

SECTION 4

PROCESS INFORMATION

**Attachment 4-10
Thermal Desorber Gas Burner Calculations**

**MIXED WASTE FACILITY
RCRA/TSCA PERMIT APPLICATION**

PERMA-FIX NORTHWEST RICHLAND, INC.

RICHLAND, WASHINGTON

Perma-Fix Northwest Richland, Inc.
 Thermal Desorber
 Natural Gas Burner Emissions

Emission Unit: Thermal Desorber
 Burner Max Capacity: 300,000 Btu/hr
 Number of Burners: 6
 Max Capacity: 1800000 Btu/hr
 Fuel: nat gas
 Mfg: Tempest
 Model: 4441-2-RRH/F

Emission Unit ID	Max Design Rate MMBtu / Hr	Throughput (Maximum) MMcf / yr	PTE Ton / Yr NOX	PTE Ton / Yr CO	PTE Ton / Yr PM	PTE Ton / Yr Sox	PTE Ton / Yr VOC	PTE Ton / Yr Lead	PTE Ton / Yr HAP
Desorber	1.8	10.59	0.53	0.44	0.04	0.00	0.03	0.00	0.01

Combustion Equipment Emission Factors	Source: AP-42 Table 1.4 (rev 7/98)	lb/MMcf
NOx		100
CO		84
PM _{total}		7.6
SO ₂		0.6
VOC		5.5
Lead		0.0005
HAP		1.89

Natural Gas Btu/scf = 1020
 Max hours/year = 6000

Footnote a to AP-42 Table 1.4 -1

SECTION 4

PROCESS INFORMATION

**Attachment 4-11
TLA and RLA Certifications**

**MIXED WASTE FACILITY
RCRA/TSCA PERMIT APPLICATION**

PERMA-FIX NORTHWEST RICHLAND, INC.

RICHLAND, WASHINGTON

PermaFix®

Northwest Richland, Inc

2011-LTR-1016
March 22, 2011

Sterling Derrick
Washington State Department of Ecology
3100 Port of Benton Blvd.
Richland, Wash. 99354

Ms. Linda Meyer
United States Environmental Protection Agency - Region 10
1200 Sixth Avenue
Suite 900, AWT-121
Seattle, WA 98101

Dear Mr. Derrick and Ms. Meyer,

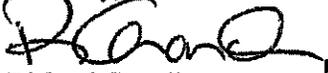
Re: Perma-Fix Northwest Richland, Incorporated (PFNW-R)
Mixed Waste Facility
Site Identification Number WAR 000010355
Permit Condition I.D.9 Certification of Truck Loading Area (TLA) and Rail Loading
Area (RLA)

Permit Condition I.D.9 requires PFNW-R to submit a letter stating that any new or modified portions of the facility have been constructed or modified in accordance with the Permit. The Permit requires the TLA and RLA to be constructed in accordance with WAC 173-303-395(4). The attached report certifies that the facility has been constructed in accordance with WAC 173-303-395(4). All minor repairs required in the report have been completed. PFNW-R also has been notified that the agency has waived it's inspection of the newly constructed facilities.

This letter also submits the updated as-built drawings for the TLA and RLA.

If you have any questions regarding this request, please feel free to contact Richard Grondin at (509) 375-7026.

Sincerely,



Richard Grondin
Perma-fix Northwest-Richland, Inc.
Vice-President and General Manager

CC: Curt Cannon PFNW w/o Attachments
Regulatory File

2011-LTR-1016
3/22/2011

2011-LTR-1016
Appendix A
Certification Statement

2011-LTR-1016
3/22/2011

The following certification statement fulfills the requirements of Hazardous Waste Management Act, in accordance with WAC 173-303-810(13)(a), and Toxic Substance Control Act, in accordance with 40 CFR 761.3, for Perma-Fix Northwest Richland, Inc. permit for the Storage and Treatment of Mixed Waste and for the Storage and Disposal of Mixed-Toxic Substance Control Act (TSCA) Regulated Polychlorinated Biphenyl (PCB) Wastes.

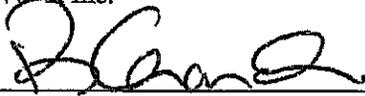
The certification below covers the documentation and submission of the Permit Modification submitted in letter No. 2011-LTR-1016, dated March 22, 2011.

As the Vice President/General Manager of the Mixed Waste Facility, I have the authority to certify on behalf of the corporation.

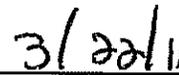
HWMA CERTIFICATION
[WAC 173-303-810(13)(a)]

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

PFNWR Inc.



Richard Grondin Vice President/General Manager



Date: March 22, 2011

2011-LTR-1016
3/22/2011

2011-LTR-1016

Appendix B

Concrete Containment Pads- Construction Certification Report



March 17, 2011

Steve Covert
Perma Fix Northwest
2025 Battelle Blvd.
Richland, WA 99352

RE: CONCRETE CONTAINMENT PADS – CONSTRUCTION CERTIFICATION REPORT

Introduction

At the request of Perma Fix Northwest, a representative of Meier Architecture • Engineering (Meier) conducted a visual observation of two (2) concrete containment pads on March 10, 2011 in order to certify construction per the design drawings and Washington Administrative Code WAC 173-303-395(4). Prior to visiting the site, we reviewed the following design drawings: Penta Engineering, LLC Drawing Numbers 100707-M-100, 100707-M-101, 100707-S-100 and 100707-S101. This report provides a summary of the observations made during the site visit.

Actual design of containment pads is by others. Meier is only providing a visual review of the construction in order to verify that construction matches the original design drawings.

Background

The pad shown on drawings 100707-M-100 and 100707-S-100, called the “Railcar Containment Pad”, consists of a 10” thick concrete slab on grade. This slab has a 1’-2” curb that extends along the west side and partially on the north and south sides. A water stop is shown in the curb section, Section D on Sheet 100707-S-100. There is a built up 1’-6” thick x 9’-0 wide concrete pad located on the west end of the slab. This pad is provided for mounting railroad rails on top. Six (6) 6” diameter drainage pipes run through the built up pad section from east to west. There are thirteen bollards located around the pad. Sloped ramps are on the North, South and East sides. All of the ramps have a containment roll of 4”. The pad slopes from east to west with the West end being the containment area.

