

Hudson River PCBs Superfund Site

**Intermediate Design Report (IDR)
Community Advisory Group Meeting**

August 31, 2005

Introduction

- Prepared by GE pursuant to the Administrative Order on Consent for Design (RD AOC)
- Design Steps
 - Remedial Design Work Plan (August 2003)
 - Preliminary Design Report (April 2004)
 - Phase 1 Dredge Area Delineation Report (March 2005)
 - Intermediate Design Report (August 22, 2005)
 - Draft Final Design (120 days after IDR is accepted)
- Both EPA and public are reviewing at same time

Key Project Elements

- **Dredging Activities**
 - **On-River Dredged Material Transport**
 - **Resuspension Control**
 - **Backfilling/Capping**
 - **Habitat Replacement and Reconstruction**

Key Project Elements (Cont'd)

- **Processing Facility**
 - Facility Layout
 - Sediment and Water Processing
- **Transportation for Disposal**
- **Disposal**

Basis of Design

- **Record of Decision (2002)**
- **Engineering Performance Standards (April 2004)**
- **Quality of Life Performance Standards (May 2004)**
- **Sediment sampling and dredge area delineation**
- **Treatability Study**
- **Water quality requirements**
- **Cultural and archaeological assessments**
- **Habitat assessment**

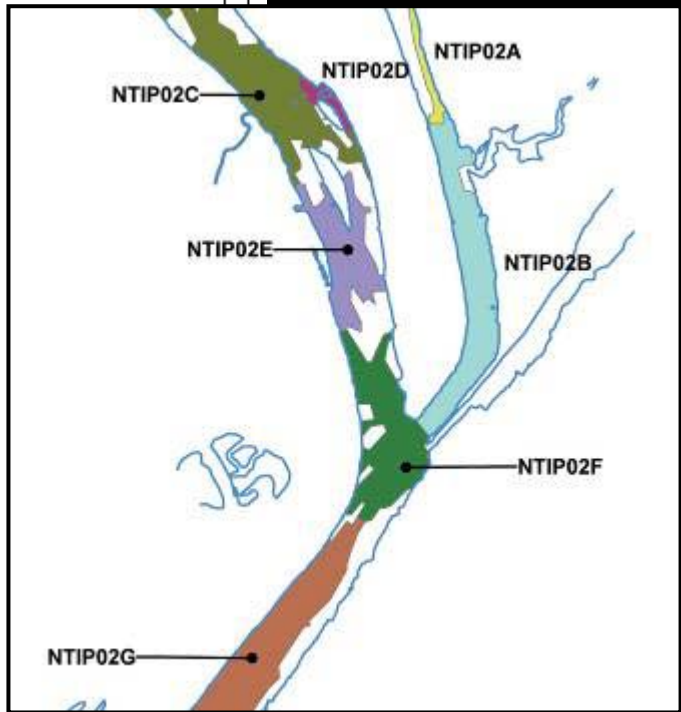
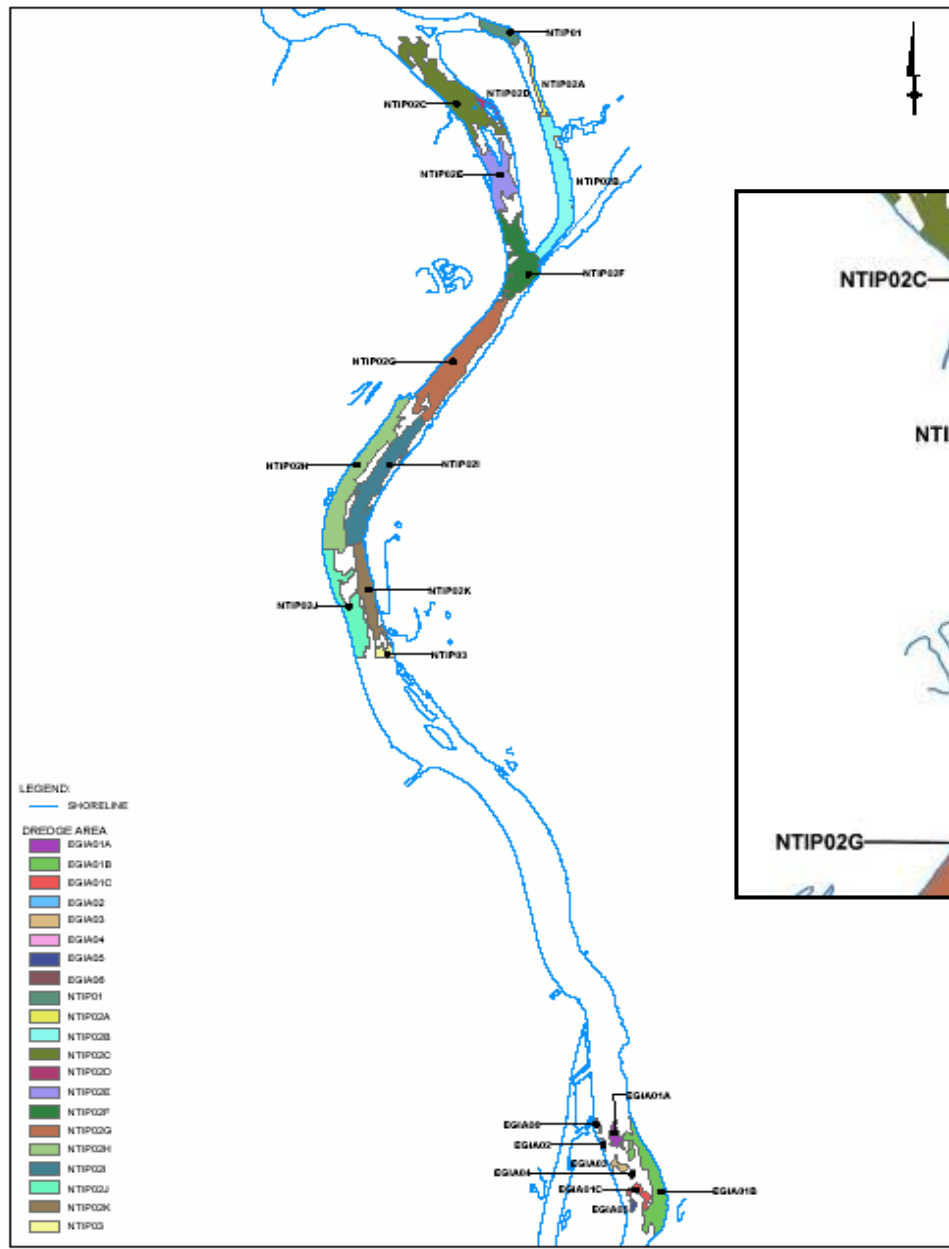
Dredging Activities

- **Approximately 265,000 cubic yards of sediment**
 - **Northern end of Rogers Island to the mouth of Snook Kill and on the eastern channel of Griffin Island**
- **May through October 2007**
- **24 hours a day, 6 days a week**
- **Minimum of 1 month, dredging at Phase 2 production rate**
- **Up to 7 mechanical (environmental clam shell bucket) dredges will be used**



Dredge Areas

- Phase 1 Dredge areas
 - Northern Thompson Island Pool
 - East channel of Griffin Island
- Phase 1 DAD Report was used by GE to prepare the Phase 1 Intermediate Design Report
- Three dimension dredge shapes (prisms) and dredging cut lines were developed for some areas in the intermediate design



- LEGEND:**
- SHORELINE
 - DREDGE AREA**
 - EGIA01A
 - EGIA01B
 - EGIA01C
 - EGIA02
 - EGIA03
 - EGIA04
 - EGIA05
 - EGIA06
 - NTIP01
 - NTIP02A
 - NTIP02B
 - NTIP02C
 - NTIP02D
 - NTIP02E
 - NTIP02F
 - NTIP02G
 - NTIP02H
 - NTIP03
 - NTIP02J
 - NTIP02K
 - NTIP03
 - EGIA01A
 - EGIA02
 - EGIA03
 - EGIA04
 - EGIA05
 - EGIA06

NOTE

1. DREDGE AREAS BASED ON FEBRUARY 28TH PHASE 1 I/OAD REPORT
2. SHORELINE BASED ON AERIAL MAPPING PERFORMED BY CHAS H. SELLS, INC IN THE SPRING OF 2002.

