

**Former Marble Quarry Landfill  
109-125 Marbledale Road  
Tuckahoe, New York**

**NYSDEC Brownfield Cleanup Program #C360143**

**Community Meeting #4  
January 11, 2017**

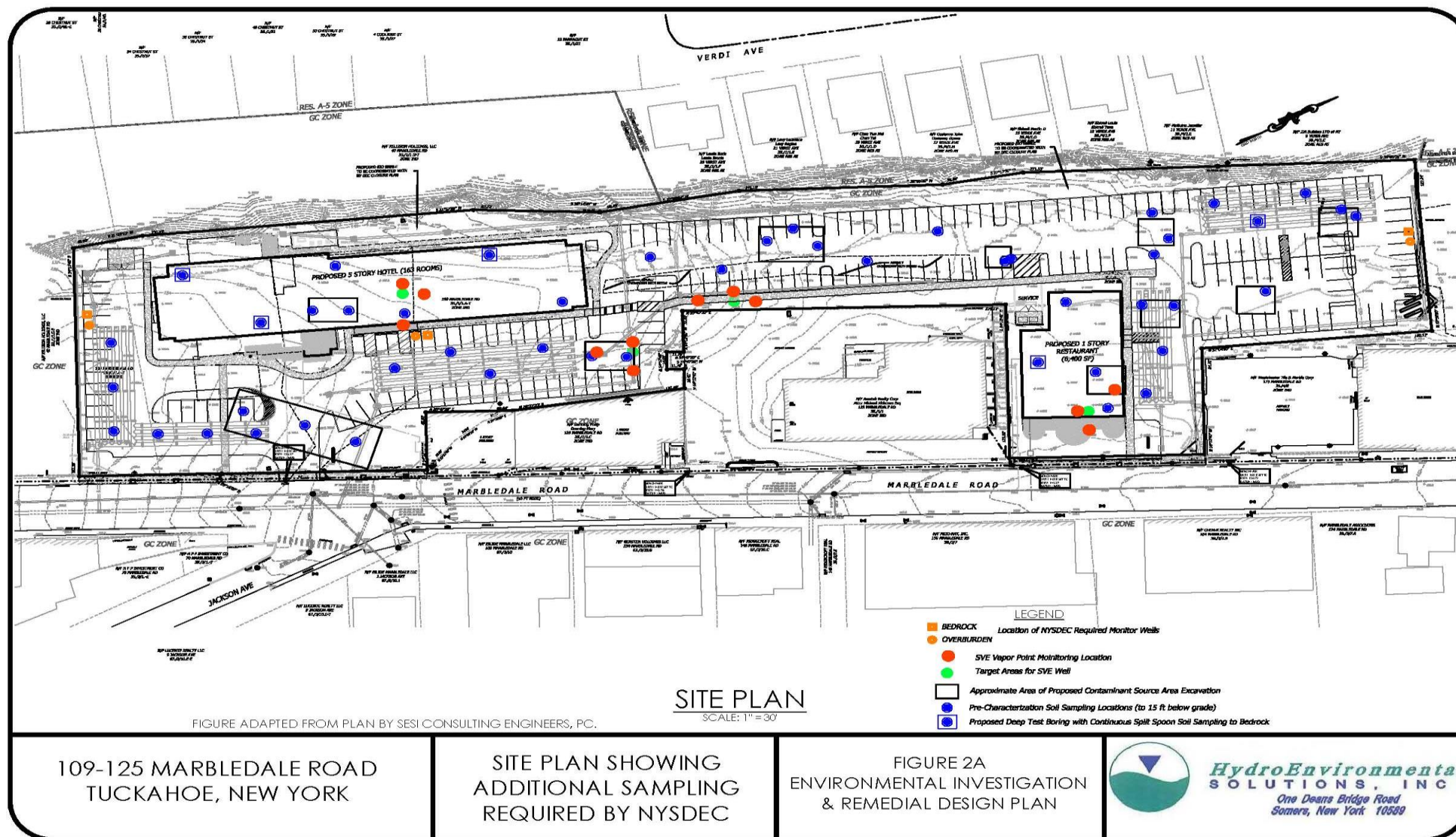


**HydroEnvironmental**  
**SOLUTIONS, INC.**

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# Site Plan Showing Supplemental Environmental Work



# Supplemental Environmental Work Technical Report to be Completed

Compile Supplemental Environmental Investigation Report – Report compilation is on-going and will include:

- Summary Data Tables for soil, groundwater and soil vapor.
- Groundwater elevation contour maps for shallow overburden and bedrock aquifers.
- Geologic Logs, monitor well and SVE well construction details.
- Summary of collected field parameters including PID and FID readings, groundwater field chemistry and CAMP air monitoring results.
- Collected data will be interpreted and used to further define Source Area removal and assist in the design of the site wide cap.

