

February 11, 2010

Alan Solomon
Project Manager
California Energy Commission
1516 Ninth Street
Sacramento, CA 95814

DOCKET 09-AFC-6
DATE <u>FEB 11 2010</u>
RECD. <u>FEB 16 2010</u>

RE: **Blythe Solar Power Project, Docket No. 09-AFC-6**
Responses to January 14, 2010 CEC Workshop Queries
Technical Areas:
Soil & Water Resources (supplemental data for DR-S&W-218)

Dear Mr. Solomon:

During the January 14, 2010, CEC Workshop staff requested additional information and clarification on several matters in the technical areas of Soil and Water Resources. Attached please find our responses to those specific questions.

If you have any questions on these data responses to the staff's workshop queries, please feel free to contact me directly.

Sincerely,



Alice Harron
Senior Director, Development

**Responses to CEC Workshop,
January 14, 2010**

**Soil and Water Resources
(Supplemental Data for DR-S&W-218)**

Blythe Solar Power Project
Docket No. 09-AFC-6

Alice Harron
Senior Director of Project Development
1625 Shattuck Avenue, Suite 270
Berkeley, CA 94709-1161

Soil and Water Data Responses to January 14, 2010 CEC Workshop Queries

For response to DR-S&W-218, provide fuller explanation of relationship of cut slopes to berms and how water will be managed to avoid headcutting. For the main channels, provide greater level of detail on drawings to indicate relationship of cut slopes to berms and channels. Provide section drawings that show gaps in berms to allow water passage from upslope areas.

DR#218 Supplemental---Soil and Water:

The issue of headcutting of channels upstream of the site will be precluded primarily by use of soil cement where existing and proposed channels enter into the primary offsite channels and by use of small (20 foot wide and 2.5 feet high) embankments placed upstream of the primary channel to direct existing drainage flows as well as future flows that may migrate into specific localized drainage inlets to the primary off-site drainage channels.

In essence, the small embankment is placed immediately upstream (5 feet away) from the upstream face of all perimeter channels that receive off site flows. This embankment runs the entire length of the perimeter channel. This embankment is then opened up at all locations where it is intercepted by off site ephemeral channels. The opening is constructed at the same current width as the existing ephemeral channel. The drainage path is then carried over the face and down the slope of the primary drainage in a defined "side slope" down-drain. Soil cement is placed within the ephemeral channel upstream of the embankment, through the opening in the embankment, along the full extent of the "side slope" down-drain, and out into the channel with an apron structure. Soil cement is also placed along the faces of the embankment on the upstream and downstream edges to preclude erosion and loss of embankment slope.

Additional details have been provided as part of this response that show this embankment barrier and the interception channels; how they operate, and how they are protected with soil cement, which in turn precludes head-cutting. This detail is shown on the detail sheets CD-021 to 024 of the revised plans.

The flow into the perimeter channels, the relationship of cut slopes to berms, and the openings in the berms, are all addressed by the above discussion as well as the additional details that are provided with this response.

Add 100-yr. water surface elevations on profiles for main channels (both collectors and conveyance).

The 100-year water surface profile has been added to the plans and is provided on Sheets CP-001 to CP-009 as part of this response.

Explain how erosion on sides of channel floors will be controlled.

The side slopes and bottom of the channels are constructed of on-site materials and they are not protected from erosion by any placement of rip-rap, stabilization fabric, or soil cement. The only locations where the channel is protected is at channel bends and at the drop structures where the bottom and sides are fully protected with soil cement. The primary control measure for the side slopes and the bottom is control of the velocity within the channel. This is accomplished by establishing a channel

slope that does not create erosive velocities. The channel slopes as currently design meet these design criteria.

Submit digital data sets for post-development drainage condition modeling.

Digital data for the hydraulic modeling was previously provided as part of the Data Responses. The FLO 2D modeling for post-development flows is provided on CD with this submittal.

**Blythe Solar Power Project
Docket No. 09-AFC-6**

Soil & Water Figures

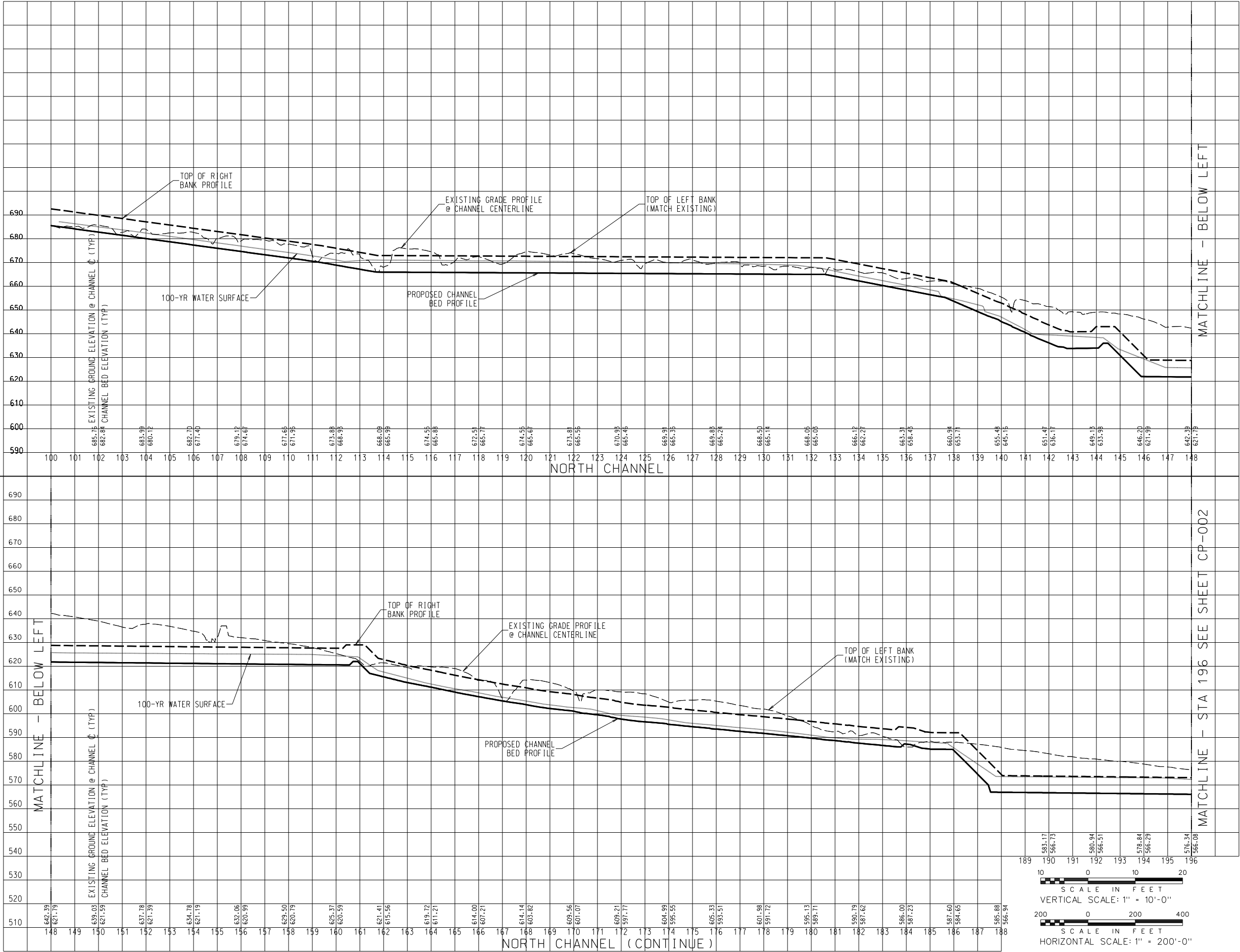
Channel Profiles – CP-001 – CP-009

Typical Details – CD-021

Typical Details and Drainage Sections –CD-022

Drainage Diffuser Detail and Cross Section – CD-023

Interception Channels at Embankment – CD-024



- PRELIMINARY -
NOT FOR CONSTRUCTION

B	ADDED 100-YR WATER SURFACE	SJM		01-25-10
A	ISSUED FOR REVIEW	FJS		12-31-09
REV	DESCRIPTION	DWN	CHK	APP

KIEWIT/MAN SOLAR MILLENNIUM

240 MW SOLAR ENERGY CENTER



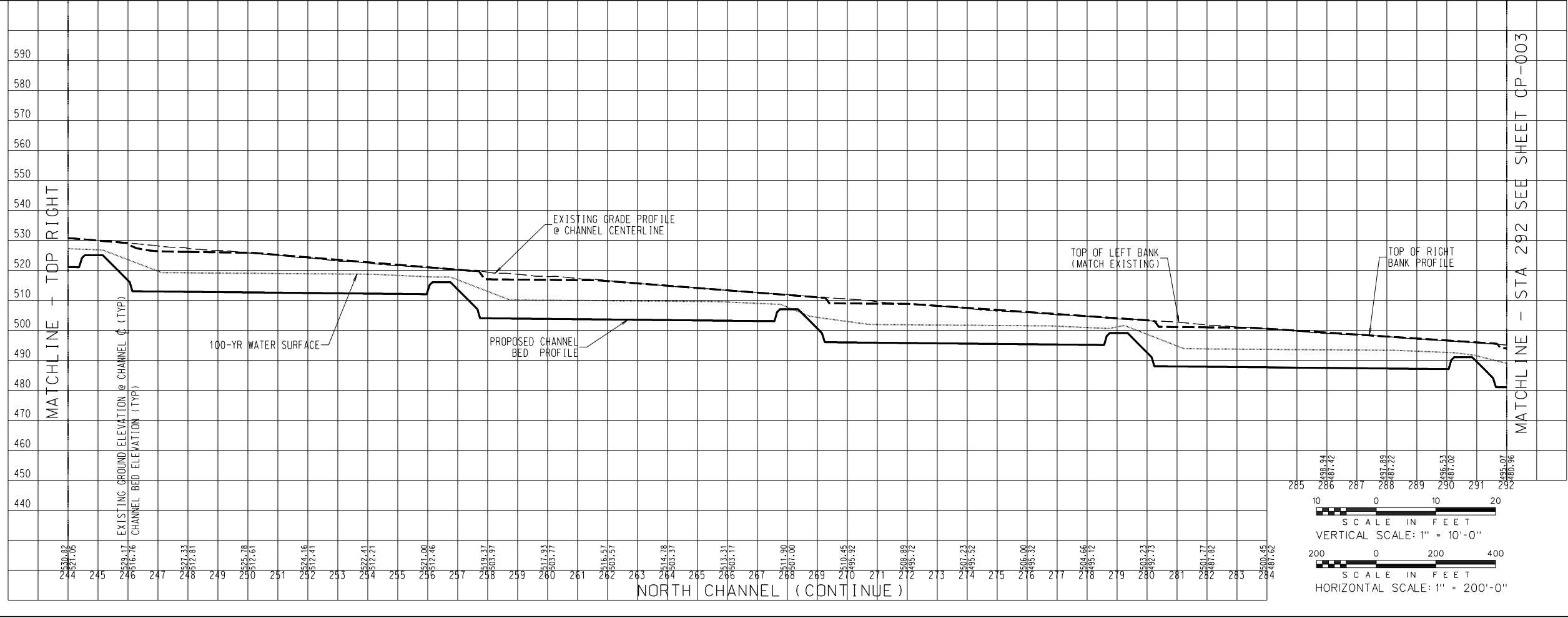
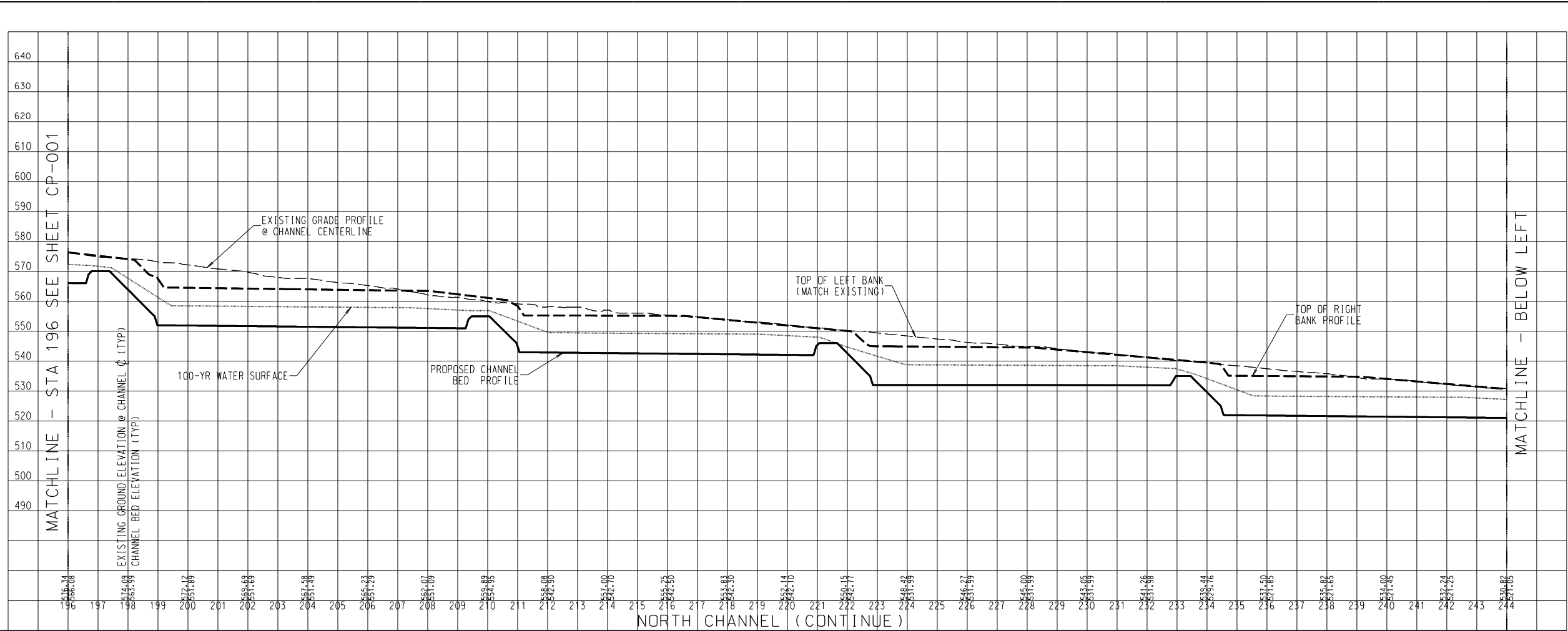
Kiewit Power
9401 Renner Boulevard
Lenexa, Kansas 66219

