

Jordan, Richard

From: Jordan, Richard
Sent: Monday, August 08, 2016 1:01 PM
To: 'Moeller, Roger (DEP)'
Cc: Marni Carroll; Jackson, Rob; Spieler, Richard (DEP)
Subject: RE: Titcomb Landfill Solar Project (X269745)
Attachments: SW_Pre_Post_update-POST.PDF

Hi Roger, thanks for the review. It couldn't have been too late as I recall that my three year old was still awake and saying that he "isssn't tired"!

Here is the revised sheet SW-2.0. Let me know if this fits the spot and if you have any questions/needs.

Thanks again -

Rich Jordan – TRC
Office: (207) 274-2624 | Cell: (207) 317-3583

rjordan@trcsolutions.com

From: Moeller, Roger (DEP) [mailto:Roger.Moeller@MassMail.State.MA.US]
Sent: Monday, August 08, 2016 11:51 AM
To: Jordan, Richard <RJordan@trcsolutions.com>
Cc: Marni Carroll <mcarroll1@sunedison.com>; Jackson, Rob <RJackson@trcsolutions.com>; Spieler, Richard (DEP) <richard.spieler@state.ma.us>
Subject: RE: Titcomb Landfill Solar Project (X269745)

Hi Rich,

Thank you for the submitting the requested additional information, looks like you had a late Sunday night doing so. I did a cursory review of the additional information and it looks like a revised Sheet SW-2.0 "Post Development Stormwater Analysis", which should show the revised drainage basin layout, still needs to be submitted in order to complete the BWPSW36 application review. Please submit at your earliest convenience and then the technical review will be restarted.

Thank you,

Roger

From: Jordan, Richard [mailto:RJordan@trcsolutions.com]
Sent: Sunday, August 07, 2016 8:51 PM
To: Moeller, Roger (DEP)
Cc: Marni Carroll; Jackson, Rob; Spieler, Richard (DEP)
Subject: FW: Titcomb Landfill Solar Project (X269745)

Hello Roger,

Please find below and attached, responses to your inquiries of May 6, 2016 regarding the Titcomb Landfill Solar Project in Amesbury, MA. SunEdison would like to request a restart of your technical review for the PCUP and as their agent on the

project, TRC has assembled this information to address your May requests. Please let me know if you have any questions or need additional information.

Thank you -

Rich Jordan (PWS/CPESC)
Planning, Permitting & Licensing



6 Ashley Drive, Scarborough, ME 04074
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From: Moeller, Roger (DEP)
Sent: Friday, May 06, 2016 10:33 AM
To: 'RJackson@trcsolutions.com'
Cc: Spieler, Richard (DEP)
Subject: RE: Titcomb Landfill Solar Project (X269745)

Hi Robert,

As we discussed, based on our review of the BWPSW36 permit application regarding Titcomb Pit LF solar project, we would like to request the following additional information and site visit:

- 1) A review of Sheet C-5 "Grading Plan" shows a proposed permanent access road and associated grading such that areas upslope of the proposed access road will be graded towards or parallel to the proposed access road. A review of Sheet SW-2.0 "Post Development Stormwater Analysis" does not include the grading upslope of the permanent access road as shown on Sheet C-5. Per our conversation the project will include grading upslope of the permanent access road as shown on Sheet C-5. The proposed access road and grading appears to affect existing stormwater runoff pathways and should be modeled in the post development stormwater analysis. Please revise and resubmit Sheet SW-2.0 and relevant post development stormwater analysis calculations to include the proposed access road and grading. If time permits, it would also be helpful to revise Sheets C-2 and C-3 to show proposed final grades instead of existing and resubmit.

Acknowledged and amended. Please see the attached revised documents, as described in the list below:

- *TRC revised the "Post Development Stormwater Analysis" to include the grading upslope of the permanent access road, as shown on Sheet C-5, and made changes to other relevant sheets associated with the revised analysis.*
 - *The updated calculations indicated the need for a larger diameter culvert. Detail sheet C-6.1 was updated to reflect this change in culvert size.*
 - *Sheets C-2 and C-3 have also been revised to show proposed final grades instead of existing.*
 - *Also included are revised Tables 3, 4, and 5 from the Post Closure Use Permit (PCUP) application reflecting the post closure landfill topography.*
- 2) The orientation of some of the solar panels and ballast blocks, particularly on the east side slopes, will lead to directing stormwater flow into concentrated flow pathways between the ballast blocks. As we discussed, other existing solar projects may have a similar orientation of panels and ballasts that have a similar affect on stormwater flow. DEP would like to visit one such site to observe how the vegetative cover and soils are holding up to concentrated sideslope stormwater flow as a result of solar equipment and ballast blocks. Please let Rick and I know if and when you can arrange an existing solar project site visit, we would very much appreciate it if you could.
 - *As you discussed with Marni Carroll, SunEdison has several sites under construction but none in operation that fit the criteria. Marni will reach out to some of SunEd's development partners to find a more relevant site and coordinate a site visit.*

