

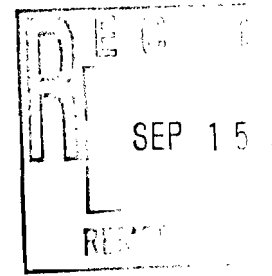
From: Jerry Rider
To: Burke, Gerard; Gibbons, Thomas
Date: 11/9/2006 3:35:00 PM
Subject: Metro North Railroad, Harmon Yard OUII Lagoon

Is this site # 360010

I have not received this site officially. We'll be glad to take it, however, when you are transferring SM responsibilities you (Tom or Gerard) need to formally do it via a memo from BD to BD. We will then discuss with the Region who will be the lead and assign a PM. I expect the region will take this as it is an RP. We have a few sample memos for you if you like to show youl the bases needing to be covered.

You need to be sure all records are in edocs or on file also.

CC: Hoffman, Carl



September 14, 2006

New York State Department of Environmental Conservation
Division of Environmental Remediation
625 Broadway
Albany, NY 12233

Attn: Gerard Burke

Re: **Metro-North Railroad, Harmon Yard OUII Lagoon
Remediation Report Submittal for Period
December 31, 2005 through July 11, 2006**

Dear Mr. Burke:

The enclosed document is the Monitoring Report for Metro-North Railroad's Harmon Yard OUII Lagoon Remediation for the period December 31, 2005 through July 11, 2006. This report summarizes the operation activities for the Vacuum-Enhanced NAPL Recovery (VENR) System installed for the Harmon Lagoon Remediation, Operable Unit II (OUII).

If you require additional information or have any questions, please feel free to contact me at 212 340 3322.

Very truly yours,


Karen L. Timko, Esq.
Director, Environmental Compliance and Services

CC: T. Roszak w/out attach
M. Mehta "
J. Reilly "
K. McHale "

OPERATIONS & MAINTENANCE STATUS REPORT
PERIOD: DECEMBER 31, 2005 THROUGH JULY 11, 2006

OPERABLE UNIT I
FORMER WASTEWATER TREATMENT AREA
METRO NORTH RAILROAD HARMON YARD
CROTON-ON-HUDSON, NEW YORK

Prepared for: Metro-North Railroad
347 Madison Avenue
New York, New York 10017

Prepared by: Day Engineering, P.C.
40 Commercial Street
Rochester, New York 14614

Date: August 2006

Project No.: 04-3135I (46)

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FIGURES

Figure 1	Project Locus
Figure 2	OU-I Site Plan
Figure 3	OU-I Site Drainage Modification Profile, Section and Detail

ATTACHMENTS

Attachment A	OU-I Remedy Inspection Forms: March 21, 2006 and July 11, 2006, Site Sketch, and Site Photographs
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1.0 INTRODUCTION

The operation and maintenance requirements for the remedial construction completed to address the former Harmon Railroad Yard Wastewater Treatment Area [i.e., identified as Operable Unit-I (OU-I)] are described in a document titled, *Operable Unit I, Operations and Maintenance Plan, Harmon Railroad Yard, Croton-On-Hudson, New York* dated July 7, 1999 as revised August 1999 (O & M Plan). A project locus map showing the location of OU-I (the "Site") is included as Figure 1 and a Site Plan depicting OU-I features is included as Figure 2.

As described in the O & M Plan, the following features of the OU-I remedy are evaluated/maintained on a routine basis as part of the remedial program:

- asphalt cover over the geocomposite cap;
- slopes around the asphalt cover;
- drainage channel; and
- perimeter fencing.

This document describes the work completed during the monitoring period between December 31, 2005 through July 11, 2006 to evaluate and maintain the above features. Specific inspection and maintenance procedures conducted during the monitoring period to address these components are discussed in Section 3.0.

2.0 BACKGROUND

The Harmon Railroad Yard (i.e., the “Yard”) is located in the Village of Croton-on-Hudson, New York, and it is bound by Route 9 on the east and Croton Point Park to the west. The Yard is approximately 100 acres in size, and has been in operation for over 100 years. Currently, Metro North Railroad (MNR) operates the Yard.

The OU-I remedial action was completed in September 1996 and it addressed remediation and closure of the former wastewater treatment plant lagoon and excavation of surface soil from specific areas around the lagoon. Remediation and closure of the lagoon and the areas surrounding the lagoon entailed the following key items:

- excavation of soil surrounding the wastewater treatment plant lagoon (i.e., identified as Zone A);
- installation of permanent sheeting around the lagoon perimeter;
- water removal from the wastewater treatment plant lagoon;
- removal of sludge from within the lagoon;
- placement of a lower backfill layer, consisting of 3.5 feet of clean backfill, over the native soil at the bottom of the lagoon;
- installation of a high density polyethylene (HDPE) geomembrane liner over the lower backfill layer;
- placement of a middle backfill layer, consisting of a one foot layer of clean fill overlain by a 10-inch layer of Zone A soil having polychlorinated biphenyl (PCB) concentrations up to 10 parts per million (ppm), overlain by a two to five foot thick layer of clean backfill, over the HDPE liner;
- installation of an HDPE geomembrane cap over the middle backfill layer;
- installation of a geocomposite drainage net over the HDPE geomembrane cap;
- placement of a top backfill layer, consisting of a one foot thick sand drainage layer and one foot of clean backfill, over the drainage net;
- installation of a reinforcement geotextile, overlain by a 6.5-inch thick asphalt cover at the final surface;
- installation of a riprap-lined drainage channel along the northern edge of the asphalt cover;
- installation of a system of manholes and pipes to carry storm water from the drainage channel to the existing Harmon Yard storm sewer system;
- transport and off-site disposal of all excavated sludge, and Zone A soil containing PCBs at concentrations greater than 10 ppm (i.e., Zone A1 soil); and
- decontamination and demolition of the Old Wastewater Treatment Plant.

