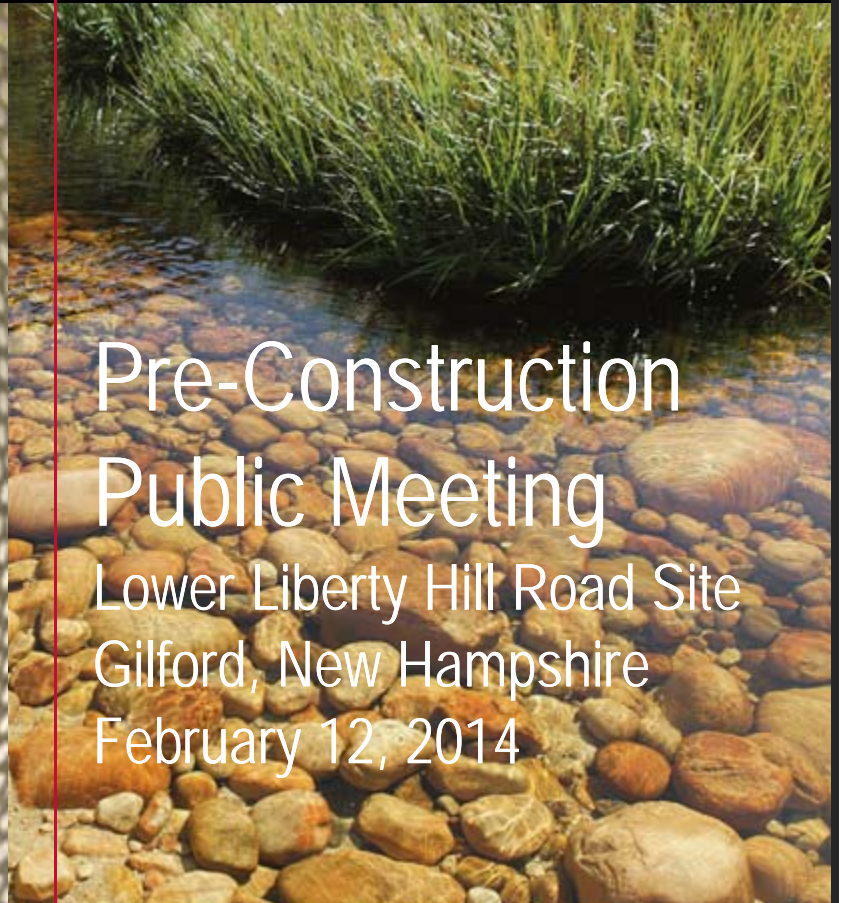
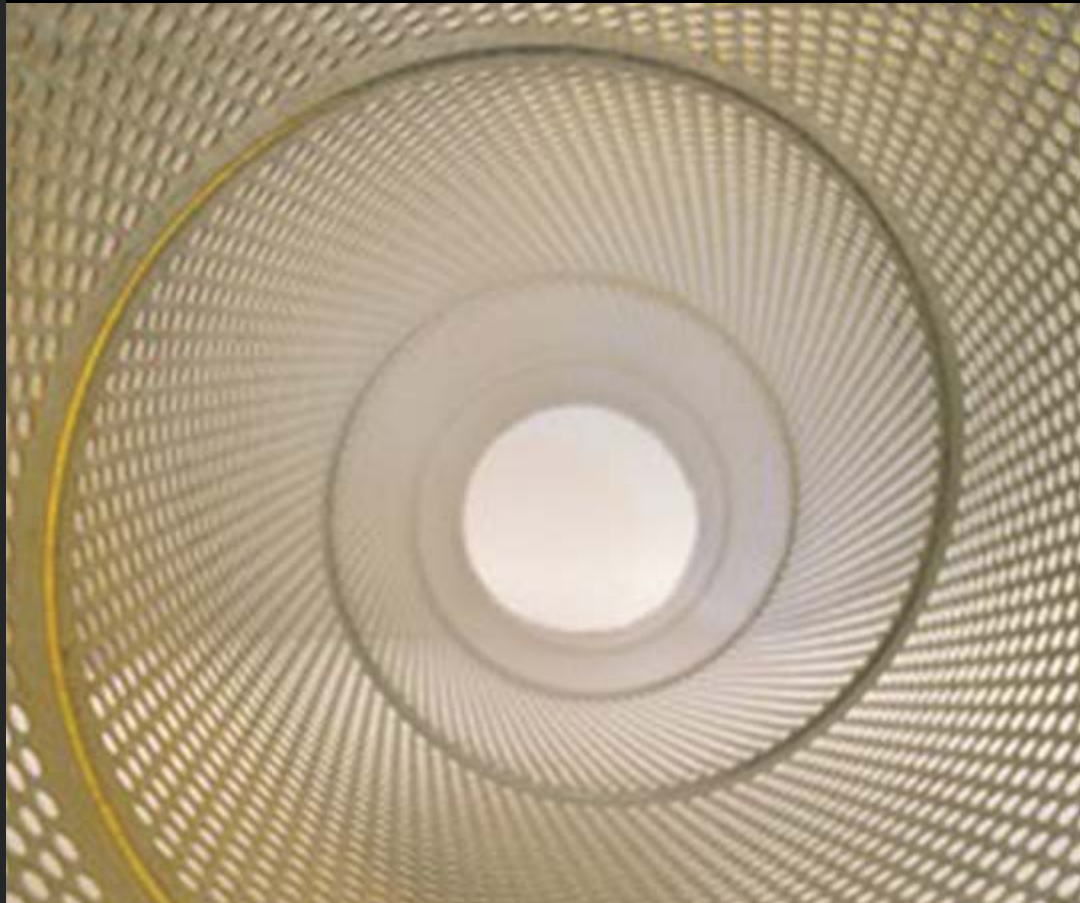


# consulting engineers and scientists



Pre-Construction  
Public Meeting  
Lower Liberty Hill Road Site  
Gilford, New Hampshire  
February 12, 2014





# Introductions

- Mary Casey, Liberty Utilities
  - Owner Project Manager
- Thor Helgason and David Boram, de maximis
  - Construction Manager
- Jeffrey Hebb, Charter Environmental
  - Site Superintendent
- Jim Ash, GEI
  - Engineer of Record