The pad shown on drawings 100707-M-101 and 100707-S-101, called the “Yard Pad”, consists of a 10” thick concrete slab on grade. This slab has a curb that varies in height from 4” at the Northeast corner to 10” at the Southwest corner. A water stop is shown in the curb section, Section D on Sheet 100707-S-101. There are sixteen bollards located around the pad. Sloped ramps are on the North, South and West sides of the pad. All of the ramps have a containment roll of 4”. The pad slopes from north to south with the Southwest corner being the containment area.

See the attached design drawings.

Observations

At the time of our site visit, both pads had been placed. Due to the locations of the pads, the "Yard Pad" was observed first. The following observations were made:

1. It appeared that a sealant coating had been applied to the entire pad surface.
2. The bollards were installed. Four (4) of the bollards had been cut down flush with the pad. There were some cracks around the base of these bollards.
3. Control joints had been cut into the slab. All joints had been sealed with what appeared to be an elastomeric sealant. The sealant appeared to be in good condition.
4. Expansion joints were located at the edges along the building doors and at the south ramp. The expansion joints appeared to have an approximately ¾" asphaltic material placed inside the joint.

The "Railcar Containment Pad" was observed next. The following observations were made:

1. Only parts of the slab appeared to have a sealant coating applied on. Perma Fix stated that this was due to weather conditions and that sealant would be applied to the remaining un-coated surfaces.
2. Control joints were cut into the slab. Control joints had been partially sealed with what appeared to be an elastomeric sealant.
3. The built up 1'-6" thick x 9'0" wide pad was installed. Railroad rails had been installed on top of the built up pad.
4. The six (6) 6" diameter drainage pipes were installed.
5. The bollards were installed.
6. Two (2) hairline cracks were observed along the North side curb.

See the attached photos #1-12.

Discussion

Both the "Railroad Containment Pad" and the "Yard Pad" appear to be in relatively good condition and match the design drawings from Penta Engineering, LLC. Some minor repairs are required as follows:

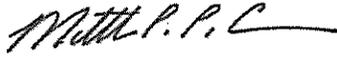
1. Sealant coating shall be applied to all concrete surfaces.
2. All cracks in the concrete shall be sealed.
3. All control joints shall have an elastomeric sealant installed.
4. All expansion joints shall be sealed.

Conclusion

The visually observable parts of the "Railcar Containment Pad" and the "Yard Pad" appear to be constructed per the design documents and in compliance with the Washington Administrative Code WAC 173-303-395 (4). The necessary repairs required are minor and do not require

additional observations. Thank you for the opportunity to work on your Project. Please let us know if you have any questions or need any further assistance.

Sincerely,

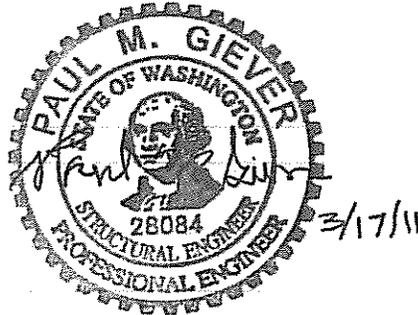


Matthew L. LaCome, P.E.
Structural Engineer

MLL:dll

Attachments

Project File No. 11-6586
Letter File No. 11-0322.rev1



Approved By Perma Fix Representative:



Richard Grondin
Vice President/General Manager

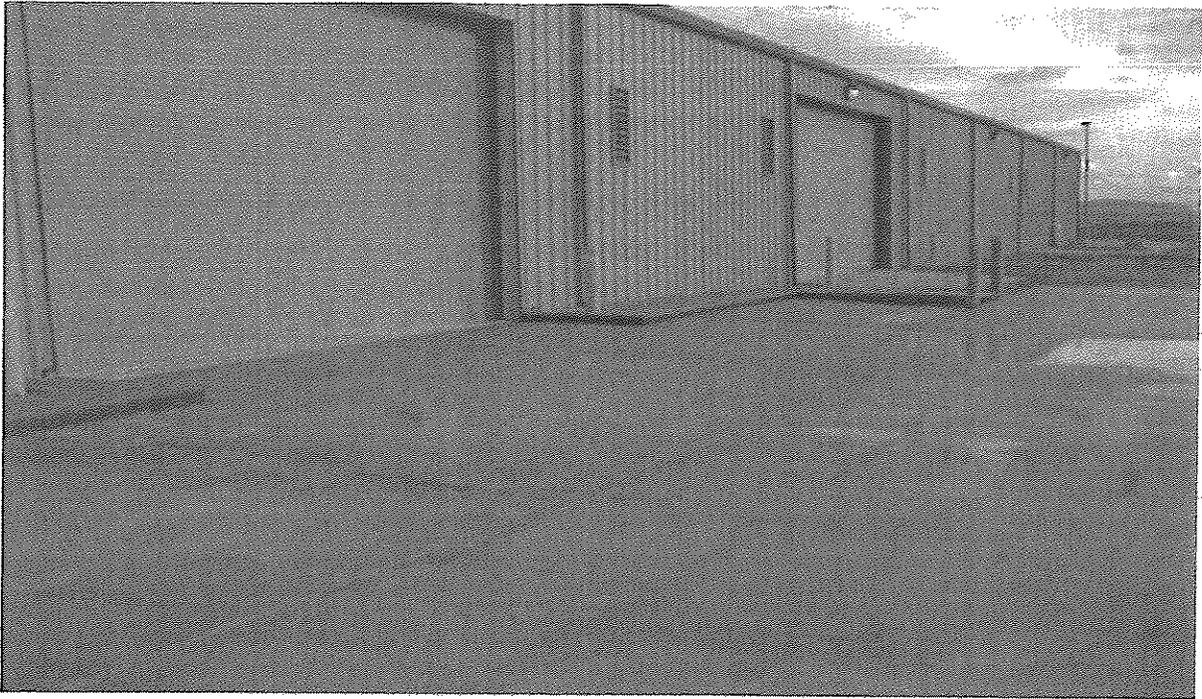


Photo #1 – Yard Pad Looking South

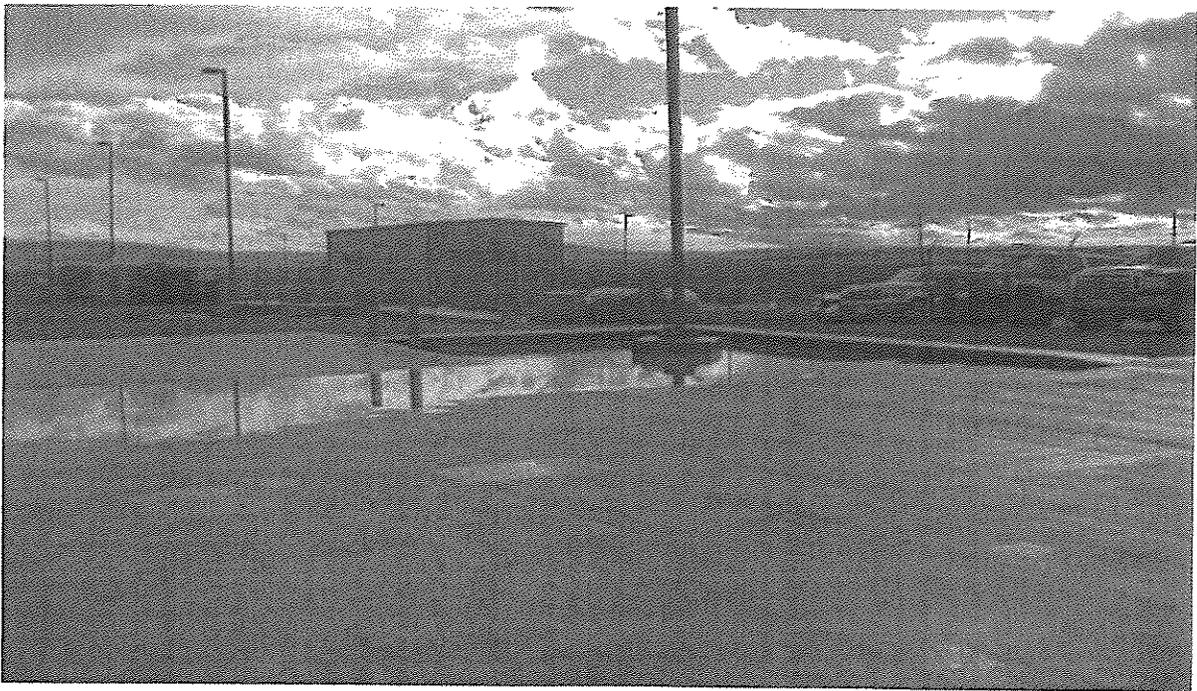


Photo #2 – Yard Pad Looking Southwest

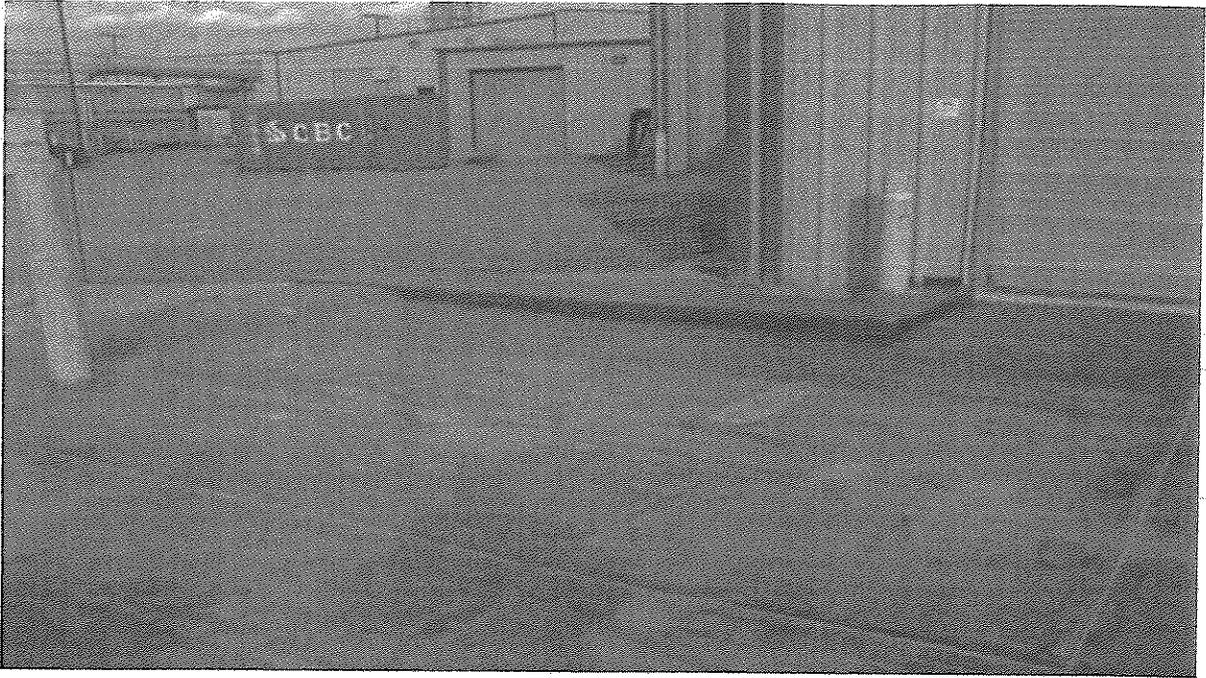


Photo #3 – Yard Pad Looking Northeast

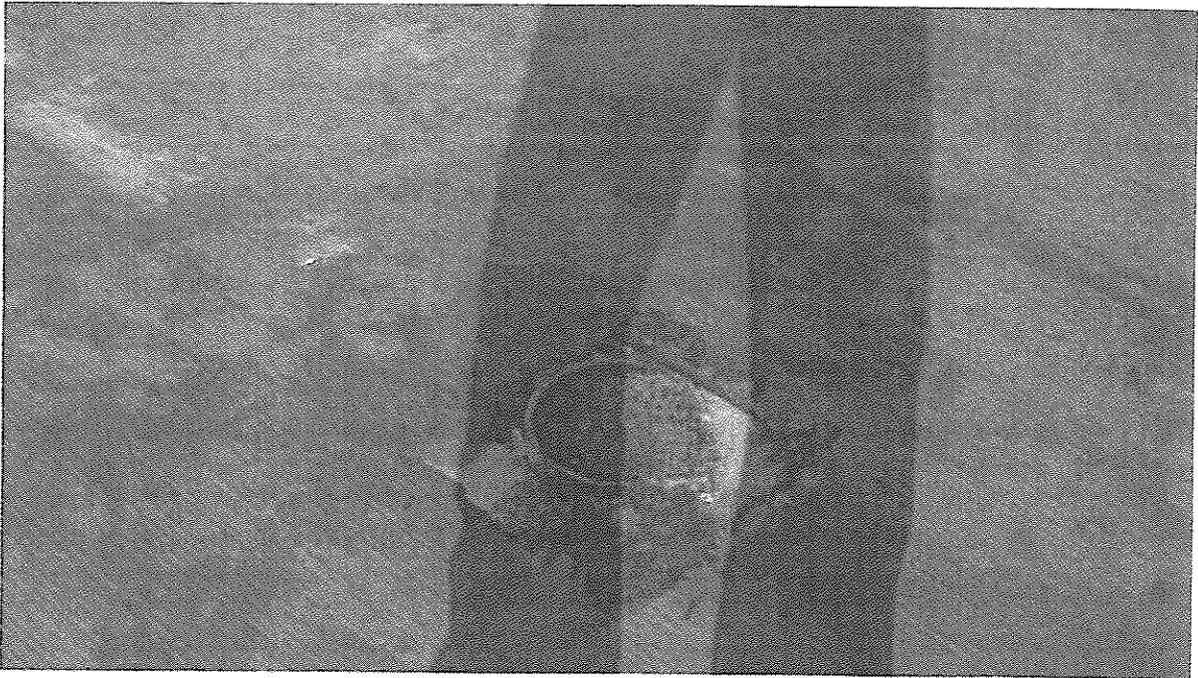


