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Letter of Transmittal

DOCKET	
09-AFC-8	
DATE	FEB 02 2010
RECD.	FEB 04 2010

Date: February 1, 2010

To: California Energy Commission
Attention: Docket No. **09-AFC-8**
1516 Ninth Street, MS-4
Sacramento, CA 95814-5512

From: Michele Scott
WorleyParsons
2330 East Bidwell, Suite 150
Folsom, CA 95630
(916) 817-3940

Dear Sir or Madam,

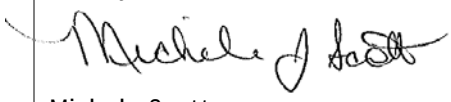
Pursuant to the provisions of Title 20, California Code of Regulation, WorleyParsons, consultant to Genesis Solar, LLC, hereby submits the Genesis Solar Energy Project Draft Channel Maintenance Plan. The Genesis Solar Energy Project is a 250 megawatt solar electric generating facility to be located between the community of Desert Center and the city of Blythe in eastern Riverside County, California.

This report is submitted as a supplementary report and accompanying data to the Genesis Solar Energy Project Application for Certification and Genesis Solar Energy Project Application for Certification Data Requests, Sets 1A and 1B. A hard copy and electronic copy (CD) are included herein.

Please feel free to contact me with any questions or concerns at (916) 817-3940.

Sincerely,

WorleyParsons



Michele Scott
Senior Compliance Manager

BEFORE THE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT COMMISSION OF THE STATE OF CALIFORNIA
1516 NINTH STREET, SACRAMENTO, CA 95814
1-800-822-6228 – WWW.ENERGY.CA.GOV

APPLICATION FOR CERTIFICATION FOR THE *GENESIS SOLAR ENERGY PROJECT*

Docket No. 09-AFC-8

PROOF OF SERVICE
(Revised 1/04/10)

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*indicates change

DECLARATION OF SERVICE

I, Michele Scott, declare that on February 1, 2010, I served and filed copies of the attached Genesis Solar Energy Project Draft Channel Maintenance Plan, dated January, 2010. This document is being submitted by the applicant, Genesis Solar LLC. 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://ww.energy.ca.gov/sitingcases/genesis_solar].

The documents have been sent to both 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:

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

__x__ by personal delivery or by depositing in the United States mail at Sacramento, California with first-class postage 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 8 paper copies, as follows:

CALIFORNIA ENERGY COMMISSION
Attn: Docket No. 09-AFC-8
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.

Original Signed By:
Michele Scott

GENESIS SOLAR ENERGY PROJECT

DRAFT CHANNEL MAINTENANCE PLAN

Submitted to:

California Energy Commission

Submitted by:

Genesis Solar, LLC

With technical assistance from:

WorleyParsons Group, Inc.

January 2010

DRAFT

Prepared By:

_____

Janine Forrest Date

Reviewed By:

Bob Anders, California Registered Professional Engineer, as an employee of WorleyParsons, with expertise in hydrology, has reviewed the report with the title “Draft Channel Maintenance Plan”.

_____

Bob Anders, PE, Date

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1. INTRODUCTION

This report presents a Draft Channel Maintenance Plan for the proposed Genesis Solar Energy Project ("Project"), located in the Colorado Desert between the communities of Blythe, CA (approximately 24 miles east) and Desert Center, CA (approximately 27 miles west) (refer **Figure 1**).

Genesis Solar, LLC, is proposing to construct, own and operate the Project on an approximate 1,800-acre site near Ford Dry Lake in Riverside County, California (refer **Figure 1**). The Project is a concentrated solar power (CSP) electric generating facility that will use a proven parabolic trough solar thermal technology. The troughs will concentrate the sun's heat on tubes carrying a petroleum-based Heat Transfer Fluid (HTF) that will be used for steam production. The steam in turn will be used to power a steam turbine generator.

As part of the Genesis Solar Energy Project, it is proposed to divert the off-site watershed using diversion channels/berms. (refer **Figure 2**)**.**

- Flows from the sub-basin 1 (north-western) will be diverted through a channel on the west side of the west 125 MW module;
- Flows from sub-basin 2 (north) will be diverted through a channel between the two 125 MW modules; and
- Flows from sub-basin 3 (north-eastern) will be diverted though a channel along the east side of the east 125 MW module.

Maintenance of the channels will be accomplished as part of the ongoing operations and maintenance of the plant and its facilities. Subcontracted specialists will be engaged as needed to perform specific maintenance activities, and the below channel maintenance program will be implemented.

1.1 PURPOSE AND OBJECTIVES

The purpose of the diversion channels are to prevent interaction with off-site stormwater and onsite stormwater which will allow:

- Allow natural groundwater recharge of the off-site stormwater with no contact with the changed flow conditions of the on-site water;
- Protect the Site infrastructure from flash flood events, which have the potential to damage the solar parabolic troughs;
- Control treatment of the on-site flows from the solar collector array (location of heat transfer fluid within the solar parabolic troughs);
- Protect the Site from upstream sediment loading;

- Control on-site flows in detention basin to ensure there is no increase in post developed flow discharging from the site, minimizing the impact on downstream ephemeral drainage features;
- Maximize the developable area within the solar field;
- Maintain a passageway, particularly through the center channel (channel B/C) for animals that may move from north to south; and
- Develop an environment that is not inviting to fossorial animals (burrowing or living underground), to deter them from burrowing within the channel.

Therefore the objective of the draft channel maintenance plan:

- Maintain channel capacity, so the runoff from upstream watershed (approximately 90,000 acre) is conveyed within the channel in a 100 year, 24 hour storm event; and
- Maintain an environment within and around the channel that is not inviting to fossorial animals while maintaining the passageway if they do access the channel.

2. CHANNEL CONDITIONS

2.1 HYDROLOGY

The channels are design to contain the 100 year, 24 hour storm event within the channel. As shown in **Figure 2**, there are five channels on site which have the following estimated flows during the 100 year storm event:

	STORMWATER FLOW RATE (CFS)
Channel A	1,156.37
Channel B	4,086.17
Channel C	2,006.55
Channel B/C	6,092.72
Channel D	2,600.43
Channel E	253.75
Channel D/E	2,854.18

Typical cross sections of the channels are provided in **Appendix A**. All runoff diversion channels will be designed with a soil/cement mix or similar surface to prevent erosion by providing adequate protection against development of an uncontrolled low-flow thalweg or designed with a low flow channel to control any flow thawleg. The channels are designed with appropriate depth to width ratios and slope erosion control to prevent undercutting and head cutting within the channel.

2.2 BIOLOGY

The slopes will be a maximum of 2H to 1V and the exposed slope protection surface will not be uneven (i.e. no exposed rip rap, gabions, etc) and therefore will not be a hazard to desert tortoises. There will be no vegetation within the channel to deter animal access however box culverts and drop structures, if used, are designed to allow the movement of animals if they do access the channels. The soil/cement mix or similar surface material of the diversion channels will limit fossorial animals ability to borrow.

3. SUCCESS CRITERIA

The following is the success criteria of the channel draft maintenance plan:

- 100 year, 24 hour storm event run off is contained with the channel and daylights at the outlet, transitioning back into surface sheet flow;
- Berm prevents upstream stormwater run off from entering the Project site;
- No vegetation or debris in the base of the channel;
- Soil-cement lined areas of the base and slopes in good condition (no signs of erosion);

4. INSPECTION AND MAINTENANCE REQUIREMENTS

4.1 INSPECTION PROGRAM

The channels are to be inspected on a semi-annual basis (spring and fall) by the environmental compliance manager (ECM) for routine maintenance activities and after storm events. The inspections are to assess the following within the channel and along the banks:

- Erosion/sedimentation accumulation at the upstream inlet to the channel;
- Erosion/sedimentation accumulation at the downstream inlet to the channel;
- Erosion/sedimentation accumulation within the channel including development of an uncontrolled low-flow thalweg;
- Debris accumulation;

- Condition of the soil-cement lined channel base;
- Visual evidence of the stormwater overtopping the channel;
- Vegetation/weed management;
- Evidence of animal use within or around the channel (i.e. tortoise movement, animal tracks);
- Condition of grade control structures;
- Condition of the berm;
- Condition of the fencing (including any keystone block/reinforced concrete walls);
- Condition of the box culverts;
- Condition of the access roads; and
- Condition of gates and signs.

The ECM will record the finds from the inspection, which will dictate the level of maintenance activities required.

Specially after a storm event, the ECM must note if the stormwater run off caused:

- Significant damage to the project, adjacent property or structural elements of the diversion channel;
- A public safety concern;
- Negatively affected groundwater recharge; or
- Negatively affected adjacent plant communities or posed a hazard to wildlife.

4.2 MAINTENANCE PROGRAM

The maintenance program will be implemented after any deficiencies in the channel system are noted. Generally, routine maintenance will occur after the semi-annual site inspections or as needed after a storm event. Regular maintenance activities may include:

- Removal of all debris accumulation from the channel;
- Removal of accumulated sediment within the channel;
- Repairs to the soil-cement base or slopes if they have signs of erosion;
- Repairs to the culverts if they are not in adequate condition;
- Spraying of vegetation with a aquatic weed control herbicide to control its presence in the channel;
- Repairs to the fence if it is not in an adequate condition to prevent access to the channel;

- Repairs to the access road if it is not in an adequate condition to provide safe road vehicle access to the channel;
- Repairs to the gates if they are not in working order;
- Repairs/replacement of signs if they are not readable.

Debris and sediment can be removed from the channel using equipment that will not damage the soil-cement base and slopes of the channel.

Soil-cement can flex with changes in soil pressures directly underneath the channel and cause cracks. In addition debris in flood flows may cause damage to soil-cement. If there has been any damage to the banks or base of the channel that is soil-cemented lined, the area would need to be isolated and repairs made. Minor cracks can be filled in or alternatively sections of the soil-cement can be cut out, soil-cement mixture relayed and compacted.

Cracks in the culverts can also be filled in using a portland cement-based mortar or a flexible sealing type material.

Weed control is required within and around the channel due to the presence of invasive weeds on the Genesis Solar LLC Facility. As the base of the channel may be soil-cement, it will not be expected to have any weeds. However, nutrient rich sediment that has dropped out during storm events may start growing weeds. There is a Site Weed Management Plan that addresses weed prevention and control around the project site. In addition, an aquatic weed control herbicide (such as Rodeo) will be sprayed in the base of the channel on a semi annual basis.

Repairs to the fence / gate / road / signage will all be undertaken on an as needed basis, as determined by the ECM and Facility Operator after the semi-annual inspection. The extent of repairs will be dependant on the level of degradation and assessment of its ability to meet its operational purpose and health and safety impact.

At the end of the Project life, it is expected that the channels will be restored to pre-project grades. Therefore a post project maintenance plan would not be required.

5. EMERGENCY REPAIRS

Emergency repairs will be undertaken as needed to ensure the capacity of the channel is not restricted. Emergency repairs may be required over the life of the Project due to unforeseen collapses to berms, embankments or in-stream structures. Other structures that may need emergency repair work would be channel crossings and vertical walls (i.e. keystone block, reinforced concrete etc).

6. REPORTING

A maintenance log will be kept by the ECM and maintained at the Genesis Solar LLC facility summarizing the inspections, maintenance activities, and any corrective actions taken including

emergency repairs. The log will also include the date of task (inspection / maintenance), who undertook the task and a description of the findings. If the task requires removal of sediment or debris, the location of where the sediment was removed from and location of where it was disposed will be recorded. The log will be on site and available to the CEC upon request.

By January 31st of each year, Genesis Solar LLC will submit an Annual Report to the appropriate regulatory agency including a summary of the inspection and maintenance activities, and any corrective actions taken including emergency repairs. The condition of the channels will be compared against the success criteria to determine any deficiencies in the maintenance program and the program updated accordingly.

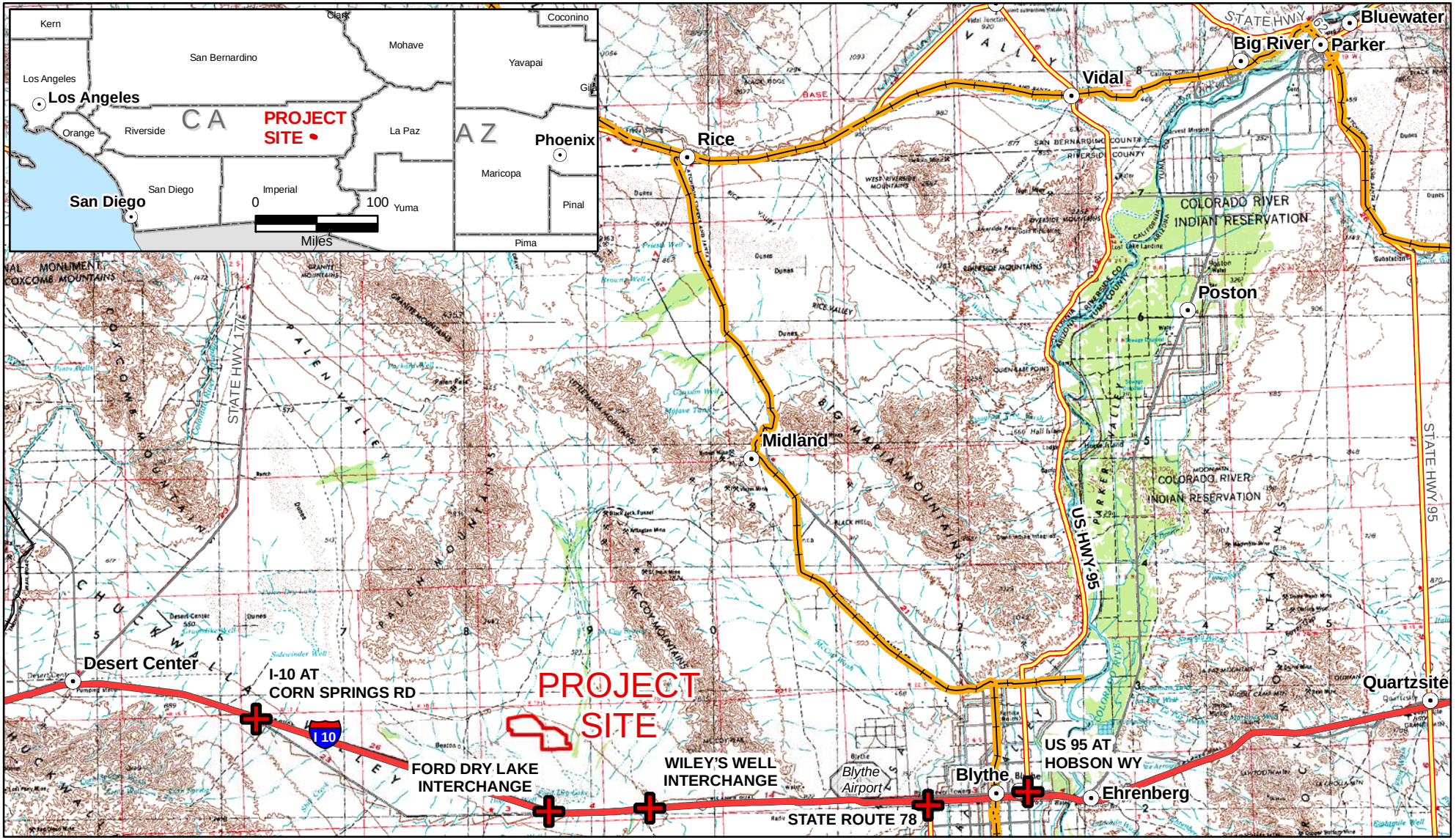
7. COST

The annual cost of the maintenance program may be **$31,558** however this value will fluctuate depending on the volume of sediment and debris removed, and required repairs (i.e. to fences, signage, gates and access roads) (refer to **Table 1**).

There are no planned capital improvement projects scheduled for the channel at this time. Any future capital improvement projects may impact this draft channel maintenance plan, therefore this plan will be updated as required to reflect the current conditions.

Genesis Solar LLC will have an allocation for channel maintenance, including emergency repairs, in their annual operating budget. If the annual budget is not fully used in any one year, then it may be rolled over to the following year's budget allocation as appropriate.

FIGURES



SOURCE:
USGS 250K Quad Sheet, Salton Sea, Needles
ESRI Cities, SDC Major Roads, Tiger Railroad
All locations approximate

N
W E
S
0 10
Miles

GENESIS SOLAR ENERGY PROJECT

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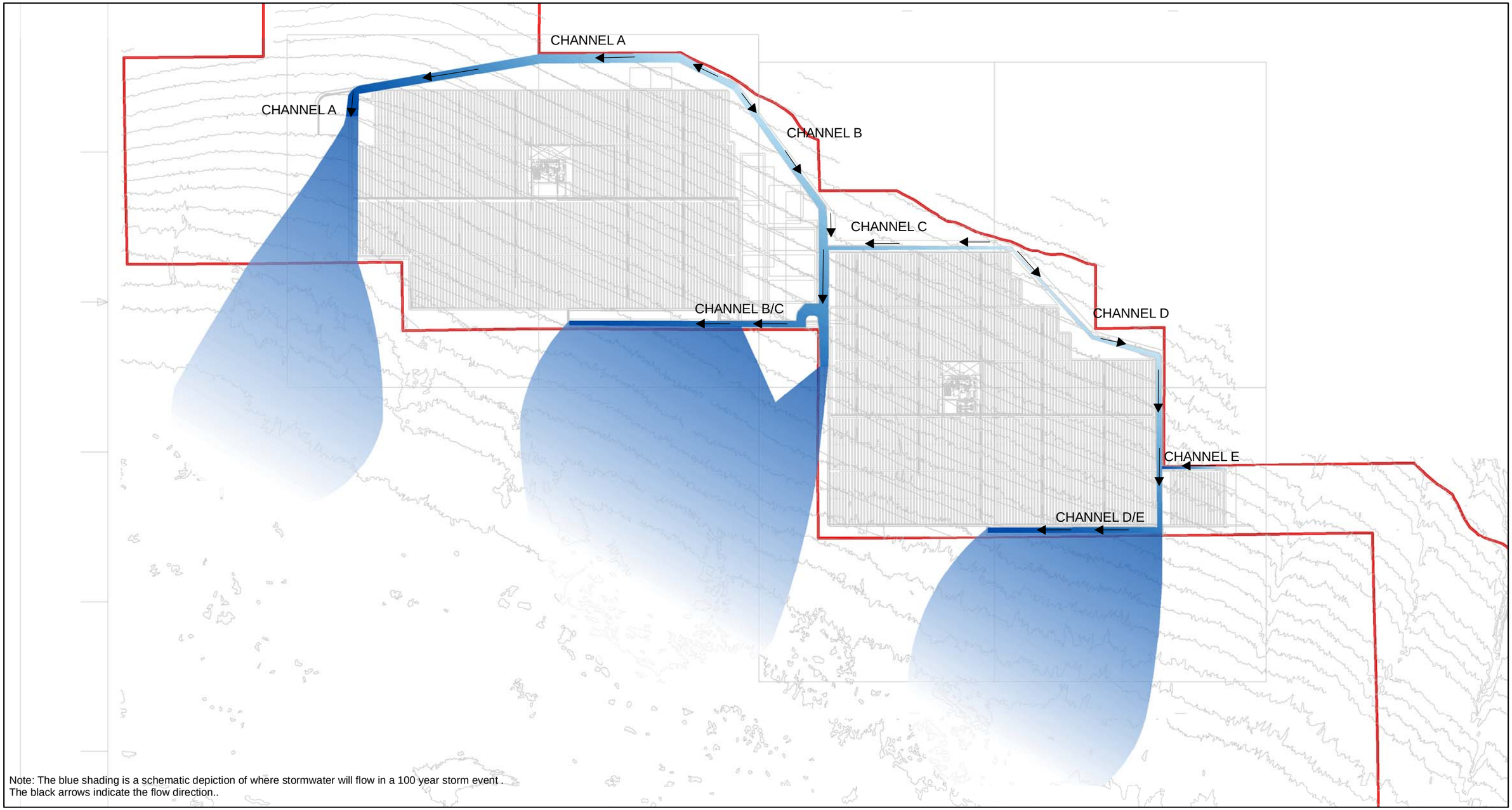
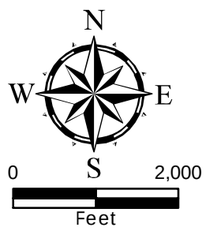
LOCATION MAP

SWL	JM	7/2009
52004617	1	



Note: The blue shading is a schematic depiction of where stormwater will flow in a 100 year storm event .
The black arrows indicate the flow direction..



GENESIS SOLAR ENERGY PROJECT
GENESIS SOLAR, LLC

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100 YEAR POST DEVELOPED FLOW PATTERN

SWL	PM	1/2010
52004617		2

TABLES

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TABLE 1

ANNUAL MAINTENANCE COST ESTIMATE
Gensis Solar Energy Project
Draft Channel Maintenance Plan

ACTIVITIY	UNIT TYPE	ACTIVITY FREQUENCY PER YEAR	NO OF UNITS PER ACTIVITY	TOAL UNITS PER YEAR	UNIT COST PER YEAR	SUB TOTAL	COST REFERENCE
Channel, Berm and Road Inspections - Quarterly	Labour	2	74.2	148.4	$ 30	$ 4,452	Assume 1 hour to inspect one acre, 2 times per year
Channel Inspections - Wet Weather	Labour	2	37.1	74.2	$ 30	$ 2,226	Assume 30 mins to inspect one acre, 2 times per year
Weed Control - Spray aqautic herbicide (Rodeo or equivalent)	Labour, Equipment and Materials	2	37.1	74.2	$ 100	$ 7,420	Assume 2 people taking 30 mins to do one acre using an existing buggy, 2 times a year
Debris Collection and Removal	Labour	1	12	12	$ 30	$ 360	Assume one removal activity per year in six different locations, each taking 2 hours of work
Sedimentation Removal and Disposal	Labour and Materials	As Needed				$ 4,000	Estimated - may not be used every year or may require more depending on the required work
Reperations to fence, gate, signage and access road	Labour and Materials	As Needed				$ 4,000	Estimated - may not be used every year or may require more depending on the required work
Emergency Repairs - as needed	Labour, Equipment and Materials	As Needed				$ 4,000	Estimated - may not be used every year or may require more depending on the required work
Reporting - Annual	Report	1	60	60	$ 85	$ 5,100	Assume 60 hours to undertake the annual report
TOTAL COST						**$ 31,558**	

Note
1. There are 74.2 acres of channel area, including the base and side slopes of the channel.

