

**IN THE UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF WYOMING**

UNITED STATES OF AMERICA,	)	
	)	Civil No. 2:08-cv-00020-WFD
Plaintiff,	)	
	)	
OKLAHOMA DEPARTMENT OF	)	SIXTH AMENDMENT
ENVIRONMENTAL QUALITY	)	TO CONSENT DECREE
and STATE OF WYOMING	)	
	)	
Plaintiff-Intervenors,	)	
	)	
v.	)	
	)	
HOLLY REFINING AND MARKETING -	)	
TULSA LLC, HEP TULSA LLC, SINCLAIR	)	
WYOMING REFINING COMPANY and	)	
SINCLAIR CASPER REFINING COMPANY	)	
	)	
Defendants.	)	

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WHEREAS, the United States of America (hereinafter “the United States”), the U.S. Environmental Protection Agency (“EPA”), the State of Oklahoma, the State of Wyoming, Sinclair Tulsa Refining Company (“STRC”), Sinclair Wyoming Refining Company (“SWRC”), and Sinclair Casper Refining Company (“SCRC”) are parties to a Consent Decree filed with this Court on May 8, 2008, as amended (hereinafter “the Consent Decree”);

WHEREAS, the Consent Decree has been previously amended to reflect the transfer of the refinery located in Tulsa, Oklahoma to Holly Refining and Marketing – Tulsa LLC and HEP Tulsa LLC, and to make other material modifications to certain provisions of the Consent Decree as they pertain to the Refineries and the Tulsa Refinery;

WHEREAS, the SCRC agreed, pursuant to Paragraph 13.b of the Consent Decree, to comply, by no later than December 31, 2009, with final NOx emission limits at the Casper Refinery FCCU of 50 ppmvd at 0% O<sub>2</sub> on a 365-day rolling average basis and 100 ppmvd at 0% O<sub>2</sub> on a 7-day rolling average basis (with the first 365-day compliance date being December 31, 2010);

WHEREAS, the SCRC is unable to comply with the 365-day rolling average NOx emission limit, and prior to the installation and use of its selective non-catalytic reduction system, had difficulty complying consistently with the 7-day rolling average NOx emission limit, and will continue to be unable to comply with the 365-day rolling average NOx emission limit without installing and operating selective catalytic reduction (“SCR”) at the Casper FCCU;

WHEREAS, the SWRC agreed, pursuant to Paragraphs 75.b of the Consent Decree, to, by no later than December 31, 2008, design, install, operate and maintain a flare gas recovery system at the Sinclair Wyoming Refinery to control continuous or routine combustion in the Flaring Device, and, pursuant to Paragraph 76 of the Consent Decree, to comply with the emission limit for the combustion of fuel gas set forth at 40 C.F.R. § 60.104(a)(1), and further agreed that until the flare gas recovery system was installed and operational, it would (1) continue to operate its process units in a manner to minimize the concentration of H<sub>2</sub>S in continuous or routine streams going to the flare; (2) not undertake any new projects that will generate streams or that will increase the H<sub>2</sub>S concentration in existing streams vented to the flare; and (3) continue to operate in compliance with 40 C.F.R. § 60.18;

WHEREAS, the SWRC is unable to comply with the requirements of Paragraphs 75.b and 76 of the Consent Decree without installing additional flare gas recovery equipment;

WHEREAS the SCRC and the SWRC need until March 31, 2013, to complete the installation of SCR and the installation of additional flare gas recovery equipment, respectively, and begin operations with the SCR system and the additional flare gas recovery equipment;

WHEREAS, the United States, State of Wyoming, the SCRC and the SWRC have agreed to certain material modifications to the Consent Decree set forth in this Sixth Amendment to Consent Decree (“Sixth Amendment”) to address the environmental impacts resulting from the SCRC’s and the SWRC’s failure to comply with the Consent Decree requirements set forth above;

WHEREAS, simultaneously with the lodging of this Sixth Amendment, the United States, State of Wyoming, the SCRC and the SWRC are filing a Stipulation and Agreement Regarding the Assessment and Payment of Certain Stipulated Penalties;

WHEREAS, the Consent Decree specifies that the Court retains continuing jurisdiction for the purpose of enforcing and modifying the Consent Decree;

WHEREAS, Paragraph 345 of the Consent Decree, as amended, provides that any material modifications to the Consent Decree shall be in writing, signed by EPA, the Applicable Co-Plaintiff, and the owners of the relevant Refineries, and shall be effective upon approval by the Court; and

WHEREAS, the United States, the State of Wyoming, the SCRC and the SWRC have each reviewed and hereby consent to this Sixth Amendment.

NOW THEREFORE the United States, the State of Wyoming, the SCRC and the SWRC hereby agree that the Consent Decree, as previously modified by the First through Fifth Amendments, shall remain in full force and effect in accordance with its terms, except as set forth in this Sixth Amendment, which shall become effective upon entry by this Court.

**AMENDED CONSENT DECREE PROVISIONS**

1. Paragraphs 13 and 14 shall be amended to read as follows:

13. NOx Emission Control for the Casper FCCU.

a. As soon as practicable, and no later than March 31, 2013, the SCRC shall complete installation and begin operation of an SCR system at the Casper Refinery FCCU designed to achieve a NOx emission limit of 20 ppmvd (at 0% O<sub>2</sub>) or lower on a 365-day rolling average basis.

b. Commencing on March 31, 2013, the SCRC shall comply with NOx emission limits of 20 ppmvd at 0% O<sub>2</sub> on a 365-day rolling average basis and 40 ppmvd at 0% O<sub>2</sub> on a 7-day rolling average basis at the Casper Refinery FCCU. For purposes of clarity, the first 365-day compliance date shall be March 31, 2014.

c. Until March 31, 2013, the SCRC shall:

i. comply with a NOx emission limit of 75 ppmvd at 0% O<sub>2</sub> on a 7-day rolling average basis at the Casper Refinery FCCU;

ii. continue to inject ammonia at the maximum permitted rate; and

iii. take other reasonable measures to minimize NOx emissions, including testing at least two alternative NOx-reducing catalyst additives approved for use by EPA. To ensure accurate test results, SCRC shall not use a NOx-reducing catalyst additive for approximately one week between the testing for each NOx-reducing catalyst additive. After completion of

the testing, if the testing demonstrates that the use of a NOx-reducing catalyst additive approved for use by EPA will further reduce NOx emissions from the FCCU, SCRC shall continue to use such NOx-reducing catalyst additives, in a manner that produces the most NOx reductions, until March 31, 2013.

d. Within 6 months after the date of entry of this Sixth Amendment, SCRC shall submit a permit application to WDEQ for the installation of the SCR system at the Casper FCCU. With respect to all other aspects of permitting the construction and operation of the SCR system, SCRC shall comply with Paragraphs 180 through 183.

14. Alternate NOx Emission Limits for Sinclair FCCU.

a. In lieu of the emissions limits in paragraph 12(b), the SWRC may accept emission limits of 20 ppmvd at 0% O<sub>2</sub> on a 365-day rolling average basis 40 ppmvd at 0% O<sub>2</sub> on a 7-day rolling average basis at the Sinclair FCCU to be achieved by December 31, 2012.

b. If SWRC accepts the alternate NOx emissions limits set forth in Paragraph 14(a), SWRC shall give notice to EPA and Wyoming of its acceptance of such limits no later than June 30, 2009.

2. Paragraph 57.b shall be amended to read as follows:

57. Reduction of Fuel Oil Burning at the Sinclair and Casper Refineries.

\* \* \* \*

b. Commencing on December 31, 2008, the SCRC will limit Fuel Oil burning at the Casper Refinery such that total SO<sub>2</sub> emission resulting from fuel oil burning will be no greater than 188 tons per year on a 365-day rolling average basis. Commencing on the date of lodging of the Sixth Amendment to the Consent Decree, the SCRC will limit Fuel Oil burning at the Casper Refinery such that total SO<sub>2</sub> emission resulting from fuel oil burning will be no greater than 95 tons per year on a 365-day rolling average basis. Fuel Oil combusted during periods of Natural Gas Curtailment will not be counted in the 365-day rolling average.

3. Paragraph 75 shall be amended by re-lettering Subparagraphs 75.c and 75.d to 75.e and 75.f, respectively and by adding new Subparagraph 75.c and 75.d to read as follows:

75. Flaring Devices and NSPS Applicability:

\* \* \* \*

c. As soon as practicable, and no later than March 31, 2013, the SWRC shall install, operate and maintain a Hijet Hijector as part of the flare gas recovery system at the Sinclair Wyoming Refinery, with such Hijet Hijector being sized adequately to ensure that the flare gas recovery system will control continuous or routine combustion in the Flaring Device such that the Flaring Device will be able to comply continuously with the emission limit at 40 C.F.R. § 60.104(a)(1).

d. Until March 31, 2013, SWRC shall comply with the Flare Gas Recovery System Optimization Plan attached hereto as Appendix N, and shall (1) continue to operate its process units in a manner to minimize the concentration of H<sub>2</sub>S in continuous or routine streams going to the flare; (2) not undertake any new projects that will generate streams or that will increase the H<sub>2</sub>S concentration in existing streams vented to the flare; and (3) continue to operate in compliance with 40 C.F.R. § 60.18

4. Paragraphs 184 through 190 in Part V, Section P shall be amended to read as follows:

184. To reduce total suspended particulate matter by approximately 15 tons per year, by no later than June 30, 2011, SWRC shall pave the unpaved roadway at the Sinclair Wyoming Refinery depicted in pink in the Refinery Plot Plan attached hereto as Appendix H.

185. The roadway shall be paved in accordance with the specifications set forth in the March 21, 2011, letter from 71 Construction, attached hereto as Appendix I, and maintained in accordance with the March 3, 2011, Sinclair Wyoming Refining Company Inspection Plan for the Northwest Trucking Division Access Road, attached hereto as Appendix J. SWRC shall inspect the paved roadways at least every 6 months, and report on the condition of the roadways to WDEQ.

186. To reduce total suspended particulate matter by an additional approximately 59 tons per year, by no later than October 31, 2012, SWRC shall pave the unpaved roadway at the Sinclair Wyoming Refinery depicted in color in the Refinery Plot Plan attached hereto as Appendix K.

187. The roadway shall be paved in accordance with the specifications set forth in Appendix L, and maintained in accordance with the SWRC Inspection Plan attached hereto as Appendix M. SWRC shall inspect the paved roadways at least every 6 months, and report on the condition of the roadways to WDEQ.

188. The paving, inspection and reporting requirements of this Section V.P shall be incorporated into federally-enforceable permits issued by WDEQ.

189-190. Reserved.

5. New Paragraphs 207A, 207B and 223B shall be added, as follows:

207A. For failure to complete installation and begin operation of an SCR system at the Casper Refinery FCCU by the deadline specified in Paragraph 13.a and/or to submit permit applications sufficient to comply with the requirements of Paragraph 13.d, per day:

<u>Period of Delay</u>	<u>Penalty per day</u>
1 <sup>st</sup> through 30 <sup>th</sup> day after deadline	\$2,500
31 <sup>st</sup> through 60 <sup>th</sup> day after deadline	\$6,000
Beyond 60 <sup>th</sup> day after deadline	\$10,000 or an amount equal to 1.2 times the economic benefit of delayed compliance, whichever is greater

207B. For failure to meet the emissions limit for NOx set forth in Paragraph 13.c.i, Two Thousand Five Hundred Dollars (\$2,500) for each calendar day in a calendar quarter on which the short-term rolling average exceeds the applicable limit, provided that SCRC shall not be in violation of Paragraph 13.c.i. or subject to any stipulated penalties if the NOx emission rate exceeds the interim 7-day limit during the approximately one-week period between the testing for each NOx-reducing catalyst additive required pursuant to Paragraph 13.c.iii. For failure to continue to inject ammonia at the maximum permitted rate as required in Paragraph 13.c.ii, Two Thousand Five

Hundred Dollars (\$2,500) for each calendar day in a calendar quarter during which SCRC fails to inject ammonia at the maximum permitted rate. For failure to comply with any of the requirements set forth in Paragraph 13.c.iii, Ten Thousand Dollars (\$10,000).