# Soil Vapor Extraction System Design and Report

- SVE pilot testing data including air flow volume, velocity, induced vacuum and VOC air quality data will be used to design an appropriate soil vapor extraction system for the site.
- The SVE Design Report will include air quality summary tables, collected field data summary tables (Ex. Induced Vacuum), radius of influence maps and iso-concentration maps.
- The SVE Design Report will be submitted to the NYSDEC for final review and approval.

# Site Preparation

- Installation of SWPPP measures, which will include haybales, silt fencing and a retention basin.
- Installation of truck tracking pads at the site entrances.
- Installation of the truck cleaning station.
- Staging of on-site dust suppression measures including a water tank/truck, foam and foaming machine, fractionation tank, polyethylene sheeting and construction of soil stockpile enclosures.
- Clearing of all site vegetation.
- It is anticipated that this work will be completed by January 20, 2017.

# Source Area 2 Removal

- First source area to be removed is SA-2, which is located within the hotel footprint.
  - Source Area 2 is approximately 20-feet wide, 36-feet long and 15-feet deep for a total volume of approximately 400 cubic yards to be removed.
- Removed soils are scheduled to go to Clean Earth of Carteret, located in Carteret, New Jersey.
- CAMP monitoring will be in place during all invasive earth moving activities on-site.
- In accordance with the approved RAWP, excavation end-point soil samples will be collected and analyzed for VOCs, SVOCs, PCBs, TAL Metals and pesticides.

# Source Area 2 Removal (continued)

- End-point soil results must comply with commercial soil clean-up objectives (CSCOs).
- If end-point soil sampling results do not meet CSCOs, additional excavation may be required and warranted, however, it is assumed that excavation completion depths will not exceed 15 feet below grade (extent of backhoe and proposed subsurface structures).
- Excavations will be secured using fencing and covered in polyethylene sheeting and/or foam as required for odor and dust suppression purposes.
- A contingency plan is in place to properly deal with the possibility of encountering unknown drums, tanks or cylinders.

# Source Area 2 Removal (continued)

- A comprehensive Scope of Work has been compiled for Source Area 2 Removal.
- The Scope of Work will be reviewed and approved by the NYSDEC and the Village Environmental Consultant before any source removal work is conducted.
- Source Area 2 removal anticipated start-up is January 23, 2017.



# Remaining Source Areas

- A comprehensive Scope of Work will be compiled for Source Areas 1, 3 through 10 Removal.
- The Scope of Work for these areas will be reviewed and approved by the NYSDEC and the Village Environmental Consultant before any source removal work is conducted.
- Following the removal of SA-2, the remaining source areas will be scheduled for removal, starting with SA-1 and moving North across the site until all source area material is removed.
- The procedures outlined for SA-2 will be followed for all source area removals after NYSDEC approval.

# Supplemental Environmental Work - Preliminary Results

## Dioxin Soil Results:

- Four total samples have been collected.
- Two samples split with the NYSDEC.
- Dioxin Soil Results are compared to the World Health Organization (WHO) 2005 Toxicity Equivalent Values (TEQ) for soils, which are not New York guidance numbers or standards but the only applicable value number available for purpose of comparison.
- When results are compared to TEQ, they indicate that trace concentrations of Dioxin are present in soil but are below the guidance identified for soil. Nonetheless, dust minimization will continue and CAMP air monitoring will continue to avoid any impacts.
- Both NYSDEC and HES collected Dioxin samples indicating the same result and/or similar results.
- NYSDOH has looked at the preliminary results and concluded that the CAMP dust action level has an adequate margin of safety for Dioxin TEQs in the range detected.