Due to the settlement over time, a pronounced depression evolved in the center of the asphalt cap that collected water. A drainage modification system was installed to correct the effects this depression had on the drainage of the asphalt cap. This drainage system modification system was installed in November-December 2005 to continuously drain water away from the depression in the asphalt cover. This system consists of a sump box installed within the depression that is connected to 4-inch diameter PVC piping, installed within the asphalt cover and above the HDPE liner that drains via gravity into the existing

Harmon Yard storm sewer system. The location of the drainage modification is shown on Figure 2 and a sheet depicting the profile, section and detail of the drainage modification is presented as Figure 3. [Note: This drainage system was installed as an alternative to repaving the asphalt cap, which was deemed to be an excessive cost that would not serve to eliminate future settlement or degradation of the OU-I cover system.]

Additionally, piping and wells for an air sparge/soil vapor extraction system were installed into and below the lower backfill soil layer to address petroleum related compounds in soil beneath the lower backfill layer. Prior to implementation of the OU-I remedy, regulation of this soil (i.e., soil located beneath the lower backfill soil layer containing petroleum related compounds) was transferred by NYSDEC, from the Division of Inactive Hazardous Waste Disposal Sites to the Bureau of Spill Prevention and Response. As such, operation and maintenance of the air sparge/soil vapor extraction system, if required, is not a component of the OU-I remedy and, therefore, is not included in the O&M plan.

3.0 OPERATION AND MAINTENANCE

This section presents a summary of observations of the OU-I remedy, and maintenance work conducted during the monitoring period. Representatives of the MNR Structures Department are at the Site daily Monday through Friday to complete field measurements and to undertake oil removal activities associated with Operable Unit-II of the former Harmon Railroad Yard Wastewater Treatment Area. In conjunction with this work, the condition of the elements of the OU-I remedy are routinely observed and repairs are conducted as necessary. Detailed inspections of the OU-I remedial elements were conducted on March 21, 2006 and July 11, 2006 and the results of these inspections are discussed below. The respective OU-I Remedy Inspection Forms and associated photographs are included in Attachment A.

3.1 Asphalt Cover

Based upon observations made on March 21, 2006 and July 11, 2006, the asphalt cover is generally in good condition. The drainage modification system installed in 2005 appeared to be functioning properly since standing water was not observed in the area of the sump box. However, an area of settling (i.e., a small depression in the asphalt cover) was observed during the March and July inspections located approximately 25 feet north of the sump box that drains the asphalt cover (refer to Site Sketch, Location 5). The depth of the depression appeared unchanged from the March inspection to the July inspection. During the March 21, 2006 inspection, surface water ponding was not observed in this area of settling; however on July 11, 2006, standing water approximately two inches deep covered an area approximately eight feet in diameter around this low spot in the asphalt cover. Since this depression does not appear to affect the overall drainage of the asphalt cover it is not being identified as a concern at this time. However, if continued settlement of the depression occurs in the future that appears to affect the drainage of the OU-I remedy a corrective action may be recommended. There were no differences in elevation observed around the grouted manhole covers during this time period.

Additionally, shallow surficial cracking radiating concentrically from the low spot in the center of the asphalt cover (i.e., in the area of the sump box) to various locations throughout the asphalt cap was noted during both inspections. It is recommended that the cracking on the asphalt cover be sealed on a routine basis to maintain the integrity of the asphalt cover.

3.2 Slopes around the Asphalt Cover

The slopes that surround the lagoon cap system and asphalt cover provide erosion protection for the portion of the asphalt cover that is not located over the sheeting wall that was left in place around the former lagoon area. These slopes are routinely observed by MNR Structures Department representatives for evidence of erosion and accumulated debris. [Note: When the OU-I remedy was implemented in 1996, it was anticipated that the slopes would be covered with vegetation to reduce erosion. However, access restrictions and the presence of deer ticks in the Yard precluded establishment of a

vegetative cover. As such, herbicide is applied to the slopes around the asphalt cover to keep the area free of vegetation.]

On July 11, 2006, minor erosion rivulets were observed on the slopes around the asphalt cover. However, no evidence of washouts or soil slides was observed during either inspection. Repair of these erosion rivulets does not appear to be warranted at this time. These areas should be observed on a routine basis and repaired if their condition deteriorates with time. A minimal amount of debris (i.e., plastic, insulation, fence slats, and miscellaneous solid waste) was observed on the slopes during the March 21, 2006 inspection. This debris was removed by the July 11, 2006 inspection.