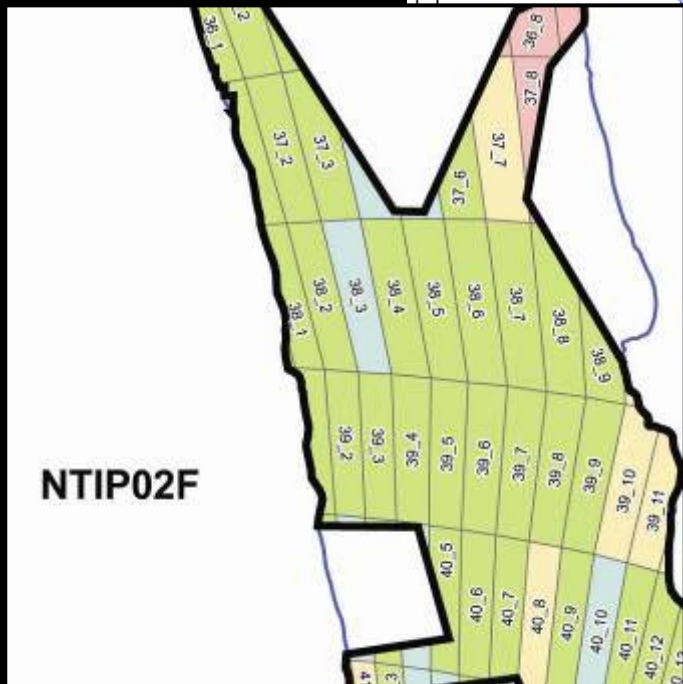


GENERAL ELECTRIC COMPANY
 HUDSON RIVER PCB SUPERFUND SITE
 PHASE 1 INTERMEDIATE DESIGN REPORT

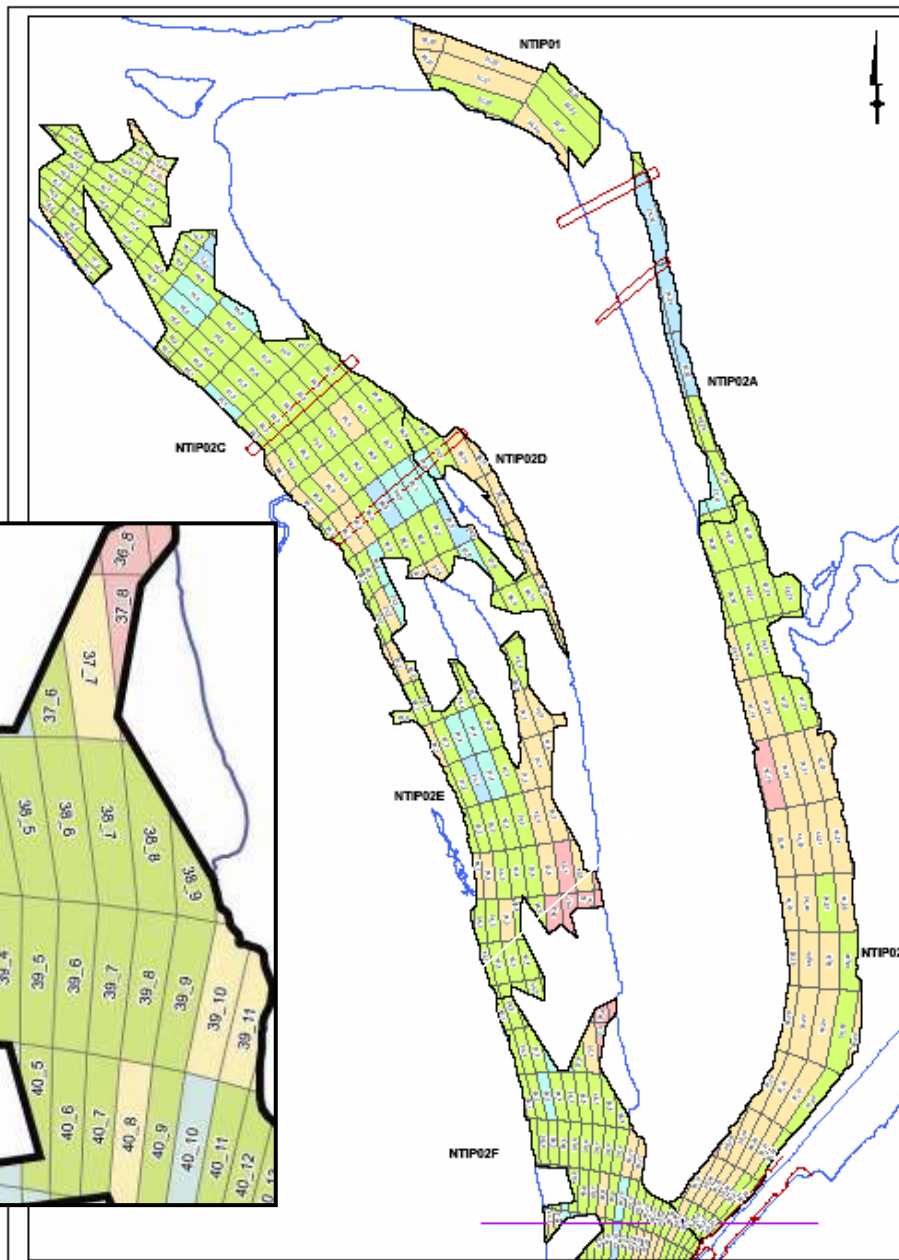
PHASE 1 DREDGE AREAS



FIGURE 3-1



NTIP02F



LEGEND
EXISTING STRUCTURE
DREDGE AREAS
SHORELINE
GRID CELL ID

AVERAGE SEDIMENT REMOVAL THICKNESS (FT)
0 - 0.5
0.5 - 1.0
1.0 - 2.0
2.0 - 5.0
> 5.0

- NOTE:
1. DREDGE AREAS BASED ON FEBRUARY 20TH PHASE 1 DAD REPORT.
 2. GRID CELLS FROM OEA RESUSPENSION MODELING (ATTACHMENT E) WITH MODIFICATIONS BY SBL.
 3. SHORELINE AND SHORELINE STRUCTURES BASED ON AERIAL MAPPING PERFORMED BY CHAS H. SELLS, INC IN THE SPRING OF 2002.



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HUDSON RIVER PCBs SUPERFUND SITE
PHASE 1 INTERMEDIATE DESIGN REPORT
DREDGE CELLS CLASSIFIED BY
REMOVAL THICKNESS - NTIP NORTH

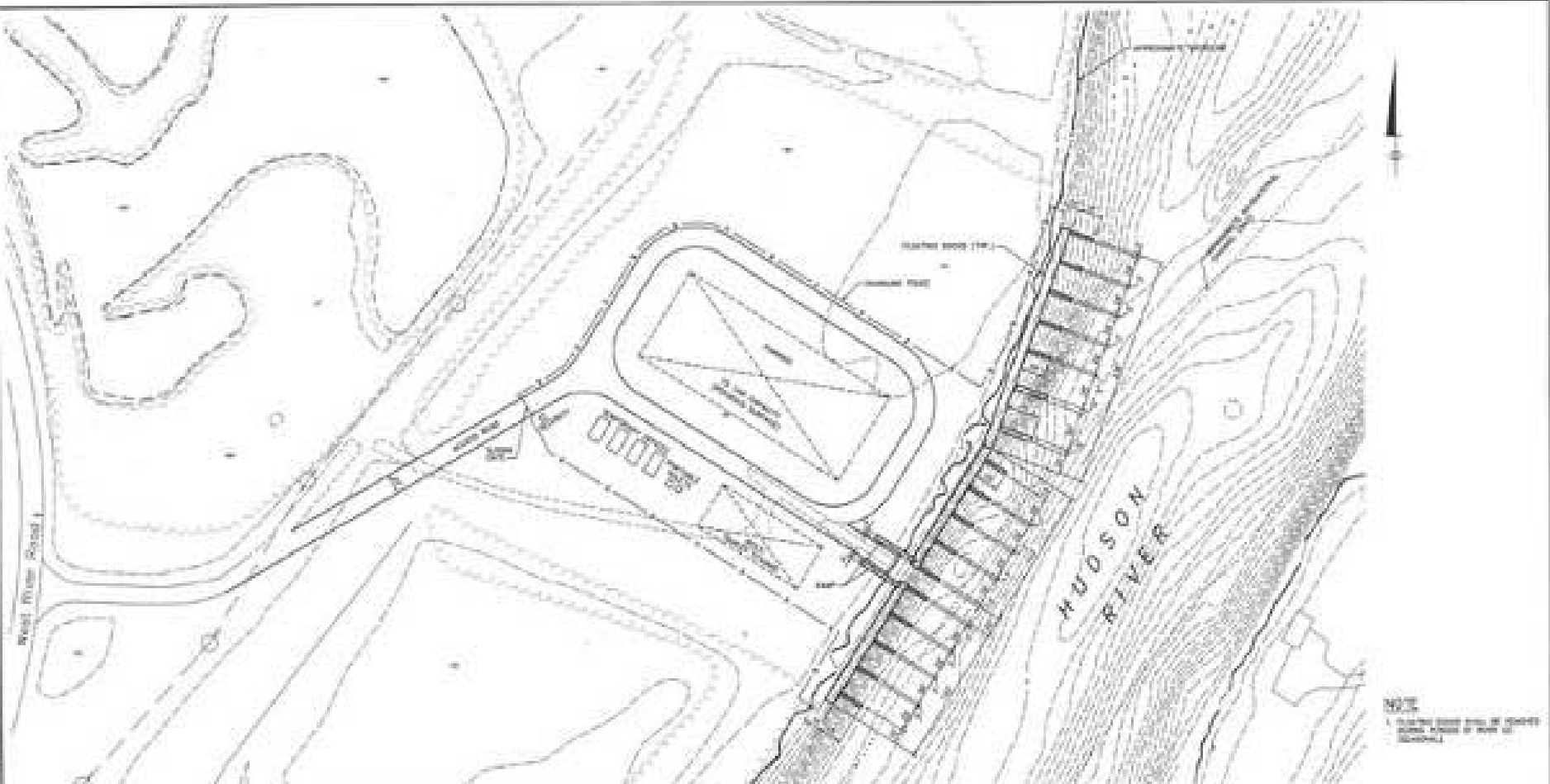


FIGURE
3-12

2/2003 3/17/03 MTR 8000 MTR
BBL PROJECT FILE: \\BBL\BBL\WORK\PROJECTS\NTIP\NTIP02\NTIP02F\NTIP02F.DWG
BBL_C:\HQ\CHAS\BBL\WORK\PROJECTS\NTIP\NTIP02\NTIP02F.DWG

