Cleanup Plan

Easton Iron and Metal

1100-1164 Bushkill Drive City of Easton, PA

May 1, 2025

Contents

Figures

Attachments

1 Introduction

HDR Engineering, Inc. (HDR) on behalf of the City of Easton is pleased to present this Cleanup Plan (CP) for the tracts associated with 1100-1164 Bushkill Drive City of Easton, Northampton County, Pennsylvania (Site). The CP details the remedial actions, engineering and institutional controls that are proposed to eliminate existing environmental exposure pathways associated with soil contamination on the Site and to demonstrate compliance with Section 250.404 and 250.410 of Pennsylvania's Land Recycling and Environmental Standards Act (Act 2) Regulations. The Site is proposed for redevelopment with mixed use properties consisting of an approximately 20,000 square feet of commercial space, ~200 residential units, and a trail connection to the Karl Stirner Arts Trail.

The City of Easton and Northampton County though a United States Environmental Protection Agency (UESPA) Cleanup Grant and Revolving Loan Fund will complete the needed actions to demonstrate attainment of the Site-Specific standard in pursuit of release of liability under Act 2

Site Location

The Site associated with the tracts is located within the Bushkill Creek Corridor (Corridor) at 1100-1164 Bushkill Drive in Easton, PA. The parcels referenced consist of two tracts of land totaling approximately 15 acres. (Figure **1)**. The northern tax tract identified on the Northampton County Geographic Information System (GIS) website is approximately 10.37 acres with Tract (Property) Identification Number (PIN) L9NE1 17 10 0310 and mailing addresses of 1100-1113 Bushkill Drive, Easton, PA. Geographic coordinates at the approximate center of the northern tract of the Site are 40.700673° North and -75.220648° West. Bushkill Drive separates the northern tract from the southern tract. The southern tract includes approximately four acres of land and is associated with the same PIN (L9NE1 17 10 0310). Geographic coordinates at the approximate center of the southern tract of the Site are 40.700029° North and -75.219080° West.

The northern tract is zoned Adaptive Reuse (AR), which is a zoning district designed to promote the redevelopment and revitalization of underutilized and underperforming areas of the city, the uses of which are industrial development, residential, institutional, and commercial. The southern tract is zoned as River Corridor (RC), a zoning district designed to accommodate appropriate development while providing for adequate protection and buffering of the city's waterways and other natural resources; assisting in flood management; protecting environmentally sensitive areas; and meeting the need for local and regional greenways, open space, and recreation within the city.

Currently, the Site is vacant, and historic structures are no longer present. Most of the Site is overgrown with vegetation. Fencing encompasses some areas on the northern and southern tracts, and temporary roadways have been constructed of recycled asphalt material. Public utilities are available for the Site. The Site is infrequently used for temporary laydown, stone stockpile and trailer storage

The Site is surrounded by a mix of residential, commercial, and public properties. Single family homes and apartment buildings are to the west, north, and east. East of the Site are Gil Machine & Tool Co Machine shop, WB Moore Biotechnology Company, and Pacific Pride fueling station. Directly east of the southern tract is Deiter Heating, the former location of Walters Tire and Oil Company and Sinclair Oil Refinery. Bushkill Creek, an accompanying trail (Karl Stirner Arts Trail), US Route 22, and the Easton Cemetery are to the south.

1.1 Previous Site Uses and Previous Cleanup/Remediation

The Site was the former location of a lime kiln facility, which operated from 1885 to approximately 1927. In 1927, the Site operated as Crew Levick Company Motor Oil Station, which included a rectangle-shaped building used to store oil barrels and four oil tanks. In 1949, the north tract of the Site was used as a scrap metal yard and filling station with three USTs along Bushkill Drive. In 1949, the southern tract was used as a junk yard. In 1958, both the northern tract and southern tract were developed with an auto repair garage and scrap metal yard. From 1958 to 2015, the Site operated as a scrap metal recycling business under the ownership of the Easton Iron & Metal Company. The scrap yard was serviced with rail during its operation.

1.2 Site Assessment Findings

Previous investigations include:

- Phase I ESA Report dated February 4, 2019 (HDR)
- Phase II ESA Report dated December 31, 2019 (HDR)
- Phase II ESA Report Addendum dated June 1, 2020 (HDR)
- Targeted Brownfields Assessment (TBA) – Phase II Environmental Site Assessment dated January 31, 2025 (Tetra Tech Inc.)

Findings for the reports identified above are listed by area of concern below, **Attachment A**:

- **Quarry Fill Area** ***(Northern Tract)***
  Arsenic was detected in soil samples at concentrations exceeding the Pennsylvania Department of Environmental Protection (PADEP) Medium Specific Concentrations (MSC) for direct contact (DC) in residential soil. Contaminants of concern in connection with the former Quarry Fill Area include metals (arsenic) and residual oil related compounds (benzo(a) pyrene).

- **Former Railroad and Railroad Spur Area** ***(Northern and Southern Tracts)***
  Heavy metals (lead) were detected exceeding a PADEP risk standards.

- **Historically Contaminated Fill Material** ***(Northern and Southern Tracts)***
  PCBs, heavy metals, and residual oils were detected in impacted fill material at concentrations exceeding the regulatory standards for direct contact and soil to groundwater pathways.

- **Former Waste Piles** ***(Northern Tract)***
  Analysis of the sample was limited to PCB and hexavalent chromium. Aroclors and PCB were detected in waste piles. PCB concentrations of 100 mg/kg were detected in surface soil of the waste piles, exceeding the regulatory standards. This sample was collected from the area of the eastern former waste pile. Contaminants of concern in connection with former waste piles fill include PCB, lead, and arsenic.

- **Historical Storage of Oil-Barrels and Oil Tanks allegedly by Crew Levick Co.** ***(Southern Tract)***
  Subsurface soil samples were collected and analyzed for petroleum products, solvents, PCBs, and metals plus mercury and were not detected at concentrations exceeding the regulatory standards.

- **Former Filling Station and Automotive Repair Facility** ***(Northern Tract)***
  Arsenic was detected in soil at the former filling station and automotive repair facility. Groundwater samples from monitoring well MW-1 in this area were collected and analyzed for petroleum products, solvents and residual oils and dissolved metals. Contaminants of concern in connection with the former filling station and automotive repair facility include arsenic in soil and dissolved iron, and manganese in groundwater.

- **Former Metal Scrap Yard Areas** ***(Northern and Southern Tracts)***
  The facility was historically operated as a scrap yard. Residual oils and heavy metals were detected in soil above regulatory standards.

- **Former Automobile Salvage Yard** ***(Southern Tract)***
  Former metal scrapyard areas included PCBs and heavy metals.

- **Leaking Pad Mounted Transformer Containing PCB** ***(Southern Tract)***
  PCBs and residual oils exceeded the regulatory standards in soil.

- **Area Of Former Potentially Leaking Drums** ***(Northern Tract)***
  Two separate areas of former potentially leaking drums on northern portion of the Site are in the southwest corner of the former filling station and automotive repair facility by the road (southwest), and the other approximately 100 feet northeast of the former filling station and automotive repair facility (northeast). PCBs, and heavy metals were detected in surface soil.

- **Battery Components in Soil** ***(Northern Tract)***
  Lead-acid battery components were identified in soil borings. Exceedances of lead were identified in the vicinity of battery components.

- **Former Sinclair Refining Co. & Walters Oil** ***(Offsite)***
  Located east of the southern Tract, the former Sinclair Refining Co. & Walters oil stored and distributed petroleum products. Samples were not collected as per EPA approval, however, petroleum products are a contaminant of concern on the property.

1.3 Site Remedy

The proposed future redeveloped of the Site includes; four mixed use buildings, parking areas, a parking garage, and a trail connection (the Foundry).

The VM Development Group's (VMDG) plan for the Foundry envisions the site being transformed into a $40M+ mixed-use community with approximately 20,000 square feet of commercial space and parking on the buildings' first floors, approximately 200 residential units on the upper floors, and unique architecture focused on the environment, science, recreation, sustainability, nature, and art.

The City of Easton and VMDG are planning a synergistic relationship between The Foundry and nearby R&H Simon Silk Mill (which was also redeveloped by VMDG) to further encourage commercial tenants to the Corridor creating jobs and helping foster new business owners and entrepreneurs. The Foundry will also further foster pedestrian connectivity in the Corridor by connecting the Karl Stirner Arts Trail to pedestrian facilities along Bushkill Drive through the Site.

In addition to new businesses, the residential units will establish new opportunities for community growth and will create indirect economic impacts in the form of disposable income being directed to local business.

2.0 List of Contacts

Owner: City of Easton **Representative:** John Kingsley **Title:** Director **Department:** Community and Economic Development **Phone Number:** 610-250-6719 **Email:** jkingsley@easton-pa.gov	**Remediator:** To be determined
Developer: VM Development Group, LLC **Representative:** Gretchen Rice **Phone Number:** 610-330-9800 x3 **Email:** GRice@VMDgrp.com	**Consultant** HDR Engineering, Inc. **Representative:** Vincent Carbone, PG **Title:** Senior Geologist/Project Manager **Phone Number:** D 610-807-5104, M 610-972-8223 **Email:** Vincent.carbone@hdrinc.com

2 Remedial Alternatives Evaluation

2.1 Remedial Alternative Options

The following remedial alternatives were generated based on the previous remedial investigations and planned development of the Site.

