HEARINGS, MEETINGS, LICENSES

2-22-16

The Board of Selectmen will hold a public hearing in the Selectmen's Meeting Room at the Town Hall, 10 Nickerson Avenue, Middleborough, MA on Monday, February 8, 2016 at 7:30 PM, for the purpose of discussing an application filed by Renewable Generation, LLC (MA) for a Special Permit under the Water Resource Protection District By-law to allow for restoration and re-planting within the 25ft buffer zone on the southeast side of the parcel based on recommendations by the Middleborough Conservation Commission. This property is shown as Assessors Map 65, Lot 3772, Zoning District – General Use, WRPD District Z4. Anyone wishing to be heard on this matter should appear at the time and place designated.

Allin Frawley
Leilani Dalpe
John M. Knowlton
Diane C. Stewart
Stephen J. McKinnon
BOARD OF SELECTMEN

Publish: January 21st **and** January 28, 2016

■ **Private party responsible for payment**

☐ **Town responsible for payment**

Please provide Selectmen's office with amount due.

Advertiser #300074

Hearing opened on Thursday 2.11.16 and Continued to 2.22.16

Atlantic
DESIGN ENGINEERS, INC.

February 15, 2016

Board of Selectmen
Town Hall Building
10 Nickerson Avenue
Middleborough, MA 02346

RE: Engineering Review
WRPD Application – 17 Jericho Road Solar Facility
Renewable Generation, LLC
ADE Project #2518.41

Dear Board Members:

Atlantic Design Engineers, Inc. (ADE) has completed our engineering review of plans and application materials for the above-referenced project relative to a Special Permit request under the Water Resource Protection District (WRPD) bylaw. The plans and materials reviewed are as follows:

1.) Remediation Plan – Sheet L-1.0, revised dated 1/19/16

2.) Plan Showing Trees Cut Beyond Limit of Work – Sheet CR-1.0, dated 12/15/15

3.) Project Narrative, dated 12/17/15

4.) Proposed 25-foot Buffer Zone Restoration Plan, dated 1/20/16

The proposed work does not specifically fall into any of the 4 categories for permissible work in the 25-foot zone under the WRPD bylaw Section 8.2.9.3.d. i through iv. Therefore, the Board will need to make a determination relative to allowing the proposed work as it is in the best interest of the WRPD bylaw to restore the unauthorized tree clearing and vegetation removal.

We have the following comments:

1.) The plan entitled "Plan Showing Trees Cut Beyond Approved Limit of Work" is stamped "draft" yet it is signed by both RLS and PE. Is this meant to be the final plan? The plan should show the limit of clearing/grading, not just stump symbols, to clarify the limit of disturbance. Also, label the distances from the clearing to the wetland edge and the total area of disturbance within the 25' zone.

2.) Erosion control measures with appropriate notes and details are not shown or provided. Please provide.

P.O. Box 1051
Sandwich, MA 02563
(508) 888-9282 · FAX 888-5859
email: ade@atlanticcompanies.com
www.atlanticcompanies.com

3.) Has any grading or earthwork been performed in the 25' buffer zone? If so, provide a plan showing pre-existing and proposed/current contours and provide methods to stabilize new slopes, if any. Also, is any of the pre-existing topography to be restored?

4.) The proposed fence should be shown on the restoration plan and specify the stabilization treatment (groundcover, loam and seed, etc.) between the fence and the proposed restoration plantings.

5.) Future inspection reports resulting from the proposed 2-year monitoring/maintenance/replacement program should be provided to the Board (in addition to the Conservation Commission).

6.) See also comments from Hawk Design dated 2/11/15.

If you have any questions, please do not hesitate to call me at (508) 888-9282.

Sincerely,

ATLANTIC DESIGN ENGINEERS, INC.

Richard J. Tabaczynski, P.E.
Vice-President

Hawk Design, Inc.
land planning
landscape architecture
P.O. Box 1309, Sandwich, MA 02563
tel: 508-833-8800 fax: 774-413-9841
email: info@hawkdesigninc.com

February 11, 2016

Town of Middleborough Planning Board
20 Center Street
Middleborough, MA 02346

Re: Ground Mounted Solar Electric Generation Facility
17 Jericho Road, Middleborough, MA 02346

Dear Board Members:

Hawk Design, Inc., at the request of *Atlantic Design Engineers, Inc.* has reviewed the submitted documentation for the above referenced project in regards to the remediation proposed due to the removal of vegetation within the 25 foot buffer zone to Bordering Vegetated Wetlands.

Documents Reviewed

Hawk Design, Inc. obtained and reviewed the following documentation for the applicant, **Renewable Generation (MA), LLC**, relative to this matter.

- Exhibit 1: Sheet L-1.0 (1 of 2) titled "Remediation Plan" prepared by *William Canon – Landscape Architecture, Environmental Design and Community Planning,* dated 1/19/16.
- Exhibit 2: Sheet L-1.1 (2 of 2) titled "Site Elevations" prepared by *William Canon – Landscape Architecture, Environmental Design and Community Planning,* dated 12/3/15.
- Exhibit 3: "Vegetation & Maintenance Plan, 17 Jericho Road Solar Facility" prepared by *Andrews Survey & Engineering, Inc.*, dated 6/3/15.
- Exhibit 4: "Proposed 25 foot Buffer Zone Restoration Plan, 17 Jericho Road, Middleboro", prepared by *ECR: Environmental Consulting & Restoration, LLC,* dated 1/20/16

Findings and Recommendations

Based on our review of the above referenced documentation and a site visit performed on February 4, 2016, *Hawk Design, Inc.* offers the following findings and recommendations.

1) The applicant's contractor has cleared trees and understory vegetation inside the 25 foot buffer zone to the Bordering Vegetative Wetland on the east to south-east side of the property for an approximate distance of 675 feet. The applicant's Landscape Architect, *William Canon,* has designed a Remediation Plan proposing 109 trees and 100 shrubs to be planted along the entire length starting at the 25 foot buffer line and extending in toward the wetland for varying distances of 10 to 15 feet.
Proposed evergreen trees are two native species with installed heights of 5-10 feet. The deciduous shade trees are four native species with installed calipers of 1-2.5 inches (approx. 8-14 feet tall). Proposed shrubs are four native deciduous species with installed heights of 2-3 feet.

Recommendation: It is our opinion that the proposed planting plan adequately addresses the required remediation in the 25 foot wetland buffer. The proposed species, sizes and spatial arrangement will provide a naturalistic woodland edge upon installation and in the future. All the proposed plants should thrive where shown due to the matching of their cultural requirements (sun exposure, moisture, soils) with the existing conditions.

On visual inspection, the neighboring commercial metal building (over 200 feet away) was barely visible from the clearing looking east on a cloudy morning. This view should be eliminated when the proposed trees in this area are planted. The remediation trees there are mostly evergreen and there is also a proposed double row of evergreen Giant Arborvitaes at 10 feet on-center spacing that is an additional perimeter screening outside the 25 foot buffer.

The planting notes state a "2 year plant guarantee." The smaller sized plant material will have a better survival rate than larger, more mature nursery stock. However, in addition to the maintenance program outlined in Exhibit 4, item 6, applicant should provide a watering program during dry spells through the establishment period of the plants and seeded areas.

2) Exhibit 4, item 6 states, "At the end of each growing season, an update letter report with photographs will be submitted to the Conservation office to document the success of the restoration project.

Recommendation: We suggest an as-built planting plan be provided by the applicant if there will not be a visual inspection of the completed installation by a representative of the town Conservation Commission, Planning Board, or Building Department.

3) The constructed site is gravel and somewhat graded level to a steep slope of varying heights down to the erosion control fence and hay bales. The planting notes state that "Disturbed areas beyond the immediate vicinity of the plantings shall be graded to match existing as required, seeded and hay mulched." Exhibit 4, item 5, additionally states "any exposed soils within 25 foot buffer zone restoration should be hand raked and seeded with N.E. Conservation/Wildlife seed mix.

Recommendation: Because remediation plants have not been installed yet, this phase has not been completed. However, the existing gravel slope should be covered with 4 inches of loam prior to the raking and seeding.

Sincerely,

Hawk Design, Inc.

Thomas Miner
Landscape Architect, Principal

TM/kh

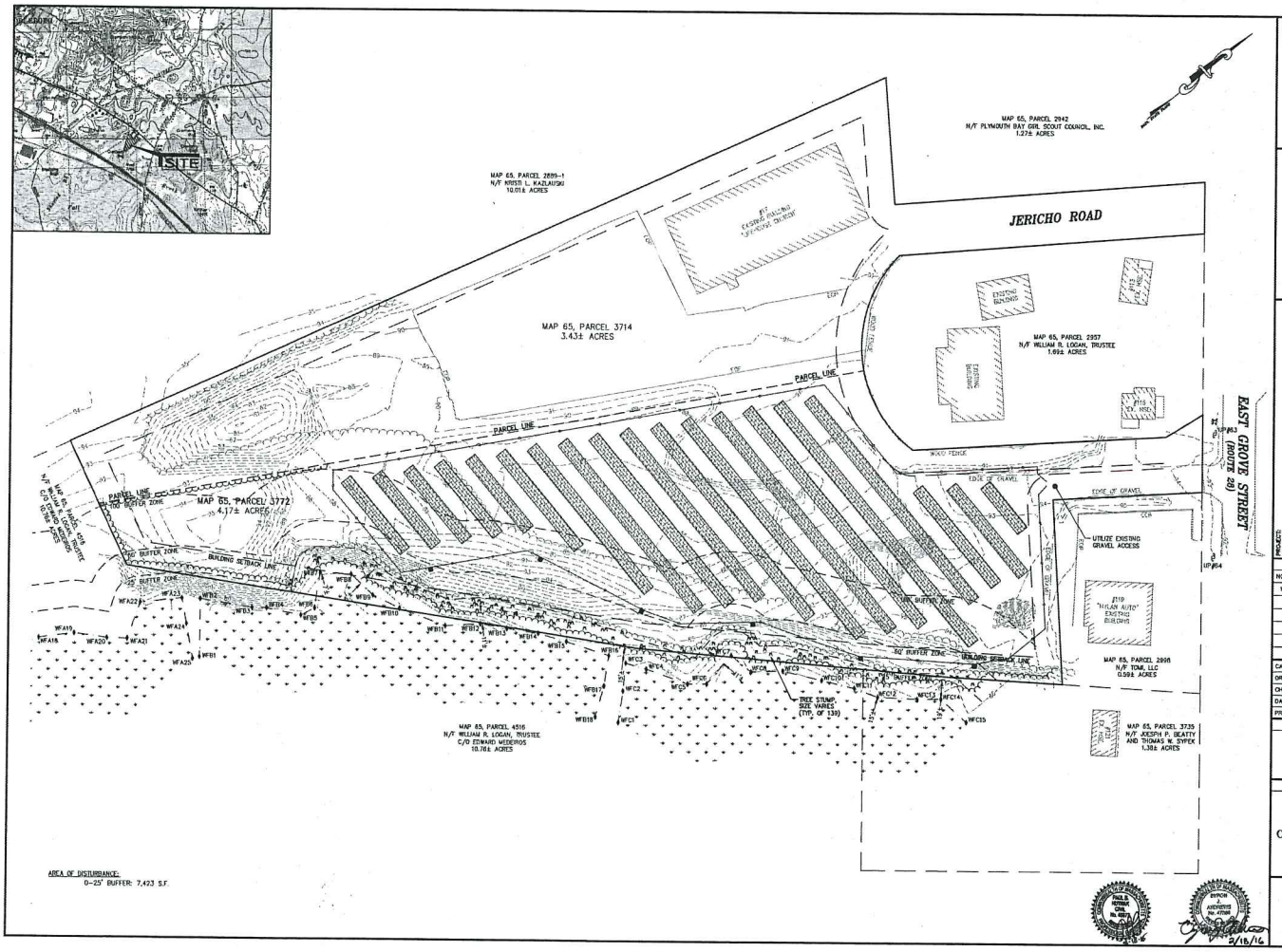
Jacqueline Shanley

From: Travis Brown <tbrown@andrews-engineering.com>
Sent: Friday, February 19, 2016 9:37 AM
To: Jacqueline Shanley
Cc: Amelia Tracy (amelia@nextsunenergy.com); Stephen O'Connell; Patricia Cassady
Subject: 17 Jericho Road - Mitigation
Attachments: 17 Jericho_Mitigation-ASE.pdf; Site Plan (New Plantings).pdf; Tree and Shrub Maintenance.pdf

Jackie,

Attached, please find the revised plans and documents for the proposed mitigation at 17 Jericho Road. These same plans and documents were submitted to the Conservation Commission at last night's meeting, as they wish to conduct a separate peer review. The Site Plan (New Plantings) and the Tree and Shrub Maintenance was provided by Canon landscape architects. Andrews Survey & Engineering, Inc. provided two revised sheets in the attached PDF 17 Jericho Mitigation-ASE. These documents have been revised to address peer review comments from Atlantic Design Engineers, Inc. and Hawk Design, Inc. at the request of the Board of Selectmen. Please let me know if I can provide you with any additional information. Thanks

Travis Brown
Project Engineer
Andrews Survey & Engineering, Inc.
104 Mendon Street - P.O. Box 312
Uxbridge, MA 01569
T: (508) 278-3897
F: (508) 278-2289
email: tbrown@andrews-engineering.com



ASE
Andrews Survey & Engineering, Inc.
Land Surveying - Civil Engineering - Site Planning
P.O. Box 352, 194 Meadow Street
Uxbridge, Massachusetts 01569-0352
P: 508-278-3897 F: 508-278-2289

PROJECT: GROUND MOUNTED SOLAR ELECTRIC GENERATION FACILITY
17 JERICHO ROAD
MIDDLEBOROUGH, MA 02346

APPLICANT: RENEWABLE GENERATION (MA), LLC
77 POND AVENUE, SUITE 101
BROOKLINE, MA 02445

REVISIONS

NO.	DATE	DESCRIPTION
1	2/16/16	PER ADC 2/15/16 PEER REVIEW COMMENTS

CAD FILE	...\dwg\17 JERICHO RD_SP-R1.dwg
DRAWN BY	TFB, SJD
CHECKED BY	BJA, PBH
DATE	DECEMBER 15, 2015
PROJECT NO.	2015-080

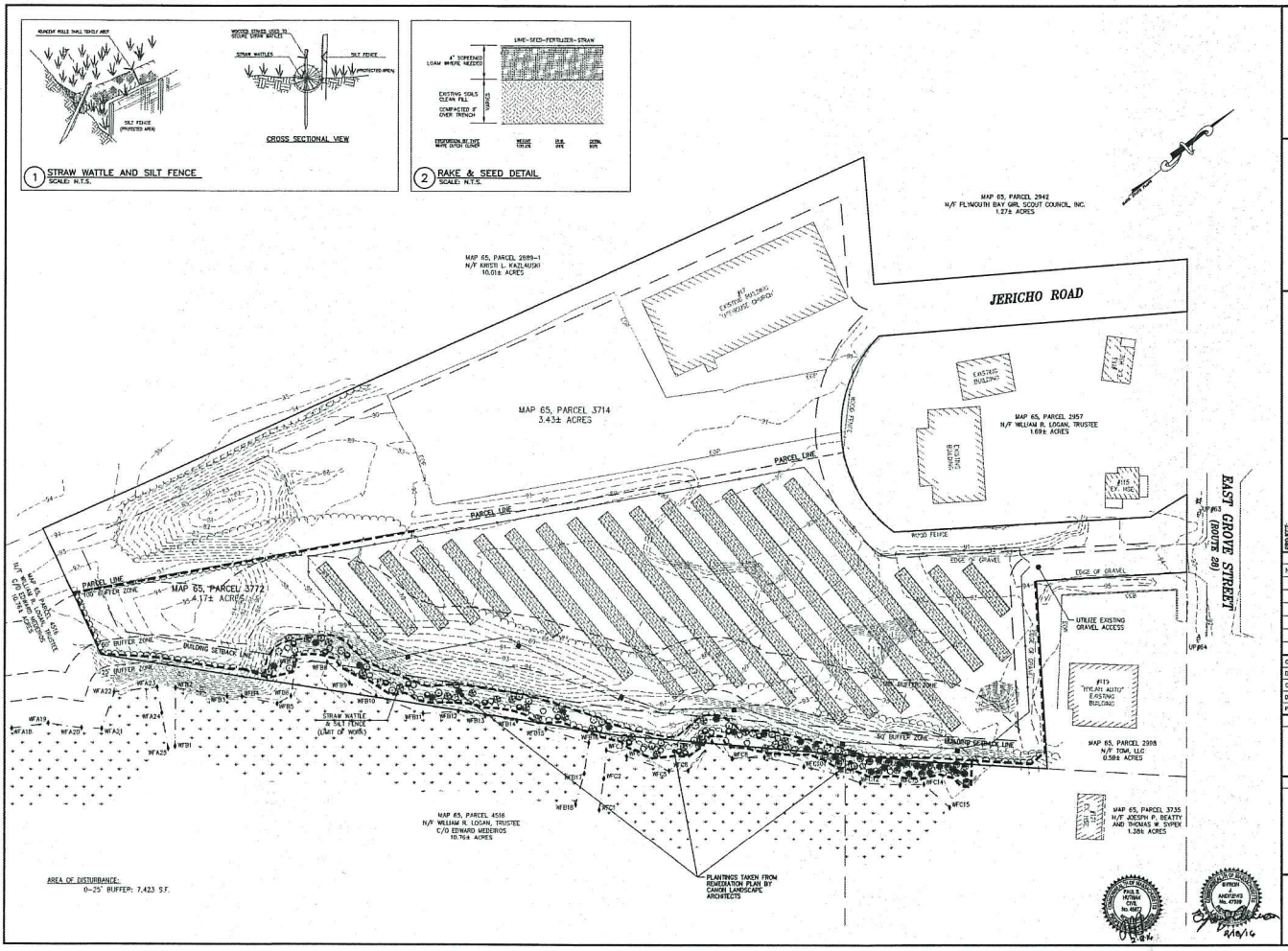
GRAPHIC SCALE
0 20 40 80 120
(IN FEET)
1 inch = 40 feet

SHEET TITLE

PLAN SHOWING TREES CUT BEYOND APPROVED LIMIT OF WORK

DRAWING NO.
CR-1.0

PLAN NO. L-4734



ASE
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Uxbridge, Massachusetts 01569-0312
P: 508-278-3097 F: 508-278-2189

PROJECT: GROUND MOUNTED SOLAR ELECTRIC GENERATION FACILITY
17 JERICHO ROAD
MIDDLEBOROUGH, MA 02346

APPLICANT: RENEWABLE GENERATION (MA), LLC
77 POND AVENUE, SUITE 101
BROOKLINE, MA 02445

REVISIONS

NO	DATE	DESCRIPTION
1	2/19/16	PER ADE 2/15/16 PEER REVIEW COMMENTS

CAD FILE	...\dwg\17 JERICHO RD_CONSTRUCTION.dwg
DRAWN BY	TFB, SJD
CHECKED BY	BJA, PBH
DATE	DECEMBER 15, 2015
PROJECT NO.	2015-080

GRAPHIC SCALE
(IN FEET)
1 inch = 40 feet

SHEET TITLE
REMEDIATION PLAN

DRAWING NO.
CR-2.0

PLAN NO. 1-4734

Landscape Maintenance Recommendations

For

Solar Electric Generation Facility

At

17 Jericho Road

Middleborough, MA 023

WILLIAM A.
CANON
LANDSCAPE ARCHITECTURE
ENVIRONMENTAL DESIGN
COMMUNITY PLANNING

158 NORTHAMPTON STREET
EASTHAMPTON, MA 01027
TEL. 413 - 527 - 6535
FAX. 413 - 527 - 6389
OFFICE @ CANONLA.COM

General Maintenance Recommendations for Trees & Shrubs:

Properly caring for trees and shrubs will enhance the aesthetic appearance and value of your property. Here are a few suggestions for what you can do to grow and maintain beautiful, healthy trees and shrubs.

- Learn to identify and understand the growth habits of your plant materials. This may take several seasons, but you will be able to notice any unusual changes and take action to correct problems before they become severe.
- When adding or replacing trees and / or shrubs in the landscape, choose pest-resistant varieties that have been suggested for your area by a local nursery or County Cooperative Extension agent.
- Avoid damaging a trees bark with lawn mowers, trimmers or other gardening tools. A mulch ring around trees and shrubs will help protect them damage by creating a buffer zone around them.
- Keep old leaves picked up during the entire season — they are often the source of infection for various diseases and offer a safe hiding place for many damaging insects (especially over the winter months).
- Keep pruning shears clean and sharp, and use them correctly. Bark tears easily and heals slowly. Many insects and diseases will attack only if there is an opening in the bark. Learn the proper pruning techniques to avoid undo damage to your trees.
- Remove and control weeds regularly, before they offer competition to surrounding plants.
- Practice a thorough cleanup before winter sets in. Remove debris and other likely homes for over-wintering insects and diseases.

Watering Trees, Shrubs & Ornamentals:

Generally speaking, trees and shrubs only need to be watered when they are planted, and while they adapt to their new homes. Once established, rain will provide all the water necessary.

Observe plants for signs of water need.

- Curling leaves are usually the first indication of stress. The surface area of the plant is being reduced to cut down on transpiration (loss of water from the leaves).
- Normally shiny leaves grow dull. Bright green leaves take on a blue or gray-green appearance.
- New growth wilts or droops and older leaves turn brown, dry up, and fall off.

- Flowers fade quickly and drop prematurely.

In most cases, these symptoms signal a lack of water, and the plant will recover if watered soon enough.

