REMEDIAL ACTION WORK PLAN
PROVIDENCE YMCA - PARCEL C
PROVIDENCE, RHODE ISLAND

PREPARED FOR:
YMCA of Greater Providence
Providence, Rhode Island

PREPARED BY:
GZA GeoEnvironmental, Inc.
Providence, Rhode Island

February 2005
File No. 32384.04

GZA
GeoEnvironmental, Inc.

Engineers and Scientists

February 9, 2005
File No. 32384.04

Mr. Kevin Coffey
YMCA of Greater Providence
70 Ship Street
Providence, Rhode Island 02903

Re: *Site Investigation Report*
Former Gorham Property – Parcel C
Providence, Rhode Island

Dear Mr. Coffey:

140 Broadway
Providence
Rhode Island 02903
401-421-4140
FAX 401-751-8613
www.gza.net

GZA GeoEnvironmental, Inc. is pleased to provide the YMCA of Greater Providence with the attached *Remedial Action Work Plan* (RAWP) associated with the Former Gorham Property-Parcel C. The report has been prepared to address Section 9.00 of RIDEM's Rules and Regulations for the Investigation and Remediation of Hazardous Material Releases (DEM-DSR-01-93, as amended).

Upon your review and approval, please sign and date the space provided in Section 11 (Certifications) and submit **two** copies of the RAWP to:

Mr. Joseph Martella
R.I. Department of Environmental Management
Office of Waste Management
235 Promenade Street
Providence, Rhode Island 02908

Additionally, a Remedial Action Approval Fee in the amount of $1,000 (made out to the "General Treasurer – State of Rhode Island") must accompany the *Remedial Action Work Plan*.

We have included an unbound copy of the RAWP should you need to provide additional copies to project personnel.

We trust this satisfies your present needs. If you need any additional information, please feel free to contact us at (401) 421-4140 (Ext. 3401) or via E-mail at jhartley@gza.com.

Very truly yours,

GZA GEOENVIRONMENTAL, INC.

John P. Hartley
Principal

John J. Spirito, P.E.
Consultant/Reviewer

Cc: A. Callam (HA&S)

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1.00 INTRODUCTION

On behalf of our client, the YMCA of Greater Providence, GZA GeoEnvironmental, Inc. (GZA) has prepared this *Remedial Action Work Plan* (RAWP) for property referred to as "Main Portion of Parcel C" of the Former Gorham Site property located off Adelaide Avenue, in Providence, Rhode Island.

The RAWP has been prepared in response to the RI Department of Environmental Management's *Remedial Decision Letter* to address the requirements of Section 9.00 of the RIDEM's Rules and Regulations for the Investigation and Remediation of Hazardous Materials Releases (Remediation Regulations).

The RAWP includes remedial strategies to address the Method 1 exceedances observed at the Site as described in GZA's May 29, 2003 *Site Investigation Report*. This RAWP has been prepared in accordance with the terms and conditions of our proposal to YMCA of Greater Providence and is subject to the Limitations presented in Section 12 and Appendix A.

2.00 BACKGROUND

The following sections provide descriptions of the Site, its environmental setting, and known conditions of environmental concern. It is based on existing information as described in more detail in the above-referenced site investigation.

2.10 SITE DESCRIPTION (Rule 9.09)

The YMCA will build its Providence Metropolitan Headquarters Facility on 5-acres located within the 37-acre former Gorham Property located between Adelaide Avenue and Mashapaug Pond in the Reservoir Triangle neighborhood of Providence, Rhode Island; **see** attached Figure 1, *Locus Plan*. A more detailed description of the planned facility is provided in Section 3. Key site features are shown on the attached *General Layout & Exploration Location Plan* (Drawing EW-1).

The former Gorham Property is listed as a "State Site" by the RIDEM (RIDEM Case #97-030) and a CERCLIS Site by the USEPA Region I (EPA ID# RID982542318). In 1990, the City of Providence foreclosed on the former Gorham Property as a result of a former owner defaulting on taxes. In its capacity as former owner and operator of the Gorham Property, Textron is a "Responsible Party" under the RIDEM's Remediation Regulations, and is conducing soil and groundwater remediation pursuant to its April, 2001 *Remedial Action Work Plan*, approved by RIDEM on October 10, 2001. Textron also committed to complete the required remedial actions in a 1994 agreement with the City of Providence. Since the transfer of the property to the City of Providence, for development purposes it has been divided into four distinct parcels:

Parcel A - the location of the Stop & Shop Supermarket;
Parcel B - the currently undeveloped parcel located to the east of the subject site;
Parcel C - the location of the proposed YMCA Providence Metropolitan Headquarters Facility and the proposed YMCA Campground; and
Parcel D - the portion of the former Gorham property adjoining Mashapaug Pond that will be used by the City of Providence as a walking trail.

The parcel subject to this RAWP is limited to the "main" portion of Parcel C designated for the construction of the proposed YMCA Providence Metropolitan Headquarters Facility only, and is hereafter referred to as the "Main Portion of Parcel C" or the "Site"

2.20 ENVIRONMENTAL SETTING

The following subsection provides information regarding the general physiographic and hydrologic conditions in the area of the Site.

2.21 Topography and Drainage

The regional topography in the vicinity of the parcel is relatively flat. Based on review of the US Geological Survey (USGS) topographic map of the area (Providence, RI Quadrangle, dated 1971, photorevised in 1979), the elevation at the site, and nearby vicinity decrease slightly from south to north, with ground elevations ranging from roughly 70 to 60 feet above the National Geodetic Vertical Datum (NGVD). At the north and northwest ends of the site, grades decrease sharply at the shoreline of Mashapaug Pond to roughly 45 feet.

A detention pond will be required to manage the surface runoff from the site. Based on the existing topography, the detention pond will be located at the north end of the site, where existing ground elevations decrease to roughly 60 feet or less. The pond will incorporate an impermeable liner; accumulated stormwater will be discharged to Mashapaug Pond via a RIPDES discharge permit.

2.22 Groundwater

Based on a review of the area's topography, topographic mapping, and observations made during the area reconnaissance, groundwater within the vicinity of the site is expected to flow northwestward, towards the Mashapaug Pond. Subsequent references to upgradient and downgradient directions are relative to our anticipated northwesterly flow direction within the vicinity of the Site. However, groundwater flow direction at the Site may vary due to underground utilities (e.g., storm drains, sewers, and utility conduits), and/or heterogeneous subsurface soil conditions.

The groundwater table level was measured at 28.5 feet below the ground surface on January 7, 2002. This depth corresponds to an elevation of approximately 39.5 feet. Groundwater levels were also estimated based on observations made during drilling; after a

stabilization time of 30 minutes or less, the groundwater level at all boring locations was greater than 28 feet below the ground surface. Fluctuations of groundwater levels are anticipated to occur due to variations in rainfall and other factors different than those prevailing at the time of the reading. It should be noted that the seasonally lowest groundwater levels typically occur during fall months.

Groundwater beneath the site is classified GB by the RIDEM and is considered unsuitable for use as a drinking water source due to known or presumed degradation. A GB groundwater designation is typical for urban locations in Rhode Island.

2.23 Soil/Bedrock

United States Geological Survey (USGS) publications were reviewed in to develop an understanding of the area geology. Maps of surficial geology and bedrock geology of the Providence Quadrangle, published in 1956 and 1959, respectively, were consulted. Based on mapping of surficial geology, the overburden at the site consists of outwash deposits comprised of sorted sand and coarse gravel. Mapping of bedrock geology shows bedrock in the area is predominantly of the Rhode Island Formation. This unit is characterized by graywacke, conglomerate, sandstone, shale, and meta-anthracite.

Three wells drilled in the general area of the site on the eastern side of Mashapaug Pond prior to 1959 show bedrock elevations at -56 to -103 feet NGVD, decreasing to the north end of the pond. Driller's logs from these wells show 100 to 110 feet of fine sand and silt, underlain by 40 to 50 feet of coarse gravel and clay, overlying bedrock.