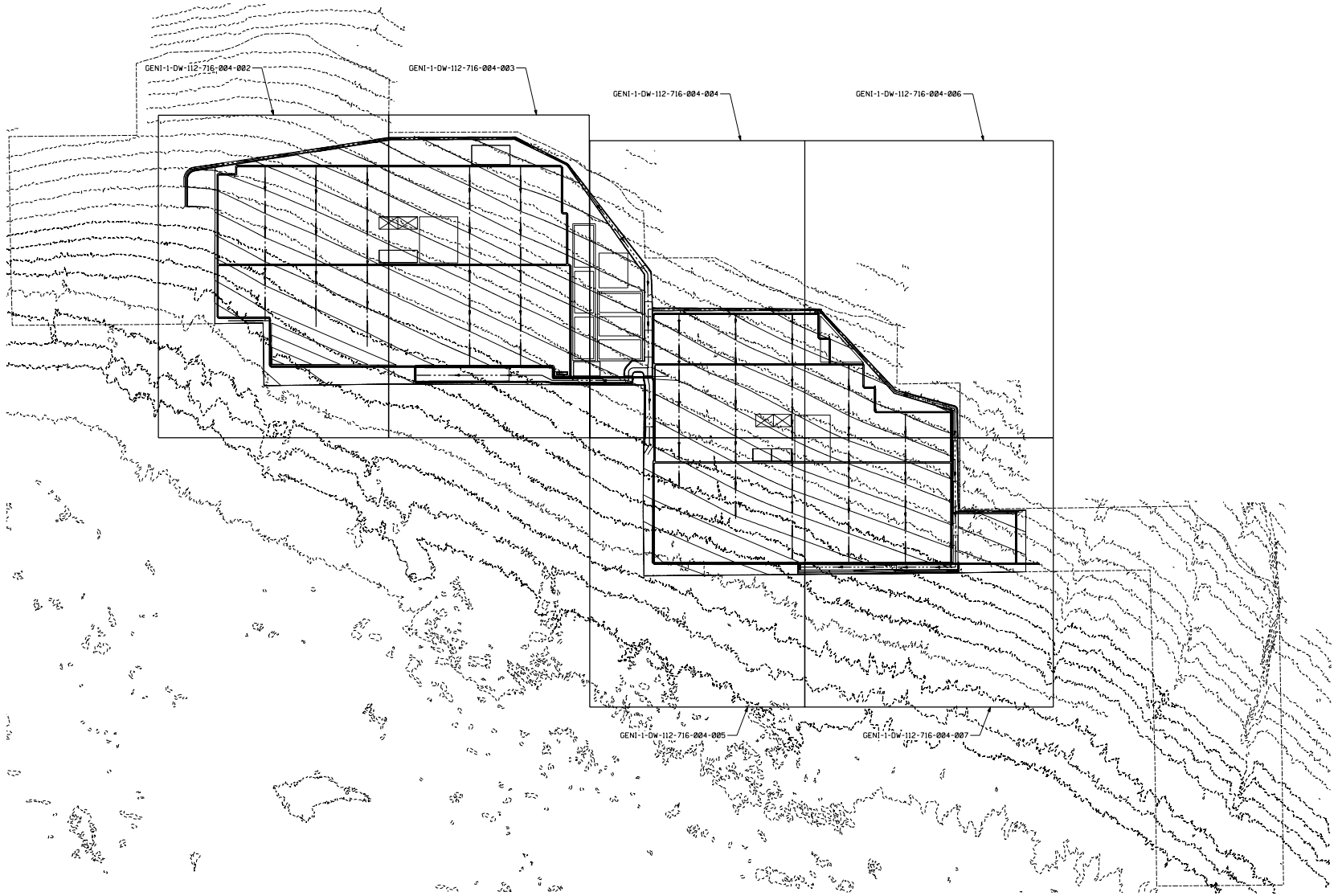
APPENDIX A: GRADING AND DRAINAGE DRAWINGS

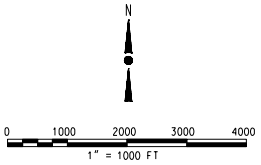
REFERENCES:

GENI-0-SK-111-002-001, GENERAL ARRANGEMENT, OVERALL SITE PLAN, FIGURE 3.4-1
GENI-1-DW-112-716-004-001, CONCEPTUAL GRADING PLAN, OVERALL PLAN, SHEET 1 OF 7
GENI-1-DW-112-716-004-002, CONCEPTUAL GRADING PLAN, SHEET 2 OF 7
GENI-1-DW-112-716-004-003, CONCEPTUAL GRADING PLAN, SHEET 3 OF 7
GENI-1-DW-112-716-004-004, CONCEPTUAL GRADING PLAN, SHEET 4 OF 7
GENI-1-DW-112-716-004-005, CONCEPTUAL GRADING PLAN, SHEET 5 OF 7
GENI-1-DW-112-716-004-006, CONCEPTUAL GRADING PLAN, SHEET 6 OF 7
GENI-1-DW-112-716-004-007, CONCEPTUAL GRADING PLAN, SHEET 7 OF 7
GENI-1-DW-112-726-002-001, CONCEPTUAL GRADING DETAILS AND SECTIONS, SHEET 1 OF 2
GENI-1-DW-112-726-002-002, CONCEPTUAL GRADING DETAILS AND SECTIONS, SHEET 2 OF 2
DIVERSION CHANNEL CROSS SECTION SHEETS

NOTES:

1. COORDINATE SYSTEM BASED ON CALIFORNIA STATE PLANE, ZONE 6, NAD 83.
2. THE GRADING PLANS ARE BASED ON GENI-0-SK-111-002-001, GENERAL ARRANGEMENT, REVISION D.





REV	DATE	DESCRIPTION	DRAWN	CHECKED	LEAD DESIGNER	ENGINEER/TECHNICAL SPECIALIST	PROJECT ENGINEER	PROJECT MANAGER
1	01/15/10	ISSUED FOR REVIEW	AP	EL	JD	BA	BA	BA	BP

PRELIMINARY STATUS — DATE — LDE: REPRESENTS GENERAL DESIGN CONCEPTS BASED ON ASSUMPTIONS. REVIEWED NOT CHECKED.

APPROVED STATUS — DATE — LDE: REPRESENTS REVIEWED AND APPROVED DESIGN, ANY PORTION MARKED "HOLD" RETAINS PRELIMINARY STATUS.

ORIGINATING PERSONNEL	PROFESSIONAL ENGINEER'S SEAL
DRAWN BY: A. PRATT	ORIGINALLY PREPARED UNDER THE RESPONSIBLE SUPERVISION OF: BY: STATE: LIC. NO.: DATE:
CHECKED BY: E. LEIBY	
LEAD DESIGNER: J. DAHLGREN	
ENGINEER/TECH SPECIALIST: B. ANDERS	
PROJECT ENGINEERING MANAGER: B. ANDERS	
PROJECT MANAGER: B. PIETRUCHA	

Zero Harm — Leadership No Incidents Safe Behavior

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CLIENT/PROJECT TITLE

GENESIS SOLAR LLC
GENESIS SOLAR ENERGY PROJECT

CONCEPTUAL GRADING PLAN OVERALL PLAN

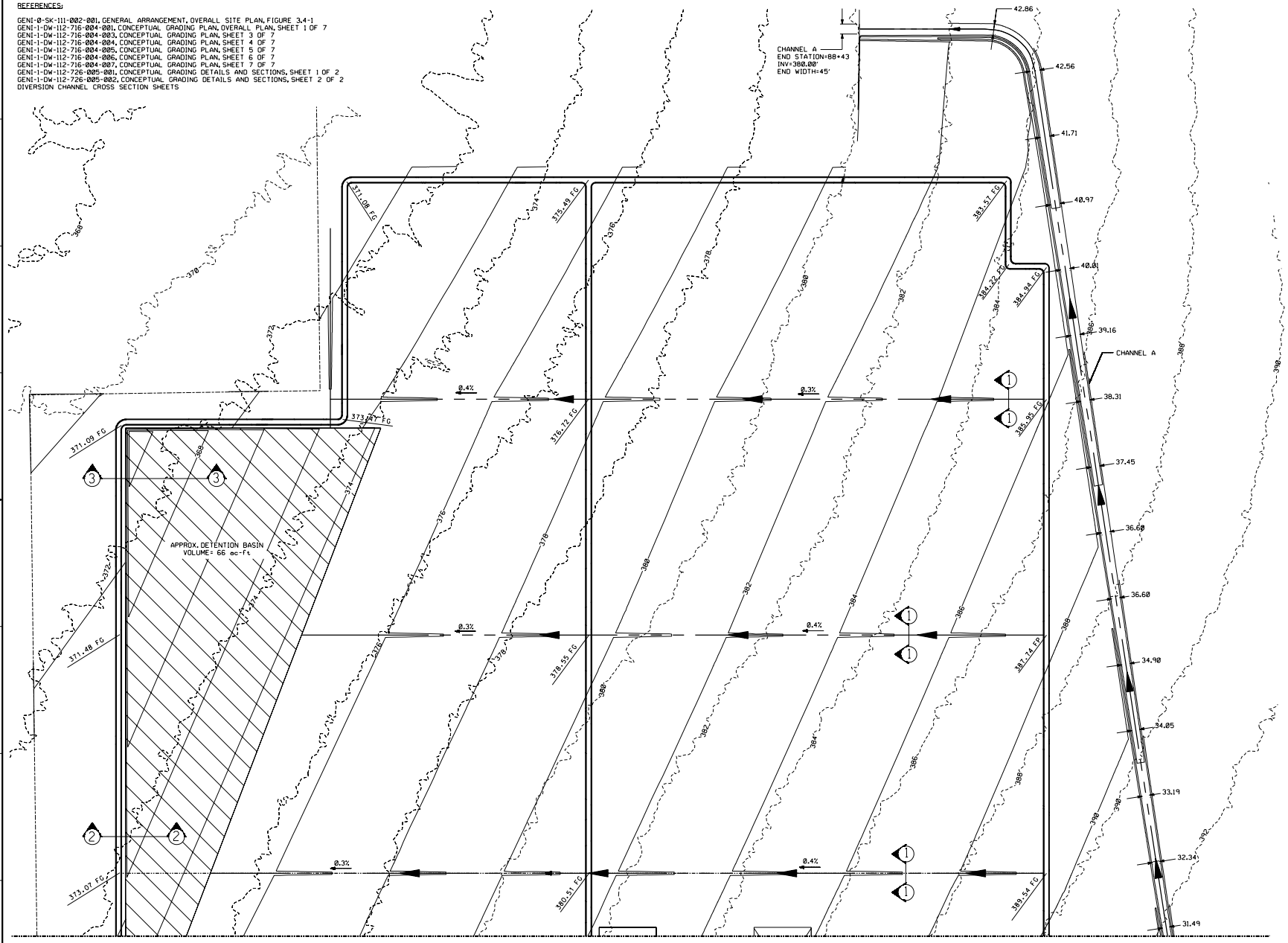
SCALE	DRAWING SIZE
1":200'	ARCH D (36" x 24")

WORLEYPARSONS DWG. NO.	REV.
GENI-1-DW-112-716-004-001	1

FILE NAME: \\GENI-1-DW-112-716-004-001.dgn 1/15/2010 2:05:31 PM

REFERENCES:

GENI-0-SK-111-002-001, GENERAL ARRANGEMENT, OVERALL SITE PLAN, FIGURE 3.4-1
GENI-1-DW-112-716-004-001, CONCEPTUAL GRADING PLAN, OVERALL PLAN, SHEET 1 OF 7
GENI-1-DW-112-716-004-003, CONCEPTUAL GRADING PLAN, SHEET 3 OF 7
GENI-1-DW-112-716-004-004, CONCEPTUAL GRADING PLAN, SHEET 4 OF 7
GENI-1-DW-112-716-004-005, CONCEPTUAL GRADING PLAN, SHEET 5 OF 7
GENI-1-DW-112-716-004-006, CONCEPTUAL GRADING PLAN, SHEET 6 OF 7
GENI-1-DW-112-716-004-007, CONCEPTUAL GRADING PLAN, SHEET 7 OF 7
GENI-1-DW-112-726-005-001, CONCEPTUAL GRADING DETAILS AND SECTIONS, SHEET 1 OF 2
GENI-1-DW-112-726-005-002, CONCEPTUAL GRADING DETAILS AND SECTIONS, SHEET 2 OF 2
DIVERSION CHANNEL CROSS SECTION SHEETS



MATCHLINE
SEE SHEET GENI-1-DW-112-716-004-003

LEGEND

- DRAINAGE CHANNEL CENTERLINE
- PROPOSED CONTOUR 392
- EXISTING CONTOUR 388
- PROPERTY BOUNDARY
- DITCH SLOPE 0.3%
- ROAD ELEVATION 370.29 FG

NOTES:

1. COORDINATE SYSTEM BASED ON CALIFORNIA STATE PLANE, ZONE 6, NAD 83.
2. THE GRADING PLANS ARE BASED ON GENI-0-SK-111-002-001, GENERAL ARRANGEMENT, REVISION D.

N

0 200 400 600 800
1" = 200 FT

REV	DATE	DESCRIPTION	DRAWN	CHECKED	LEAD DESIGNER	ENGINEER/TECHNICAL SPECIALIST	PROJECT ENGINEERING MANAGER	PROJECT MANAGER
1	01/15/10	ISSUED FOR REVIEW	AP	EL	AP	BA	BA	BA	BP

PRELIMINARY STATUS — DATE — LDE
REPRESENTS GENERAL DESIGN CONCEPTS BASED ON ASSUMPTIONS. REVIEWED NOT CHECKED.

APPROVED STATUS — DATE — LDE
REPRESENTS REVIEWED AND APPROVED DESIGN. ANY PORTION MARKED "HOLD" RETAINS PRELIMINARY STATUS.

ORIGINATING PERSONNEL	PROFESSIONAL ENGINEER'S SEAL
DRAWN BY: A. PRATT	
CHECKED BY: E. LEIBY	
LEAD DESIGNER: A. PRATT	
ENGINEER/TECH SPECIALIST: B. ANDERS	
PROJECT ENGINEERING MANAGER: B. ANDERS	
PROJECT MANAGER: B. PIETRUCHA	

Zero Harm — Leadership, No Incidents, Safe Behavior

ORIGINALLY PREPARED UNDER THE RESPONSIBLE SUPERVISION OF
(N) _____ STATE(L) _____
LIC. NO.: _____ DATE: _____

WorleyParsons
resources & energy

CLIENT/PROJECT TITLE

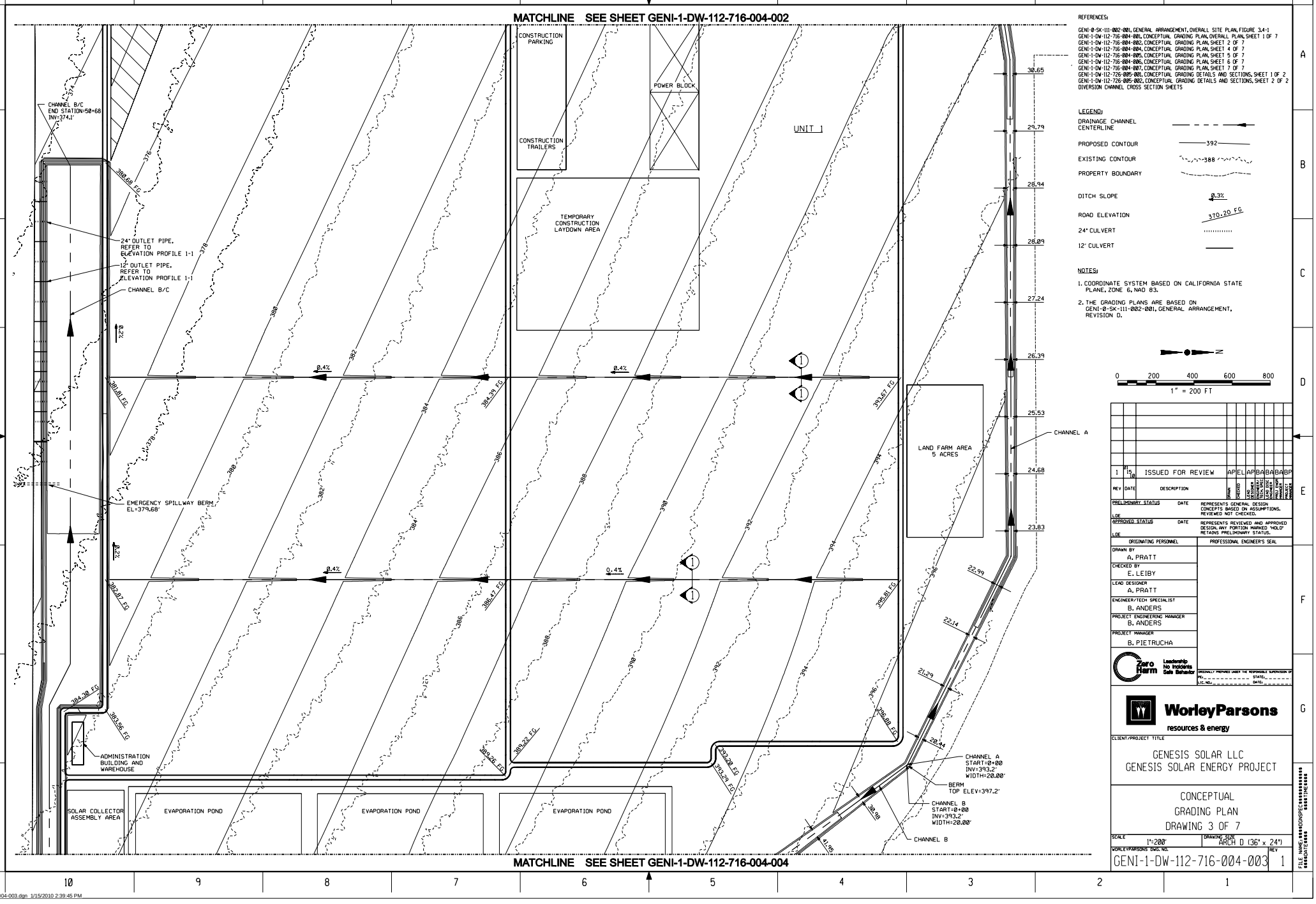
GENESIS SOLAR LLC
GENESIS SOLAR ENERGY PROJECT

CONCEPTUAL GRADING PLAN DRAWING 2 OF 7

SCALE: 1"=200'
DRAWING SIZE: ARCH D (36" x 24")
WORLEYPARSONS DWG. NO.: GENI-1-DW-112-716-004-002
REV: 1

FILE NAME: ##ACONSPECS##
##SHEETSET##

\GENI-1-DW-112-716-004-002.dgn 1/15/2010 2:34:51 PM



REFERENCES:

GENI-0-SK-111-002-001, GENERAL ARRANGEMENT, OVERALL SITE PLAN, FIGURE 3.4-1
GENI-1-DW-112-716-004-001, CONCEPTUAL GRADING PLAN, OVERALL PLAN, SHEET 1 OF 7
GENI-1-DW-112-716-004-002, CONCEPTUAL GRADING PLAN, SHEET 2 OF 7
GENI-1-DW-112-716-004-004, CONCEPTUAL GRADING PLAN, SHEET 4 OF 7
GENI-1-DW-112-716-004-005, CONCEPTUAL GRADING PLAN, SHEET 5 OF 7
GENI-1-DW-112-716-004-006, CONCEPTUAL GRADING PLAN, SHEET 6 OF 7
GENI-1-DW-112-716-004-007, CONCEPTUAL GRADING PLAN, SHEET 7 OF 7
GENI-1-DW-112-726-005-001, CONCEPTUAL GRADING DETAILS AND SECTIONS, SHEET 1 OF 2
GENI-1-DW-112-726-005-002, CONCEPTUAL GRADING DETAILS AND SECTIONS, SHEET 2 OF 2
DIVERSION CHANNEL CROSS SECTION SHEETS

LEGEND:

DRAINAGE CHANNEL CENTERLINE
PROPOSED CONTOUR 392
EXISTING CONTOUR 388
PROPERTY BOUNDARY
DITCH SLOPE 0.3%
ROAD ELEVATION 370.20 FG
24" CULVERT
12" CULVERT

NOTES:

1. COORDINATE SYSTEM BASED ON CALIFORNIA STATE PLANE, ZONE 6, NAD 83.
2. THE GRADING PLANS ARE BASED ON GENI-0-SK-111-002-001, GENERAL ARRANGEMENT, REVISION D.

0 200 400 600 800
1" = 200 FT

REV	DATE	DESCRIPTION	DRAWN	CHECKED	LEAD DESIGNER	ENGINEER/TECHNICAL SPECIALIST	LEAD ENGINEERING MANAGER	PROJECT ENGINEERING MANAGER	PROJECT MANAGER
1	01/15/10	ISSUED FOR REVIEW	AP	EL	AP	BA	BA	BA	BP

PRELIMINARY STATUS — LDE — DATE: REPRESENTS GENERAL DESIGN CONCEPTS BASED ON ASSUMPTIONS. REVIEWED NOT CHECKED.
APPROVED STATUS — LDE — DATE: REPRESENTS REVIEWED AND APPROVED DESIGN, ANY PORTION MARKED "HOLD" RETAINS PRELIMINARY STATUS.

ORIGINATING PERSONNEL	PROFESSIONAL ENGINEER'S SEAL
DRAWN BY: A. PRATT	ORIGINALLY PREPARED UNDER THE RESPONSIBLE SUPERVISION OF
CHECKED BY: E. LEIBY	PRINT NAME
LEAD DESIGNER: A. PRATT	LIC. NO.
ENGINEER/TECH SPECIALIST: B. ANDERS	STATE
PROJECT ENGINEERING MANAGER: B. ANDERS	DATE
PROJECT MANAGER: B. PIETRUCHA	

Zero Harm — Leadership No Incidents Safe Behavior

WorleyParsons resources & energy

CLIENT/PROJECT TITLE

GENESIS SOLAR LLC
GENESIS SOLAR ENERGY PROJECT

CONCEPTUAL
GRADING PLAN
DRAWING 3 OF 7

SCALE: 1"=200' | DRAWING SIZE: ARCH D (36" x 24")

WORLEYPARSONS DWG. NO.: GENI-1-DW-112-716-004-003 | REV: 1

FILE NAME: e:\projects\genesis\drawings\civil\GENI-1-DW-112-716-004-003.dgn
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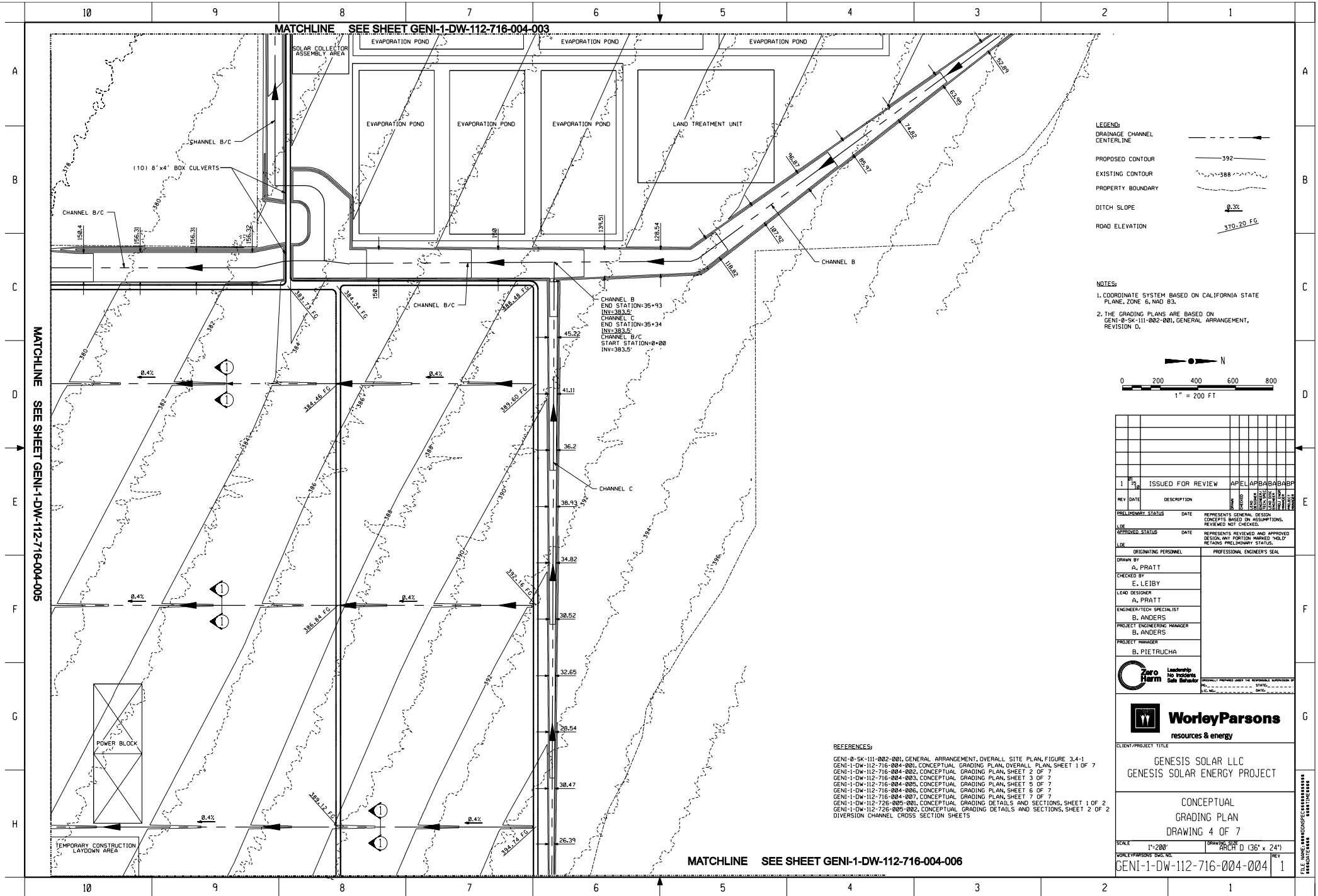


REFERENCES:

GENI-0-SK-111-002-001, GENERAL ARRANGEMENT, OVERALL SITE PLAN, FIGURE 3.4-1
GENI-1-DW-112-716-004-001, CONCEPTUAL GRADING PLAN, OVERALL PLAN, SHEET 1 OF 7
GENI-1-DW-112-716-004-002, CONCEPTUAL GRADING PLAN, SHEET 2 OF 7
GENI-1-DW-112-716-004-003, CONCEPTUAL GRADING PLAN, SHEET 3 OF 7
GENI-1-DW-112-716-004-005, CONCEPTUAL GRADING PLAN, SHEET 5 OF 7
GENI-1-DW-112-716-004-006, CONCEPTUAL GRADING PLAN, SHEET 6 OF 7
GENI-1-DW-112-716-004-007, CONCEPTUAL GRADING PLAN, SHEET 7 OF 7
GENI-1-DW-112-726-005-001, CONCEPTUAL GRADING DETAILS AND SECTIONS, SHEET 1 OF 2
GENI-1-DW-112-726-005-002, CONCEPTUAL GRADING DETAILS AND SECTIONS, SHEET 2 OF 2
DIVERSION CHANNEL CROSS SECTION SHEETS

REV	DATE	DESCRIPTION	DRAWN	CHECKED	LEAD DESIGNER	ENGINEER/TECH SPECIALIST	LEAD ENG MANAGER	PROJECT ENGINEERING MANAGER	PROJECT MANAGER
1	01 15 10	ISSUED FOR REVIEW	AP	EL	AP	BA	BA	BA	BP

PRELIMINARY STATUS — DATE — LDE: REPRESENTS GENERAL DESIGN CONCEPTS BASED ON ASSUMPTIONS. REVIEWED NOT CHECKED.

