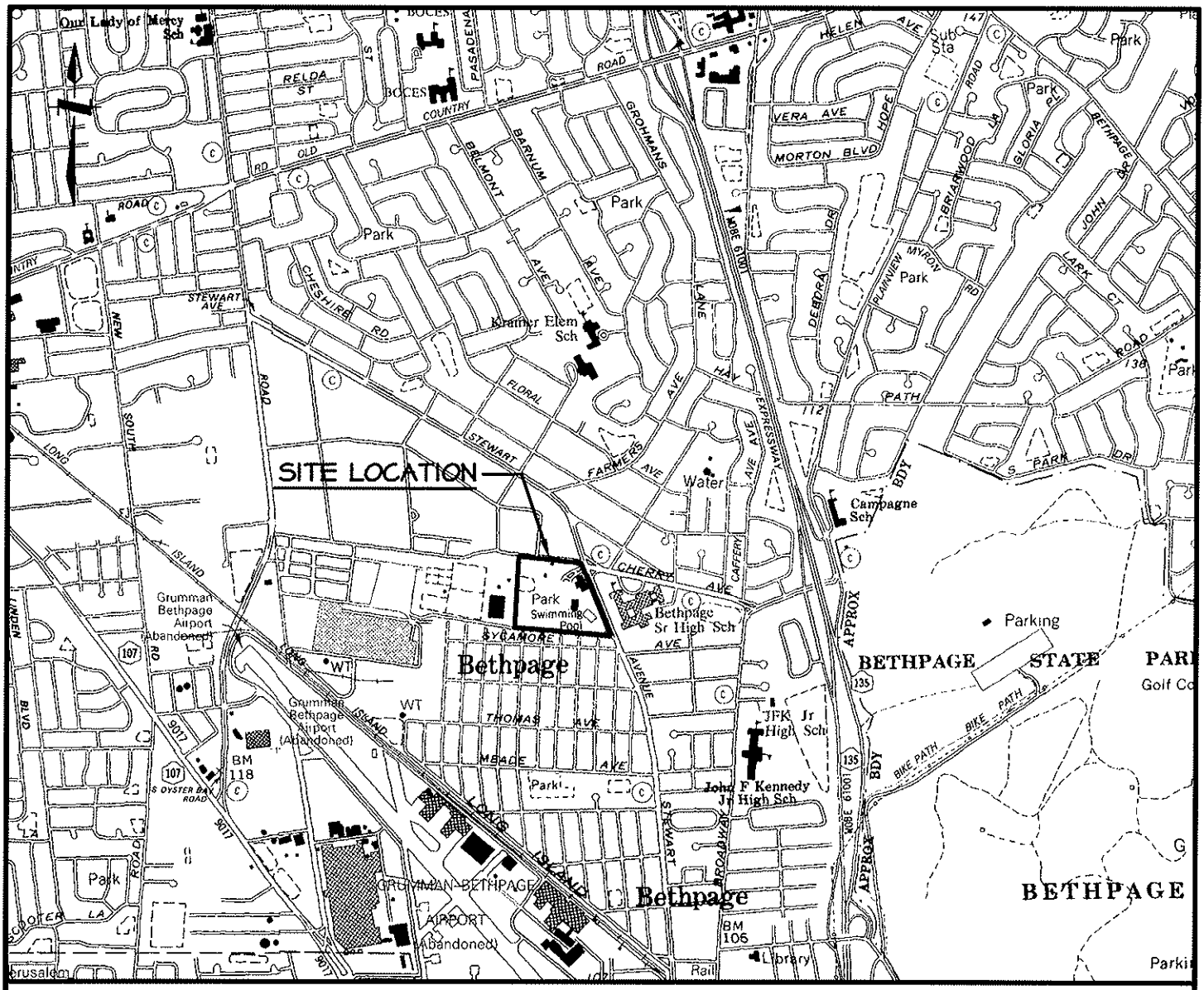
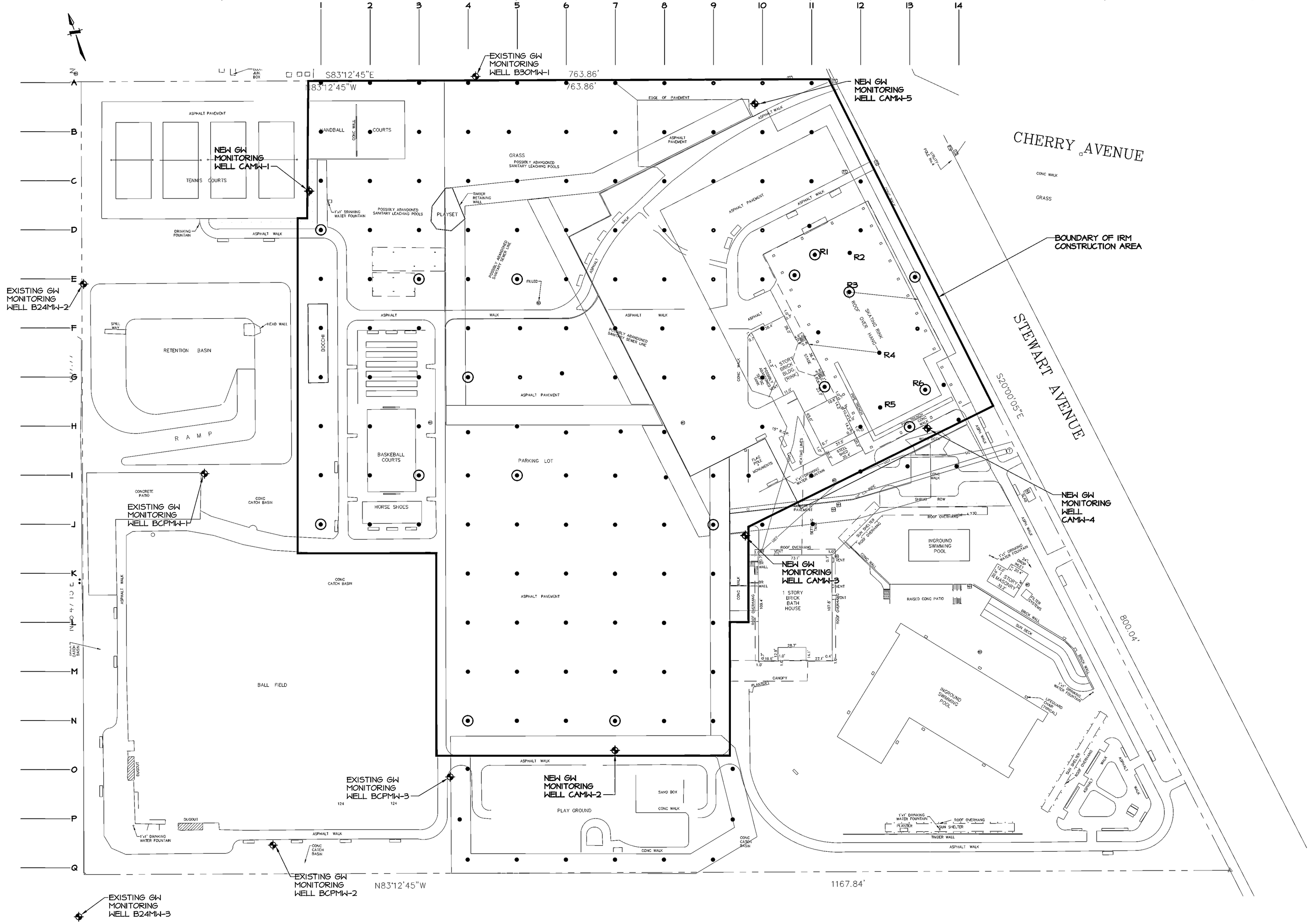


FIGURE 1. SITE LOCATION

SCALE: 1" = 2000'



LEGEND

- SOIL SAMPLING LOCATION
- GROUND WATER MONITORING WELL
- SOIL AND SOIL VAPOR SAMPLING LOCATION

NOTES:

1. BASEMAP SOURCE: SIDNEY B. BOWNE & SON, LLP, PROJ. NO. 10408802, SEPT. 2004

H2MGROUP
HOLZMACHER, McLENDON & MURRELL, P.C.
575 Broad Hollow Road, Melville, New York 11747
ENGINEERS ▸ ARCHITECTS ▸ PLANNERS ▸ SCIENTISTS ▸ SURVEYORS
E-mail: h2m@h2m.com
www.h2m.com
MELVILLE, N.Y. (631)-756-5000
TOTOWA, N.J. (973)-942-0700

"ALTERATION OF THIS DOCUMENT, EXCEPT BY A LICENSED PROFESSIONAL IS ILLEGAL"

MARK	DATE	DESCRIPTION

ISSUE:	
PROJECT NO:	TOBY 0402
DATE:	MARCH 2006
CAD DWG FILE:	FIGURE-2.dwg
XREF DWG FILE:	xr_EXCAVATION.dwg
SCALE:	1"= 50'
FILE LOCATION:	
DESIGNED BY:	PRL
DRAWN BY:	DP
CHECKED BY:	PRL
REVIEWED BY:	PJS