2.30 REGULATORY EXCEEDANCES

2.31 Former Gorham Property

As noted above, Textron performed an environmental site investigation, and is conducing soil and groundwater remediation pursuant to its April, 2001 *Remedial Action Work Plan*, (approved by RIDEM on October 10, 2001) at the Former Gorham Property. GZA understands that the following remedial components are to be addressed or have been completed by Textron as part of its remedial action at the entire Gorham Property:

1. Contaminated groundwater is present in the western portion of the former Gorham property consisting of volatile organic compounds at concentrations that exceed RIDEM's GB Groundwater Objectives. Textron is undertaking an in-situ treatment and groundwater monitoring program to address these exceedances.

2. Textron's RAWP proposed excavation of several areas where soil contained contaminants at concentrations greater than the applicable Upper Concentration Limits. GZA understands that these removal actions have been completed.

3. Soils containing contaminants at concentrations above the Industrial/Commercial Direct Exposure Criteria are present throughout the former Gorham property. To address these exceedances, Textron proposed capping approaches consistent with site development activities and the establishment of an Environmental Land Usage Restriction.

4. A portion of the former Gorham property adjoining Mashapaug Pond will be used by the City of Providence as a walking trail (Parcel D). Textron is in the process of completing a Method 3 Risk Assessment of the walking trail area with the goal of achieving unrestricted access to the area.

2.32 Main Portion of Parcel C (the "Site")

Based on the work performed by GZA and others (i.e., Harding Lawson Associates on behalf of Textron), the following conditions of environmental concern have been identified at the Main Portion of Parcel C.

1. Contaminants (PAHs and certain metals) are present in soils at the site at concentrations above the Method 1 Residential Direct Exposure Criteria. These contaminants and others have been found in soil throughout the former Gorham property and are likely reflective of the long-term historical industrial use of the property.

2. VOCs, primarily TCE and Freon 113, are present in soil gas at low ppmv levels beneath the central and northern areas of the site. These appear to be associated with the volatilization of these constituents from the groundwater plume that has been identified beneath the site.

3. Aerobic biodegradation of organic materials (from natural or anthropogenic sources) is evident in the observed lowered oxygen and raised carbon dioxide levels in soil gas beneath the site, with the changes most evident in the northern portion of the site. In one area, on the northern most side of the site, in the area of GZA's soil gas probes SG-11 to SG-13, percent levels of methane (5.4% in one sample) also appear to have been generated from anaerobic degradation of organic material.

4. To evaluate the significance of these findings, GZA compared the soil gas data to available criteria. While the TCE concentration was above the RI Air Pollution Control Regulation No. 22 Acceptable Ambient Air Levels (AALs), it was below the Connecticut Department of Environmental Protection's Residential Volatilization Criteria (RVCs) for soil vapor. Notwithstanding, it was recognized that soil gas concentrations will vary widely from day-to-day and season-to-season.

3.00 PROPOSED DEVELOPMENT

The YMCA of Greater Providence will build a 14,500 square-foot, 1-story recreational and community resource facility on the 5 acre Main Portion of Parcel C. The facility will offer a fitness and aerobics center with supporting family locker rooms. Also, there will be a primetime area, gymnasium, "powerzone," childcare center, administrative offices and support spaces. Site features also include parking for approximately 80 vehicles, a playground for the childcare center and a "soccer type" playing field. The project is designed to accommodate approximately 848 people. Key site features are shown on the attached *General Layout & Exploration Location Plan* (Drawing EW-1).

The YMCA's master plan calls for a phased project; with Phase 1 being the aforementioned project. The phased construction will be dependent on additional funds being raised. Accordingly, this RAWP describes remedial activities associated with Phase 1 only. The YMCA recognizes that initiation of future site development will require RIDEM notification and the subsequent preparation of additional remedial plans that will be subject to RIDEM review and approval.

4.00 REMEDIAL OBJECTIVES (Rule 9.02)

Based on the above, the following remedial objectives have been established for the Main Portion of Parcel C. Note that response measures proposed serve to augment those to be completed by Textron and to address changes in site use (i.e., residential versus industrial/commercial).

1. Control exposure to site soils containing contaminants at concentrations above the Residential Direct Exposure Criteria;

2. Control potential inhalation risks and potential explosive conditions associated with off-gassing of natural and anthropogenic subsurface materials;

3. Establish procedures/protocols for soils management;

4. Incorporate remedial measures into the design of the proposed structure and site improvements; and

5. Protect the long-term effectiveness of the remedial measures.

In accordance with Section 9.00 of the Remediation Regulations, this RAWP addresses remedial objectives for all potentially impacted media (soil, groundwater, surface water/sediment and air). Remedial objectives for each of the media prescribed by the regulations are discussed below.

4.10 SOILS

As described above, Method 1 exceedances observed at the Site were limited to certain PAHs and metals at concentrations above the Residential Direct Exposure Criteria. As the proposed use of the Site is considered a residential exposure scenario, remedial objectives for soil have been included. To address this risk, all soils will be capped with asphalt pavement, building structures, or two feet of clean soil. The selected remedial approach is consistent with the intent of the Remediation Regulations and in keeping with the planned construction/development activities for the property.

4.20 GROUNDWATER

As noted above, contaminated groundwater is present in the western portion of the property consisting of volatile organic compounds at concentrations that exceed RIDEM's GB Criteria. As Textron has undertaken an in-situ treatment and groundwater monitoring program to address these exceedances, this RAWP does not include additional groundwater related response actions. Evidence of VOCs in soil gas may be associated with impacted groundwater; remedial responses to these conditions are described in Section 4.30.

4.30 AIR

Given the potential presence of significant levels of methane in soil gas near the proposed building and the detection of low but detectable levels of VOCs beneath the proposed location of the site buildings, as a precaution, remedial actions will be taken to reduce the potential for significant exposure of future site users to these constituents. To address these conditions, a sub-slab ventilation system will be installed beneath the building. The system will allow for the maintenance of ventilation and a negative pressure beneath the foundations of buildings in the area of groundwater contamination.

4.40 SURFACE WATER/SEDIMENT

The remedial program will not include components to address impacts to surface water or sediment. As noted above, a detention pond will be constructed to manage the post-construction surface runoff from the site. The pond will incorporate an impermeable liner; accumulated stormwater will be discharged to Mashapaug Pond via a RIPDES discharge permit. Vanasse Hangen Brustlin, Inc. (VHB) will be designing the detention pond and preparing the RIPDES discharge permit; which will be presented to the appropriate RIDEM program leads.

5.00 REMEDIAL COMPONENTS

The remedial objectives for the Site have been developed to control and/or evaluate known conditions that represent regulatory exceedances as established in the Remediation Regulations. Each element of the remedial program is described separately below.

5.10 CONTRACTORS AND/OR CONSULTANTS (Rule 9.08)

The following table provides a list of the Contractors and Consultants involved in the implementation of the remedy:

Firm	Role	Contact	Address	Phone Number
GZA	Environmental Engineering Geotechnical Engineering	John Hartley Dave Carchedi	140 Broadway Providence, RI 02903	421-4140
RGB	Design and Specifications	Christopher McMahon	50 Holden Street Providence, RI 02903	272-1730
VHB	Civil Engineering Permitting	Robert Smedberg	530 Broadway Providence, RI 02909	272-8100
Dimeo Construction	General Contractor		75 Chapman Street Providence, RI 02905	781-9800

GZA will be present at the Site during periods of construction activities that involve the remedial components described herein. Consistent with our practice, daily field summaries describing these construction activities will be prepared. Photographic evidence of the placement of the geotextile material, the thickness of the final soil cap and the placement and thickness of the bituminous asphalt and concrete pavement will be provided in the *Remedial Action Summary Report*.

5.20 ENGINEERED CONTROLS - DESIGN STANDARDS AND TECHNICAL SPECIFICATIONS (Rule 9.10)

5.21 Site Preparation

The former facility buildings have been demolished, but buried concrete foundations below the ground surface remain throughout the central and southern portions of the Site. The proposed building area is underlain by approximately 2 to 7 feet of existing fill materials, with as much as 14 and 16 feet in two isolated locations. The fill consists of sand and debris associated with former plant activities and is in a loose to medium dense state. The on-site soil fill is underlain by deposits of natural sand that are in the medium dense to very dense state. Since the foundation soils at the site are fill, without compaction documentation, the area will require some sort of Site improvement in order to allow for the safe construction of the building foundations.