APPROVED STATUS — DATE — LDE: REPRESENTS REVIEWED AND APPROVED DESIGN. ANY PORTION MARKED "HOLD" RETAINS PRELIMINARY STATUS.

ORIGINATING PERSONNEL	PROFESSIONAL ENGINEER'S SEAL
DRAWN BY: A. PRATT	
CHECKED BY: E. LEIBY	
LEAD DESIGNER: A. PRATT	
ENGINEER/TECH SPECIALIST: B. ANDERS	
PROJECT ENGINEERING MANAGER: B. ANDERS	
PROJECT MANAGER: B. PIETRUCHA	

Zero Harm — Leadership, No Incidents, Safe Behavior

ORIGINALLY PREPARED UNDER THE RESPONSIBLE SUPERVISION OF (PE) _____ STATE _____ LIC. NO. _____ DATE _____

WorleyParsons resources & energy

CLIENT/PROJECT TITLE

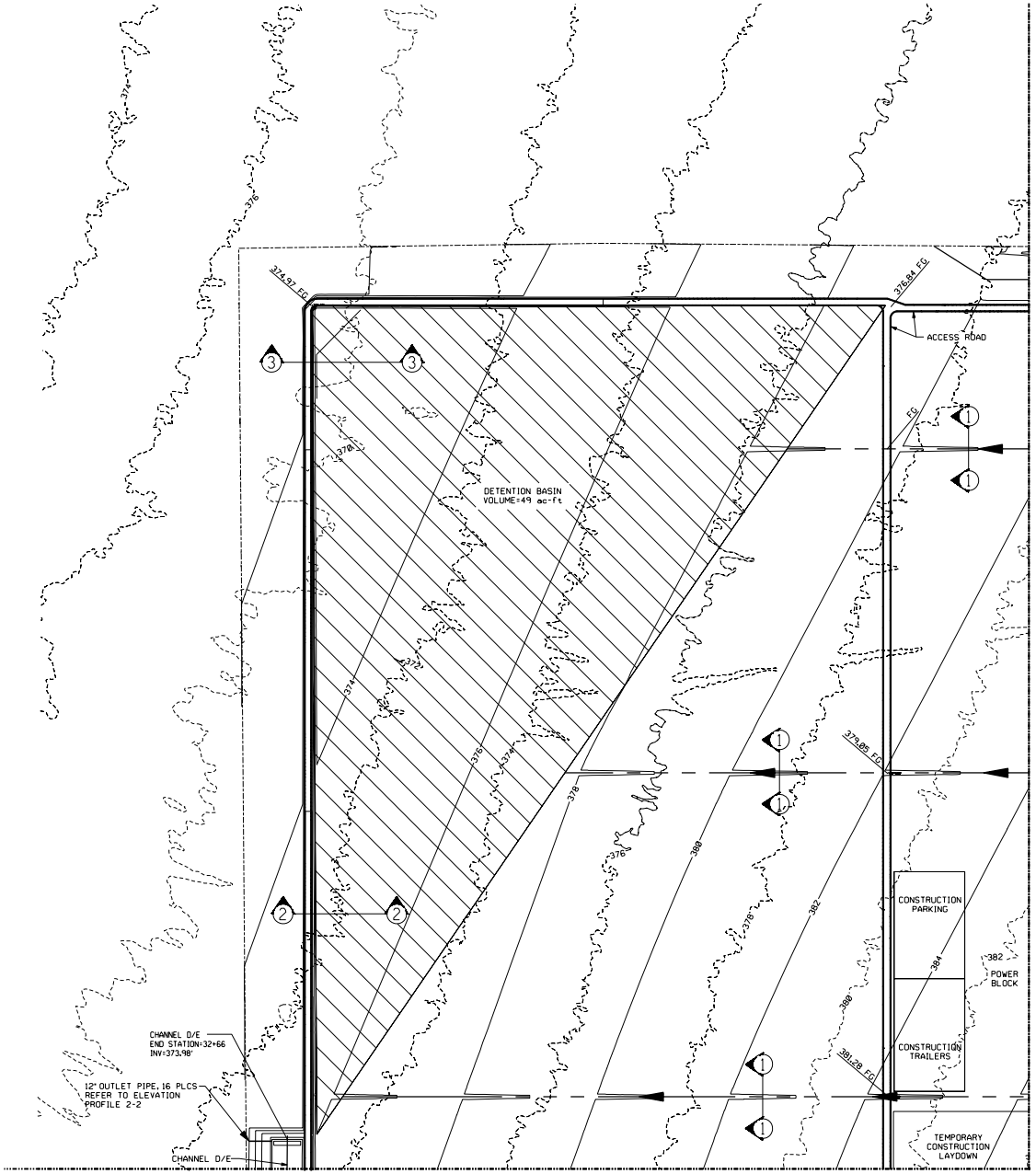
GENESIS SOLAR LLC
GENESIS SOLAR ENERGY PROJECT

CONCEPTUAL
GRADING PLAN
DRAWING 4 OF 7

SCALE	DRAWING SIZE
1"=200'	ARCH D (36" x 24")

WORLEYPARSONS DWG. NO. GENI-1-DW-112-716-004-004 REV 1

FILE NAME: e:\projects\genesis\drawings\GENI-1-DW-112-716-004-004.dgn



REFERENCES:

GENI-0-SK-111-002-001, GENERAL ARRANGEMENT, OVERALL SITE PLAN, FIGURE 3.4-1
GENI-1-DW-112-716-004-001, CONCEPTUAL GRADING PLAN, OVERALL PLAN, SHEET 1 OF 7
GENI-1-DW-112-716-004-002, CONCEPTUAL GRADING PLAN, SHEET 2 OF 7
GENI-1-DW-112-716-004-003, CONCEPTUAL GRADING PLAN, SHEET 3 OF 7
GENI-1-DW-112-716-004-004, CONCEPTUAL GRADING PLAN, SHEET 4 OF 7
GENI-1-DW-112-716-004-006, CONCEPTUAL GRADING PLAN, SHEET 6 OF 7
GENI-1-DW-112-716-004-007, CONCEPTUAL GRADING PLAN, SHEET 7 OF 7
GENI-1-DW-112-726-005-001, CONCEPTUAL GRADING DETAILS AND SECTIONS, SHEET 1 OF 2
GENI-1-DW-112-726-005-002, CONCEPTUAL GRADING DETAILS AND SECTIONS, SHEET 2 OF 2
DIVERSION CHANNEL CROSS SECTION SHEETS

LEGEND:

DRAINAGE CHANNEL CENTERLINE
PROPOSED CONTOUR — 392
EXISTING CONTOUR — 388
PROPERTY BOUNDARY
DITCH SLOPE — 0.3%
ROAD ELEVATION — 370.20 FG
12' CULVERT

N

0 200 400 600 800
1" = 200 FT

NOTES:

1. COORDINATE SYSTEM BASED ON CALIFORNIA STATE PLANE, ZONE 6, NAD 83.
2. THE GRADING PLANS ARE BASED ON GENI-0-SK-111-002-001, GENERAL ARRANGEMENT, REVISION D.

REV	DATE	DESCRIPTION	DRAWN	CHECKED	LEAD DESIGNER	ENGINEER/ TECH. SPEC.	LEAD DISC ENGINEER	PROJ ENGR MANAGER	PROJECT MANAGER
1	01 15 10	ISSUED FOR REVIEW	AP	EL	AP	BA	BA	BA	BP

PRELIMINARY STATUS — DATE — LDE
REPRESENTS GENERAL DESIGN CONCEPTS BASED ON ASSUMPTIONS. REVIEWED NOT CHECKED.

APPROVED STATUS — DATE — LDE
REPRESENTS REVIEWED AND APPROVED DESIGN. ANY PORTION MARKED "HOLD" RETAINS PRELIMINARY STATUS.

ORIGINATING PERSONNEL

DRAWN BY: A. PRATT
CHECKED BY: E. LEIBY
LEAD DESIGNER: A. PRATT
ENGINEER/TECH SPECIALIST: B. ANDERS
PROJECT ENGINEERING MANAGER: B. ANDERS
PROJECT MANAGER: B. PIETRUCHA

PROFESSIONAL ENGINEER'S SEAL

Zero Harm — Leadership, No Incidents, Safe Behavior

ORIGINALLY PREPARED UNDER THE RESPONSIBLE SUPERVISION OF
PE: STATE:
LIC. NO.: DATE:

WorleyParsons resources & energy

CLIENT/PROJECT TITLE

GENESIS SOLAR LLC
GENESIS SOLAR ENERGY PROJECT

CONCEPTUAL
GRADING PLAN
DRAWING 5 OF 7

SCALE: 1"=200' — DRAWING SIZE: ARCH D (36" x 24")

WORLEYPARSONS DWG. NO.: GENI-1-DW-112-716-004-005 — REV: 1

FILE NAME: ****DGNSPEC**********
DATE: ********** TIME: ********

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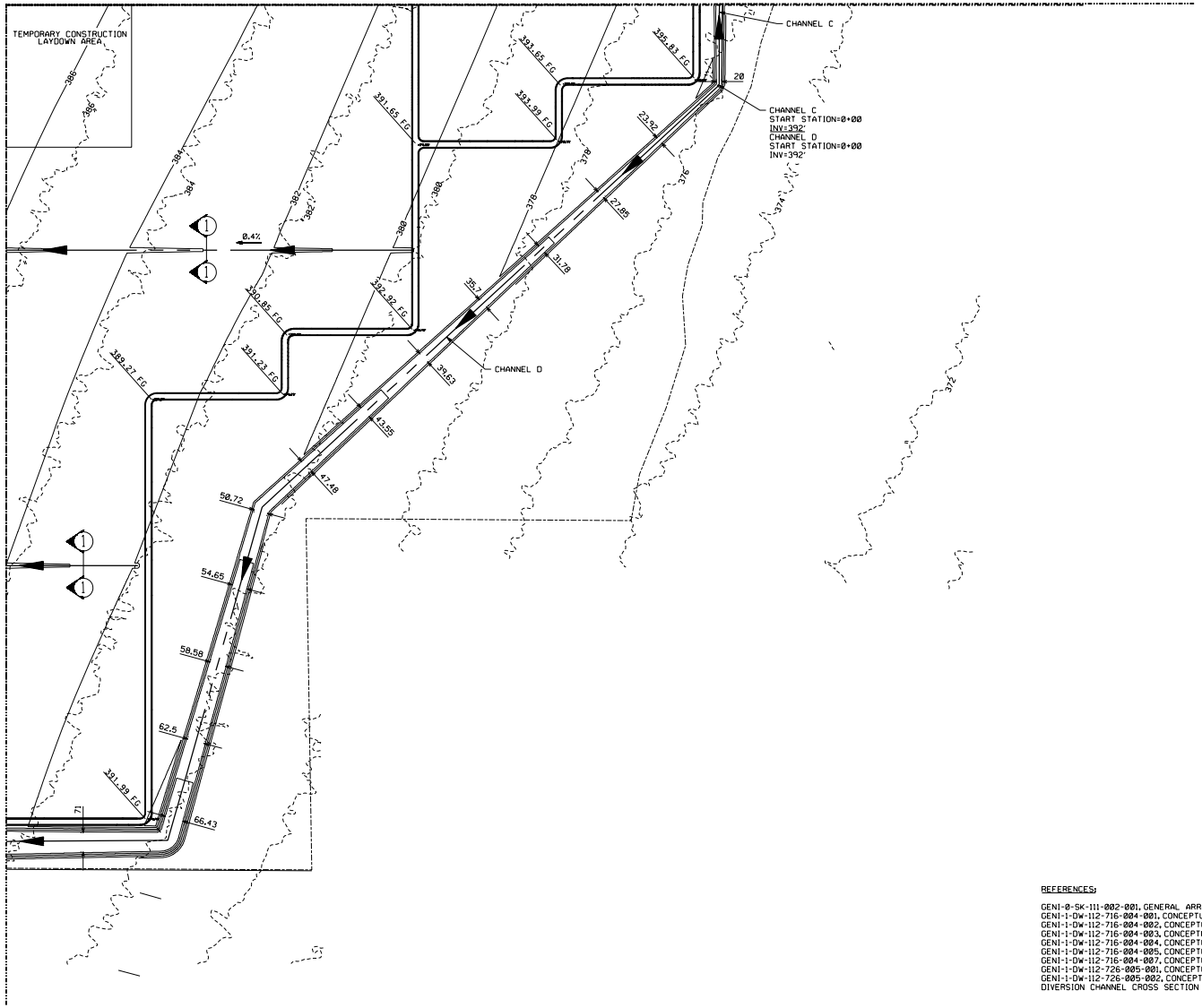

LEGEND:

DRAINAGE CHANNEL CENTERLINE

PROPOSED CONTOUR 392

EXISTING CONTOUR 388

PROPERTY BOUNDARY

DITCH SLOPE 0.3%

ROAD ELEVATION 370.20 FG

N

0 200 400 600 800

1" = 200 FT

NOTES:

1. COORDINATE SYSTEM BASED ON CALIFORNIA STATE PLANE, ZONE 6, NAD 83.
2. THE GRADING PLANS ARE BASED ON GENI-0-SK-111-002-001, GENERAL ARRANGEMENT, REVISION D.

REFERENCES:

GENI-0-SK-111-002-001, GENERAL ARRANGEMENT, OVERALL SITE PLAN, FIGURE 3.4-1
GENI-1-DW-112-716-004-001, CONCEPTUAL GRADING PLAN, OVERALL PLAN, SHEET 1 OF 7
GENI-1-DW-112-716-004-002, CONCEPTUAL GRADING PLAN, SHEET 2 OF 7
GENI-1-DW-112-716-004-003, CONCEPTUAL GRADING PLAN, SHEET 3 OF 7
GENI-1-DW-112-716-004-004, CONCEPTUAL GRADING PLAN, SHEET 4 OF 7
GENI-1-DW-112-716-004-005, CONCEPTUAL GRADING PLAN, SHEET 5 OF 7
GENI-1-DW-112-716-004-007, CONCEPTUAL GRADING PLAN, SHEET 7 OF 7
GENI-1-DW-112-726-005-001, CONCEPTUAL GRADING DETAILS AND SECTIONS, SHEET 1 OF 2
GENI-1-DW-112-726-005-002, CONCEPTUAL GRADING DETAILS AND SECTIONS, SHEET 2 OF 2
DIVERSION CHANNEL CROSS SECTION SHEETS

REV	DATE	DESCRIPTION	DRAWN	CHECKED	LEAD DESIGNER	ENGINEER/ TECH. SPEC.	LEAD DISC. ENGINEER	PROJ. ENGR. MANAGER	PROJECT MANAGER
1	01 15 10	ISSUED FOR REVIEW	AP	EL	AP	BA	BA	BA	BP

PRELIMINARY STATUS — DATE — LDE — REPRESENTS GENERAL DESIGN CONCEPTS BASED ON ASSUMPTIONS. REVIEWED NOT CHECKED.

APPROVED STATUS — DATE — LDE — REPRESENTS REVIEWED AND APPROVED DESIGN. ANY PORTION MARKED "HOLD" RETAINS PRELIMINARY STATUS.

ORIGINATING PERSONNEL

DRAWN BY: A. PRATT

CHECKED BY: E. LEIBY

LEAD DESIGNER: A. PRATT

ENGINEER/TECH SPECIALIST: B. ANDERS

PROJECT ENGINEERING MANAGER: B. ANDERS

PROJECT MANAGER: B. PIETRUCHA

Zero Harm — Leadership, No Incidents, Safe Behavior

PROFESSIONAL ENGINEER'S SEAL

ORIGINALLY PREPARED UNDER THE RESPONSIBLE SUPERVISION OF
PE: STATE:
LIC. NO.: DATE:

WorleyParsons resources & energy

CLIENT/PROJECT TITLE

GENESIS SOLAR LLC
GENESIS SOLAR ENERGY PROJECT

CONCEPTUAL
GRADING PLAN
DRAWING 5 OF 6

SCALE 1"=200' — DRAWING SIZE ARCH D (36" x 24")

WORLEYPARSONS DWG. NO. GENI-1-DW-112-716-004-006 — REV 1

FILE NAME: ***DIGNSPEC*****
PLOT DATE: ********
PLOT TIME: ********

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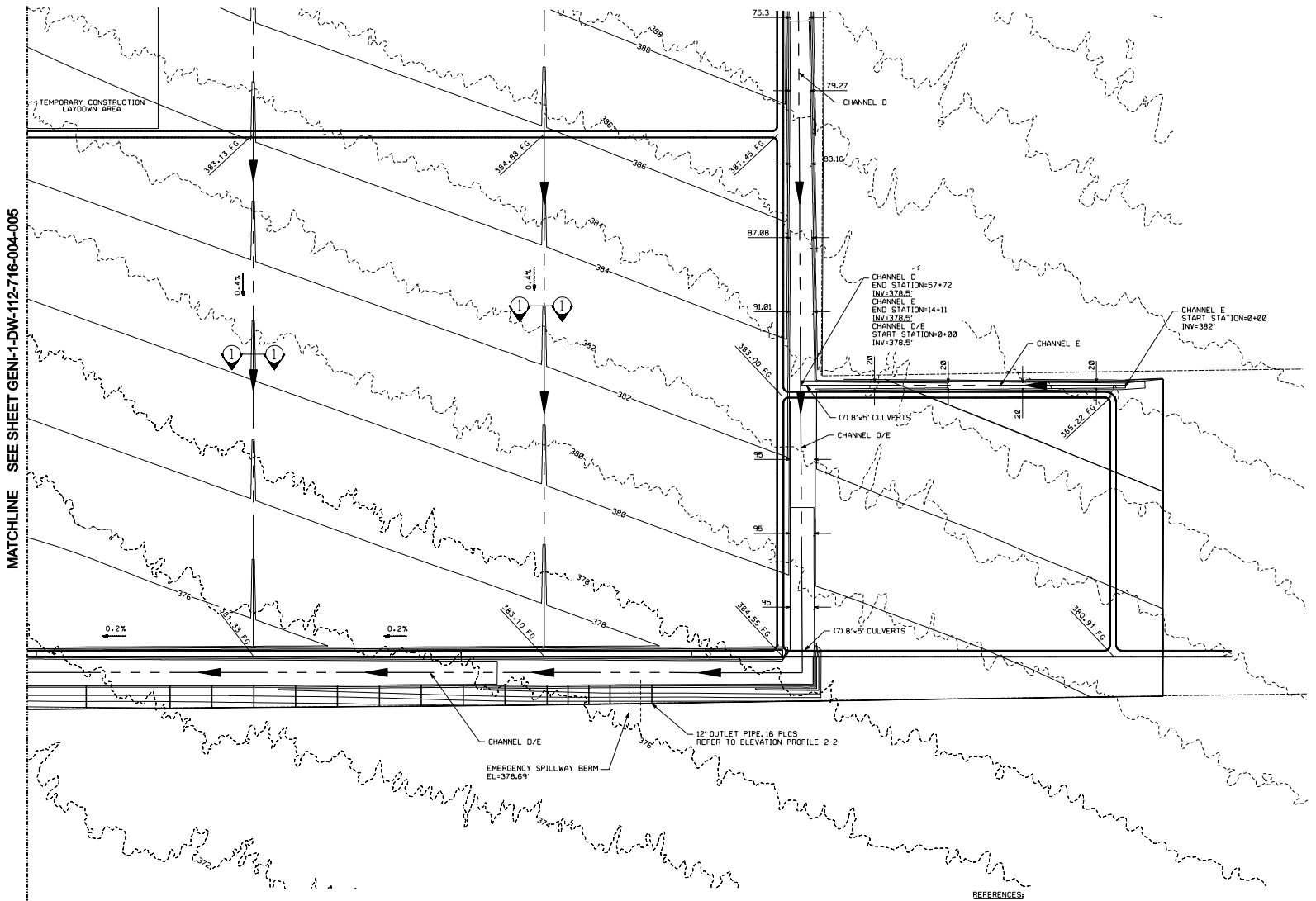

LEGEND:

DRAINAGE CHANNEL CENTERLINE

PROPOSED CONTOUR 392

EXISTING CONTOUR 388

PROPERTY BOUNDARY

DITCH SLOPE 0.3%

ROAD ELEVATION 370.20 FG

N

0 200 400 600 800

1" = 200 FT

NOTES:

1. COORDINATE SYSTEM BASED ON CALIFORNIA STATE PLANE, ZONE 6, NAD 83.
2. THE GRADING PLANS ARE BASED ON GENI-0-SK-111-002-001, GENERAL ARRANGEMENT, REVISION D.

REFERENCES:

GENI-0-SK-111-002-001, GENERAL ARRANGEMENT, OVERALL SITE PLAN, FIGURE 3.4-1
GENI-1-DW-112-716-004-001, CONCEPTUAL GRADING PLAN, OVERALL PLAN, SHEET 1 OF 7
GENI-1-DW-112-716-004-002, CONCEPTUAL GRADING PLAN, SHEET 2 OF 7
GENI-1-DW-112-716-004-003, CONCEPTUAL GRADING PLAN, SHEET 3 OF 7
GENI-1-DW-112-716-004-004, CONCEPTUAL GRADING PLAN, SHEET 4 OF 7
GENI-1-DW-112-716-004-005, CONCEPTUAL GRADING PLAN, SHEET 5 OF 7
GENI-1-DW-112-716-004-006, CONCEPTUAL GRADING PLAN, SHEET 6 OF 7
GENI-1-DW-112-726-005-001, CONCEPTUAL GRADING DETAILS AND SECTIONS, SHEET 1 OF 2
GENI-1-DW-112-726-005-002, CONCEPTUAL GRADING DETAILS AND SECTIONS, SHEET 2 OF 2
DIVERSION CHANNEL CROSS SECTION SHEETS

REV	DATE	DESCRIPTION	DRAWN	CHECKED	LEAD DESIGNER	ENGINEER/TECHNICAL SPECIALIST	LEAD DISCIPLINE ENGINEER	PROJECT ENGINEERING MANAGER	PROJECT MANAGER
1	01/15/10	ISSUED FOR REVIEW	AP	EL	AP	BA	BA	BA	BP

PRELIMINARY STATUS — DATE — LDE: REPRESENTS GENERAL DESIGN CONCEPTS BASED ON ASSUMPTIONS. REVIEWED NOT CHECKED.

APPROVED STATUS — DATE — LDE: REPRESENTS REVIEWED AND APPROVED DESIGN. ANY PORTION MARKED 'HOLD' RETAINS PRELIMINARY STATUS.

