

## TOWN OF TYNGSBOROUGH

Office of the Selectmen

25 Bryants Lane

Tyngsborough, MA 01879

Tel: 978 649-2300 Ext. 100 Fax: 978 649-2320

03A

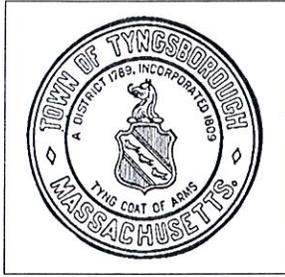
May 18, 2015

Town of Tyngsborough  
Legal Notice

The Board of Selectmen, Acting as the Special Permit Granting Authority will hold a public hearing on Monday, June 8, 2015 at 6:05 p.m. at the Tyngsborough Town Hall, 25 Bryants Lane. The hearing is at the request of Citizens Tyngsborough Solar, LLC for a Special Permit to construct a proposed Solar Facility on approximately 65 acre on the site of the former Charles George landfill an R-1 zoning districts located off of Dunstable and Cummings Roads, in Tyngsborough Massachusetts.

1<sup>st</sup> Publication Date – Monday, May 25, 2015

2<sup>nd</sup> Publication Date – Monday, June 01, 2015



***Town of Tyngsborough***  
***Office of the Town Collector & Parking Clerk***  
25 Bryant Lane - Tyngsborough, Massachusetts 01879-1042  
Phone: (978) 649-2300, Ext. 127 / Fax: (978) 649-2327  
E-mail: [gspickler@tyngsboroughma.gov](mailto:gspickler@tyngsboroughma.gov)  
Gene R. Spickler, CMMC – Collector & Parking Clerk

April 23, 2015

To: Tyngsborough Board of Selectmen  
C/O Curt Bellavance, Administrator

**RE: Citizens Tyngsborough Solar, LLC Special Permit Application Comments**

Dear Board of Selectmen;

No payments have been received for the FY 2015 RE Taxes on the parcels in this application.

In addition the five parcels mentioned in this application (plus 5 additional parcels that are not part of this application) are in Tax Title with the Treasurer's Office. They have all been in Tax Title for many years and a substantial amount of money is owed the Town.

Ch. 40, S. 57 allows the denial of permits for delinquent taxes and penalties that are more than 12 months past due. I would recommend denial of this application until all delinquent Tax Title amounts are paid, or a payment agreement is reached with the Treasurer's Office. I would also ask that the applicant be made aware that a permit may be suspended or revoked if the FY 2015 RE Taxes become more than 12 months past due.

Please contact this office if questions or we can be of further assistance.

Respectfully,

Gene R. Spickler, CMMC  
Town Collector & Parking Clerk



## ***Town of Tyngsborough Planning Board***

25 Bryants Lane,  
Tyngsborough, Massachusetts 01879-1003  
Office: (978) 649-2300 ext. 115  
Fax: (978) 649-2301

2015 APR 21 AM 11:04  
BOARD OF SELECTMEN  
TYNGSBOROUGH, MA.

April 21, 2015

Tyngsborough Board of Selectmen  
25 Bryants Lane  
Tyngsborough, MA 01879

RE: Proposed Solar Facility at Charles George Landfill

Honorable Board,

The Planning Board is in receipt of your Request for Comment regarding the above referenced project. The Planning Board supports this project; however, we urge the Board to collect all back taxes that are owed to the Town.

The Board of Selectmen should investigate the long term benefits to the Town from this project. In addition, since Tyngsborough is a designated Green Community, any opportunity to reduce our energy costs should be strongly considered. Therefore, any Special Permit should be conditioned with Town buildings being sourced from the power produced from the solar fields.

If you require any additional information, please feel free to contact the office at 978-649-2300, ext. 115.

Respectfully for the Planning Board,

*Pamela C. Berman*

Pamela Berman  
Administrative Assistant



# **Town of Tyngsborough**

## **Zoning Board of Appeals**

25 Bryants Lane  
Tyngsborough, Massachusetts 01879-1003  
Office: (978) 649-2300, ext. 115  
Fax: (978) 649-2301

2015 APR 21 AM 11:04  
BOARD OF SELECTMEN  
TYNGSBOROUGH, MA.

April 21, 2015

Tyngsborough Board of Selectmen  
25 Bryants Lane  
Tyngsborough, MA 01879

RE: Proposed Solar Facility at Charles George Landfill

Honorable Board,

We are in receipt of your Request for Comment regarding the above referenced project. The ZBA supports this project; however, we offer the following comments that the Board should consider before issuing a Special Permit.

1. It is critical that the integrity of the landfill cap be maintained during installation, operation, and any subsequent decommission of the solar field.
2. A procedure should be developed that will identify and report any breaches in the landfill cap during installation, operation, and subsequent decommission.
3. A bond should be considered for any equipment removal at the end of the lease term.
4. As part of the lease term an equipment removal list should include the following terms: ballast blocks, crushed stone, and crushed uncoated ABC.
5. Vehicular traffic should be prohibited on the landfill cap during installation, operation, and decommission of the solar field.
6. A 24-hour security surveillance system should be considered for the site entrance, and several other locations within the solar array field.

In addition, the ZBA strongly encourages the Board of Selectmen to condition any Special Permit with payment of all back taxes owed to the Town, and that ALL Town electric meters, including all buildings and street lights, be covered by the power that is produced from the solar field.

If you require any additional information, please feel free to contact the office at 978-649-2300, ext. 115.

Respectfully for the Zoning Board of Appeals,

Pamela Berman  
Administrative Assistant

REQUEST FOR COMMENT FORM

2015 APR 24 AM 11:08  
BOARD OF SELECTMEN  
TYNGSBOROUGH, MA.

To: All Departments, Boards, and Committees  
From: Board of Selectmen  
Date: 4 / 10 / 15  
Re: Request for Comment

TYPE OF LICENSE: Special Permit Application

APPLICANT(S) NAME: Citizens Tyngsborough Solar, LLC

OWNER(S) NAME:

NAME OF BUSINESS: Citizens Tyngsborough Solar, LLC

BUSINESS ADDRESS: 88 Black Falcon Avenue Suite 342  
Boston, MA 02210

Department:

The Board of Selectmen has received an application for a Solar Facility (Public or Private Utility Facility) under section 1.16.00 of the zoning by-laws on Lot 5, approximately 65 acres at the Charles George Landfill, Dunstable Road.

Please return by: 4 / 23 / 15.

If your Agency Must take action prior to issuance of this license please so indicate action.

COMMENTS: The Assessors believe this is a viable project however they are concerned about the outstanding taxes due to the Town being resolved.

Prepared by: Lauren Wockel (Print) Date: 4 / 24 / 15

Signature: [Handwritten Signature]

Department Head: \_\_\_\_\_ (Print) Date: \_\_\_ / \_\_\_ / \_\_\_

Signature: \_\_\_\_\_

- 
- Cc:  ACO  Conservation  TFD  
 Assessors  DPW  TPD  
 ZBA  Historical  Town Clerk  
 Health  Planning Bd.  Other (\_\_\_\_\_)  
 Bldg. Comm.  Planner  
 Collector  Sewer Comm.

REQUEST FOR COMMENT FORM

2015 APR 13 AM 9:33

To: All Departments, Boards, and Committees  
From: Board of Selectmen  
Date: 4 / 10 / 15  
Re: Request for Comment

BOARD OF SELECTMEN  
TYNGSBOROUGH, MA.

TYPE OF LICENSE: Special Permit Application

APPLICANT(S) NAME: Citizens Tyngsborough Solar, LLC

OWNER(S) NAME:

NAME OF BUSINESS: Citizens Tyngsborough Solar, LLC

BUSINESS ADDRESS: 88 Black Falcon Avenue Suite 342  
Boston, MA 02210

Department:

The Board of Selectmen has received an application for a Solar Facility (Public or Private Utility Facility) under section 1.16.00 of the zoning by-laws on Lot 5, approximately 65 acres at the Charles George Landfill, Dunstable Road.

Please return by: 4 / 23 / 15.

If your Agency Must take action prior to issuance of this license please so indicate action.

COMMENTS: A notice of intent may not be necessary - However - Local Stormwater Permitting will be Required.

Prepared by: Mario, M.S. (Print)  
Signature: [Signature]

Date: 4/9/15

Department Head: Mario, M.S. (Print)  
Signature: [Signature]

Date: 4/9/15

- |     |                                      |  |  |
|-----|--------------------------------------|--|--|
| Cc: | <input type="checkbox"/> ACO         | <input checked="" type="checkbox"/> Conservation | <input type="checkbox"/> TFD           |
|     | <input type="checkbox"/> Assessors   | <input type="checkbox"/> DPW                     | <input type="checkbox"/> TPD           |
|     | <input type="checkbox"/> ZBA         | <input type="checkbox"/> Historical              | <input type="checkbox"/> Town Clerk    |
|     | <input type="checkbox"/> Health      | <input type="checkbox"/> Planning Bd.            | <input type="checkbox"/> Other (_____) |
|     | <input type="checkbox"/> Bldg. Comm. | <input type="checkbox"/> Planner                 |  |
|     | <input type="checkbox"/> Collector   | <input type="checkbox"/> Sewer Comm.             |  |



REQUEST FOR COMMENT FORM

2015 APR 13 AM 9:32  
BOARD OF SELECTMEN  
TYNGSBOROUGH, MA.

To: All Departments, Boards, and Committees  
From: Board of Selectmen  
Date: 4 / 10 / 15  
Re: Request for Comment

TYPE OF LICENSE: Special Permit Application

APPLICANT(S) NAME: Citizens Tyngsborough Solar, LLC

OWNER(S) NAME:

NAME OF BUSINESS: Citizens Tyngsborough Solar, LLC

BUSINESS ADDRESS: 88 Black Falcon Avenue Suite 342  
Boston, MA 02210

Department:

The Board of Selectmen has received an application for a Solar Facility (Public or Private Utility Facility) under section 1.16.00 of the zoning by-laws on Lot 5, approximately 65 acres at the Charles George Landfill, Dunstable Road.

Please return by: 4 / 23 / 15.

If your Agency Must take action prior to issuance of this license please so indicate action.

COMMENTS: no Advers Comments @ This Time.

Prepared by: Paul Welcome (Print) Date: 4 / 10 / 15  
Signature: [Signature]

Department Head: \_\_\_\_\_ (Print) Date: \_\_\_ / \_\_\_ / \_\_\_  
Signature: \_\_\_\_\_

- |     |   |                                       |  |
|-----|---|---------------------------------------|--|
| Cc: | <input type="checkbox"/> ACO                    | <input type="checkbox"/> Conservation | <input type="checkbox"/> TFD           |
|     | <input type="checkbox"/> Assessors              | <input type="checkbox"/> DPW          | <input type="checkbox"/> TPD           |
|     | <input type="checkbox"/> ZBA                    | <input type="checkbox"/> Historical   | <input type="checkbox"/> Town Clerk    |
|     | <input type="checkbox"/> Health                 | <input type="checkbox"/> Planning Bd. | <input type="checkbox"/> Other (_____) |
|     | <input checked="" type="checkbox"/> Bldg. Comm. | <input type="checkbox"/> Planner      |  |
|     | <input type="checkbox"/> Collector              | <input type="checkbox"/> Sewer Comm.  |  |

REQUEST FOR COMMENT FORM

2015 APR 13 PM 1:46  
BOARD OF SELECTMEN  
TYNGSBOROUGH, MA.

To: All Departments, Boards, and Committees  
From: Board of Selectmen  
Date: 4 / 10 / 15  
Re: Request for Comment

TYPE OF LICENSE: Special Permit Application

APPLICANT(S) NAME: Citizens Tyngsborough Solar, LLC

OWNER(S) NAME:

NAME OF BUSINESS: Citizens Tyngsborough Solar, LLC

BUSINESS ADDRESS: 88 Black Falcon Avenue Suite 342  
Boston, MA 02210

Department:

The Board of Selectmen has received an application for a Solar Facility (Public or Private Utility Facility) under section 1.16.00 of the zoning by-laws on Lot 5, approximately 65 acres at the Charles George Landfill, Dunstable Road.

Please return by: 4 / 23 / 15.

If your Agency Must take action prior to issuance of this license please so indicate action.

COMMENTS: Highway Dept. Has no Comment.

Prepared by: Jim Hustrip (Print)

Date: 4/13/15

Signature: James R. Hustrip

Department Head: Jim Hustrip (Print)

Date: 4/13/15

Signature: James R. Hustrip

- |     |                                      |   |  |
|-----|--------------------------------------|---|--|
| Cc: | <input type="checkbox"/> ACO         | <input type="checkbox"/> Conservation   | <input type="checkbox"/> TFD           |
|     | <input type="checkbox"/> Assessors   | <input checked="" type="checkbox"/> DPW | <input type="checkbox"/> TPD           |
|     | <input type="checkbox"/> ZBA         | <input type="checkbox"/> Historical     | <input type="checkbox"/> Town Clerk    |
|     | <input type="checkbox"/> Health      | <input type="checkbox"/> Planning Bd.   | <input type="checkbox"/> Other (_____) |
|     | <input type="checkbox"/> Bldg. Comm. | <input type="checkbox"/> Planner        |  |
|     | <input type="checkbox"/> Collector   | <input type="checkbox"/> Sewer Comm.    |  |

REQUEST FOR COMMENT FORM

To: All Departments, Boards, and Committees  
From: Board of Selectmen  
Date: 4 / 10 / 15  
Re: Request for Comment

2015 APR 14 AM 9:45  
BOARD OF SELECTMEN  
TYNGSBOROUGH, MA.

TYPE OF LICENSE: Special Permit Application

APPLICANT(S) NAME: Citizens Tyngsborough Solar, LLC

OWNER(S) NAME:

NAME OF BUSINESS: Citizens Tyngsborough Solar, LLC

BUSINESS ADDRESS: 88 Black Falcon Avenue Suite 342  
Boston, MA 02210

Department:

The Board of Selectmen has received an application for a Solar Facility (Public or Private Utility Facility) under section 1.16.00 of the zoning by-laws on Lot 5, approximately 65 acres at the Charles George Landfill, Dunstable Road.

Please return by: 4 / 23 / 15.

