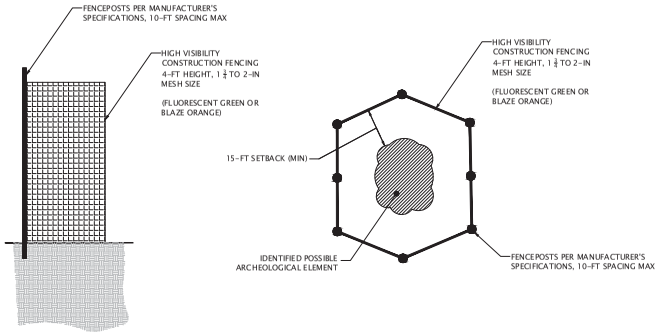
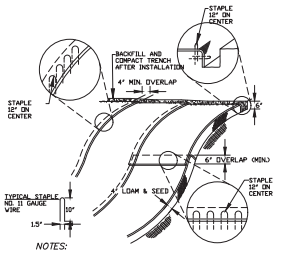


ELEVATION VIEW

PLAN VIEW (APPLICABLE ONLY TO ARCHEOLOGICAL PROTECTION ZONES)

1 HIGH VISIBILITY CONSTRUCTION FENCE

Scale: NTS

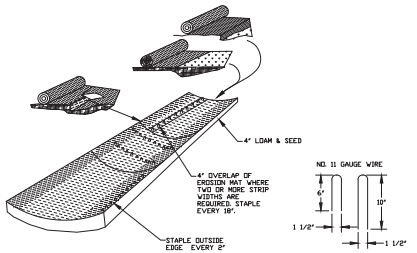


NOTES:

1. TRACK AND SEED SURFACE WITH EQUIPMENT PERPENDICULAR TO SLOPE PRIOR TO APPLYING BLANKET
2. BEGIN AT THE TOP OF BLANKET INSTALLATION AREA BY ANCHORING BLANKET IN A 6" DEEP TRENCH.
3. BACKFILL AND COMPACT TRENCH AFTER STAPLING.
4. ROLL THE BLANKET DOWN SLOPE.
5. THE SIDE EDGES OF BLANKETS MUST BE STAPLED WITH APPROX. 4 INCH OVERLAP WHERE 2 OR MORE STRIP WIDTHS ARE REQUIRED.
6. WHEN BLANKET ENDS MUST BE SPLICED WID SLOPE PLACE BLANKET END OVER END WITH 6 INCH (MIN.) OVERLAP AND ANCHOR DOWN SLOPE BLANKET IN A 6 INCH DEEP TRENCH.
7. BLANKET SHALL BE NORTH AMERICAN GREEN SC-150 OR APPROVED EQUAL.

2 SLOPE STABILIZATION

Scale: NTS



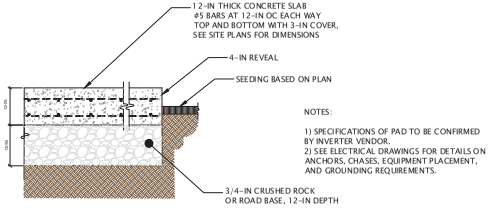
NOTES:

1. BEGIN AT THE TOP OF BLANKET INSTALLATION AREA BY ANCHORING BLANKET IN A 6" DEEP TRENCH.
2. BACKFILL AND COMPACT TRENCH AFTER STAPLING.
3. ROLL THE BLANKET DOWN THE DITCH IN THE DIRECTION OF THE WATER FLOW.
4. THE EDGES OF BLANKETS MUST BE STAPLED WITH APPROX. 4 INCH OVERLAP WHERE 2 OR MORE STRIP WIDTHS ARE REQUIRED.
5. BLANKET SHALL BE NORTH AMERICAN GREEN SC-150 OR APPROVED EQUAL.

3 CHANNEL STABILIZATION

Scale: NTS

SOLAR FIELD IMAGE



4 INVERTER PAD

Scale: NTS

5

SOLAR ARRAY SEED MIX	20# PER ACRE
SPECIES	Per Bulk Pound (lb)
Sheep Fescue	.25
Little Bluestem 'Camper'	.2
Broomsedge	.12
Annual Ryegrass	.15
Lanceleaf Coreopsis	.08
Plains Coreopsis	.08
Blackeyed Susan	.04
Common Yarrow	.04
Butterfly Milkweed	.04
TOTAL	1lb