TOWN OF OYSTER BAY
BETHPAGE COMMUNITY PARK
BETHPAGE, NEW YORK

IRM
CONSTRUCTION AREA

CONTRACT

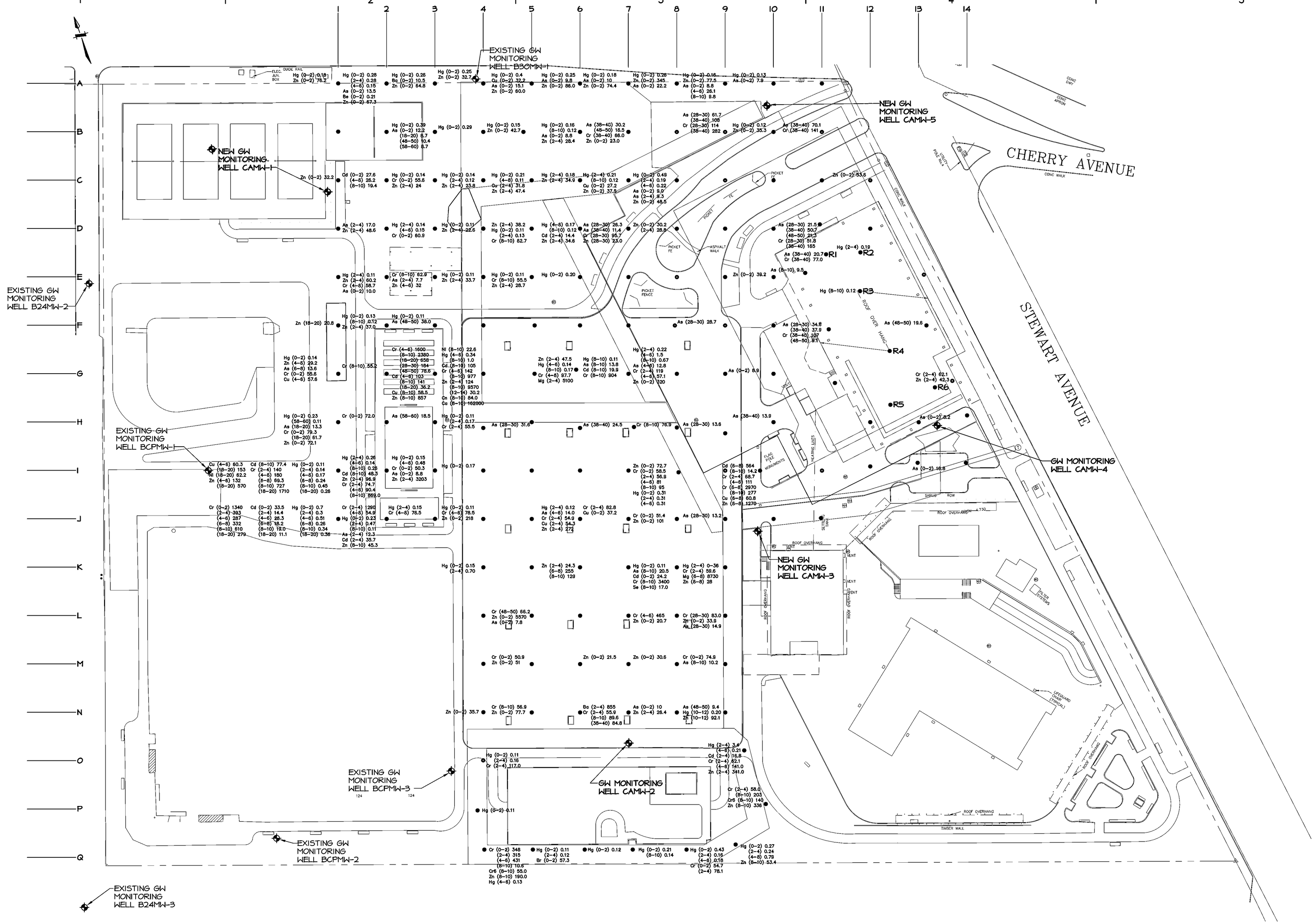
SHEET TITLE

SOIL, GROUNDWATER AND SOIL VAPOR SAMPLING LOCATIONS.

SHEET NUMBER

FIGURE 2

M:\cadd\TOBY\0402\RAP supplement\FIGURE-2.dwg Last Modified: Mar 31, 2006 – 2:47pm Plotted on: Jul 08, 2008 – 4:39pm By cadd120



LEGEND

Cr (0-2) 348 ● SOIL SAMPLING POINT - (DEPTH IN FEET) CONTAMINANT AND CONCENTRATION IN mg/kg AT OR ABOVE NYSDEC TAGM 4046

GROUND WATER MONITORING WELL

NOTES:

1. BASEMAP SOURCE SIDNEY B. BOWNE & SON, LLP, PROJ. NO. 10408802, SEPT. 2004
2. CONCENTRATIONS SHOWN IN MG/KG (PPM) FOR ALL METALS DETECTED ABOVE NYSDEC TAGM 4046 RECOMMENDED SOIL CLEAN UP OBJECTIVES.

H2M GROUP
HOLZMACHER, McLENDON & MURRELL, P.C.
575 Broad Hollow Road, Melville, New York 11747
ENGINEERS ▸ ARCHITECTS ▸ PLANNERS ▸ SCIENTISTS ▸ SURVEYORS
E-mail: h2m@h2m.com
www.h2m.com
MELVILLE, N.Y. (631)-796-5000
TOTOWA, N.J. (973)-942-0700

"ALTERATION OF THIS DOCUMENT, EXCEPT BY A LICENSED PROFESSIONAL IS ILLEGAL"

MARK	DATE	DESCRIPTION

ISSUE:	
PROJECT NO:	TOBY 0402
DATE:	MARCH 2006
CAD DWG FILE:	FIGURE-3.dwg
XREF DWG FILE:	xr_EXCAVATION.dwg
SCALE:	1"= 50'
FILE LOCATION:	
DESIGNED BY:	PRL
DRAWN BY:	DP
CHECKED BY:	PRL
REVIEWED BY:	PJS