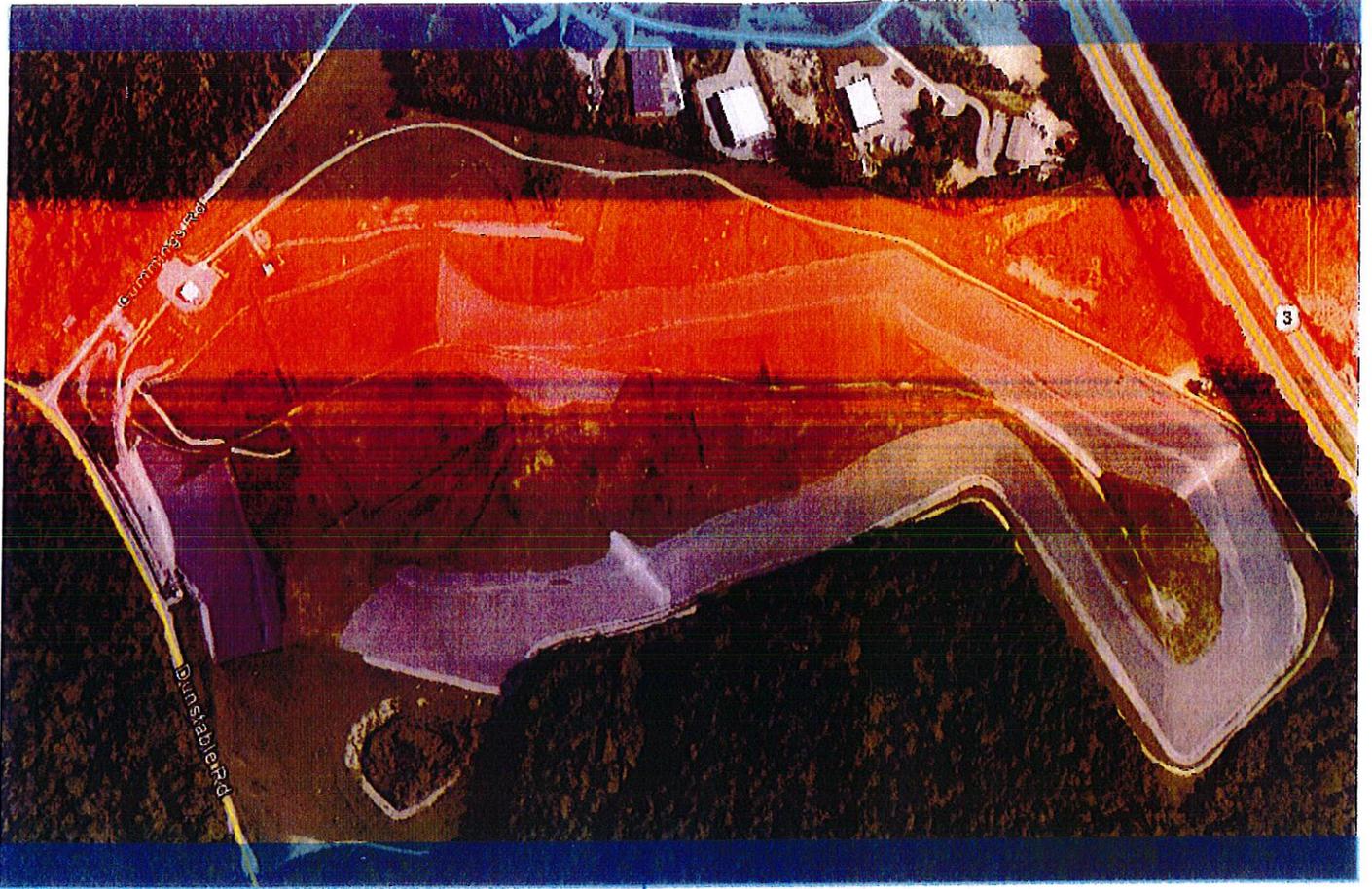
If your Agency Must take action prior to issuance of this license please so indicate action.

COMMENTS: No comment

Prepared by: \_\_\_\_\_ (Print) Date: \_\_\_ / \_\_\_ / \_\_\_  
Signature: \_\_\_\_\_

Department Head: PAUL PROVENCEN (Print) Date: 4 / 14 / 15  
Signature: Paul Provencen

- |     |                                      |   |  |
|-----|--------------------------------------|---|--|
| Cc: | <input type="checkbox"/> ACO         | <input type="checkbox"/> Conservation           | <input type="checkbox"/> TFD           |
|     | <input type="checkbox"/> Assessors   | <input type="checkbox"/> DPW                    | <input type="checkbox"/> TPD           |
|     | <input type="checkbox"/> ZBA         | <input type="checkbox"/> Historical             | <input type="checkbox"/> Town Clerk    |
|     | <input type="checkbox"/> Health      | <input type="checkbox"/> Planning Bd.           | <input type="checkbox"/> Other (_____) |
|     | <input type="checkbox"/> Bldg. Comm. | <input type="checkbox"/> Planner                |  |
|     | <input type="checkbox"/> Collector   | <input checked="" type="checkbox"/> Sewer Comm. |  |



**Tighe&Bond**

Tyngsborough Solar Project  
Tyngsborough, MA

**Special Permit  
Application**

Prepared For:

**Tyngsborough Solar, LLC**

April 2015

BOARD OF SELECTMEN  
TYNGSBOROUGH, MA.

2015 APR -8 PM 3:36

C-0917-09-01-02  
April 8, 2015



Tyngsborough Board of Selectmen  
Tyngsborough Town Hall  
25 Bryants Lane  
Tyngsborough, MA 01879

Re: **Tyngsborough Solar Project - Special Permit Application**

To the Board of Selectmen of the Town of Tyngsborough:

On behalf of Tyngsborough Solar LLC (Tyngsborough Solar or "the Proponent"), Tighe & Bond is pleased to submit two hard copies of the enclosed Special Permit application and two copies of the plans to the Town of Tyngsborough Board of Selectmen for a proposed ground-mounted solar photovoltaic (PV) array to be located on the Charles-George Reclamation Trust Landfill (Charles-George Landfill). The private landfill is located at 500 Dunstable Road in the Town of Tyngsborough, MA and owned by Dunstable Road Land Properties, LLC. The application has been prepared in compliance with Section 1.16.00 (Special Permits) of the Zoning By-Law of the Town of Tyngsborough. The project requires a Special Permit application from the Board of Selectmen as a "public or private utility facility". A portion of the project will be located within the Town of Dunstable. A joint Special Permit/ Site Plan Review application will be submitted to the Dunstable Planning Board for the Dunstable portion of the project.

The application package includes the following materials:

- Special Permit application narrative, including: A description of the project site, justification for the proposed facility, technical design details, a list of other approvals required for the project, and a discussion of compliance with the Findings Required at Section 1.16.14 of the Tyngsborough Zoning By-Law and General Regulations.
- Site Engineering Plans prepared in accordance with the Rules and Regulations for Special Permits and Site Plans issued by the Board of Selectmen pursuant to the Zoning By-Law.
- Required Figures

The required application fee of \$350 is included with the application. The application is also subject to a Project Review Fee (Public or Private Utility Facilities) of \$1,000 pursuant to Section III.A.4 of the Rules and Regulations for Special Permits. The Project Review Fee is also included with the application.

We understand that the Board of Selectmen will undertake the necessary abutter notification and legal advertisement for a public hearing.

We look forward to coordinating with the Board of Selectmen during its review of this application. Please contact me at (413) 875-1302 should have any questions.



Very truly yours,  
**TIGHE & BOND, INC.**



Briony Angus, AICP  
Senior Project Manager/ Associate

t: 413.875.1302  
e: [bangus@tighebond.com](mailto:bangus@tighebond.com)

Enclosures: Two Hard Copies of the Complete Application Package

Copy: Emma Kosciak, Tyngsborough Solar, LLC

APPLICATION FOR SPECIAL PERMIT BY THE  
TYNGSBOROUGH BOARD OF SELECTMEN  
ACTING AS  
SPECIAL PERMIT GRANTING AUTHORITY

Name of Applicant Citizens Tyngsborough Solar, LLC

Address of Applicant 88 Black Falcon Ave, Suite 342, Boston, MA 02210

Tel# of Applicant (617) 951-0413

Address/Location of Subject Property. Charles-George Landfill

Assessors Map #(s) 14 Lot #(s) 13, 14, 14A, 15, 16

Present Zoning District(s) of Subject Property R1

Type of Use Applied For Solar Facility (Public or Private Utility Facility) (be specific)

Under Section 1.16.00 of the Zoning By-laws

Characteristics of Subject Property # of Lots 5

Area of Lot(s) in Square Feet Approximately 65 acres (Tyngsborough)

Present Use Charles-George Landfill

Is Applicant the Owner of the Property? No

Is Applicant the Operator, Proprietor, or Manager of the Proposed Activity?

Yes      No      Not Applicable

If Applicant is not the owner and operator (if no is checked on item 6 and/or 7) evidence of authority by affidavit or other legal instrument must be attached. Is such evidence attached?  Yes      \_\_\_\_\_ No.

I, the applicant, have reviewed the applicable section(s) of the Town's Zoning By-law as most recently amended?  Yes \_\_\_\_\_ No.

I, the applicant, have reviewed the Rules and Regulations of the Special Permit Granting Authority as most recently amended?  Yes      No.



Signature of Applicant

I hereby certify that the information given above and included with the application pursuant to the Rules and Regulations so promulgated by the Board of Selectmen acting a Special Permit Granting Authority is correct and to the best of my knowledge complete and accurate.

I hereby request a hearing before the Special Permit Granting Authority pursuant to the matter of and disposition of the application and agree to pay all fees so required.

Name Emma Kosciak  
Date 4/7/2015 Emma Kosciak

Signature of the Town Clerk

As Town Clerk, I hereby certify that I have received this application for a Special Permit.

Name Jeanne Shires  
Date 4/8/15

Application received in Selectmen's Office

Name Thomas May  
Date 4/8/15

\*\*\*\*\*  
<sup>Two</sup> Fourteen copies (~~14~~) of the Application packet Received by SPGA

Date 4/8/15 by Thomas May

Application Fee(s) Received

Date 4/8/15 by Thomas May

Postage Fees Received

Date \_\_\_\_\_ by \_\_\_\_\_

Project Review Fee(s) Received

Date 4/8/15 by Thomas May  
Amount \$ 350.00

**Town of Tyngsborough Special Permit Application**

**Section 1 Introduction**

**Section 2 Background Information**

2.1 Solid Waste Site Assignment .....2-1  
2.2 Landfill Operations & Waste Characteristics .....2-1  
2.3 Landfill Closure Documentation .....2-1  
2.4 Environmental Monitoring.....2-1

**Section 3 Project Description**

3.1 Project Site Description.....3-1  
3.1.1 General Description .....3-1  
3.1.2 Zoning .....3-1  
3.1.3 Setbacks .....3-1  
3.1.4 Wetlands and Rare Species.....3-2  
3.2 Project Description .....3-2  
3.2.1 System Equipment .....3-1  
3.2.2 Electrical Equipment and Interconnection .....3-2  
3.3 Project Schedule .....3-2  
3.4 Construction Impacts.....3-2  
3.5 Facility Operations.....3-3  
3.5.1 Operations & Maintenance .....3-3  
3.5.2 Site Security .....3-4  
3.5.3 Inverter Noise Impacts .....3-4  
3.6 Decommissioning .....3-4

**Section 4 Stormwater Management**

4.1 Stormwater Runoff and Erosion Control Plan.....4-1  
4.1.1 Ballast Installation on Crushed Stone/ABC Pads .....4-2  
4.1.2 Erosion Control .....4-2

**Section 5 Other Required Approvals**

5.1 Local Approvals.....5-1  
5.1.1 Town of Tyngsborough Permits .....5-1  
5.1.2 Town of Dunstable Permits .....5-1  
5.1.3 Abutter Notification .....5-1  
5.2 State Approvals .....5-1  
5.2.1 MA Wetlands Protection Act .....5-1  
5.2.2 MA Endangered Species Act (MESA) .....5-2  
5.2.3 MA Environmental Policy Act (MEPA).....5-2  
5.2.4 Post Closure Use Permit (MassDEP) .....5-2

5.3 Federal Approvals.....5-2  
5.3.1 NPDES Construction General Permit.....5-2

**Section 6 Compliance with Special Permit Findings**

**Section 7 Compliance with General Regulations**

7.1 Parking and Loading .....7-1  
7.2 Signs .....7-1  
7.3 Soils, Vegetation, Rock and Gravel Removal .....7-1  
7.4 Buffering, Screening and Grading .....7-1  
7.5 Environmental Protection Standards .....7-1  
7.5.1 Water Quality .....7-1  
7.5.2 Air Quality .....7-2  
7.5.3 Noise .....7-2  
7.5.4 Solid Waste Storage .....7-2  
7.5.5 Other Requirements .....7-2  
7.6 Outdoor Lighting .....7-2

**Appendices**

- A     Figures
  - 1     USGS Locus Map
  - 2     Priority Resource Figure
  - 3     Orthophoto
- B     Project Drawings
- C     Certified Lists of Abutters (Tyngsborough & Dunstable)
- D     Proponent’s Solar Array Operation & Maintenance Plan
- E     Proponent’s Emergency Response Plan
- F     Letter of Intent (LOI)
- G     Statement/ Letter – Existing Variances and/or Special Permits

## Section 1

### Introduction

On behalf of Tyngsborough Solar, LLC (Tyngsborough Solar or "the Proponent"), Tighe & Bond is pleased to submit a Special Permit application to the Town of Tyngsborough Board of Selectmen for the Tyngsborough Solar Project (referred to as "the project"). The proposed project includes construction of a solar photovoltaic (PV) array with a Direct Current (DC) nameplate generating capacity of approximately 3.56 megawatts (MW) on the Charles-George Reclamation Trust Landfill (Charles-George Landfill). The private landfill is located at 500 Dunstable Road in the Town of Tyngsborough, MA and owned by Dunstable Road Land Properties, LLC. A portion of the project (i.e., 3,596 panels, 1.13 MW) will be located within the Town of Dunstable. A joint Special Permit/Site Plan Review application will be submitted to the Dunstable Planning Board for the Dunstable portion of the project.

As proposed, the ground-mounted array will occupy approximately 14.85 acres of the approximately 65.79-acre landfill footprint located within Tyngsborough, and approximately 4.23 acres of a 7-acre parcel (Dunstable Parcel ID Map 22 Lot 53) located in Dunstable. Tyngsborough Solar has entered into a long-term ground lease with Dunstable Road Land Properties, LLC. Components of the system to be installed at the landfill include solar panels, mounting substrates, system foundations, wiring and connections, power inverters, service and metering equipment, and interconnection with the utility.

The project limit encompasses areas in the Towns of Tyngsborough and Dunstable, as well as areas on and off the limits of the landfill cap. The site is bordered by Route 3 and Flint Pond to the east, Dunstable Road to the west, wooded areas to the south, and an industrial development to the north. Access is currently provided by Cummings Road (via Dunstable Road) and an existing gravel access road that extends onto the site. A USGS Site Locus figure and Priority Resource figure are provided in Appendix A as Figures 1 and 2.

The facility will be designed by Tyngsborough Solar, in conjunction with Tighe & Bond as lead civil engineer and environmental consultant.