On-River Transport

- About 12 barges (for dredged material and backfill) moved by tugs
- Barges
 - Large – 195 by 35 ft (1,050 cu yds of sediment)
 - Small – 100 by 30 ft (500 cu yds of sediment)
- Tugs (60 ft long)
 - Average vessel speed 6-7 mph
- Lock size – max 300 ft long
- Under full production up to 26 lock trips (Lock 7) per day
- Support facility at West River Road boat launch for up to 26 support boats



NOTE:
 1. ALL DIMENSIONS ARE IN FEET UNLESS OTHERWISE SPECIFIED.

WORK BOAT VESSEL SCHEDULE				
VESSEL TYPE	QTY. SCHEDULED	LAUNCH AREA (SQ. FT.)	SUPPORT VESSEL DOCK (SQ. FT.)	BERTHING AREA (SQ. FT.)
WORK BOAT	1	1,100	1,100	1,100
SUPPORT VESSEL DOCK	1	1,100	1,100	1,100
WORK BOAT	1	1,100	1,100	1,100
SUPPORT VESSEL DOCK	1	1,100	1,100	1,100
WORK BOAT	1	1,100	1,100	1,100
SUPPORT VESSEL DOCK	1	1,100	1,100	1,100

SITE PLAN
 Scale: 1" = 100'

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CONCRETE WORKS

 1000 West 10th Street
 Anchorage, Alaska 99501
 Phone: (907) 562-1234
 Fax: (907) 562-1235
 E-mail: info@concreteworks.com
 Website: www.concreteworks.com



1" = 100'



WEST RIVER ROAD LAUNCH AND SUPPORT VESSEL FACILITY - SITE PLAN

Project No.: Drawing No.: Revision: Date: Scale:	P-0208
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Resuspension Control

- **Basis of Design**

- **Resuspension Performance Standard (500 ppt - drinking water standard)**
- **Consideration of river conditions**
 - **River velocity**
 - **Sediment type**
 - **Seasonal fluctuations**

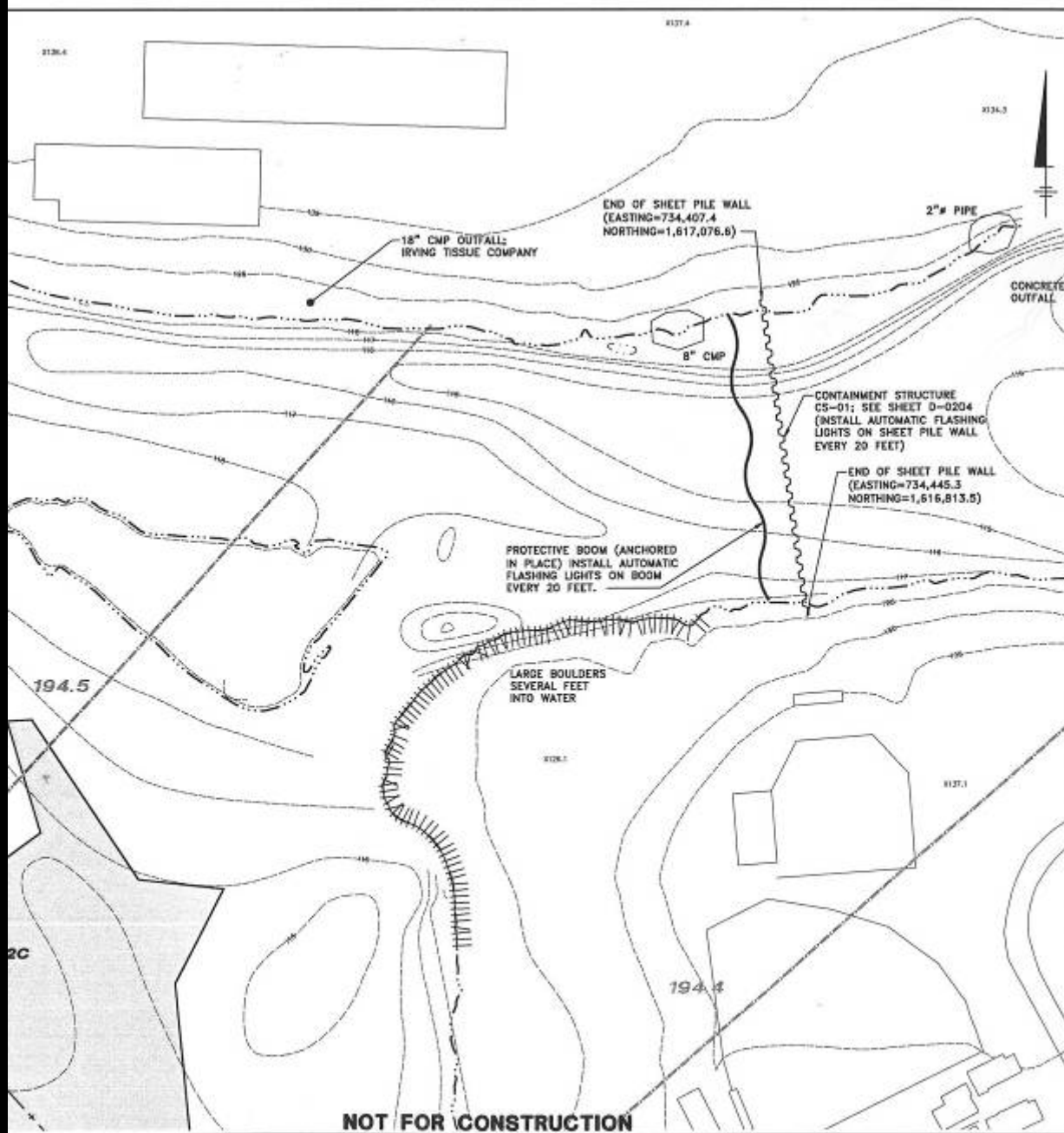
Resuspension Control (Cont'd)

- **Controls Considered**
 - **Curtains**
 - **Piles**
 - **Caissons**
 - **Portable Dams**
 - **Air Curtains**

Resuspension Control (Cont'd)

To limit resuspension during dredging, sheet piling will be used in two areas:

- East side of Rogers Island
 - Temporarily close channel (Yacht basin)
- East side of Griffin Island
 - Areas requiring deeper dredging along east bank
- Silt curtains and gates will be used in selected location