ORIGINATING PERSONNEL

DRAWN BY: A. PRATT
CHECKED BY: E. LEIBY
LEAD DESIGNER: A. PRATT
ENGINEER/TECH SPECIALIST: B. ANDERS
PROJECT ENGINEERING MANAGER: B. ANDERS
PROJECT MANAGER: B. PIETRUCHA

PROFESSIONAL ENGINEER'S SEAL

ORIGINALLY PREPARED UNDER THE RESPONSIBLE SUPERVISION OF
PE: _____ STATE: _____
LIC. NO.: _____ DATE: _____

Zero Harm — Leadership, No Incidents, Safe Behavior

WorleyParsons resources & energy

CLIENT/PROJECT TITLE

GENESIS SOLAR LLC
GENESIS SOLAR ENERGY PROJECT

CONCEPTUAL
GRADING PLAN
DRAWING 7 OF 7

SCALE: 1":200' | DRAWING SIZE: ARCH D (36" x 24")

WORLEYPARSONS DWG. NO.: GENI-1-DW-112-716-004-007 | REV: 1

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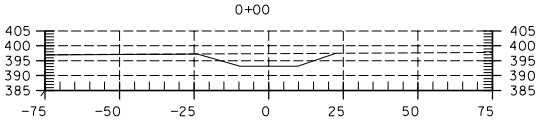
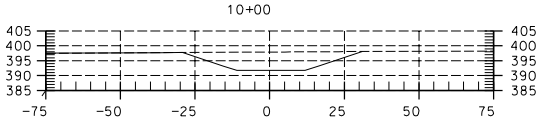
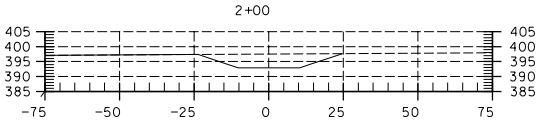
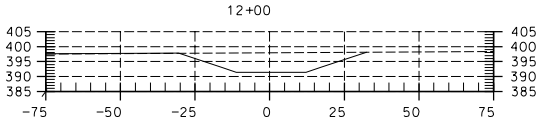
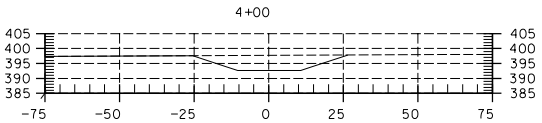
STA.0+00 TO STA.18+00

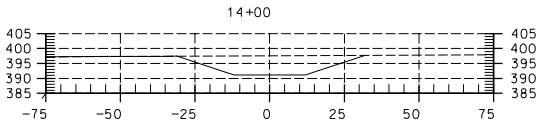


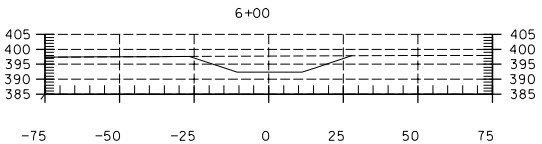


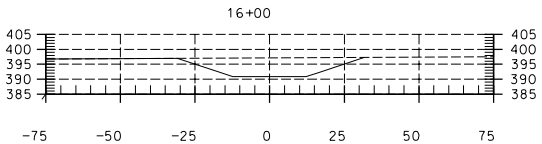


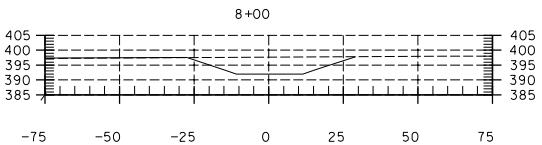


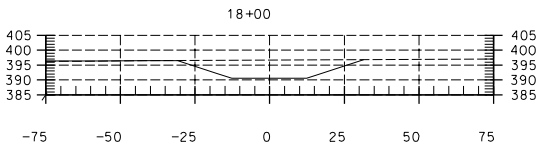












LEGEND:

EXISTING GRADE

PROPOSED GRADE

SCALE:
HORIZ: 1"=20'
VERT: 1"=20'

REV	DATE	DESCRIPTION	DRAWN	CHECKED	LEAD DESIGNER	ENGINEER/ TECHNICAL SPECIALIST	PROJECT ENGINEER	PROJECT MANAGER
1	01 15 10	ISSUED FOR REVIEW	AP	EL	JD	BA	BA	BA	BP

PRELIMINARY STATUS — DATE — LDE
REPRESENTS GENERAL DESIGN CONCEPTS BASED ON ASSUMPTIONS. REVIEWED NOT CHECKED.

APPROVED STATUS — DATE — LDE
REPRESENTS REVIEWED AND APPROVED DESIGN. ANY PORTION MARKED "HOLD" RETAINS PRELIMINARY STATUS.

ORIGINATING PERSONNEL

DRAWN BY: A. PRATT
CHECKED BY: E. LEIBY
LEAD DESIGNER: J. DAHLGREN
ENGINEER/TECH SPECIALIST: B. ANDERS
PROJECT ENGINEERING MANAGER: B. ANDERS
PROJECT MANAGER: B. PIETRUCHA

PROFESSIONAL ENGINEER'S SEAL

Zero Harm — Leadership, No Incidents, Safe Behavior

ORIGINALLY PREPARED UNDER THE RESPONSIBLE SUPERVISION OF
PE(s) _____ STATE(s) _____
LIC. NO(s) _____ DATE(s) _____

WorleyParsons
resources & energy

CLIENT/PROJECT TITLE

GENESIS SOLAR LLC
GENESIS SOLAR ENERGY PROJECT

CHANNEL A CROSS SECTIONS

SCALE: 1"=20'
DRAWING SIZE: ARCH D (36" x 24")
WORLEYPARSONS DWG. NO.: GENI-1-DW-112-716-004-008
REV: 1

FILE NAME: ##DGNSPEC##
##TIME##

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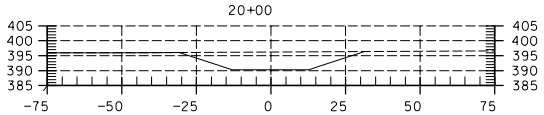
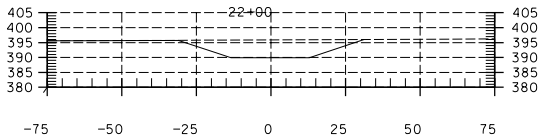
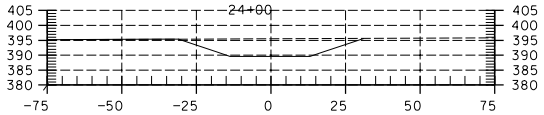
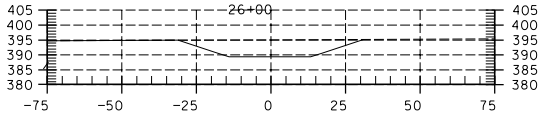
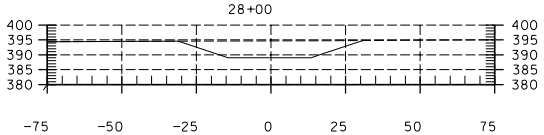
STA.20+00 TO STA.38+00

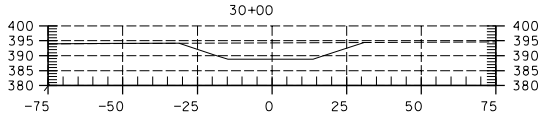


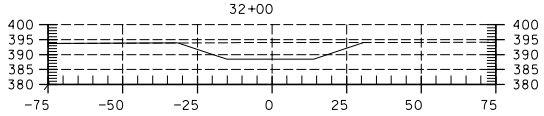


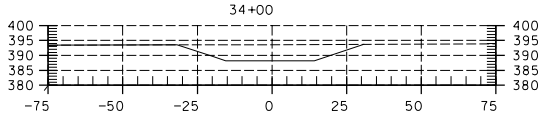


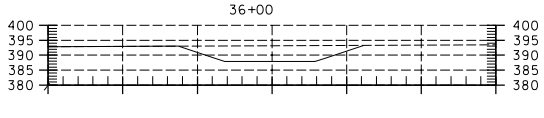


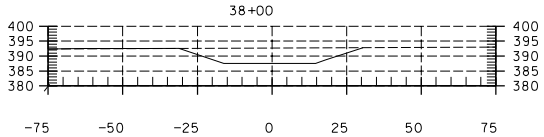












LEGEND:

EXISTING GRADE

PROPOSED GRADE

SCALE:
HORIZ: 1"=20'
VERT: 1"=20'

REV	DATE	DESCRIPTION	DRAWN	CHECKED	LEAD DESIGNER	ENGINEER/TECHNICAL LEAD/SPECIALIST	PROJECT ENGINEERING MANAGER	PROJECT MANAGER
1	01 15 10	ISSUED FOR REVIEW	AP	EL	JD	BA	BA	BA	BP

PRELIMINARY STATUS — DATE — LDE
REPRESENTS GENERAL DESIGN CONCEPTS BASED ON ASSUMPTIONS. REVIEWED NOT CHECKED.

APPROVED STATUS — DATE — LDE
REPRESENTS REVIEWED AND APPROVED DESIGN. ANY PORTION MARKED "HOLD" RETAINS PRELIMINARY STATUS.

ORIGINATING PERSONNEL	PROFESSIONAL ENGINEER'S SEAL
DRAWN BY: A. PRATT	
CHECKED BY: E. LEIBY	
LEAD DESIGNER: J. DAHLGREN	
ENGINEER/TECH SPECIALIST: B. ANDERS	
PROJECT ENGINEERING MANAGER: B. ANDERS	
PROJECT MANAGER: B. PIETRUCHA	

Zero Harm — Leadership, No Incidents, Safe Behavior

ORIGINALLY PREPARED UNDER THE RESPONSIBLE SUPERVISION OF
NAME _____ STATE _____
LIC. NO. _____ DATE _____

WorleyParsons
resources & energy

CLIENT/PROJECT TITLE

GENESIS SOLAR LLC
GENESIS SOLAR ENERGY PROJECT

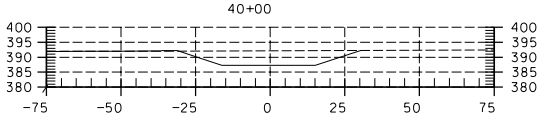
CHANNEL A CROSS SECTIONS

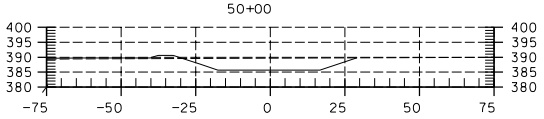
SCALE: 1"=20'
DRAWING SIZE: ARCH D (36" x 24")
WORLEYPARSONS DWG. NO.: GENI-1-DW-112-716-004-009
REV: 1

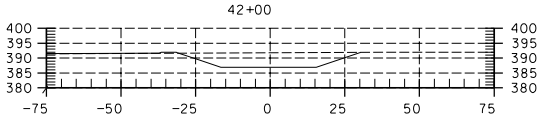
FILE NAME: ##DGNSPEC##
##TIME##
##DGNFILE##

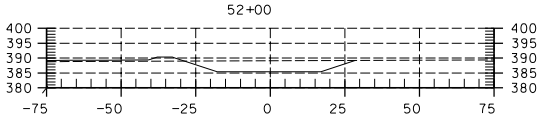
GENI-1-DW-112-716-004-009.dgn 1/14/2010 4:56:15 PM

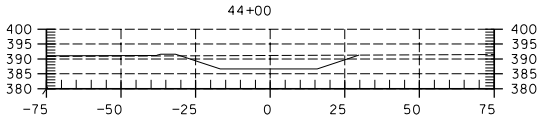
STA.40+00 TO STA.58+00

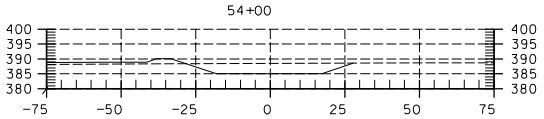


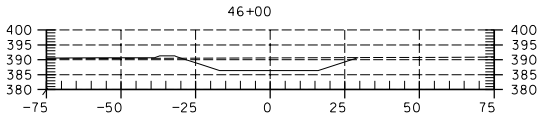


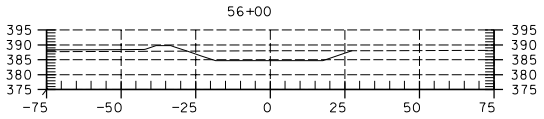


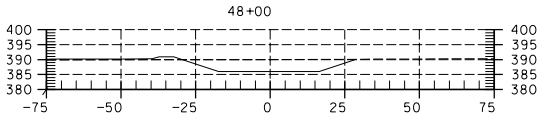


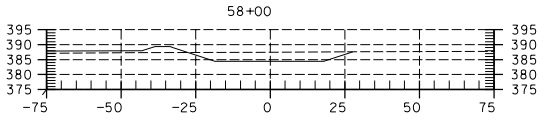












LEGEND:

EXISTING GRADE

PROPOSED GRADE

SCALE:
HORIZ: 1"=20'
VERT: 1"=20'

REV	DATE	DESCRIPTION	DRAWN	CHECKED	LEAD DESIGNER	ENGINEER/TECHNICAL SPECIALIST	PROJECT ENGINEERING MANAGER	PROJECT MANAGER
1	01 15 10	ISSUED FOR REVIEW	APEL	JDBA	BA	BA	BP	

PRELIMINARY STATUS — DATE — LDE
REPRESENTS GENERAL DESIGN CONCEPTS BASED ON ASSUMPTIONS. REVIEWED NOT CHECKED.

APPROVED STATUS — DATE — LDE
REPRESENTS REVIEWED AND APPROVED DESIGN. ANY PORTION MARKED "HOLD" RETAINS PRELIMINARY STATUS.

ORIGINATING PERSONNEL

DRAWN BY: A. PRATT
CHECKED BY: E. LEIBY
LEAD DESIGNER: J. DAHLGREN
ENGINEER/TECH SPECIALIST: B. ANDERS
PROJECT ENGINEERING MANAGER: B. ANDERS
PROJECT MANAGER: B. PIETRUCHA

PROFESSIONAL ENGINEER'S SEAL

Zero Harm — Leadership No Incidents Safe Behavior

ORIGINALLY PREPARED UNDER THE RESPONSIBLE SUPERVISION OF
PRINT NAME _____ STATE _____
LIC. NO. _____ DATE _____

WorleyParsons
resources & energy

CLIENT/PROJECT TITLE

GENESIS SOLAR LLC
GENESIS SOLAR ENERGY PROJECT

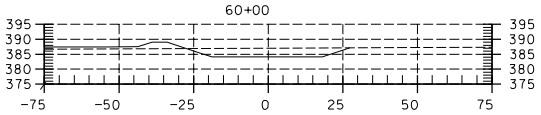
CHANNEL A CROSS SECTIONS

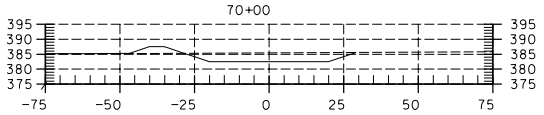
SCALE: 1"=20'
DRAWING SIZE: ARCH D (36" x 24")
WORLEYPARSONS DWG. NO.: GEN1-1-DW-112-716-004-010
REV: 1

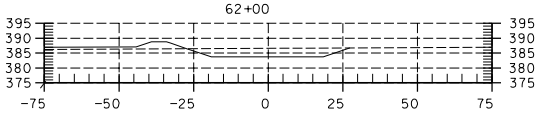
FILE NAME: ##DGNSPEC##
##TIME##
##PRINTER##

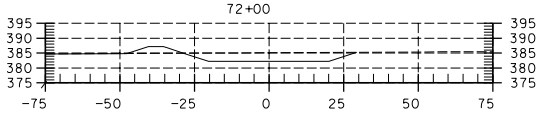
GEN1-1-DW-112-716-004-010.dgn 1/14/2010 4:56:56 PM

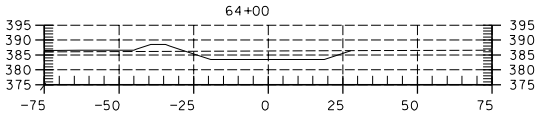
STA.60+00 TO STA.78+00

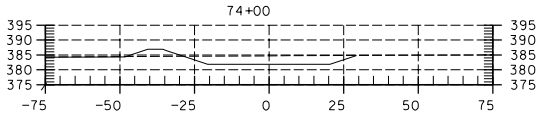


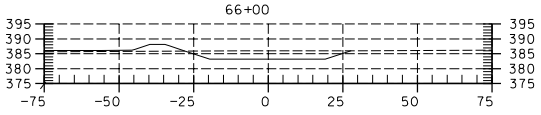


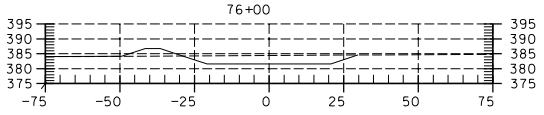


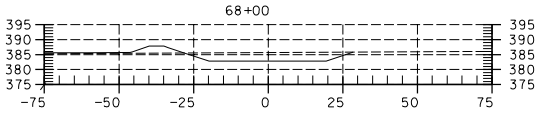


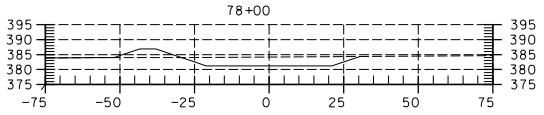












LEGEND:

EXISTING GRADE

PROPOSED GRADE

SCALE:
HORIZ: 1"=20'
VERT: 1"=20'

REV	DATE	DESCRIPTION	DRAWN	CHECKED	LEAD DESIGNER	ENGINEER/TECHNICAL SPECIALIST	LEAD DISCIPLINE ENGINEER	PROJECT ENGINEERING MANAGER	PROJECT MANAGER
1	01 15 10	ISSUED FOR REVIEW	AP	EL	JD	BA	BA	BA	BP

PRELIMINARY STATUS — DATE — LDE
REPRESENTS GENERAL DESIGN CONCEPTS BASED ON ASSUMPTIONS. REVIEWED NOT CHECKED.

APPROVED STATUS — DATE — LDE
REPRESENTS REVIEWED AND APPROVED DESIGN. ANY PORTION MARKED 'HOLD' RETAINS PRELIMINARY STATUS.

ORIGINATING PERSONNEL

DRAWN BY: A. PRATT
CHECKED BY: E. LEIBY
LEAD DESIGNER: J. DAHLGREN
ENGINEER/TECH SPECIALIST: B. ANDERS
PROJECT ENGINEERING MANAGER: B. ANDERS
PROJECT MANAGER: B. PIETRUCHA

PROFESSIONAL ENGINEER'S SEAL

ORIGINALLY PREPARED UNDER THE RESPONSIBLE SUPERVISION OF
BY _____ STATE _____
LIC. NO. _____ DATE _____

Zero Harm — Leadership No Incidents Safe Behavior

WorleyParsons
resources & energy

CLIENT/PROJECT TITLE

GENESIS SOLAR LLC
GENESIS SOLAR ENERGY PROJECT

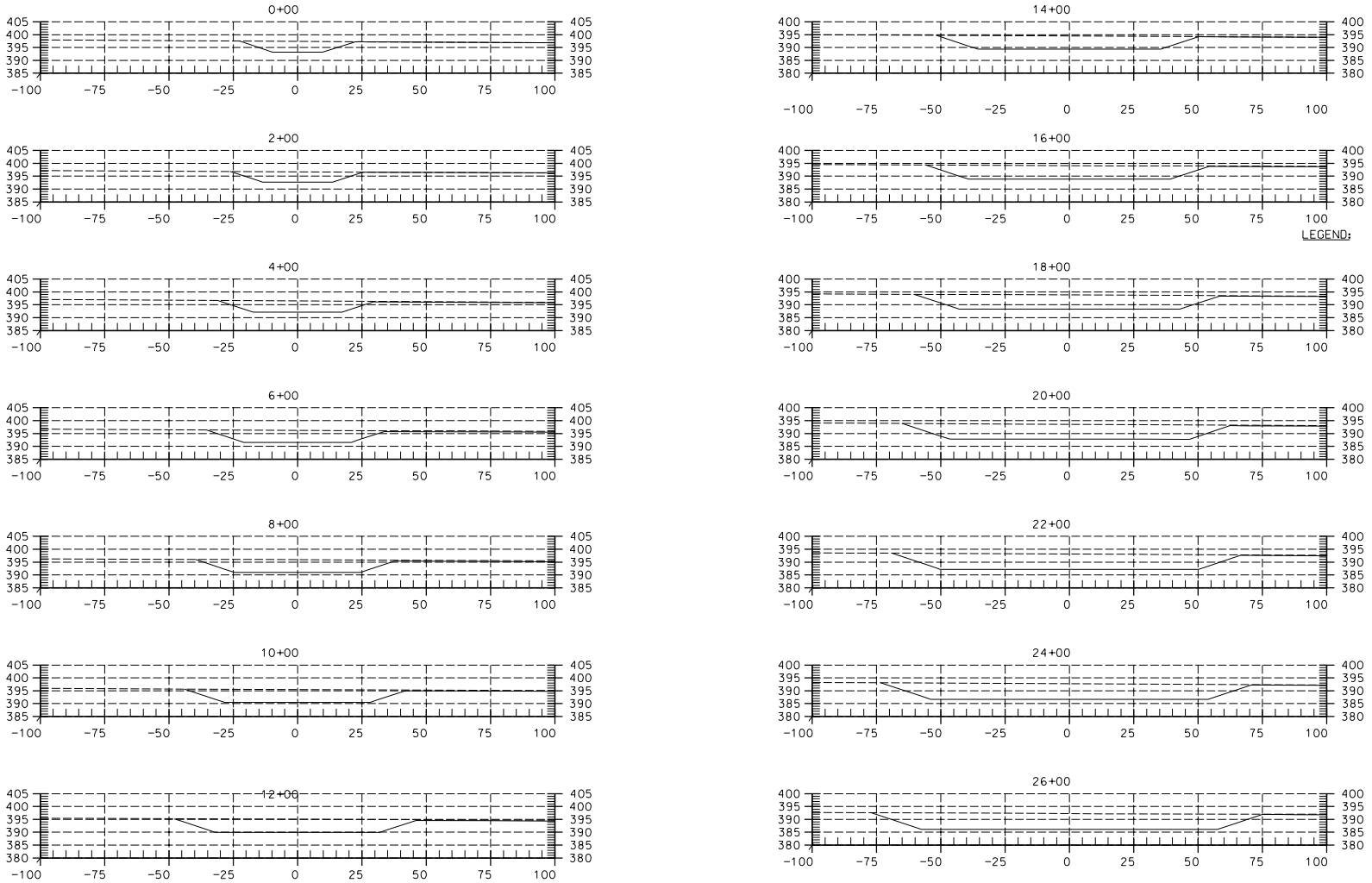
CHANNEL A CROSS SECTIONS

SCALE: 1"=20'
DRAWING SIZE: ARCH D (36" x 24")
WORLEYPARSONS DWG. NO.: GEN1-1-DW-112-716-004-011
REV: 1

FILE NAME: ##ISOASPECT##
SAVED: ##TIME##

GEN1-1-DW-112-716-004-011.dgn 1/14/2010 4:57:32 PM

STA.0+00 TO STA.26+00



LEGEND:

EXISTING GRADE

PROPOSED GRADE

SCALE:
HORIZ: 1"=20'
VERT: 1"=20'

REV	DATE	DESCRIPTION	DRAWN	CHECKED	LEAD DESIGNER	ENGINEER/TECH SPECIALIST	PROJECT ENGINEER	PROJECT MANAGER
1	01 15 10	ISSUED FOR REVIEW	AP	EL	JD	BA	BA	BA	BP

PRELIMINARY STATUS — DATE — LDE: REPRESENTS GENERAL DESIGN CONCEPTS BASED ON ASSUMPTIONS. REVIEWED NOT CHECKED.

APPROVED STATUS — DATE — LDE: REPRESENTS REVIEWED AND APPROVED DESIGN. ANY PORTION MARKED "HOLD" RETAINS PRELIMINARY STATUS.