# Summary of Presentation

- Progress Update
- Anticipated Construction Activities
- Anticipated Construction Schedule



# Project Progress

- **Contractor Selection**
  - Liberty bid the Remedial Construction Work
  - Charter Environmental of Boston, MA was selected as the contractor to conduct the work
- **NHDES Approval of Design Plans and Specs –**  
December 2013
- **Alteration of Terrain Permit Obtained from NHDES –**  
October 2013
- **Construction General Permit (CGP) and Remediation General Permit (RGP)**
  - Submitted Applications to EPA
- **Building Demolition – October 2013**
  - Spears Brothers of Laconia demolished remaining structures on 69 and 87 Liberty Hill Road

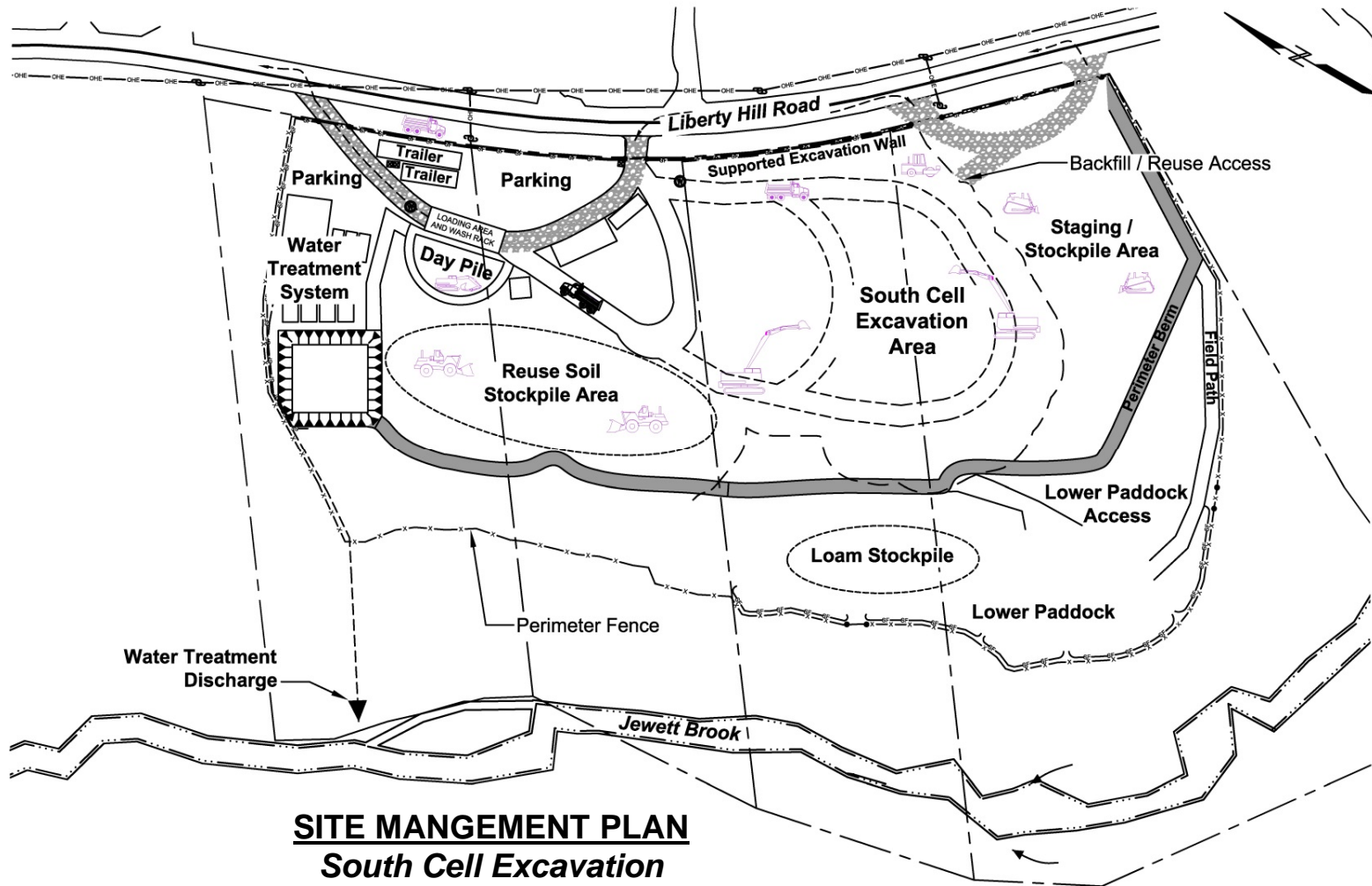


## Remedial Design – Key Features

- Work Divided into Two Phases (North and South). Each Phase Planned for One Season
- Each Phase Consists of:
  - Excavation of Soil
  - Temporary Stockpiling of Re-Use Soil
  - Transport off-site of Treatment Soil
  - Backfill with Re-Use Soil, Treated Soil
- Implementation of Site Controls
- Final Site Grading and Seeding