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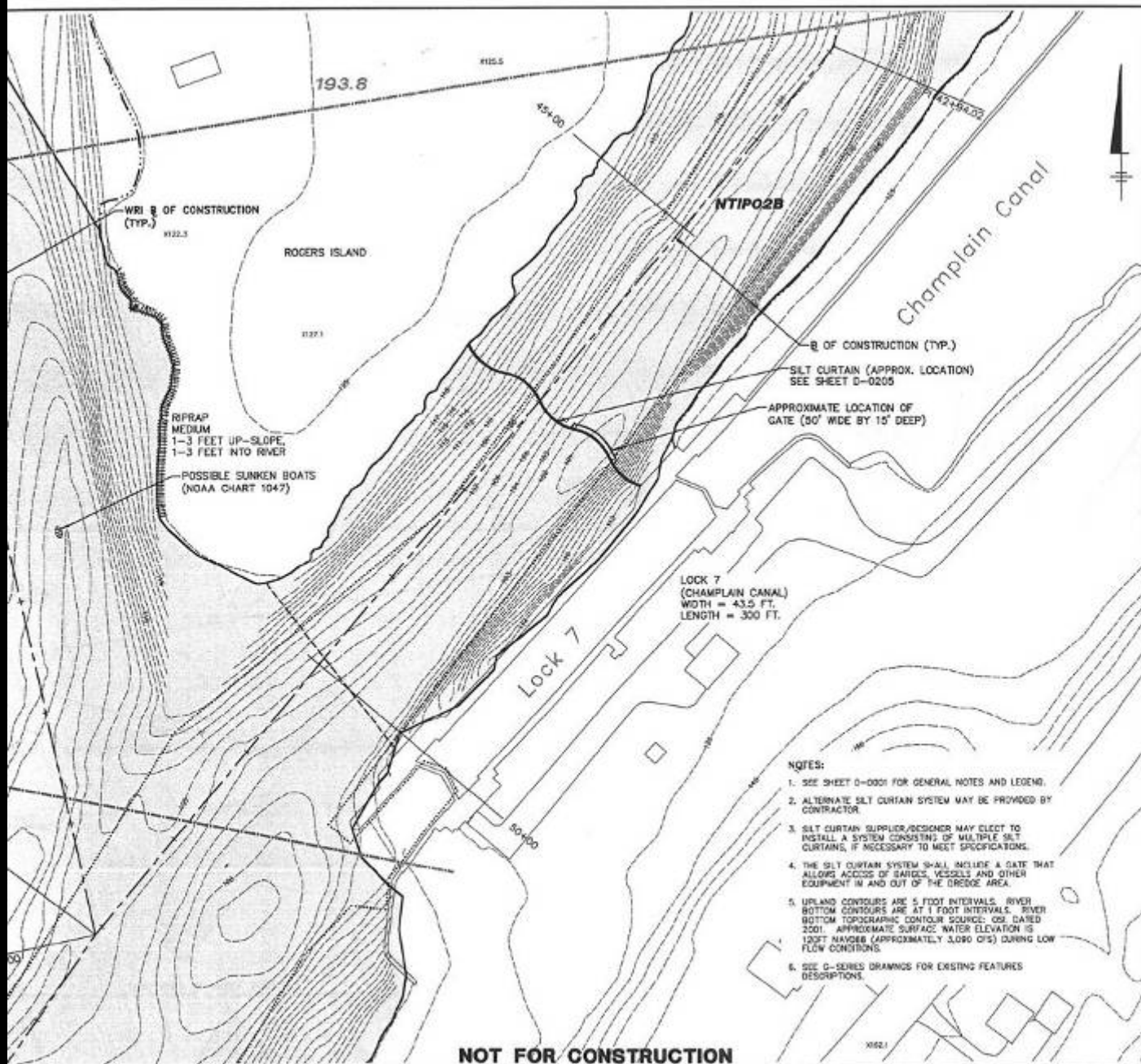
GENERAL ELECTRIC COMPANY • HUDSON RIVER PCB SUPERFUND SITE
HUDSON RIVER PHASE 1 INTERMEDIATE DESIGN

RESUSPENSION CONTAINMENT LAYOUT - NORTH END OF EAST CHANNEL ROGERS ISLAND (CONTAINMENT STRUCTURE CS-01)



BBL Project No. 20437
Date AUGUST 22, 2005
Basland, Bouck & Lee, Inc.
Corporate Headquarters
6725 Townshood Road
Syracuse, NY 13214
315-446-9120

D-0200



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HUDSON RIVER PHASE 1 INTERMEDIATE DESIGN

**RESUSPENSION CONTAINMENT LAYOUT -
SOUTH END OF EAST CHANNEL ROGERS ISLAND (SILT CURTAIN)**

BBL
BARHAM, BOCK & LEE, INC.
engineers, scientists, economists

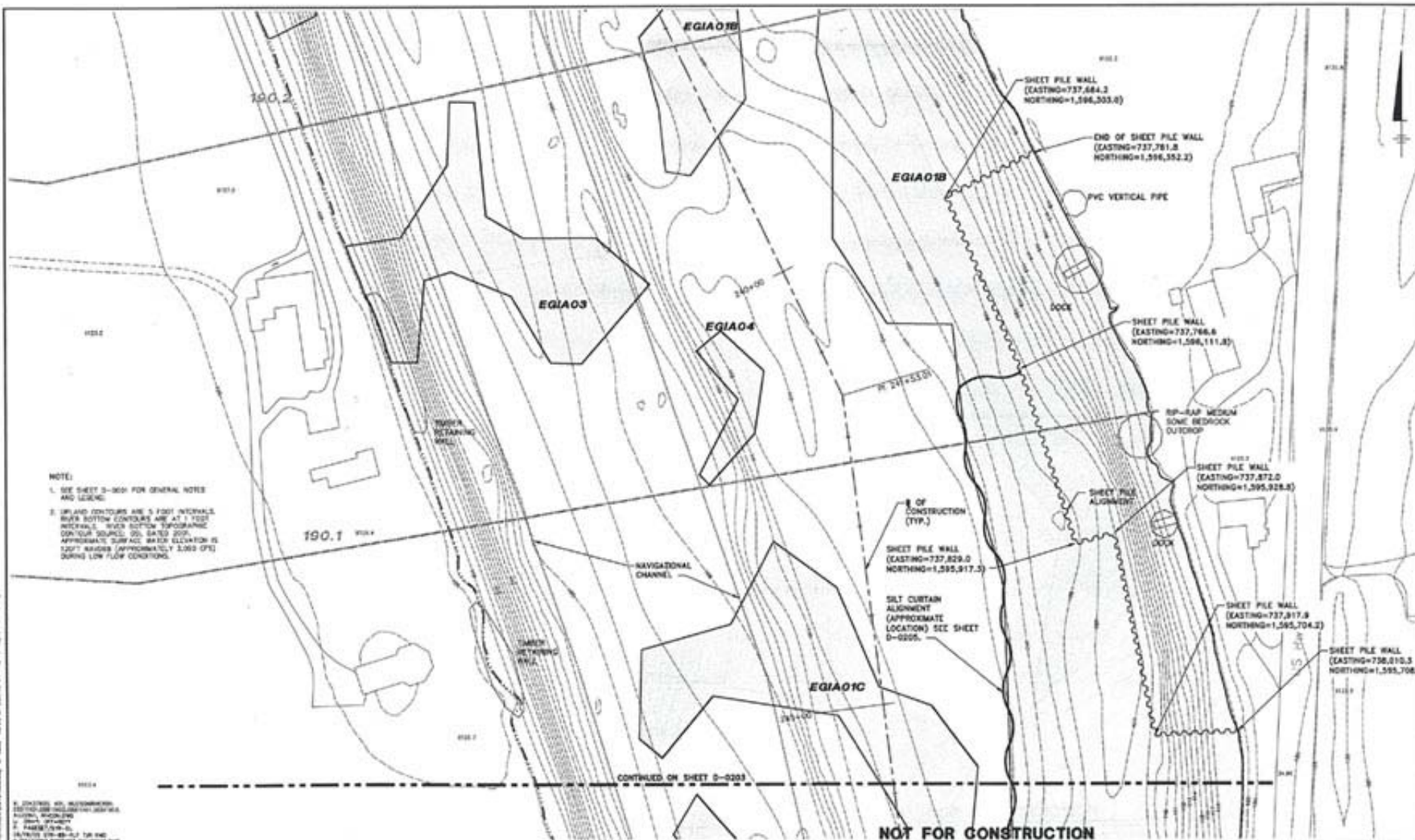
BBL Project No.
20437

Date
AUGUST 23, 2005

Shelton, Buck & Lee, Inc.
Corporate Headquarters
8723 Tompsett Road
Syracuse, NY 13214
315-445-6120

D-0201

DREDGING



BY: [Signature]
 DATE: AUGUST 22, 2005
 PROJECT NO. D-0202

<p>PROJECT NO. D-0202</p> <p>DATE: AUGUST 22, 2005</p> <p>PROJECT NO. D-0202</p>	<p>PROJECT NO. D-0202</p> <p>DATE: AUGUST 22, 2005</p> <p>PROJECT NO. D-0202</p>
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<p>PROJECT NO. D-0202</p> <p>DATE: AUGUST 22, 2005</p> <p>PROJECT NO. D-0202</p>



RESUSPENSION CONTAINMENT LAYOUT - EAST GRIFFIN ISLAND AREA

<p>PROJECT NO. D-0202</p> <p>DATE: AUGUST 22, 2005</p> <p>PROJECT NO. D-0202</p>	<p>PROJECT NO. D-0202</p> <p>DATE: AUGUST 22, 2005</p> <p>PROJECT NO. D-0202</p>
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CONTINUED ON SHEET D-0202



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GENERAL ELECTRIC COMPANY • HUDSON RIVER PCBs SUPERFUND SITE
 HUDSON RIVER PHASE 1 INTERMEDIATE DESIGN
**RESUSPENSION CONTAINMENT LAYOUT -
 EAST GRIFFIN ISLAND AREA**

DREDC010

REL Project No.
20437

Date
AUGUST 22, 2005

Basland, Buck & Lee, Inc.
 Corporate Headquarters
 6750 Foresta Road
 Syracuse, NY 13214
 315-448-8120

