SALES@NEVADOS.SOLAR

Speakers

SPEAKERS

Guy Atherton
PVcase Ground Mount PM

BRIAN TANG
Manager, Application Engineering

CARL JACKSON
Application Engineering

CONTENTS

NEVADOS

Why Nevados?

Our objective is to offer cost-effective solar tracking solutions that eliminate the need for site grading.

We design each site to be installed, including engineering and construction schedule, which not everybody does

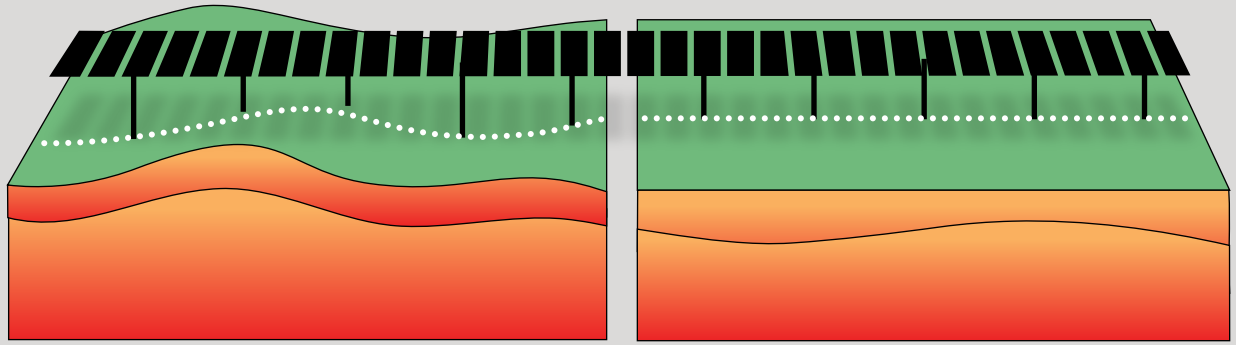
We make dealing with specialized and complex sites simple

Because the world is not flat

Our Approach to Terrain

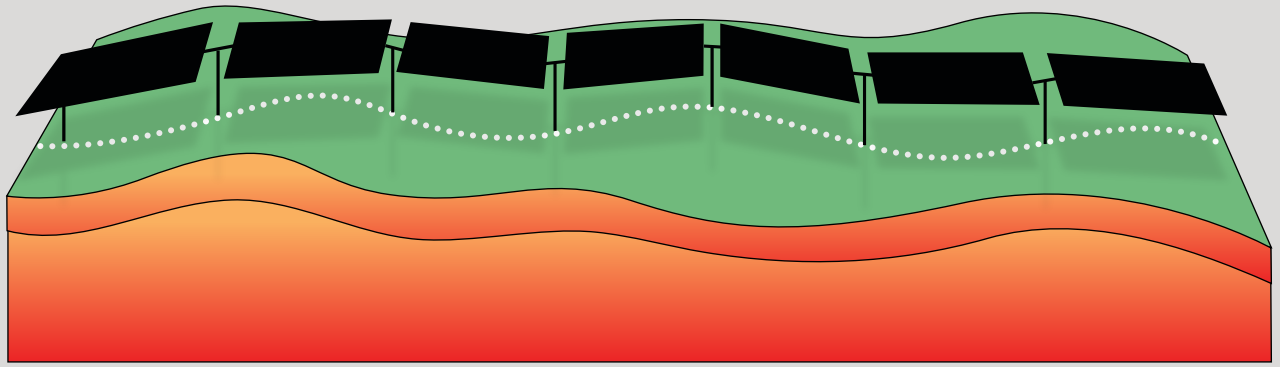
Traditional Tracker

Historically, Trackers deal with rolling terrain by variable foundation reveal height with a limited ability to handle slope change.



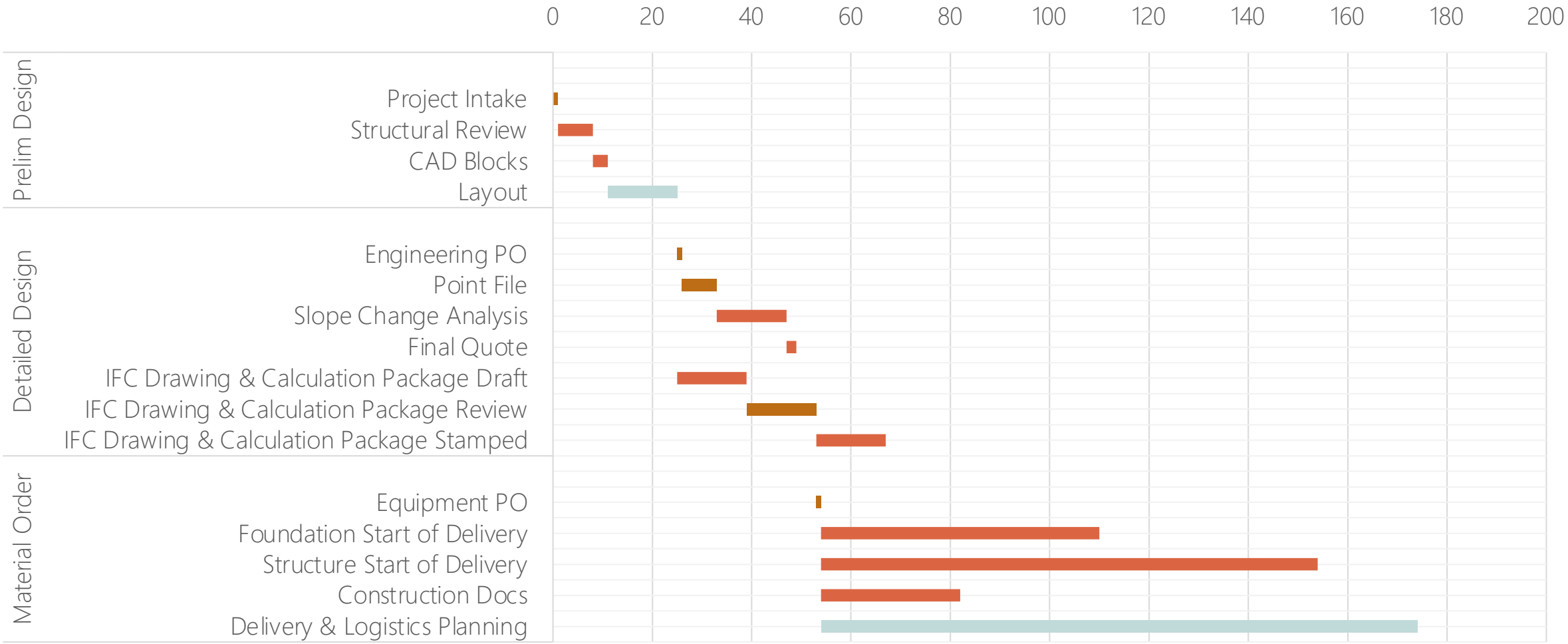
Nevados All Terrain Tracker (ATT)

Our tracker has consistent foundation reveal height regardless of the terrain, interchangeable proprietary bearings enable easy terrain following. Our ATT is capable of handling up to a 26% slope change across a foundation



NEVADOS

NEVADOS PROJECT DESIGN/PROCUREMENT TIMELINES



NEVADOS WORK FLOW

Pre-Award <30%:

Task/Deliverable	Est. Time to Completion
Project data input collection	1 – 5 days pending customer response and information
Structural Review and TOPL Report	1 day
CAD Blocks	Same day as Structural
Preliminary Layout	1-7 days
B.O.M.	1 day
Full Proposal	3-7 days

Late Stage >30% with Engineering PO:

Task/Deliverable	Est. Time to Completion
Final Structural Review	1 Day
Final Layout	Pending customer
Point File	2 weeks
Final BOM	1 day
Preliminary 60% IFC Draft	1-2 weeks

Post Award:

Task/Deliverable	Est. Time to Completion
Equipment Layouts	30 days before 1st delivery
Stamped IFC with PE calcs	2 weeks

PROJECT DATA COLLECTION

- Minimum Requirements to start project proposal
  - Site location and coordinates
  - Target DC capacity
  - Module information and datasheet
  - String size
  - GCR
  - U.S. content for manufacturing
  - Site boundaries (AutoCAD and KMZ)
  - Foundations
  - Expected First Delivery

- Additional Information
  - ASCE Code
  - Risk Category
  - Snow Load
  - Wind Speed
  - Leading Edge
  - CAB Requirement (Row End/Motor/Other)
  - North South Row Spacing
  - Boundary offsets (Road, Fences, Wetlands, Etc.)
  - Geotech Reports
  - Pull-test Report
  - Preliminary Layout

Structural Review and TOPL Reports

- Nevados optimizes steel for every project and site
- Site conditions are critical to understand to generate functional reports
- TOPLs will need to be generated to design foundations

Notes:
Fh - Horizontal force due to wind load
Fv - Vertical force due to wind load
Fa - Axial load due to wind load
Ma - Moment at slew drive due to south and north wing
Ma-1A Moment due to Mechanical stop - north wing
Ma-2A Moment due to Mechanical stop - south wing
Ma-1B Moment due to Mechanical stop - north wing
Ma-2B Moment due to Mechanical stop - south wing
Z = Distance between axis of rotation and top of the post.
Z1 - Distance to slew drive axis of rotation from top of the post.
Z2 - Distance to axis of rotation for non-drive and mechanical stop posts from top of the post
Z3 - Distance to axis of rotation for row end and articulating posts from top of the post

