

LANDFILL CLOSURE at SCOFIELDTOWN PARK

BACKGROUND:

The former municipal landfill which underlies the now closed Scofieldtown Park and the City of Stamford's Recycling/Composting Center and Public Works Department salt shed originally opened in the 1930s. It operated for several decades until it ceased operations in the early 1970s. The landfill portion of the site measures approximately 17 acres. It reportedly accepted a combination of municipal solid waste, construction and demolition debris and bulky wastes at various times during its operation. The landfill ceased operation at a time when there were no environmental regulations governing landfill capping, closure, post-closure care and long-term monitoring of groundwater. The landfill property is bounded by Rock Rimmon Road to the west, Scofieldtown Road to the south and east, the Diocese of Bridgeport owned cemetery property to the north and Poorhouse Brook to the northeast.

The landfill has been the subject of several limited assessments and investigations undertaken by the Connecticut Department of Energy & Environmental Protection (DEEP) and the United States Environmental Protection Agency (EPA). In the fall of 2009 the detection of pesticides in nearby drinking water wells triggered a preliminary investigation by the City of groundwater surrounding the landfill. While the results of that investigation did not connect the landfill to the well contamination, the City decided to enter into a Consent Order with DEEP in which the City agreed to conduct further groundwater investigations and to close the landfill in a manner that will be more protective of human health and the environment.

WHAT DOES DEEP REQUIRE OF THE CITY?

- Perform an off-site impact evaluation and leachate seep study (Impact Evaluation) to assess the impact that the former landfill has on groundwater and surface water quality surrounding the site.
- Report the results of the study to DEEP and make recommendations for capping/closure and post-closure maintenance/monitoring of the site in a Final Landfill Closure Plan document.
- Prepare a final engineering design of the landfill closure and solicit bids from qualified contractors to perform the work.
- Implement and perform quality control of the closure activities.
- Conduct long-term maintenance of the landfill cap to ensure that it continues to perform as intended and periodically report the results of engineering inspections and routine maintenance to DEEP.
- Perform long-term post-closure groundwater and surface water quality monitoring and report the results as prescribed by DEEP.
- If necessary, recommend additional measures to ensure that the closed landfill site meets DEEP's requirements to protect human health and the environment.

WHAT HAS BEEN COMPLETED THUS FAR?

- In the spring of 2011, TRC on behalf of the City submitted proposed plans for the Impact Evaluation and the landfill closure to DEEP for its preliminary review.
- Notice of the proposed plans was published on July 1, 2011. The notice states that comments on the proposed plans must be made in writing to DEEP within 45 days. Once

the current 45 day public comment phase is completed and after careful consideration of all comments, DEEP will issue its decision on the Impact Evaluation Plan.

- The Landfill Closure Plan has been submitted in draft form, and DEEP will issue a conditional decision on the draft which will allow the City to incorporate the results of the Impact Evaluation into a final Closure Plan design.

HOW WILL THE SITE BE USED FOLLOWING LANDFILL CLOSURE?

This is a decision for the members of the community and City officials. Although the final cap has not been designed, the soil and synthetic materials available for landfill closures will allow a wide range of future uses that are compatible. The conceptual plan is to use a portion of the site for continued public works and recycling/transfer center activities and the other portion for a public park use. The two activities would be separated by fencing and vegetative screening. The exact nature of the public park use will integrate community input, concepts from the 1997 Master Plan for Development and current needs. Ultimately the landfill cap will serve to protect the community and City employees from any exposure to the landfill waste material beneath the cap.

WHAT IS THE TIMELINE FOR THE CLOSURE PROCESS?

The schedule for all of the following activities is an estimate based on other similar projects and the impact of state and local regulatory reviews and availability of funding.

