

BERRY LANE PARK PHASE IV SKATE PARK

SECTION 025010

MANAGEMENT OF CONTAMINATED SOIL AND LIQUID

I. PART 1 GENERAL

The Contractor is notified that the Work Site includes areas of known environmental contamination which have been remediated via the installation of an engineering control (cap). The engineering control was installed Site wide and consists of a minimum of 24 inches of certified clean fill (soil, clay and/or stone) placed over a geotextile fabric. The fabric serves as a demarcation between the base of the certified clean fill and below lying contaminated soil.

During the course of subsurface activities conducted below the engineering control, the Contractor is required to follow the requirements related to excavation, pumping, handling, storage, removal and disposal of chemically impacted soils and groundwater as discussed below.

1.1 DESCRIPTION

- A. When the Contractor disturbs the engineering control they are responsible to replace the engineering control "in kind".
- B. It is the Contractor's responsibility to manage contaminated materials and wastes in a manner protective of human health and the environment and to minimize to the maximum extent practicable the generation of soil and groundwater wastes. The Contractor is to control the release, spread or disposal of soil and groundwater contaminants.
- C. The Contractor shall staff the job with personnel having the requisite training to manage contaminated materials and have readily available to the Work all necessary equipment, supplies and materials necessary to permit the efficient removal, control and/or disposal of encountered contaminated materials.
- D. Contractor shall, in accordance with applicable Federal, State, County and local rules, regulations and guidelines or as may be specifically required by this section, prepare all necessary plans, obtain all permits, licenses, and approvals and furnish all labor, materials, tools, equipment, analytical tests, PPE and temporary works required to provide for the safe excavation, handling and disposal of uncontaminated and contaminated (non-hazardous and hazardous) soil and materials.
- E. Contractor shall in accordance with applicable Federal, State, and local rules, regulations and guidelines or as may be specifically required by this section, prepare all necessary plans, obtain all permits, licenses, and approvals and furnish all labor, materials, tools, equipment, analytical tests, and temporary works required to provide for the safe control, pumping, handling and disposal of uncontaminated and contaminated groundwater or stormwater runoff entering open excavations.
- F. Contractor shall in accordance with applicable Federal, State, and local rules, regulations and guidelines or as may be specifically required by this section, prepare all necessary plans, obtain all permits, licenses, and approvals and furnish all labor, materials, tools, equipment, analytical tests, and temporary works required to minimize the creation and dispersion of dust from activities conducted under this Contract.
- G. All Work subject to this specification shall be planned and executed in such a manner as to prevent the spread of contaminated soil and groundwater to uncontaminated areas or media.

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- H. Equipment decontamination shall be performed to prevent contamination of clean areas, cross-contamination between contaminated areas, or the incidental transport of contaminated materials offsite.
- I. All costs associated with the management and loadout of this contaminated materials are to be included in the Contractors bid.
- J. Groundwater encountered within excavations may not be discharged to soil or groundwater.
- K. The property owner will be the designated generator of any contaminated soil and material where a Generator is required to be named.

1.2 DEFINITIONS

- L. A. Soil Materials – The work area is underlain by various soil types as detailed in the supporting documents.
- M. B. “Contaminated soil” is defined for the purposes of this specification as soil with contaminant concentrations that exceed the New Jersey Department of Environmental Protection’s Residential Direct Contact Soil Remediation Standard (RDCSR) and/or Non-Residential Direct Contact Soil Remediation Standard (NRDCSR), and the Default Impact to Ground Water Soil Remediation Standard (IGWSR), whichever is more stringent. This definition includes soil classified as non-hazardous and hazardous.
- C. “Uncontaminated soil” is defined as fill, silts, or sands exhibiting contaminant levels that are below the New Jersey Department of Environmental Protection’s Residential Direct Contact Soil Remediation Standard (RDCSR) and/or Non-Residential Direct Contact Soil Remediation Standard (NRDCSR), whichever is more stringent.
- D. “Hazardous soil” is defined for the purpose of this specification as soil that contains contaminant levels that exceed criteria contained in the Resource Conservation and Recovery Act and amendments (RCRA, USEPA, 1984), or Toxic Substances Control Act of 1976 (TSCA USEPA, 1976).
- E. “Contaminated liquid” is defined for the purposes of this specification to include groundwater pumped from wells, sumps or trenches to dewater soils for excavation activities, washwater resulting from onsite decontamination activities, water from weather-related sources which is pumped from sumps, drains, excavations or other site areas, and effluents resulting from gravity or pumped drainage of contaminated material stockpiles.
- F. “Contaminated material” is defined for the purposes of this specification as miscellaneous debris, PPE, plastic sheeting, tracking pad gravel, wood, or other materials exhibiting levels of contamination that exceed the New Jersey Department of Environmental Protection’s unrestricted use standard. This material must be handled, stored, transported, and disposed offsite in accordance with all applicable federal, state, and local regulations.
- G. “Disposal”, where it applies to or refers to “contaminated soil”, is defined for the purposes of these specifications as offsite treatment, recycling, or landfill disposal in accordance with applicable federal, state, and local regulations such that the disposal facility will issue a certificate of disposal, destruction or recycling showing that the contaminants of concern have been destroyed and/or the waste materials have been transformed into resaleable products, including landfill capping material.