# South Cell Excavation – Contractor Layout Construction Season 2014



**SITE MANGEMENT PLAN**  
*South Cell Excavation*

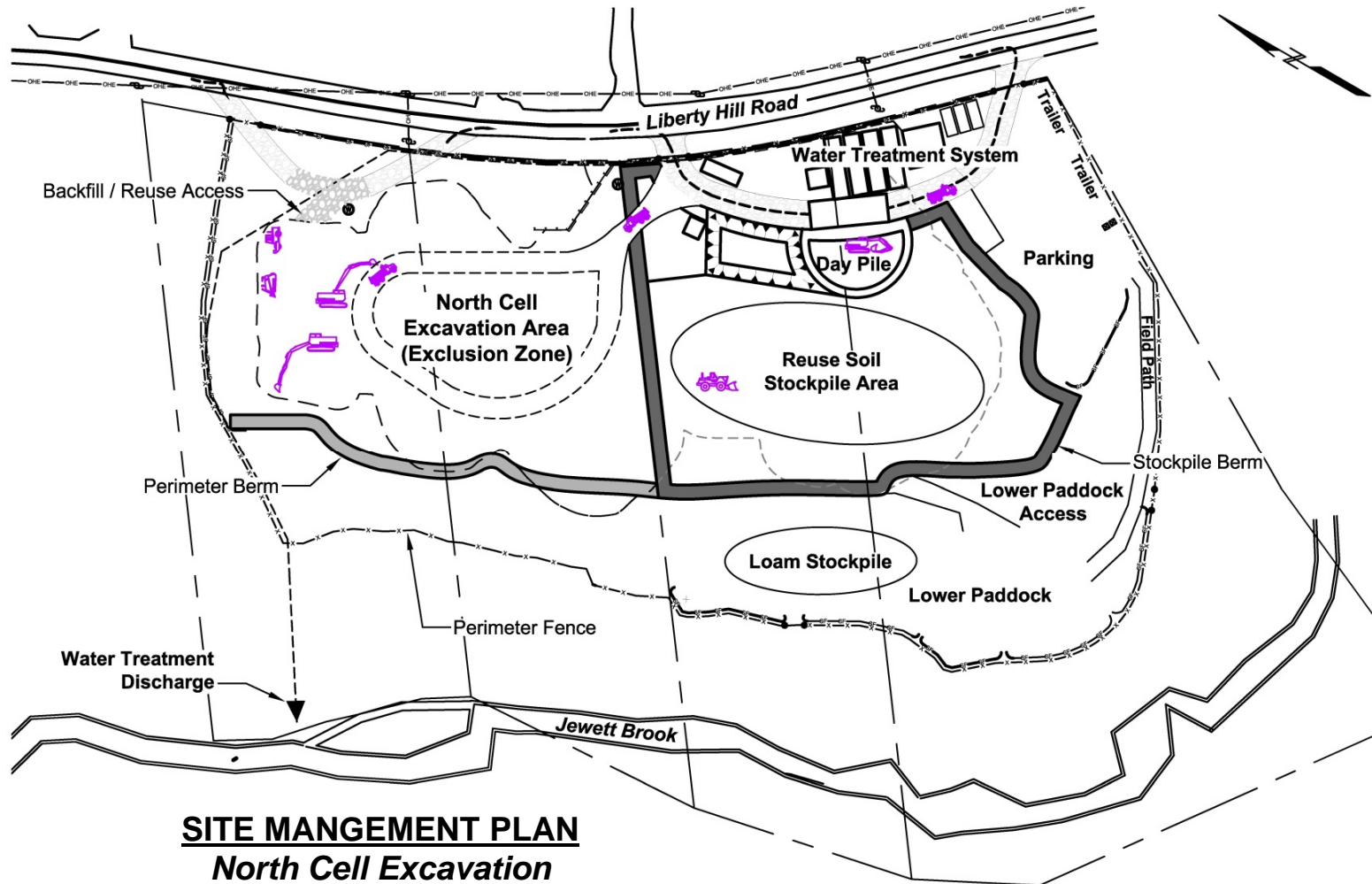


**Liberty Utilities**<sup>SM</sup>





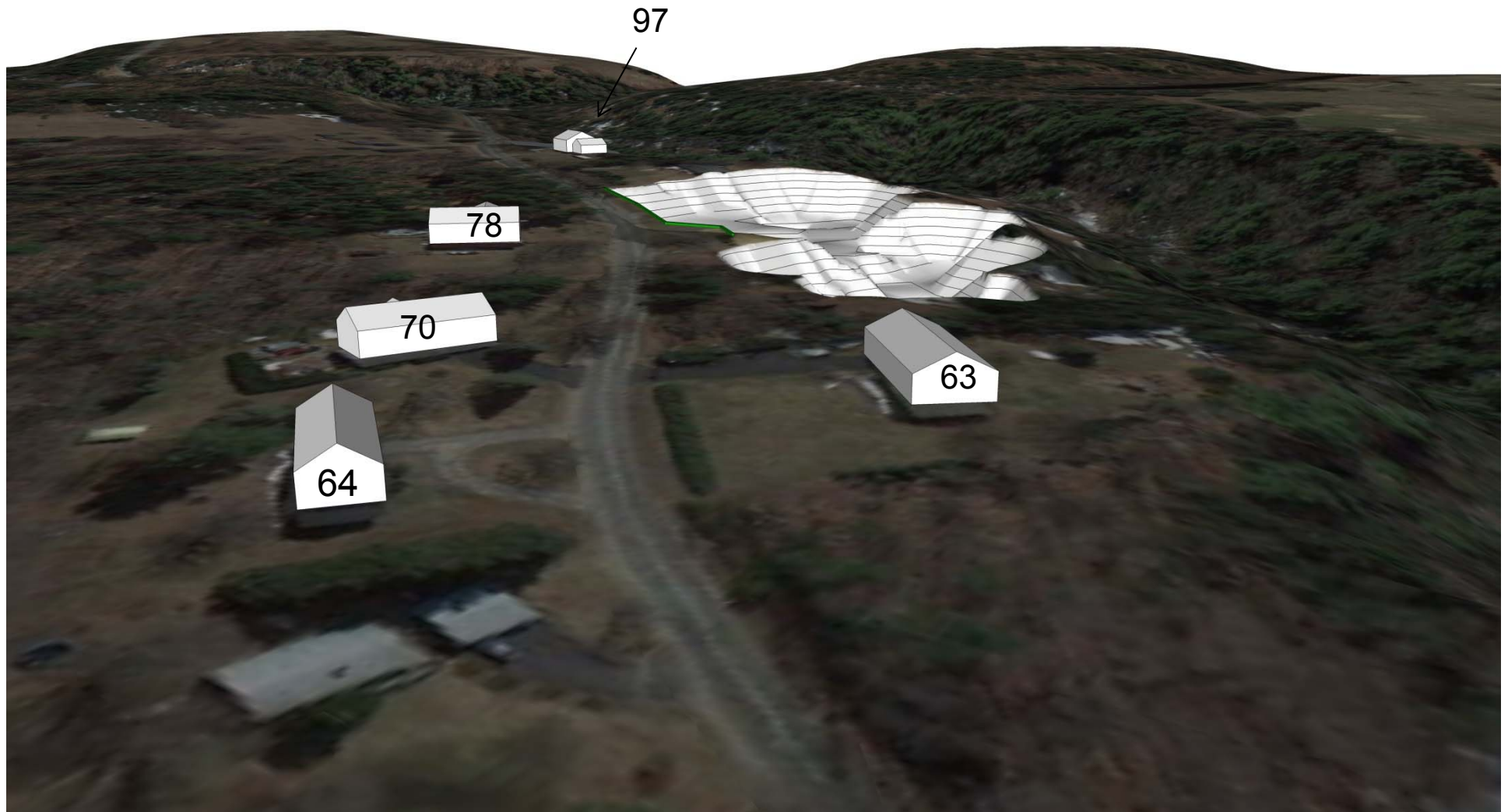
# North Cell Excavation – Contractor Layout Construction Season 2015