Photo #4 – Yard Pad at Cut off Bollard



Photo #5 – Yard Pad at Control Joints

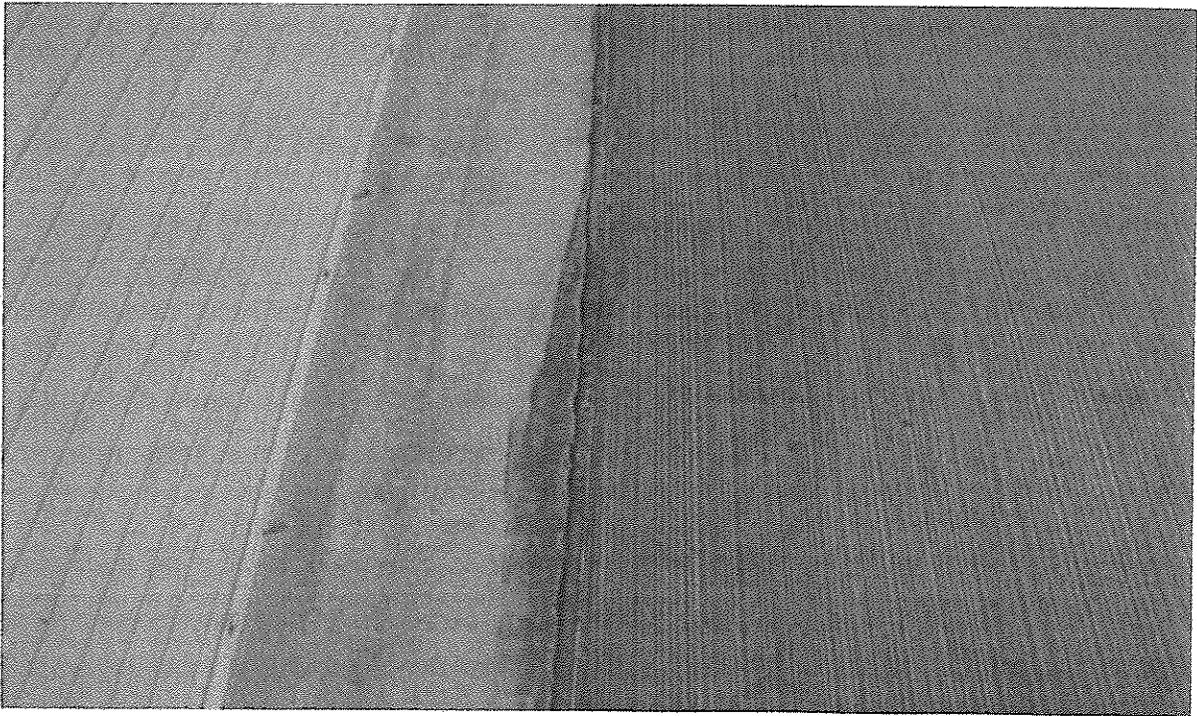


Photo #6 – Yard Pad at Expansion Joints

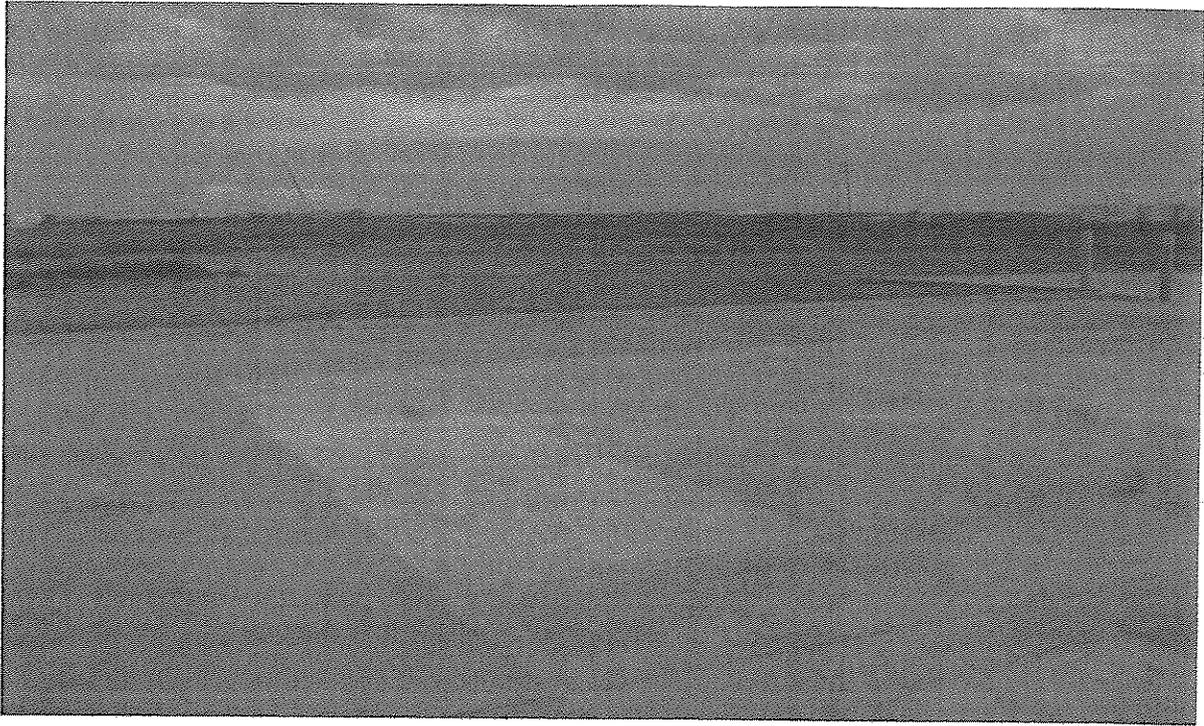


Photo #7 – Railroad Containment Pad Looking East



Photo #8 – Railroad Containment Pad Looking Southeast



Photo #9 – Railroad Containment Pad Looking North



