

Team Meeting

10/01/2018
Senior Design Lab

Type of meeting:	Meeting with Client
Note taker:	Katayi Katanga

Attendees: Whole team present

Please read:

Please bring: Laptop

Minutes

Agenda item: Safety Moment **Presenter:** Ahmed

Discussion:

Car battery safety. As it gets colder, you may need to jumpstart your car. Make sure car to be jump started and car jump starting are close to one another and make sure to connect jumper wires correctly.

Agenda item: Solar Plant Location and Layout in California **Presenter:** Tam and Ahmed

Discussion:

Compared two pieces of land in California as possible locations for solar plant. Choice was between Millville, Shasta County (\$375,000), CA and Barstow, San Bernardino County, CA (\$499,000). Final choice was Barstow based on land available, as Millville required a space of 360 acres while only 320 acres were available for sale.

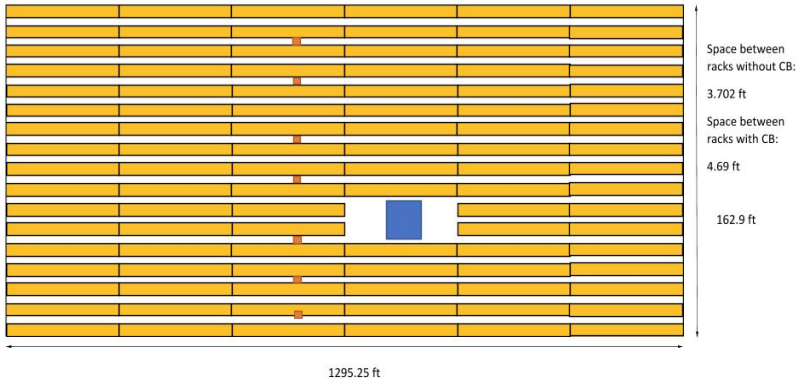
Conclusions:

Chose Barstow. Total cost of building in Barstow:

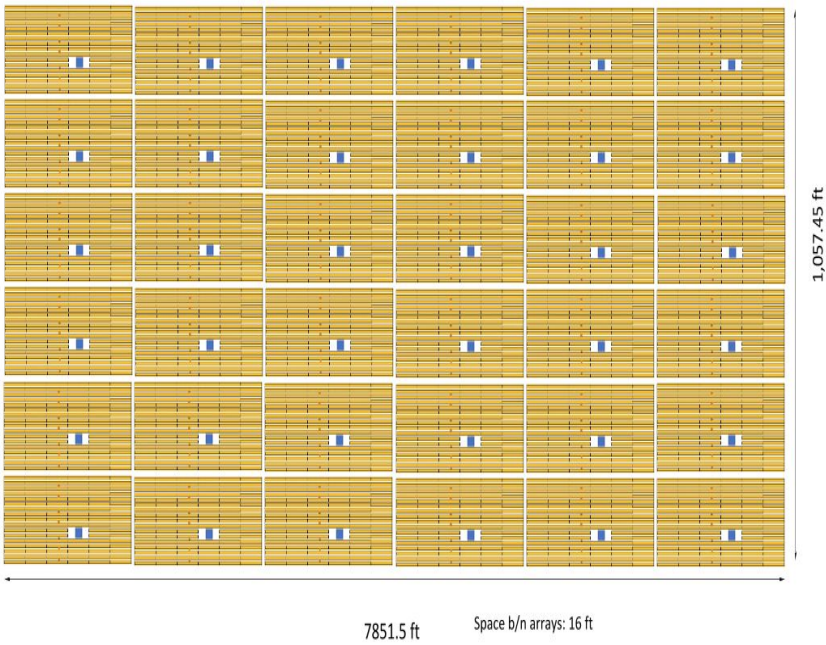
Solar Plant Cost			
Panels	237600	48.4704	million \$
CBs	252	0.32270112	million \$
Inverters	36	15.556275	million \$
Land	190.6016168	0.375	million \$ 440 acres
Total Cost		64.72437612	million \$

Solar Layout:

Single Array (6x17 – 2 racks, 7 CB, 1 inverters)



Solar Power Plant Layout (36 arrays, 36 inverters)



Action items

✓ n/a

Person responsible

Deadline

Agenda item: Solar Plant Location and Layout in New Mexico

Presenter: YJ and Chufu

Discussion:

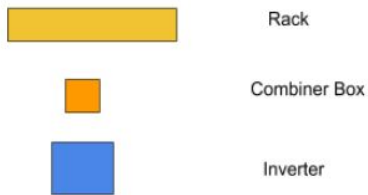
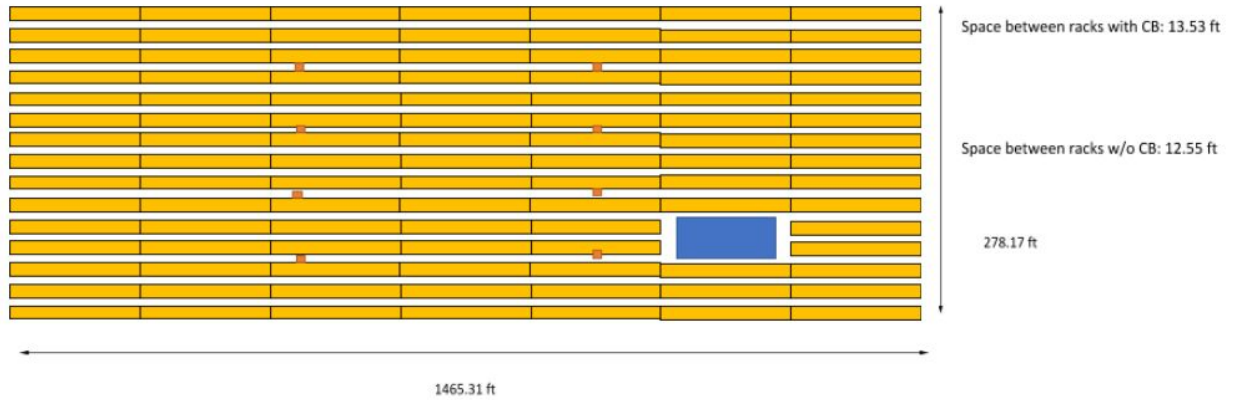
Compared land in NM for solar plant. Choices were 307 Hwy 419, Sabinoso, New Mexico (307 acres) \$119,000 and 0 Peacock Rd Estancia, NM 87016 (560 acres) \$195,000.

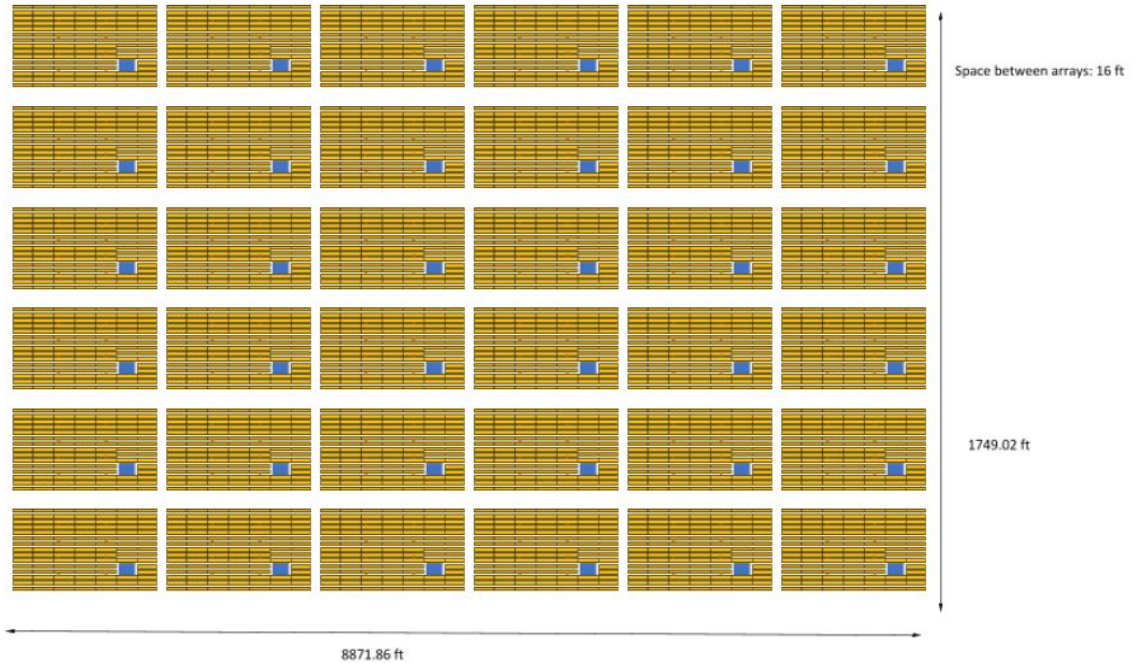
Conclusions:

Chose Estancia as final location. Total cost of building plant in Estancia is:

Solar Plant Cost				
Panels	241920	49.35168	Million\$	
CBs	288	0.36880128	Million\$	
Inverters	36	15.556275	Million\$	
Land	360.4482785	0.195	Million\$	560 acres
	Total Cost	65.4717563	Million\$	

Layout is as follows:





Action items

✓ n/a

Person responsible

Deadline

Agenda item: Solar Plant Location and Layout in Texas

Presenter: Katayi and Nur

Discussion:

Compared two locations in TX based on land price, size and solar radiation as well as weather conditions. The two locations were Plains, Yoakum County, Texas (\$231,000 for 385 acres) and Alpine, Brewster County, Texas (\$147,000 for 285 acres).

We assumed 30 acres for the substation and based on these factors, chose Alpine as our TX location.