**SITE MANGEMENT PLAN**  
*North Cell Excavation*



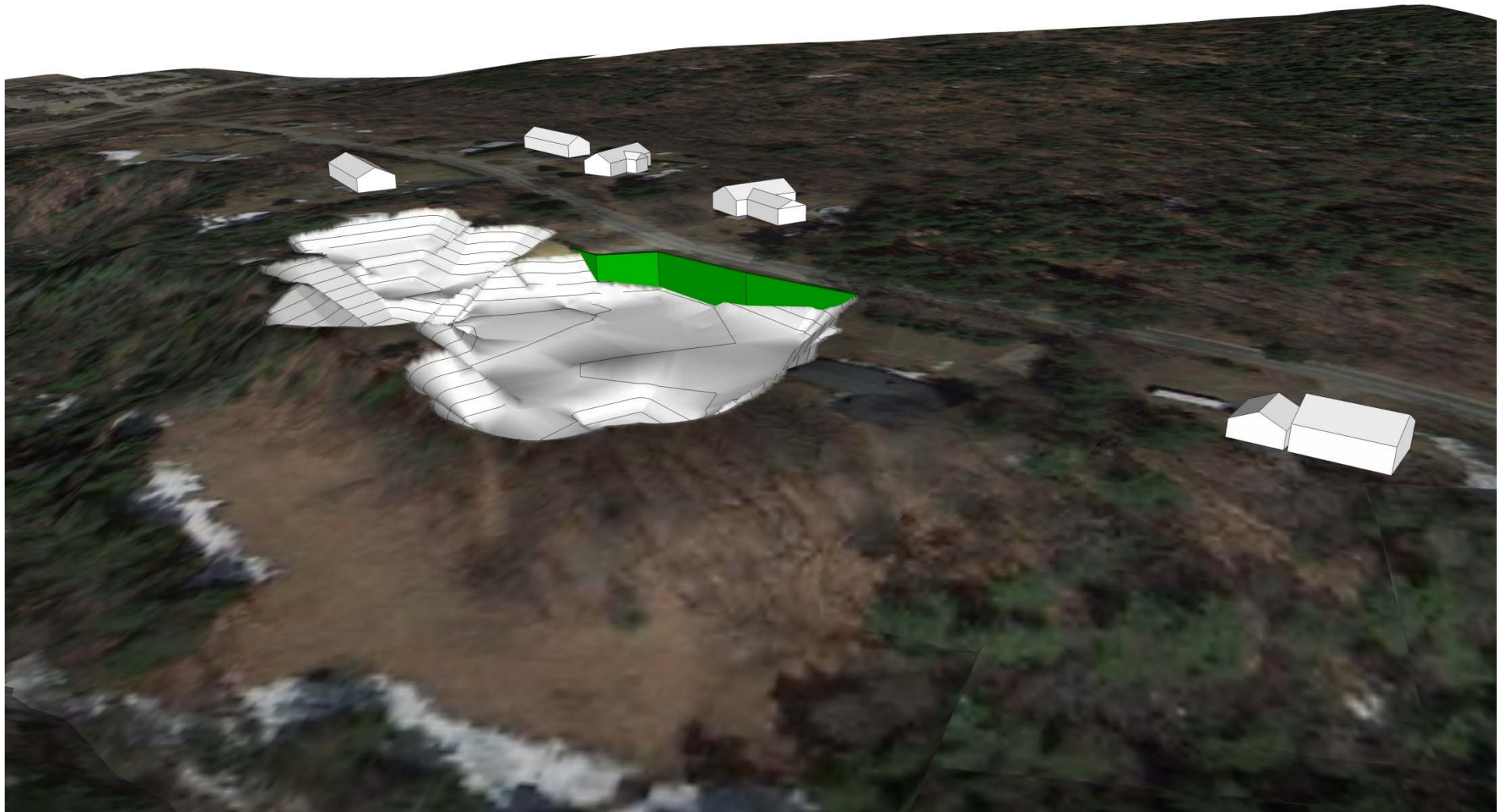
# Aerial View Looking Up Liberty Hill Road