223B. For failure to comply with any of the requirements of the Flare Gas Recovery System Optimization Plan attached hereto as Appendix N, per day:

<u>Period of Delay</u>	<u>Penalty per day</u>
1 <sup>st</sup> through 30 <sup>th</sup> day after deadline	\$2,500
31 <sup>st</sup> through 60 <sup>th</sup> day after deadline	\$6,000
Beyond 60 <sup>th</sup> day after deadline	\$10,000 or an amount equal to 1.2 times the economic benefit of delayed compliance, whichever is greater

6. Paragraph 259A shall be amended to read as follows:

**N. Road Paving at the Sinclair Wyoming Refinery**

259A. For failure to comply with any of the requirements set forth in Paragraphs 184 through 188:

<u>Period of Delay</u>	<u>Penalty per day</u>
1 <sup>st</sup> through 30 <sup>th</sup> day after deadline	\$1,000
31 <sup>st</sup> through 60 <sup>th</sup> day after deadline	\$2,000
Beyond 60 <sup>th</sup> day after deadline	\$5,000

7. Appendices F, G and H to the Fifth Amendment to Consent Decree are hereby relabeled as Appendices H, I and J.

**ORDER**

Before the taking of any testimony, without adjudication of any issue of fact or law, and upon the consent and agreement of the United States, the State of Wyoming the SCRC and the

SWRC, it is hereby ADJUDGED, ORDERED and DECREED that this Sixth Amendment is hereby approved and entered as a final order of this Court.

Dated and entered this \_\_\_\_\_ day of \_\_\_\_\_, 2012.

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United States District Judge

### **SIGNATORIES**

Each of the undersigned representatives certifies that he or she is fully authorized to enter into the Sixth Amendment to Consent Decree on behalf of such Parties, and to execute and to bind such Parties to this Sixth Amendment. This Sixth Amendment to Consent Decree may be signed in counterparts.




WE HEREBY CONSENT to the entry of the Sixth Amendment to Consent Decree entered in the matter of *United States, et al. v. Sinclair Wyoming Refining Co. et al.*, Civil No. 2:08-cv-00020-WFD, subject to the public notice and comment requirements of 28 C.F.R. § 50.7.

FOR PLAINTIFF UNITED STATES OF AMERICA:

Date: \_\_\_\_\_

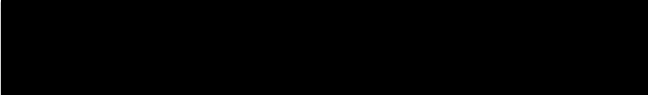
8/10/12



IGNACIA S. MORENO  
Assistant Attorney General  
Environment and Natural Resources Division  
United States Department of Justice

Date: \_\_\_\_\_

8/17/12



JAMES D. FREEMAN  
Senior Attorney  
Environmental Enforcement Section  
United States Department of Justice

WE HEREBY CONSENT to the entry of the Sixth Amendment to Consent Decree entered in the matter of *United States, et al. v. Sinclair Wyoming Refining Co. et al.*, Civil No. 2:08-cv-00020-WFD, subject to the public notice and comment requirements of 28 C.F.R. § 50.7.

FOR PLAINTIFF THE UNITED STATES  
ENVIRONMENTAL PROTECTION AGENCY:

Date: \_\_\_\_\_

8/9/12



CYNTHIA GILES  
Assistant Administrator  
Office of Enforcement and Compliance Assurance  
United States Environmental Protection Agency

Date: \_\_\_\_\_

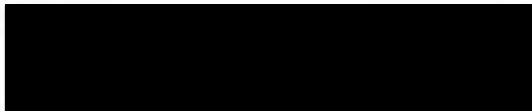
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PHILLIP A. BROOKS  
Director, Air Enforcement Division  
Office of Enforcement and Compliance Assurance  
United States Environmental Protection Agency

Date: \_\_\_\_\_

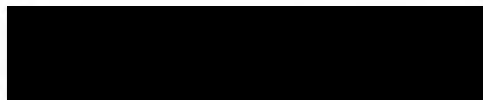
7/18/2012



ROBERT G. KLEPP  
Attorney-Advisor  
Air Enforcement Division  
Office of Civil Enforcement  
Office of Enforcement and Compliance Assurance  
United States Environmental Protection Agency

Date: \_\_\_\_\_

8/13/12




SHELDON H. MULLER  
Senior Attorney  
Office of Enforcement, Compliance and  
Environmental Justice  
United States Environmental Protection Agency,  
Region 8


WE HEREBY CONSENT to the entry of the Sixth Amendment to Consent Decree entered in the matter of *United States, et al. v. Sinclair Wyoming Refining Co. et al.*, Civil No. 2:08-cv-00020-WFD, subject to the public notice and comment requirements of 28 C.F.R. § 50.7.

FOR PLAINTIFF-INTERVENOR, STATE OF WYOMING:

Date: 8/17/12

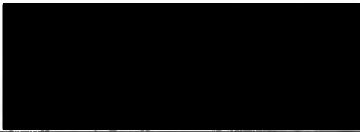
  
\_\_\_\_\_  
JOHN CORRA  
Director  
Wyoming Department of Environmental Quality

Date: 8-16-12

  
\_\_\_\_\_  
STEVEN A. DIETRICH  
Administrator, Air Quality Division  
Wyoming Department of Environmental Quality

Approved As To Form:

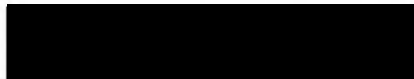
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\_\_\_\_\_  
NANCY E. VEHR  
Senior Assistant Attorney General  
Wyoming Attorney General's Office

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FOR DEFENDANT SINCLAIR WYOMING  
REFINING COMPANY:

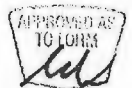
Date: 8.3.12

  
MICHAEL R. ACHACOSO  
Vice President, Sinclair Wyoming Refining  
Company

FOR DEFENDANT SINCLAIR CASPER  
REFINING COMPANY:

Date: 8.3.12

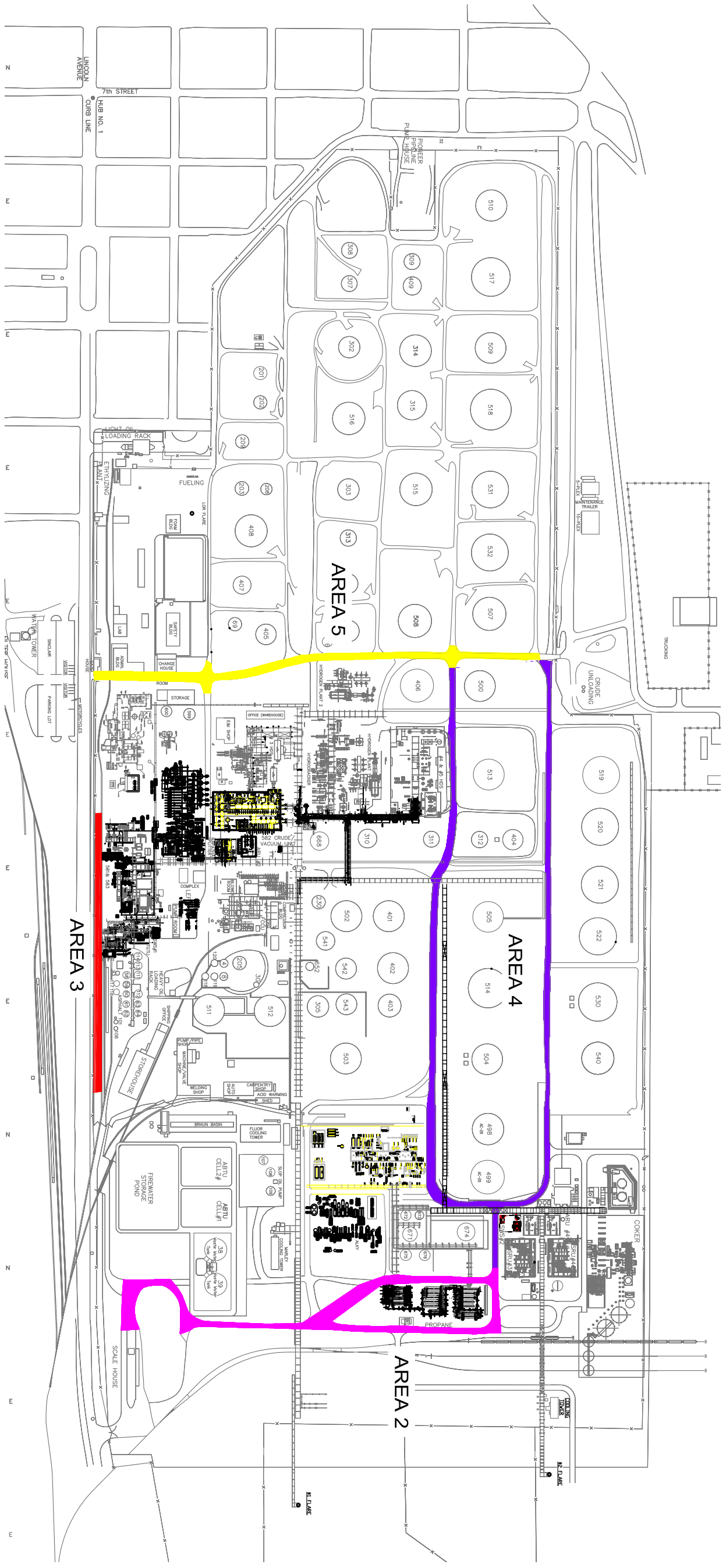
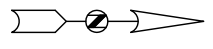
  
MICHAEL R. ACHACOSO  
President, Sinclair Casper Refining Company



## Appendix K.1

### Road Paving Plot at Sinclair Wyoming Refinery

# 2012 PAVING PROJECT SINCLAIR WYOMING REFINERY



OWNER:

SINCLAIR WYOMING REFINING COMPANY

P.O. BOX 277

SINCLAIR, WYOMING 82334

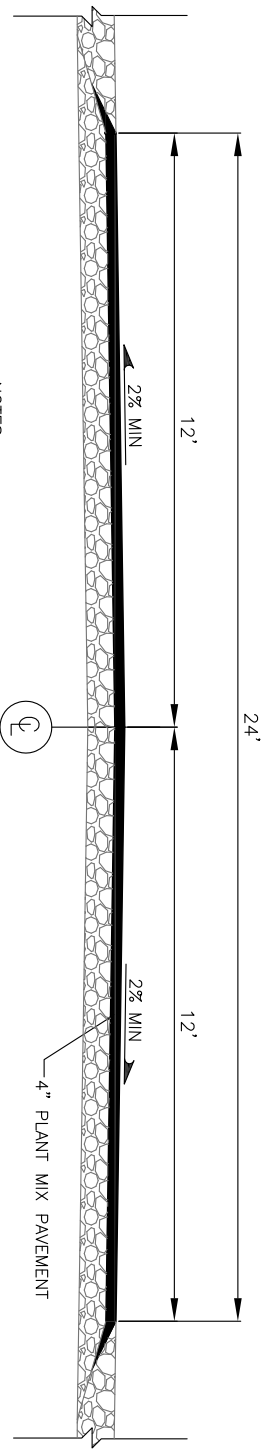
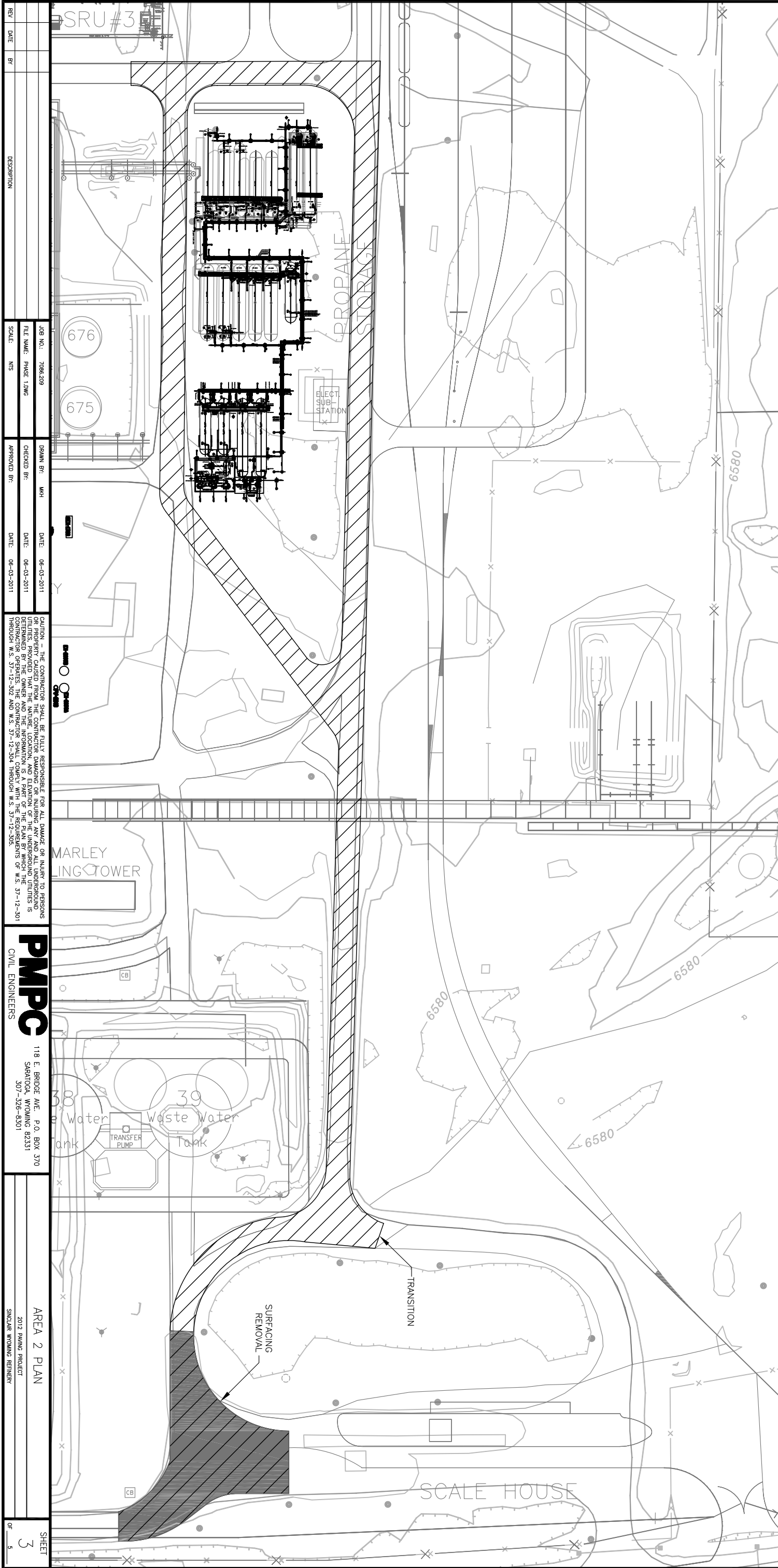
ENGINEER:

PMPC

P.O. BOX 370

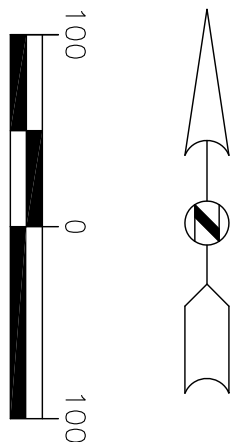
SARATOGA, WYOMING 82331

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- NOTES:
- 1) REMOVE EXISTING SURFACING AND HAUL TO SINGLAR DUMP (APPROX. 1.5 MILES)
  - 2) USE EXISTING MATERIAL AT SHOULDERS TO MAKE CROWN
  - 3) BACKFILL TAPER WITH BASE
  - 4) ANGLE FULL SECTION OF PAVEMENT TO 6" BELOW BASE AT TRANSITION ENDS, SEE TRANSITION DETAIL ON PAGE 4

PAVING AREA: 8230 SY  
 SURFACE REMOVAL AREA: 1690 SY



REV	DATE	BY	DESCRIPTION

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FILE NAME:	PHASE 1.DWG	CHECKED BY:		DATE:	06-03-2011
SCALE:	NIS	APPROVED BY:		DATE:	06-03-2011

**PMPC**  
 CIVIL ENGINEERS  
 118 E. BRIDGE AVE. P.O. BOX 370  
 SARATOGA, WYOMING 82331  
 307-326-8301

AREA 2 PLAN	SHEET	3
2012 PAVING PROJECT	OF	5
SINGLAR WYOMING REFINERY		

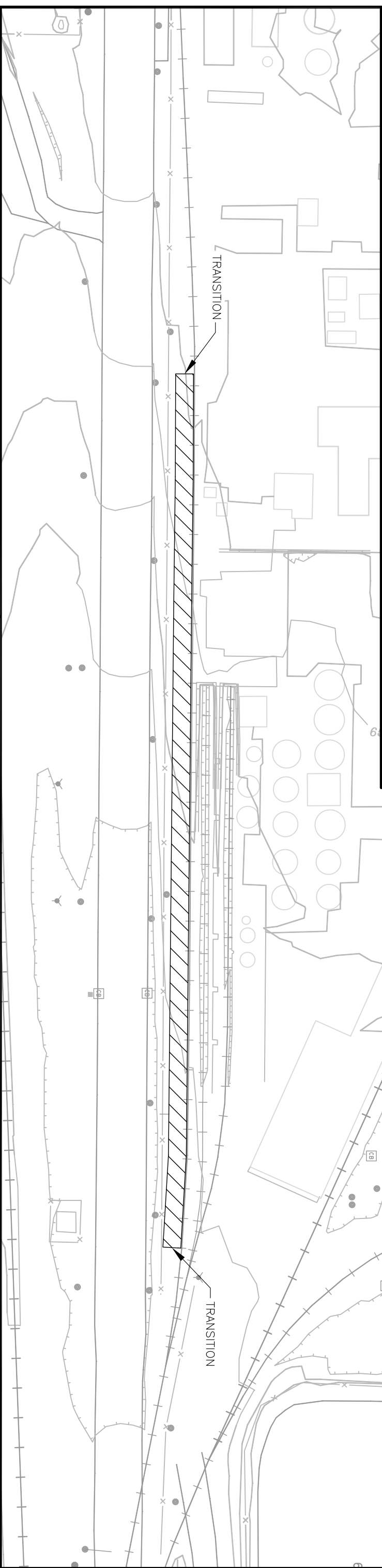
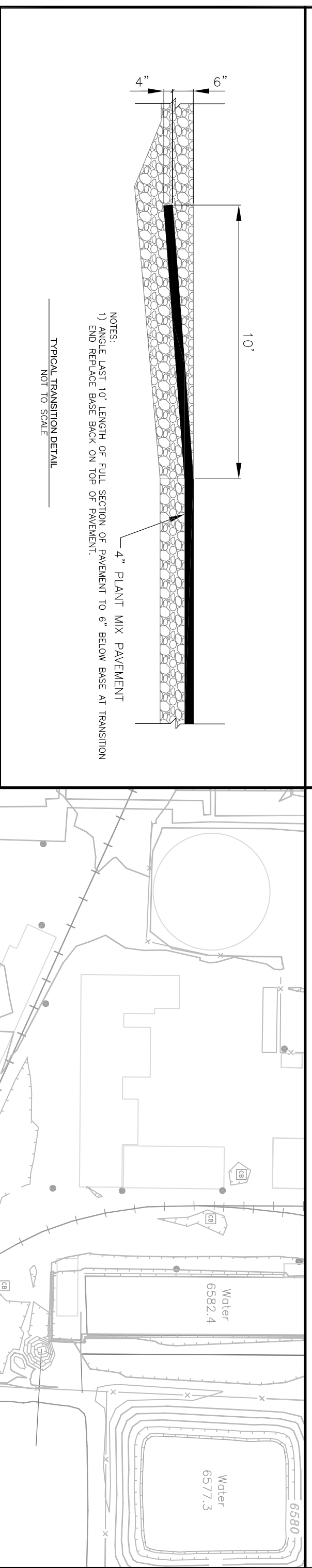
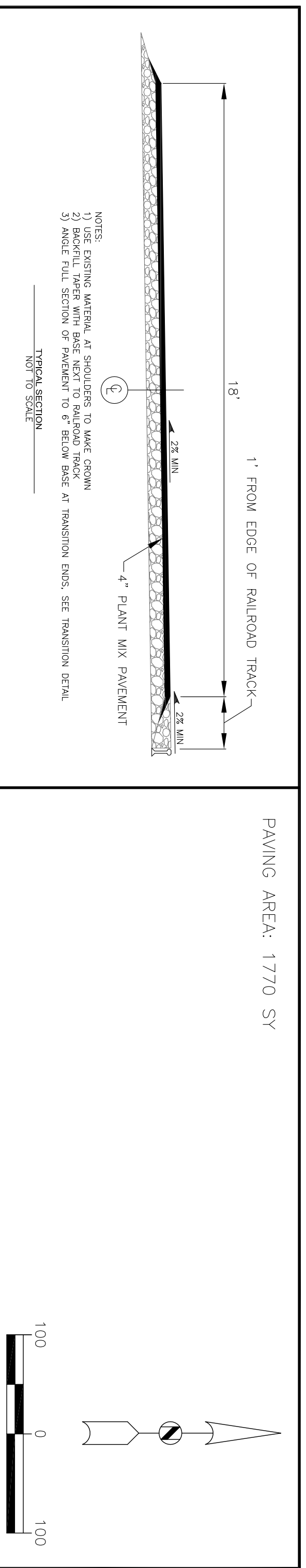
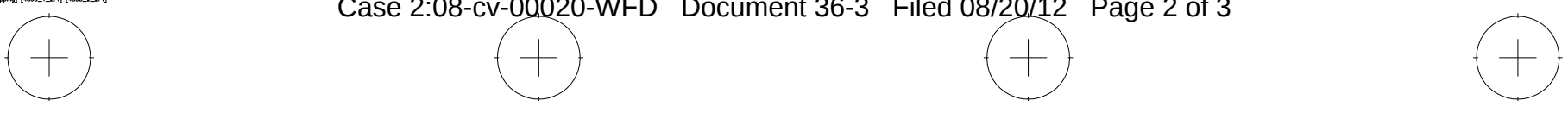
CAUTION - THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ALL DAMAGE OR INJURY TO PERSONS OR PROPERTY CAUSED FROM THE CONTRACTOR DAMAGING OR INJURING ANY AND ALL UNDERGROUND UTILITIES, EXISTING OR PROPOSED, AND THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION AND REPAIR OF ALL UNDERGROUND UTILITIES. THE CONTRACTOR SHALL COMPLY WITH THE REQUIREMENTS OF W.S. 37-12-301 THROUGH W.S. 37-12-302 AND W.S. 37-12-304 THROUGH W.S. 37-12-305.

## Appendix K.2

### Road Paving Plot at Sinclair Wyoming Refinery



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SCALE:	1"=100'	APPROVED BY:		DATE:	06-03-2011

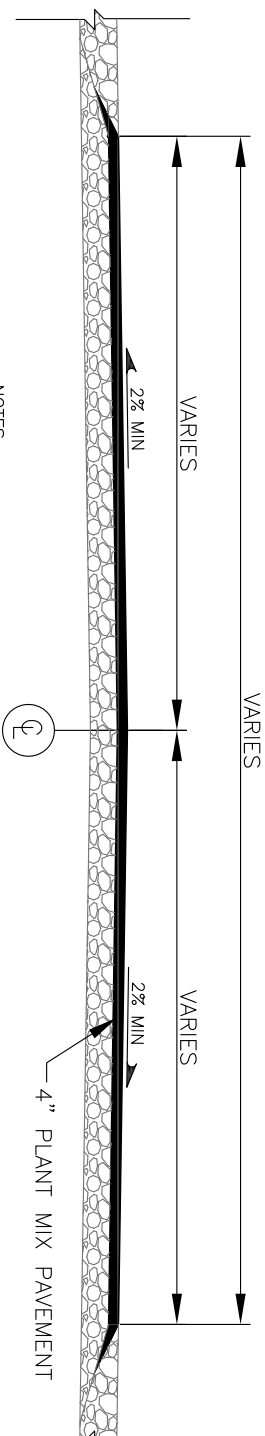
  

CAUTION - THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ALL DAMAGE OR INJURY TO PERSONS OR PROPERTY CAUSED FROM THE CONTRACTOR DAMAGING OR INJURING ANY AND ALL UNDERGROUND UTILITIES, EXISTING OR PROPOSED, AND THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE APPROPRIATE AGENCIES AND AGENCIES. THE CONTRACTOR SHALL COMPLY WITH THE REQUIREMENTS OF W.S. 37-12-301 THROUGH W.S. 37-12-302 AND W.S. 37-12-304 THROUGH W.S. 37-12-305.