D-0203

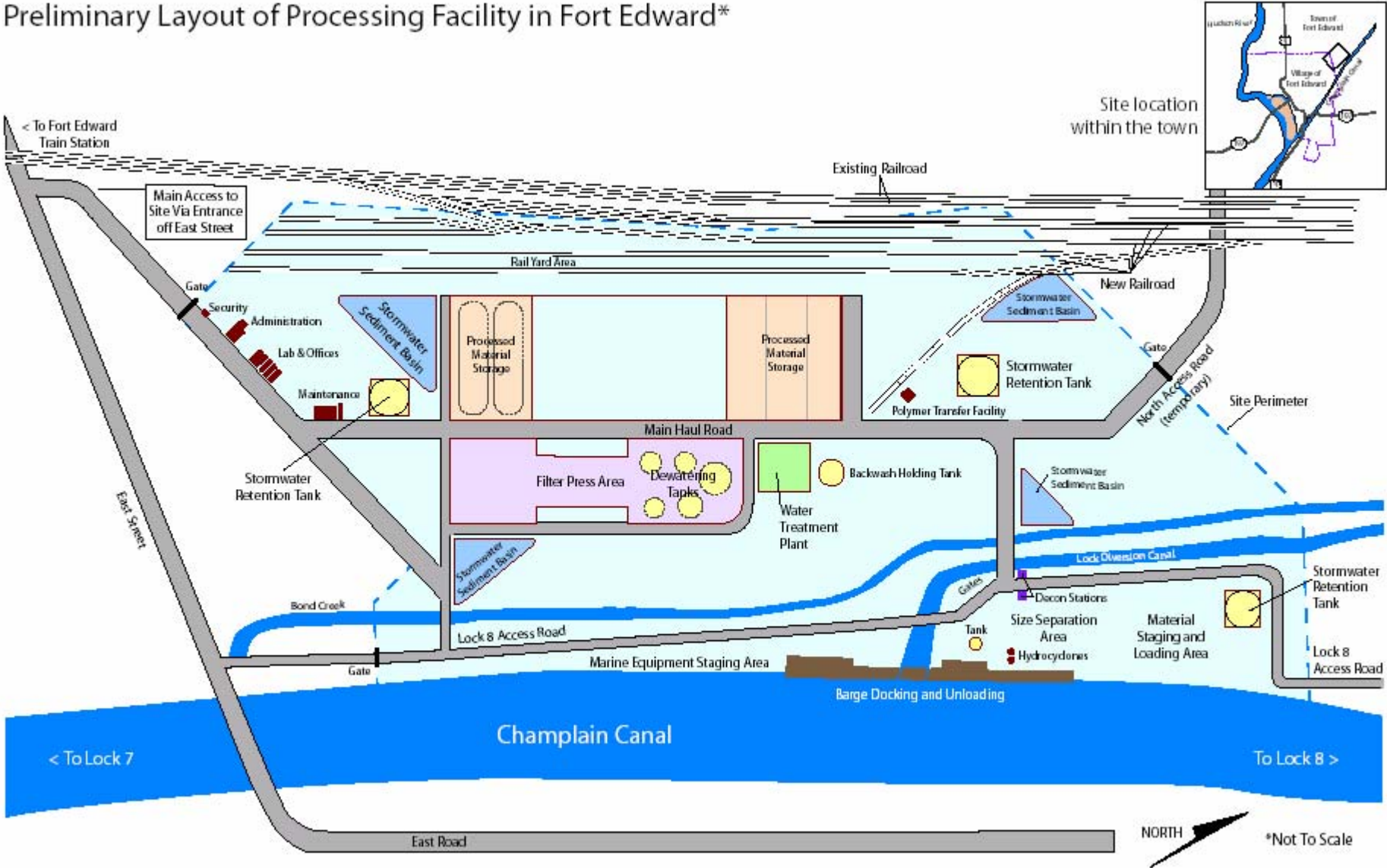
Backfilling/Capping

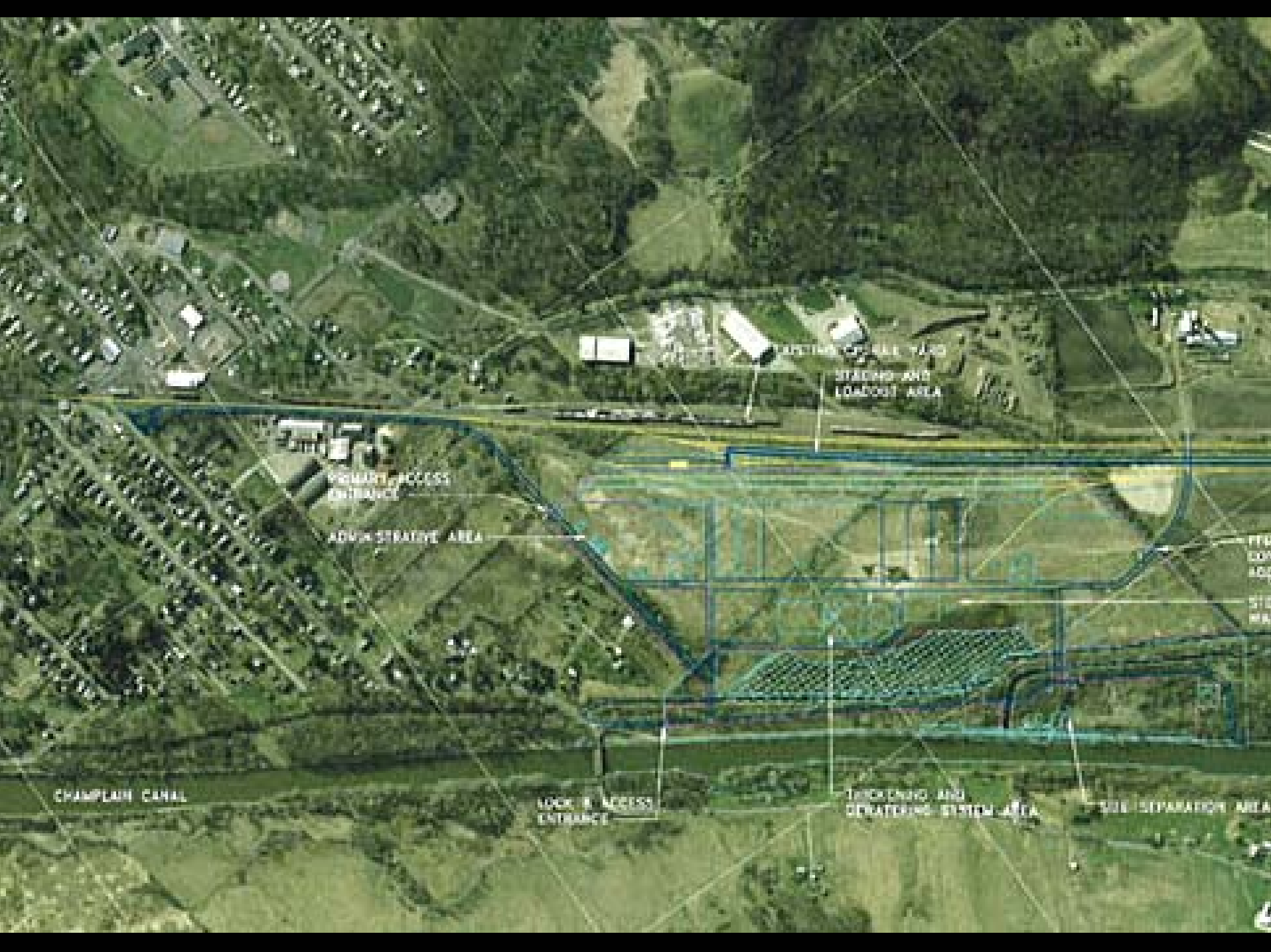
- **Clean material may be placed on bottom after dredging to:**
 - Reduce post dredging surface concentration
 - Replacement and reconstruction of habitat
- **Backfilling/Capping will follow dredging and may continue for about a month after dredging ends**
- **About 134,000 to 186,000 cu yds**
- **Backfill will come by barge from quarries near the Hudson River or waterways connected to the Hudson River**

Habitat Replacement and Reconstruction

- **River bottom, shoreline and nearby wetlands are being evaluated and the design is taking into account changes in these areas associated with dredging**
- **Backfilling/capping is being designed to construct and replace habitat where needed**
- **Threatened and endangered species are being taken into consideration**