Lastly, we discussed the remediation of landfill gas migration along the northwestern property line. For your information, if landfill gas migration is not sufficiently remediated by the 6 soil gas vents, 3 already installed and 3 to be installed, GeoSyntec expects extraction of landfill gas from existing gas vents located in waste near the northwest landfill corner may be necessary. It may be necessary for you to coordinate with GeoSyntec to review and adjust the solar panel layout as necessary to provide sufficient access to the existing gas vents to allow installation of gas extraction piping and maintenance of piping and retrofitted gas vents.

Acknowledged. We were told about this at our project kickoff meeting with the DEP and subsequently moved the system away from this area. Note this would be off the landfill cap.

Let us know if you have questions or require additional information.

Thank you,

Roger Moeller, P.E., LEED AP
MassDEP -- Northeast Regional Office
Bureau of Air & Waste-Solid Waste Section
205B Lowell Street, Wilmington, MA 01887
direct (978) 694-3306 fax (978) 694-3499
roger.moeller@state.ma.us

From: Spieler, Richard (DEP)
Sent: Wednesday, May 04, 2016 7:23 AM
To: Moeller, Roger (DEP)
Subject: FW: Titcomb Landfill Solar Project (X269745)

fyi

From: Jackson, Rob [[mailto:](#)]
Sent: Tuesday, May 03, 2016 1:55 PM
To: Spieler, Richard (DEP)
Subject: RE: Titcomb Landfill Solar Project (X269745)

Rick,

Good afternoon. We received a phone call from Roger Moeller a few weeks ago.

We understood there would be an email with a summary of the technical comments, but we have not received this information to date.

We would kindly request this information at your convenience.

Robert E. Jackson, PE
National Market Director – Solar Power
Planning, Permitting, and Licensing



650 Suffolk Street, Wannalancit Mills, Lowell, MA 01854
T: 978.656.3609 | F: 978.453.1995 | C: 978.987.2820

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From: Spieler, Richard (DEP) [<mailto:richard.spieler@state.ma.us>]
Sent: Wednesday, March 23, 2016 1:15 PM
To: Jackson, Rob <RJackson@trcsolutions.com>
Subject: RE: Titcomb Landfill Solar Project (X269745)

Rob: Thanks

Rick

From: Jackson, Rob [<mailto:RJackson@trcsolutions.com>]
Sent: Tuesday, March 22, 2016 6:30 PM
To: Spieler, Richard (DEP); Ruch, Susan (DEP)
Subject: RE: Titcomb Landfill Solar Project (X269745)

Richard,

Good evening. Please see the attached BWP SW 36 Application Form executed by the City of Amesbury in reference to the Titcomb Landfill Solar Landfill.

We hope this satisfies the administrative portion and the technical review can be initiated.

If there is anything else needed, please do not hesitate to contact me.

Robert E. Jackson, PE
National Market Director – Solar Power
Planning, Permitting, and Licensing



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From: Jackson, Rob
Sent: Friday, March 04, 2016 9:57 AM
To: 'Spieler, Richard (DEP)' <Richard.Spieler@MassMail.State.MA.US>; Ruch, Susan (DEP) <susan.ruch@state.ma.us>
Subject: RE: Titcomb Landfill Solar Project (X269745)

Richard,

Good morning. We are working on obtaining a signature from the City on the BWP 36 form and hope to have this shortly.

Robert E. Jackson, PE

National Market Director – Solar Power
Planning, Permitting, and Licensing



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From: Spieler, Richard (DEP) [<mailto:Richard.Spieler@MassMail.State.MA.US>]
Sent: Thursday, March 03, 2016 1:21 PM
To: Jackson, Rob <RJackson@trcsolutions.com>; Ruch, Susan (DEP) <susan.ruch@state.ma.us>
Subject: RE: Titcomb Landfill Solar Project (X269745)

Rob: I just completed the administrative review of the application and we will need the BWP SW 36 form to be signed by a responsible official from the City of Amesbury since they are the applicant.

Thanks

Rick

Richard Spieler, P.E.
MassDEP -- Northeast Regional Office
Bureau of Air & Waste-Solid Waste Section
205B Lowell Street, Wilmington, MA 01887
direct (978) 694-3317 fax (978) 694-3499
richard.spieler@state.ma.us

From: Jackson, Rob [<mailto:RJackson@trcsolutions.com>]
Sent: Monday, February 29, 2016 3:58 PM
To: Ruch, Susan (DEP)
Cc: Spieler, Richard (DEP)
Subject: RE: Titcomb Landfill Solar Project (X269745)

Susan,

Good afternoon. Received a phone call from Abdul Turay, who notified us that the attached transmittal form was not included within the submittal.