ORIGINATING PERSONNEL	PROFESSIONAL ENGINEER'S SEAL
DRAWN BY: A. PRATT	ORIGINALLY PREPARED UNDER THE RESPONSIBLE SUPERVISION OF: PRINT NAME, P.E. NO., STATE, DATE
CHECKED BY: E. LEIBY	
LEAD DESIGNER: J. DAHLGREN	
ENGINEER/TECH SPECIALIST: B. ANDERS	
PROJECT ENGINEERING MANAGER: B. ANDERS	
PROJECT MANAGER: B. PIETRUCHA	

Zero Harm — Leadership, No Incidents, Safe Behavior

WorleyParsons
resources & energy

CLIENT/PROJECT TITLE

GENESIS SOLAR LLC
GENESIS SOLAR ENERGY PROJECT

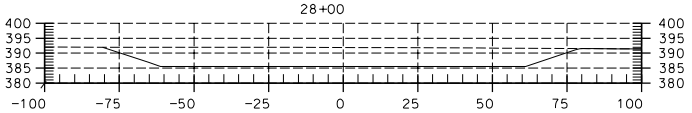
CHANNEL B CROSS SECTIONS

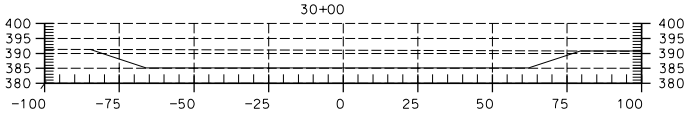
SCALE	DRAWING SIZE
1"=20'	ARCH D (36" x 24")

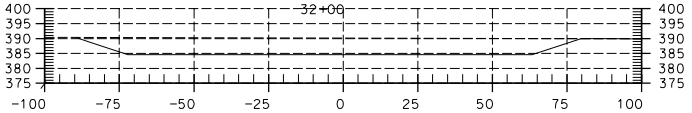
WORLEYPARSONS DWG. NO.	REV
GENI-1-DW-112-716-004-012	1

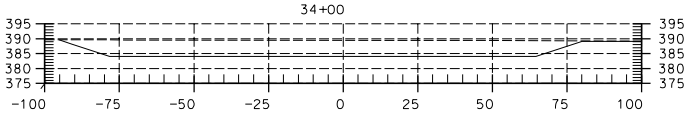
FILE NAME: GENI-1-DW-112-716-004-012.dgn
TIME/DATE: 1/14/2010 4:58:25 PM

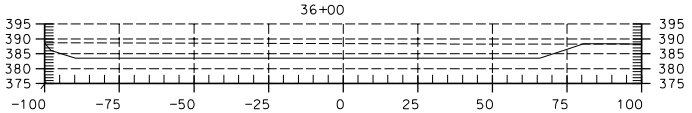
STA.28+00 TO STA.46+59

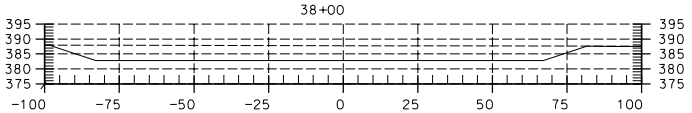


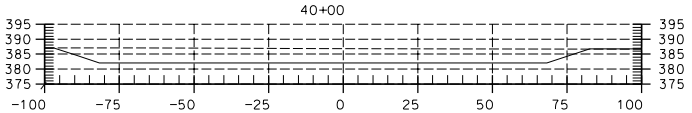


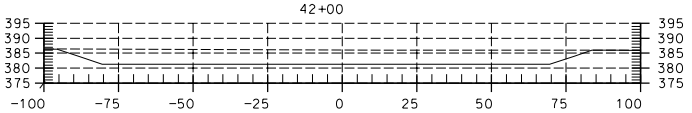


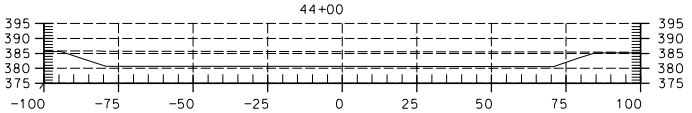


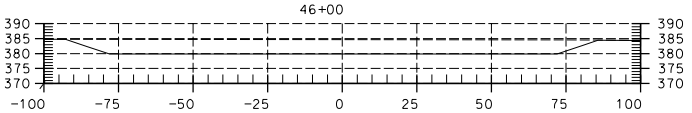


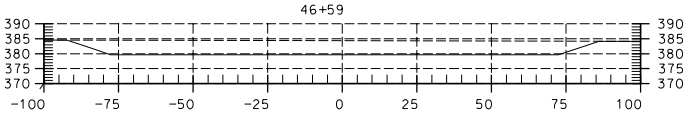












LEGEND:

EXISTING GRADE

PROPOSED GRADE

SCALE:
HORIZ: 1"=20'
VERT: 1"=20'

REV	DATE	DESCRIPTION	DRAWN	CHECKED	LEAD DESIGNER	ENGINEER/TECHNICAL SPECIALIST	PROJECT ENGINEERING MANAGER	PROJECT MANAGER
1	01 15 10	ISSUED FOR REVIEW	AP	EL	JD	BA	BA	BA	BP

PRELIMINARY STATUS — DATE — LDE
REPRESENTS GENERAL DESIGN CONCEPTS BASED ON ASSUMPTIONS. REVIEWED NOT CHECKED.

APPROVED STATUS — DATE — LDE
REPRESENTS REVIEWED AND APPROVED DESIGN. ANY PORTION MARKED "HOLD" RETAINS PRELIMINARY STATUS.

ORIGINATING PERSONNEL	PROFESSIONAL ENGINEER'S SEAL
DRAWN BY: A. PRATT	
CHECKED BY: E. LEIBY	
LEAD DESIGNER: J. DAHLGREN	
ENGINEER/TECH SPECIALIST: B. ANDERS	
PROJECT ENGINEERING MANAGER: B. ANDERS	
PROJECT MANAGER: B. PIETRUCHA	

Zero Harm — Leadership, No Incidents, Safe Behavior

ORIGINALLY PREPARED UNDER THE RESPONSIBLE SUPERVISION OF
NAME _____ STATE _____
LIC. NO. _____ DATE _____

WorleyParsons
resources & energy

CLIENT/PROJECT TITLE

GENESIS SOLAR LLC
GENESIS SOLAR ENERGY PROJECT

CHANNEL B CROSS SECTIONS

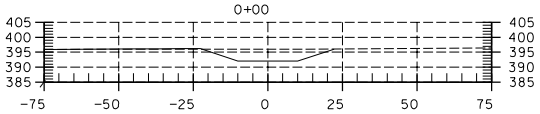
SCALE	DRAWING SIZE
1"=20'	ARCH D (36" x 24")

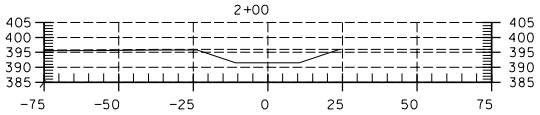
WORLEYPARSONS DWG. NO.	REV
GEN1-1-DW-112-716-004-013	1

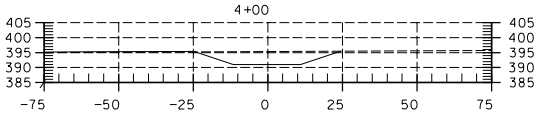
FILE NAME: ##ISORSPEC##
##SHEETTIME##

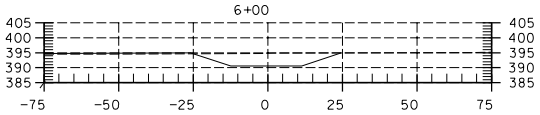
GEN1-1-DW-112-716-004-013.dgn 1/14/2010 4:59:08 PM

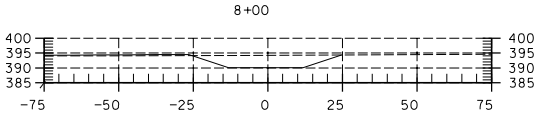
STA.0+00 TO STA.26+00

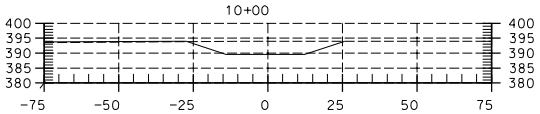


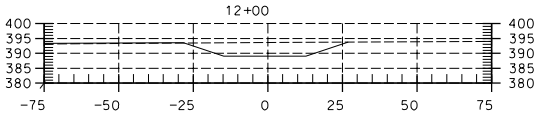


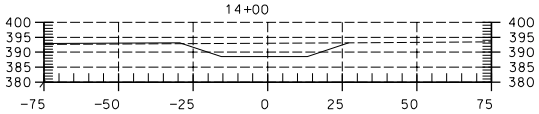


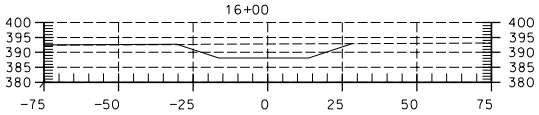


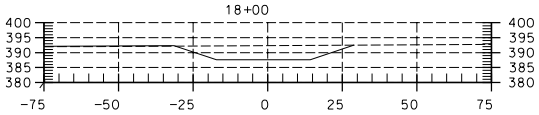


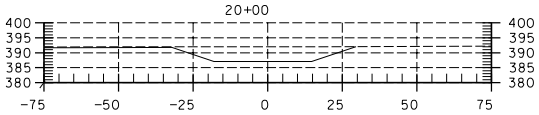


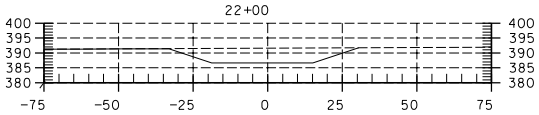


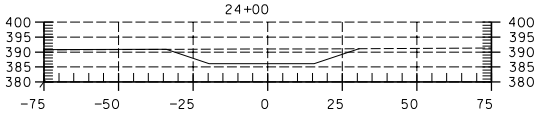


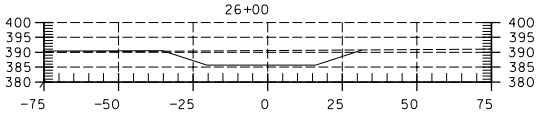












LEGEND:

EXISTING GRADE

PROPOSED GRADE

SCALE:
HORIZ: 1"=20'
VERT: 1"=20'

REV	DATE	DESCRIPTION	DRAWN	CHECKED	LEAD DESIGNER	ENGINEER/TECH SPECIALIST	PROJECT ENGINEERING MANAGER	PROJECT MANAGER
1	01 15 10	ISSUED FOR REVIEW	AP	EL	JD	BA	BA	BA	BP

PRELIMINARY STATUS — DATE — LDE
REPRESENTS GENERAL DESIGN CONCEPTS BASED ON ASSUMPTIONS. REVIEWED NOT CHECKED.

APPROVED STATUS — DATE — LDE
REPRESENTS REVIEWED AND APPROVED DESIGN. ANY PORTION MARKED "HOLD" RETAINS PRELIMINARY STATUS.

ORIGINATING PERSONNEL

DRAWN BY: A. PRATT
CHECKED BY: E. LEIBY
LEAD DESIGNER: J. DAHLGREN
ENGINEER/TECH SPECIALIST: B. ANDERS
PROJECT ENGINEERING MANAGER: B. ANDERS
PROJECT MANAGER: B. PIETRUCHA

PROFESSIONAL ENGINEER'S SEAL

Zero Harm — Leadership, No Incidents, Safe Behavior

ORIGINALLY PREPARED UNDER THE RESPONSIBLE SUPERVISION OF
NAME
LIC. NO.
STATE
DATE

WorleyParsons
resources & energy

CLIENT/PROJECT TITLE

GENESIS SOLAR LLC
GENESIS SOLAR ENERGY PROJECT

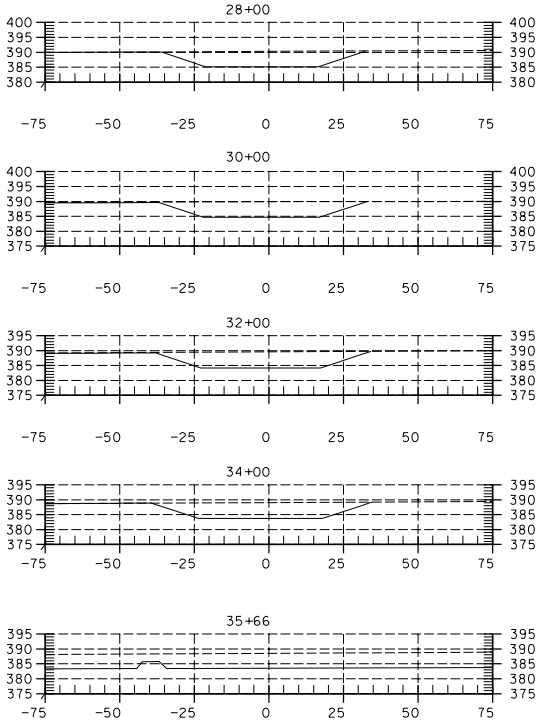
CHANNEL C CROSS SECTIONS

SCALE: 1"=20'
DRAWING SIZE: ARCH D (36" x 24")
WORLEYPARSONS DWG. NO.: GEN1-1-DW-112-716-004-014
REV: 1

FILE NAME: ##DGNSPEC##
##TIME##

GEN1-1-DW-112-716-004-014.dgn 1/14/2010 4:59:52 PM

STA.28+00 TO STA.35+66



LEGEND:

EXISTING GRADE

PROPOSED GRADE

SCALE:
HORIZ: 1"=20'
VERT: 1"=20'

REV	DATE	DESCRIPTION	DRAWN	CHECKED	LEAD DESIGNER	ENGINEER/TECHNICAL SPECIALIST	LEAD DISCIPLINE ENGINEER	PROJECT ENGINEERING MANAGER	PROJECT MANAGER
1	01 15 10	ISSUED FOR REVIEW	AP	EL	JD	BA	BA	BA	BP

PRELIMINARY STATUS — DATE — LDE
REPRESENTS GENERAL DESIGN CONCEPTS BASED ON ASSUMPTIONS. REVIEWED NOT CHECKED.

APPROVED STATUS — DATE — LDE
REPRESENTS REVIEWED AND APPROVED DESIGN. ANY PORTION MARKED "HOLD" RETAINS PRELIMINARY STATUS.

ORIGINATING PERSONNEL	PROFESSIONAL ENGINEER'S SEAL
DRAWN BY: A. PRATT	ORIGINALLY PREPARED UNDER THE RESPONSIBLE SUPERVISION OF: BY _____ LIC. NO. _____ STATE _____ DATE _____
CHECKED BY: E. LEIBY	
LEAD DESIGNER: J. DAHLGREN	
ENGINEER/TECH SPECIALIST: B. ANDERS	
PROJECT ENGINEERING MANAGER: B. ANDERS	
PROJECT MANAGER: B. PIETRUCHA	

Zero Harm — Leadership, No Incidents, Safe Behavior

WorleyParsons
resources & energy

CLIENT/PROJECT TITLE

GENESIS SOLAR LLC
GENESIS SOLAR ENERGY PROJECT

CHANNEL C CROSS SECTIONS

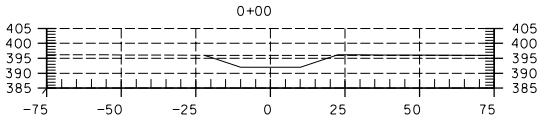
SCALE	DRAWING SIZE
1"=20'	ARCH D (36" x 24")

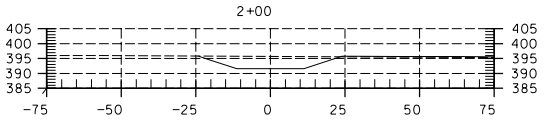
WORLEYPARSONS DWG. NO.	REV
GENI-1-DW-112-716-004-015	1

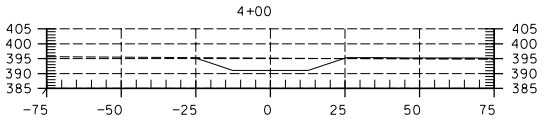
FILE NAME: ==$$CONSPECTS$$==
==$$$$TIME$$$$==
==$$$$DATE$$$$==

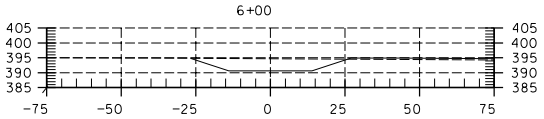
GENI-1-DW-112-716-004-015.dgn 1/14/2010 5:00:24 PM

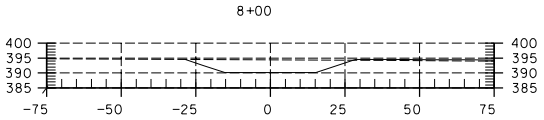
STA.0+00 TO STA.26+00

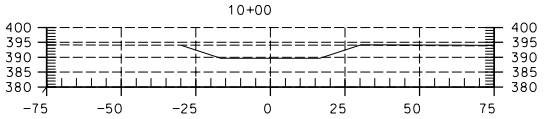


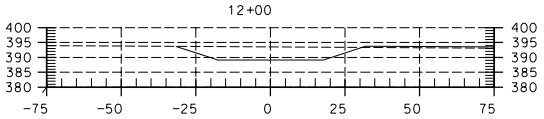


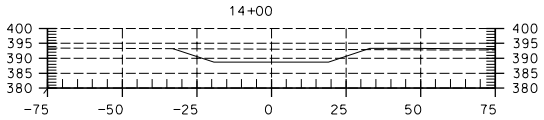


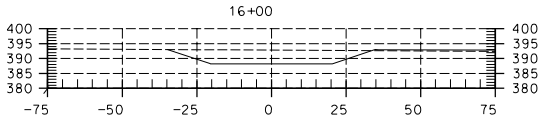


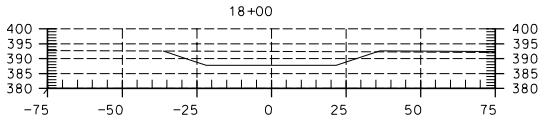


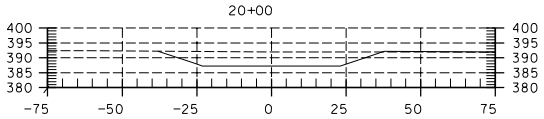


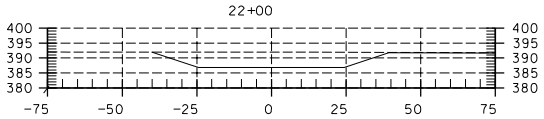


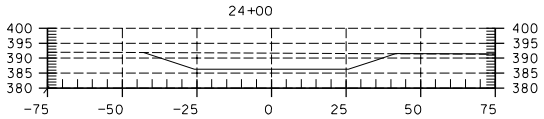


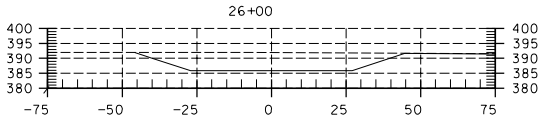












LEGEND:

EXISTING GRADE

PROPOSED GRADE

SCALE:
HORIZ: 1"=20'
VERT: 1"=20'

REV	DATE	DESCRIPTION	DRAWN	CHECKED	LEAD DESIGNER	ENGINEER/TECHNICAL SPECIALIST	LEAD DISCIPLINE ENGINEER	PROJECT ENGINEERING MANAGER	PROJECT MANAGER
1	01 15 10	ISSUED FOR REVIEW	AP	EL	JD	BA	BA	BA	BP

PRELIMINARY STATUS — DATE — LDE
REPRESENTS GENERAL DESIGN CONCEPTS BASED ON ASSUMPTIONS. REVIEWED NOT CHECKED.

APPROVED STATUS — DATE — LDE
REPRESENTS REVIEWED AND APPROVED DESIGN. ANY PORTION MARKED "HOLD" RETAINS PRELIMINARY STATUS.

ORIGINATING PERSONNEL

DRAWN BY: A. PRATT
CHECKED BY: E. LEIBY
LEAD DESIGNER: J. DAHLGREN
ENGINEER/TECH SPECIALIST: B. ANDERS
PROJECT ENGINEERING MANAGER: B. ANDERS
PROJECT MANAGER: B. PIETRUCHA

PROFESSIONAL ENGINEER'S SEAL

Zero Harm — Leadership, No Incidents, Safe Behavior

ORIGINALLY PREPARED UNDER THE RESPONSIBLE SUPERVISION OF
BY _____ STATE _____
LIC. NO. _____ DATE _____

WorleyParsons
resources & energy

CLIENT/PROJECT TITLE

GENESIS SOLAR LLC
GENESIS SOLAR ENERGY PROJECT

CHANNEL D CROSS SECTIONS

SCALE: 1":20'
DRAWING SIZE: ARCH D (36" x 24")
WORLEYPARSONS DWG. NO.: GEN1-1-DW-112-716-004-016
REV: 1

FILE NAME: ##%%CONSPECT%%##########
##$$$$TIME$$$$##########

GEN1-1-DW-112-716-004-016.dgn 1/14/2010 5:01:14 PM

STA.28+00 TO STA.54+00

LEGEND:

- - - - - - - EXISTING GRADE

———— PROPOSED GRADE

SCALE:
HORIZ: 1"=20'
VERT: 1"=20'

REV	DATE	DESCRIPTION	DRAWN	CHECKED	LEAD DESIGNER	ENGINEER/TECH. SPEC.	LEAD DISC ENGINEER	PROJ ENGR MANAGER	PROJECT MANAGER
1	01 15 10	ISSUED FOR REVIEW	AP	EL	JD	BA	BA	BA	BP

PRELIMINARY STATUS DATE — REPRESENTS GENERAL DESIGN CONCEPTS BASED ON ASSUMPTIONS. REVIEWED NOT CHECKED.
LDE

APPROVED STATUS DATE — REPRESENTS REVIEWED AND APPROVED DESIGN. ANY PORTION MARKED "HOLD" RETAINS PRELIMINARY STATUS.
LDE

ORIGINATING PERSONNEL	
DRAWN BY	A. PRATT
CHECKED BY	E. LEIBY
LEAD DESIGNER	J. DAHLGREN
ENGINEER/TECH SPECIALIST	B. ANDERS
PROJECT ENGINEERING MANAGER	B. ANDERS
PROJECT MANAGER	B. PIETRUCHA

PROFESSIONAL ENGINEER'S SEAL

Zero Harm — Leadership, No Incidents, Safe Behavior

ORIGINALLY PREPARED UNDER THE RESPONSIBLE SUPERVISION OF
PE: __________ STATE: ______
LIC. NO.: __________ DATE: ______

WorleyParsons
resources & energy

CLIENT/PROJECT TITLE
GENESIS SOLAR LLC
GENESIS SOLAR ENERGY PROJECT

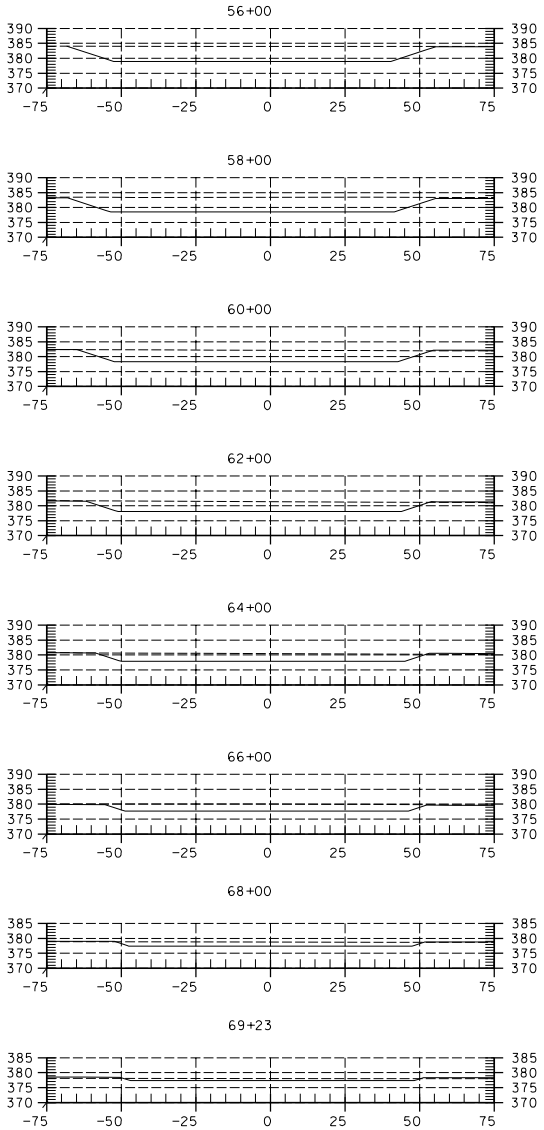
CHANNEL D CROSS SECTIONS

SCALE: 1"=20'
DRAWING SIZE: ARCH D (36" x 24")
WORLEYPARSONS DWG. NO.: GENI-1-DW-112-716-004-017
REV: 1

FILE NAME:$$$$DGNSPEC$$$$$$$$$$$$ $$$$DATE$$$$ $$$$TIME$$$$

GENI-1-DW-112-716-004-017.dgn 1/14/2010 5:02:00 PM

STA.56+00 TO STA.69+23



LEGEND:

EXISTING GRADE

PROPOSED GRADE

SCALE:
HORIZ: 1"=20'
VERT: 1"=20'

REV	DATE	DESCRIPTION	DRAWN	CHECKED	LEAD DESIGNER	ENGINEER/TECH SPECIALIST	PROJECT ENGINEERING MANAGER	PROJECT MANAGER
1	01/15/10	ISSUED FOR REVIEW	AP	EL	JD	BA	BA	BA	BP

PRELIMINARY STATUS — DATE — LDE
REPRESENTS GENERAL DESIGN CONCEPTS BASED ON ASSUMPTIONS. REVIEWED NOT CHECKED.

APPROVED STATUS — DATE — LDE
REPRESENTS REVIEWED AND APPROVED DESIGN. ANY PORTION MARKED "HOLD" RETAINS PRELIMINARY STATUS.