CHANNEL PROFILES

DESIGNED	by	date
DRAWN	SJM	12-29-09
CHECKED	FJS	12-29-09
APPROVED		

DRAWING NUMBER

2008-045-CP-001



- PRELIMINARY -
NOT FOR CONSTRUCTION

B	ADDED 100-YR WATER SURFACE	SJM			01-25-10
A	ISSUED FOR REVIEW	FJS			12-31-09
REV	DESCRIPTION	DWN	CHK	APP	DATE

KIEWIT/MAN SOLAR MILLENNIUM

240 MW SOLAR ENERGY CENTER



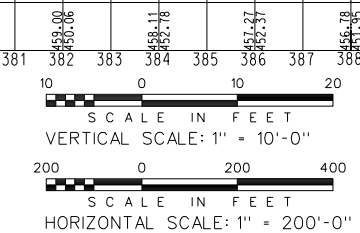
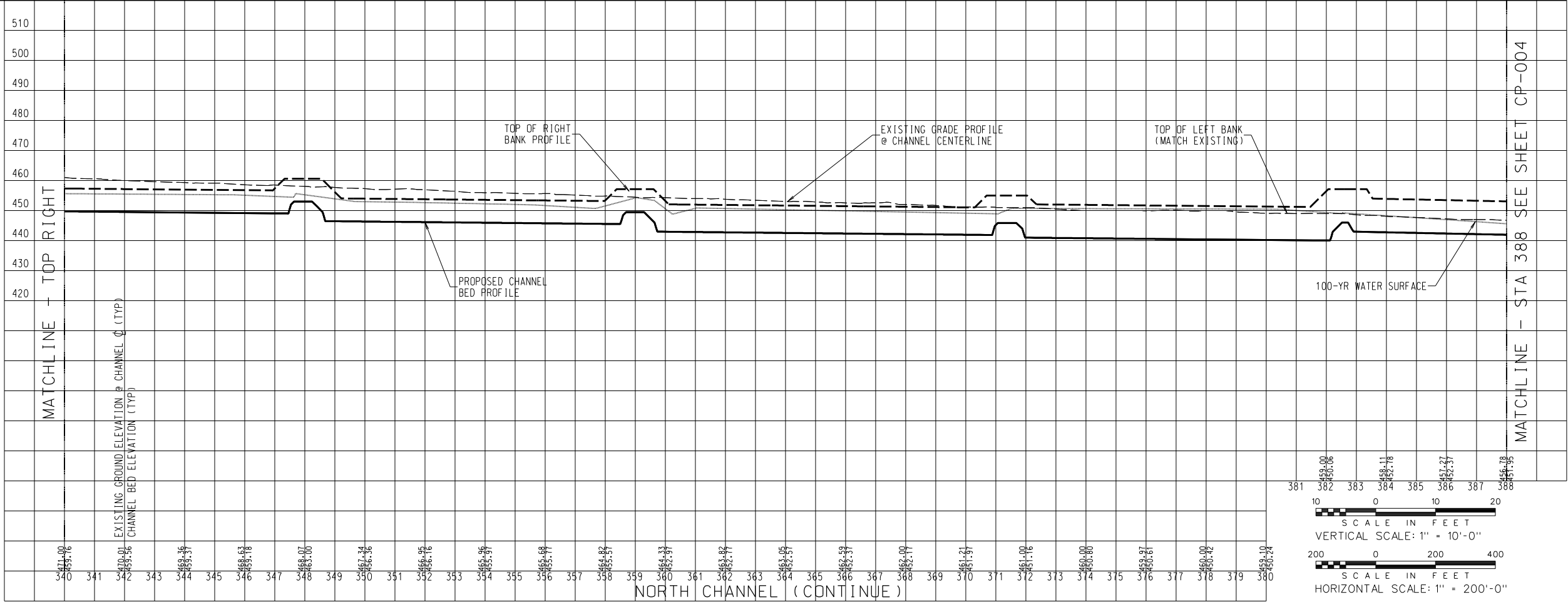
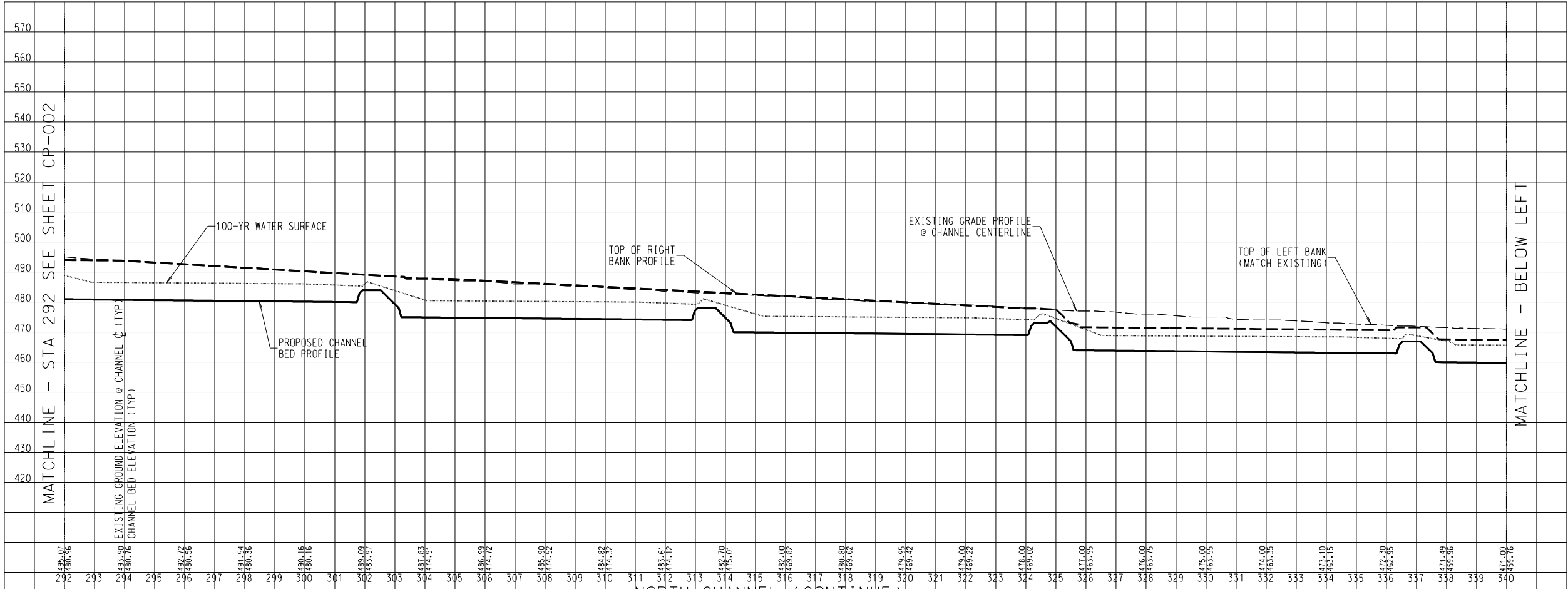
Kiewit Power
9401 Renner Boulevard
Lenexa, Kansas 66219

