



AMENDED ENVIRONMENTAL MANAGEMENT PLAN

PORT COVINGTON – CHAPTER 1 **Baltimore City, Maryland**

April 6, 2021

Submitted to:

Maryland Department of the Environment
Land Restoration Program
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GTA Project No. 152029

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FIGURES

Figure 1 – Site Location Map (*color*)

Figure 2 – Development Boundary

Figure 3 – Topographic Map (*color*)

Figure 4 – Proposed Site Layout (*11" x 17", color*)

Figure 5 – Capping Details (*11" x 17", color*)

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1.0 INTRODUCTION

1.1 Overview and Purpose

At the request of Port Covington Master Developer, LLC, (“PCMD”), Geo-Technology Associates, Inc. (GTA) has prepared this Environmental Management Plan (EMP) for Port Covington Chapter 1 (“subject property”). A *Site Location Map* for the subject property is presented as *Figure 1*. During previous environmental evaluations, soil and groundwater impacts were identified above the applicable Maryland Department of the Environment (MDE) comparison values. This EMP has been prepared to establish a proposed remedy for the soil and groundwater impacts in conjunction with the planned site development. The subject property currently contains grassed land, asphalt and gravel parking areas, and East Cromwell Street.

The subject property, as shown on *Figure 2 (Development Boundary)*, is a portion of a larger overall proposed development called Port Covington (“overall property”). The subject property consists of the portion of Cromwell Street located east of West Peninsula Drive, and of the individual land allotments or a portion thereof found at the following addresses:

- 200 and 300 East Cromwell Street (“Baltimore Sun”);
- 301 East Cromwell Street (including waterfront bulkhead);
- 321 East Cromwell Street (“Tidewater Yacht Service”, “Lot 6A”);
- 201 East Cromwell Street (“Lot 10E”);
- 2601 Port Covington Drive (“Land Unit 7”);
- 250 Atlas Street (Block E1);
- 255 Atlas Street (Block E6);
- 301 Atlas Street (Block E7); and
- 2400 Anthem Street (Block E5a and E5b).

Portions of East McComas Street will also be affected by utility installation. The proposed remedy for the subject property includes capping (e.g., asphalt, concrete, and MDE-approved residential clean fill), impacted soil removal (if necessary), proper management of groundwater during dewatering activities, construction observation to document the EMP implementation, Health and Safety Plan (HASP) implementation during construction, and soil material management governed by an MDE-approved *Comprehensive Soil Management Plan* (CSMP) that applies to the overall property. Engineering and institutional controls will ensure that the selected remedial methods and designs (e.g., capping, deed restrictions and maintenance) meet or exceed regulatory standards that are acceptable to MDE.

The PCMD project team requests that the MDE Land Restoration Program (LRP) participate in the review of the environmental conditions and the proposed remedies. This EMP is being submitted to the MDE LRP for approval so that a No Further Action (NFA) letter may be obtained following implementation of the proposed remedies.

1.2 Limitations

This EMP was prepared by GTA for PCMD under the terms and conditions of GTA's contract with PCMD. GTA acknowledges that this document is being submitted to the MDE and will be part of the public record, and that the MDE is expected to use this report as part of its review process. However, use of this report by any third party is at their sole risk. GTA is not responsible for any claims, damages, or liabilities associated with third-party use.

2.0 BACKGROUND

2.1 Site Description

The subject property comprises approximately 30 acres of land located west and east of and including East Cromwell Street and south of East McComas Street, in Baltimore City, Maryland. The subject property is part of the overall property, which is a former industrial area of over 260 acres. The subject property is the site of the "Chapter 1" development, which includes a portion of several different Port Covington properties. Chapter 1 is the first step in the development process for the overall Port Covington area. The portion of the subject property west

of East Cromwell Street has historically been associated with 200 and 300 East Cromwell Street (the Baltimore Sun), and the portions east of East Cromwell Street with 321 East Cromwell Street (“Tidewater Yacht Service”, “Lot 6A”); 301 East Cromwell Street (whiskey distillery); 201 East Cromwell Street; and 2601 Port Covington Drive (“Land Unit 7”). Pursuant to a recently recorded subdivision plat titled “Port Covington Subdivision II Amendment I”, portions of the associated properties are now renamed as 250 Atlas Street; 255 Atlas Street; 301 Atlas Street; and 2400 Anthem Street with development identifiers Block E1, Block E6, Block E7, and Block E5a and E5b, respectively. The subject property also includes East Cromwell Street, and portions of East McComas Street that will be affected by utility installation (*Figure 2, Development Boundary*).

The surrounding vicinity includes buildings associated with the future Under Armour Campus, the Sagamore Whiskey Distillery, the Baltimore Sun newspaper manufacturing facility, Interstate 95, and the Gould Street power plant. The Middle Branch of the Patapsco River is located to southeast of the subject property.

The subject property is generally flat with ground surface elevations of approximately 10 to 20 feet above mean sea level. Grades have been adjusted as part of building pad preparation and pursuant to the existing EMP. The site and vicinity slope gently downward toward the south and southeast towards the Middle Branch of the Patapsco River. Surficial drainage on the subject property occurs via overland sheet flow and is collected by stormwater inlets located in the adjoining parking areas and roadways. In addition, some near-shore surficial drainage is also conveyed directly into Middle Branch of the Patapsco River. A topographic map for the site and vicinity, based on the USGS Map, is presented as *Figure 3*.

The Maryland Geological Survey *Geologic Map of Baltimore County and City, Maryland* (1976) indicates that the subject property is situated within the Coastal Plain Physiographic Province, which is generally characterized by interlayered sedimentary deposits from historic marine and estuarine environments. Specifically, the subject property is indicated to be underlain by Lowland Deposits which are characterized as sand, silt, and clay.

Hydrologically, the Coastal Plain is underlain by both unconfined and confined aquifers of unconsolidated sediments, which overlie consolidated bedrock and dip toward the southeast. Groundwater storage and movement are functions of the primary porosity of the sediments. Larger storage is provided by gravel and sand, with little to no storage provided by clay. Near-surface, unconfined aquifers typically consist of sediments of higher permeability and are recharged locally, primarily through precipitation that permeates through the unsaturated zone into the aquifer. The water table in unconfined aquifers is therefore highly variable, fluctuating with the seasons and with rates of precipitation. Variations in the groundwater surface and flow generally reflect the topography and relative locations of surface water features. Intermittent confining layers can locally alter the water table conditions. The deeper, confined aquifers are bound by confining layers above and below, creating an artesian system. Confined aquifers are recharged in areas where the formation crops out, generally in more remote areas to the west.

The groundwater flow direction in the site vicinity is assumed to mirror surficial topography. Accordingly, the groundwater flow direction is assumed to be generally toward the southeast in the immediate site vicinity.

2.2 Proposed Development

The subject property is proposed to be developed as both private commercial and public uses, which will include multiple structures throughout the Chapter 1 project boundary. Several new interior roadways will be constructed which will be owned by Baltimore City or privately, and will provide access to the subject property from East Cromwell Street. East Cromwell Street will also be realigned and the waterfront bulkhead at 301 and 321 East Cromwell Street will be modified and improved (*Figure 4, Proposed Site Layout*). Pursuant to the existing EMP, site grading and pad development in the western portion of Chapter 1 commenced in May 2019. Between May 2019 and March 2020, rough grading and subdivision of the property took place. Construction activities did not occur between March 2020 and December 2020 due to COVID-19 considerations. The mass grading phase of the E1, E5a, E5b, E6, and E7 pads was completed in mid-February 2021 per their respective building permits.

The currently-active subdivided development areas included within Chapter 1 include:

Block E1: Block E1 is the condominium unit designated as “Land Unit E1” in the “Declaration of Condominium for Port Covington Lot 1L Land Condominium” and recorded in the Land Records of Baltimore City at Book No. 22525 on page 273 and as shown on the plat titled “Port Covington Lot 1L Land Condominium” recorded as Plat No. 865 in the Baltimore City Plat Records. Block E1 is the southern 1.91 acres of a 3.225-acre parcel with an address of 250 Atlas Street. A mixed-use structure will be constructed on the property. That structure will have ground level retail space and an underground/basement parking garage. The building will contain 156 multi-family residential units. The large majority of these residential units will be located above the ground-level public, commercial retail space. A lobby providing access to residents and six (6) residential units are located on the ground level, above the underground/basement parking garage encased in concrete. Pursuant to the existing EMP, between June 2019 and present, approximately 2,517 truckloads (50,340 tons) of MDE-approved fill material has been placed on the property during the mass grading phase, raising the grade between five (5) and seven (7) feet. A portion of the pad will be excavated to accommodate a partial basement.