6

NEW ENGLAND CONSERVATION / WILDLIFE SEED MIX 25# PER ACRE	
SPECIES	**PERCENT**
Big Bluestem (Andropogon gerardii)	20
Little Bluestem (Schizachyrium scoparium)	20
Switchgrass (Panicum virgatum)	20
Fox Sedge (Carex vulpinoidea)	10
Silky Wild Rye (Elymus villosus)	8
Common Milkweed (Asclepias syriaca)	5
Deertongue (Panicum clandestinum)	5
Pennsylvania Smartweed (Polygonum pensylvanicum)	5
Partridge Pea (Chamaecrista fasciculata)	4
Silky Smooth Aster (Aster laevis)	1.5
Nodding Bur-Marigold (Bidens cernua)	1
Flat-top Aster (Aster umbellatus)	0.5
TOTAL	100

7

NEW ENGLAND MOIST MIX 35# PER ACRE	
SPECIES	PERCENT
Upland Bentgrass (Agrostis perennans)	32
Creeping Bentgrass (Agrostis stolonifera)	16
Big Bluestem (Andropogon gerardi)	15
Fox Sedge (Carex vulpinoidea)	10
Canada Wild Rye (Elymus canadensis)	7.5
Virginia Wild Rye (Elymus virginicus)	7
Creeping Red Fescue (Festuca rubra)	5.5
Soft Rush (Juncus effusus)	2
Switchgrass (Panicum virgatum)	1
Little Bluestem (Schizachyrium scoparium)	1
Green Bulrush (Scirpus atrovirens)	1
New England Aster (Aster novae-angliae)	1
Spotted Joe-Pye Weed (Eupatorium maculatum)	0.5
Blue Vervain (Verbena hastata)	0.5
TOTAL	100

MEADOW SEEDING NOTES:

General Notes
The following methodology is for establishing the Solar Array Seed Mix specified on the plan set titled *Solar Development, Parcel ZG-2* and with a revised date of *December 2, 2016*. The Solar Array Seed Mix is specified on Sheet 5.2 reflects the characteristics of the site such as slope, topography, and soils and includes plant species native to the region. This seeding method is intended to establish a native grass and forb matrix on native existing soil types which are described in the *Stormwater Management Report* with a revised date of *December 30, 2015*.

- Meadows
  A meadow is a landscape type that evolves over time as some grasses and forbs flower or reach maturity after 2 growing seasons while others may take 3 to 4 growing seasons to reach maturity. The species in this meadow mix should reach maturity in 2 to 3 growing seasons. Meadows, like all landscapes, require maintenance. This will come in the form of short and long term mowing in order to suppress competition from advantageous herbaceous weed species in the first two growing seasons and successional "woody" vegetation once the meadow reaches maturity.

- Soils
  Every effort should be made to use existing fine/ sandy soils as the growing medium for the meadow. The importation of topsoil should be a last resort as a soil amendment for the purpose of establishing the 'Solar Array Seed Mix.' This methodology is provided with the assumption that topsoil will NOT be spread across the entire project area, but that existing sandy fine soils can be used to amend localized areas that are dominated by coarse gravels at the soil surface.

- Seed Mix Selection
  Seed mix should be of highest available quality and comply with tolerance for purity and germination established by Official Seed Analysts of North America. Ernst Conservation Seeds is a reputable source for native seed mixes.

Seed Methodology
The following methodology provides sequencing for establishing the solar array seed mix as described above. This process should begin following final grading. This methodology does not specify a temporary cover crop. A cover crop may be needed to stabilize the site depending on weather conditions and construction timing relative to the seasons and the ideal time frame for establishing the meadow. The best time to seed for this project is in the spring when the soils are at a normal moisture content level (moist, not saturated) and no later than June 1. Weather forecasts should be monitored as occasional watering may be necessary if a dry spring season occurs. The meadow seeding sequence should begin no longer than 48 hours after final grading. Site stabilization techniques should be utilized in this 48 hour time period.

1. Soil Scarification/ Seed Bed Preparation
   Seed bed preparation is the process of scarifying and loosening the soil surface in order to create a loose, friable, soil surface. The soil surface should be a uniform planar surface that is flat and without excessive ridges, furrows, ruts or mounds and low spots where water can collect. Soil scarification should only when weather, soil conditions, and construction phasing allows for no longer than 48 hours between scarification (the beginning of the seeding process) and covering the seed with weed free straw mulch (not hay) or hydro-seed (the end of the seeding process). The soil should be scarified to maximum depth of 3 inches (see below). During this process, areas where coarse gravel dominates the soil surface should be identified and amended with fine sandy-soil common borrow generated from on-site earthwork. The importation of topsoil should be a last resort and only used as an amendment for "localized" spots that lack the characteristics of a soil seed bed.
   - Soil: The soil types found in most of the project area specified to be seeded as meadow are typically not subject to excessive compaction as a result of construction activities. However, rutting, soil glazing, and excessive "tracking" caused by machinery is possible and must be alleviated at a depth necessary to provide friable soil and alleviating any excessive compaction.