Conclusions:

We chose Alpine texas based on the following pros in comparison to Plains:

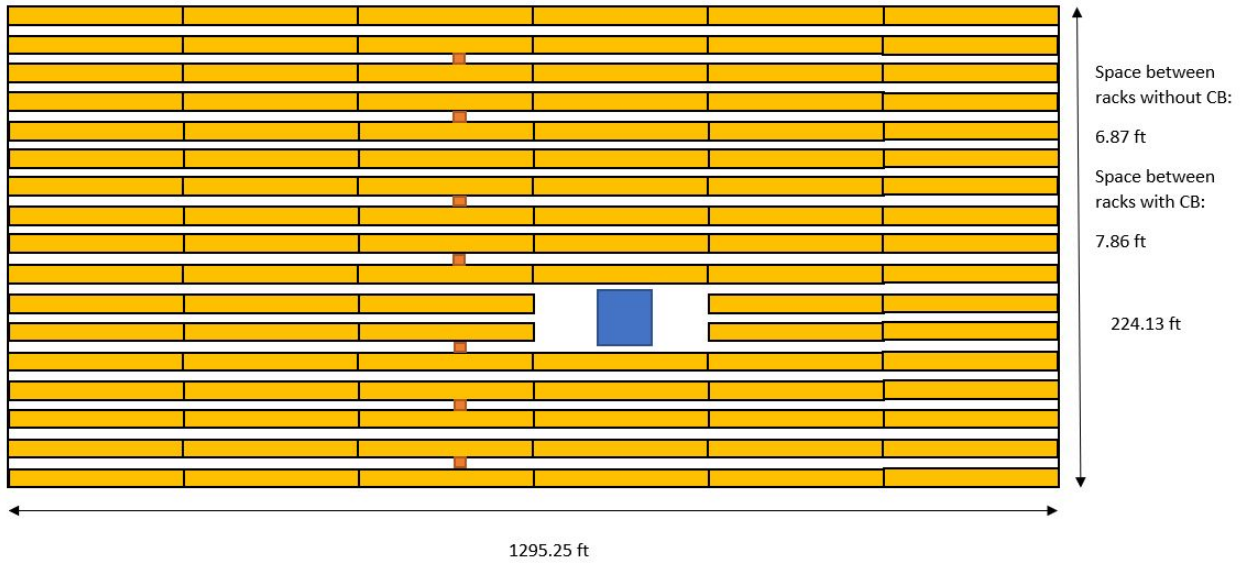
Alpine - Pros	Alpine - Cons
<ul style="list-style-type: none"> • Brewster county has loads of solar installations (32 in area) • Good distance away from settlement area 	<ul style="list-style-type: none"> • Lower solar radiation (diff of 0.14) • Possibility of land shortage in expansion was ever considered

Plains - Pros	Plains - Cons
<ul style="list-style-type: none"> • More land for cheaper price (385 acres of flat land selling at \$231,000., 145 extra acres) • No possibility of land shortage if expansion of plant and substation was considered • Less hurricanes and storms • Higher solar radiation 	<ul style="list-style-type: none"> • No other installations of solar in area • Close to a settlement area • Possibility of land waste (assuming max 30 acres for substation) • Retail cost of electricity is lower compared to Alpine, difference of \$0.011 • Higher chance of tornadoes

Total cost of building our plant in TX with a land price of 147,000 for 280 acres:

Solar Plant Cost				
Panels	237600	48.4704	million \$	
CBs	252	0.32270112	million \$	
Inverters	36	15.556275	million \$	
Land	256.8052046	0.147	million \$	280 acres
	Total Cost	64.49637612	million \$	

Layout:



Action items

✓ n/a

Person responsible

Deadline

Agenda item: Justification

Presenter: Nur

Discussion:

Justified the use of the Eaton CCB_36 over the Ingecon StringBox based on number of string, size and overall system protection

Conclusions:

We will review the CB to be used because new project specs have been included. We now have a limit of 250A for our CB.

Agenda item: Final Land Choice

Presenter: Katayi

Discussion:

Final solar plant location was chosen based of the following factors:

- Solar radiation
- Total cost of project + land cost
- Sunny days in a year
- Distance to human settlement
- Space for expansion

Action items

Person responsible

Deadline

- ✓ Create 3 different layouts for final location, send a write up Team explaining why and how choice was made.

10/3 at 9 PM

Agenda item: Gantt Chart 2.0

Presenter: Katayi

Discussion:

An imprved gantt chart was presented showing projections of hours spent on tasks.

Action items

Person responsible

Deadline

- ✓ Keep track of the hours spent on each task

Student Team

10/1 by 4 PM

Other Information

Resources:

- Barstow:
 - <https://www.landwatch.com/San-Bernardino-County-California-Land-for-sale/pid/25100649>
 - <https://www.usclimatedata.com/climate/barstow/california/united-states/usca0069>
 - <https://www.bestplaces.net/climate/city/california/barsto>
 - <http://www.abengoasolar.com/export/sites/abengoasolar/resources/pdf/Mojave-factsheet-140115.pdf>
- Millville:
 - <https://www.landwatch.com/Shasta-County-California-Land-for-sale/pid/332882081>
- Alpine:
 - <https://www.landwatch.com/Brewster-County-Texas-Land-for-sale/pid/28356955>
- Tilt angle: <https://www.solarpaneltilt.com/>
- <https://www.landsoftexas.com/property/385-acres-in-Yoakum-County-Texas/5158641>
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Special notes: None