Block E5a: Block E5a the condominium unit designated as Land Unit E5A in the “Declaration of Condominium for Port Covington Lot 1G Land Condominium” and recorded in the Land Records of Baltimore City at Book No. 22525 on page 248 and as shown on the plat titled “Port Covington Lot 1G Land Condominium” recorded as Plat No. 864 in the Baltimore City Plat Records. Block E5a is the southern 1.02 acres of a 2.095-acre parcel with an address of 2400 Anthem Street. A commercial office structure that includes retail space will be constructed on the property. Pursuant to the existing EMP, between October 2019 and present, approximately 262 truckloads (5,240 tons) of MDE-approved fill material has been placed on the property and the adjacent Block E5b parcel during the mass grading, raising the grade between one (1) and three (3) feet.

Block E5b: Block E5b is the condominium unit designated as Land Unit E5B in the “Declaration of Condominium for Port Covington Lot 1G Land Condominium” and recorded in the Land Records of Baltimore City at Book No. 22525 on page 248 and as shown on the plat titled “Port Covington Lot 1G Land Condominium” recorded as Plat No. 864 in the Baltimore City Plat Records. Block E5b is the northern 0.74 acres of a 2.095-acre parcel with an address of 2400 Anthem Street. A mixed-use structure will be constructed on the property. That structure will have ground level retail space. The building will contain 121 residential and extended stay/hospitality units. The large majority of these units will be located above the ground-level public, commercial retail space. A lobby providing access to residents and nine (9) extended stay/hospitality units are located on the ground level. Pursuant to the existing EMP, between October 2019 and present, approximately 262 truckloads (5,240 tons) of MDE-approved fill material has been placed on the property and the adjacent Block E5a parcel during the mass grading phase, raising the grade between one (1) and three (3) feet.

Block E6: Block E6 is a 1.508-acre parcel with an address of 255 Atlas Street. Two mixed-use structures will be constructed on the property. Those structures will have ground-level retail space. The buildings will contain a total of 254 residential units. The large majority of these residential units will be located above the ground-level public, commercial retail space. A lobby providing access to residents and fourteen (14) residential units are located on the ground level. Pursuant to the existing EMP, between July 2019 and present, approximately 1,294 truckloads (25,880 tons) of MDE-approved fill material has been placed on the property during the mass grading phase, raising the grade between five (5) and nine (9) feet.

Block E7: Block E7 is a 1.796-acre parcel with an address of 301 Atlas Street. Three commercial office/market structures will be constructed on the property. Pursuant to the existing EMP, between June 2019 and present, approximately 2,852 truckloads (57,040 tons) of MDE-approved fill material has been placed on the property during the mass grading phase, raising the grade between five (5) and nine (9) feet. Some of the material is in the process of being relocated onsite to lower the rough grade.

Other areas included in this EMP are subdivided parcels with pending development plans, proposed roadways, and the former East Cromwell Street as shown on *Figure 4*.

The other portions of the development will include future phases of construction and redevelopment. This EMP focuses on Chapter 1 only; additional or amended EMPs will be submitted for future construction phases as appropriate.

2.3 Site History

GTA prepared and reviewed numerous previous environmental and geotechnical evaluations of portions of the subject property and overall property between 2012 and present, including monthly EMP update reports tracking the progress of the implementation of this EMP thus far. Environmental reports have been submitted to MDE under separate cover.

Historically, the subject property and surrounding vicinity were primarily vacant land, with marinas and marine-related businesses along the shoreline, rail yards located on the northern and eastern portions of the site, and scattered residences in the remainder of the area. The subject property was a portion of a larger property owned by the Western Maryland Railroad and later by CSX Transportation. Winans Cove was located on the southeastern portion of the subject property until it was filled in the 1940s. By 1952, additional rail yards were constructed and operated by

the Western Maryland Railroad Corporation on the central portion of the subject property. Two “fuel oil” tanks were located adjacent to the rail yards on the western portion of the site. A portion of a 2,400,000-gallon molasses aboveground storage tank (AST) was installed and buildings associated with the rail yard were constructed on the southeastern portion of the site. By 1979, additional structures associated with the rail yards were constructed on the northwestern and southeastern portions of the site. Environmental evaluations of the subject property and vicinity have identified residual petroleum contamination in soil, elevated polycyclic aromatic hydrocarbons (PAHs) and metals in the surface and subsurface soil, and concentrations of total petroleum hydrocarbons (TPH) diesel range organics (DRO) in groundwater above the MDE Groundwater Cleanup Standard (GCS).

The overall Port Covington development was submitted for oversight by the MDE LRP. The goal, upon completion of the EMP, is to receive and record closure determinations issued by MDE for each property as a NFA determination that is supplemented by recordation of long-term maintenance requirements in an environmental covenant for each applicable parcel.

In addition to this EMP, GTA developed and submitted a CSMP dated April 18, 2016 and a Revised CSMP dated November 28, 2018 for MDE review and approval. The purpose of the CSMP is to manage soils with similar levels of contaminants typical of urban fill within the Port Covington peninsula. The CSMP provides a framework for the construction and enhancement of existing and proposed public works including roads, utilities, sewer and water, and stormwater. The CSMP includes multiple components to manage potential environmental exposures to site workers and future residential, recreational, commercial and on-site visitor populations. It includes general health and safety protocols, air monitoring requirements, reporting requirements, and provisions governing environmental media management including soil excavation, staging, and relocation. The CSMP was approved by MDE on April 25, 2016 and the revision was approved on December 3, 2018. Additionally, site-specific RAPs or other regulatory vehicles (e.g., Soil Management Plans, EMPs, etc.) govern activities on individual parcels outside of the Chapter 1 development to ensure that the selected remedial methods and designs (e.g., capping, deed restrictions and maintenance) meet or exceed regulatory standards that are acceptable to MDE.

This EMP is for the area designated as Chapter 1 as shown on *Figure 2*. This EMP was originally approved by MDE on March 25, 2019, and has been revised to reflect current site conditions and updated property descriptions.

2.3.1 Existing Soil Conditions

Prior environmental and geotechnical studies identified historic fill and soil impacts at the subject property. Fill material depth extended between approximately between 2 and 17 feet below the ground surface (bgs). Several metals (specifically arsenic, vanadium, manganese, and iron) and the PAH benzo(a)pyrene were detected above the MDE’s Non-Residential Cleanup Standards (NRCS) during a July 2015 evaluation and subsequent investigations in 2018 and 2019 in areas that had not previously been completely characterized. TPH DRO and VOCs were also reported in several samples above the laboratory reporting limit, but at concentrations below the NRCS.

Soil sample results were also compared to the published Anticipated Typical Concentration (ATC) values for metals in soil in eastern Maryland. According to the *2008 MDE Cleanup Standards for Soil and Groundwater* guidance document, ATC levels serve as general indicators of background levels for metals in the state of Maryland. Additionally, the guidance document states: “When an ATC concentration for a given province exceeds the Proposed Maryland Cleanup Standards (Residential), the ATC value for the appropriate province may be proposed as an acceptable alternative to the risk derived value presented in the Proposed Maryland Cleanup Standards (Residential).” The ATC values were established by the MDE from a data set consisting of 150 background sample results throughout the state.

Arsenic was detected above the ATC in several samples. Additionally, arsenic was compared to risk-derived values, developed from standard risk assessment calculations using United States Environmental Protection Agency (USEPA) and MDE guidance for risk assessments. USEPA and MDE accepts risk-based remedial goal calculations for arsenic that incorporate a relative bioavailability (RBA) value of 0.6 (60%), rather than the

default RBA of 1.0 (100%). Using this approach, the non-residential risk-derived comparison value (RCV) for arsenic is 26.8 mg/kg. None of the samples exceeded the non-residential RCV of 26.8 mg/kg. The highest concentrations of arsenic and other metals found during sampling are likely due to the historic fill materials present at the subject property.

2.3.2 Existing Groundwater Conditions

The July 2016 environmental evaluation indicated that no VOCs were detected above the MDE GCS. TPH DRO was detected above the GCS in two locations.

2.3.3 Existing Soil Vapor Conditions

Soil vapor has not been evaluated on the subject property. However, analytical results for soil and groundwater samples collected in 2016 as described above reported VOCs below the NRCS. Therefore, vapor intrusion of VOCs into future improvements is not considered an exposure pathway at this time.

3.0 EXPOSURE ASSESSMENT

Based on prior evaluations, potential environmental exposure risks to future residents, construction workers, visitors/recreators, and on-site workers may exist at the subject property. The identified exposure pathways, potentially exposed populations, and chemicals of potential concern (COPCs) are summarized in the table below. If additional contaminants are identified during the additional site assessment, the table below will be expanded appropriately.