3.3 Drainage Channel

The drainage channel that traverses the northern edge of the asphalt cover and connects to the Harmon Yard storm sewer system diverts water away from the lagoon. Visual observation of the condition of this channel and the evaluation of the need for maintenance (e.g., removal of debris) is conducted in conjunction with the observation and maintenance of the asphalt cover. During the observations made on March 21, 2006 and July 11, 2006, the drainage channel appeared to be in good condition and the repair/replacement of the underlying geotextile, in this channel was not deemed necessary. Stockpiles of sand and crushed stone were observed in the drainage channel that is connected to catch basin 1. Since the new sump box that was installed with the drainage modification system collects/diverts surface water that previously discharged to the drainage channel in this area, a corrective action does not appear necessary at this time.

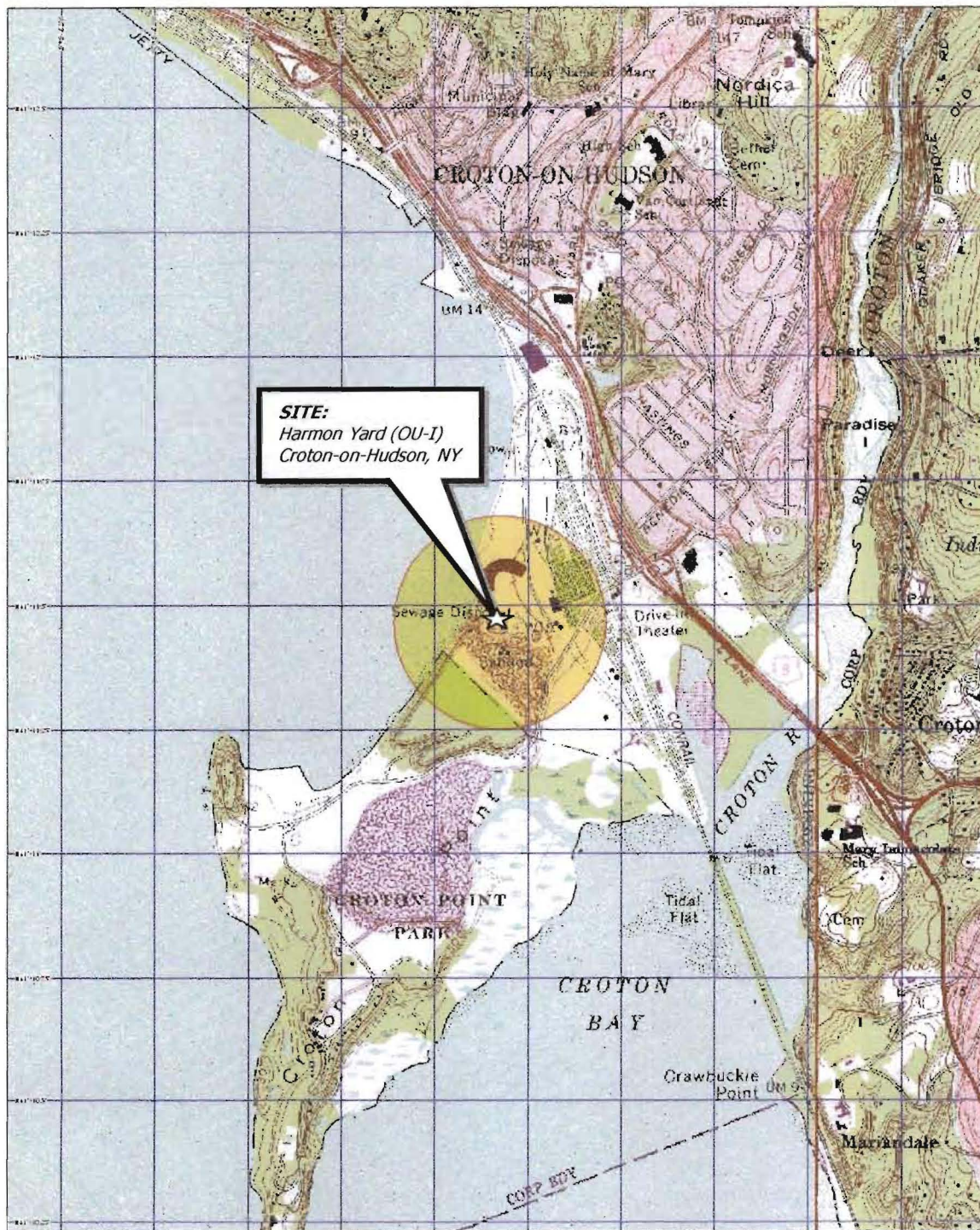
3.4 Perimeter Fencing

Access to the former Harmon Railroad Yard Wastewater Treatment Area is controlled by perimeter fencing with locked gates to prevent unauthorized entry into the OU-I area. MNR Structures Department personnel observe the perimeter fencing on a daily basis (i.e., Monday through Friday). During the March 21, 2006 and the July 11, 2006 inspections, there was no damage to the fence noted and the gate locks were present and in good condition.

4.0 SCHEDULE

The periodic observation and maintenance of the asphalt cover; slopes surrounding the asphalt cover; the drainage channel; and the perimeter fencing will continue to be conducted on a routine basis. As part of this work, the inspection form included in Attachment A will be completed on a quarterly basis to document the condition of the OU-I remedial system. A report summarizing the operation and maintenance activities conducted at OU-I from July 11, 2006 through December 31, 2006 will be submitted on or before March 1, 2007. Inspection forms completed in September 2006 and December 2006 will be included in this report.

