

347 Madison Avenue  
New York, NY 10017-3739  
212-340-3000

Howard Permut  
President

**1983-2008**

**25**



April 3, 2009

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

Att: Gerard Burke

**Subject: Metro-North Railroad, Harmon Yard,  
Operable Unit I – Operations & Maintenance Status Report,  
Report Period August 1, 2008 through January 1, 2009.**

Dear Mr. Burke;

Enclosed please find a copy of Metro-North Railroad's Harmon Yard Operable Unit I, Operations & Maintenance Status Report for the period of August 1, 2008 through January 1, 2009. This document describes the inspection and maintenance work completed during the monitoring period to evaluate and maintain features at OU-I.

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

Very truly yours,  
Metro-North Railroad

A handwritten signature in black ink, reading 'Joanne Reilly', is written over the typed name.

Joanne Reilly, Manager  
Manager, Environmental Compliance and Services

Enc.

APR 06 2009

CC: K. Timko – MNR w/ attachment  
R. Kampff – Day Engineers

**OPERATIONS & MAINTENANCE STATUS REPORT  
PERIOD: AUGUST 1, 2008 THROUGH JANUARY 1, 2009**

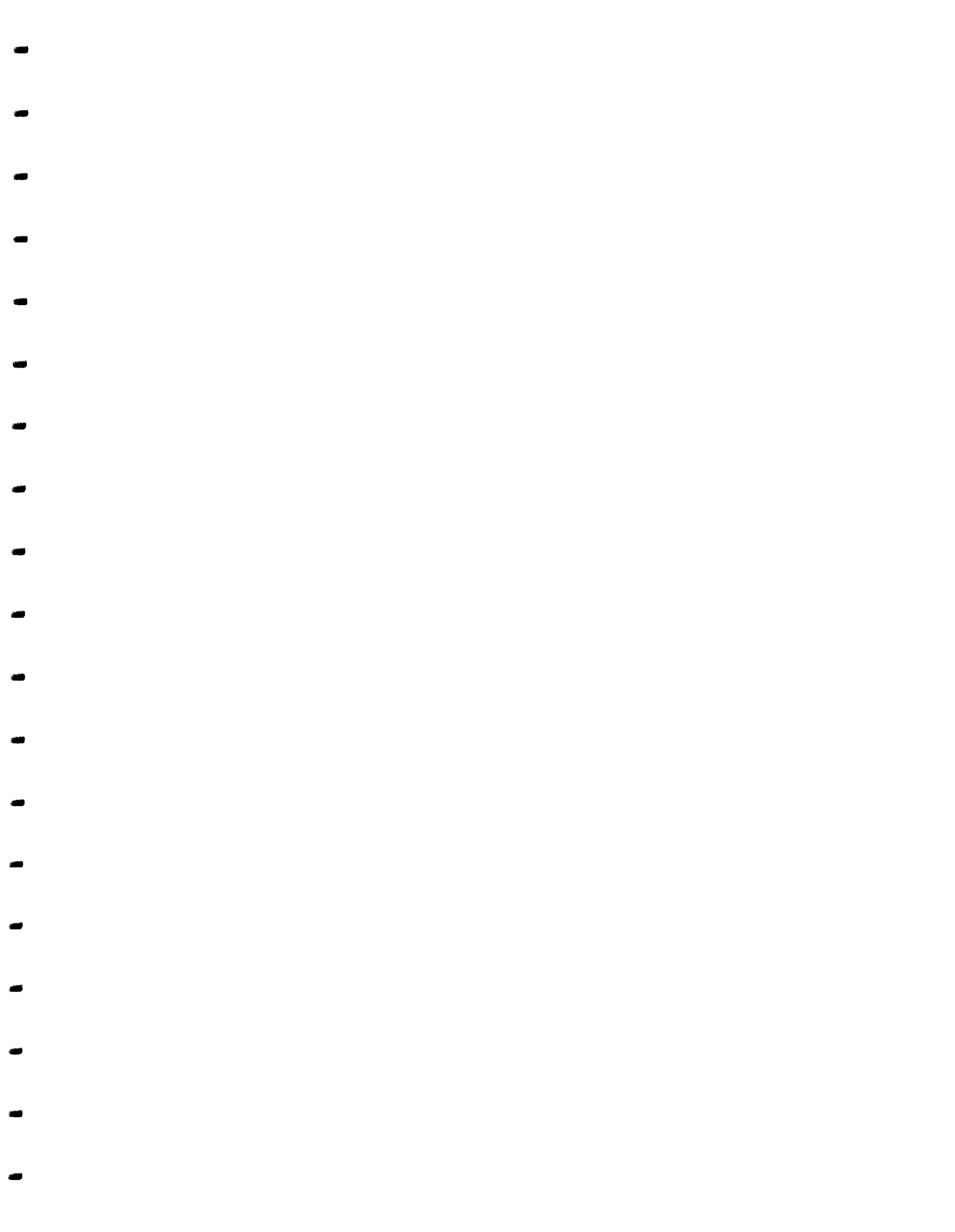
**OPERABLE UNIT I  
FORMER WASTEWATER TREATMENT AREA  
METRO NORTH RAILROAD HARMON YARD  
CROTON-ON-HUDSON, NEW YORK**