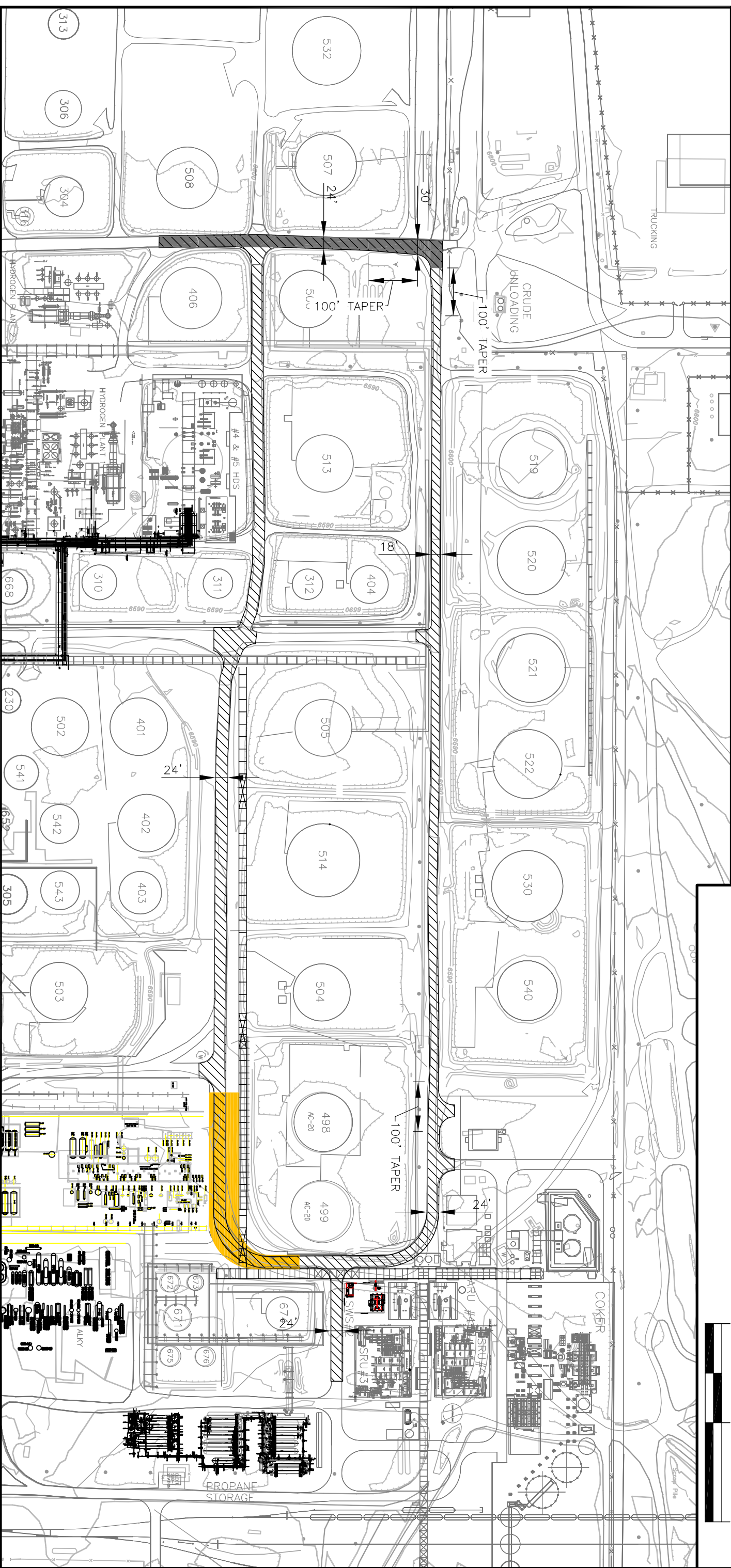
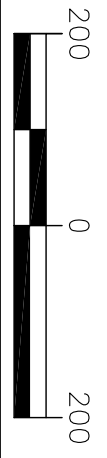
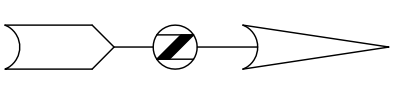
**PMP** CIVIL ENGINEERS  
 118 E. BRIDGE AVE. P.O. BOX 370  
 SARATOGA, WYOMING 82331  
 307-326-8301

AREA 3 PLAN  
 2012 PAVING PROJECT  
 SINGLAR WYOMING RENEWAL

SHEET  
 4  
 OF 5



PAVING AREA: 13860 SY  
 IMPORTED CRUSHED BASE: 1300 CY  
 SURFACE REMOVAL AREA: 1690 SY



REV	DATE	BR	DESCRIPTION

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FILE NAME:	PHASE 4.DWG	CHECKED BY:		DATE:	06-03-2011
SCALE:	NIS	APPROVED BY:		DATE:	06-03-2011

CAD/IN - THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ALL DAMAGE OR INJURY TO PERSONS OR PROPERTY CAUSED FROM THE CONTRACTOR DAMAGING OR INJURING ANY AND ALL UNDERGROUND UTILITIES, EXISTING AND PROPOSED PIPES, AND THE LOCATION AND EXISTENCE OF ALL UNDERGROUND UTILITIES IS THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL COMPLY WITH THE REQUIREMENTS OF W.S. 37-12-301 THROUGH W.S. 37-12-302 AND W.S. 37-12-304 THROUGH W.S. 37-12-305.
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<b>PMP</b>	118 E. BRIDGE AVE. P.O. BOX 370
CIVIL ENGINEERS	SARATOGA, WYOMING 82331
	307-326-8301

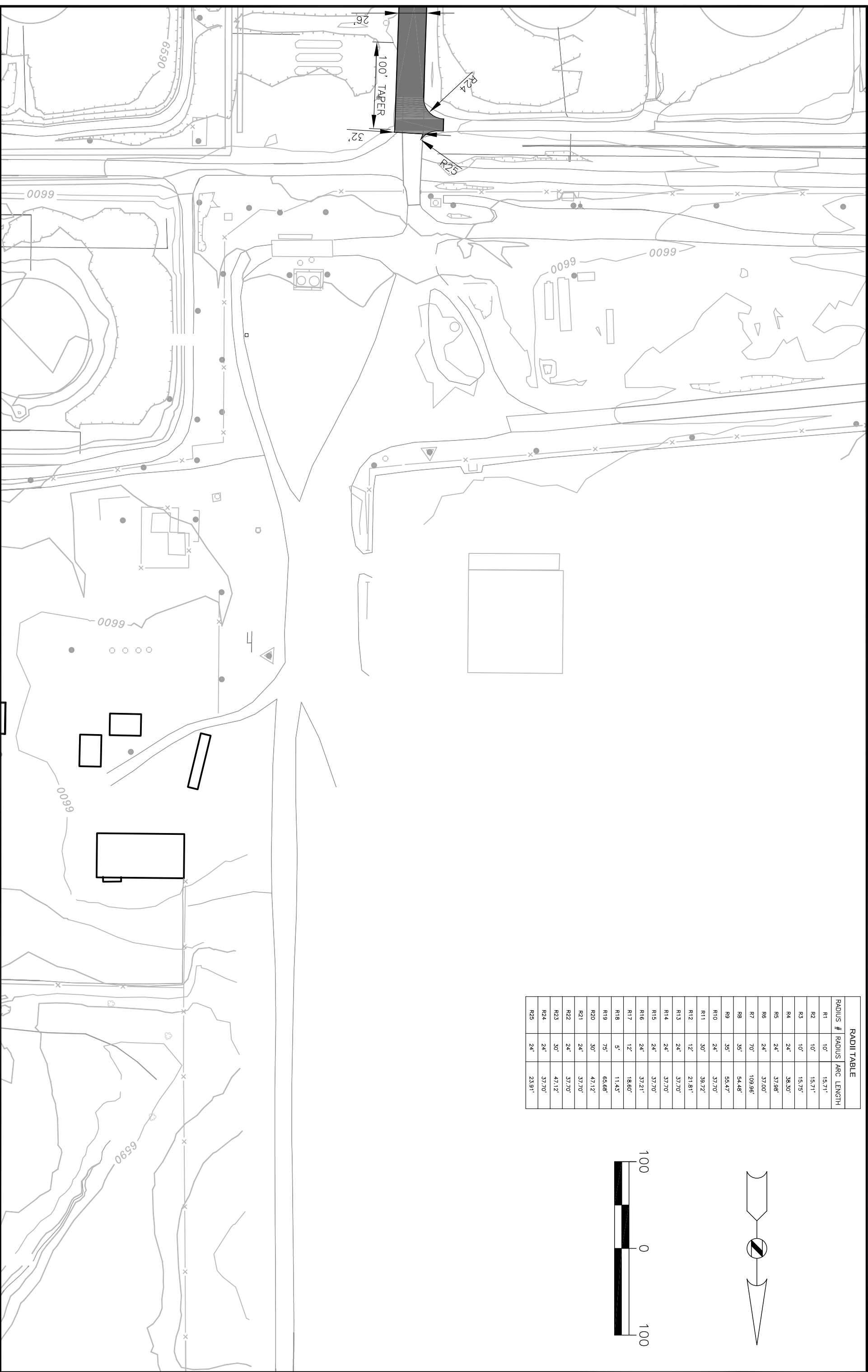
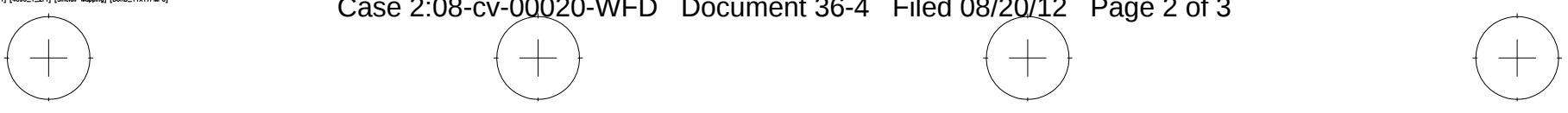
AREA 4 PLAN	2012 PAVING PROJECT
	SINCLAIR WYOMING REFINERY

SHEET	5
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## Appendix K.3

### Road Paving Plot at Sinclair Wyoming Refinery



REV	DATE	BY	DESCRIPTION

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SCALE:	1" = 100'	APPROVED BY:	KH
		DATE:	07/15/11

CAUTION - THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ALL DAMAGE OR INJURY TO PERSONS OR PROPERTY CAUSED FROM THE CONTRACTOR DAMAGING OR INJURING ANY AND ALL UNDERGROUND UTILITIES, PROVIDED THAT THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES. THE CONTRACTOR SHALL COMPLY WITH THE REQUIREMENTS OF W.S. 37-12-301 THROUGH W.S. 37-12-302 AND W.S. 37-12-304 THROUGH W.S. 37-12-305.