Module Info:

Manufacturer	First Solar
Model	FS6 435W
Chord Length (L)	79.09 in
Width (W)	48.50 in
Height (h)	1.91 in
Weight (Wt)	77.00 lb

x _____
PE/SE team to sign above, Customer to confirm Module size

Drive & Bearing Axis Dimensions	**Z**
Z1 - Drive Post (HE6)	7.48 in
Z1 - Drive Post (HE8)	7.68 in
Z2 - MS and Non Drive Post	3 in
Z3 - Row End / Articulating	1.96 in

Row Configuration:
84 Modules per Row
42 Modules per North Wing
42 Modules per South Wing

Max Drive Post Reveal Height	65 in
Max Non-Drive Post Reveal Height	72 in
Design Drive Post Reveal Height	60 in
Design Non-Drive Post Reveal Height	67 in
Design Leading Edge Height	36 in

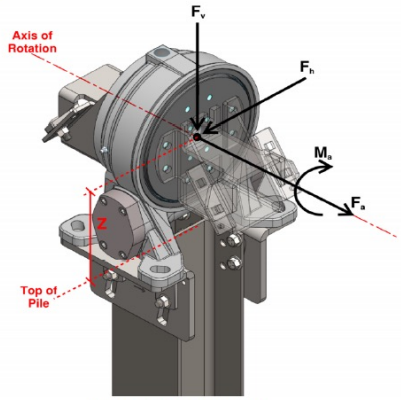


Figure - A, Direction of Loads

Design Parameters

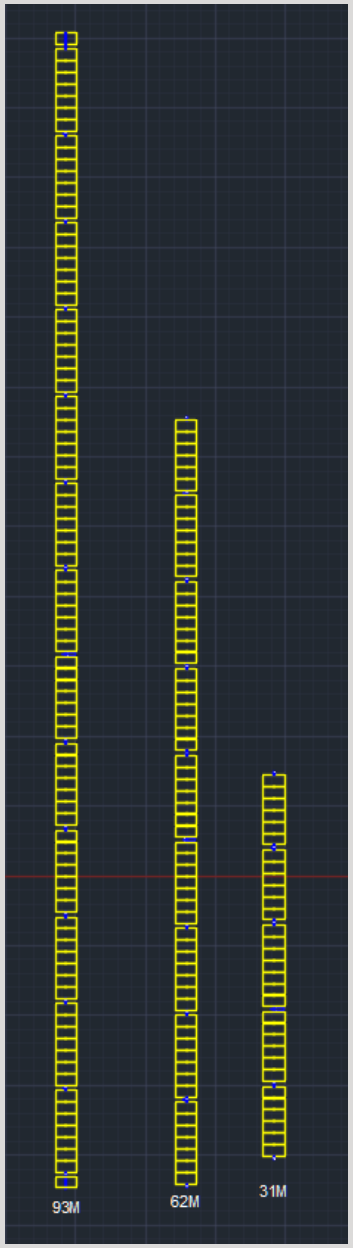
Max Wind Speed (per ASCE 7-16)	87	MPH
Operational Wind Speed (3-second gust)	42	MPH
Operational Wind Speed (10-second gust)	35	MPH
Snow Load	0	psf
Stow Angle	60	degrees
Snow Stow Angle	60	degrees
Exposure Class	C	
Max Slope	2.5	degrees
Seismic Load Sds*	1.014	g
Ground Elevation Factor, Ke	0.99	

x _____
PE/SE team to sign above, Customer to confirm design/site parameters

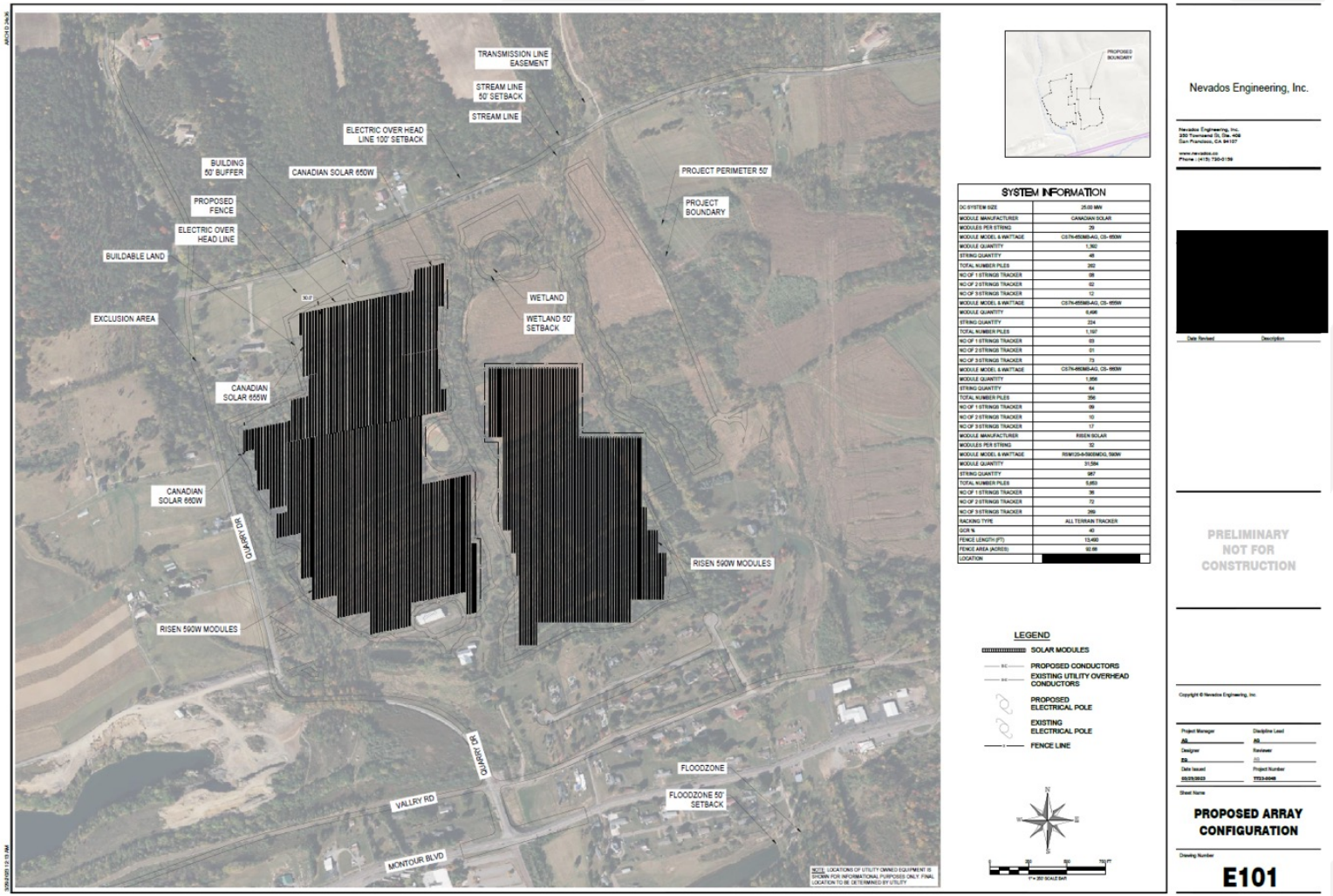
	Post Type	Load Case	Max-Wind Post Stow Loads Fh (lbs)	Fv (lbs)	Fa (lbs)	Mid Row Torque Ma (ft.lbs)	North Wing Torque Ma-1A (ft.lbs)	North Wing Torque Ma-1B (ft.lbs)	North Wing Torque Ma-1C (ft.lbs)	South Wing Torque Ma-2A (ft.lbs)	South Wing Torque Ma-2B (ft.lbs)	South Wing Torque Ma-2C (ft.lbs)
1	Perimeter Drive Post	#7, Max Wind Uplift	-2209	-848	19	-875	-	-	-	-	-	-
		#5a, Max Wind Downforce	2114	2826	31	-1101	-	-	-	-	-	-
		#3, Max Snow Load	0	713	31	-	-	-	-	-	-	-
		#5b, Max Seismic Load	0	712	261	-	-	-	-	-	-	-
2	Perimeter Non-Drive Post	#7, Max Wind Uplift	-2209	-848	19	-	-	-	-	-	-	-
		#5a, Max Wind Downforce	2114	2826	31	-	-	-	-	-	-	-
		#3, Max Snow Load	0	713	31	-	-	-	-	-	-	-
		#5b, Max Seismic Load	0	712	261	-	-	-	-	-	-	-
3	Perimeter Mechanical Stop Post	#7, Max Wind Uplift	-2209	-848	19	-	-1792	-1750	-1312	-1312	-1750	-1792
		#5a, Max Wind Downforce	2114	2826	31	-	-2243	-2201	-1651	-1651	-2201	-2243
		#3, Max Snow Load	0	713	31	-	-	-	-	-	-	-
		#5b, Max Seismic Load	0	712	261	-	-	-	-	-	-	-
4	Perimeter Row-End Non-Drive Post	#7, Max Wind Uplift	-1105	-424	19	-	-	-	-	-	-	-
		#5a, Max Wind Downforce	1057	1413	31	-	-	-	-	-	-	-
		#3, Max Snow Load	0	356	31	-	-	-	-	-	-	-
		#5b, Max Seismic Load	0	356	261	-	-	-	-	-	-	-
5	Interior Drive Post	#7, Max Wind Uplift	-1150	-236	19	-1998	-	-	-	-	-	-
		#5a, Max Wind Downforce	1393	2106	31	-406	-	-	-	-	-	-
		#3, Max Snow Load	0	713	31	-	-	-	-	-	-	-
		#5b, Max Seismic Load	0	712	261	-	-	-	-	-	-	-
6	Interior Non-Drive Post	#7, Max Wind Uplift	-1150	-236	19	-	-	-	-	-	-	-
		#5a, Max Wind Downforce	1393	2106	31	-	-	-	-	-	-	-
		#3, Max Snow Load	0	713	31	-	-	-	-	-	-	-
		#5b, Max Seismic Load	0	712	261	-	-	-	-	-	-	-
7	Interior Mechanical Stop Post	#7, Max Wind Uplift	-1150	-236	19	-	-1374	0	-1665	-1665	0	-1374
		#5a, Max Wind Downforce	1393	2106	31	-	-299	0	-321	-342	0	-299
		#3, Max Snow Load	0	713	31	-	-	-	-	-	-	-
		#5b, Max Seismic Load	0	712	261	-	-	-	-	-	-	-
8	Interior Row-End Non-Drive Post	#7, Max Wind Uplift	-575	-118	19	-	-	-	-	-	-	-
		#5a, Max Wind Downforce	697	1053	31	-	-	-	-	-	-	-
		#3, Max Snow Load	0	356	31	-	-	-	-	-	-	-
		#5b, Max Seismic Load	0	356	261	-	-	-	-	-	-	-
9	Corner Row-End Non-Drive Post	#7, Max Wind Uplift	-1678	-755	19	-	-	-	-	-	-	-
		#5a, Max Wind Downforce	1276	1632	31	-	-	-	-	-	-	-
		#3, Max Snow Load	0	356	31	-	-	-	-	-	-	-
		#5b, Max Seismic Load	0	356	261	-	-	-	-	-	-	-