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- H. "Certified Clean Fill" is defined for the purposes of this specification as materials that conform to the provisions set forth in the Technical Requirements for Site Remediation, N.J.A.C. 7:26E-6.4(b)2, which exhibits contaminant levels that are below the New Jersey Department of Environmental Protection's most stringent soil remediation standard, including the Default Impact to Ground Water Soil Remediation Standard (IGWSRS), Residential Direct Contact Soil Remediation Standard (RDCSRS) and/or Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS).
- I. "Work Site", refers to all areas depicted or inferred within the Contract Documents where the Work is to be performed.
- J. "Debris" is defined for the purposes of this specification as any non-soil material found or generated onsite which may or may not be contaminated, including, but not limited to rocks, concrete, brick, glass, wood, metal, asphalt, and rubbish.
- K. "Pervious Surfaces" is defined for the purposes of this specification as any area which will not be covered by the building slab, roads, sidewalks, and walkways. "Pervious surfaces" will generally consist of landscaped areas.
- L. "PCB Management Area" correlates to the extent of the management area as depicted on Drawing 2.0 *Existing Conditions and Demolition Plan*. Soil within this area are impacted with heavy metals, PAHs and PCBs. Soils generated from within the PCB Management Area cannot be reused and must be properly characterized and disposed at a disposal facility permitted to accept PCB waste.
- M. "Backfill" is defined for the purposes of this specification as material used to refill an excavated area, onsite soils can be utilized for this purpose, if on-site soils are unavailable or onsite soils do not meet engineering requirements imported Certified Clean Fill may be utilized.
- N. "Property Owner / Owner" is the Jersey City Redevelopment Agency
- O. "Reuse Soils" are defined as soils located within the boundaries of the park under the 24 inch clean fill cap, excluding within the PCB Management Area. Soil generated from beneath the 24 inch clean fill cap can be reused but its final placement must be under a 24 inch clean fill cap.

1.3 COMPLIANCE DOCUMENTS

The Contractor shall comply with all applicable federal, state, and local rules, regulations, and guidelines including but not limited to the following:

- A. Occupational Safety and Health Administration ("OSHA") regulations:
 - 1. 29 CFR, Part 1904, Recording and Reporting Occupational Injuries and Illnesses
 - 2. 29 CFR, Part 1910, Occupational Safety and Health Standards
 - 3. 29 CFR, Part 1926, Excavations
- B. U.S. Department of Transportation regulations (codified in 49 CFR)
- C. U.S. Environmental Protection Agency (EPA) Regulations (codified in 40 CFR)
- D. The Technical Requirements for Site Remediation, N.J.A.C. 7:26E .
- E. All other applicable federal, state, or local rules regulations and guidelines.

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1.4 SCOPE OF WORK

- A. The Contractor shall prepare and submit four (4) copies of all documents required herein for review of compliance with contract by Owner. Submittals shall be furnished in accordance with the time schedule identified or sufficiently in advance of the work to permit the Owner and/or Environmental Construction Manager reasonable time for review and comment. No work requiring a submittal shall commence prior to Contractor obtaining Owner review for compliance.
- B. The Contractor shall prepare a Site Specific Health and Safety Plan (SSHASP) in accordance with OSHA regulations as described in 29 CFR 1910.120. This Health and Safety Plan shall be approved by a Certified Industrial Hygienist ("CIH") and shall bear the signature and seal of the CIH. All personnel involved in the excavation, handling, and transport of contaminated materials shall be trained and medically monitored in accordance with OSHA regulations as described in 29 CFR 1910.120. The HASP shall require and the Contractor shall provide copies of 40-hour OSHA training, current 8-hour OSHA training update, and current medical monitoring certificates for all employees to the Owner prior to commencing the work.
- C. The Contractor shall provide a work plan that fully details the means and methods for managing, storing, waste classifying, transporting and disposing of contaminated liquid, soil and other materials encountered or generated by the work under this contract.
- Contaminated liquid, including but not limited to, accumulated stormwater, groundwater, and decontamination rinsate.
 - Contaminated soil consisting of all soil excavated from below the remedial cap and any surface or other soils exposed to contaminated soil, contaminated liquid or other discharges of hazardous materials.
 - Liquid and solid hazardous waste materials brought onto the site or incidental to Contractor execution of the work.