CHANNEL PROFILES

DESIGNED by SJM date 12-29-09
DRAWN FJS date 12-29-09
CHECKED
APPROVED

DRAWING NUMBER

2008-045-CP-002



- PRELIMINARY -
NOT FOR CONSTRUCTION

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A	ISSUED FOR REVIEW	FJS			12-31-09
REV	DESCRIPTION	DWN	CHK	APP	DATE

KIEWIT/MAN SOLAR MILLENNIUM

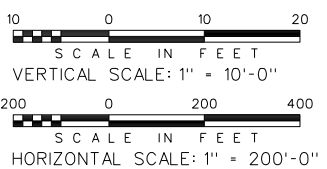
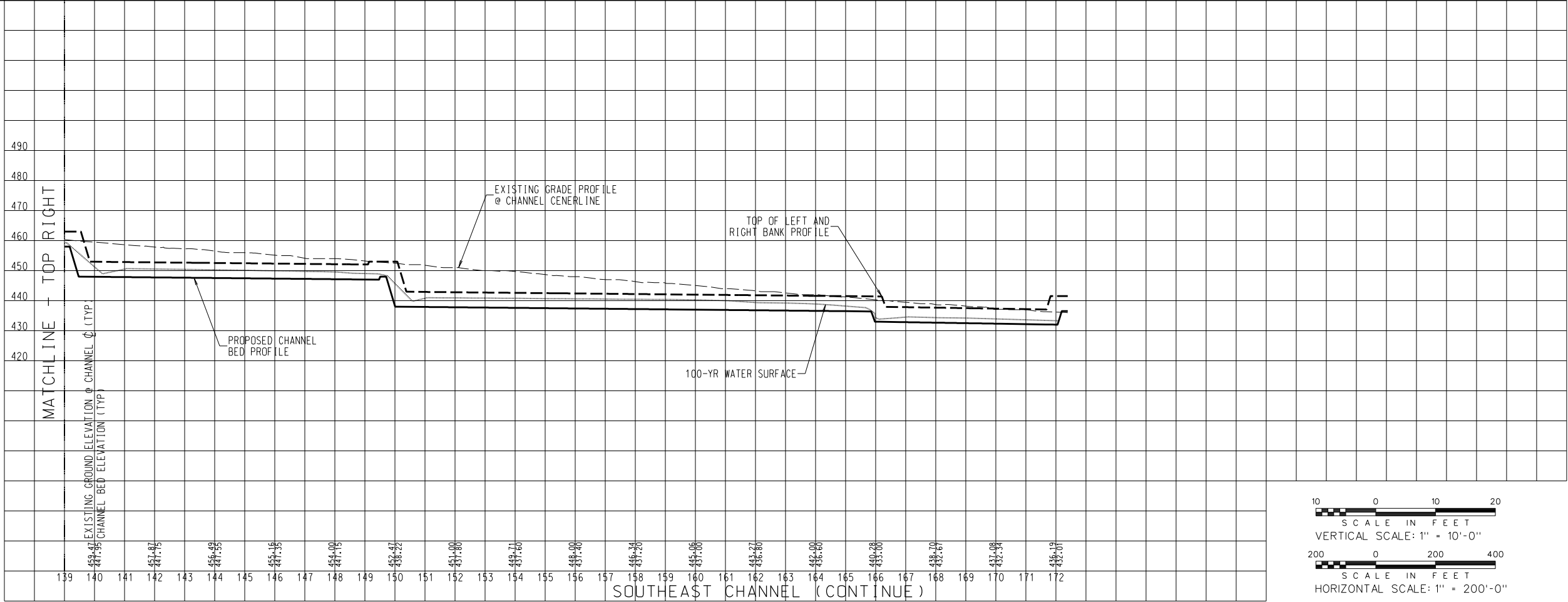
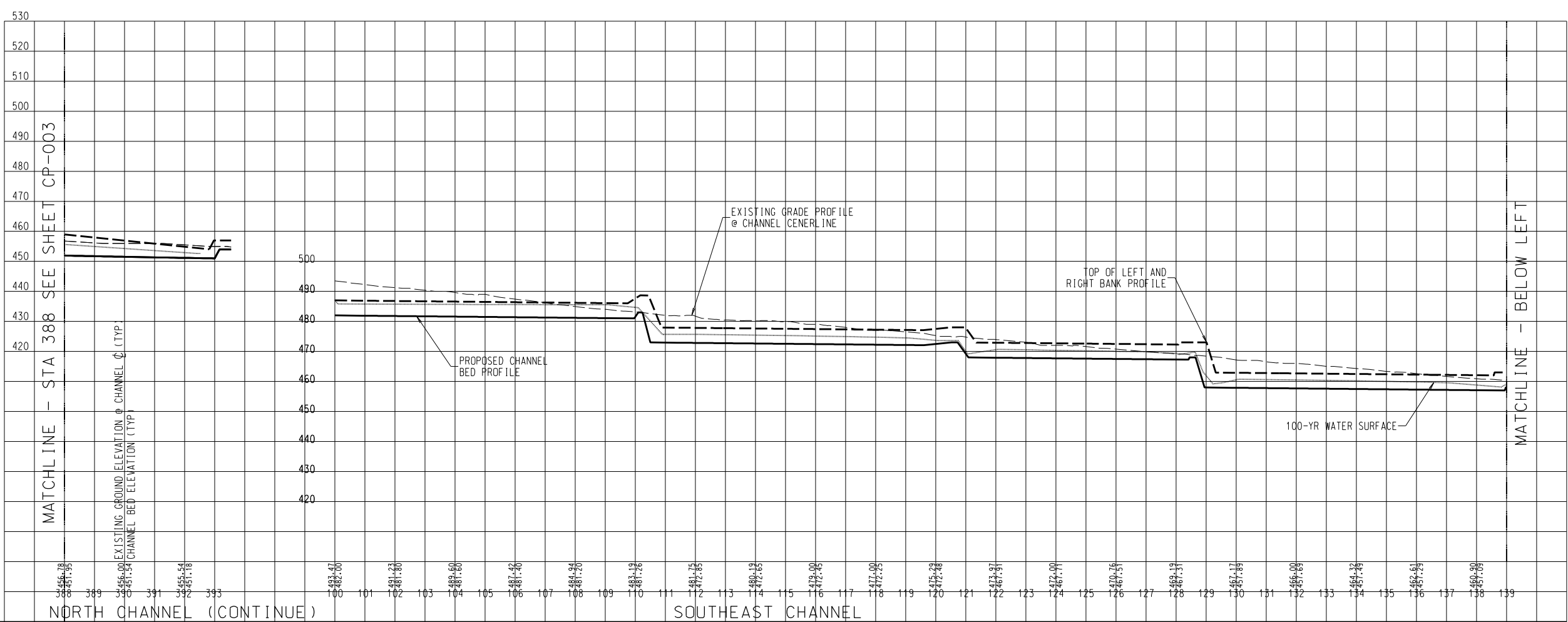
240 MW SOLAR ENERGY CENTER



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Lenexa, Kansas 66219

CHANNEL PROFILES

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CHECKED	FJS	12-29-09	
APPROVED			



- PRELIMINARY -
NOT FOR CONSTRUCTION

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REV	DESCRIPTION	DWN	CHK	APP	DATE

KIEWIT/MAN SOLAR MILLENNIUM

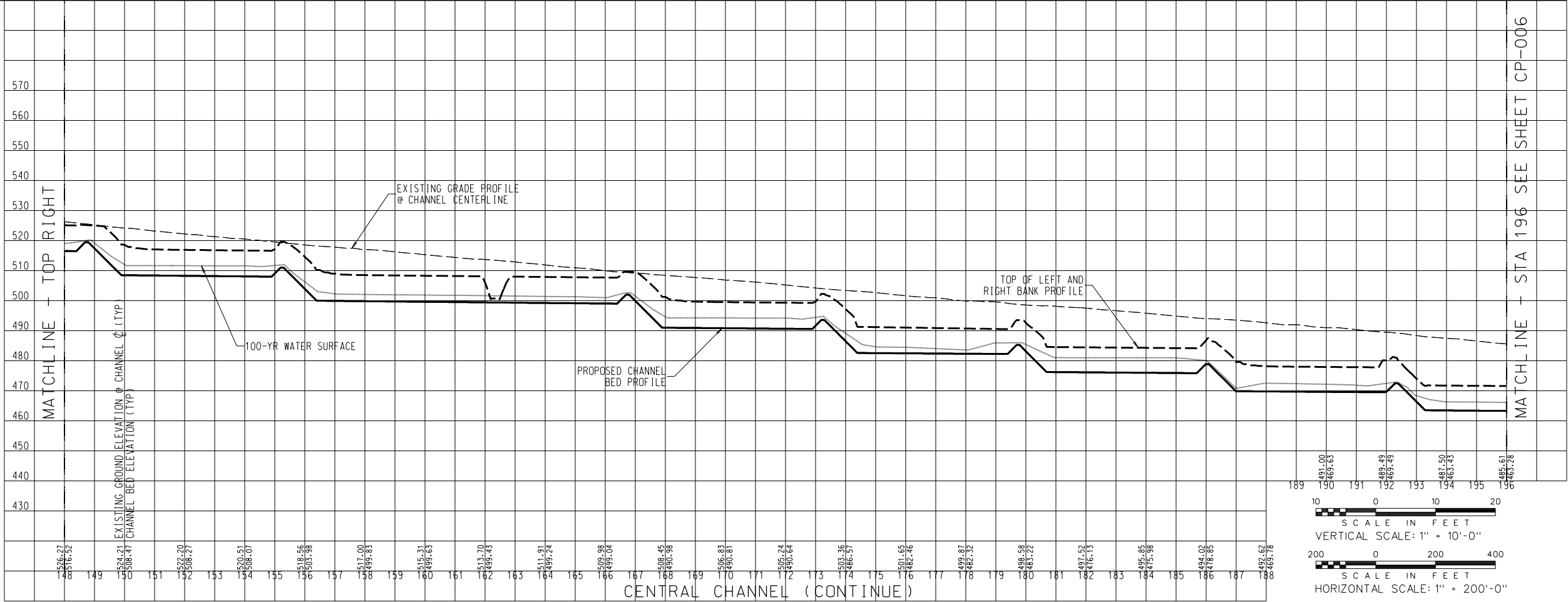
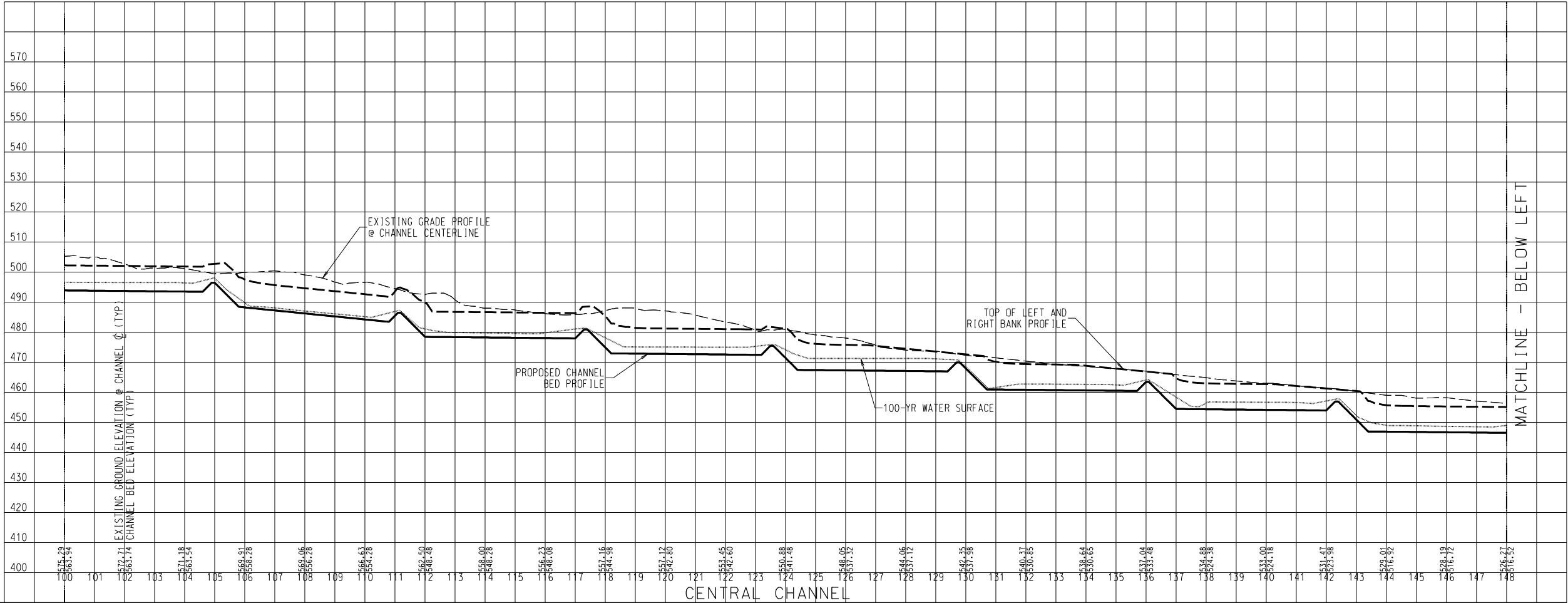
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CHANNEL PROFILES

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APPROVED			



- PRELIMINARY -
NOT FOR CONSTRUCTION

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A	ISSUED FOR REVIEW	FJS			12-31-09
REV	DESCRIPTION	DWN	CHK	APP	DATE

KIEWIT/MAN SOLAR MILLENNIUM

240 MW SOLAR ENERGY CENTER



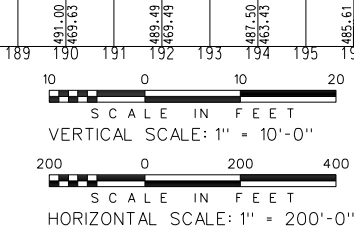
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Lenexa, Kansas 66219