The site is both a solid waste landfill and Superfund site, under control of the U.S. Environmental Protection Agency (USEPA, ID MAD003809266). The State ordered closure of the site in 1983. That same year, the EPA listed the site on the National Priorities List (NPL). Remediation at the site has been addressed in five stages; initial actions, and four long-term remedial phases: 1) providing a permanent water supply, 2) capping the site, 3) controlling the migration of contaminants, including collection and treatment of landfill gas, and 4) collecting and off-site discharge of leachate and contaminated groundwater to a publicly owned treatment works (POTW). Construction complete status was attained in September 1998. The cap and gas collection/destruction system are in the operation and maintenance phase and under responsibility of the Massachusetts Department of Environmental Protection (MassDEP). The groundwater/leachate collection system (with off-site discharge to POTW) is also in the operation and maintenance phase being led by MassDEP. Five Year Reviews were completed in 1995, 2000, 2005, and 2010.

The proposed solar PV array requires a Special Permit from the Board of Selectmen as a "*public or private utility facility*". The abutting parcels are all in the Residential 1 Low Density (R1) District. The application has been prepared in compliance with Section 1.16.00 (Special Permits) of the Zoning By-Law of the Town of Tyngsborough. The application also contains a narrative discussion of how the proposed project complies with the Special Permit criteria outlined in Section 1.16.14 of the Zoning Bylaw.

Required figures and plans are provided in the Appendices to this narrative. The required application fee of \$350 is included with the application. The application is also subject to a Project Review Fee (Public or Private Utility Facilities) of \$1,000 pursuant to Section III.A.4 of the Rules and Regulations for Special Permits.

---

## Section 2

### Background Information

#### 2.1 Solid Waste Site Assignment

The Charles-George Reclamation Trust Landfill is a 70-acre mixed industrial, municipal, and hazardous waste landfill that was operated from the late 1950s until at least 1976. In 1982, the Tyngsborough Board of Health suspended the assignment of the land as a landfill. In 1983, the Commonwealth of Massachusetts ordered for the closure of the landfill. The site was also listed by EPA as a Superfund site in September of that same year.

#### 2.2 Landfill Operations & Waste Characteristics

According to the USEPA and MassDEP-provided information, municipal waste was deposited at the Charles-George Reclamation Trust Landfill from the late 1950s to 1967. In 1967, the landfill was expanded to its present size and accepted household and industrial waste from 1967 through at least 1976. In 1973 the landfill was issued a permit by the Commonwealth of Massachusetts to handle hazardous waste in addition to municipal and domestic refuse. Disposal of hazardous wastes continued from January of 1973 through at least June of 1976. During this time the landfill accepted primarily drummed and bulk chemicals containing volatile organic compounds (VOCs) and toxic metal sludges.

The landfill was listed on the National Priorities List (NPL) due to the detection of VOCs and heavy metals in groundwater samples collected from private wells near the site. However, the landfill has since been designated as "otherwise adequately regulated" under the MA Solid Waste Regulations and does not require any additional MassDEP Bureau of Waste Site Cleanup (BWSC) involvement.

#### 2.3 Landfill Closure Documentation

The closure construction began in 1989 and construction completion status was attained for the entire site in September 1998. Included in the closure construction was a synthetic membrane landfill cap and soil cover, a new shallow perimeter leachate toe-drain, two leachate pumping stations, a passive gas collection and venting system, and a surface water diversion and sedimentation system. The old leachate collection system was also connected to the new pump stations.

Prior to installation of the landfill cap, the surface of the landfill was regraded to provide soil cover for the exposed refuse and provide drainage of stormwater.

#### 2.4 Environmental Monitoring

The Charles-George Landfill has not been utilized for any post-closure activity since its closure in 1988. Post-closure monitoring is required for a period of 30 years after cap construction, per 310 CMR 19.132. Required post-closure site maintenance includes biannual erosion inspection and mowing of vegetative growth, yearly application of a commercial herbicide to the rock cover portions of the cap and detention basins, access

road maintenance, maintenance to the fence and gates, and inspection and maintenance of leachate, landfill gasses and groundwater extraction systems.

## Section 3

### Project Description

#### 3.1 Project Site Description

##### 3.1.1 General Description

This section provides a description and a resource area characterization summary for the project site. The project site is comprised of multiple parcels and is located in Tyngsborough and Dunstable, MA. Specifically, the Charles-George Landfill is located at 42° 40' 10.12" N and 71° 27' 00.79" W. Based on the Town of Tyngsborough and Town of Dunstable assessor's data, the project parcels consist of:

- Parcel ID 14-13-0 (2.8 acres) located at 76 Cummings Road, Tyngsborough, MA
- Parcel ID 14-14-0 (18.4 acres) located at 525 Dunstable Road, Tyngsborough, MA
- Parcel ID 14-14A-0 (0.6 acres) located at Cummings Road, Tyngsborough, MA
- Parcel ID 14-15-0 (10.2 acres) located at Cummings Road, Tyngsborough, MA
- Parcel ID 14-16-0 (32 acres) located at Dunstable Road, Tyngsborough, MA
- Parcel ID 22-53 (7 acres) located at 0 Blodgett Street, Dunstable, MA

The site is bordered by Route 3 and Flint Pond to the east, Dunstable Road to the west, wooded areas to the south, and an industrial development to the north. The footprint of the landfill is approximately 70 acres. Access to the landfill site is provided via Cummings Road (via Dunstable Road). The limits and topography of the landfill site are depicted on Sheets 2 through 6 in Appendix B.

##### 3.1.2 Zoning

The parcel is located in the Residential-1, Low Density (R-1) Zoning District based on the Town of Tyngsborough Zoning Map. The project requires a Special Permit application from the Board of Selectmen as a "*public or private utility facility*". The abutting parcels are all in the Residential 1 Low Density (R1) District. However, there are no abutting residential uses in Tyngsborough – the Tyngsborough R1 parcels consist of industrial uses and the landfill.

##### 3.1.3 Setbacks

The limits of the project are shown on Sheets 7 through 11 in Appendix B. The solar array area will be set back more than 30 feet from the front, side and rear property lines to comply with the property line setback requirements outlined in Section 2.12.50 Table of Dimensions Requirements in the Zoning By-Law. In areas where separate abutting parcels are under common ownership, the project crosses interior parcel and setback lines. Note that the Dorothy G. George and Dunstable Road Properties, LLC are the same entity. The solar PV facility is also set back more than 50 feet from the property line where the parcel boundary abuts Town of Dunstable parcels.

### 3.1.4 Wetlands and Rare Species

A comprehensive analysis of environmental factors including wetlands, rare and endangered species, vernal pools, regulated floodplain, drinking water resources, areas of protected open space, and Areas of Critical Environmental Concern was conducted based on available GIS data. Based on this analysis, there are no jurisdictional wetland resource areas or buffer zones present within the limit of work. Additionally, there are no areas designated as Priority Habitats of Rare Species or Estimated Habitats of Rare Wildlife, no mapped Certified or Potential Vernal Pools, regulated floodplain, drinking water areas, areas of protected open space or ACECs within the limit of work. Please refer to the Priority Resource figure (Figure 2) in Appendix A for reference.

## 3.2 Project Description

Tyngsborough Solar, LLC has entered into a long-term ground lease with Dunstable Road Land Properties, LLC to develop an approximately 3.56 MW<sub>(DC)</sub> solar array on the former Charles-George Landfill, pending receipt of necessary regulatory approvals.

As proposed, the ground-mounted array will occupy approximately 14.85 acres of the approximately 65.79-acre landfill footprint located within Tyngsborough, and approximately 4.23 acres of a 7-acre parcel (Dunstable Parcel ID Map 22 Lot 53) located in Dunstable- in the areas of relatively lower slope (i.e., less than 14%).

The portion of the solar array located on the landfill within the Town of Tyngsborough is 2.4 MW<sub>(DC)</sub>; 7,728 panels. The portion of the solar array project within Dunstable is 3,956 panels (1.13 MW<sub>(DC)</sub>).

The limit of work is shown on Sheets 7 through 11 of Appendix B. The solar system components are listed in Table 3-1, below.

**TABLE 3-1**

Photovoltaic Solar Array Details  
Charles-George Landfill, Tyngsborough, MA

Equipment/Component	Description
System Size (DC):	3,560 kW
Photovoltaic Modules:	(7,728) 315w Solar Modules, or equivalent
Inverters:	(3) SMA-800 inverters
Transformers:	(3) Transformers, To Be Determined
Mounting System:	Game Change Pour-In-Place™ Ground Mounting Racks, or equivalent
Tilt Angle:	25°
Azimuth:	180° (South = 180°)

The Tyngsborough Solar Project design prioritizes minimizing potential impacts to the landfill capping system while considering cost implications, system operation, array constructability, and ongoing operation and maintenance factors. Based on the layout and design (Appendix B), the project will not require any significant, clearing, grading, or compaction activities on the landfill during installation or operation of the system. Crushed stone or crushed, uncoated, Asphalt Brick and Concrete (ABC) will be used if the contractor determines that it is required to level the foundations of the racks. The foundation system has been designed to minimize erosion and impacts to stormwater control. The existing 10-ft. wide gravel access road from Cummings Road into the landfill will be widened to 12-ft in order to provide access for construction vehicles and other occasional vehicular traffic for post-construction regular maintenance procedures.

The landfill will be left in similar condition to pre-installation and in compliance with applicable regulations and permits.

Following expiration of the lease agreement with Dunstable Road Land Properties, LLC, Tyngsborough Solar will decommission and remove the system from the landfill. System components include: solar panels, mounting substrates, system foundations, wiring and connections, power inverters, service and metering equipment, and the utility interconnection. Disturbed surfaces will be restored with loam and seed.

The plans for the Tyngsborough Solar Array are included in Appendix B.

### **3.2.1 System Equipment**

#### **3.2.1.1 Photovoltaic Equipment**

Sheets 7 through 11 in Appendix B depict the layout of the solar arrays. The system will consist of approximately 7,728 315w PV modules (or "panels") in a portrait orientation. The panels will be arranged in groups of four measuring approximately 13 feet long by 5.75 feet wide.

#### **3.2.1.2 Rack System & Foundation**

The rows of Game Change racks will run east-west. The panels will be mounted at a fixed 25° angle facing south. The edge of the solar PV panels will be 3' off the ground in the front and 6.5' from the ground in the rear. The rows of racks will be spaced approximately 7 feet apart, to reduce shadow impacts and allow for cap and solar system maintenance.

The rack foundation will consist of cast in place ballast blocks, each with two posts to support the racking system. The ballast blocks will be oriented north-south, perpendicular to the axis of the rack rows. The 6 feet by 1.53 feet ballast blocks will be cast in place. Crushed stone or crushed, uncoated ABC may be used as needed to assist in the leveling of the posts within the ballast prior to placement of the concrete. The existing grass will remain in place and the ballast and/or crushed stone will be placed on the grass surface. The amount of crushed material shown on the drawings and details on Sheet 12 varies based on the amount of ground surface undulation and slope occurring where the ballast blocks are to be installed.

Details depicting the proposed interface between the solar system and the landfill cap are included on the Site Layout drawings located in Appendix B. No penetration of the cap will be permitted at this site, and all equipment will be ballasted.

**3.2.1.3 Cable Conduit and Utilities**

Each row will have an integrated combiner and disconnect switch into which the panel wiring feeds. From the combiner box, energy will be transmitted to one of three SMA-800 inverters located on equipment pads located on the landfill. Cable trays will be used to support the conduit above the landfill surface from the arrays to the equipment pads. It should be noted that electrical conduit cannot be run subsurface due to the presence of the landfill cap.

**3.2.2 Electrical Equipment and Interconnection**

Three reinforced concrete electrical equipment pads will be located on the landfill cap as shown on Sheet 7 in Appendix B. The equipment pads will be surrounded by a chain link fence with posts cast into the pad. In addition to the inverters noted above, the electrical equipment pads will also contain switchgear and a transformer that will step-up the power prior to interconnecting with National Grid’s local distribution circuit. An Interconnection Application was submitted to National Grid and the Impact Study has been completed.

Above ground conduits will convey power from the equipment pads to the interconnect location. An emergency system cut-off switch will be installed in a location designated by National Grid.

**3.3 Project Schedule**

Required permit applications for the project include building and electrical permits, Post-Closure Use Permit from MassDEP and USEPA, a Joint Special Permit/ Site Plan Review from the Town of Dunstable, and this Special Permit application from the Town of Tyngsborough. The schedule for the project is presented in Table 3-2, below. As indicated below, construction is anticipated to commence in the late summer/ early fall.

**TABLE 3-2**  
Project Schedule

Project Phase	Timeframe
System Design	February 2015 – March 2015
Permitting	March 2015 – June 2015
Interconnection Study	February 2015 – May 2015
Procurement	June 2015 – July 2015
Construction	July 2015 – November 2015

**3.4 Construction Impacts**

Several temporary and permanent impacts are expected during or as a result of construction of the array on the landfill. The proposed project includes the reuse of the existing access road from Cummings Road into the landfill in order to provide access for construction vehicles and other occasional vehicular traffic for post-construction regular maintenance procedures. Approximately 24 inches of crushed stone will be installed to improve the existing access road to provide additional material above the existing landfill cap. Additionally, the existing 10 ft-wide access road will be widened to 12 feet.

Only low ground pressure (LGP) equipment with less than 7 pounds per square inch ground pressure will be allowed on the landfill cap. Construction staging and stockpiling of materials will be limited to areas not on the landfill cap, and will be located at the existing facility and parking area northwest of the landfill. Details and design of the access road improvements are provided on Sheets 7 through 11 in Appendix B.

Installation of the PV system will be initiated with the installation of leveling pads of crushed stone or crushed uncoated ABC if needed and the cast in place ballast blocks. The ballast block forms will be placed on the landfill surface and the racking system will be constructed and placed in the form. Following this initial set-up, concrete will be placed into the ballast block forms by pumping from a concrete truck that is located off of the landfill cap or on the access road. Every ballast has been designed so that it is within 500 ft of an access road that is capable of holding a concrete truck. As a last resort, concrete will be placed into the ballast block forms from LGP equipment. However, every effort will be taken to reduce this practice, in order to minimize the amount of vehicular traffic on the cap.

Following ballast placement, the rack systems, panels, and supplies will be transported to installation locations with LGP equipment. The racks themselves will be mounted either by hand or with a rubber tracked mini excavator. Additionally, the panels are only single panel high in portrait orientation which enables manual installation. This will reduce the need for vehicular assistance during installation and serve to reduce vehicular traffic on the landfill. Following rack and panel installation, impacted vegetated surfaces will be repaired and seeded as soon as reasonably possible to minimize the potential for erosion.

A chain link fence is proposed to be installed around the equipment pads to provide security. The fence will be affixed directly to the concrete equipment pad. See the plan set in Appendix B for the location of fencing.

No clearing of existing vegetation is proposed as part of this project. The Proponent will maintain the vegetation within the limits of the solar array to avoid shading impacts to the solar system throughout the life of the project.

Minimal contour changes are anticipated only in the area of the proposed access road. The potential impact of this feature is summarized in Section 4 Stormwater Management.