The underlying outwash deposits are considered competent bearing materials for support of spread footings. The fill above the outwash deposits should be excavated and replaced with compacted structural fill. The excavated fills may be suitable for reuse as structural fill, if the demolition debris is culled. For general backfill around foundations and utilities, material larger than 3 to 4 inches should be culled prior to backfilling.

The fill below the building foundations, interior and exterior, should be excavated to natural soils, with the excavation limits extending to a limit defined by a 1 horizontal to 1 vertical slope extending downward and outward from 2 to 10 feet outside the edges of the exterior footings, as indicated on the Earthwork Drawings. Prior to fill placement the subgrade should be proof-rolled with at least six passes of a self-propelled vibratory roller having a drum weight of at least 10,000 pounds and a dynamic force of 20,000 pounds. Any areas that show poor compaction or excessive settlement should be over-excavated to firm ground and replaced with compacted structural fill. Care must also be taken if the soils are wet so as not to cause weaving and softening of the subgrade. Subsequent to the subgrade compaction, the previously excavated material should be replaced in lifts and compacted to obtain 95 % of the maximum dry density as determined in accordance with the modified Proctor test (ASTM D-1557). Excavation can then take place for foundation construction.

During the fill excavation, existing foundations, abandoned utility piping, slabs, pavements, and other debris encountered shall be removed extending to a minimum depth of 2 or 10 feet below footings and other structures and/or to a limit defined by a 1 horizontal to 1 vertical slope extending downward and outward from two feet outside the edge of each footing.

The fill at the Site has been shown to contain arsenic and Polycyclic Aromatic Hydrocarbons at concentrations above the Method 1 Direct Exposure Criteria. The existing soils shall remain on Site, therefore, the intent is to fill the building and parking areas using the on-Site borrow (existing site soils) materials.

5.22 Soil Cap

As shown on the attached *Proposed Environmental Cap Plan* (Drawing EW-2), exterior surfaces of the Site will consist of both landscaped and solid surface areas (concrete [walkways] and asphalt [parking and access areas]). The specifications for the placement of the solid surfaces are summarized below.

- Asphalt pavement – access and parking areas will be completed with a 6-inch base course composed of off-site gravel and completed with two 2-inch perpendicular lifts of asphalt.

- Concrete pavement – walkways will be completed with concrete pavement poured in-place at a thickness of 4-inches. The slab of the buildings will be completed with concrete pavement poured in-place at a thickness of 6-inches.

The landscaped areas will be developed with tree/bush plantings and sod/grass cover. Consistent with RIDEM policy, to control direct exposure risks, the landscaped areas will be developed by the placement of 2-feet of off-site gravel and loam. It will be the assigned responsibility of the Site contractor to provide assurances (through laboratory testing) that off-Site soil used for landscaping does not contain contaminants at concentrations above the Method 1 Residential Direct Exposure Criteria. Accordingly, samples representative of the off-site supply (1 sample per each 1,000-cubic yards of soil) will be required to be tested for the following analyte groups.

Analyte	EPA Test Method
Total Petroleum Hydrocarbons	8100M
Volatile Organic Compounds	8260
Semi-Volatile Organic Compounds	8270
Priority Pollutant Metals (13)	6010 & 7471A

Demonstration of the soil supply in meeting the Residential Direct Exposure Criteria will be made prior to the delivery of the material to the Site. Soils not meeting the Method 1 Residential Direct Exposure Criteria will be rejected for use at the Site. Laboratory testing results of the selected soil source will be provided to RIDEM as part of the *Remedial Action Summary Report.*

5.23 Sub-slab Ventilation System

The proposed configuration of the building's soil gas venting system is modeled after radon gas evacuation systems as outlined in EPA's "*Radon Prevention in the Design and Construction of Schools and Other Large Buildings*." The gas venting system will consist of a 6-inch thick layer of ASTM C-33 Size #5 Aggregate (3/4-inch crushed stone) with isolated suction pits. The 4-foot by 4-foot by 8 inch deep suction pits connect to a 6-inch diameter vertical vent pipe extending to through the roof. Each roof vent is fitted with a suction fan. The design will include the vapor barrier, already included in the project for the slab design, and sealing of major gas entry routes with polyurethane elastometric joint compound (i.e. slab and foundation joints, utility and pipe penetrations, etc.). This technique is referred to as an active soil depressurization (ASD) system and has been commonly used when buildings are located in areas of elevated radon levels. Similar systems have been used in the design and construction of schools and other large buildings.

The ASD system, with the use of one suction pit, vent pipe, and suction fan without sub-slab foundation walls to impede the airflow through the crushed stone, will work on up to 100,000 square foot of slab area. If sub-slab foundation walls are constructed, isolating the air flow below the slab, additional suction pits would be required. Piping for multiple vents can be connected to one larger suction fan.

Two vertical vent pipes with separate fans will be placed in the Phase 1 area and two more in the proposed gym. This should provide proper suction in each area while also providing redundancy. The fans will be equipped with a device that notifies the building owner if the system is not operating properly. An electronic pressure sensing device will be installed in each fan intake line that will signal if a system vacuum drop occurs. Upon completion of the floor and sealing of major gas entry rates, measurements of actual vacuum response will be made to verify desired vacuums are achieved. The attached *Sections & Details Plan* (Drawing EW-3), depicts the proposed detail and locations of the vent system's suction pits based on the latest floor plan. The figure also includes the construction specification prepared by GZA.

5.30 BEST MANAGEMENT PRACTICES (Rule 9.03D)

The general contractor will prepare and submit a dust and dirt containment plan prior to beginning work. To control dust, the contractor will utilize water spraying continuously during demolition activities and twice per day to suppress airborne dust generated during soil excavation, grading, and other site development activities.

To protect off-site areas from the potential stormwater run-off of impacted soils, all construction activities will be subject to an *Erosion and Sediment Control Plan* and *Construction Stormwater Pollution Prevention Plan*, which will be prepared by VHB and presented to the appropriate RIDEM program leads.

5.40 POINTS OF COMPLIANCE (Rule 9.06)

As the principal remedial objective of the project is to control future exposures to impacted soils, the point of compliance established for the Site will involve an evaluation of the quality of soil brought to the Site to serve as final cover.

It will be the expressed responsibility of the contractor to provide evidence through laboratory testing that the off-Site soil supply proposed for use at the Site does not contain contaminants above the Method 1 Residential Direct Exposure Criteria. Accordingly, samples representative of the off-Site supply (1 sample per each 1,000-cubic yards of soil) will be required to be tested for the following analyte groups.

Analyte	EPA Test Method
Total Petroleum Hydrocarbons	8100M
Volatile Organic Compounds	8260
Polycyclic Aromatic Hydrocarbons	8270
Priority Pollutant Metals (13)	6010 & 7471A

Demonstration of the soil supply in meeting the Residential Direct Exposure Criteria will be made prior to the delivery of the material to the Site. Soils not meeting the Method 1 Residential Direct Exposure Criteria will be rejected for use at the Site. Laboratory testing results of the selected soil source will be provided to RIDEM (via fax) for verbal approval

and as part of the *Remedial Action Summary Report*. The *Remedial Action Summary Report* will also include a statement from the soil supplier providing the origin and suitability of the material.

5.50 CONTINGENCY PLAN (Rule 9.13)

GZA has prepared a Contingency/Health & Safety Plan, attached as Appendix F, to address unanticipated conditions/incidents encountered at the property during construction. The Contingency/Health & Safety Plan is applicable to GZA personnel and will be available at the Site at all times during the implementation of the remedial actions described herein. The following provides a listing of points of contacts who will be contacted in the event of an unanticipated incident involving hazardous materials.