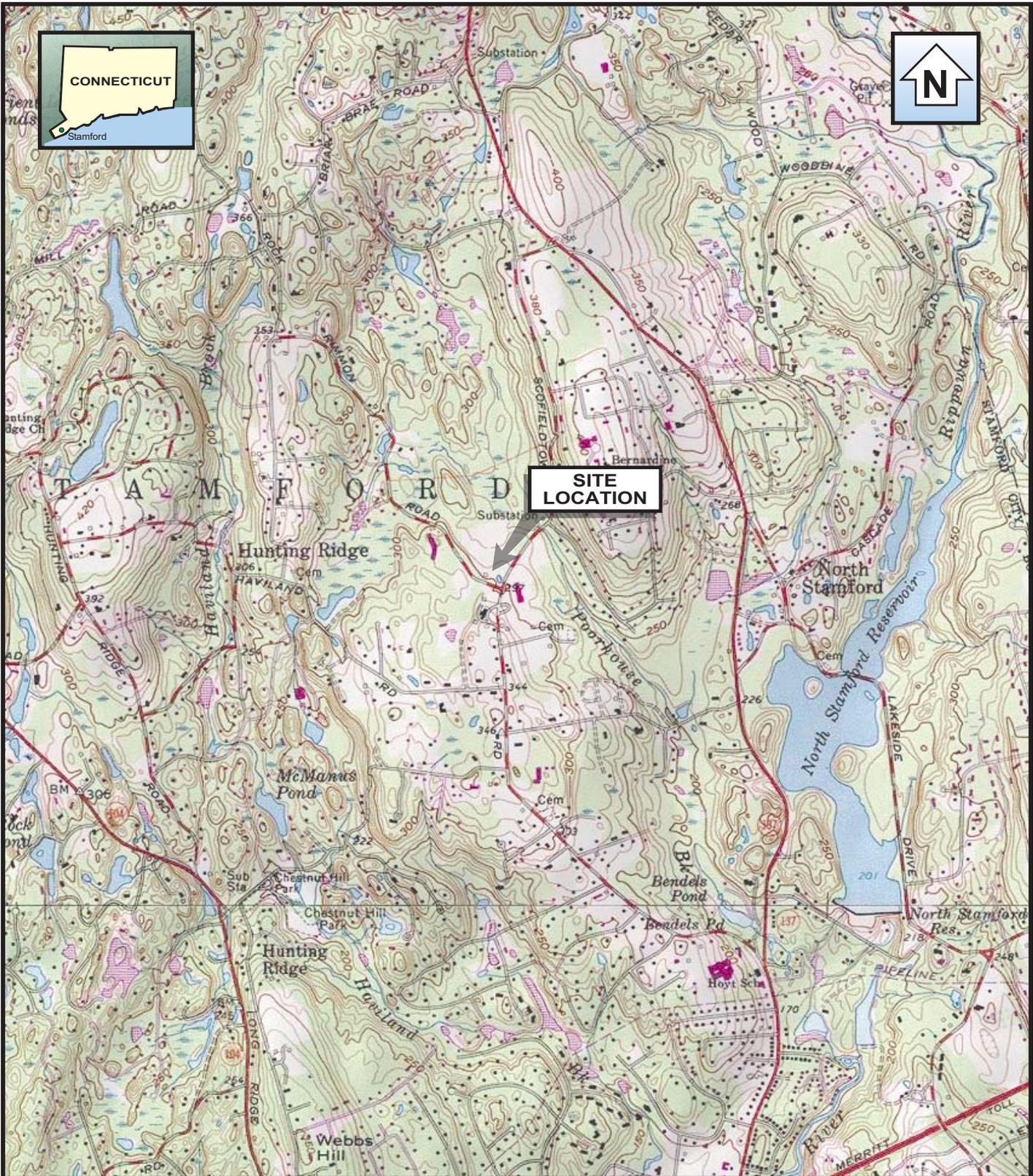
- DEEP issues final decision on the Impact Evaluation – 09/01/2011.
- DEEP issues a decision on the draft Landfill Closure Plan – 11/01/2011.
- City completes Impact Evaluation and issues report and proposed final closure plan to DEEP – 12/01/2012.
- DEEP completes review of Impact Evaluation report and final closure plan and provides comments/decision – 03/01/2013.
- Completion of final engineering design and bid package for closure – 12/30/2013.
- Solicitation of construction bids for closure and contract award – 04/01/2014.
- Completion of landfill closure construction – 10/01/2015.
- Submit landfill closure report to DEEP – 01/01/2016.
- Initiation of post closure monitoring – 01/01/2016 and beyond.

WHERE CAN I GET UPDATES, INFORMATION OR ANSWER QUESTIONS? The City will maintain on its public website current information pertaining to the project status, notices of public meetings and other information pertaining to the project. The web address for the site is www.ci.stamford.ct.us and under the quick links you can navigate to the site entitled “**Scofieldtown Area Task Force**” to get the latest information.

If you prefer to speak directly to a representative from the City, the project will be managed from the Office of Operations Engineering Bureau (203-977-4493).

If you have questions or comments that you wish to send directly to the DEEP they should be directed in writing to Ms. Amanda Flad at Remediation Division, Bureau of Water Protection and Land Use, Connecticut Department of Energy and Environmental Protection, 79 Elm Street, Hartford, CT 06106-5127.

Display Boards



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BASE CREATED WITH TOPO™ © 1996 WILDFLOWERS PRODUCTIONS, www.topo.com 7.5' USGS TOPOGRAPHIC MAP



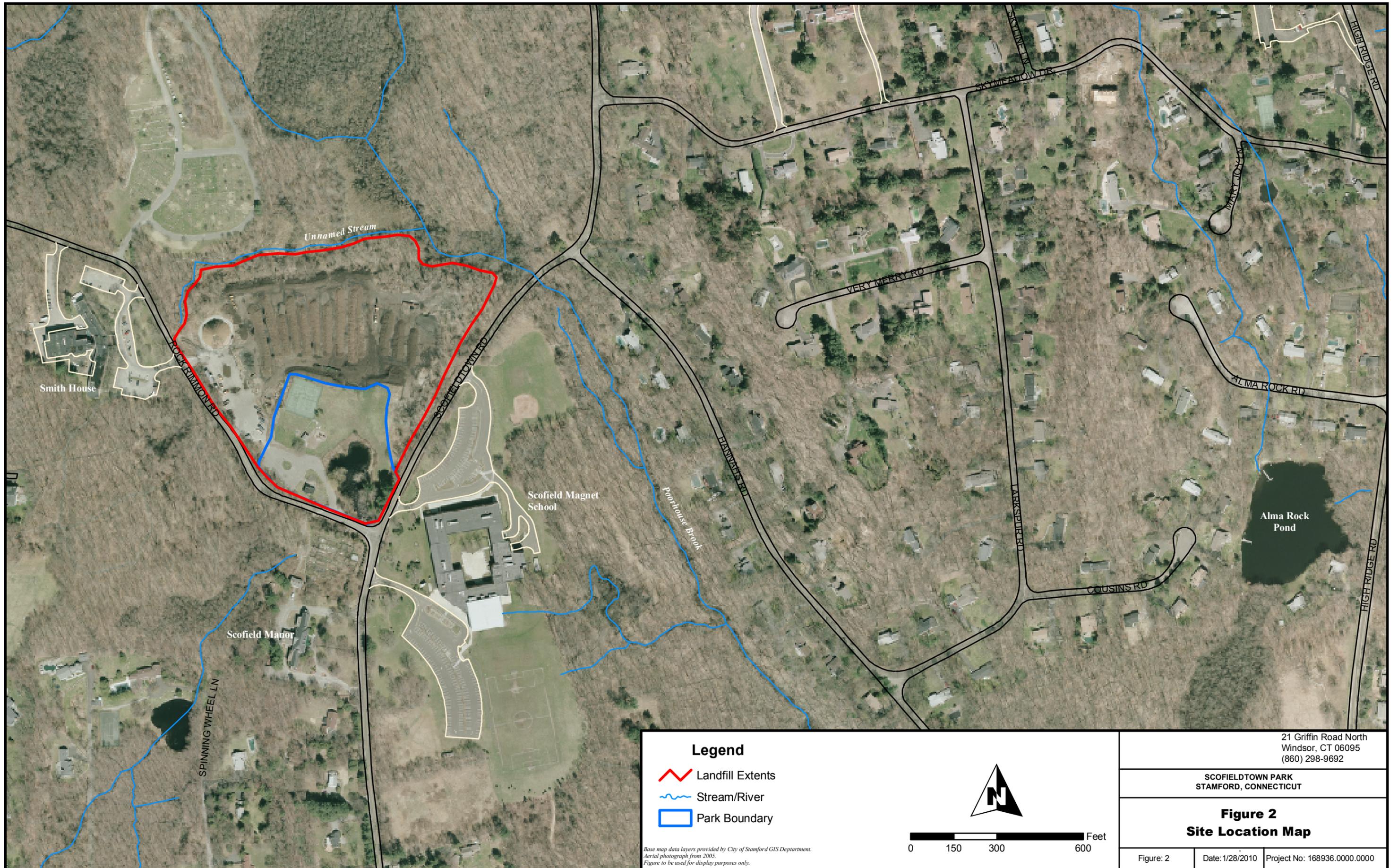
21 Griffin Road North
Windsor, CT 06095
(860) 298-9692