POTENTIAL EXPOSURE PATHWAYS			
Media	Potential Exposed Population	Exposure Pathway	COPCs
Soil (surface and subsurface)	Child, Youth, and Adult Resident Child, Youth, and Adult Visitor/Recreator Adult On-Site Worker Construction Worker	Dermal Exposure Incidental Ingestion Inhalation of Fugitive Dust	PAHs and metals

POTENTIAL EXPOSURE PATHWAYS			
Soil Vapor/Indoor Air	Child, Youth, and Adult Resident Child, Youth, and Adult Visitor/Recreator Adult On-Site Worker	Inhalation	VOCs
Groundwater	Construction Worker	Dermal Exposure Incidental Ingestion	TPH DRO

3.1 Direct Contact from Soil Contamination

With regard to soil exposure, potential risks to construction workers may exist through dermal exposure, incidental ingestion, or inhalation of volatiles and fugitive dust during development activities. Management of this potential exposure to construction workers is discussed in *Section 5.1*. Based on the planned uses and environmental response plans, potential risks to future site occupants (residents, visitors/recreators, and workers) from impacted soils are not anticipated.

As discussed in *Section 2.3*, a CSMP was developed for the Port Covington peninsula including the subject property addressing soil stockpiles and general management and handling of site soils. The CSMP includes multiple components for managing potential environmental exposures to site workers and future visitor/recreator populations. It also includes specific health and safety protocols and air monitoring requirements. The proposed remedies for the soil contamination (HASPs, excavation and disposal, institutional controls, and engineering controls) are protective of human health, because they are designed to prevent exposure to contamination.

Based on future development plans, existing soil will be capped (e.g., asphalt, concrete, buildings, or marker fabric overlain by clean fill, etc.) in areas of proposed construction across the subject property. This will act as an engineering control, which will eliminate the direct contact exposure risk to future resident, on-site worker, and visitor/recreator populations. The cap will be inspected annually by the property owner’s representative. The cap will be inspected for signs of erosion, deterioration, or penetrations. Repairs will be initiated within one month of discovery. The property owner will maintain records of the annual inspections and details regarding cap repairs. These limitations will be recorded as a deed restriction in the land records for the subject

property. In addition, fill material is expected to be imported to the subject property consistent with the CSMP to adjust the grade or for capping as part of construction. Excavation for installation of subsurface utilities and fencing may encounter impacted soil, which will be re-used on site beneath the cap or disposed off-site consistent with the CSMP. Under the current conditions, resident, future on-site worker, and visitor/recreator populations at the subject property could be exposed to the COPCs; however, once this EMP is complete, the above-referenced populations will be protected and the risk to construction workers will be temporary and limited, and controlled by following the site-specific health and safety plan. These proposed remedial strategies are further outlined in *Section 5.0* of this report.

An approved erosion and sediment control plan was in place for the subject property prior to the beginning of construction. Erosion and sediment controls address the potential for COPCs in run-off generated during a storm event from leaving the subject property. A qualified party that has completed their MDE Erosion and Sediment Control Certification will observe sediment controls at the site on a weekly basis and/or 24 hours after a storm event to observe construction entrances, super silt fences, wash racks, swales, check dams, dikes, and any other sediment control measures. Weekly inspection forms will be completed and kept on file by GTA during construction. In the event of a breach or other defect requiring repair to the erosion and sediment controls, the onsite contractor will be notified and the features will be repaired as quickly as possible.

3.2 Inhalation of Fugitive Dust

During future construction activities, it is possible for COPC-impacted soil to become airborne, with the potential that site construction workers may breathe this fugitive dust. The inhalation of fugitive dust is planned to be limited due to implementation of a site-specific HASP, applicable portions of the CSMP, and dust control methodologies that will prevent dust generation. Capping (e.g., soil, asphalt, or concrete) across the subject property will eliminate future exposure to inhalation of fugitive dust to future resident, on-site worker and visitor/recreator populations. The proposed remedy for inhalation of fugitive dust (HASP and dust control methodologies) is

protective of human health since exposure to contamination above regulatory limits will be prevented.

The placement of asphalt and/or concrete, building improvements, or MDE-approved clean fill from off-site or from the subject property will act as an engineering control and will eliminate future exposure to inhalation of fugitive dust to future resident, on-site worker, and visitor populations. Exposure to the capped soils in future excavations or other construction activities not referenced in this EMP will be managed through the use of the site-specific HASP and dust control methodologies, as required by site institutional controls to be recorded in land records. Specific details associated with dust control during construction are further described in *Section 5.1* of this EMP.

3.3 Exposure to Groundwater Contamination

Based on the planned use of public utilities, no groundwater use is planned, and the nature of the proposed development will eliminate the potential exposure pathways to groundwater COPCs after construction. Potential risks to construction workers may exist through dermal exposure, incidental ingestion, or inhalation of volatiles. This exposure pathway can potentially exist for the construction workers during sub-surface excavation activities. Management of this potential exposure to construction workers is discussed in *Section 5.1*. Based on the planned site developments, potential risks to future site occupants from impacted groundwater will not exist. As discussed in *Section 5.3.2*, a groundwater use restriction for the subject property will be recorded in the land records.

Based on the observed depth to groundwater and construction/grading plans/utility installation, dewatering for various construction activities (i.e. utility installation) is possible. If dewatering is required, site construction workers may come in contact with the groundwater during site development. Specific details associated with the dewatering activities are further described in *Section 5.3.1* of this EMP.

3.4 Soil Vapor Exposure

As discussed in *Section 2.3.3*, soil vapor has not been evaluated on the subject property. However, analytical results for soil and groundwater samples collected in 2016 as described above reported VOCs below the NRCS. Therefore, vapor intrusion of VOCs into future improvements is not considered an exposure pathway at this time.

4.0 CLEANUP CRITERIA

As a simplified, conservative measure, the cleanup criteria for the subject property’s COPCs are the MDE NRCS and GCS values, which are the generic risk-based guidance values in MDE’s *Cleanup Standards for Soil and Groundwater; October 2018; Interim Final Guidance (Update No. 3.2)*. Arsenic will be compared to the risk-based non-residential RCV. Additional COPCs may be identified as a result of the pending additional site characterization efforts described in *Section 2.4*.

CLEANUP CRITERIA			
Media	COPC	Cleanup Criteria	Basis
Soil	Arsenic	26.8 mg/kg	RCV
	Lead	550 mg/kg	NRCS
	Iron	82,000 mg/kg	NRCS
	Manganese	2,600 mg/kg	NRCS
	Thallium	1.2 mg/kg	NRCS
	Vanadium	580 mg/kg	NRCS
	Benzo(a)pyrene	2.1 mg/kg	NRCS
Groundwater	TPH DRO	47 µg/L	GCS

If other COPCs are identified during development activities, the cleanup criteria will be re-evaluated with MDE. Generally, the cleanup criteria that will be applied to any additional COPCs will be the published MDE NRCS values, or risk-based site-specific values calculated using the appropriate frequency exposure parameters, as the need arises. The use of cleanup criteria other than those tabulated above will only occur with prior MDE approval.

Notwithstanding the foregoing, based on MDE’s *Residential Redevelopment and Land Use Controls Policy* document dated August 2020, the E1, E5b, and E6 parcels described in *Section 2.2* will meet the Tier 1B classification as structures with retail or commercial space on the ground floor as well as a small number of residential rental or extended-stay/hospitality units. In keeping with the guidelines for Tier 1B properties, none of the ground-floor residential units will be fee-simple or otherwise converted to occupant-owned residences in the future absent satisfaction of the Tier 1A standards and other applicable requirements. Land-use controls will be in place as described below to ensure continued satisfaction of this requirement.

5.0 REMEDIES AND INSTITUTIONAL CONROLS

This EMP presents proposed remedial actions to protect against exposure to potentially contaminated soil, fugitive dust, and groundwater in conjunction with future construction and improvement. Potentially-complete exposure pathways have been identified between contaminated soil, fugitive dust, and groundwater and future resident, on-site worker, and visitor populations and construction workers at the subject property. These exposure pathways will be eliminated through the preparation and implementation of a site-specific HASP, capping, construction observation for health and safety measures, dust monitoring, proper management of impacted materials encountered during development activities pursuant to applicable portions of the CSMP, and engineering and institutional controls (e.g. deed restrictions on use of groundwater and notifications prior to excavation).

5.1 Health and Safety Measures

A site-specific HASP will be prepared to reduce direct contact exposure to the identified soil and groundwater contaminants during the performance of construction activities that could involve impacted media. The HASP will provide recommended procedures to reduce the potential for over-exposure. The primary action taken to mitigate potential exposures to construction workers will be the avoidance of direct contact with potentially impacted soil or groundwater, and the appropriate use of personal protective equipment during construction activities.

During soil movement activities, fugitive dust may be produced and air monitoring for particulates will be conducted (twice a day or as needed based on field conditions). The OSHA permissible exposure limit (PEL) for Particulates Not Otherwise Regulated (PNOR), or nuisance dust, is 15 mg/m³. For conservancy, a PNOR/nuisance dust action level of 12 mg/m³ will be used during air monitoring. If greater than 12 mg/m³ are detected, implement dust suppression procedures until dust levels are reduced to below the action level. If dust levels increase while suppression measures are under way and the dust concentration exceeds 12 mg/m³, operations must be shut down and suppression activities continued. When dust concentrations are reduced to 12 mg/m³ or below, operations may resume.