FIGURES



3-D TopoQuads Copyright © 1999 DeLorme, Yarmouth, ME 04096 Source Data: USGS 550 ft Scale: 1" = 19,200' Detail: 14:0 Datum: WGS84

Drawing Produced From: 3-D TopoQuads, DeLorme Map Co., referencing USGS quad maps Haverstraw (NY) 1979 and Ossining (NY) 1979. Site Lat/Long: N41d-11.46' - W73d-53.33'

DATE
02-27-2006

DRAWN BY
RJM

SCALE
1" = 2000'

day

DAY ENGINEERING, P.C.
 ENVIRONMENTAL ENGINEERING CONSULTANTS
 ROCHESTER, NEW YORK 14614-1008

PROJECT TITLE
**METRO-NORTH RAILROAD
 HARMON YARD (OU-I)
 CROTON-ON-HUDSON, NEW YORK**

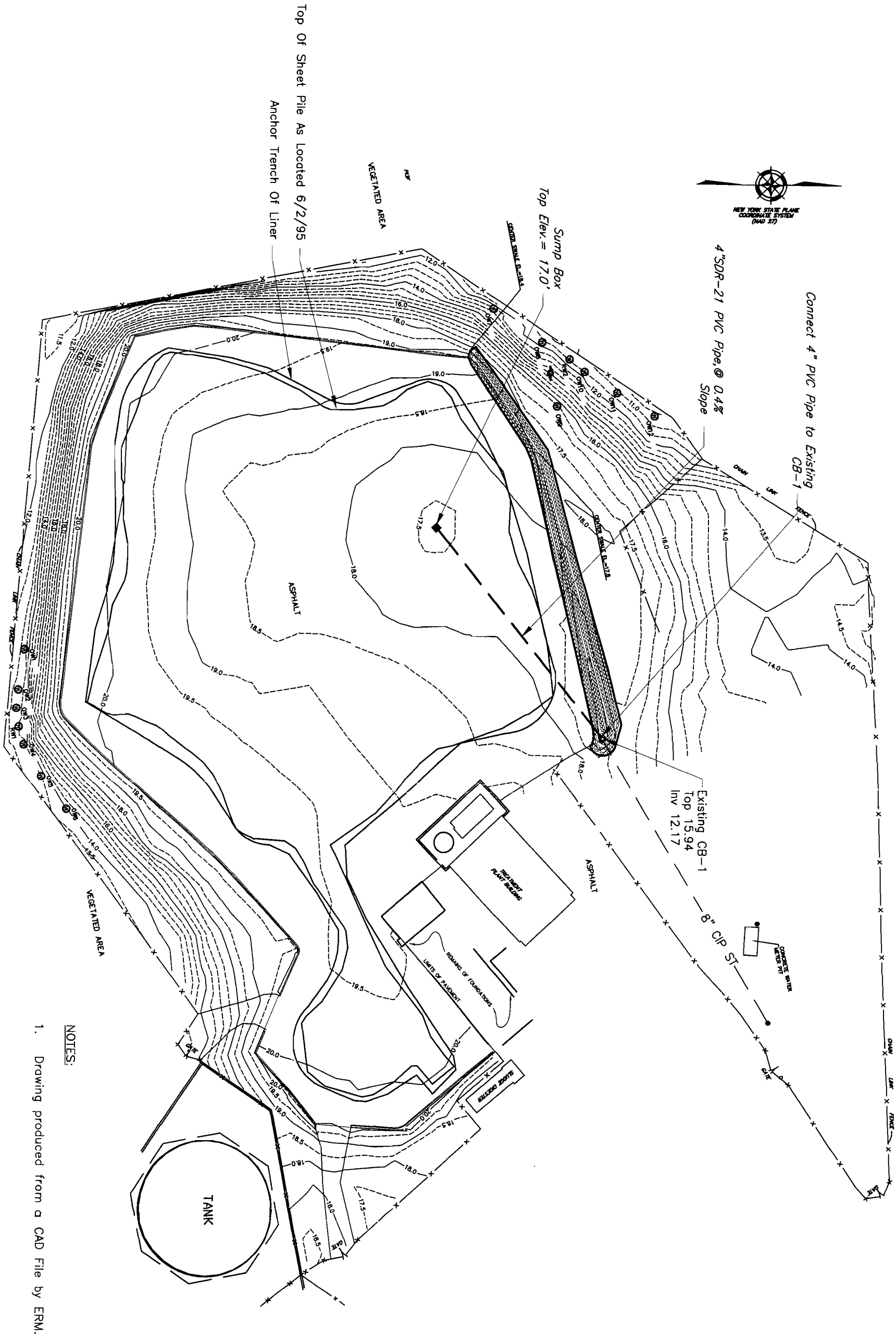
PROGRESS REPORT

DRAWING TITLE
PROJECT LOCUS MAP

PROJECT NO.
04-31351 (46)

FIGURE 1

SHEET 1 OF 1



NOTES:

1. Drawing produced from a CAD File by ERM.

1 SITE PLAN
FIG-1 1" = 60'

PROJECT TITLE
**METRO-NORTH RAILROAD
HARMON YARD
CROTON-ON-HUDSON**

OU-I SITE DRAINAGE PLAN

DRAWING TITLE

Partial Site Plan

PROJECT NO.
04-31351 (46)