SCOFIELD PARK
STAMFORD, CONNECTICUT

FIGURE 1
AREA LOCATION MAP

Date: 01/10

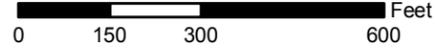
Project No. 168936.0000.000000



Legend

-  Landfill Extents
-  Stream/River
-  Park Boundary

Base map data layers provided by City of Stamford GIS Department.
Aerial photograph from 2005.
Figure to be used for display purposes only.

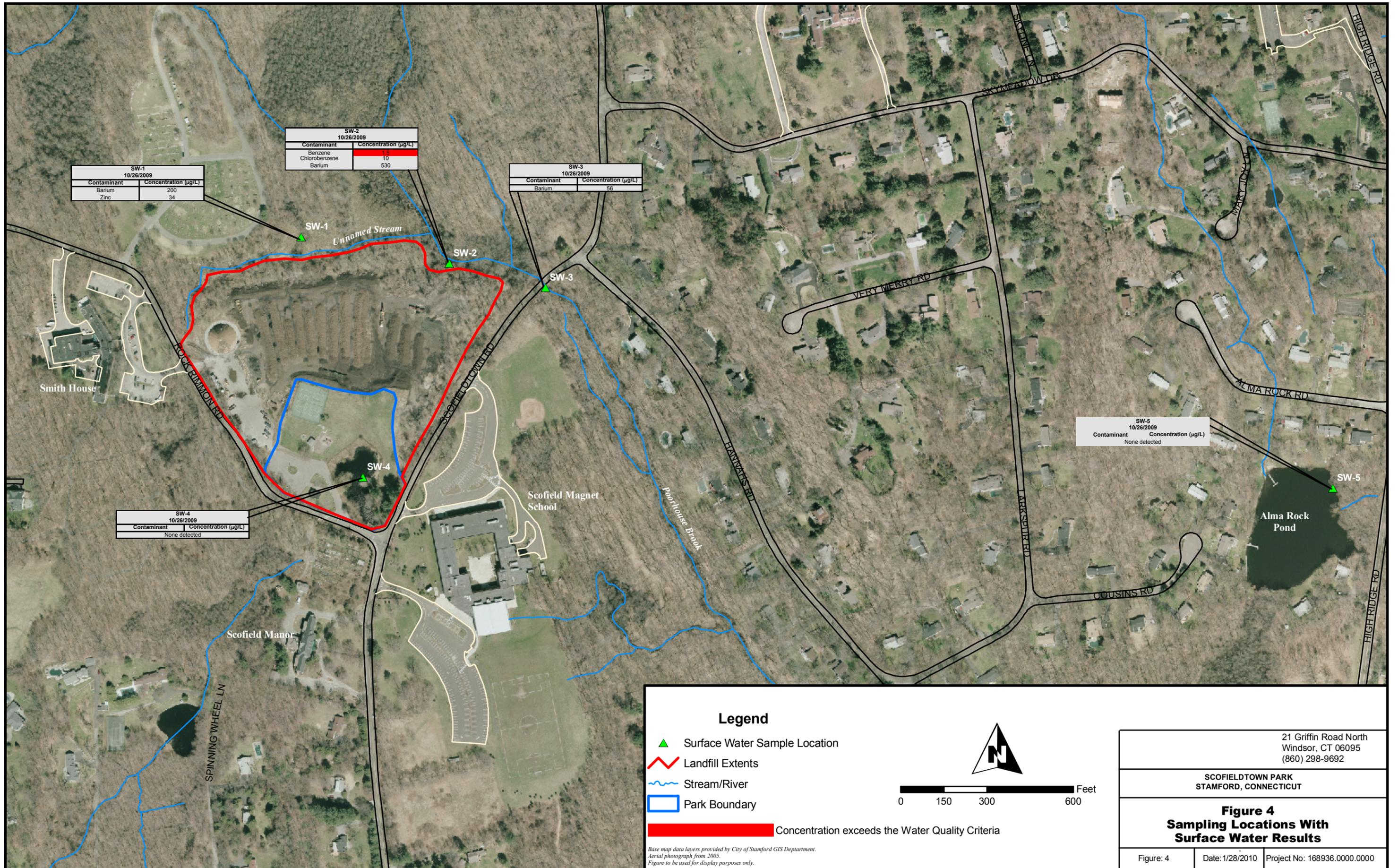


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SCOFIELDTOWN PARK
STAMFORD, CONNECTICUT