If indications of petroleum or VOC impacts are encountered during construction, such as through soil staining, odors, etc., air monitoring for volatiles will be conducted. The monitoring will be conducted both within the excavation and at the excavation perimeter with a portable photoionization detector (PID). If elevated PID readings are encountered, response actions, as defined in the HASP, will be implemented.

The HASP will be submitted to the Client under separate cover and will be provided to all contractors involved in construction activities potentially encountering impacted media, for their information. The contractors should independently assess the available information and implement appropriate measures to protect the health and safety of their employees and subcontractors. Information and recommendations contained in this plan should not in any way be construed as relieving the contractors or their subcontractors of their responsibilities for site health and safety. A copy of the HASP will be provided to MDE prior to the start of construction.

5.2 Remedial Action for Soils

Soil containing COPCs above the cleanup criteria in *Section 4.0* is present throughout the site. A HASP will be implemented to reduce direct contact exposure of construction workers to the impacted soil during construction. In addition, applicable portions of the CSMP will be implemented to manage potential environmental exposures to site workers and future onsite

populations during soil relocation activities. Construction practices for dust control will be utilized to limit worker exposure to contaminants borne on dust and windblown particulates.

During construction activities, qualified parties will assist with identification and management of impacted soil with COPCs pursuant to the CSMP and HASP.

5.2.1 Construction-Related Soil

During construction activities, GTA will assist with identification and management of the COPC-impacted soil. GTA's services will be performed using environmental staff that will periodically visit the site or be contacted directly by the general contractor if there is a concern about the soil being relocated. Periodically or as needed, soil generated from proposed sub-surface excavations and site grading will be field screened using a PID, which is capable of detecting volatile organic vapors, such as those typically associated with petroleum and some solvents.

Soil generated during grading and sub-surface excavations that is not grossly impacted as determined by GTA will be used within the Chapter 1 development without restriction during site development. If excess soil is generated, it will be relocated to the impacted soil stockpile that will be located either on the subject property or the 100 East Cromwell Street property (see *Section 5.2.4*). Soil stockpiled on the subject property will only be staged temporarily prior to being used elsewhere onsite beneath proposed site improvements (i.e., hardscaped areas) or relocation to the 100 East Cromwell Street property stockpile. During construction, active and inactive areas will be fenced and secured, including 24-hour security personnel, to prevent exposure to visitors prior to final capping of impacted soils.

5.2.2 SVOC, TPH, and Metal Impacted Soil and Screening

Soil impacted by SVOCs, TPH, and metals has been identified at the subject property. Excavated materials generated during site development and utility installation are anticipated to be either utilized elsewhere onsite beneath proposed site improvements (i.e. hardscaped areas), stockpiled for future use on the subject property, relocated to the impacted soil stockpile at the 100 East Cromwell Street property, or removed from the

subject property for disposal pursuant to the MDE-approved CSMP. In the event that soil will need to be transported off-site, the offsite disposal facility proposed for receiving contaminated soil is:

Soil Safe, Inc. (Soil Safe)
16001 Mattawoman Drive
Brandywine, Maryland 20613-3027
(301) 782-3036

or

Clean Earth Inc. (Clean Earth)
6250 Dower House Road
Upper Marlboro, Maryland 20772
(215) 734-1400

Use of this facility as an off-site disposal facility is contingent on additional waste characterization soil sampling. If onsite soils are determined to be hazardous in a waste disposal scenario or have COPC concentrations above the acceptable levels in the facility's permit listed above, the soil will be transported to another selected licensed waste disposal facility. Additional/alternate disposal facilities may also be utilized. Information regarding these facilities will be provided to MDE prior to the transport of impacted soil offsite and disposal shall occur in accordance with local, state, and federal regulations for waste handling and disposal.

5.2.3 Imported Fill Material Sampling and Analysis

Pursuant the CSMP, imported fill (soil or aggregate) obtained from an import source will first be sampled and analyzed. Work plans for sampling fill soil source areas will be submitted to the MDE for review and approval prior to sample collection and analysis. No soil will be transported on-site for use as fill without prior written approval by the MDE project manager.

Stone that is needed for the construction activities, such as for utility backfill, pavement or building subgrades, etc., can be acquired from standard commercial providers using local quarry sources. A clean fill certification will be obtained for any such materials and provided to MDE for approval prior to being transported to the site. Documentation with delivery tickets and quantities will be provided in the monthly EMP update reports. Documentation of the imported fill sampling activities will also be summarized within monthly EMP progress reports and the *EMP Completion Report*.

Materials currently approved by MDE for import for use onsite include the following:

Vendor	Type	Approval Date
Vulcan Materials	#57, #3, #8 stone	5/22/19
	#10 screenings/stone dust	5/22/19
	Rip rap	5/22/19
	Masonry and concrete sand	11/19/19
	Crushed virgin concrete	2/22/21
Martin Marietta – Texas Quarry	#57, #3, #2 stone	11/19/18
	#10 screenings/stone dust	11/5/19
	Rip rap and GAB	11/5/19
Patuxent Materials, Inc.	#57, CR6	11/20/19
	Rip rap	1/20/20
Rowen Concrete	Crushed virgin concrete	7/8/19

5.2.4 Temporary Soil Stockpile Management

Based on the proposed construction and interim uses proposed in the Chapter 1 development, excess soil may be generated during construction activities (e.g. utility installation, etc.). Any excess soil will be segregated as on-site impacted soil per the CSMP. Two stockpile areas are located on the northwestern portion of 100 East Cromwell Street in an existing grass area. An impacted soil stockpile is located in the northwestern corner of 100 East Cromwell Street (further from the Baltimore Sun building). MDE-approved certified clean fill soil is staged in a separate “clean” stockpile underlain by geotextile fabric adjacently east of the impacted soil stockpile. The soil stockpiles are separated by super silt fencing and have separate entrances, and comply with the *2011 Maryland Standards and Specifications for Soil Erosion and Sediment Control* and permit requirements of Baltimore City. These temporary stockpile locations may need to be relocated based on-going construction activities. If relocation becomes necessary and new temporary stockpile locations are identified, MDE will be notified. The CSMP should be referenced for details pertaining to the stockpiles and general management and handling of site soils.

5.3 Remedial Action for Groundwater

5.3.1 Construction-Related Groundwater

During construction, temporary dewatering may be necessary for utility installation and excavation for the parking garage or bulkhead modifications. If necessary, GTA will develop a dewatering contingency plan for when potentially contaminated groundwater is expected to be encountered during excavation and also for when contaminated groundwater is unexpectedly encountered. When potentially contaminated groundwater is unexpectedly encountered, excavation must be stopped and the dewatering contingency plan must be implemented.

Groundwater dewatering, if required, must be performed in compliance with all local, state, and federal laws and regulations. If temporary and low-volume dewatering is necessary, fluids entering trenches or excavations in use will be removed and will be relocated to another trench or excavation using a hose and pump.

If volumes require discharging the water offsite, then discharge effluent monitoring must be performed for compliance with the local, state, and federal requirements, and must include flow monitoring as well as periodic fixed laboratory analysis of the effluent stream. There is an existing General Discharge Permit No. 19OGR-65898 for discharging groundwater to the Patapsco River. However, discharge cannot occur without effluent testing and required reporting to the USEPA, and depending on effluent sampling results may be subject to additional treatment onsite prior to discharge. Groundwater cannot be discharged to the stormwater or sanitary sewer systems, or to the ground surface.

The contaminated groundwater dewatering contingency plan includes the following options for handling and disposal of the groundwater offsite if necessary:

- Utilizing a vacuum truck to remove the water and dispose of it off-site at an appropriate facility.
- Pumping the water to on-site frac tanks and analyzing the water for potential on-site treatment or appropriate off-site disposal.

- If acceptable to City of Baltimore Department of Public Works, discharge to the municipal sanitary sewer under a Wastewater Discharge Permit.
- Discharge to the local stormwater system via a general National Pollution Discharge Elimination System (NPDES) permit. Existing General Discharge Permit No. 19OGR-65898 governs this process.

If dewatering is required, site construction workers may come in contact with the groundwater during site development and appropriate health and safety precautions presented in the HASP should be followed.

5.3.2 Groundwater Use Restriction

Based on the planned use of public utilities, no groundwater use is planned and the nature of the proposed Chapter 1 development will eliminate the potential exposure pathways to groundwater COPCs after construction. A groundwater use prohibition will be established for the site and recorded in the local land records. The proposed remedy for the groundwater contamination (groundwater use prohibition) is protective of human health since contact with the contaminated groundwater will be prevented.

5.4 Remedial Actions for Specific Development Features

The subject property is proposed to be developed with structures using a slab-on-grade construction with footers, piles, or caissons. The buildings will include a concrete slab that will act as a cap, which will eliminate the direct contact exposure risk to future residents, on-site workers, and visitors. Details regarding the proposed development for the subject property and general capping schematics are presented as *Figures 4* and *5*. Final cap thicknesses will be detailed in final construction plans following the City of Baltimore Department of Transportation requirements (to be provided by a third party prior to construction).