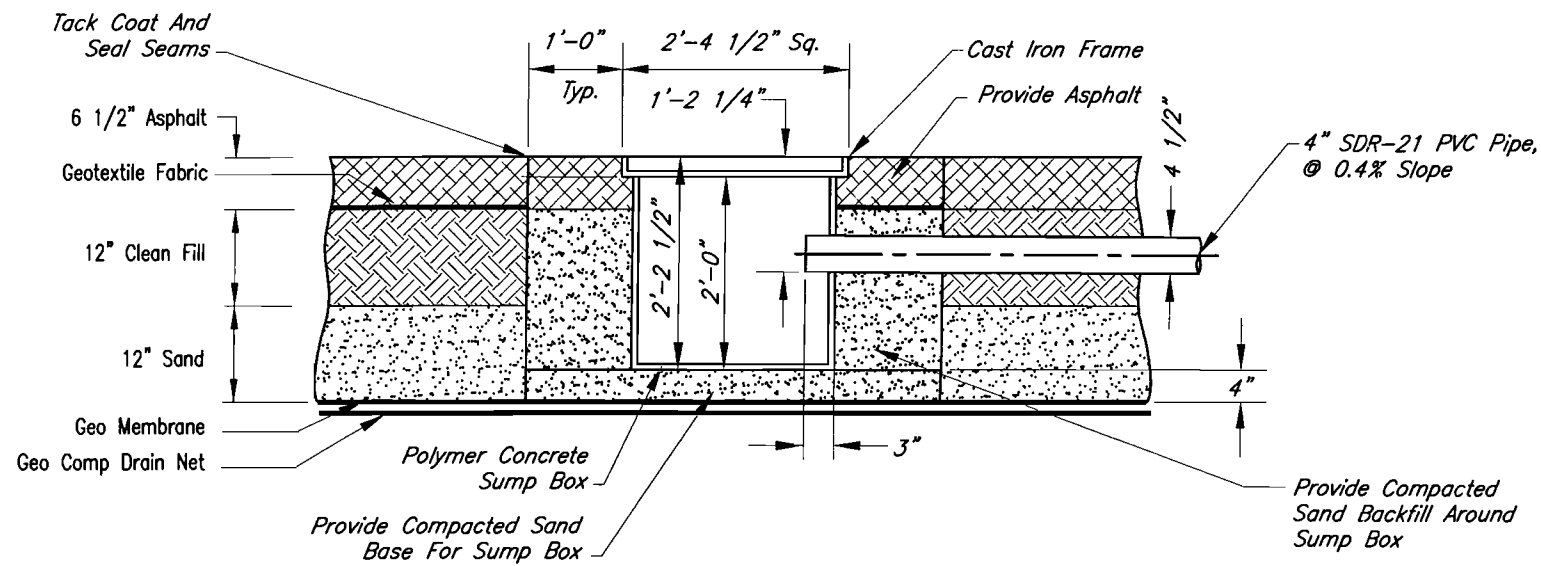
FIGURE 2

day

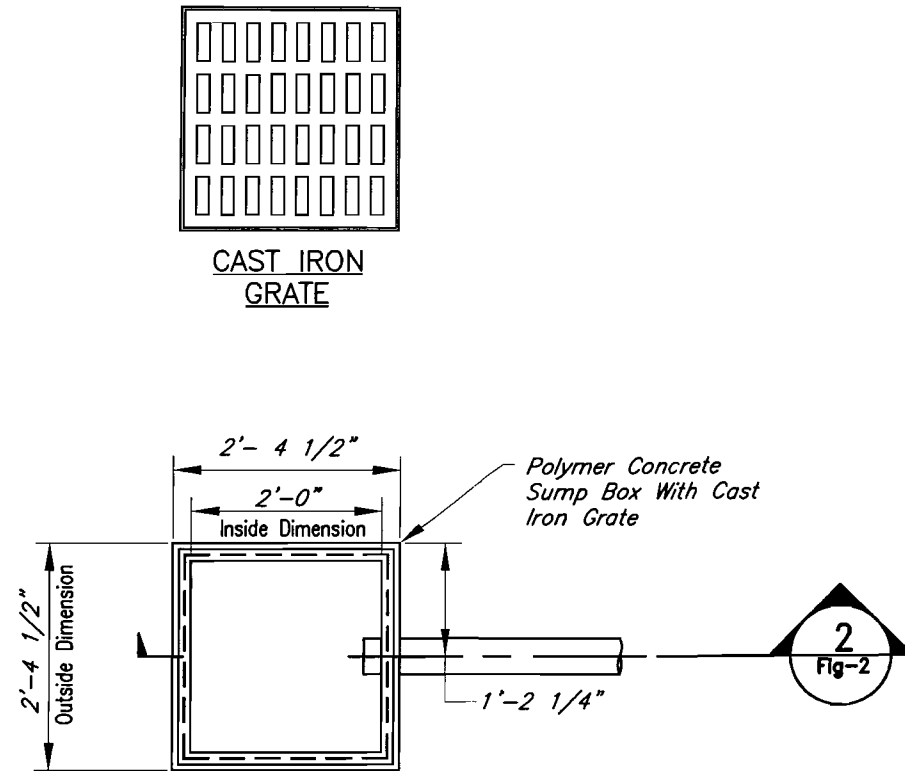
DAY ENGINEERING, P.C.
ENVIRONMENTAL ENGINEERING CONSULTANTS
ROCHESTER, NEW YORK 14614-1008
NEW YORK, NEW YORK 10165-1617