CAD Blocks & Preliminary Layouts (1 Week)

- Structural reviews will provide CAD block configurations
- To minimize reworking layouts, CAB requirements should be determined as early as possible
- A CAD of site boundaries will be required to build the most accurate layout
  - Roads, wetlands, offsets, etc.
  - Inverter size callouts
- GCR requirements or range

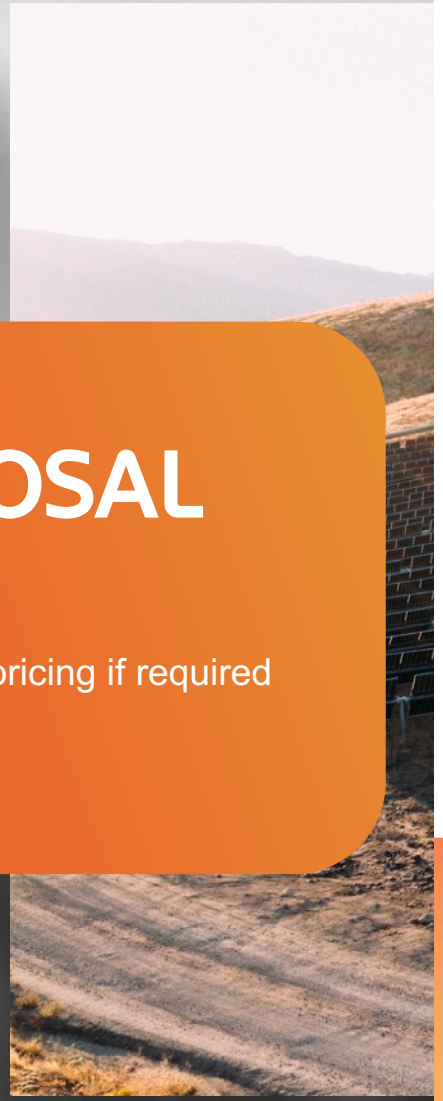


- Nevados ATT can open buildable areas
- Iterate layout with the customer
- Topo surface to identity potential areas for grading/non-grading
- 1 foot contour line is preferred
- Preliminary point file based off layout from customer, if possible, to generate the most accurate B.O.M.



B.O.M. AND PROPOSAL

- B.O.M. are generated from preliminary layout
- Preliminary foundations can be included in the pricing if required



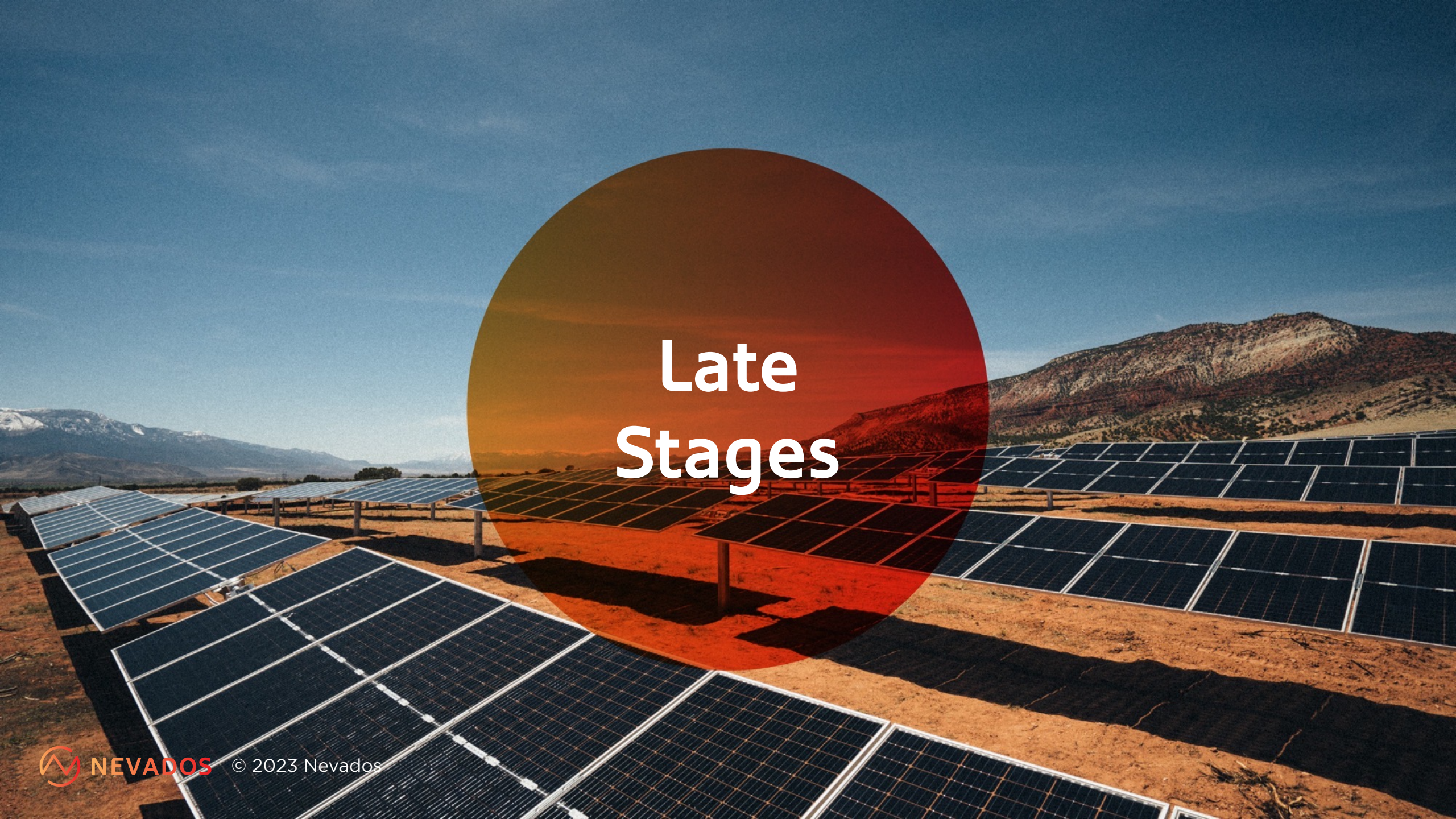
NEVADOS ALL TERRAIN TRACKER

TRACKER QUOTATION

0	Nevados	0
Quote Date 10/27/23. Valid for 14 days.	Contact Brittanie Jackson	Contact 0
Location California	Phone 289.552.4128	Phone 0
Size 0	Email Brittanie@nevados.solar	Email 0

Description				QTY	$/w	$
Structure	Material	Interior	3 String	0	#N/A	#N/A
			2 String	0		
			1 String	0		
			Other	0		
		Exposed & Exterior	3 String	0		
			2 String	0		
			1 String	0		
			Other	0		
	Logistics	DDP to Project Site; Incoterm 2020		0	#DIV/0!	0
	Total				#N/A	#N/A
Foundations	Material	W6 Profile Summary on next page		0	#N/A	#N/A
	Logistics	DDP to Project Site; Incoterm 2020			#DIV/0!	0
	Total				#N/A	#N/A
Structure + Foundation	Material				#N/A	#N/A
	Logistics				#DIV/0!	0
	Total				#N/A	#N/A
Additional Services	O&M Spares				#DIV/0!	#N/A
	Structure IFC Drawing, Calc. Package, Foundation Design				#DIV/0!	53,000
Included Services	Base Warranty - Structure: 10 years, Controls: 5 years				.0000	0
	TRACE Terrain Aware Backtracking or True Tracking				.0000	0
	On-Site Support (40 hrs) & Commissioning				.0000	0
Total					#N/A	#N/A