5.4.1 Hardscaped Areas

East Cromwell Street will be re-aligned and private- and publicly-owned roadways will be constructed west of East Cromwell Street (*Figure 4*), and other hardscaped areas may include parking lots and sidewalks. The impervious cover is currently planned to

generally consist of a minimum of three to eight inches of granular sub-base and four to eight inches of pavers, asphalt, or concrete over native material or clean fill, as illustrated on the final approved grading plan. Based on preliminary grading estimates, the re-use of on-site materials is anticipated. In areas where clean fill is required, the fill will be approved by the MDE and will meet non-residential standards. Details of the capping are illustrated in *Figure 5*. A *Clean Fill Sampling Plan* will be submitted for MDE approval, implemented, and the material accepted by MDE prior to the use of any fill on the property.

5.4.2 Landscaped Areas

Pervious capping will include the landscaped areas and areas to be covered by stone. These areas will be capped with a minimum of two feet of MDE-approved residential-grade clean fill. The thickness of the cap can be increased during grading or during landscaping following grading as an option to accommodate the planting of different species in order to ensure the minimum clean fill requirements and accommodate the plant's root ball. If needed, the clean fill thickness will be increased to three feet to accommodate a plant's root ball. The pervious capping will eliminate the direct contact exposure risk to future occupants or users of the site. Based on preliminary grading estimates, the re-use of on-site materials is anticipated, with MDE-approved clean fill that meets non-residential soil standards used where necessary to reach final grade. A total of at least two feet of MDE-approved residential-grade clean fill material above a marker barrier will be placed in areas of pervious capping. A *Clean Fill Sampling Plan* will be submitted for MDE approval, implemented, and the material accepted by MDE prior to the use of any fill on the property.

Pervious and landscaping capping will be underlain by a marker barrier, as shown on *Figure 5*. The marker barrier will not be placed beneath building improvements, impervious surfaces, or roadways. The marker barrier will be placed between the native site soil and MDE-approved residential-grade clean fill. Specifications for soil and asphalt marker fabric are presented, along with general details for the impervious and pervious capping, on *Figure 5*. It should be noted that utilities may be installed in these areas prior

to capping. Excavated materials generated during utility installation that are not used as backfill will either be placed elsewhere onsite beneath a capped area or deposited in the impacted soil stockpile. The property owner is responsible for ensuring the proper implementation of all recorded deed restrictions and land use controls, and maintenance requirements for site caps to reduce the risk to public health and the environment.

5.5 Concrete Reuse

If concrete structures are identified during demolition, they will be properly crushed and re-purposed for use on-site beneath a cap or disposed off-site. Existing roadways, parking lots, and associated curbs, gutters, and stormwater vaults will be crushed and used as fill beneath a hardscape cap. If concrete associated with walls or painted surfaces is encountered, it will be sampled and characterized in accordance with a concrete sampling work plan, which will be submitted to the MDE for approval. Pending laboratory results, the concrete will be crushed and either re-used on site or disposed of off-site.

If the COPCs associated with the sampled concrete meet MDE NRCS and/or cleanup criteria in *Section 4.0*, then the concrete can be reused on-site. If the COPCs associated with the sampled concrete do not meet the MDE NRCS and/or cleanup criteria in *Section 4.0* then the concrete can only be reused on-site below a cap or disposed off-site at an MDE-approved facility. The location of the re-purposed concrete will be documented in monthly EMP update reports and the EMP completion report.

The crushed concrete resulting from the demolition of East Cromwell Street and associated curb and gutter and concrete blocks removed from the shoreline, currently staged in the impacted stockpile at 100 East Cromwell Street, were approved by MDE on July 8 and December 2, 2019 for reuse onsite.

6.0 RISK MANAGEMENT

The proposed remedies include the use of asphalt and/or concrete, capping, and MDE-approved clean fill, all which will require periodic maintenance activities.

6.1 Hardscaped and Landscaped Maintenance

The cap will be inspected annually by the property owner's representative. The cap will be inspected for signs of erosion, deterioration, or penetrations. Repairs will be initiated within one month of discovery. The property owner will be responsible for the onsite maintenance inspections, performing maintenance, and maintaining all inspection records. Maintenance records will include, at a minimum, the date of the inspection, name of the inspector, any noted issues, and subsequent resolution of the issues. If the action level is reached, preventative maintenance of the cap is required. If preventative maintenance is required, the property owner will have 60 days to complete the appropriate maintenance.

6.2 Land Use Controls

In conjunction with receiving closure documentation (e.g., No Further Action letter, Certificate of Completion, or No Further Requirements Determination), land use controls including groundwater use restrictions will be recorded, and restrictions on converting any ground-floor residential units to condominiums or fee-simple units will be recorded for each of Blocks E1, E5b, and E6.

6.3 Emergency Excavation

MDE must be verbally or electronically notified within 24 hours following the discovery of unplanned emergency conditions at the subject property and must be provided with written documentation within 10 days of the repair. In addition, MDE must be provided written notice a minimum of five business days prior to planned activities at the site that could encounter the dark/black impacted soil, with the repairs completed within 15 days, and written documentation submitted to MDE within 10 days of the repair. Written notice of planned excavation activities must include the proposed date(s) for the excavation, location of the excavation(s), health and safety protocols (as required), clean fill source and documentation (as required), and proposed characterization and disposal requirements (as required). The property owner will maintain on-site records of the yearly inspections and will include information on any repairs to the subject property. The property owner or occupants will be required to notify MDE in writing of any proposed construction or excavation activities that could encounter the dark/black impacted soil.

These notification requirements and appropriate contact information must be included in the EMP for each future development area.

6.4 Planned Excavations

MDE will be provided written notice, either by the property owner or a party designated and notified by the property owner, a minimum of five business days prior to planned activities at the site that will penetrate any capped areas, with the repairs completed within 15 days, and written documentation submitted to MDE within 10 days of the repair. The property owner will provide written notice of planned excavation activities, including the proposed date(s) for the excavation, location of the excavation(s), health and safety protocols (as required), clean fill source and documentation (as required), and proposed characterization and disposal requirements (as required).

7.0 PERMITS AND CONTINGENCIES

7.1 Permits

The property owner must comply with federal, State and local laws and regulations by obtaining necessary approvals and permits to conduct activities and implement this EMP or activities specified in the EMP.

7.2 Site Contingency Plan

In the event that the future soil and/or groundwater COPCs exceed their designated cleanup criteria, or safe concentrations cannot be controlled during the EMP implementation process, or contamination and/or exposure risks/pathways not previously identified are identified, the following contingency measures will be taken:

- Notify MDE within 24 hours;
- Postpone implementation of the EMP;
- Evaluate new site conditions identified; and
- Amend EMP to address new site conditions identified.

Notified departments will include:

MDE Land Restoration Program
Land and Materials Administration
1800 Washington Boulevard
Baltimore, Maryland 21230
(410) 537-3493
Attention: Chris Hartman

In addition to the above, if there is evidence of an oil discharge at the subject property in violations of applicable regulations, it must be reported within two hours as specified in COMAR 26.10.08.01, to the Oil Control Program (OCP) (410-537-3442) or, if after normal business hours, to the 24-hour Spill Reporting Hotline (1-866-633-4646). The MDE will be verbally notified within 48 hours (72 hours in writing) of changes (planned or emergency) to the EMP implementation schedule, previously undiscovered contamination, and citations from regulatory entities related to health and safety practices. Notifications shall be made to the MDE project manager at 410-537-3493.

Emergency conditions that cause imminent and substantial endangerment to human health and the environment will require abeyance of the EMP process until the emergency condition has been addressed.

The MDE must be provided with documentation and analytical reports generated as a result of any unidentified contamination. Previously undiscovered contamination may require an amendment to the EMP.

8.0 ADMINISTRATIVE

8.1 Schedule

The following schedule is provided for the proposed development of Chapter 1, which began in May 2019, moving forward. During implementation of the EMP, MDE will be notified of any project schedule changes.