## **3.5 Facility Operations**

### **3.5.1 Operations & Maintenance**

The Operation and Maintenance (O&M) plan for the solar array will be appended to the existing Operation and Maintenance Plan for the landfill site (see Appendix D for Tyngsborough Solar's O&M Plan). USEPA and/or its contractors are currently responsible for operation and maintenance. It is not intended that the protocol listed here will replace the current O&M activities for the landfill, but will rather update the procedures to meet the needs of the solar array.

When construction has been completed, construction impacts, such as sedimentation in drainage features that require repair, will be identified and repaired. Following construction and re-establishment of vegetation impacted during construction, the

operation and maintenance of the landfill should not be significantly altered from the current requirements.

As required by the landfill's current post-closure maintenance and monitoring plan, the site will continue to be inspected periodically for erosion. Any erosion to the landfill surface will be stabilized and repaired immediately upon discovery. USEPA will maintain responsibility for vegetation management at the site outside of the solar array and Tyngsborough Solar will maintain responsibility for vegetation management within the solar array area. Vegetation will be mowed at least twice a year similar to the current operation for the site.

### **3.5.2 Site Security**

There is existing fencing at the project site and signage indicating high voltages within the limits of the PV array will be provided on the outside of the perimeter fencing. Additionally, the project addresses the site security requirements of the National Electric Code (NEC) through the use of wiring encased in conduit, locked combiner boxes, and the installation of a fence and locks around the equipment pad. The existing perimeter fence is an additional security measure that prevents intrusion, but is not required by the NEC. Other than the proposed equipment pad fencing and existing fencing and site access, no additional site security is proposed at this time.

It should be noted that on-premise devices and incidental signs guiding and directing traffic, not exceeding two (2) square feet in area, and bearing no advertising, are not considered signs within the context of the Zoning By-law and Sign Regulations (Section 3.11.00). Additionally, legal notices or informational devices erected or required by public agencies are also not considered signs within the context of the Zoning By-law and Sign Regulations (Section 3.11.00).

### **3.5.3 Inverter Noise Impacts**

The proposed Inverters will not create a nuisance sound condition for abutting properties and will comply with MassDEP's Noise Policy #90-001. The project will comply with the requirements of Section 3.14.40 of the Town's By-Laws.

## **3.6 Decommissioning**

Dunstable Road Land Properties, LLC has entered into a long-term ground lease agreement with Tyngsborough Solar, LLC. The lease agreement will require that Tyngsborough Solar decommission and remove the system from the landfill upon expiration of the lease agreement. System components include: solar panels, mounting substrates, system foundations, wiring and connections, power inverters, service and metering equipment, and the utility interconnection. Disturbed surfaces will be restored with loam and seed. The landfill will be left in similar condition to pre-installation as well as be in compliance with applicable regulations and permits.

## Section 4

# Stormwater Management

The project limits encompass areas in the Towns of Tyngsborough and Dunstable, as well as areas on and off the limits of the landfill cap. The landfill surface is grass in good condition without any evidence of erosion from heavy rainfall events. The landfill cap is comprised of a low permeability barrier system. Landfill closure documentation indicates that the landfill cap consists of the following, from bottom to top:

- 6" minimum of common fill
- 6" minimum of select common fill
- Non-woven geotextile
- Drainage net
- 60 mil. high-density polyethylene (HDPE) liner
- Drainage net for slopes 4:1 or less
- Woven geotextile
- 12" crushed stone (2") for slopes greater than 4:1
- 12" select common fill for slopes 4:1 or less

The low permeability liner effectively prevents stormwater from percolating into the waste mass below. Therefore, for purposes of this discussion, the landfill surface is considered an existing impervious surface as all stormwater sheet flows off the landfill surface or above the low permeability soil layer until it encounters the edge of the landfill cap and recharges to ground water. Areas within the project limits outside of the landfill cap are primarily located in the Town of Dunstable, to the northwest of the existing landfill.

Soils within areas outside of the landfill cap, as published in the USDA Soil Survey for Middlesex County, Version 14, dated September 19, 2014, are predominantly Paxton fine sandy loams of varying slopes, with poor infiltration capacity. The hydrologic soil group (HSG) for this area outside of the landfill cap is listed as C or D. The site is divided by vegetated berms throughout the landfill. The berm running east to west divides the site into two drainage areas discharging stormwater to the north and south. Additionally, berms running north to south create smaller drainage areas. Perimeter swales collect stormwater runoff and direct it to detention and sedimentation basins around the site. Over the entire landfill cap, stormwater is allowed to percolate into the landfill crushed stone or vegetation layer; however the low permeability cap prevents groundwater recharge within the limits of the landfill.

### 4.1 Stormwater Runoff and Erosion Control Plan

The proposed project includes the reuse of the existing access road from Cummings Road into the landfill in order to provide access for construction vehicles and other occasional vehicular traffic for post-construction regular maintenance procedures. The existing access roads will be improved by installing approximately 24 inches of crushed stone above the existing roadway surface. In a number of areas, the access road will create a berm, therefore culverts will be installed in order to retain existing flow patterns

of stormwater runoff. Outlet protection will be provided at all culvert outlets in the form of level spreaders.

Where the improvements to the access road alter the existing flow of stormwater and result in channelized stormwater flows along the roadside, stormwater will be allowed to cross the road through proposed culverts and discharge stormwater runoff to mimic existing conditions flow patterns. Using HydroCAD® Version 9.10, a hydrology and hydraulics software package based on TR-20 and TR-55 methodologies, the peak and average velocities of the stormwater along the western edge of the proposed access road has been evaluated. This data was utilized to determine whether peak velocities (for the 100-year 24 hour storm event) are potentially erosive on the given slopes, and if additional erosion control measures are warranted.

Additionally, the construction of the access road will require culverts located such that stormwater runoff will be allowed to cross beneath the access road and discharge off-site as under existing conditions. This crossing will include the addition of a culvert backfilled with three inch minus stone beneath the typical proposed access road cross section. The culverts are sized to handle the 100-year 24 hour storm event.

Using special conditions under TR55, the existing and proposed cross section was evaluated to compare how the curve number would be impacted. By adding a crushed stone ballast support and access road over the existing cap system cross section, the void ratio of the entire section increased and allows more storage of stormwater and therefore reducing the curve number. The lower curve number and the increased time of concentration result in a decrease in peak discharge rates as a result of the proposed development.

As mentioned previously, the proposed improvements will reduce peak discharge rates from the project to areas off-site. Stormwater runoff will continue to flow as under existing conditions with an increase in time of concentration and subsequent reduction in peak discharge rates.

#### **4.1.1 Ballast Installation on Crushed Stone/ABC Pads**

Crushed stone or crushed uncoated ABC may be used as necessary to create a level surface for installation of the rack components integral with the cast in place ballast blocks. The crushed stone pads will be located above the vegetative landfill cap and will be no more than 6-inches thick. This installation method for the proposed project will improve stormwater runoff conditions by increasing the time of concentration and reducing peak discharge rates. The relatively small size of the ballast blocks and the spacing between blocks and rows of panels will not impede existing stormwater flow paths. As the existing landfill surface within the project limits does not exhibit signs of erosion, the reduced flow rates under proposed conditions will not aggravate any areas of concerns within the project limits.

#### **4.1.2 Erosion Control**

The existing landfill groundcover will be retained, reducing the chance of erosion of the landfill cap. All construction within the limits of solid waste will occur above the existing impervious landfill cap system. Erosion control measures to be implemented during construction are indicated on the Site Plans.

See Appendix D for additional information on the Operation and Maintenance (O&M) plan for the Tyngsborough Solar Facility. The O&M Plan includes pre- and post-construction

inspections and other ongoing operation and maintenance requirements intended to address erosion control and stormwater management.

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## Section 5

### Other Required Approvals

#### 5.1 Local Approvals

##### 5.1.1 Town of Tyngsborough Permits

The following local permits will be sought from the Town of Tyngsborough:

- Stormwater Management Permit
- Special Permit
- Building permit
- Electrical permit

Per the Town's Stormwater Bylaw Regulations, non-residential projects that disturb more than 5,000 SF activities require a Stormwater Management Permit administered by the Tyngsborough Conservation Commission. The project has been designed in accordance with the Massachusetts Stormwater Standards as well as additional requirements per the Tyngsborough Stormwater Bylaw Regulations. As such, the project will not result in significant alternations to the existing stormwater management system of the landfill and abutting areas.

##### 5.1.2 Town of Dunstable Permits

The following local permits will be sought from the Town of Dunstable:

- Special Permit / Site Plan Review
- Building permit
- Electrical permit

##### 5.1.3 Abutter Notification

In accordance with Section IV (Hearings and Disposition) of the Town's Rules and Regulations for Special Permits and M.G. L. Chapter 40A; Section 11, owners directly opposite any public or private street or way, and owners of land which lie within 300' of a boundary or part thereof of the land in question are required to be notified along with Town boards and committee members. A certified list of abutters prepared by the Town is provided in Appendix C. Per confirmation from the Town, the Town will notify abutters and key committees at least two weeks prior to the scheduled public hearing for comment.

The project does not require review and/or approval from any other local agency.

#### 5.2 State Approvals

##### 5.2.1 MA Wetlands Protection Act

Based on available data from the Massachusetts Office of Geographic Information (MassGIS), (see Figure 2, Appendix A) no jurisdictional wetland resource areas or

associated buffer zones subject to projection pursuant to the MA Wetlands Protection Act (M.G.L. c. 131, Section 40) are located within 100' of the limit of work. Therefore, approval from the Tyngsborough and Dunstable Conservation Commission are not required for the project.

**5.2.2 MA Endangered Species Act (MESA)**

The Massachusetts Endangered Species Act (MESA) is implemented by the Massachusetts Natural Heritage and Endangered Species Program (NHESP) to protect areas determined to contain endangered, threatened or species of special concern. These areas are designated as "Priority Habitats of Rare Species" or "Estimated Habitats of Rare Wildlife" under the MESA Regulations 321 CMR 10.00 and are delineated state-wide in the Massachusetts Natural Heritage Atlas. NHESP also maintains a state-wide listing of "Certified Vernal Pools" which also have special protected status.

Current MassGIS MESA mapping is provided on Figure 2 in Appendix A. As shown on the figure, areas mapped as "Priority Habitats of Rare Species" or "Estimated Habitats of Rare Wildlife" do not exist on-site or in the immediate vicinity of the Charles-George Landfill. Based on this information, the project does not require MESA review.

**5.2.3 MA Environmental Policy Act (MEPA)**

Massachusetts Environmental Protection Act (MEPA) review thresholds were reviewed for applicability to the proposed solar PV array project. MEPA review is required for projects that involve a state agency action (e.g. Permit) and that exceed a MEPA review threshold at 301 CMR 11.03. As proposed, the project does not exceed any MEPA thresholds and therefore MEPA review is not required.

**5.2.4 Post Closure Use Permit (MassDEP)**

As the project is located on a closed landfill, it will require a Major Post-Closure Use Permit (PCUP, BWP SW 36) from the Department of Environmental Protection (MassDEP) in accordance with 310 CMR 19.016 & 19.143. The Applicant has met with MassDEP to discuss the project and is preparing a PCUP application for submittal to MassDEP. The PCUP will include an evaluation to demonstrate that the project will not adversely impact the landfill cap and outline measures that will be taken during and after construction to protect the integrity of the cap. The PCUP will also be reviewed by USEPA.

**5.3 Federal Approvals**

**5.3.1 NPDES Construction General Permit**

The Environmental Protection Agency (EPA) issues National Pollutant Discharge Elimination System (NPDES) General Construction Permits (CGP) as a part of the effort to minimize detrimental runoff caused by the clearing, grading, and excavating or general construction activities on construction sites. The proposed solar PV array project, including the solar array, electrical equipment and access roads, will impact approximately 11.57 acres of the landfill within Tyngsborough, primarily within areas of relatively low slope. Since the land disturbance will exceed the CGP impact threshold of more than one acre of land, a NPDES CGP permit is required. Prior to construction, a CGP permit will be obtained and a Stormwater Pollution Prevention Plan (SWPPP) will be submitted to the EPA.

## Section 6

# Compliance with Special Permit Findings

This section of the application has been developed in response to the Special Permit criteria outlined in Section 1.16.14 of the Zoning Bylaw. The proposed use:

**1.16.14 (1) – Is in harmony with the purpose and intent of this By-law.**

The project was developed in compliance with all provisions and requirements of the Zoning By-Law of the Town of Tyngsborough as a “public utility facility” allowed by Special Permit in the Residential (R-1) District pursuant to Section 2.11.30 (Table of Uses) of the bylaw. The ground-mounted solar PV project is appropriately sited on a closed and capped landfill rather than an undeveloped, open space in harmony with the purpose of the Zoning By-Law of the Town of Tyngsborough to “conserve the value of land and buildings including the conservation of natural resources and the prevention of blight and pollution of the environment” per Section 1.10.20. The project re-purposes the closed landfill parcel and intends to conserve natural resources and prevent pollution by providing the Town with a local, renewable source of energy. Furthermore, the project adheres to the bylaw purpose to “preserve the natural, scenic and aesthetic qualities of the community” by appropriately siting the solar array on an existing landfill.

**1.16.14 (2) – Will not be detrimental or injurious to the neighborhood in which it is to take place.**

The project is consistent with the current and historical industrial and municipal context of the surrounding uses. The project will minimize obstruction of scenic views from publicly accessible locations as the ground-mounted solar PV panels will be sited in a central location on the project parcel and substantial setbacks will be maintained. Wooded areas adjacent to the landfill will be maintained as no vegetation clearing is proposed.

**1.16.14 (3) – Is appropriate for the site in question.**

The project site is an ideal location as it will repurpose a closed landfill rather than develop an open space. The solar array installation will be screened by the natural heavily wooded buffer surrounding the property. Also, the equipment pads will be fully enclosed by fencing. No buildings are proposed as part of this project. The site is well-suited for the project as the surrounding uses predominantly consist of industrial buildings, wooded areas, and by Route 3 and Flint Pond to the east.

**1.16.14 (4) – Complies with all applicable requirements of this By-law.**

The project was developed in compliance with all provisions and requirements of the Zoning By-Law of the Town of Tyngsborough as a “public utility facility” allowed by Special Permit in the Residential (R-1) District pursuant to Section 2.11.30 (Table of Uses) of the bylaw. The project will utilize the Charles-George Landfill, which is currently closed.

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## **Section 7**

### **Compliance with General Regulations**

The following section addresses the General Regulations provided in Section 3 of the Zoning Bylaw.

#### **7.1 Parking and Loading**

The solar project will not result in vehicle trips other than those associated with system maintenance. While no striped parking spaces are planned, adequate area exists adjacent to the landfill for occasional parking of maintenance vehicles. Zoning bylaw requirements for parking, traffic and loading demand do not appear apply to this proposed solar project on a closed landfill.