Watering Shrubs:

If a shrub has been well chosen to suit its site, then it demands little care beyond watering during the first few months to one year after planting. Make sure new shrubs receive sufficient amounts of water during their crucial first summer in your yard. Established shrubs seldom need to be watered, except in arid parts of the country or during an extreme drought. When you do water, remember to water slowly over a long period of time to allow the water to soak deep into the soil. Avoid frequent light watering as this leads to a shallow, weak root system.

Watering trees:

How much water is available to a particular tree depends on the depth and spread of its roots. Watch trees closely to determine when they need water. Signs of water stress include wilting, a change in leaf color (from shiny to dull, or from dark green to gray-green) and premature leaf fall. Adjustments can be made for rainfall and soil type. Your tree may need water quite often in very sandy soil, less often in heavier soil. Always dig down a few inches into the soil first to see if watering is necessary. Trees in a lawn area should have a deep soaking about twice a summer in addition to normal lawn watering.

Watering Methods:

There are a number of ways to water efficiently: basins, furrows, sprinklers, soakers or drip irrigation systems. The most important goals are to eliminate runoff, to confine water inside the drip-line of branches, and to apply water uniformly.

Pruning Trees & Shrubs:

Reasons for Pruning

Regular and correct pruning keeps shrubs and trees healthy and vigorous and prevents potential problems. Properly pruned fruit trees will bear larger crops and ward off diseases better. Carefully pruned flowering shrubs not only blossom profusely year after year, but also remain a desirable size. When a tree is grown in a home landscape rather than in a natural woodland, pruning can guide its branch structure so that when it's mature, the branches are strong and resist storm damage.

Pruning to Increase Vigor

Regular pruning of shrubs by a technique called gradual renewal pruning can keep a landscape young, vigorous and healthy. Yearly pruning encourages old growth to give way to new wood, which flowers more profusely and is more resistant to disease and

insects. Even neglected and overgrown shrubs can be renewed gradually by removing the oldest and tallest branches over several years.

Removing branches also allows the sun to penetrate deep into the interior of the plant. When exposed to sun, foliage expands to its fullest, maximizing photosynthesis — the process whereby plants produce food energy to power their growth. Regular pruning spreads the regrowth and rejuvenation effect throughout the entire plant.

Pruning to Repair Storm Damage

Snowstorms, hurricanes, tornadoes, and thunderstorms can damage even properly pruned trees. Of course, trees that have weak limbs or a poor branching structure are more susceptible to storm damage than ones trained to have sturdy branches and a more open canopy. When severe weather causes tree limbs to snap, the damage can often be repaired and the tree saved with the proper pruning techniques. The techniques are similar to those used for removing large healthy branches.

When severe winds break or damage branches high in a tree, there is little recourse other than to seek professional tree-care help. These branches are often hazardous to remove and may require roping to lower them safely to the ground. After pruning a severely damaged tree, increase its vigor by giving the tree extra care. Consider irrigating, supporting the tree with guy wires, fertilizing, mulching, and controlling pests to help the tree recover.

Pruning Techniques:

The cuts you use to prune result in different growth patterns. The differences lie in where the cuts are made on the stem in relation to dormant buds and side branches.

Thinning — Cutting off a shrub or tree branch where it originates on the parent branch. These cuts can also shorten branches by cutting to a crotch, where the branch forms a Y. The terminal bud of the remaining branch assumes dominance and stops other dormant buds from growing into branches. Drop catching is thinning the major branches of a tree. This maintains the tree's natural shape while dramatically reducing its size.

Thinning shrubs reduces their size without stimulating excessive growth. The plant is controlled and rejuvenated for a healthier, stronger and more vigorous shrub.

Heading — This involves cutting a branch to a stub, lateral bud or lateral branch with a small diameter. Heading a large branch is referred to as stubbing. Since this process removes the terminal bud, dominance is lost. Under the cut location, many vigorous new shoots develop from existing buds. Buds lower on the branch may not sprout. Fruit trees can be headed to encourage branching and counter their natural tendency to produce very few side branches. Trees are often headed under utility wires to remove interfering branches. This typically destroys the tree's natural shape as well as spurring a resultant rush of new growth.

Shearing — Similar to heading, shearing removes short lengths of top growth. It can occur above or below a bud, often resulting in a stub. This removes all terminal buds on the stem tips, which sparks a flush of new growth right behind the cuts for a dense exterior canopy. Shearing works best for topiary and other formal hedges. Shearing can ruin shrubs that don't adapt well to this procedure.

Pinching — Pinching off the tip of a succulent stem spurs growth, much like heading on branches or deadheading on annuals or perennials. By pinching 1 to 2 inches of new growth, you can encourage the branching of the terminal, or leader, shoots of young trees. You must thin the resultant growth as branches start to grow, or they'll compete with the main leader.

By understanding how plants respond to pruning and by using good judgment, it is possible to prune lightly almost any time of the year without harming the plant. The vigor of many flowering shrubs won't suffer if pruned just after flowering, especially if leaves have not fully developed. Limit late-summer pruning, however, because it stimulates the growth of new shoots, which can be injured by cold winter temperatures.

Pruning Styles:

Formal Pruning:

Formal gardens appear neat, well-ordered, and under the complete control of the gardener. Long, elegant hedges define garden spaces and mark boundaries. Plant shapes are geometrical and shrubs are usually sheared into individual balls, cones, or boxes. This traditional style enhances some garden settings, in which formality and an elegant look are required. Formal landscape designs use square and round shapes and sharply drawn lines for both structures and plants. The natural form of the plant is changed and pruned into the geometrical shape that reinforces the design. Since the natural shape and size of the plant are changed by pruning, the type of plant becomes less important. A plant that responds well to formal clipping is usually selected; boxwood and yew are the most popular choices.

Informal Pruning:

Today's garden styles tend to be more informal, with an emphasis on a naturalistic look. Gardeners appreciate the natural shapes of plants; many garden designers emphasize plants in groups or masses reflecting natural, free-form styles. In an informal setting, shrubs are not pruned into rigid shapes but are thinned as needed to emphasize their layers of tiered branches, gracefully cascading limbs, or irregular outlines. Informal pruning should be inspired by the plant's normal growth habit. Pruned naturally, a shrub or tree maintains its usual habit and growth rate; only a little attention is required each year to maintain the desired size and shape.

Pruning Hedges:

Different pruning techniques make a hedge either a formal, uniform green wall or an informal row of closely planted shrubs with softer edges. The sheared hedge, an important element of classical European gardens, demands frequent pruning to maintain its tidy formality. A formal hedge should be pruned several times each year, depending on the plants' rate of growth. Informally pruned hedges, on the other hand, may only need pruning once a year to keep them looking good and within bounds.

When to Prune:

In general the best time to prune any woody plant is just before new growth starts. Pruning in late winter or early spring while a plant is dormant won't adversely affect its vigor; but pruning at other times can rob it of stored food energy. Severe pruning during or just after active growth in spring only wastes stored energy

New growth can be directed by pruning in late winter or early spring before leaves appear. It is easy at this time of year to examine the structural arrangement of the branches of deciduous trees and shrubs and plan pruning strategies. Dormant season pruning is good for the plant and the gardener. It is a time when few other garden chores make demands and the outdoor activity is excellent exercise.

However, there are cases in which pruning should be done during the growing season. If spring-flowering shrubs are pruned in winter, the flower buds will be removed and the plants won't blossom that spring. The spring-flowering trees and shrubs that bloom on the previous season's growth should be pruned immediately after flowering, but before leaves fully expand. Summer-blooming plants, which usually bloom on the current-season's growth, can be pruned in winter without danger of removing flower buds; in fact, dormant-season pruning will stimulate more flowers.

Midsummer pruning has a dwarfing effect on plants. Removing summer foliage reduces photosynthesis, resulting in less food reserves for the following spring's growth. Summer pruning is appropriate for slowing the vigorous growth of an immature fruit tree so that it will begin bearing. Dwarf fruit trees especially are subjected to frequent light pruning during the summer. This controls their shape and avoids overly vigorous spring growth.

Summer pruning will prevent an extremely vigorous tree from responding to heavy pruning with a burst of water sprouts and suckers. Summer pruning is also recommended for restricting growth of a tree or shrub that has reached a desired height and spread. However, because wounds will not callus over as rapidly as during the late dormant season, it's best to keep summer pruning cuts small and save heavy shaping for winter.

The worst time to prune is right after leaves emerge in spring. Stored energy has powered the initiation and expansion of the new foliage, but the leaves have not yet begun to accumulate food to replenish the supply. Bud break in spring is also the time of greatest root growth, another heavy drain on stored reserves. Until food manufacture equals or surpasses food utilization, the plant can ill afford to lose foliage. In addition, the tissue beneath the bark is soft during the spring growth; it is easy to tear the bark when pruning.

With judgment and moderation, some pruning can be done at any time. Dead and dying branches, suckers, and water sprouts should be removed anytime they become apparent. Pinching and small cuts guide growth without removing very much plant material, and can be done any time the plant is growing. And, of course, removing a few stragglers or branches that are out of line during the growing season won't do any harm.

Fertilizing Trees & Shrubs:

Just like all living things, plants must receive nutrients to survive. In addition to light and water, they need a regular diet of minerals and other elements. Grass, flowers, trees and even weeds all compete to absorb nutrients. By applying plant food to your plants on a regular basis, you replenish those nutrients so the plants can continue to grow and produce foliage, flowers and fruit.

Most soils provide many, but not all, of the nutrients required by plants. In nature, only plants adapted to each soil thrive on that soil. Gardeners, however, wish to grow a variety of plants adapted to all sorts of soils. This is best accomplished by supplementing the mineral nutrients in the soil with fertilizers.

All fertilizers, whether natural or synthesized, contain some or all of the nutrient elements essential for plant growth. These elements are what make a fertilizer a fertilizer.

In spite of all the technical information on fertilizer labels and in this guide, fertilizing garden soil is no more complicated than adding nutrients that are missing from the soil. Plant nutrients are the same in all fertilizers. They are just packaged differently, with the nutrients in different chemical formulations to be applied differently. The differences between fertilizers lie in the mix of nutrients they contain and the way they are formulated.

Fertilizer Components:

The three essential nutrients in plant food are nitrogen (N), phosphorus (P) and potassium (K). Each plays a role in building healthy plants. Nitrogen encourages growth of leaves and stems while phosphorus and potassium increase flowering and root growth. Most plant foods also have trace elements, small amounts of other nutrients that are needed to grow healthy, beautiful plants.

Plant foods are labeled according to the percentages of each of the ingredients they contain, always in the same order: N–P–K . The label indicates the relative amounts of the three essential nutrients with an analysis formula (for example: 15-30-15, 18-24-16, or some other combination).

Types of Fertilizer:

There are several types of plant fertilizers. Some gardeners use more than one so that they can feed their plants most appropriately. Select what is right for your flower gardens by comparing the features and benefits of each and considering how you plan to maintain

your garden. Many gardeners get excellent results using a single all-purpose plant food on every plant in their garden.

Granular Fertilizer

- Scatter on the surface or incorporate into the soil
- Contains a mix of instantly-available and controlled-release nutrients
- Economical
- Often formulated for specific plants
- Water after spreading

Water-Soluble Plant Fertilizer

- Mix with water to apply (with a garden hose and /or with a watering can)
- Easy to control amount and frequency of feeding
- Feeds through plants foliage and roots
- Won't burn plants
- Starts feeding almost instantly
- Fast results often visible in a few days
- Proven to grow more and larger flowers and vegetables
- Repeat application every other week for spectacular results
- Used by most professional growers

Slow-Release Granular Plant Fertilizer

- Easy-to-use
- Spread around plants (on top of the soil) or incorporate in the soil
- Feeds slowly and steadily for up to 3 months
- No danger of overfeeding or underfeeding
- Apply directly in planting hole
- Water in thoroughly after applying

Generally, shrubs demand little fertilizer compared to the amount required by lawns or vegetables. Light applications of fertilizer at regular intervals greatly increase growth and stimulate flower production. When planting and nurturing a new tree or shrub, you may want to use a water-soluble plant food to help it thrive in its new home. Once established, most trees and shrubs thrive with the application of a controlled-release plant food.

When to Fertilize:

In most cases, you should feed trees and shrubs in the early spring or in the fall. However, you should feed spring-flowering shrubs and trees again after blooming to encourage better blooming next spring.

In most soils, mature trees need little or no feeding as long as they have good leaf color and grow reasonably well. If additional nutrients are needed to maintain health and vigor, choose a fertilizer that is 50 percent nitrogen in slow-release form. Because nitrogen is transient, apply the necessary amount in spring and in the fall. Keep the fertilizer at least 6 inches away from the trunk to avoid injuring the tree. After application, sprinkle the area with water to wash the fertilizer into the soil Let the trees and shrubs be your guide. If leaf color is pale, increase the rate. If growth is excessive on young plants, cut back the amount of fertilizer used or stop fertilizing altogether. As plants mature, fertilizer is seldom, if ever, needed.

Mulching:

Mulching is one of gardening's oldest techniques. Mulches imitate the layer of fallen leaves and dead plants that cover the ground in wild settings. They insulate the soil from the temperature changes and drying of the atmosphere. Without a mulch, the soil surface gets very cold on spring and fall nights and very hot during hot weather. It loses its water rapidly to the dry air and becomes inhospitable to plants. During hot weather, plant roots growing in the top few inches of soil exposed to the sun die from overheating and drought.

Soil under a few inches of mulch remains at near the same temperature day and night. Because the mulch traps dead air above it, that air quickly becomes saturated, preventing further evaporation. With moisture and agreeable temperatures, plant roots can utilize the soil right to the surface. Sometimes they even grow into the mulch. For this reason, adding a few inches of mulch has the effect of giving your plants deeper soil to grow in.

Mulch comes in a wide variety of forms, textures and colors, from pebbles and rocks to wood chips to cocoa beans. While each has its advantages, choosing and using a mulch is a great way to improve your garden, keeping soil moist and cool to help encourage healthy plants.

Benefits of Mulching:

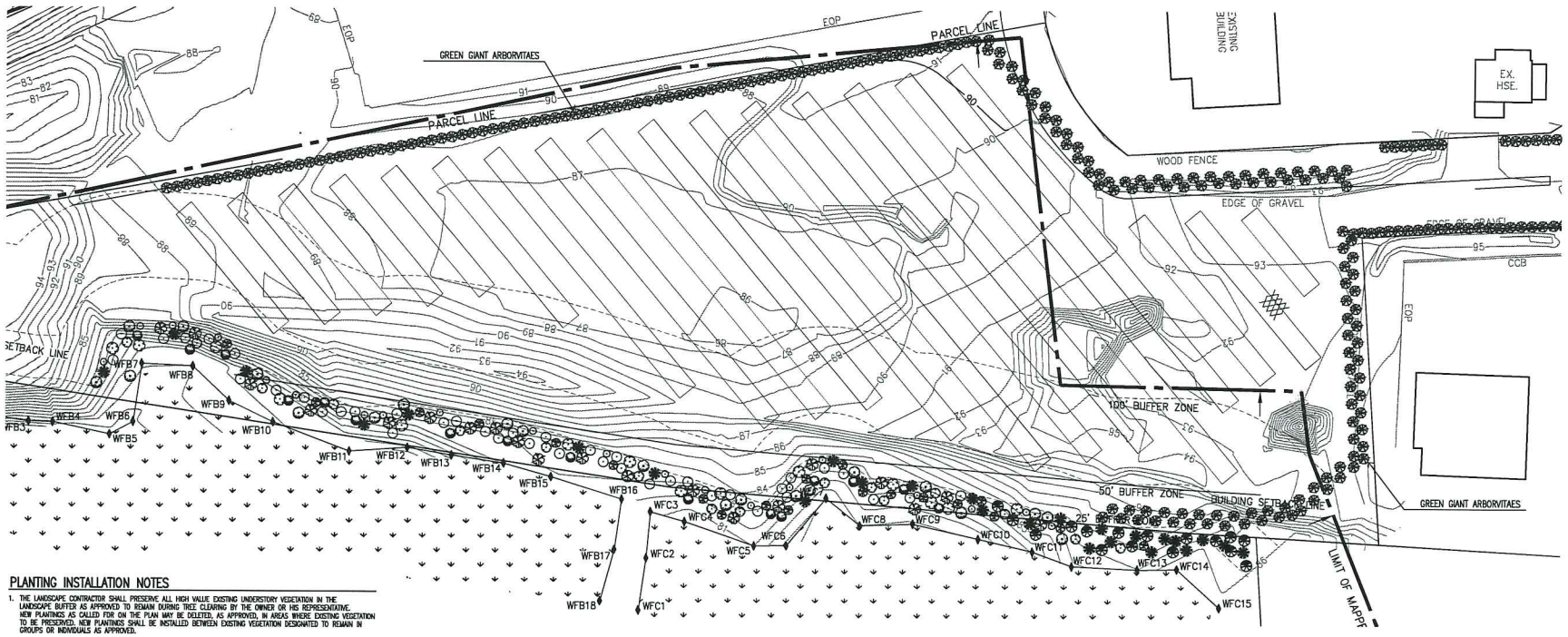
- **Weed control.** Since they will be denied light, weed seedlings will not grow.
- **Temperature control**. Mulches insulate plants from drastic temperature changes.
- **Attractive appearance**. Mulches provide a neat, uniform look to your landscaping.
- **Moisture retention.** Mulches reduce the speed of water evaporation while keeping an even supply of water on the upper levels of the soil.
- **Prevention of compaction.** Mulches break the fall of water drops, which can cause the soil to compact and inhibit plant growth.
- **Soil texture improvement.** The soil underneath the mulch benefits as well. For example, clay soils get improved aeration, and sandy soils retain water better.

When deciding on a mulch for your lawn or garden, remember these mulch recommendations:

- Mulch should be long-lasting and not easily washed away by rain.
- Mulch should have a loose structure that allows water to pass through it quickly.
- Mulches and barks differ in texture and color. Choose what's best for you.
- Pebbles, rocks and gravel can make useful and attractive mulches. However, they do not shut out light entirely, so weed seeds may germinate beneath them.

Applying Mulch

- Late spring is the best time to apply mulch. This will help reduce soil temperature and save water. An early spring application will slow the natural warming process of the soil.
- Fine mulches should be applied 1 to 2 inches deep. Coarse or fluffy mulches should be put on 2 to 3 inches deep.
- Apply the mulch evenly. Level it with a rake or your hands. Don't pack it down.
- After application, wet the mulch thoroughly, then pull it back a few inches from the stem or trunk. This allows adequate air circulation to the base of the plant.



PLANTING INSTALLATION NOTES

1. THE LANDSCAPE CONTRACTOR SHALL PRESERVE ALL HIGH VALUE EXISTING UNDERSTORY VEGETATION IN THE LANDSCAPE BUFFER AS APPROVED TO REMAIN DURING TREE CLEARING BY THE OWNER OR HIS REPRESENTATIVE. NEW PLANTINGS AS CALLED FOR ON THE PLAN MAY BE DELETED, AS APPROVED, IN AREAS WHERE EXISTING VEGETATION TO BE PRESERVED. NEW PLANTINGS SHALL BE INSTALLED BETWEEN EXISTING VEGETATION DESIGNATED TO REMAIN IN GROUPS OR INDIVIDUALS AS APPROVED.
2. CONTRACTOR SHALL COORDINATE PLANT LOCATIONS WITH OWNER OR HIS REPRESENTATIVE TO BE CERTAIN THERE ARE NO CONFLICTS WITH UNDERGROUND UTILITIES.
3. THE CONTRACTOR SHALL EXCAVATE ALL PITS AS DETAILED ON THE DRAWINGS AND IN ACCORDANCE WITH THE FOLLOWING:
   A. ALL PITS SHALL BE GENERALLY CIRCULAR IN OUTLINE, WITH VERTICAL SIDES AT LEAST 12" LARGER THAN THE ROOT BALL AND SHALL BE TO A DEPTH SO AS TO ALLOW ONE-EIGTH (1/8) OF THE ROOT BALL TO BE ABOVE THE NATURAL OR EXISTING GRADE. PLANTS SHALL REST ON WELL-COMPACTED BACKFILL AND ALL SIDES SURROUNDING THE ROOT BALL SHALL BE BACKFILLED WITH 50% NATIVE SOIL AND 50% PREPARED TOPSOIL MIXTURE AND COMPACTED FOR PLANT STABILITY.
   B. ALL PLANT PITS, EXCAVATED AND DISTURBED AREAS SHALL BE COVERED WITH A 2-3" MINIMUM LAYER OF BARK MULCH AS APPROVED. DISTURBED AREAS BEYOND THE IMMEDIATE VICINITY OF THE PLANTINGS SHALL BE GRADED TO MATCH EXISTING AS REQUIRED, SEEDED AND HAY MULCHED.