Alternative	Pros	Cons	Estimated Cost
1. Use a combination of capping, vapor barriers, and hot spot excavation to eliminate	• Eliminates Direct Contact and Soil to Groundwater pathways. • Most cost-effective option.	• The cap will need regular inspections and periodic maintenance. • Any planned disturbance would need to be managed by the Soil Management Plan.	• **$2,500,000** (Based on redesign using impervious cap and cover, landscaping and institutional controls.)

exposure pathways.		• Future use of the Site will rely on Engineering controls to maintain elimination of pathway exposure.	
2. Excavation of all impacted soil.	• Removes impacted soil and eliminates the need for engineering and institution controls. • No need for cap maintenance or inspections.	• Impacted soil may be within the water table and this alternative could potentially require excavation of saturated materials. • This would be the most expensive solution. Impacted soil is estimated to span approximately 435,600 square feet across the two tracts.	• **$10,000,000** (Based on estimated volume to remove scrap/soil mix to native soil.)
3. No Remediation on the Site and rely on natural attenuation to reduce contaminants over time.	• Least expensive.	• The Site will likely sit undeveloped, and contaminants will remain for extended periods of time through natural attenuation. • Will require decades of monitoring to resolve residual impacts to soil. • Metals and scrap material will not be removed maintaining potential source areas.	• **$100,000/yr** (Based on maintenance and security of the properties indefinitely.)

2.2 Recommended Remedial Alternative

The recommended remedial alternative for the Site is Option 1 in **Section 2.1** above. This is the preferred alternative as it eliminates the current exposure pathways, ensures the Site will be adequately remediated as per the Site-Specific Standard based on the factors set forth in Section 304(j) of Act 2., and is the most cost-effective alternative. Hot Spot Excavation is detailed in **Section 2.2.1** below and details of the Engineered control are described in **Section 5.0** of this CP. If future redevelopment plans change, then the remediation alternatives will be reevaluated.

3 Treatability Studies

Treatability studies were not completed as part of this CP or previous investigations and reporting efforts as treatment is not being proposed for remediation.

4 Design Plans and Specifications

4.1 Hot Spot Excavation

Three areas as shown on **Attachment A** indicate the hot spots that will be excavated in conjunction with redevelopment activities. Two hot spots are located on the northern tract and are associated with the following areas and contaminants of concern:

- Former leaking drum area- Total PCBs and lead
- Former scrap metal/acid battery storage/ and former waste pile storage area- Antimony, arsenic, iron, lead, mercury, and zinc

The total area in the northern tract to be excavated is estimated to be 337 cubic yards. One hot spot are located on the southern tract and are associated with the following areas and contaminants of concern:

- Former PCB transformer storage area- No samples collected, assumed PCBs
- Former scrap metal area- Total PCBs, Iron, Lead, Manganese, and Mercury.

The total areas in the southern tract for exaction is estimated to be1,450 cubic yards.

The areas will be excavated to a minimum of 3.5 feet below ground surface (bgs). Prior to excavation waste profile samples will be collected for disposal purposes based on the volume estimated for disposal. Once a disposal location has been identified, excavation will begin, and material will be directly loaded into lined (if necessary) dump trucks and hauled to the approved landfill. A copy of all manifests will be retained for documentation purposes.

Post excavation samples will be collected to confirm removal of the contaminated material. The 75/10x rule will be utilized to demonstrate attainment. The 75/10x rule states that a minimum of 75% of the samples will not exceed the applicable PADEP Non-residential standard nor will one sample exceed the standard by greater than 10 times. Once contaminated material is appropriately removed the areas will be backfilled with 2A modified stone in support of redevelopment activities. The areas will then be capped as per the Engineering design plans in **Attachment B**.

4.2 Engineering Controls

Pathway elimination for direct contact, soil to groundwater leaching, and vapor migration to indoor air will be accomplished by the controls described in this section in addition to the site use restrictions discussed in **Section 5.2**. The proposed engineering controls are included as **Attachment B**.

4.2.1 Vapor Retardant and Passive Vapor Control System

A passive vapor control system will minimize the potential for volatile organic vapors, that have been identified in subsurface soils underlying the Site, from migrating into the proposed buildings.

The passive vapor control system will consist of the following:

- 4 inch-Reinforced Concrete floor
- Three inches of a compacted 2A stone subbase
- Minimum of 10-mil Vapor Barrier Membrane- composite barrier designed to eliminate organic permeation
- Two cushion layers of eight-ounce geotextile fabric to protect the vapor barrier integrity

Vapor Barrier System details are provided in the below sections.

4.2.1.1 VAPOR BARRIER MEMBRANE

A polymer membrane will be installed beneath the concrete slab of the proposed building. The membrane will meet or exceed the criteria established in ASTM E1745, Standard Specification for Plastic Water Vapor Retarders used in Contact with Soil or Granular Fill under Concrete Slabs.

The membrane will be selected for its resistance to degradation from petroleum hydrocarbon constituents in the sub-surface. The vapor barrier will be installed directly beneath the concrete slab. Since the integrity of the membrane is critical to vapor permeation mitigation a layer of geotextile fabric will be placed below the vapor barrier to protect it from puncture during construction. Penetrations of the membrane for pipes and foundations will be sealed with materials (boots and/or tape) in accordance with the manufacture recommendations. To ensure compliance with manufacturer installation specifications, all membrane installation activities will be overseen by a qualified membrane installer. **Attachment C** presents a typical cross-section of the vapor barrier system and provides design details for sealing potential vapor entry points (seams, penetrations, and wall joints).

4.2.1.2 CUSHION LAYER

Two 8-ounce non-woven, needle punched (NWNP) geotextile fabric will be placed above and below the vapor barrier to protect it from puncture during construction. The cushion layer will be installed consistent with manufacturer recommendations.

4.2.2 Proposed Slab on Grade Buildings

One slab on grade mixed use building with an area of approximately 25,000 square feet each, will be constructed on the northern tract. The concrete slabs will consist of a minimum of 4-inches of air-entrained concrete with steel wire mesh reinforcement, underlain by the proposed vapor barrier discussed in Section 4.1.1 placed over compacted subgrade.

One slab on grade mixed use building with an area of approximately 23,000 square feet each, will be constructed on the southern tract. The concrete slabs will consist of 4-inches of air-entrained concrete with steel wire mesh reinforcement, underlain by 6-inches of 2A modified crushed aggregate (no slag), placed over compacted subgrade.

4.2.3 Proposed Asphalt Pavement Areas

Asphalt parking lots and driveways will be constructed to the north and east of the buildings on the northern tract as well at the eastern, western and southeastern areas of the southern tract. Asphalt pavement will consist of 1 ½-inches of Superpave asphalt mixture wearing course, underlain by a 2-inch binder course, underlain by 6-inches of 2A aggregate subbase, placed over a geotextile demarcation fabric and compacted subgrade. The geotextile fabric will act as a warning barrier during any future earth disturbances. A typical cross-section of the proposed caps are included as Attachment C.

4.2.4 Landscaped Areas

Areas not paved or under a slab on grade foundation will be landscaped with grass, shrubs, and/or trees. These caps will include one foot of clean fill and a geotextile demarcation fabric prior to final landscaping. The geotextile fabric will act as a warning barrier during any future earth disturbances. Elevation measurements will be collected by a Pennsylvania Licensed Surveyor prior to and following the installation of the clean fill to document that the appropriate thickness of clean fill is placed. A recreational trail will be included in the edge of the landscaping for public access and will consist of 2-4 inches of bituminous pavement with a 4 inch 2A aggregate subbase.

4.3 Site Use Restrictions

Deed restrictions will be used to control future use of the Site, groundwater underlying the Site, and subsurface activities. These restrictions are as follows:

I. In no event shall the Site or any part thereof be used for any of the following purposes:
   - Single family or multifamily grade level dwellings or otherwise as a residence or dwelling quarters, constructed on the base floor, for any person or persons;
   - Camp grounds;
   - Daycare centers, nurseries, kindergartens, elementary and secondary schools, vocational or technical schools, or similar facilities;
   - Hospitals, nursing homes, shelters, group homes, or similar facilities;
   - Cemeteries; and
   - The planting and raising of plants for crops for human consumption.

II. Any digging, excavating, grading, pile driving or other earth moving activities shall be conducted at the Site or any part thereof including, without limitation, the excavation or removal of asphalt, concrete, soil or other ground cover and foundations and the digging of foundations for buildings and trenches for utilities, in compliance with all applicable federal, state and local rules, regulations and ordinances including, without limitation those pertaining to the environment and those pertaining to human health and occupational safety, and in compliance with the post remediation care plan or Soil Management Plan (SMP) approved by the PADEP and/or the USEPA as part of a Cleanup Plan.

III. Without limiting the generality of the foregoing if any asphalt, concrete, soil or other ground cover is excavated or removed from any part of the Site, such materials shall be stored, managed, transported, and disposed of in compliance with the Soil Management Plan approved by the PADEP and/or the USEPA as part of a Cleanup Plan.

IV. Groundwater underlying the property or any part thereof shall not be used for any purpose and no wells for the extraction thereof shall be installed, permitted or utilized on the Site or any part thereof; provided, however, monitoring wells may be installed and operated on the property by Seller, its successors and assigns solely for the purpose of monitoring, treating and remediation of such groundwater.

5 Post Remediation Care Plan

5.1 Construction Phase

To ensure appropriate controls are in place to prevent the runoff of impacted soil and/or residual materials the Site will be inspected by the Lot's owner, or their designated representative, on a routine basis for erosion and/or damage during the construction phase of the project. Additionally, the Site will be inspected annually for accidental or planned disturbance that require repair and/or restoration. The schedule of these inspections will depend on the level of construction activity, the level of storm water runoff, and other factors that may affect the integrity of the proposed cap. Inspections will document onsite erosion occurring at the Site and/or damage to the cap being installed and identify the corrective actions taken to mitigate the condition, e.g., replace soil and reseed, install erosion controls. Inspection reports will be maintained on file within the Site facility and one copy will be forwarded to the central office of the Northeast Regional office of PADEP.