Firm	Contact	Address	Phone Number
GZA	John Hartley	140 Broadway Providence, RI 02903	421-4140 474-3636 (cell)
YMCA	Kevin Coffey	222 Richmond Street Providence, RI 02903	521-9622 (x122)
RIDEM	Jim Ball	235 Promenade Street Providence, RI 02903	222-2797 x7129 222-3070
Marshall Environmental	Peter Marshall	3034 Post Road Warwick, RI 02886-3165	736-9001 639-3714 (cell)

5.60 OPERATING LOG (Rule 9.13)

An Operating Log will be developed and maintained at the Site during the period of construction. The log will be readily available at the Site during its construction. Subsequent to this period, the log will be retained for a minimum period of three years. The Operating Log will include, at a minimum, the following information:

- Dates and time periods during which the remedial components described herein were ongoing;
- Records of any laboratory analysis and field screening performed as part of the remedial action;
- Description of instances under which the Contingency Plan was implemented; and
- Inspection reports detailing compliance with the remedial specifications described herein and the actions taken to address non-compliant practices/conditions.

A copy of the Operating Log will be provided to the Department at the completion of the project as part of the *Remedial Action Summary Report*.

5.70 SHUT-DOWN AND POST-CLOSURE REQUIREMENTS (Rule 9.16)

In the event that the development project is cancelled, or if construction activities are suspended for an extended period of time, (i.e., greater than 2 weeks), the RIDEM will be so notified and the security fencing will remain in-place, closed and locked.

Daily shut-down procedures will include the covering and securing of all stockpiled soils with polyethylene sheeting and the application of water (via the water truck) to exposed surfaces. Additionally, off-hour access to Site will be controlled by locking the temporary construction fencing.

5.80 SECURITY PROCEDURES

During construction activities, access to the site will be limited to the owner's contractors, consultants or other designated representatives through the construction fencing and gates, safety fencing, yellow barrier tape, warning signs, and/or other barricades (Rule 9.16). It will be the responsibility of the general contractor to address the following:

- Development of a site-specific safety and health plan which meets state and federal regulations;
- Evaluation of off-site soil;
- Site security, including fencing off work areas for safety purposes;
- Traffic control;
- Debris removal, haulage, and recycling or disposal
- Dust control; and
- Daily Site maintenance of any property on public way.

6.00 SHUT-DOWN AND POST-CLOSURE REQUIREMENTS

In conjunction with an ELUR that will be recorded on the deed of the property, the owner will institute monitoring and maintenance procedures, including requirements to maintain pavement covers in good condition and procedures to be followed to notify contractors of existing Site conditions in the event of utility repair or other activities that might disturb potentially contaminated soils. Provisions will be made to provide notices to the general community as necessary (Rule 9.17). In addition, the owner will institute procedure to ensure that the operation of the sub-slab ventilation system will be monitored via the pressure (vacuum) sensing device that will be installed in each fan intake line.

7.00 INSTITUTIONAL CONTROLS (Rule 9.17)

To protect the long-term effectiveness of the remedy, an Environmental Land Usage Restriction (ELUR) will be recorded on the deed of the property. The ELUR, (to be forwarded directly by the YMCA under a separate cover), will also provide reference to the *Soil Management Plan* presented in Appendix B. The *Soil Management Plan* was developed to establish procedures should any future work at the Site involve the disturbance of the surfaces and the excavation of underlying soils. The draft ELUR, will serve to:

- require that the Site's cover materials (soil cap, asphalt pavement and buildings) remain in-place and in good condition;
- prohibit the use of groundwater at the Site for drinking water;
- require RIDEM notification should soil excavation below soil cap, asphalt pavement and/or buildings be planned;
- will include a soils management plan which will define how the Site will be managed in the event that such disturbances are necessary;
- prohibit activities that may interfere with the remedial action and its maintenance, long-term monitoring or other measures necessary to assure the integrity of the remedial action;
- require prior notice to the RIDEM of the owner's intent to convey any interest in the property;
- grant RIDEM the right to enter the property for monitoring compliance with the remedial actions; and
- require annual certification by an Environmental Professional as to the integrity of the engineered controls.

A copy of the final, department approved recorded ELUR will be submitted to the RIDEM within 10 days of its recording in the City of Providence Land Evidence Records. As the ELUR will apply to the Site in its entirety, a legal description of the property will be referenced in and attached to (as an exhibit) the ELUR.

8.00 COMPLIANCE DETERMINATION (Rule 9.18)

As long as the remedial measures described in this plan are implemented and maintained, the Site will be considered to be compliant with the remedial objectives. At the completion of the YMCA Construction Project, GZA will develop a *Remedial Action Summary Report* describing the construction activities and documenting the Site's compliance with the remedial objectives. We understand that RIDEM will issue a *Letter of Compliance* for the Site once these conditions are met.

Maintenance procedures will include requirements to maintain soil and/or pavement caps in good condition and procedures to be followed to notify contractors of existing Site conditions in the event of utility repair or other activities that might disturb potentially contaminated soils.

To evaluate the Site's compliance status with respect to the ELUR, the owner will institute yearly monitoring and maintenance procedures to be followed to ensure that the capped soils remain secure. A qualified environmental professional will conduct a yearly evaluation of the property. The evaluation will include a reconnaissance of the property at which time the condition of the pavement and capped portion of the Site will be documented. Additionally, the evaluation will include apparent changes in the nature of Site use and apparent changes to the physical condition of the property (with respect to

alterations that may affect the integrity of the engineering modifications described in the RAWP and ELUR). Annual inspections reports, prepared by a qualified individual, will be submitted to the RIDEM.

9.00 PROJECT MANAGEMENT

GZA, under contract with the YMCA, will provide oversight for the remedial activities, including:

- review and concurrence of a Site-specific Safety and Health Plan which addresses applicable state and federal regulations, including persons to be notified in the event of an unexpected incident involving hazardous materials at the Site, and availability of the Plan (Rule 9.13);
- collecting required samples and interpreting laboratory results;
- coordination of the disposition of potentially contaminated materials;
- evaluating and proposing modifications to the work plan and interfacing with RIDEM; and
- providing a *Remedial Action Summary Report* to RIDEM at the conclusion of the project.

10.00 PROJECT SCHEDULE (Rule 9.07)

The owner is prepared to implement the remedial action plan upon receiving the *Remedial Approval Letter* from RIDEM. The anticipated schedule for the Site activities is summarized in the following table:

Task/ Regulatory Milestone	Target Date/ Time to Complete from receipt of RIDEM Approval
Groundbreaking	June 1 , 2005
Initiation of Construction	June 1 , 2005
Completion of Construction	October 1, 2006
Filing of ELUR	November 30, 2006
Filing *Remedial Activities Summary Report*	December 30, 2006

11.00 CERTIFICATION (Rule 9.19)

To address Section 9.19 of the Remediation Regulations, the following statements of certification are made.

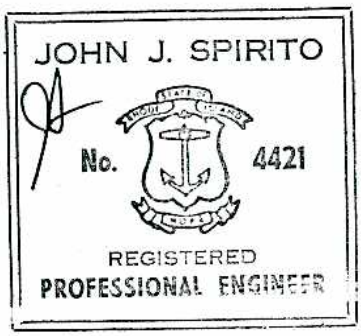
GZA GeoEnvironmental, Inc. certifies to the best of its knowledge, that this Remedial Action Work Plan is complete and accurate.

John P. Hartley
Principal
GZA GeoEnvironmental, Inc

John J. Spirito, P.E.
Principal
GZA GeoEnvironmental, Inc

As a designee of the YMCA of Greater Providence, I certify, to the best of my knowledge, that this Remedial Action Work Plan is a complete and accurate representation of the Site and the release and contains all known facts surrounding the release.

Andrew Baker
Facilities Director
YMCA of Greater Providence



The Remedial Action Approval Fee in the amount of $1,000, issued by the YMCA of Greater Providence and payable to the General Treasurer–State of Rhode Island, will be provided under separate cover.