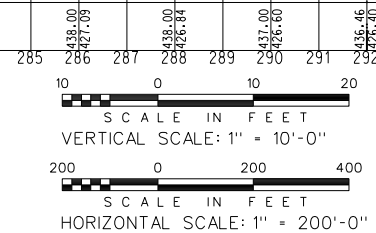
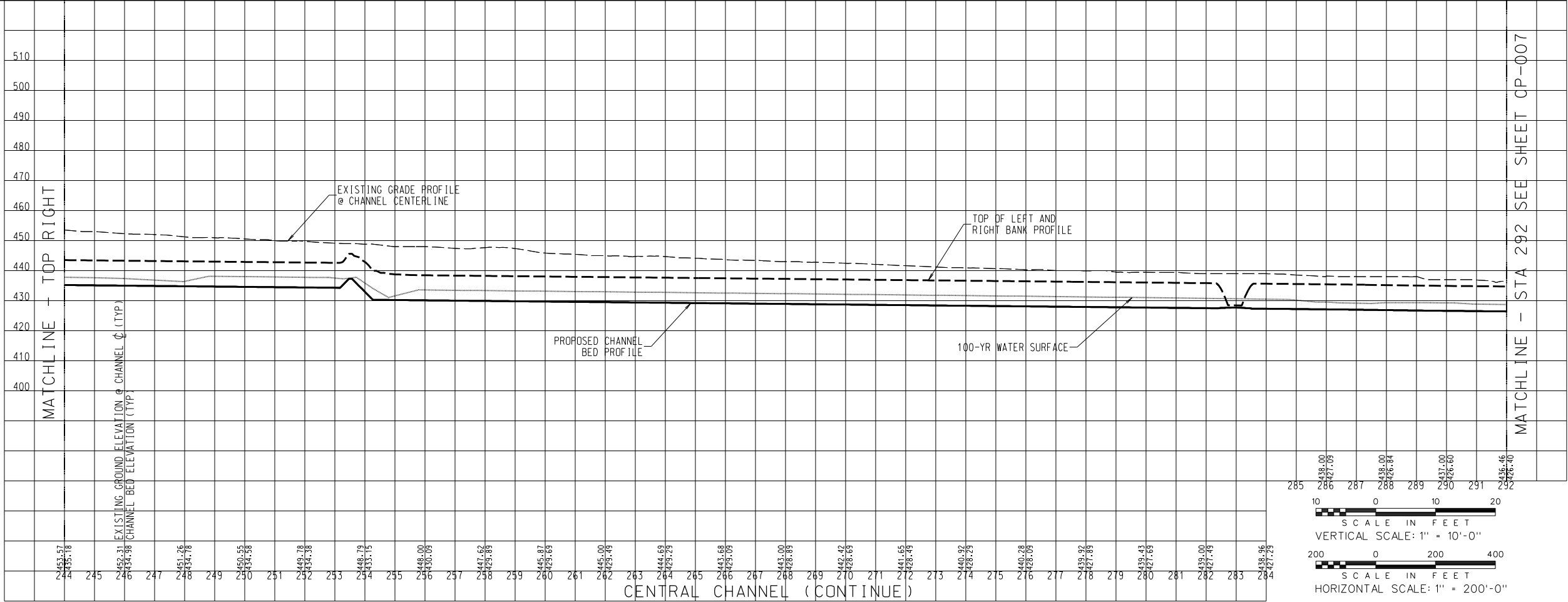
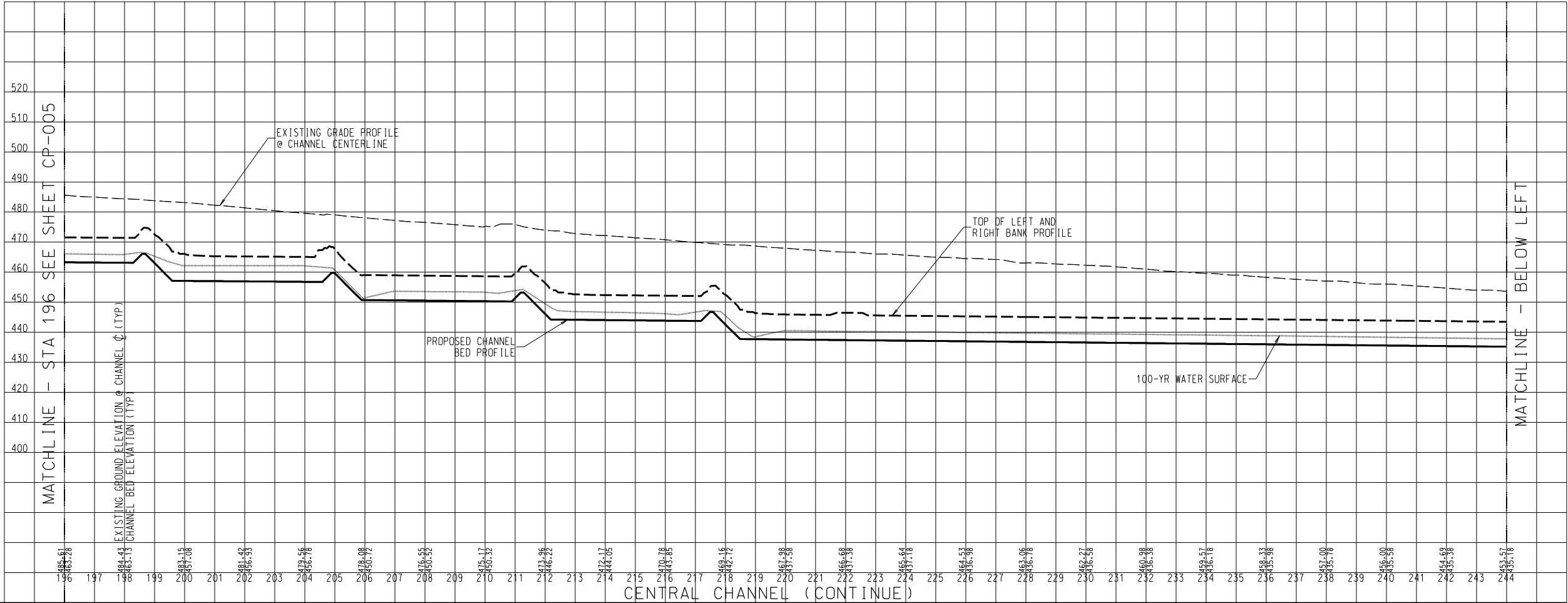
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APPROVED		

DRAWING NUMBER

2008-045-CP-005





- PRELIMINARY -
NOT FOR CONSTRUCTION

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REV	DESCRIPTION	DWN	CHK	APP	DATE

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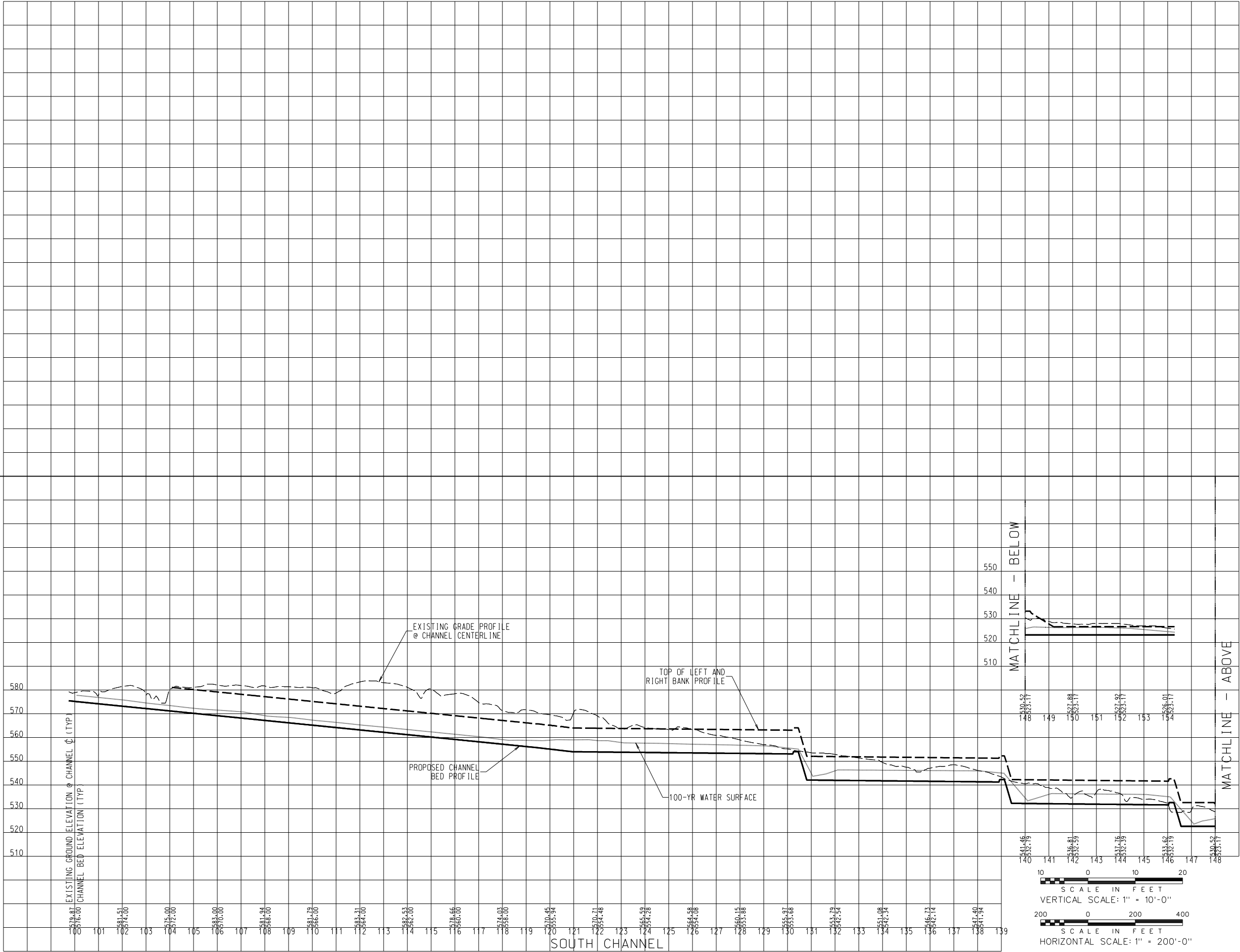
240 MW SOLAR ENERGY CENTER