Preliminary Layout of Processing Facility in Fort Edward*





STORAGE AND
LOADING AREA

PRIMARY ACCESS
ENTRANCE

ADMINISTRATIVE AREA

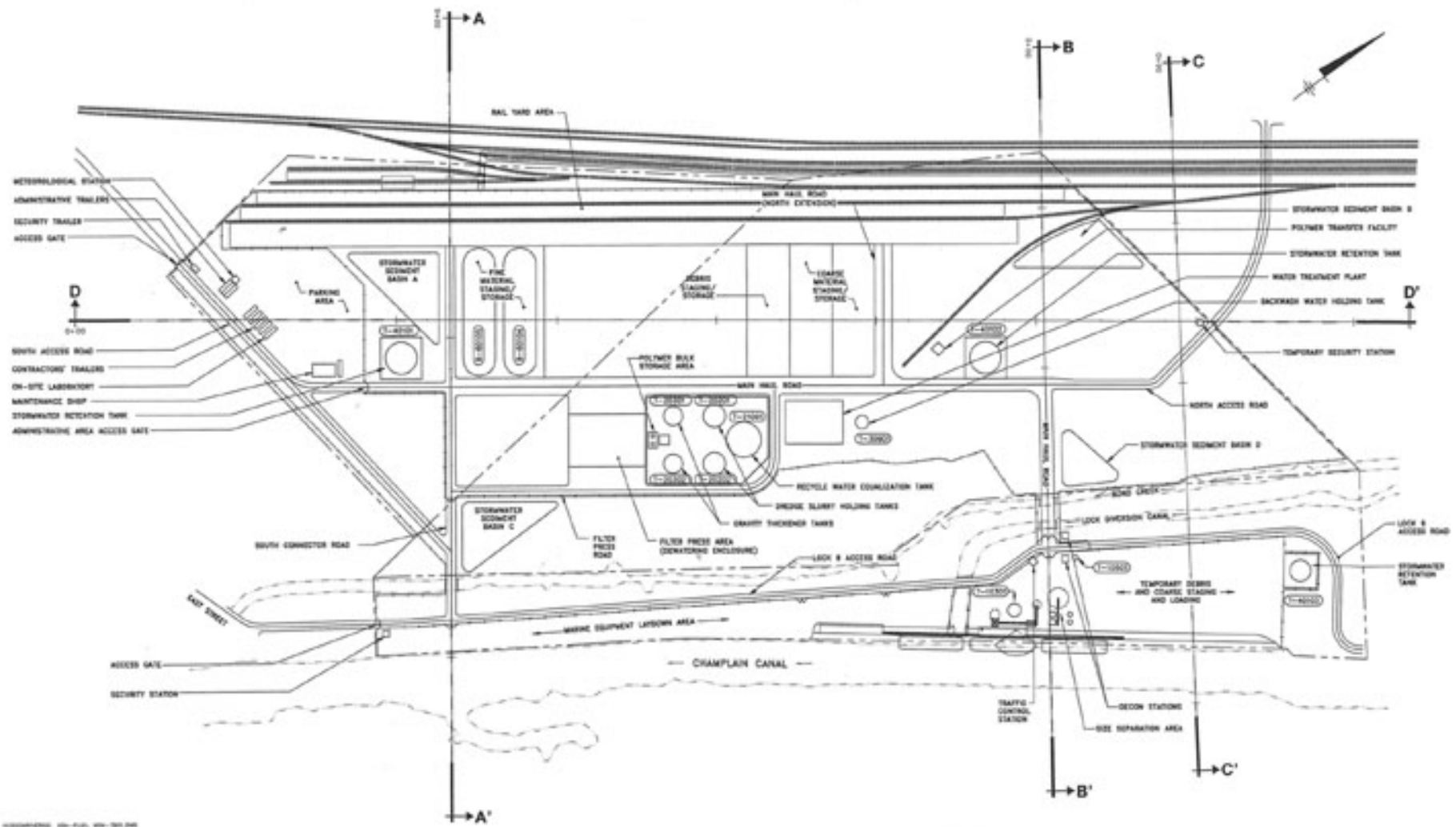
CHAMPLAIN CANAL

LOCK # ACCESS
ENTRANCE

TREATING AND
OPERATING SYSTEM AREA

SOLIDS SEPARATION AREA

PFD
CON
ACC
STE
PA



1. UNDESIGNED: 800-742-7400
 2. 2000
 3. 2000
 4. 2000
 5. 2000

DATE	DESCRIPTION

NO.	DATE	REVISION

Contract Engineer's Name JOHN PAUL GOODY	Contract Engineer's No. 00742
Date 08/21/00	Site Name
Project No. 	Project Name

BBL
 BASLAND, BOICE & LEE, INC.
 REGIONAL OFFICE

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 GENERAL ELECTRIC COMPANY • HUDSON RIVER PHASE 1 SUPERFUND SITE
 HUDSON RIVER PHASE 1 INTERMEDIATE DESIGN
SITE DEVELOPMENT
 PROPOSED FACILITY

BBL Project No. 0000
Date 08/21/00
Basland, Boice & Lee, Inc. 6725 South Road Syracuse, NY 13214 315-438-4730

P-0003

Processing Facility

- **Towpath Road will be used during construction**
- **Low areas of the site will be raised with clean fill**
- **Security fencing will be installed around the perimeter**
- **Areas not used on site will be left undisturbed**
- **Waterfront area will be about 1,450 feet long (enough to accommodate up to three barges)**
- **Lock 8 access road will be relocated to the west along Bond Creek (access will be restricted during the project)**

Processing Facility

- During operations, employee and delivery traffic will access the site from a road to be constructed off East Street, across from the Fort Edward rail station. The road will run along the railroad right-of-way to the southwest end of the site.
- Dredging 24 hours a day, 6 days a week
- Sediment hydraulically and mechanically offloaded from barges

Processing Facility

- Large debris will be removed
- Sediment will be segregated using hydrocyclones
 - Coarse materials separated out in the hydrocyclone systems will be placed on a screen to remove excess water
 - Fine materials will be mixed with polymers to enhance dewatering, then sent through filter presses
- Approximately 12 filter presses will be used
- Fine sediment will resemble a dry “cake”, and coarse material will be a sand and gravel mixture

Processing Facility

- **Material will be moved to one of five structures (two of which will be enclosed), each approximately 100 feet wide by 400 feet long on concrete slab foundations.**
- **Water generated during sediment processing and rain that falls on sediment will be collected for treatment**
 - **Water treatment plant will be designed to treat approximately 2 million gallons of water a day**
 - **Treated water will be discharged to the Champlain Canal in compliance with EPA and New York State requirements**

Other Processing Facility Information

- Only about 5 acres of the site require clearing
- Utilities need to be brought on-site (utilities needed include potable water, electric, gas, telephone and sanitary)
- Storm water runoff will be captured and treated

Other Processing Facility Information

- **Buildings**

- **Filter presses (160 by 240 ft) building**
- **Water treatment (136 by 180 ft) building**
- **Dewatered fine sediment staging/storage in two (100 by 400 ft) buildings**
- **Office, laboratory and maintenance buildings**

Monitoring Activities

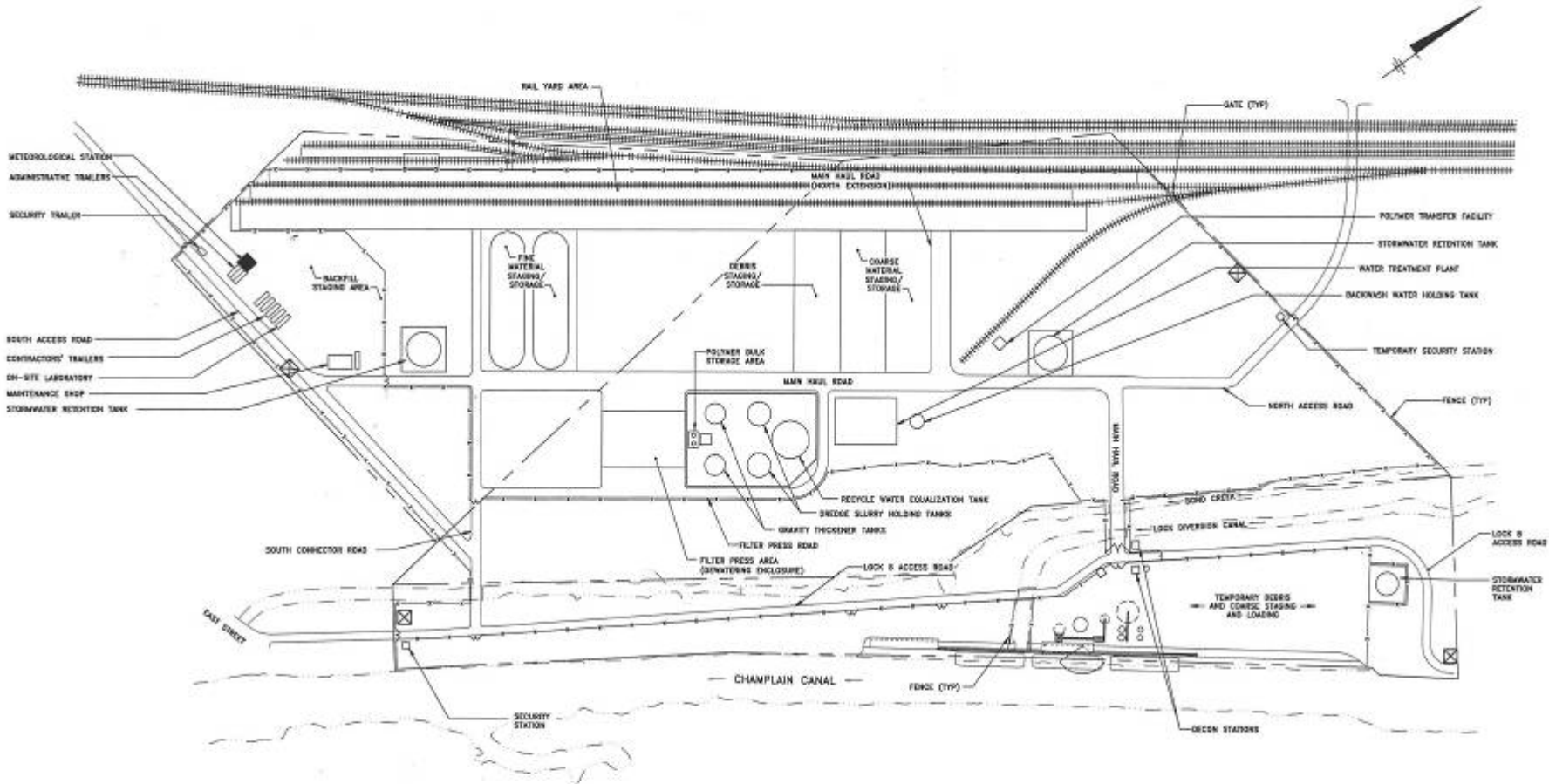
- **Monitoring will be conducted to assess compliance with**
 - EPA's Engineering Performance Standards
 - Quality of Life Performance Standards
 - Water quality requirements
- **Monitoring will include**
 - Water column monitoring
 - Resuspension monitoring
 - Public water intakes
 - Fish monitoring
 - Sediment residuals monitoring
 - Air quality, odor, noise, lighting monitoring
 - Water discharge monitoring