#### **7.2 Signs**

Signage installed indicating high voltages within the limits of the PV array will be provided on the outside of the perimeter fencing. It should be noted that on-premise devices and incidental signs guiding and directing traffic, not exceeding two (2) square feet in area, and bearing no advertising, are not considered signs within the context of the Zoning By-law and Sign Regulations (Section 3.11.00). Additionally, legal notices or informational devices erected or required by public agencies are also not considered signs within the context of the Zoning By-law and Sign Regulations (Section 3.11.00).

#### **7.3 Soils, Vegetation, Rock and Gravel Removal**

The project is designed to minimize alteration of the site and the project does not propose any vegetation clearing; vegetation management practices will remain the same; and no disruption of the landfill cap will occur. Soil erosion impacts will be minimized since the existing grass groundcover will be retained, thus, reducing the chance of erosion of the landfill cap. Erosion control measures to be implemented during construction are indicated on the Site Plans. No rock or gravel removal is proposed as part of the project.

#### **7.4 Buffering, Screening and Grading**

No clearing of existing vegetation is proposed. The equipment pads will be enclosed by fencing to provide additional screening. The project will minimize obstruction of scenic views from publicly accessible locations as the ground-mounted solar PV panels will be sited in a central location on the project parcel and substantial setbacks will be maintained. Wooded areas adjacent to the landfill will be maintained as no vegetation clearing is proposed. The solar project may be visible to residences located south and west of the landfill to the extent that the landfill is currently visible to those residences.

#### **7.5 Environmental Protection Standards**

##### **7.5.1 Water Quality**

While the ballast blocks and PV modules are impervious to stormwater, an increase in stormwater runoff will not occur due to ground cover alteration as the existing landfill

surface will not be disturbed. The project will not alter existing ground water recharge processes as the existing drainage patterns of the project site will not change significantly.

**7.5.2 Air Quality**

The solar array will not produce any emissions subject to regulations as a nuisance, hazard, or other disturbance.

**7.5.3 Noise**

It is not anticipated that the project will create a nuisance sound condition for abutting properties. The solar PV panels have no moving parts and do not generate any noise. Insignificant noise is generated by inverters and transformers during the daytime when the system is operating. The inverters and transformers make a low humming sound equivalent to less than 50 (dB) of noise, or about the same sound level as is typical inside a house. The system is silent at night when ambient noise is the quietest.

The project will meet the noise requirements of Section 3.14.41 of the Tynsborough Zoning Bylaw. Additionally, the project will be required to comply with the MassDEP Noise Policy #90-001 pursuant to the conditions of the Post-Closure Use Permit issued by MassDEP.

**7.5.4 Solid Waste Storage**

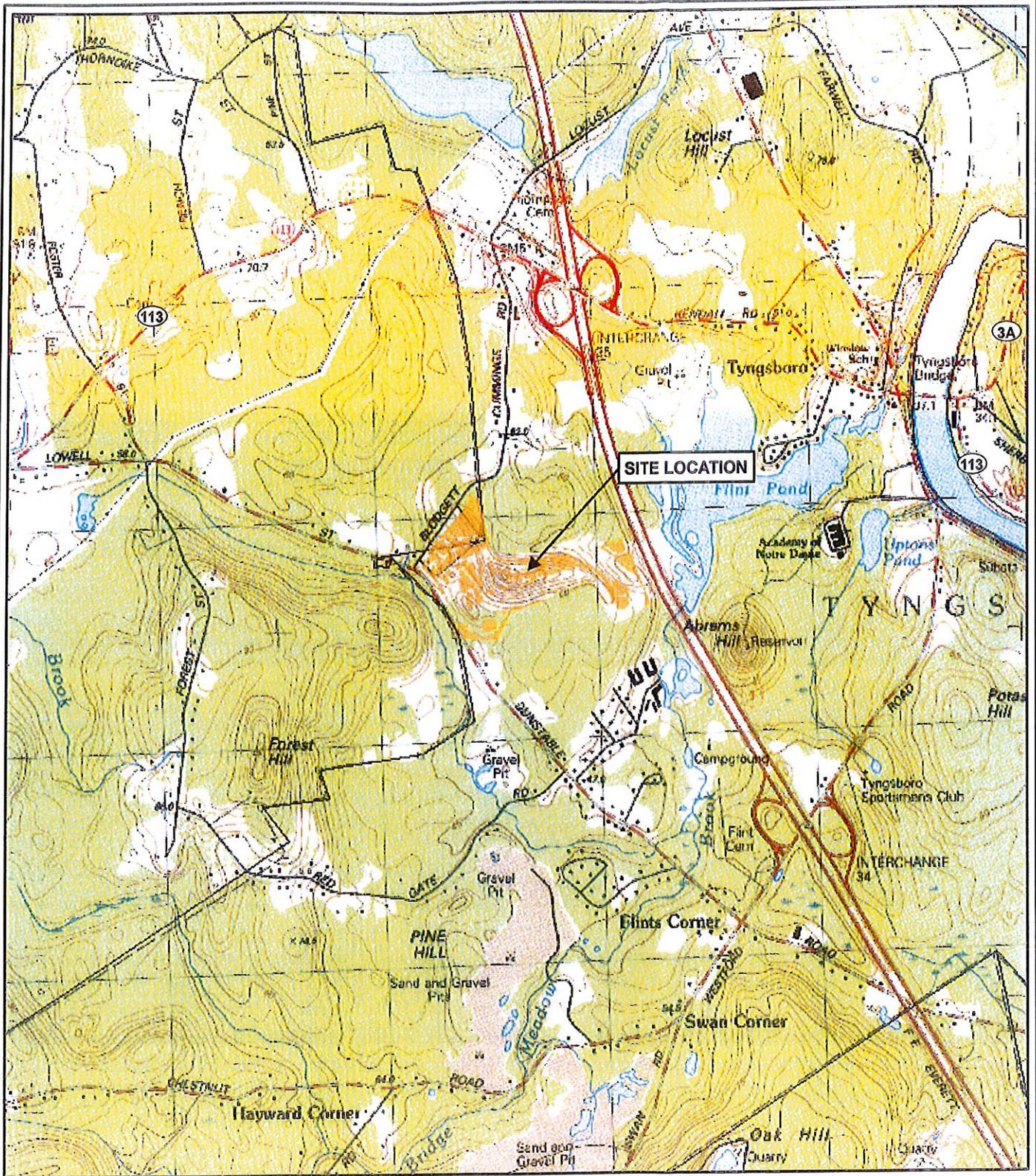
The project will not generate any solid waste.

**7.5.5 Other Requirements**

The solar array will not produce any vibration, odor, glare, flashing, cinders, dust, fumes, gases, odors, smoke or radiation. No processes associated with the solar project will create visual or audible interference in any radio or television receivers off the premises or cause fluctuations in excess of ten percent in line voltage off the premises. No use or storage of inflammable and explosive materials is proposed. 7.6 Outdoor Lighting

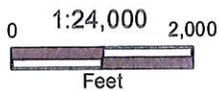
Site lighting is not proposed as part of this project.

J:\C\C0917\Permitting\Tyngsborough Landfill\Special\_Permit\Narrative\Tyngsborough\_SP\_Narrative.docx

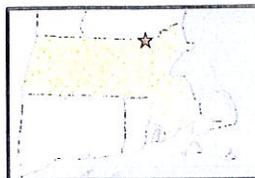


**Legend**

Buildable Area < 10% Slope



Based on USGS Topographic Map for Nashua South, MA Quadrangle. Revised 19XX. X-Meter Contour Interval.



**FIGURE 1  
SITE LOCUS MAP**

Charles George Landfill  
500 Dunstable Road  
Tyngsborough, Massachusetts

**Tighe & Bond**

February 2014

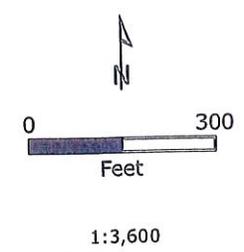
**FIGURE 2**

**PRIORITY RESOURCES**



**Legend**

- Town Boundary
- 100FT Buffer Zone
- 200FT Riverfront Area
- Dunstable & George Owned Landfill Area
- Parcel Line
- Contour Line (3m)
- NHESP Certified Vernal Pools
- NHESP Potential Vernal Pools
- Transmission Line
- Intermittent Stream
- Stream
- Inland Wetlands
- Public Surface Water Supply Protection Area (Zone A)
- DEP Approved Wellhead Protection Area (Zone II)
- DEP Interim Wellhead Protection Area (IWPA)
- NHESP Estimated Habitats for Rare Wildlife
- NHESP Priority Habitats for Rare Species
- Protected and Recreational Open Space
- Area of Critical Environmental Concern (ACEC)
- 100 Year FEMA Flood Plain
- 500 Year FEMA Flood Plain



**NOTES**

1. Based on MassGIS Color Orthophotography (April 2011-2012)
2. Data source: Office of Geographic and Environmental Information (MassGIS), Commonwealth of Massachusetts Executive Office of Environmental Affairs. Data valid as of October 2012.

**Charles George Landfill**  
**500 Dunstable Road**  
**Tyngsborough, Massachusetts**

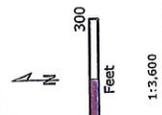
**December 2013**



**FIGURE 2**

**PRIORITY RESOURCES**

- Legend**
- Town Boundary
  - 100ft Buffer Zone
  - 200ft Riverfront Area
  - Dunstable & George Owned Landfill Area
  - Parcel Line
  - Contour Line (5m)
  - MHPSP Certified Vernal Pools
  - MHPSP Potential Vernal Pools
  - Transmission Line
  - Intermittent Stream
  - Stream
  - Inland Wetlands
  - Public Surface Water Supply Protection Area (Zone A)
  - DEP Approved Wellhead Protection Area (Zone II)
  - DEP Interim Wellhead Protection Area (IWPA)
  - MHPSP Estimated Habitats for Rare Wildlife
  - MHPSP Priority Habitats for Rare Species
  - Protected and Recreational Open Space
  - Area of Critical Environmental Concern (ACEC)
  - 100 Year FEMA Flood Plain
  - 500 Year FEMA Flood Plain



**NOTES**

1. Based on MassGIS Color Orthophotography (April 2011-2012).

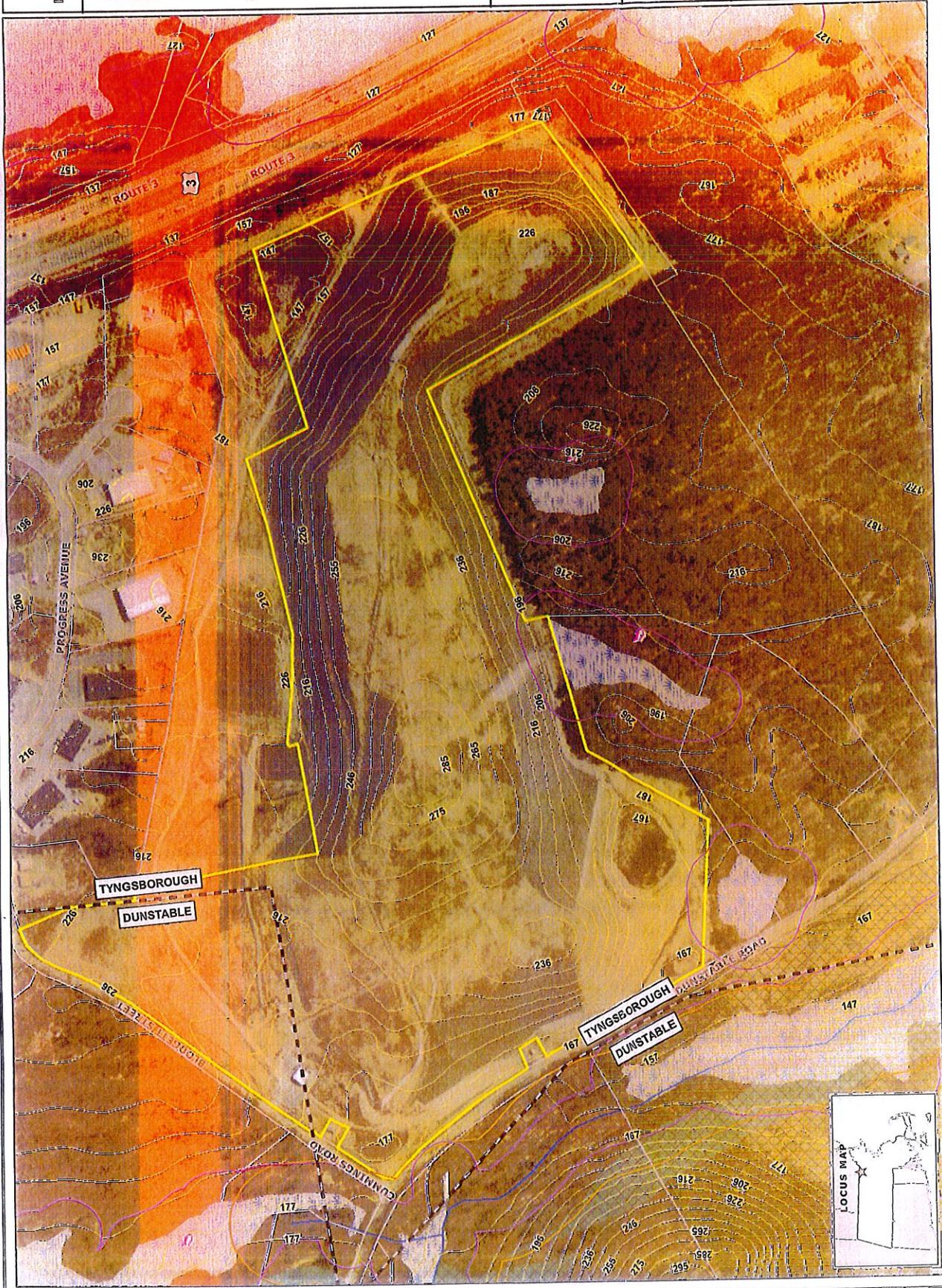
2. Data sources: Office of Geographic and Environmental Information (MassGIS), Commonwealth of Massachusetts Environmental Affairs, Data valid as of October 2012.