**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:** March 2009

**Project No.:** 04-3135I (46)



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### FIGURES

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### ATTACHMENTS

Attachment A	OU-I Remedy Inspection Forms: November 20, 2008 and December 17, 2008 Site Inspection Photographs OU-I Site Plan with Photograph Locations
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APR 06 2009

## 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, as amended by actions described in previous status reports, 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 modification system; and
- perimeter fencing.

This document describes the work completed during the monitoring period between August 1, 2008 and December 31, 2008 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 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 occurred near the center of the asphalt cap. Water from snowmelt and rainfall events collected within this depression. A drainage modification was installed to correct the effects that this depression had on the drainage of the asphalt cap. This drainage 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, this piping drains via gravity into the existing Harmon Yard storm sewer system. As a result, surface water from the asphalt cap does not discharge into the surrounding drainage channel. 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.]

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 August 1, 2008 through the January 31, 2009 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 cleaning/repairs are completed as deemed necessary. During the monitoring period, two detailed inspections of the OU-I remedial elements were conducted by DAY on November 20, 2008 and December 17, 2008. The results of these inspections are discussed below. Copies of the completed OU-I Remedy Inspection Forms and site photographs for the November 20, 2008 and the December 17, 2008 inspections are included in Attachment A.

#### **3.1 Asphalt Cover**

Based upon observations made on November 20, 2008 and December 17, 2008, there is minor cracking in the asphalt cover that appears to be stabilized. Although the cracking appears stabilized, a corrective action (i.e., future filling and asphalt sealing of the cracks) should be considered when weather permits. The area of settling observed during these inspections appeared similar to that observed during previous inspections. Surface water ponding was observed on the asphalt cover during the November 20, 2008 inspection but this surface water ponding was apparently drained by the December 17, 2008 inspection (i.e. the drainage modification system was functioning as designed). There were no differences in elevation observed around the grouted manhole covers within the asphalt cover during this time period.

#### **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. Due to the presence of deer ticks in the Yard, herbicide was routinely applied to the slopes around the asphalt cover to keep the area free of vegetation and some areas of erosion resulted (e.g., in proximity to the L4 shed as noted in a previous status report.) Herbicide is no longer applied to the slopes around the asphalt cover, which resulted in the re-growth of vegetation in this area. This vegetative cover provides better erosion control on the slopes and areas of erosion noted during previous monitoring events are no longer evident.

During the November 20, 2008 and December 17, 2008 inspections, no evidence of washouts, soil slides, or erosion rivulets was observed on the side slopes. A small amount of debris (i.e., windblown trash, paper, etc.) was observed on the slopes along the perimeter of the fence during both inspections. Such material should be routinely



removed as part of preventive maintenance. In addition, the storage of rock and brick was observed on the north slope during the November 20, 2008 inspection; however, the materials were no longer being stored on the north slope during the December 17, 2008 inspection.