# Proposed Future Construction Work – Order of Operations

Projected Startup Date – January 9, 2017

1. Data compilation and review to determine if any modifications to the Work Plan are necessary regarding excavation and soil moving/CAMP. NYSDEC and HDR review of foundation plan and to confirm Resolution is being followed.
2. Clear and Prepare Site.
3. Excavate and Dispose of Source Material Areas at off-site Disposal Facility.
4. Install Site Utilities, Stormwater Retention Systems and SVE System(s). Design SVE/SSDS, review and approval of same by NYSDEC.
5. Implement Site-Wide Cut and Fill Plan.
6. Second round of groundwater sampling (following installation of foundation piles).
7. Foundation and Geotechnical Assessment – Carlin Simpson Geotechnical Engineer has replaced dynamic compaction concept.
8. Install Building Foundations – Hotel and Restaurant.
9. Install Vegetative and Engineered Site Wide Caps.
10. Third round of groundwater sampling (following completion of site wide caps).

# Additional Project Construction Updates

As noted above, Deep Dynamic Compaction (DDC) **will not** be used during installation of building foundations. Methods to be used include:

1. Over excavation.
2. Geo-grid and replace with dense graded aggregate (DGA)
3. Rapid Impact Compaction (RIC) to stabilize soils. Used to stabilize the first 10-20 feet beneath structures and utilities in areas other than the building footprints.

# Additional Project Construction Updates (continued)

<b>ROBERT B. SIMPSON, P.E.</b> PROFESSIONAL ENGINEER			
<b>GROUND IMPROVEMENT PLAN</b>			
MARRIOTT SPRINGHILL SUITES 109-125 MARBLEDALE ROAD TUCKAHOE, NEW YORK			
DRAWN	MRA	SCALE	1" = 30'
CHECKED	RBS	DATE	11.10.16
PROJECT NO.	14-100	DWG NO.	GT-1
APPROVED		<b>CARLIN-SIMPSON AND ASSOCIATES</b> 61 Main Street Sayreville, NJ 08872  Consulting Geotechnical and Environmental Engineers	



AREAS WHERE RAPID IMPACT COMPACTION (RIC) WILL BE REQUIRED TO IMPROVE THE SUBGRADE SOILS.