Description of Work	TENTATIVE SCHEDULE
Updated EMP Review/Approval	March 2021

Description of Work	TENTATIVE SCHEDULE
Submission of Monthly EMP Progress Reports	Monthly following initiation of work (due the 15 th of each subsequent month)
Vertical Construction Commencement	March 2021
Complete E1 Complete E5a Complete E5b Complete E6 Complete E7	June 2023 November 2022 February 2023 May 2023 December 2022

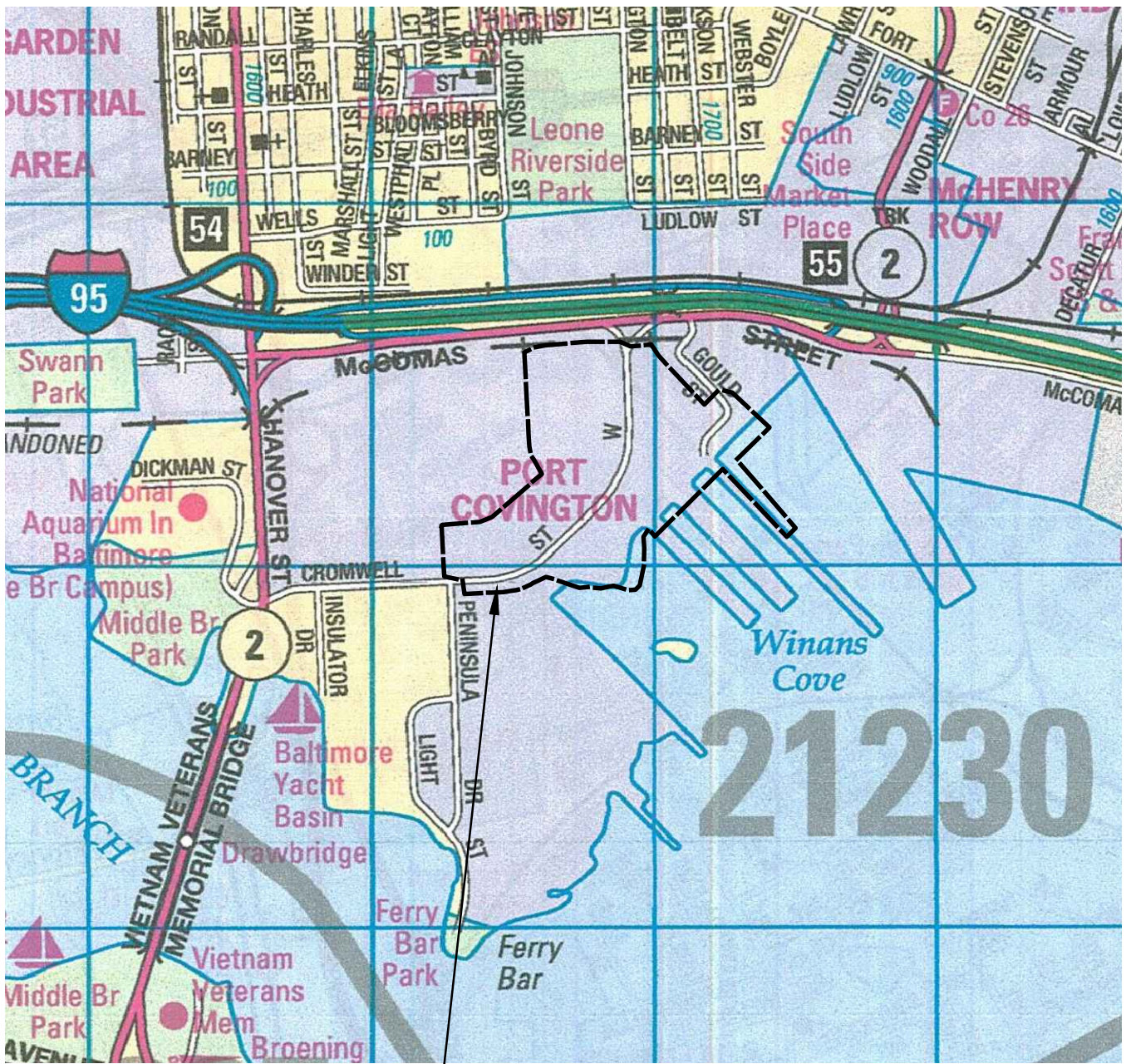
The Land Management Administration project manager will be notified in writing within five calendar days of the beginning of EMP implementation activities. Schedule updates will be provided as-needed, as part of the progress reports discussed in *Section 8.2*.

8.2 Documentation

During implementation of this EMP, GTA will prepare monthly EMP progress reports summarizing the remedial activities occurring during that month. These monthly progress reports will be submitted to the Client and to MDE to demonstrate implementation of this EMP. The monthly reports will be due to MDE by the 15th day of the month following the month covered by the report.

At the conclusion of the EMP implementation, GTA will prepare an *EMP Completion Report*, and a no further action letter (NFA) or other appropriate regulatory action will be requested.

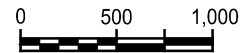
******* END OF REPORT *******



Approximate Subject Property Boundary

Notes

1. Map Copyright © ADC The Map People, (800) 829-6277
2. Permitted Use Number 21006238



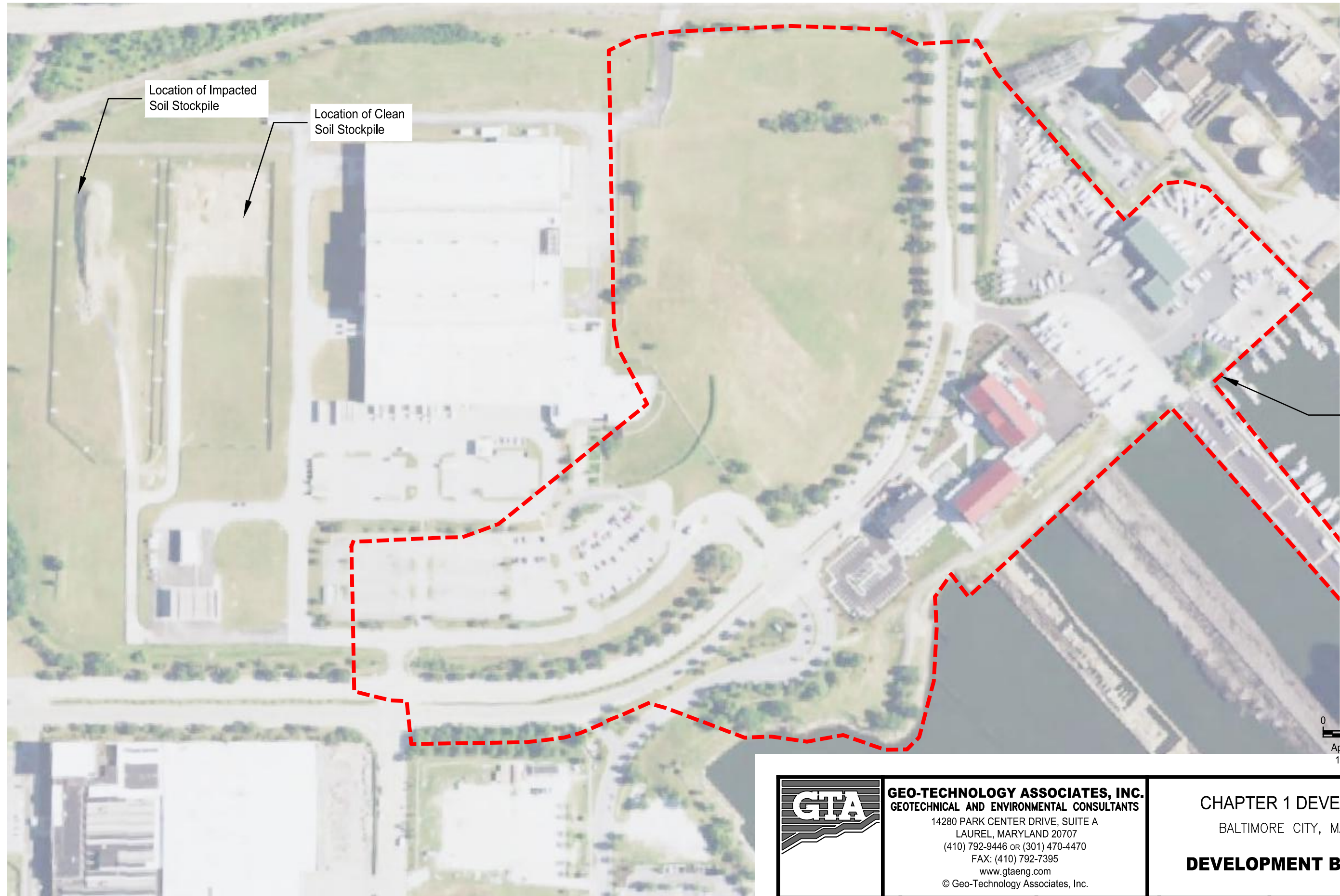
Approximate Scale
1 inch = 1,000 feet



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CHAPTER 1 DEVELOPMENT
 BALTIMORE, MARYLAND