### **3.3 Drainage Modification System**

The drainage channel that traverses the northern edge of the asphalt cover and connects to the Harmon Yard storm sewer system was originally constructed to divert water away from the lagoon. Due to the settlement and changes in the topography of the center of the asphalt cap, the water flow patterns exiting the asphalt cover have changed and water from the asphalt cap no longer flows through the drainage channel. A new drainage modification system now handles drainage off the asphalt cover (refer to Section 2.0 and Figure 3). Therefore, the drainage modification system will be monitored as the replacement to the drainage channel. During the November 20, 2008 and the December 17, 2008 inspections, significant sedimentation was not observed in the area of the drainage modification system and the drainage modification appears to be operating as designed. Therefore, corrective actions are not recommended to the drainage modification system 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 November 20, 2008 and December 17, 2008 inspections, there was no damage to the fence noted and the gate locks were present and in good condition. There was no vegetation observed along the fence that would provide a means of access to the Site. Therefore, a corrective action does not appear needed at this time.

## **4.0 SUMMARY AND CONCLUSION**

This section presents a summary of observations of the OU-I remedy made during the August 1, 2008 through January 31, 2009 monitoring period and recommendations for maintenance work to be conducted during the next monitoring period (i.e., February 1, 2009 through July 31, 2009).

### **4.1 Asphalt Cover**

- Based upon observations made through December 31, 2008, there is evident cracking in the asphalt cover and visual monitoring of these cracks should continue throughout the next monitoring period. As weather permits, the cracks should be filled with joint sealer and spot sealing should be conducted along the cracks with an asphalt sealant.
- The area of settling observed north of the catch basin (i.e., the location where a drainage modification was installed in November-December 2005) should be monitored for continued settlement and if this settlement appears to affect the OU-I remedy, additional corrective actions should be considered.

### **4.2 Slopes Around the Asphalt Cover**

- A small amount of debris (i.e., windblown trash, paper, etc.) was observed on the slopes along the perimeter of the fence during the inspection. This material and other similar debris should be routinely removed from this area.

### **4.3 Drainage Modification System**

- There was no significant sedimentation observed in the drainage modification system during this monitoring period. Therefore, a corrective action is not needed to the drainage system at this time.

### **4.4 Perimeter Fencing**

- During the November 20, 2008 and the December 17, 2008 inspections, there was no damage to the fence noted; the gate locks were present and in good condition; and vegetation was not observed along the fencing that would allow access to the Site. Therefore, a corrective action for the perimeter fencing does not appear needed at this time.

## 5.0 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 to document the condition of the OU-I remedial system. A report summarizing the operation and maintenance activities conducted at OU-I from February 1, 2009 through July 31, 2009 will be submitted on or before August 15, 2009. It is anticipated that site inspections will be completed on/or about March 30, 2009 and July 1, 2009 during this time period.

**FIGURES**



3-D TopoQuads Copyright © 1999 DeLorme, Vermont, ME 04006 Source Data: USGS 1" = 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'