The work plan shall discuss any proposed soil reuse which will include a detailed discussion of the location where reuse soil is anticipated to be generated and its proposed final placement location.

It should be noted that soils located within the PCB Management Area and under the engineering control are not eligible for reuse. These soils are to be properly characterized and disposed at a disposal facility permitted to accept PCB waste. The extent of the PCB Management Area is depicted on Drawing C2.0 *Existing Conditions and Demolition Plan*. Costs associated with waste characterization and disposal is the responsibility of the Contractor.

- D. JCRA will provide an Authorized Agent to sign disposal manifests during periods of excavation and disposal.

II. PART 2 PRODUCTS

- A. As specified in contractor work plan.

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III. PART 3 EXECUTION

3.1 GENERAL REQUIREMENTS

- A. The Contractor shall be responsible to replace the engineering control in kind.
- B. Contaminated liquid and solid wastes shall be disposed of in accordance with all applicable Federal, State, and local regulations. Dewatering liquid must be containerize and disposed or treated and discharged to municipal storm sewer under appropriate local, county, state permits; no onsite discharge to ground will be permitted.
- C. Contractor is to supply to owner and/or licensed site remediation professional (LSRP) of record a letter from the disposal facility documenting their acceptance of the material under their existing permitting. No contaminated material shall be transported offsite without the LSRPs receipt and approval of such documentation.
- D. Contaminated soil must be segregated and placed on plastic pending offsite disposal. Separate stockpiles shall be generated for PCB contaminated soil, reuse soil, and certified clean fill so as to minimize cross contamination of stockpiles. The Contractor shall provide the Owner with the name, location, and qualifications of hauling contractors and disposal facilities that will be used for the transportation and disposal of contaminated soils and materials, prior to transportation of contaminated soil offsite.
- E. Excavation and material stockpile and treatment areas shall be secured as required by 29 CFR Part 1910 to prevent access by unauthorized personnel.
- F. On ground staging or stockpiling of soil and other materials shall be permitted only in areas pre-approved by the Owner.
- G. Contractor is to coordinate waste characterization and disposal of contaminated soil which is to be disposed offsite.

3.2 EQUIPMENT AND DECONTAMINATION PROCEDURES

- A. As specified in contractor work plan.

IV. PART 4 TRANSPORTATION

4.1 SCOPE OF WORK

- A. As specified in contractor work plan.

4.2 OFF-SITE DISPOSAL CONTAMINATED MATERIAL

- A. As specified in contractor work plan.

4.3 RECORDKEEPING

- A. The Contractor shall maintain a current record of all waste determinations including, the results of any analyses performed, the analyzed substances, associated sampling locations, and the time and date of sample collection. Transportation, treatment, disposal methods, disposal dates, quantities of materials, and the name and address of the

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transporter and disposal or reclamation facility shall be recorded and provided to the Owner and Owner's Representative. The following information documenting the services provided shall be submitted to the owner and engineer within five (5) working days of completion of the waste disposal portion of the work by the Contractor:

1. Two (2) copies of a cover letter signed by a Contractor representative certifying that all services involved were performed in accordance with the terms and conditions of this specification and all applicable Federal, State, and local rules, regulations, and guidelines.
 2. Two (2) copies of all manifests and weight verification tickets.
 3. Two (2) copies of all analyses performed for disposal.
 4. Two (2) copies of all waste analyses or waste profile sheets.
- B. The original and two (2) copies of all certifications of final treatment or disposal signed by the responsible disposal facility official shall be furnished to the Owner and Owners Representative no later than five (5) working days following the delivery of the soil and materials to the facility.
- C. The Contractor shall use the NJDOT, NJDEP and USEPA approved waste manifest system so that waste can be tracked from generation to ultimate disposal.
- D. The manifests must comply with all applicable Federal, State, and local rules regulations, and guidelines.
- E. The Contractor shall prepare and coordinate the signing of manifests by the designated representative (Owner and Generator).

END OF SECTION

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SECTION 025020

IMPORTED FILL ENVIRONMENTAL QUALITY CONTROL

I. PART 1 GENERAL

The Contractor is notified that the Work Site is currently regulated under the New Jersey Department of Environmental Protection's Site Remediation Program (NJDEP SRP) therefore all imported soils are to meet the requirements as specified in the NJDEP's Alternative and Clean Fill Guidance for SRP Sites, December 29, 2012 Version 2.0.