# Aerial View Looking Down Liberty Hill Road

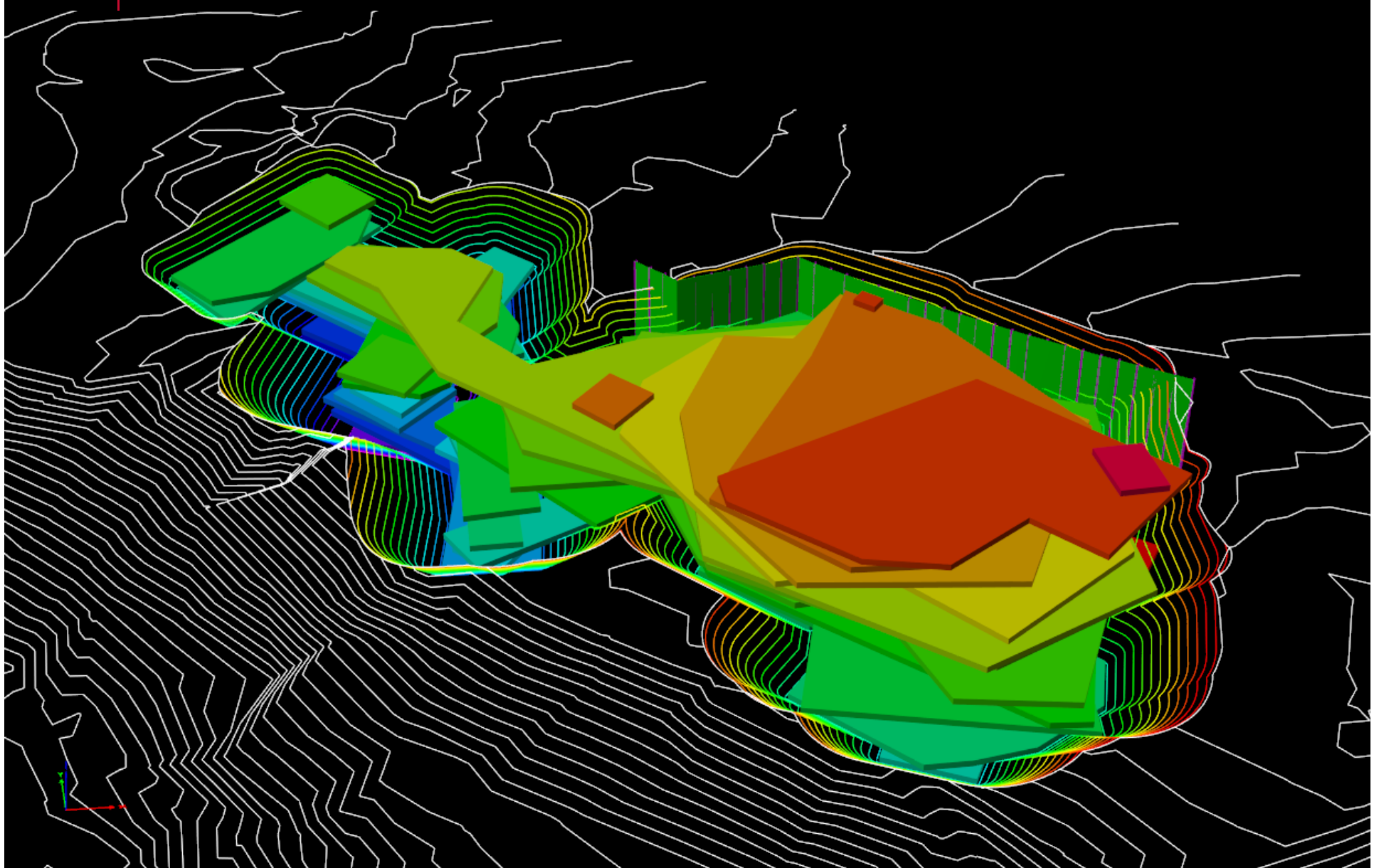


**Liberty Utilities**<sup>SM</sup>





# Excavation Layers and Side Slopes





# Anticipated Activities – 2014

- **Mobilization Activities**

- Install Perimeter Fence with Fabric Cover and 4 Gates
- Clear Vegetation (Except For Tree Protection Zones)
- Install Internal Roadways and Truck Wash Pad, Trailers
- Install Water Treatment System
- Install Perimeter Air Monitoring Stations and Vibration Monitoring Stations



## Construction Activities – 2014 (Continued)

- **Excavation Activities**

- Install Soldier Piles for Excavation Support Wall
- Remove Top Soil from South Excavation Area and stockpile
- Remove Foundations in South Excavation Area
- Mark out Excavation Areas
- Start Excavation Activities
- Transport Treatment Soil to ESMI, Stockpile  
Reuse Soil onsite
- Conduct Dewatering and Water Treatment as needed