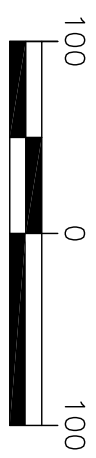
  

<b>PMPC</b>	CIVIL ENGINEERS
118 E. BRIDGE AVE. P.O. BOX 370	SARATOGA, WYOMING 82331
307-326-8301	

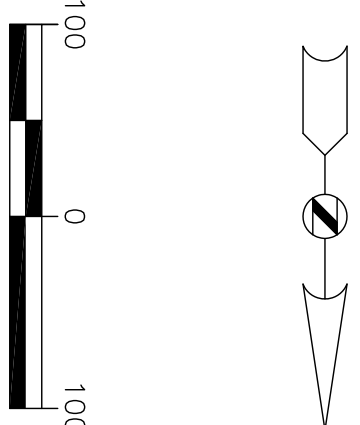
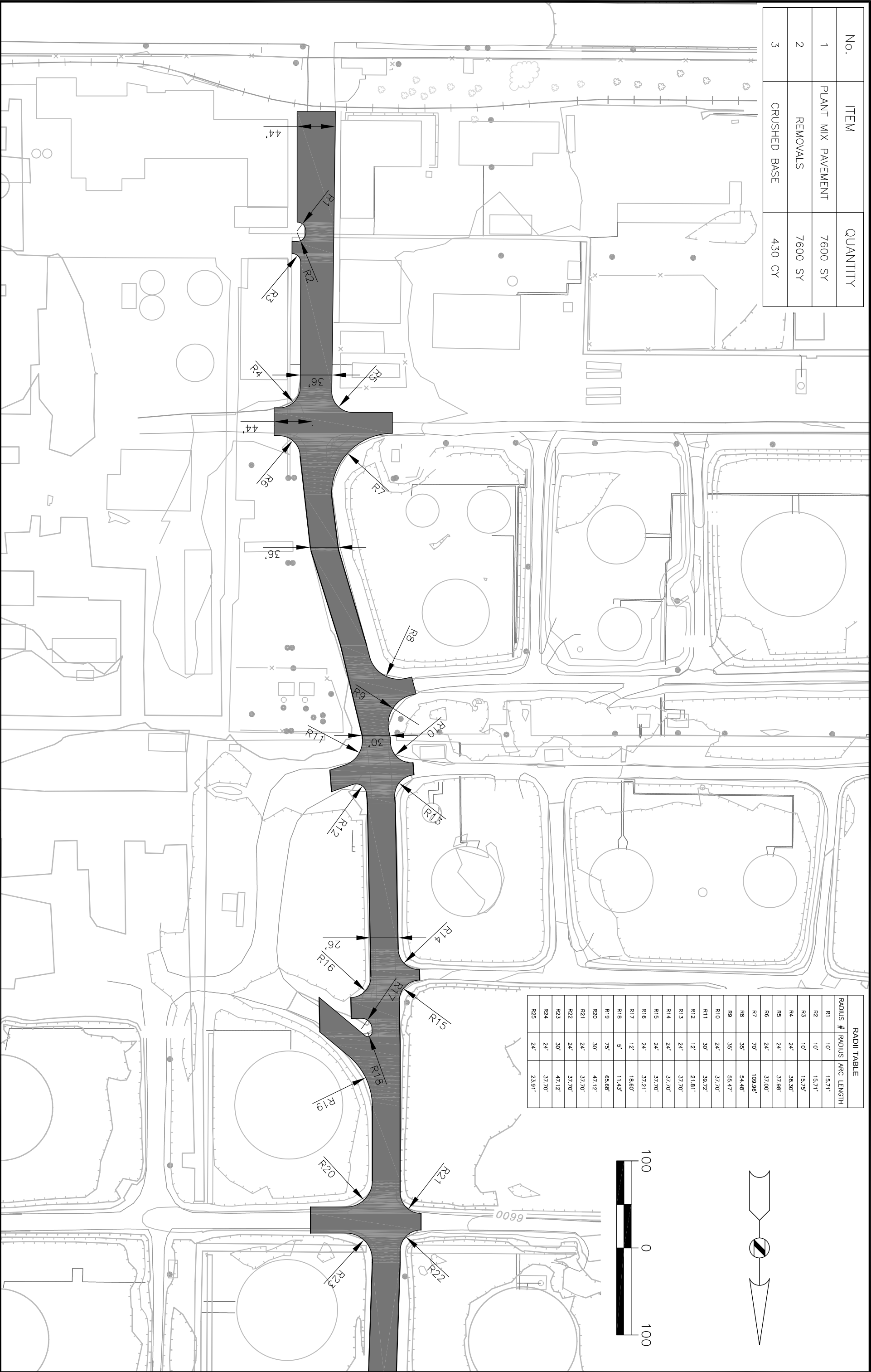
AREA 5 PAVING	SHEET
2012 PAVING PROJECT	2
SINCLAIR WYOMING REFINERY	OF 2

RADIUS #	RADIUS	ARC LENGTH
R1	10'	15.71'
R2	10'	15.71'
R3	10'	15.75'
R4	24'	38.30'
R5	24'	37.98'
R6	24'	37.00'
R7	70'	109.96'
R8	35'	54.48'
R9	35'	55.47'
R10	24'	37.70'
R11	30'	39.72'
R12	12'	21.81'
R13	24'	37.70'
R14	24'	37.70'
R15	24'	37.70'
R16	24'	37.21'
R17	12'	18.60'
R18	5'	11.43'
R19	75'	65.68'
R20	30'	47.12'
R21	24'	37.70'
R22	24'	37.70'
R23	30'	47.12'
R24	24'	37.70'
R25	24'	23.91'



No.	ITEM	QUANTITY
1	PLANT MIX PAVEMENT	7600 SY
2	REMOVALS	7600 SY
3	CRUSHED BASE	430 CY

RADIUS #	RADIUS	ARC LENGTH
R1	10'	15.71'
R2	10'	15.71'
R3	10'	15.75'
R4	24'	36.30'
R5	24'	37.98'
R6	24'	37.00'
R7	70'	109.96'
R8	35'	54.48'
R9	35'	55.47'
R10	24'	37.70'
R11	30'	39.72'
R12	12'	21.81'
R13	24'	37.70'
R14	24'	37.70'
R15	24'	37.70'
R16	24'	37.21'
R17	12'	18.60'
R18	5'	11.43'
R19	75'	65.68'
R20	30'	47.12'
R21	24'	37.70'
R22	24'	37.70'
R23	30'	47.12'
R24	24'	37.70'
R25	24'	23.91'



REV	DATE	BY	DESCRIPTION

JOB NO.: 7096.209	DATE: 07/14/11
FILE NAME: NEW AREAS.DWG	CHECKED BY: JF
SCALE: 1" = 100'	DATE: 07/15/11
APPROVED BY: KH	DATE: 07/15/11

CAUTION - THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ALL DAMAGE OR INJURY TO PERSONS OR PROPERTY CAUSED FROM THE CONTRACTOR DAMAGING OR INJURING ANY AND ALL UNDERGROUND UTILITIES, PROVIDED THAT THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE LOCATION AND EXTENSION OF ALL UNDERGROUND UTILITIES. THE CONTRACTOR SHALL COMPLY WITH THE REQUIREMENTS OF W.S. 37-12-301 THROUGH W.S. 37-12-302 AND W.S. 37-12-304 THROUGH W.S. 37-12-305.

**PMP&C** CIVIL ENGINEERS  
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 SARATOGA, WYOMING 82331  
 307-326-8301

AREA 5 PAVING	SHEET 1
2012 PAVING PROJECT	OF 2
SINCLAIR WYOMING REFINERY	

Appendix L  
Road Paving Specifications at Sinclair  
Wyoming Refinery

**SINCLAIR WYOMING REFINING COMPANY  
2012 PAVING PROJECT**

**Sinclair, Wyoming**

**Sinclair Wyoming Refining Company  
PO Box 277  
Sinclair, Wyoming 82334**

**June 2012**

**PMPC**  
P.O. Box 370  
118 E. Bridge Avenue  
Saratoga, Wyoming 82331

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Phone: (307) 326-8301  
Fax: (307)326-8302  
E-Mail: [pmpc@pmpc-eng.com](mailto:pmpc@pmpc-eng.com)  
Set No. \_\_\_\_\_

**TECHNICAL SPECIFICATIONS**



## TECHNICAL SPECIFICATIONS

The Technical Specifications governing this project shall be the WYOMING PUBLIC WORKS STANDARD SPECIFICATIONS, 2001 EDITION. Only Sections of the Wyoming Public Works Standard Specifications listed in the Table of Contents are utilized in the project. Said STANDARD SPECIFICATIONS shall be in full force except as modified herein by the SPECIAL PROVISIONS.

COPIES OF THE WYOMING PUBLIC WORKS STANDARD SPECIFICATIONS, 2001 EDITION may be purchased from the Wyoming Public Works Council, P.O. Box 32, Cheyenne, WY, 82003, (307) 634-9440.

**Note: The Wyoming Public Work Standard Specifications Have Not Been Included.**

On the following pages are the Specials Provisions, which include modified specifications and/or specifications not found in the Wyoming Public Works Standard Specifications. The entries in the Table of Contents indicate the source or status of the specification by the characters preceding the section name as shown below.

* Section xxx	Modifications to Wyoming Public Works Standard Specifications
^ Section xxx	No Modifications to Wyoming Public Works Standard Specifications
Section xxx	Additional Specification not included in Wyoming Public Works Standard Specifications

**SPECIAL PROVISIONS**

## SPECIAL PROVISIONS

### SECTION 01090 – REFERENCES

This Special Provision modifies the corresponding Wyoming Public Works Standard Specification. Delete, add or amend portions of the Standard as described.

#### **PART 1 GENERAL**

##### **Add the following Subsections to the Standard:**

#### 1.03 QUALITY ASSURANCE

- A. For products or workmanship specified by association, trade, or Federal Standards, comply with requirements of the standard, except when more rigid requirements are specified or are required by applicable codes.
- B. Conform to reference standard by date of issue current on date of Contract Documents.
- C. Obtain copies of standards when required by Contract Documents.
- D. Maintain copy at jobsite during submittals, planning, and progress of the specific work, until Substantial Completion.
- E. Should specified reference standards conflict with Contract Documents, request clarification from Engineer before proceeding.
- F. The contractual relationship of the parties to the Contract shall not be altered from the Contract Documents by mention or inference otherwise in any reference document.

#### 1.04 SCHEDULE OF REFERENCES

AASHTO American Association of State Highway and Transportation Officials  
444 North Capitol Street, N.W.  
Washington, DC 20001

ACI American Concrete Institute  
Box 19150  
Reford Station  
Detroit, MI 48219

- AI Asphalt Institute  
Asphalt Institute Building  
College Park, MD 20740
- AIA American Institute of Architects  
1735 New York Avenue, N.W.  
Washington, DC 20006
- AITC American Institute of Timber Construction  
333 W. Hampden Avenue  
Englewood, CO 80110
- AISC American Institute of Steel Construction  
400 North Michigan Avenue  
Eighth Floor  
Chicago, IL 60611
- AISI American Iron and Steel Institute  
1000 16th Street, N.W.  
Washington, DC 20036
- ANSI American National Standards Institute  
1430 Broadway  
New York, NY 10018
- APA American Plywood Association  
Box 11700  
Tacoma, WA 98411
- ASHRAE American Society of Heating, Refrigerating and  
Air Conditioning Engineers  
1791 Tullie Circle, N.E.  
Atlanta, GA 30329
- ASME American Society of Mechanical Engineers  
345 East 47th Street  
New York, NY 10017
- ASTM American Society for Testing and Materials  
1916 Race Street  
Philadelphia, PA 19103
- AWWA American Water Works Association  
6666 West Quincy Avenue  
Denver, CO 80235

AWPA American Wood-Preservers' Association  
7735 Old Georgetown Road  
Bethesda, MD 20014

AWS American Welding Society  
550 LeJeune Road  
Miami, FL 33135

CLFMI Chain Link Fence Manufacturers Institute  
1101 Connecticut Avenue, N.W.  
Washington, DC 20036

CRSI Concrete Reinforcing Steel Institute  
933 Plum Grove Road  
Schaumburg, IL 60195

EJCDC Engineers' Joint Contract Documents Committee  
American Consulting Engineers Council  
1050 15th Street, N.W.  
Washington, DC 20005

FS Federal Specification  
General Services Administration  
Specifications and Consumer Information Distribution Section  
(WFSIS)  
Washington Navy Yard, Building 197  
Washington, DC 20407

GA Gypsum Association  
1603 Orrington Avenue  
Evanston, IL 60201

MIL Military Specification  
Naval Publications and Forms Center  
5801 Tabor Avenue  
Philadelphia, PA 19120

NAAMM National Association of Architectural Metal Manufacturers  
221 North LaSalle Street  
Chicago, IL 60601

NEMA National Electrical Manufacturers' Association  
2101 L Street, N.W.  
Washington, DC 20037

NFPA National Fire Protection Association  
1619 Massachusetts Avenue, N.W.  
Washington, DC 20036

NSWMA National Solid Wastes Management Association  
1120 Connecticut Avenue, N.W.  
Washington, DC 20036

PCA Portland Cement Association  
5420 Old Orchard Road  
Skokie, IL 60077

PCI Prestressed Concrete Institute  
201 North Wacker Drive  
Chicago, IL 60606

PS Product Standard  
U. S. Department of Commerce  
Washington, DC 20203

SDI Steel Deck Institute  
Box 3812  
St. Louis, MO 63122

SJI Steel Joist Institute  
1703 Parham Road  
Suite 204  
Richmond, VA 23229

SSPC Steel Structures Painting Council  
4400 Fifth Avenue  
Pittsburgh, PA 15213

UL Underwriters' Laboratories, Inc.  
333 Pfingston Road  
Northbrook, IL 60062

**PART 2 PRODUCTS**

Not Used

**PART 3 EXECUTION**

Not Used

**PART 4 METHOD OF MEASUREMENT AND BASIS OF PAYMENT**

**4.01 METHOD OF MEASUREMENT**

- A. No separate measurement will be made for items under this section. Full compensation shall be considered as included in the prices paid for the various contract items and no additional compensation will be allowed therefore.