1.1 DESCRIPTION

- A. Work included: Provide certification to the Owner that fill to be imported to the site is free of contaminants in accordance with applicable regulations.
- B. Imported material is to be approved by Owner and/or Licensed Site Remediation Professional (LSRP) of Record.

1.2 REFERENCES

- A. NJDEP's Technical Requirements for Site Remediation, N.J.A.C. 7:26E.
- B. NJDEP's Alternative and Clean Fill Guidance for SRP Sites, December 29, 2012 Version 2.0.

1.3 SUBMITTALS

- A. Documentation that the imported fill (i.e. certified clean and/or alternative fill) meets the NJDEP's Technical Requirements for Site Remediation and the Alternative and Clean Fill Guidance for SRP Sites shall be submitted to and approved by the Owner and/or Owner and/or Licensed Site Remediation Professional (LSRP) of Record before proceeding with Work.

1.4 QUALITY ASSURANCE

- A. Perform work in accordance with State of New Jersey standards. Maintain one copy of record documents on site.

II. PART 2 PRODUCTS

2.1 SOIL MATERIALS

- A. Imported Fill and Backfill Materials
 - 1. Provide certified clean fill materials that contain no contamination.
 - 2. All imported fill material must conform to the most current provisions set forth in the Technical Requirements for Site Remediation, N.J.A.C. 7:26E and/or Alternative and Clean Fill Guidance for SRP Sites including the NJDEP's Impact to Groundwater Soil Remediation Standard, unless otherwise approved by the NJDEP/LSRP.
 - 3. All imported fill material must be pre-approved by the Owner and/or LSRP prior to importation.
 - 4. When necessary, imported fill must be staged on 6 mil plastic sheeting.

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5. Imported fill to be installed within 5” of finished grade shall be considered topsoil and shall meet the topsoil requirements outlined in Section 02900 Permanent Seeding.

III. PART 3 EXECUTION

3.1 CLEAN FILL

- A. Locate a source of certified clean fill (free of contaminants) which conforms to the provisions set forth in the Technical Requirements for Site Remediation, N.J.A.C. 7:26E and/or Alternative and Clean Fill Guidance for SRP Sites including the NJDEP’s Impact to Groundwater Soil Remediation Standard. All imported certified clean fill material must be pre-approved by the Owner and/or LSRP prior to importation. Where sampling is required the sample frequency shall be in accordance with Table 2 in the Alternative and Clean Fill Guidance for SRP Sites and as presented below.

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Table 2: Sampling Frequency Guide for Clean Fill

| Proposed Volume | Default Sampling Scheme without Justification |
|---------------------|--|
| (Cubic Yards) | (Samples) |
| 0 to 20 | 1 |
| 20.1 to 40 | 2 |
| 40.1 to 60 | 3 |
| 60.1 to 80 | 4 |
| 80.1 to 100 | 5 |
| 100.1 to 200 | 6 |
| 200.1 to 300 | 7 |
| 300.1 to 400 | 8 |
| 400.1 to 500 | 9 |
| 500.1 to 600 | 10 |
| 600.1 to 700 | 11 |
| 700.1 to 800 | 12 |
| 800.1 to 900 | 13 |
| 900.1 to 1000 | 14 |
| 1000.1 to 2000 | 15 |
| 2000.1 to 3000 | 16 |
| 3000.1 to 4000 | 17 |
| 4000.1 to 5000 | 18 |
| 5000.1 to 6000 | 19 |
| 6000.1 to 7000 | 20 |
| 7000.1 to 8000 | 21 |
| 8000.1 to 9000 | 22 |
| 9000.1 to 10,000 | 23 |
| 10,000.1 to 11,000* | 24 |

*With volumes greater than 10,000 cubic yards, the sampling rate is 1 per additional 1,000 cubic yards.

- B. Transport acceptable certified clean fill to the Site and temporarily stockpile the clean fill on 6 mil plastic pending use as backfill.
- C. No clean fill may be imported to the Site as long as the Owner determines that soil excavated from the Site is available for reuse and is acceptable for the purpose intended.

END OF SECTION

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SECTION 025030

CONTAMINATED SOIL HANDLING AND REUSE CONTROL

I. PART 1 GENERAL

The Contractor is notified that the Work Site includes areas of known environmental contamination which have been remediated via the installation of an engineering control (i.e. a cap). The engineering control was installed Site wide and consists of a minimum of 24 inches of certified clean fill (soil, clay and/or stone) placed over a geotextile fabric. The fabric serves as a demarcation between the base of the certified clean fill and below lying contaminated soil.

1.1 DESCRIPTION

- A. Work shall include, but not necessarily be limited to, the following:
 - 1. Construct contaminated soil stockpile facilities at the locations approved by the Owner's representative.
 - 2. Handle contaminated soil excavated during site preparation and/or excavation.
 - 3. Maintain contaminated stockpile areas.
 - 4. Reuse of contaminated soil as subsurface backfill below base of existing cap elevation.