Photo #10 – Railroad Containment Pad Looking North along West End

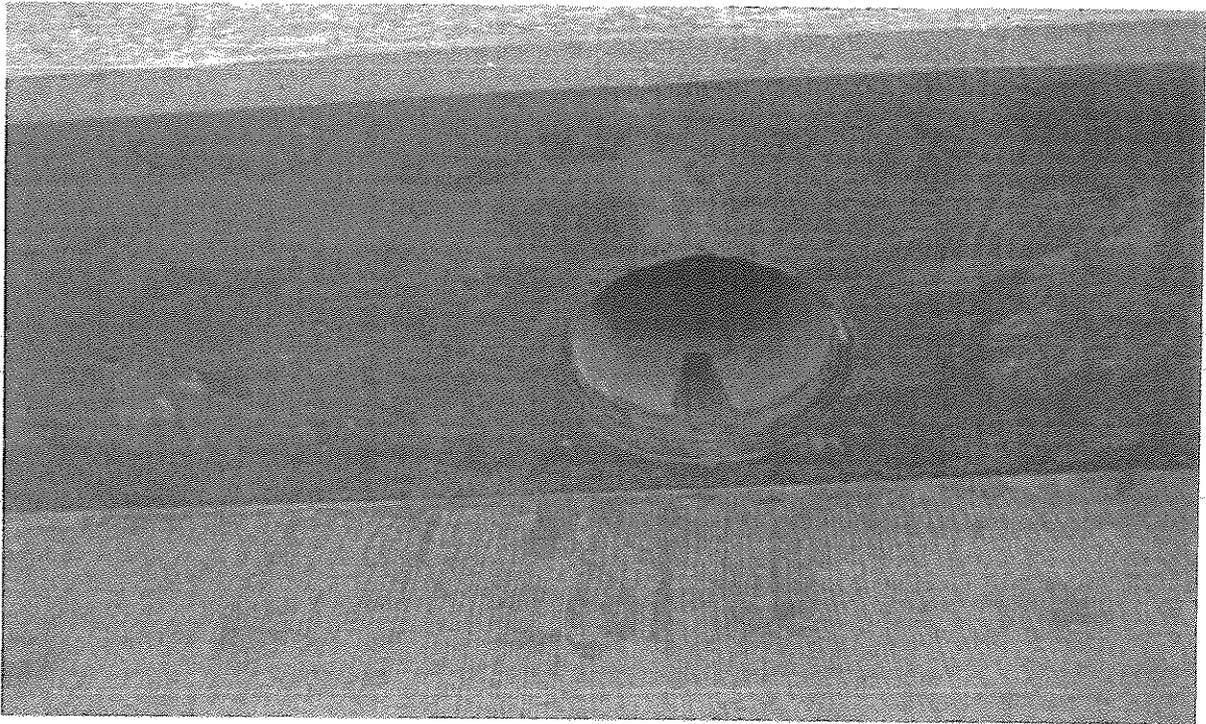


Photo #11 – Railroad Containment Pad at Drainage Pipe

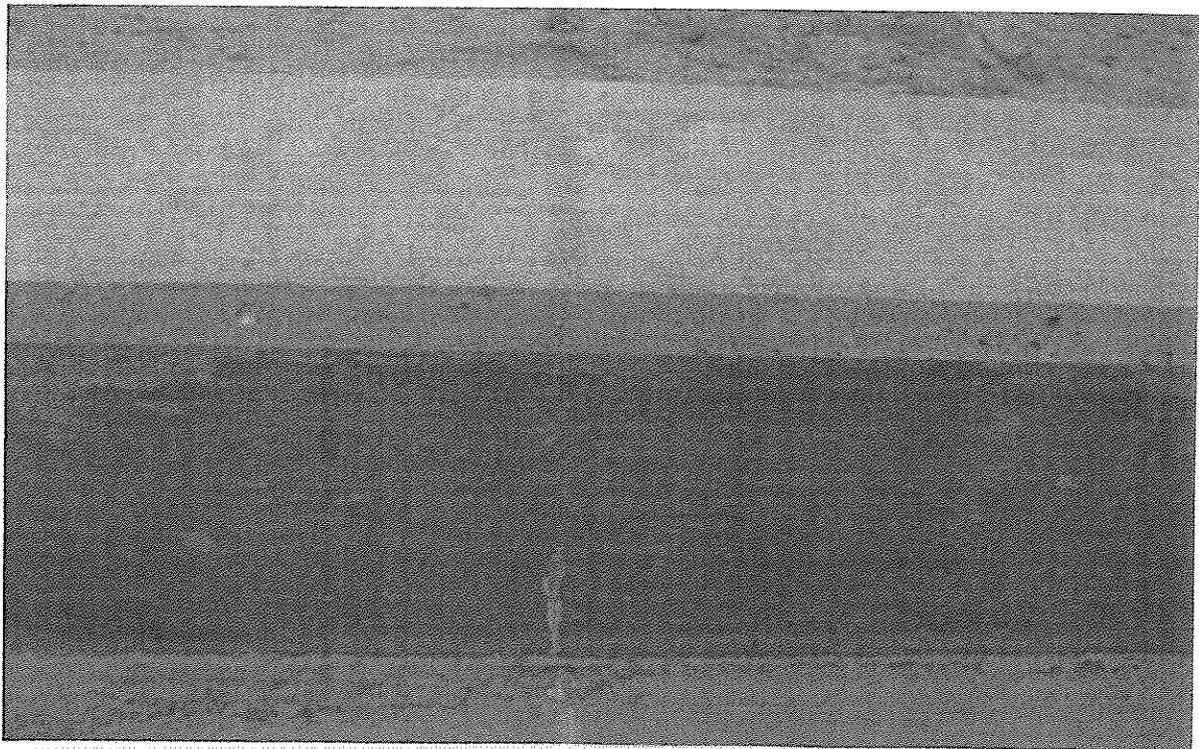


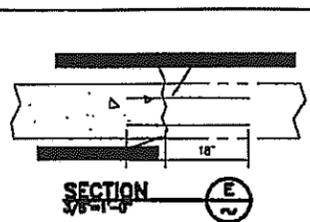
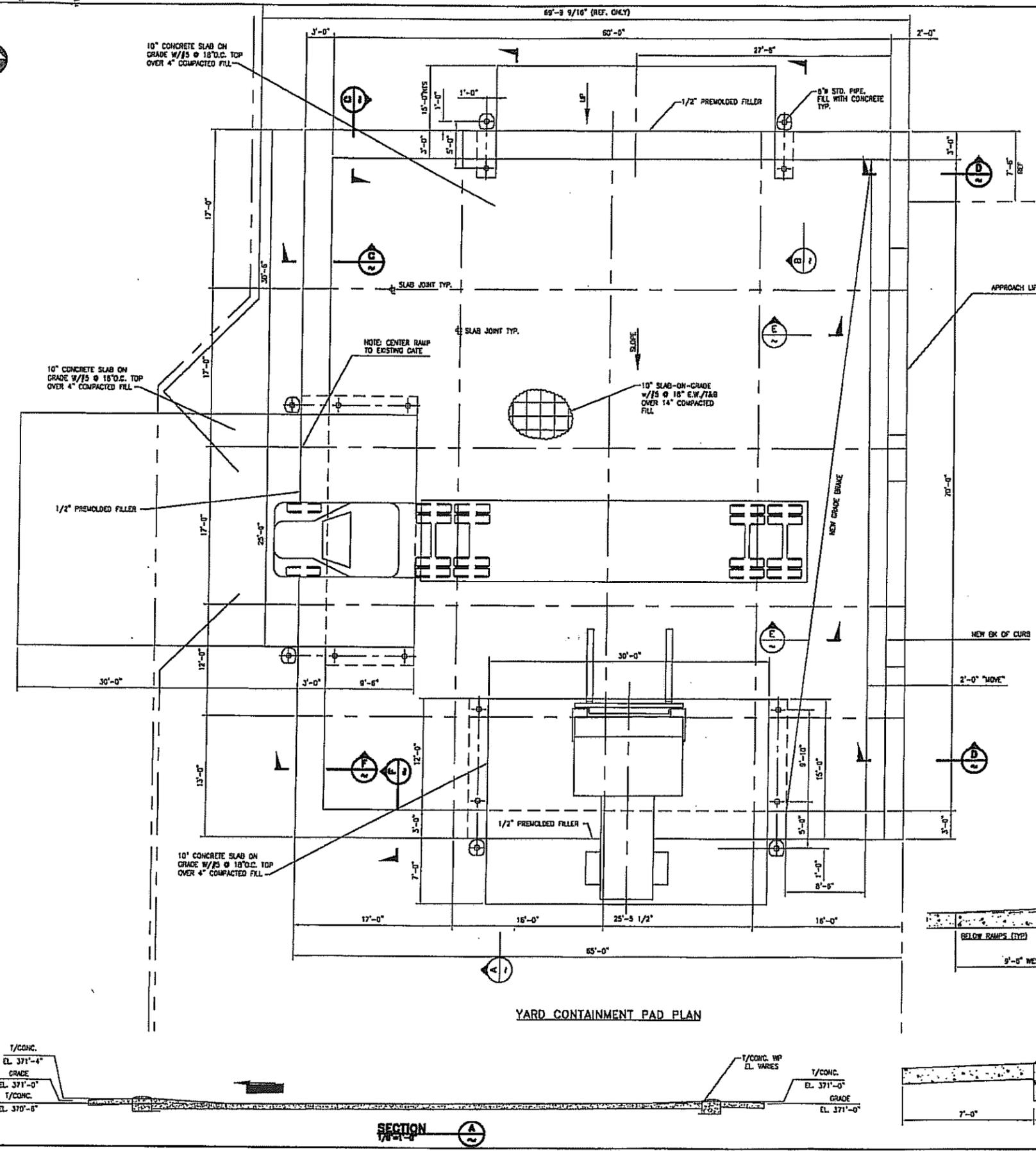
Photo #12 – Railroad Containment Pad at Cracked Curb