2012.0





STAY IN  
TRUCK  
WINDOWS  
CLOSED

SUPPORT  
ZONE  
TRUCK  
LINING  
AREA



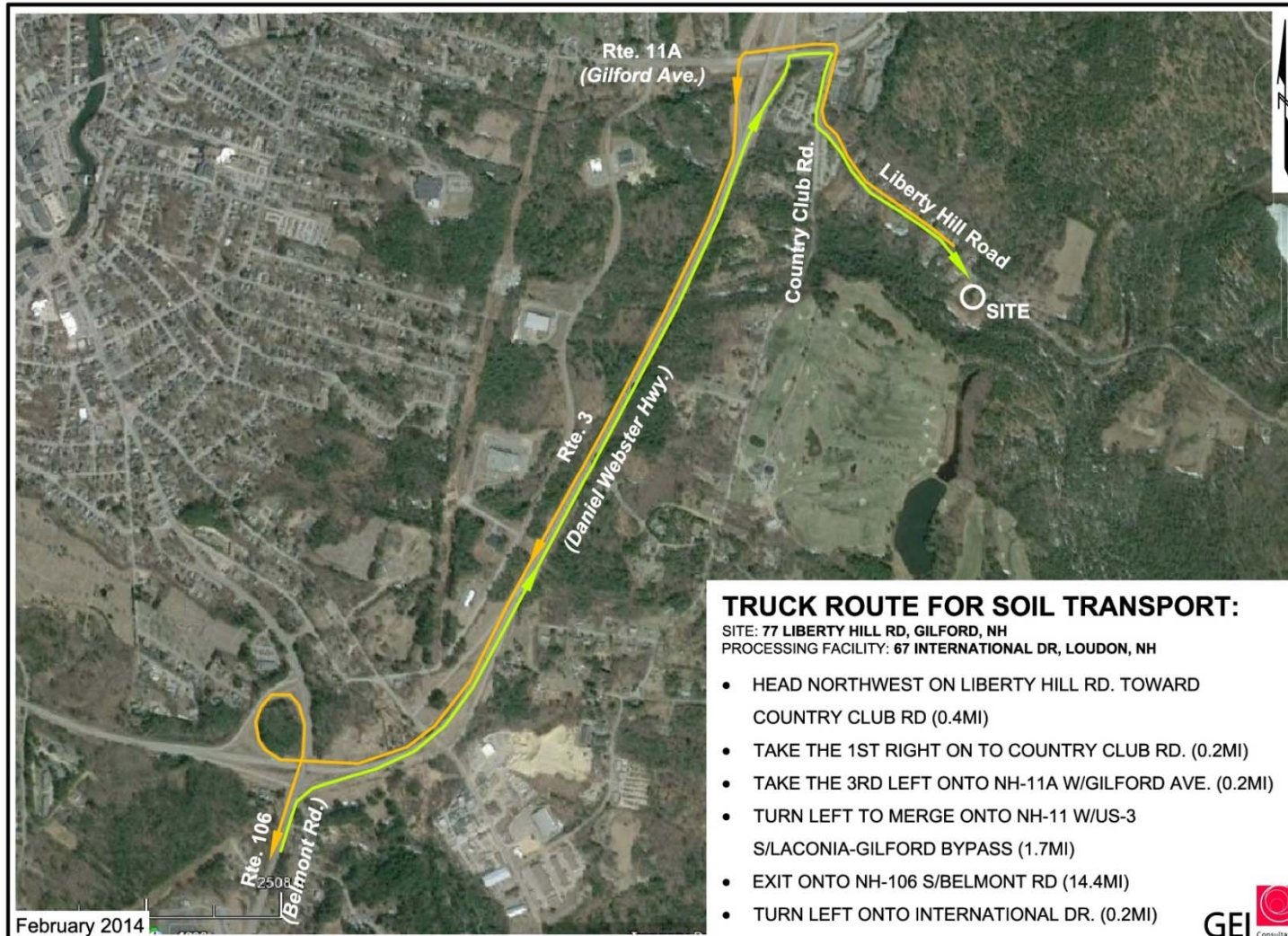






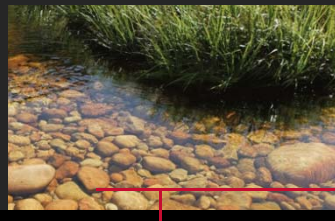


# Truck Route – Treatment Soil Transport

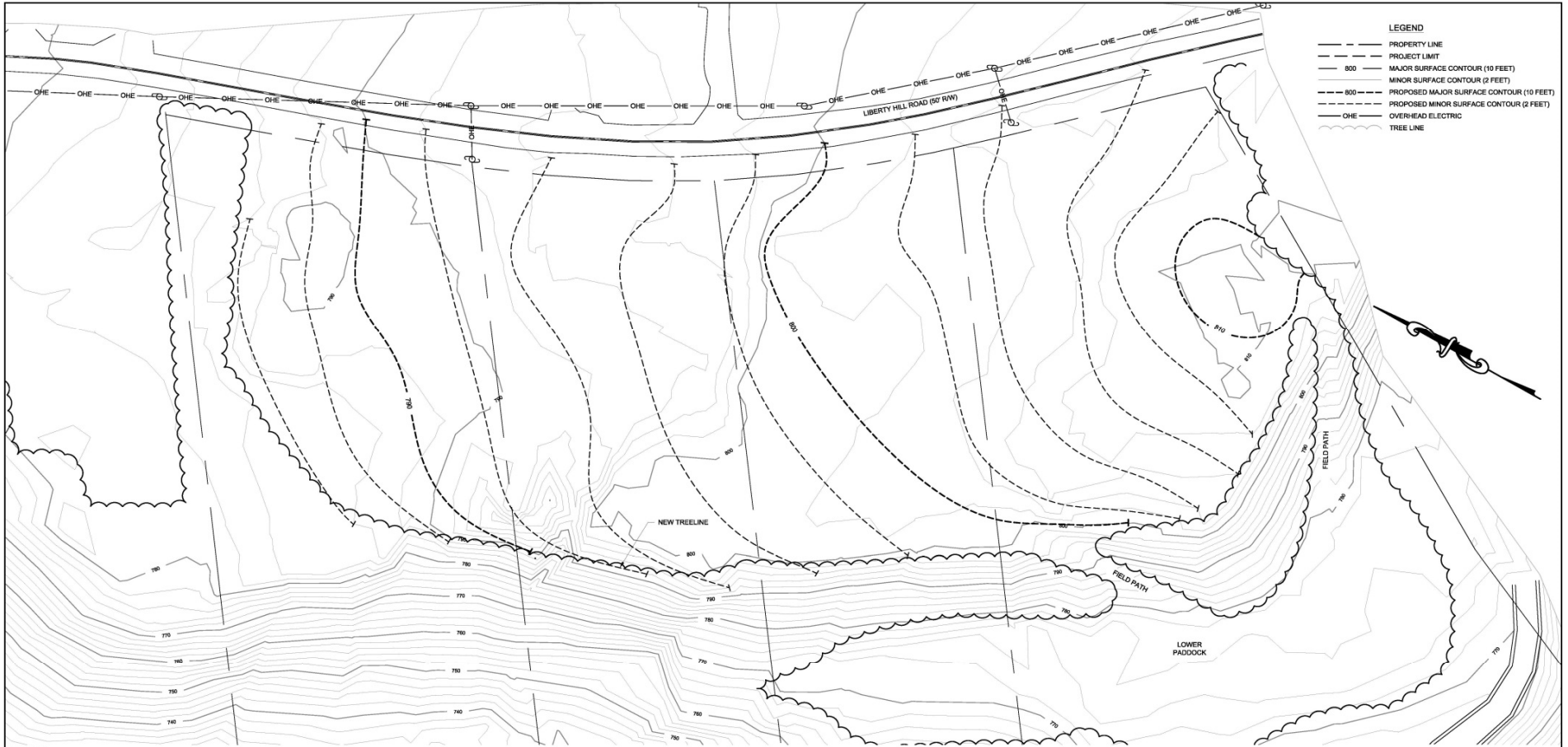


Liberty Utilities<sup>SM</sup>





# Restoration Plan



**LEGEND**

- PROPERTY LINE
- - - PROJECT LIMIT
- 800 — MAJOR SURFACE CONTOUR (10 FEET)
- - - 800 - - MINOR SURFACE CONTOUR (2 FEET)
- 800 --- PROPOSED MAJOR SURFACE CONTOUR (10 FEET)
- - - 800 - - PROPOSED MINOR SURFACE CONTOUR (2 FEET)
- OHE — OVERHEAD ELECTRIC
- ~ ~ ~ TREE LINE

