REMEDIAL ACTION WORK PLAN FOR PHASE 1 FACILITY SITE WORK CONSTRUCTION

HUDSON RIVER PCBs SUPERFUND SITE

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JANUARY 2007

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ACRONYMS AND ABBREVIATIONS

CD	*Consent Decree*
CFR	*Code of Federal Regulations*
CFM	Cubic feet per minute
CHASP	Community Health and Safety Plan
CM	Construction Manager
CPR	Canadian Pacific Railway
CQAP	Construction Quality Control and Quality Assurance Plan
CQCP	Contractor Quality Control Plan
CY	Cubic Yards
EHS	Environmental Health and Safety
EPA	United States Environmental Protection Agency
FDR	Final Design Report
FRP	fiberglass reinforced plastic
FSWC	Facility Site Work Construction (Contracts 1 and 2)
GE	General Electric Company
HASP	Health And Safety Plan
HDPE	high-density polyethylene
KV	Kilovolt
MPA	mass per unit area
mg/kg	milligram per kilogram
NYSDEC	New York State Department of Environmental Conservation
OE	Or Equivalent
OSHA	Occupational Safety and Health Administration
PCBs	polychlorinated biphenyls
PSF	pounds per square foot
PVC	Polyvinyl chloride
QA	Quality Assurance
QC	Quality Control
QoLPS	Quality of Life Performance Standards
RA	Remedial Action
RA HASP	Remedial Action Health and Safety Plan

ACRONYMS AND ABBREVIATIONS (CONTINUED)

RAWP	Remedial Action Work Plan
RD AOC	Administrative Order on Consent for Hudson River Remedial Design and Cost Recovery
RM	river mile
ROD	Record of Decision
SOW	Statement of Work
SPCC	Spill, Prevention Control and Countermeasure
SPDES	State Pollutant Discharge Elimination System
SWPPP	Stormwater Pollution Prevention Plan
TID	Thompson Island Dam
USCG	United States Coast Guard

SECTION 1

INTRODUCTION

The United States Environmental Protection Agency (EPA) issued a Superfund Record of Decision (ROD) on February 1, 2002 (EPA, 2002) calling for, among other things, the dredging and disposal of certain sediments from the Upper Hudson River containing polychlorinated biphenyls (PCBs). On August 18, 2003, the General Electric Company (GE) and EPA entered into an Administrative Order on Consent for Hudson River Remedial Design and Cost Recovery (RD AOC) (Index No. CERCLA-02-2003-2027) (EPA/GE, 2003), under which GE agreed to design the remedy outlined in the ROD.

On October 6, 2005, the Consent Decree (CD) for the remedial action (RA) in the Upper Hudson River (CD) (Civil Action No. 1:05-CV-1270) was filed in Federal Court. After an extensive public review and comment period, the court approved and entered the CD on November 2, 2006 (EPA/GE, 2005).

GE prepared the Phase 1 Final Design Report (FDR) and submitted it to the EPA on March 21, 2006. On May 31, 2006, the EPA approved the portion of the FDR that included the civil site work construction (Contract 1) and rail yard construction (Contract 2), which comprise the scope of this work plan. However, EPA has not yet approved the designs for access road and the work support marina.

Included as Appendix B to the CD is the *Statement of Work for Remedial Action and Operations, Maintenance and Monitoring* (SOW) which sets forth a number of requirements for implementing the remedial action set forth in the ROD. Section 2.1.2 of the SOW requires that an RA Work Plan for Facility Site Work Construction be provided to EPA for review and approval. This document is being submitted to satisfy that requirement.

1.1 PROJECT SETTING

The Upper Hudson River is defined as the section of river from the Fenimore Bridge in Hudson Falls to the Federal Dam at Troy, New York.. The ROD calls for, among other things, a remedial action to remove and dispose of sediments from the Upper Hudson River. Sediments to be removed are defined based on the PCB mass per unit area (MPA) and surface concentration or characteristic criteria (EPA, 2002).

EPA defined three sections of the Upper Hudson River for the sediment remediation activities outlined in the 2002 ROD:

- River Section 1: Former location of Fort Edward Dam to Thompson Island Dam (TID) (from river mile [RM] 194.8 to RM 188.5; approximately 6.3 river miles);

- River Section 2: TID to Northumberland Dam (from RM 188.5 to RM 183.4; approximately 5.1 river miles); and
- River Section 3: Northumberland Dam to the Federal Dam at Troy (from RM 183.4 to RM 153.9; approximately 29.5 river miles).

The remedial action is to be conducted in two phases, designated Phase 1 and Phase 2. Phase 1 is defined as the first year of dredging and will be completed in a portion of River Section 1. Phase 1 also includes preparation of the land-based sediment processing facility. Phase 2 covers the remaining dredging in the three river sections.

1.2 PHASE 1 CONTRACTS DESCRIPTION

The project scope for Phase 1 activities will be conducted under at least seven separate contracts (excluding the rail transport and disposal contracts as well as agreements with the originating rail carrier for infrastructure improvements) and three separate Remedial Action Work Plans (RAWPs). The contracts and RAWPs are described below and summarized in Table 1-1. The table also includes the relationship of construction quality assurance (QA), quality control (QC) and health and safety to other Phase 1 activities.

Table 1-1. Organization of Phase 1 RA Work Plans

Phase 1 Contract Packages	Remedial Action Work Plans	Construction Quality Assurance Plans	Remedial Action Health and Safety Plan
Contract 1 – Facility Site Work Construction	**RA Work Plan #1** Phase 1 Facility Site Work Construction	Construction Quality Control/Quality Assurance Plan	One umbrella RA Health and Safety Plan
Contract 2 – Rail Yard Construction			
Contract 3A – Processing Facility Construction	**RA Work Plan #2** Phase 1 Processing Equipment Installation and Remaining Site Work		
Contract 3B – Processing Facility Operation	**RA Work Plan #3** Phase 1 Dredging and Facility Operations	Dredging Construction Quality Control/Quality Assurance Plan	
Contract 4 – Dredging Operations			
Contract 5 – Habitat Construction			
Contract 6 – Rail Yard Operations			

The activities to be performed under Contract 1 (Facility Site Work Construction) and Contract 2 (Rail Yard Construction) are presented in detail in Sections 2 through 7 of this RAWP. These activities include the following:

- Contract 1 – Facility Site Work Construction includes general civil work, such as grading, placement and compaction of fill, and paving. Other work activities include wharf area construction, access road construction, river mooring installation, and construction of a support marina. The contractor selected for Contract 1 will be referred to as the civil work contractor in this document.
- Contract 2 – Rail Yard Construction includes rail construction on the processing facility site property and within the right-of-way of the commercial rail carrier and rail yard facilities work. The contractor selected for Contract 2 will be referred to as the rail yard construction contractor in this document.

The activities to be performed under Contract 3A – Processing Facility Construction will be described in the RAWP#2, *Remedial Action Work Plan for Phase 1 Processing Equipment Installation and Remaining Site Work*. RAWP #2 covers the remaining site work, such as processing facility buildings, and the installation of process equipment, piping, electrical, instrumentation, communications, and the commissioning of the systems. The contractor selected for Contract 3A will be referred to as the process equipment installation contractor in this document.

The scope of work under Contract 3B, Contract 4, Contract 5, and Contract 6 will be addressed in *Remedial Action Work Plan #3 – Phase 1 Dredging and Processing Facility Operations*. Briefly, RAWP #3 will cover the following:

- Contract 3B – Processing Facility Operations, including barge offloading, coarse material separation, sediment dewatering, water treatment (process and stormwater), stormwater management, and staging area management and maintenance. In the off season (when the Champlain Canal is closed), the contractor will winterize the processing facility and operate and maintain the stormwater collection and treatment system.
- Contract 4 – Dredging Operations, including resuspension containment system installation, debris removal, the performance of inventory and residual dredging operations and the transport of loaded sediment barges to the off-loading wharf at the processing facility. After dredging is completed in an area, the contractor will place appropriate backfill, cap, or shoreline stabilization structures.
- Contract 5 – Habitat Construction, including the supply and planting of sub aquatic vegetation in certain dredged areas pursuant to habitat reconstruction plans.
- Contract 6 – Rail Yard Operations, including all activities required to operate and maintain the rail yard. This primarily will involve the loading of debris, coarse

material and dewatered sediment into empty rail cars, setting up of outbound loaded trains, and receiving of inbound empty trains.

1.3 WORK PLAN ORGANIZATION

This RAWP for Phase 1 Facility Site Work Construction (FSWC) was developed pursuant to the CD and addresses construction of the:

- Sediment processing facility;
- Access roads;
- Wharf area;
- Rail yard;
- Work support marina; and
- Barge moorings and snubbing post south of Lock C7 of the Champlain Canal.

This RAWP for Phase 1 FSWC has been developed in accordance with the SOW Section 2.1.2 in the CD. Table 1-2 provides a cross-reference of the CD SOW requirements.

Table 1-2. Consent Decree SOW / RAWP Cross-reference Table

Citation	Description of Requirement	RAWP Section
SOW, Section 2.1.2, Page 2-2	…a description of the site work construction activities	Section 2
SOW, Section 2.1.2, Page 2-2	monitoring requirements applicable to facility site work construction,	Section 4 & Appendix B
SOW, Section 2.1.2, Page 2-2	equipment staging,	Section 5
SOW, Section 2.1.2, Page 2-3	compliance monitoring,	Section 4 & Appendix B
SOW, Section 2.1.2, Page 2-3	site work construction schedule,	Section 3
SOW, Section 2.1.2, Page 2-3	The construction schedule shall describe the sequencing and reasonable durations for construction elements and account for seasonal limitations for construction in the Upper Hudson Work Area (e.g., frost conditions which could compromise construction quality such as rail bed installation and foundations, high water events, ambient temperature limitations for asphalt paving, etc.	Section 3
SOW, Section 2.1.2, Page 2-3	This construction schedule shall be integrated with the construction schedule for the processing equipment installation and remaining site work	Section 3
SOW, Section 2.1.2, Page 2-3	worker Health and Safety Plan (HASP)	Section 6 & RA HASP (separate submittal)
SOW, Section 2.1.2, Page 2-3	site work Construction Quality Control/Quality Assurance Plan addressing the items pursuant to Section 2.3.2.2.1 of this SOW that are relevant to this work.	Section 4 & CQAP (separate submittal)

Note: RAWP contents are prescribed in the CD SOW, Section 2.1.2.

This plan consists of:

Section 1 – Introduction: presents general background information about the project.

Section 2 – Description of Construction Activities: identifies the major construction activities, the location of fill sources, and transportation methods and routing.

Section 3 – Schedule: The construction schedule for the Phase 1 FSWC lists construction activities, milestone dates, durations of activities, and depicts how activities are related to one another. Interface points with activities to be described in other RAWPs are also discussed.

Section 4 – Monitoring Requirements and Compliance Monitoring Applicable to Facility Site Work Construction: summarizes the Quality of Life Performance Standards (QoLPS) applicable to the FSWC activities, describes the Stormwater Pollution Prevention Plan (SWPPP) requirements, contingent contaminated soil management requirements for the Work Support Marina, and construction quality control and quality assurance (QC/QA) requirements

Section 5 – Equipment Staging: depicts the areas for contractors to stage their equipment and materials during construction.

Section 6 – Safety: describes the health and safety framework that will be used to address the potential hazards associated with the FSWC activities to ensure that all work is performed in a safe manner.

Section 7 – References: provides bibliographic references to key documents referred to in the body of the report.

Throughout the work plan, reference is made to Technical Specifications, which together with design plans form the basis for the FSWC. The Technical Specifications are part of the Phase 1 FDR.

1.4 WORK PLAN REVISIONS

Construction activities described herein are based on the EPA-approved design plans and specifications for Contract 1 and Contract 2. During implementation, revisions to this RAWP may become necessary due to design changes, unexpected field conditions, or other reasons. When GE becomes aware that revisions will be necessary, and those revisions affect the approved schedule or alter the means or scope of the work set forth in this RAWP, GE will notify EPA of the proposed change and seek EPA approval.

SECTION 2

DESCRIPTION OF CONSTRUCTION ACTIVITIES

A Site Plan Overview is presented in Figure 2-1, and depicts the overall project area including the processing facility site, Champlain Canal, and work support marina, situated adjacent to the Hudson River. As shown on Figure 2-2, the processing facility site is situated along the shore of the Champlain Canal land cut between Locks C7 and C8.