**Charles George Landfill  
500 Dunstable Road  
Tyngsborough, Massachusetts**

**December 2013**



C-0917



v:\Projects\CC917\Map11\1x17\_06\_Landfill.mxd

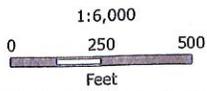


**FIGURE 3**  
**ORTHOPHOTOGRAPH**  
Charles George Landfill  
500 Dunstable Road  
Tyngsborough, Massachusetts

April 2015



Based on MassGIS Color Orthophotography (2013)









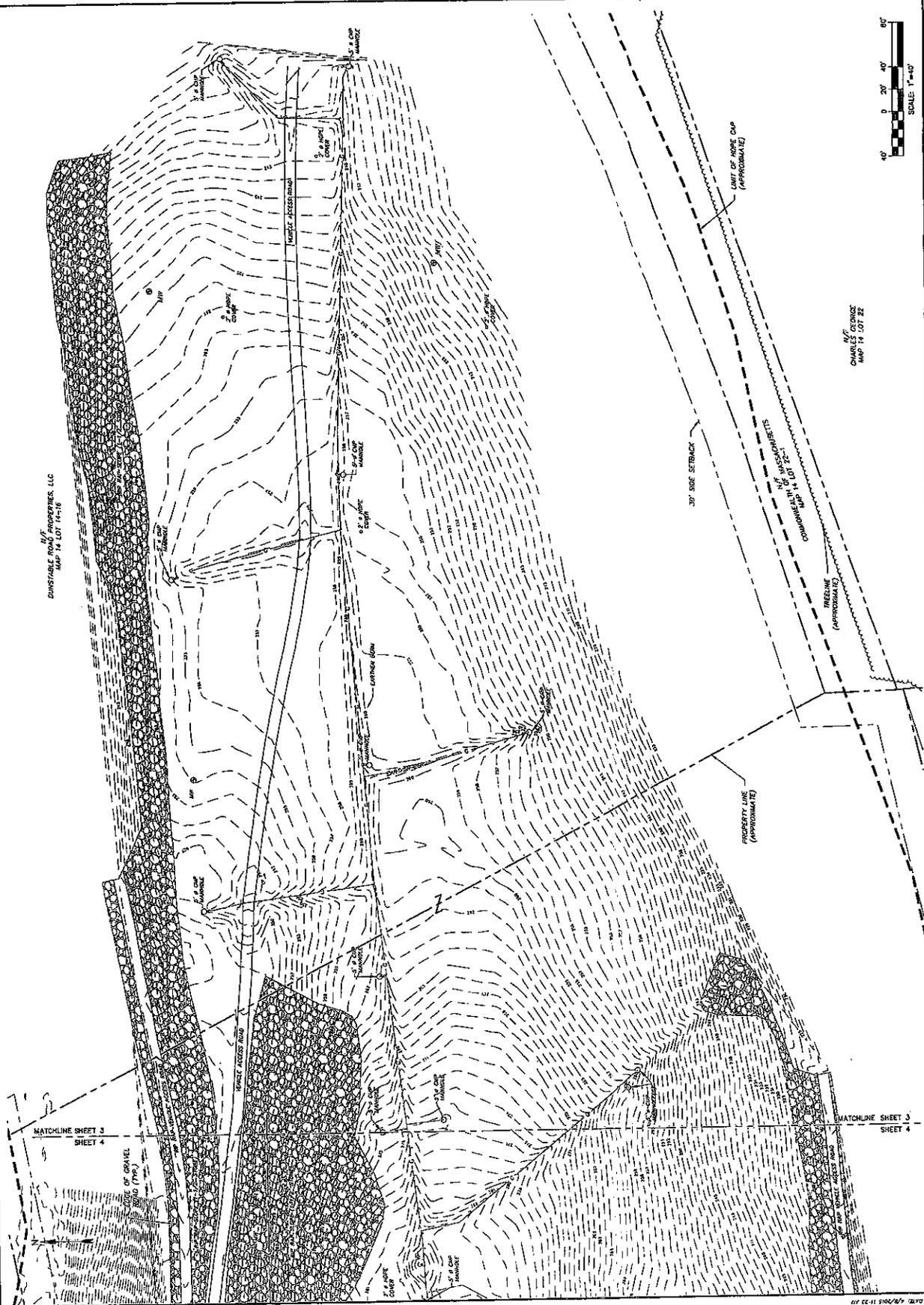
**Tyngsborough Solar LLC**

**Tyngsborough Solar Project**

Dunstable & Tyngsborough, Massachusetts

**NOT FOR CONSTRUCTION**

DATE:	08/08/15
PROJECT NO.:	0327
FILE:	0327
SITE:	0327
SCALE:	AS SHOWN
SHEETING CONDITIONS:	AS SHOWN
SHEET NO.:	14 OF 22
SHEET TITLE:	MAP 14 LOT 22



B/V  
DUNSTABLE ROAD PROPERTIES, LLC  
MAP 14 LOT 14-16

N/E  
CHARLES GEORGE  
MAP 14 LOT 22



MATCHLINE SHEET 3  
SHEET 4

MATCHLINE SHEET 3  
SHEET 4













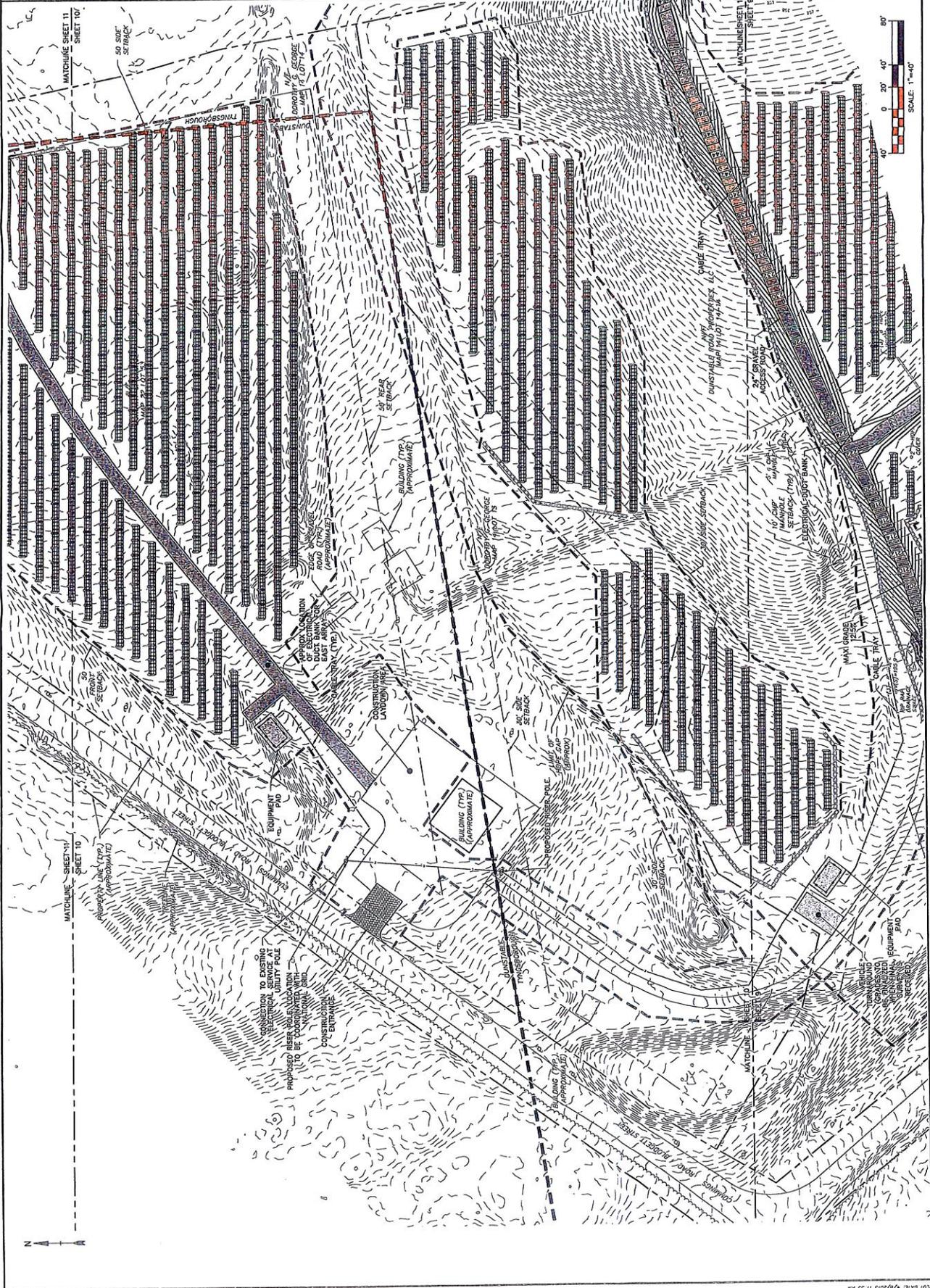
**Tyngsborough Solar LLC**

**Tyngsborough Solar Project**

Dunstable & Tyngsborough, Massachusetts

**NOT FOR CONSTRUCTION**

DATE: 4/8/2015 11:55 AM	PROJECT NO: 10377
DRAWN BY: JRM	CHECKED BY: JRM
APPROVED BY: JRM	SCALE: AS SHOWN





**Tyngsborough Solar LLC**

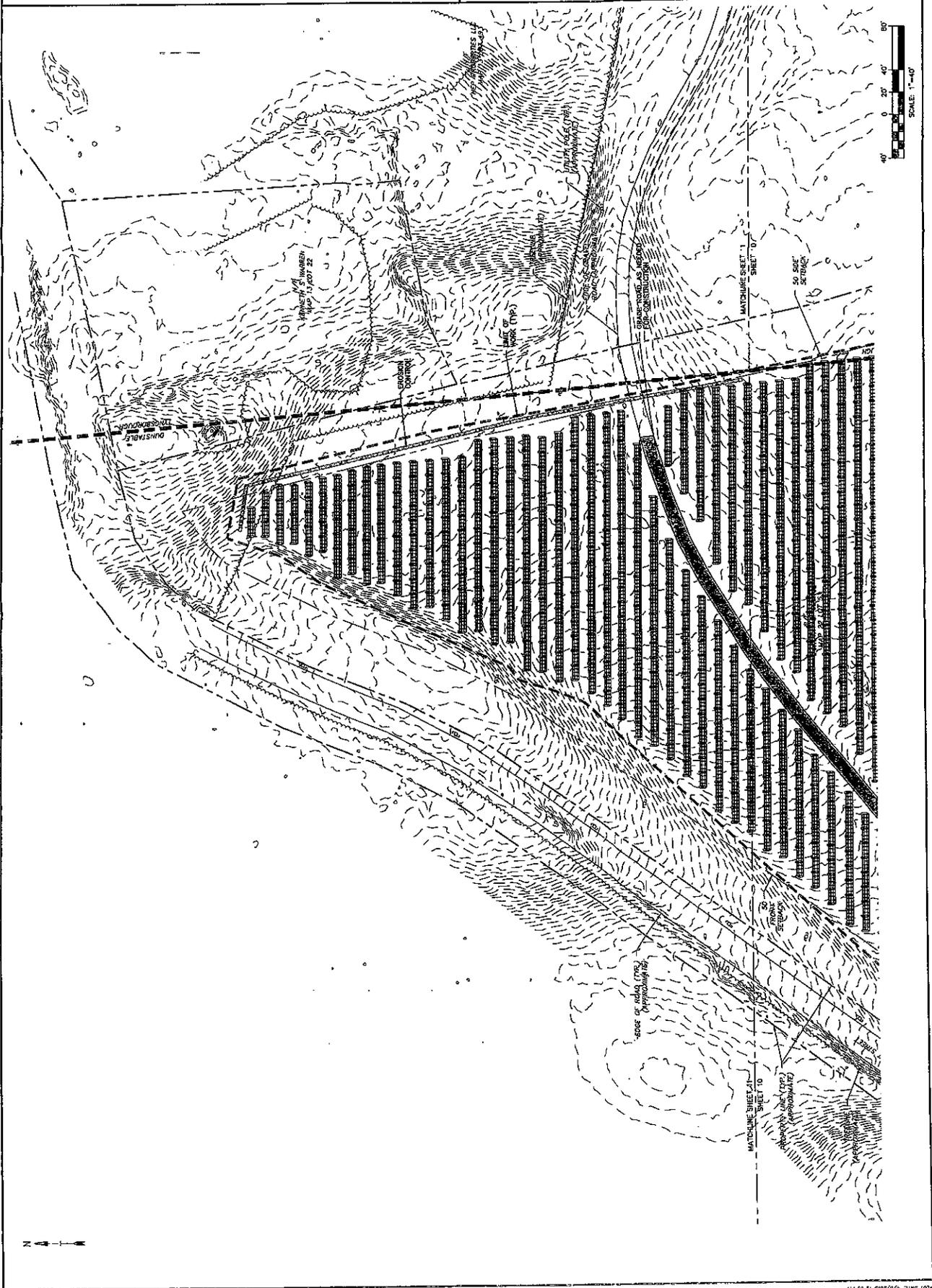
**Tyngsborough Solar Project**

Dunstable & Tyngsborough, Massachusetts

**NOT FOR CONSTRUCTION**

DATE	6/2/2015 12:05 PM
PROJECT NO.	02077
DRAWN BY	ESK
CHECKED BY	JHJ
APPROVED BY	
PROPOSED CONDITIONS	SEE PLAN D
SCALE:	AS SHOWN

**SHEET 11**





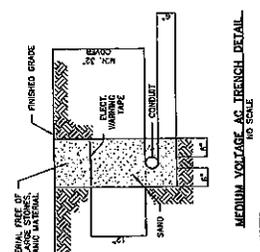
**Tyngsborough Solar LLC**

**Tyngsborough Solar Project**

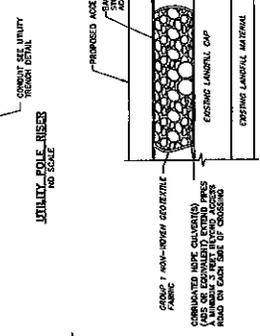
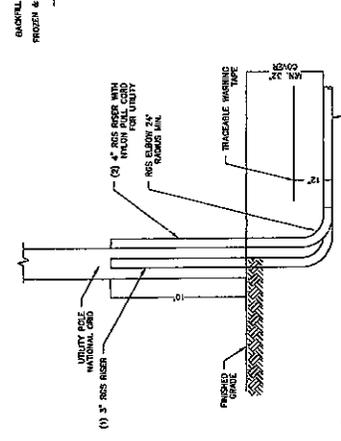
Dunstable & Tyngsborough, Massachusetts

NOT FOR CONSTRUCTION

SCALE	AS SHOWN
SHEET	12
DATE	6/7/2015
PROJECT	Tyngsborough Solar
CLIENT	Tyngsborough Solar LLC
DESIGNER	Tighe & Bond
APPROVED BY	[Signature]
DATE	6/7/2015