ORIGINATING PERSONNEL	PROFESSIONAL ENGINEER'S SEAL
DRAWN BY: A. PRATT	
CHECKED BY: E. LEIBY	
LEAD DESIGNER: J. DAHLGREN	
ENGINEER/TECH SPECIALIST: B. ANDERS	
PROJECT ENGINEERING MANAGER: B. ANDERS	
PROJECT MANAGER: B. PIETRUCHA	

Zero Harm — Leadership, No Incidents, Safe Behavior

ORIGINALLY PREPARED UNDER THE RESPONSIBLE SUPERVISION OF
NAME _____ STATE _____
LIC. NO. _____ DATE: _____

WorleyParsons
resources & energy

CLIENT/PROJECT TITLE

GENESIS SOLAR LLC
GENESIS SOLAR ENERGY PROJECT

CHANNEL D CROSS SECTIONS

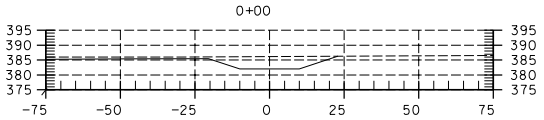
SCALE	DRAWING SIZE
1:20'	ARCH D (36" x 24")

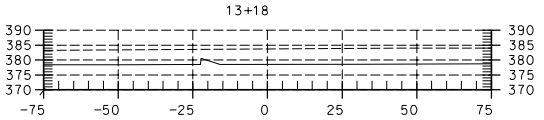
WORLEYPARSONS DWG. NO.	REV
GEN1-1-DW-112-716-004-018	1

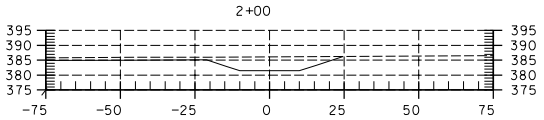
FILE NAME: ##ISOSPEC##########
##########TIME##########

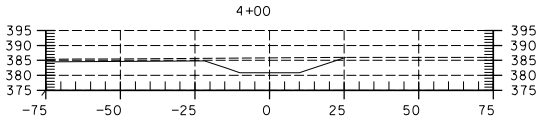
GENI-1-DW-112-716-004-018.dgn 1/14/2010 5:02:33 PM

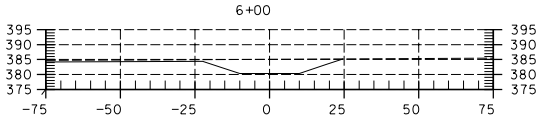
STA.0+00 TO STA.13+18

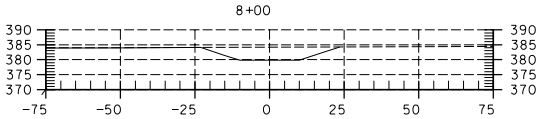


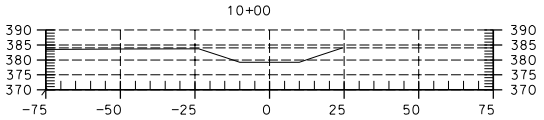


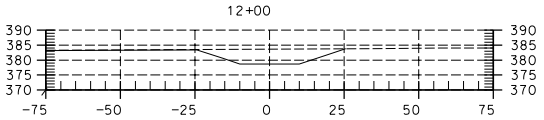












LEGEND:

EXISTING GRADE

PROPOSED GRADE

SCALE:
HORIZ: 1"=20'
VERT: 1"=20'

REV	DATE	DESCRIPTION	DRAWN	CHECKED	LEAD DESIGNER	ENGINEER/TECHNICAL LEAD DISC.	PROJECT ENGINEERING MANAGER	PROJECT MANAGER
1	01 15 10	ISSUED FOR REVIEW	AP	EL	JD	BA	BA	BA	BP

PRELIMINARY STATUS — LDE — DATE: REPRESENTS GENERAL DESIGN CONCEPTS BASED ON ASSUMPTIONS. REVIEWED NOT CHECKED.

APPROVED STATUS — LDE — DATE: REPRESENTS REVIEWED AND APPROVED DESIGN. ANY PORTION MARKED 'HOLD' RETAINS PRELIMINARY STATUS.

ORIGINATING PERSONNEL

DRAWN BY: A. PRATT
CHECKED BY: E. LEIBY
LEAD DESIGNER: J. DAHLGREN
ENGINEER/TECH SPECIALIST: B. ANDERS
PROJECT ENGINEERING MANAGER: B. ANDERS
PROJECT MANAGER: B. PIETRUCHA

PROFESSIONAL ENGINEER'S SEAL

Zero Harm — Leadership, No Incidents, Safe Behavior

ORIGINALLY PREPARED UNDER THE RESPONSIBLE SUPERVISION OF
PE: _____ STATE: _____
LIC. NO.: _____ DATE: _____

WorleyParsons
resources & energy

CLIENT/PROJECT TITLE

GENESIS SOLAR LLC
GENESIS SOLAR ENERGY PROJECT

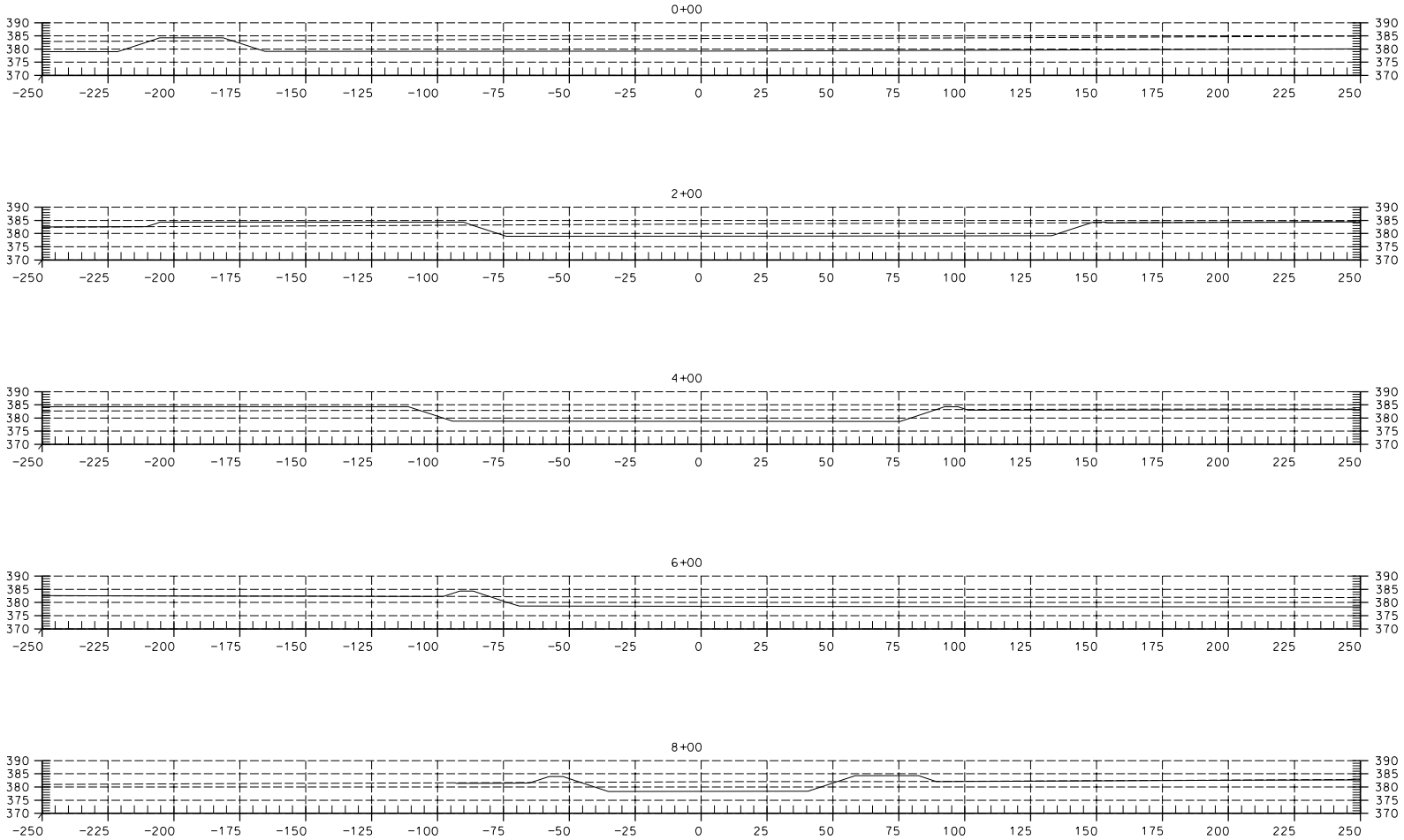
CHANNEL E CROSS SECTIONS

SCALE: 1"=20'
DRAWING SIZE: ARCH D (36" x 24")
WORLEYPARSONS DWG. NO.: GEN1-1-DW-112-716-004-019
REV: 1

FILE NAME: ##ISORSPEC##
##ISSUETIME##

GEN1-1-DW-112-716-004-019.dgn 1/14/2010 5:03:19 PM

STA.0+00 TO STA.8+00



LEGEND:

- - - - - - - EXISTING GRADE

———— PROPOSED GRADE

SCALE:
HORIZ: 1"=20'
VERT: 1"=20'

REV	DATE	DESCRIPTION	DRAWN	CHECKED	LEAD DESIGNER	ENGINEER/ TECH SPEC	LEAD DISC ENGINEER	PROJ ENGR MANAGER	PROJECT MANAGER
1	01 15 10	ISSUED FOR REVIEW	AP	EL	JD	BA	BA	BA	BP

PRELIMINARY STATUS — DATE — REPRESENTS GENERAL DESIGN CONCEPTS BASED ON ASSUMPTIONS. REVIEWED NOT CHECKED.
LDE

APPROVED STATUS — DATE — REPRESENTS REVIEWED AND APPROVED DESIGN. ANY PORTION MARKED "HOLD" RETAINS PRELIMINARY STATUS.
LDE

ORIGINATING PERSONNEL

DRAWN BY: A. PRATT
CHECKED BY: E. LEIBY
LEAD DESIGNER: J. DAHLGREN
ENGINEER/TECH SPECIALIST: B. ANDERS
PROJECT ENGINEERING MANAGER: B. ANDERS
PROJECT MANAGER: B. PIETRUCHA

PROFESSIONAL ENGINEER'S SEAL

Zero Harm — Leadership, No Incidents, Safe Behavior

ORIGINALLY PREPARED UNDER THE RESPONSIBLE SUPERVISION OF
PE: _____ STATE: _____
LIC. NO.: _____ DATE: _____

WorleyParsons resources & energy

CLIENT/PROJECT TITLE

GENESIS SOLAR LLC
GENESIS SOLAR ENERGY PROJECT

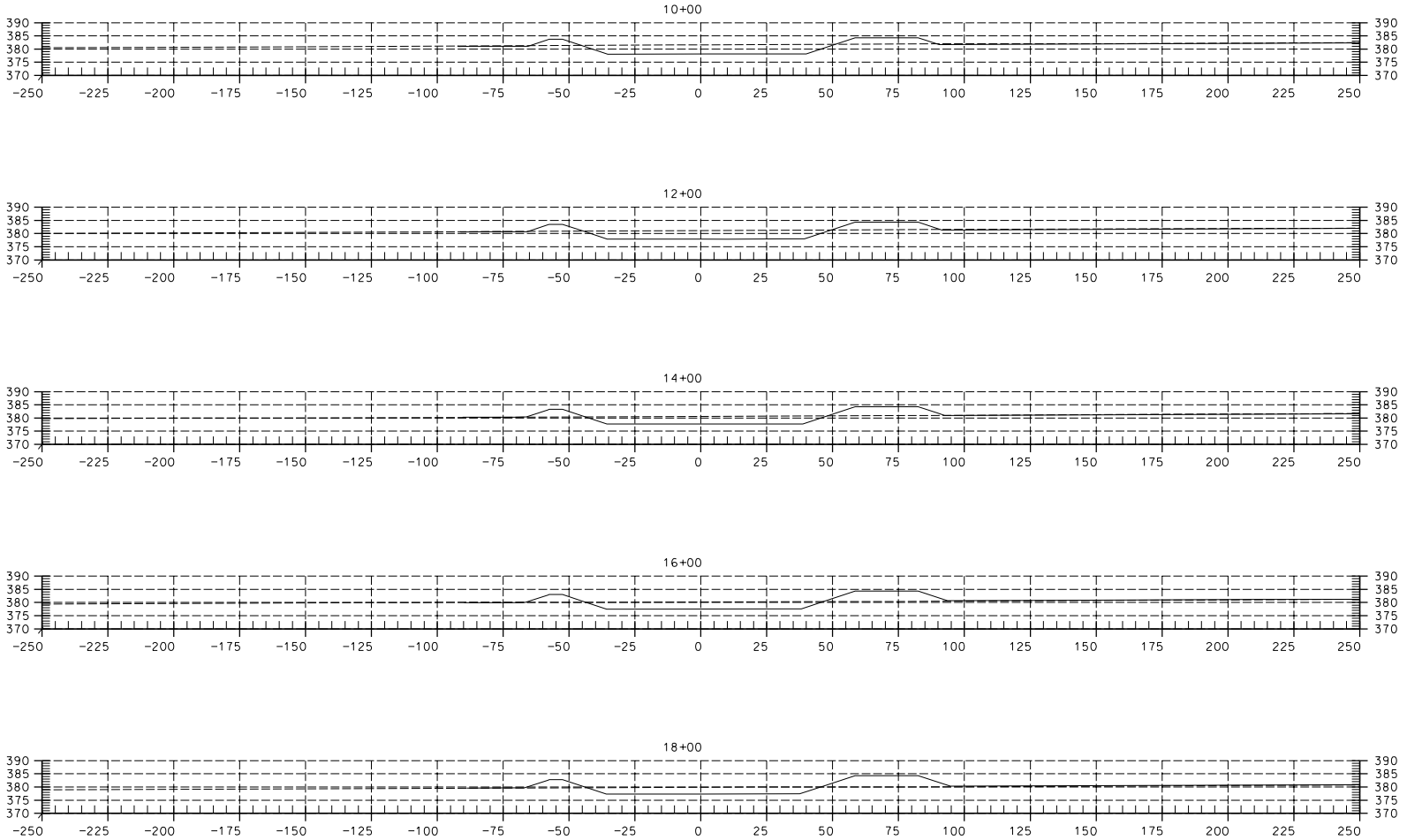
CHANNEL B/C CROSS SECTIONS

SCALE: 1"=20'
DRAWING SIZE: ARCH D (36" x 24")
WORLEYPARSONS DWG. NO.: GENI-1-DW-112-716-004-020
REV: 1

FILE NAME: ****DGNSPEC**********
****DATE**** ****TIME****

GENI-1-DW-112-716-004-020.dgn 1/14/2010 5:04:10 PM

STA.10+00 TO STA.18+00



LEGEND:

- - - - - - - EXISTING GRADE

———— PROPOSED GRADE

SCALE:
HORIZ: 1"=20'
VERT: 1"=20'

REV	DATE	DESCRIPTION	DRAWN	CHECKED	LEAD DESIGNER	ENGINEER/ TECH. SPEC.	LEAD DISC ENGINEER	PROJ. ENGR MANAGER	PROJECT MANAGER
1	01 15 10	ISSUED FOR REVIEW	AP	EL	JD	BA	BA	BA	BP

PRELIMINARY STATUS — DATE — REPRESENTS GENERAL DESIGN CONCEPTS BASED ON ASSUMPTIONS. REVIEWED NOT CHECKED.
LDE

APPROVED STATUS — DATE — REPRESENTS REVIEWED AND APPROVED DESIGN. ANY PORTION MARKED "HOLD" RETAINS PRELIMINARY STATUS.
LDE

ORIGINATING PERSONNEL

DRAWN BY: A. PRATT
CHECKED BY: E. LEIBY
LEAD DESIGNER: J. DAHLGREN
ENGINEER/TECH SPECIALIST: B. ANDERS
PROJECT ENGINEERING MANAGER: B. ANDERS
PROJECT MANAGER: B. PIETRUCHA

PROFESSIONAL ENGINEER'S SEAL

Zero Harm — Leadership No Incidents Safe Behavior

ORIGINALLY PREPARED UNDER THE RESPONSIBLE SUPERVISION OF
PE: _____ STATE: _____
LIC. NO.: _____ DATE: _____

WorleyParsons resources & energy

CLIENT/PROJECT TITLE

GENESIS SOLAR LLC
GENESIS SOLAR ENERGY PROJECT

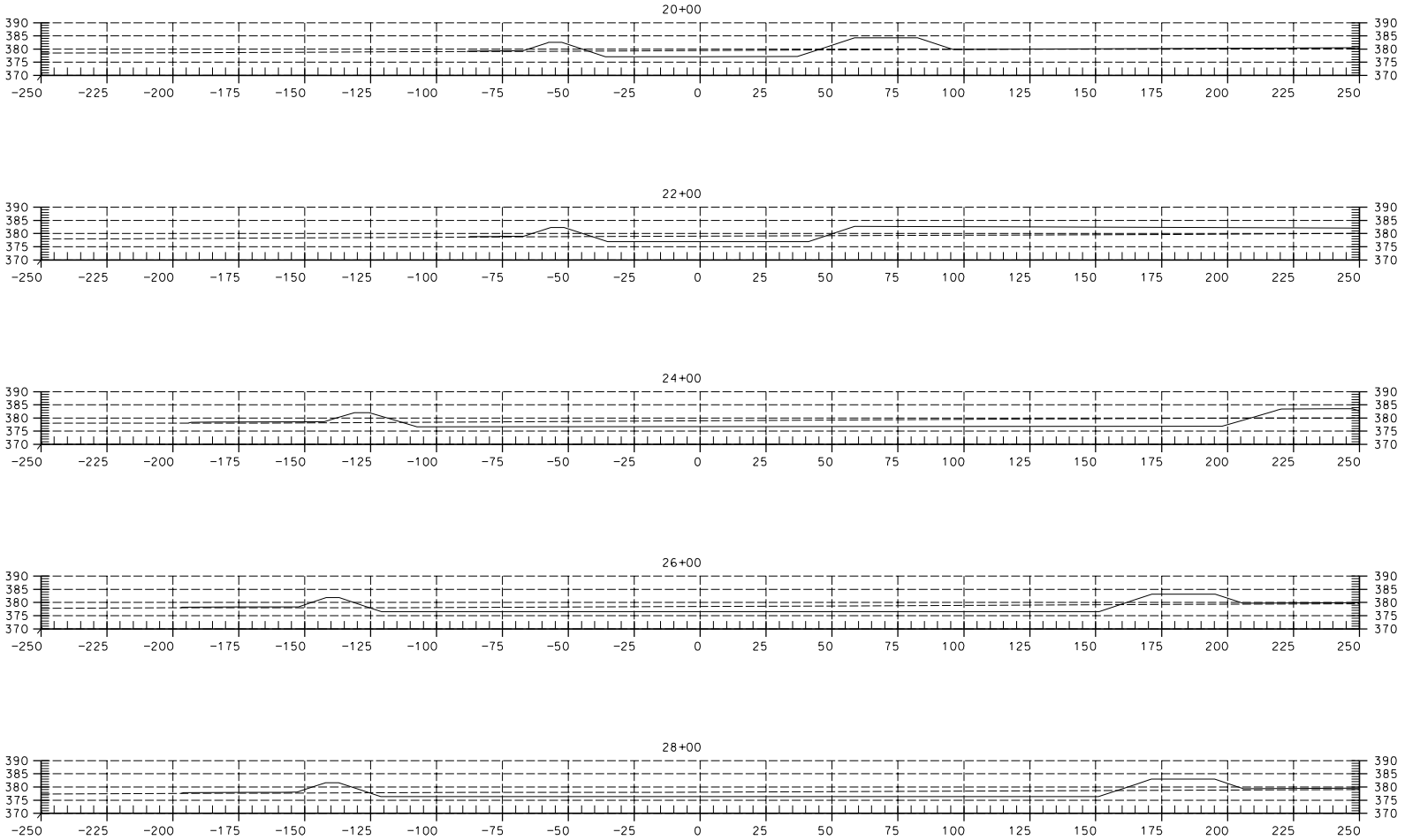
CHANNEL B/C CROSS SECTIONS

SCALE: 1"=20'
DRAWING SIZE: ARCH D (36" x 24")
WORLEYPARSONS DWG. NO.: GENI-1-DW-112-716-004-021
REV: 1

FILE NAME: ****DGNSPEC**********
****DATE**** ****TIME****

GENI-1-DW-112-716-004-021.dgn 1/14/2010 5:04:47 PM

STA.20+00 TO STA.28+00



LEGEND:

- - - - - - - EXISTING GRADE

———— PROPOSED GRADE

SCALE:
HORIZ: 1"=20'
VERT: 1"=20'

REV	DATE	DESCRIPTION	DRAWN	CHECKED	LEAD DESIGNER	ENGINEER/ TECH. SPEC.	LEAD DISC ENGINEER	PROJ ENGR MANAGER	PROJECT MANAGER
1	01 15 10	ISSUED FOR REVIEW	AP	EL	JD	BA	BA	BA	BP

PRELIMINARY STATUS — DATE — REPRESENTS GENERAL DESIGN CONCEPTS BASED ON ASSUMPTIONS. REVIEWED NOT CHECKED.
LDE

APPROVED STATUS — DATE — REPRESENTS REVIEWED AND APPROVED DESIGN. ANY PORTION MARKED "HOLD" RETAINS PRELIMINARY STATUS.
LDE

ORIGINATING PERSONNEL

DRAWN BY: A. PRATT
CHECKED BY: E. LEIBY
LEAD DESIGNER: J. DAHLGREN
ENGINEER/TECH SPECIALIST: B. ANDERS
PROJECT ENGINEERING MANAGER: B. ANDERS
PROJECT MANAGER: B. PIETRUCHA

PROFESSIONAL ENGINEER'S SEAL

Zero Harm — Leadership No Incidents Safe Behavior

ORIGINALLY PREPARED UNDER THE RESPONSIBLE SUPERVISION OF
PE: _____ STATE: _____
LIC. NO.: _____ DATE: _____

WorleyParsons resources & energy

CLIENT/PROJECT TITLE

GENESIS SOLAR LLC
GENESIS SOLAR ENERGY PROJECT

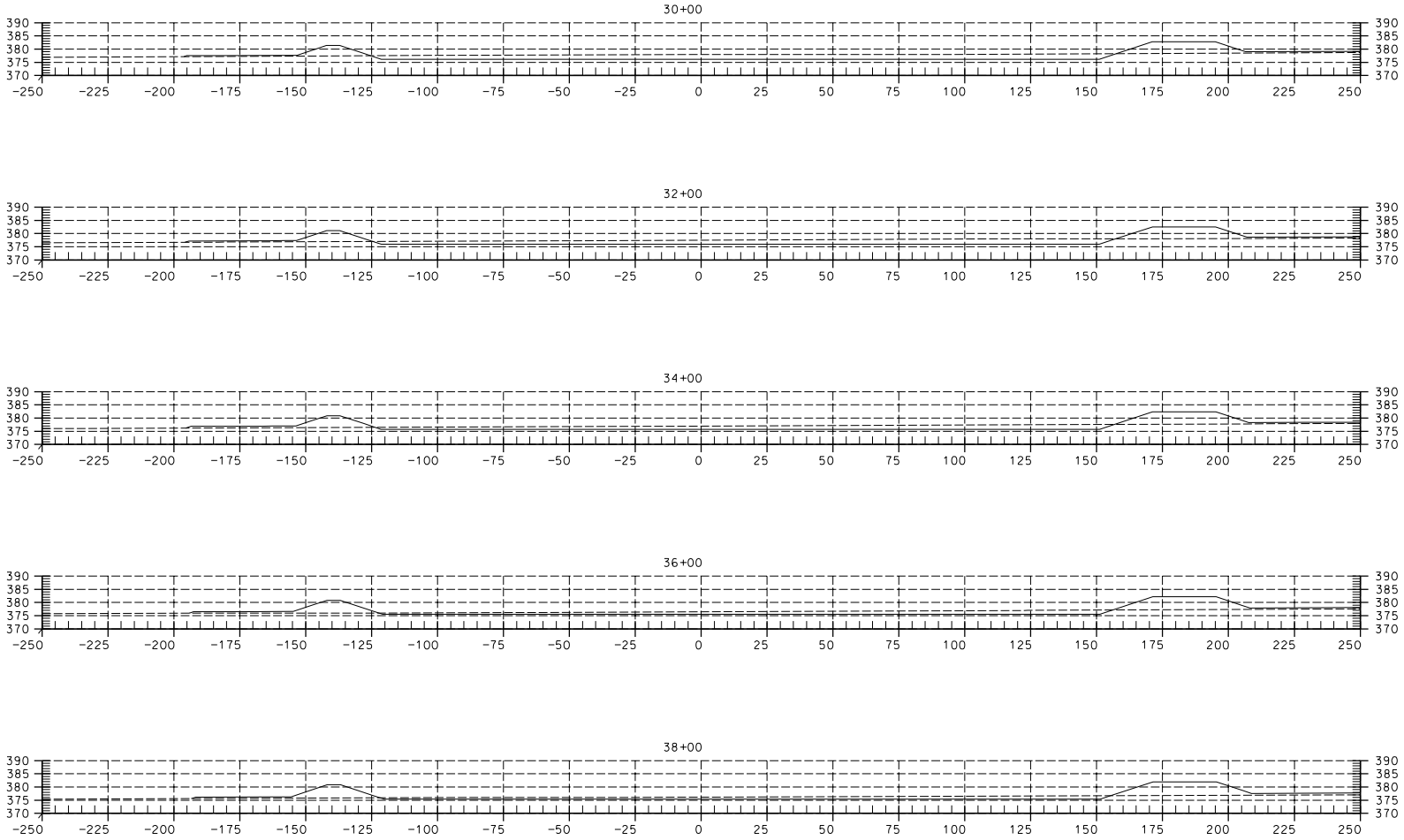
CHANNEL B/C CROSS SECTIONS

SCALE: 1"=20'
DRAWING SIZE: ARCH D (36" x 24")
WORLEYPARSONS DWG. NO.: GENI-1-DW-112-716-004-022
REV: 1

FILE NAME: ****DGNSPEC**********
****DATE**** ****TIME****

GENI-1-DW-112-716-004-022.dgn 1/14/2010 5:05:34 PM

STA.30+00 TO STA.38+00



LEGEND:

EXISTING GRADE

PROPOSED GRADE

SCALE:
HORIZ: 1"=20'
VERT: 1"=20'

REV	DATE	DESCRIPTION	DRAWN	CHECKED	LEAD DESIGNER	ENGINEER/TECHNICAL LEAD/SPECIALIST	PROJECT ENGINEERING MANAGER	PROJECT MANAGER
1	01-15-10	ISSUED FOR REVIEW	AP	EL	JD	BA	BA	BA	BP

PRELIMINARY STATUS — DATE — LDE
REPRESENTS GENERAL DESIGN CONCEPTS BASED ON ASSUMPTIONS. REVIEWED NOT CHECKED.