TOWN OF OYSTER BAY
BETHPAGE COMMUNITY PARK
BETHPAGE, NEW YORK

IRM
CONSTRUCTION AREA

CONTRACT

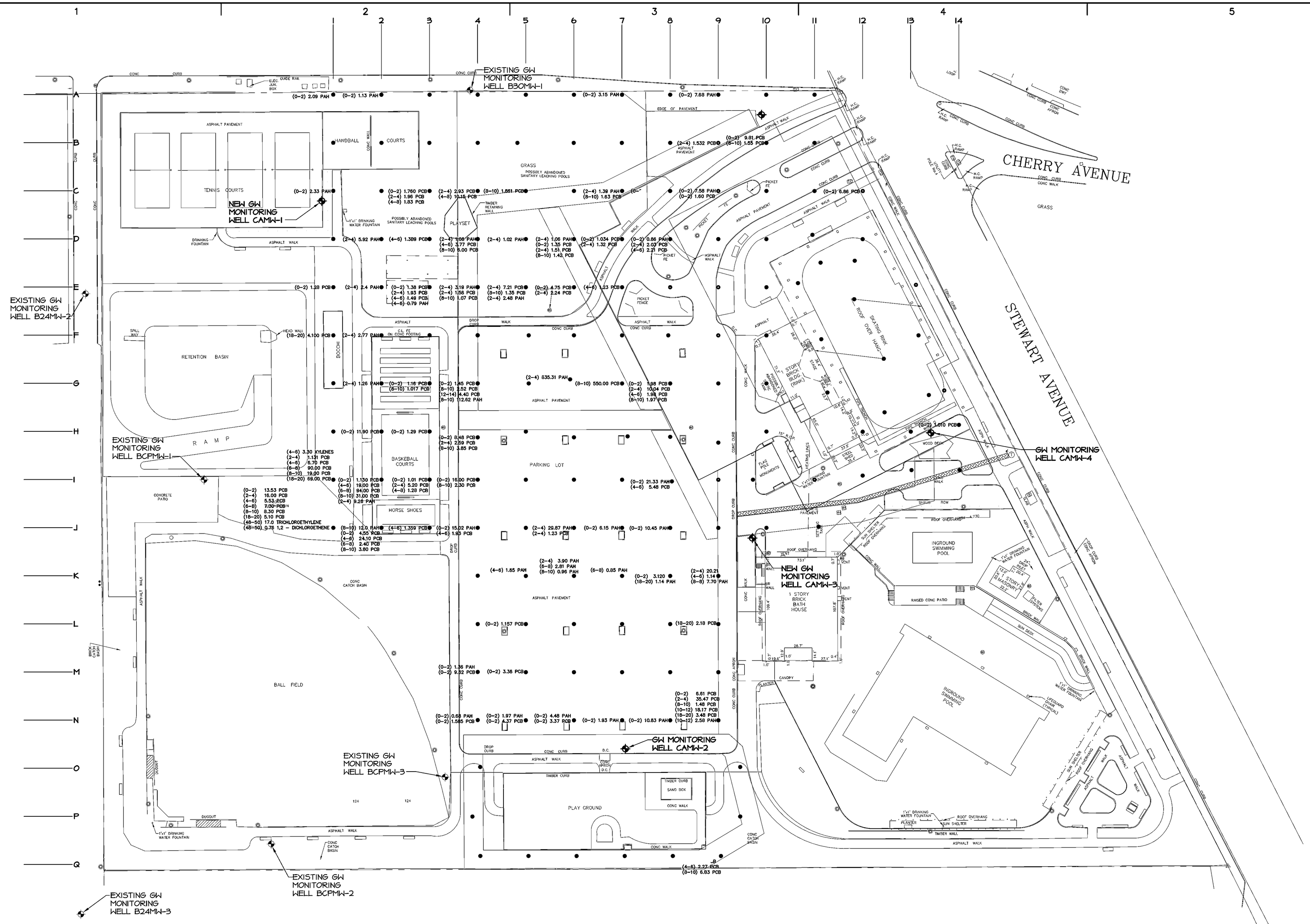
SHEET TITLE

SOIL SAMPLING RESULTS FOR METALS

SHEET NUMBER

FIGURE 3

M:\cadd\TOBY\0402\RAP supplement\FIGURE-3.dwg Last Modified: Mar 31, 2006 - 2:48pm Plotted on: Jul 08, 2008 - 4:40pm By cadd120



LEGEND

(0-2) 240 PAH • SOIL SAMPLING POINT – (DEPTH IN FEET) CONTAINMENT AND CONCENTRATION IN MG/KG

⊕ GROUND WATER MONITORING WELL

NOTES:

1. BASEMAP SOURCE: SIDNEY B. BOWNE & SON, LLP, PROJ. NO. 10408802. SEPT. 2004
2. ALL CONCENTRATIONS SHOWN IN MG/KG (PPM).

H2M GROUP
HOLZMACHER, McLENDON & MURRELL, P.C.
575 Broad Hollow Road, Melville, New York 11747
ENGINEERS ▸ ARCHITECTS ▸ PLANNERS ▸ SCIENTISTS ▸ SURVEYORS
E-mail: h2m@h2m.com
www.h2m.com
MELVILLE, N.Y. (631)-796-5000
TOTOWA, N.J. (973)-942-0700

"ALTERATION OF THIS DOCUMENT, EXCEPT BY A LICENSED PROFESSIONAL IS ILLEGAL"

MARK	DATE	DESCRIPTION

ISSUE:	
PROJECT NO:	TOBY 0402
DATE:	MARCH 2006
CAD DWG FILE:	FIGURE-4.dwg
XREF DWG FILE:	xr_EXCAVATION.dwg
SCALE:	1"= 50'
FILE LOCATION:	
DESIGNED BY:	PRL
DRAWN BY:	DP
CHECKED BY:	PRL
REVIEWED BY:	PJS

TOWN OF OYSTER BAY
BETHPAGE COMMUNITY PARK
BETHPAGE, NEW YORK

IRM CONSTRUCTION AREA

CONTRACT

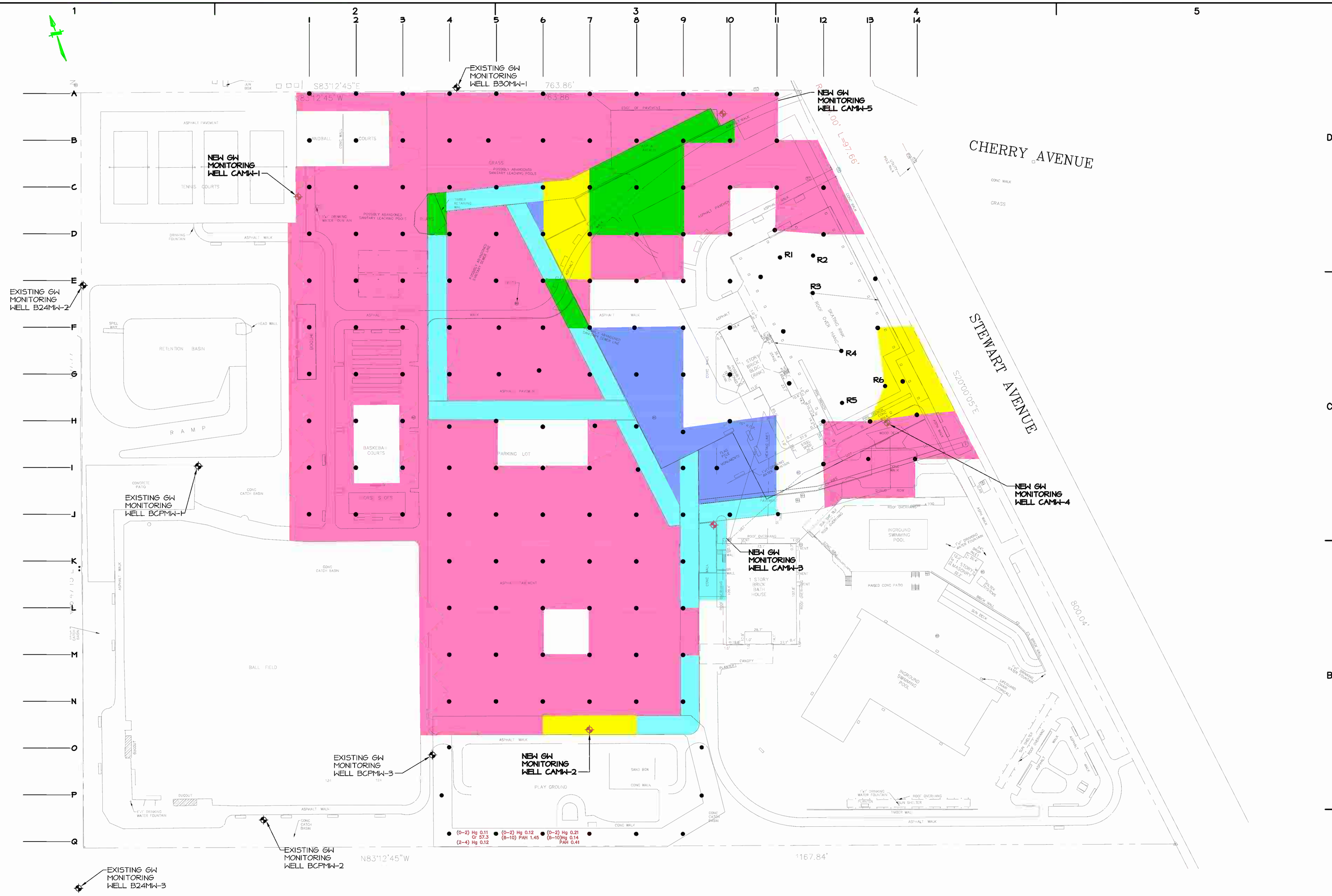
SHEET TITLE

SOIL SAMPLING RESULTS FOR PCBS, VOCS AND SVOCS

SHEET NUMBER

FIGURE 4

M:\cadd\TOBY\0402\RAP supplement\FIGURE-4.dwg Last Modified: Mar 31, 2006 – 2:48pm Plotted on: Jul 08, 2008 – 4:41pm By cadd120



PROPOSED EXCAVATION DEPTH LEGEND

- NO EXCAVATION REQUIRED
- 2'
- 4'
- 6'
- 7'
- 8'

LEGEND

- SOIL SAMPLING POINT
- GROUND WATER MONITORING WELL

REMEDIAL ALTERNATIVE II

- REMEDIATION TO 2 FOOT DEPTH TO TAGM OBJECTIVES IN PERVIOUS AREAS.
- REMEDIAL EXCAVATION TO FACILITATE PLANNED CONSTRUCTION.

NOTES:

1. BASEMAP SOURCE: SIDNEY B. BOWNE & SON, LLP, PROJ. NO. 10408802, SEPT. 2004
2. LIMITS OF EXCAVATION ARE SHOWN TO EXTEND TO ADJACENT DATA POINTS AND/OR THE BOUNDARY OF CONSTRUCTION AREA. ACTUAL LIMITS AND CONFIGURATION OF REMEDIAL EXCAVATION MAY VARY SLIGHTLY FROM THIS PLAN. DETAILED PLANS AND SPECIFICATIONS REFLECTING PRACTICAL CONSTRUCTABILITY CONCERNS INCLUDING CUT-BACK VS. SHORING WILL BE DEVELOPED FOR USE DURING REMEDIATION WORK.