Figure 2
Site Location Map

Figure: 2	Date: 1/28/2010	Project No: 168936.0000.0000
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SW-1 10/26/2009	
Contaminant	Concentration (µg/L)
Barium	200
Zinc	34

SW-2 10/26/2009	
Contaminant	Concentration (µg/L)
Benzene	1.5
Chlorobenzene	10
Barium	530

SW-3 10/26/2009	
Contaminant	Concentration (µg/L)
Barium	56

SW-4 10/26/2009	
Contaminant	Concentration (µg/L)
None detected	

SW-5 10/26/2009	
Contaminant	Concentration (µg/L)
None detected	

Legend

- ▲ Surface Water Sample Location
- ▬ Landfill Extents
- ~ Stream/River
- Park Boundary
- Concentration exceeds the Water Quality Criteria

Base map data layers provided by City of Stamford GIS Department.
Aerial photograph from 2005.
Figure to be used for display purposes only.

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SCOFIELDTOWN PARK
STAMFORD, CONNECTICUT

Figure 4
Sampling Locations With
Surface Water Results

Figure: 4	Date: 1/28/2010	Project No: 168936.0000.0000
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MW-1 OB 11/23/2009	
Contaminant	Concentration (µg/L)
1,2,4-Trimethylbenzene	25
1,3,5-Trimethylbenzene	4.7
1,4-Dichlorobenzene	17
4-Isopropyltoluene	3.7
Benzene	48
Chlorobenzene	17
Ethylbenzene	170
Isopropylbenzene	5.1
m+p Xylenes	280
n-Butylbenzene	1.1
n-Propylbenzene	4.8
Naphthalene	63
o-Xylene	55
sec-Butylbenzene	1
Tetrahydrofuran	5.6
Toluene	770
2-Methyl Naphthalene	2.1
3+4 Methyl Phenol	35
ETPH	680
Silvex	0.62
Alkalinity	780,000
Aluminum	100
Arsenic	23
Barium	1,600
Calcium	140,000
Iron	18,000
Magnesium	88,000
Manganese	240
Potassium	160,000
Sodium	2,600,000

MW-6 R 12/30/2009	
Contaminant	Concentration (µg/L)
cis-1,2-Dichloroethene	1.1
Alkalinity	270,000
Aluminum	1,100
Barium	270
Calcium	320,000
Iron	3,200
Magnesium	1,800
Manganese	81
Potassium	41,000
Sodium	29,000

MW-2 R 11/23/2009	
Contaminant	Concentration (µg/L)
cis-1,2-Dichloroethene	5.1
Trichloroethene	2.4
Vinyl Chloride	5.5
Alkalinity	270,000
Aluminum	180
Barium	120
Calcium	72,000
Iron	11,000
Magnesium	18,000
Manganese	2,300
Potassium	14,000
Sodium	57,000
Gross Alpha	9.23 +/- 3.39
Gross Beta	22.52 +/- 4.32

MW-2 OB 11/23/2009	
Contaminant	Concentration (µg/L)
Alkalinity	480,000
Aluminum	110
Barium	150
Calcium	140,000
Iron	13,000
Magnesium	27,000
Manganese	2,300
Potassium	23,000
Sodium	65,000
Gross Alpha	4.50 +/- 3.07
Gross Beta	23.18 +/- 4.35

MW-1 R 11/23/2009	
Contaminant	Concentration (µg/L)
Toluene	1.3
Alkalinity	140
Aluminum	310
Barium	96
Calcium	49,000
Iron	18,000
Magnesium	14,000
Manganese	11,000
Potassium	5,800
Sodium	360,000
Gross Alpha	18.06 +/- 3.69
Gross Beta	23.84 +/- 4.39

MW-4 OB 11/24/2009	
Contaminant	Concentration (µg/L)
Alkalinity	48,000
Barium	360
Calcium	65,000
Magnesium	12,000
Manganese	160
Potassium	9,100
Sodium	470,000
Gross Alpha	7.08 +/- 3.45
Gross Beta	10.44 +/- 3.69

MW-4 R 11/23/2009	
Contaminant	Concentration (µg/L)
Toluene	9.7
Alkalinity	40,000
Barium	210
Calcium	40,000
Iron	9,700
Magnesium	12,000
Manganese	240
Potassium	6,400
Sodium	260,000
Zinc	34
Gross Beta	13.62 +/- 3.78

MW-9 R 12/30/2009	
Contaminant	Concentration (µg/L)
1,2,4-Trimethylbenzene	9.4
1,3,5-Trimethylbenzene	3.7
Ethylbenzene	4.1
Toluene	1.4
Methyl Alcohol	37
Alkalinity	1,200,000
Aluminum	1,800
Barium	470
Calcium	370,000
Copper	41
Iron	23,000
Magnesium	1,800
Manganese	730
Potassium	110,000
Sodium	100,000

MW-5 R 11/24/2009	
Contaminant	Concentration (µg/L)
trans-1,2-Dichloroethene	3.4
Alkalinity	40,000
Calcium	6,700
Iron	4,800
Magnesium	3,600
Manganese	72
Potassium	4,300
Sodium	14,000
Gross Alpha	3.00 +/- 2.33
Gross Beta	5.71 +/- 3.31

MW-3 OB 11/23/2009	
Contaminant	Concentration (µg/L)
Chlorobenzene	3.5
Alkalinity	140,000
Barium	120
Calcium	30,000
Iron	9,100
Magnesium	7,200
Manganese	210
Potassium	6,500
Sodium	130,000
Gross Beta	9.56 +/- 3.64