We aren't sure what happened, but please see the attached as requested.

If there is anything else needed from us, please let me know.

Robert E. Jackson, PE
Market Director- Renewable Energy Generation



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From: Ruch, Susan (DEP) [<mailto:Susan.Ruch@MassMail.State.MA.US>]
Sent: Monday, February 29, 2016 2:32 PM
To: Jackson, Rob <RJackson@trcsolutions.com>
Cc: Spieler, Richard (DEP) <richard.spieler@state.ma.us>
Subject: RE: Titcomb Landfill Solar Project (X269745)

Rob – we received the hard copy. We'll let you know if we need an additional copy.

From: Jackson, Rob [<mailto:RJackson@trcsolutions.com>]
Sent: Monday, February 29, 2016 10:42 AM
To: Ruch, Susan (DEP)
Subject: Titcomb Landfill Solar Project (X269745)

Susan,

Good morning and hope you had a nice weekend.

Please accept this email on behalf of SunEdison as notification that TRC delivered the BWP SW36 Major Post Closure Use Permit Application for solar development on the Titcomb Landfill located in Amesbury, Massachusetts.

Our engineer delivered one (1) hard copy to the Northeast Regional Office on Friday. If additional copies are needed, please let me know.

The transmittal reference is X269745. We also would appreciate a confirmation that the submittal was received.

Please me know of any questions.

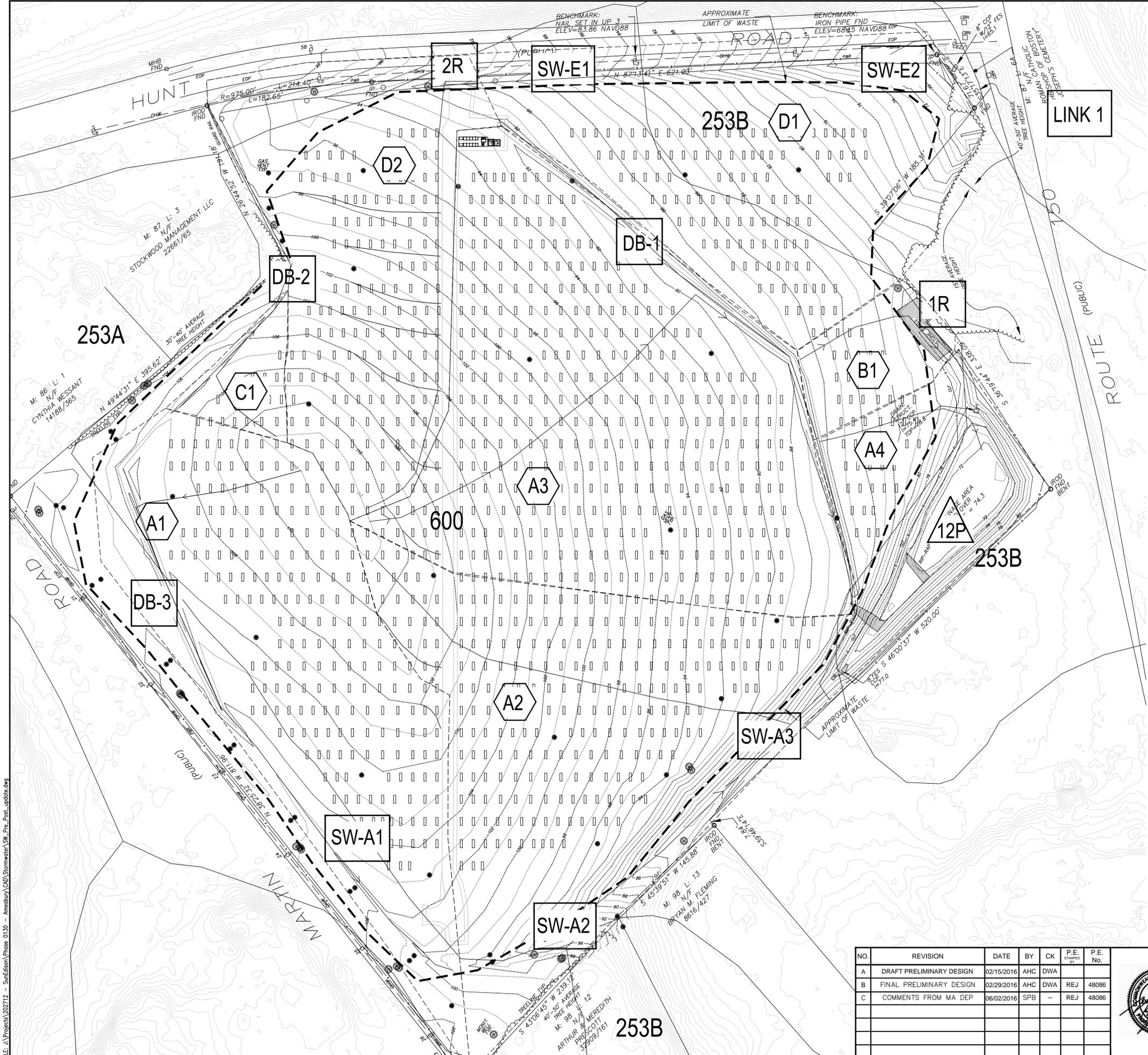
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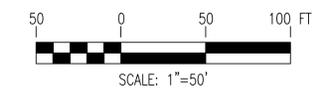