PLANTING NOTES

1. ALL PLANT MATERIALS SHALL BE NURSERY GROWN AND CONFORM TO THE AMERICAN STANDARD FOR NURSERY STOCK ANSI Z60.1-2004 OR THE LATEST EDITION PUBLISHED BY THE AMERICAN NURSERY AND LANDSCAPE ASSOCIATION.
2. THE LANDSCAPE CONTRACTOR SHALL FURNISH AND INSTALL ALL PLANT MATERIAL TO THE SIZE AND QUANTITY AS CALLED FOR ON THE PLANT LIST UNLESS ALTERNATES OR SUBSTITUTIONS ARE OTHERWISE APPROVED.
3. THE LANDSCAPE CONTRACTOR SHALL FURNISH AND INSTALL GREEN GIANT ARBORVITAES AS SOON AS POSSIBLE.
4. ALL PLANTINGS, EXCEPT GREEN GIANT ARBV., SHALL BE PERFORMED DURING THE FOLLOWING DATES UNLESS OTHERWISE APPROVED:
   DECIDUOUS MATERIAL:
   SPRING – MARCH 21 TO JUNE 1
   FALL – SEPT. 1 TO OCT. 15
   EVERGREEN MATERIAL:
   SPRING – APRIL 1 TO JUNE 1
   FALL – AUGUST 21 TO OCT. 15
5. CONTRACTOR SHALL WATER ALL NEW PLANTINGS UNTIL WELL ESTABLISHED, AND AS APPROVED BY A REPRESENTATIVE OF NEXTSUN ENERGY. CONTRACTOR SHALL GUARANTEE ALL PLANTS FOR TWO (2) YEARS FROM THE TIME OF ACCEPTANCE BY THE OWNER. AT THE END OF THIS PERIOD, ANY PLANT THAT IS MISSING, DEAD, NOT TRUE TO NAME OR SIZE AS CALLED FOR OR NOT IN SATISFACTORY GROWTH SHALL BE REPLACED. ALL REPLACEMENTS SHALL BE PLANTS OF THE SAME KIND AND SIZE SPECIFIED ON THE PLANT LIST.

25' RESTORATION PLANTING LIST

SYMBOL	BOTANICAL NAME	COMMON NAME	QUANTITY	SIZE	CONDITION
	TREES				
	ACER RUBRUM	RED MAPLE	21	1-1.5" CAL.	B&B
	JUNIPERUS VIRGINIANA	EASTERN RED CEDAR	16	5-6' HT.	B&B
	PINUS STROBUS	EASTERN WHITE PINE	26	10' HT.	B&B
	QUERCUS ALBA	WHITE OAK	14	2-2.5" CAL.	B&B
	QUERCUS RUBRA	NORTHERN RED OAK	16	1-1.5" CAL.	B&B
	SASSAFRAS ALBIDUM	SASSAFRAS	16	1-1.5" CAL.	B&B
	SHRUBS				
	ARONIA MELANOCARPA	BLACK CHOKEBERRY	20	2-3' HT.	POT
	HAMAMELIS VIRGINIANA	WITCH HAZEL	20	2-3' HT.	POT
	MYRICA PENSYLVANICA	BAYBERRY	20	2-3' HT.	POT
	VACCINIUM CORYMBOSUM	HIGHBUSH BLUEBERRY	40	2-3' HT.	B&B

KEY: B&B=BALLED & BURLAP

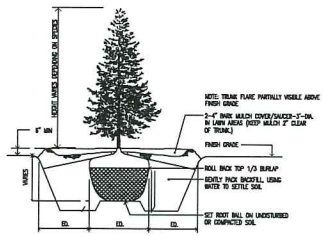
GRAPHIC KEY:

WETLAND BOUNDARY LINE

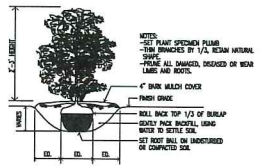
DETAIL NUMBER
SHEET NUMBER WHERE DTL IS SHOWN

NEW TREE/SHRUB PLANTING

A1 SITE PLAN
SCALE: 1"=40'
0 20' 40' 80'
NORTH



1 TYPICAL TREE PLANTING
NO SCALE



2 TYPICAL SHRUB PLANTING
NO SCALE

WILLIAM A. CANON
LANDSCAPE ARCHITECTURE
ENVIRONMENTAL DESIGN
COMMUNITY PLANNING
158 NORTHAMPTON STREET
EASTHAMPTON, MA 01027
TEL. 413-527-8535
FAX. 413-527-6389
OFFICE@CANONLA.COM

LANDSCAPE ARCHITECT

CONSULTANTS

GROUND MOUNTED SOLAR ELECTRIC GENERATION FACILITY
17 JERICHO ROAD
MIDDLEBOROUGH, MA 02346

MARK	DATE	DESCRIPTION
DA	12/2/15	PRELIMINARY RESUBMITTAL PLANS
DA	1/19/16	RESUBMIT WITH ADDITIONAL PLANTINGS
DA	2/18/16	⚠1 RESUBMIT TO PLANNING BOARD

PROJECT NO. 15.1201- A746

CAD FILE

SHEET TITLE

REMEDIATION PLAN

L- 1.0

CRANBERRY CAPITAL
OF THE WORLD

Phone: 508-946-2405
Fax: 508-946-0058

Town of Middleborough

Massachusetts

Board of Selectmen

MEMORANDUM

TO: Rich Tabaczynski, Atlantic Design Engineers, Inc.
Ruth Geoffroy, Planning Director
Patricia Cassady, Conservation Commission Agent
Robert Whalen, Building Commissioner
Robert Buker, Health Officer
Chris Peck, DPW Director

FROM: Jackie Shanley
Executive Assistant to the Board of Selectmen

DATE: January 20, 2016

SUBJECT: **W.R.P.D. Application – filed by Renewable Generation, LLC
Assessor's Map 65, Lot 3772, Zoning District-Residential General Use,
WRPD District Z4.**

Attached is a W.R.P.D. application filed by Renewable Generation, LLC for a Special Permit under the Water Resource Protection District By-law.

This application will be heard by the Board of Selectmen at its meeting on **February 8, 2016 at 7:30 PM.**

Please provide **remarks or concerns** regarding the request to the Selectmen's Office **by, or before, Noon on Wednesday, February 3rd.**

Thank you.

Attachments

Town of Middleborough
20 Centre Street, Second Floor
Middleborough, Massachusetts 02346

Robert J. Whalen
Building Commissioner
Tel. 508-946-2426
Fax 508-946-2305

February 2, 2016

Middleborough Board of Selectmen
Middleborough Town Offices
10 Nickerson Ave
Middleborough, MA 02346

Subject: Jericho Christian Fellowship, 117 East Grove Street, Assessors Map: 065 Lot: 2916

Honorable Board,

I reviewed the application submitted by Renewable Generation LLC for a Special Permit to allow for restoration and replanting within the 25ft buffer zone.

I would suggest that the proposed remediation plan be submitted to the Board of Selectman's Engineer for review by a Landscape Architect.
Because the Conservation Agent and Building Commissioner have already spent countless hours babysitting this project, I would like to suggest that the Boards' Engineer also be put in charge of overseeing this remediation project up to its completion.

Respectfully submitted,

Robert J. Whalen
Building Commissioner
Zoning Enforcement Officer

RJW/d

Town of Middleborough

CONSERVATION COMMISSION

20 CENTRE STREET
MIDDLEBOROUGH, MASSACHUSETTS 02346

PHONE: 1-508-946-2406
FAX: 1-508-946-2309

MEMORANDUM

TO: Board of Selectmen

FROM: Patricia J. Cassady, Conservation Agent

DATE: January 25, 2016

RE: Solar Project at 17 Jericho Road/117 East Grove Street (Map 65, Lot 2916) DEP File # SE220-1245
Enforcement Order under WPA and Violation under WRPD

On behalf of the Middleborough Conservation Commission I am writing this memo to make sure we are on the same page regarding the subject solar project at 17 Jericho Road/117 East Grove Street.

The Commission would like to recommend a peer review consultant to the Board of Selectmen that has experience with Landscape Design and reviewing restoration plans. We currently have sent information to a Registered Landscape Architect to obtain a quote for the review.

Also, The Conservation Chairman, Steven Ventresca and I plan to attend the Board of Selectmen's meeting on Monday, February 8th, 2016 to discuss this situation and hopefully come up with a solution everyone can agree with.

Please let me know in the meantime if you have questions or comments regarding this matter. I can be reached at 508-946-2406 or pcssdy@middleborough.com

Thank you

pjc

December 17, 2015

Middleborough Board of Selectmen
10 Nickerson Ave
Middleborough, MA 02346

Dear Commissioners,

Renewable Generation, LLC (MA) is submitting a Special Permit application for the work to replant inside the 25ft buffer zone on its project site located at 117 East Grove St. Herein, please find the attached:

- (2) Special Permit Application
- (1) Fee Check
- (2) Project Narrative
- (2) Stormwater Report and Calculations prepared by Andrews Survey & Engineering
- (2) Existing Conditions and Proposed Site Plans prepared by Andrews Survey & Engineering, and Site Plans, Elevations and Details prepared by Canon Design, Landscape Architects
- (1) Abutters List
- A digital copy has been remitted as well to

We look forward to discussing this with you in 2016.

Sincerely,

Jacob Laskin,
President

77 Pond Ave, Suite 101, Brookline, MA 02445
Tel 617.942.2733 | Fax 617.440.7554

Project Narrative
Project Site: East Grove St, Middleborough MA
Parcel 65-2916
December 17, 2015

Renewable Generation, LLC (MA) is proposing to restore plantings in the 25ft buffer zone along the southeastern property line abutting William Logan's property. The proposed restoration plan includes re-planting native pine, cedar, arborvitae and blueberry species to create a thriving understory that will grow to resemble the old growth, as well as provide thick vegetative screening between the solar project and the abutters.

The Restoration Plan complies with the WRPD byaws and regulations by providing new vegetative cover that preserves the natural environment. The site is within WRPD Z4, which is subject to MGL Chapter 131, Section 40 – regarding land disturbance within the 25ft buffer. Renewable Generation, LLC (MA) is requesting a Special Permit to install plantings specified in its remediation plan under this regulation.

Renewable Generation, LLC (MA) is working with the Middleborough Conservation Commission simultaneously to confirm the exact scope of work for remediation as appropriate in the wetlands buffer. The plans submitted herein are DRAFT plans as they have not been approved by the Conservation Commission as of the date of submission.

Affirmative Statements:

1. The project has been designed to minimize large-scale lot disturbances and has implemented methods to encourage infiltration of site runoff and preservation of groundcover.

2. There will be no removal of soil closer than four (4) feet to the groundwater table, as determined through Title 5 Evaluation methods.

3. There is to be no storage of hazardous waste.

4. The outside stored material will have no impact on groundwater, and will be permanently located outside of the 100ft buffer zone.

77 Pond Ave, Suite 101, Brookline, MA 02445
Tel 617.942.2733 | Fax 617.440.7554

RECEIVED
03:37pm
DEC 18 2015
Allison J. Ferreira
TOWN CLERK

PETITION APPLICATION FOR A WRPD SPECIAL PERMIT

One (1) electronic copy of the petition & engineering plans must be **filed with** the **Selectmen's** office via email: jshanley@middleborough.com and **Seven (7) complete paper sets** of the petition application, including **all required documents**, such as engineering plans, must be **filed with** the **Town Clerk** at 20 Centre Street (former Eastern Bank building), 1st floor, Middleborough, MA. The Town Clerk's office will forward all petitions for a Special Permit to the Board of Selectmen's office.

I/We hereby petition your Board for a public hearing for a Special Permit, which is subject to Board of Selectmen approval under the **Water Resource Protection District** By-law.

A. Location of property in question:

Street address: 17 Jericho Road Map

Map & Lot 065, Lot 3772

Zoning District General Use

(General Use, Business, Industrial, Residence A, Residence B, or Residence Rural)

WRPD District Z4

(Z1, Z2, Z3, Z4)

B. To allow for:

To allow for restoration and re-planting within the 25ft buffer zone on the southeast side of the parcel based on recommendations by Conservation Commission.

(As shown on the attached plan)

Example: To allow for an addition of 12' x 20' to the building at 1234 Nickerson Avenue, Map #, Zoning district, WRPD District (A or B), presently used as a residence for the purpose of a dental office by the owner occupant. There will be a maximum of three employees.

C. Submitted by:

Jacob Laskin	NextSun Energy, LLC
Printed full name (Individual)	Printed company name/engineering firm
Signature (Individual)	Signature (company/engineering rep.)
77 Pond Avenue, Suite 101	jake@nextsunenergy.com
Address	Email address
(617) 942-2733	
Daytime telephone	

CHECKLIST FOR SITE PLANS

(Applicant must initial each item or the application/petition will not be accepted.)

No.	Description	Initial	N/A
1.	**One (1) electronic copy** of the site plans must be filed with the Board of Selectmen's office via **jshanley@middleborough.com**.	JL	____
2.	**Seven (7) paper copies** of the **site plan** must be filed with the Town Clerk's office, along with **seven (7) paper sets** of the **petition application** (see top of "Petition Application" form).	JL	____
a.	Show locus to reasonable scale (use corner of the site plan page).	JL	____
b.	Show existing and proposed street lines, number & name.	JL	____
c.	Show existing and/or proposed building, including accessory buildings.	JL	____
d.	Show driveway and driveway openings.	JL	____
e.	Show natural waterways (if any).	JL	____
f.	Show distance from structure to wetlands.	JL	____
g.	Show the location of all wetlands, which must be determined by a wetland's specialist, i.e., flagged on site plans, the area which is within twenty-five (25) feet of the wetland, the total area and location of the portion of any lot within one hundred (100) feet of any wetland and the land disturbing activity or activities proposed within the one hundred (100) and twenty-five (25) foot zones.		
h.	Show setback dimensions or distances from street and abutters.	JL	____
i.	Show the footage for all lines of the property and the total area (either in square footage or acreage).	JL	____
j.	Show topography, wetland delineations, local storm water discharge points, on site drainage systems and septic systems.	JL	____
k.	Show details for work done or proposed for any component outlined in No. 1(j) (above).	JL	____
l.	The plan is stamped by BOTH a registered Land Surveyor and a Civil Professional Engineer. Note: If the site has no approval required other than a home lot, then a Land Surveyor stamp will be accepted.	JL	____

CHECKLIST FOR PROJECT WRITTEN NARRATIVE

No.	Description	Initial	N/A
1.	Provide a written narrative explaining how you see the project complying with the WRPD bylaws and regulations.	JL	____
2.	The submittal contains a Certified Abutter's list obtained from the Assessor's office, Town Hall, 10 Nickerson Ave.	JL	____
3.	If your petition requests alterations or additions to a building, or structure, you should bring detailed plans which show the proposed alterations or additions.	JL	____
4.	The submittal contains calculations for any proposed on-site stormwater retainage, storage tanks and spill containment, on site drainage and recharge.	JL	____
5.	The submittal contains a statement that the project has been designed to minimize large scale lot disturbances and has implemented methods to encourage infiltration of site runoff and preservation of groundcover.	JL	____
6.	The submittal contains a statement that there will be no removal of soil closer than four (4) feet to the groundwater table, as determined through Title 5 Soil Evaluation methods.	JL	____
7.	The submittal contains a statement that if there is to be storage of hazardous wastes, sludges, deicing chemicals, fertilizers, or oil, that the appropriate methods have been provided to contain any spillage.	JL	____
8.	The submittal contains a statement that outside stored material will have no impact to the groundwater.	JL	____

Jacqueline Shanley

From: Amelia Tracy <amelia@nextsunenergy.com>
Sent: Monday, February 01, 2016 12:55 PM
To: Jacqueline Shanley
Cc: Patricia Cassady; Jake Laskin
Subject: Re: FW: WRPD - Solar - Jericho/E. Grove
Attachments: Restoration Plan and Narrative 117 East Grove St Middleborough 012116 SUBMITTAL.pdf; Vegetation and Maintenance Plan_Jericho Rd (1) (1) (1).pdf

Jackie, thanks for your email. Yes the plans were submitted as Draft plans due to concurrent permitting with ConCom throughout January after the WRPD submittal. I have attached the most current plans and mitigation plan for your distribution to BOS. These are the same items that were submitted to ConCom at our last hearing. The O&M plan for restoration work is in ECR Holmes narrative, which supplements the original O&M plan for the project which I am also attaching for background information and detail. (all attached here)

Also, to follow up on the process that we discussed on the phone today, as I understood, the attached updated submittal will be sent to the peer reviewer and BOS, and will be commented on before the 2/22 hearing such that we are able to prepare a response to peer review for the BOS hearing. If the peer reviewer can have their comments back to us by 2/15, we will be able to provide all updates at the same time between to BOS (2/22) and ConCom (2/18) hearings which will maximize efficiency for both boards reviewing.

Please send the peer review fee so that we can get the check out to you this week.

Thanks again for your help, and please let me know if you have any questions.
Amelia

Amelia Tracy
NextSun Energy
c. 413.588.8079
www.NextSunEnergy.com

On Mon, Feb 1, 2016 at 12:03 PM, Jacqueline Shanley <jshanley@middleborough.com> wrote:

Good Morning Amelia,

Can you clarify why Conservation has received the attached plans with a more recent date on them than what you had submitted in your WRPD application? I have distributed your application to various people for input, as is procedure. It is critical that everyone is reviewing the same/correct information.

Secondly, the Board's (Selectmen) adopted regulation re Outside Consultants is attached here for your convenience. The Board will be engaging the services of Atlantic Design Engineers, Inc. In addition, the Board has requested Atlantic Design to subcontract for architectural landscape review and those services will be provided by Hawk Design. The expense for all outside peer review will be the responsibility of the applicant, Renewable Generation, LLC (Next Sun).

Lastly, because more time is needed for outside peer review, and because we have just received plans through our Conservation department, with a different/more current date on them, than those received in your original application, we will need to open the public hearing scheduled for Monday, 2/8/16 and vote to continue it to 2/22/16 at 7:30 pm.

I will be sending notice to each of the abutters named on the Town's Certified Abutter's list to give them some advanced notice.

Please get back to me about the difference in dates on the plans.

Thank you.

Jackie

Jackie Shanley

Executive Assistant to Board of Selectmen

Town of Middleborough

10 Nickerson Ave.

Middleborough, MA 02346

508 946-2405 Tel.

508 946-0058 Fax

jshanley@middleborough.com

From: Patricia Cassady
Sent: Friday, January 29, 2016 4:59 PM
To: Jacqueline Shanley
Subject: WRPD - Solar - Jericho/E. Grove

Hi Again,

This is what I have electronically, which has more recent dates on the plans than the ones in the WRPD application.

Thanks,

Tricia

Patricia J. Cassady, Agent

For the Middleborough Conservation Commission

20 Centre Street, 2nd Floor

Middleborough, MA 02346

Ph: 508-946-2406/Fax: 508-946-2309

E-mail: pcssdy@middleborough.com

ECR
Environmental Consulting & Restoration, LLC

January 20, 2016

Middleborough Conservation Commission
20 Centre Street, 2nd floor
Middleborough, MA 02346
Attn: Patricia Cassady, Conservation Agent

RE: Proposed 25 foot Buffer Zone Restoration Plan, 17 Jericho Road, Middleboro

Dear Mrs. Cassady & Members of the Conservation Commission:

Please accept this revised 25 foot Buffer Zone Restoration Plan to mitigate cutting of vegetation within the 25 foot buffer zone to Bordering Vegetated Wetlands at 17 Jericho Road in Middleboro. Environmental Consulting & Restoration, LLC (ECR) in collaboration with Renewable Generation, LLC (MA), and Andrews Survey & Engineering, Inc. have revised the restoration proposal to include an improved mix of native plant species and proposed restoration tasks to restore the 25 foot buffer zone to a naturalized buffer zone environment. The proposed plant list includes a mix native saplings and shrubs that typically exist within a healthy freshwater buffer zone environment. The proposal also include a variety of species to improve biodiversity and includes additional wildlife habitat value such as berry producing plants for avian species and small mammals. The number of proposed plantings (209) is based on a ratio of 1.5 to 1 based on the number of cut trees within the 25 foot buffer zone (139). Along with the proposed maintenance of regenerating trees within the cutting area described in the Task #4 below, the number of proposed plantings should be optimal to allow for healthy growth conditions and prevent future overcrowding conditions.

The propose restoration tasks involves the following activities:

1. Maintenance of the existing erosion control line to include replacement of degraded sections, if necessary.

2. Removal of excess slash (cut limbs/brush) within the restoration area.

3. Planting of native vegetation by hand to include the species, number, and sizes in Table 1 below

Table 1 – Proposed 25 foot Buffer Zone Restoration Plant Palette

Description	Species	Size	Number	Estimated Mature Height & Width
Coniferous Tree	Red Cedar (*Juniperus virginiana*)	5 to 6 ft.	16	
Coniferous Tree	White Pine (*Pinus strobus*)	8 to 10 ft.	26	80' x 40'
Deciduous Tree	White Oak (*Quercus alba*)	2-2.5" caliper	14	60' x 40'
Deciduous Tree	Red Maple (*Acer rubrum*)	1 to 1.5" caliper	21	40' x 30'
Deciduous Tree	Sassafras (*Sassafras albidum*)	1 to 1.5" caliper	16	25' x 25'
Deciduous Tree	Red Oak (*Quercus rubra*)	1 to 1.5" caliper	16	60' x60'
Shrub	Bayberry (*Myrica pennsylvanica*)	2-3 ft.	20	9' x 9'

Shrub	Highbush Blueberry (*Vaccinium corymbosum*)	2-3 ft.	40	6' x 6'
Shrub	Black Chokeberry (*Aronia melancarpa*)	2-3 ft.	20	6' x 5'
Shrub	Witch Hazel (*Hamamelis virginiana*)	2-3 ft.	20	15' x 5'
		TOTAL	**209**	

Upon planting, the root balls of each plant should be mulched with natural wood chips. Additionally, the larger trees should be guyed, as necessary, for the first growing season. Substitution of plant species should only occur after confirmation of native plant substitution by the Conservation Agent.