The Phase 1 FSWC activities covered by this RA work plan will include the construction of the access road, the sediment processing facility, wharf area, rail yard, river mooring posts, and work support marina. The work support marina will be located on the west shore of the river, on the New York state-owned property accessible from West River Road in the Town of Moreau. The river mooring posts will be located in the river south of Lock C7 to allow for mooring of project vessels.

2.1 FACILITY SITE CIVIL WORK AND RAIL YARD CONSTRUCTION

Prior to initiation of in-river dredging, the processing facility site must be transformed from its current condition to a fully functional sediment handling and processing facility. The principal construction activities are summarized below.

- The contractor will perform initial site access activities, including installation of erosion control measures, construction of the main access road, installation of site perimeter security fencing and control gates, and setup of an administration area for contractors and representatives of GE and EPA.
- Civil work activities will include earthwork, construction of stormwater basins, stormwater collection system piping, installation of the HDPE liner, utilities, roadways, culverts, and crossings. Up to 100,000 cubic yards (CY) of select fill material will be brought to the site to provide a structural subgrade for roads, tanks, buildings, wharfs, and rail beds.
- Construction of the wharf area, including revetment excavation, placement of rip-rap, construction of concrete retaining walls, wharfs, staging areas, and the loading and size separation area.
- Installation of river moorings and a snubbing post downstream of Lock C7.
- Establishing a work support marina for operations support and monitoring boats.
- Rail yard construction, which will include a maintenance building, a weigh-in-motion scale, a rail yard air system, inspection roadways, concrete loading pad, and a series of tracks and associated turnouts including a fenced off loading track.

The civil work contractor (Contract 1) will commence with site preparation for the processing facility and rail yard. Contract 1 also includes the work support marina construction, the wharf area construction, the river moorings installation, the site earth work, the site paving, and landscaping. Once the necessary site earthwork and sub-ballast is complete the rail yard construction contractor (Contract 2) will commence track installation, rail yard building construction, and other required tasks. These work activities are described in the sections below.

2.1.1 Site Access and Preparation

During the initial stage of the project, the private access road from Towpath Road will provide the main access to the site. This road will be used to mobilize equipment and materials necessary to commence FSWC activities including constructing the Main Access Road from the processing facility site toward Route 196. The existing road way approaches at the current rail road crossing are sufficient to support the delivery of equipment and materials to the site during initial mobilization. Once the Main Access Road sub-base has been constructed, the temporary access road will be taken out of service and the Main Access Road will be used to access the site.

2.1.1.1 Equipment Mobilization and Temporary Access

At the start of the project, necessary equipment to establish the site access and erosion controls, perform earthwork and other early FSWC activities will be mobilized to the site using the existing access road from Towpath Road. The temporary site access across the existing railroad will be coordinated with Canadian Pacific Railroad (CPR) to address potential safety issues when crossing the rail line. CPR will inspect the tracks at the crossing and make improvements, if needed, to accommodate the transport of equipment and materials over the railroad tracks. A CPR flagman will be used during transport of vehicles and equipment over the railroad tracks. A rail road crossing plan is provided in Appendix H. Testing equipment needed for monitoring of work during facility site work construction will also be brought to the site (see QoLPS Field Sampling plan (Appendix B)). During the peak of the initial FSWC activity, as many as 100 workers each day will use the temporary access road and cross the railroad tracks. Table 2-1 provides a list of equipment types identified by the civil work contractor that will be mobilized across the rail road tracks to perform site work (actual equipment utilized may vary). It is anticipated that the civil work contractor will mobilize most of the equipment at the early stages of the project using the temporary access road. The equipment listed in Table 2-1 is assumed to be mobilized once to the site, and maintenance and repairs will be conducted on site whenever practicable. As described in Section 2.1.1, any remaining equipment mobilized to the site will use the Main Access Road, once its construction is complete.

Table 2-1. List of Construction Equipment for Facility Site Work Construction

Construction Equipment	Quantity (approximate)	Description*
Air Compressor	2	185 cubic feet per minute (CFM)
Asphalt Paver	2	Barber Greene
Road Widener	2	Barber Greene
Dual-Drum-Walk-Behind-Roller	4	Bomag
Vibratory Roller	6	Ingersoll Rand
Concrete Finishing Bridge	1	Gomaco
Bulldozer	6	Caterpillar D550
Bulldozer with Global Positioning System (GPS)	4	Caterpillar D6
Articulated dump trucks		25 to 40 ton units.
Front End Loader	5	Various sizes
Track Backhoe (excavator)	7	Caterpillar 330 (OE)
Road Grader	2	Caterpillar 14G
Rubber Tired Backhoe	4	Caterpillar 420
Hydraulic Crane	2	Grove 28-Ton
Conventional Crane	2	American 60-Ton
Hydraulic Crane	1	Liebherr 1160
Flexiboat Barges	8	40-feet x 20-feet
I-612 Vibratory Hammer	1	Int'l. Construction Equip.
Tug Boat	1	
Diesel Pile Hammer	2	Int'l. Construction Equip.
Water Truck	4	
Sheepsfoot Roller	2	Ingersoll Rand
Concrete Pump	1	Schwinn
Scraper	5	Caterpillar

* Equipment descriptions may vary subject to availability, field conditions, contractor preferences, etc.

2.1.1.2 Erosion Control

Site erosion and sediment controls will be implemented on the project. A silt fence will be installed around wetlands and the perimeter of the site, as shown on Contract 1 drawing SP-01000. Other erosion and sediment controls such as hay bales, temporary swales, and check dams, may also be utilized as part of the controls. The civil work contractor will ensure that all surfaces to be excavated are moist, if necessary, during excavation to minimize dust. Water will be dispersed from spray bars mounted on water trucks. If water is applied to the site, it will not be applied in excessive quantities or pressure to cause channeling or erosion of the surface to which it is applied. Monitoring of these controls will be documented in accordance with the SWPPP attached as Appendix D.

2.1.1.3 Site Access Roads

The Main Access Road will be constructed from Route 196 to the processing facility site, running adjacent to the Champlain Canal. Construction will include minor clearing and grubbing, subgrade construction, and final surface installation. Construction will be pursued simultaneously from Route 196 and from the processing facility. Once the road is rough graded with a backhoe, bulldozer and dirt rollers, geotextile will be installed as required. Dump trucks will place crushed aggregate, which will be spread, graded and compacted with a roller as a sub-base. The topsoil that is removed from the road will be stockpiled in designated locations on the processing facility site and temporarily seeded, as necessary, to control erosion.

Part of the Main Access Road includes a bridge over the Glens Falls Feeder Canal. Piles to support the bridge structure will be driven with a pile driver. The bridge excavation area will be dewatered, as necessary, by redirecting the flow with sheeting and/or berms to create dry conditions that would facilitate soil excavation. Soil will be removed with an excavator adjacent to the Feeder Canal to install formed concrete abutments. Structural steel members will be lifted and positioned with a crane. The steel decking will then be furnished and installed above the steel framework, and its surface will be prepared to allow installation of a layer of asphalt.

Once the sub-base is compacted and bridge work is completed, construction vehicles will use the Main Access Road to enter the site. After final paving, marking, and signage is complete (which includes marking the road for traffic control with the required speed limit), a guard rail will be installed adjacent to the roadway along the canal. Then, and after the traffic signal is operational, the Main Access Road from Route 196 to Lock C8 will be opened as a shared-use road with NYSCC (including public access to Lock C8, as controlled by NYSCC). Traffic control for construction at the intersection of Route 196 and the Main Access Road are described in greater detail in the Traffic Control Plan – Appendix C.

2.1.1.4 Fencings and Gates

The fencing plan is shown on Contract 1 drawing S-0044. To restrict site access, a 7-foot-high chain-link fence will be installed around the perimeter of the processing facility. A 30-foot-

long slide gate at the main entrance, plus several swing gates and personnel gates will also be installed. A main access gate (Gate G-1) will be installed at the southern terminus of the Main Access Road to control access and egress to the site. Emergency access will be through Gate G-5, off East Street. Additional gates will be installed within the site to provide access to authorized and properly trained personnel during the operation of the processing facility, wharf area, and decontamination areas.

Access to the rail loading area will also be restricted with chain-link fence. Two gates located near the turn-outs for Track No. 1 will be installed for access control to the rail yard. Fencing around the rail yard will be installed after the rail yard is constructed.

2.1.1.5 Administration Area

Once the site is brought to final subgrade, the administration area used for office trailers, parking, and a support area will be constructed. Installation of the modular office structures shall include connection of utilities, including water, power, and telephone lines.

2.1.2 Civil Work

Civil work construction includes general earthwork, liner installation, construction of stormwater basins and the earthen berm, installation of utilities, construction of site roads and culverts, pavement of the material storage pads, and the sub-ballast grading in the rail yard.

As part of the civil work construction a variety of fill will be used for grading, structural fill, base material and bedding at the processing facility and work support marina sites. All borrow material used for the project will be certified clean fill. The various fill types are anticipated to be provided by local sources.

2.1.2.1 Sediment Processing / Transfer Facility Area

The Sediment Processing / Transfer Facility Area construction includes the processing facility area, rail yard, administration area, and roads within the site. The main work for this area includes:

- Earthwork, including: clearing, grubbing and rough grading; construction of contact stormwater (Type 1) basins; and preparation of dewatering building and water treatment plant areas;
- Installation of collection piping, geotextiles, and a high-density polyethylene (HDPE) liner;
- Installation of utilities, including electrical conduit and manhole-handhole installation to support the supply of power and the extension of primary utilities (water, and telephone) from nearby main line locations;
- Site access roads, storage areas, and loading areas will be constructed and paved;

- Culverts will be installed to allow construction of roads over Bond Creek and the NYSCC Diversion Canal; and
- Construction of paved pads for staging processed materials to be generated under Contract 3B, including knee-walls.

Earthwork

Clearing and grubbing of appropriate areas will be conducted. To prevent damage to existing wetland areas, a 4-foot-high, temporary construction fence will be installed 5 feet outside the wetland boundaries. Existing trees will be left undisturbed whenever possible. The trees outside of the south site perimeter fence line will not be removed. It is anticipated that the clearing of heavy brush and small trees will be minimal: limited to the areas of the railroad tracks, the size separation / material off-loading area, wharf area and main haul road at Bond Creek. Trees will be marked for protection prior to construction. Specifications for tree protection have been included as part of the design. To protect trees outside clearing and grubbing limits, stakes will be placed in a circle around the tree.

The site will be rough-graded using scrapers and/or bulldozers. The topsoil will be stripped and stockpiled on site for future use. Cut-and-fill areas will be surveyed to establish a proper subgrade elevation. Survey control work to confirm grades will be performed in accordance with the final design. Excess excavated soil will be used to create a berm near the Rail Yard Access road. Cut material will be handled, transferred and staged in accordance with the SWPPP.

Stormwater Basin Systems

Stormwater and erosion management systems will be constructed to control all water falling on developed areas at the site. Methods to prevent stormwater run-on (drainage from neighboring sites) will also be constructed. During construction, Stormwater Basin A and Basin B will be used to collect all re-directed flow during construction. The lined North Stormwater Basin and South Stormwater Basin may also be used if necessary and the water pumped to the unlined Basins A and B for treatment prior to the flow leaving the site.

The northern, southern and waterfront Type 1 stormwater basins, designed to collect stormwater that may contact dredge sediment during operations (under Contract 3B or 6), will be graded and sloped with excavators and bulldozers. A multi-layer liner system of geotextile, HDPE membrane, geosynthetic drainage composite, and concrete will be constructed above the subgrade (see Liner Systems below). A trench will be excavated to install a perforated pipe. The pipe will convey the stormwater collected in the basin to the lift station. The piping will be installed above an HDPE liner. To secure the liner and geocomposite system, the perimeter edge will be anchored into the subgrade of the stormwater basins.

Type II stormwater basins, designed to contain non-contact stormwater during operations, will be constructed similar to Type 1 stormwater basins, but without a liner system. Catch basins and trench drains will collect stormwater running off low-permeability site features such as roads, pads, and processing areas. The overflow ditches leaving the basins which discharge to the Bond Creek Tributary and Bond Creek will contain several stone check dams to control sediment from discharging into the streams. An HDPE pipe will be cut to the length of the specified check dam and placed on geotextile on final grade. A backhoe or small excavator will place the riprap to construct the check dams. Once constructed, accumulated sediments will be removed from the check dams when sediment has accumulated to half the height of the check dam.