2. Seed Application
   A well prepared seed bed provides a loose friable soil surface for which the seed can be sown into. Seed application is a two part process: 1) seed application at proper rates per acre and 2) sow the seed into the soil ¼ to ½" depth maximum. A rate of 20lbs Pure Live Seed per Acre should be used for this seed mix. The best approach is to apply the seed using a drill seeder or slice seeder directly into the soil. These machines are designed to apply a variety of seed types and sizes to the soil and sow the seed in one step. These are specific machines and not always available thus, spreading the seed by hand is often the most economical and functional method.
   - Seeding by Hand: The specified seed mix should be spread at three-fourth (3/4) of the specified rate directly onto the soil surface if hydro-mulching is the method used to cover the soil surface after seeding. (the other ¼ will be applied with the hydro-mulching slurry). The bulk bags of seed should be agitated by hand on site to redistribute the seeds in the matrix before spreading. If weed free straw mulch is used to cover the soil surface following the seed application, the seed should be applied at the full rate.
   - Sowing the Seed: Once the seed is spread the seed must be sown into the soil to the depth above in order to increase chances of germination by keeping soil moisture close to the seed. The seed can be sown by a number of ways including "tracked" in with a low PSI rubber tire or tracked machine, using a York landscape rake or similar, or the traditional means of using a metal leaf rake. Areas below the solar panels where a machine cannot be operated also need to be sown.
   - Watering: Precipitation forecasts, seasonal conditions, and soil moisture should be monitored. If a slurry of hydro-mulch and the remaining seed is used to mulch the seeded area, watering should only be considered in dry conditions after the application of hydro-mulch. If weed free straw is used to mulch the seeded area, the activity of "watering in" the seed may be necessary before the application of straw mulch to provide ample soil moisture for seed germination. No tracking or rutting shall occur as a result of the application of straw mulch

3. Mulching
   Moisture is an important component for seed germination. Mulching the soil surface retains soil moisture and prevents desiccation from the soil surface and seed sprouts. The best method for preventing dry soil conditions and desiccation is to apply water slurry of hydro-mulch at the rate specified by the mulch manufacturer or applicator. The remaining ¼ rate of specified seed should be applied with the hydro-mulch slurry.

4. Maintenance/ Mowing
   - First Year: Initial mowing should begin when plant growth (including non-seeded/ annual plants such as crabgrass) reaches a height of 6 inches. The mowing height should be 4 inches to clip the growth and seed heads of the annual herbaceous plants. This reduces plant competition for water, light, and soil resources. The mowing should continue for the entire first year growing season every 3-4 weeks or as plant growth dictates.
   - Long Term: The meadow should be managed by annual mowing with a brush hog or flail type mower. Mowing is necessary to prevent the establishment of woody plant species. The mowing should occur mid spring so that plant material persists over winter for visual interest and habitat diversity for insects, birds, and animals. If meadow species are actively growing and new growth is taller than 12", mowing should not occur that year.

5. Monitoring
   Monitoring for seed germination should begin two weeks after seeding and should continue to determine plant growth and watering requirements if needed. Regular monitoring will also help to identify areas to be reseeded in late summer. The monitoring should occur for 2 growing seasons minimum to ensure meadow establishment. If wide spread areas are not establishing soil samples are to be collected and analyzed by a qualified laboratory to determine if nutrient, pH, or other amendments are necessary.

6. Reseeding
   Areas to be reseeded shall follow the same seeding sequence outlined above. It is expected that some seeded areas may not germinate, but that over time the meadow plants shall fill in through seed proliferation and growth habits. Areas large enough to be identified through monitoring as being dominated by weeds or other invasive species that have out-competed the meadow seeds or areas deemed unstable due to low plant growth shall be reseeded accordingly.

7. Meadow/ Plant Succession Notes
   It is possible that over time some areas in the meadow might become dominated by native low growing plant species existing in the soil seed bank. One example of this is the likelihood that various types of native ferns could emerge in shaded areas created by the solar panels. No species of ferns are in the meadow seed mix, but are highly desirable low growing species that can exist and thrive in meadows adding to landscape diversity. Native low growing species such as ferns that emerge due to being in the soil seed bank should remain. Thorough and regular monitoring during the maturation of the meadow is a key component to balancing areas to be reseeded and areas where successional plant growth of low growing natives should be allowed to thrive.

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CONSTRUCTION DRAWINGS
(ISSUED FOR BID AND BUILDING PERMIT APPLICATION)
ORIGINAL PLAN SIZE 24"X36"

Project Title:

WHEELOCK TRACT SOLAR DEVELOPMENT

SHUTESBURY, MA

Sheet Title:

SITE DETAILS

Date:	12-02-2016
Scale:	As Shown
Drawn by:	KAM
Checked by:	KAM
SWCA File #	40761
REVISIONS	DATE: BY:

SHEET # 5.1