1.2 QUALITY ASSURANCE

- A. Use adequate number of skilled workers who are thoroughly trained and experienced in the necessary crafts and are completely familiar with the specified requirements and methods needed for proper performance of the work of this Section.
- B. All workers who are exposed or with the reasonable possibility of exposure to the contaminated soils or groundwater must comply with the hazardous waste operations requirements pursuant to the OSHA regulation 29 CFR 1910.120.
- C. Use equipment adequate in size, capacity and quantity to accomplish the work of this section in a timely manner.

1.3 DEFINITIONS

- A. Soil Materials – The work area is underlain by various soil types as detailed in the supporting documents.
- B. "Contaminated soil" is defined for the purposes of this specification as soil with contaminant concentrations that exceed the New Jersey Department of Environmental Protection's Residential Direct Contact Soil Remediation Standard (RDCSRS) and/or Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS), and the Default Impact to Ground Water Soil Remediation Standard (IGWSRS), whichever is more stringent. This definition includes soil classified as non-hazardous and hazardous.
- C. "Uncontaminated soil" is defined as fill, silts, or sands exhibiting contaminant levels that are below the New Jersey Department of Environmental Protection's Residential

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Direct Contact Soil Remediation Standard (RDCSRS) and/or Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS), whichever is more stringent.

- D. “Hazardous soil” is defined for the purpose of this specification as soil that contains contaminant levels that exceed criteria contained in the Resource Conservation and Recovery Act and amendments (RCRA, USEPA, 1984), or Toxic Substances Control Act of 1976 (TSCA USEPA, 1976).
- E. “Contaminated liquid” is defined for the purposes of this specification to include groundwater pumped from wells, sumps or trenches to dewater soils for excavation activities, washwater resulting from onsite decontamination activities, water from weather-related sources which is pumped from sumps, drains, excavations or other site areas, and effluents resulting from gravity or pumped drainage of contaminated material stockpiles.
- F. “Contaminated material” is defined for the purposes of this specification as miscellaneous debris, PPE, plastic sheeting, tracking pad gravel, wood, or other materials exhibiting levels of contamination that exceed the New Jersey Department of Environmental Protection’s unrestricted use standard. This material must be handled, stored, transported, and disposed offsite in accordance with all applicable federal, state, and local regulations.
- G. “Disposal”, where it applies to or refers to “contaminated soil”, is defined for the purposes of these specifications as offsite treatment, recycling, or landfill disposal in accordance with applicable federal, state, and local regulations such that the disposal facility will issue a certificate of disposal, destruction or recycling showing that the contaminants of concern have been destroyed and/or the waste materials have been transformed into resaleable products, including landfill capping material.
- H. “Certified Clean Fill” is defined for the purposes of this specification as materials that conform to the provisions set forth in the Technical Requirements for Site Remediation, N.J.A.C. 7:26E-6.4(b)2, which exhibits contaminant levels that are below the New Jersey Department of Environmental Protection’s most stringent soil remediation standard, including the Default Impact to Ground Water Soil Remediation Standard (IGWSRS), Residential Direct Contact Soil Remediation Standard (RDCSRS) and/or Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS).
- I. “Work Site”, refers to all areas depicted or inferred within the Contract Documents where the Work is to be performed.
- J. “Debris” is defined for the purposes of this specification as any non-soil material found or generated onsite which may or may not be contaminated, including, but not limited to rocks, concrete, brick, glass, wood, metal, asphalt, and rubbish.
- K. “Pervious Surfaces” is defined for the purposes of this specification as any area which will not be covered by the building slab, roads, sidewalks, and walkways. “Pervious surfaces” will generally consist of landscaped areas.
- L. “PCB Management Area” correlates to the extent of the management area as depicted on Drawing 2.0 *Existing Conditions and Demolition Plan*. Soil within this area are impacted with heavy metals, PAHs and PCBs. Soils generated from within the PCB Management Area cannot be reused and must be properly characterized and disposed at a disposal facility permitted to accept PCB waste.

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- M. “Backfill” is defined for the purposes of this specification as material used to refill an excavated area, onsite soils can be utilized for this purpose, if on-site soils are unavailable or onsite soils do not meet engineering requirements imported Certified Clean Fill may be utilized.
- N. “Property Owner / Owner” is the Jersey City Redevelopment Agency
- O. “Reuse Soils” are defined as soils located within the boundaries of the park under the 24 inch clean fill cap, excluding within the PCB Management Area. Soil generated from beneath the 24 inch clean fill cap can be reused but its final placement must be under a 24 inch clean fill cap.