H2MGROUP
HOLZMACHER, McLENDON & MURRELL, P.C.
575 Broad Hollow Road, Melville, New York 11747
ENGINEERS ▸ ARCHITECTS ▸ PLANNERS ▸ SCIENTISTS ▸ SURVEYORS
E-mail: h2m@h2m.com
www.h2m.com
MELVILLE, N.Y. (631)-756-5000
TOTOWA, N.J. (973)-942-0700

"ALTERATION OF THIS DOCUMENT, EXCEPT BY A LICENSED PROFESSIONAL IS ILLEGAL"

MARK	DATE	DESCRIPTION

ISSUE:	
PROJECT NO:	TOBY 0402
DATE:	MARCH 2006
CAD DWG FILE:	figure 5.dwg
XREF DWG FILE:	xr_EXCAVATION.dwg
SCALE:	1"= 50'
FILE LOCATION:	
DESIGNED BY:	PRL
DRAWN BY:	DP
CHECKED BY:	PRL
REVIEWED BY:	PJS

TOWN OF OYSTER BAY
BETHPAGE COMMUNITY PARK
BETHPAGE, NEW YORK

IRM
CONSTRUCTION AREA

CONTRACT

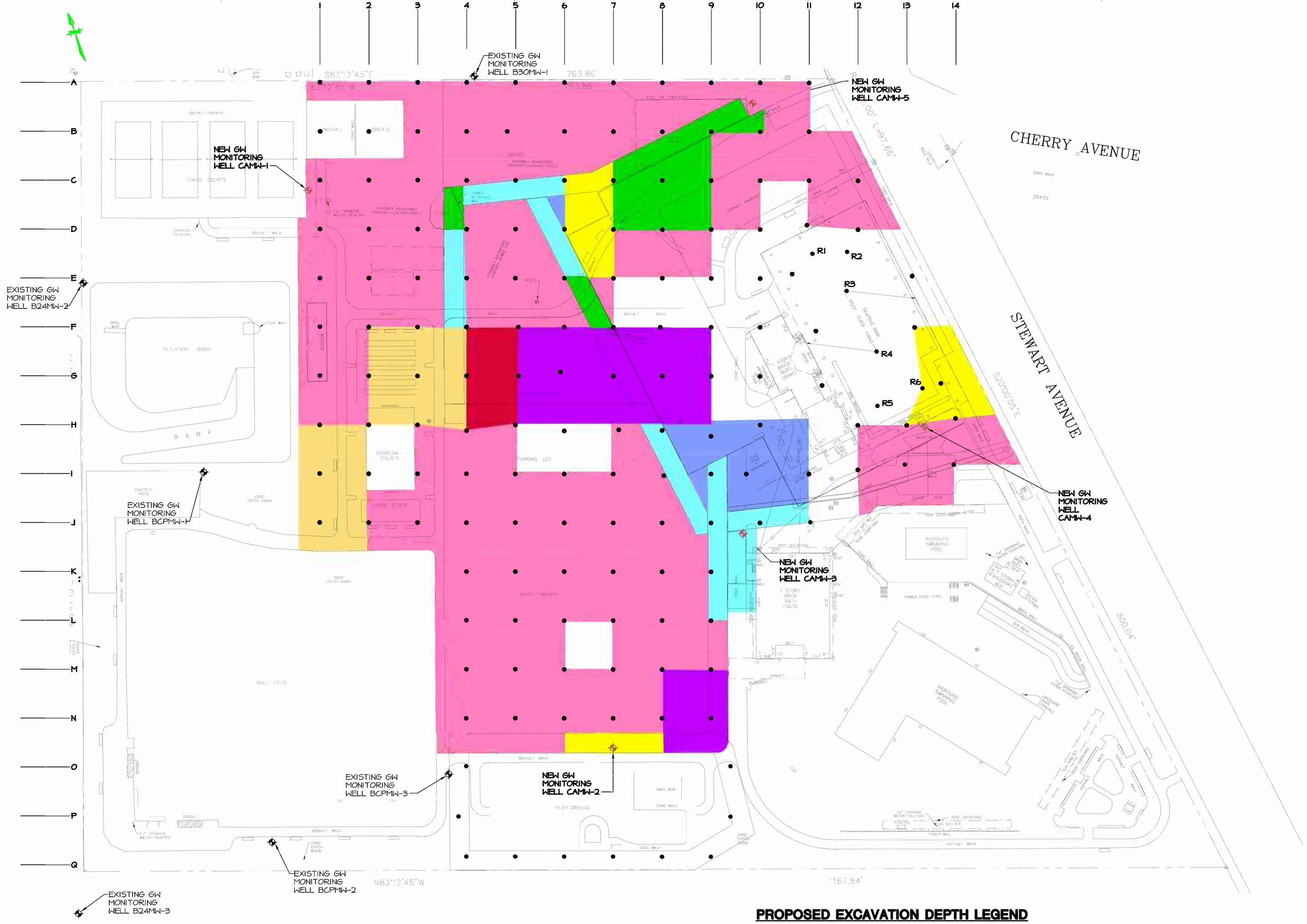
SHEET TITLE

REMEDIAL ALTERNATIVE II

SHEET NUMBER

FIGURE 5

W:\cadd\TOBY\0402\RAP supplement\FIGURE-5.dwg Last Modified: Jun 13, 2008 - 3:21pm Plotted on: Jul 10, 2008 - 3:28pm By cadd120



LEGEND

- SOIL SAMPLING POINT
- GROUND WATER MONITORING WELL

REMEDIAL ALTERNATIVE III

- REMEDIATION TO 2 FOOT DEPTH TO TAGM OBJECTIVES IN PERVIOUS AREAS.
- REMEDIAL EXCAVATION TO FACILITATE PLANNED CONSTRUCTION.
- TARGETED REMEDIAL EXCAVATION IN FILL AREAS.

PROPOSED EXCAVATION DEPTH LEGEND

- NO EXCAVATION REQUIRED
- 2'
- 4'
- 6'
- 7'
- 8'
- 10'
- 12'
- 14'
- 20'

NOTES:

1. BASEMAP SOURCE: SIDNEY B. BOWNE & SON, LLP, PROJ. NO. 10408802, SEPT. 2004
2. LIMITS OF EXCAVATION ARE SHOWN TO EXTEND TO ADJACENT DATA POINTS AND/OR THE BOUNDARY OF CONSTRUCTION AREA. ACTUAL LIMITS AND CONFIGURATION OF REMEDIAL EXCAVATION MAY VARY SLIGHTLY FROM THIS PLAN. DETAILED PLANS AND SPECIFICATIONS REFLECTING PRACTICAL CONSTRUCTABILITY CONCERNS INCLUDING CUT-BACK VS. SHORING WILL BE DEVELOPED FOR USE DURING REMEDIATION WORK.

H2MGROUP
HOLZMACHER, McLENDON & MURRELL, P.C.
575 Broad Hollow Road, Melville, New York 11747
ENGINEERS ▸ ARCHITECTS ▸ PLANNERS ▸ SCIENTISTS ▸ SURVEYORS
E-mail: h2m@h2m.com
www.h2m.com
MELVILLE, N.Y. (631)-756-5000
TOTOWA, N.J. (973)-942-0700

"ALTERATION OF THIS DOCUMENT, EXCEPT BY A LICENSED PROFESSIONAL IS ILLEGAL"

MARK	DATE	DESCRIPTION

ISSUE:	
PROJECT NO:	TOBY 0402
DATE:	MARCH 2006
CAD DWG FILE:	FIGURE-6.dwg
XREF DWG FILE:	xr_EXCAVATION.dwg
SCALE:	1"= 50'
FILE LOCATION:	
DESIGNED BY:	PRL
DRAWN BY:	DP
CHECKED BY:	PRL
REVIEWED BY:	PJS