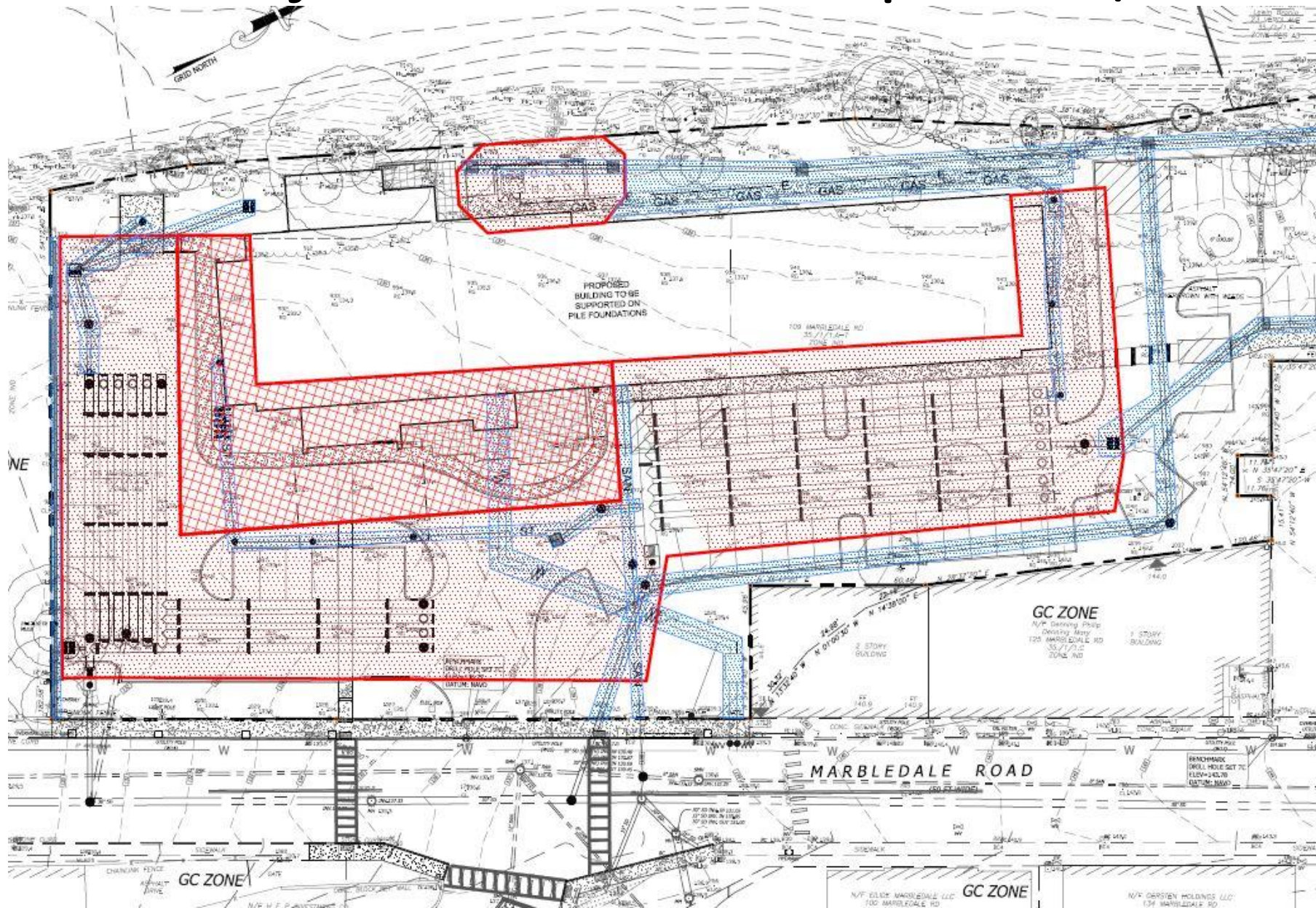
AREAS WHERE OVER-EXCAVATION OF THE FILL AND DEBRIS IS ANTICIPATED. THE SUBGRADE WILL BE STABILIZED WITH GEOGRID REINFORCEMENT AND NEW COMPACTED FILL AS SHOWN ON DETAIL 1 ON THIS SHEET.



AREAS WHERE RAPID IMPACT COMPACTION (RIC) AND OVER-EXCAVATION OF THE FILL AND DEBRIS WILL BE REQUIRED. AFTER RIC, THE SUBGRADE WILL BE STABILIZED WITH GEOGRID REINFORCEMENT AND NEW COMPACTED FILL.