II. PART 2 PRODUCTS

2.1 MATERIALS

- A. Snow fence for soil stockpile area.
- B. Polyethylene sheet (minimum 6 mm thickness) for lining and covering soil stockpile area.

III. PART 3 EXECUTION

3.1 PREPARATION

- A. Construct stockpile(s) in area sufficient to accommodate excavated contaminant soil volumes. Stockpile shall be provided with a raised boundary curb or berm and sump sufficient to contain materials and moisture runoff.
- B. Install a snow fence around the soil stockpile area(s).
- C. Line base of stockpile with polyethylene sheet (minimum 6 mm thickness) and cover soil stockpile with a polyethylene sheet (minimum 6 mm thickness). Install, anchor and maintain the cover daily. Soil stockpile shall not exceed eight feet in height.
- D. Establish soil erosion and sediment controls for soil stockpile area(s). Maintain controls during period of work describe herein. Provide all materials and implement as required by program.

3.2 SOIL HANDLING AND REUSE

- A. Contaminated soil, outside the PCB Management Area, maybe reused within the excavation from which it originated if its placement meets design plans and its placed at an elevation below the geotextile fabric demarcation liner.
- B. Soils located within the PCB Management Area and under the engineering control are not eligible for reuse. These soils are to be properly characterized and disposed at a disposal facility permitted to accept PCB waste. The extent of the PCB Management Area is depicted on Drawing C2.0 *Existing Conditions and Demolition Plan*. Waste characterization and disposal are contactor costs.
- C. Contaminated soil shall be stockpiled pending offsite disposal or reuse at the direction of the Owner’s Environmental Specialist. At a minimum separate stockpiles shall be generated for 1) PCB impacted soil (pending offsite disposal), 2) soil pending reuse, 3) excess soil (pending offsite disposal), and 4) certified clean fill. Materials shall not be co-mingled.

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END OF SECTION

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SECTION 025040

STORMWATER RUNOFF AND FLUIDS CONTROL

I. PART 1 GENERAL

1.1 WORK INCLUDED

- A. Work shall include, but not necessarily be limited to, the following:
1. Control, collection, and storage of discharge from dewatering operations generated during construction.
 2. Control, collection, and storage of stormwater runoff into excavated areas generated during construction.
 3. Prepare, file and obtain all necessary permits to construct and operate all required recovery, control treatment and discharge facilities.

1.2 RELATED SECTIONS

- A. Documents affecting the work of this section include, but are not necessarily limited to:
- Section 025010 – Management of Contaminated Soil and Liquid
 - Section 025020 - Imported Fill Material
 - Section 025030 - Site Soil Handling and Reuse

1.3 QUALITY ASSURANCE

- A. Use adequate number of skilled workers who are thoroughly trained and experienced in the necessary crafts and are completely familiar with the specified requirements and methods needed for proper performance of the work of this Section.
- B. “New Jersey Stormwater Best Management Practices Manual” April 2004.

1.4 SUBMITTALS

- A. Supplemental to the general requirements for excavation as set forth in other portions of this document, provide a plan for the collection, storage and control of stormwater runoff within work areas.
- B. Supplemental to the general requirements for excavation as set forth in other portions of this document, provide a plan for the collection, storage and disposal of dewatering effluent.
- C. Provide a plan for the collection, testing and disposal of all decontamination waste fluids and solid wastes.
- D. Provide manufacturer’s data sheets for all materials and equipment used to pump, transfer or store fluids and waste solids.
- E. Copies of all permit applications, copies of all draft and final permit documents.

II. PART 2 PRODUCTS

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2.1 MATERIALS

- A. Reinforced polyethylene sheeting to be Griffolyn TX-1200 Black or approved equal (Reef Industries, Inc., Houston, TX. 1-800-231-6074).
- B. 55-gallon drums and/or large storage tanks suitable for storage of contaminant liquids.
- C. Health and Safety barrier materials.

III. PART 3 EXECUTION

3.1 STORMWATER RUNOFF AND DEWATERING CONTROL

- A. As required by the general requirements for excavation as set forth in other portions of this document and the Health and Safety Plan (HASP), the Contractor shall keep excavations and site construction area free of water and shall capture, store and prevent the uncontrolled discharge of said water.
- B. The Contractor shall manage earthwork grades and provide temporary basins, trenches, sumps, transfer pumping, piping, etc. to prevent stormwater from flowing onto disturbed areas from other areas and to capture, store and prevent the uncontrolled discharge of stormwater falling directly onto disturbed areas.
- C. The Contractor shall collect, store, and coordinate the disposal of storm water accumulations and dewatering fluids during periods of site disturbance, work shall include the furnishing of tanks and all appurtenant piping, valves, supports and controls. The storage vessels shall include devices to control overfills. Any onsite treatment and discharge of collected water will be performed in accordance with local, state and federal laws.