A 6-inch high concrete curb will be installed at roadway edges around Type 1 areas to prevent run-off into Type 2 areas, even during a 100-year storm event.

Collection System Piping and Lift Stations

The stormwater piping will be fusion-welded HDPE. Catch basins and trench drains will collect stormwater running off low-permeability site features such as roads, pads, and processing areas. These are further described in the SWPPP (Appendix D).

The pump and lift stations for Type 1 stormwater will be installed in accordance with the manufacturers' specifications. The pump stations are packaged units containing: the chamber, pumps, and motors. An excavator will prepare the subgrade at these locations. The pump and lift stations will be set to specified elevations with an excavator or small crane. The pump stations will not be placed into operation in this phase but will be used as low point sumps, pumped manually by the civil work contractor. Hook-up occurs under Contract 3A once the water treatment plant is placed into operation and before site processing operations begin.

Liner Systems

The project requires the installation of approximately 267,000 square yards of geomembrane liner. Quality control of liner construction must meet Specification 02621 specifically providing for pre-approval of installer's qualifications and QC program, shop drawings, and liner manufacturer's QC certifications, material and installation warranties per Specification 01600 1.05.C., and submittal of test results.

A bulldozer will grade the areas prior to liner installation, with spreading and compaction of fill as required to achieve the necessary grades. After grading the subgrade to the proper elevation and slope, the liner system will be installed as required in the different areas of the project. The multi-layer system, which includes membrane liner, sand, and geotextile layers, will be placed by means of a spreader bar attached to the front of a loader. The following steps will be followed to protect the integrity of the liner.

- Equipment or tools will not damage the geomembrane during handling, transportation and deployment;
- Personnel working on the geomembrane will not smoke or wear damaging shoes;
- The method used to unroll the panels will not cause scratches or crimps in the geomembrane and will not damage the supporting soil;
- Adequate loading (e.g. sand bags or similar items that will not damage the geomembrane) will be placed to prevent uplift by wind (in case of high winds, continuous loading is recommended along edges of panels to minimize risk of wind flow under the panels); and,
- Required fill will be placed above the system to reduce the time the system will be exposed to damaging elements.

Field Seaming

The approved seaming processes are fusion and extrusion welding. On the side slopes, seams will be oriented in the general direction of maximum slope (i.e., oriented down not across the slope). In corners and odd shaped geometric locations, the number of field seams will be minimized. Base T-seams will not be closer than 5 feet from the toe of the slope. Seams will be aligned with the least possible number of wrinkles and imperfections (i.e., bumps or bubbles) If an imperfection is found, it will be relieved and cap-stripped. Geomembrane panels must have a finished minimum overlap of 4-inches for fusion welding and 6-inches for extrusion welding.

Field test seams will be conducted on the liner to verify that seaming conditions are satisfactory. Test seams shall be conducted at the beginning of each seaming period and at least once every four hours, for each seaming apparatus and personnel used that day.

All test seams will be made in contact with the subgrade. A welding rod used for extrusion welding will have the same properties as the resin used to manufacture the geomembrane. The test seam samples will be 10-feet long for fusion welding and 3 feet long for extrusion welding with the seam centered lengthwise. Three specimens shall be cut from each end to test the seams. A tensionmeter will be used to test three specimens for shear and three specimens for peel.

Once the liner system and utilities and piping which run above the liner are installed, fill will be placed to bring the site to proper subgrade for paving. The fill layer will be spread and graded using front-end loaders and bulldozers.

In areas to be designated as exclusion zones, the HDPE liner will be installed approximately 2 feet below final grade. In areas where a foundation other structure penetrates this liner, the liner will be sealed against the outside surface of the structure for those structures placed under Contract 1. Sealing of the liner against building structures constructed under Contract 3A will be

performed as part of Contract 3A, and will be described in detail in the *Remedial Action Work Plan for Phase 1 Processing Equipment Installation and Remaining Site Work.*

Water Control and Removal

Witness pipes or subgrade monitoring pipes will be installed as required on the plans. These pipes will be located at the low points in the liner system, the pipes will be used to pump water that collects on the liner into the storm water system during construction. The storm water system will carry this water to the collection basins for management in accordance with the SWPPP. During final paving, caps will be installed on the witness pipes. Water that accumulates on the liner will be pumped to a Type 2 stormwater basin, prior to the start of plant operations.

Utilities

Potable water and electric utility services will be installed using excavators, bulldozers, front-end loaders, and trench support equipment such as trench boxes and pipe shields. Manhole structures will be installed using excavators to prepare the work area, and a trench box or shield to maintain the side slopes during construction.

The nearest water main providing potable water from the Village is located along East Street, approximately 1,000 feet from the southwest boundary of the site. A water line will be installed by the project to connect the site water system to this main. The water lines will be cleaned and tested prior to backfilling or road construction. A heated fiberglass enclosure will be installed at this location to house a backflow preventor. The enclosure will be attached to a concrete base with anchor brackets. In addition, a new, 6-inch-diameter fire water supply line will be installed as part of the site water system to supply hydrants throughout the site. Thrust blocks, block valve supports, hydrants, and valves will be installed as required.

A below grade 1,500-gallon concrete tank will be installed near the water treatment plant area for storage of sanitary wastes. The tank will be installed below the frost line to prevent freezing during the winter months, and will be sized for a one week storage capacity.

Temporary electrical service to support construction will be provided by National Grid. Overhead lines for distribution around the site will be constructed from the point of service from National Grid. Temporary, portable generators shall be used, as necessary, for remote areas of the site.

Electrical conduits will be installed below grade in duct banks that will contain from 2 to 12 conduits. Conduits are constructed of Polyvinyl chloride (PVC) and lengths are solvent welded together. Trenching will be done with an excavator. Spacers will be used to maintain proper distance between each conduit. All conduits will be left with pull strings, as pulling electrical wires and making connections will be conducted as part of Contract 3A – Processing Facility

Construction. An on-site substation will be constructed to receive permanent power from National Grid once details on route and size of service have been designated by National Grid.

Roadways

Depending on the area, the roadways will be constructed of concrete or asphalt. Concrete roadways will be formed and placed, with expansion joints and reinforcement as required. In Type 1 areas (e.g., rail yard loading pad, main haul road near the filter cake staging enclosure), although these areas have a liner beneath them, expansion joints will have a pre-formed elastic joint sealer to function as a water stop. The asphalt will be placed with a paver and roller in open areas and hand placed in congested areas, shaped areas or around pipe supports and other structures. Confirmation of concrete bearing capability for design loads and compaction of subgrades will be performed, pursuant to the applicable technical provisions and the Contractor's Quality Control Plan. Quality control of road construction must meet Specification 02201 and 02645 specifically providing for compaction and testing of subgrades and final grades. To contain runoff, a 6-inch asphalt curb will be installed at the main haul road.

Culverts and Crossings

Steel, concrete, and HDPE culverts of varying diameters and lengths will be required for crossing the streams and waterways. Culvert areas will be excavated and the bottom of the excavation will be graded to receive the pipe. Should conditions warrant, additional excavation will be made below culvert elevation and a bedding material placed to a suitable thickness. The culverts will be installed using equipment such as excavators and a front-end loader. If work activities are observed to be causing excess turbidity, the contractor will be required to install a turbidity curtain along the waterway to contain the suspended sediments, as described in the SWPPP (Appendix D).

A crane may be used to lift and position larger culverts, such as the steel arch pipe for the road crossing over Bond Creek. The three larger culverts that will carry Bond Creek will be installed as follows: arch pipe sections will be fabricated off site and delivered in sections varying from 20 to 31 feet; the pieces will be unloaded and positioned on the stream bed as described in the previous paragraph; additional sections will be installed as required and connected by means of corrugated bands; once the pipe arch is installed it will be backfilled, loading the arch symmetrically about the center line; and finally, the leading end of the culvert will be tied into the cutoff wall.

Culvert areas will be dewatered as necessary by redirecting the flow with sheeting and/or berms. The road crossings over Bond Creek and the NYSCC lock diversion canal will be constructed to provide access between the wharf and other areas. Sedimentation from on-site operations will be kept from the stream by means of silt fence and/or haybales as outlined in the erosion control methods. Once the slopes have been established around the culverts temporary erosion control methods will be removed.

Material Staging and Enclosure Area

Concrete footings and 6-foot-high concrete walls will be constructed to provide containment along the sides of the filter cake staging enclosures, debris staging area, and course material staging area. An excavator will dig the areas for the footings and the walls. Once the footings are formed and poured, the wall sections will be constructed. The wall sections in the fine (filter cake) staging areas will be used to support the enclosure. The HDPE liner will be fastened to the foundation wall to provide a sealed termination point for the liner.

2.1.2.2 Rail Yard Civil Work

Earthwork and Stormwater Drainage

The rail yard area will be rough graded with scrapers and/or bulldozers. General fill will be used as needed from the site. HDPE stormwater piping and catch basins will be installed at the loading platform area and between Track #3 & #5. The subgrade will be established to the levels in the design specifications. A stormwater drainage ditch adjacent to Track #5 will be constructed. Catch basins and piping will be installed at the loading platform area.

Culverts and Crossings

A segmented pre-cast concrete box culvert approximately 330-ft long will be installed across the rail yard area to extend an existing culvert that drains water from the west side of the existing main rail line. This will be connected to the existing drainage structure (dual 42-inch pipes) that is under the existing main rail line. The area will be excavated within the limits of the structure foundations. Any structurally unsuitable material will be removed and backfilled with crushed stone. An existing 72-inch cattle pass culvert, which is currently out-of-service, will be sealed off.

After the main access road is opened, the grade crossing (DOT 249293X) will be closed. This is described in the rail crossing plan (Appendix H). A low-density track crossing will allow continued access by the abutter to the north of the site using the existing private grade crossing (DOT 249291J). Low-density crossings will be installed over yard tracks as part of constructing the inspection roadways.

Loading Pad Construction

Once the earthwork and drainage structures are completed, the rail yard construction contractor will install precast concrete panels between and besides the rails of the loading track. The civil work contractor will install a cast-in-place concrete pad at the loading pad area with contraction joints and isolation joints as specified in the design. A cast-in-place concrete curb will be constructed around the perimeter of the loading platform, with the exception of the location where Track #7 crosses into the loading pad area.

Utilities

Communication, water and electric services will be routed to the rail support building and weigh scale. Communication and electric service will be distributed to other areas of the Rail Yard area (e.g., weigh scale), in accordance with the design specifications. The utilities will be installed in the same manner as described for the Sediment Processing Facility area (Section 2.1.2.1).

2.1.3 Wharf Area

The work wharf and unloading wharf along the Champlain Canal will be constructed so that barges alongside the wharves will not interfere with the navigation channel. To accomplish this, the canal bank will be cut back by approximately 65 feet. Initial earthwork will include clearing, grubbing, and excavation. The contractor will construct the wharves by: installing piles, revetments, and rip-rap; building a structural steel superstructure and framework; and installing a concrete deck and rails. The unloading area will be paved, the decontamination areas will be constructed, and primary utilities will be brought to the area.

2.1.3.1 Revetment Excavation, Construction, and Rip-rap Installation

The proposed revetment will be constructed approximately 65 feet inland with an excavator. The in-stream diversion canal flow will be diverted around the active work area to allow excavation to proceed in dry working conditions. The Diversion Canal will be temporarily dammed up by means of a berm constructed perpendicular to the flow. The NYSCC will be asked that the inlet valve for the Diversion Canal be closed during this construction of the revetment area. After revetment construction is completed, the water will then be channeled through a pipe, that will carry it though the revetment area and out to the canal.

The outfall to the NYSCC Diversion Canal will be graded with an excavator for a level transition to the existing channel. Once the diversion canal is controlled through the bypass pipe as described in the above paragraph, the work on weir and rip rap will be done in the dry. Silt will be controlled with sedimentation measures, per the SWPPP (Appendix D). Geotextile will be laid over the rough grading, and an excavator will place an 8-inch-thick layer of crushed stone, and a 3-foot-thick layer of rip-rap. A pre-cast concrete barrier will be embedded into the rip-rap to support a pre-cast concrete weir, which will be placed with an excavator or crane. A poured-in-place concrete retaining wall or a pre-cast concrete barrier will be installed at the top slope of the new revetment.