MW-3 R 11/23/2009	
Contaminant	Concentration (µg/L)
Alkalinity	85,000
Aluminum	300
Calcium	34,000
Iron	5,200
Magnesium	14,000
Manganese	3,900
Potassium	3,700
Sodium	76,000
Gross Beta	6.81 +/- 3.38

MW-7 R 11/24/2009	
Contaminant	Concentration (µg/L)
1,1,1,2-Tetrachloroethane	23
trans-1,2-Dichloroethene	5.3
Chlordane	0.42
Dieldrin	0.29
Alkalinity	38,000
Aluminum	150
Barium	290
Calcium	77,000
Iron	220
Magnesium	27,000
Potassium	10,000
Sodium	200,000
Zinc	23
Gross Beta	9.56 +/- 3.64

MW-8 R 11/24/2009	
Contaminant	Concentration (µg/L)
1,1,1,2-Tetrachloroethane	33
trans-1,2-Dichloroethene	5.5
Chlordane	0.91
Dieldrin	0.096
Alkalinity	43,000
Calcium	29,000
Iron	4,800
Magnesium	9,200
Manganese	73
Potassium	4,000
Sodium	40,000
Zinc	33
Gross Alpha	4.91 +/- 2.78
Gross Beta	9.89 +/- 3.56

Legend

- Monitoring Well Location
- Landfill Extents
- Stream/River
- Park Boundary

Concentration exceeds the GWPC or USEPA Drinking Water MCL*
 Concentration exceeds the GWPC and GWVC
 Concentration exceeds both the GWPC and the SWPC
 Concentration exceeds the GWVC

N

0 150 300 600 Feet

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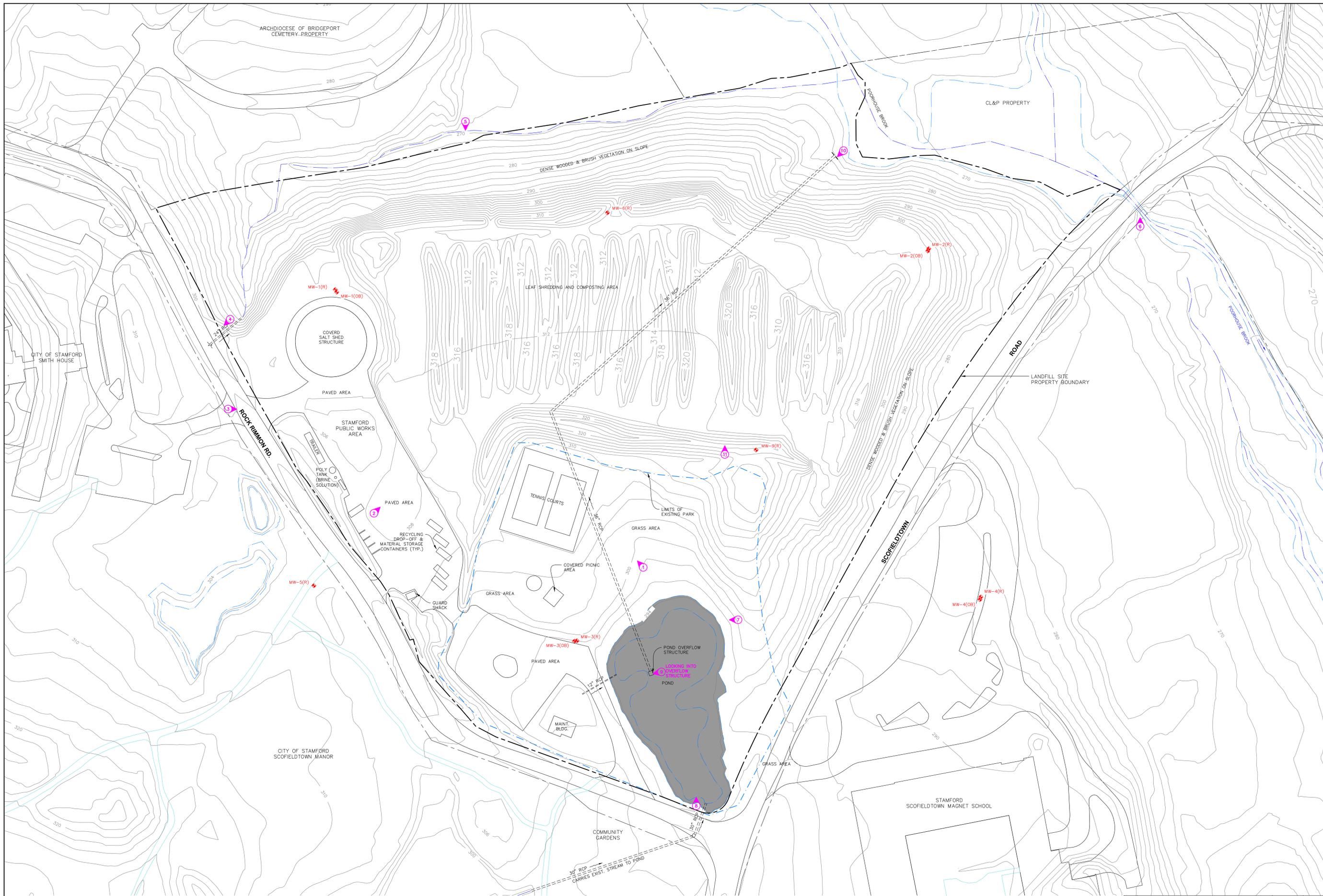
**SCOFIELDTOWN PARK
STAMFORD, CONNECTICUT**

**Figure 5
Sampling Locations With
Ground Water Results**

Figure: 5 Date: 1/28/2010 Project No: 168936.0000.0000

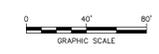
Base map data layers provided by City of Stamford GIS Department.
Aerial photograph from 2005.
Figure to be used for display purposes only.