Kiewit Power
9401 Renner Boulevard
Lenexa, Kansas 66219

CHANNEL PROFILES

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APPROVED			



- PRELIMINARY -
NOT FOR CONSTRUCTION

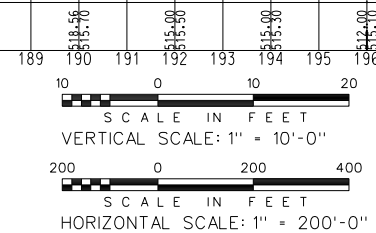
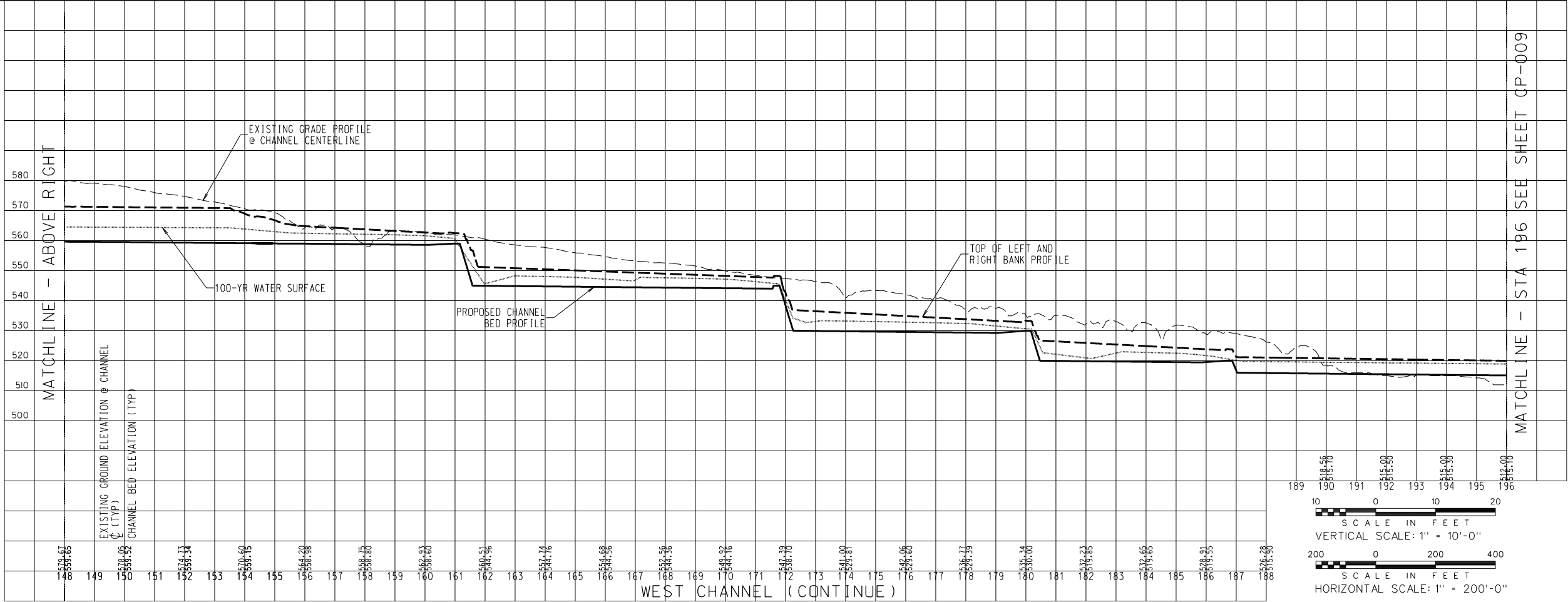
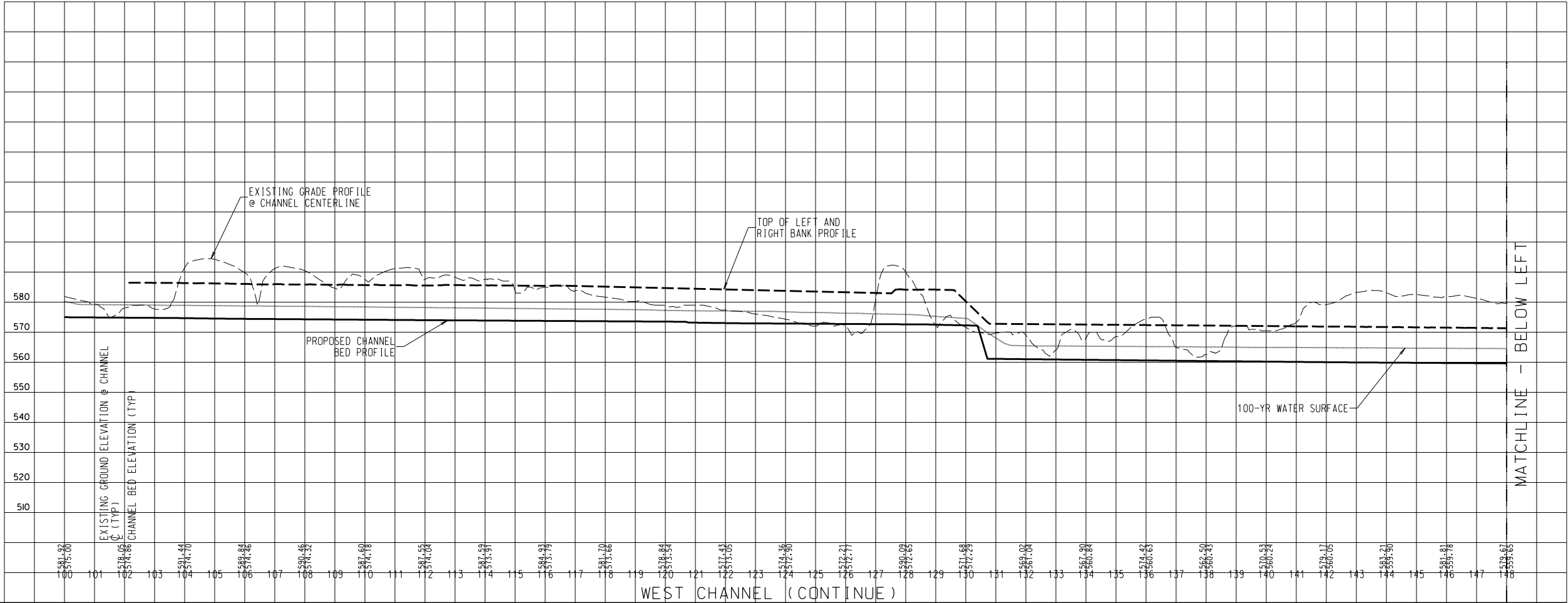
KIEWIT/MAN SOLAR MILLENNIUM

240 MW SOLAR ENERGY CENTER



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Lenexa, Kansas 66219

CHANNEL PROFILES



- PRELIMINARY -
NOT FOR CONSTRUCTION

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A	ISSUED FOR REVIEW	FJS			12-31-09
REV	DESCRIPTION	DWN	CHK	APP	DATE

KIEWIT/MAN SOLAR MILLENNIUM

240 MW SOLAR ENERGY CENTER

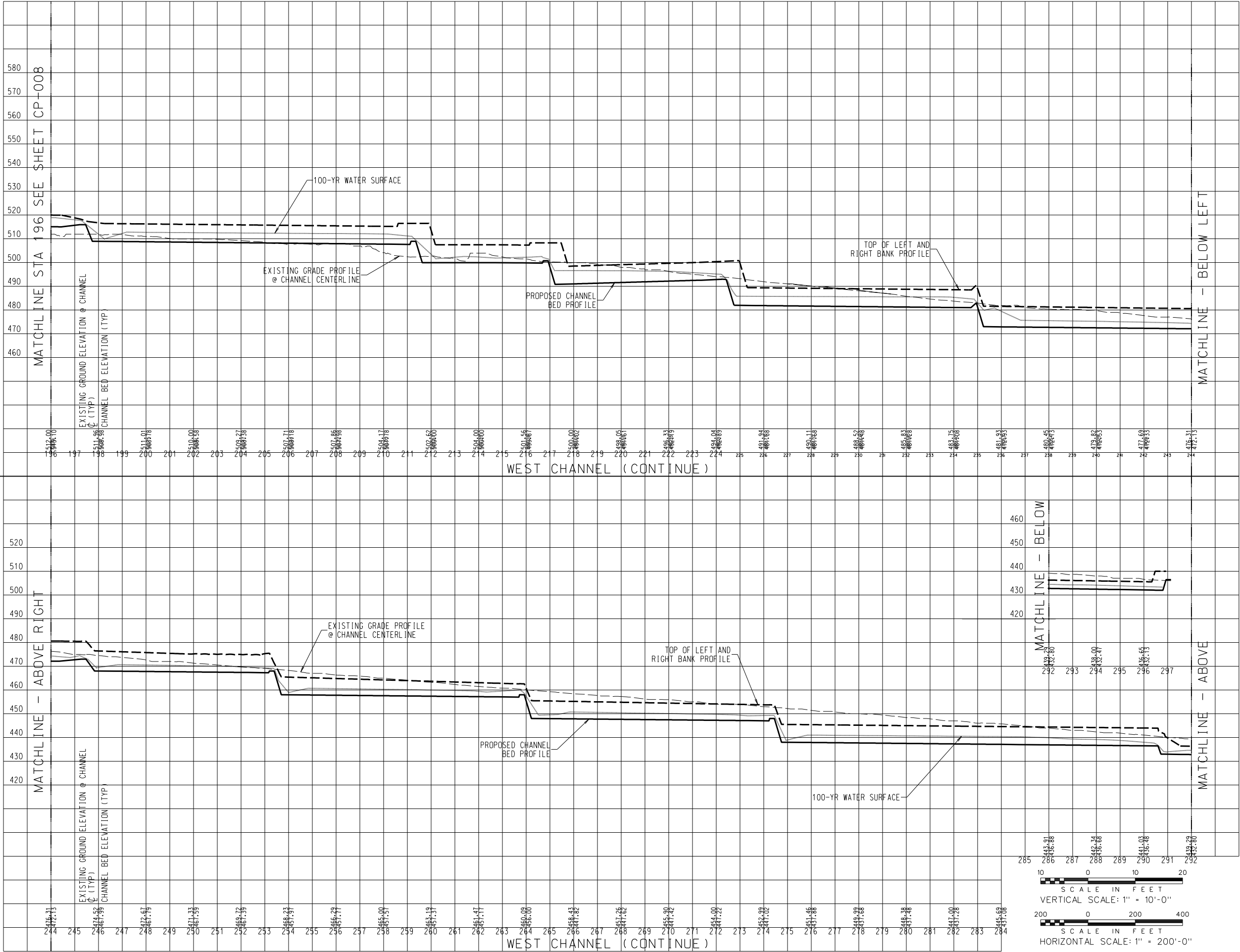


Kiewit Power
9401 Renner Boulevard
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CHANNEL PROFILES

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APPROVED		

DRAWING NUMBER
2008-045-CP-008



- PRELIMINARY -
NOT FOR CONSTRUCTION

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KIEWIT/MAN SOLAR MILLENNIUM

240 MW SOLAR ENERGY CENTER



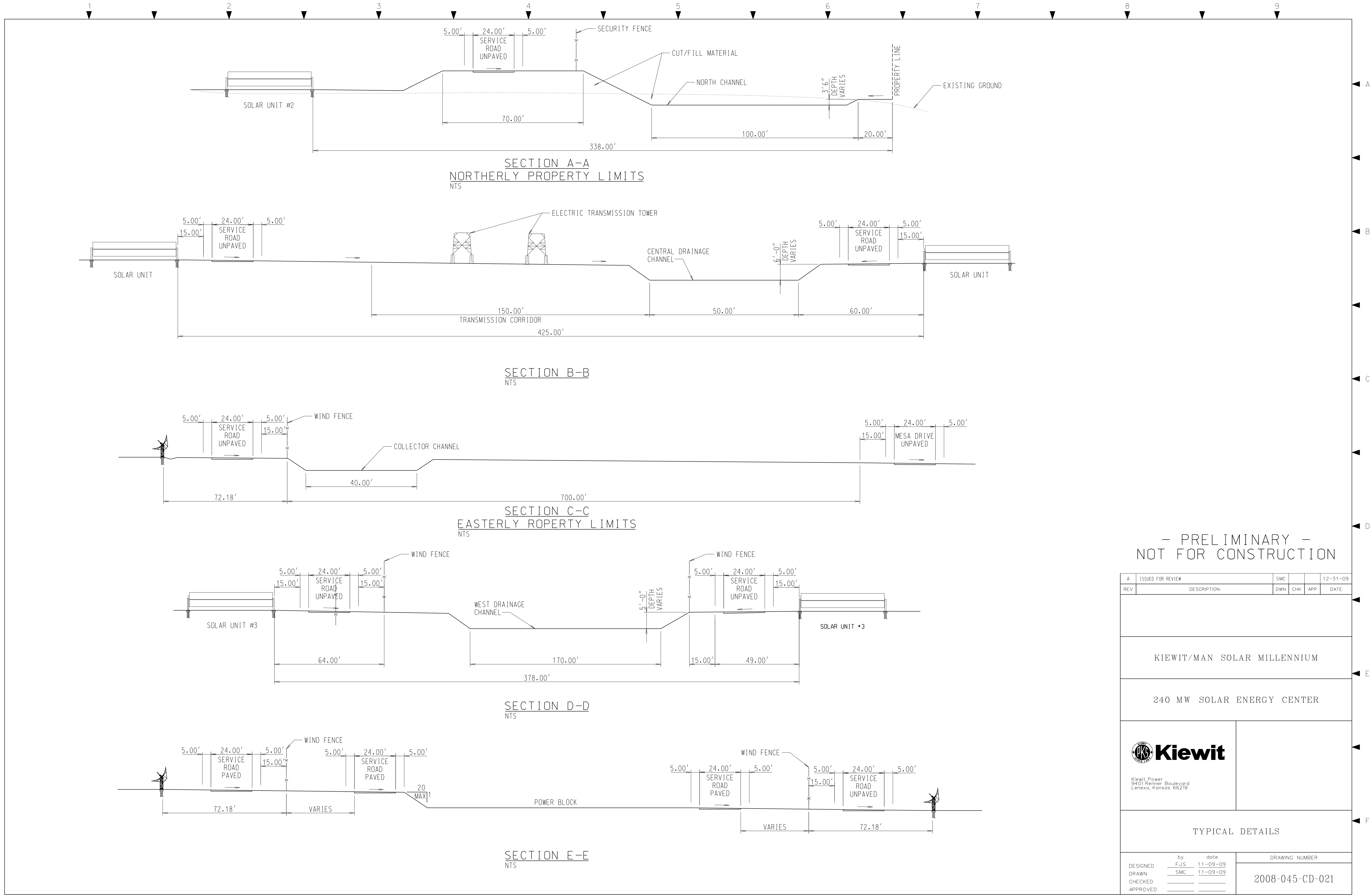
Kiewit Power
9401 Renner Boulevard
Lenexa, Kansas 66219