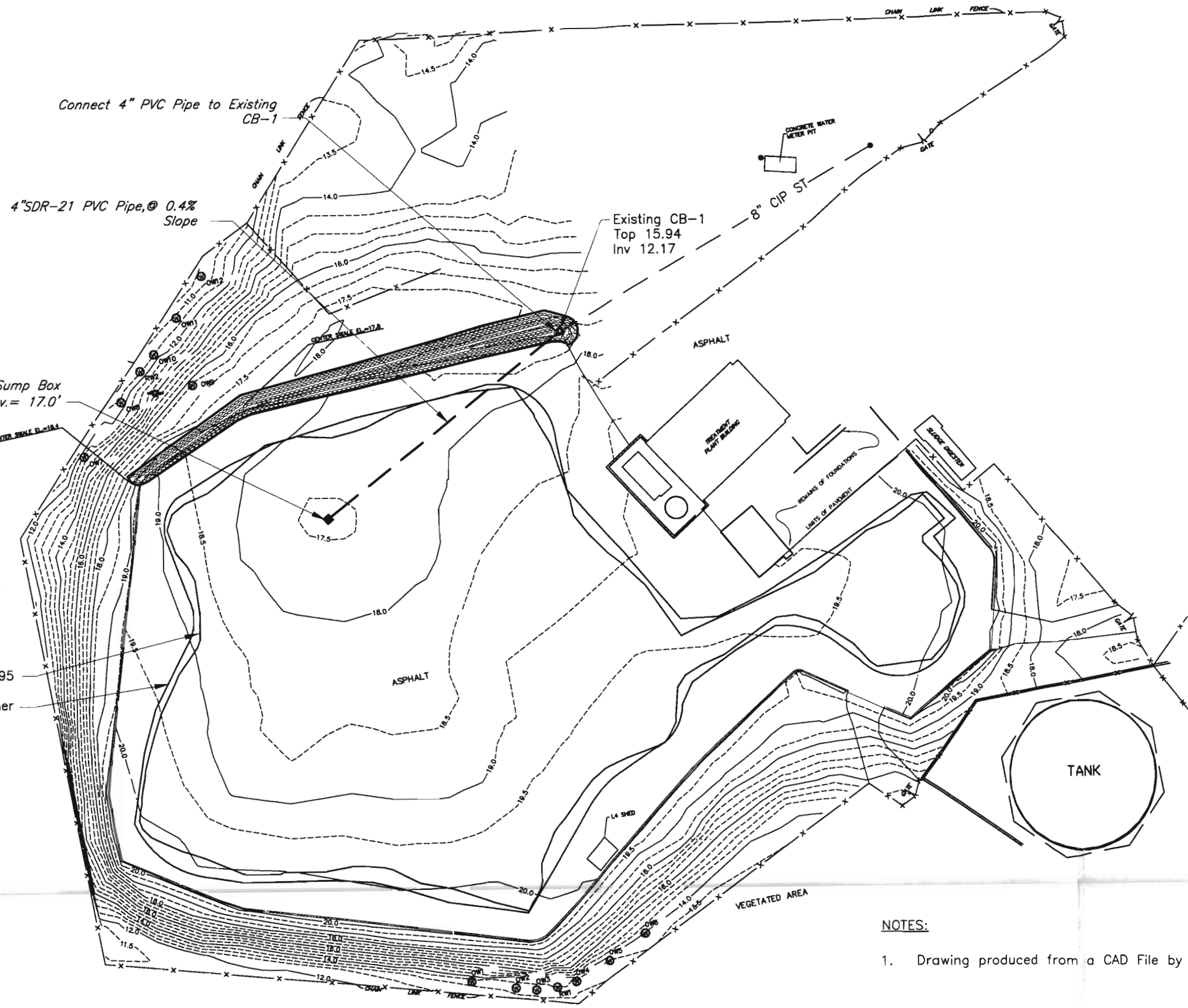
DATE <b>02-27-2006</b>	 <b>DAY ENGINEERING, P.C.</b> ENVIRONMENTAL ENGINEERING CONSULTANTS ROCHESTER, NEW YORK 14614-1008	PROJECT TITLE <b>METRO-NORTH RAILROAD          HARMON YARD (OU-I)          CROTON-ON-HUDSON, NEW YORK</b> <b>PROGRESS REPORT</b>	PROJECT NO. <b>04-3135I (46)</b>  <b>FIGURE 1</b>  SHEET 1 OF 1
DRAWN BY <b>RJM</b>		DRAWING TITLE <b>PROJECT LOCUS MAP</b>	

Ref4:  
Ref5:  
Ref6:

Ref1: Base-1.dwg  
Ref2:  
Ref3:

Xerox432ansiB-2; 11 x 17  
Layout Name: Layout 1

Time Plotted: Tues Mar 4 14:20 2008  
File Name: Harmon\CB Lagoon-Ref66\Figure-1.dwg



NOTES:  
1. Drawing produced from a CAD File by ERM.