TOWN OF OYSTER BAY
BETHPAGE COMMUNITY PARK
BETHPAGE, NEW YORK

IRM
CONSTRUCTION AREA

CONTRACT

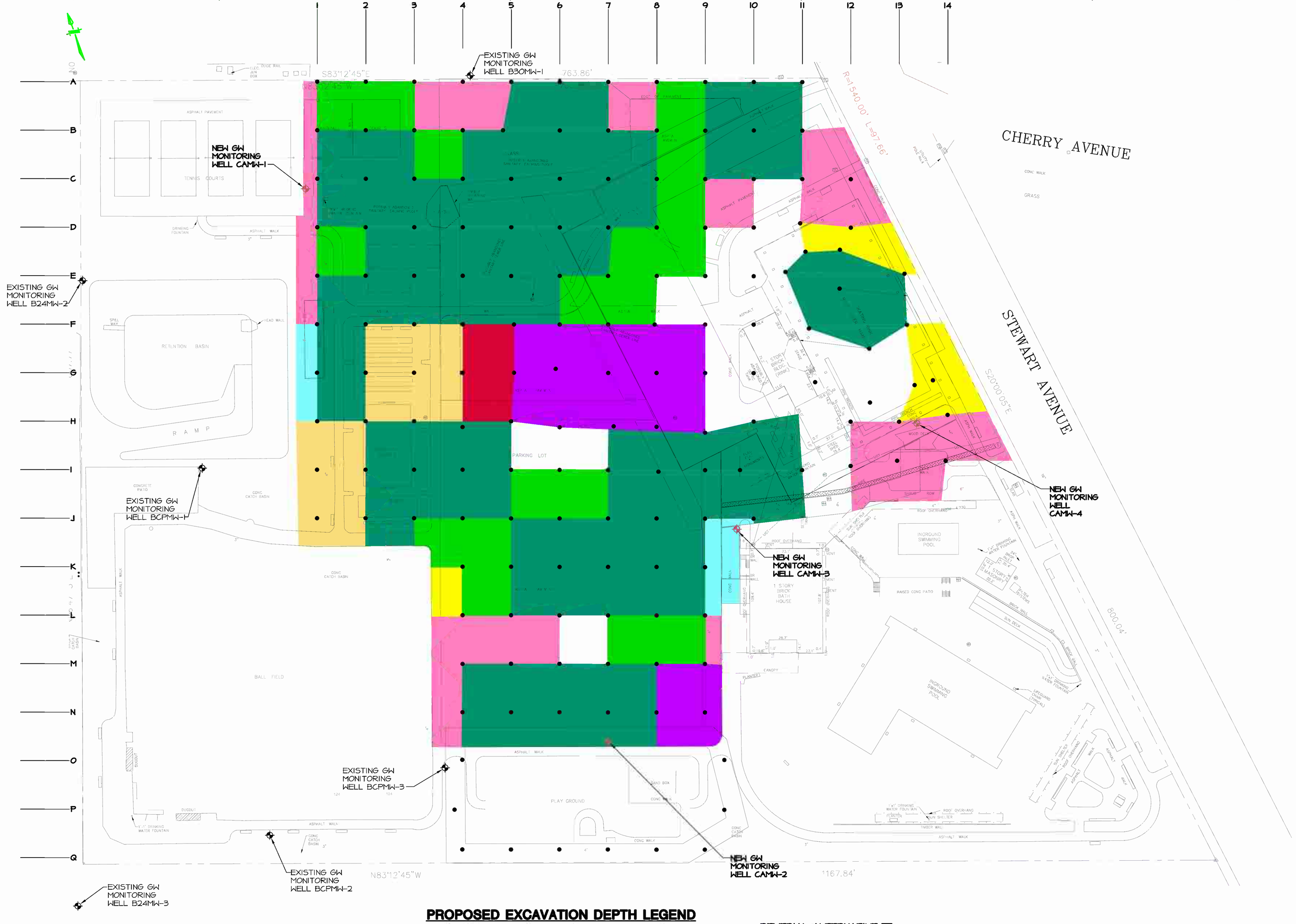
SHEET TITLE

REMEDIAL ALTERNATIVE III

SHEET NUMBER

FIGURE 6

W:\cadd\TOBY\0402\RAP supplement\FIGURE-6.dwg Last Modified: Jun 13, 2006 - 3:21pm Plotted on: Jul 10, 2008 - 3:30pm By cadd120



PROPOSED EXCAVATION DEPTH LEGEND

- NO EXCAVATION REQUIRED
- 2'
- 4'
- 6'
- 8'
- 10'
- 12'
- 14'
- 20'

LEGEND

- SOIL SAMPLING POINT
- GROUND WATER MONITORING WELL

REMEDIAL ALTERNATIVE IV

- REMEDIATION TO 10 FOOT DEPTH TO TAGM OBJECTIVES
- REMEDIAL EXCAVATION TO FACILITATE PLANNED CONSTRUCTION.
- TARGETED REMEDIAL EXCAVATION IN FILL AREAS.

NOTES:

1. BASEMAP SOURCE: SIDNEY B. BOWNE & SON, LLP, PROJ. NO. 10408802, SEPT. 2004
2. LIMITS OF EXCAVATION ARE SHOWN TO EXTEND TO ADJACENT DATA POINTS AND/OR THE BOUNDARY OF CONSTRUCTION AREA. ACTUAL LIMITS AND CONFIGURATION OF REMEDIAL EXCAVATION MAY VARY SLIGHTLY FROM THIS PLAN. DETAILED PLANS AND SPECIFICATIONS REFLECTING PRACTICAL CONSTRUCTABILITY CONCERNS INCLUDING CUT-BACK VS. SHORING WILL BE DEVELOPED FOR USE DURING REMEDIATION WORK.

H2MGROUP
HOLZMACHER, McLENDON & MURRELL, P.C.
575 Broad Hollow Road, Melville, New York 11747
ENGINEERS ▸ ARCHITECTS ▸ PLANNERS ▸ SCIENTISTS ▸ SURVEYORS
E-mail: h2m@h2m.com
www.h2m.com
MELVILLE, N.Y. (631)-756-5000
TOTOWA, N.J. (973)-942-0700

"ALTERATION OF THIS DOCUMENT, EXCEPT BY A LICENSED PROFESSIONAL IS ILLEGAL"

MARK	DATE	DESCRIPTION

ISSUE:	
PROJECT NO:	TOBY 0402
DATE:	MARCH 2006
CAD DWG FILE:	FIGURE-7.DWG
XREF DWG FILE:	xr_EXCAVATION.dwg
SCALE:	1"= 50'
FILE LOCATION:	
DESIGNED BY:	PRL
DRAWN BY:	DP/PB
CHECKED BY:	PRL
REVIEWED BY:	PJS

TOWN OF OYSTER BAY
BETHPAGE COMMUNITY PARK
BETHPAGE, NEW YORK

IRM
CONSTRUCTION AREA

CONTRACT

SHEET TITLE

REMEDIAL ALTERNATIVE IV

SHEET NUMBER

FIGURE 7

W:\cadd\TOBY\0402\RAP supplement\FIGURE-7.dwg Last Modified: Jun 13, 2008 - 3:21pm Plotted on: Jul 10, 2008 - 3:31pm By cadd120

TABLE 3.2.2. QUALITATIVE RISK CHARACTERIZATION

Functional Exposure Pathway	Potential Receptor Population	Qualitative Potential Risk
Ingestion of Contaminated Soil	Visitors/Workers at Site	Present
	Area Residents	Minor
	Construction/Remedial Workers	Minor
Inhalation of Vapors	Visitors/Workers at Site	Present
	Area Residents	Minor
	Construction/Remedial Workers	Minor
Inhalation of Contaminated Dust During Intrusive Soil Activity	Workers at Site	Present
	Area Residents	Minor
	Construction/Remedial Workers	Minor
Direct Contact with Runoff Water	Visitors/Workers at Site	Minor
	Area Residents	Not Present
	Construction/Remedial Workers	Minor
Ingestion of Contaminated Groundwater	Visitors/Workers at Site	Not Present
	Area Residents	Not Present
	Construction/Remedial Workers	Not Present
Dermal Absorption of Contaminants in Soil	Visitors/Workers at Site	Present
	Area Residents	Minor
	Construction/Remedial Workers	Minor
Dermal Absorption of Contaminants in Groundwater	Visitors/Workers at Site	Not Present
	Area Residents	Not Present
	Construction/Remedial Workers	Not Present

FIGURE 6.0.1. REMEDIAL ALTERNATIVE COST COMPARISON

RA I	Limited Action
RA II	Remediation to 2-Foot Depth in Pervious Areas and Remedial Excavation to Facilitate Construction.
RA III	Remediation to 2-Foot Depth in Pervious Areas, Remedial Excavation to Facilitate Construction plus Targeted Removal of Impacted Fill Areas.
RA IV	Remediation to 10-Foot Depth plus Targeted Removal of Impacted Fill Areas
RA V	Remediation of all Soils to TAGM Objectives