Engineering Performance Standards

- Resuspension, residuals and productivity standards are included in the basis of design
- Design analysis includes the assessment of the ability to achieve the standards
- Achievement of the performance standards will be evaluated in Phase 1

Quality of Life

- **Air quality analysis**
 - **General PCB emission points identified**
 - **Modeling of emissions to identify the need for controls is ongoing**
- **Noise analysis**
 - **Noise generating equipment identified**
 - **Preliminary noise model developed**



LEGEND

■ METEOROLOGICAL STATION

⊗ POC MONITORING STATION

B. ALBANY/GENESEE (201-743-2) 400-860-1000
 C. 201-277-4214
 F. 716-257-2111
 617-242-2244-2245
 617-242-7400, P. 2888-889



THE SHADING AND DIMENSIONS OF THE SCALE INDICATE IN THE TOP BLOCK. INCORPORATED IN THE SCALE. SCALE MAY BE PRODUCED WITH DIMENSIONS AND DIMENSIONS BY ANY MEANS. USE THE GRAPHIC SCALE BAR IN THE TOP BLOCK TO DETERMINE THE ACTUAL SCALE OF THIS GRAPHIC.

Professional Engineer's Name JOHN PAUL ECKERT	State NY	Date Signed 02/05
Professional Engineer's No. 047425	State NY	Date Signed 02/05
Project No. 1032	Designed by IGIS	Drawn by



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GENERAL ELECTRIC COMPANY - HUDSON RIVER PGM SUPERFUND SITE
 HUDSON RIVER PHASE 1 INTERMEDIATE DESIGN

**PROCESSING FACILITY
 AIR MONITORING NETWORK PLAN**

PROCESSING FACILITY

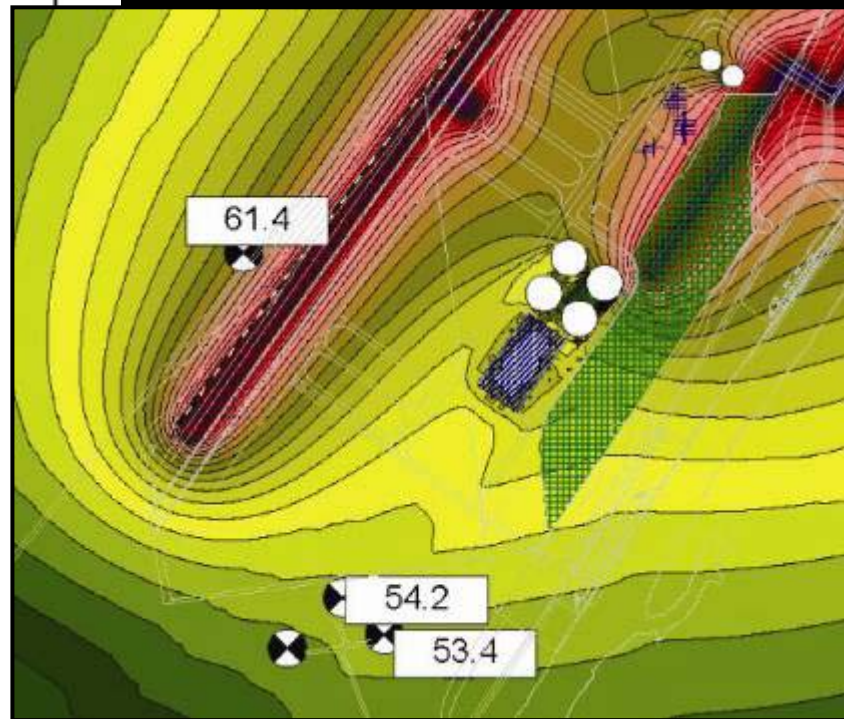
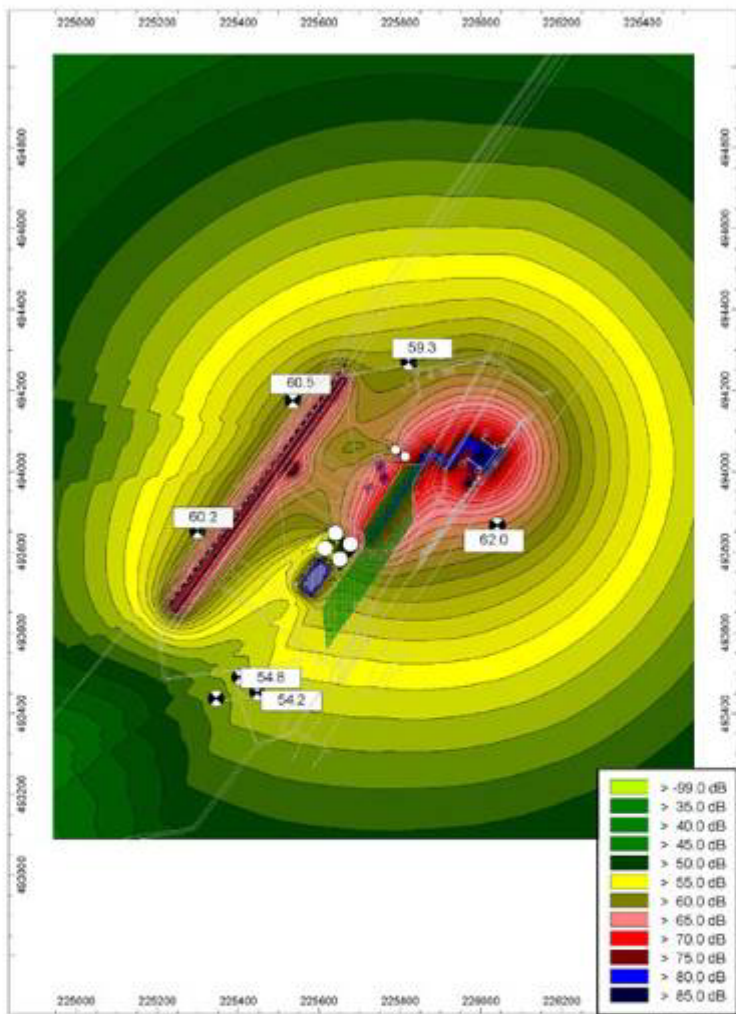
SB, Project No.
20437

Date
AUGUST 22, 2005

Shawmut Design & Inc., Inc.
 Corporate Headquarters
 5712 Tremont Road
 Syracuse, NY 13214
 315-446-9128

P-0008

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 HUDSON RIVER PCBs SUPERFUND SITE
 PHASE 1 INTERMEDIATE DESIGN REPORT