** Virtual Product Training: 1-2 hr; Golden Row on-site: 1 day; O&M training: 1 day; Commissioning: 1 on-site visit, 1 day per Zone Controller; Weather Station: 3 hr per*



NEVADOS

Late Stage >30% with Engineering PO

- P.O. Signed
- Finalize Structural Reviews
  - Fully understand site conditions
  - Modules finalized
  - Leading edge requirement
  - Final Geotech and pull test reports supplied
- Finalize Foundations (as required)
- Final Layout from customer with civil details and grading plans

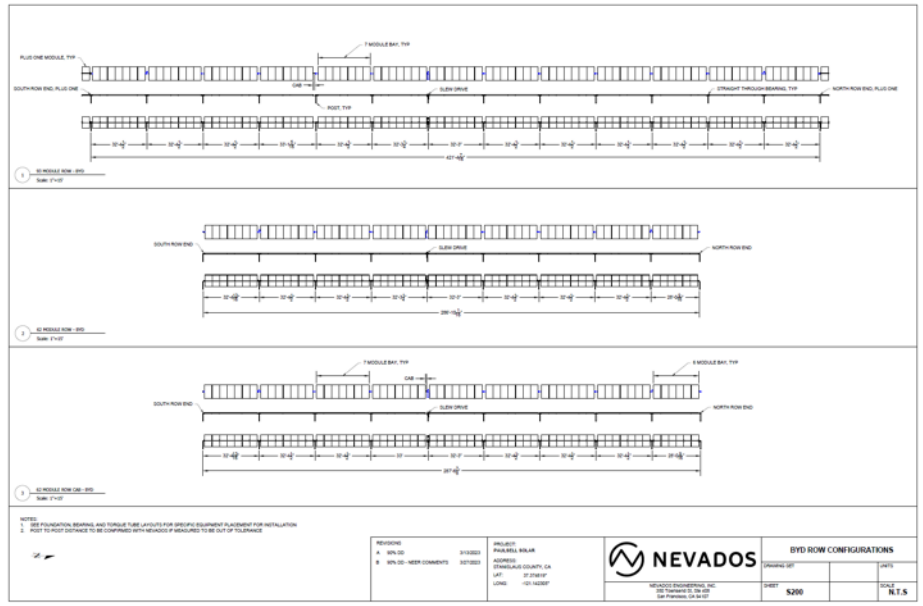
Point File Analysis (1-2 Weeks)

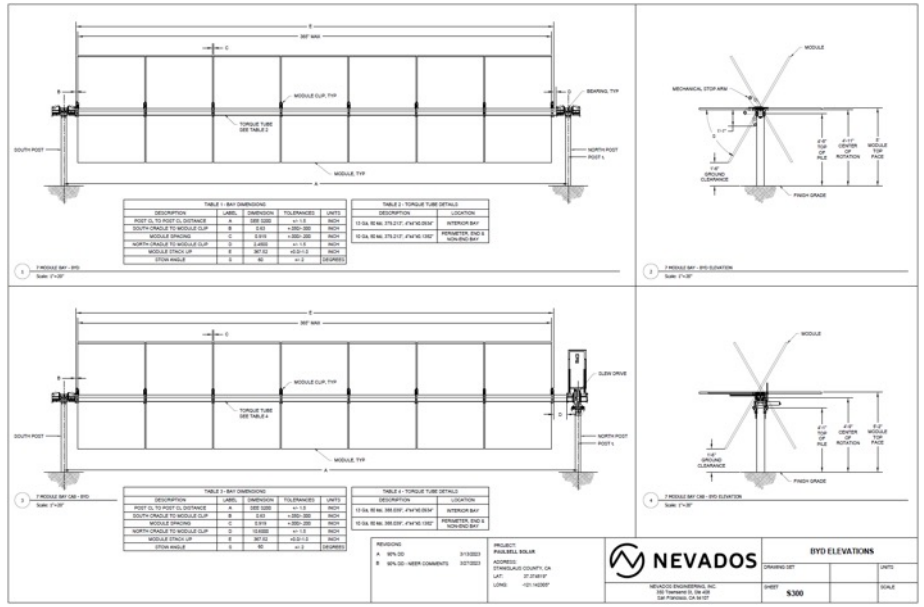
- Customer to provide Nevados with a point file based off proposed grading plans or expected site topography
- This will be in the form of a CSV file that identifies Pile Locations with Easting, Northing, and Elevation
- The Point File will be used to allocate bearings to each pile based off the net angle change at the pile location with the following thresholds:
  - 4% (2.5 degrees)
  - 13% (7.5 degrees)
  - 27% (15 degrees)
- Torque Tubes will also be checked for minimum engagements and shifted if they are out of tolerance
- Potential to identify splicing, variable reveal heights, and spot grading
- B.O.M. finalized

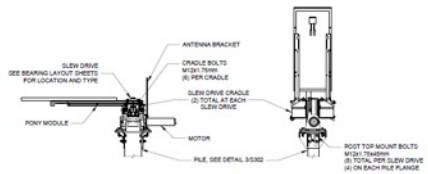
Index	x	y	z (bottom	tracker	block	exterior	bearing	Splice	z (top of pile)	Reveal Height
0	11666610	3858796	406.265	1	1	FALSE	row end		410.4733333	50.5
1	11666610	3858822	407.611	1	1	FALSE	mechanical stop		411.8193333	50.5
2	11666610	3858849	407.999	1	1	FALSE	compact		412.2073333	50.5
3	11666610	3858876	408.265	1	1	FALSE	compact		412.4733333	50.5
4	11666610	3858903	408.756	1	1	FALSE	slew drive HE6		412.381	43.5
5	11666610	3858929	409.446	1	1	FALSE	compact		413.6543333	50.5
6	11666610	3858956	410	1	1	FALSE	compact		414.2083333	50.5
7	11666610	3858983	410.143	1	1	FALSE	compact		414.3513333	50.5
8	11666610	3859010	410.612	1	1	FALSE	mechanical stop		414.8203333	50.5
9	11666610	3859037	410.897	1	1	FALSE	shared row end		415.1053333	50.5
10	11666610	3859064	411.196	1	1	FALSE	mechanical stop		415.4043333	50.5
11	11666610	3859091	411.536	1	1	FALSE	compact		415.7443333	50.5
12	11666610	3859118	411.924	1	1	FALSE	compact		416.1323333	50.5
13	11666610	3859145	412.181	1	1	FALSE	slew drive HE6		415.806	43.5
14	11666610	3859171	412.83	1	1	FALSE	compact		417.0383333	50.5
15	11666610	3859198	412.364	1	1	FALSE	compact	0.1	416.6723333	51.7
16	11666610	3859225	411.801	1	1	TRUE	compact		416.0093333	50.5
17	11666610	3859252	410.913	1	1	TRUE	mechanical stop		415.1213333	50.5
18	11666610	3859279	409.871	1	1	TRUE	row end		414.0793333	50.5
19	11666625	3858795	406.63	2	1	FALSE	row end	0.1	410.9383333	51.7
20	11666625	3858822	407.899	2	1	FALSE	mechanical stop		412.1073333	50.5
21	11666625	3858849	408.005	2	1	FALSE	compact		412.2133333	50.5
22	11666625	3858876	408.565	2	1	FALSE	compact		412.7733333	50.5
23	11666625	3858903	409.02	2	1	FALSE	slew drive HE6		412.645	43.5
24	11666625	3858929	409.617	2	1	FALSE	compact		413.8253333	50.5
25	11666625	3858956	410	2	1	FALSE	compact		414.2083333	50.5
26	11666625	3858983	410.537	2	1	FALSE	compact		414.7453333	50.5
27	11666625	3859010	411.05	2	1	FALSE	mechanical stop		415.2583333	50.5
28	11666625	3859037	411.306	2	1	FALSE	shared row end		415.5143333	50.5
29	11666625	3859064	411.608	2	1	FALSE	mechanical stop		415.8163333	50.5
30	11666625	3859091	411.947	2	1	FALSE	compact		416.1553333	50.5
31	11666625	3859118	412.334	2	1	FALSE	compact		416.5423333	50.5
32	11666625	3859145	412.795	2	1	FALSE	slew drive HE6		416.42	43.5
33	11666625	3859171	413.406	2	1	FALSE	compact		417.6143333	50.5
34	11666625	3859198	412.863	2	1	FALSE	compact	0.1	417.1713333	51.7
35	11666625	3859225	411.841	2	1	TRUE	compact		416.0493333	50.5
36	11666625	3859252	410.83	2	1	TRUE	mechanical stop		415.0383333	50.5
37	11666625	3859279	409.812	2	1	TRUE	row end		414.0203333	50.5
38	11666639	3858795	406.795	3	1	FALSE	row end		411.0033333	50.5
39	11666639	3858822	407.983	3	1	FALSE	mechanical stop		412.1913333	50.5

IFC Package (4-6 Weeks)

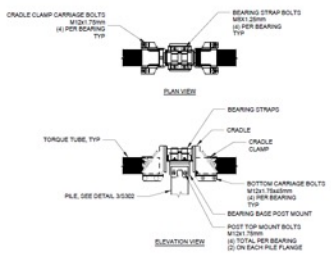
- IFC package to be kicked off after P.O. is signed
- Turnaround time of 4-6 weeks
- In 4-6 weeks, a draft will be provided to the customer for review and comments
- Edits from the draft review will be incorporated into the package
- After approval from customer, the package will be delivered to a P.E. for stamping
- Typical 2-week turnaround time for stamped package and calculation
- Foundation package will also require P.E. stamping and calculations
- P.E. will provide general notes, materials, and codes in the stamped package