Inspections will be replaced by the protocols specified in the SMP upon completion of construction. The SMP identifies the procedures to be followed when breaches to the cap occur, whether accidental or planned. The owner of the Site at that time will be responsible for adhering to the procedures and protocols set forth on the SMP.

5.2 Post-Construction Phase

Annual Cap Inspection

To ensure the integrity of engineering controls, the capped areas will be inspected by the owner, or designated representative, for damage to the cap on an annual basis. Inspections will document any damage to the cap and identify the corrective actions taken to mitigate the conditions. Corrective actions involving the repair/replacement of the engineering controls shall be performed in accordance with the SMP, which details procedures for material management and cap replacement. Inspection reports will be maintained on file within the Site facility and a copy will be forwarded to the Central and Northeast Regional office of PADEP. A Generic Cap Inspection Form is included as **Attachment** E of this report.

Planned Cap Disturbances

Future development and/or maintenance activities performed on the property may require existing engineering controls to be temporarily disturbed or removed. Procedures set forth in the SMP shall be followed by any parties that perform the work. As such, any engineering control that is disturbed or removed must be replaced with the same engineering control or another approved engineering control as described in the Cleanup Plan. If replacing the engineering control is not desired, the owner will characterize regulated substances in the soils/materials beneath the removed engineering control and manage or remediate those soils/materials in accordance with Act 2 and all applicable laws and regulations. The material management procedures cited in the SMP will be required at all times when conducting any intrusive activities that breach capped areas.

Institutional Controls

To ensure ongoing compliance with the Act 2 Site-Specific Standard, institutional controls have been recorded in the deed for the subject property. Details of the institutional controls are presented in **Section 4.2** above. Furthermore, environmental covenants are referenced in the deed for the property. The deed and environmental covenant will be submitted under separate covers.

5.3 Operation and Maintenance of the Vapor Mitigation System

5.3.1 System Verification

Post-construction sampling will be indoor air sampling to verify the operational effectiveness of the vapor control system. The following procedures will be employed to collect and analyze the samples:

1. Directly following the completion of construction of the primary structural building components, but prior to interior build out, or habitation the owner's representative will collect air samples from the interior of the buildings to determine the effectiveness of the vapor controls. One indoor air sample from the building. The indoor air will be analyzed for TCE, EPA method TO-15-SIM.

2. The analytical results of the indoor air samples will be compared to the PADEP SVIA. If there are no exceedances of these criteria, construction will proceed. If the indoor air samples exceed the SVIA, potential background vapor sources will be evaluated and removed if present. An Indoor air sample will then be recollected within two weeks, where necessary. If the resample results do not exceed the SVIA, construction will proceed If the recollected sample results exceed the action levels, construction will proceed, and a system upgrade may be recommended.

3. A report will be prepared and submitted to PADEP detailing the analytical results of the indoor air samples. The results for the COCs will be compared to the PADEP SVIA listed in Table 5 of the VI Technical Guidance Manual. Should established action levels be

exceeded an appropriate response action will be developed using the decision matrix and recommended to the PADEP.

5.3.2 Annual Inspection

5.3.2.1 PASSIVE VAPOR CONTROL SYSTEM

On an annual basis the owner or owners representative will inspect the building's foundation for cracks, depressions or other unconformities that may allow preferential pathways into the building. If identified the repair will be noted and maintained in the record.

5.3.3 Record Keeping and Reporting

Inspection reports for the annual inspections will be maintained on file within the Site facility and a copy will be forwarded to the northeast office of the PADEP upon request.

6 Cooperation or Agreement of Third Party

The City of Easton upon approval of this Cleanup Plan agrees to provide access to the property(ies) as described in this Cleanup Plan as the Site, under the current address of 1100-1164 Bushkill Drive, in Easton Pennsylvania, for the purpose of remediation and/or monitoring to the designated remediator and consultant. The designated remediator and/or consultant may be assigned by the owner of the property and or PADEP.

_____

City of Easton
Name: _____
Title: _____

Date: _____

7 Public Comments

On January 10, 2022, a Notice of Intent to remediate (NIR) was published in the Express Times (Easton, Pennsylvania) and was provided to the local municipality on January 5, 2022. The NIR was submitted to the PADEP on January 14, 2022. In accordance with Act 2 regulations, the municipality was provided with a 30-day comment period and an opportunity to be involved in the development of the remediation and reuse plans for the property. Requests for involvement were not received as a result of these notices; therefore, a public-involvement plan was not required. The public notification regarding the submission of this Cleanup Plan was published on July XX, 202X. Municipal notification was provided to the City of Easton on July XX, 202X. Proof of public and municipal notification is included in **Attachment F**.

A Community Relations Plan (CRP) was developed as part of the Cleanup Grant and the EPA Brownfield Cleanup Revolving Loan Fund (RLF) Grant awarded to the City of Easton for the Site. The CRP establishes procedures that allows the public and stakeholders to participate in

the cleanup planning process and improve the public's understanding and participation in the cleanup and redevelopment process.

8 Signatures

Qualified Environmental Professional	Quality Control / Quality Assurance
Chelsea Tarbell, PG	Vincent Carbone, PG
Geologist	Senior Geologist/Program Manager

Professional Engineer

Brandon Walker, PE

8.1 Qualifications of Environmental Professionals

This Cleanup Plan was prepared by the following HDR personnel:

Ms. Chelsea Tarbell, a geologist at HDR with 8 years of experience in the completion of environmental due diligence and liability activities. She has a B.A. in Geology from the University of Minnesota, Morris and is a licensed professional geologist in the state of Pennsylvania. Ms. Tarbell is experienced in the completion of large-scale environmental due diligence assessments including multi-township wide remediation investigations. Ms. Tarbell has been the technical lead on several environmental projects within the power, transportation, and industrial sectors across the United States. Her experience also encompasses ASTM 1527E-21 Phase I and Phase II assessments, emerging contaminants, remedial investigations, geophysical studies, hydrogeologic studies, interim remedial measures, site management, and operations, maintenance, and monitoring.

Mr. Brandon Walker has 22 years of experience in with a specialization in design of erosion and sediment control plans and stormwater management facilities associated with industrial and energy projects. Mr. Walker manages the Industrial Section for HDR's PA/WV/OH/DE offices, where he leads a group of civil and mechanical engineers and designers. Prior to joining HDR, Brandon was a manager of an oil and gas engineering group in the Pittsburgh, Pennsylvania area and a project manager and lead engineer for several cross-country natural gas and liquids pipelines. He has performed civil and water resource design on small and large-scale projects

and successfully designed wetland mitigation and stream restoration projects. Brandon's additional experience includes preparing site grading for various types of facilities including compressor stations, Marcellus Shale well and brine injection well pads, beneficial use landfills, wind turbine power generation facilities, and clean waste fill disposal sites. He has prepared numerous types of earth disturbance permit applications for industrial, natural gas utility pipelines and compressor stations, plant wastewater discharge pipelines, and overhead transmission lines throughout the east coast and midwestern united states.

Quality Assurance / Quality Control was performed by the following HDR Personnel:

Mr. Vincent Carbone is a senior geologist and Professional Associate at HDR with over 33 years of experience in the completion of environmental due diligence, liability, and risk management activities. Mr. Carbone is the Due Diligence Technical Service Lead for HDR having performed numerous environmental due diligence assessments and reviews in the United States and Canada. Mr. Carbone is experienced in the completion of large-scale renewable power due diligence assessments including wind and solar facilities as large as 40 square miles. Mr. Carbone as has completed many corridor due diligence assessments for transportation, power, and oil and gas clients. Mr. Carbone has also performed environmental due diligence on several large brownfield redevelopment projects throughout the United States. Mr. Carbone has been the environmental manager for several complex decommissioning projects for several prominent utility companies including coal, combustion turbine, combined cycle and hydroelectric facilities in the United States and Canada. His experience also encompasses ASTM 1527E-21 Phase I and Phase II assessments, remedial investigations, geophysical studies, feasibility studies, interim remedial measures, site management, and operations, maintenance, and monitoring. Mr. Carbone is responsible for the geologic and hydrogeologic interpretation of geology and hydrogeology projects.