END OF SECTION

## **SPECIAL PROVISIONS**

### **SECTION 02076 – SURFACING MATERIAL REMOVAL TO SUBGRADE ELEVATION**

This Special Provision modifies the corresponding Wyoming Public Works Standard Specification. Delete, add or amend portions of the Standard as described.

#### **PART 1 GENERAL**

##### **1.01 SUMMARY**

- A. This section refers to the removal of all surfacing material encountered, including but not limited to asphalt, concrete, base material, and subgrade material, to the top of subgrade elevation shown on the plans.

##### **1.02 RELATED WORK SPECIFIED ELSEWHERE**

- A. Section 02210 – Excavation and Embankment.

#### **PART 2 PRODUCTS**

Not Used

#### **PART 3 EXECUTION**

- A. All areas of Pavement shown on the plans for removal shall be marked and approved by the Engineer prior to cutting and removal. All edges of removal items abutting other surfacing or appurtenances shall be saw cut as directed by the Engineer.
- B. Concrete, Pavement and Construction debris from the Project shall be disposed of at the Refinery Landfill unless the Contractor has made other disposal arrangements approved by the Engineer.
- C. Removal of surfacing material shall include all material encountered above top of subgrade elevation. Scarification and compaction of the subgrade shall be subject to Section 02210 – Excavation and Embankment.



**PART 4 METHOD OF MEASUREMENT AND BASIS OF PAYMENT**

**4.01 METHOD OF MEASUREMENT**

- A. The work to be paid for under the bid item Surfacing Material Removal to Subgrade Elevation will be measured by the Square Yard of area shown on the plans or marked and approved by the Engineer.

**4.02 BASIS OF PAYMENT**

- A. The accepted quantity of Surfacing Material Removal to Subgrade Elevation will be paid for at the contract unit price in the Bid Form, which price shall include cutting pavement and concrete, removal, loading, hauling, unloading, saw cutting, disposal fees and all labor, equipment and materials necessary to complete this item in accordance with the Contract Documents.

END OF SECTION

**SPECIAL PROVISIONS**

**SECTION 02190 – AGGREGATES**

This Special Provision modifies the corresponding Wyoming Public Works Standard Specification. Delete, add or amend portions of the Standard as described.

**PART 2 PRODUCTS**

**Delete the first sentence in Subsection 2.03 B. 3. of the Standard and replace with the following:**

3. Crushed base and crushed sub-base shall be Grading W as shown in the following gradation requirements table.

**Add Subsection 2.07 E. to the Standard:**

- E. Aggregate for Hot Plant Mix Bituminous Pavement shall be Type III, ½” max.

END OF SECTION

## SPECIAL PROVISIONS

### SECTION 02231 – AGGREGATE SUB-BASE AND BASE COARSE

This Special Provision modifies the corresponding Wyoming Public Works Standard Specification. Delete, add or amend portions of the Standard as described.

#### PART 1 GENERAL

**Add the following to Subsection 1.03 of the Standard:**

- F. ANSI/ASTM D698 – Test Methods for Moisture-Density Relation of Soils and Soil-Aggregate Mixtures, Using 5 lb. Rammer and 12 inch Drop
- G. ASTM D2922 – Test Methods for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth)
- H. ASTM D3017 – Test Methods for Moisture Content of Soil and Soil-Aggregate Mixtures.

#### PART 3 EXECUTION

**Delete Part 3 of the Standard and replace it with the following:**

##### 3.01 PREPARATION

- A. The top six (6) inches of subgrade shall be scarified and recompact to a density as specified in Section 02210, Excavation and Embankment, Subsection 3.02 A.
- B. Contractor shall mix the aggregate, water and commercial additive by the Stationary Plant Method or Stockpile Method.

##### 3.02 APPLICATION

- A. Stationary Plant Method – Materials mixed by the stationary plant method shall be transported to the job site while it contains the proper moisture content, and shall be placed on the roadbed by means of an approved method.

##### 3.03 SHAPING AND COMPACTION

- A. The moisture content of the material at the time of compaction shall be within plus two or minus four percentage points of optimum.

- B. Field inspection and testing will be performed under provisions of Section 01400. The surface of each layer shall be maintained during the compaction operations in such a manner that a uniform texture and surface is produced and the aggregates firmly keyed. Water shall be uniformly applied over the materials during compaction in the amount necessary for proper consolidation.
- C. The base course for the roadways shall be crowned and sloped to drain as shown on the Drawings.
- D. Each layer of aggregate base shall be compacted to the 95% of maximum dry density as determined in accordance with ANSI/ASTM D698.
- E. The ENGINEER may request a proof roll on the base material prior to paving if any areas of the base material appear to be soft. The proof rolling sequence will be followed as stated in SECTION 02512.301A.3 of the Standard.

#### **PART 4 METHOD OF MEASUREMENT AND BASIS OF PAYMENT**

**Delete Part 4 the Standard and replace it with the following :**

##### **4.01 METHOD OF MEASUREMENT**

- A. No separate measurement will be made for items under this section. Full compensation shall be considered as included in the price paid for Plant Mix Pavement and no additional compensation will be allowed therefore.

##### **4.02 BASIS OF PAYMENT**

- A. No separate payment will be made for items under this section. Full compensation shall be considered as included in the price paid for Plant Mix Pavement and no additional compensation will be allowed therefore.

END OF SECTION

**SPECIAL PROVISIONS**

**SECTION 02290 – WATERING**

This Special Provision modifies the corresponding Wyoming Public Works Standard Specification. Delete, add or amend portions of the Standard as described.

**PART 2 PRODUCTS**

**Delete Subsection 2.01 A. of the Standard and replace with the following:**

- A. Owner will provide water for Contractor's use on this project at delivery points and using methods designated by the Refinery at no cost to the Contractor. The Contractor shall provide a valve, meter and appropriate backflow prevention device for connection to the Refinery's system.

END OF SECTION

## **SPECIAL PROVISIONS**

### **SECTION 02512 – PLANT MIX PAVEMENTS**

This Special Provision modifies the corresponding Wyoming Public Works Standard Specification. Delete, add or amend portions of the Standard as described.

#### **PART 2 MATERIALS**

**Add the following paragraphs to Subsection 2.01 D. 1. of the Standard:**

Contractor shall submit for the Engineer's approval a job mix design formula for each mixture to be supplied for the project. The design mixes shall have a minimum stability of 1200 lbs, a flow of 0.08-0.16, a minimum percentage air void of approximately 4% and swell less than 0.030 inch. The number of Marshall blows shall be 50 (ASTM-D1559). The job-mix formula with the allowable tolerances shall be within the master range specified. The job-mix formula for each mixture shall establish a single percentage of aggregate passing each required sieve size and a single mixing temperature.

The optimum asphalt content for the mix design shall be the highest percentage the mix will accommodate without reducing stability or void content below the above minimum values. The minimum asphalt content shall be 4.5%.

All job mix designs shall have a 75% index of retained strength when tested in accordance with ASTM D-1075, Effect of Water on Compacted Bituminous Mixtures.

Course aggregate shall be tested in accordance with ASTM D-1664, Coating and Stripping of Bitumen Aggregate Mixtures and shall have a minimum of 95% retained film.

A Marshall Test shall be performed at the end of each day of paving operations.

#### **PART 3 EXECUTION**

**Add the following paragraph to Subsection 3.01 A. of the Standard:**

3. Proof rolling shall be performed on the sub-base in the presence of the ENGINEER with the use of a fully loaded 10 cubic yard, dual wheeled dump truck or approved equal.

**PART 4 METHOD OF MEASUREMENT AND BASIS OF PAYMENT**

**Delete Subsection Part 4 of the Standard and replace with the following:**

**4.01 METHOD OF MEASUREMENT**

- A. The Bid Item Plant Mix Pavement shall be measured for payment by the square yard along the centerline of the paved section and the width perpendicular to the centerline at the center and each end of the area paved. Irregularly shaped areas shall be measured as determined by the Engineer to calculate the area.

**4.02 BASIS OF PAYMENT**

- A. Payment for Plant Mix Pavements shall be made at the Contract Unit Price in the Bid Form. Payment shall constitute full compensation for all labor, materials and equipment to satisfactorily complete the work as shown on the Drawings, indicated in the Details, or specified in the Contract Documents. Satisfactory completion shall include sawcutting asphalt and/or concrete; scarifying and recompacting the subgrade; furnishing, installing and compacting the aggregate base course; grading, providing and placing tack coat; furnishing, installing and compacting Plant Mix Pavement and all other items necessary or incidental for completion of the item.

END OF SECTION

## **SPECIAL PROVISIONS**

### **SECTION 02545 – BITUMINOUS MATERIALS**

This Special Provision modifies the corresponding Wyoming Public Works Standard Specification. Delete, add or amend portions of the Standard as described.

#### **PART 2 PRODUCTS**

##### **Add the following to Subsection 2.02 of the Standard:**

- C. Asphalt Cement shall be Type PG64-22.

#### **PART 4 METHOD OF MEASUREMENT AND BASIS OF PAYMENT**

##### **Delete Part 4 of the Standard and replace with the following:**

##### **4.01 METHOD OF MEASUREMENT**

- A. Asphalt cement shall be measured by the Ton. The CONTRACTOR shall supply the Engineer with weight tickets from the supplier for each load used on the project. The weight ticket shall be stamped with the date, tare weight, and final weight of the truck. The AC level in the storage tank at the plant for the AC shall be read prior to paving, at the end of each day of paving and at the end of paving operations for the project. Asphalt mix cannot be used for other clients or projects from the CONTRACTOR's plant while paving is being done on the 2011 Paving Project unless the AC level in the tank is measured before and after this material is produced.
- B. No separate measurement and payment will be made for all other items under this section. Full compensation shall be considered as included in the prices paid for the various contract items and no additional compensation will be allowed therefore.

##### **4.02 BASIS OF PAYMENT**

- A. Payment for Asphalt Cement shall be made at the Contract Unit Price in the Bid Form. Payment shall constitute full compensation for all labor, materials and equipment to satisfactorily complete the work as shown on the Drawings, indicated in the Details, or specified in the Contract Documents. Satisfactory completion shall include loading, hauling, offloading, measuring and all other items necessary or incidental for completion of the item.

END OF SECTION



## **SPECIAL PROVISIONS**

### **SECTION 02551 – TACK COAT**

This Special Provision modifies the corresponding Wyoming Public Works Standard Specification. Delete, add or amend portions of the Standard as described.

#### **PART 2 PRODUCTS**

**Delete Part 2 of the Standard and replace with the following:**

##### **2.01 MATERIALS**

- A. Bituminous materials shall meet the applicable requirements of Section 02545, BITUMINOUS MATERIALS.
- B. BITUMINOUS TACK COAT shall be Type SS-1, Emulsified Asphalt.

#### **PART 3 EXECUTION**

**Add the following to Subsection 3.01.A of the Standard:**

- 4. Bituminous material shall be applied to edges of pavement concrete sections which are adjacent to new pavement sections. The Contractor shall take steps to prevent the bituminous material from getting on the concrete or pavement surfaces.

#### **PART 4 METHOD OF MEASUREMENT AND BASIS OF PAYMENT**

**Delete Part 4 of the Standard and replace with the following:**

##### **4.01 METHOD OF MEASUREMENT**

- A. No separate payment will be made for items under this section. Full compensation shall be considered as included in the prices paid for the various contract items and no additional compensation will be allowed therefore.

END OF SECTION

## Appendix M

### Road Inspection and Maintenance Plan at Sinclair Wyoming Refinery

SWRC  
6/26/12, rev. 0

**Sinclair Wyoming Refining Company**

**Inspection Plan for Paving Areas 2, 3, 4 and 5**

1. Purpose

The purpose of this inspection plan is to provide a mechanism to assure that Sinclair Wyoming Refining Company (SWRC) will inspect, repair and maintain the asphalt paved roads in Paving Areas 2, 3, 4 and 5 in the SWRC refinery.