12.00 LIMITATIONS

GZA's work was performed in accordance with generally accepted practices of other consultants undertaking similar studies at the same time and in the same geographical area, and GZA observed that degree of care and skill generally exercised by other consultants under similar circumstances and conditions. This work plan is also subject to the following specific limitations and those contained in Appendix A.

This work plan was designed to provide an appropriate level of remediation given our current understanding of Site conditions and proposed development objectives for the property. If development plans or property use changes significantly, or if additional data is obtained during the course of development, GZA reserves the right to modify any or all of the criteria specified in this plan.

J:\ENV\32384-04.MJB\RAWP\32384-04RAWP.DOC

FIGURES

PROVIDENCE YMCA – MAIN PORTION OF PARCEL

PROVIDENCE, RHODE ISLAND

GENERAL LAYOUT & EXPLORATION LOCATION PLAN

PROJECT NO.
32384.03

DRAWING NO.
EW-1

PROVIDENCE YMCA – MAIN PORTION OF PARC

PROVIDENCE, RHODE ISLAND

PROPOSED ENVIRONMENTAL
CAP PLAN

PROJECT NO.
32384.03

DRAWING NO.
EW-2

PROVIDENCE YMCA – MAIN PORTION OF PAR

PROVIDENCE, RHODE ISLAND

GAS VENTING SYSTEM LOCATION PLA
DETAILS AND SPECIFICATIONS

PROJECT NO.
32384.03

DRAWING NO.

EW-3

APPENDIX A

LIMITATIONS

GEOHYDROLOGICAL LIMITATIONS

1. The conclusions and recommendations submitted in this report are based in part upon the data obtained from a limited number of soil samples from widely spaced subsurface explorations. The nature and extent of variations between these explorations may not become evident until further investigation. If variations or other latent conditions then appear evident, it will be necessary to reevaluate the recommendations of this report.

2. The generalized soil profile described in the text is intended to convey trends in subsurface conditions. The boundaries between strata are approximate and idealized and have been developed by interpretations of widely spaced explorations and samples; actual soil transitions are probably more gradual. For specific information, refer to the boring logs.

3. Water level readings have been made in the test pits, borings and/or observation wells at times and under conditions stated on the exploration logs. These data have been reviewed and interpretations have been made in the text of this report. However, it must be noted that fluctuations in the level of the groundwater may occur due to variations in rainfall and other factors different from those prevailing at the time measurements were made.

4. The conclusions and recommendations contained in this report are based in part upon various types of chemical data and are contingent upon their validity. These data have been reviewed and interpretations made in the report. As indicated within the report, some of these data are preliminary "screening" level data, and should be confirmed with quantitative analyses if more specific information is necessary. Moreover, it should be noted that variations in the types and concentrations of contaminants and variations in their flow paths may occur due to seasonal water table fluctuations, past disposal practices, the passage of time, and other factors. Should additional chemical data become available in the future, these data should be reviewed by GZA, and the conclusions and recommendations presented therein modified accordingly.

5. Chemical analyses have been performed for specific parameters during the course of this study, as detailed in the text. It must be noted that additional constituents not searched for during the current study may be present in soil and groundwater at the site.

6. It is recommended that this firm be retained to provide further engineering services during design, implementation, and/or construction of any remedial measures, if necessary. This is to observe compliance with the concepts and recommendations contained herein and to allow design changes in the event that subsurface conditions differ from those anticipated.

APPENDIX B

APPENDIX B

SOILS MANAGEMENT PLAN

APPENDIX B

SOIL MANAGEMENT PLAN

Main Portion of Parcel C Property
Former Gorham Site - Providence, Rhode Island

This *Soil Management Plan* has been prepared to establish procedures that should be followed during construction/maintenance activities that require the need to manage soils excavated from the subsurface at the Main Portion of Parcel C Property (the Site). The plan serves to supplement, and will be initiated by, the RIDEM notification requirement established by the Environmental Land Usage Restriction (ELUR) for the property.

CONTAMINANTS OF CONCERN

Direct contact with surficial soil has been identified as a long-term exposure pathway of concern at the Site. Soils at the site were found to contain certain constituents (i.e., arsenic, lead, and PAHs) at concentrations that exceed the Method 1 Residential and Industrial/Commercial Direct Exposure Criteria.

HEALTH AND SAFETY GUIDELINES

The basic health and safety procedures outlined below should be implemented while performing excavation work at the Site. **Recognize that the procedures are intended as a general guideline only. Contractors and others involved in subsurface excavation work at the Site are responsible for the preparation of their own health and safety procedures.**

Based on the type of chemical constituents present at the Site, the potential routes of exposure to on-site excavation or utility repair workers include dermal contact (absorption) or accidental ingestion of impacted soil, and the possible injection of contaminants through broken skin. As contaminants released at the Site are not volatile in nature, inhalation hazards are not anticipated. Utilization of the appropriate personal protective equipment and the general safety guidelines provided below will help minimize the potential for worker exposure impacted media while performing work within the ELUR area.

Personal Protective Equipment (PPE)

In general, the level of protection which will be used by workers will be determined by the task which the person is performing; however, at a minimum Level D PPE will be worn at all times while performing excavation activities within the ELUR area. Level D PPE will, at a minimum, consist of the following PPE:

- Steel-toe work boots with over-boots as needed;
- Hard hats;
- Rubber or leather gloves; and
- Work coveralls.

Site Operating Procedures/Safety Guidelines

Regardless of the level of PPE necessary to complete work, the following general health and safety guidelines should be followed during the performance of any excavation activities conducted.

- The location of all utilities in the vicinity of the excavation will be established prior to beginning work;

- During site work, precautions should be taken to restrict access to the work area to only personnel involved in the work activities. Under no circumstances should the general public be allowed access to the area.

- Practice contamination avoidance: never sit or kneel in an excavation; never lay equipment on the ground; avoid obvious sources of contamination such as puddles; and avoid unnecessary contact with objects in an excavation;

- Be alert to any unusual changes in your physical condition; never ignore warning signs. Notify the responsible employee as to suspected exposures;

- All equipment used in an excavation shall be properly cleaned and maintained in good working order. Equipment shall be inspected for signs of defect and/or contamination before use;

- Eating, drinking, chewing gum, and smoking shall be prohibited in active excavation areas; and

- During working hours, workers who stop to drink or eat should leave the active work area, remove PPE, and wash hands thoroughly with soap and water prior to eating or drinking;

- The discovery of any condition that would suggest the existence of a situation more hazardous than anticipated shall result in the evacuation of site personnel from the excavation and the re-evaluation of the hazard and the level of protection.

- At the completion of work, workers should wash their hands with soap and water before leaving the Site. All workers safety boots are recommended to be brushed with a stiff bristle brush or similar instrument (not by hand) to remove residual soil. Disposable PPE should be disposed of according to applicable regulations.

In Case of Serious Exposure of Injury

In the event of serious chemical exposure or worker injury, the responsible employee will immediately be alerted. This person will follow the steps indicated below:

- Summon appropriate emergency response agency by using the emergency phone numbers provided below. Convey the following information:
    - Nature of emergency,
    - Location of victim,
    - Specific information about exposure or accident (gases, chemical, asphyxiation, etc.),
    - Length of exposure, and
    - Hazards which may be involved in rescue or treatment.
- If taken to a hospital, notify the hospital of the background of the problem:
    - Potential for hospital contamination,
    - Any contaminated items and the nature of the contamination, and
    - Estimated arrival time.

Emergency Phone Numbers

Emergency telephone numbers and the directions to the nearest hospital are included below.