- GENERAL NOTES:**
- SUBJECT PARCEL IS LOCATED IN ZONE OP - OFFICE PARK ZONE
 - THE MINIMUM FRONT AND SIDE YARD SETBACKS SHALL BE FIFTY (50) FEEL FROM THE PROPERTY LINE
 - THE FOLLOWING DATUMS ARE REPRESENTED HEREON:
 HORIZONTAL: MASSACHUSETTS STATE PLANE COORDINATE SYSTEM, NAD 83, MAINLAND ZONE, US FEET.
 VERTICAL: NORTH AMERICAN VERTICAL DATUM 88.
 - TOPOGRAPHICAL SURVEY PERFORMED BY LAND PLANNING, INC, HANSON, MA. EXISTING CONDITIONS PLAN PROVIDED ON DECEMBER 8, 2015.
 - SITE TOPOGRAPHY IS SUPPLEMENTED BY LIDAR DATA OBTAINED FROM USGS.
 - THE PHOTOVOLTAIC LAYOUT WAS PRODUCED BY NEO VIRTUS ENGINEERING, INC. DATED FEBRUARY 10, 2016
 - THE BALLAST BLOCK DESIGN WAS PRODUCED BY RBI SOLAR, INC. DATED JANUARY 21, 2015.
 - UNDERGROUND UTILITIES ARE SHOWN BASED ON VISIBLE SURFACE EVIDENCE ONLY AND ARE NOT CERTIFIED.
 - CONSTRUCTION STAGING AREA WILL BE LOCATED IN THE PROPERTY ADJACENT TO THE SITE FROM THE EAST. THIS PROPERTY IS ALSO OWNED BY THE TOWN OF AMESBURY AND IS CURRENTLY USED AS A PAVED VACANT LOT OFF OF ROUTE 150.

LEGEND (PROPOSED)		LEGEND (EXISTING)	
	INVERTER PAD		OVERHEAD WIRES
	PERIMETER FENCE		EXISTING CONTOUR LINE
	ACCESS ROAD		GAS VENT
	UTILITY POLES		TREE/BRUSH LINE
	CULVERT		UTILITY POLE
	PROPOSED CONTOURS		MONITORING WELL
	BALLAST BLOCKS		STONE SWALE
			APPROXIMATE EXTENT OF LANDFILL CAP
			DRAINAGE BASIN FENCELINE
			PARCEL BOUNDARIES
			PERIMETER FENCELINE
			APPROXIMATE EXTENT OF LANDFILL CAP
			SUBCATCHMENT
			TC FLOW LINE
			REACHLINE
			SUBCATCHMENT ID
			POND ID
			REACH POINT ID

SOILS DATA

ABBREV.	NAME, DESCRIPTION	SLOPES	HSG
253A	FREETOWN MUCK	0-3%	A
253B	FREETOWN MUCK	3-8%	A
600	PITS, GRAVEL		



NO.	REVISION	DATE	BY	CK	P.E. STAMPED	P.E. No.
A	DRAFT PRELIMINARY DESIGN	02/15/2016	AHC	DWA		
B	FINAL PRELIMINARY DESIGN	02/29/2016	AHC	DWA	REJ	48086
C	COMMENTS FROM MA DEP	06/02/2016	SPB		REJ	48086



CLIENT APPROVAL	
JL	APPROVED BY
SUNEDISON COMPANY	DATE
02/19/2016	

TITCOMB LANDFILL

SunEdison

POST DEVELOPMENT STORMWATER ANALYSIS

AMESBURY MASS

TRC Wannalancit Mills
650 Suffolk Street, Suite 200
Lowell, MA 01854
SCALE: 1"=50' DATE: MAY 2016

SW-2.0

REV. C