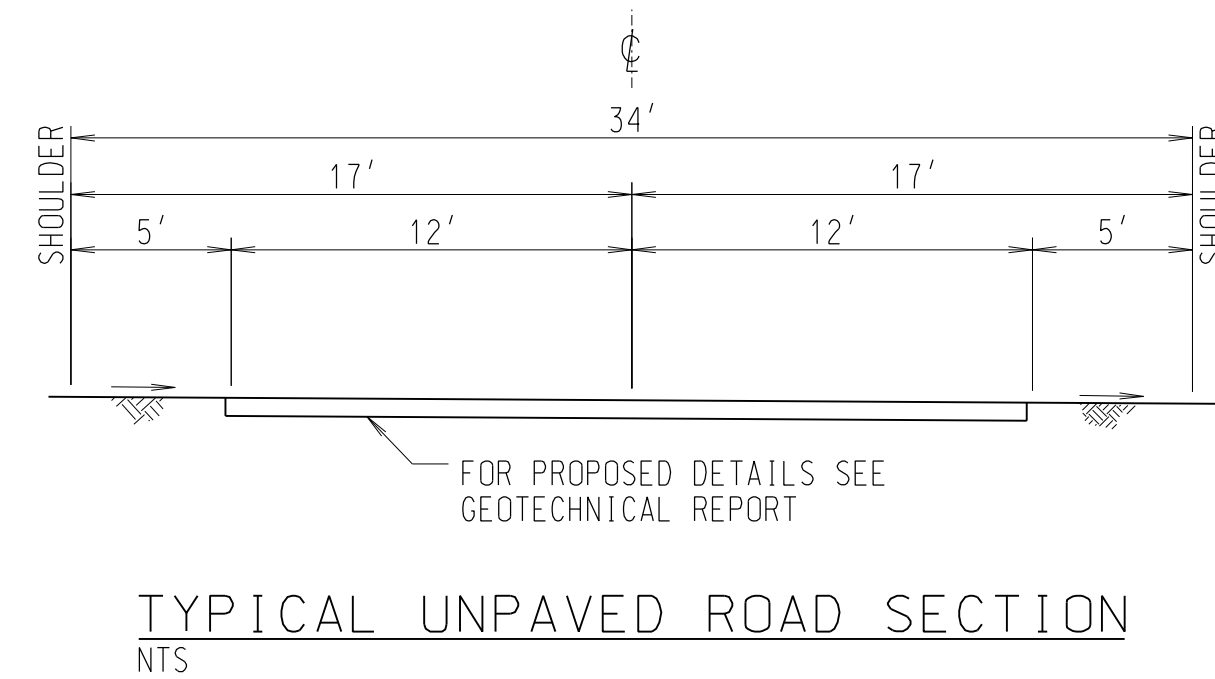
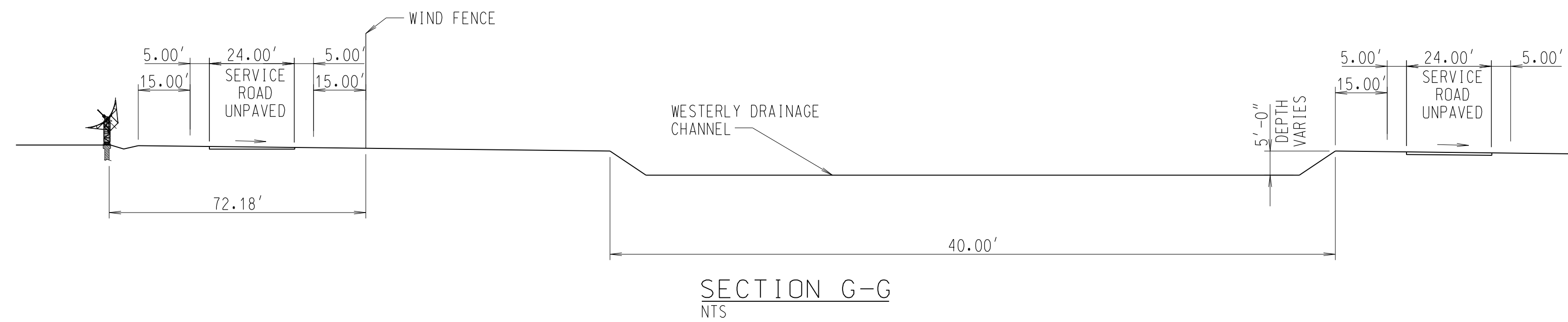
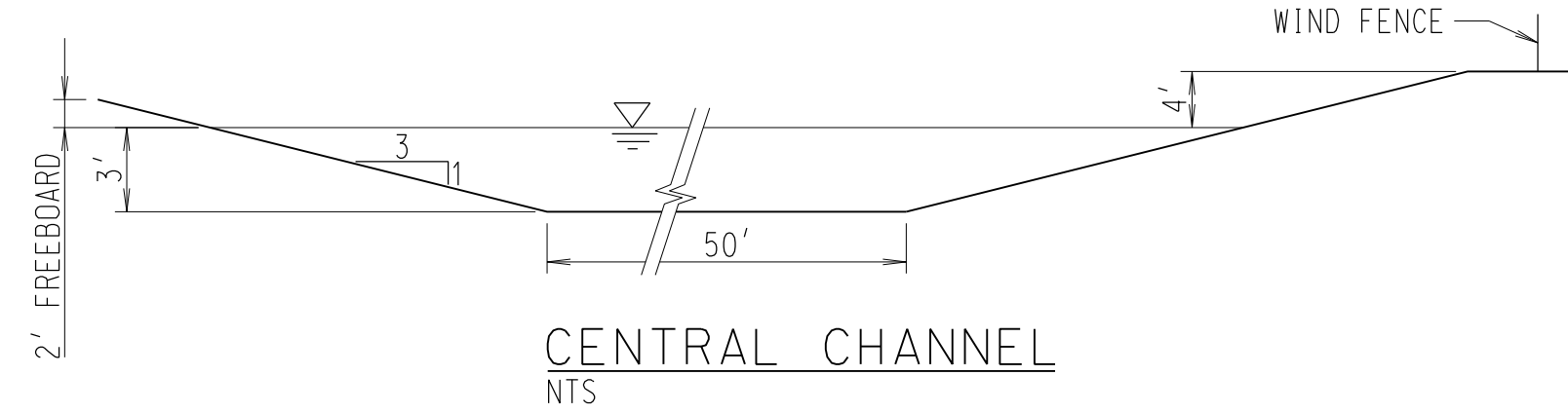
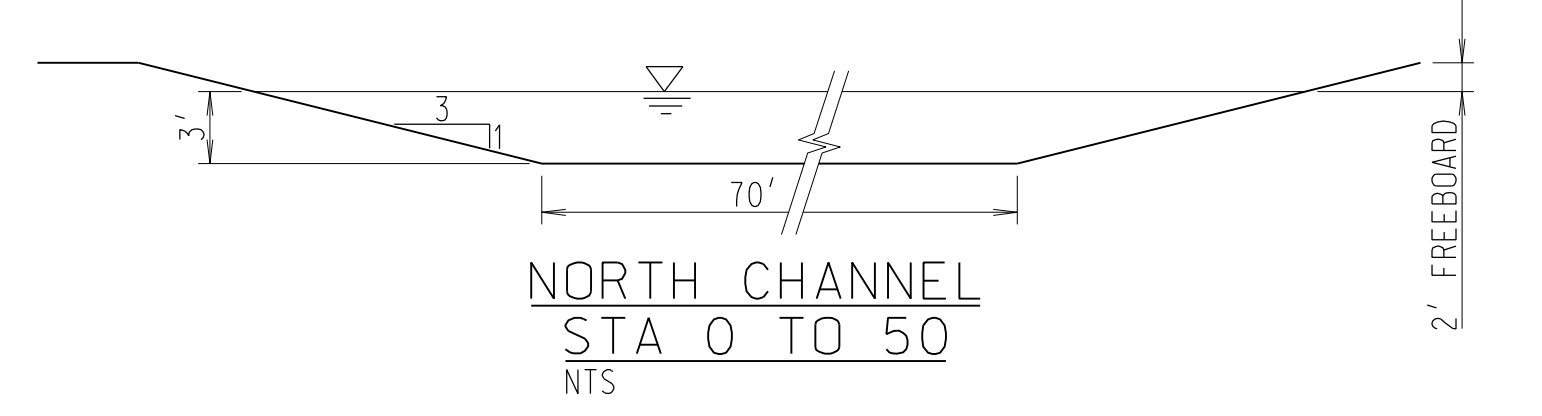
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DESIGNED	by	date
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APPROVED		