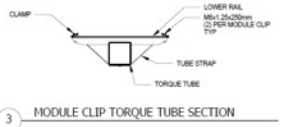




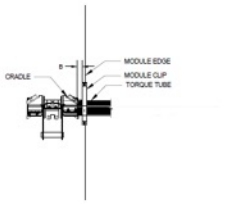
1 SLEW DRIVE



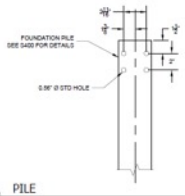
2 STRAIGHT THROUGH BEARING



3 MODULE CLIP TORQUE TUBE SECTION



4 BEARING TO MODULE CLIP SPACING



5 PILE

NOTES:
1. BOLT HOLE PATTERN APPLIES TO ALL NEVADOS BEARINGS AND SLEW DRIVE POST MOUNT

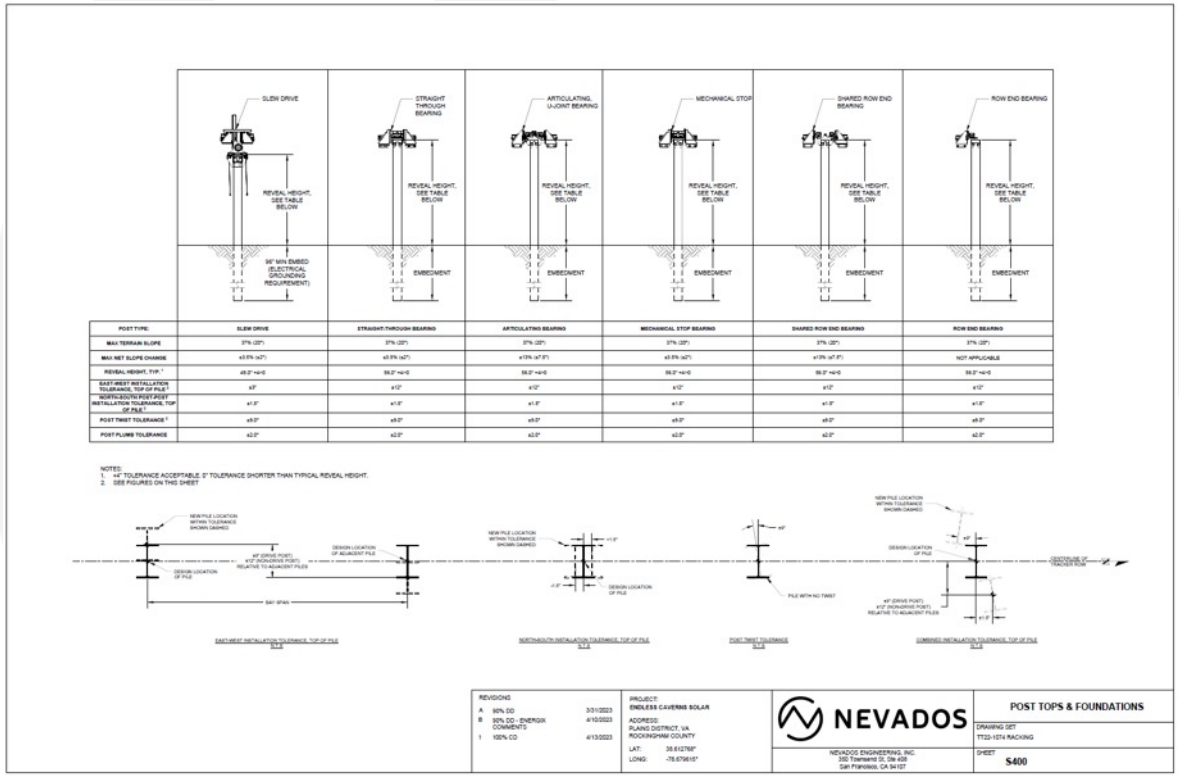
SHEET NOTES:
1. SEE IOM NEGGU-0010 FOR ALL INFORMATION RELATED TO COMPONENTS, FASTENERS, AND INSTALLATION GUIDE

REVISIONS		
A	90% DD	3/31/2023
B	90% DD - ENERGIX COMMENTS	4/10/2023
1	100% CD	4/13/2023

PROJECT: ENDLESS CAVERNS SOLAR
ADDRESS: PLAINS DISTRICT, VA ROCKINGHAM COUNTY
LAT: 38.612768°
LONG: -78.675615°

NEVADOS
NEVADOS ENGINEERING, INC. 150 Townsend St, Ste 439 San Francisco, CA 94107

DETAILS
DRAWING SET: TT22-1074 RACKING
SHEET: S302



POST TYPE:	SLEW DRIVE	STRAIGHT-THROUGH BEARING	ARTICULATING BEARING	MECHANICAL STOP BEARING	SHARED ROW END BEARING	ROW END BEARING
MAX TERRAIN SLOPE	37% (20°)	37% (20°)	37% (20°)	37% (20°)	37% (20°)	37% (20°)
MAX NET SLOPE CHANGE	±3.5% (±2°)	±3.5% (±2°)	±15% (±7.5°)	±3.5% (±2°)	±15% (±7.5°)	NOT APPLICABLE
REVEAL HEIGHT, TYP.*	48.0" +4/-0	56.0" +4/-0	56.0" +4/-0	56.0" +4/-0	56.0" +4/-0	56.0" +4/-0
EAST-WEST INSTALLATION TOLERANCE, TOP OF PILE†	±9"	±12"	±12"	±12"	±12"	±12"
NORTH-SOUTH POST-POST INSTALLATION TOLERANCE, TOP OF PILE†	±1.5"	±1.5"	±1.5"	±1.5"	±1.5"	±1.5"
POST TWIST TOLERANCE †	±9.0°	±9.0°	±9.0°	±9.0°	±9.0°	±9.0°
POST PLUMB TOLERANCE	±2.0°	±2.0°	±2.0°	±2.0°	±2.0°	±2.0°

NOTES:
1. 44" TOLERANCE ACCEPTABLE, 0" TOLERANCE SHORTER THAN TYPICAL REVEAL HEIGHT.
2. SEE FIGURES ON THIS SHEET

REVISIONS		
A	90% DD	3/31/2023
B	90% DD - ENERGIX COMMENTS	4/10/2023
1	100% CD	4/13/2023

PROJECT: ENDLESS CAVERNS SOLAR
ADDRESS: PLAINS DISTRICT, VA ROCKINGHAM COUNTY
LAT: 38.612768°
LONG: -78.675615°

NEVADOS
NEVADOS ENGINEERING, INC. 150 Townsend St, Ste 439 San Francisco, CA 94107

POST TOPS & FOUNDATIONS
DRAWING SET: TT22-1074 RACKING
SHEET: S400

Zone Controller & Weather Station Layout

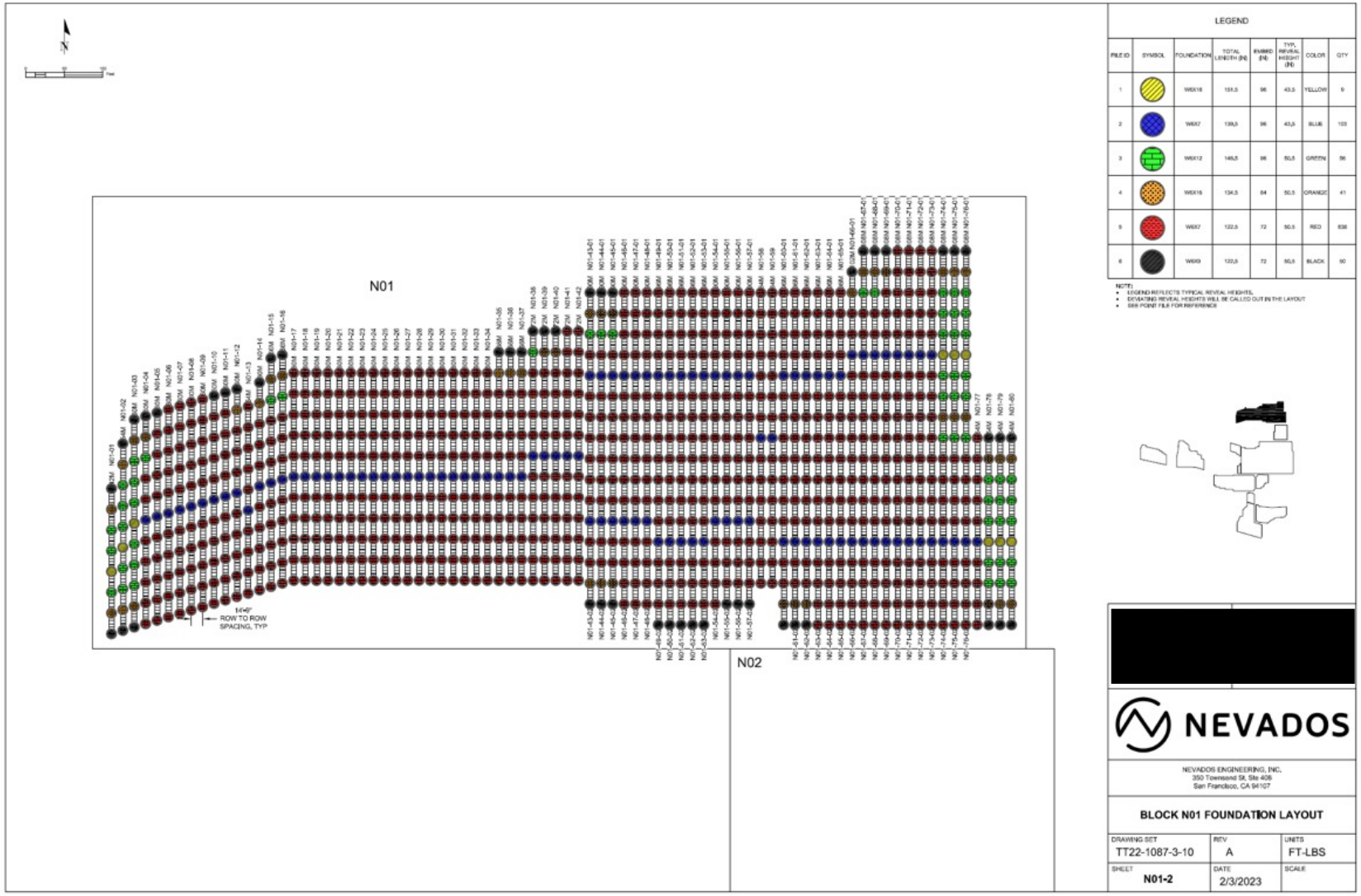
- Require iteration with customer to place weather stations in buildable areas
- Potential Impact to civil design
- Zone Controllers will be designed at inverted pads with 1-2 per pad