SITE LOCATION MAP



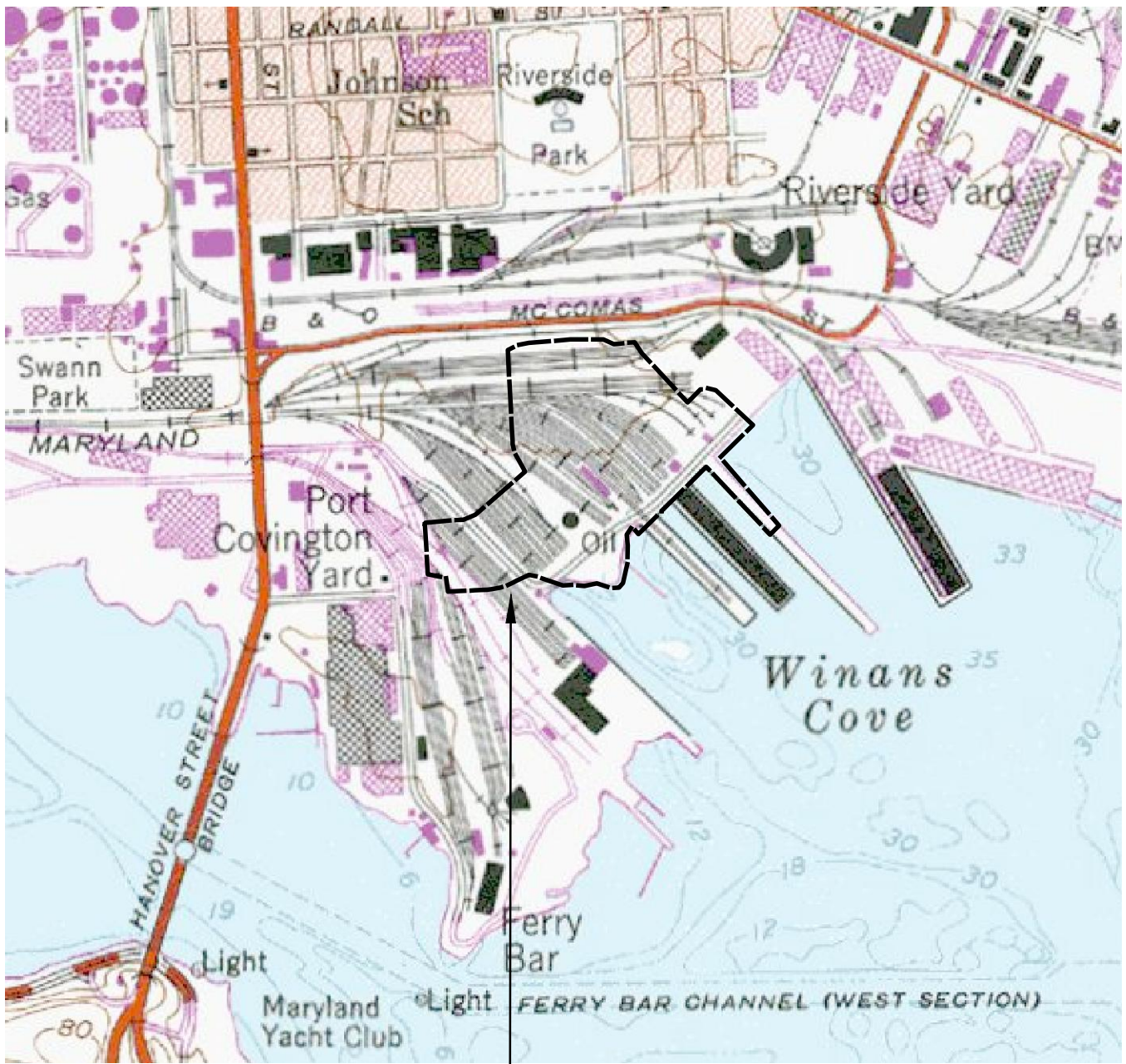
Approximate Subject Property Boundary

0 100 200
Approximate Scale
1 inch = 200 feet



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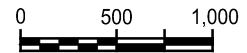
CHAPTER 1 DEVELOPMENT
BALTIMORE CITY, MARYLAND
DEVELOPMENT BOUNDARY



Approximate Subject
Property Boundary

Notes

1. Based on the USGS Baltimore East, MD 7.5 Minute Quadrangle Map.
2. Copyright 2013 MyTopo, Inc.



Approximate Scale
1 inch = 1,000 feet



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TOPOGRAPHIC MAP

PROJECT: 161714

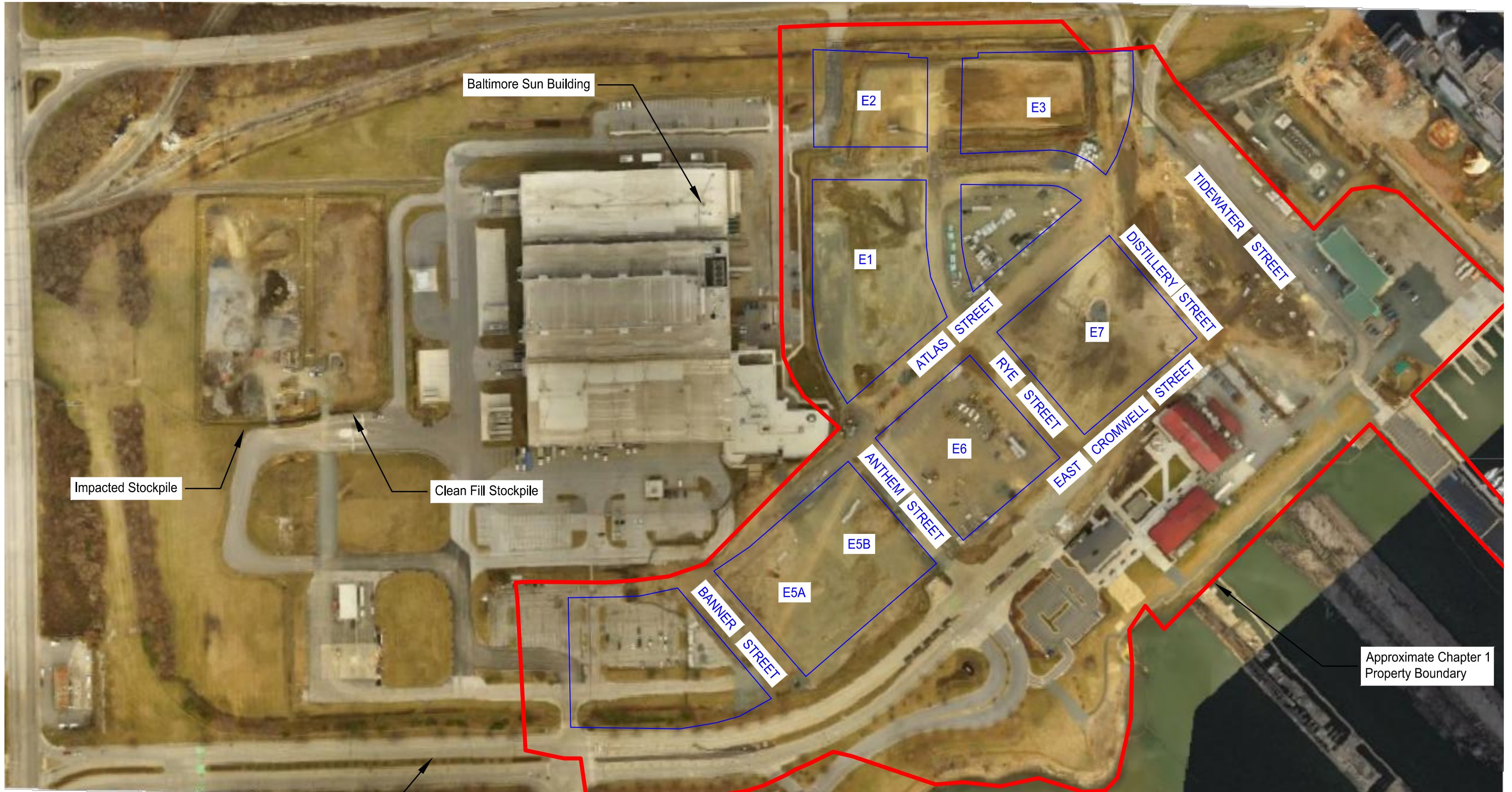
DATE: JULY 2018

SCALE: 1" = 1,000'

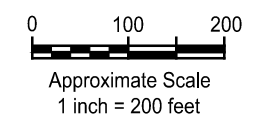
DESIGN BY: MDP

REVIEW BY: KBD

FIGURE: 3



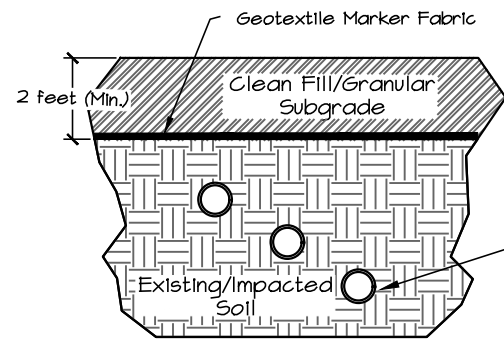
East Cromwell Street



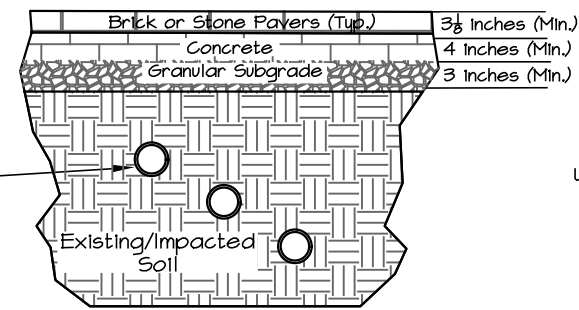
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CHAPTER 1 DEVELOPMENT
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PROPOSED SITE LAYOUT