	RA I	RA II	RA III	RA IV	RA V
Total Soil Volume for Excav./Remed. (cubic yards, yd^3)	31000	36000	57000	100000	269,000
Estimated Remediation Time (Days)	39	45	71	125	336
Soil Volume with PCBs >50 ppm	0.0	0.0	11445.0	11445.0	11445.0
Soil Excavation Cost ($6/$yd^3$ for <20 feet deep)	$ 186,000	$ 216,000	$ 342,000	$ 600,000	$ 1,614,000
Soil Transportation and Disposal ($85/$yd^3$, PCB >2, <50 ppm)	$ 2,635,000	$ 3,060,000	$ 3,872,175	$ 7,527,175	$ 21,892,175
Soil Transportation and Disposal ($250/$yd^3$, PCB >50, <500 ppm)	$ -	$ -	$ 2,861,250	$ 2,861,250	$ 2,861,250
Backfill including installation ($35/$yd^3$)	$ 1,085,000	$ 1,260,000	$ 1,995,000	$ 3,500,000	$ 9,415,000
Waste characterization ($1345/800$yd^3$)	$ 52,119	$ 60,525	$ 95,831	$ 168,125	$ 452,256
Dust Control ($450/day)	$ 17,438	$ 20,250	$ 32,063	$ 56,250	$ 151,313
Utility Relocation	$ 12,000	$ 12,000	$ 12,000	$ 12,000	$ 12,000
Sheeting/Shoring	$ -	$ -	$ -	$ -	$ 11,000,000
Subtotal	$ 3,987,556	$ 4,628,775	$ 9,210,319	$ 14,724,800	$ 47,397,994
General conditions (bonds, job trailers, portajohns, insurance, traffic control, temporary fencing, etc.) 10%	$ 398,756	$ 462,878	$ 921,032	$ 1,472,480	$ 4,739,799
Engineering/Oversight/Manifesting/Air Monitoring/Health & Safety	$ 158,500	$ 176,000	$ 249,500	$ 400,000	$ 991,500
Net Subtotal	$ 4,544,812	$ 5,267,653	$ 10,380,851	$ 16,597,280	$ 53,129,293
15% overall contingency	$ 681,722	$ 790,148	$ 1,557,128	$ 2,489,592	$ 7,969,394
Total	$ 5,226,534	$ 6,057,800	$ 11,937,978	$ 19,086,872	$ 61,098,687

New York State Department of Environmental Conservation
Division of Environmental Remediation
Remedial Bureau A,11th Floor
625 Broadway, Albany, New York 12233-7015
Phone: (518) 402-9620 FAX: (518) 402-9022

Denise M. Sheehan
Commissioner

February 10, 2006

Philip Schade
H2M Group, P.C.
575 Broad Hollow Road
Melville, NY 11747-5076

RE: Bethpage Community Party Park IRM Remedial Action Plan and Supplemental Investigation Report.

Dear Mr. Schade:

H2M, on behalf of the Town of Oyster Bay (Town), has submitted the "Investigation Report & Remedial Action Plan" and the "December 2005 Supplemental Investigation Report" for the Bethpage Community Park Interim Remedial Measure (IRM) construction area. These documents have been distributed to the New York State Department of Health (NYSDOH) and the Nassau County Department of Health (NCDH). The IRM sampling program is being undertaken by the Town to confirm the feasibility of constructing a new ice rink facility in the Bethpage Community Park in what has been termed the IRM construction area.

Copies of the H2M reports were also sent to the Northrop Grumman Corporation as they are under order to complete the overall RI/FS for the Bethpage Community Park (a.k.a. former Grumman settling Ponds). Northrop Grumman comments on the Remedial Action Plan and Supplemental Investigation Reports were submitted to the Town separately by the Northrop Grumman Corporation.

The New York State Department of Environmental Conservation (NYSDEC) has compiled the following general comments and attached specific comments for incorporation into the IRM reports.

General Comments

The sampling program for the IRM construction area undertaken by the Town was comprehensive and focused in nature. The analytical data generated from the soil, groundwater and soil gas investigation was more than adequate to characterize the future construction areas detailed in figure 2 of the IRM Work Plan. This sampling information was used to generate the two reports submitted to the NYSDEC for review pursuant to the IRM order on consent.

1. The NYSDEC Division of Environmental Remediation (DER) Technical Assistance and Guidance Memorandum (TAGM) 4046 listing the soil cleanup objective for chromium has not been changed. For at least the last five years, the NYSDEC has been using a soil clean up level of 50 parts per million (ppm) for chromium.

2. The IRM report acknowledges the presence of soil vapors within the designated construction area and recommends that any new building(s) be designed for vapor mitigation. Both the NYSDEC and NYSDOH concur with this conclusion.

3. The Town has not presented cost estimates with this remedial action plan. Based on our experience, the magnitude of work and the level of effort for this proposed IRM is very extensive and well beyond what the NYSDEC would normally require. Given the analytical results generated as part of the IRM program and, the proposed use, the NYSDEC would not require removal of sub-surface soil that marginally exceeds the soil cleanup levels.

4. Since the scope of this proposed remedy exceeds the general scope of an IRM and is more in the nature of a final remedy, it is the NYSDEC's recommendation that, pursuant to 6 NYCRR Part 375, remedial alternatives should be evaluated against eight criteria to select a cost-effective remedy for the site. These criteria are:

-overall protectiveness of human health;
-compliance with applicable, or relevant and appropriate regulations and guidance criteria;
-long term effectiveness and permanence;
-reductions in toxicity, mobility and volume through treatment;
-short term effectiveness (ie impacts to local residents);
-implementablility; and,
-cost.

5. Due to the nature of the work and the public's interest in the site, the NYSDEC requires that the proposed remedy be presented and discussed at a public information meeting. This will provide an opportunity for the public to participate in the selection and implementation of the remedy at the site. Additionally, please note that the environmental contractor(s) that would implement any remedial plan would also be responsible for a required Health and Safety Plan (HASP) and a Community Air Monitoring Plan (CAMP).

Specific Comments

1. Page 9, Section 4.1, first Paragraph: The 1 mg/kg surface (0-2 feet) and 10 mg/kg subsurface (greater than 2 feet) is the recommended objective for PCBs. The Remedial Action Plan should be revised accordingly.

2. Page 10, Third Paragraph: Figure 7 referencing PCBs exceedences should read figure 6 here and in all text locations.

3. Page 10, Last Paragraph: Figure 6 referencing Metal exceedences should read figure 5 here and in all text locations.

4. Section 6.1.1: Exposure Pathways and Section 6.3: This Risk Characterization on Page 27 states:

> "Visitors/Workers at the Site were identified to have potential risk from ingestion of contaminated soil, inhalation or vapors, inhalation of contaminated dust during remediation activities and dermal absorption of contaminated soil. All other potential risks for identified receptors are considered minor."
>
> a. The evaluation of Complete Pathways in Section 6.1.2 for visitors/worker for ingestion of on-site soils is minor and therefore is not a complete pathway. This will change the risk characterization of site visitors to minor since there is a lack of risk.
>
> **b. Page 25, Construction Workers:** The NYSDEC does not approve Health and Safety Plans (HASP) of remedial contractors. A community air monitoring plan (CAMP) would be required during any remedial construction.
>
> **c. Table 6.3.1 and Supporting text:** The qualitative potential risks for visitors to the park either are minor, or do not exist. Since "minor" meets the definition of acceptable, this needs to be defined as such in the text.

5. Section 7.0, Remedial Action Plan: The proposed remedial action is excavation and disposal of approximately 100,000 cubic yards of soil. As covered under general comments and, given the magnitude of this proposed project, the remedial action plan should screen various alternatives with the evaluation criteria listed in general comment **4**. The report should include, but not necessarily be limited to, the following additional alternatives:

> **a.** limited action, ie controls in the form of environmental easements with appropriate engineering and institutional controls; and,
>
> **b.** select soil removal as identified by the analytical data that exceed the NYSDEC TAGM enough to warrant excavation and offsite disposal in lieu of leaving the materials in place.

The actions being proposed in section 7 are based upon a risk characterization that is not supported by the report. The report actually provides a strong argument why most of these risks are, for all reasonable considerations, minor or even non-existent.

6. Page 31: Remedial Strategy Criteria: The remedial strategies laid out in 1 through 3 do not consider any option other than complete removal to allow for site re-development. Additional alternatives should be evaluated in this focused IRM Remedial Action Plan.

7. Page 32, Bullet 3: Even with the limits of excavation proposed in the remedial action plan, volatile organic compound source areas have not been identified. Therefore, this would not, for the time being, negate the need for vapor control in the IRM construction area, and thus unrestricted use would not be attained by the excavations proposed by the town. The Remedial Action Plan should be revised accordingly.

8. Section 7.0, Page 32, Last Paragraph: Most exceedences for PCBs were only slightly above 1 and much less than 10 ppm. Given the quantitative results of data usability, this translates to most surface soil (0 to 2 feet) remaining in place with no further action with respect to PCBs.

9. Section 7, Metals: The same holds for most soil samples identified with some metal concentration in TAGM range as wtih PCBs in comment 8.

10. Site figures: Soil gas sample locations are not depicted on any figures. These sample locations should be added to appropriate figures of the IRM report and the supplemental sampling report.

11. Figure 9, Remedial Action Plan and Figure 5, Supplemental Report: These figure(s) should be revised based on the overall revisions to the IRM reports.

Supplemental Sampling Report

12. Page 1, First Paragraph: The areas sampled on the south side of the playground are outside the seven acres referred to as "the construction area" as referenced in figure 2 of the approved IRM work plan. Rather than include this in the IRM remedial construction area, the NYSDEC proposes to include this area in the overall RI/FS being conducted under an order on consent by Northrop Grumman for the Bethpage Community Park.

13 Page 11: As acknowledged in the supplemental sampling report, the NYSDEC applies 50 mg/kg for chromium with respect to screening remedial alternatives.