Response Agency	**Phone Number**
Ambulance	911
Police	911 or (401) 272-3121
Fire	911
RIDEM/Office of Compliance & Inspection/Emergency response Program	(401)222-1360 or (401) 222-3070 (non-business hours)
USEPA/Hazardous Materials Spills	(800) 424-8802
Poison Control Center	(800) 562-8236
Dig Safe (Utility Clearance)	1-888-DIGSAFE
Hospital	
Rhode Island Hospital	(401) 444-4000
Route to Hospital	
1. Start out going NORTH on RI-2 N/RESERVOIR AVE toward ADELAIDE AVE. 2. Turn SLIGHT LEFT onto ELMWOOD AVE/US-1. 3. Turn RIGHT onto PUBLIC ST. 4. Turn LEFT onto EDDY ST. 5. End at 593 Eddy St, Providence, RI	

SOIL MANAGEMENT GUIDELINES

The following soil management guidelines were developed for activities involving soil excavation at the Site. The guidelines apply to all construction and maintenance activities; refer to the "emergency" provision of the Environmental Land Usage Restriction. The procedures will be implemented to govern soil stockpiling, management, and disposal procedures. The stockpiling and disposal procedures detailed in this plan apply only to excess soil which cannot be used as backfill in the original excavation from which it came. Soil generated from an excavation conducted at the Site may be placed back into its original excavation for backfill upon completion of the excavation. However, so as to maintain known exposure scenarios, every attempt shall be made to backfill the excavation so that the corresponding depth and location of the backfilled soil resembles the depth and location at which the soil originally existed.

- Provide 30 days written notice to RIDEM before any mechanical excavation, or within three days of excavation in response to an emergency as provided in the Environmental Land Usage Restriction for the site.

- As part of the RIDEM notification, the site owner will provide a brief written description of the anticipated site activity involving soil excavation. The description will include an estimate of the volume of soil to be excavated and the duration of the construction project.

- Prior to the initiation of soil excavation, the selected contractor or any other personnel performing subsurface work at the Site will contact DIGSAFE and appropriate utility companies to identify and mark the location of below grade utilities.

- Excavated soils will be staged and temporarily stored in a designated area of the property for no more than 90 days. Within reason, the storage location will be selected to limit the unauthorized access to the materials (i.e., away from public roadways/walkways).

- Depending on the volume of material involved in the project, soils will be either stockpiled on polyethylene sheeting, or stored in roll-off type containers. In either case, the material in storage will be covered with secured polyethylene sheeting at the end of each workday. Stockpiled materials will be maintained with appropriate controls to limit the loss of the cover and protect against stormwater erosion. Soil stockpiles shall be inspected daily. Should tears or punctures be observed in either the polyethylene sheeting covering or underlying the piles, repairs will be made immediately.

- During site/earth work, dust suppression techniques must be initiated and maintained during periods when windblown dusts are generated. All reasonable precautions must be taken to prevent the excessive generation of dust during soil excavation, stockpiling, loading, and other soil handling activities. If excessive dust generation occurs and cannot be reasonably controlled, dust masks should be required for onsite workers.

- In the event that unexpected observations or situations involving hazardous materials, hazardous wastes or similar conditions of environmental concern arise during site work, such activities will immediately stop. Workers will not attempt to handle the situation themselves, but will contact an environmental professional for further evaluation and direction.

- Soils excavated from the site may not be re-used on off-Site properties. Excavated fill material shall not be re-used as fill on commercial properties unless it meets the Residential Direct Exposure Criteria for all constituents listed in Table 1 of the Rules and Regulations for the Investigation and Remediation of Hazardous Material Releases. Soil must be sampled, by an environmental professional, at a frequency of one sample per 500 tons for all constituents. In the event that the soil does not meet these criteria, the material must be properly managed and disposed of off-Site at a licensed facility.

- If soils are to be transported off-Site for disposal/recycling, a qualified environmental professional will collect samples of the excavated soils (either during excavation or from stockpiles) for laboratory testing. The testing program will be adequate to support the data requirements of the anticipated disposal facility, but should consider the following testing program.

Analyte/Parameter	Test Method
Petroleum hydrocarbons	EPA Method 8100M
Volatile organic compounds	EPA Method 8260
Semi-volatile organic compounds	EPA Method 8270
Polychlorinated Biphenyls	EPA Method 8081
Total RCRA Metals	EPA Method 6010 & 7471A
Flashpoint	EPA Method 1010M
Corrosivity (pH)	EPA Method 9045C
Reactivity	EPA Methods SW-846 7.3.3.2/9014 and SW-846 7.3.4.2/376.2

- Copies of the material shipping records associated with the disposal of the materials will be maintained by the site owner and will be summarized in a closure report and in the annual property inspection reports to be completed by a qualified professional and submitted to the RIDEM.

GZA
GeoEnvironmental, Inc.

Engineers and Scientists

February 16, 2006
File No. 32384.04-C

Mr. Joseph T. Martella II
RI Department Environmental Management
Office of Waste Management
235 Promenade Street
Providence, Rhode Island 02908

Re: Response to Comments
Providence YMCA – Parcel C
333 Adelaide Avenue
Providence, Rhode Island
Case No. 2004-014

140 Broadway
Providence
Rhode Island
02903
401-421-4140
Fax: 401-751-8613
www.gza.com

Dear Mr. Martella:

The purpose of this letter is to provide responses to the comments provided in your December 21, 2005 letter. We prepared this correspondence on behalf our client, the YMCA of Greater Providence. This letter is considered an addendum to our February 9, 2005 *Remedial Action Work Plan* (RAWP), and as such, is subject to the limitations contained and/or referenced therein.

To aid in your review, we have presented your comment followed by our response.

RIDEM Comment No. 1:

Please clarify the YMCA's plans and schedule for resolving the following issues.

a. *The SIR for the "campground" portion of Parcel C is incomplete. It is the Department's understanding that the YMCA intends to complete this SIR and propose and implement a separate RAWP for this portion of Parcel C at a later date. Until this work is completed this area cannot be approved for any use. Please advise regarding the YMCA's intentions to complete this work and to secure this area until it has been successfully remediated.*

b. *It is also the Department's understanding that Parcel C (Providence Assessor's Plat 51, Lot 324) has not yet been legally subdivided, as proposed in the site plans, to separate the land to be leased and development by the YMCA for the so called "Parcel D" property, which includes the "cove" portion of Mashapaug Pond and the surrounding upland area adjacent thereto. Please advise regarding the status of this subdivision.*

GZA's Response to Comment No. 1:

a. The YMCA recognizes that the remedial program presented in the February 9, 2005 RAWP does not include the "campground portion" of Parcel C, and, therefore, the area will not be approved for any use. Being a not-for-profit organization, the ability for the YMCA to complete investigations and response actions on this parcel is a direct function of its ability to raise funds. The fundraising efforts completed to date have focused on the "Main Portion" of Parcel C. Based on their present fundraising efforts, the YMCA anticipates that site investigation at the "Campground parcel" will commence in 2008, with the design and development of that parcel beginning in of 2010. In the interim, the means by which access to this area by YMCA workers and visitors will be restricted is discussed in Response to Comment 4 below.

b. A Class I survey of Providence Assessor's Plat 51, Lot 324 has been completed; a copy is attached for your reference. The survey has been completed to support the legal subdivision of the parcel from "Parcel D" property, including the "cove" portion of Mashapaug Pond and the adjacent upland area. The YMCA is presently working with the City of Providence to execute this subdivision. A copy of that subdivision plan will be provided to the Department upon its execution.

RIDEM Comment No. 2

Recent analytical testing results, submitted during the ongoing public comment period for the proposed Providence public high school on abutting Parcel B, have indicated the presence of significantly elevated levels of contamination in the sediments of Mashapaug Pond. As a result of this new information, the YMCA's RAWP must include a specific description of the YMCA's plans to prevent workers and visitors from accessing Parcel D and the surface water and/or sediments of the pond until such time as these areas have been properly characterized and, if necessary, remediated by the responsible parties.

GZA's Response to Comment No. 2:

The YMCA and GZA understand that the RIDEM has recently completed additional testing of sediments and shoreline areas of Mashapaug Pond. These data has not been made available to us. To address this comment, under the assumption the data show that there continues to be an off-Site direct exposure issue, the YMCA has developed certain engineered controls and administrative actions that will be implemented to control access of it workers and visitors to Parcel D and the surface water and/or sediments of Mashapaug Pond. These engineered controls are presented on the attached design plan prepared by RGB.