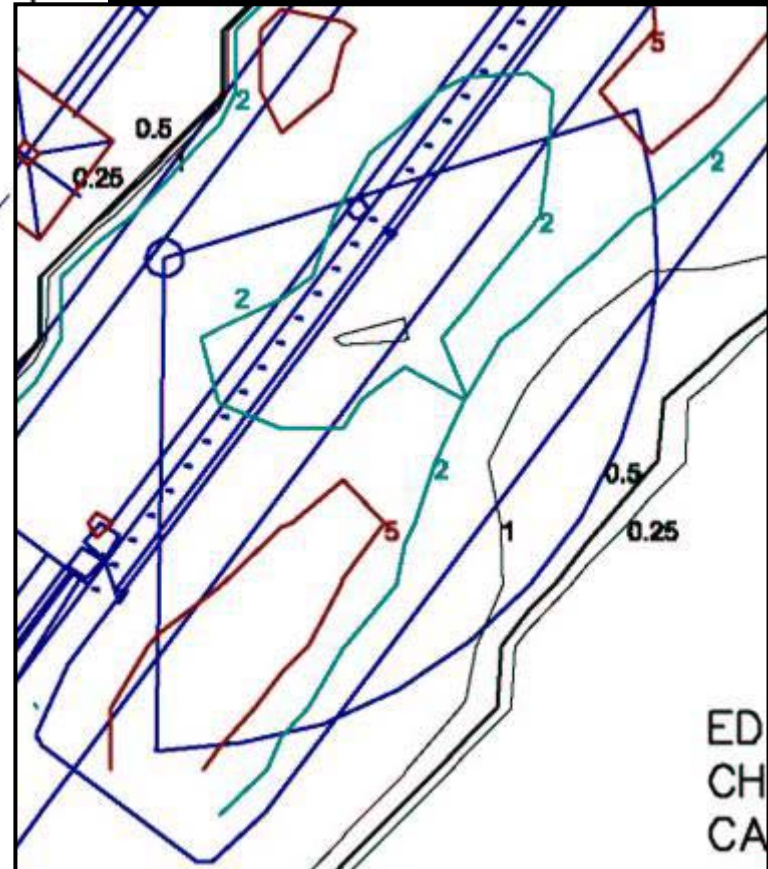
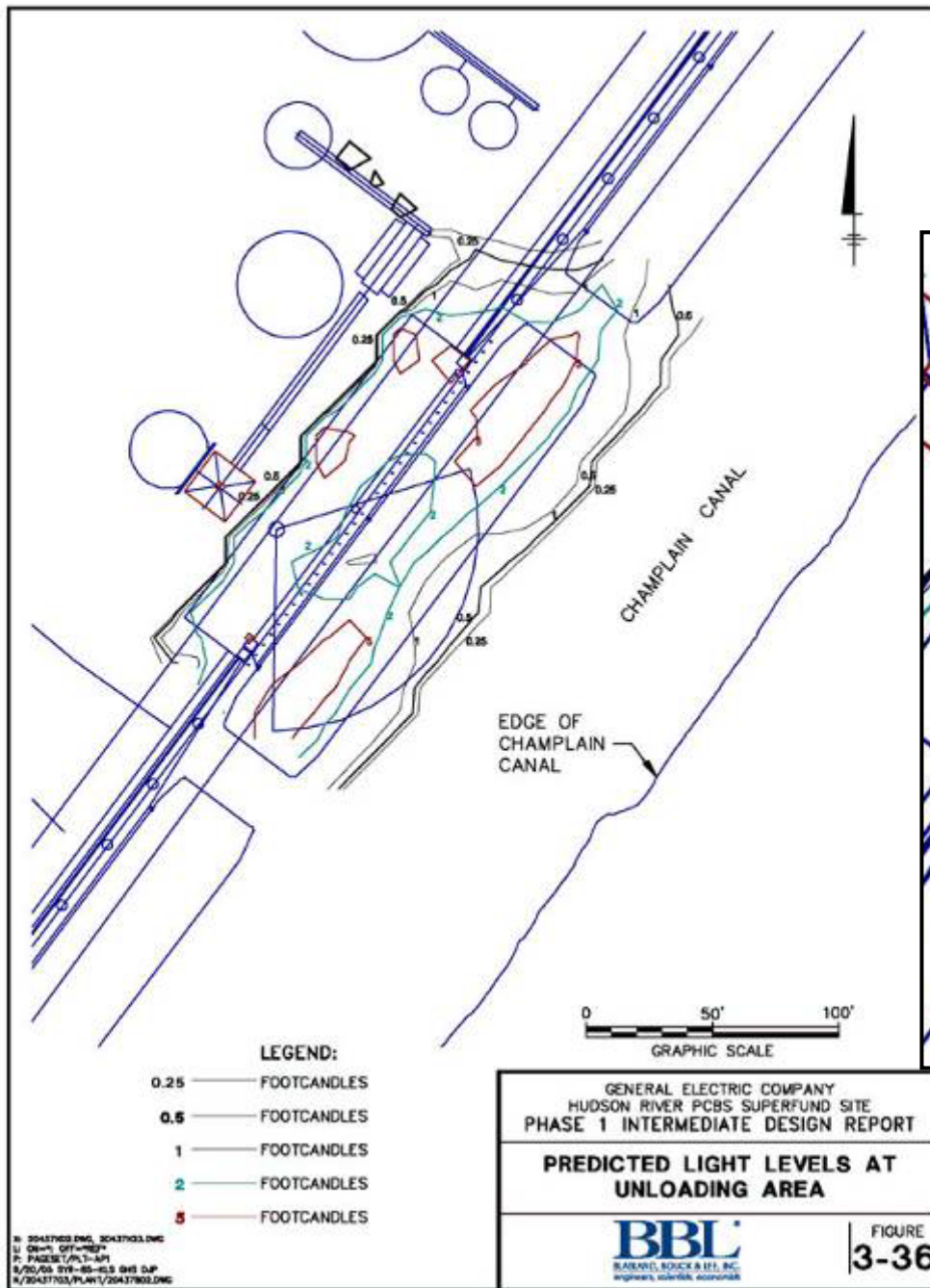
PREDICTED Ldn LEVELS



FIGURE
 3-34

Quality of Life (Cont'd)

- **Lighting analysis**
 - **Lighting sources identified**
 - **Lighting levels identified**
- **Navigation analysis**
 - **Logistics model has been developed and will be used to consider recreational and project vessel use of the river**
- **Complaint response program is being developed and will be provided in the CHASP and associated contingency plans**



Dredged Material Transport

- **By rail to licensed facilities outside Hudson River Valley**
 - Short list developed and final list will be part of final design
- **Rail Yard**
 - Two, 2,400-foot-long tracks on which rail cars will be staged
 - Additional tracks for maneuvering, repair, and inspection of rail cars, and loading of materials from the processing facility
 - Approximately 38,000 feet of rail will be installed

Dredged Material Transport (Cont'd)

- During Phase 1, approximately 390,000 tons of processed material will be transported offsite
- Two to four trains, each about 81 rail cars long, will be loaded each week
- A fleet of 350 to 650 gondola-type rail cars will be dedicated for the project
- Individually lined cars with covers or sealed cars with watertight hard lids will be used
- Discussions with rail carriers are ongoing



Transportation for Disposal

- Onsite staging/stockpile capacity (80,000 cu yds or 120,000 tons)
- Transported based on waste characteristics (greater or less than 50 ppm)
- Shipping season (May 15 to Dec 31) 33 weeks
- Transfer from Canadian Pacific Railway to other carriers

Disposal

- **Greater than 50 ppm PCBs**
 - Idaho, Michigan, Oregon, Texas and Utah
- **Below 50 ppm PCBs**
 - Georgia, Illinois, Indiana, Michigan, Ohio, Pennsylvania and Virginia

Overall Design Optimization

As part of design, a logistics model is being developed. The model will support the design on specific project elements and will be used to evaluate scenarios associated with the movement of:

- Barge/tugs
- Rail cars
- Dredges
- Recreation traffic
- Lock use

Next Steps

- **Ongoing activities:**
 - Sediment sampling and analysis
 - Information gathering (e.g., cultural and archaeological)
 - Discussions with land owners and municipalities for access
 - Discussions with various federal/state/local agencies on details of the design
 - Continuation of design work
 - Discussions with the railroads and landfills
 - Community Health and Safety Plan (CHASP) development
 - Public input

Next Steps (Cont'd)

- Both EPA and public are reviewing at same time
- Public input and agency comments on draft Intermediate Design Report by the end of September
- Draft Final Design (120 days after Intermediate Design is approved)
- Public input and agency comments on Draft Final Design Report
- Design is finalized

Next Steps (Cont'd)

- **Phase 1 will evaluate the effectiveness of the remedial activities relative to the performance standards**
- **At the end of Phase 1 and prior to the initiation of Phase 2**
 - **EPA and GE will evaluate Phase 1**
 - **Independent peer review of Phase 1 results**
 - **Based on the results of these Phase 1 reviews, changes to the project, the engineering design, and/or performance standards may be necessary**

Intermediate Design Information

- A public forum will be held at the Fort Edward Firehouse at 7:00 pm, September 8, 2005
- Hard copies of the Intermediate Design Report are available for review at repositories in Glens Falls, Fort Edward (EPA Hudson River Field Office), Ballston Spa, Albany, Poughkeepsie, New York City (EPA Region 2 offices), and Edgewater, New Jersey
- Web at www.epa.gov/udson

The Hudson River Field Office

**USEPA Hudson River Field Office
421 Lower Main St
Hudson Falls, NY 12839**

**518-747-4389 or 866-615-6490 toll-free
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**David H. King, Director
Leo Rosales, Public Affairs Specialist**



Discussion