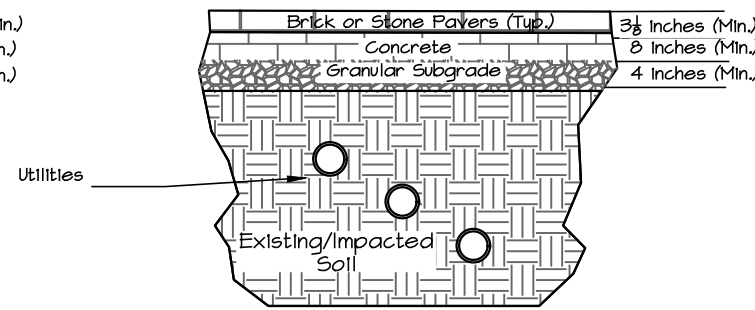
SUBJECT TO MINOR VARIATIONS. REFER TO FINAL CONSTRUCTION PACKAGE FOR APPROVED CONSTRUCTION DETAIL (TO BE PROVIDED).



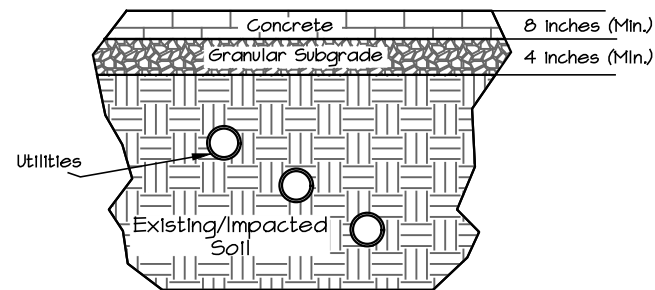
LANDSCAPED AREA (SOIL/STONE)
Typical Section



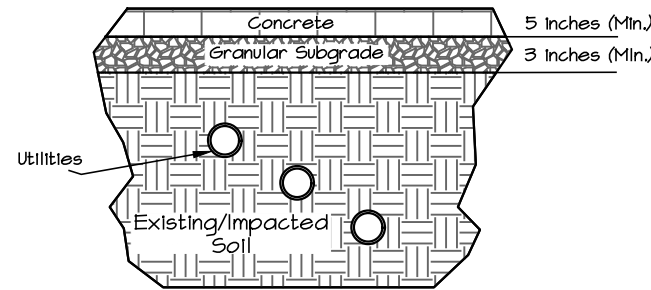
PAVER SIDEWALK (STABLE SOIL)
Typical Section



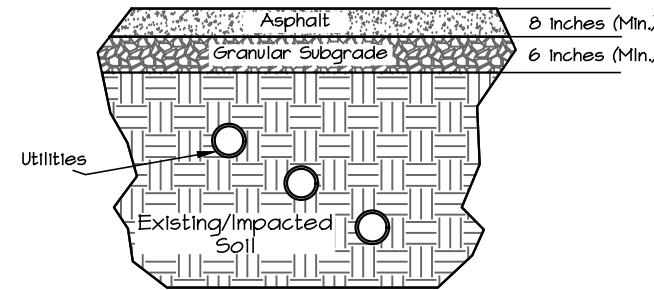
PAVER ROADWAY (STABLE SOIL)
Typical Section



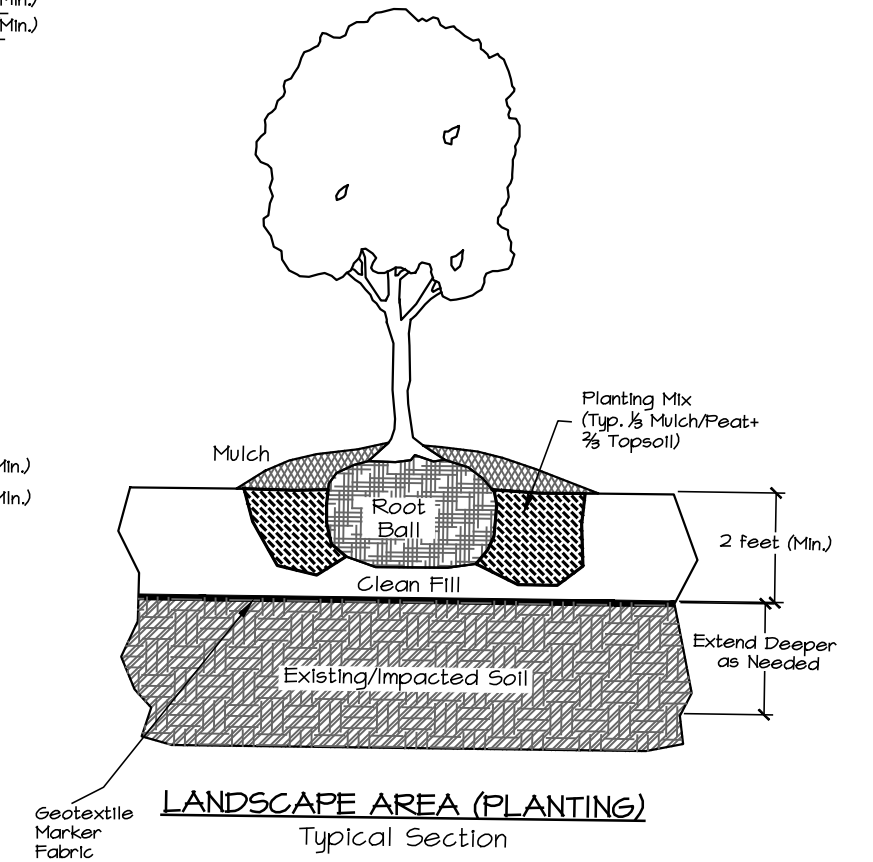
CONCRETE ROADWAY (STABLE SOIL)
Typical Section



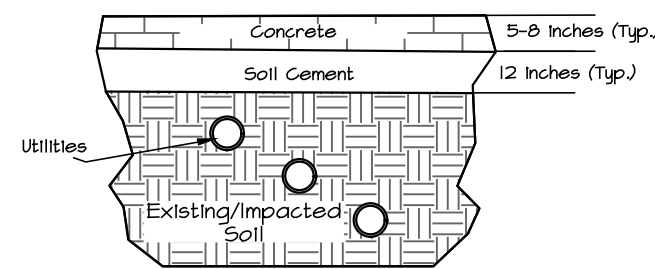
CONCRETE SIDEWALK (STABLE SOIL)
Typical Section



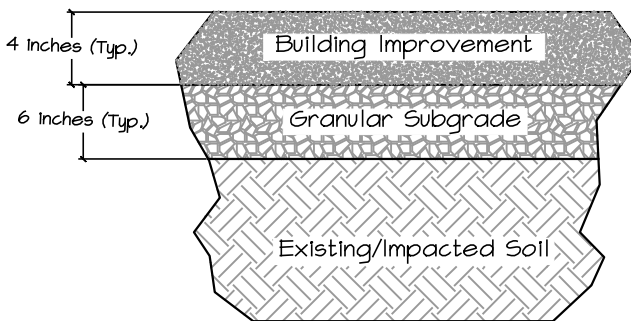
ASPHALT ROADWAY (STABLE SOIL)
Typical Section



LANDSCAPE AREA (PLANTING)
Typical Section



HARDESCAPED AREA (SOFT SOIL)
Typical Section



BUILDING SLAB
Typical Section

TABLE 1

MINIMUM PHYSICAL REQUIREMENTS FOR MARKER GEOTEXTILE

PROPERTY	UNITS	ACCEPTABLE VALUES	TEST METHOD
GRAB STRENGTH	LBS	160X160	ASTM D 4632
MULLEN BURST	PSI	350	ASTM D 3786
CBR PUNCTURE	LBS	75	ASTM D 4833
TRAPEZOID TEAR	LBS	75	ASTM D 4533
APPARENT OPENING SIZE	U.S. SIEVE	30	ASTM D 4751
PERMITTIVITY	SEC -1	0.05	ASTM D 4491
ULTRAVIOLET DEGRADATION	PERCENT	80 AT 500 HRS	ASTM D 4355

NOTES

1. DEPTH/WIDTH OF UTILITY TRENCH WILL VARY.
2. DETAILS ARE NOT FOR CONSTRUCTION.
3. DETAILS ARE PROVIDED FOR INFORMATIONAL PURPOSES ONLY AND ARE SUBJECT TO FINAL DESIGN.
4. GRANULAR SUBGRADE BENEATH ASPHALT/CONCRETE IS MDE-APPROVED CLEAN STONE/FILL.



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GENERAL CAPPING DETAILS