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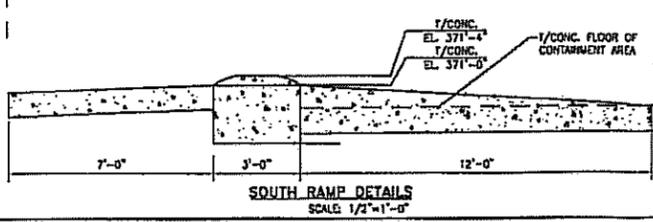
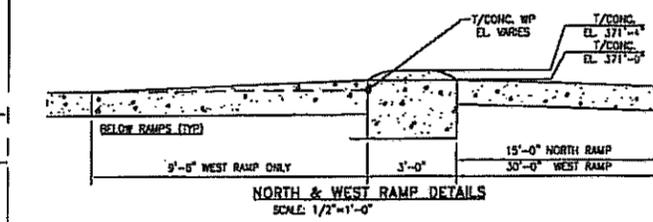
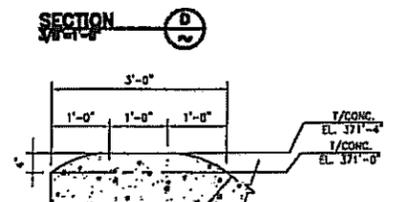
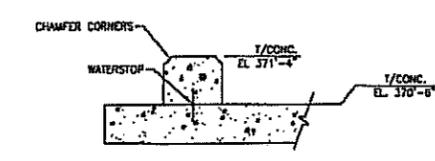
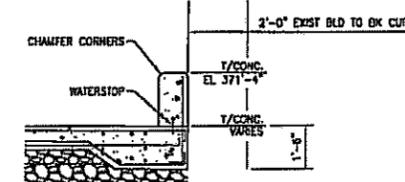
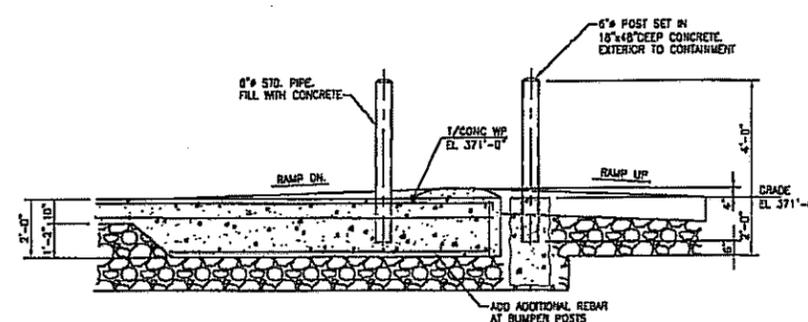
2011-LTR-1016