14. Page 20, section 6.2: See comments 8 and 8 of the Remedial Action Report regarding recommended soil cleanup objectives.

Data Validation and Usability:

15. Section 5.2 and Data Validation Reports: The reports from the analytical data were reviewed by data validators for usablility. Overall, the analyses were within range, holding and extraction times were met. The main item identified by the validators was the potential "weathering" of PCB results whereby certain congener ratios varied. Overall, most aroclors in the delivery group were identified to be clearly above or below the 1 mg/kg guidance numbers using the range of 800 to

1,200 ug/kg being reported for the most conservative peaks. However, in a number of the Data Usability Summary reports (DUSRs), it states the following:

> "AR1248 was not "overlooked," but the pattern was identified as weathered AR1242. In all samples containing more than 2 times the reporting limit of AR1242, AR1248 was reported with the qualifier X as potentially masked at a lower level. Any 1248 that could be present would be included in the concentration reported for AR 1242."

a. In general, what impact did this have on the increased reported concentration of AR1242?

b. Were only the results flagged with an X changed by the aforementioned adjustments to the PCB reported values?

Please submit the revised plan by February 27, 2006. If you have any questions prior to making revisions, please feel free to contact me at (518) 402-9620.

Sincerely,

Steven M. Scharf, P.E.
Project Engineer
Remedial Bureau A
Division of Environmental Remediation

c: R. Rusinko, DEC (Via e-mail)
M. Cavanaugh, DEC (Via E-mail)
B. Fonda, Region 1 (Via E-mail)
W. Parish, Region 1 (Via E-mail)
T. Wescott, NYSDOH (Via E-mail)
J. Byrne, P.E., Town of Oyster Bay (Via E-mail)
R. Betz, Town of Oyster Bay (Via E-mail)
M. Russo, Town of Oyster Bay (Via E-mail)
P. Barry, Town of Oyster Bay (Via E-mail)
T. Firetog, Esq (Via E-mail)
(TOB-IRMRAMPcomment-1.wpd)

H2M GROUP

ACEC MEMBER SUPPORTING EXCELLENCE IN ENGINEERING
AMERICAN COUNCIL OF ENGINEERING COMPANIES

Holzmacher, McLendon & Murrell, P.C. ▲ H2M Associates, Inc.
H2M Labs, Inc. ▲ H2M Architects & Engineers, Inc.
575 Broad Hollow Road, Melville, New York 11747
631.756.8000, Fax: 631.694.4122
www.h2m.com

March 14, 2006

Steven M. Scharf, P.E.
Project Engineer
Division of Environmental Remediation
New York State Department of Environmental Conservation
625 Broadway
Albany, New York 12233 7015

Re: Town of Oyster Bay
Interim Remedial Measure at Bethpage Community Park
Remedial Action Plan and Supplemental Report
H2M Project No. TOBY 04-02

Dear Mr. Scharf:

On behalf of the Town of Oyster Bay, Holzmacher, McLendon & Murrell, P.C. (H2M) is pleased to provide herein a response to your February 10, 2006 comment letter relative to the above referenced reports. We have included specific responses to most of the comments. All of the comments will be addressed in an addendum to the Remedial Action Plan which we anticipate submitting to your office in approximately two weeks.

Response to General Comments

Comment 1: The NYSDEC Division of Environmental Remediation (DER) Technical Assistance [sic] and Guidance Memorandum (TAGM) 4046 listing the soil cleanup objective for chromium has not been changed. For at least the last five years, the NYSDEC has been using a soil clean up level of 50 parts per million (ppm) for chromium.

Response to Comment 1: Both of the subject reports include a reference to the April 1995 NYSDEC Technical and Administrative Guidance Memorandum (TAGM) 4046 which includes the latest, to our knowledge, NYSDEC guidance relative to soil cleanup objectives. As you state in your comment above, the recommended cleanup objective for chromium is 50 parts per million. Accordingly, both of the subject reports utilized a cleanup objective of 50 ppm for comparison to chromium concentrations in soil wherever identified. It is our opinion therefore, that the existing reports comply with your comment and no revision is required.

Comment 2: The IRM report acknowledges the presence of soil vapors within the designated construction area and recommends that any new building(s) be designed for vapor mitigation. Both the NYSDEC and NYSDOH concur with this conclusion.

Response to Comment 2: It is our understanding that the intent of this comment is to acknowledge agreement with the reported conclusions and recommendations relative to soil vapor. Consistent with NYSDOH guidance, new building construction in area of the existing ice rink will be designed to seal potential preferential vapor pathways and will include a sub-slab depressurization system.

Comment 3: The Town has not presented cost estimates with this remedial action plan. Based on our experience, the magnitude of work and the level of effort for this proposed IRM is very extensive and well beyond what the NYSDEC would normally require. Given the analytical results generated as part of the IRM program and, the proposed use, the NYSDEC would not require removal of subsurface soil that marginally exceeds the soil cleanup levels.

Response to Comment 3: It is unclear as to whether this comment suggests that the cost of the proposed remedial action is perceived by NYSDEC to be excessive, or whether the proposed level of cleanup is considered excessive. Either way, as was mentioned above, an addendum to the Remedial Action Plan that addresses this comment and Comment 4 will be submitted to your office in approximately two weeks.

Comment 4: Since the scope of this proposed remedy exceeds the general scope of an IRM and is more in the nature of a final remedy, it is the NYSDEC's recommendation that, pursuant to 6 NYCRR Part 375, remedial alternatives should be evaluated against eight criteria to select a cost-effective remedy for the site. These criteria are:

-overall protectiveness of human health;
-compliance with applicable, or relevant and appropriate regulations and guidance criteria;
-long tem effectiveness and permanence;
-reductions in toxicity, mobility and volume through treatment;
-short term effectiveness (ie impacts to local residents);
-implementability; and,
-cost

Response to Comment 4: We do not agree that the proposed remedy exceeds the general scope of an IRM. Although the proposed remedial action may be consistent in nature to any final remedy, we do not see how this departs in any way from the intent of an IRM. Based upon NYSDEC policy (New York State Department of Environmental Conservation Fact Sheet: Interim Remedial Measures (IRM), referenced from NYSDEC internet site address: http://www.dec.state.ny.us/website/der/ihws/fs_irm.html), an IRM:

"is a discrete set of planned actions for both emergency and non-emergency situations that can be conducted without the extensive investigation and evaluation of a Remedial Investigation/Feasibility Study (RI/FS). An IRM can be part of or the full remediation of a site. An IRM is designed to be a permanent part of the final remedy. Sometimes, an IRM achieves the remedial goal for a site and no further action is required. "

Based upon this policy and similar language in TAGM #HWR-91-4042, it is clear that it is permissible for an IRM to be consistent with any final remedy selected. In addition, the same policies indicate that an IRM does not require extensive investigation and evaluation of remedial alternatives.

Notwithstanding the above, the Town has authorized the considerable effort required to complete the requested remedial alternative evaluation, the results of which will be included in the addendum to be issued in approximately two weeks.

Comment 5: Due to the nature of the work and the public's interest in the site, the NYSDEC requires that the proposed remedy be presented and discussed at a public information meeting. This will provide an opportunity for the public to participate in the selection and implementation of the remedy at the site. Additionally, please note that the environmental contractor(s) that would implement any remedial plan would also be responsible for a required Health and Safety Plan (HASP) and a Community Air Monitoring Plan (CAMP)

Response to Comment 5: We concur with your comment regarding the importance of public interaction and community participation. As you are aware, the Town has prepared and implemented a Community Participation Plan for this project and has complied with that plan. The Community Participation Plan calls for the Town to hold an information seminar for local residents prior to implementation of the Remedial Action Plan to inform the public of the outcome of the investigation phase and provide details on the proposed remedial action. The Town fully intends to follow through on this commitment and the requirements of the Department approved Community Participation Plan, which should address the intent of your comment.

In anticipation of your expeditious review of this letter and approval of the addendum to the Remedial Action Plan which will be submitted by the end of March 2006, the Town will schedule a public meeting for early June 2006.

We acknowledge and agree with your comments related to required HASP and CAMP.

Response to Specific Comments

Comment 1 - Page 9, Section 4.1, First Paragraph: The 1 mg/kg surface (0-2 feet) and 10 mg/kg subsurface (greater than 2 feet) is the recommended objective for PCBs. The Remedial Action Plan should be revised accordingly.

Response to Comment 1: The Remedial Action Plan includes recommendations for cleanup which utilize an objective of 1 mg/kg for 0-10 feet. This criterion relates to proposed and future site use which may include changes in surface elevation. The intent was to provide for surface level soil quality to a depth of 10 feet below grade thereby avoiding the need for future remedial action with respect to contaminated soil, should Park related improvements or renovations require a change in surface elevation. We maintain that the cleanup criteria selected in the current Remedial Action Plan is appropriate, unless it is the State's intent to direct otherwise. We ask that the State clarify this comment in a response to this letter, in terms of whether it should be perceived as a directive.