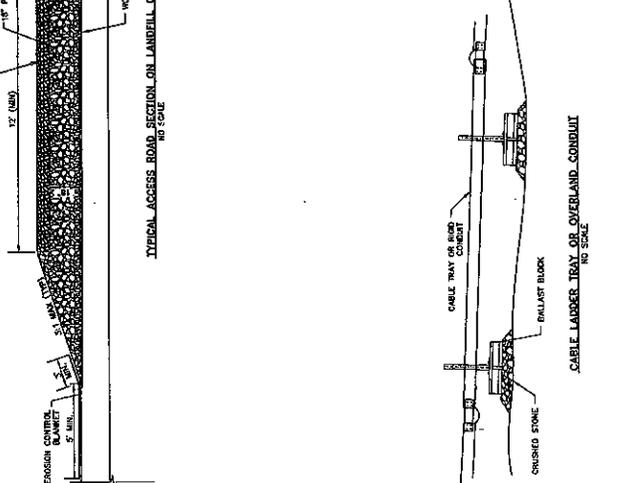
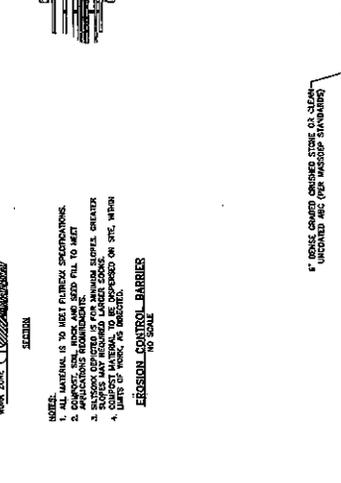
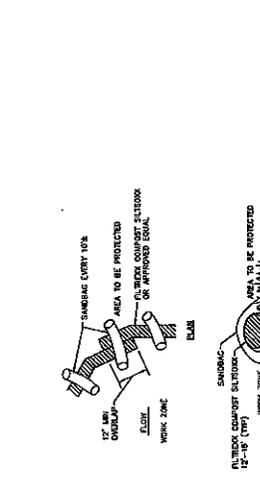
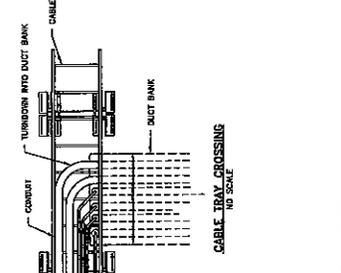
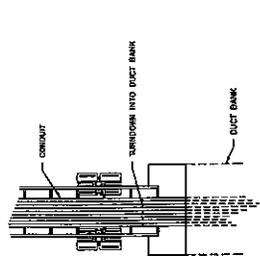
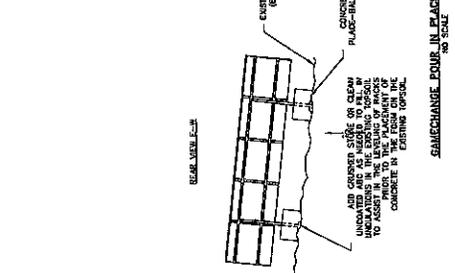
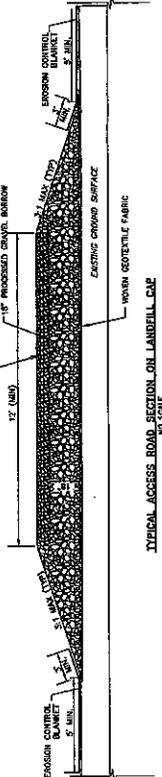
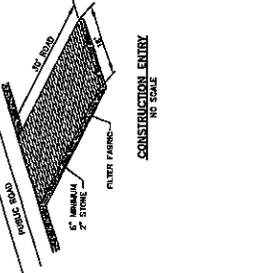
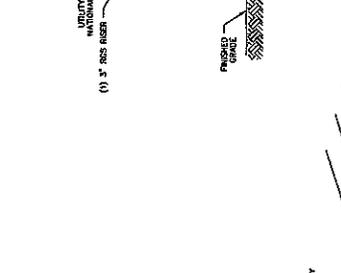
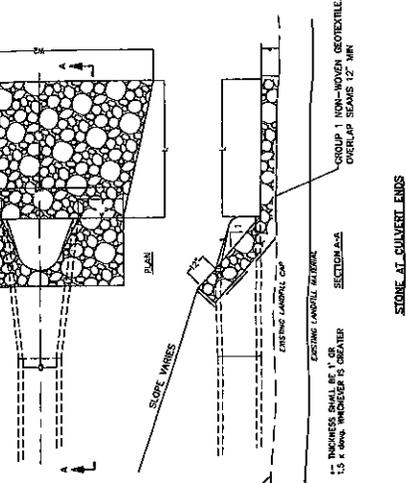


**NOTES:**  
1. SECTION SHOWN IS FOR OPEN LANDFILL. CROSSINGS SHOULD USE GRAVEL SECTION AT SURFACE. CONDUIT SHALL BE 50% PVC FOR THE ACCESS ROAD CROSSING.



Ø	MIN. STONE SIZE
12"	12"
18"	18"
24"	24"
30"	30"
36"	36"
42"	42"
48"	48"
54"	54"
60"	60"
66"	66"
72"	72"
78"	78"
84"	84"
90"	90"
96"	96"
102"	102"
108"	108"
114"	114"
120"	120"

GROUP 1 NON-WOVEN GEOTEXTILE FABRIC  
GROUP 2 WOVEN GEOTEXTILE FABRIC  
GROUP 3 WOVEN GEOTEXTILE FABRIC



Town of Tyngsborough  
 Address List

Parcel ID	Location	Owner	Co-Owner	Mailing Address	City	State	Zip
1191	CUMMINGS RD	COMMONWEALTH OF MASS		1 WINTER ST	BOSTON	MA	02108
1220	CUMMINGS RD	WARREN KENNETH S	D.E.Q.E.	56 CUMMINGS RD	TYNGSBOROUGH MA	MA	01879
1430	3 TRADER CR	589 PLEASANT STREET REALTY L		P O BOX 687	TYNGSBOROUGH MA	MA	01879
1440	5 TRADER CR	5 TRADER CIRCLE REALTY TRUST			BILLERICA	MA	01821
1450	66 PROGRESS AV	A & J REALTY TRUST		15 LAMONT ST	CHELMSFORD	MA	01824
1460	72 PROGRESS AV	CRANE REALTY TRUST		EVERLEIGH JILL J TRUSTEE 8 ARTHUR AV	TYNGSBOROUGH MA	MA	01879
1470	78 PROGRESS AV	PHOENIX REALTY LLC		FROST GEORGE A TRUSTE 72 PROGRESS AVE	TYNGSBOROUGH MA	MA	01879-0490
1490	90 PROGRESS AV	HEP PROPERTIES LLC		C/O C + C MACHINE	TYNGSBOROUGH MA	MA	01879
1100	530 DUNSTABLE RD	BERGERON RICHARD &		92 MIDDLESEX RD UNIT 3	TYNGSBOROUGH MA	MA	01879
1110	DUNSTABLE RD	CHARLES GEORGE 2007 IRREVOC		530 DUNSTABLE RD	TYNGSBOROUGH MA	MA	01879
1120	77 CUMMINGS RD	GESI REALTY TRUST		DOROTHY GEORGE 2004 RI P O BOX 702	LONDON DERRY NH	NH	03053
1130	76 CUMMINGS RD	DUNSTABLE RD LAND PROP LLC		G GUILMETTE ETAL C/O ANI 10 TIMBERWICK DRIVE	CLIFTON PARK NY	NY	12065
1140	525 DUNSTABLE RD	DUNSTABLE RD LAND PROP LLC		P O BOX 702	LONDON DERRY NH	NH	03053
114A0	CUMMINGS RD	DUNSTABLE RD LAND PROP LLC		P O BOX 702	LONDON DERRY NH	NH	03053
1150	CUMMINGS RD	DUNSTABLE RD LAND PROP LLC		P O BOX 702	LONDON DERRY NH	NH	03053
1160	DUNSTABLE RD	DUNSTABLE RD LAND PROP LLC		P O BOX 702	LONDON DERRY NH	NH	03053
1210	DUNSTABLE RD	DUNSTABLE RD LAND PROP LLC		P O BOX 702	LONDON DERRY NH	NH	03053
1211	DUNSTABLE RD	GEORGE JAMES CHARLES TRUST		P O BOX 702	LONDON DERRY NH	NH	03053
1220	DUNSTABLE RD	GEORGE JAMES CHARLES TRUST		P O BOX 702	LONDON DERRY NH	NH	03053
1260	DUNSTABLE RD	CHARLES GEORGE 2007 IRREVOC		P O BOX 702	LONDON DERRY NH	NH	03053
1261	475 DUNSTABLE RD	CHARLES GEORGE 2007 IRREVOC		P O BOX 857	LONDON DERRY NH	NH	03053
190	DUNSTABLE RD	DUNSTABLE RD LAND PROP LLC (		P O BOX 702	LONDON DERRY NH	NH	03053
		EL KAREH JOSEPH K & MARY B		DOROTHY GEORGE 2004 RI P O BOX 702	LONDON DERRY NH	NH	03053
				544 MERRIMACK ST	LOWELL	MA	01854

\*\*\* Contact the Dunstable Assessor for a list of abutters in Dunstable Ma

End of Report

COVER SHEET

ABUTTERS LIST AS PER CH 40A; SEC 11

TOWN BOARD: SELECTMEN

LOCATION:

CHARLES GEORGE LANDFILL (14-13-0, 14-14-0, 14-14A-0, 14-15-0, 14-16-0)

BY: ERIN SEJKORA

PREPARED BY: JENNIFER WILSON



DATE: 3/24/2015

CERTIFIED LIST OF PARTIES IN INTEREST

SPECIAL PERMIT

(Must be submitted with Special Permit Application)

April 7<sup>th</sup>, 2015

To the Board of Selectmen of the Town of Tyngsborough

The undersigned, being an applicant for approval of the special permit for the land shown on Assessors Map No. \_\_\_\_\_ as Lot No. \_\_\_\_\_ submits the following sketch of the land listing the names of the adjoining owners in their relative positions and indicating the address of each party in interest in a separate list. Parties in Interest include owners of land in question, owners of land which lie within 300 feet of a boundary or part thereof of the land in question, owners of land directly opposite any public or private street or way; all as they appear in the most recent applicable tax list notwithstanding that the land of any such owner is located in another town or another state, the Planning Boards of abutting town in Massachusetts or in New Hampshire and the Tyngsborough Building Inspector as prescribed in MGL Chapter 40A Section 11.

Signature of Applicant *[Handwritten Signature]*

Address 88 Black Falcon Ave. Boston MA 02210

Date 04/07/2015

To the Board of Selectmen of the Town of Tyngsborough:

This is to certify that at the time of the last assessment for taxation made by the Town of Tyngsborough, the names and addresses of the parties in interest to the parcel of land shown above were as above written, except as follows:

Certified: \_\_\_\_\_  
Assistant Assessor,  
Town of Tyngsborough

**Town of Dunstable**  
**Abutters List**

**Date:** March 23, 2015

**Subject:** Map 22 Block 53 Lot 0  
Blodgett St.

**Town Board:** Planning Board

**Requested by:** Erin Sikora  
Tighe and Bond  
53 Southhampton Rd.  
Westfield, MA 01085

**Prepared by:** Terry Atwood  
978-649-4514 x227

TUA

413 | 572 - 3288  
413 | 562-5317 fax

03/23/2016

12:18:24PM

Page 1 of 1

# Town of Dunstable Abuffers List

ParcelID	Location	Owner	Co-Owner	Mailing Address	City	State	Zip
22 49 0	304 LOWELL ST	GEORGE DOROTHY G		304 LOWELL ST	DUNSTABLE	MA	01827
22 49 1	284 LOWELL ST	GEORGE CHARLES SR 2004 REV	DOROTHY GEORGE 2004 RE	PO BOX 702	LONDONDERRY	NH	03053
22 51 0	BLODGETT ST	GESI REALTY TRUST	C/O ANN HYDE	10 TIMBERWICK DR	CLIFTON PARK	NY	12065
22 52 0	BLODGETT ST	TYSON CHARLOTTE	ALLAN M HUNTER	41 CUMMINGS RD	TYNGSBORO	MA	01879
22 53 0	BLODGETT ST	GEORGE CHARLES SR 2004 REV	DOROTHY GEORGE 2004 RI	PO BOX 702	LONDONDERRY	NH	03053
22 54 0	BLODGETT ST	WARREN KENNETH S		56 CUMMINGS RD	TYNGSBOROUGH	MA	01879

**End of Report**

**Certified List of Parties in Interest**  
**Special Permit**  
(Must be submitted with Special Permit Application)

April 7, 2015

To the Planning Board of the Town of Dunstable,

The undersigned, being an applicant for approval of the Special Permit for the land shown on Assessor's Map No. 28 as Block/Lot No.: 53-D submits the following sketch of the land listing the names of the adjoining owners in their relative positions and indicating the address of each party in interest in a separate list. Parties in interest include owners of land in question, owners of land which lie within 300 feet of a boundary or part thereof of the land in question, owners of land directly opposite any public or private street or way; all as they appear in the most recent applicable tax list notwithstanding that the land of any such owner is located in another town, the Planning Board of Pepperell, Groton, Tyngsborough, Nashua NH, Hollis NH, and The Dunstable Building Inspector as prescribed in M.G.L. Chapter 40A, Section 11.

  
Signature of Applicant

88 Black Falcon Ave  
Boston, MA 02210  
Address

March 23, 2015

To the Planning Board of the Town of Dunstable

This is to certify that at the time of the last assessment for taxation made by the Town of Dunstable, the names and addresses of the parties in interest to the parcel of land shown above were as above written, except as follows:

Certified: Luce Atwood  
Assessor, Town of Dunstable

## **Operations & Maintenance Plan**

The Operation & Maintenance (O&M) plan for the solar array is explained below. It is not intended that the protocol listed here will replace the current O&M activities for the landfill, rather update the existing procedures to meet the needs of the solar array.

Prior to the start of construction, the site will be inspected to document current conditions and areas identified as needing maintenance, if any, will be addressed as appropriate. Following construction and re-establishment of any vegetation impacted during construction, the operation and maintenance of the landfill should not be significantly altered from the current requirements. The site should continue to be inspected regularly for erosion and to ensure the stormwater system is operating as designed. Any erosion to the landfill surface should be stabilized and repaired immediately upon discovery. Additionally, vegetation management in the vicinity of the panels and at the interface of the ballast/gravel base will require careful, manual maintenance.

Tyngsborough Solar, LLC (Tyngsborough Solar) is responsible for maintaining and servicing the solar electric system post construction. This work will be performed through a combination of Tyngsborough Solar's personnel, their-approved subcontractors, or authorized vendor (manufacturer of components used in the solar PV system) representatives. The area where the Solar Electric System is located and the immediate proximity of the electrical equipment shall be treated as a Secure Facility, accessible only by authorized personnel. Access to these locations should be arranged by contacting the Owner or Operator.

Operations at the site will be minimal. The panels are static, and are monitored remotely on a continuous basis over the internet. On a daily basis, the applicant will be responsible for responding to alerts from system's automated alert system regarding potential system malfunction.

Additional maintenance at the site will typically consist of the following.

### **Equipment Maintenance**

Tyngsborough Solar and/or its authorized sub-contractors will conduct the following tasks to ensure maintenance and proper operation of the solar PV system equipment.