DesignTag TKH	DATE 10-2004
DRAWN BY LRP/Tw	DATE DRAWN 10-25-2004
SCALE As Noted	DATE ISSUED 08-15-2006

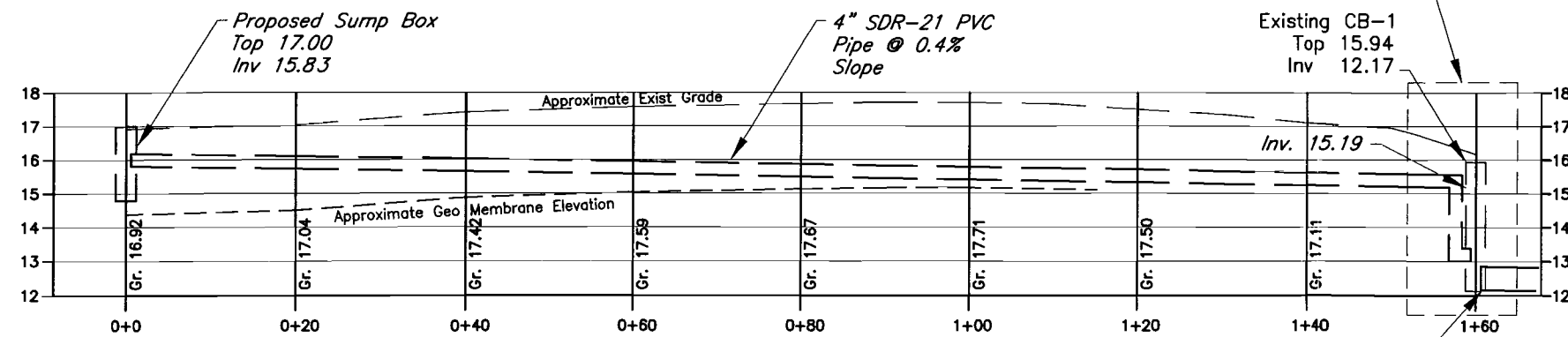
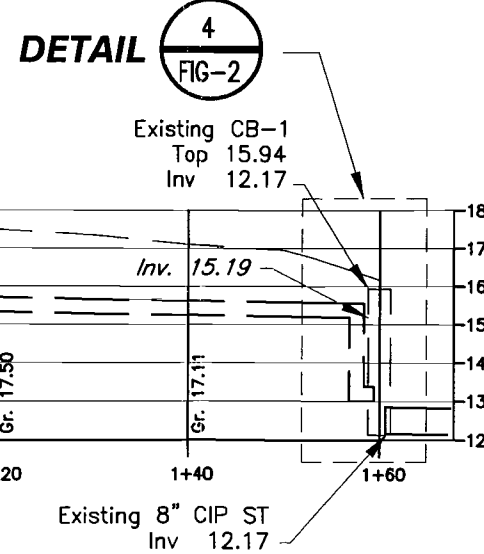
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Ref2:
Ref3:
Ref4:
Ref5:
Ref6:
Xerox432AnsB-2; 11 x 17
Layout Name: Layout2
Time Plotted: Tue Mar 7 16:20 2006
File Name: Harmon\CB Lagoon-Ref66\Figure-1.dwg



2 SECTION VIEW
FIG-2 1/2" = 1'-0"



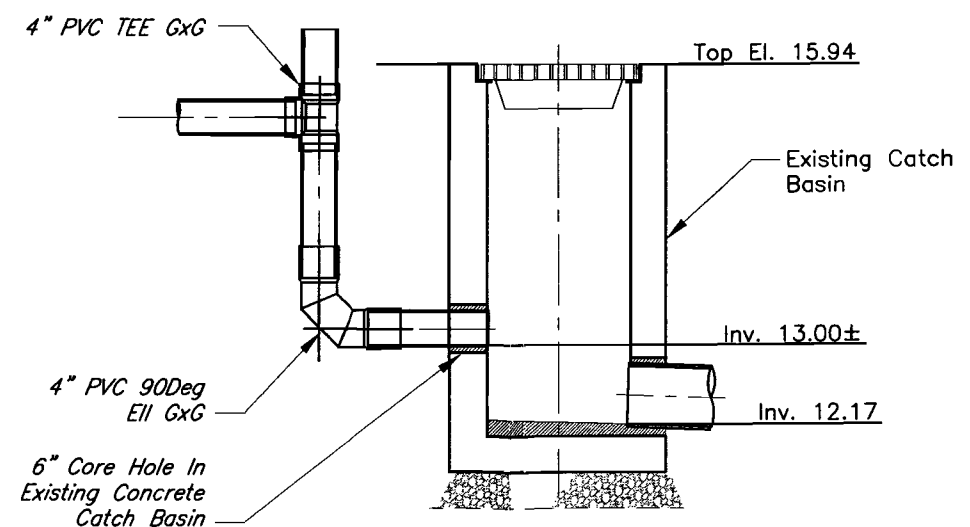
1 SUMP BOX PLAN VIEW
FIG-2 1/2" = 1'-0"



3 PROFILE
FIG-2 1" = 20' Horizontal
1" = 5' Vertical

NOTES:

1. Polymer Concrete Sump Box: Jay R. Smith Mfg. Co., Smith ACO Trench Drain Series, Model 9846 Sump Box, or approved equal.