1 SITE PLAN  
FIG-1 1" = 60'

DATE	10-2004
DesignTag	TKH
DATE DRAWN	10-25-2004
DRAWN BY	LRP/TW
SCALE	As Noted
DATE ISSUED	03-04-2008

**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 PLAN**

DRAWING TITLE  
**Partial Site Plan**

PROJECT NO.  
 04-3135I (46)

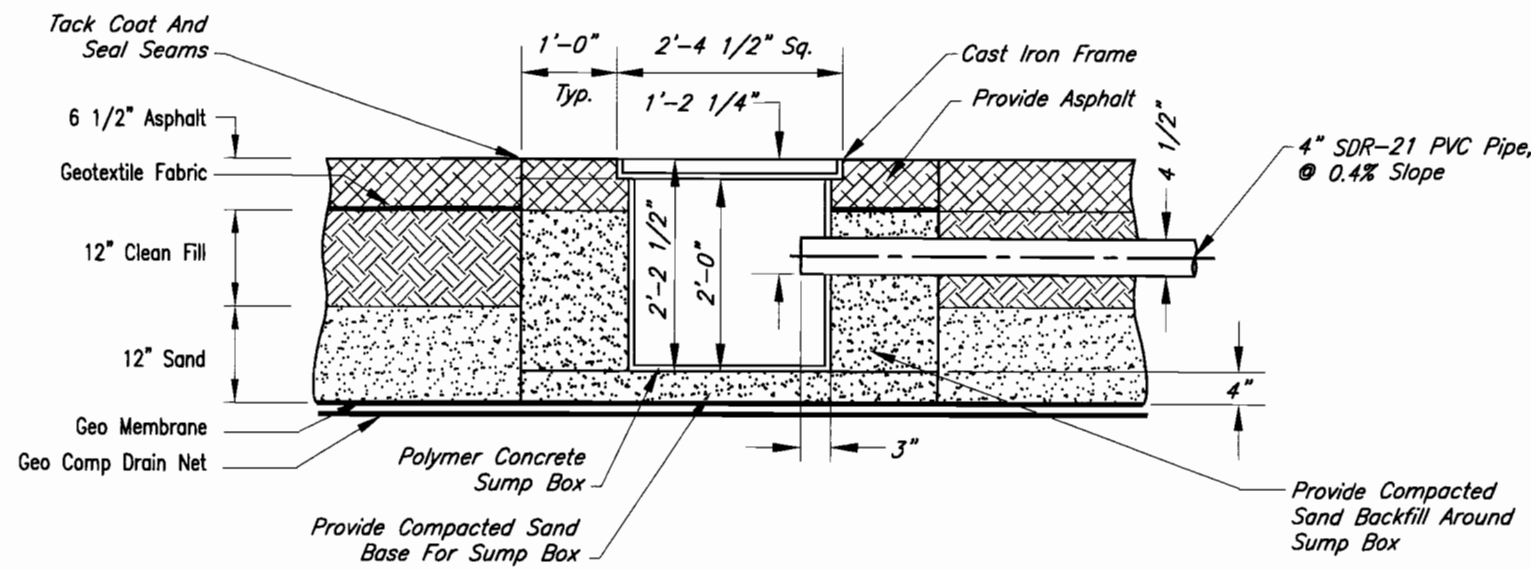
**FIGURE 2**

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Ref6:

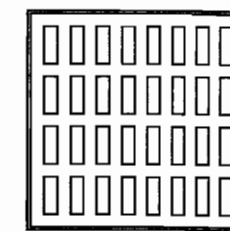
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Ref2:  
Ref3:

Xerox432AnsiB-2; 11 x 17  
Layout Name: Layout2

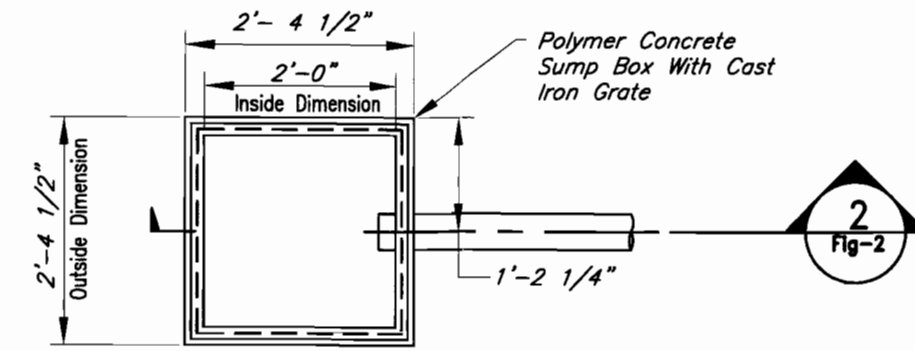
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File Name: Harmon\CB Lagoon-Ref66\Figure-1.dwg



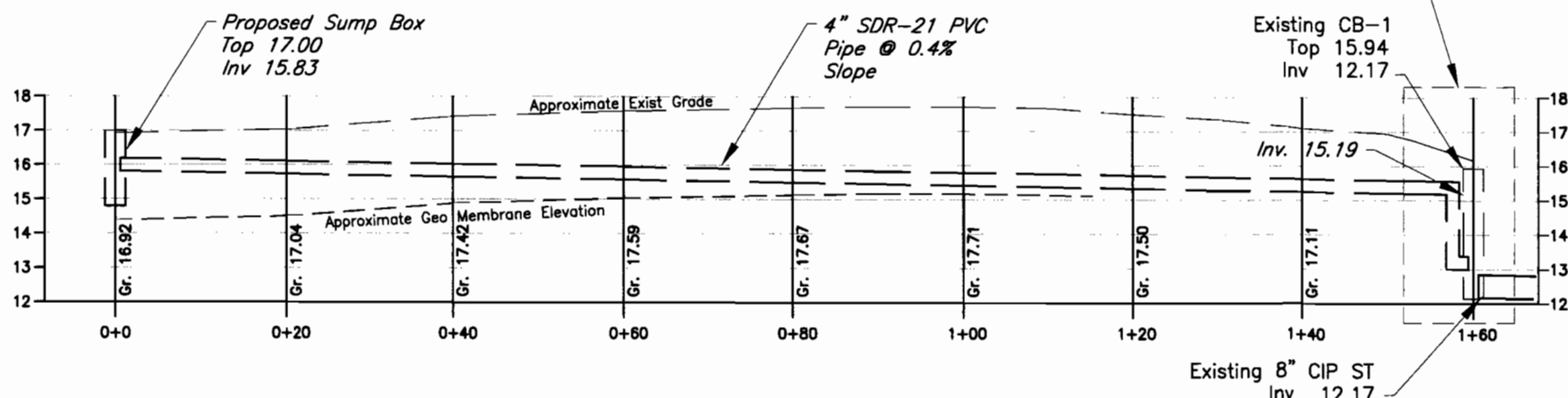
**2 SECTION VIEW**  
FIG-2 1/2" = 1'-0"