Appendix C

Updated As-Built Drawings



- NOTES:
- 1) CONCRETE SHALL HAVE AIR ENTRAINED $f_c=4000$ psi @ 28 DAYS.
 - 2) REINFORCING SHALL BE ASTM A516, GRADE 60 REINFORCING.
 - 3) CONCRETE COVER SHALL BE 3\"/>



REV.	DATE	DESCRIPTION	BY	CHKD.	APPR.
2		SHAR11 AS BUILT			
1		280718 SEE REVISION CLOUDS	PAW		PAW
0		35EP10 ISSUED FOR CONSTRUCTION	PAW		PAW

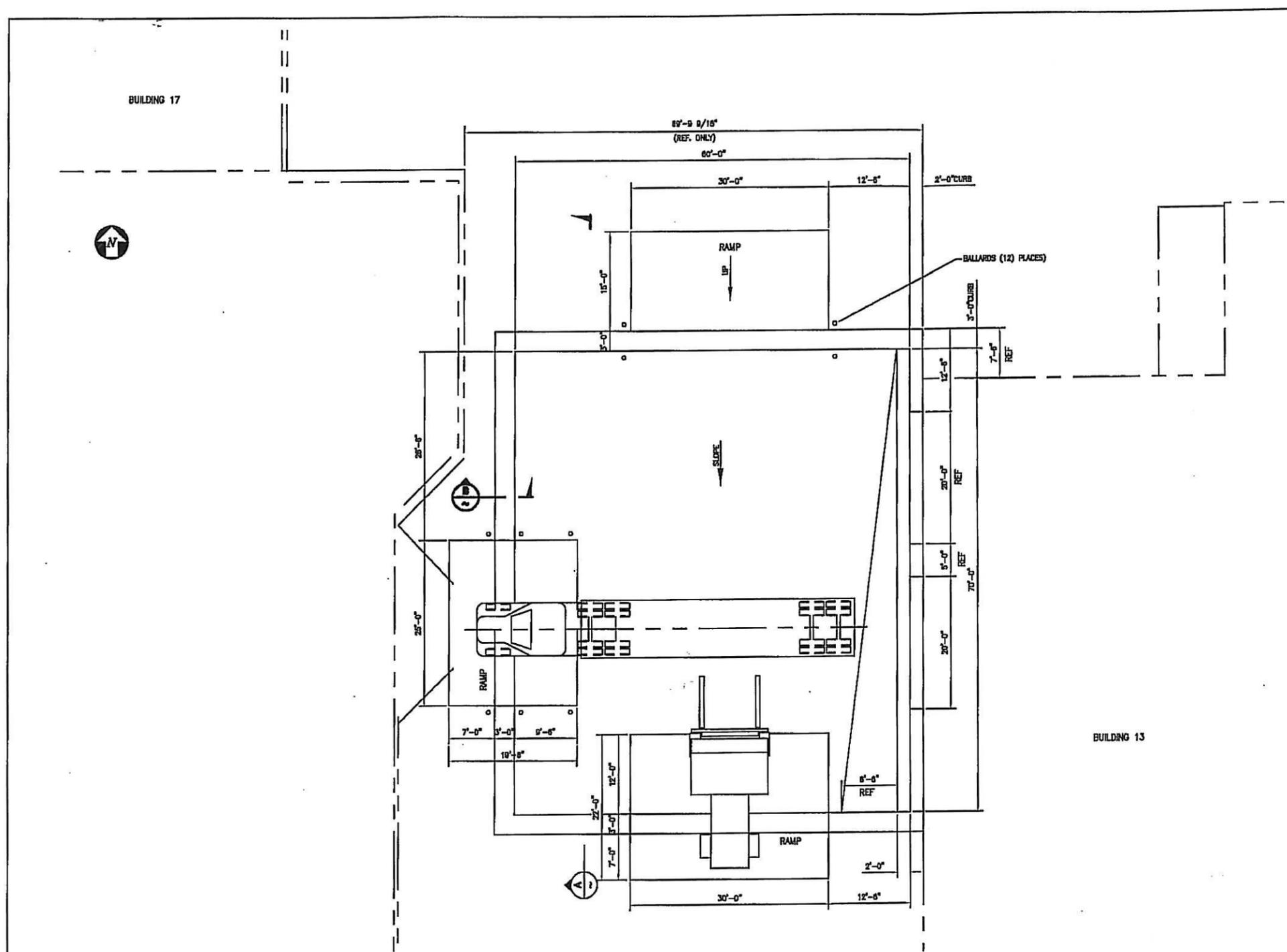
PENTA
 PENTA Engineering Co. LLC
 10123 Corporate Square Drive, St. Louis, MO 63132-2805
 www.penta.net Phone: 314-878-0123; Fax: 314-878-0120

This drawing and the information contained herein is submitted confidentially and is the property of Penta Engineering Co. LLC. It may not be duplicated, disclosed, or utilized without written consent from Penta Engineering Co. LLC.

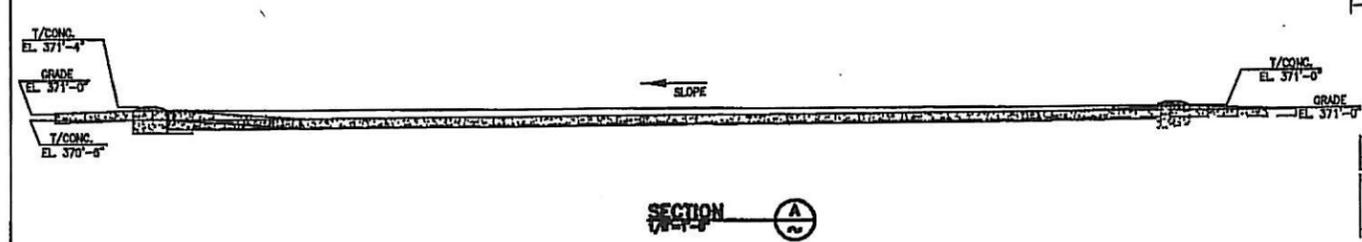
YARD PAD
GENERAL ARRANGEMENT & DETAILS

DESIGNED:	DATE:	PENTA DRAWING NUMBER:	REV.
JONES	26JUL10	100707-S-101	2
DRAWN:	DATE:	CLIENT DRAWING NUMBER:	
JONES	26JUL10		
CHECKED:	DATE:		
APPROVED:	DATE:		
	SCALE: 3/16"=1'-0"		