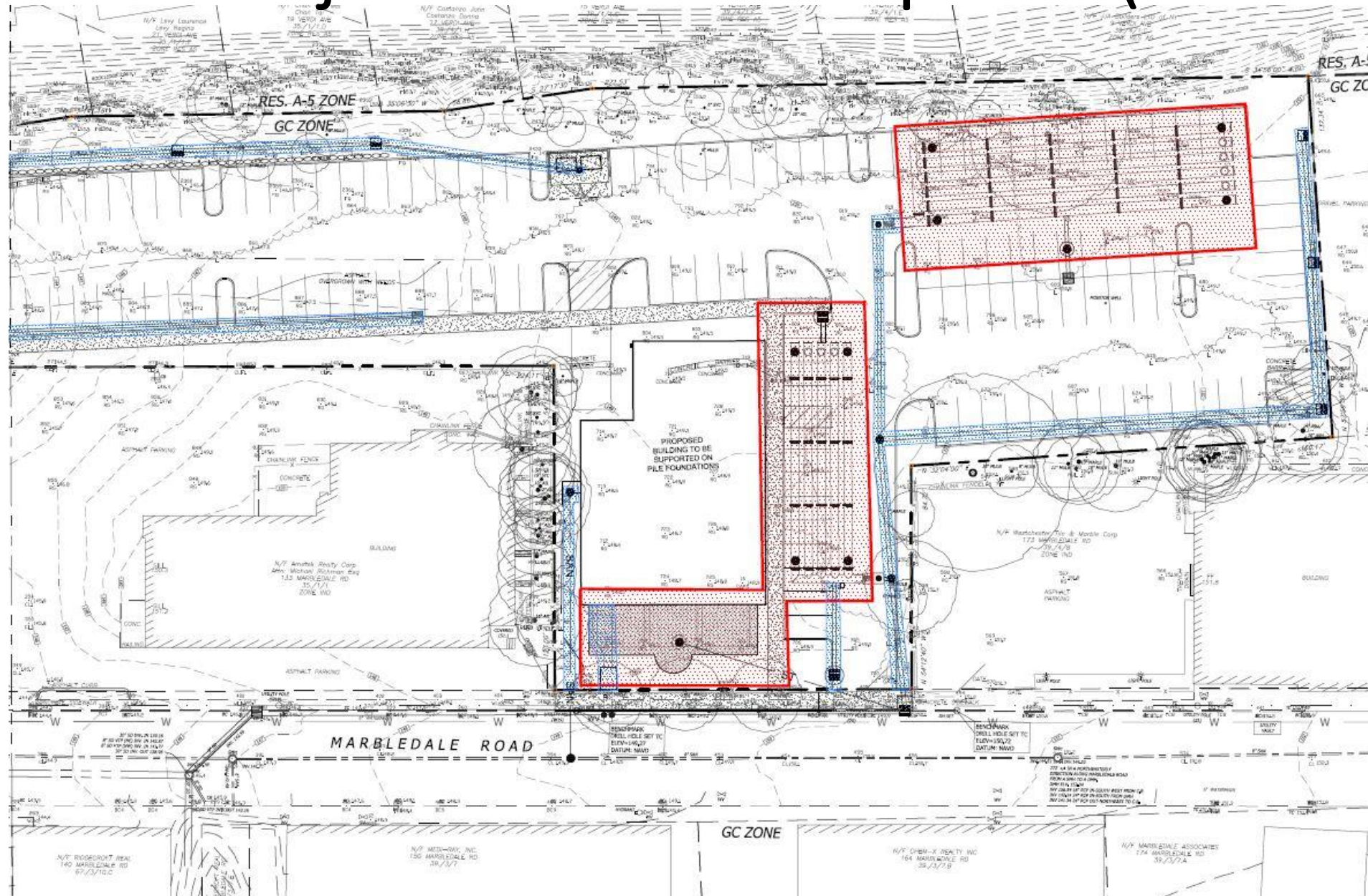


# Additional Project Construction Updates (continued)

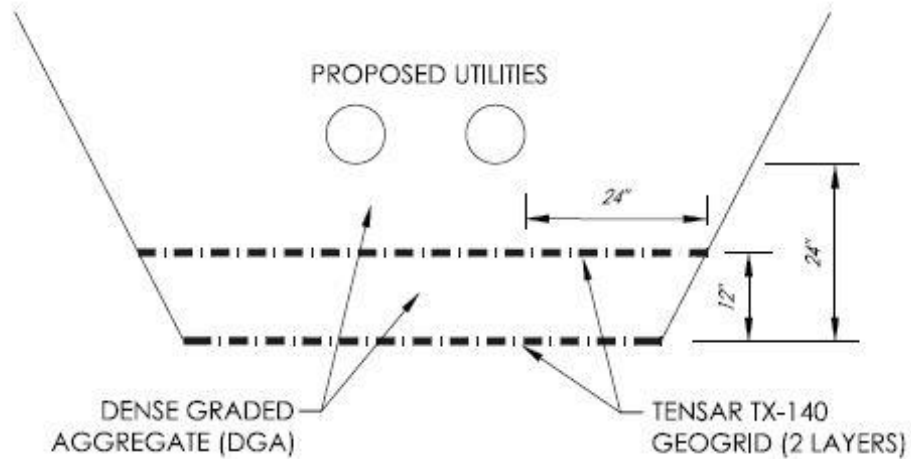




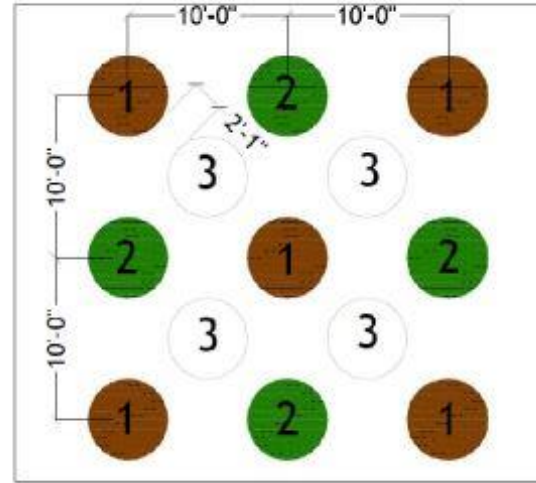
# Additional Project Construction Updates (continued)