**CAST IRON GRATE**



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

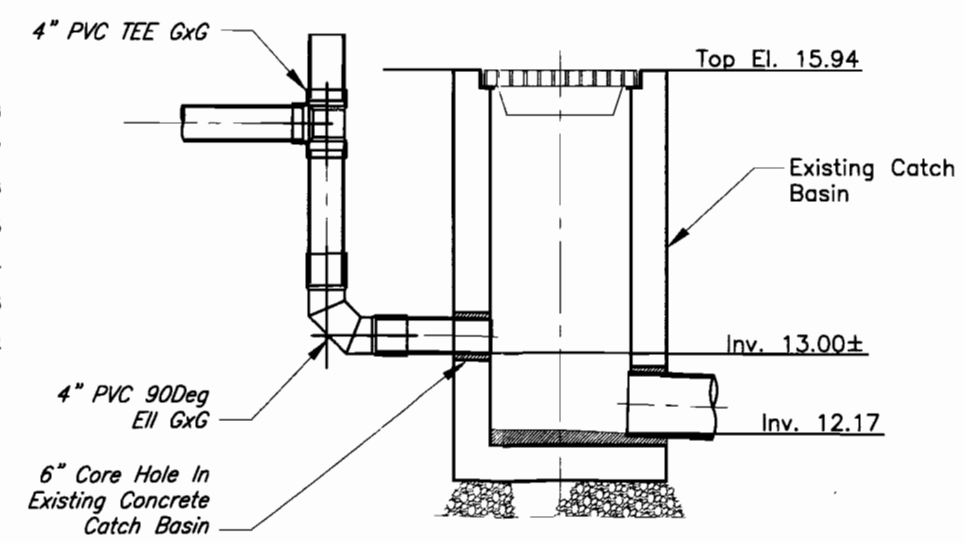


**3 PROFILE**  
FIG-2 1" = 20' Horizontal  
1" = 5' Vertical

**NOTES:**

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

**DETAIL 4**  
FIG-2



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

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

**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  
Completed on November 20, 2008 and December 17, 2008  
Site Inspection Photographs  
OU-I Site Plan with Photograph Locations**



**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 continued settlement?
- Is there any elevation difference at the grouted manhole covers?

X		
X		
	X	
	X	

Specify Correction Actions Needed:

Minor low spot north of drainage manhole  
 Minor cracks throughout.

**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?

	X	
	X	
X		

Specify Correction Actions Needed:

Rock & brick stored on north slope  
 windblown debris along fence.

**Drainage Modification System**

- Is there significant sedimentation in the drainage catchbasin or manhole?

	X	
--	---	--

Specify Correction Actions Needed:

**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?

	X	
	X	
X		

Specify Correction Actions Needed:

Cc: Metro-North Department of Environmental Compliance and Services

Date of Inspection: 11/20/08

Inspection Form Completed By: Tom Roszik DAY ENGINEERING



Picture #1 (11/20/08)

Rock and brick storage on north slope around asphalt cover.



Picture #2 (11/20/08)

Surface water ponding on asphalt cover.

PC 04-3135I (46)  
OU-I Inspection  
Croton Harmon, New York  
March 2009

**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?
<b>Asphalt Cover</b>			
Are there any cracks in the asphalt cover?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Is there any surface water ponding on the asphalt cover?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Is there any evidence of continued settlement?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Is there any elevation difference at the grouted manhole covers?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Specify Correction Actions Needed:	<u>Minor cracks, but stabilized.</u>		

<b>Slopes Around the Asphalt Cover</b>			
Are there any erosion rivulets?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Is there evidence of any washouts or soil slides?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Is there debris or other material on the slopes?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Specify Correction Actions Needed:	<u>small quantities of windblown trash inside perimeter fencing</u>		

<b>Drainage Modification System</b>			
Is there significant sedimentation in the drainage catchbasin or manhole?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Specify Correction Actions Needed:			

<b>Perimeter Fencing</b>			
Is there any damaged fencing?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Are the gate locks present and in good working condition?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Specify Correction Actions Needed:			