To construct the new revetment, the area will be rough-graded with an excavator and geotextile fabric will be installed along the slope face. This will be followed by the installation of an 8-inch-thick layer of crushed stone and a 3-foot-thick layer of rip-rap. The stone will be placed and spread to final slope and grades with an excavator. Pre-cast and poured-in-place concrete retaining walls (depending on location) will be installed at the top slope of the revetment. The working wharf and unloading wharf will be located in the areas of these

retaining walls. The retaining walls are designed to be anchor points for structural steel framework and will be constructed with beam pockets, beam plates, and anchor bolts for the structural steel and decking.

2.1.3.2 Work Wharf, Unloading Wharf and South and Center Staging Areas

Pile Installation

Pipe piles will be installed by means of a track mounted drill rig which will auger the hole and advance the casing into bedrock and seat the casing into the rock. The drill rig will then drill into rock the required depth and diameter. Reinforcing steel cages will be set into the casing by means of a hydraulic crane. Concrete will then be tremied into the casing. Casing will then be trimmed to the proper elevation. Quality control of pile construction must meet Specifications 02315 and 02368 specifically providing for submittal of shop drawings, material certifications, and pile driving equipment testing documentation, and CM approval of pre-qualified subcontractors.

Structural Steel and Concrete

A crane will be used to position structural steel members connecting the pipe piles. The steel members will then be connected and anchored to the retaining wall, forming a continuous steel framework. The pre-formed steel decking will be installed above the steel framework, and its surface will be prepared to allow construction of the concrete deck. Pre-cast concrete fender panels will be installed on the end of the wharves, secured to the main deck section with re-bar, and supported by steel knee bracing. Concrete is poured over the steel decking to form the finished grade for the working and unloading wharf decks. Quality control of wharf construction must meet Specification Sections 05110 – 05500 (Waterfront Structural Steel, Steel Deck, Metal Fabrications), 11165 (Fender Systems), and 03001 (Concrete).

Perimeter pre-cast concrete barriers will be installed for support areas and walkways. Soil or asphalt will be placed above a compacted subbase on the landward side and rip-rap will be placed on the canal side. The pre-cast concrete barriers will be positioned and installed with an excavator. Walkways, ladders, rails, winches, fenders, and cleats will then be installed.

Cleats, and Fenders

Cast steel cleats will be installed to the steel framing for tying of barges and tugs to the wharf area. The cleats will be installed with marine grade hardware that will be cast in the pre-cast fender panels at the precasting facility after the platform is constructed. To allow staging the barges and tugs at the wharf area, rubber fenders will be attached to the concrete fender panels. The precast fenders will be installed from land by means of a 200-ton crane.

2.1.3.3 Size Separation Area

The size separation area will be rough-graded with bulldozers and compacted with rollers. The subgrade will be inspected and any protrusions or rocks will be removed to allow proper installation of a flexible membrane liner and geotextile. Front-end loaders and excavators will assist with the positioning and placement of the liner and geotextile system. Along the wharf, the liner will be welded to an HDPE strip in the concrete retaining wall. A dump trailer will place the fill and bulldozers and graders will spread and grade a one-foot-thick layer of fill above the liner system to serve as a subbase. A one foot thick layer of asphalt will serve as the final surface and will be graded to drain to the waterfront stormwater basin.

Once the walkways and dolphins in the staging areas are complete, the barge winch system can be installed. The winch platforms and sheave support frames will be connected to the dolphins, winches installed on the platforms including sheaves installed on the sheave support frames. The required wire rope will then be installed into the framework.

2.1.4 River Moorings

Four moorings will be installed in the Hudson River, downstream of Lock C7, to facilitate barge movement and staging. The mooring dolphins are designed to stage project vessels that are not in use or are waiting to be transported to the processing facility. Also, one turning dolphin (i.e., snubbing post) will be installed 60 ft off the bullnose of Lock C7 wall to assist barges in repositioning, as necessary, at the entrance to the lock.

The mooring dolphins will be installed by setting a crane and pile hammer on a barge in the river. Each mooring will be positioned to the proper location, the battered pile will be driven, followed by the two pipe piles. The framing will be welded together and the fender installed. The crane will be replaced on the barge with a drill rig and the ground anchors installed.

The turning dolphin will consist of a 30-inch-diameter steel pipe pile and will be installed in a similar manner as the mooring dolphins. To key the steel pipe pile to the bedrock, a hole will be drilled with a slightly larger diameter drill, into bedrock 10-ft, and the annulus filled with high-strength grout. An 8.5-foot-long by 6.3-foot-diameter donut fender will be installed around the steel pipe pile to assist vessels in turning. Both the staging dolphins and the turning dolphin will be painted with approved marine epoxy paint in accordance with United States Coast Guard (USCG) aids-to-navigation requirements.

2.1.5 Work Support Marina

The development of the work support marina on the west bank of Thompson Island Pool will provide small project craft with direct access to the Hudson River, thus reducing the marine traffic between Lock C7 and the processing facility wharf. The New York State Department of Environmental Conservation (NYSDEC) boat launch, immediately to the south of the work

support marina, will be used to launch project support vessels. Construction of this marina will include:

- Improvement of the access road (old Route 29);
- Clearing and grubbing the site;
- Placing fill and geotextile as sub-base for parking and staging areas;
- Paving of roads, parking and staging areas;
- Installation of security fencing, gates, and project-support trailers;
- Distribution of electrical power; and
- Installation of a gangway and floating docks.

A site plan for the work support marina is shown on Figure 2-3. Power will be supplied by extending the existing on-site electric, located north of the proposed security trailer, to a medium voltage switchgear and transformer. Electrical conduits will be installed below grade in duct banks that will contain from 1 to 12 conduits. Power will be distributed to office trailers and exterior lighting.

2.1.5.1 Site Preparation and Parking Area

An area with culturally significant resources is known to exist on the property. These resources will not be impacted by site activities. However, to ensure their protection, new fencing will be placed around the area prior to work, as shown on Figure 2-3. The work area at the work support marina will be cleared. Fill will be delivered by truck. The fill will be graded to the required elevations with a bulldozer. The access road and parking areas will be established and paved to final grade. The disturbance of existing soil at this site will be minimized. Stripping of topsoil will not be permitted unless excavation is required as shown on the contract drawings or approved by the CM. All on-site soils excavated as shown on the drawings will be stockpiled on-site, beyond the parking area. Should on-site soils need to be removed from the site, they will be tested for PCBs and disposed of at a facility permitted to receive the material. Any soil that is removed will be sampled and managed as described in Section 4.2.2.

2.1.5.2 Concrete Anchor Blocks

Concrete blocks will be installed in the bank to anchor the floating docks. An excavator will remove the necessary embankment and a crane will install the pre-cast concrete anchor blocks, which will measure approximately 8 feet long by 8 feet wide by 5 feet high. The excavation area will be compacted to prevent settlement prior to installation of each anchor block. The excavated material will be stockpiled and managed as described in Section 4.2.2.

2.1.5.3 Pipe Supports and Floating Dock System

The pipe supports will consist of 8-inch-diameter aluminum pipe struts. Each pipe strut will be connected to a concrete anchor block then connected to the floating dock system. Dock system tension will be controlled by lateral chains with turn-buckles. The dock system will be assembled by installing the concrete anchors and allowing them to cure. The 20-foot wide main walkway will be assembled and set into the water, assisted by a large hydraulic crane. This section will be connected to the anchors and secured. This 20-foot wide section will be used as a work platform. The 10-foot wide walkways north and south of the main platform will be assembled off the 20-foot wide platform in the water and floated to their final position. They will be secured to the anchors and then the finger docks will be set in the water and attached to the 10-foot wide sections. Cleats and gangways will then be installed. Two junction boxes, one on each side of the gangway, will be mounted on the dock to distribute power to electric pillars installed between each vessel berth to illuminate the floating dock area and provide electrical shore power to project vessels.

2.1.6 Rail Yard Construction

The rail yard is the portion of the site where dewatered sediments will be loaded onto railcars for transport by 81-car unit trains to an offsite disposal facility. The rail yard will also receive returned, empty, 81-car unit trains.

The rail yard construction contract will include a rail yard building, a weigh-in-motion scale that will weigh railcars containing processed sediment materials prior to transport offsite for disposal, a rail yard air system, and a series of tracks and associated turnouts used for operations and staging of rail equipment. These facilities will be constructed on a graded and prepared area, as described in Section 2.1.2.2.

2.1.6.1 Rail Track Layout / Construction

The rail yard will consist of:

- A main line passing siding, Track #1;
- Storage tracks designated Track #2 and #3;
- A weigh-scale track designated Track #5,
- The loading track designated Track #7,
- The repair-in-place track designated Track #9; and
- Miscellaneous other tracks identified as Tracks #8, and #10.

Rail yard construction will be performed on subballast that is installed as described in Section 2.1.1. Rail yard construction will include installation of ballasted track and special work, including crossings, rail yard air and other ancillary facilities. Track ballast will be spread from dump trucks directly on the prepared sub-ballast and spread with either a bulldozer with a

spreader box or tailgated and leveled with a bulldozer or power grader. The finished ballast pads will be compacted with a smooth drum vibratory roller. Top ballast will be hauled in by dump truck and then stockpiled in the stockpile area or within close proximity to where needed if space allows. It will then be loaded into hi-rail dump trucks or dump cars and distributed on the completed skeleton track. Wooden ties will be laid and then spread to the correct length and set with a rail tie loader. Top ballast will be hauled in by dump truck and stockpiled in the designated stockpile area or within close proximity to where needed if space allows. It will then be loaded into hi-rail dump trucks or dump cars and distributed on the completed skeleton track

Ties, rail, and other track material required to construct ballasted-jointed or relay-welded rail track and special work will be installed and top-ballasted, aligned, and stabilized. Low-density, at-grade crossings will be constructed where yard roadways cross tracks.

To establish a grade for construction, initial ballast will be installed on Tracks 1, 2 and 3. Rail ties will be distributed and installed at these tracks. Additional ballast will be spread to the elevations stated in the design, and the rail will be installed. Turnouts will be constructed at Track #1 to the south ladder, Track #3 to Track #2, Track #1 to the North Ladder, and mainline turnouts (north and south). The signal system and turnouts for connecting of Track #1 to the main line will be designed, installed, and activated by CPR. Since these fully signaled and controlled turnouts have a long lead time, Track #1 turnouts may be temporarily operated manually , if necessary, to receive construction materials.. Once the entire rail yard is accepted, the power to the turnouts will be activated.

For Track 1, the rail strings will be welded with a portable electric flash-butt welding machine set up onsite. If rail is furnished in 1,440’ long strings, closure welds would be performed in track using the thermite welding process after the track is constructed and surfaced. The rails will be pulled along the ties with a rough terrain forklift or mobile crane which will be followed by a crew to apply track fasteners, including plates, lags, and clips.

Turnouts will be installed followed by construction of Tracks #2, #3 and Track #5. Installation of yard service road, grade crossings, and concrete panels will be installed following the final surfacing on trackwork. Portions of Tracks #7 will have concrete panels installed as a primary containment in the event of a spill of processed materials during loading. A bumper post will be installed on each of Tracks #7, #8, #9 and #10. A drain pan will be installed as part of Track #10.

2.1.6.2 Rail Yard Facilities

A rail yard service area pre-engineered building measuring approximately 60 feet long by 40 feet wide by 16 feet high will be constructed. To construct the building, conventional construction equipment such as front-end loaders, an excavator or small crane to lift equipment, a vibratory roller compactor, and a rough terrain forklift will be used. The steel frame building will have an overhead door for equipment and vehicle access. An 8-inch-thick, reinforced

concrete slab will be poured as the floor. The walls will then be erected in sections then the roof system will be assembled.