**NOTES:**

1. SOILS MUST BE STABILIZED WITH SEEDING AND MULCH AS SOON AS POSSIBLE AFTER WORK HAS BEEN COMPLETED IN AN AREA.
2. ALL CUT AND FILL SLOPES MUST BE SEEDED/LOAMED WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE.
3. FOLLOW TEMPORARY SEEDING REQUIREMENTS ON THIS SHEET FOR PERIMETER AND STOCKPILE BERMS, DISTURBED AREAS AND EXCAVATION SIDEWALLS THAT WILL BE LEFT OPEN.
4. FOLLOW PERMANENT SEEDING REQUIREMENTS ON THIS SHEET FOR FINAL SITE RESTORATION AT THE COMPLETION OF THE WORK.
5. ENGINEER WILL CONSIDER OTHER TEMPORARY AND PERMANENT SEEDING MIXES PROPOSED BY CONTRACTOR THAT ARE ECOLOGICALLY APPROPRIATE.
6. MULCH FOR TEMPORARY AND PERMANENT SEEDING MUST BE BLOWN ON USING HYDROSEED-TYPE EQUIPMENT. MULCH MUST BE 100% WOOD FIBER MULCH WITH TACKIFIER OR ENGINEER-APPROVED EQUIVALENT.
7. SOIL DISTURBANCE OUTSIDE OF THE WORK ZONE SHOULD BE MINIMIZED BETWEEN OCTOBER 15 AND MAY 1.
8. DISTURBED AREAS THAT DO NOT EXHIBIT A MINIMUM OF 85 PERCENT COVERAGE OF VEGETATIVE GROWTH BY OCTOBER 15, OR THAT ARE DISTURBED AFTER OCTOBER 15, MUST BE STABILIZED BY SEEDING AND INSTALLING EROSION CONTROL BLANKETS ON SLOPES GREATER THAN 3:1, AND SEEDING AND PLACING 3 TO 4 TONS OF MULCH PER ACRE, SECURED WITH ANCHORED NETTING, ELSEWHERE. THE INSTALLATION OF EROSION CONTROL BLANKETS OR MULCH AND NETTING MUST NOT OCCUR OVER ACCUMULATED SNOW OR ON FROZEN GROUND AND MUST BE COMPLETED IN ADVANCE OF THAW OR SPRING MELT EVENTS.
9. ALL DITCHES AND SWALES THAT DO NOT EXHIBIT A MINIMUM OF 85 PERCENT COVERAGE OF VEGETATIVE GROWTH BY OCTOBER 15, OR THAT ARE DISTURBED AFTER OCTOBER 15, MUST BE STABILIZED TEMPORARILY WITH STONE OR EROSION CONTROL BLANKETS APPROPRIATE FOR THE DESIGN FLOW CONDITIONS.
10. AFTER NOVEMBER 15, INCOMPLETE ROAD OR PARKING SURFACES WHERE WORK HAS STOPPED FOR THE WINTER SEASON MUST BE PROTECTED WITH A MINIMUM OF 3 INCHES OF CRUSHED GRAVEL PER NHDOT ITEM 304.3.
11. RESTORE ALL SLOPES TO PRE-REMEDIATION CONDITIONS WHERE AFFECTED BY EXCAVATION ACTIVITY.



TEMPORARY SEEDING MIXTURES				
FROM	TO	SEED TYPE	APPLICATION RATE (LB PER 1,000 FT <sup>2</sup> )	
APRIL 15TH	MAY 15TH	OATS	2 LB	
MAY 15TH	AUGUST 15TH	BROWNTOP MILLET	1 LB	
AUGUST 15TH	OCTOBER 15TH	ANNUAL RYEGRASS WINTER RYE	1 LB 2.5 LB	

PERMANENT SEEDING MIXTURE				
FROM	TO	SEED TYPE	APPLICATION RATE (LB PER 1,000 FT <sup>2</sup> )	
AUGUST 15TH	OCTOBER 15TH	TALL FESCUE CREEPING RED FESCUE REDTOP	5 LB 5 LB 5 LB	

Attention:				
NO.	DATE	ISSUE/REVISION	APP	
2	09/09/13	95% DESIGN - DES REVIEW	JCW	
1	06/10/13	90% DESIGN - CLIENT REVIEW	JCW	
0	05/20/13	90% DESIGN - INTERNAL REVIEW	JCW	

Designed:	DRS
Checked:	SEO
Drawn:	DW
Submitted By:	JRA
NH P.E. No.:	12124
Submitted Date:	09/09/13

**GEI** Consultants  
400 Unicorn Park Drive  
Woburn, MA 01801  
781-221-4000

**Liberty Utilities**  
LIBERTY UTILITIES  
SALEM, NH 03079  
GEI Project 126140

SOIL REMOVAL ACTION  
LOWER LIBERTY HILL RD.  
GILFORD, NEW HAMPSHIRE

**SITE RESTORATION PLAN**

DWG. NO.  
**R-01**

REV  
**2**

**Not To Be Used  
for Construction**



# Soil Volumes

- **Total Soil Excavation:** 93,000 cubic yards
- **2014 Season Estimates:**  
Treatment Soil: 28,000 cubic yards (~1,400 trucks)  
Reuse Soil: 27,000 cubic yards
- **2015 Season Estimates:**  
Treatment Soil: 12,000 cubic yards (~600 trucks)  
Reuse Soil: 27,000 cubic yards

Onsite stockpile capacity ~20,000 cubic yards  
Excavation/stockpiling/backfill need careful management.



# Truck Traffic

- **Estimated Truck Traffic**

- 12 to 58 turns/day
- Turn = (arrive, dump and/or load, then depart)
- Some days will be high-volume, others low
- Depends on sequence, weather, truck type and availability



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WATER | GAS | ELECTRIC



GEI  
Consultants



# Truck Types



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# Wash Rack and Loading Pad







# Site Controls

- Perimeter Fencing
- Air Monitoring Stations at Fenced Perimeter
  - Volatile Organics
  - Dust
  - Odors
- Vibration Monitoring
- Noise Monitoring
- Excavation Dewatering and Treatment
- Designated Truck Route for Soil Transportation



# Noise Thresholds

A. The noise threshold standards and measurement locations for the Site are:

1. Normal work hours: time-weighted average of no more than 70 dB(A), with no short-duration peaks greater than 90 dB(A). The allowable L10 value which must not be exceeded for more than 10 percent of any work day is 75 dB(A).
2. Outside of normal work hours: time-weighted average of no more than 50 dB(A) with no short-duration peaks greater than 70 dB(A).