APPROVED STATUS — DATE — LDE
REPRESENTS REVIEWED AND APPROVED DESIGN. ANY PORTION MARKED "HOLD" RETAINS PRELIMINARY STATUS.

ORIGINATING PERSONNEL	PROFESSIONAL ENGINEER'S SEAL
DRAWN BY: A. PRATT	
CHECKED BY: E. LEIBY	
LEAD DESIGNER: J. DAHLGREN	
ENGINEER/TECH SPECIALIST: B. ANDERS	
PROJECT ENGINEERING MANAGER: B. ANDERS	
PROJECT MANAGER: B. PIETRUCHA	

Zero Harm — Leadership, No Incidents, Safe Behavior

ORIGINALLY PREPARED UNDER THE RESPONSIBLE SUPERVISION OF
PRINT NAME: _____ STATE: _____
LIC. NO.: _____ DATE: _____

WorleyParsons
resources & energy

CLIENT/PROJECT TITLE

GENESIS SOLAR LLC
GENESIS SOLAR ENERGY PROJECT

CHANNEL B/C CROSS SECTIONS

SCALE: 1"=20'
DRAWING SIZE: ARCH D (36" x 24")
WORLEYPARSONS DWG. NO.: GENI-1-DW-112-716-004-023
REV: 1

FILE NAME: ##ISOSPECS##
PLOTTED: ##TIME##

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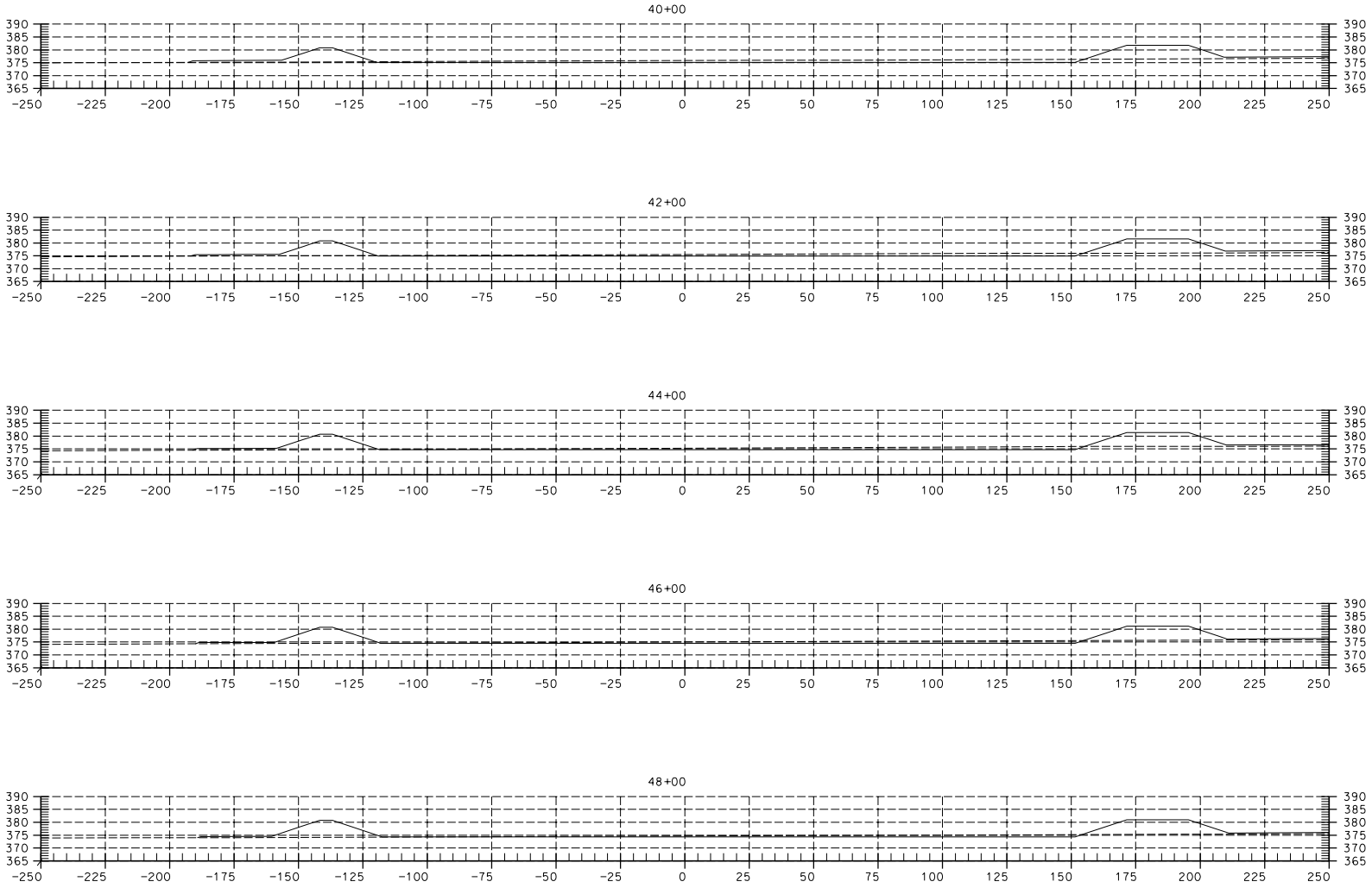
STA.40+00 TO STA.48+00



LEGEND:

EXISTING GRADE

PROPOSED GRADE

SCALE:
HORIZ: 1"=20'
VERT: 1"=20'

REV	DATE	DESCRIPTION	DRAWN	CHECKED	LEAD DESIGNER	ENGINEER/TECHNICAL SPECIALIST	PROJECT ENGINEER	PROJECT MANAGER
1	01 15 10	ISSUED FOR REVIEW	AP	EL	JD	BA	BA	BA	BP

PRELIMINARY STATUS — DATE — LDE
REPRESENTS GENERAL DESIGN CONCEPTS BASED ON ASSUMPTIONS. REVIEWED NOT CHECKED.

APPROVED STATUS — DATE — LDE
REPRESENTS REVIEWED AND APPROVED DESIGN. ANY PORTION MARKED 'HOLD' RETAINS PRELIMINARY STATUS.

ORIGINATING PERSONNEL	PROFESSIONAL ENGINEER'S SEAL
DRAWN BY: A. PRATT	
CHECKED BY: E. LEIBY	
LEAD DESIGNER: J. DAHLGREN	
ENGINEER/TECH SPECIALIST: B. ANDERS	
PROJECT ENGINEERING MANAGER: B. ANDERS	
PROJECT MANAGER: B. PIETRUCHA	

Zero Harm — Leadership, No Incidents, Safe Behavior

ORIGINALLY PREPARED UNDER THE RESPONSIBLE SUPERVISION OF
BY _____ STATE _____
LIC. NO. _____ DATE _____

WorleyParsons
resources & energy

CLIENT/PROJECT TITLE

GENESIS SOLAR LLC
GENESIS SOLAR ENERGY PROJECT

CHANNEL B/C CROSS SECTIONS

SCALE: 1"=20'
DRAWING SIZE: ARCH D (36" x 24")
WORLEYPARSONS DWG. NO.: GEN1-1-DW-112-716-004-024
REV: 1

FILE NAME: ##DGNSPEC##
##SHEETNUMBER##

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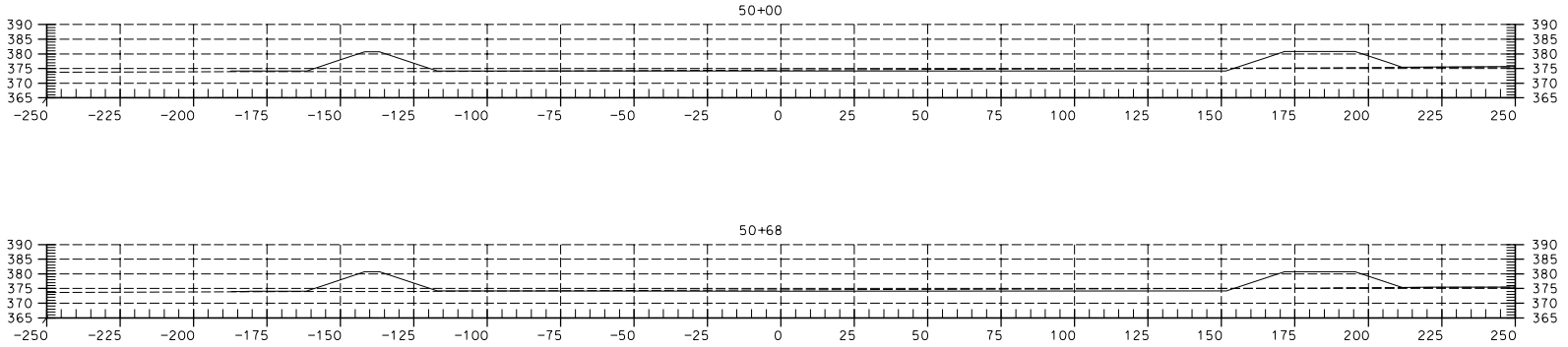
STA.50+00 TO STA.50+68



LEGEND:

EXISTING GRADE

PROPOSED GRADE

SCALE:
HORIZ: 1"=20'
VERT: 1"=20'

REV	DATE	DESCRIPTION	DRAWN	CHECKED	LEAD DESIGNER	ENGINEER/TECHNICAL LEAD/SPECIALIST	PROJECT ENGINEERING MANAGER	PROJECT MANAGER
1	01 15 10	ISSUED FOR REVIEW	AP	EL	JD	BA	BA	BA	BP

PRELIMINARY STATUS — DATE — LDE
REPRESENTS GENERAL DESIGN CONCEPTS BASED ON ASSUMPTIONS. REVIEWED NOT CHECKED.

APPROVED STATUS — DATE — LDE
REPRESENTS REVIEWED AND APPROVED DESIGN, ANY PORTION MARKED "HOLD" RETAINS PRELIMINARY STATUS.

ORIGINATING PERSONNEL	PROFESSIONAL ENGINEER'S SEAL
DRAWN BY: A. PRATT	ORIGINALLY PREPARED UNDER THE RESPONSIBLE SUPERVISION OF: PRINT NAME, STATE, LIC. NO., DATE
CHECKED BY: E. LEIBY	
LEAD DESIGNER: J. DAHLGREN	
ENGINEER/TECH SPECIALIST: B. ANDERS	
PROJECT ENGINEERING MANAGER: B. ANDERS	
PROJECT MANAGER: B. PIETRUCHA	

Zero Harm — Leadership, No Incidents, Safe Behavior

WorleyParsons
resources & energy

CLIENT/PROJECT TITLE

GENESIS SOLAR LLC
GENESIS SOLAR ENERGY PROJECT

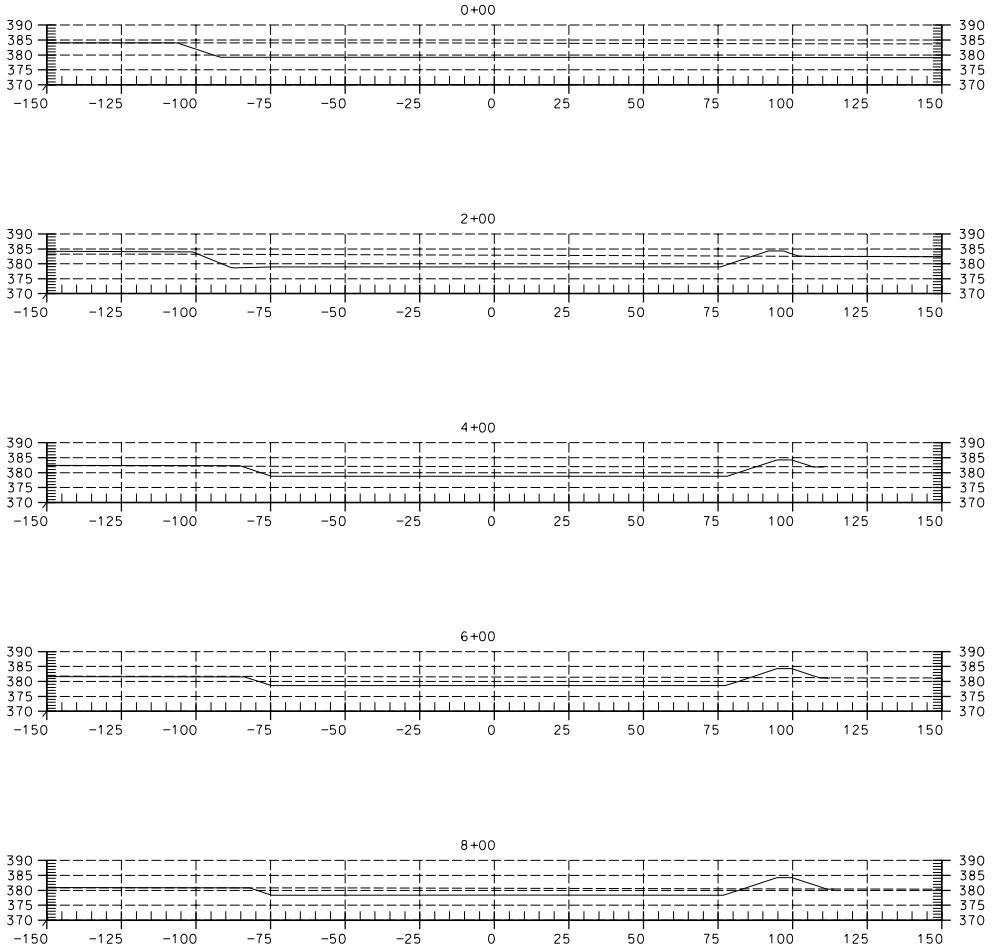
CHANNEL B/C CROSS SECTIONS

SCALE	DRAWING SIZE
1"=20'	ARCH D (36" x 24")

WORLEYPARSONS DWG. NO.	REV
GENI-1-DW-112-716-004-025	1

FILE NAME: ##DGNSPEC##
##SHEETNUMBER##

STA.0+00 TO STA.8+00



LEGEND:

EXISTING GRADE

PROPOSED GRADE

SCALE:
HORIZ: 1"=20'
VERT: 1"=20'

REV	DATE	DESCRIPTION	DRAWN	CHECKED	LEAD DESIGNER	ENGINEER/TECHNICAL LEAD/SPECIALIST	PROJECT ENGINEER	PROJECT MANAGER
1	01 15 10	ISSUED FOR REVIEW	AP	EL	JD	BA	BA	BA	BP

PRELIMINARY STATUS — DATE — LDE
REPRESENTS GENERAL DESIGN CONCEPTS BASED ON ASSUMPTIONS. REVIEWED NOT CHECKED.

APPROVED STATUS — DATE — LDE
REPRESENTS REVIEWED AND APPROVED DESIGN. ANY PORTION MARKED "HOLD" RETAINS PRELIMINARY STATUS.

ORIGINATING PERSONNEL

DRAWN BY: A. PRATT
CHECKED BY: E. LEIBY
LEAD DESIGNER: J. DAHLGREN
ENGINEER/TECH SPECIALIST: B. ANDERS
PROJECT ENGINEERING MANAGER: B. ANDERS
PROJECT MANAGER: B. PIETRUCHA

PROFESSIONAL ENGINEER'S SEAL

Zero Harm — Leadership, No Incidents, Safe Behavior

ORIGINALLY PREPARED UNDER THE RESPONSIBLE SUPERVISION OF
PE(_____) LIC. NO.(_____) STATE(_____) DATE(_____)

WorleyParsons
resources & energy

CLIENT/PROJECT TITLE

GENESIS SOLAR LLC
GENESIS SOLAR ENERGY PROJECT

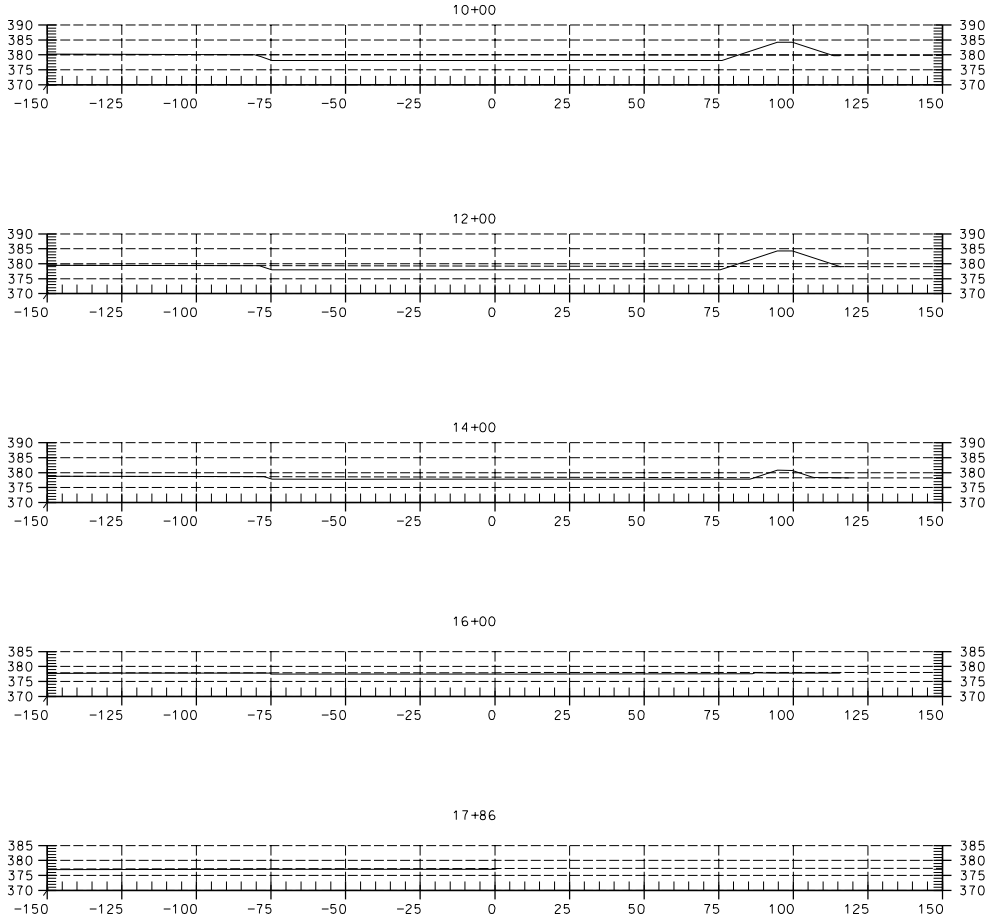
CHANNEL B/C-2 CROSS SECTIONS

SCALE: 1"=20'
DRAWING SIZE: ARCH D (36" x 24")
WORLEYPARSONS DWG. NO.: GENI-1-DW-112-716-004-026
REV: 1

FILE NAME: ##ISOASPECT##
PLOT TIME: ##TIME##

GENI-1-DW-112-716-004-026.dgn 1/14/2010 5:07:58 PM

STA.10+00 TO STA.17+86



LEGEND:

- - - - - - - EXISTING GRADE

———— PROPOSED GRADE

SCALE:
HORIZ: 1"=20'
VERT: 1"=20'

REV	DATE	DESCRIPTION	DRAWN	CHECKED	LEAD DESIGNER	ENGINEER/ TECH SPEC	LEAD DISC ENGINEER	PROJ ENGR MANAGER	PROJECT MANAGER
1	01 15 10	ISSUED FOR REVIEW	AP	EL	JD	BA	BA	BA	BP

PRELIMINARY STATUS — DATE — REPRESENTS GENERAL DESIGN CONCEPTS BASED ON ASSUMPTIONS. REVIEWED NOT CHECKED.
LDE

APPROVED STATUS — DATE — REPRESENTS REVIEWED AND APPROVED DESIGN. ANY PORTION MARKED "HOLD" RETAINS PRELIMINARY STATUS.
LDE

ORIGINATING PERSONNEL

DRAWN BY
A. PRATT

CHECKED BY
E. LEIBY

LEAD DESIGNER
J. DAHLGREN

ENGINEER/TECH SPECIALIST
B. ANDERS

PROJECT ENGINEERING MANAGER
B. ANDERS

PROJECT MANAGER
B. PIETRUCHA

PROFESSIONAL ENGINEER'S SEAL

Zero Harm — Leadership No Incidents Safe Behavior

ORIGINALLY PREPARED UNDER THE RESPONSIBLE SUPERVISION OF
PE: _____ STATE: _____
LIC. NO.: _____ DATE: _____

WorleyParsons
resources & energy

CLIENT/PROJECT TITLE

GENESIS SOLAR LLC
GENESIS SOLAR ENERGY PROJECT

CHANNEL B/C CROSS SECTIONS

SCALE 1"=20'
DRAWING SIZE ARCH D (36" x 24")
WORLEYPARSONS DWG. NO. GENI-1-DW-112-716-004-027
REV 1

FILE NAME: ****DGNSPEC**********
****DATE**** ****TIME****

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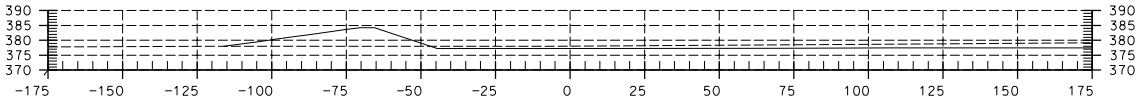
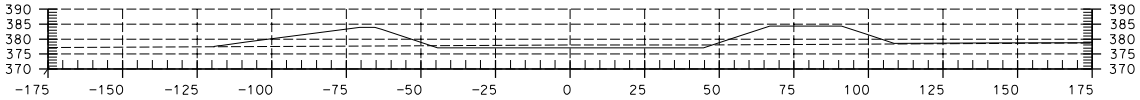
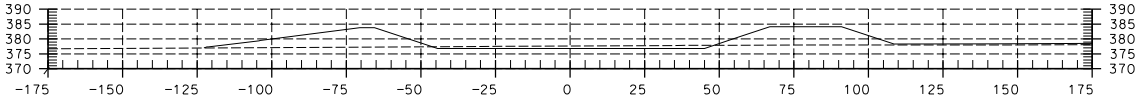
0+00



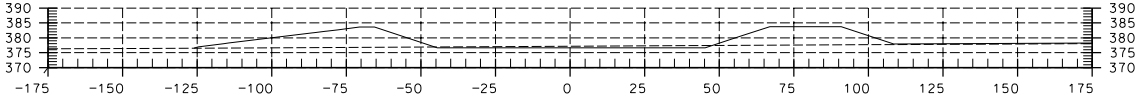
2+00



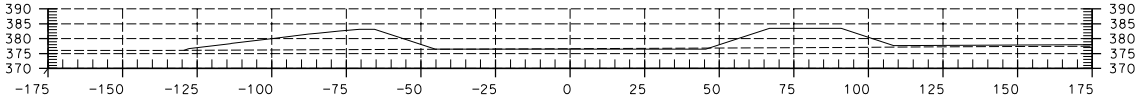
4+00



6+00



8+00



LEGEND:

EXISTING GRADE

PROPOSED GRADE

SCALE:
HORIZ: 1"=20'
VERT: 1"=20'

REV	DATE	DESCRIPTION	DRAWN	CHECKED	LEAD DESIGNER	ENGINEER/TECHNICAL LEAD/SPEC	PROJECT ENGINEER	PROJECT MANAGER
1	01 15 10	ISSUED FOR REVIEW	AP	EL	JD	BA	BA	BA	BP

PRELIMINARY STATUS — DATE — LDE
REPRESENTS GENERAL DESIGN CONCEPTS BASED ON ASSUMPTIONS. REVIEWED NOT CHECKED.