4. In addition to the proposed revegetation of saplings and shrubs, the existing cut deciduous trees such as Red Maple, Black Oak, and White Oak within the 25 foot buffer zone are expected to produce stump sprouts. The root base of the cut tree is viable and during the beginning of the next growing season, the stump will regenerate to produce sprouts that can be managed into new saplings. Stump sprout maintenance is proposed to manage the stump sprouts by selecting one or two of the terminal buds of the new sprouts and pruning out the remaining sprouts during the middle of the first growing season. Over the following growing seasons, the saved/selected sprouts should be maintained to include pruning the new shoots as they emerge from the stump. Over time this will produce a new healthy sapling.

5. Upon completion of the revegetation activities, any exposed soils within the 25 foot buffer zone restoration area should be hand raked and seeded with a New England Conservation/Wildlife seed mix. Seeding should occur during the beginning to middle of the growing season when soil temperatures are consistently above 55 degrees. Seeding activities outside the growing season will require the seeded areas to be covered with weed free straw until seed germination.

6. The 25 foot buffer zone restoration area will be monitored during the two growing seasons to include maintenance activities consisting of replacement of dead plant stock, stump sprout pruning, and hand pulling of new non-native invasive plant growth. At the end of each growing season, an update letter report with photographs will be submitted to the Conservation office to document the success of the restoration project.

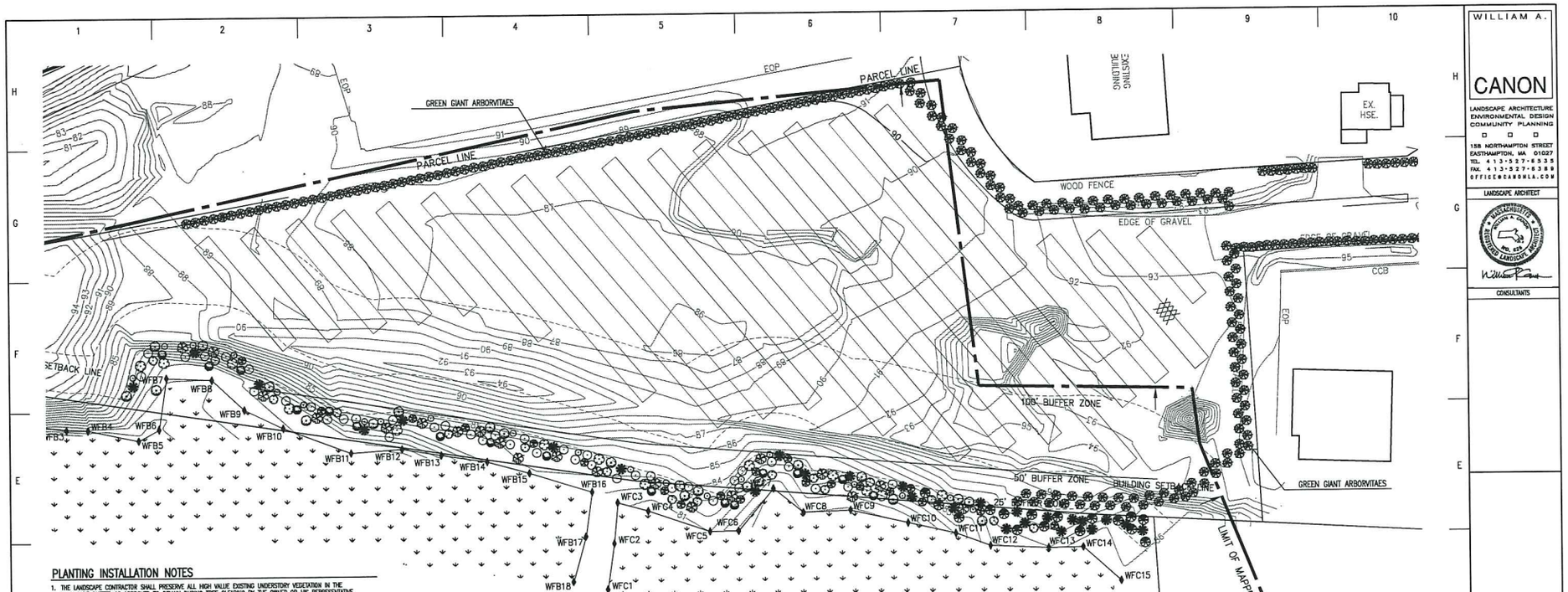
Due to the time of year and availability of nursery stock, ECR recommends delaying the proposed activities until the upcoming spring season on or around April 15th. Proposed activities will include coordination with the Conservation Agent. We look forward to discussing this proposal with the Commission at the next available meeting. If you require additional information or have questions, please contact me at (617) 529 – 3792.

Sincerely,
Environmental Consulting & Restoration, LLC

Brad Holmes

Brad Holmes, PWS, MCA
Manager

CC: Renewable Energy (MA), Inc.
Andrews Survey & Engineering, Inc.



PLANTING INSTALLATION NOTES

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1. ALL PLANT MATERIALS SHALL BE NURSERY GROWN AND CONFORM TO THE AMERICAN STANDARD FOR NURSERY STOCK ANSI Z60.1-2004 OR THE LATEST EDITION PUBLISHED BY THE AMERICAN NURSERY AND LANDSCAPE ASSOCIATION.
2. THE LANDSCAPE CONTRACTOR SHALL FURNISH AND INSTALL ALL PLANT MATERIAL TO THE SIZE AND QUANTITY AS CALLED FOR ON THE PLANT LIST UNLESS ALTERNATES OR SUBSTITUTIONS ARE OTHERWISE APPROVED.
3. THE LANDSCAPE CONTRACTOR SHALL FURNISH AND INSTALL GREEN GIANT ARBORVITAES AS SOON AS POSSIBLE.
4. ALL PLANTINGS, EXCEPT GREEN GIANT ARBV., SHALL BE PERFORMED DURING THE FOLLOWING DATES UNLESS OTHERWISE APPROVED:
   DECIDUOUS MATERIAL:
   SPRING – MARCH 21 TO JUNE 1
   FALL – SEPT. 1 TO OCT. 15
   EVERGREEN MATERIAL:
   SPRING – APRIL 1 TO JUNE 1
   FALL – AUGUST 21 TO OCT. 15
5. CONTRACTOR SHALL GUARANTEE ALL PLANTS FOR TWO (2) YEARS FROM THE TIME OF ACCEPTANCE BY THE OWNER. AT THE END OF THIS PERIOD, ANY PLANT THAT IS MISSING, DEAD, NOT TRUE TO NAME OR SIZE AS CALLED FOR OR NOT IN SATISFACTORY GROWTH SHALL BE REPLACED. ALL REPLACEMENTS SHALL BE PLANTS OF THE SAME KIND AND SIZE SPECIFIED ON THE PLANT LIST.

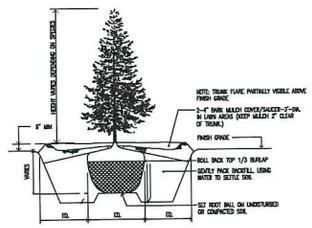
GRAPHIC KEY:

WETLAND BOUNDARY LINE
DETAIL NUMBER
SHEET NUMBER WHERE DTL. IS SHOWN
NEW TREE/SHRUB PLANTING

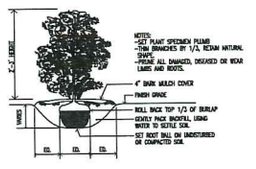
25' RESTORATION PLANTING LIST

SYMBOL	BOTANICAL NAME	COMMON NAME	QUANTITY	SIZE	CONDITION
	TREES				
	ACER RUBRUM	RED MAPLE	21	1-1.5" CAL.	B&B
	JUNIPERUS VIRGINIANA	EASTERN RED CEDAR	15	5-8' HT.	B&B
	PINUS STROBUS	EASTERN WHITE PINE	25	10' HT.	B&B
	QUERCUS ALBA	WHITE OAK	14	2-2.5" CAL.	B&B
	QUERCUS RUBRA	NORTHERN RED OAK	15	1-1.5" CAL.	B&B
	SASSAFRAS ALBIDUM	SASSAFRAS	15	1-1.5" CAL.	B&B
	SHRUBS				
	ARONIA MELANOCARPA	BLACK CHOKEBERRY	20	2-3' HT.	POT
	HAMAMELIS VIRGINIANA	WITCH HAZEL	20	2-3' HT.	POT
	MYRICA PENSYLVANICA	BAYBERRY	20	2-3' HT.	POT
	VACCINIUM CORYMBOSUM	HIGHBUSH BLUEBERRY	40	2-3' HT.	B&B

KEY: B&B-BALLED & BURLAP



1 / * TYPICAL TREE PLANTING
NO SCALE



2 / * TYPICAL SHRUB PLANTING
NO SCALE

A1 SITE PLAN
SCALE: 1"=40'
0 20' 40' 80'
NORTH

WILLIAM A. CANON
LANDSCAPE ARCHITECTURE
ENVIRONMENTAL DESIGN
COMMUNITY PLANNING
158 NORTHAMPTON STREET
EASTHAMPTON, MA 01027
TEL. 413-527-8535
FAX. 413-527-8388
OFFICE@CANONLA.COM

LANDSCAPE ARCHITECT
CONSULTANTS

MARK	DATE	DESCRIPTION
SP	1/19/16	REVISION WITH ADDITIONAL PLANTINGS
SP	12/2/15	PRELIMINARY REMEDIATION PLAN

PROJECT NO. 15.1201
CAD FILE

SHEET TITLE
REMEDIATION PLAN
L-1.0
SHEET NO. 1 OF 2

Fact Sheet ST-327
November 1993

Juniperus virginiana
Eastern Redcedar[1]

Edward F. Gilman and Dennis G. Watson[2]

INTRODUCTION

Redcedar is an evergreen growing 40 to 50 feet tall in an oval, columnar, or pyramidal form (very diverse) and spreading 8 to 15 feet when given a sunny location (Fig. 1). It develops a brownish tint in winter in the north and is sometimes used in windbreaks or screens. The fruit is a blue berry on female trees and is ornamental when produced in quantity. Birds devour the fruit and 'plant' it along farm fences and in old abandoned fields. Some botanists do not separate *J. virginiana* from *silicicola*.

GENERAL INFORMATION

Scientific name: *Juniperus virginiana*
Pronunciation: joo-NIP-er-us ver-jin-ee-AY-nuh
Common name(s): Eastern Redcedar
Family: *Cupressaceae*
USDA hardiness zones: 2 through 9 (Fig. 2)
Origin: native to North America
Uses: Bonsai; wide tree lawns (>6 feet wide); medium-sized tree lawns (4-6 feet wide); recommended for buffer strips around parking lots or for median strip plantings in the highway; reclamation plant; screen; residential street tree; Christmas tree; tree has been successfully grown in urban areas where air pollution, poor drainage, compacted soil, and/or drought are common
Availability: generally available in many areas within its hardiness range

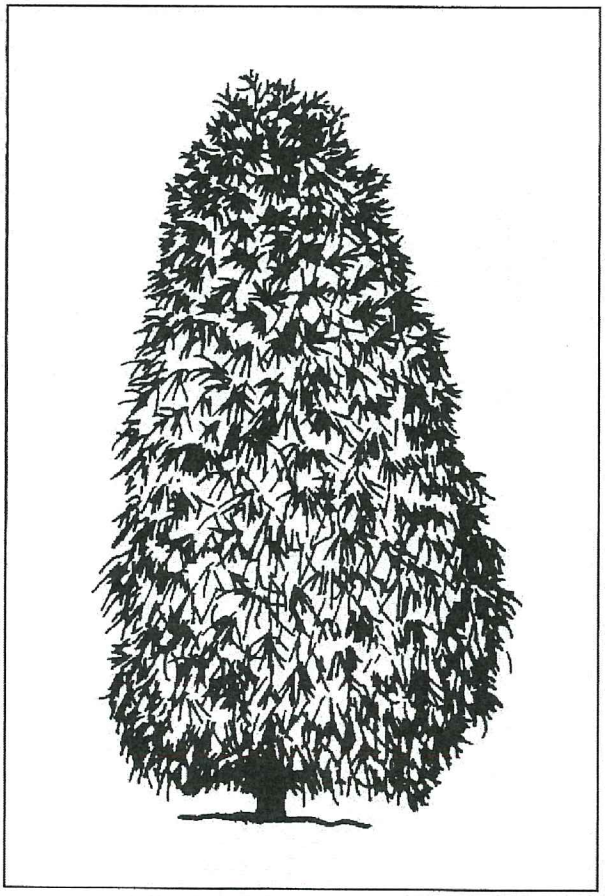


Figure 1. Middle-aged Eastern Redcedar.

DESCRIPTION

Height: 40 to 50 feet
Spread: 10 to 20 feet

1. This document is adapted from Fact Sheet ST-327, a series of the Environmental Horticulture Department, Florida Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida. Publication date: November 1993.
2. Edward F. Gilman, associate professor, Environmental Horticulture Department; Dennis G. Watson, associate professor, Agricultural Engineering Department, Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida, Gainesville FL 32611.

Fact Sheet ST-473
October 1994

Pinus strobus
Eastern White Pine[1]

Edward F. Gilman and Dennis G. Watson[2]

INTRODUCTION

Eastern White Pine has soft blue-green needles borne in groups of five although foliage color varies greatly from one tree to the next (Fig. 1). It is the state tree of Maine and Missouri. Some specimens keep the bluish color throughout the winter, others loose it. Although it can grow 100 to 120 feet tall with a three to five-foot-diameter trunk and spread 50 to 60 feet, it is typically seen from 50 to 80 feet tall in landscapes. Growth is very rapid at first but slows down with age. Several branches on young trees normally originate from the same point on the trunk forming a tree appearing to be built of layers of foliage. Although young trees are pyramidal and usually grow with one central leader, the layers (or whorls) of horizontal branches give White Pine a distinctive appearance in middle and old age. The gray bark on the trunk and large branches remains unusually smooth through middle age, breaking up into elongated blocks in old age. Be sure to purchase only certified rust-resistant plants.

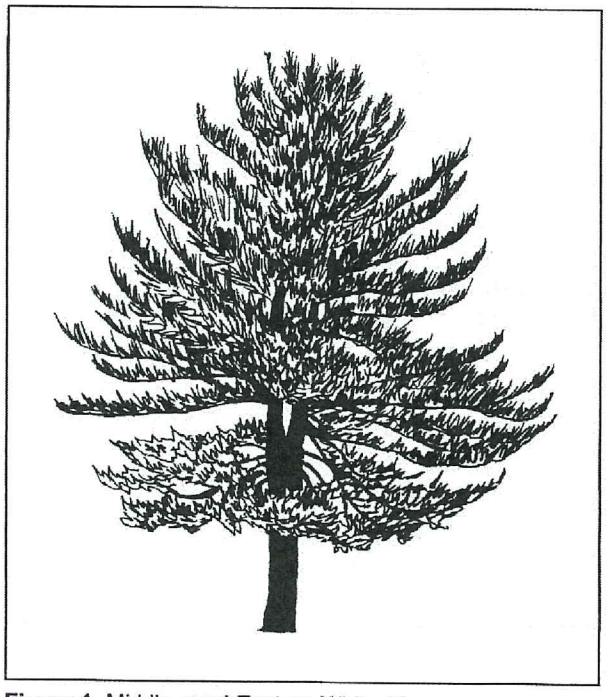


Figure 1. Middle-aged Eastern White Pine.

GENERAL INFORMATION

Scientific name: *Pinus strobus*
Pronunciation: PIE-nus STROE-bus
Common name(s): Eastern White Pine
Family: *Pinaceae*
USDA hardiness zones: 3B through 7 (Fig. 2)
Origin: native to North America
Uses: Bonsai; hedge; screen; shade tree; specimen; Christmas tree; no proven urban tolerance
Availability: generally available in many areas within its hardiness range

DESCRIPTION

Height: 50 to 80 feet
Spread: 25 to 35 feet
Crown uniformity: symmetrical canopy with a regular (or smooth) outline, and individuals have more or less identical crown forms
Crown shape: oval; pyramidal
Crown density: moderate
Growth rate: fast

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1. This document is adapted from Fact Sheet ST-473, a series of the Environmental Horticulture Department, Florida Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida. Publication date: October 1994.
2. Edward F. Gilman, associate professor, Environmental Horticulture Department; Dennis G. Watson, associate professor, Agricultural Engineering Department, Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida, Gainesville FL 32611.

Fact Sheet ST-541
October 1994

Quercus alba
White Oak[1]

Edward F. Gilman and Dennis G. Watson[2]

INTRODUCTION

White Oak is a long-lived, slow-growing tree, reaching 60 to 100 feet in height with a spread of 50 to 90 feet in its native bottomland soil (Fig. 1). Old specimens can be massive, growing to be several hundred years old. Since trunks can be six feet in diameter leave plenty of room for this tree in the landscape. The trunk flares out at the base lifting sidewalks and curbing if planted in tree lawns less than eight feet wide. The red fall color is fairly reliable year to year and is outstanding among the Oaks in USDA hardiness zones 8a and colder areas. Brown leaves may be held on the tree into the early part of the winter.

GENERAL INFORMATION

Scientific name: *Quercus alba*
Pronunciation: KWERK-us AL-buh
Common name(s): White Oak
Family: *Fagaceae*
USDA hardiness zones: 3B through 8 (Fig. 2)
Origin: native to North America
Uses: large parking lot islands (> 200 square feet in size); wide tree lawns (>6 feet wide); recommended for buffer strips around parking lots or for median strip plantings in the highway; shade tree; specimen; no proven urban tolerance
Availability: grown in small quantities by a small number of nurseries

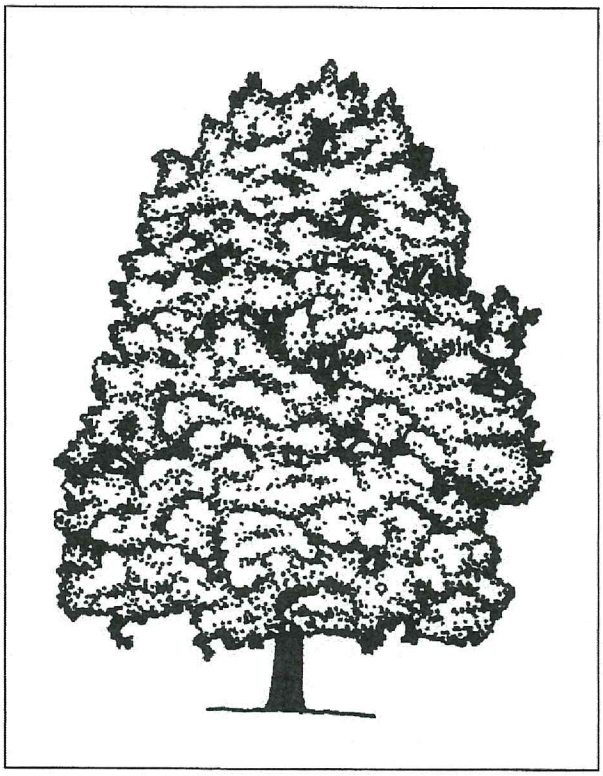


Figure 1. Mature White Oak.

DESCRIPTION

Height: 60 to 100 feet
Spread: 60 to 80 feet
Crown uniformity: irregular outline or silhouette
Crown shape: round; pyramidal
Crown density: moderate
Growth rate: slow
Texture: medium

1. This document is adapted from Fact Sheet ST-541, a series of the Environmental Horticulture Department, Florida Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida. Publication date: October 1994.
2. Edward F. Gilman, associate professor, Environmental Horticulture Department; Dennis G. Watson, associate professor, Agricultural Engineering Department, Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida, Gainesville FL 32611.

Acer rubrum

Red maple

Characteristics

Broad-leaved, deciduous tree

GROWTH

Rate: medium to fast; 18 to 25 ft. in 10 yrs.

PLANTING

Forms available: seed, plug, whip, bare root, container, balled and burlapped

HABITAT

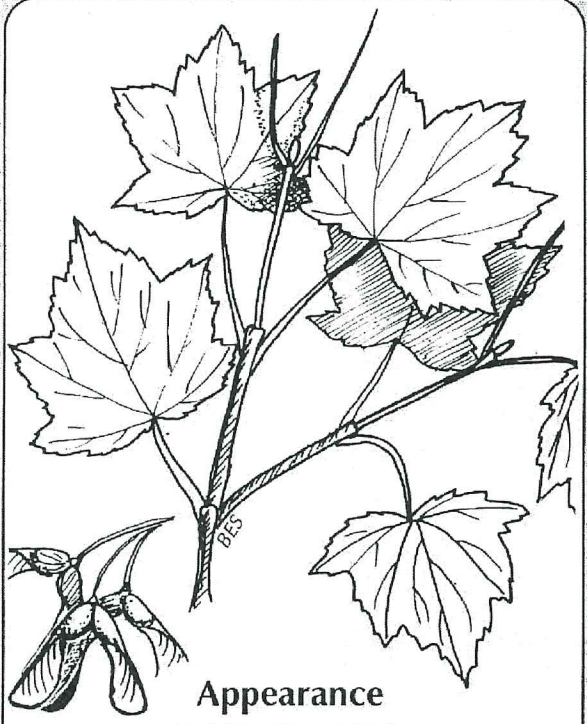
Community: fresh tidal marsh or swamp
nontidal marsh or swamp
alluvial woods
moist uplands

Distribution: Quebec to Manitoba, south to southern Florida, Oklahoma, and Texas

Shade: tolerates partial shade

NOTES

Small transplants do not tolerate standing water
Susceptible to wind or ice damage (weak wooded)
Susceptible to rot-causing fungi, canker injuries, and Verticillium wilt
Susceptible to leaf hoppers, many borers, and scale
pH preference = 4.5 - 7.0
Tolerates drought
Male and female flowers usually on separate plants



Appearance

Height: 75 to 100 ft.
Aerial spread: 50 to 75 ft.
Colors: red flowers and buds
Flowering period: late March, early April
Fruiting period: late April to mid June

Wildlife Benefits

Potential Benefits and Species Served

Food (seed, sap, or buds): bobwhite, yellow-bellied sapsucker, cardinal, evening and pine grosbeaks, waterbirds, squirrels, chipmunk

Cover and Nesting: American robin, prairie warbler, American goldfinch

Food (twigs, foliage): hoofed browsers

Hydrology

Indicator status: Facultative to Facultative wetland +

Salinity: fresh water; less than 0.5 ppt

Tidal zone: above spring tide elevation

Nontidal regime: irregularly to seasonally inundated or saturated (up to approximately 25% of the growing season)

Fact Sheet ST-584
October 1994

Sassafras albidum
Sassafras[1]

Edward F. Gilman and Dennis G. Watson[2]

INTRODUCTION

This lovely, deciduous, native North American tree is pyramidal when young but later develops into a 30 to 60-foot-tall by 25 to 40-foot-wide, rounded canopy composed of many short, horizontal branches which give the tree a layered effect (Fig. 1). For years, Sassafras was grown for the supposedly-medicinal properties of the fragrant roots and bark but it is the outstanding fall display of foliage which should bring it into the garden today. The large, multi-formed, five-inch leaves, fragrant when crushed, are bright green throughout the summer but are transformed into magical shades of orange/pink, yellow/red, and even scarlet/purple in the cooler months of autumn, brightening the landscape wherever they are found. These colors are especially prominent when Sassafras is planted as a specimen or in a mixed shrubbery border, with a background of dark evergreens.