All equipment that is required to operate beyond normal work hours must be electrically driven.



# Vibration Limits

VIBRATION TYPE	THRESHOLD VALUE PEAK PARTICLE VELOCITY	LIMITING VALUE PEAK PARTICLE VELOCITY
<b>Continuous or Steady State Vibration (see Note 1)</b>	0.1 in/sec for frequencies less than 30 Hz	0.2 in/sec for frequencies less than 30 Hz
	0.2 in/sec for frequencies greater than 60 Hz	0.3 in/sec for frequencies greater than 60 Hz
<b>Transient or Impact Vibration (see Note 2)</b>	0.2 in/sec for frequencies less than 60 Hz	0.3 in/sec for frequencies less than 60 Hz
	0.3 in/sec for frequencies greater than 90 Hz	0.4 in/sec for frequencies greater than 90 Hz

**Notes:**

1. Response Values for Continuous or Steady State Vibrations apply to vibrations such as vibratory pile drivers, jack hammers, reciprocating pavement breakers, compactors, large pumps and compressors, bulldozers, trucks, cranes, and other large machinery. Use linear interpolation for frequencies between 30 Hz and 60 Hz.
2. Response Values for Transient or Impact Vibrations apply to vibrations such as blasting, drop chisels, clam shell buckets, impact pile drivers, wrecking balls, building demolition, gravity drop ground compactors and gravity drop pavement breakers. Use linear interpolation for frequencies between 60 Hz and 90 Hz.



# Air Monitoring Plan

	Alert Level	Action Level	Site Condition 1	Site Condition 2	Site Condition 3
TVOC (15-minute)	3.7 ppm	5.0 ppm	< 3.7 ppm	≥ 3.7 ppm, < 5.0 ppm	≥ 5.0 ppm
PM-10 (15-minute)	100 ug/m <sup>3</sup>	150 ug/m <sup>3</sup>	< 100 ug/m <sup>3</sup>	≥ 100 ug/m <sup>3</sup> , < 150 ug/m <sup>3</sup>	≥ 150 ug/m <sup>3</sup>
Odor (15-minute)	Odors / Complaints	1.5	No odors	NA	1.5 (0-3 scale)
Naphthalene (8-hour average)	30 ug/m <sup>3</sup>	186 ug/m <sup>3</sup>	< 140 ug/m <sup>3</sup>	≥ 140 ug/m <sup>3</sup> , < 186 ug/m <sup>3</sup>	≥ 186 ug/m <sup>3</sup>
Benzene (8-hour average)	60 ug/m <sup>3</sup>	90 ug/m <sup>3</sup>	< 60 ug/m <sup>3</sup>	≥ 60 ug/m <sup>3</sup> , < 90 ug/m <sup>3</sup>	≥ 90 ug/m <sup>3</sup>
Ethylbenzene (8-hour average)	750 ug/m <sup>3</sup>	1000 ug/m <sup>3</sup>	< 750 ug/m <sup>3</sup>	≥ 750 ug/m <sup>3</sup> , < 1000 ug/m <sup>3</sup>	≥ 1000 ug/m <sup>3</sup>
Styrene (8-hour average)	750 ug/m <sup>3</sup>	1000 ug/m <sup>3</sup>	< 750 ug/m <sup>3</sup>	≥ 750 ug/m <sup>3</sup> , < 1000 ug/m <sup>3</sup>	≥ 1000 ug/m <sup>3</sup>
Toluene (8-hour average)	4000 ug/m <sup>3</sup>	5000 ug/m <sup>3</sup>	< 4000 ug/m <sup>3</sup>	≥ 4000 ug/m <sup>3</sup> , < 5000 ug/m <sup>3</sup>	≥ 5000 ug/m <sup>3</sup>
Total Xylenes (8-hour average)	1000 ug/m <sup>3</sup>	1550 ug/m <sup>3</sup>	< 1000 ug/m <sup>3</sup>	≥ 1000 ug/m <sup>3</sup> , < 1550 ug/m <sup>3</sup>	≥ 1550 ug/m <sup>3</sup>

Notes:

<sup>1</sup> Alert Levels are set below the Action Levels so that actions can be taken prior to exceeding an Action Level. An Alert Level serves as a screening tool to trigger contingent measures if necessary, to assist in minimizing off-site transport of contaminants during remedial activities. The naphthalene alert level is a concentration that may result in noticeable odors.

<sup>2</sup> Action Levels presented for individual VOCs are from the NHDES Env-A 1450-1 Table of Regulated Toxic Air Pollutants, except for benzene. The benzene action level is the Massachusetts Department of Environmental Protection subchronic reference value developed to be protective for exposures lasting from several days up to 7 years.

ug/m<sup>3</sup> - micrograms per cubic meter

ppmv - parts per million by volume

TVOC - total volatile organic compounds

PM-10 - particulate matter (i.e. dust) less than 10 microns in diameter

NA - not applicable



## Pre-Construction Assessments

- Assessment of Current Conditions of Houses Surrounding the Construction Site
- Conducted by NH Licensed Home Inspector
- Document Existing Conditions of House
  - Could identify structural problems regardless of the unlikely construction-related issues
- Protects both homeowners and Liberty Utilities in the unlikely event of damage



## Next Steps

- Contractor Mobilization – March/April 2014
- Start of Excavation Activities – April 2014
- Completion of Season 1 Activities – December 2014
- Start of Season 2 Activities – March 2015
- Completion of Season 2 Activities – October 2015



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- Questions or Comments?



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## Contact Information

### **Michael G. McCluskey, P.E.**

NHDES Hazardous Waste Remediation Bureau  
29 Hazen Drive, PO Box 95, Concord, NH 03302  
Phone: (603) 271-2183  
Email: [Michael.McCluskey@des.nh.gov](mailto:Michael.McCluskey@des.nh.gov)

### **Mary E. Casey**

Liberty Utilities  
11 Northeastern Boulevard, Salem NH 03079  
Phone: (603) 328-2725  
Email: [mary.casey@Libertyutilities.com](mailto:mary.casey@Libertyutilities.com)

[www.lowerlibertyhillsite.com](http://www.lowerlibertyhillsite.com)

Information Hotline during Construction: (603) 216-3600