The air lines for the rail yard air system will be installed in conduit during placement of the ballast pad. Once the rail yard air system is constructed and pressure tested, ballast material will be spread and leveled to final grade. The first work anticipated for the air system will be the advanced installation of a portion of the air lines that cross under Tracks 10, 9, 5 and 3. These sections will be installed prior to construction of those tracks and most likely prior to the start of construction of the rail yard maintenance building. These lines will be installed by open cut excavations, bedded, backfilled and compacted. The stubbed out ends will be properly covered, protected and reference marked before final backfilling so that the ends can be readily located later in the project when the rest of the system is installed. Once the compressor pads are prepared inside the rail yard maintenance building, the compressor equipment will be installed and secured to the floor. The underground fiberglass reinforced plastic (FRP) tank will then be installed and tied into the drain pipes stubbed out from the building. The balance of the HDPE piping will be installed between "from" and "to" points per the plans and specifications. The air piping will be installed by either open cut excavation or trenching, depending on field conditions. The piping will be welded together while above grade on the ground and then bedded in the ditch line on the compacted trench bottom, covered with 6-inches of select fill and the remainder backfilled with native soil. Stub ups will be made at appropriate locations and headers installed as shown on the drawings. At railside header locations, piping may rest on pressure-treated sleepers for support. The piping from outside will be run into the building and connected to the compressors. Start-up and testing of the system will be completed once all electrical work has been completed which will allow for start up of the compressors for final testing and approval of the air system.

On Track #5, a foundation pit for the weigh-in-motion scale will be excavated, cast-in-place foundations placed and then the scale will be installed. Continuous-welded rail will be installed over the scale, followed by the signals.

The weigh-scale building, measuring 8 feet by 8 feet, will be constructed, including all electrical work. The building footers will be constructed by excavating to the proper depth. The necessary formwork, rebar and concrete for the footings will be placed and all formwork for the walls on the footings will be laid out. The concrete floor will be poured after the footers are completed. After the concrete is installed, the steel framework will be anchored to anchor bolts embedded in the concrete footers. Upon completion of setting the steel, the walls will be sheeted and insulated. The roof insulation and panels are then installed. The final details for the building will include installing all building trims, doors and hardware and installation of the overhead door. The lighting, electrical and air compressor systems will be installed upon completion of the basic structure.

2.1.6.3 Weigh Scale

The foundation/pit for the weigh scale and subgrade for the approach slabs will be excavated to the proper subgrade and compacted. The two 75-feet long reinforced concrete approach slabs and the foundation and pads for the 12.5-foot long weigh module will then be placed. Electrical conduits and drains will be cast into the concrete at this time.

At the time of delivery, a delivery truck, with an onboard crane system, will set and install the scale module into the completed scale pit. Equipment and installation will be in conformance with State of New York Weights and Measures requirements. Installation of the scale system by the scale manufacturer will include:

- Overall inspection and acceptability of foundation prior to weigh bridge installation;
- Installation of all weigh bridge modules using the delivery truck, crane and operator;
- Installation of the complete rail scale;
- Installation and start up of the controller and hardware;
- Electrical signal connections from power cells to junction boxes, indicator, etc;
- Connection to the controller including system programming; and,
- Final testing and calibration utilizing railroad track scale test car. Rail Scale Test Car provided by others.

2.2 TRANSPORTATION METHODS AND ROUTING

Figure 2-4 shows the truck routes in the vicinity of the Processing Facility Site. During civil work and rail yard construction, all structural fill, equipment, and materials will be trucked to the site. Maps depicting anticipated truck routes from potential fill sources to the site are shown in Appendix E, these maps are provided for informational purposes only as actual routes will be decided by the contractor and will adhere to the truck routes identified in Figure 2-4. The materials, equipment or other items delivered to the staging areas will be unloaded in the staging area or directed to the appropriate area of the site.

The civil work contractor will initially mobilize to the site using the temporary access road, until the Main Access Road from Route 196 is completed for use by construction contractors. Deliveries to the site will then be through the main gate, traveling the North Access Road to the staging areas designated for Contract 1: southwest of the access gate and adjacent to the wharf area. These areas are depicted in Appendix A, Equipment Staging Plans. The materials, equipment or other items delivered to the staging areas will then be distributed to the site as appropriate.

The staging area for the rail yard construction contractor is located in the center of the site, south of the proposed rail yard. Deliveries for Contract 2 will be directed to this area. On-site

distribution of equipment, materials or other items will be arranged by the contractor, with the routing patterns to be approved by the CM.

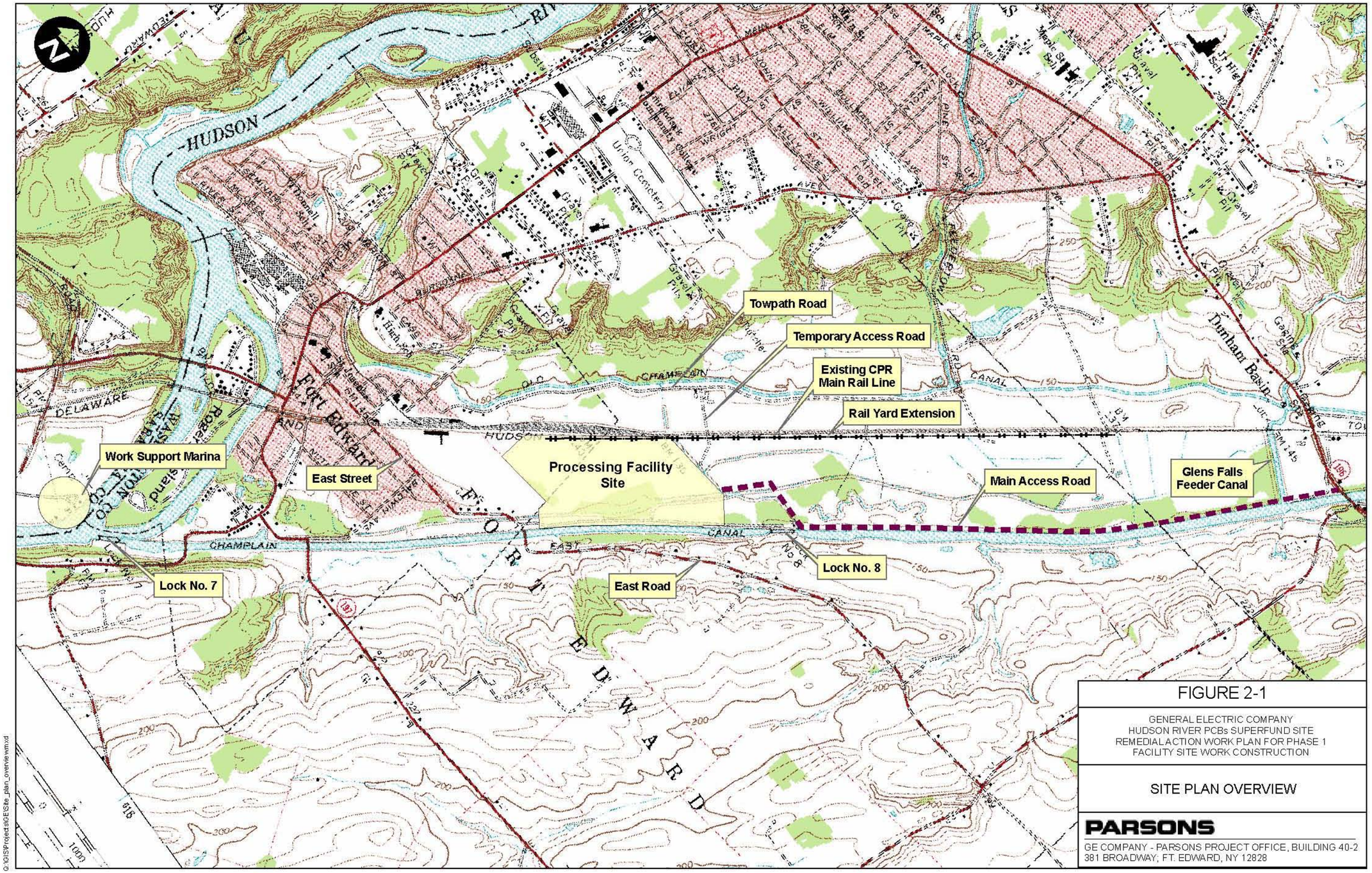


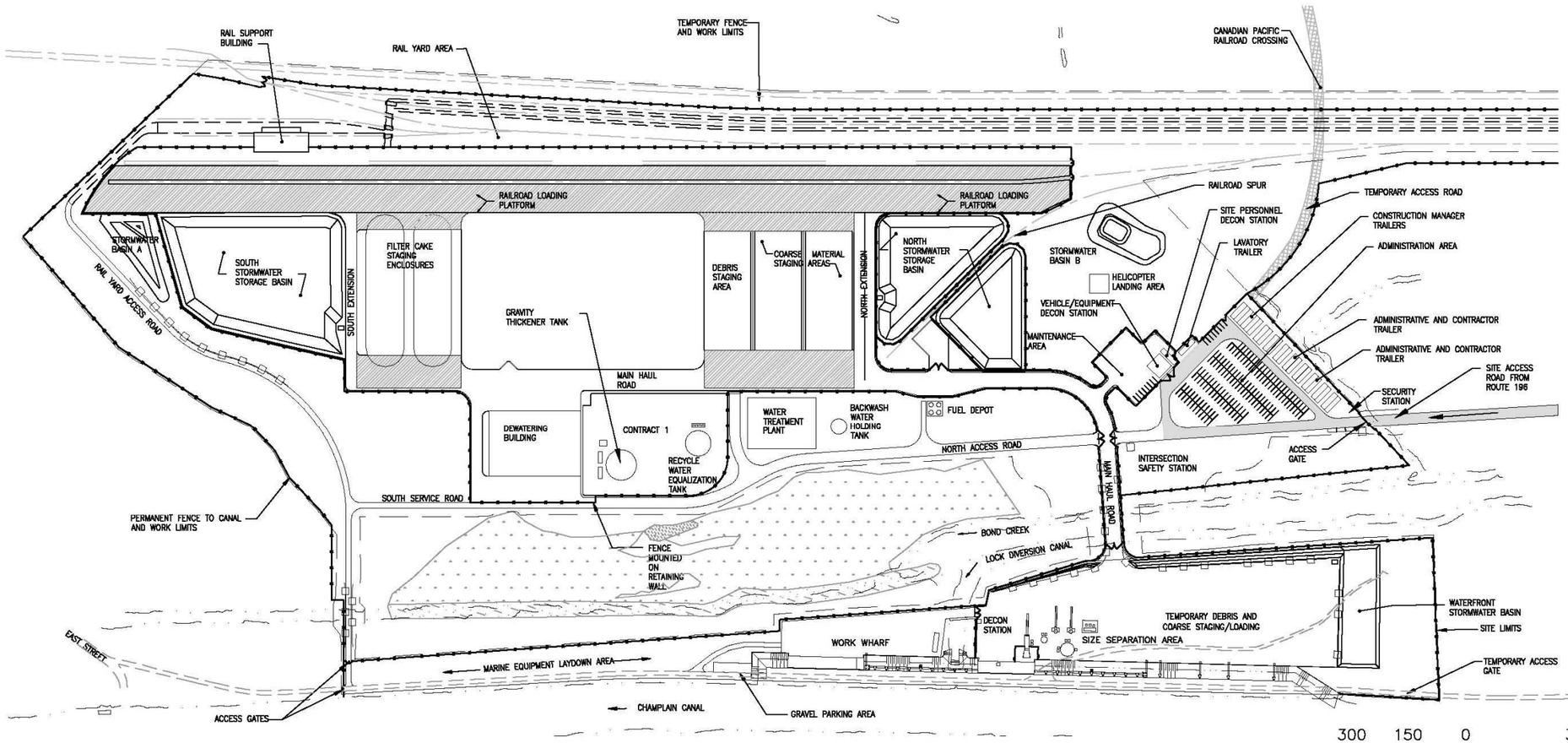
FIGURE 2-1

GENERAL ELECTRIC COMPANY
HUDSON RIVER PCBs SUPERFUND SITE
REMEDIAL ACTION WORK PLAN FOR PHASE 1
FACILITY SITE WORK CONSTRUCTION

SITE PLAN OVERVIEW

PARSONS

GE COMPANY - PARSONS PROJECT OFFICE, BUILDING 40-2
381 BROADWAY; FT. EDWARD, NY 12828



SOURCE:

BASE MAP DRAWING SUPPLIED BY BLASLAND, BOUCK & LEE, INC.