- Perform a visual inspection of the equipment including subassemblies, wiring harnesses, contacts and major components and record ambient operating temperature.
- Check inverter modules for the following:
  - IGBT's and inverter boards for discoloration
  - Power capacitors for signs of damage
  - Record all voltage and current readings via the front display panel
  - Check appearance/cleanliness of the cabinet, ventilation system and insulated surfaces
  - Check for corrosion on terminals and cables
  - Torque terminals, connectors and bolts as needed
  - Check all fuses for open or signs of heating (Inverter & Combiner)

- Check the condition of both the AC & DC Surge Suppressors
- Check the operation of all safety devices (E-Stop, Door Switches, GFDI)
- Correct all deficiency detected
- Inspect (clean or replace) air filter elements
- Complete Maintenance Schedule Card and Issue a written inspection report.
- Install and perform any recommended Engineering Field Modifications, including software upgrades.

### **Site Maintenance**

Tyngsborough Solar and/or its authorized subcontractors will perform site maintenance activities as follow, to ensure safety and to maintain site aesthetics.

- Mowing the grass between the rows of racks a minimum of twice a year, possibly more if the growth of grass requires it. The height of the grass will be similar to the adjacent cleared area of the site and will be maintained at a level to reduce the risk of grass fires. No herbicides or chemicals will be used to manage vegetation.
- Personnel in a pickup-type truck will visit the site monthly to inspect the inverters for proper performance and perform maintenance as needed. The condition of signage and proper functioning of access gates will be inspected as well.

### **Array Cleaning Procedure**

Tyngsborough Solar and/or its authorized subcontractors will clean the PV panels if the system is outputting a noticeably lower wattage AC or there is an accumulation of dirt on the modules. Maintaining module cleanliness is crucial to maximizing system performance. No harmful chemicals shall be used in the cleaning of the modules. Cleaning of the panels will be done with water and a soft-bristled broom if needed. Note that the PV system does not need to be turned off during cleaning.

# EMERGENCY RESPONSE PLAN

Tyngsborough Solar Project

Charles-George Landfill, Tyngsborough, MA

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In the case of an emergency, responders will access the Solar Facility from the west where there is access from Cummings Road (via Dunstable Road). Follow the access road to the right/south where the electrical equipment and disconnects are located. Responders can readily access the electrical equipment, which is located adjacent to the access road. The location of the electrical equipment will be clearly marked from the gates and the disconnect switch will be clearly labeled.

The emergency response plan will be filed with local emergency responders and updated as necessary. Emergency response information may also be posted on the access gates. Contact information is included below.

---

## **24-hour Emergency Contact/ Tyngsborough Solar, LLC Contact:**

Emma Kosciak  
Tyngsborough Solar LLC  
88 Black Falcon Avenue, Suite 342  
Boston, MA 02210  
Phone: (617) 951-0413  
Fax: (617) 542-4487

## **Town of Tyngsborough Police Department: In emergency dial 9-1-1**

Town of Tyngsborough Police Department  
20 Westford Road  
Tyngsborough, MA 01879  
(978) 649-7504

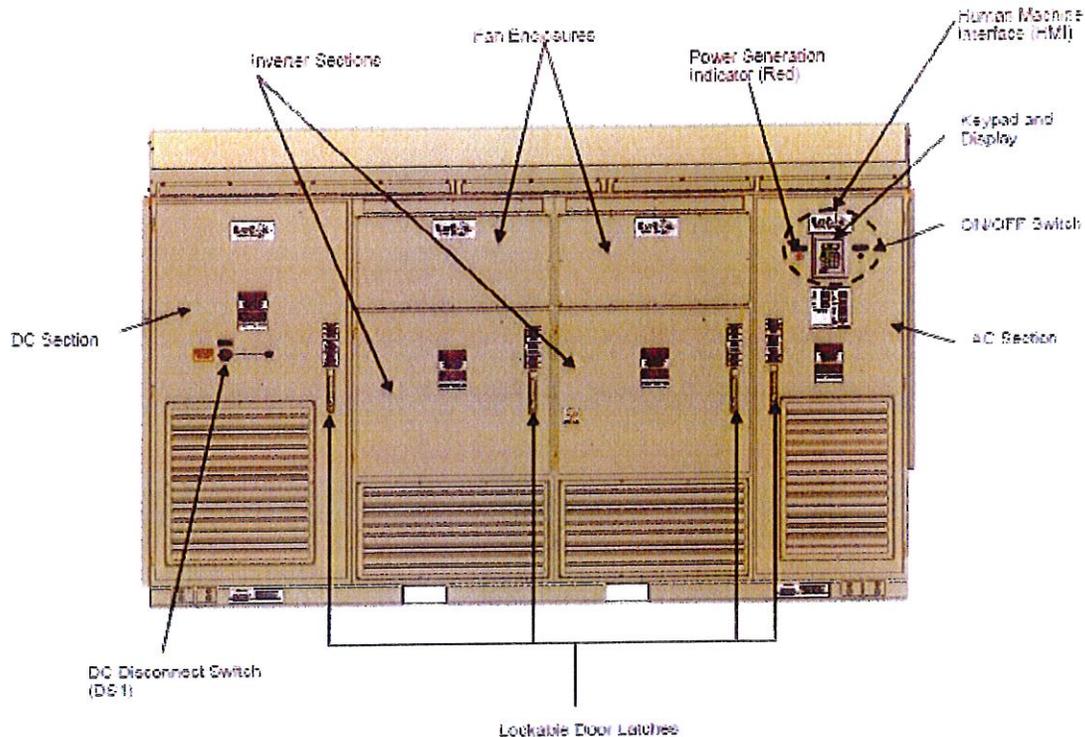
## **Town of Tyngsborough Fire Department: In emergency dial 9-1-1**

Town of Tyngsborough Fire Department  
Tyngsborough, MA 01879  
(978) 649-7671

## Emergency Shut Down Procedure:

In an emergency situation the ON/OFF switch on each inverter should be manually turned to the OFF position. This will internally shut off both the AC and DC switches inside the inverter. After the system has been turned off the DC Disconnect Switch labeled DS 1 should be turned off and a lock should be placed on it to keep it from being reenergized.

Now that the system is off, follow normal shut down procedures below to turn off remaining closed switches.



## Simple System Shutdown and Startup Procedures

Any work done on solar electric system must be approved in writing by Tyngsborough Solar, LLC and performed by an authorized electrician. To work on the DC side of the solar system when the system is running properly or to reset the inverter, use the following steps to shut down and restart the system.

### Inverter Shutdown

Use the following procedures for system shutdown.

- Turn off the ON/OFF switch on the inverter
- Turn the DC disconnect off
- Turn the AC disconnect off
- Install lockout devices on the disconnects
- Turn off DC-Fused Combiner Box switches

## **Inverter Start / Restart**

Use the following procedures for system start-up and restart:

- Turn on DC-Fused Combiner Box switches after verifying the following:
- Inverter is off
- The AC and DC disconnects are off
- Remove any lockout devices on AC and DC disconnects
- Make sure all combiner fuses are closed
- Close the AC disconnect
- Close the DC disconnect

After a short initialization period, the inverter will transition to "waking up" provided that the PV voltage is greater than the PV voltage start set point. After another short period (typically 5 minutes) the system will start up. The inverter cuts itself off when either AC or DC power is removed. It is best to remove both sources of power and you must do this before attempting to service the unit.

## **SITE SAFETY PROCEDURES**

### **GENERAL WARNINGS!**

- The equipment contains lethal AC and DC voltages!
- Site access is intended for authorized personnel only!
- These servicing instructions are for use by qualified personnel only!
- Equipment is supplied from multiple sources!
- The inverter contains energy storage devices that require 15 minutes to safely discharge lethal voltages!

### **DO NOT VIOLATE SITE SAFETY AND OPERATION PROCEDURES**

The installation, adjustment, repairs or testing of the Photovoltaic System involves possible contact with potentially lethal voltages and currents. No attempt to install or service the system should be made by anyone who is not qualified, trained technician familiar with power electronic equipment.

### **Hazardous Locations**

The following are deemed hazardous locations:

- Inverters and Disconnects: For hazardous locations within the inverter, refer to the Inverter Operations and Maintenance Manual.
- Vicinity of the Solar Electric Photovoltaic System.
- Field wiring and all electrical boxes associated with the system.

### **Precautions While in the Vicinity of the Solar Electric System**

- Safety glasses and electrical insulating gloves must be worn when handling or working near the array, modules, electrical boxes, or wiring.

- It is recommended to always have at least two persons present when working on the array or handling modules. Do not attempt to service or adjust unless another person capable of rendering first aid and cardiopulmonary resuscitation (CPR) is also present.
- Any accidents should be immediately reported to a Supervisor, who should then report to Tyngsborough Solar LLC.
- The Photovoltaic Modules are made of glass and can be broken. Dropping or banging the modules may cause them to break, as may impact with sharp, hard or heavy objects. Along with electrical hazard, sharp edges or broken glass can cause injury. Be careful not to break modules and take care to properly handle and dispose of modules if they are cracked or broken.
- Any crack in the module can expose the person touching it to the full voltage and current of the array. If the module is wet, touching a cracked module anywhere may expose the person to the full voltage and current of the array. Do not touch the modules when they are exposed to the sun without wearing electrical insulating gloves. Do not touch a wet, cracked module without wearing electrical insulating gloves.
- A module may contain an unknown crack or connector failure at any time. Do not touch, handle or carry any wet module without wearing electrical insulating gloves.



**CITIZENS  
ENERGY  
CORPORATION**  
a non-profit energy company

October 27, 2013

Karen George  
Dunstable Road Land Properties, LLC  
c/o Charles George Companies, Inc.  
209 Nashua Road  
Londonerry, NH 03053

Dear Ms. George,

Please find following a letter of intent between Dunstable Road Land Properties, LLC ("Owner"), and Citizens Enterprises Corporation ("Citizens"). Citizens Enterprises Corporation is the for-profit wholly owned subsidiary of the non-profit Citizens Energy Corporation.

This letter will serve as the basis of an understanding between the parties, whereby Citizens will undertake a process of determining the feasibility of the proposed site for development as a ground mounted solar generating facility (hereinafter, the "Option Period"). This process will include a determination as to the feasibility of the issues associated with permitting and regulatory process as well as the engineering, operational and commercial feasibility of developing the site as intended.

1. **The Property:** The site is located in Tyngsboro, Massachusetts, consisting of approximately sixty-four (64) acres of land and is otherwise known as the Landfill Site. A more precise description of the Property is herewith attached as exhibit "A" and is incorporated herewith.
2. **The Option Period:** During the Option Period, Citizens will explore, at its own expense, permitting and approvals with the Massachusetts Department of Environmental Protection, the Environmental Protection Agency, and National Grid for a ground mounted solar array on the site. It is specifically understood and agreed that all contact with the Town of Tyngsboro shall be through the Owner and / or the Owner's agents and representatives.

Citizens will also, at its own cost and expense, undertake preliminary engineering for the placement and anchoring of a ground mounted solar array on the site. During the Option Period, Citizens will have exclusive rights to pursue a solar development of the site. Citizens will provide Owner with a notice of termination if the property is found, at Citizens' discretion, not to be feasible for solar development. At such time, copies of all study materials and data pertaining to the property, such as surveys, wetlands delineations, engineering and geotechnical information developed during the due diligence period, shall be made available to Owner at no charge.





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[REDACTED]

One megawatt of solar takes us approximately five acres of land. [REDACTED]  
[REDACTED] per [REDACTED]  
[REDACTED] the size of the project. The lease payments will [REDACTED]

6. [REDACTED] resulting in a [REDACTED]

6. **Ownership of Solar Assets:** Citizens will fund 100% of all solar development costs (both hard and soft costs) and plans to own the solar assets subject to a mutually agreeable Lease.

7. **Conditions Precedent to Closing:** The Closing and finalization of the Lease by Owner and Citizens will be contingent upon the following:

- a. Owner shall provide verification to Citizens, that (i) all real estate taxes, due and payable with regard to the property upon which the solar project will be located, have been paid in full or that the outstanding balances have been resolved, and (ii) that there is no change in the zoning classification for the property which adversely affects the project economics, and there exists no zoning impediment precluding Citizens from developing and operating a solar system upon the leased premises.
- b. Citizens shall obtain, at Citizens own cost and expense, a satisfactory Phase I Post Closure Report.
- c. Citizens shall obtain at Citizen's own cost and expense a title report with respect to the site which is satisfactory to the needs of Citizens, and permits the development and use of the site as intended, the operation of the System and financing of same.
- d. There shall exist no adverse material change in the condition, business, or ownership of the leased premises from the condition as now exists that would prohibit Citizens from proceeding forward with the construction and operation of the System.



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- e. Citizens shall undertake a diligent effort to obtain such historical information as may be available or obtainable; and shall review such maintenance information such that Citizens is satisfied as to the maintenance cost associated with said Property.
8. **Costs and Expenses:** Each party shall pay all of its costs and expenses (including legal) associated with the drafting and execution of this letter of intent, the Lease, and negotiating and closing the transaction contemplated hereby.
9. **Brokers:** Owner and Citizens shall warrant to each other that they have had no dealing with any real estate brokers(s), leasing brokers(s), or agent(s) in connection with the negotiation of this transaction, and know of no real estate brokers(s) or agent(s) who are entitled to assert a claim for payment or a commission in connection with this transaction. Owner and Citizens herewith mutually agree to indemnify and hold each other harmless with respect to any acts, which may give rise to possible claims asserted by others with respect to commissions relative to the lease transaction herein contemplated.
10. **Business Plan:** Citizens agrees to work cooperatively with Owner to provide a business plan for the solar project outlining the benefit to the Town with the intention of presentation, either written or in person at Owner's sole discretion. The intent of this business plan is to support the Owner with their efforts to resolve any outstanding tax issues associated with the Property.

Citizens and Owner have mutually agreed to the terms outlined above in this letter of intent. This letter will serve as a basis for a common understanding of the Option Period and the basic structure for Citizens' contemplated lease and solar development on the Property in Tyngsboro, MA.

Peter F. Smith  
Chief Operating Officer  
Citizens Enterprises Corporation

Date: 10/28/13  
Signature: Peter F. Smith

Karen George  
Owner Manager  
Dunstable Road Land Properties, LLC

Date: 10/28/13  
Signature: Karen George

**DUNSTABLE ROAD LAND PROPERTIES, LLC**  
**89 TURNPIKE ROAD**  
**IPSWICH, MA 01938**

April 6, 2015

Town of Tyngsborough  
25 Bryants Lane  
Tyngsborough, MA 01879

Re: Landfill Special Permit Application

To Whom It May Concern:

Dunstable Road Land Properties, LLC is furnishing this correspondence as the landowner and operator of the Charles-George Reclamation Trust Landfill located at 300 Cummings Road Tyngsborough, MA. Dunstable Road Land Properties, LLC has entered into a long term Lease Agreement with Tyngsborough Solar LLC for a solar generation facility to be located on the capped and closed Landfill.

Dunstable Road Land Properties, LLC to the best of its knowledge, there are not any existing variances and/or special permits for the property.

Dunstable Road Land Properties, LLC is in support of Special Permit Application being submitted by Tyngsborough Solar LLC for the proposed solar photovoltaic generation project at the former landfill site.

Kind regards,

  
Karen George  
Manager

KG/djs