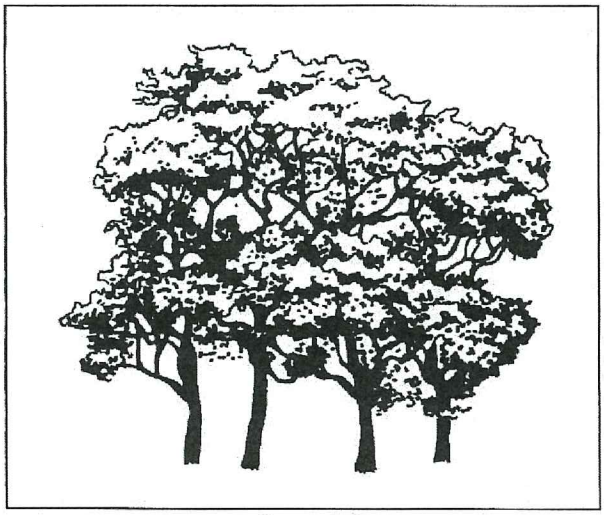


Figure 1. Middle-aged Sassafras.

GENERAL INFORMATION

Scientific name: *Sassafras albidum*
Pronunciation: SASS-uh-frass AL-bih-dum
Common name(s): Sassafras
Family: *Lauraceae*
USDA hardiness zones: 5 through 9A (Fig. 2)
Origin: native to North America
Uses: large parking lot islands (> 200 square feet in size); wide tree lawns (>6 feet wide); medium-sized tree lawns (4-6 feet wide); recommended for buffer strips around parking lots or for median strip plantings in the highway; near a deck or patio; shade tree; specimen; residential street tree; no proven urban tolerance

Availability: somewhat available, may have to go out of the region to find the tree

DESCRIPTION

Height: 30 to 60 feet
Spread: 25 to 40 feet
Crown uniformity: irregular outline or silhouette
Crown shape: round; pyramidal
Crown density: dense
Growth rate: medium
Texture: medium

1. This document is adapted from Fact Sheet ST-584, a series of the Environmental Horticulture Department, Florida Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida. Publication date: October 1994.
2. Edward F. Gilman, associate professor, Environmental Horticulture Department; Dennis G. Watson, associate professor, Agricultural Engineering Department, Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida, Gainesville FL 32611.

Fact Sheet ST-560
October 1994

Quercus rubra
Northern Red Oak[1]

Edward F. Gilman and Dennis G. Watson[2]

INTRODUCTION

An adaptable, widely planted Oak with a rapid growth rate, Red Oak will reach a height of 60 to 70 feet and a spread of 40 to 60 feet when open-grown, and is native to rich woodland areas where it will grow to 90 feet tall (Fig. 1). Branches and upper trunk are marked with long, light grey longitudinal lines which remind some people of ski trails. Open-grown trees form a rounded crown which makes a nice shade, park or street tree. Many communities use Red Oak as a street tree where overhead space is not limiting. Acorns are small and easily cleaned up, broken into small pieces by pedestrians or eaten by squirrels. The foliage turns a wonderful dark red in the fall.

GENERAL INFORMATION

Scientific name: *Quercus rubra*
Pronunciation: KWERK-us ROO-bruh
Common name(s): Northern Red Oak
Family: *Fagaceae*
USDA hardiness zones: 5 through 8A (Fig. 2)
Origin: native to North America
Uses: large parking lot islands (> 200 square feet in size); wide tree lawns (>6 feet wide); recommended for buffer strips around parking lots or for median strip plantings in the highway; shade tree; residential street tree; tree has been successfully grown in urban areas where air pollution, poor drainage, compacted soil, and/or drought are common
Availability: generally available in many areas within its hardiness range

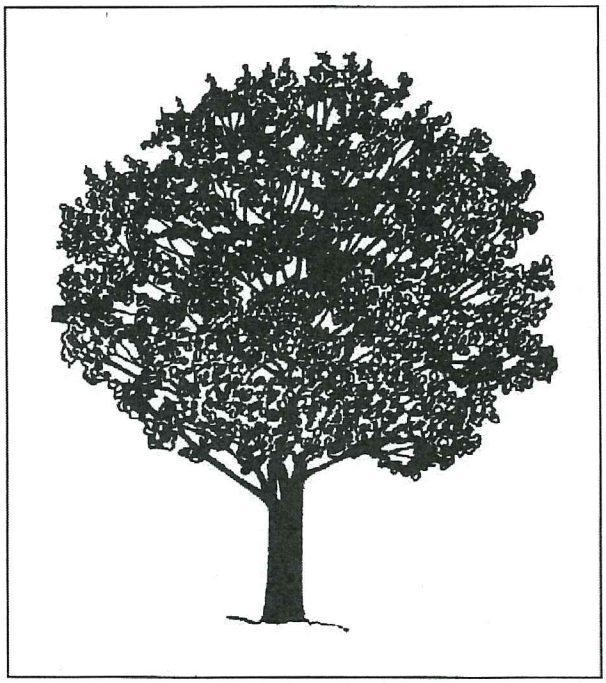


Figure 1. Mature Northern Red Oak.

DESCRIPTION

Height: 60 to 70 feet
Spread: 50 to 60 feet
Crown uniformity: symmetrical canopy with a regular (or smooth) outline, and individuals have more or less identical crown forms
Crown shape: round
Crown density: dense
Growth rate: fast

1. This document is adapted from Fact Sheet ST-560, a series of the Environmental Horticulture Department, Florida Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida. Publication date: October 1994.

2. Edward F. Gilman, associate professor, Environmental Horticulture Department; Dennis G. Watson, associate professor, Agricultural Engineering Department, Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida, Gainesville FL 32611.

Myrica pensylvanica
Bayberry

Characteristics
Broad-leaved, deciduous shrub

GROWTH
Rate: medium; 1 to 2 ft. per yr.
Rate of spread: slow
Spreads by suckers

PLANTING
Forms available: seed, bare root, container, balled and burlapped

HABITAT
Community: tidal fresh and brackish marshes and swamps
nontidal marshes and swamps
sand flats and dunes

Distribution: Newfoundland, south to North Carolina (mainly Coastal Plain)

Shade: tolerates partial shade

NOTES
Nitrogen fixing
Male and female flowers usually on separate plants
pH preference = 5.0 - 6.5
Fairly insensitive to disease, insect and wind or ice damage
Tolerates drought

Appearance
Height: 6 to 12 ft.
Aerial spread: 6 to 12 ft.
Flower color: green
Flowering period: late March through early or mid-April
Fruit color: white to gray
Fruiting period: early September, persisting through late May

Wildlife Benefits
Potential Benefits and Species Served

Food: eastern meadowlark, white-eyed vireo, yellow-rumped warbler, tree swallow, red-winged blackbird

Winter food: many songbirds, waterfowl, shorebirds, and marshbirds

Cover: many species

Hydrology
Indicator status: Facultative

Salinity: fresh to brackish water; up to approximately 20 ppt

Tidal zone: above mean high water to upland

Nontidal regime: irregularly to seasonally inundated or saturated (up to approximately 25% of the growing season)

Vaccinium corymbosom

Highbush blueberry

Characteristics

Broad-leaved, deciduous shrub

GROWTH
Rate: slow; less than 1 ft. per yr.
Spreads by suckers

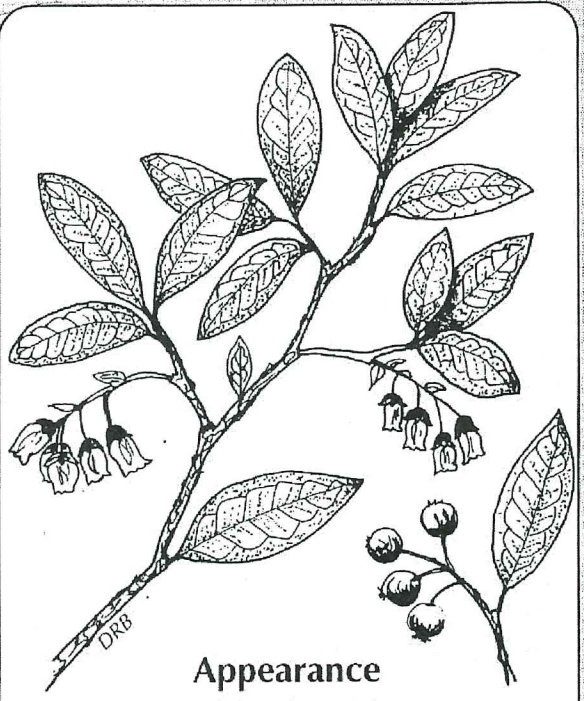
PLANTING
Forms available: bare root, containter

HABITAT
Community: forested wetlands
shrub swamps
bogs
upland woods (rare)

Distribution: Nova Scotia to southern Quebec, west to Wisconsin, south to Florida and Texas

Shade: tolerates full shade

NOTES
Fairly insenstive to wind or ice damage
Demands acid soil; pH = 3.5 - 6.0 (will tolerate 6.5)



Appearance

Height: 6 to 12 ft.
Aerial spread: 6 to 12 ft.
Flower description: white or pinkish bell
Flowering period: mid-May through early June
Fruit color: bluish to black
Fruiting period: early July through late August

Wildlife Benefits

Potential Benefits and Species Served

Highly valuable fruit

Food (fruit): blue jay, black-capped chickadee, tufted titmouse, brown thrasher, eastern bluebird, orchard oriole, pine grosbeak, scarlet tanager, black bear

Food (fruit), Cover, and/or Nesting: ruffed grouse, ring-necked pheasant, mourning dove, eastern kingbird, gray catbird, American robin, hermit thrush, rufous-sided towhee

Food (plant parts): red fox, skunk, deer, chipmunk, mice

Hydrology

Indicator status: Facultative wetland –

Salinity: resistant; tolerates infrequent flooding by water containing some salt

Tidal zone:

Nontidal regime: seasonally inundated or saturated (approximately 13 to 25% of the growing season)

Aronia melanocarpa (Pyrus melanocarpa)

Black chokeberry

Characteristics

Broad-leaved, deciduous shrub

GROWTH
Rate: slow; less than 1 ft. per yr.
Spreads by suckers

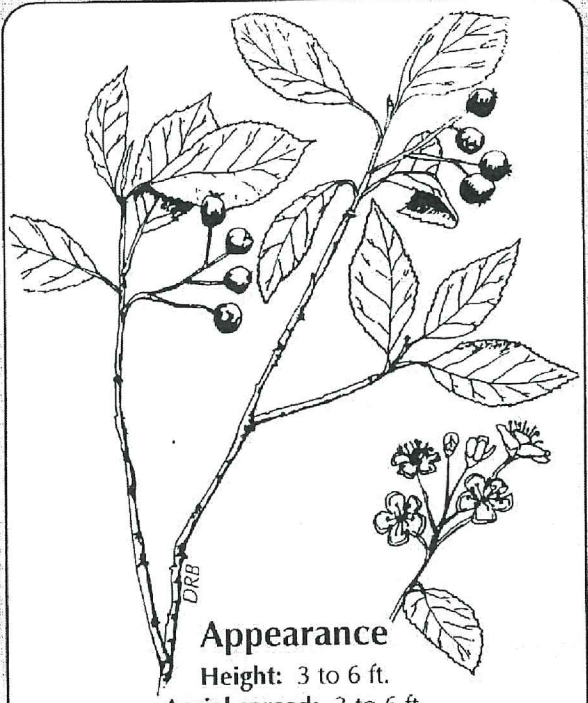
PLANTING
Forms available: plug, container

HABITAT
Community: swamp and bog edges
clearings

Distribution: Newfoundland to northwestern Ontario and Minnesota, south to Nova Scotia, New England, South Carolina, and Tennessee

Shade: tolerates partial shade

NOTES
Relatively insensitive to disease, insect, and wind or ice damage
pH preference = 5.1 - 6.5
Tolerates drought



Appearance

Height: 3 to 6 ft.
Aerial spread: 3 to 6 ft.
Flower color: white
Flowering period: early through mid-May
Fruit color: black
Fruiting period: early September through late November

Wildlife Benefits

Potential Benefits and Species Served

Food (fruit): black-capped chickadee, bobwhite, gray catbird, brown thrasher, cedar waxwing, eastern meadowlark, large and small mammals

Food (fruit, buds): ruffed grouse

Food (twigs, foliage, fruit): hoofed browsers

Hydrology

Indicator status: Facultative

Salinity: resistant; tolerates infrequent flooding by water containing some salt

Tidal zone:

Nontidal regime: irregularly to seasonally saturated (up to approximately 25% of the growing season)

Fact Sheet ST-294
November 1993

Hamamelis virginiana
Witch-Hazel[1]

Edward F. Gilman and Dennis G. Watson[2]

INTRODUCTION

Witch-Hazel grows best in sun or partial shade and in light, moist soil (Fig. 1). The plant tolerates some drought and grows slowly. It grows 20 to 30 feet tall and spreads 15 to 25 feet forming a multistemmed, shrubby, round, somewhat asymmetrical ball. Removing the lower branches helps produce a more tree-form multistemmed specimen but regular minor pruning will be required to maintain it in this form since the plant suckers freely from the base of the trunk.

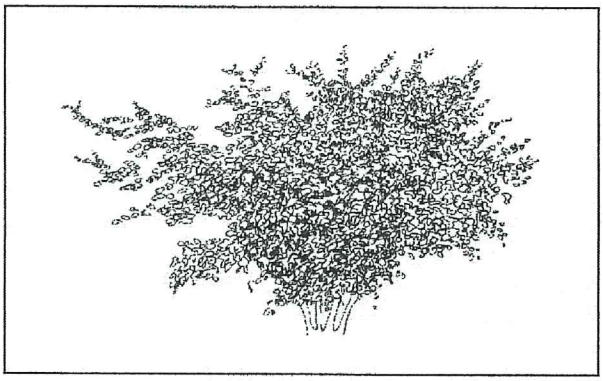


Figure 1. Young Witch-Hazel.

GENERAL INFORMATION

Scientific name: *Hamamelis virginiana*
Pronunciation: ham-uh-MEE-liss ver-jin-ee-AY-nuh
Common name(s): Witch-Hazel
Family: *Hamamelidaceae*
USDA hardiness zones: 4 through 8 (Fig. 2)
Origin: native to North America
Uses: container or above-ground planter; recommended for buffer strips around parking lots or for median strip plantings in the highway; reclamation plant; specimen; no proven urban tolerance
Availability: somewhat available, may have to go out of the region to find the tree

DESCRIPTION

Height: 20 to 30 feet
Spread: 15 to 25 feet
Crown uniformity: irregular outline or silhouette
Crown shape: round; vase shape
Crown density: moderate
Growth rate: slow
Texture: coarse

Foliage

Leaf arrangement: alternate (Fig. 3)
Leaf type: simple
Leaf margin: sinuate; undulate
Leaf shape: elliptic (oval); obovate
Leaf venation: pinnate
Leaf type and persistence: deciduous
Leaf blade length: 4 to 8 inches; 2 to 4 inches
Leaf color: green
Fall color: yellow
Fall characteristic: showy

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1. This document is adapted from Fact Sheet ST-294, a series of the Environmental Horticulture Department, Florida Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida. Publication date: November 1993.
2. Edward F. Gilman, associate professor, Environmental Horticulture Department; Dennis G. Watson, associate professor, Agricultural Engineering Department, Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida, Gainesville FL 32611.

Andrews Survey & Engineering, Inc.

Land Surveying • Civil Engineering • Site Planning

June 3, 2015

Middleborough Conservation Commission
20 Centre Street, 2nd Floor
Middleborough, MA 02346

Vegetation & Maintenance Plan
17 Jericho Road Solar Facility

Renewable Generation MA respectfully submits the following "Vegetation and Maintenance Plan" to the Middleborough Conservation Commission. The plan has been developed with the intention of presenting no impact to the designated wetlands area onsite and to minimize any new impacts to the buffer zone. In order to ensure proper photovoltaic operation, the solar system layout has been designed to avoid tree shade during high solar output hours (9am to 3pm). Vegetation maintenance surrounding the photovoltaic solar facility is required to avoid shade being cast during these critical hours, on the solar installation. The "Vegetation and Maintenance Plan" presented to the Commission addresses possible actions of disturbance within the wetlands buffer and details the minimal to no impact approach that Renewable Generation MA will take in regards to each concern.

The solar installation has been designed to leave the designated wetland on the property undisturbed and the 25-foot wetland buffer zone minimally encroached. The day to day operation of the solar facility will not require any activity in the wetlands or wetlands buffer and the perimeter fencing surrounding the solar facility will deter operations and maintenance personnel from accessing the wetlands area.

With the recognition that the trees in the wetlands buffer will continue to grow and in the course of a few years will cast shade that impacts the performance of the solar facility, Renewable Generation MA proposes the following "Tree Plan in Wetlands Buffer".

1. Tree Plan in Wetlands Buffer

   In consulting expert opinion on how to minimize ongoing impacts to the wetlands buffer, Renewable Generation MA is proposing to perform a one-time selective tree removal and restoration planting operation as outlined on the following page. The intention of this approach is to minimize the long-term impact to the wetlands buffer by utilizing a one-time action plan that is intended to mitigate the need for any future tree trimming or removal.

104 Mendon Street, P.O. Box 312
Uxbridge, MA 01569
Phone (508) 278-3897
Fax (508) 278-2289

500 East Washington Street
North Attleboro, MA 02760
Phone (508) 316-0452
Fax (508) 316-0963

www.andrews-engineering.com

BUFFER TREE REMOVAL & RESTORATION PLANTING
17 Jericho Road, Middleborough, MA

This protocol pertains to proposed tree removal and restoration plantings within and existing wooded buffer zone. Trees within the outer buffer zone will be cut in order to prevent shading of the solar panels which are proposed in the adjacent disturbed area. The area of proposed tree cutting is depicted on the site plan. Restoration planting with slow-growth, drought tolerant seed mixture. The protocol for removal and restoration is as follows:

- A limit of work barrier will be installed between the proposed tree removal area and the adjacent wetland. This barrier will consist of staked orange construction fencing only as no soil disturbance is proposed.
- Trees will be cut and removed using equipment located upgradient in the existing disturbed areas. No equipment (other than chain saws) will be used in the wooded buffer areas. Stumps and roots will be left in place, therefore no soil disturbance is proposed.
- The native, woody, restoration plantings specified below, have a high degree of wildlife value for food and shelter and are small in stature when fully grown. The grass seed mixture will be planted within open areas along the adjacent wetland at the rate specified on the plans. Planting will only take place during the spring (May 1 – June 15) or fall (September 15 – November 1) seasons unless supplemental irrigation is provided.

The trees to be removed are within an approximately 450' long strip along the north and west sections of the wetland buffer and approximately 75' in width, as indicated by the hatched areas shown on the revised plans. Selective removal will occur for trees measuring 20 feet or taller at the start of construction. Trees meeting these criteria shall be marked and notification shall be provided to the Conservation Commission at least 48 hours prior to cutting.

The 75' wide strip of removed trees results in a similar sized benefit of the shade line and considering that the trees in the buffer are reasonably mature and expected to grow at a relatively low annual rate, it is anticipated that this additional buffer from the shade will mitigate the future need to trim or remove trees in the wetlands buffer area. Renewable Generation MA does, however, request the right to remove trees that are deemed in danger of falling onto the solar facility that could compromise the safety of the operation and cause physical damage.

In the event that the tree canopy does grow more than anticipated, Renewable Generation MA would like to further request the right to trim trees during the advanced years of the project's operation in the event the canopy growth results in significant shade impacting the performance of the solar facility. If future tree trimming in the wetland or buffer is required the applicant will notify the Conservation Commission in writing prior to the trimming.

2. Erosion Control

The revised plans presented propose no soil disturbance in the 25' wetland buffer zone and thus, requires no additional erosion control measures in this area, except where noted.