NEVADOS

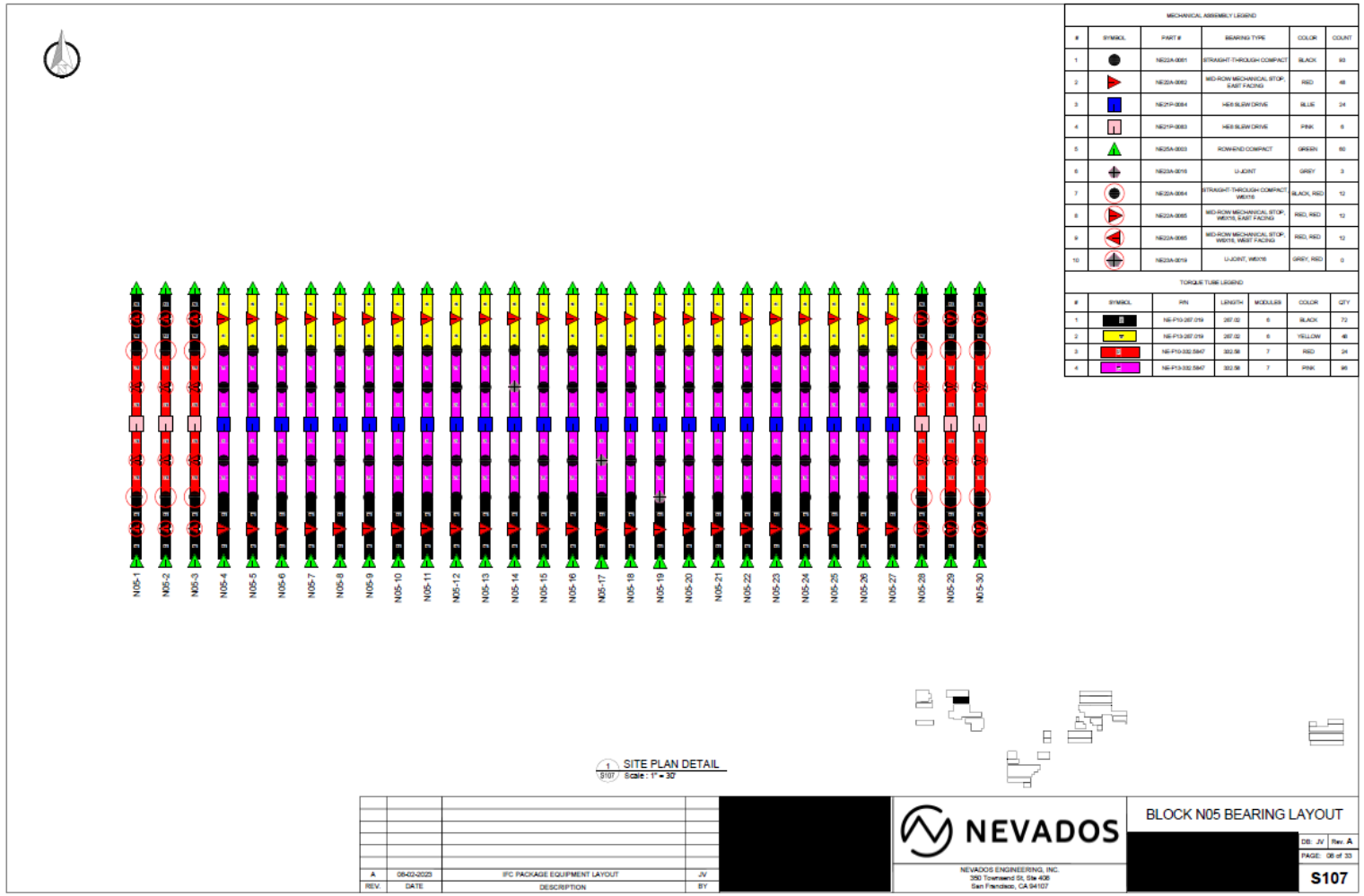
Construction and Commissioning

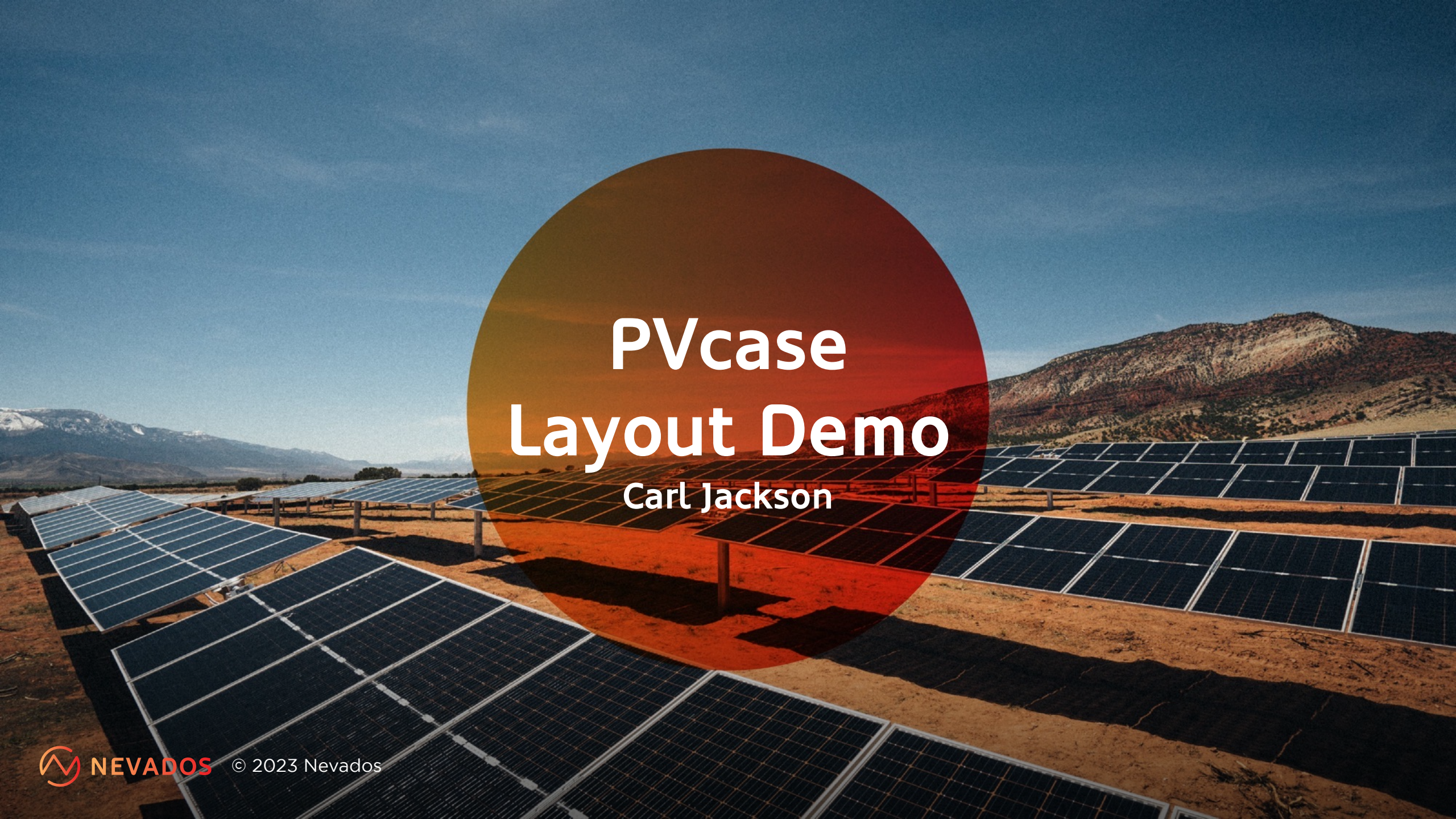
- Provide equipment 30 days prior to first delivery or earlier
- Customer to provide clear timelines with milestones
  - Pile install start and finish
  - Equipment install start and finish
  - Commissioning start and finish
- Align Nevados controls with on-site SCADA and network teams
- Align delivery schedules and crews involved with receiving
- Provide equipment staging plan
- Schedule virtual product training with relevant parties involved in construction
- Schedule golden row training after virtual product training
- Schedule Nevados support for commissioning if required