* - MCL for Gross Alpha & Beta Only

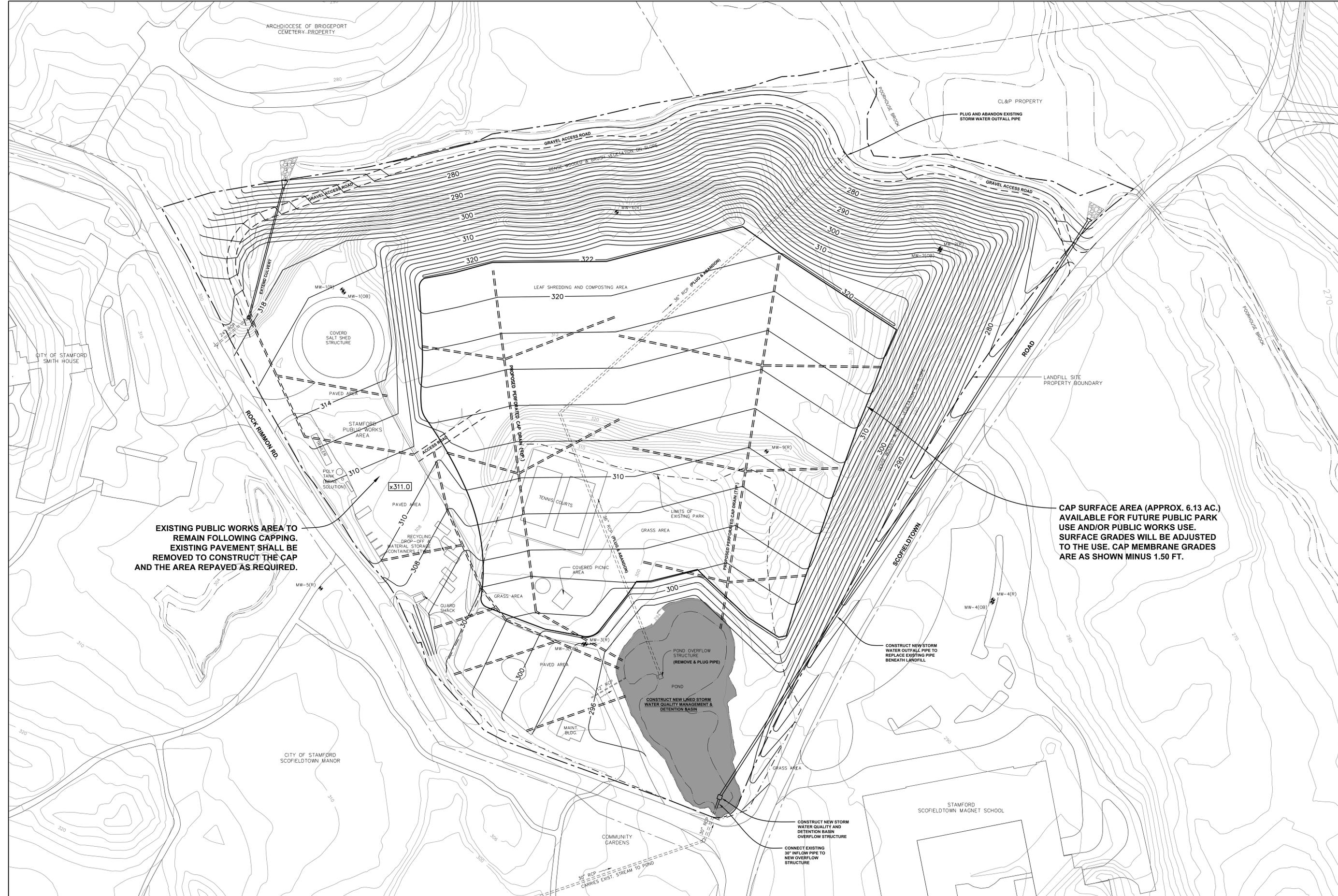


2:\045\180554\Cap Design\Figure C.dwg
 Figure C.dwg & Cap Design\Figure C March 08, 2011 11:32PM xhdwlsk

LEGEND
 PHOTOGRAPH LOCATION WITH IDENTIFICATION AND DIRECTION



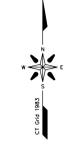
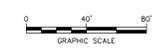
NO.	REVISIONS	DATE	APPROVAL
CITY OF STAMFORD SCOFIELDTOWN PARK LANDFILL STAMFORD, CONNECTICUT			
LANDFILL CAP EXISTING CONDITIONS PLAN			
CTRC <small>21 Griffin Road North Windsor, CT 06095 (860) 298-9692</small>		<small>DESIGN: CNS 12/21/10 DRAWN: KCH 12/21/10 CHECKED: CNS 12/21/10 SCALE: 1"=40' PROJECT: 180554-00002-0000 FIGURE No.</small>	
C			



EXISTING PUBLIC WORKS AREA TO REMAIN FOLLOWING CAPPING. EXISTING PAVEMENT SHALL BE REMOVED TO CONSTRUCT THE CAP AND THE AREA REPAVED AS REQUIRED.

CAP SURFACE AREA (APPROX. 6.13 AC.) AVAILABLE FOR FUTURE PUBLIC PARK USE AND/OR PUBLIC WORKS USE. SURFACE GRADES WILL BE ADJUSTED TO THE USE. CAP MEMBRANE GRADES ARE AS SHOWN MINUS 1.50 FT.