LEGEND

Parcel Boundaries

North Parcel

South Parcel

0 Miles 0.2

Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

SITE MAP

1100 BUSHKILL DR, EASTON PA

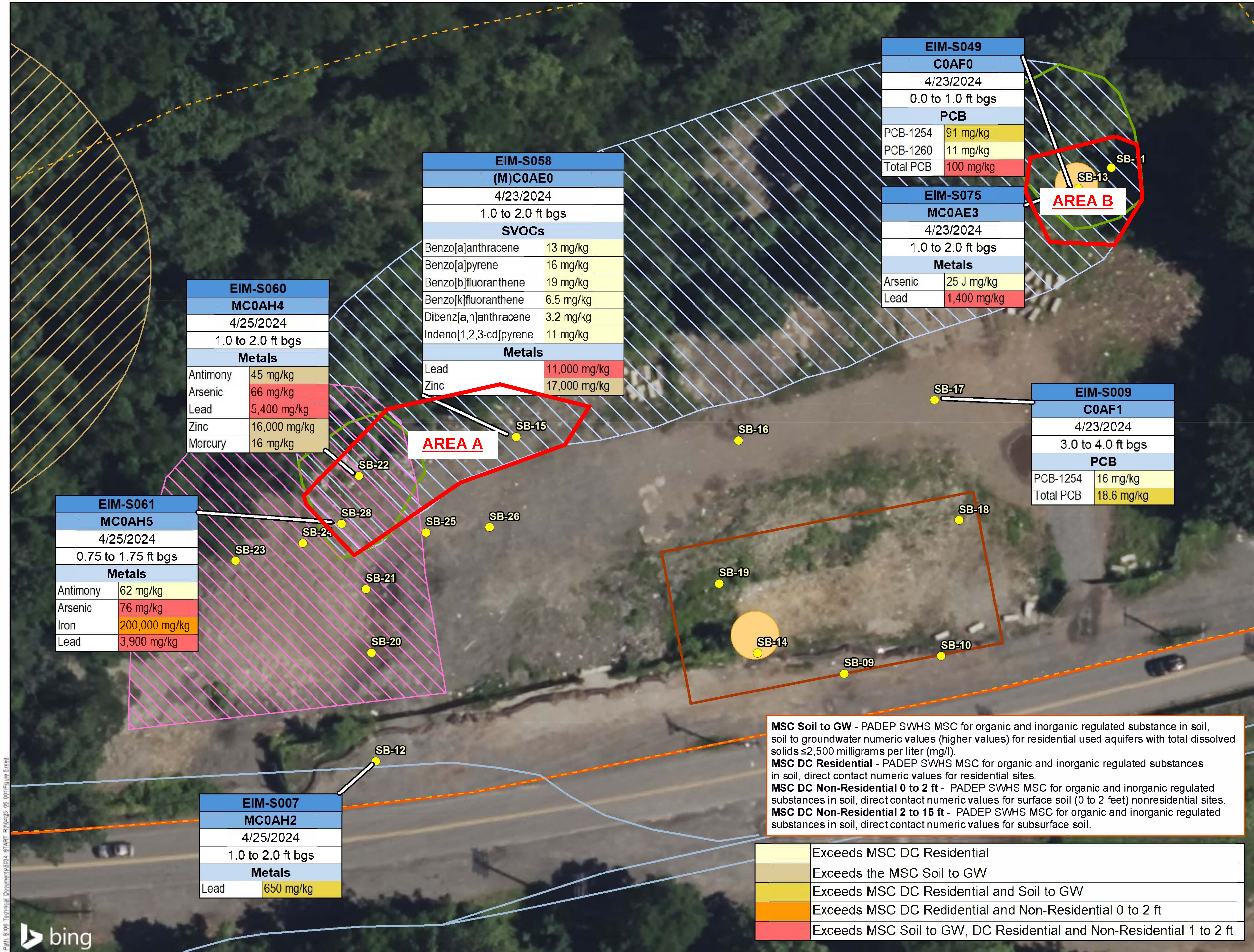
FIGURE 1

EASTON IRON AND METAL

PATH: G:\JOBS\EIM\GIS\MAP_DOC\EIM_NOVEMBER2019_FIGS\FIG1_SITEMAP.MXD - USER: CTARBELL - DATE: 3/12/2020

A

Areas of Concern and Hot Spots for Excavation



EIM-S049	
C0AF0	
4/23/2024	
0.0 to 1.0 ft bgs	
PCB	
PCB-1254	91 mg/kg
PCB-1260	11 mg/kg
Total PCB	100 mg/kg

EIM-S075	
MC0AE3	
4/23/2024	
1.0 to 2.0 ft bgs	
Metals	
Arsenic	25 J mg/kg
Lead	1,400 mg/kg

EIM-S058	
(M)C0AE0	
4/23/2024	
1.0 to 2.0 ft bgs	
SVOCs	
Benzo[a]anthracene	13 mg/kg
Benzo[a]pyrene	16 mg/kg
Benzo[b]fluoranthene	19 mg/kg
Benzo[k]fluoranthene	6.5 mg/kg
Dibenz[a,h]anthracene	3.2 mg/kg
Indeno[1,2,3-cd]pyrene	11 mg/kg
Metals	
Lead	11,000 mg/kg
Zinc	17,000 mg/kg

EIM-S060	
MC0AH4	
4/25/2024	
1.0 to 2.0 ft bgs	
Metals	
Antimony	45 mg/kg
Arsenic	66 mg/kg
Lead	5,400 mg/kg
Zinc	16,000 mg/kg
Mercury	16 mg/kg

EIM-S061	
MC0AH5	
4/25/2024	
0.75 to 1.75 ft bgs	
Metals	
Antimony	62 mg/kg
Arsenic	76 mg/kg
Iron	200,000 mg/kg
Lead	3,900 mg/kg

EIM-S009	
C0AF1	
4/23/2024	
3.0 to 4.0 ft bgs	
PCB	
PCB-1254	16 mg/kg
Total PCB	18.6 mg/kg

EIM-S007	
MC0AH2	
4/25/2024	
1.0 to 2.0 ft bgs	
Metals	
Lead	650 mg/kg

bgs = Below ground surface
EIM = Easton Iron and Metal
FT=FEET
GW - Groundwater
J = Estimated concentration qualifier
mg/kg = Milligrams per kilogram
MSC - Medium Specific Concentrations
PADEP - Pennsylvania Department of Environmental Protection
PCB - Chlorinated biphenyls
SWHS - Statewide Health Standards

MSC Soil to GW - PADEP SWHS MSC for organic and inorganic regulated substance in soil, soil to groundwater numeric values (higher values) for residential used aquifers with total dissolved solids ≤2,500 milligrams per liter (mg/l).
MSC DC Residential - PADEP SWHS MSC for organic and inorganic regulated substances in soil, direct contact numeric values for residential sites.
MSC DC Non-Residential 0 to 2 ft - PADEP SWHS MSC for organic and inorganic regulated substances in soil, direct contact numeric values for surface soil (0 to 2 feet) nonresidential sites.
MSC DC Non-Residential 2 to 15 ft - PADEP SWHS MSC for organic and inorganic regulated substances in soil, direct contact numeric values for subsurface soil.

(light yellow)	Exceeds MSC DC Residential
(tan)	Exceeds the MSC Soil to GW
(yellow)	Exceeds MSC DC Residential and Soil to GW
(orange)	Exceeds MSC DC Redidential and Non-Residential 0 to 2 ft
(red)	Exceeds MSC Soil to GW, DC Residential and Non-Residential 1 to 2 ft

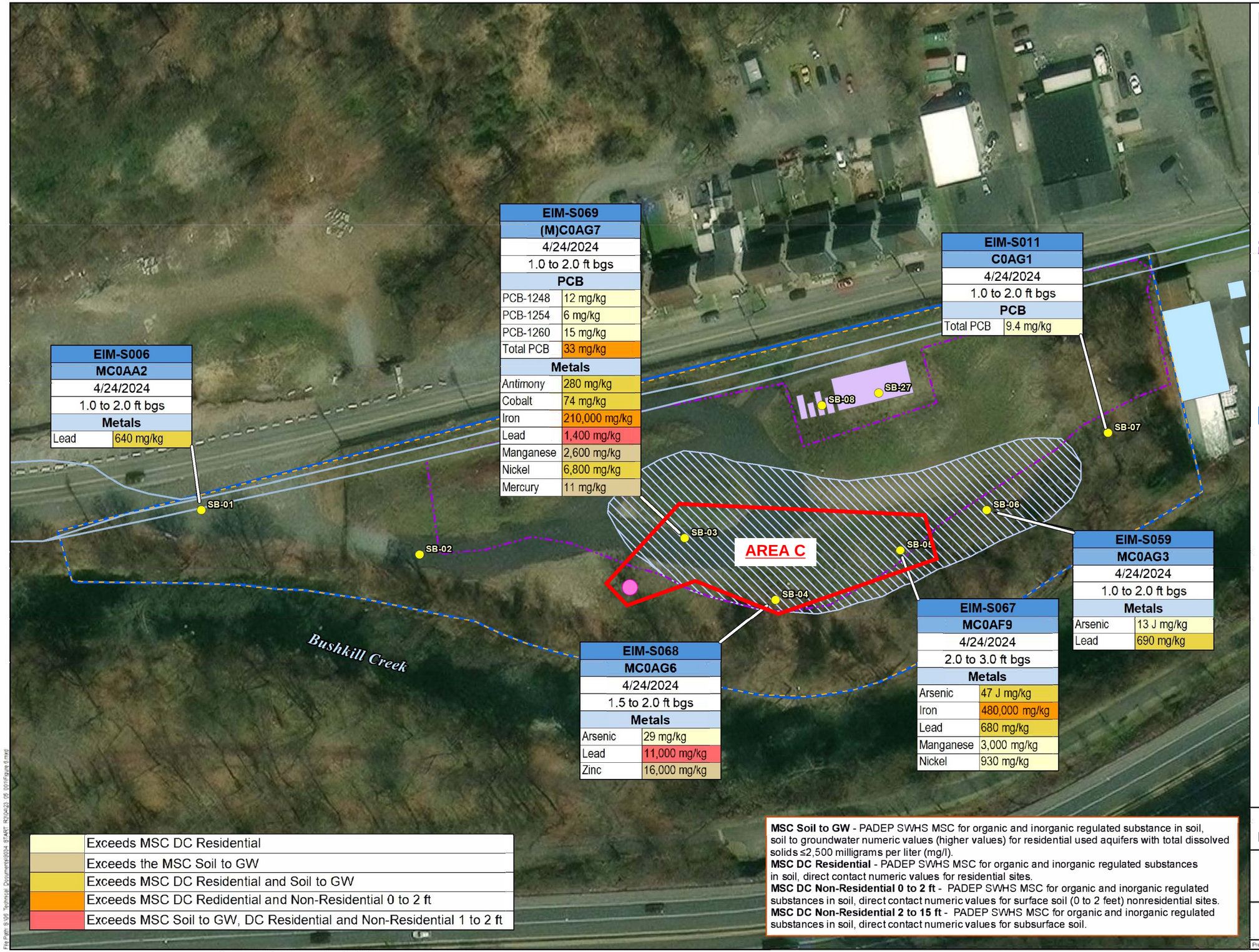
Easton Iron and Metal Phase II ESA
Easton, Northampton County, Pennsylvania