2. Background

SWRC is in the process of paving various earthen roads as well as repaving existing paved roads at the refinery for the purposes of dust control. Existing paved roads will be inspected for common distresses such as loss of aggregates, cracks, and distortions to help assess the road base condition as well as the roadway surface condition.

3. Types of maintenance to be performed

- For existing paved roads that will be repaved, the asphalt will first be removed and the subgrade scarified, reshaped and recompactd to the required density (typically 95% of the standard proctor).
- For existing earthen roads, the subgrade will be scarified, reshaped and recompactd to the required density (typically 95% of the standard proctor).
- Depending on the condition of the existing subgrade, additional road base may be required.
- Drainage will be addressed to ensure water is adequately carried away from the roadway.
- The subgrade work will be followed with two (2) courses of hot plant mix pavement to the required thickness and density. The minimum final compacted thickness will be four inches (4”).
- Within the first year after construction, an emulsified seal coat or cover seal coat may be installed on the roadway to seal any surface cracking. Thereafter, a regular maintenance program will be implemented to ensure the integrity of the roadway. A minimum of once per year, a visual examination of the roadway will be conducted and required maintenance procedures, if any, will be determined. Maintenance procedures may consist of crack sealing and pot hole repair. Typically, seal coats are reapplied every five (5) years to extend the life of the pavement.

SWRC  
6/26/12, rev. 0

4. Inspection schedule and tracking

- Road inspections will be conducted at a minimum frequency of once per year by the SWRC Engineering Department.
- The SWRC Environmental Department will have the responsibility to track inspection frequency and any corrective actions taken.

## Appendix N

### Sinclair Wyoming Refinery Flare Gas Recovery System Optimization Plan

## **Flare Gas Recovery System Optimization Plan**

Sinclair Wyoming Refining Company (SWRC) shall implement an optimization program designed to maximize the availability and up-time of the two Flare Gas Recovery (FGR) compressors at the SWRC facility. SWRC is in the process of acquiring and installing a new "Hi-jet" FGR system that will complement the existing compressors to ensure compliance with NSPS Subpart J. The Hi-jet system will be installed and operational by March 31, 2013. In the interim, below are actions that SWRC has undertaken and will undertake to optimize the existing FGR system.

The following modifications have been completed on the two Flare Gas Recovery (FGR) Compressors at the Sinclair Wyoming Refining Company (SWRC) facility:

1. The lube oil circulation pump was upgraded with a higher speed motor to provide additional oil circulation for the cooling of the compressor during periods of high heat of compression.
2. The lube oil system is now split into three separate streams to provide separate cooling for each service.
  - a. The bearing oil is cooled on a separate plate and frame exchanger and an exchanger bypass is controlled by the Distributive Control System (DCS) to provide the bearing oil at a specific temperature.
  - b. The seal oil and compressor oil are cooled on a shell and tube exchanger and an exchanger bypass is controlled by the Distributive Control System (DCS) to provide the seal and compressor oil at a specific temperature.
  - c. A stream from the seal oil and compressor oil circuit is routed back to the gas/oil separator utilizing a back pressure controller and this controller maintains lube oil pressure on the system.
3. The discharge gas from the FGR compressor is cooled in a water cooler before the discharge knockout (KO) drum. A new line from the KO drum routes any condensables back to the Coker Wet Gas Compressor.

Following the completion of the previously stated modifications to the C-103 FGR Compressor and placing the compressor in operation it was determined that some additional changes needed to be made to further improve the compressor operation. These changes have been completed on the C-102 FGR Compressor as of August 1, 2012 and C-102 is in the start-up process. The C-103 Compressor will undergo the following additional modifications which will be made no later than August 17, 2012:

1. Relocate the suction pressure temperature probes on the gas inlet line to a location closer to the inlet suction KO drum;
2. Modify the oil recirculation control valve to inject excess oil back into the compressor discharge gas/oil separator before the oil is cooled (maintains maximum separator temperature);

3. Add an on/off valve to the back pressure control loop;
4. Change programming so the back pressure control valve controls in both warm-up and run conditions;
5. Change the control of oil flow to only inject the oil needed to cool to the compressor set point (minimizes oil to the compressor and reduce the absorption);
6. Modify the programming to bypass oil coolers to achieve set point; and
7. Install new lube oil pump motors with variable frequency drive (VFD), which will allow the lube oil pumps to be operated at the optimum rate.

The above modifications will improve the operation of the compressors; however, the compressor lube oil is still being contaminated by butane and pentanes that enter the flare system from time to time. This requires the compressors to be shut down to replace the contaminated lube oil on a frequent basis.

To address this problem, Sinclair has identified two additional changes that will minimize the lube oil contamination issue. These changes are:

1. Reduce the compressor discharge pressure to 90-95 psig, which will allow for additional butane and pentane to flash out of the lube oil in the gas/oil separator; and
2. Install a larger compressor suction K.O. Drum to remove the butanes and pentanes from the flare gas going to the FGR Compressors. The existing suction drum on each skid is 36" D x 76" T-T. Sinclair is investigating a common suction K.O. Drum that is 60" D x 120" T-T; however, the evaluation of the drum size has not been completed so the exact vessel size has not been determined.

Item 1 immediately above will be accomplished by routing the flare gas stream after the flare gas treating system directly to the fuel gas mix drum. To put this existing piping system in service, the existing non-functioning valve on a line that connects the treated gas line going from the flare gas treating unit to the LCO Absorber with the line going to the Fuel Gas Mix Drum will be replaced with a new valve. Item 1 shall be completed by August 31, 2012.

Item 2 immediately above, which requires a new vessel to be fabricated and installed on the FGR System, shall be completed by February 1, 2013.

The operational reliability of the FGR Compressors continues to be the focus of SWRC personnel in the interim while the physical modifications to the compressor system are completed. SWRC shall continue to undertake all ongoing actions identified above and shall not undertake any actions that will decrease the up-time of the C-102 and C-103 FGR Compressors, or that will in any way decrease the FGR System's ability to minimize the concentration of H<sub>2</sub>S in continuous or routine streams going to the flare. The following additional actions will be taken to maximize the availability and on-stream operating time of

the compressors. The actions focus on three areas: Operations, Reliability, and Maintenance.

1. Operations:

SWRC's approach to managing flare gas volumes begins by focusing on the sources of the gas flows. Newly installed Panametrics flare flow meters will enable a better understanding of where flare flows are originating throughout the refinery. SWRC shall use these meters to identify and undertake actions to locate and correct, as expeditiously as practicable, the source of increased flare flow volumes when they occur.

2. Reliability:

In order to increase the opportunity to identify mechanical problems (bearing or seal) that could lead to a failure, SWRC shall monitor the manual vibration of the compressors and their motors at least twice per month.

3. Maintenance:

In order to reduce the time needed to change the lube oil in and restart the compressors, SWRC shall no later than October 1, 2012:

- a. Increase the size of the transfer pumps used to replace the lube oil to 17 gpm to allow more rapid transfer of oil between the storage totes and the compressors.
- b. Install facilities necessary to keep the stored lubricating oil associated with the Flare Gas Recovery Compressors warm to reduce the time required to change the lubricating oil due to reduced oil viscosity. Additionally, storing the lubricating oil at a temperature higher than ambient temperature (~ 70°F) in the winter will help minimize the time required to meet the minimum oil temperature needed for compressor re-start during periods of sub-freezing ambient temperatures.

SWRC shall submit reports to EPA and Wyoming on or before September 30, 2012, November 30, 2012, January 31, 2013, and March 31, 2013, identifying (1) all steps undertaken to comply with each of the provisions of this Flare Gas Recovery System Optimization Plan, and (2) any failures to comply with each such provision. The January 13, 2013 report can be combined with the semi-annual progress report required pursuant to Paragraph 199 of the Consent Decree.



**IN THE UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF WYOMING**

UNITED STATES OF AMERICA,	)	
	)	Civil No. 2:08-cv-00020-WFD
Plaintiff,	)	
	)	
OKLAHOMA DEPARTMENT OF	)	STIPULATION AND AGREEMENT
ENVIRONMENTAL QUALITY	)	REGARDING THE ASSESSMENT
and STATE OF WYOMING	)	AND PAYMENT OF CERTAIN
	)	STIPULATED PENALTIES
Plaintiff-Intervenors,	)	
	)	
v.	)	
	)	
HOLLY REFINING AND MARKETING -	)	
TULSA LLC, HEP TULSA LLC, SINCLAIR	)	
WYOMING REFINING COMPANY and	)	
SINCLAIR CASPER REFINING COMPANY	)	
	)	
Defendants.	)	

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The United States, on behalf of the U.S. Environmental Protection Agency (“EPA”), the State of Wyoming (“Wyoming”), and Defendants Sinclair Wyoming Refining Company (“SWRC”) and Sinclair Casper Refining Company (“SCRC”) (referred to collectively herein as “Sinclair Companies”) enter into this Stipulation and Agreement Regarding the Assessment and Payment of Certain Stipulated Penalties (“Agreement”) in order to document their agreement regarding the assessment and payment of certain stipulated penalties under the Consent Decree in this case. Relevant background information and the specific terms of the parties’ agreement are set forth below.

1. The Plaintiffs filed this action on January 15, 2008, alleging violations of multiple environmental laws at the two domestic petroleum refineries owned and operated by the Sinclair Companies, and a third refinery formerly owned by the Sinclair Tulsa Refining Company but

subsequently transferred to Holly Refining and Marketing – Tulsa LLC and HEP Tulsa LLC. At the same time, the United States moved to lodge the proposed Consent Decree between the Plaintiffs and the Defendants.

2. In response to an “Unopposed Motion For Entry of Consent Decree” filed by the United States, the Court approved and entered the Consent Decree on June 30, 2008.

3. Paragraph 13 of the Consent Decree requires SCRC to comply with NO<sub>x</sub> emission limits of 50 ppmvd at 0% O<sub>2</sub> on a 365-day rolling average basis and 100 ppmvd at 0% O<sub>2</sub> on a 7-day rolling average basis at the Casper Refinery FCCU. Paragraph 207 of the Consent Decree establishes stipulated penalties for those violations. The United States and Wyoming contend that SCRC has almost continuously failed to comply with the 365-day rolling average NO<sub>x</sub> emission limit, and has failed on numerous days to comply with the 7-day rolling average NO<sub>x</sub> emission limit, at the Casper Refinery FCCU, during all quarters since the emission limits became applicable, as reported in SCRC’s periodic semi-annual progress reports.

4. Paragraph 20 of the Consent Decree requires SWRC to comply with SO<sub>2</sub> emission limits of 25 ppmvd at 0% O<sub>2</sub> on a 365-day rolling average basis and 50 ppmvd at 0% O<sub>2</sub> on a 7-day rolling average basis at the Sinclair Wyoming Refinery FCCU. Paragraph 209 of the Consent Decree establishes stipulated penalties for those violations. The United States and Wyoming contend that SWRC failed to comply with the 7-day rolling average SO<sub>2</sub> emission limit at the Sinclair Wyoming Refinery FCCU on several days during the fourth quarter of 2010, as reported in SWRC’s January 31, 2011, semi-annual progress report.

5. Paragraph 21.b of the Consent Decree requires SCRC to comply with SO<sub>2</sub> emission limits of 50 ppmvd at 0% O<sub>2</sub> on a 365-day rolling average basis and 100 ppmvd at 0% O<sub>2</sub> on a 7-day rolling average basis at the Casper Refinery FCCU. Paragraph 209 of the Consent

Decree establishes stipulated penalties for those violations. The United States and Wyoming contend that SCRC failed to comply with the 7-day rolling average SO<sub>2</sub> emission limit at the Casper Refinery FCCU on several days during the first quarter of 2011, as reported in SCRC's July 29, 2011, semi-annual progress report.

6. Paragraph 31 of the Consent Decree requires the Defendants, by dates specified therein, to comply with the FCCU CO emission limits set forth in Paragraph 31. Paragraph 212 of the Consent Decree establishes stipulated penalties for those violations. The United States and Wyoming contend that SWRC failed to comply with the required CO emissions limits at the Sinclair Wyoming Refinery on numerous days during the 1<sup>st</sup> quarter of 2009, as reported in SWRC's July 31, 2009, semi-annual progress report.