# Additional Project Construction Updates (continued)



① TYPICAL UTILITY SUBGRADE PREPARATION  
NO SCALE

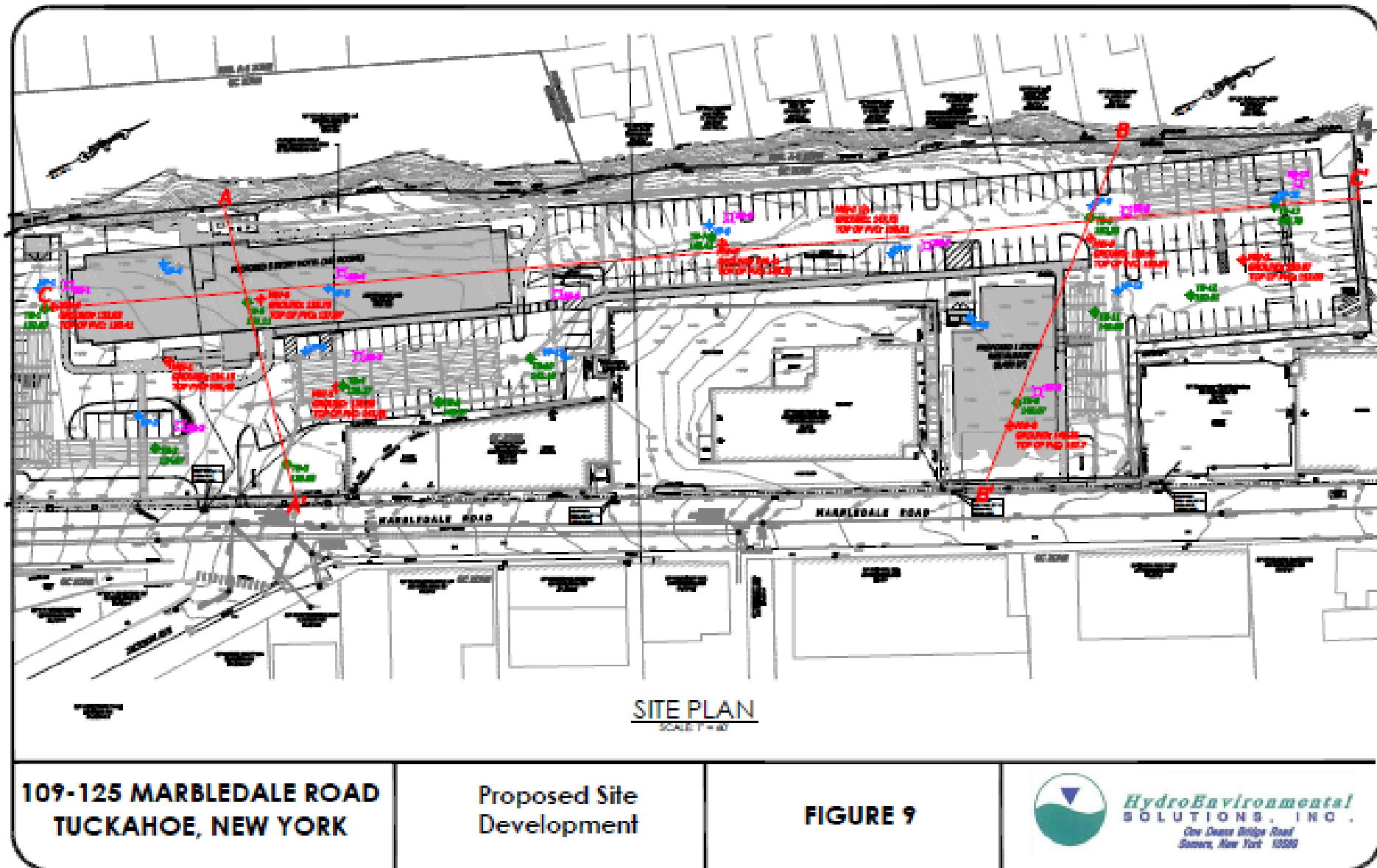


② RAPID IMPACT COMPACTION LAYOUT & CRATERS (TYP.)  
NO SCALE





# Proposed Future Site Development

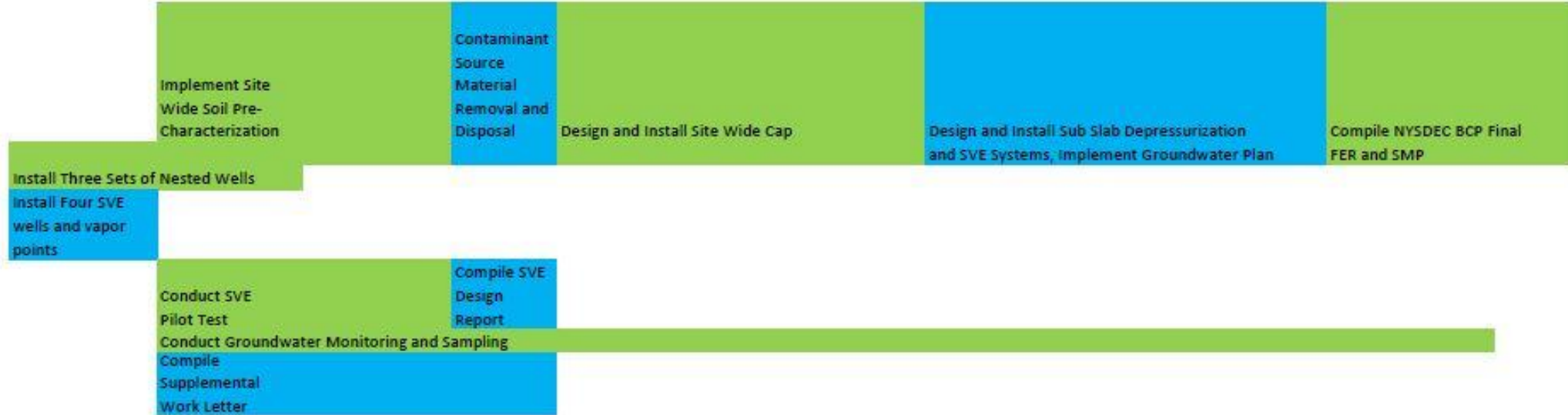


# DRAFT Project Schedule

2016												2017	2018											
Start	July	August	September	October	November	December	January	February	March	April	May	June	July	August	September	October	November	December	January	February	March	April	May	June

DRAFT: Subject to Change

RAWP Approved by NYSDEC
RAWP Supplemental Work



DRAFT: Subject to Change

Task Name - NYSDEC Approved RAWP	Duration	Start	Finish
Contaminant Source Material Removal and Disposal	30 Days	1/3/2017	1/31/2017
Design and Install Site Wide Cap	120 Days	2/1/2017	5/31/2017
Design and Install Sub Slab Depressurization and SVE Systems	150 Days	6/1/2017	10/31/2017
Compile NYSDEC BCP FER and SMP	90 Days	11/1/2017	1/31/2018
Task Name - Supplemental RAWP Environmental Work	Duration	Start	Finish
Implement Site Wide Soil Pre-Characterization	30 Days	11/7/2016	12/7/2016
Install Three Sets of Nested Monitor Wells (Bedrock and Overburden)	14 Days	10/11/2016	11/30/2016
Install Four SVE Wells and Nine Vapor Monitoring Points	4 Days	10/20/2016	10/28/2016
Conduct SVE Pilot Test	5 Days	11/14/2016	12/7/2016
Conduct Groundwater Monitoring and Sampling (3 field days, One Year Duration)	3 days	11/14/2016	12/14/2017
Compile Supplemental Work Summary Letter	60 Days	11/20/2016	1/20/2017
Design SVE System and Compile SVE Design Report	30 Days	12/20/2016	1/20/2017

Thank You for Attending the Tuckahoe  
Community Meeting Related to the  
Marbledale BCP Site!

*Questions?*

