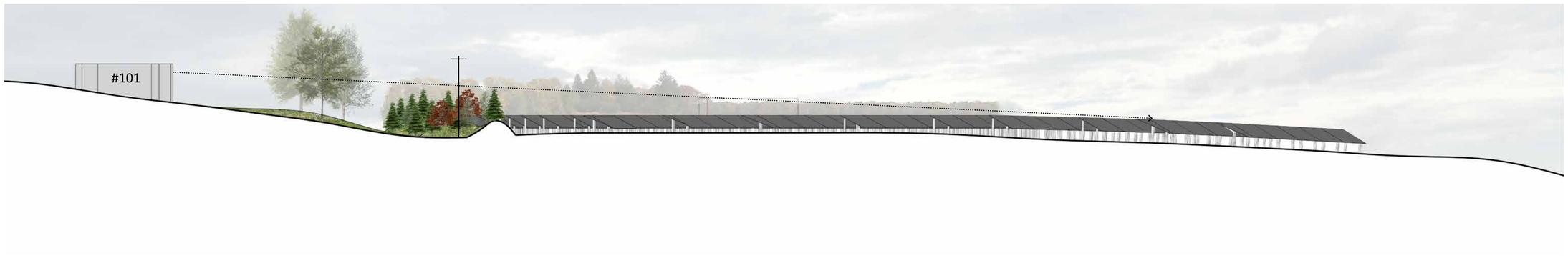
101 Howe Street Section: 10-Year Projected Tree Growth

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

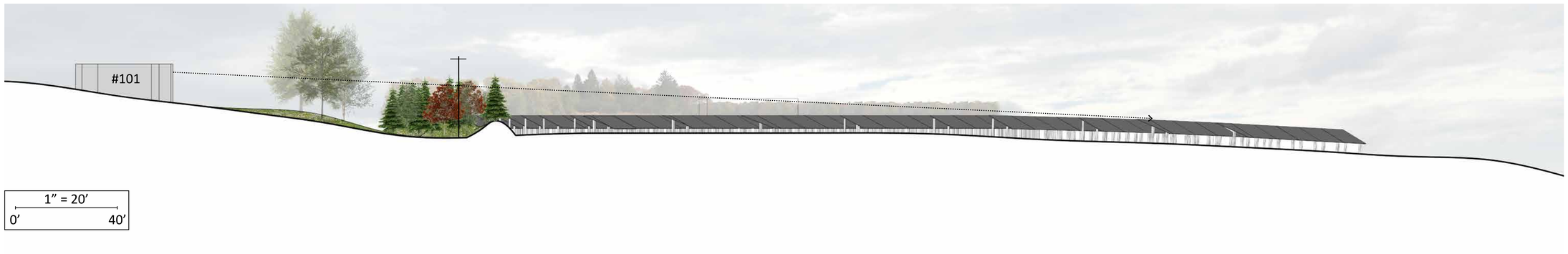
Initial Planting (vegetation ~ 6-8’ tall)



5 Years (vegetation ~ 12-14’ tall)



10 Years (vegetation ~ 18-20’ tall)



1” = 20’
0’ 40’

101 Howe Street Section Detail: 10-Year Projected Tree Growth

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

Initial Planting (vegetation ~ 6-8’ tall)

5 Years (vegetation ~ 12-14’ tall)

10 Years (vegetation ~ 18-20’ tall)