LEGEND:

- SITE PERIMETER FENCE
- TEMPORARY FENCE
- FORESTED AREA
- EMERGENT WETLANDS
- TEMPORARY ACCESS ROAD
- SITE ACCESS ROAD FROM ROUTE 196

FIGURE 2–2

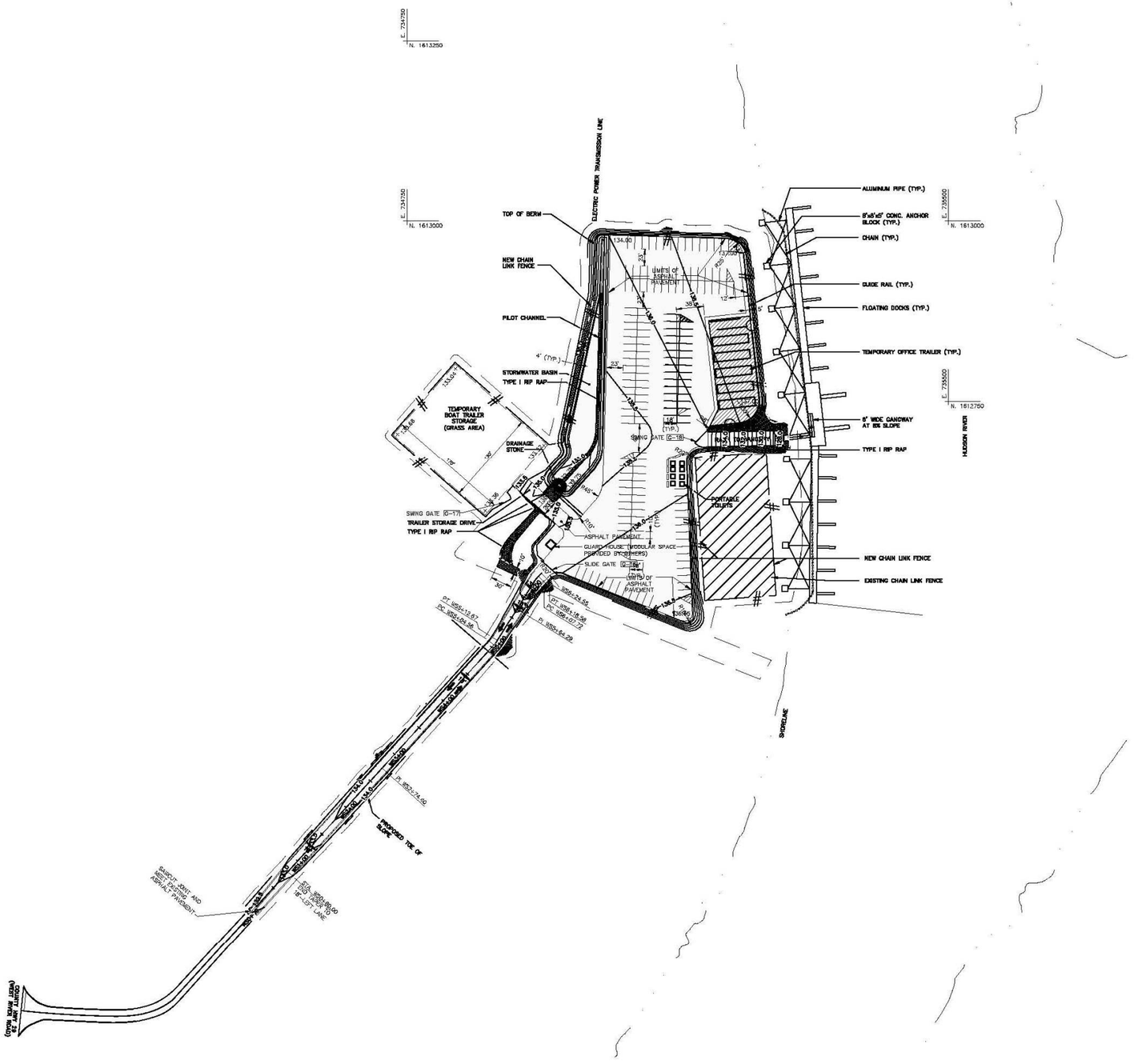
GENERAL ELECTRIC COMPANY
HUDSON RIVER PCBs SUPERFUND SITE
REMEDIAL ACTION WORK PLAN FOR PHASE 1
FACILITY SITE WORK CONSTRUCTION

PROCESSING FACILITY SITE PLAN
(PROCESSING AND RAIL YARD FACILITY)

PARSONS

GE COMPANY – PARSONS PROJECT OFFICE, BUILDING 40–1,
381 BROADWAY FT. EDWARD, NY 12828

442209.04012 ** 442209C001(REVA).DWG ** STEVE ** 01/08/07 ** 13:09:38



LEGEND:

CULTURAL AND ARCHEOLOGICAL SENSITIVE AREA

SOURCE:

BASE MAP DRAWING SUPPLIED BY
BLASLAND, BOUCK & LEE, INC.

150 0 150 300

SCALE: 1"=150'

FIGURE 2-3

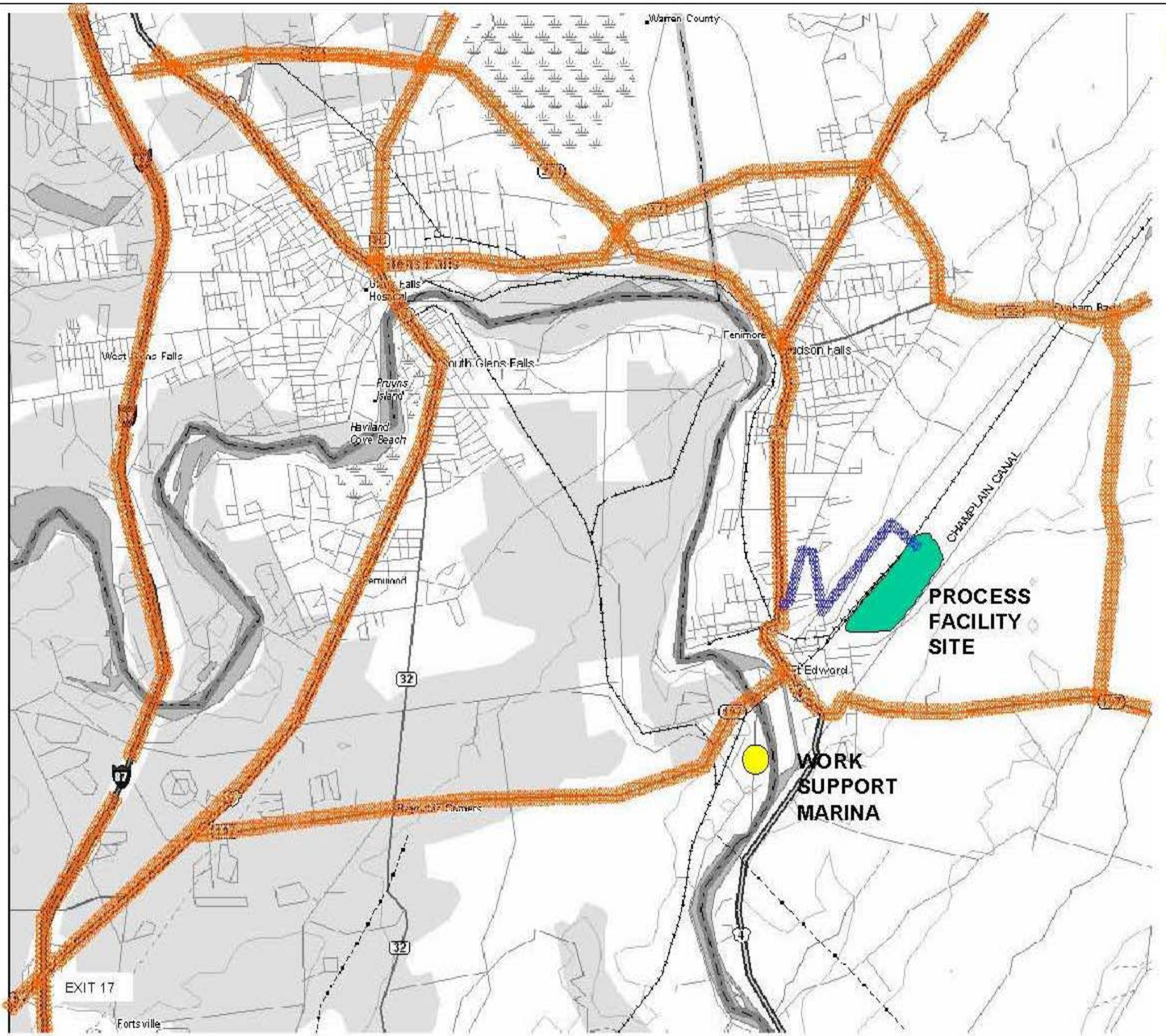
GENERAL ELECTRIC COMPANY
HUDSON RIVER PCBs SUPERFUND SITE
REMEDIAL ACTION WORK PLAN FOR PHASE 1
FACILITY SITE WORK CONSTRUCTION

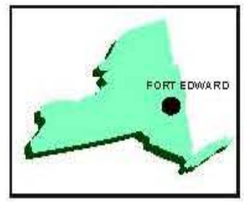
WORK SUPPORT MARINA SITE PLAN

PARSONS

GE COMPANY – PARSONS PROJECT OFFICE, BUILDING 40-1,
381 BROADWAY FT. EDWARD, NY 12828

442209.04012 ** 442209C002(REVA).DWG ** STEVE ** 01/10/07 ** 09:01:39





LATITUDE: N43° 18' 11"
LONGITUDE: W73° 32' 29"

New York
Quadrangle

SOURCE: DeLORME 3-D TOPOQUAD PROGRAM

2000 ft Scale: 1 : 68,750 Detail: 11-5 Datum: WGS84

LEGEND:

STATE OF NEW YORK DESIGNATED TRUCK ROUTES

TOWN OF FORT EDWARD TRUCK ROUTE, TO BE USED DURING TEMPORARY ACCESS ONLY

NOTES:

REFERENCE: OFFICIAL DESCRIPTION OF DESIGNATED QUALIFYING AND ACCESS HIGHWAYS IN NEW YORK STATE. NYSDOT, TRAFFIC ENGINEERING AND HIGHWAY SAFETY DIVISION APRIL, 2006.

FIGURE 2-4

GENERAL ELECTRIC COMPANY
HUDSON RIVER PCBs SUPERFUND SITE
REMEDIAL ACTION WORK PLAN FOR PHASE 1
FACILITY SITE WORK CONSTRUCTION

TRUCK ROUTE MAP

PARSONS
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SECTION 3

SCHEDULE

3.1 OVERVIEW

The construction schedule for Phase 1 FSWC is presented as Figure 3-1. This schedule identifies the major construction activities and sequencing for construction of the sediment processing facility, wharf area, work support marina, and rail yard.

The construction schedule describes the sequencing and reasonable durations for the facility site work and rail yard construction activities described in Section 2. The schedule accounts for average seasonal limitations to construction in the Upper Hudson River work area. These include, but are not limited to, frost conditions or weather delays such as precipitation events and ground and ambient temperature limitations, which would compromise construction quality.

3.2 INTERFACE POINTS WITH OTHER CONSTRUCTION ACTIVITIES

Because the Phase 1 RA is divided into at least seven major contracts, the interface points between each contract scope of work are important to the overall project schedule. The key sequence of activities and interface points between the civil work contractor (Contract 1) and rail yard construction contractor (Contract 2) are listed below.

- Civil work contractor will complete initial site work including underground utility piping, drainage installation and liner. Civil work contractor will bring all proposed rail yard areas to specified subgrade, sub-ballast, and required compaction, with emphasis on early completion of the work in the vicinity of Track #1. These activities need to be completed, particularly at the Track #7 Loading Platform area and Rail Support Building Area before the rail yard construction contractor can start. Rail yard construction contractor will then complete utility tie-ins at rail support building.
- Review by the rail yard construction contractor and acceptance of subballast by the CM is required prior to turnover to rail yard construction contractor for maintenance and rail yard construction; ballast, ties, and rail. Rail yard construction contractor will complete ballast, pre-cast panel, and rail at Tracks #7 and #9. Acceptance of work performed by rail yard construction contractor by the CM is required.
- Civil work contractor will construct the temporary security fence through proposed rail yard. Review by the rail yard construction contractor and acceptance by the CM is required; then rail yard construction contractor assumes maintenance responsibilities of the temporary fence.
- Civil work contractor will install permanent fence in rail yard after rail yard construction contractor completes rail construction.

- Civil work contractor will install cast-in-place concrete loading platform after CM acceptance of pre-cast panel rail construction is complete at Track #7.
- Rail yard construction contractor will maintain drainage system rough-in at Track #7 and #9 during installation of ballast, pre-cast panels, and rail.