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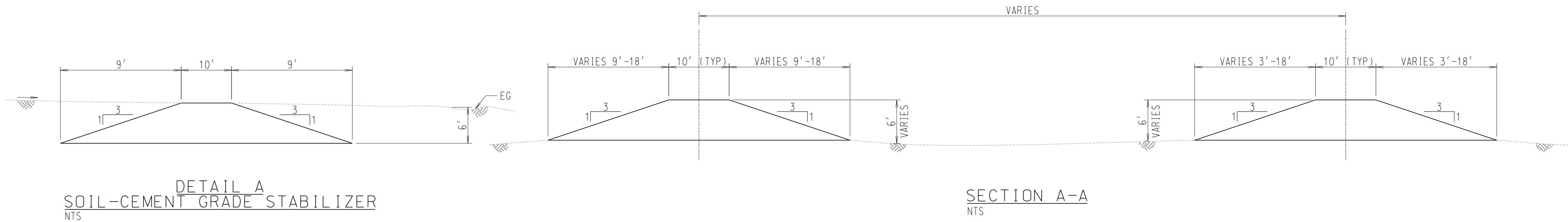
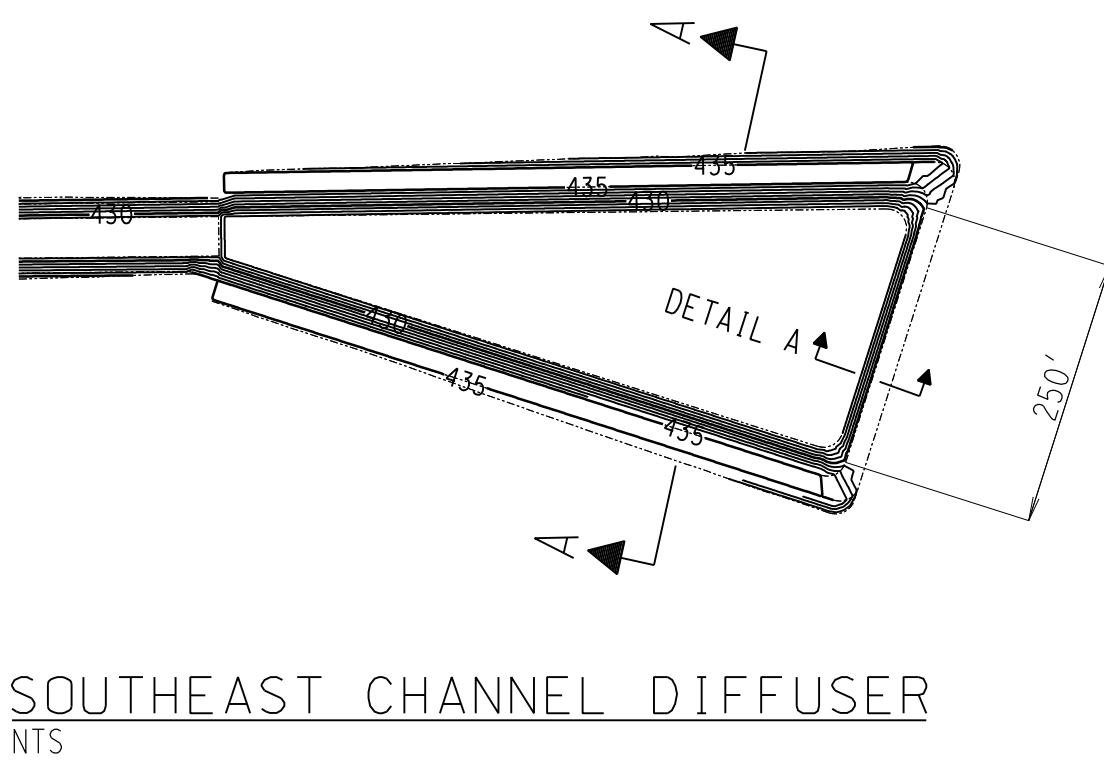
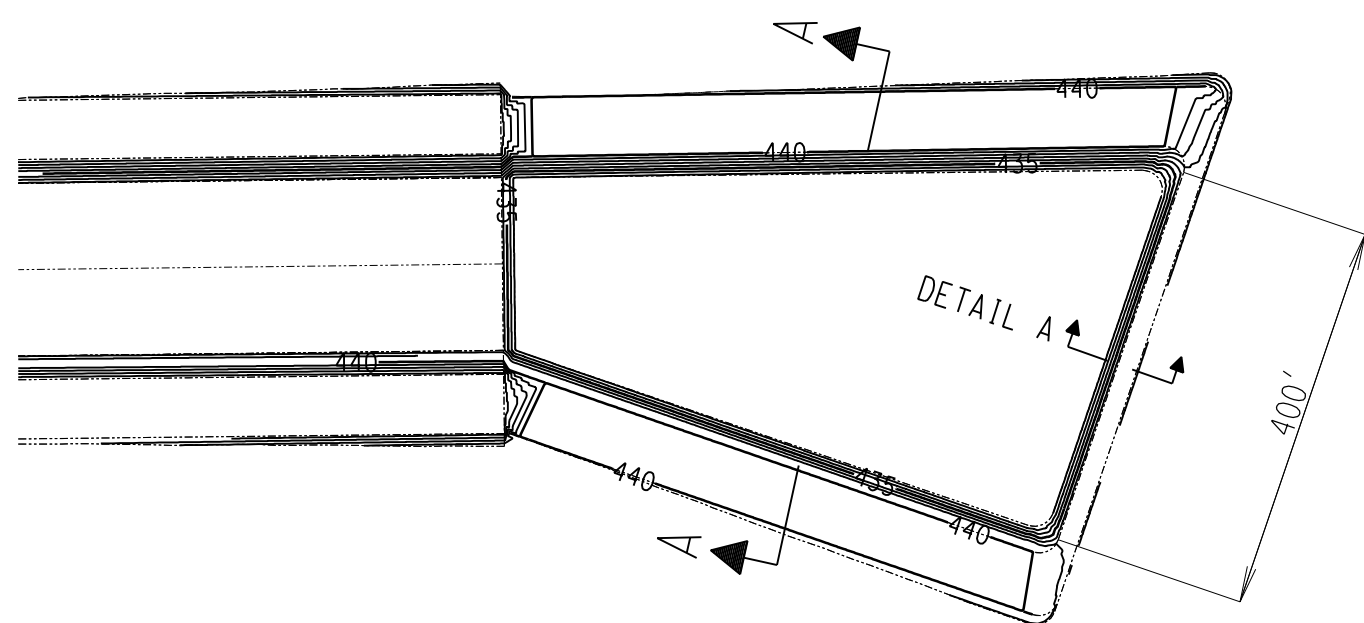
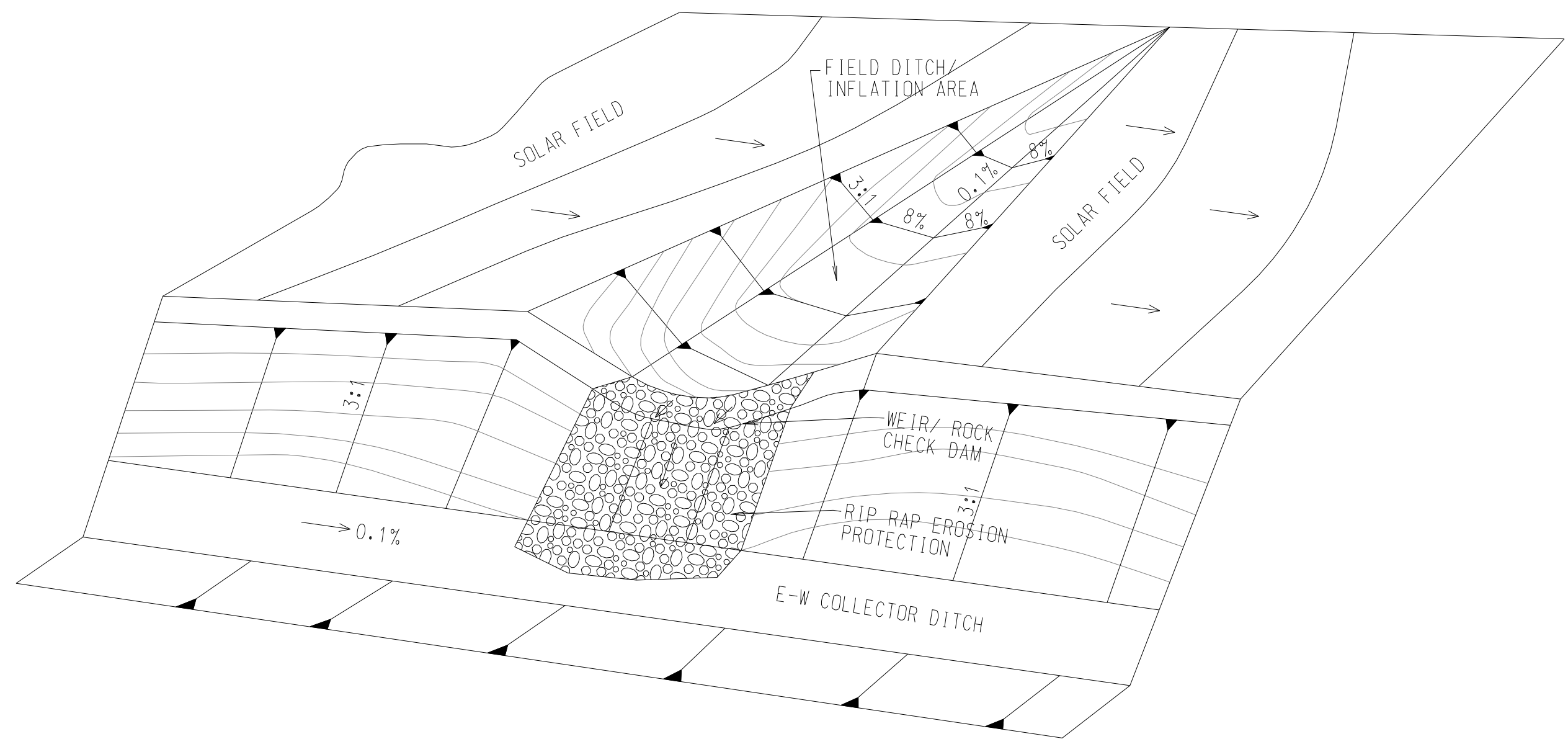
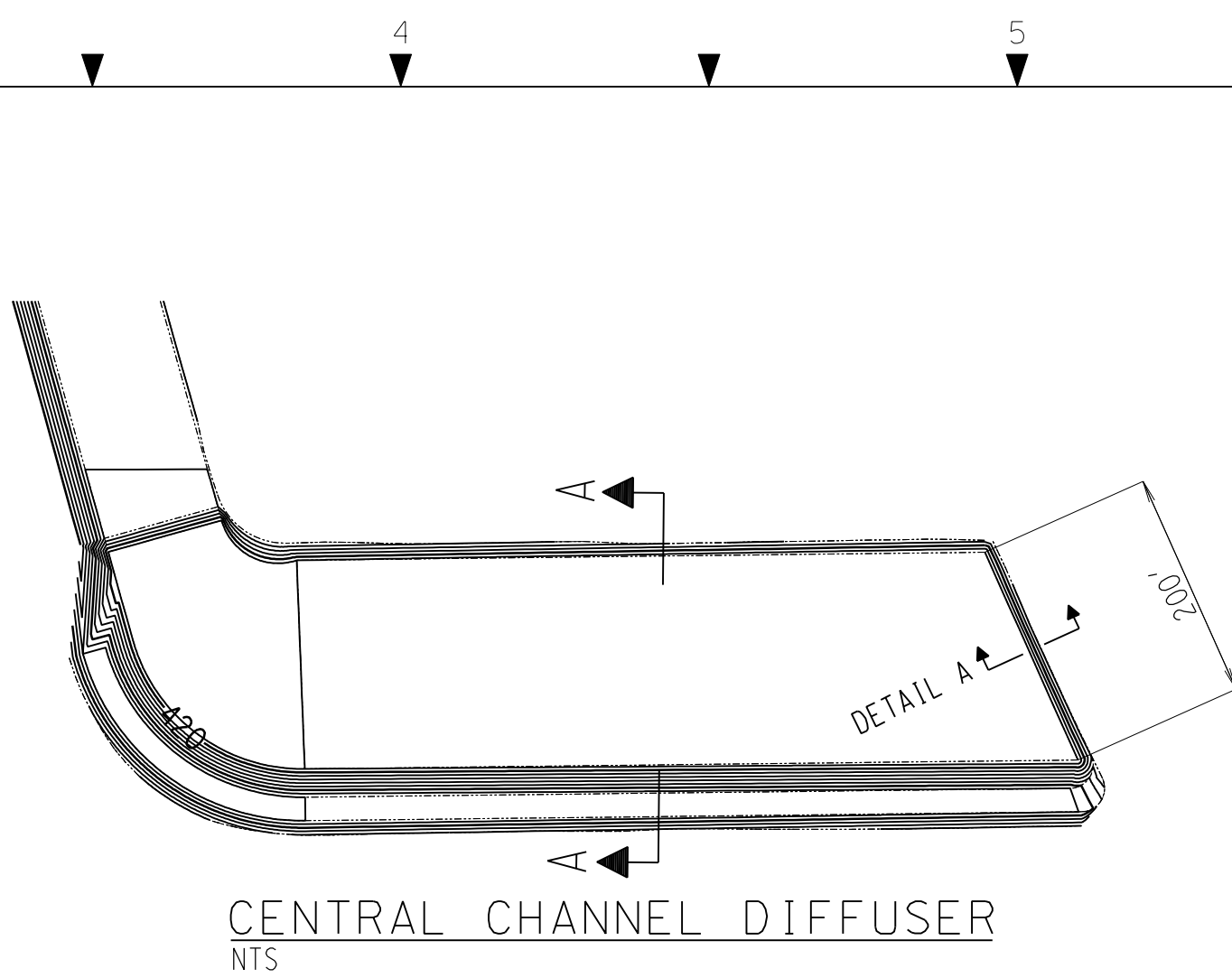
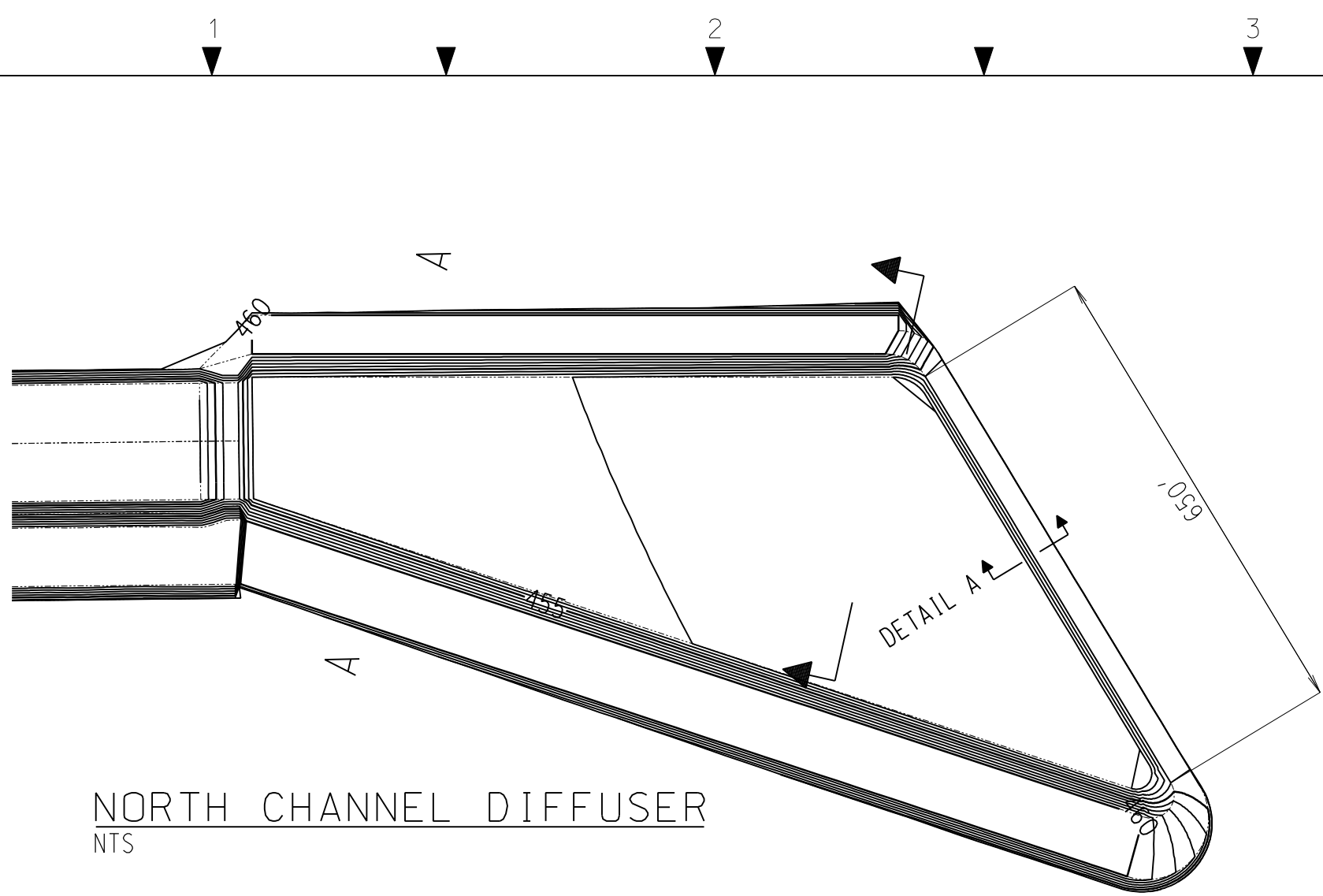
2008-045-CP-009