RIDEM Comment No. 3

RAWP Item 4.00 (Remedial Objectives), states "Note that response measures proposed serve to augment those to be completed by Textron to address changes in site use (i.e., residential versus industrial/commercial)." The RAWP should also note that no response measures have been completed by Textron, Inc. (Textron), the City of Providence or any other party on the subject portion of the site to date.

GZA's Response to Comment No. 3:

Accepted; the reference was made to identify the groundwater response actions completed by Textron on Parcel B, which do have some long-term implications to groundwater quality on the subject parcel.

RIDEM Comment No. 4:

Regarding RAWP Item 4.20 (Groundwater), while no additional groundwater related response actions will be performed by the YMCA, the YMCA must provide reasonable access to Textron, the City of Providence or the Department to perform or supervise future groundwater investigation, treatment and/or monitoring as necessary.

GZA's Response to Comment No. 4

Accepted; the YMCA will grant the requested access to the subject property for these purposes with the understanding that exploration locations will be reviewed and approved by YMCA prior to their completion. Additionally, with support from the Department, any disturbances to the site caused by the explorations will be minimized, repaired in a neat manner and returned to their original condition.

RIDEM Comment No. 5:

All areas within the proposed building shall be equipped with sensors that monitor levels of oxygen and explosive gases inside the building. The sensors shall be incorporated into an alarm system that will alert both the occupants of the building and the local fire department if the levels of explosive gases exceed 1% of the lower explosive level (LEL). The outlet pipes for the gas venting system shall also be equipped with sensors to monitor levels of explosive gases during the operational life of the buildings.

GZA's Response to Comment No. 5:

Based on our discussions, GZA understands that the Department's selection of 1% of the lower explosive limit as an action level is based on criteria established for the Save the Bay building project, which was constructed on a former municipal waste landfill. As we discussed, we believe that this extremely low criteria may result in false positive alarm readings. Notwithstanding our reservations, based on our desire to move the YMCA

project along on a reasonable time table, GZA will accept the 1% of the lower explosive limit for an action level. We do however, reserve the right to petition RIDEM to modify this level should the monitoring indicate the occurrence of frequent false-positive readings.

With regard to the requirement that the sensors be incorporated into an alarm system that will directly alert the local fire department, GZA understands that the Providence Fire Department has not accepted such a system requirement. We will confirm this understanding and advise the Department accordingly.

RIDEM Comment No. 6:

Due to the ongoing presence of elevated volatile organic compound (VOC) concentrations in groundwater throughout the Gorham/Textron site, and the potential for site-wide development activities to change the vapor migration pathways, a schedule for periodic monitoring of indoor air for the presence of volatile organic compounds (VOCs) must be proposed in the RAWP.

GZA's Response to Comment No. 6:

It is GZA's opinion that the requested interior air monitoring is not warranted. This opinion is based on the fact that building will incorporate a subsurface collection/ventilation system which will be designed to operate on a full-time basis. Rather than rely on a passive system and monitoring of indoor air quality, the YMCA adopted a proactive and conservative approach to constantly vent the sub-slab to remove the potential for VOC build-up and migration into the indoor air. With active venting a negative pressure will be maintained below the slab of the building. In our opinion, the previously observed low concentrations of VOCs in the groundwater and soil gas will not have the potential to build up beneath or enter the building. Additionally, we have concern over the inherent inability of indoor air testing to separate out interior VOC concentrations which are not related to subsurface environmental influences (i.e., "false-positive" results). As you know, interior air sampling results will commonly detect VOCs which are associated with background air quality from a wide variety of other sources such as common building products, cosmetics, cleaners, refrigeration units (Freon), recently dry-cleaned clothing (PCE) and/or fuel exhaust entering the building from exterior sources. The detection of these compounds is also complicated by the absence of promulgated standards on which to assess the significance of the findings. We believe that the recording of such false-positive results is likely and will not improve the well being of workers and visitors to the facility.

If VOC air quality monitoring is still judged by RIDEM to be necessary, we believe it should first be performed on samples collected from beneath the building. This data would then be compared to limits based upon conservative assumptions on the potential for migration through the building slab and into the indoor air. We believe this approach is both protective of public health and avoids the potential for false positives associated with indoor air conditions from normal building usage.

RIDEM Comment No. 7:

Based upon the City of Providence detecting varying levels of asbestos containing material (ACM) and asbestos in surficial and subsurface soils throughout Parcel B, including samples collected at the Parcel B/Parcel C boundary, the final Department approval of the RAWP will include a condition that requires appropriate soil and dust management controls and monitoring in a manner consistent with the asbestos and fugitive dust management precautions implemented by the City.

GZA's Response to Comment No. 7:

Accepted; the RAWP will be modified to describe the soil and dust management controls and monitoring consistent with those precautions implemented on Parcel B by the City of Providence.

We trust that this information fulfills your present needs and look forward to the issuance of the *Remedial Approval Letter*. Should you have any questions, please feel free to call us at 421-4140.

Very truly yours,

GZA GEOENVIRONMENTAL, INC.

John P. Hartley
Principal

John Spirito, PE
Project Reviewer

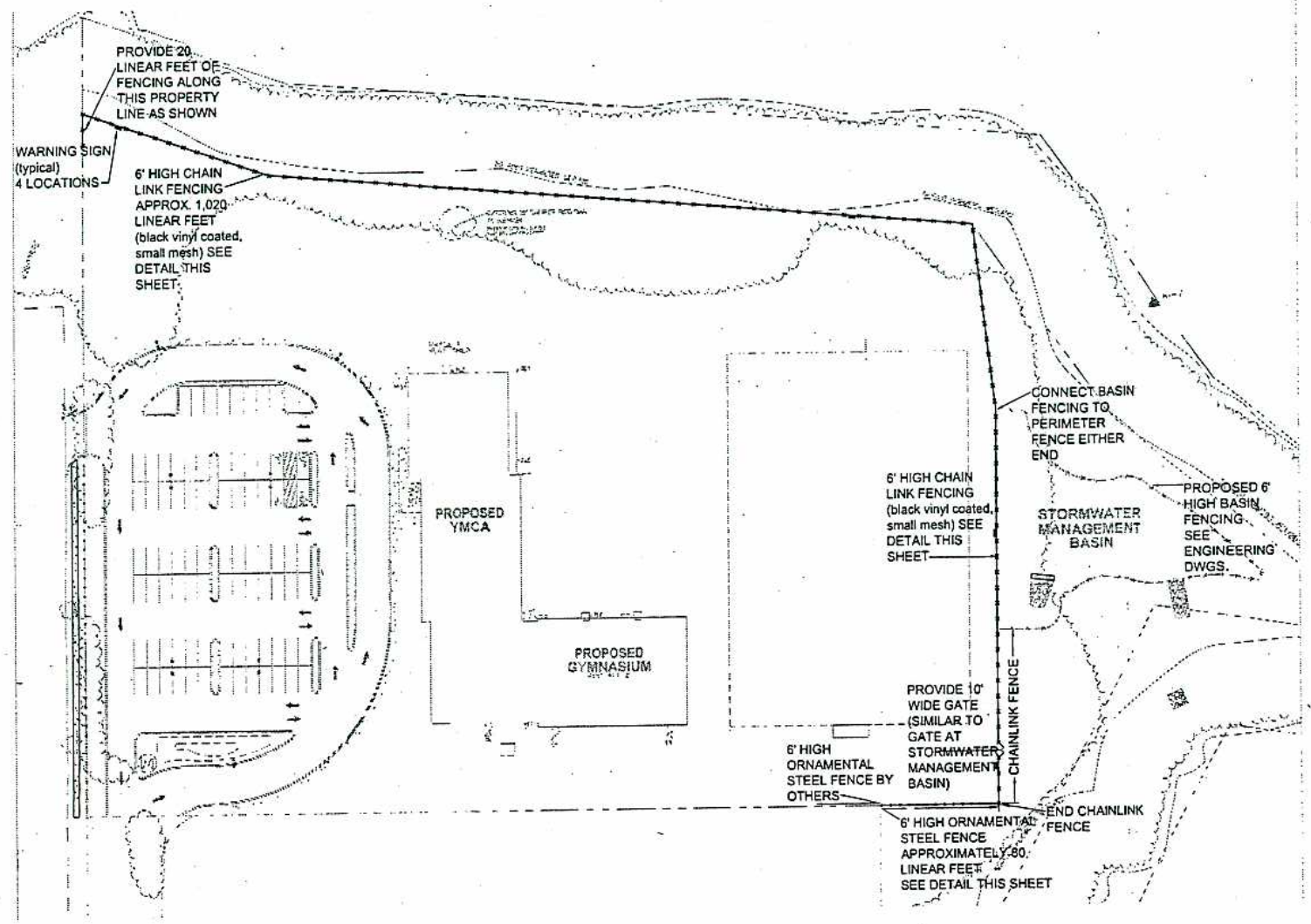
Attachment: Figure LSK-1 (RGB)

cc: S. Rittscher (YMCA)