The key sequence of activities and interface points between the civil work contractor (Contract 1) and the process equipment installation contractor (Contract 3A) based on initial information are listed below. These interfaces will be confirmed or revised as part of schedule development for RAWP #2, Process Equipment Installation and Remaining Site Work, prepared by the selected contractor who will perform Contract 3A.

- Civil work contractor will complete initial site work including grading, underground utility piping, drainage installation, and liner. Civil work contractor will bring entire Processing Facility Site to specified subgrade and required compaction, with emphasis on early completion of the Main Haul Road to allow mobilization of process equipment installation contractor.
- Civil work contractor will furnish and install duct banks, manholes, handholes, and conduit as specified for the electrical and communication distribution. Process equipment installation contractor will install major electrical equipment, pull cable, furnish and install all electrical grounds and manhole hardware, terminate cables and construct equipment pads.
- Civil work contractor will complete asphalt paving at the wharf area and all steel framing and steel decking for the unloading wharf, prior to process equipment installation contractor working in area to install size separation equipment and the hyrdocyclone pit, but after process equipment installation contractor installs required foundations.
- Underground utilities and stormwater drainage need to be completed at the entire wharf (work wharf, unloading, south and center staging area) before process equipment installation contractor can start. Process equipment installation contractor will pull cable, furnish and install all grounds and manhole hardware, terminate cables and construct equipment pads.
- Civil work contractor will place liner in all areas and leave openings where processing facilities will be located. Process equipment installation contractor will trim liner, as required to construct the facility, furnish and install additional liner as required, and terminate to existing liner system and to the facility.
- Civil work contractor will install the underground piping, utility conduits, duct banks, manholes, and water or sewer lines to a stub-up point within 5 feet of building or end use point. Process equipment installation contractor will connect to stub-up points and distribute utilities throughout process areas.

- Civil work contractor will install all underground utility conduits, manholes, handholes, and foundations for street lighting, parking lot lighting, and area light poles. Wiring, grounding, fixtures, and poles are installed by the process equipment installation contractor.

3.3 ASSUMPTIONS AND QUALIFICATIONS

The project schedule includes the following assumptions and qualifications:

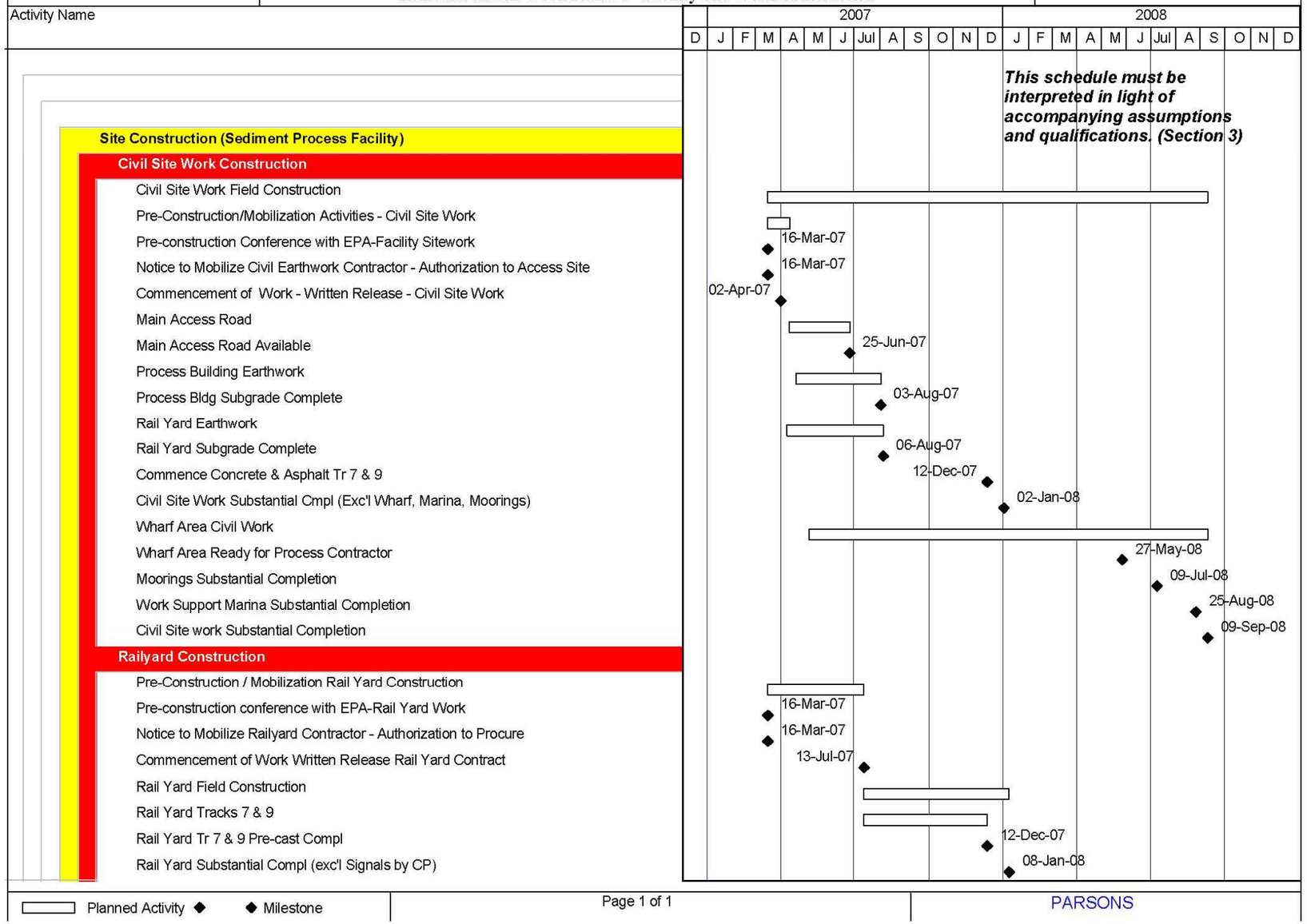
- Third party entities, including but not limited to utility service providers, railroads, rail transport, public entities and landfill, meet required dates, as described below.
- Weather conditions are such that the access road, main processing facility and rail yard site are free of snow, ice and sufficiently dry to allow commencement of earthwork on April 2, 2007.
- Necessary site access leases and agreements will be executed for the processing facility site and main access road so that mobilization can begin by March 16, 2007.
- Necessary site access and lease agreements will be executed for the Work Support Marina by April 1, 2008.
- Site leases, railroad agreements and public utility agreements are fully executed prior to issuing Notices to Mobilize for Contracts 1 and 2.
- Access agreement will be executed for crossing the existing mainline to mobilize equipment to the processing facility site by March 16, 2007.
- Relocation of existing handholes and overhead lines within the grading limits by mid-March 2007.
- Temporary construction power will be provided to the limits of the site by April 1, 2007.
- Pole relocation at Route 196 is accomplished prior to April 1, 2007.
- Power for the traffic control signal is provided to the Route 196 intersection by May 1, 2007.
- Power is provided to the Work Support Marina by May 1, 2008.
- EPA approves RAWP # 1 by March 1, 2007.
- The schedule does not account for events that are beyond the control of GE.
- EPA and GE will continue to discuss and reach timely resolution of the outstanding Phase 1 final design issues that relate to Contracts 1 and 2 (access road design and work support marina design).
- Weather conditions meet average seasonal limitations for construction in the Upper Hudson River work area (e.g., frost conditions, high water events, ambient temperature limitations, etc.).

- Actual site conditions are consistent with site condition data previously obtained and which have been relied upon for the basis of design and construction.
- Material and equipment fabrication and delivery times are estimated; actual fabrication and delivery times are controlled by market conditions and will be determined at the time orders are placed.

FIGURE 3-1

Hudson River Sediment Remediation Project - Phase I

Remedial Action Work Plan # 1 - Facility Site Work Construction



SECTION 4

MONITORING REQUIREMENTS AND MITIGATION AND RESPONSE ACTIONS APPLICABLE TO FACILITY SITE WORK CONSTRUCTION

This section summarizes the QoLPS applicable to the FSWC activities, the controls that will be implemented during the FSWC to meet those standards, the monitoring that will be conducted to assess achievement of those standards, and the actions to be taken if the numerical values in those standards are exceeded or if complaints are received from the local community related to these quality-of-life issues. This section also describes SWPPP requirements, contingent contaminated soil management requirements for the Work Support Marina, and construction QC/QA requirements.

4.1 QUALITY OF LIFE PERFORMANCE STANDARDS

EPA has established QoLPS for Phase 1 of the Remedial Action in the Upper Hudson River (EPA, 2004). Those standards address air quality, odor, noise, lighting, and navigation. The portions of the air quality standard relating to polychlorinated biphenyls (PCBs) and to the National Ambient Air Quality Standards (NAAQS) do not apply to the FSWC activities, although the portion of that standard relating to opacity does. The QoLPS for odor, noise, lighting, and navigation apply to these activities. These standards require implementation of engineering and/or operational measures to meet those standards (based on the Phase 1 design), monitoring to assess achievement of those standards, and the implementation of mitigation and other response actions in the event of an exceedance of or deviation from those standards.

GE's Phase 1 FDR describes the QoLPS and presents design analyses assessing the ability to achieve the standards, as well as engineering and operational features that are included in the design to meet the standards and, where necessary, to mitigate potential exceedances of the QoLPS. Section 4 of the associated Phase 1 Remedial Action Community Health and Safety Plan (RA CHASP) (Parsons, 2006) describes GE's overall approach to addressing the QoLPS and provides detailed descriptions of the actions that will be undertaken in the event monitoring detects an exceedance of any of the performance standards. Phase 1 Project Specification Section 01460 for Contracts 1 and 2 requires contractor-specific plans for implementing the work in accordance with the QoLPS requirements.

The following subsections describe the monitoring that will be undertaken during the FSWC activities to assess achievement of the QoLPS, the controls and mitigation measures that the contractors will implement to meet the standards, and the response actions that GE will take in the event of an exceedance of the applicable QoLPS criteria during the FSWC or in the event of a complaint relating to the subjects of the QoLPS. In accordance with the CD, during FSWC, to

the extent that additional measures to address the QoLPS include equipment modifications or additions, only those that are reasonably available from a schedule and cost standpoint will be implemented.

4.1.1 Quality of Life Performance Standards Compliance Monitoring

The monitoring that will be undertaken during the FSWC activities to assess and verify achievement of the applicable QoLPS is specified in detail in the attached QoLPS Field Sampling Plan (FSP), which is attached hereto as Appendix B. That FSP describes the routine and contingency monitoring that will be implemented for opacity, odor, noise, and lighting. As described in that plan, the point of compliance with the noise and lighting standards is at the actual receptors.

4.1.2 Control and Mitigation Actions

The specific actions that the contractors will take to control noise and light during construction are set forth in the Noise and Lighting Control Plans prepared by each contractor (attached as Appendix F and G, respectively). In addition, those plans describe the monitoring that the contractors will conduct within their work areas for noise and lighting. This work area monitoring will be conducted solely for construction management purposes – i.e., to self-verify compliance with contract specifications and to provide a guide to the contractors of the potential for noise or light levels to exceed the applicable QoLPS criteria at nearby receptors. Based on the work area monitoring results, the contractors can implement control strategies, as appropriate. This work area monitoring should not be considered as monitoring to assess or verify compliance with the QoLPS; the latter will be conducted by a separate monitoring contractor in accordance with the QoLPS FSP attached as Appendix B. Finally, the Noise and Lighting Control Plans specify certain actions that the contractors will take to mitigate noise and lighting impacts in the event that the QoLPS compliance monitoring (described in Section 4.1.1) shows an exceedance of an applicable QoLPS criterion.

With respect to the navigation standard, the actions that GE will take to meet the requirements of that standard are set forth in Section 4.4.5 of the Phase 1 FDR, which is incorporated by reference herein.

4.1.3 Response Actions in the Event of an Exceedance or Complaint

The specific actions that GE will take if the monitoring described in Section 4.1.1 shows an exceedance of the opacity standard, the odor standard for hydrogen sulfide, the noise standard criteria, or the lighting standards are specified in Section 4 of the Phase 1 RA CHASP (Sections 4.2.6, 4.3.4, 4.4.4 & 4.4.5, and 4.5.4). The specific actions that GE will take in the event of an air quality, odor, noise or lighting complaint are likewise specified in Section 4 of the RA CHASP (Sections 4.2.7, 4.3.5, 4.4.6, and 4.5.5). Finally, the actions that GE will take in the event of a deviation from the navigation standard requirements or a navigation complaint are

specified in Sections 4.6.4 and 4.6.5 of the RA CHASP. All these provisions of the RA CHASP are incorporated by reference herein.