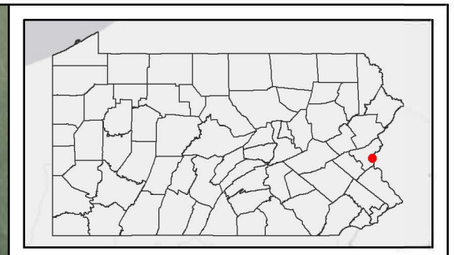
Figure 5
Soil Boring Locations With Detections Exceeding PADEP SWHS - North Parcel

TETRA TECH

Prepared For: EPA START R3 VI | Prepared By: K. Orzada

Date Saved: 01/30/25 EPA Contract No: 68HE0320D0003 TD No: T604-23-05-001 Source: Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community
Coordinate System: NAD 1983 2011 StatePlane Pennsylvania South FIPS 3702 Ft US





Soil Boring Location
Former Railroad & Railroad Spur
Leaking Pad-Mounted Transformer Containing PCB
Former Automotive Salvage Yard
Former Metal Scrap Yard Areas
Historical Contaminated Fill Material / Asbestos-Containing Material in Fill
Historical Storage of Oil Barrels and Oil Tanks by Crew Levick Co.
Off-Site Former Sinclair Refining Co. & Walters Oil/Walters Oil Inc. & Walter Oil Division
South Parcel of Site

bgs = Below ground surface
EIM = Easton Iron and Metal
FT=FEET
GW - Groundwater
J = Estimated concentration qualifier
mg/kg = Milligrams per kilogram
MSC - Medium Specific Concentrations
PADEP - Pennsylvania Department of Environmental Protection
PCB - Chlorinated biphenyls
SWHS - Statewide Health Standards

N
40 0 40
Feet

MSC Soil to GW - PADEP SWHS MSC for organic and inorganic regulated substance in soil, soil to groundwater numeric values (higher values) for residential used aquifers with total dissolved solids ≤2,500 milligrams per liter (mg/l).
MSC DC Residential - PADEP SWHS MSC for organic and inorganic regulated substances in soil, direct contact numeric values for residential sites.
MSC DC Non-Residential 0 to 2 ft - PADEP SWHS MSC for organic and inorganic regulated substances in soil, direct contact numeric values for surface soil (0 to 2 feet) nonresidential sites.
MSC DC Non-Residential 2 to 15 ft - PADEP SWHS MSC for organic and inorganic regulated substances in soil, direct contact numeric values for subsurface soil.

Easton Iron and Metal Phase II ESA
Easton, Northampton County, Pennsylvania

Figure 6
Soil Boring Locations With Detections Exceeding PADEP SWHS - South Parcel

TETRA TECH

Prepared For: EPA START R3 VI | Prepared By: K. Grzesik

Coordinate System: NAD 1983 2011 StatePlane Pennsylvania South FIPS 3702 Ft US

B

Engineering Design Plans

LAND DEVELOPMENT
1111 BUSHKILL DRIVE
EASTON, PA

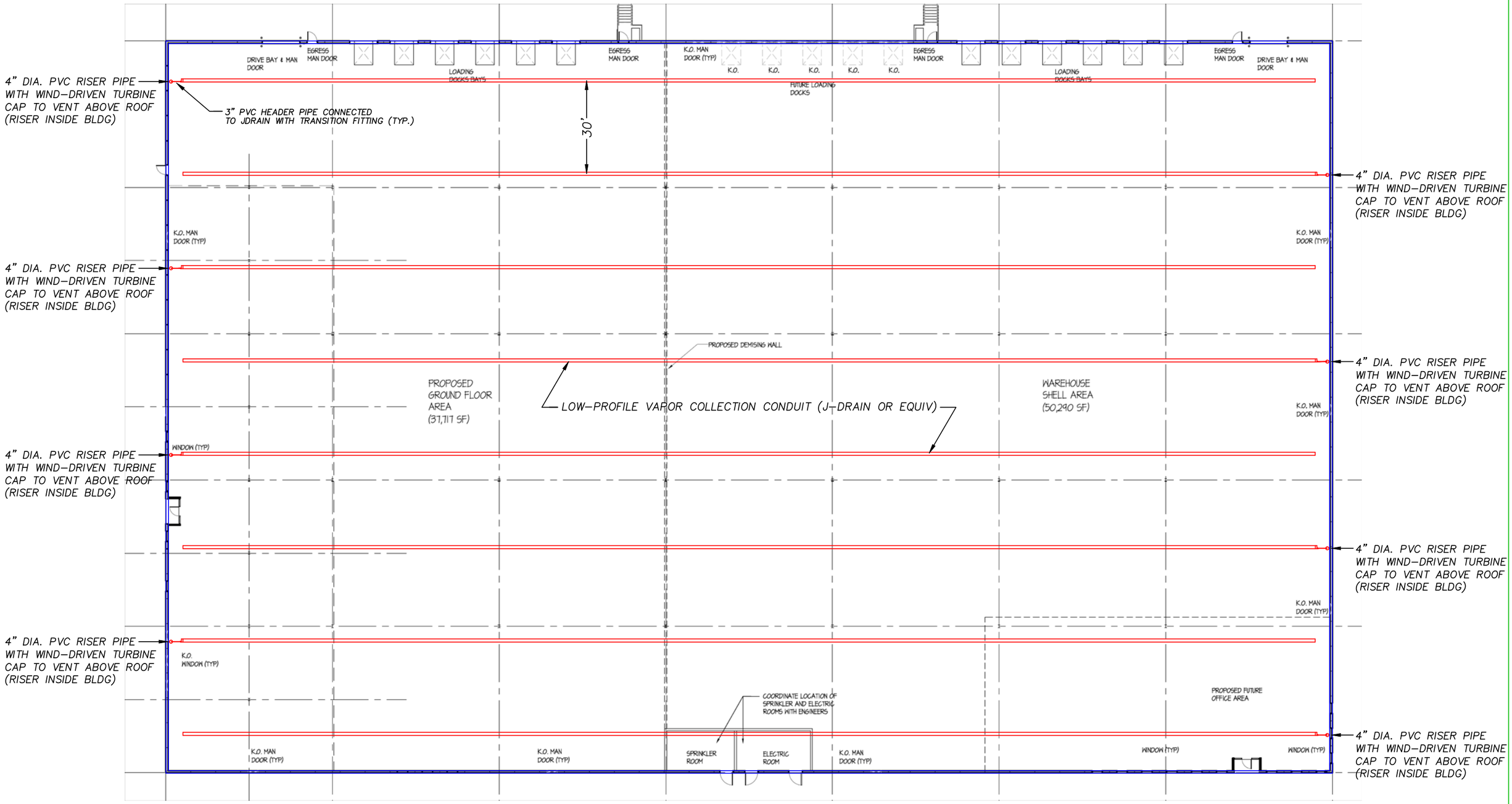
SITE PLAN

PLAN
SCALE: 1" = 50'
04-15-25

NORTH STAR
Construction Management Inc.
SUITE 208 ● 645 W HAMILTON ST ● ALLENTOWN PA 18101

C

Typical Cross-Section of the Vapor Barrier System



LEGEND

= LOW-PROFILE SUB-SLAB VAPOR COLLECTION PIPING (J-DRAIN OR EQUIVALENT)

NOTES:

SITE MAP DERIVED FROM DIGITIZED FLOOR PLAN PREPARED BY CERMINARA ARCHITECT DATED MARCH 6, 2019.
SCALE IS APPROXIMATE AS THIS SITE PLAN IS INTENDED FOR ILLUSTRATIVE PURPOSES ONLY.
TO CONVERT TO ACTIVE SYSTEM (IF NECESSARY) REPLACE WIND-DRIVEN TURBINE CAPS WITH POWERED IN-LINE FAN UNITS. FAN UNIT TO BE INSTALLED ON VENT RISER ABOVE ROOF.