Foundation Layout



Mechanical Assembly Layout





PVcase Layout Demo

Carl Jackson

NEVADOS

PVcase BENEFITS:

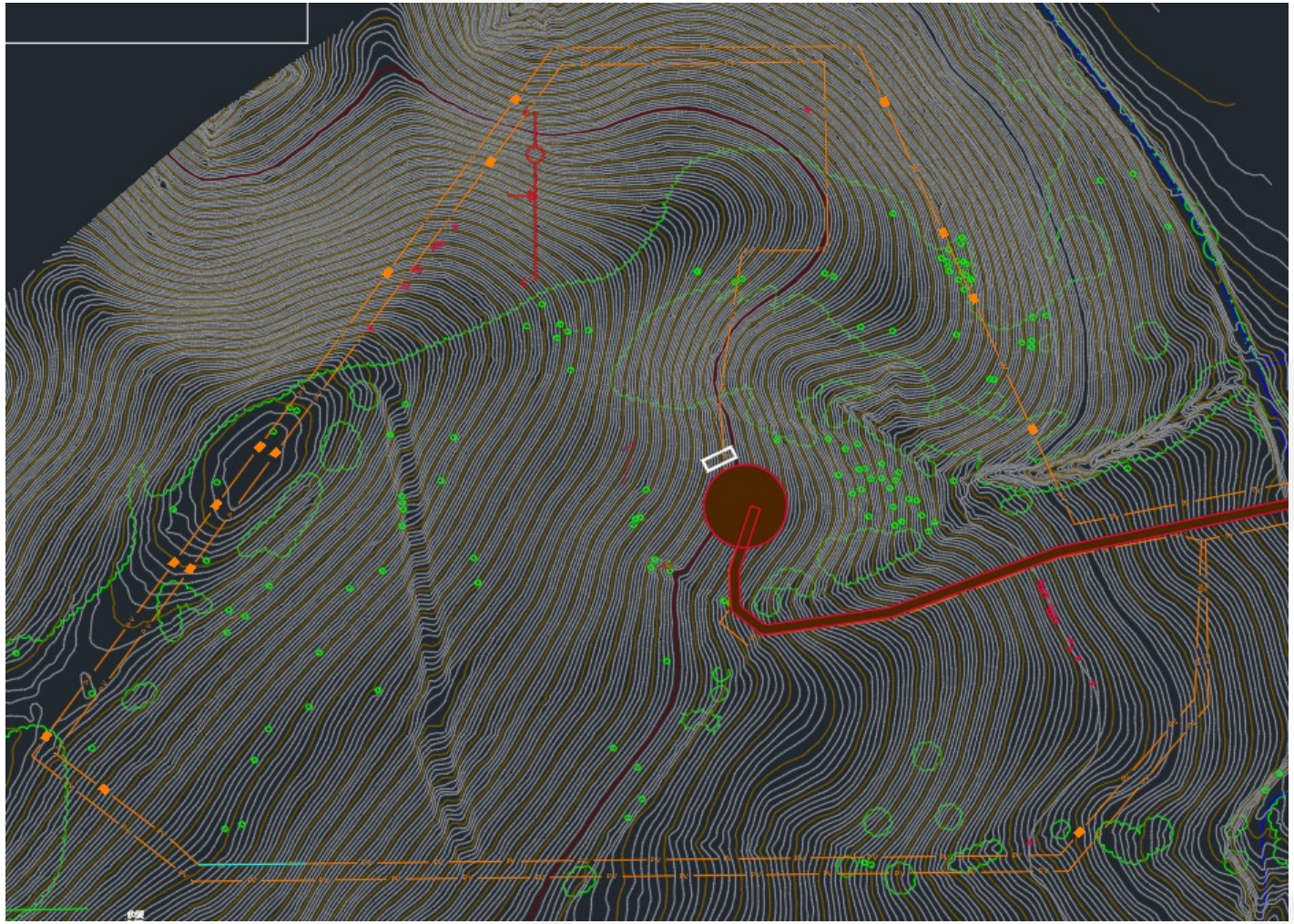
Allows more accurate analysis of topography at preliminary layout stage

Allows more accurate preliminary BOM's, and allows easy communication with customers/ EPC's who use PVcase

Allows for quick generation of challenging layouts at preliminary design stages and allows for easy adjustments/iterations in azimuth and capacity

Process Overview

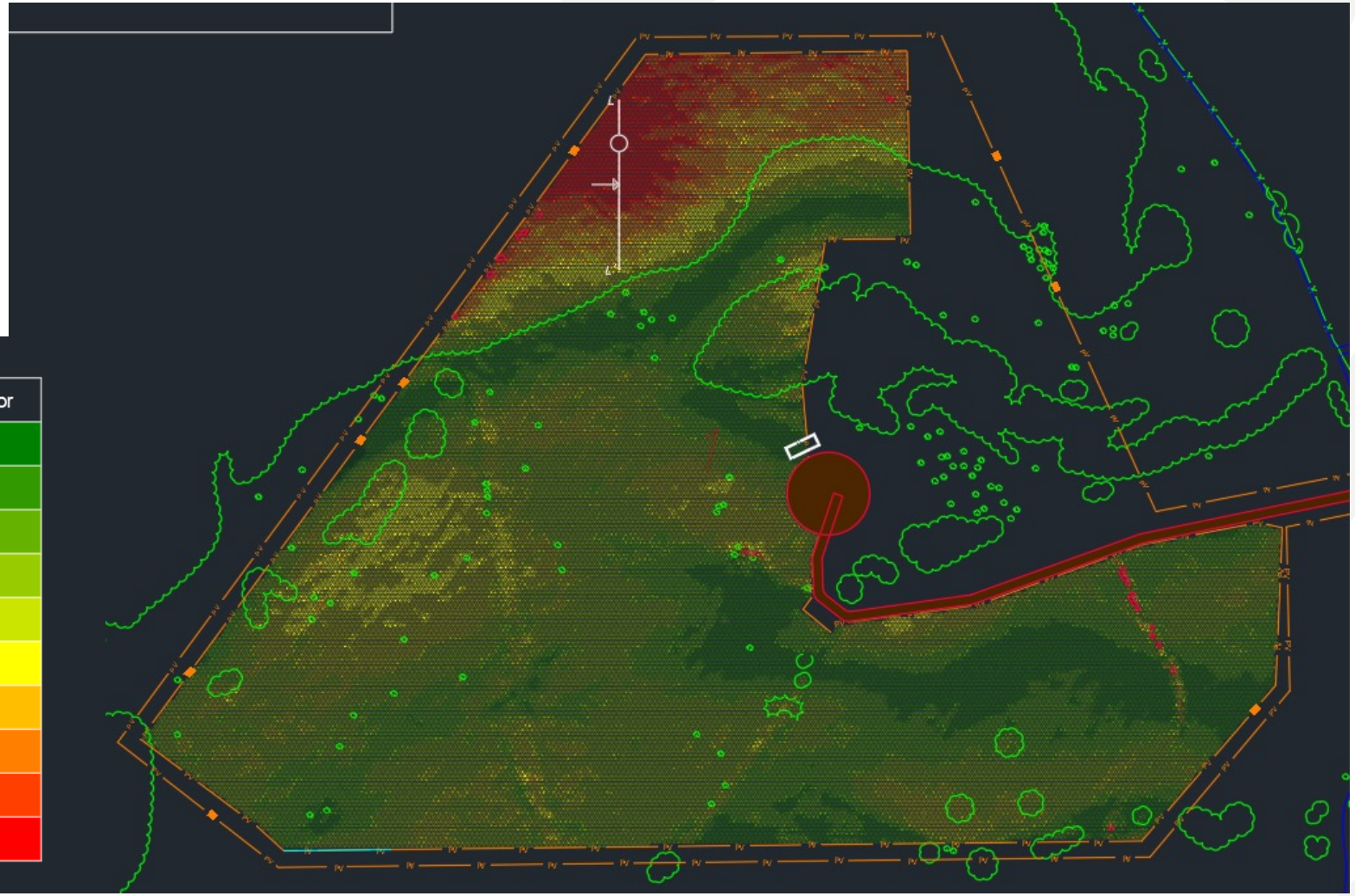
Input site plans with topography lines is used to generate a surface mesh