J:\ENV\32384-04.mjb\Response to Comments\32384-04responseLetter2-16.doc

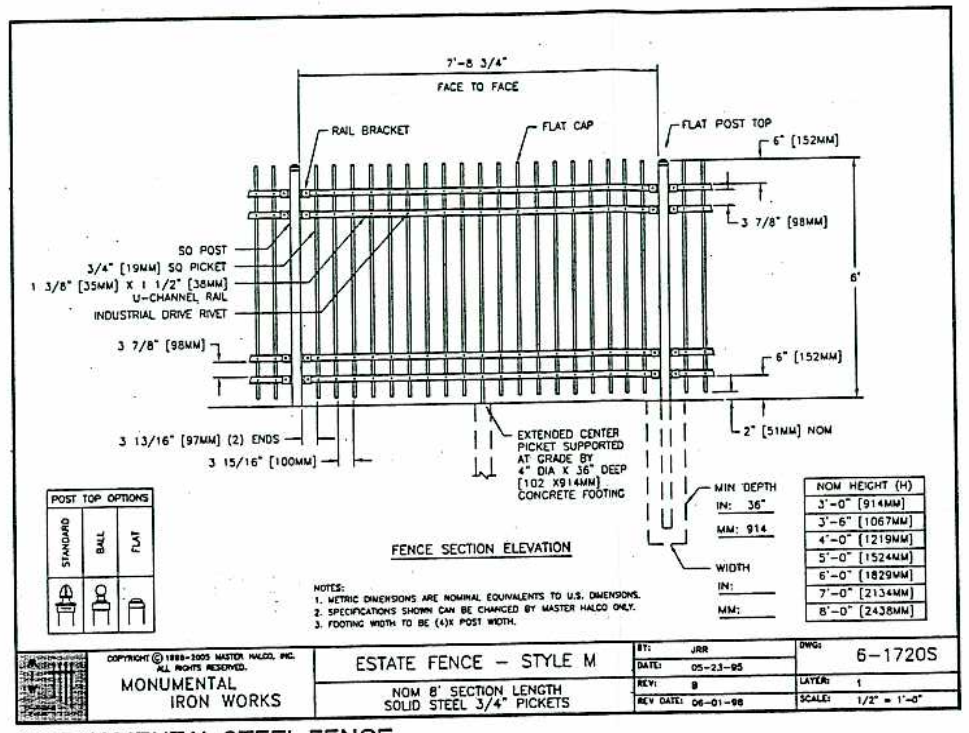
ATTACHMENT

FIGURE LSK-1

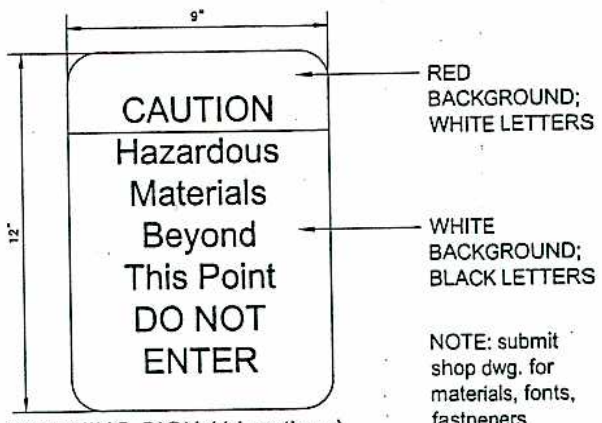


North

Site Fencing Plan
1" = 40'



6' ORNAMENTAL STEEL FENCE
no scale



WARNING SIGN (4 locations)
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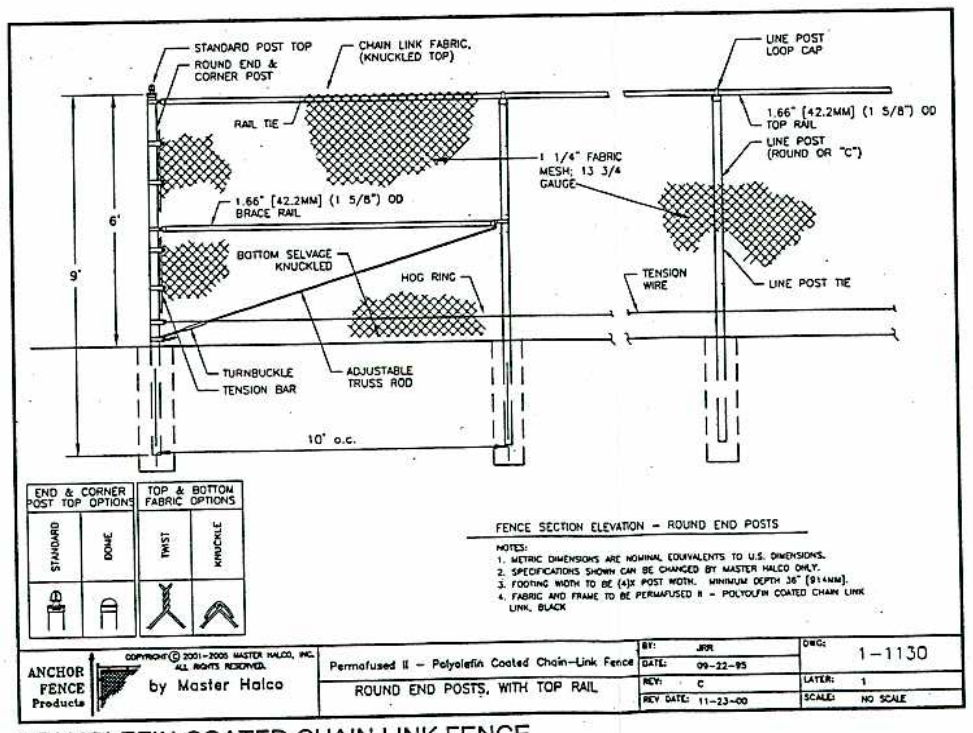

POLYOLEFIN COATED CHAIN LINK FENCE
no scale

Certification

Drawn by . DCS
Checked by RGB

Revised on
1. May 2005 - Snow Removal areas consolidated to one location on plan.
2. May 2005 - Tree planting detail
3. May 2005 - Added ST TP to plant list.
4. 20 May 2005 - Added tree planting infrastructural soil detail.
5. 24 June 2005-Labeled sidewalk; No ramp at Adelaide Avenue.

50 Holden Street
Providence, Rhode Island 02906
Phone: (401) 272-1730
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E-mail: rgbinfo@rgb.net
www.rgb.net
RGB
Architecture · Engineering · Interior Design

Project

YMCA of Greater Providence

THE NEW PROVIDENCE YMCA

Parcel 'C'
Adelaide Avenue
Providence, RI

Drawing Status
CONSTRUCTION DOCUMENTS

Issued On FEBRUARY 2006

Sheet Contents
PERIMETER FENCING LAYOUT

LANDSCAPE ARCHITECT:
DIANE C.
SOULE & ASSOCIATES, ASLA
LANDSCAPE ARCHITECTURE • GRAPHICS • DESIGN
Smithfield, Rhode Island 401.231.0736 e-mail: DCSA@COX.NET

Project Number. 5185

Drawing No. LSK-1

Sheet 1 of 1