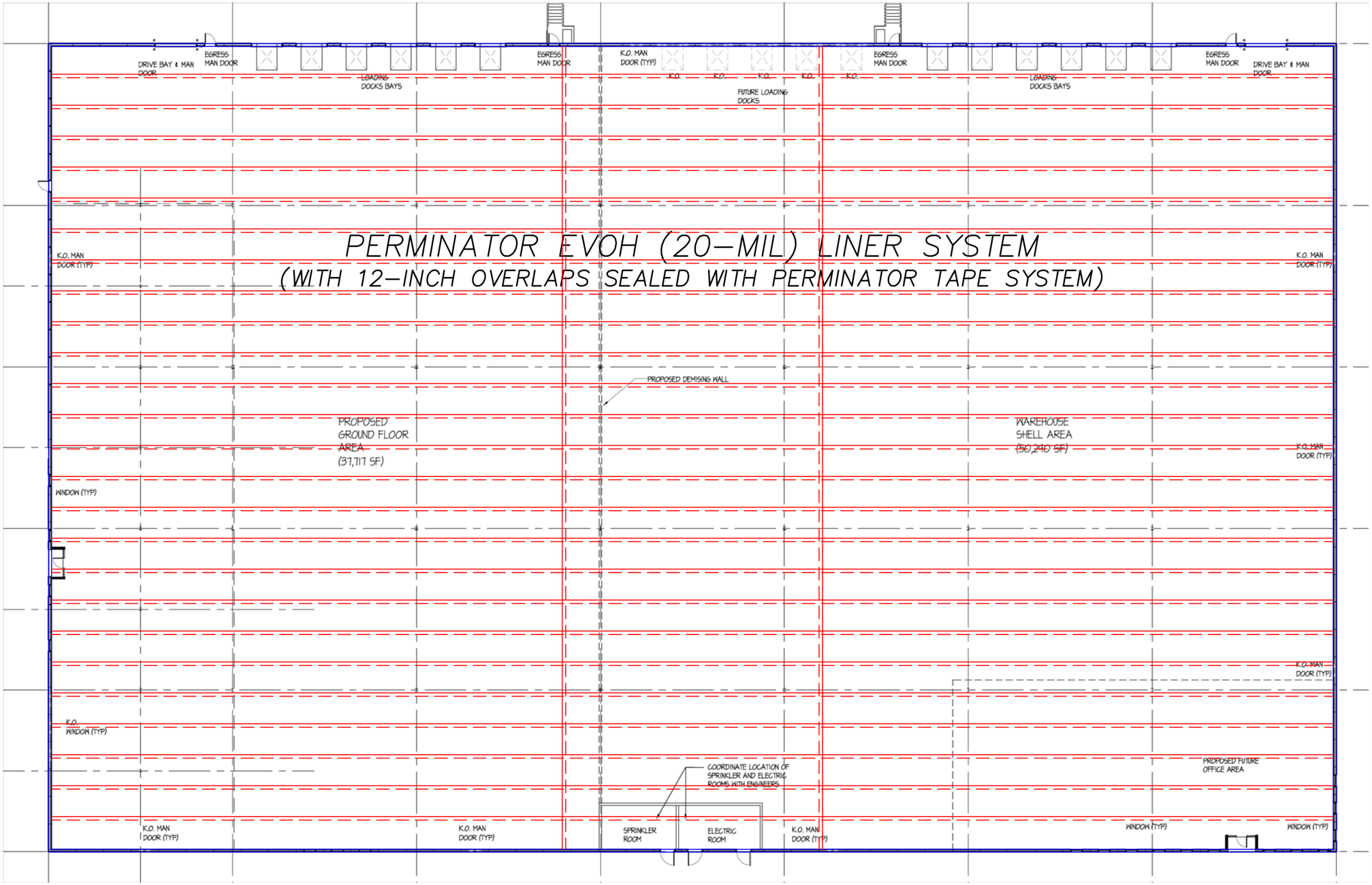
ENVIRONMENTAL CONSULTING, INC.
2002 RENAISSANCE BOULEVARD
SUITE 110
KING OF PRUSSIA, PENNSYLVANIA 19406

JOB No.	DRAWN BY:	SCALE:	FIGURE No.:
2019.009	ADH	1"=30'	1
DATE: 6/13/19	CHECKED BY: SJK		

2675 COMMERCE CENTER BOULEVARD
BETHELEHEM, NORTHAMPTON COUNTY, PENNSYLVANIA 18105

TITLE: PROPOSED VAPOR COLLECTION SYSTEM PLAN

NORTH



LEGEND

= VAPOR BARRIER MEMBRANE SEAMS WITH 12-INCH OVERLAPS SEALED WITH PERMINATOR EVOH TAPE

NOTES:

SITE MAP DERIVED FROM DIGITIZED FLOOR PLAN PREPARED BY CERMINARA ARCHITECT DATED MARCH 6, 2019.
SCALE IS APPROXIMATE AS THIS SITE PLAN IS INTENDED FOR ILLUSTRATIVE PURPOSES ONLY.

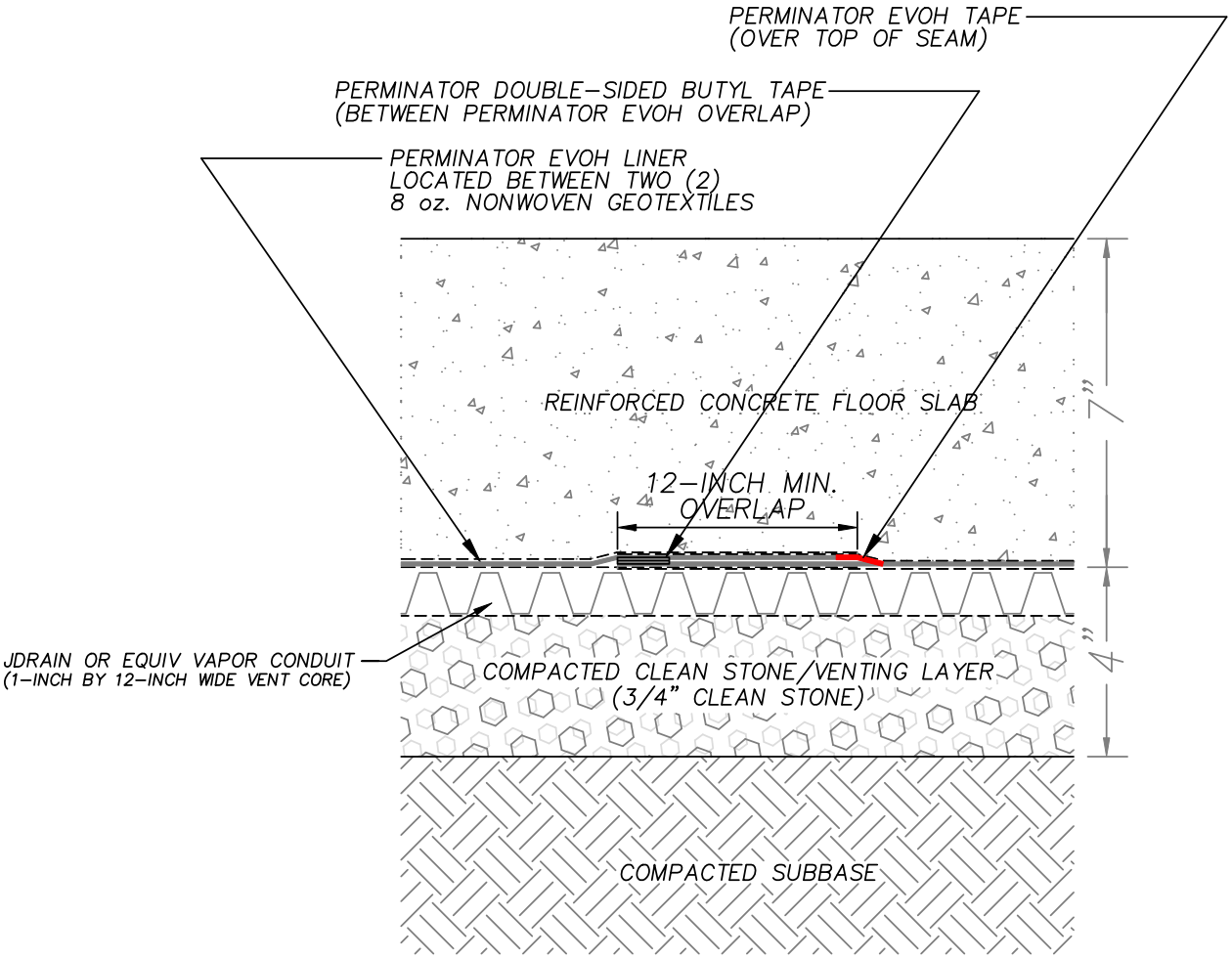
ENVIRONMENTAL CONSULTING, INC.
2002 RENAISSANCE BOULEVARD
SUITE 110
KING OF PRUSSIA, PENNSYLVANIA 19406