4.2 POLLUTION PREVENTION

4.2.1 Stormwater Pollution Prevention Plan

A SWPPP covering the Facility Site Work Construction including the Work Support Marina is provided in Appendix D. The applicable monitoring and other requirements of that plan are described below.

During construction of the processing facility and rail yard, the contractors will comply with the monitoring requirements described in specification Section 02371 for Contracts 1 and 2, Dust, Erosion & Sediment Control.

To implement the SWPPP, the construction areas must be routinely inspected and documented. The key elements of the monitoring effort include:

- Frequent site inspections and maintenance;
- Record-keeping;
- Performance of repairs if necessary; and
- Review and modification of the SWPPP.

As detailed in the SWPPP, site inspections are generally performed every seven days and within 24 hours of a rainfall of 0.5 inches or greater. All disturbed areas for material storage, locations where vehicles enter and/or exit the site, and erosion and sedimentation controls that are identified as part of the SWPPP will be inspected. Controls must be in good working condition. If a repair is necessary, it must be completed within seven days of receipt of report or notice, if practicable.

Each contractor's superintendent will be responsible for inspection of all control measures. The contractor's superintendents will each designate an individual for the purpose of performing maintenance and repair activities required by the SWPPP control features. The individual inspecting the site will record any damages or deficiencies on SWPPP inspection forms.

Disturbed areas and areas used for storage of materials that are exposed to precipitation will be inspected for evidence of, or the potential for, pollutants entering the drainage system. Locations where vehicles enter and/or exit the construction site will be examined for evidence of offsite sediment tracking. Erosion controls will be maintained in good operating condition until the area affected has been completely stabilized and the construction activity is complete.

Stabilization measures will be initiated as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, but in no case more than 14 days after the construction activity in that portion of the site has temporarily or permanently ceased.

4.2.2 Contingent Contaminated Soil Management

The Work Support Marina is to be located on property for which NYSDEC has provided data to GE that indicates PCBs are present in some soil samples. The civil design minimizes the disturbance of the existing soil; however, some excavation will be required to complete final grades. Approximately 1000 CY will be excavated. As such, the potential exists for PCBs to be present in materials excavated during site grading. Instructions to the civil work contractor for management of soils was provided in the Erosion and Sediment Control Plan (Drawing S-0101) for the Work Support Marina.

Site personnel involved in excavating existing soil will wear personal protective equipment, as described in the Worker HASP, in the event that soils containing PCBs are encountered. The excavated material will be staged on a liner in piles of approximately 100 CY and the soil piles will be characterized for PCBs. The piles will be covered when not actively being loaded or unloaded. Erosion controls will be placed around the base of the piles.

Seven discrete grab samples will be collected and composited into one sample for each pile. If the composite PCB concentration is less than 1 milligram per kilogram (mg/kg), then the material will be used on-site as general fill. If the composite PCB concentration is greater than 1 mg/kg, the material will be profiled, manifested, and properly disposed at a licensed facility. Total PCB concentration will be determined using SW-846 Method 8082.

4.3 CONSTRUCTION QC/QA

The quality of constructed facilities will be achieved through a combination of design and technical specifications (technical requirements) and a program of quality oversight (QC/QA) conducted during FSWC. This approach will be implemented to both assure that facilities are built to meet the approved FDR and to document that FDR requirements are met or exceeded. The construction QC/QA program is summarized below.

4.3.1 Technical Requirements

Technical requirements are embodied in the facility design plans and specifications developed as part of the approved Phase 1 FDR. These plans and specifications are then implemented by contract specifications for Contract 1 – Facility Site Work Construction, and Contract 2 – Rail Yard Construction (for detailed reference, please see Phase 1 Project Specifications for these two contracts).

The specifications cover all relevant aspects of facility construction, and include specific requirements for quality control. Technical requirements are thus established for design quality and for quality monitoring, and are contract obligations to be met by the selected contractors.

4.3.2 Monitoring for QC/QA

Monitoring of construction quality performance will be conducted by the *Construction Quality Control/Quality Assurance Plan* (CQAP) (Parsons, 2007a) administered by the CM. The CQAP required as part of this RAWP has been prepared in accordance with the requirements of Section 2.1.2 of the CD SOW, and is being submitted as a stand-alone document. The CQAP and Phase 1 contract specifications require Construction Quality Control Plans (CQCP) for each contract work package.

4.3.2.1 Construction Quality Control/Quality Assurance Plan

The CQAP provides for:

- Quality control – inspections and testing performed by the construction contractors pursuant to their CQCP; and
- Quality Assurance – oversight of the construction contractors' QC activities, including daily monitoring of contractor QC activities and limited supplemental testing and inspections.

The CM's QA function confirms the contractor's QC processes by providing oversight and verification of the construction quality, inspections, and testing plans and activities of the contractor. The CM will perform inspections and supplemental monitoring in accordance with the CQAP to ensure effectiveness of the CQCP.

Duties of the CM include:

- Ensuring that routine inspections of the contractor's work are conducted and documented.
- Verifying that the equipment used in testing meets the test requirements and that the tests are conducted by qualified personnel according to the standardized procedures.
- Monitoring construction QC tests conducted by the contractor's personnel, as may be required by the technical specifications.
- Confirming that the testing equipment and procedures do not change over time or assuring that any changes do not result in a deterioration of the quality of the inspection process or constructed facilities.
- Performing independent, onsite inspection and construction QA testing of the work in progress to verify the effectiveness of the QC program and compliance with requirements of the contract documents.

4.3.2.2 Construction Quality Control

Each contractor (civil work and rail yard construction) will be responsible for implementing QC for the scope of work under its respective contract. The contractors' CQCPs detail how contractors will comply with the specifications, drawings, and monitoring requirements. Each

contractor's CQCP provides for inspection and testing by qualified QC personnel to ensure that equipment, materials, and the constructed product are inspected and tested in accordance with applicable specifications, codes, regulations, and industry standards. After each contractor's CQCP has been approved by the CM it is available for review upon request for informational purposes only.

SECTION 5

EQUIPMENT STAGING

Within the processing facility site, areas are established for each contractor to stage equipment and materials. A 7-foot-high, chain-link fence will provide access control to the overall project site. Equipment and materials to be used for site construction will be received and staged in designated contractor staging areas.

Appendix A presents the Equipment Staging Plans for the civil work and rail yard construction contractors. Appendix A also contains a contract staging areas figure, Drawing SP-005, depicting the locations of the designated equipment and materials staging locations for civil work and rail yard construction contractors. As depicted on the figure, an administration area, located west of the main access gate, has been designated as the area where field and office trailers will be located. The civil work contractor will stage equipment and materials in two areas, one staging area north of the North Stormwater Storage Basin, and a second staging area on the wharf, south of the waterfront stormwater basin. The rail yard construction contractor will stage equipment southwest of the proposed rail yard area.

- Each contractor will lock all equipment and vehicles when not in use.
- Stormwater protection measures, such as installation of silt fences, will be implemented within their staging areas by each contractor.
- Each equipment staging plan describes fueling equipment and controls, and location of equipment and materials.
- Trash debris dumpsters will be staged at the contractor staging areas for collection of trash and other debris from each day's work activities. The dumpsters will be emptied routinely and disposed off-site.
- First-aid supplies and fire extinguishers will be readily available.

The Equipment Staging Plans are reviewed and approved by the CM per Specification 01460 prior to implementation.

SECTION 6

SAFETY

6.1 GE ENVIRONMENTAL HEALTH AND SAFETY POLICY

GE provides a safe and healthy working environment in all the communities in which it does business. GE's environmental health and safety (EHS) programs combine clear leadership by management; the participation of all employees, contractors, and functions; and the use of appropriate technology to ensure the health and safety of its employees and the public.

GE requires that each of its facilities and sites identify and control potential hazards in order to protect the public, its employees, and the environment. Reviews are conducted regularly; deficiencies, if any, are identified; issues are tracked to closure; improvements are made to prevent potential hazards; and mitigation measures are implemented as a result of these reviews. The end result enhances injury prevention, increases operations knowledge, improves communications, and helps assure compliance with required EHS standards.

The Phase 1 FSWC will abide by the requirements of GE's world-class EHS program.

6.2 CONSTRUCTION MANAGER HEALTH AND SAFETY PROGRAM

The project CM also holds the highest standards for project health and safety. The safety goal for this project is zero incidents, zero injuries – a Zero Incident philosophy. This approach originated with a study by the Construction Industry Institute, which identified specific control measures shown to dramatically reduce the probability of incidents. These control measures, known as Zero Incident Techniques, provide the framework for safety on this project, and the Project Team's proactive approach to manage the interrelated areas of safety, health, environment, and risk management. The definition of an incident is any unplanned or unexpected event that results in or has the potential to result in a personal injury, property damage or environmental release.

6.3 HEALTH AND SAFETY PLAN

6.3.1 RA HASP

A *Remedial Action Health and Safety Plan* (RA HASP) (Parsons, 2007b) defines minimum safety and health requirements, guidelines, and practices applicable to the overall Phase 1 RA project, including the civil work and rail yard construction. The RA HASP required for this Phase 1 FSWC RAWP has been prepared as a stand-alone document and is being submitted separately. For complete details on the project health and safety program, please refer to the RA HASP.

The RA HASP reflects the corporate policy of both GE and the CM. The RA HASP uses the zero incident management approach and defines the safety goal for this project as *zero incidents and zero injuries.*

The RA HASP provides a general description of anticipated types of field activities. Specific field activities are described in more detail in the Contractor HASPs. The objectives of the RA HASP are to:

- Establish minimum health and safety requirements;
- Identify the physical, chemical, and biological hazards potentially present during field work associated with the RAWP;
- Prescribe the protective measures necessary to control those hazards;
- Define emergency procedures; and
- Prescribe training and medical qualification criteria for site personnel.

The RA HASP must be reviewed by all contractor and subcontract managers, supervisors, foremen, and safety personnel. All craft personnel performing field activities will receive a site-specific project orientation summarizing the content of the RA HASP. All personnel will be required to sign the appropriate documentation acknowledging an understanding of the RA HASP requirements.

The RA HASP was written to comply with the requirements of the Occupational Safety and Health Administration (OSHA) Hazardous Waste Operations and Emergency Response Standard (29 CFR 1910.120). All activities covered by the RA HASP will be conducted in compliance with this HASP and with applicable federal, state, and local health and safety regulations, including 29 CFR 1910.120.

6.3.2 Contractor HASP

Under the RA HASP and this RAWP, each contractor is required to prepare a "worker HASP" (referred to herein as Contractor HASP). Each Contractor HASP will discuss tasks and provide detailed procedures and activity hazard analyses specific to its scope of work. The Contractor HASP will conform to the RA HASP. The Contractor HASPs for Contractors 1 & 2 are being appended to the RA HASP which is being submitted to EPA for review as a separate stand-alone volume.

SECTION 7

REFERENCES

Blasland, Bouck & Lee, Inc. August 2005. *Phase 1 Intermediate Design Report – Hudson River PCBs Superfund Site.*

Blasland, Bouck & Lee, Inc. March 2006. *Phase 1 Final Design Report – Hudson River PCBs Superfund Site* (including Contract drawings and specifications).

Parsons. 2006. Remedial Action *Community Health and Safety Plan* (RA CHASP). Hudson River PCBs Superfund Site. March, 2006.

Parsons. 2007a. *Construction Quality Control/Quality Assurance Plan - Phase 1 Facility Site Work Construction - Hudson River PCBs Superfund Site*. January, 2007

Parsons. 2007b. *Remedial Action Health and Safety Plan - Hudson River PCBs Superfund Site.* January, 2007.

United States Environmental Protection Agency and General Electric Company. 2003. Administrative Order on Consent for Hudson River Remedial Design and Cost Recovery. Index No. CERCLA-02-2003- 2027.

United States Environmental Protection Agency and General Electric Company. 2005. Consent Decree in *United States v. General Electric Company*, Civil Action No. 1:05-CV-1270, lodged in United States District Court for the Northern District of New York, October 6, 2005; final judgement entered November 2, 2006.