4 EXISTING CONCRETE CATCH BASIN
FIG-2 1/2" = 1'-0"

DATE	10-2004
Design/Tag	TKH
DRAWN BY	LRP/TW
DATE DRAWN	10-25-2004
SCALE	As Noted
DATE ISSUED	3-2006

day DAY ENGINEERING, P.C.
ENVIRONMENTAL ENGINEERING CONSULTANTS
ROCHESTER, NEW YORK 14614-1008
NEW YORK, NEW YORK 10165-1617

PROJECT TITLE
METRO-NORTH RAILROAD
HARMON YARD
CROTON-ON-HUDSON
OU-1 SITE DRAINAGE MODIFICATION

DRAWING TITLE
Profile, Section, and Details

PROJECT NO.
04-3135I (46)

FIGURE 3

ATTACHMENT A

**OU-I Remedy Inspection Forms for March 21, 2006 and July 11, 2006,
Site Sketch, and Site Photographs**

OU-I Remedy Inspection Form **Harmon Railroad Yard, Croton-On-Hudson, NY**

Note the location(s) of any of the inspection findings described below on the attached site sketch. Also attach copies of photographs to document conditions observed at the time of this inspection.

Photo locations ① (typical) noted on site sketch.

Yes No Corrective Action Needed?

Asphalt Cover

Are there any cracks in the asphalt cover?

Is there any surface water ponding on the asphalt cover?

Is there any evidence of settlement?

Is there any elevation difference at the grouted manhole covers?

Specify Correction Actions Needed:

X	
	X
X	
	X

X

Minor cracking (see photos 6 and 7) should be sealed, various locations on cover. catch basin and drain (photo 4) installed in low spot. Second low spot (photo 5) is self draining to catch basin.

Slopes Around the Asphalt Cover

Are there any erosion rivulets?

Is there evidence of any washouts or soil slides?

Is there debris or other material on the slopes?

Specify Correction Actions Needed:

	X
	X
X	

X

Small amounts of wind blown debris (plastic, insulation, fence slats, trash.

Drainage Channels

Is there any exposed geotextile in the drainage channel?

If so, is the exposed geotextile damaged?

Is there significant sedimentation in the drainage channel?

[Given the arrangement of the riprap channel adjacent to the asphalt cover, there should be minimal sedimentation occurring in the channel, and any significant sedimentation should be investigated to determine its source and cause.]

Specify Correction Actions Needed:

	X
	X
X	

stockpiled sand next to drainage channel has gotten into drainage channel, however, drainage channel is not being used as originally intended, drainage being handled by new catch basin. (photo 8)

Perimeter Fencing

Is there any damaged fencing?

Is there any vegetation close to the exterior of the fence that should be removed to eliminate a means for access to the Site over the fence?

Are the gate locks present and in good working condition?

Specify Correction Actions Needed:

	X
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X	
X	

scrub trees along various portions of fence (photos 1, 2, 3)

Date of Inspection: March 21, 2006

Inspection Form Completed By: Tom Roszak

Cc: Metro-North Department of Environmental Compliance and Services

OU-I Remedy Inspection Form

Harmon Railroad Yard, Croton-On-Hudson, NY

Note the location(s) of any of the inspection findings described below on the attached site sketch.
Also attach copies of photographs to document conditions observed at the time of this inspection.

Yes No Corrective Action
Needed?

Asphalt Cover

Are there any cracks in the asphalt cover?

Is there any surface water ponding on the asphalt cover?

Is there any evidence of settlement?

Is there any elevation difference at the grouted manhole covers?

Specify Correction Actions Needed:

Low spot ~ 25' North of catch basin holding ~ 8' circle of
water 2" deep. (photo 4-)
Minor cracking throughout.

X	
X	
X	
	X

X

Slopes Around the Asphalt Cover

Are there any erosion rivulets?

Is there evidence of any washouts or soil slides?

Is there debris or other material on the slopes?

Specify Correction Actions Needed:

FA 4-14 minor erosion rivulet (photo)

X	
	X
	X

Drainage Channels

Is there any exposed geotextile in the drainage channel?

If so, is the exposed geotextile damaged?

Is there significant sedimentation in the drainage channel?

[Given the arrangement of the riprap channel adjacent to the asphalt cover, there should be minimal sedimentation occurring in the channel, and any significant sedimentation should be investigated to determine its source and cause.]

Specify Correction Actions Needed:

see 3/21/06 note re: stockpiled sand

	X
	X
X	

Perimeter Fencing

Is there any damaged fencing?

Is there any vegetation close to the exterior of the fence that should be removed to eliminate a means for access to the Site over the fence?

Are the gate locks present and in good working condition?