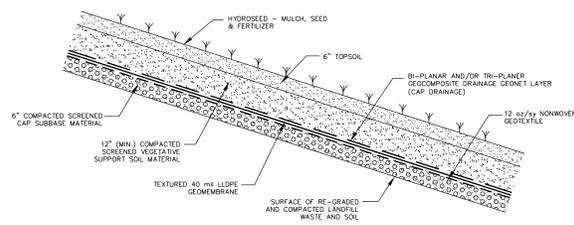
- NOTES:**
- 1) CAPPING WILL REQUIRE THE IMPORTATION OF SOIL MATERIAL. THE SOIL MATERIALS AND RE-GRADED LANDFILL MATERIALS WILL BE MANAGED IN TEMPORARY STOCKPILES FOR STAGING AND USE DURING CONSTRUCTION.
 - 2) ALL AREAS OF THE SITE BEING RE-GRADED TO CONSTRUCT THE LANDFILL CAP SHALL BE CLEARED AND GRUBBED.



REVISIONS		DATE	APPROVAL
NO.			

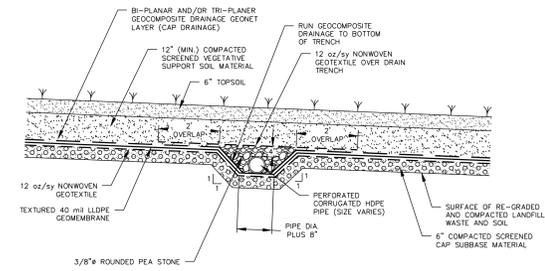
CITY OF STAMFORD SCOFIELDTOWN PARK LANDFILL STAMFORD, CONNECTICUT		 <small>21 Griffin Road North Waterbury, CT 06906 (860) 298-9692</small>
LANDFILL CAP SURFACE GRADING PLAN PRELIMINARY		
DESIGN:	CNS	12/21/10
DRAWN:	KCH	12/21/10
CHECKED:	CNS	12/21/10
SCALE:	1"=40'	
PROJECT:	18054-00002-0000	
FIGURE NO.	E	

NOTE:
FUTURE USE IN PROPOSED PUBLIC PARK WILL REQUIRE THAT THE VEGETATIVE SUPPORT SOIL LAYER VARY IN THICKNESS FROM THE TYPICAL SECTION. A MINIMUM OF 18" OF SOIL SHALL BE MAINTAINED IN ALL AREAS REGRADED FOR PARK USE.

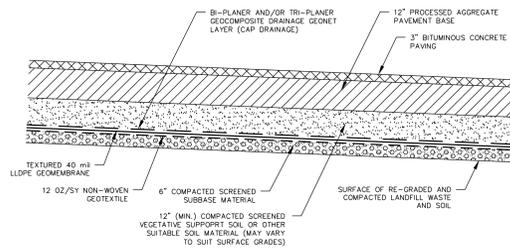


NOTE:
MAXIMUM MEMBRANE SLOPE: 3 HORIZONTAL TO 1 VERTICAL (STABILITY)
MINIMUM MEMBRANE SLOPE: 4% (CAP DRAINAGE)

RECOMMENDED TYPICAL LANDFILL CAP SECTION (VEGETATED AREAS)
NOT TO SCALE

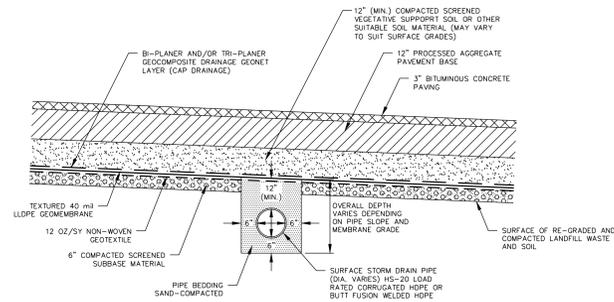


TYPICAL LANDFILL CAP DRAINAGE - PERFORATED PIPE INTERCEPTOR
NOT TO SCALE

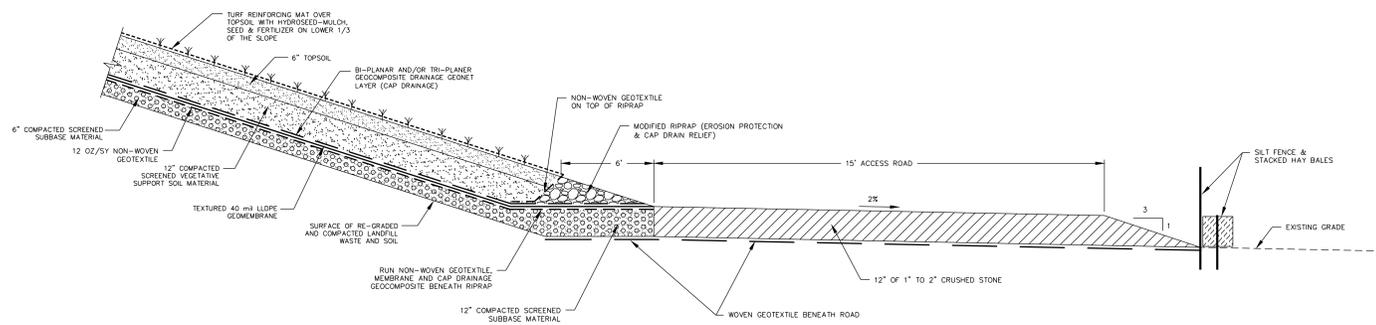


NOTE:
MINIMUM MEMBRANE SLOPE: 4% (CAP DRAINAGE)