APPROVED STATUS — DATE — LDE
REPRESENTS REVIEWED AND APPROVED DESIGN. ANY PORTION MARKED "HOLD" RETAINS PRELIMINARY STATUS.

ORIGINATING PERSONNEL	PROFESSIONAL ENGINEER'S SEAL
DRAWN BY: A. PRATT	ORIGINALLY PREPARED UNDER THE RESPONSIBLE SUPERVISION OF: NAME, LIC. NO., STATE, DATE
CHECKED BY: E. LEIBY	
LEAD DESIGNER: J. DAHLGREN	
ENGINEER/TECH SPECIALIST: B. ANDERS	
PROJECT ENGINEERING MANAGER: B. ANDERS	
PROJECT MANAGER: B. PIETRUCHA	

Zero Harm — Leadership, No Incidents, Safe Behavior

WorleyParsons
resources & energy

CLIENT/PROJECT TITLE

GENESIS SOLAR LLC
GENESIS SOLAR ENERGY PROJECT

CHANNEL D/E CROSS SECTIONS

SCALE	DRAWING SIZE
1"=20'	ARCH D (36" x 24")

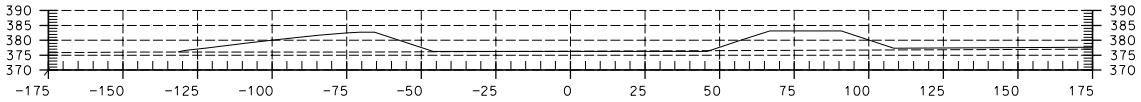
WORLEYPARSONS DWG. NO.	REV
GENI-1-DW-112-716-004-028	1

FILE NAME: ##DGNSPEC##
TIME: ##TIME##
##DGNPLOTTER##

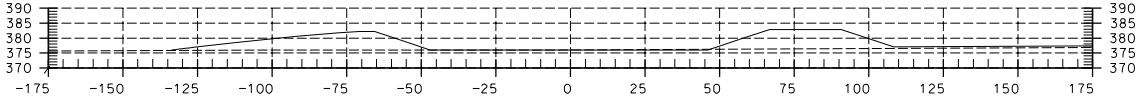
GENI-1-DW-112-716-004-028.dgn 1/14/2010 5:09:16 PM

STA.10+00 TO STA.18+00

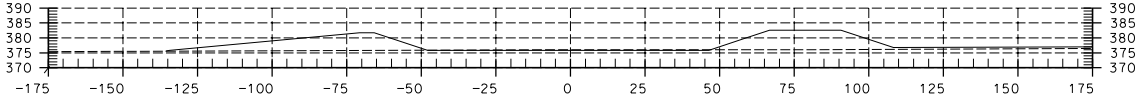
10+00



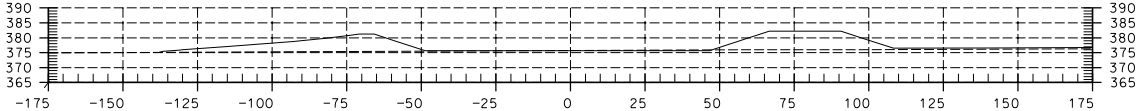
12+00



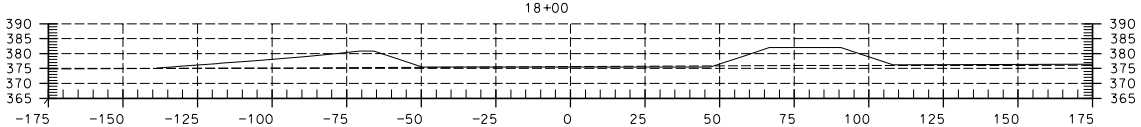
14+00



16+00



18+00



LEGEND:

EXISTING GRADE

PROPOSED GRADE

SCALE:
HORIZ: 1"=20'
VERT: 1"=20'

REV	DATE	DESCRIPTION	DRAWN	CHECKED	LEAD DESIGNER	ENGINEER/TECHNICAL LEAD/SPECIALIST	PROJECT ENGINEER	PROJECT MANAGER
1	01 15 10	ISSUED FOR REVIEW	AP	EL	JD	BA	BA	BA	BP

PRELIMINARY STATUS — DATE — LDE
REPRESENTS GENERAL DESIGN CONCEPTS BASED ON ASSUMPTIONS. REVIEWED NOT CHECKED.

APPROVED STATUS — DATE — LDE
REPRESENTS REVIEWED AND APPROVED DESIGN. ANY PORTION MARKED "HOLD" RETAINS PRELIMINARY STATUS.

ORIGINATING PERSONNEL	PROFESSIONAL ENGINEER'S SEAL
DRAWN BY: A. PRATT	
CHECKED BY: E. LEIBY	
LEAD DESIGNER: J. DAHLGREN	
ENGINEER/TECH SPECIALIST: B. ANDERS	
PROJECT ENGINEERING MANAGER: B. ANDERS	
PROJECT MANAGER: B. PIETRUCHA	

Zero Harm — Leadership, No Incidents, Safe Behavior

ORIGINALLY PREPARED UNDER THE RESPONSIBLE SUPERVISION OF
BY _____ STATE _____
LIC. NO. _____ DATE _____

WorleyParsons
resources & energy

CLIENT/PROJECT TITLE

GENESIS SOLAR LLC
GENESIS SOLAR ENERGY PROJECT

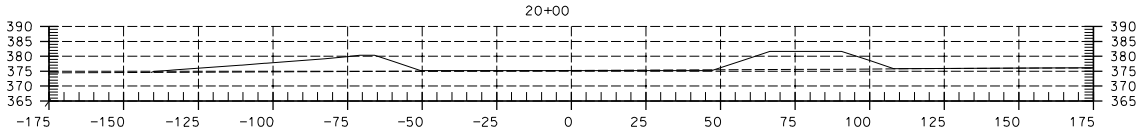
CHANNEL D/E CROSS SECTIONS

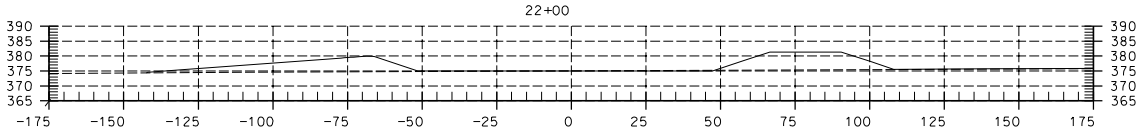
SCALE: 1"=20'
DRAWING SIZE: ARCH D (36" x 24")
WORLEYPARSONS DWG. NO.: GENI-1-DW-112-716-004-029
REV: 1

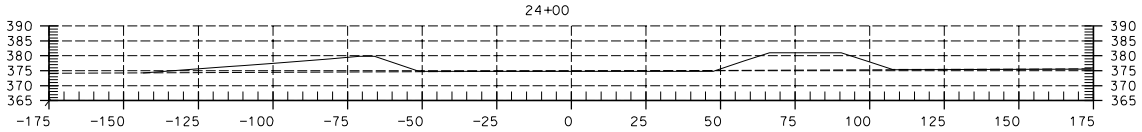
FILE NAME: ##DGNSPEC##
TIME: ##DGNTIME##

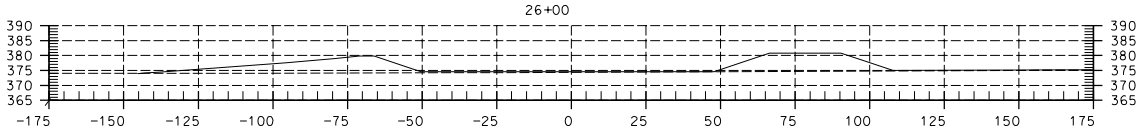
GENI-1-DW-112-716-004-029.dgn 1/14/2010 5:10:02 PM

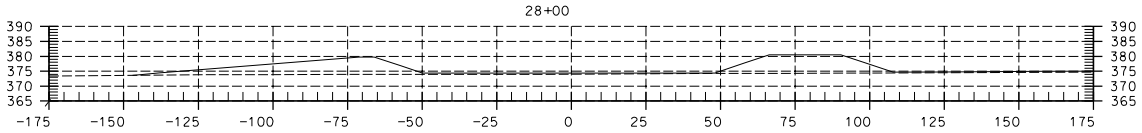
STA.20+00 TO STA.28+00











LEGEND:

EXISTING GRADE

PROPOSED GRADE

SCALE:
HORIZ: 1"=20'
VERT: 1"=20'

REV	DATE	DESCRIPTION	DRAWN	CHECKED	LEAD DESIGNER	ENGINEER/TECHNICAL SPECIALIST	PROJECT ENGINEER	PROJECT MANAGER
1	01/15/10	ISSUED FOR REVIEW	APE	LJD	BAB	ABA	BAB	BP

PRELIMINARY STATUS — DATE — LDE
REPRESENTS GENERAL DESIGN CONCEPTS BASED ON ASSUMPTIONS. REVIEWED NOT CHECKED.

APPROVED STATUS — DATE — LDE
REPRESENTS REVIEWED AND APPROVED DESIGN, ANY PORTION MARKED "HOLD" RETAINS PRELIMINARY STATUS.

ORIGINATING PERSONNEL	PROFESSIONAL ENGINEER'S SEAL
DRAWN BY: A. PRATT	
CHECKED BY: E. LEIBY	
LEAD DESIGNER: J. DAHLGREN	
ENGINEER/TECH SPECIALIST: B. ANDERS	
PROJECT ENGINEERING MANAGER: B. ANDERS	
PROJECT MANAGER: B. PIETRUCHA	

Zero Harm — Leadership, No Incidents, Safe Behavior

ORIGINALLY PREPARED UNDER THE RESPONSIBLE SUPERVISION OF
BY: _____ STATE: _____
LIC. NO.: _____ DATE: _____

WorleyParsons
resources & energy

CLIENT/PROJECT TITLE

GENESIS SOLAR LLC
GENESIS SOLAR ENERGY PROJECT

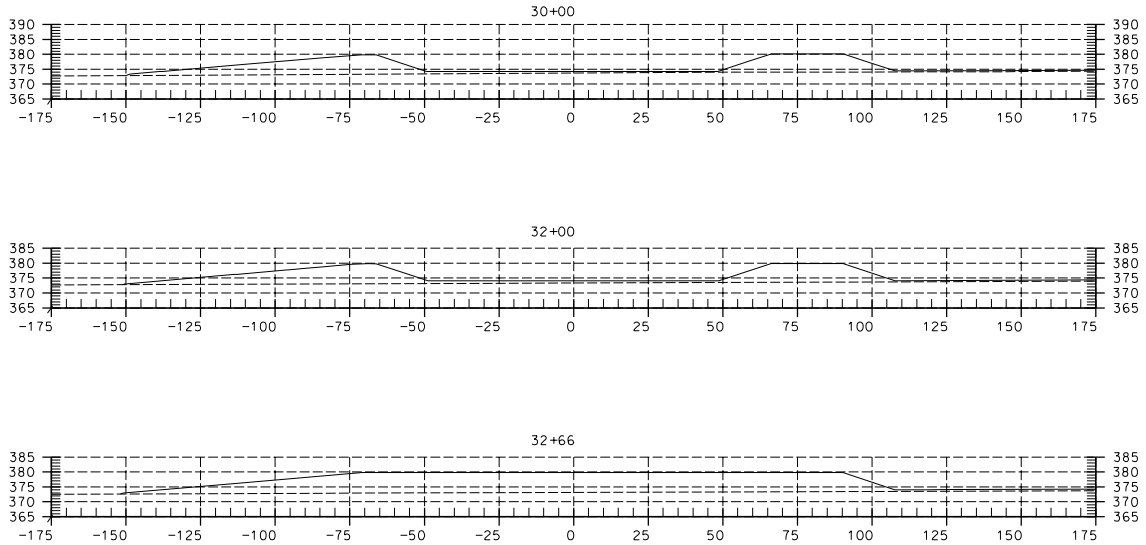
CHANNEL D/E CROSS SECTIONS

SCALE: 1":20'
DRAWING SIZE: ARCH D (36" x 24")
WORLEYPARSONS DWG. NO.: GENI-1-DW-112-716-004-030
REV: 1

FILE NAME: ##ISOASPECT##
##SHEETTITLE##

GENI-1-DW-112-716-004-030.dgn 1/14/2010 5:10:33 PM

STA.30+00 TO STA.32+66



LEGEND:

EXISTING GRADE

PROPOSED GRADE

SCALE:
HORIZ: 1"=20'
VERT: 1"=20'

REV	DATE	DESCRIPTION	DRAWN	CHECKED	LEAD DESIGNER	ENGINEER/TECHNICAL LEAD/SPECIALIST	PROJECT ENGINEERING MANAGER	PROJECT MANAGER
1	01 15 10	ISSUED FOR REVIEW	AP	EL	JD	BA	BA	BA	BP

PRELIMINARY STATUS — DATE — LDE
REPRESENTS GENERAL DESIGN CONCEPTS BASED ON ASSUMPTIONS. REVIEWED NOT CHECKED.

APPROVED STATUS — DATE — LDE
REPRESENTS REVIEWED AND APPROVED DESIGN. ANY PORTION MARKED "HOLD" RETAINS PRELIMINARY STATUS.

ORIGINATING PERSONNEL	PROFESSIONAL ENGINEER'S SEAL
DRAWN BY: A. PRATT	ORIGINALLY PREPARED UNDER THE RESPONSIBLE SUPERVISION OF: PRINT NAME, LIC. NO., STATE, DATE
CHECKED BY: E. LEIBY	
LEAD DESIGNER: J. DAHLGREN	
ENGINEER/TECH SPECIALIST: B. ANDERS	
PROJECT ENGINEERING MANAGER: B. ANDERS	
PROJECT MANAGER: B. PIETRUCHA	

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WorleyParsons
resources & energy

CLIENT/PROJECT TITLE

GENESIS SOLAR LLC
GENESIS SOLAR ENERGY PROJECT

CHANNEL D/E CROSS SECTIONS

SCALE	DRAWING SIZE
1"=20'	ARCH D (36" x 24")

WORLEYPARSONS DWG. NO.	REV
GEN1-1-DW-112-716-004-031	1

FILE NAME: ##DGNSPEC##
##SHEETNUMBER##

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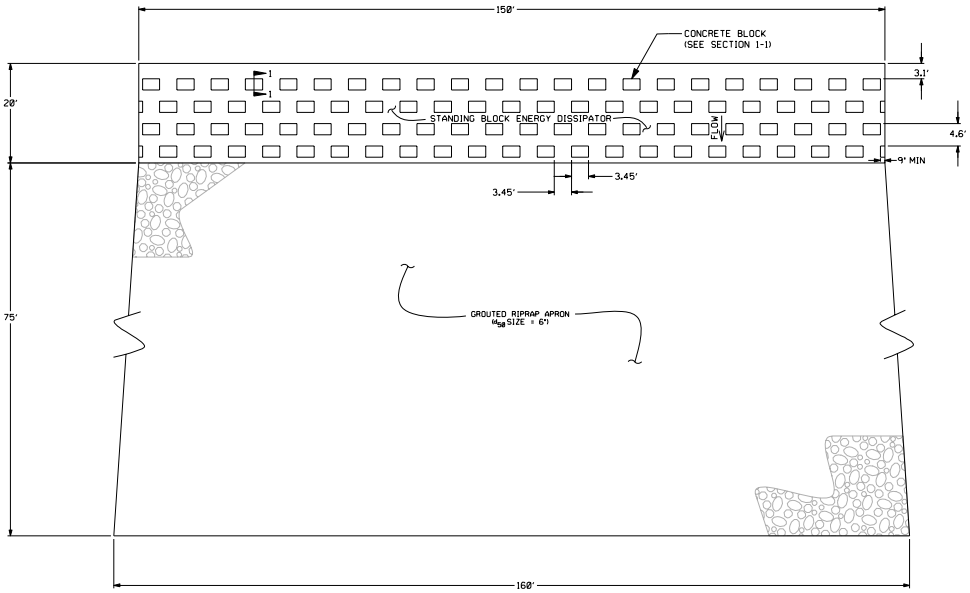
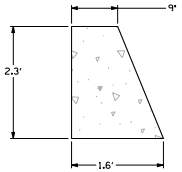


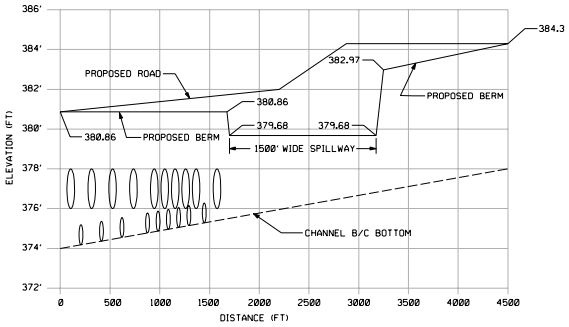
ENERGY DISSIPATOR
DETAIL A
NOT TO SCALE



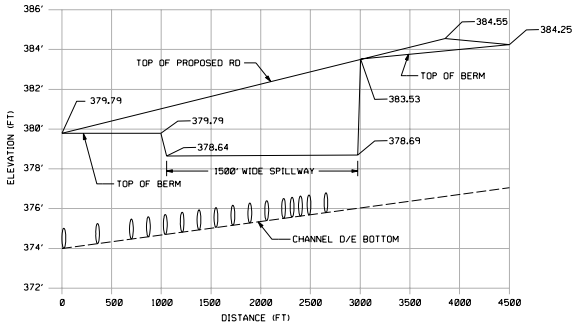
SECTION 1-1
NOT TO SCALE

REFERENCES:

GEN1-0-SK-111-002-001, GENERAL ARRANGEMENT, OVERALL SITE PLAN, FIGURE 3.4-1
GEN1-1-DW-112-716-004-001, CONCEPTUAL GRADING PLAN, OVERALL PLAN, SHEET 1 OF 7
GEN1-1-DW-112-716-004-003, CONCEPTUAL GRADING PLAN, SHEET 3 OF 7
GEN1-1-DW-112-716-004-004, CONCEPTUAL GRADING PLAN, SHEET 4 OF 7
GEN1-1-DW-112-716-004-005, CONCEPTUAL GRADING PLAN, SHEET 5 OF 7
GEN1-1-DW-112-716-004-006, CONCEPTUAL GRADING PLAN, SHEET 6 OF 7
GEN1-1-DW-112-716-004-007, CONCEPTUAL GRADING PLAN, SHEET 7 OF 7
GEN1-1-DW-112-726-005-002, CONCEPTUAL GRADING DETAILS AND SECTIONS, SHEET 2 OF 2
DIVERSION CHANNEL CROSS SECTION SHEETS



CHANNEL B/C
ELEVATION PROFILE 1-1



CHANNEL D/E
ELEVATION PROFILE 2-2

REV	DATE	DESCRIPTION	DRAWN	CHECKED	LEAD DESIGNER	ENGINEER/TECHNICAL SPECIALIST	LEAD SITE ENGINEER	PROJECT ENGINEER	PROJECT MANAGER
1	15/10	ISSUED FOR REVIEW	AP	EL	JD	BA	BA	BA	BP

PRELIMINARY STATUS — DATE — LDE: REPRESENTS GENERAL DESIGN CONCEPTS BASED ON ASSUMPTIONS. REVIEWED NOT CHECKED.

APPROVED STATUS — DATE — LDE: REPRESENTS REVIEWED AND APPROVED DESIGN. ANY PORTION MARKED "HOLD" RETAINS PRELIMINARY STATUS.

ORIGINATING PERSONNEL	PROFESSIONAL ENGINEER'S SEAL
DRAWN BY: A. PRATT	
CHECKED BY: E. LEIBY	
LEAD DESIGNER: J. DAHLGREN	
ENGINEER/TECH SPECIALIST: B. ANDERS	
PROJECT ENGINEERING MANAGER: B. ANDERS	
PROJECT MANAGER: B. PIETRUCHA	

Zero Harm — Leadership No Incidents Safe Behavior

ORIGINALLY PREPARED UNDER THE RESPONSIBLE SUPERVISION OF
(N)
LIC. NO.: STATE:
DATE:

WorleyParsons
resources & energy

CLIENT/PROJECT TITLE

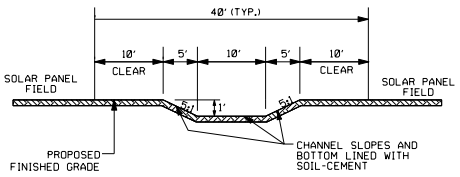
GENESIS SOLAR LLC
GENESIS SOLAR ENERGY PROJECT

CONCEPTUAL
GRADING PLAN DETAILS AND SECTIONS
DRAWING 1 OF 2

SCALE	DRAWING SIZE
NOT TO SCALE	ARCH D (36" x 24")

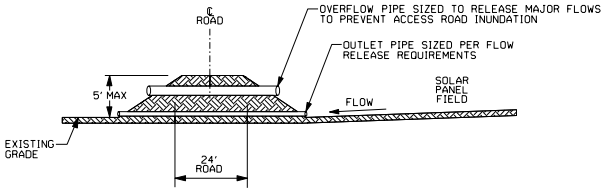
WORLEYPARSONS DWG. NO.: GEN1-1-DW-112-726-005-001 REV: 1

FILE NAME: ##ISOASPECT##########
##########



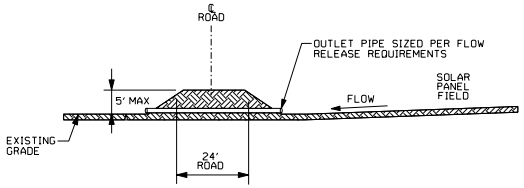
SECTION 1-1

SCALE: NTS



SECTION 2-2

SCALE: NTS



SECTION 3-3

SCALE: NTS

REFERENCES:

GEN1-0-SK-111-002-001, GENERAL ARRANGEMENT, OVERALL SITE PLAN, FIGURE 3.4-1
GEN1-1-DW-112-716-004-001, CONCEPTUAL GRADING PLAN, OVERALL PLAN, SHEET 1 OF 7
GEN1-1-DW-112-716-004-003, CONCEPTUAL GRADING PLAN, SHEET 3 OF 7
GEN1-1-DW-112-716-004-004, CONCEPTUAL GRADING PLAN, SHEET 4 OF 7
GEN1-1-DW-112-716-004-005, CONCEPTUAL GRADING PLAN, SHEET 5 OF 7
GEN1-1-DW-112-716-004-006, CONCEPTUAL GRADING PLAN, SHEET 6 OF 7
GEN1-1-DW-112-716-004-007, CONCEPTUAL GRADING PLAN, SHEET 7 OF 7
GEN1-1-DW-112-726-005-001, CONCEPTUAL GRADING DETAILS AND SECTIONS, SHEET 1 OF 2
DIVERSION CHANNEL CROSS SECTION SHEETS

REV	DATE	DESCRIPTION	DRAWN	CHECKED	LEAD DESIGNER	ENGINEER/TECH SPECIALIST	LEAD DISCIPLINE	PROJECT ENGINEERING MANAGER	PROJECT MANAGER
2	22 03 AS	ISSUED FOR REVIEW	JD	JD	JD	JD	JB	JB	BA	BA
1		N/A								

PRELIMINARY STATUS — DATE — LDE — REPRESENTS GENERAL DESIGN CONCEPTS BASED ON ASSUMPTIONS. REVIEWED NOT CHECKED.

APPROVED STATUS — DATE — LDE — REPRESENTS REVIEWED AND APPROVED DESIGN. ANY PORTION MARKED "HOLD" RETAINS PRELIMINARY STATUS.

ORIGINATING PERSONNEL	PROFESSIONAL ENGINEER'S SEAL
DRAWN BY: J. DAHLGREN	
CHECKED BY: J. DAHLGREN	
LEAD DESIGNER: J. DAHLGREN	
ENGINEER/TECH SPECIALIST: J. BRAVO	
PROJECT ENGINEERING MANAGER: J. BRAVO	
PROJECT MANAGER: B. PIETRUCHA	

Zero Harm — Leadership, No Incidents, Safe Behavior

ORIGINALLY PREPARED UNDER THE RESPONSIBLE SUPERVISION OF
PRINT NAME: _____ STATE: _____
LIC. NO.: _____ DATE: _____

WorleyParsons
resources & energy

CLIENT/PROJECT TITLE

GENESIS SOLAR LLC
GENESIS SOLAR ENERGY PROJECT

CONCEPTUAL
GRADING PLAN SECTIONS
DRAWING 2 OF 2

SCALE	DRAWING SIZE
NOT TO SCALE	ARCH D (36" x 24")

WORLEYPARSONS DWG. NO. — REV

GEN1-1-DW-112-726-005-002 — 1

FILE NAME: ##DGNFILE##
##PRINTTIME##