Specify Correction Actions Needed:

Scrub trees along various portions of fence. (photos 2, 3)

	X
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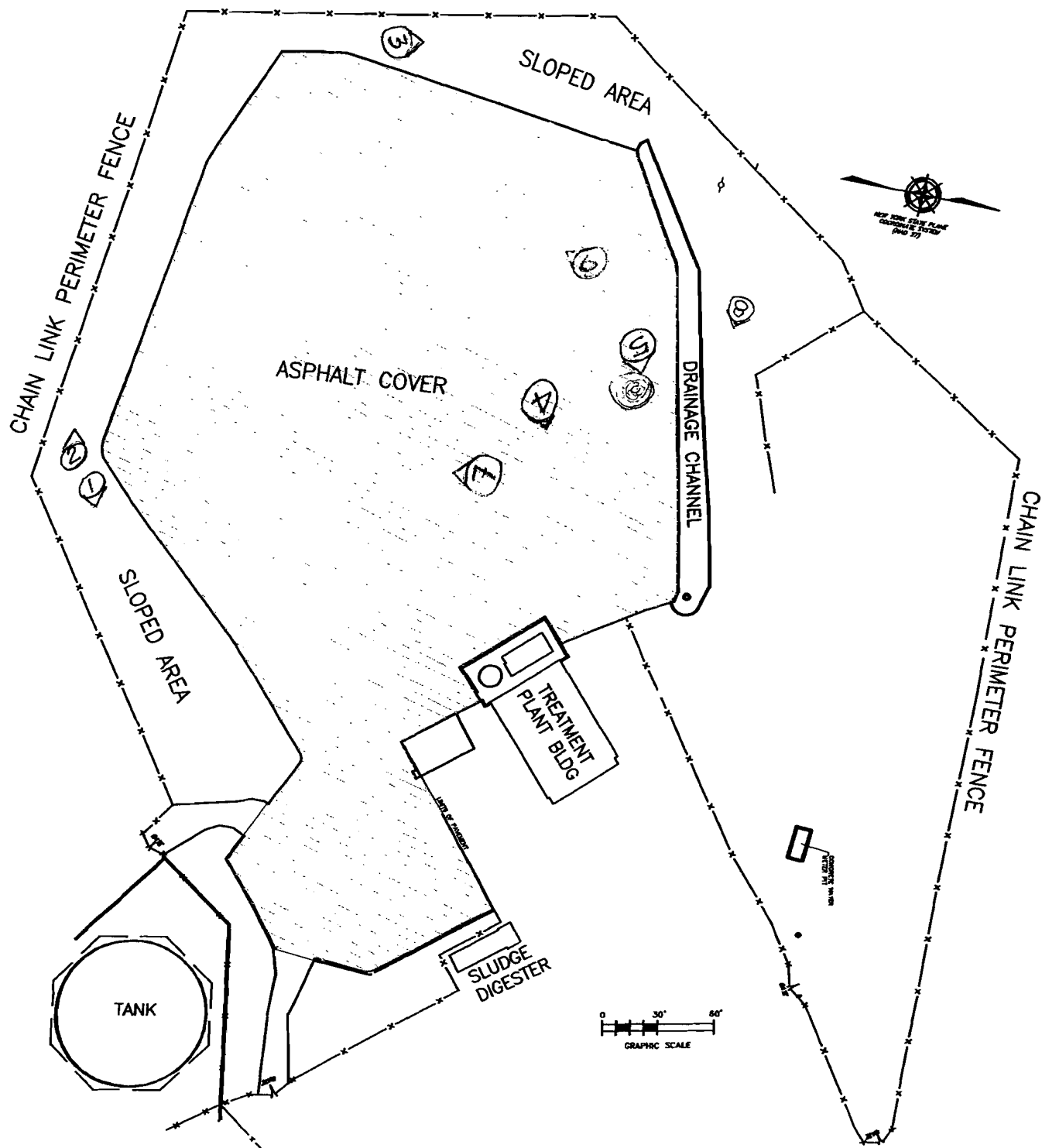
X	
X	

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Date of Inspection: July 11, 2006

Inspection Form Completed By: Tom Roszak. Day Engineering

Cc: Metro-North Department of Environmental Compliance and Services



DATE
03-2006

DRAWN BY
TWW

SCALE
1" = 80'

day

DAY ENGINEERING, P.C.
ENVIRONMENTAL ENGINEERING CONSULTANTS
ROCHESTER, NEW YORK 14614-1008
NEW YORK, NEW YORK 10165-1617

PROJECT TITLE
METRO-NORTH COMMUTER RAILROAD
HARMON YARD
CROTON-ON-HUDSON, NY

OU-1
DRAWING TITLE

Site Sketch

PROJECT NO.
3398I-04 (46)

FIGURE 1



Location 1

View of scrub trees along the perimeter fencing and minor erosion rivulets in the asphalt cover.



Location 2

View of scrub trees along the perimeter fencing.



Location 3
View of the scrub trees along the perimeter fencing.



Location 4
View of the sump box installed during drainage modification system.



Location 5

View of the small depression in the asphalt cover 25 feet north of the sump box during the March 21, 2006 inspection.



Location 5

View of the small depression in the asphalt cover 25 feet north of the sump box during the July 11, 2006 inspection.



Location 6

View of minor cracking located throughout the asphalt cover.



Location 7

View of minor cracking located throughout the asphalt cover.



Location 8
Stockpiled sand next to the drainage channel of catch basin 1.