Cc: Metro-North Department of Environmental Compliance and Services

Date of Inspection: 12/17/2008

Inspection Form Completed By: THOMAS ROSZAK DAY ENGINEERING



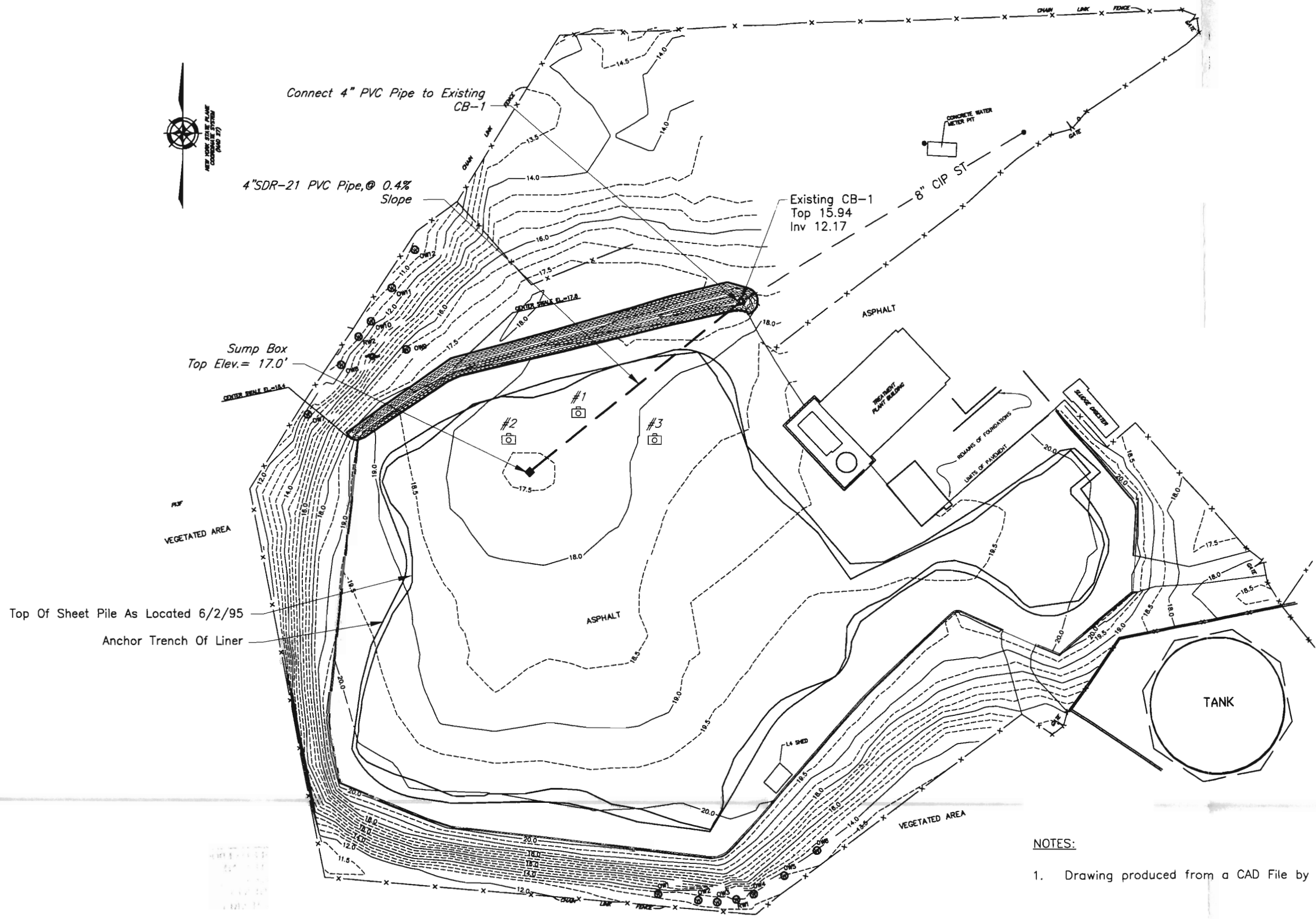
Picture #3 (12/17/08)  
Minor cracks that appear stabilized on asphalt cover.

Ref4:  
Ref5:  
Ref6:

Ref1: Base-1.dwg  
Ref2:  
Ref3:

Xerox432AnsiB-2; 11 x 17  
Layout Name: Layout 3

Time Plotted: Thur Mar 5 12:25 2009  
File Name: Harmon\CB Lagoon-Ref66\Figure-1.dwg



Top Of Sheet Pile As Located 6/2/95  
Anchor Trench Of Liner

1 SITE PLAN  
FIG-1

NOTES:  
1. Drawing produced from a CAD File by ERM.

LEGEND:  
#1  
[Symbol] Approximate Location Of Inspection Photograph

DATE	3-2009
FIELD VERIFIED BY	TER
DATE DRAWN	3-5-2009
DRAWN BY	RJM/TW
DATE ISSUED	3-5-2009
SCALE	As Noted

**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 PLAN**  
 DRAWING TITLE  
**Partial Site Plan With Inspection Photograph Locations**

PROJECT NO.  
**04-3135I (46)**