JOB No.	DRAWN BY:	SCALE:	FIGURE No.:
2019.009	ADH	1"=30'	2
DATE: 6/13/19	CHECKED BY: SJK		

2675 COMMERCE CENTER BOULEVARD
BETHELEHEM, NORTHAMPTON COUNTY, PENNSYLVANIA 18105

TITLE: PROPOSED VAPOR BARRIER SYSTEM PLAN

NORTH



VAPOR BARRIER SEAM DETAIL

NOT TO SCALE

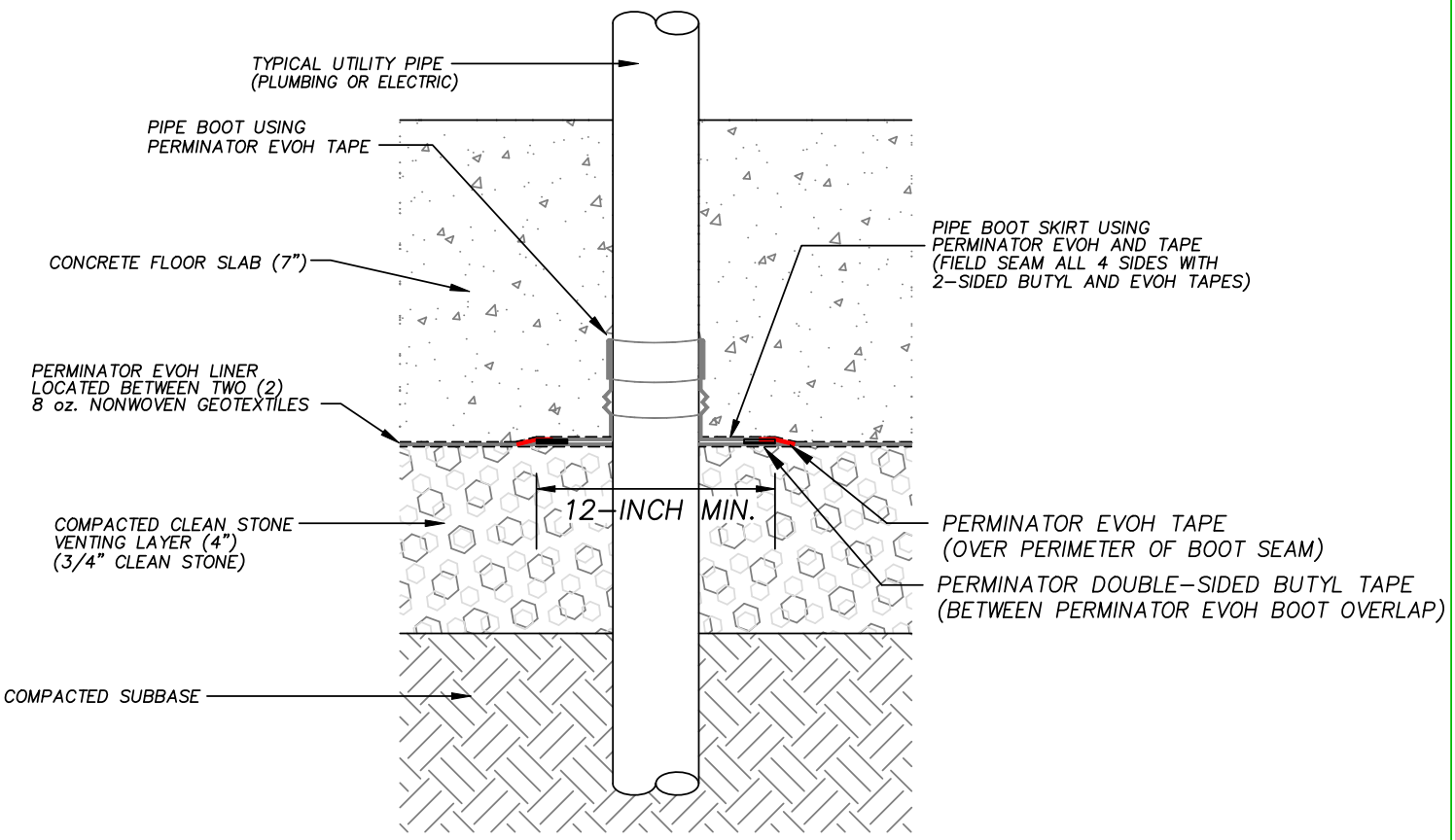
ENVIRONMENTAL CONSULTING, INC.
2002 RENAISSANCE BOULEVARD
SUITE 110
KING OF PRUSSIA, PENNSYLVANIA 19406

JOB No.	DRAWN BY:	SCALE:	FIGURE No.
2019.009	ADH	N.T.S.	3
DATE: 6/13/19	CHECKED BY: SJK	TITLE:	

2675 COMMERCE CENTER BOULEVARD
BETHELEHEM, NORTHAMPTON COUNTY, PENNSYLVANIA 18105

SEAM DETAIL FOR FOR PROPOSED VAPOR BARRIER SYSTEM

X:\2019.009\VAPOR BARRIER\CAD\PROPOSED SEAM DETAIL



PENETRATION DETAIL

NOT TO SCALE

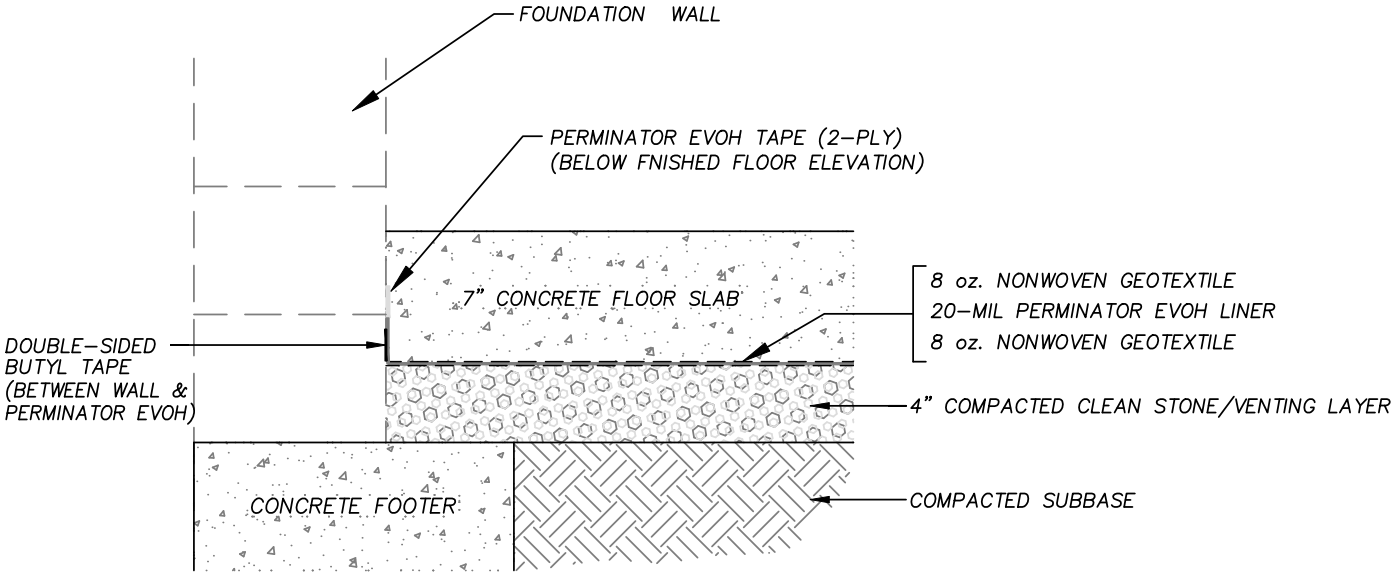
ENVIRONMENTAL CONSULTING, INC.
2002 RENAISSANCE BOULEVARD
SUITE 110
KING OF PRUSSIA, PENNSYLVANIA 19406

JOB No.	DRAWN BY:	SCALE:	FIGURE No.
2019.009	ADH	N.T.S.	4
DATE: 6/13/19	CHECKED BY: SJK	TITLE:	

2675 COMMERCE CENTER BOULEVARD
BETHELEHEM, NORTHAMPTON COUNTY, PENNSYLVANIA 18105

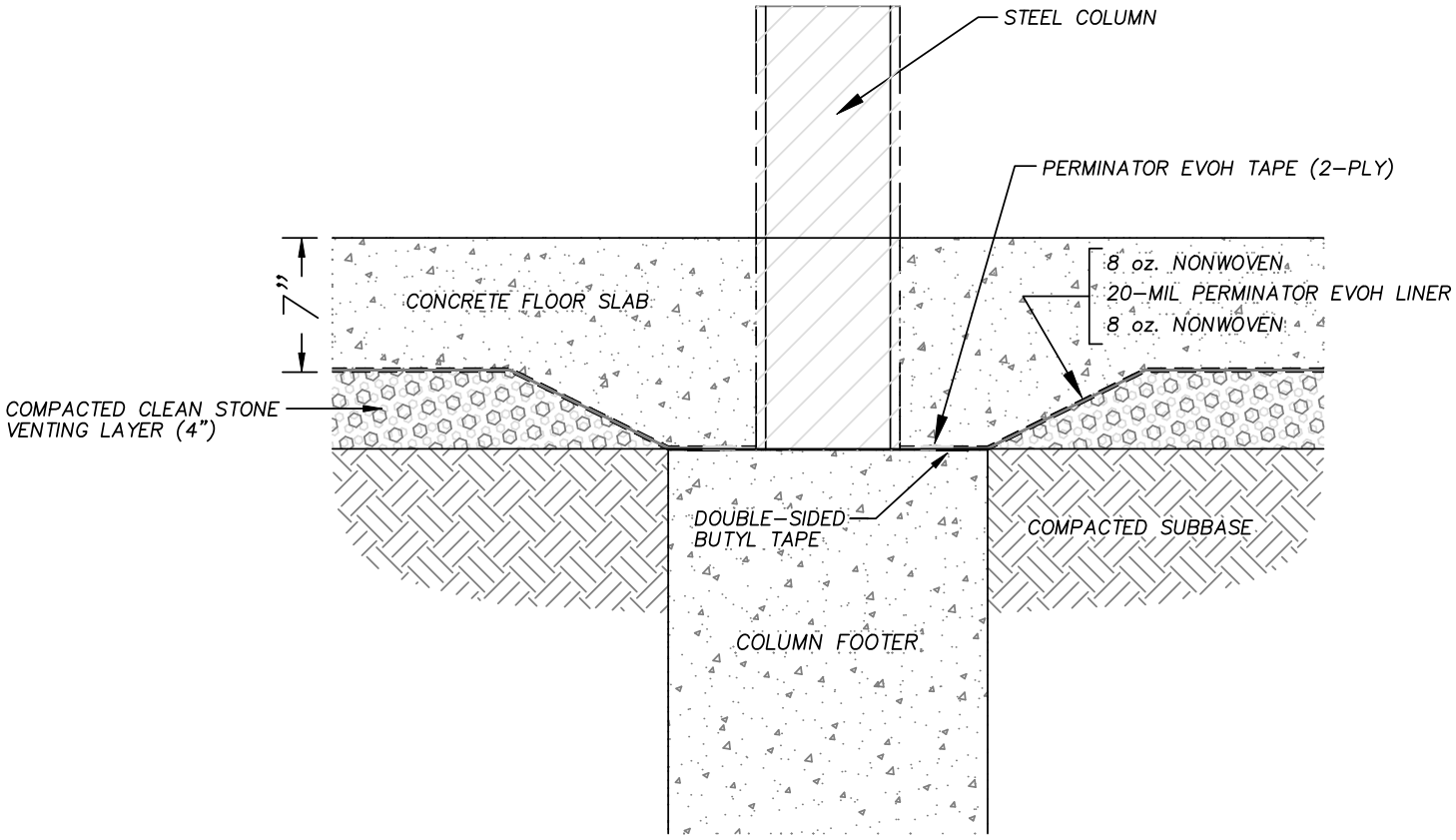
PENETRATION DETAIL FOR PROPOSED VAPOR BARRIER SYSTEM

\\2019.009\VAPOR BARRIER\CAD\PROPOSED PENETRATION DETAIL



PERIMETER FOUNDATION FASTENING DETAIL

NOT TO SCALE



INTERIOR COLUMN FOOTER FASTENING DETAIL

NOT TO SCALE

NOTE:

SCALE IS APPROXIMATE AS THESE DETAILS ARE INTENDED FOR ILLUSTRATIVE PURPOSES ONLY.