3. Vegetation Management outside the Wetlands and Wetlands Buffer

The primary means of managing grass, weeds, vines, or other types of vegetation will be mechanical in nature, primarily with a mower or weed whacker. Mowing and landscape maintenance will typically occur once after the major growth periods in late fall (Oct-Nov). Summers are often dry enough to prevent high growth of grasses and other vegetation, thus we typically do not require grass cutting in these months.

We hope this serves your needs at this time. Should you have any questions or require additional information, please contact this office.

Very truly yours,
ANDREWS SURVEY & ENGINEERING, INC.

Stephen J. O'Connell
Partner / Senior Project Manager

Attachment(s)

C: Renewable Generation MA

Jacqueline Shanley

From: Amelia Tracy <amelia@nextsunenergy.com>
Sent: Wednesday, February 03, 2016 12:54 PM
To: Jacqueline Shanley
Cc: Patricia Cassady; Jake Laskin; Selectman Allin Frawley; Robert G. Nunes
Subject: Re: FW: WRPD - Solar - Jericho/E. Grove

Excellent thanks Jackie,

Amelia

Amelia Tracy
NextSun Energy
c. 413.588.8079
www.NextSunEnergy.com

On Wed, Feb 3, 2016 at 12:51 PM, Jacqueline Shanley <jshanley@middleborough.com> wrote:

Good Afternoon Amelia,

Thank you for getting us the up-to-date plans/information.

I can't commit to Next Sun receiving our peer review comments by 2/15/16. We respectfully allow our outside peer review at least two weeks to review the material. If they are able to provide that information by 2/15, I will be more than happy to share it with you.

I also have not received an invoice for the peer review as the review is underway. They have been sent the updated information/plans that this office only just recently became aware of thanks to our Conservation Agent.

The hearing will be opened on 2/8/16 at 7:30 pm and immediately voted to be continued to 2/22/16 at 7:30 pm. We are taking the responsibility of notifying the abutters. I am sending notices to each of them today.

Thank you.

Andrews Survey & Engineering, Inc.

Land Surveying • Civil Engineering • Site Planning

July 13, 2015

Middleborough Conservation Commission
20 Centre Street
Middleborough, MA 02346

Re: ***Stormwater Management Narrative***
Renewable Generation (MA), LLC – 17 Jericho Road, Middleborough, MA
ASE Project #2015-060

Dear Commission Members:

Renewable Generation (MA), LLC, intends to develop a portion of the property located at 17 Jericho Road. Included, is the construction of solar panels along with associated utilities, gravel access way, and minor earthwork.

The property is comprised of 7.60± acres of land situated on the west side of East Grove Street (Route 28) and is located in the General Use (GU) zoning district. The property contains the existing Lifehouse Church building with paved parking areas. The project area is comprised of gravel areas, sparse vegetation and mature forest along the eastern boundary. The vegetation throughout the project site can be classified as fair as it consists mostly of sparse vegetation with mature forest along the eastern and southern boundary. According to Natural Resources Conservation Service Soil Maps this site contains type A soils. The property lies outside the 100-year flood plain according to the current Middleborough Flood Insurance Rate Map (FIRM) Panel 25023C0319J and Panel 25023C0432, effective date July 17, 2012.

Upon completion of construction, any materially disturbed areas of the site will be seeded with a slow growing grass seed mixture. This finish surface will be a net improvement to the existing ground cover of the project area and therefore provide no measurable increase in storm water runoff. Therefore, no storm water management facilities are proposed.

The proposed project consists of minimal grading and site clearing to construct a ground mounted solar electric generation facility. Considering this, all of the runoff from the proposed project will be clean and does not need to be treated for total suspended solids. Furthermore, the project site discharges into a significant wetland system that will accept the clean runoff with insignificant, if any, increased chances of flooding or increases in runoff rates for downstream properties. In fact, the increase in clean runoff may help provide a source of clean water and, therefore positive effects in drier months while not having any negative effects during wetter months.

To convey the clean runoff, the project proposes to maintain existing drainage patterns as they currently exist in a sheet flow and shallow concentrated flow condition to the existing large wetland area.

104 Mendon Street, P.O. Box 312
Uxbridge, MA 01569
Phone (508) 278-3897
Fax (508) 278-2289

500 East Washington Street
North Attleboro, MA 02760
Phone (508) 316-0452
Fax (508) 316-0963

www.andrews-engineering.com

According to the 13th Edition of the Massachusetts Natural Heritage Atlas, Priority Habitat of Rare Species and Estimated Habitat of Rare Wetlands Wildlife is located on and bordering the property. No known Areas of Critical Environmental Concern (ACEC) are located on or bordering the property.

The proposed work to this site includes the construction of a negligible amount of impervious and minor changes to the ground cover, therefore Standard 2 of the MassDEP Stormwater Management Handbook. A SCS TR-20-based computer program, "HydroCAD," was used to calculate the pre- and post-construction curve numbers. The post construction curve numbers were lower than, or the same as, the existing curve numbers which means the rate of discharge would be lower in the post. The HydroCAD computations are attached, refer to the summary table below for the pre-construction versus post-construction curve numbers.

Curve Number	
Pre-	Post-
58	40

It is our belief that this information is sufficient to show that the proposed work will not have any negative effects on the drainage from the site and Standard 2 is met.

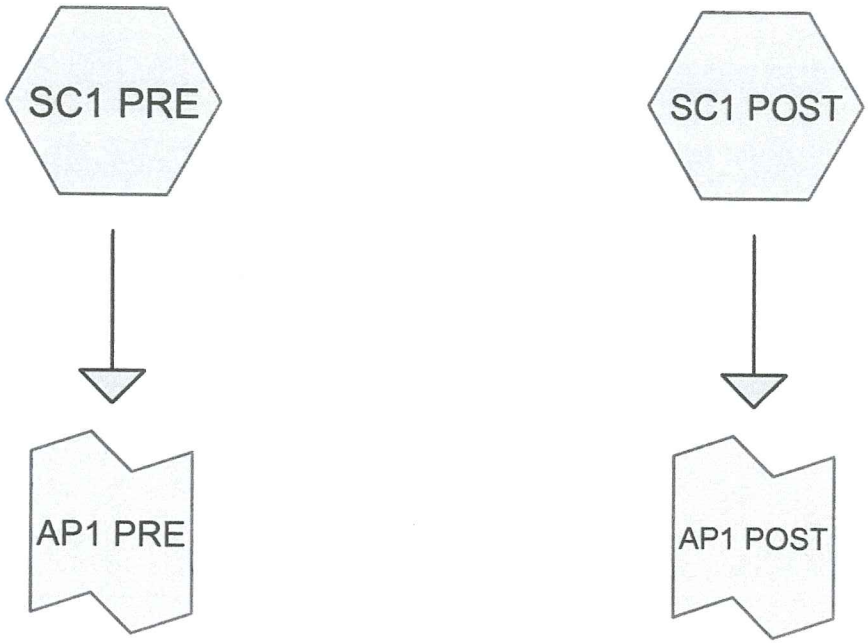
We hope this serves your needs at this time. Should you have any questions or require additional information, please contact this office.

Very truly yours,
ANDREWS SURVEY & ENGINEERING, INC.

Stephen J. O'Connell
Partner / Senior Project Manager

Attachment(s)

C: Renewable Generation (MA), LLC



Subcat Reach Pond Link

Routing Diagram for Jericho_Stormwater
Prepared by Andrews Survey & Engineering, Printed 7/13/2015

Summary for Subcatchment SC1 POST:

Runoff = 0.00 cfs @ 24.00 hrs, Volume= 49 cf, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.20"

Area (sf)	CN	Description
197,347	39	>75% Grass cover, Good, HSG A
17,064	30	Woods, Good, HSG A
8,516	96	Gravel surface, HSG A
222,927	40	Weighted Average
222,927		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.2	50	0.0140	0.06		**Sheet Flow, Segment A** Woods: Light underbrush n= 0.400 P2= 3.20"
2.4	230	0.0100	1.61		**Shallow Concentrated Flow, Segment B** Unpaved Kv= 16.1 fps
0.1	42	0.2140	7.45		**Shallow Concentrated Flow, Segment C** Unpaved Kv= 16.1 fps
16.7	322	Total			

Summary for Subcatchment SC1 PRE:

Runoff = 0.80 cfs @ 12.41 hrs, Volume= 6,339 cf, Depth= 0.34"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.20"

Area (sf)	CN	Description
100,921	68	<50% Grass cover, Poor, HSG A
85,044	30	Woods, Good, HSG A
36,962	96	Gravel surface, HSG A
222,927	58	Weighted Average
222,927		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.1	50	0.0120	0.06		**Sheet Flow, Segment A** Woods: Light underbrush n= 0.400 P2= 3.20"
0.7	108	0.0240	2.49		**Shallow Concentrated Flow, Segment B** Unpaved Kv= 16.1 fps
0.0	22	0.3180	9.08		**Shallow Concentrated Flow, Segment C** Unpaved Kv= 16.1 fps
15.8	180	Total			

Summary for Link AP1 POST:

Inflow Area = 222,927 sf, 0.00% Impervious, Inflow Depth = 0.00" for 2-Year event
Inflow = 0.00 cfs @ 24.00 hrs, Volume= 49 cf
Primary = 0.00 cfs @ 24.00 hrs, Volume= 49 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 1.00-72.00 hrs, dt= 0.05 hrs

Summary for Link AP1 PRE:

Inflow Area = 222,927 sf, 0.00% Impervious, Inflow Depth = 0.34" for 2-Year event
Inflow = 0.80 cfs @ 12.41 hrs, Volume= 6,339 cf
Primary = 0.80 cfs @ 12.41 hrs, Volume= 6,339 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 1.00-72.00 hrs, dt= 0.05 hrs

Summary for Subcatchment SC1 POST:

Runoff = 0.13 cfs @ 13.76 hrs, Volume= 3,215 cf, Depth= 0.17"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.70"

Area (sf)	CN	Description
197,347	39	>75% Grass cover, Good, HSG A
17,064	30	Woods, Good, HSG A
8,516	96	Gravel surface, HSG A
222,927	40	Weighted Average
222,927		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.2	50	0.0140	0.06		**Sheet Flow, Segment A** Woods: Light underbrush n= 0.400 P2= 3.20"
2.4	230	0.0100	1.61		**Shallow Concentrated Flow, Segment B** Unpaved Kv= 16.1 fps
0.1	42	0.2140	7.45		**Shallow Concentrated Flow, Segment C** Unpaved Kv= 16.1 fps
16.7	322	Total			

Summary for Subcatchment SC1 PRE:

Runoff = 3.68 cfs @ 12.26 hrs, Volume= 18,720 cf, Depth= 1.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.70"

Area (sf)	CN	Description
100,921	68	<50% Grass cover, Poor, HSG A
85,044	30	Woods, Good, HSG A
36,962	96	Gravel surface, HSG A
222,927	58	Weighted Average
222,927		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.1	50	0.0120	0.06		**Sheet Flow, Segment A** Woods: Light underbrush n= 0.400 P2= 3.20"
0.7	108	0.0240	2.49		**Shallow Concentrated Flow, Segment B** Unpaved Kv= 16.1 fps
0.0	22	0.3180	9.08		**Shallow Concentrated Flow, Segment C** Unpaved Kv= 16.1 fps
15.8	180	Total			

Summary for Link AP1 POST:

Inflow Area = 222,927 sf, 0.00% Impervious, Inflow Depth = 0.17" for 10-Year event
Inflow = 0.13 cfs @ 13.76 hrs, Volume= 3,215 cf
Primary = 0.13 cfs @ 13.76 hrs, Volume= 3,215 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 1.00-72.00 hrs, dt= 0.05 hrs

Summary for Link AP1 PRE:

Inflow Area = 222,927 sf, 0.00% Impervious, Inflow Depth = 1.01" for 10-Year event
Inflow = 3.68 cfs @ 12.26 hrs, Volume= 18,720 cf
Primary = 3.68 cfs @ 12.26 hrs, Volume= 18,720 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 1.00-72.00 hrs, dt= 0.05 hrs

Summary for Subcatchment SC1 POST:

Runoff = 1.73 cfs @ 12.42 hrs, Volume= 13,600 cf, Depth= 0.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=6.70"

Area (sf)	CN	Description
197,347	39	>75% Grass cover, Good, HSG A
17,064	30	Woods, Good, HSG A
8,516	96	Gravel surface, HSG A
222,927	40	Weighted Average
222,927		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.2	50	0.0140	0.06		**Sheet Flow, Segment A** Woods: Light underbrush n= 0.400 P2= 3.20"
2.4	230	0.0100	1.61		**Shallow Concentrated Flow, Segment B** Unpaved Kv= 16.1 fps
0.1	42	0.2140	7.45		**Shallow Concentrated Flow, Segment C** Unpaved Kv= 16.1 fps
16.7	322	Total			

Summary for Subcatchment SC1 PRE:

Runoff = 9.20 cfs @ 12.24 hrs, Volume= 41,012 cf, Depth= 2.21"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=6.70"

Area (sf)	CN	Description
100,921	68	<50% Grass cover, Poor, HSG A
85,044	30	Woods, Good, HSG A
36,962	96	Gravel surface, HSG A
222,927	58	Weighted Average
222,927		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.1	50	0.0120	0.06		**Sheet Flow, Segment A** Woods: Light underbrush n= 0.400 P2= 3.20"
0.7	108	0.0240	2.49		**Shallow Concentrated Flow, Segment B** Unpaved Kv= 16.1 fps
0.0	22	0.3180	9.08		**Shallow Concentrated Flow, Segment C** Unpaved Kv= 16.1 fps
15.8	180	Total			

Summary for Link AP1 POST:

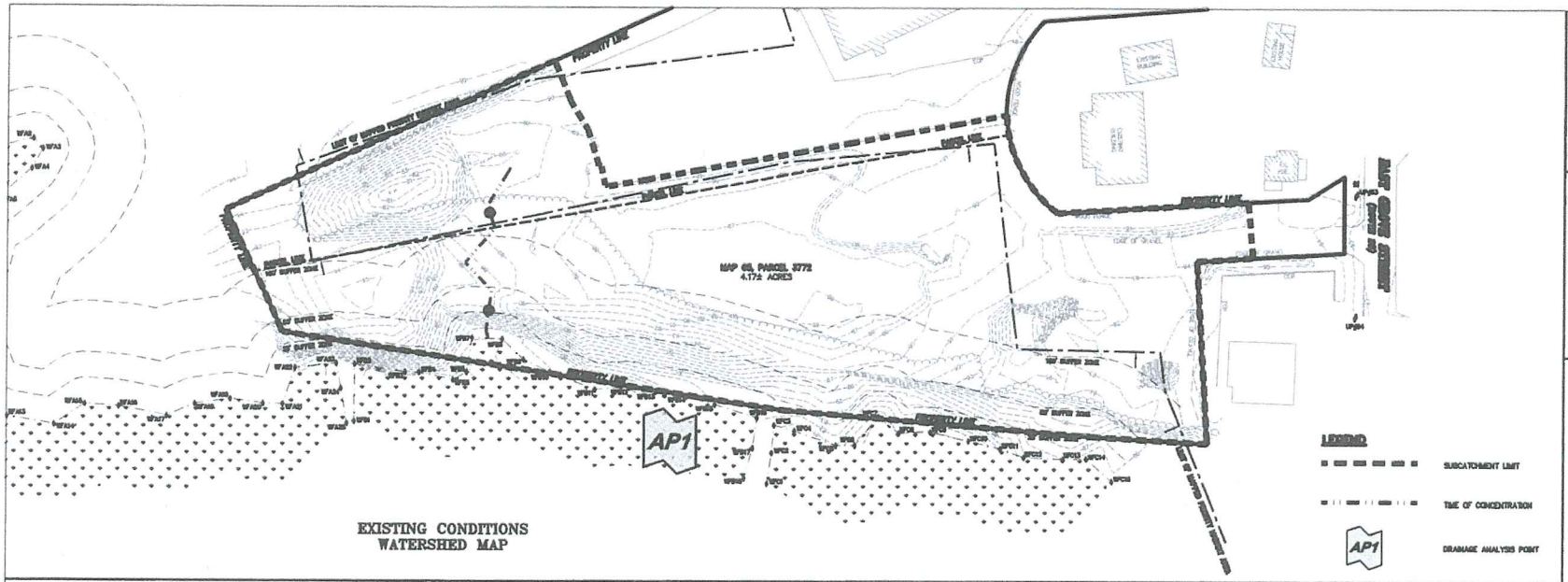
Inflow Area = 222,927 sf, 0.00% Impervious, Inflow Depth = 0.73" for 100-Year event
Inflow = 1.73 cfs @ 12.42 hrs, Volume= 13,600 cf
Primary = 1.73 cfs @ 12.42 hrs, Volume= 13,600 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 1.00-72.00 hrs, dt= 0.05 hrs

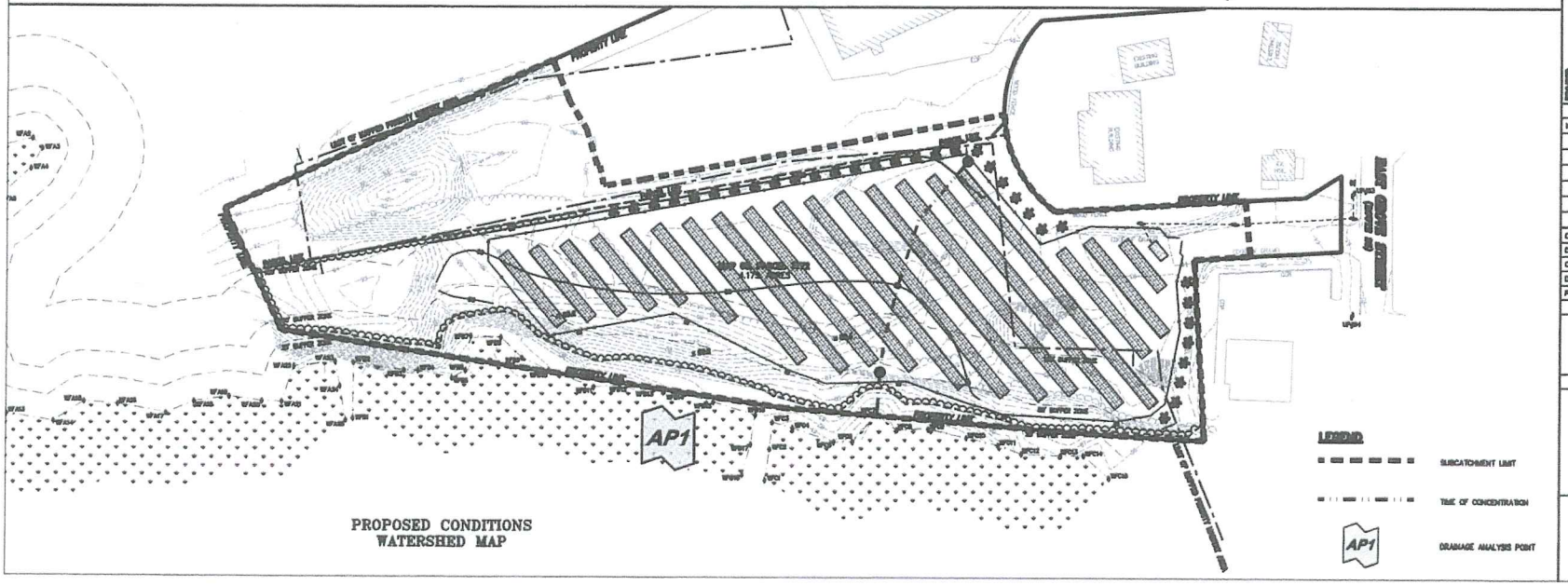
Summary for Link AP1 PRE:

Inflow Area = 222,927 sf, 0.00% Impervious, Inflow Depth = 2.21" for 100-Year event
Inflow = 9.20 cfs @ 12.24 hrs, Volume= 41,012 cf
Primary = 9.20 cfs @ 12.24 hrs, Volume= 41,012 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 1.00-72.00 hrs, dt= 0.05 hrs



EXISTING CONDITIONS
WATERSHED MAP



PROPOSED CONDITIONS
WATERSHED MAP

ASE
Andrews Survey & Engineering, Inc.
Land Surveying - Civil Engineering - Site Planning
P.O. Box 312, 104 Meadow Street
Uxbridge, Massachusetts 01569-0312
P: 508-278-3097 F: 508-278-2289