END OF SECTION

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3.2 WASTE FLUID AND SOLIDS CONTROL

- A. The Contractor shall collect, store and coordinate the proper dispose of all waste fluids and waste solids generated as a result of all HASP activities, stormwater and dewatering control activities and equipment, debris or work area decontamination activities in accordance with all federal, state and local laws and regulation.
- B. The Contractor shall collect, store, and dispose of leachate from soil and debris stockpiles if required as directed by the Engineer.
- C. The Contractor shall prior to disposal of any waste fluids or waste solids, submit to the owner or owner's environmental consultant waste classification test results and the identity of the properly licensed disposal facility contracted to receive the waste. The Contractor shall not dispose of any waste fluids or waste solids without the prior written approval of the owner. The owner has the right to reject any disposal facility and require an alternate without an increase in the contract price. The Contractor shall provide the owner with completed waste manifest and transportation forms within five days of disposal.

3.3 BASINS, TRENCHES

- A. If the Contractor constructs basins and/or trenches at the Site for the control, transfer or storage of stormwater or dewatering effluent they shall be constructed of materials free of chemical contamination and lined with reinforced polyethylene sheeting which is installed, anchored and maintained in accordance with the manufacturer's recommendations. The discharge point from any trench or basin shall be provided with an absorbent boom to prevent the discharge of floating product sheen. All measures shall be continuously maintained free of leakage and overflow.
- B. The materials utilized to construct all temporary measures employed under this section shall be removed and disposed of prior to final acceptance of the Work.

END OF SECTION

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SECTION 025050

CLAY BARRIER

PART 1 - GENERAL

- 1.01** The work shall consist of the installation of the 12" clay barrier at the base of the light pole foundation and utility pole clean corridor as shown on the construction documents.

PART 2 - MATERIALS

- 2.01** Soils used in clay barrier construction shall have a minimum plasticity index of 12 as tested by Atterberg Limit tests (ASTM D-4318), a minimum of 50% passing the number 200 sieve, and a re-compacted in-place permeability of 1×10^{-7} centimeters per second or less.
- 2.02** Clay materials shall meet the requirements of certified clean fill as presented in Section 02120 and contain no sod, brush, roots, frozen soil, or other perishable materials. Rock particles larger than 3/4 inches shall be removed prior to compaction of the clay.

PART 3 - EXECUTION

3.03 FOUNDATION PREPARATION

- A. Foundation surfaces shall be graded to remove surface irregularities and shall be scarified or otherwise acceptably scored or loosened to a minimum depth of 2 inches. The moisture content of the loosened material shall be controlled as specified for the clay barrier, and the surface materials of the foundation shall be compacted and bonded with the first layer of the clay barrier as specified for subsequent layers of clay barrier.

3.04 PLACEMENT

- A. The clay barrier shall not be placed until the required foundation preparation has been completed and the foundation has been inspected and approved by the Technician or Engineer. The clay barrier shall not be placed upon a frozen surface, nor shall snow, ice, or frozen material be incorporated in the clay barrier.
- B. The clay barrier shall be placed in lifts. The thickness of each lift before compaction shall not exceed the smaller of 6 inches or the length of the teeth of the footed compactor used.
- C. The distribution of materials throughout the clay barrier shall be essentially uniform, and the clay barrier shall be free from lenses, pockets, streaks, or layers of material differing substantially in texture, moisture content, or gradation from the surrounding material.
- D. If the surface of any layer becomes too hard and smooth for proper bond with the succeeding layer, it shall be scarified to a depth of not less than 2 inches before the next layer is placed.

3.05 CONTROL OF MOISTURE CONTENT

- A. During placement and compaction of the clay barrier, the moisture content of

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the clay being placed shall be maintained above optimum moisture as determined by the Standard Proctor Test (ASTM D-698) or Modified Proctor Test (ASTM D-1557).

- B. The application of water to the clay shall be accomplished at the borrow areas insofar as practicable. Water may be applied by sprinkling the clay after placement and before compaction of the barrier, if necessary. Uniform moisture distribution shall be obtained by diskings.

3.06 **COMPACTION**

- A. The clay shall be compacted 2 to 5 percent wetter than the moisture content at maximum proctor density.
- B. The clay barrier shall be compacted to a minimum of 95% of standard proctor dry density (ASTM D-698) or to a minimum of 90% of modified proctor dry density (ASTM D-1557), at a moisture content above optimum moisture.
- C. The clay barrier shall be compacted with a footed compactor weighing at least 30,000 pounds, operated continuously, in uncompacted lift thicknesses not to exceed the smaller of 6 inches or the length of the teeth on the footed compactor used.