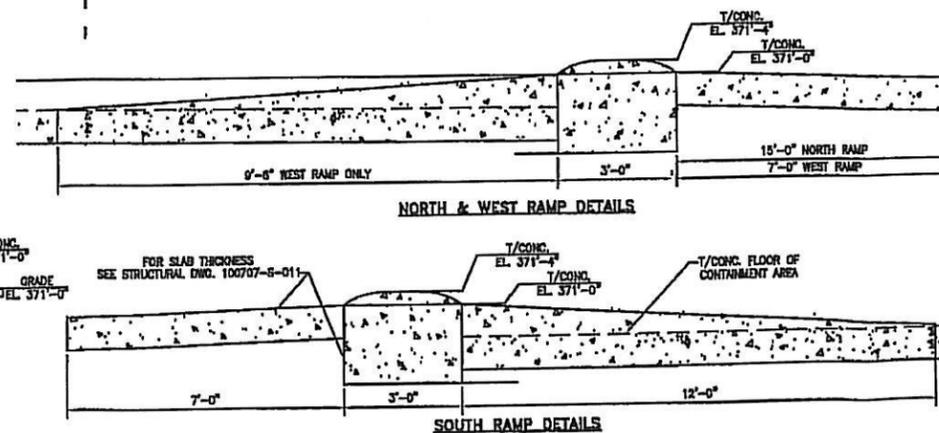
VA-AUTOCAD PROJECT FILES\2010-08-FRIB-BAL-SITE & W&D-PROVIDER-SITE-CHEMISTRY\100707-S-101-REVISED-3/9/2011-14432-PAW-WEXLER



YARD CONTAINMENT PAD PLAN



SECTION A-A



NORTH & WEST RAMP DETAILS

SOUTH RAMP DETAILS

CONTAINMENT CALCULATIONS

CONTAINMENT REQUIRED = 6,000 gal
 25-YEAR, 24-HOUR RAIN FALL EVENT: 2in
 CONTAINMENT PRECIPITATION: 60ft X 70ft X 2in = 700 cu.ft
 or 5,237 gal

FORK-LIFT TIRE VOLUME PER TIRE: 3ft X 1.5ft X 6in = 2.25 cu.ft
 or 13.0 cu.ft for 6 tires = 101 gal

TRUCK TIRE VOLUME PER TIRE: 3.5ft X 1.5ft X 6in = 2.4 cu.ft
 or 43.2 cu.ft for 18 tires = 778 gal

NORTH RAMP INSIDE CONTAINMENT AREA VOLUME = 1/2 X (4in X 0.5ft X 30ft) = 47.5 cu.ft
 or 355 gal

WEST RAMP INSIDE CONTAINMENT AREA VOLUME = 1/2 X (4in X 0.5ft X 25ft) = 39.6 cu.ft
 or 297 gal

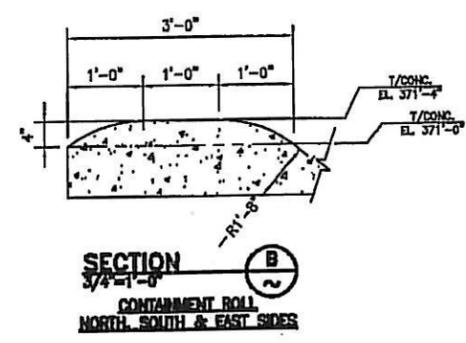
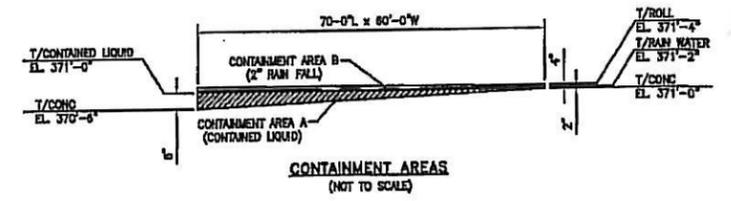
SOUTH RAMP INSIDE CONTAINMENT AREA VOLUME = 1/2 X (6in X 12ft X 30ft) = 90 cu.ft
 or 674 gal

SLOPE TO BUILDING VOLUME = 1/2 X (1/2 X (0.5ft X 0.5ft) X 70ft) = 74.4 cu.ft
 or 577 gal

TOTAL CONTAINMENT REQ.: (5,237 + 101 + 778 + 355 + 297 + 674 + 577) gal
 = 13,997 gal

CONTAINMENT VOLUME AVAILABLE: CONTAINMENT AREA A + CONTAINMENT AREA B
 = (1/2 X (6in X 70ft X 60ft)) + (3in X 80ft X 60ft)
 = 1,050 cu.ft + 1,050 cu.ft
 = 2,100 cu.ft or 15,710 gal

CONTAINMENT CHECK: 15,710gal > 13,997 gal (CONTAINMENT ADEQUATE)



SECTION B-B
CONTAINMENT ROLL
NORTH, SOUTH & EAST SIDES

1	ISSUED AS BUILT	WHO	
0	ISSUED FOR CONSTRUCTION	PAJ	TED
REV.	DATE	DESCRIPTION	BY

PENTA
 PENTA Engineering Co, LLC
 10123 Corporate Square Drive, St. Louis, MO 63132-2905
 www.penta.net; Phone: 314-578-0123; Fax: 314-578-0120

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YARD PAD GENERAL ARRANGEMENT			
DESIGNED: JONES	DATE: 21JUL10	PENTA DRAWING NUMBER	REV.
DRAWN: JONES	DATE: 30AUG10	100707-M-101	1
CHECKED:	DATE:	CLIENT DRAWING NUMBER	
APPROVED:	SCALE: 1/8"=1'-0"		

C:\DOCUMENTS AND SETTINGS\SCORVA\LOCAL SETTINGS\TEMPORARY INTERNET FILES\LOCAL100707-M-101 REV.DWG 3/0/2011 10:45:55 AM WJLWVER