PROJECT
GROUND MOUNTED SOLAR ELECTRIC GENERATION FACILITY
17 JERICHO ROAD
MIDDLEBOROUGH, MA 02346

APPLICANT
RENEWABLE GENERATION (MA), LLC
77 POND AVENUE, SUITE 101
BROOKLINE, MA 02445

REVISIONS

NO.	DATE	DESCRIPTION

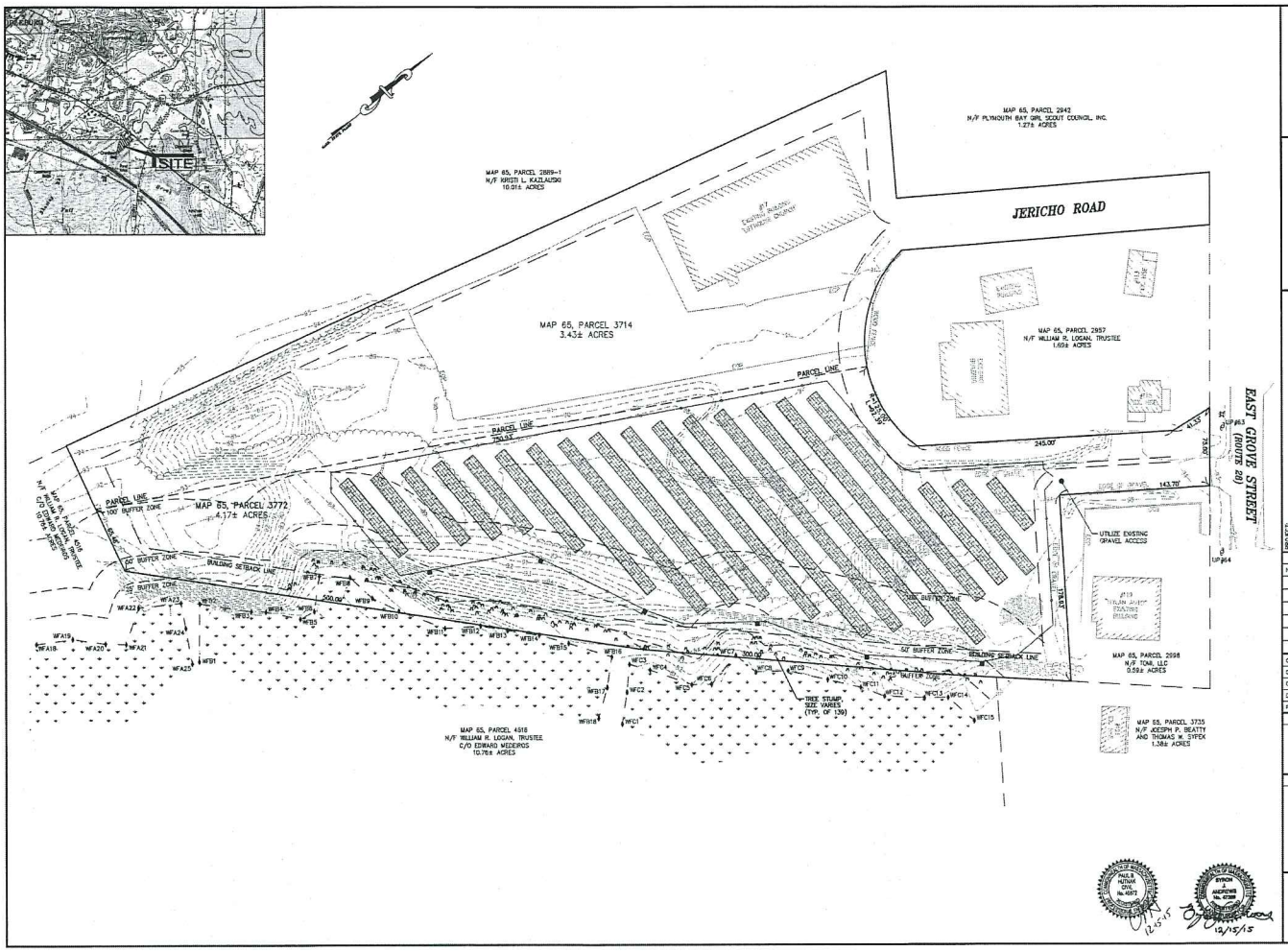
CAD FILE	...\dwg\17 JERICHO RD_SP_DRAINAGE.dwg
DRAWN BY	TRB, SJO
CHECKED BY	BJA, PEN
DATE	JULY 13, 2015
PROJECT NO.	2015-030

GRAPHIC SCALE
(IN FEET)
1 inch = 100 feet

SHEET TITLE
WATERSHED MAP

SHEET NO.
P-1

PLAN NO. L-4086



ASE
Andrews Survey & Engineering, Inc.
Land Surveying - Civil Engineering - Site Planning
P.O. Box 315, 194 Meadow Street
Uxbridge, Massachusetts 01569-0315
P: 508-278-2087 F: 508-278-2289

PROJECT:
GROUND MOUNTED SOLAR ELECTRIC GENERATION FACILITY
17 JERICHO ROAD
MIDDLEBOROUGH, MA 02346

APPLICANT:
RENEWABLE GENERATION (MA), LLC
77 POND AVENUE, SUITE 101
BROOKLINE, MA 02445

REVISIONS

NO.	DATE	DESCRIPTION
		DRAFT

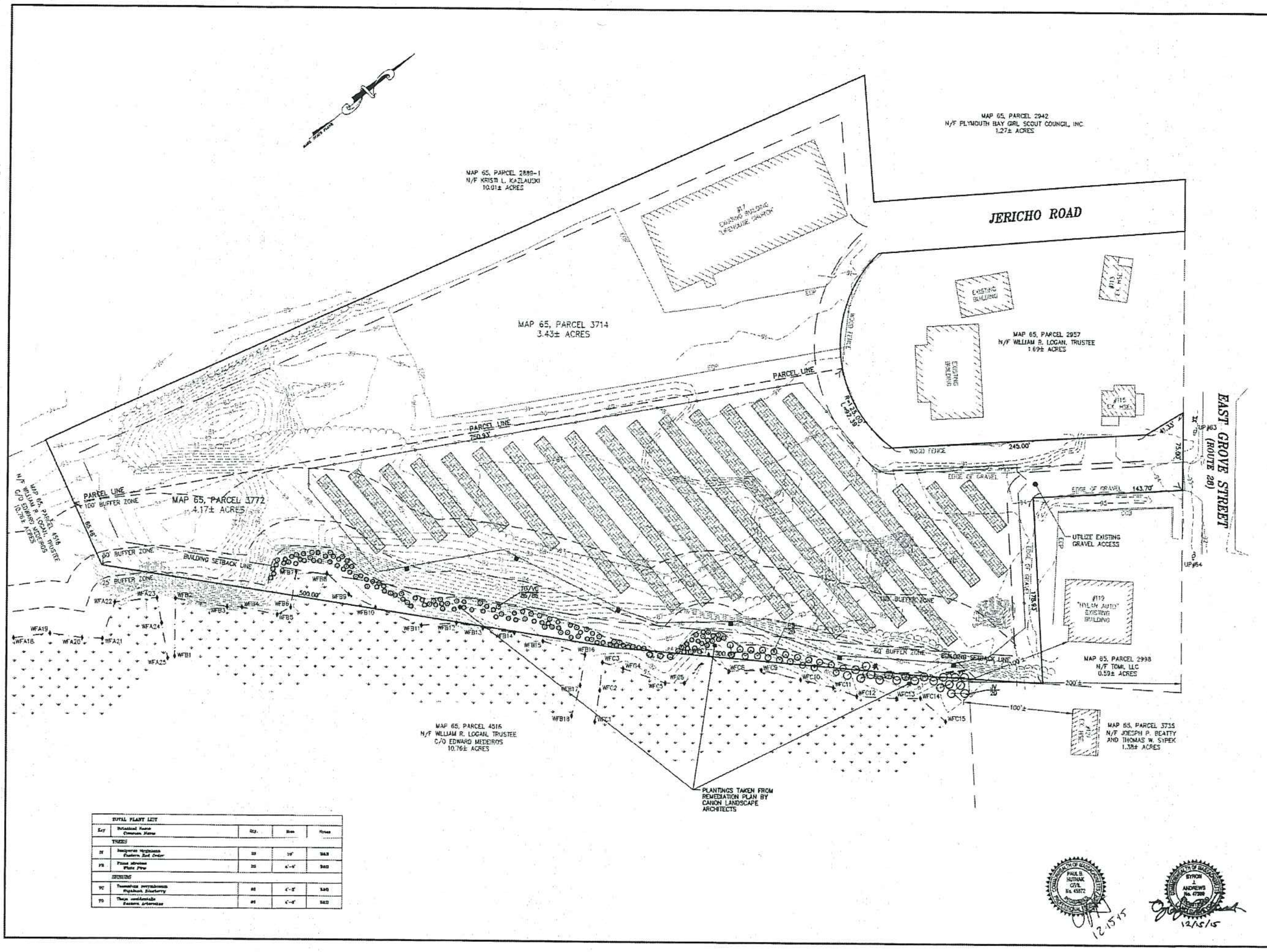
CAD FILE	...\dwg\17 JERICHO RD_SP-R1.dwg
DRAWN BY	PRS, SJO
CHECKED BY	SJA, PSH
DATE	DECEMBER 15, 2015
PROJECT NO.	2015-060

GRAPHIC SCALE
(IN FEET)
1 inch = 40 feet

SHEET TITLE

PLAN SHOWING TREES CUT BEYOND APPROVED LIMIT OF WORK

DRAWING NO.
CR-1.0



Andrews Survey & Engineering, Inc.
Land Surveying - Civil Engineering - Site Planning

P.O. Box 312, 104 Mendon Street
Uxbridge, Massachusetts 01569-0312
P: 508-278-3897 F: 508-278-2289

PROJECT:
GROUND MOUNTED SOLAR ELECTRIC
GENERATION FACILITY
17 JERICHO ROAD
MIDDLEBOROUGH, MA 02346

APPLICANT:
RENEWABLE GENERATION (MA), LLC
77 POND AVENUE, SUITE 101
BROOKLINE, MA 02445

REVISIONS

NO.	DATE	DESCRIPTION
		DRAFT

CAD FILE	..\dwg\17 JERICHO RD_CONSTRUCTION.dwg
DRAWN BY	TRB, SJO
CHECKED BY	BJA, PBH
DATE	DECEMBER 15, 2015
PROJECT NO.	2015-060

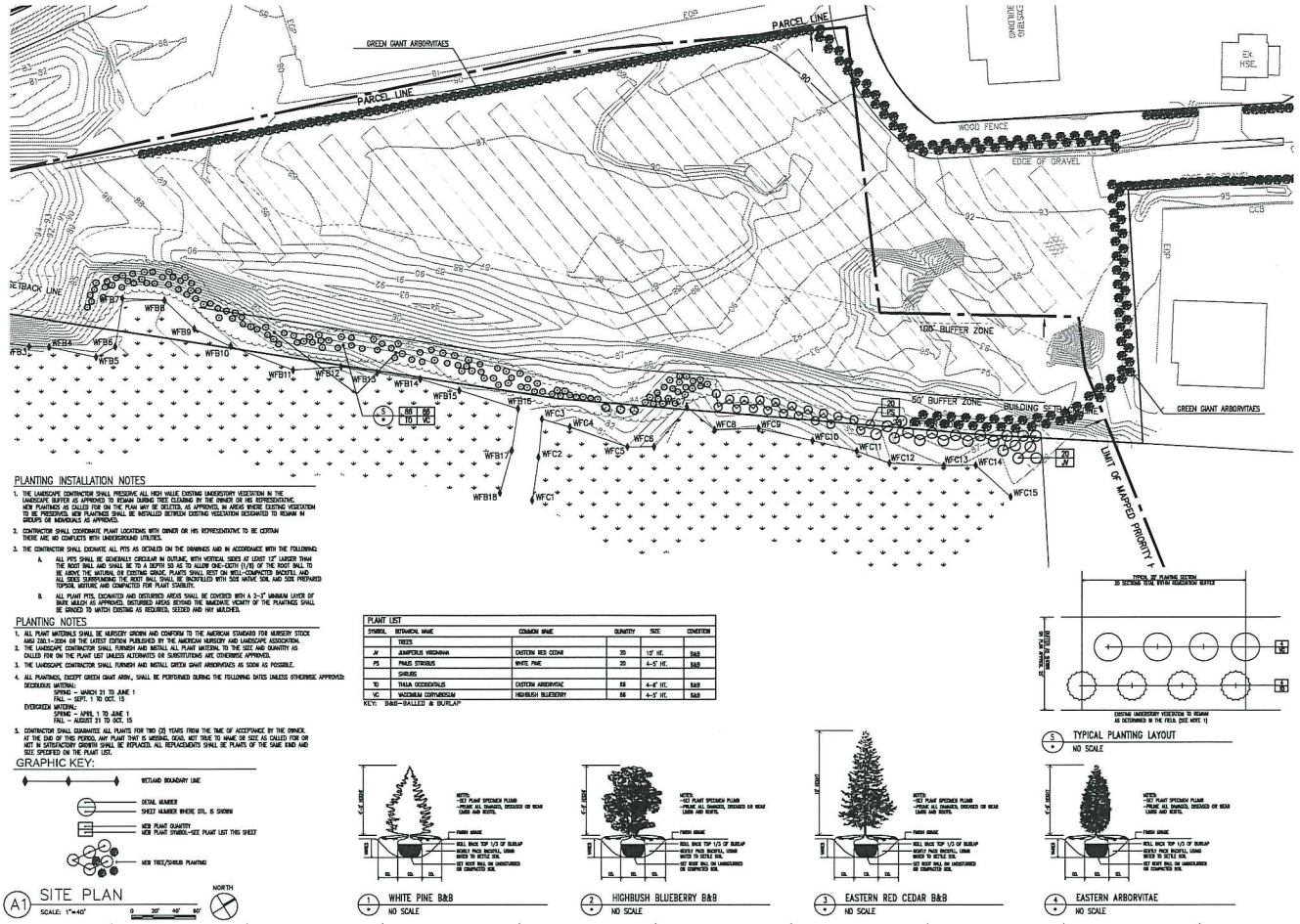
GRAPHIC SCALE
(IN FEET)
1 inch = 40 feet

SHEET TITLE

REMEDIATION PLAN

DRAWING NO.

CR-2.0



PLANTING INSTALLATION NOTES

1. THE LANDSCAPE CONTRACTOR SHALL PRESERVE ALL HIGH VALUE EXISTING UNDERSTORY VEGETATION IN THE LANDSCAPE BUFFER AS APPROVED TO REMAIN DURING TREE CLEARING BY THE OWNER OR HIS REPRESENTATIVE. NEW PLANTINGS AS CALLED FOR ON THE PLAN MAY BE DELETED, AS APPROVED, IN AREAS WHERE EXISTING VEGETATION TO BE PRESERVED. NEW PLANTINGS SHALL BE INSTALLED BETWEEN EXISTING VEGETATION DESIGNATED TO REMAIN IN GROUPS OR MONUMENTS AS APPROVED.
2. CONTRACTOR SHALL COORDINATE PLANT LOCATIONS WITH OWNER OR HIS REPRESENTATIVE TO BE CERTAIN THERE ARE NO CONFLICTS WITH UNDERGROUND UTILITIES.
3. THE CONTRACTOR SHALL EXCAVATE ALL PITS AS DETAILED ON THE DRAWINGS AND IN ACCORDANCE WITH THE FOLLOWING:
   A. ALL PITS SHALL BE GENERALLY CIRCULAR IN OUTLINE, WITH VERTICAL SIDES AT LEAST 12" LARGER THAN THE ROOT BALL AND SHALL BE TO A DEPTH SO AS TO ALLOW ONE-EIGTH (1/8) OF THE ROOT BALL TO BE ABOVE THE NATURAL OR EXISTING GRADE. PLANTS SHALL REST ON WELL-COMPACTED BACKFILL AND ALL SIDES SURROUNDING THE ROOT BALL SHALL BE BACKFILLED WITH SOIL MIXTURE AND SIDE PREPARED TOPSOIL MIXTURE AND COMPACTED FOR PLANT STABILITY.
   B. ALL PLANT PITS, EXCAVATED AND DISTURBED AREAS SHALL BE COVERED WITH A 2-3" MINIMUM LAYER OF BARK MULCH AS APPROVED. DISTURBED AREAS BEYOND THE IMMEDIATE VICINITY OF THE PLANTINGS SHALL BE GRADED TO MATCH EXISTING AS REQUIRED, SEEDED AND HAY MULCHED.

PLANTING NOTES

1. ALL PLANT MATERIALS SHALL BE NURSERY GROWN AND CONFORM TO THE AMERICAN STANDARD FOR NURSERY STOCK ANSI Z60.1—2004 OR THE LATEST EDITION PUBLISHED BY THE AMERICAN NURSERY AND LANDSCAPE ASSOCIATION.
2. THE LANDSCAPE CONTRACTOR SHALL FURNISH AND INSTALL ALL PLANT MATERIAL TO THE SIZE AND QUANTITY AS CALLED FOR ON THE PLANT LIST UNLESS ALTERNATES OR SUBSTITUTIONS ARE OTHERWISE APPROVED.
3. THE LANDSCAPE CONTRACTOR SHALL FURNISH AND INSTALL GREEN GIANT ARBORVITAES AS SOON AS POSSIBLE.
4. ALL PLANTINGS, EXCEPT GREEN GIANT ARBV., SHALL BE PERFORMED DURING THE FOLLOWING DATES UNLESS OTHERWISE APPROVED:
   DECIDUOUS MATERIAL:
   SPRING – MARCH 21 TO JUNE 1
   FALL – SEPT. 1 TO OCT. 15
   EVERGREEN MATERIAL:
   SPRING – APRIL 1 TO JUNE 1
   FALL – AUGUST 21 TO OCT. 15
5. CONTRACTOR SHALL GUARANTEE ALL PLANTS FOR TWO (2) YEARS FROM THE TIME OF ACCEPTANCE BY THE OWNER. AT THE END OF THIS PERIOD, ANY PLANT THAT IS MISSING, DEAD, NOT TRUE TO NAME OR SIZE AS CALLED FOR OR NOT IN SATISFACTORY GROWTH SHALL BE REPLACED. ALL REPLACEMENTS SHALL BE PLANTS OF THE SAME KIND AND SIZE SPECIFIED ON THE PLANT LIST.

GRAPHIC KEY:

WETLAND BOUNDARY LINE
DETAIL NUMBER
SHEET NUMBER WHERE DTL. IS SHOWN
NEW PLANT QUANTITY
NEW PLANT SYMBOL–SEE PLANT LIST THIS SHEET
NEW TREE/SHRUB PLANTING

PLANT LIST

SYMBOL	BOTANICAL NAME	COMMON NAME	QUANTITY	SIZE	CONDITION
	TREES				
JV	JUNIPERUS VIRGINIANA	EASTERN RED CEDAR	20	15' HT.	B&B
PS	PINUS STROBUS	WHITE PINE	20	4–5' HT.	B&B
	SHRUBS				
TO	THUJA OCCIDENTALIS	EASTERN ARBORVITAE	88	4–6' HT.	B&B
VC	VACCINIUM CORYMBOSUM	HIGHBUSH BLUEBERRY	88	4–5' HT.	B&B

KEY: B&B–BALLED & BURLAP

A1 SITE PLAN
SCALE: 1"=40'
0 20' 40' 60'
NORTH

1 WHITE PINE B&B — NO SCALE
2 HIGHBUSH BLUEBERRY B&B — NO SCALE
3 EASTERN RED CEDAR B&B — NO SCALE
4 EASTERN ARBORVITAE — NO SCALE

5 TYPICAL PLANTING LAYOUT — NO SCALE

WILLIAM A. CANON
LANDSCAPE ARCHITECTURE
ENVIRONMENTAL DESIGN
COMMUNITY PLANNING
158 NORTHAMPTON STREET
EASTHAMPTON, MA 01027
TEL. 413-527-8533
FAX. 413-527-8536
OFFICE@CANONLA.COM

LANDSCAPE ARCHITECT

CONSULTANTS

BY	DATE	DESCRIPTION
SP	12/2/15	PRELIMINARY REMEDIATION PLAN

PROJECT

PROJECT NO. 15.1201

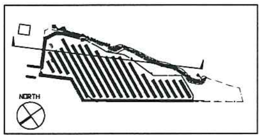
CAD FILE

SHEET TITLE

REMEDIATION PLAN

L-1.0

SHEET NO. 1 OF 2



LOCUS MAP

A1 SITE ELEVATION

SCALE: 1"=30'

A2 SITE ELEVATION

SCALE: 1"=10'

WILLIAM A. CANON
LANDSCAPE ARCHITECTURE
ENVIRONMENTAL DESIGN
COMMUNITY PLANNING
158 NORTHAMPTON STREET
EASTHAMPTON, MA 01027
TEL. 413-527-6535
FAX. 413-527-8389
OFFICE@CANONLA.COM

LANDSCAPE ARCHITECT

CONSULTANTS

MARK	DATE	DESCRIPTION
SP	12/3/15	SITE ELEVATIONS
		DRAFT

PROJECT NO. 15.1201

CAD FILE

SHEET TITLE

SITE ELEVATIONS

L- 1.1

SHEET NO. 2 OF 2

$58.00 Balance

RECEIVED
DEC 14 2015
MIDDLEBORO BOARD OF ASSESSORS

RECEIVED
23:37 pm
DEC 18 2015
Allison J. Ferreira
TOWN CLERK

CERTIFIED ABUTTERS LIST REQUEST

Date: 12/11/15

LOCUS: Map 65 Lot 2916 Unit

Property Address: East Grove St

Board or Office For: BOS

Subdivision/Reason for Project: Remediation Plan

Owner's Name(s) & Address: Jericho Christian Fellowship, Inc. (Lifehouse Church)

17 Jericho Rd

Applicant Name & Address: (if different from Owner) Jacob Laskin, Renewable Generation

77 Pond Ave Suite 101, Brookline MA 02445

CONTACT NAME & PHONE #: Jacob Laskin (617) 942-2733

*Selectman's Office, Zoning Board and Planning Board require a certified abutter's list of all abutters within 300' in all directions including across the street. If it is for a Liquor License, all schools and churches within 500' will be included on the list.
*Planning Board also requires a Form E to be included with the submission of the list.
*Road Completion will include every parcel that abuts the roadway (locus lots) and every direct abutter to those lots (non-locus lots). The locus and non-locus lots will be listed on separate pages.