3.07 **REWORKING OR REMOVAL AND REPLACEMENT OF DEFECTIVE BARRIER**

- A. Clay placed at densities lower than the specified minimum density or at moisture contents lower than optimum moisture content or otherwise not conforming to the requirements of the specifications shall be reworked to meet the specifications or removed and replaced by acceptable clay. The replacement clay and the foundation and fill surfaces upon which it is placed shall conform to all requirements of this specification for foundation preparation, approval, placement, moisture control, and compaction.

3.08 **TESTING AND DOCUMENTATION REQUIREMENTS**

- A. Barrier construction shall be tested and documented as specified below. Copies of the documentation report, including test locations and test results, shall be provided to the owner.
- B. Field and laboratory soil tests shall be completed on the clay barrier, by a third party engineering firm retained by the Owner, to document compliance with this specification. Testing shall be completed as the barrier is being placed. The following tests shall be completed at the specified frequency.

Standard Proctor Test (ASTM D-698) 1 per 5,000 cubic yards of clay barrier

or

Modified Proctor Test (ASTM D-1557) 1 per 5,000 cubic yards of clay barrier

Field density tests (ASTM D-2922, or D2937, or D2167, or D1556) 1 test per 100-foot grid per 1 foot thickness

Atterberg Limit tests (ASTM D-4318) 1 per 1,500 cubic yards of clay barrier

Grain size distribution (ASTM D-422) 1 per 1,500 cubic yards of clay barrier

Permeability (ASTM D-5084) 1 per 5,000 cubic yards of clay barrier

- C. Atterberg limits, grain size distribution, and permeability tests shall be

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completed on undisturbed samples obtained from the constructed clay barrier. A minimum of one of each of the laboratory tests specified above shall be completed per clay barrier.

- D. All test holes shall be backfilled using powdered bentonite mixed with clay soil used in barrier construction and compacted by hand tamping. The clay shall be broken down into clods less than ½ inch in diameter. A minimum of 25% of the backfilled test hole volume shall be occupied by powdered bentonite after backfilling.

3.09 OVERBURDEN CONTROL

- A. Soils placed within two feet of the top of the clay barrier shall be screened of rocks and gravel larger than 2-inch.

END OF SECTION

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SECTION 025070

ODOR AND DUST CONTROL

I. PART 1 GENERAL

1.1 DESCRIPTION

- A. Work shall include, but not necessarily be limited to, the following:
1. Provide and implement measures to suppress airborne soil particulates;

1.2 RELATED SECTIONS

- A. Documents affecting the work of this section include, but are not necessarily limited to:
- Section 025010 - Management of Contaminated Soil and Liquid
 - Section 025020 – Environmental Security And Site Access Control
 - Section 025020 – Imported Fill Environmental Quality Control
 - Section 025030 – Contaminated Soil Handling and Reuse
 - Section 025040 – Storm water Runoff and Fluids Control

1.3 QUALITY ASSURANCE

- A. Use adequate number of skilled workers who are thoroughly trained and experienced in the necessary crafts and are completely familiar with the specified requirements and methods needed for proper performance of the work of this Section.

1.4 MEASUREMENT AND PAYMENT

- A. All work required by this section is included in the lump sum bid.

II. PART 2 PRODUCTS

2.1 MATERIALS

- A. Water truck or similar equipment for spraying water onto soils in order to control dust.
- B. Portable wind fences as approved by the Owner/Owner's representative.

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- C. Polyethylene sheeting (minimum 6 mm thickness) to cover areas of exposed or stockpiled soil.

III. PART 3 EXECUTION

3.1 ODOR AND DUST CONTROL

- A. All construction and remediation activities shall be monitored by Contractor. Dust control measures shall be implemented by Contractor as necessary to limit the generation of airborne particulates from construction activities.
- B. Real time air monitoring for particulates is recommended to be conducted continuously along the site boundary. If dust is observed during invasive site work, then invasive soil disturbing work will temporarily cease and resume only after effective dust suppression measures have been implemented in the areas in which the dust was generated. Dust generated in the non-active portions of the site will be controlled.
- C. The Contractor shall have ready for use at all times the equipment necessary to control odors and dust. The application of water to control dust and odors shall be performed in a controlled manner to prevent runoff. The collection and treatment of this water is the responsibility of the Contractor.
- D. The Contractor may be restricted from operating in very high winds at the discretion of the Owner's Representative.
- E. Where emissions cannot be controlled by Contractor, where there is a lack of available equipment or where weather conditions prevent adequate control, the Contractor shall suspend the work.

END OF SECTION