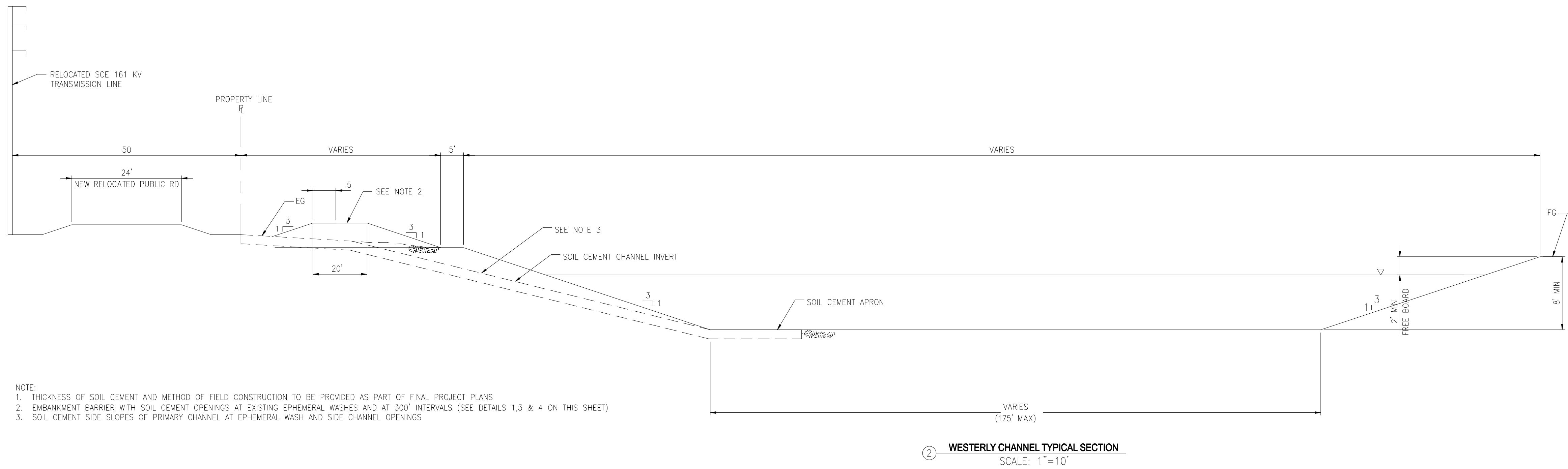
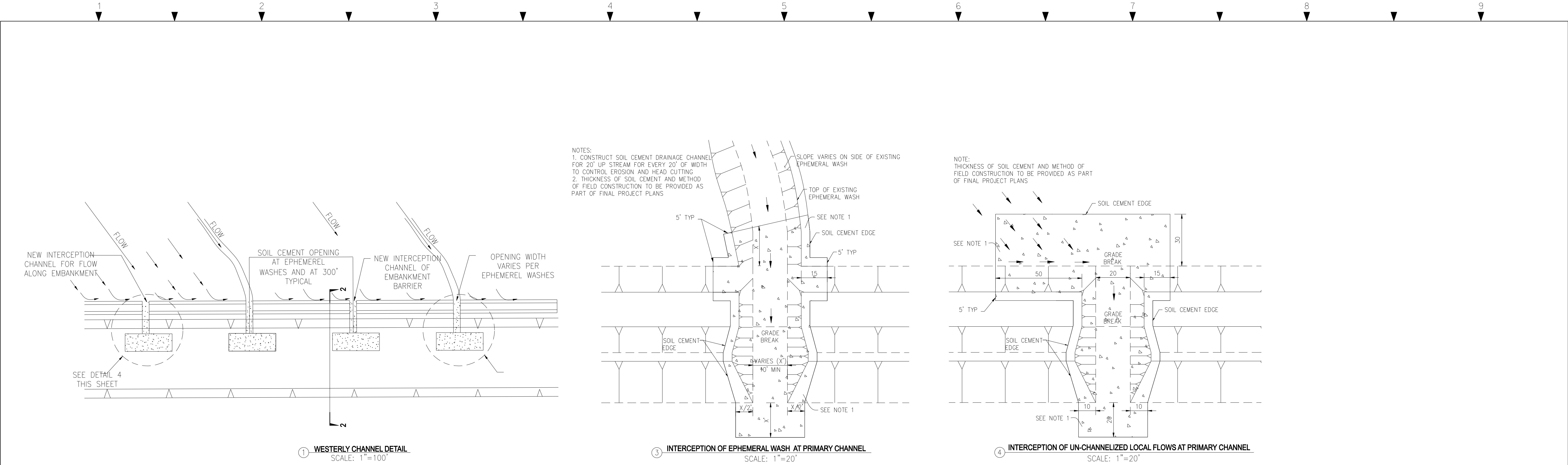
- PRELIMINARY -
NOT FOR CONSTRUCTION

ISSUED FOR REVIEW		SMC		12-31-09
REV	DESCRIPTION	DWN	CHK	APP DATE
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<div style="text-align: center;"> <h2>240 MW SOLAR ENERGY CENTER</h2> </div>				
<div style="text-align: center;"> <h2>TYPICAL DETAILS AND DRAINAGE SECTIONS</h2> </div>				
DESIGNED <u>by</u> <u>date</u> DRAWN <u>FJS</u> <u>11-09-09</u> <u>SMC</u> <u>11-09-09</u> CHECKED _____ APPROVED _____		<div style="text-align: center;"> <h3>DRAWING NUMBER</h3> <h1>2008-045-CD-022</h1> </div>		



- PRELIMINARY -
NOT FOR CONSTRUCTION

	ISSUED FOR REVIEW	SMC		12-31-09	
REV	DESCRIPTION	DWN	CHK	APP	DATE
KIEWIT/MAN SOLAR MILLENNIUM					
240 MW SOLAR ENERGY CENTER					
					
Kiewit Power 9401 Renner Boulevard Lenexa, Kansas 66219					
DRAINAGE DIFFUSER DETAIL AND CROSS SECTION					
DESIGNED	by	date	DRAWING NUMBER		
DRAWN	FJS	12-14-09			
CHECKED	SMC	12-14-09			
APPROVED			2008-045-CD-023		



- PRELIMINARY -
NOT FOR CONSTRUCTION

A	ISSUED FOR REVIEW	SMC			01-28-10
REV	DESCRIPTION	DWN	CHK	APP	DATE

KIEWIT/MAN SOLAR MILLENNIUM

240 MW SOLAR ENERGY CENTER



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DRAWING CD-024

INTERCEPTION CHANNELS AT EMBANKMENT

DESIGNED	by	date
DRAWN	BAS	01-28-10
CHECKED	SMC	01-28-10
APPROVED		

DRAWING NUMBER
SKC-2008045-CD-012810-1

**STATE OF CALIFORNIA
ENERGY RESOURCES CONSERVATION AND DEVELOPMENT COMMISSION**

In the Matter of:
APPLICATION FOR CERTIFICATION
for the *BLYTHE SOLAR POWER PROJECT*

Docket No. 09-AFC-6
PROOF OF SERVICE
(Revised 1/26/2010)

APPLICANT

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DECLARATION OF SERVICE

I, Carl Lindner, declare that on, February 11, 2010, I served and filed copies of the attached Blythe Solar Power Project Data Response Materials:

Data Responses to January 14, 2010 CEC Workshop Queries
Technical Areas: Soil & Water Resources (supplemental data for DR-S&W-218)

The original document, filed with the Docket Unit, is accompanied by a copy of the most recent Proof of Service list, located on the web page for this project at:

[\[http://www.energy.ca.gov/sitingcases/solar_millennium_blythe\]](http://www.energy.ca.gov/sitingcases/solar_millennium_blythe).

The document has been sent to the other parties in this proceeding (as shown on the Proof of Service list) and to the Commission's Docket Unit, in the following manner:

(Check all that Apply)

For service to all other parties:

_____ sent electronically to all email addresses on the Proof of Service list;

 X by personal delivery or by overnight delivery service or depositing in the United States mail at Camarillo, California with postage or fees thereon fully prepaid and addressed as provided on the Proof of Service list above to those addresses **NOT** marked "email preferred."

AND

For filing with the Energy Commission:

 X sending an original paper copy and one electronic copy, mailed and emailed respectively, to the address below (preferred method);

OR

_____ depositing in the mail an original and 12 paper copies, along with 13 CDs, as follows:

CALIFORNIA ENERGY COMMISSION

Attn: Docket No. 09-AFC-6

1516 Ninth Street, MS-4

Sacramento, CA 95814-5512

docket@energy.state.ca.us

I declare under penalty of perjury that the foregoing is true and correct.