7. Paragraph 45 of the Consent Decree requires the Defendants to install controls to meet specified NOx emission reductions by certain dates. Paragraph 214 of the Consent Decree establishes stipulated penalties for those violations. SWRC failed to install controls sufficient to meet the specified NOx emission reductions by the required date at the Sinclair Wyoming Refinery as reported in SWRC's January 30, 2009, semi-annual progress report.

8. Paragraph 68 of the Consent Decree requires the Defendants, for all periods of operation of the Sulfur Recovery Plants, to comply with the SO<sub>2</sub> emissions limits set forth in 40 C.F.R. § 60.104(a)(2) at each SRP. Paragraph 219 of the Consent Decree establishes stipulated penalties for those violations. The United States and Wyoming contend that SWRC failed to comply with the specified SO<sub>2</sub> emissions limits at the Sinclair Wyoming Refinery's SRPs on numerous days during the first and second quarters of 2009, as reported in SWRC's July 31, 2009, semi-annual progress report.

9. Paragraph 68 of the Consent Decree also requires the Defendants to continuously

monitor all Tail Gas Unit (“TGU”) emissions points to the atmosphere at the SRPs, and to report all excess emissions. Paragraph 208 of the Consent Decree establishes stipulated penalties for those violations. The United States and Wyoming contend that SWRC failed to monitor for SO<sub>2</sub> emissions at the Sinclair Wyoming Refinery’s TGU on numerous days during the second quarter of 2009, as reported in SWRC’s July 31, 2009, semi-annual progress report. The United States also contends that SWRC and SCRC failed to install a continuous emissions monitor for SO<sub>2</sub> on the TGU by-pass stacks at the Sinclair Wyoming Refinery and the Casper Refinery, as reported in SWRC’s and SCRC’s January 30, 2009, and July 31, 2009, semi-annual progress reports.

10. Paragraph 75.b of the Consent Decree requires SWRC, as soon as practicable, but no later than December 31, 2008, to design, install, operate and maintain a flare gas recovery system (“FGRS”) to control continuous or routine combustion in the Sinclair Wyoming Refinery’s Flaring Device. Paragraph 76 of the Consent Decree requires SWRC to comply with the emission limit set forth in 40 C.F.R. § 60.104(a)(1) for refinery gases combusted in a Flaring Device. Paragraphs 222 and 223 of the Consent Decree establish stipulated penalties for those violations. The United States and Wyoming contend that SWRC has failed to design, install, operate and maintain a FGRS that can adequately control continuous or routine combustion in the Sinclair Wyoming Refinery’s Flaring Device, and has regularly violated the emission limit set forth in 40 C.F.R. § 60.104(a)(1) for refinery gases combusted in the Flaring Device, as continuously reported in SWRC’s semi-annual progress reports.

11. Section V, Part J of the Consent Decree prescribes measures, including corrective action, that the Defendants must undertake with respect to Acid Gas Flaring and Tail Gas Incidents. Paragraphs 86, 93 and 224 establish stipulated penalties for the failure to comply with the prescribed measures. The United States and Wyoming contend that SWRC failed to comply

with those measures with respect to a Tail Gas Incident that occurred at the Sinclair Wyoming Refinery from May 3 – 30, 2009.

12. Paragraph 170 of the Consent Decree requires the Defendants to, among other things, report results from Leak Detection and Repair (“LDAR”) monitoring to unit supervisors daily. Paragraph 253 of the Consent Decree establishes stipulated penalties for those violations. The United States and Wyoming contend that SWRC failed to report results from LDAR monitoring to unit supervisors for several days during the third and fourth quarters of 2008 and the first, second, and third quarters of 2009.

13. Consent Decree Paragraph 265 requires Defendants to make payment of stipulated penalties within 60 days after receipt of a formal written demand for payment by the United States or an Applicable Co-Plaintiff. Paragraph 265 also allows the United States and the Applicable Co-Plaintiff, in their unreviewable discretion, to waive payment of any portion of stipulated penalties that may accrue under the Consent Decree.

14. This Agreement documents the undersigned parties’ agreement to resolve potential claims for stipulated penalties for the alleged past Consent Decree violations addressed herein, and potential future violations of the Consent Decree as specified below, without adjudication of any issue of fact or law. This Agreement does not represent an admission of guilt or an admission of violation of the Consent Decree or underlying regulations.

15. SCRC shall pay a total of \$1,043,750 in stipulated penalties for alleged violations of the Consent Decree, outlined in Paragraph 3 above, at the Casper Refinery.

16. SWRC shall pay a total of \$16,500 in stipulated penalties for alleged violations of the Consent Decree, outlined in Paragraph 4 above, at the Sinclair Wyoming Refinery.

17. SCRC shall pay a total of \$10,500 in stipulated penalties for alleged violations of

the Consent Decree, outlined in Paragraph 5 above, at the Casper Refinery.

18. SWRC shall pay a total of \$9,000 in stipulated penalties for alleged violations of the Consent Decree, outlined in Paragraph 6 above, at the Sinclair Wyoming Refinery.

19. SWRC shall pay a total of \$50,000 in stipulated penalties for alleged violations of the Consent Decree, outlined in Paragraph 7 above, at the Sinclair Wyoming Refinery.

20. SWRC shall pay a total of \$62,000 in stipulated penalties for alleged violations of the Consent Decree, outlined in Paragraph 8 above, at the Sinclair Wyoming Refinery.

21. SWRC shall pay a total of \$2,652,250 in stipulated penalties for alleged violations of the Consent Decree, outlined in Paragraph 10 above, at the Sinclair Wyoming Refinery.

22. As an exercise of their discretion under Consent Decree Paragraph 265, the United States and Wyoming will not assess, demand, or otherwise seek stipulated penalties for potential violations outlined in Paragraphs 9, 11, and 12 above.

23. In accordance with Paragraphs 15 - 22 above, SWRC shall pay a total of \$2,789,750 and SCRC shall pay a total of \$1,054,250 in stipulated penalties within 60 days after the Court enters the Sixth Amendment to Consent Decree that was lodged simultaneously with the filing of this Agreement. Payment shall be made as follows:

a. SWRC shall pay \$1,394,875 and SCRC shall pay \$527,125 to the United States by Electronic Funds Transfer ("EFT") to the United States Department of Justice, referencing USAO File Number, DOJ Case Number 90-5-2-1-07793, and the civil action case name and case number of this action in the District of Wyoming. SWRC and SCRC must provide notice of payment to the Department of Justice and to EPA as provided in Paragraph 341 of the Consent Decree.

b. SWRC shall pay \$1,394,875 and SCRC shall pay \$527,125 to Wyoming

by certified or corporate check made payable to the "Wyoming Department of Environmental Quality" and mailed to:

Wyoming Attorney General's Office  
Attn: Nancy Vehr  
123 Capitol Building  
Cheyenne, WY 82002.

24. Payment of the stipulated penalties set forth in Paragraph 23 above, and compliance with the requirements of the Sixth Amendment to Consent Decree in this matter, shall resolve all civil liability of SWRC to the United States and Wyoming as follows:

a. With respect to the violations referenced in Paragraphs 4, 6, 7, 8, 9, 11 and 12 above, for the dates of violations cited therein or set forth in the semi-annual progress reports cited therein.

b. With respect to the violations referenced in Paragraph 10 above, for the period of time from December 31, 2008 through March 31, 2013.

25. Payment of the stipulated penalties set forth in Paragraph 23 above, and compliance with the requirements of the Sixth Amendment to Consent Decree in this matter, shall resolve all civil liability of SCRC to the United States and Wyoming as follows:

a. With respect to the violations referenced in Paragraph 3 above, for the period of time from December 31, 2009 through the date the Court enters the Sixth Amendment to Consent Decree that was lodged simultaneously with the filing of this Agreement.

b. With respect to the violations referenced in Paragraphs 5 and 9 above, for the dates of violations set forth in the semi-annual progress reports cited therein.

26. This Agreement shall become effective on the date that the Court enters the Sixth Amendment to Consent Decree that was lodged simultaneously with the filing of this

Agreement. If the Court does not enter the Sixth Amendment to Consent Decree, this Agreement shall be null and void in its entirety and the parties retain all rights they have under the Consent Decree, as amended.

**IT IS SO STIPULATED AND AGREED.**

#### **SIGNATORIES**

Each of the undersigned representatives certifies that he or she is fully authorized to enter into the Stipulation and Agreement on behalf of such Parties, and to execute and to bind such Parties to this Stipulation and Agreement. This Stipulation and Agreement may be signed in counterparts.




Signature Page for Stipulation and Agreement Regarding Assessment and Payment of Certain Stipulated Penalties in *United States, et al. v. Sinclair Wyoming Refining Co. et al.*, Civil No. 2:08-cv-00020-WFD.

FOR PLAINTIFF UNITED STATES OF AMERICA:


Date: \_\_\_\_\_

8/10/12

  
IGNACIA S. MORENO  
Assistant Attorney General  
Environment and Natural Resources Division  
United States Department of Justice

Date: \_\_\_\_\_

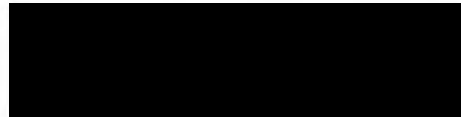
8/17/12

  
JAMES D. FREEMAN  
Senior Attorney  
Environmental Enforcement Section  
United States Department of Justice

Signature Page for Stipulation and Agreement Regarding Assessment and Payment of Certain Stipulated Penalties in *United States, et al. v. Sinclair Wyoming Refining Co. et al.*, Civil No. 2:08-cv-00020-WFD.

FOR PLAINTIFF THE UNITED STATES  
ENVIRONMENTAL PROTECTION AGENCY:

Date: 8/9/12



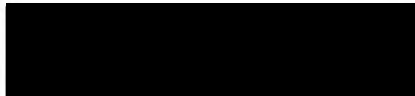
CYNTHIA GILES  
Assistant Administrator  
Office of Enforcement and Compliance Assurance  
United States Environmental Protection Agency

Date: 7/31/2012



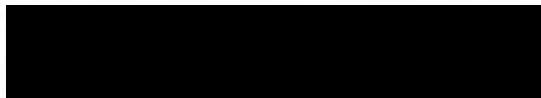
PHILLIP A. BROOKS  
Director, Air Enforcement Division  
Office of Enforcement and Compliance Assurance  
United States Environmental Protection Agency

Date: 7/18/2012



ROBERT G. KLEPP  
Attorney-Advisor  
Air Enforcement Division  
Office of Civil Enforcement  
Office of Enforcement and Compliance Assurance  
United States Environmental Protection Agency

Date: 8/13/12



SHELDON H. MULLER  
Senior Attorney  
Office of Enforcement, Compliance and  
Environmental Justice  
United States Environmental Protection Agency,  
Region 8

Signature Page for Stipulation and Agreement Regarding Assessment and Payment of Certain Stipulated Penalties in *United States, et al. v. Sinclair Wyoming Refining Co. et al.*, Civil No. 2:08-cv-00020-WFD.

FOR PLAINTIFF-INTERVENOR, STATE OF WYOMING:

Date: 8/17/12



JOHN CORRA  
Director  
Wyoming Department of Environmental Quality

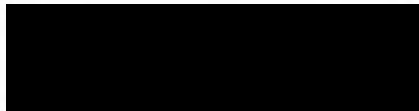
Date: 8-16-12



STEVEN A. DIETRICH  
Administrator, Air Quality Division  
Wyoming Department of Environmental Quality

Approved As To Form:

Date: 8/17/12




NANCY E. VEHR  
Senior Assistant Attorney General  
Wyoming Attorney General's Office

Signature Page for Stipulation and Agreement Regarding Assessment and Payment of Certain Stipulated Penalties in *United States, et al. v. Sinclair Wyoming Refining Co. et al.*, Civil No. 2:08-cv-00020-WFD.

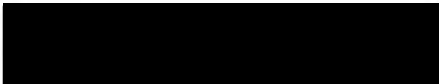
FOR DEFENDANT SINCLAIR WYOMING  
REFINING COMPANY:

Date: 8.3.12

  
\_\_\_\_\_  
MICHAEL R. ACHACOSO  
Vice President, Sinclair Wyoming Refining  
Company

FOR DEFENDANT SINCLAIR CASPER  
REFINING COMPANY:

Date: 8.3.12

  
\_\_\_\_\_  
MICHAEL R. ACHACOSO  
President, Sinclair Casper Refining Company