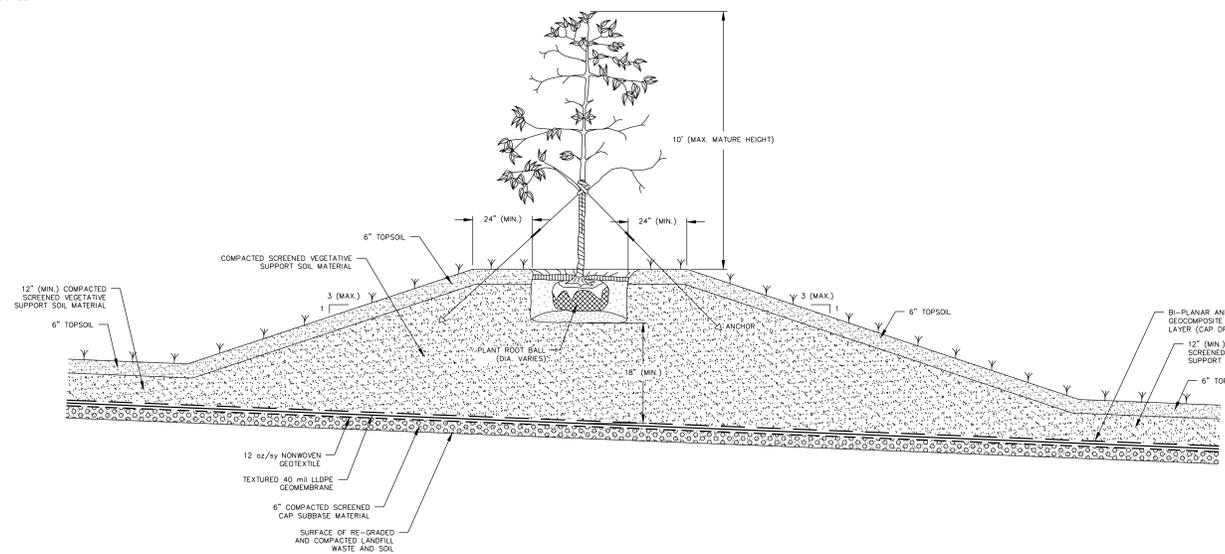
RECOMMENDED TYPICAL LANDFILL CAP SECTION (PAVED AREAS)
NOT TO SCALE



TYPICAL SECTION - SURFACE STORM DRAIN PIPE INSTALLATION
NOT TO SCALE



TYPICAL LANDFILL CAP TOE AND ACCESS ROAD SECTION - NORTH AND EAST SLOPES
NOT TO SCALE



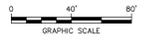
TYPICAL SECTION - LANDSCAPE PLANTING MOUND
NOT TO SCALE

NOTE:
THE SECTIONS SHOWN ON THIS FIGURE ARE TYPICAL SECTIONS FOR THE PROJECT AND THE LOCATIONS WHERE THEY APPLY VARY ACROSS THE SITE.

NO.	REVISIONS	DATE	APPROVAL
CITY OF STAMFORD SCOTFIELDTOWN PARK LANDFILL STAMFORD, CONNECTICUT			 21 Griffin Road North Windsor, CT 06095 (860) 298-9692
LANDFILL CAP DETAILS			
DESIGN: CNS 2/16/11 DRAWN: KDH 2/16/11 CHECKED: CNS 2/16/11 SCALE: NONE PROJECT: 18054-00002-0000 FIGURE NO.			F



NOTES:
 1) COMPOSITION AND ENVIRONMENTAL QUALITY OF SOIL PLACED ABOVE THE GEOMEMBRANE WILL BE DIFFERENT BETWEEN THE PARK AREA AND THE PUBLIC WORKS AREA.



NO.	REVISIONS	DATE	APPROVAL
CITY OF STAMFORD SCOFIELDTOWN PARK LANDFILL STAMFORD, CONNECTICUT			
FUTURE USE PLAN			 <small>21 Griffin Road North Waterbury, CT 06906 (860) 298-9692</small>
DESIGN: ONS		2/16/11	
DRAWN: KCH		2/16/11	
CHECKED: ONS		2/16/11	
SCALE: 1"=40'			
PROJECT: 18054-00002-0000			
FIGURE NO.			
G			

SCOFIELDTOWN PARK LANDFILL CLOSURE - ESTIMATED TIMELINE

Activities	Date	2010		2011				2012				2013				2014				2015				2016	
		Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2
CT DEEP issued Consent Order	9/10/2010	★																							
Retain TRC as PE and LEP	12/9/2010		★																						
Submit proposed Closure Plan	3/9/2011			★																					
City published legal notice of its submission of Landfill Closure Plan to DEEP	7/1/2011					★																			
45-day comment period	7/1/11-8/14/11					■																			
Conduct public information meeting	7/18/2011					★																			
Anticipate DEEP issue final decision on the Impact Evaluation	9/1/2011						★																		
DEEP issues a decision on the draft Landfill Closure Plan	11/1/2011							★																	
Complete Impact Evaluation and issue report and propose final closure plan to DEEP	12/1/2012								■	■	■	■	■												
DEEP completes review of Impact Evaluation report and final closure plan and provide comments/decision	3/1/2013													■	■										
Engineering design and prepare bid package for closure	12/30/2013														■	■	■	■							
Solicitation of construction bids and contract award	4/1/2014																	■							
Construction of landfill closure without park amenities	10/1/2015																		■	■	■	■	■	■	■
Submit landfill closure report to DEEP	1/1/2016																						■	■	■
Initiation of post closure monitoring	1/1/2016 and beyond																						■	■	■
Concept design for end use	9/1/2013																								
Engineering design and prepare bid package for end use	12/1/2014																								
Solicitation of construction bids and contract award	3/1/2015																								
End use construction	Tentative																								
Request project funding for FY11/12			■	■	■	■																			
Request project funding for FY12/13							■	■	■																
Request project funding for FY13/14										■	■														
Request project funding for FY14/15												■	■	■											
Request project funding for FY15/16																						■	■	■	

Today's date