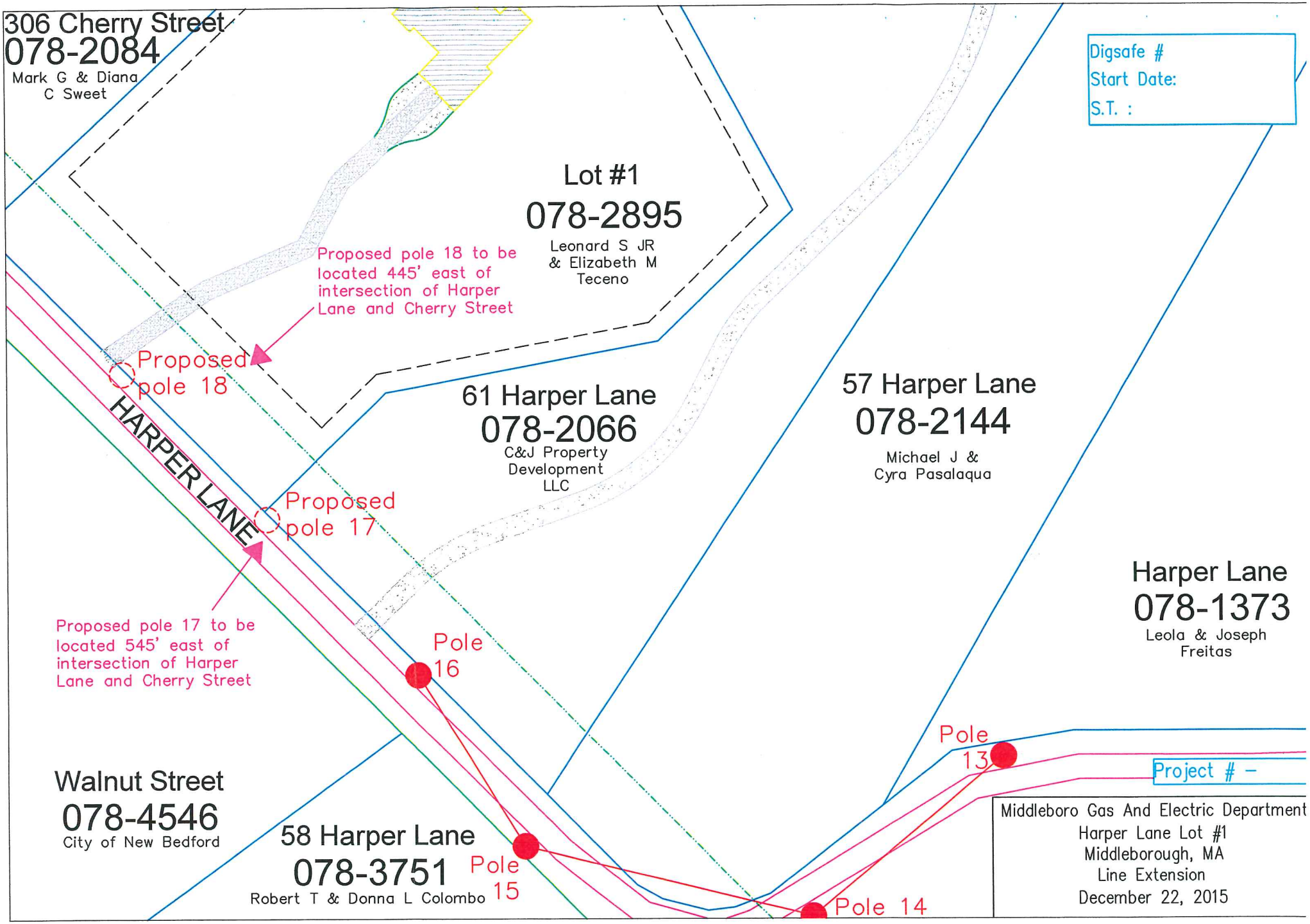
FEES: The Abutters list fee is $25.00 for the first page or the first 13 abutters and then $2.00 for each additional abutter on the remaining pages. The first $25.00 is due with the submission of the request.

NO REFUNDS: Once the abutter's list request is submitted and completed by this office, absolutely no refunds will be given.

THE CERTIFICATION MAY TAKE UP TO 10 WORKING DAYS: The Contact Person will be notified once the certified abutter's list is complete.

A hearing will be held in the Selectmen's Meeting Room at the Town Hall, 10 Nickerson Avenue, Middleborough, MA on Monday, February 22, 2016 at 8:00 PM, for the purpose of discussing a petition filed by the Middleborough Gas & Electric Department and Verizon New England, Inc. to install poles 17 and 18 on Harper Lane. This installation is necessary in order to provide service to a new home under construction. Anyone desiring to be heard on this matter should appear at the time and place designated.

Allin Frawley
Leilani Dalpe
John M. Knowlton
Diane C. Stewart
Stephen J. McKinnon
BOARD OF SELECTMEN


306 Cherry Street
078-2084
Mark G & Diana C Sweet
Lot #1
078-2895
Leonard S JR & Elizabeth M Teceno
Proposed pole 18 to be located 445' east of intersection of Harper Lane and Cherry Street
Proposed pole 18
HARPER LANE
61 Harper Lane
078-2066
C&J Property Development LLC
57 Harper Lane
078-2144
Michael J & Cyra Pasalaqua
Proposed pole 17
Proposed pole 17 to be located 545' east of intersection of Harper Lane and Cherry Street
Pole 16
Harper Lane
078-1373
Leola & Joseph Freitas
Pole 13
Walnut Street
078-4546
City of New Bedford
58 Harper Lane
078-3751
Robert T & Donna L Colombo
Pole 15
Pole 14
Digsafe #
Start Date:
S.T. :
Project # -
Middleboro Gas And Electric Department
Harper Lane Lot #1
Middleborough, MA
Line Extension
December 22, 2015

Town Copy

MIDDLEBOROUGH GAS & ELECTRIC DEPARTMENT

Electric Division
37 Wareham Street, Middleborough, MA 02346
(508) 947-3023

December 28, 2015

Board of Selectmen
Town of Middleboro
Middleboro, MA 02346

Dear Selectmen,

Enclosed, you will find a petition from the Middleborough Gas & Electric Department and Verizon New England INC. proposing to install poles 17 and 18 Harper Lane, Middleboro. Please present this petition at the next Board meeting for usual course of action relative to granting.

Sincerely,

William Taylor

William Taylor
Electric Division Manager

PETITION FOR JOINT OR IDENTICAL POLE LOCATIONS

December 28, 2015

To the Board of Selectmen in Middleborough, Massachusetts.

Middleboro Gas & Electric Department and Verizon New England INC request permission to locate poles, wires, cables and fixtures including the necessary anchors, guys and other such sustaining and protecting fixtures to be owned and used in common by your petitioners, along and across the following public way or ways:

Harper Lane, 2 new pole locations.

The petition proposes to place two (2) new pole on Harper Lane, pole 17 and 18 to provide service to new home under construction.

Wherefore they pray that after due notice and hearing as provided by law, they be granted joint or identical locations for and permission to erect and maintain poles, wires and cables, together with anchors, guys and other such sustaining and protecting fixtures as they may find necessary, said poles to be erected substantially in accordance with the plan filed herewith marked-MG&E. No. **2015-05** dated **12/28/15**

Also for permission to lay and maintain underground laterals cables and wires in the above or intersecting public ways for the purpose of making connections with such poles and buildings as each of said petitioners may desire for distributing purposes.

Your petitioners agree to reserve space for one crossarm at a suitable point on each of said poles for the fire, police, telephone and telegraph signal wires belonging to the municipality and used by it exclusively for municipal purposes.

VERIZON NEW ENGLAND INC.

By Daryl Crossman

Manager Rights of Way

Middleboro Gas & Electric

By William E. Taylor

William E. Taylor, Division Manager

ORDER FOR JOINT OR IDENTICAL POLE LOCATIONS

In Board of Selectmen of the Town of Middleboro, Massachusetts,

Notice having been given and a public hearing held, as provided by law, IT IS HEREBY ORDERED;

That the Middleboro Gas & Electric Light Company and Verizon New England INC. be and they are hereby granted joint or identical locations for and permission to erect and maintain poles and their respective wires and cables to be placed thereon, together with anchors guys and other such sustaining and protecting fixtures as said Companies may deem necessary, in public way or ways hereinafter referred to, as requested in petition of said Companies date the 28th day of December 2015.

All construction under this order shall be in accordance with the following conditions:
Poles shall be of sound timber and reasonably straight and shall be set substantially at the points indicated upon the plan marked-MG&E., No. **2015-05** Dated **12/28/15**
-Filed with said petition. There may be attached to said poles by said VERIZON NEW ENGLAND INC. not to exceed 40 wires and 4 cables and by said Middleboro Gas & Electric not to exceed the necessary wires, cables and fixtures and all of said wires and cables shall be placed at a height of not less than 18 feet from the ground at highway crossings and not less than 16 feet from the ground elsewhere.

The following are the public ways or parts of ways along which the poles above referred to may be erected, and the number of poles which may be erected thereon under this order: -

Street name: Harper Lane.

Description of work: The petition proposes to place new poles 17 and 18 to provide service to new home under construction.

Also that permission be and hereby is granted to each of said Companies to lay and maintain underground laterals, cables and wires in the above or intersecting public ways for the purpose of making connections with such poles and buildings as each may desire for distributing purposes.

I hereby certify that the foregoing order was adopted at a meeting of the Board of Selectmen of the Town of Middleboro, Massachusetts held on the _____ day of _____ 2015.

_____
Clerk of Selectman

We hereby certify that on _____ 2015, at _____ o'clock _____ m., at _____ a public hearing was held on the petition of the Middleboro Gas & Electric Department and Verizon New England INC.
For permission to erect the poles, wires, cables, fixtures and connections described in the order herewith recorded, and that we mailed at least seven days before said hearing a written notice of

the time and place of said hearing to each of the owners of real estate (as determined by the last preceding assessment for taxation) along the ways or parts of ways upon which the Companies are permitted to erect poles, wires, cables, fixtures and connections under said order. And that thereupon said order was duly adopted.

_____

_____

_____

Selectman of the Town of _____
Massachusetts

CERTIFICATE

I hereby certify that the foregoing is a true copy of a joint location order and certificate of hearing with notice adopted by the Board of Selectmen of the Town of _____ Massachusetts, on the _____ day of _____ 2015, and recorded with the records of location orders of said Town, Book _____, Page _____. This certified copy is made under the provisions of Chapter 166 of General Laws and any additions thereto or amendments thereof.

Attest:

_____
Town Clerk

CRANBERRY CAPITAL
OF THE WORLD

Phone: 508-946-2405
Fax: 508-946-0058

Town of Middleborough

Massachusetts

Board of Selectmen

The Board of Selectmen, acting in its capacity as the Board of Health, will hold a public hearing in the Selectmen's Meeting Room at the Town Hall, 10 Nickerson Avenue, Middleborough, MA on Monday, February 22, 2016 at 8:15 PM, at the request of the Health Officer, to consider approval of a variance request by Outback Engineering, Inc. for proposed soil absorption system at Map 016, Lot 1716, Fuller Street. Anyone wishing to be heard on this matter should appear at the time and place designated.

Allin Frawley
Leilani Dalpe
John M. Knowlton
Diane Stewart
Stephen J. McKinnon
BOARD OF SELECTMEN

Outback Engineering Incorporated

165 East Grove Street
Middleboro, MA 02346
Tel # 508-946-9231 **Fax # 508-947-8873**
Civil Engineers + Land Surveyors + Wetland Scientists + Soils Laboratory

January 8, 2016

Middleborough Board of Selectmen
10 Nickerson Avenue
Middleborough, MA 02346

RE: **Variance Request, Fuller Street, Middleboro, Assessors ID Map: 016 Lot: 1716**

Dear Board Members:

On behalf of the owner, Jonathan A. Shaw and the applicant, Gene Main, we are hereby requesting a variance from the Town of Middleborough Health Department Regulation 5.003 (A)(1)(a), which regulates the allowable effluent loading rates for soil absorption systems with a maximum allowable percolation rate of 30 minutes per inch.

On October 7, 2015, Outback Engineering, Inc. conducted percolation tests on the above mentioned site and obtained a perc rate of 34 minutes per inch on test pits 1 and 2. The Site is suitable for a septic system under 310 CMR 15.245(1) which allows for a perc rate up to 60 minutes per inch. Using the greater perc rate will not adversely impact any abutting properties, the environment, or groundwater but will actually provide greater treatment of effluent as it slowly percolates thru the soil.

We look forward to meeting with the Board to discuss this request and should you have any questions, require additional information, please do not hesitate to contact me at (508) 946-9231.

Sincerely,
Outback Engineering, Inc.

Jeffrey Youngquist, P.L.S.
President

TOWN OF MIDDLEBOROUGH
HEALTH DEPARTMENT

Jeanne Spalding
Health Officer

PH: 508-946-2408
FX: 508-946-2321

REGULATION

1.000 Variances

1.001 Authority: This regulation is promulgated pursuant to the authority granted to the Middleborough Board of Health by Massachusetts General Laws, Chapter 111, Section 31.

A) Review and Issuance Authority:

The Middleborough Board of Health or Middleborough Health Officer may vary the application of any provision of a regulation adopted by the Board of Health pursuant to Massachusetts General Laws, Chapter 111, Section 31. A variance may be granted only when in the opinion of the Board of Health or Health Officer –

(1) The person requesting a variance established that enforcement of the health regulation provision from which a variance is sought would be manifestly unjust; and

(2) The person requesting a variance established that a reasonable level of protection of public health and/or public safety can be achieved without enforcement of the provision from which a variance is sought.

B) Variance Request:

Every request for a variance shall be in writing, shall state the specific provision of a regulation from which a variance is sought and include in the request facts, reason(s) and argument why enforcement of the provision would be manifestly unjust and facts, reason(s) and argument why and how a reasonable level of protection of public health and/or public safety can be achieved without enforcement of the provision.

C) Appeal:

Any person aggrieved by the decision of the Health Officer on a request for variance shall be entitled to a hearing before the Board of Health and such person shall file with the Board of Health within seven days after notice of decision, a written request for hearing.

Chairman

Date Regulation Adopted: 8.11.14

Effective Date of Regulation: 9.1.14

Richard Farmer
61 Brookside Drive
Middleboro, MA 02346
508-923-9125
reclr@verizon.net

Memorandum For:	Board of Selectmen, Middleborough Massachusetts
From:	The Residents of Brookside Estates (Brookside Drive, Fidelity Lane)
Date:	February 11, 2016
RE:	Request for Board Involvement, Brookside Estates

I am here representing the residents of Brookside Estates (Brookside Drive and Fidelity Lane). We request the Board of Selectmen officially engage with the Planning Board to resolve the roadway issues within the development.

The roadways within Brookside Estates have catastrophically failed with portions of the roadways having collapsed in some areas. The failures center on underground drainage structures due to improper installation and construction methods.

Since 2010 the developer and the Planning Department have been at a stalemate regarding repair and completion of the roadways. During this time the conditions on the roadways have continued to degrade and pose a risk to the safety of the inhabitants traveling them.

In June of 2015, the residents received a letter from the attorney representing Funding Services Trust stating that the developer would no longer provide roadway repair or snow removal and they should turn to the Planning Board/Department for any concerns. He also stated that the town was holding monies to secure construction of the roadways and cited an ongoing dispute with the Planning Department.

In July the residents met with the Town Manager and Chairman of the Board of Selectman. The Vice Chair of the Board was also present. While the meeting was spirited at times, we left the meeting with an understanding that the town and residents would be working together to resolve the issues. As residents, who are directly impacted by the agreement between the town and developer we have a stake in resolving the issues.

Since then the residents have attempted to work with the Planning Board and department to understand the full scope of the problem and work in concert with the town to re-engage the developer. These attempts have been unsuccessful. The developer has chosen to remain in default of his agreement with the town and refused to fulfill his obligations as the owner of the roads.

We are asking the Board of Selectmen to become involved to place additional emphasis on finding a resolution to this issue. We understand that the Planning Board is a separate, elected body responsible for the administration of the Subdivision Control Law. The Board of Selectman does have the authority under the Mass General Law to investigate the issue and any actions recommended by the Planning Board may require your approval.

1. Construction at Brookside Estates began in 2003. Tibbets Engineering was engaged by the town to inspect construction of the project.

2. In a January 2004 correspondence from Tibbets Construction to the Town Planner cites several notifications to the Planning Department regarding settlements in the roadways:

    a. October 2003 Tibbets Engineering notified the Planning Department that the contractor was working weekends and nights and there was a potential for all installations may not be observed or monitored. Tibbets also states that backfilling of trenches was not being performed while Tibbets was on site.

    b. December 2003 notification to the Planning Department regarding concerns of numerous roadway settlements near drainage structures installation.

    c. Tibbets Engineering assessed that the causes of the roadway failures were due to poor drainage backfills and compaction compounded by the contractor's installation methods.

3. On March 21, 2004, A revised correspondence from Tibbets Engineering to the Planning Department also cites weather conditions during installation and compaction methods for trenched areas.

    a. Tibbets stated that drainage pipe installation for a specific portion of roadway was inspected for installation but backfilling was not witnessed iaw Planning Department Guidelines.

    b. Tibbets recommended excavating and compacting moderate settlement areas, which would allow for observation of backfill material.

4. In May of 2004 correspondence from Tibbets Engineering again refers to roadway settlements ranging from minor to moderate again attributing them to construction methods utilized during installation.

5. While we know that pavement issues were addressed several times, we have seen no indication that the installation, backfill or compaction of the drainage structures below grade were ever addressed by the developer.

6. The roadway suffered a collapse between 2009/2010. It was not until June 2011 when a video survey conducted found that the installation of drainage structures was incorrect and damaged in many areas.

7. Given the settlement issues with the roadways and focus on trenching, backfilling, and compaction it seems obvious that the integrity of drainage structures would be suspect.

8. Lot Releases for the development occurred from October 2004 through April 2006.

    a. It should be noted that the Form J, Release Form, specifically states that the ways and utilities have been completed/partially completed to the satisfaction of the Planning Board to serve adequately the lots specified in the lot release.

    b. The Subdivision Control Law also states that no more than 50% of the lots in any subdivision will be released until the base course of bituminous concrete has been installed and approved by the board. This would include approval of underground installations for drainage and utilities.

9. Correspondence from the Planning Department to the developer dated September 14, 2004 again cites further road settlement and failure. It also indicated that following:

    a. The Planning Department requested confirmation that detention basins and shoulder work be confirmed complete and in compliance prior to installing the binder.

    b. Paving occurred without adequate notice to the Planning Department prior to an inspection being held.

    c. A site Inspection was conducted by the Planning Department on September 13-14, ~~2005~~. 2004

    d. The correspondence addresses 11 areas and over 40 deficiencies particularly with detention basins.

    e. Of particular concern is a request by the Planning Department for the developer to have his engineer provides a list of non-compliant items rather than waiting for the Planning Department to find them in order to develop remedies.

    f. Inspite of this this correspondence, Lot 6 was released on October 19, 2004.

10. In a November 2004 correspondence from the Planning Department documents a meeting held with the developer regarding issues to be addresses prior to lot release. It again cites settlement and roadway failure.

    a. The correspondence cites some 41 outstanding issues to be addressed.

    b. Lots 1, 2, 3, 4, 5, and 13 were released on November 9, 2004, 5 days later.

11. In a January 3, 2005 correspondence from the Planning Department to the developer refers back to the November 2004 correspondence regarding deficiencies to be completed prior to lot release. It also requested, in writing, how these deficiencies have been addressed prior to a site inspection by the Planning Department. On February 1, 2005 Lots 7, 9, 11 were released.

12. This history concerns the residents for several reasons.

a. The Planning Board and Department have maintained that they do not perform inspections, they make observations.

i. The Subdivision Control Law requires inspections to be conducted at each stage of construction.

ii. Correspondence from the Planning Department and the written authorization for Tibbets Engineering specifically cites inspectors or inspections.

iii. The reliance of the Planning Department on the developer to identify deficiencies to be corrected.

b. The Planning Board and Department have stated they have no enforcement authority over the developer regarding construction other than the performance guarantee.

i. The residents have maintained that conditions for Lot Release would be a primary enforcement mechanism to ensure the developer completes his obligations to install the ways and utilities.

ii. The Planning Board appears to have changed their position as shown during the February 2, 2015 meeting where several members of the board cited lot release as "leverage" to ensure completion of items prior to lot release.

c. The Planning Board has maintained their reluctance to take over projects using the performance guarantee when developers fail to complete.

i. Recently the project at Fernway was taken over by the town and completed to allow acceptance of the road.

d. Inspite of the developer's clear intent to remain in breach of the agreement with the town:

i. No action has been taken against the surety, it is still being held by the town.

ii. No legal action has been taken against the developer for breach of covenant. The developer appears to remain solvent.

e. The project seems to have been allowed to expire.

i. The expiration for satisfactory completion of the streets and improvements for the project as listed on Form G was October 31, 2010. after which the

~~2004~~ Keep 2010

performance guarantee with all interest were specified the remain the sole property of the Town of Middleborough for completion of the ways and installation of services.

ii. Barring extension by the Planning Board the project sat for over 5 years.

iii. The Planning Board voted to extend approval of the project in November 2015 without holding a public hearing in accordance with the Subdivision Control law.

iv. On December 15, 2015 a public hearing was conducted and approval for the project extended to March 15, 2016.

f. The priority seems to be on getting the development built as planned. Given the developer's obvious intent to not re-engage with the project, the Planning Board has the authority to waive any regulations deemed to be in the public interest to deliver a safe stable road which the town can accept.