Comment 2 - Page 10, Third Paragraph: Figure 7 referencing PCBs exceedences should read figure 6 here and in all text locations.

Response to Comment 2: The figure number will be changed in the addendum to the Remedial Action Plan.

Comment 3 - Page 10, Last Paragraph: Figure 6 referencing Metal exceedences should read figure 5 here and in all text locations.

Response to Comment 3: The figure number will be changed in the addendum to the Remedial Action Plan.

Comment 4 - Section 6.1.1: Exposure Pathways and Section 6.3: This Risk Characterization on Page 27 states:

> "Visitors/Workers at the Site were identified to have potential risk from ingestion of contaminated soil, inhalation or vapors, inhalation of contaminated dust during remediation activities and dermal absorption of contaminated soil. All other potential risks for identified receptors are considered minor."

a. The evaluation of Complete Pathways in Section 6.1.2 for visitors/worker for ingestion of on-site soils is minor and therefore is not a complete pathway. This will change the risk characterization of site visitors to minor since there is a lack of risk.

b. Page 25, Construction Workers: The NYSDEC does not approve Health and Safety Plans (HASP) of remedial contractors. A community air monitoring plan (CAMP) would be required during any remedial construction.

c. Table 6.3.1 and Supporting text: The qualitative potential risks for visitors to the park either are minor, or do not exist. Since "minor" meets the definition of acceptable, this needs to be defined as such in the text.

Response to Comment 4: Additional information clarifying the human exposure assessment will be included in the addendum to the Remedial Action Plan to be submitted subsequent to this letter.

Comment 5 - Section 7.0, Remedial Action Plan: The proposed remedial action is excavation and disposal of approximately 100,000 cubic yards of soil. As covered under general comments and, given the magnitude of this proposed project, the remedial action plan should screen various alternatives with the evaluation criteria listed in general comment 4. The report should include, but not necessarily be limited to, the following additional alternatives:

a. limited action, i.e., controls in the form of environmental easements with appropriate engineering and institutional controls; and,

b. select soil removal as identified by the analytical data that exceed the NYSDEC TAGM enough to warrant excavation and offsite disposal in lieu of leaving the materials in place.

The actions being proposed in section 7 are based upon a risk characterization that is not supported by the report. The report actually provides a strong argument why most of these risks are, for all reasonable considerations, minor or even non-existent.

Response to Comment 5: Please see response to General Comment 4 and Specific Comment 4 above.

Comment 6 - Page 31: Remedial Strategy Criteria: The remedial strategies laid out in 1 through 3 do not consider any option other than complete removal to allow for site re-

development. Additional alternatives should be evaluated in this focused IRM Remedial Action Plan.

Response to Comment 6: Additional alternatives will be evaluated in the addendum to the Remedial Action Plan. To our knowledge, this is not a "focused IRM", but an IRM consistent with the Order on Consent.

Comment 7- Page 32, Bullet 3: Even with the limits of excavation proposed in the remedial action plan, volatile organic compound source areas have not been identified. Therefore, this would not, for the time being, negate the need for vapor control in the IRM construction area, and thus unrestricted use would not be attained by the excavations proposed by the town. The Remedial Action Plan should be revised accordingly.

Response to Comment 7: Even though vapor mitigation appears to be necessary in the ice rink area, it cannot be concluded that vapor mitigation would be required in the entire IRM area. In addition, the proposed IRM may significantly reduce soil vapor concentrations as a result of soil excavation and vapor ventilation activity, thereby eliminating the soil vapor issue in the ice rink area.

Given the fact that we have previously identified the presence of soil vapors in the area of the ice rink and have made recommendations for mitigating vapor intrusion in that area, we do not see the need for any revision to the Remedial Action Plan on this matter.

Comment 8 - Section 7.0, Page 32, Last Paragraph: Most exceedences for PCBs were only slightly above 1 and much less than 10 ppm. Given the quantitative results of data usability, this translates to most surface soil (0 to 2 feet) remaining in place with no further action with respect to PCBs.

Response to Comment 8: See response to Specific Comment 1 above.

Comment 9 - Section 7, Metals: The same holds for most soil samples identified with some metal concentration in TAGM range as with PCBs in Comment 8.

Response to Comment 9: This comment, and the prior comment, infer a relaxation of certain cleanup criteria related to metals and PCBs. Given the general nature of the comments, it is difficult to specifically discern the direction the State is looking to convey. We therefore request clarification as to the cleanup criteria the State is suggesting related to metals and PCBs.

Comment 10 - Site Figures: Soil gas sample locations are not depicted on any figures. These sample locations should be added to appropriate figures of the IRM report and the supplemental sampling report.

Response to Comment 10: A revised figure showing the soil vapor sampling points will be included in the addendum to the Remedial Action Plan.

Comment 11 - Remedial Action Plan and Figure 5, Supplemental Report: These figure(s) should be revised based on the overall revisions to the IRM reports.

Response to Comment 11: Revised figures, as applicable, will be included in any subsequent submittals.

Comment 12 - Page 1, First Paragraph: The areas sampled on the south side of the playground are outside the seven acres referred to as "the construction area" as referenced in figure 2 of the approved IRM work plan. Rather than include this in the IRM remedial construction area, the NYSDEC proposes to include this area in the overall RI/FS being conducted under an order on consent by Northrop Grumman for the Bethpage Community Park.

Response to Comment 12: The area surrounding the playground will likely be disturbed as part of the construction and IRM implementation. This area will need to be excavated to allow for updated stormwater drainage associated with a new parking area. Given that the construction work and excavation in this area may take place prior to completion of Northrop Grumman's RI/FS, it was included in the scope of the remedial action plan and is an integral part and is consistent with the intent of the IRM to be conducted at the site.

Comment 13 - Page 11: As acknowledged in the supplemental sampling report, the NYSDEC applies 50 mg/kg for chromium with respect to screening remedial alternatives.

Response to Comment 13: Please see response to General Comment 1.

Comment 14 - Page 20, section 6.2 See comments 8 and 8 [sic] of the Remedial Action Report regarding recommended soil cleanup objectives.

Response to Comment 14: Please see response to Specific Comment 9.

Comment 15 - Section 5.2 and Data Validation Reports: The reports from the analytical data were reviewed by data validators for usability. Overall, the analyses were within range, holding and extraction times were met. The main item identified by the validators was the potential "weathering" of PCB results whereby certain congener ratios varied. Overall, most aroclors in the delivery group were identified to be clearly above or below the 1 mg/kg guidance numbers using the range of 800 to 1,200 ug/kg being reported for the most conservative peaks. However, in a number of the data Usability Summary reports (DUSRs), it states the following:

> "AR 1248 was not "overlooked" but the pattern was identified as weathered AR1242. In all samples containing more than 2 times the reporting limit of AR1242, AR 1248 was reported with the qualifier X as potentially masked at a lower level. Any 1248 that could be present would be included in the concentration reported for AR1242."

a. In general, what impact did this have on the increased reported concentration of AR1242?

b. Were only the results flagged with an X changed by the aforementioned adjustments to the PCB reported values?

Response to Comment 15: From the pattern, it was determined that weathered AR1242 was present. The process of quantification was adjusted to allow for the distorted pattern due to weathering. The value derived from the quantification of the weathered AR1242 was not increased for the potential presence of low levels of other aroclors. No "adjustments" were made, and the concentrations were reported that were derived from the average of the congeners that were actually present. Since the other aroclors have the same congeners, but different pattern, a small portion of the PCBs present and reported as AR1242 may potentially have been from other aroclors that were reported with the "X" qualifier.

For the purpose of evaluating the data, the aroclors with the qualifier "UX" should be regarded as not present. The qualifier "X" means that the laboratory did not find any concentration for that aroclor, but that very low levels above the reporting limits may actually have been present, masked by AR1242, and included in the concentration found for AR1242.

As explained above, neither the values reported for AR1242 nor the aroclors reported with "UX" were "adjusted", only congeners that were actually present were quantified. For those aroclors with "U" and without an "X", it could be determined that no quantities above half of the reporting limit were present.

H2MGROUP

In summary, the reported concentrations for PCBs would not change based upon this commentary.

If you should you have any questions or concerns, please contact me at (631) 756-8000 extension 1623.

Very truly yours,

HOLZMACHER, McLENDON & MURRELL, P.C.

Philip J. Schade, P.E.

cc: James Byrne, P.E., Commissioner of Public Works/Town of Oyster Bay
Frank DeStefano, Commissioner of Parks/Town of Oyster Bay
Phyllis Barry, Public Information Officer/Town of Oyster Bay
Theodore W. Firetog, Esq.
Gary Litwin/NYSDOH
Peter Scully/NYSDEC
Rosalie Rusinko, Esq./NYSDEC
John Molloy, P.E./H2M
Richard Humann, P.E./H2M