ENVIRONMENTAL CONSULTING, INC.
2002 RENAISSANCE BOULEVARD
SUITE 110
KING OF PRUSSIA, PENNSYLVANIA 19406

JOB No.	DRAWN BY:	SCALE:	FIGURE No.
2019.009	ADH	N.T.S.	5
DATE: 6/13/19	CHECKED BY: SJK	TITLE:	

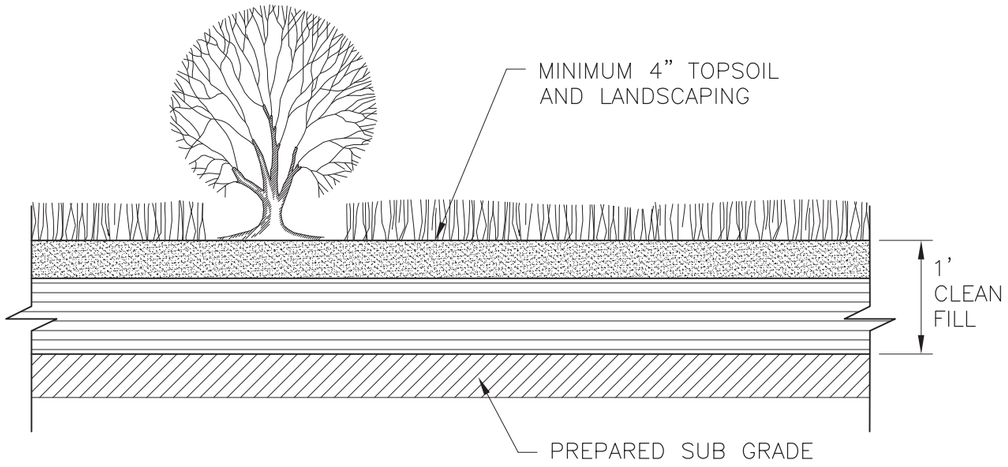
2675 COMMERCE CENTER BOULEVARD
BETHELEHEM, NORTHAMPTON COUNTY, PENNSYLVANIA 18105

PROPOSED VAPOR BARRIER SYSTEM FASTENING DETAILS

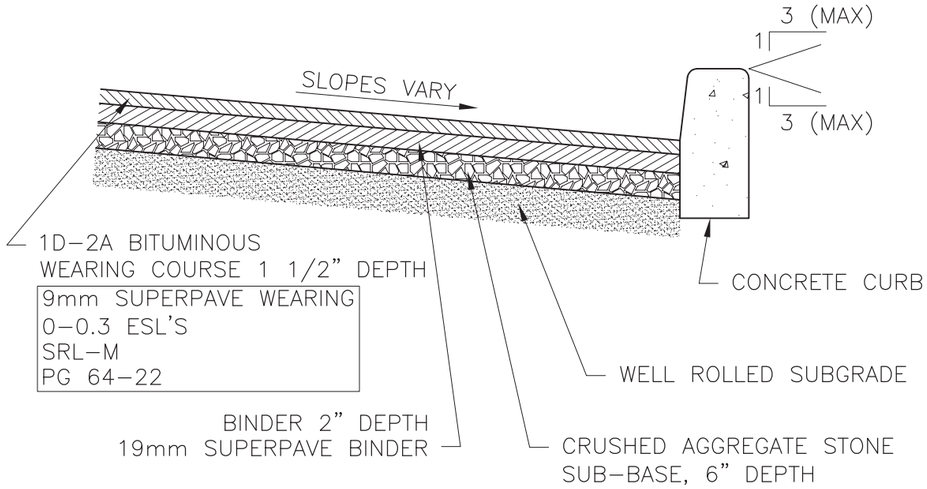
\2019.009\VAPOR BARRIER\CAD\PROPOSED VAPOR BARRIER DETAILS

D

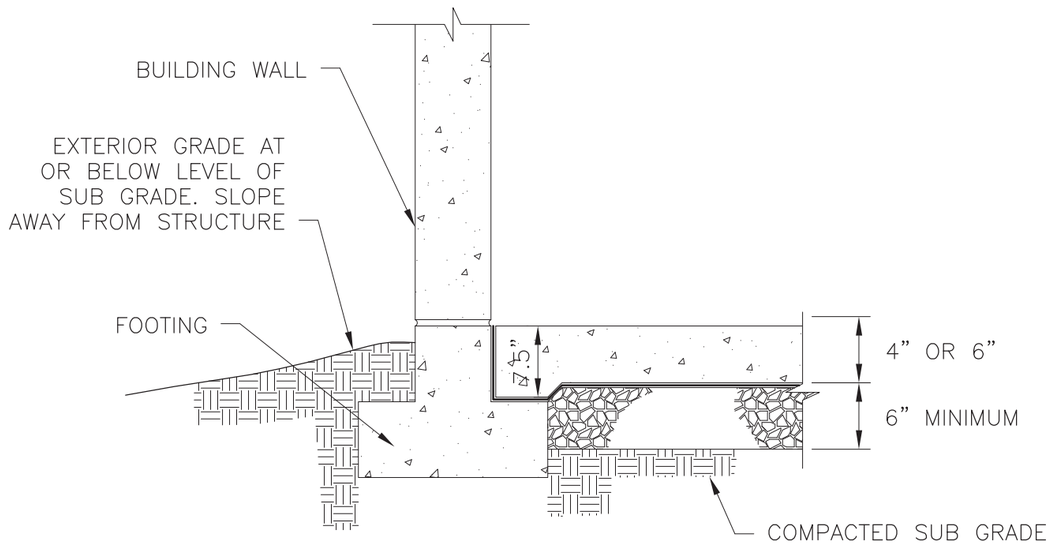
Typical Cross-Section of the Proposed Caps



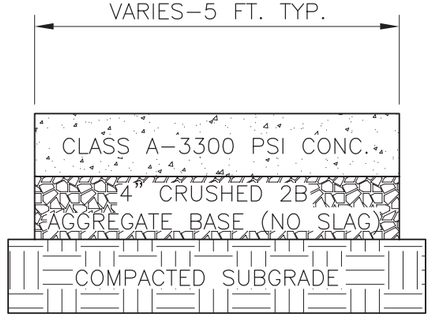
LANDSCAPING DETAIL
SCALE: NONE



TYPICAL PAVING SECTION
SCALE: NONE



TYPICAL DETAIL BUILDING SLAB
SCALE: NONE



NOTES:
1. CONSTRUCT IN SECTIONS NOT OVER 10 FEET WITH VERTICAL JOINTS FOR FULL DEPTH OF PAVEMENT. THE JOINTS SHALL BE MADE REMOVABLE METAL PLATES SO THAT ADJACENT BLOCKS WILL BE MADE ON DIFFERENT DAYS.
2. EXPANSION JOINTS LOCATED 30' O.C.
3. TOOL JOINTS LOCATED 5' O.C.
4. SIDEWALK IS TO BE LIGHT BROOM FINISHED IN THE DIRECTION OF SIDEWALK WIDTH.

CONCRETE SIDEWALK DETAIL-SITE
SCALE: NONE

NOTES:
1. ALL MATERIAL AND CONSTRUCTION PROCEDURES SHALL COMPLY WITH THE CITY OF BETHLEHEM ORDINANCE.

0 1/2" 1" 2"

Henningson, Durham & Richardson Architecture and Engineering, P.C.
In association with HDR Engineering, Inc.

LEHIGH VALLEY INDUSTRIAL PARK VII
ENGINEERING CONTROL DETAILS

DATE 11-13-2014

FIGURE 5

E

Generic Cap Inspection Form

Annual Cap Inspection Worksheet

Date of Inspection _____ Site _____

Name of Inspector _____ Owner _____

Item or Issue	Yes	No	NA	Location	Action Taken
ASPHALT AREA(S)					
Cracking					
Settlement					
Surface Disturbance					
Other					
CONCRETE AREA(S)					
Cracking					
Settlement					
Surface Disturbance					
Other					
GRAVEL AREA(S)					
Settlement					
Surface Disturbance					
Stormwater Damage					
Other:					
LANDSCAPED AREA(S)					
Surface Erosion					
Surface Disturbance					
Storm Water Damage					
Bare Spots (Loss of Vegetation)					
Settlement					
Other					
OTHER CAPPED AREA(S)					

Annual Cap Inspection Worksheet

Date of Inspection _____ Lot # _____

Name of Inspector _____ Owner _____

Item or Issue	Yes	No	NA	Location	Action Taken
OTHER CAPPED AREA(S) (CONT.)					

Comments:

F

Public and Municipal Notifications