Process Overview

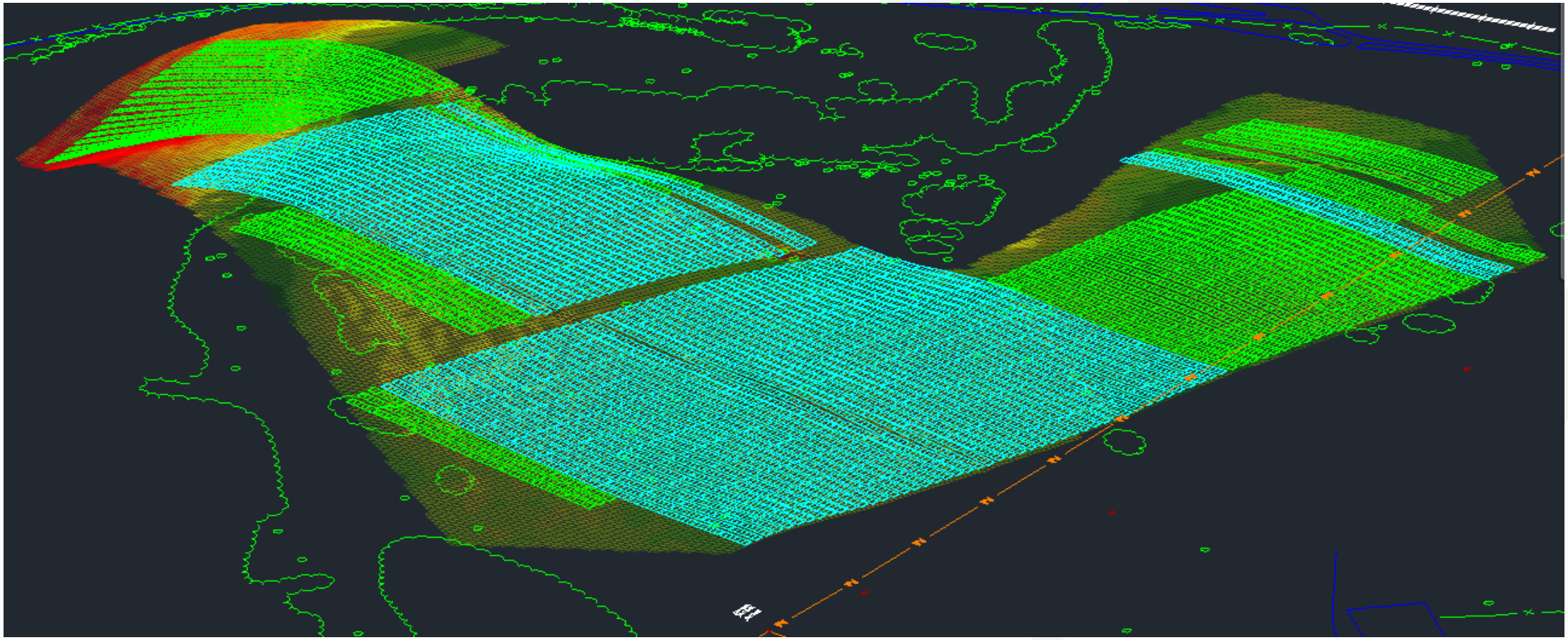
Surface mesh and distribution table

Angle min., %	Angle max., %	Distribution, %	Color
0.00	0.00	0.03	
0.00	4.62	14.30	
4.62	9.25	22.01	
9.25	13.88	33.15	
13.88	18.50	15.37	
18.50	23.12	4.67	
23.12	27.75	2.44	
27.75	32.38	3.57	
32.38	37.00	2.02	
37.00	142.81	2.44	



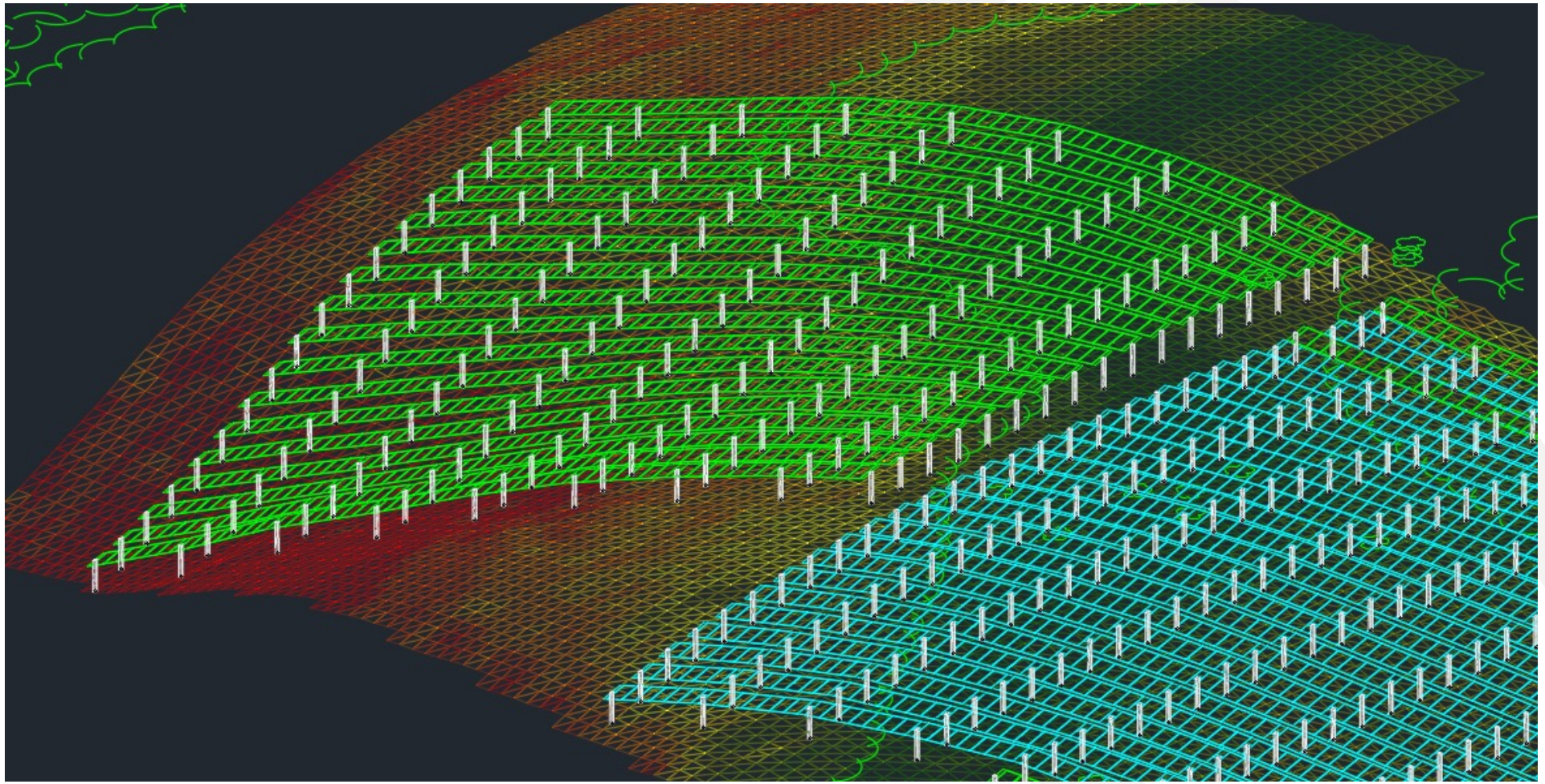
Process Overview

Layout Generation on top of surface



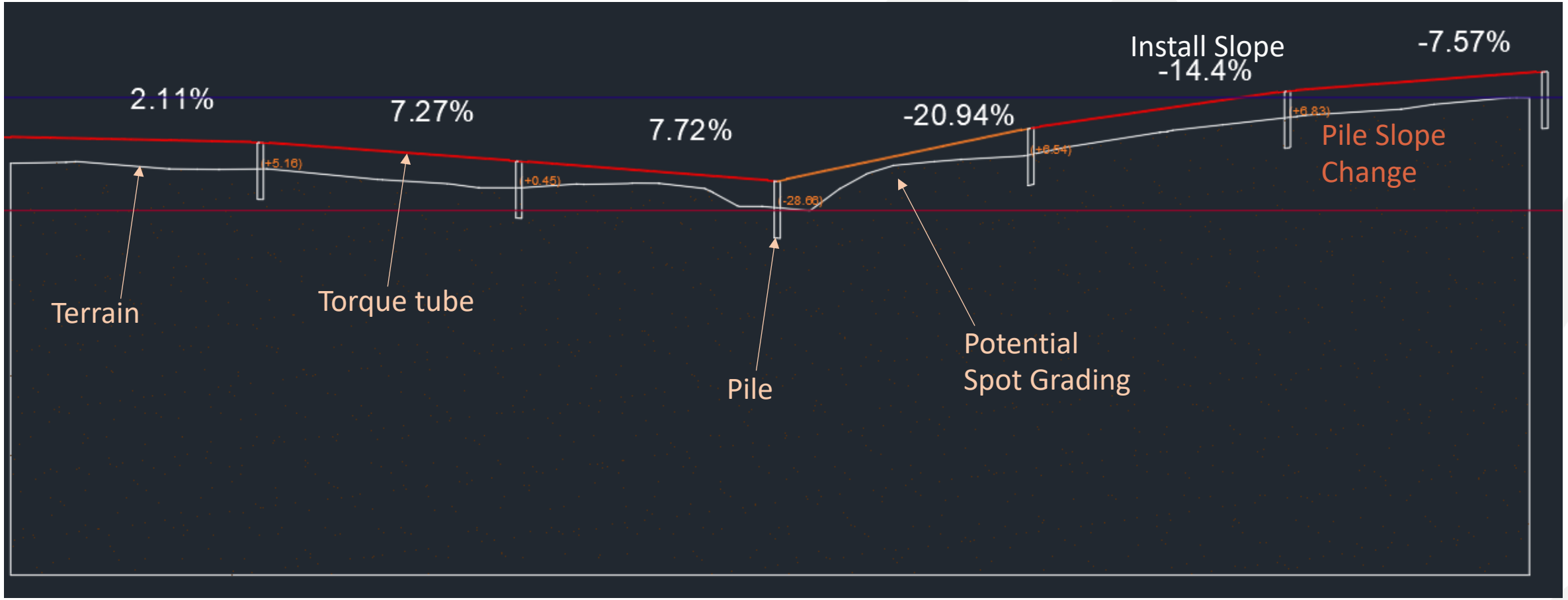
Process Overview

Piles rendered



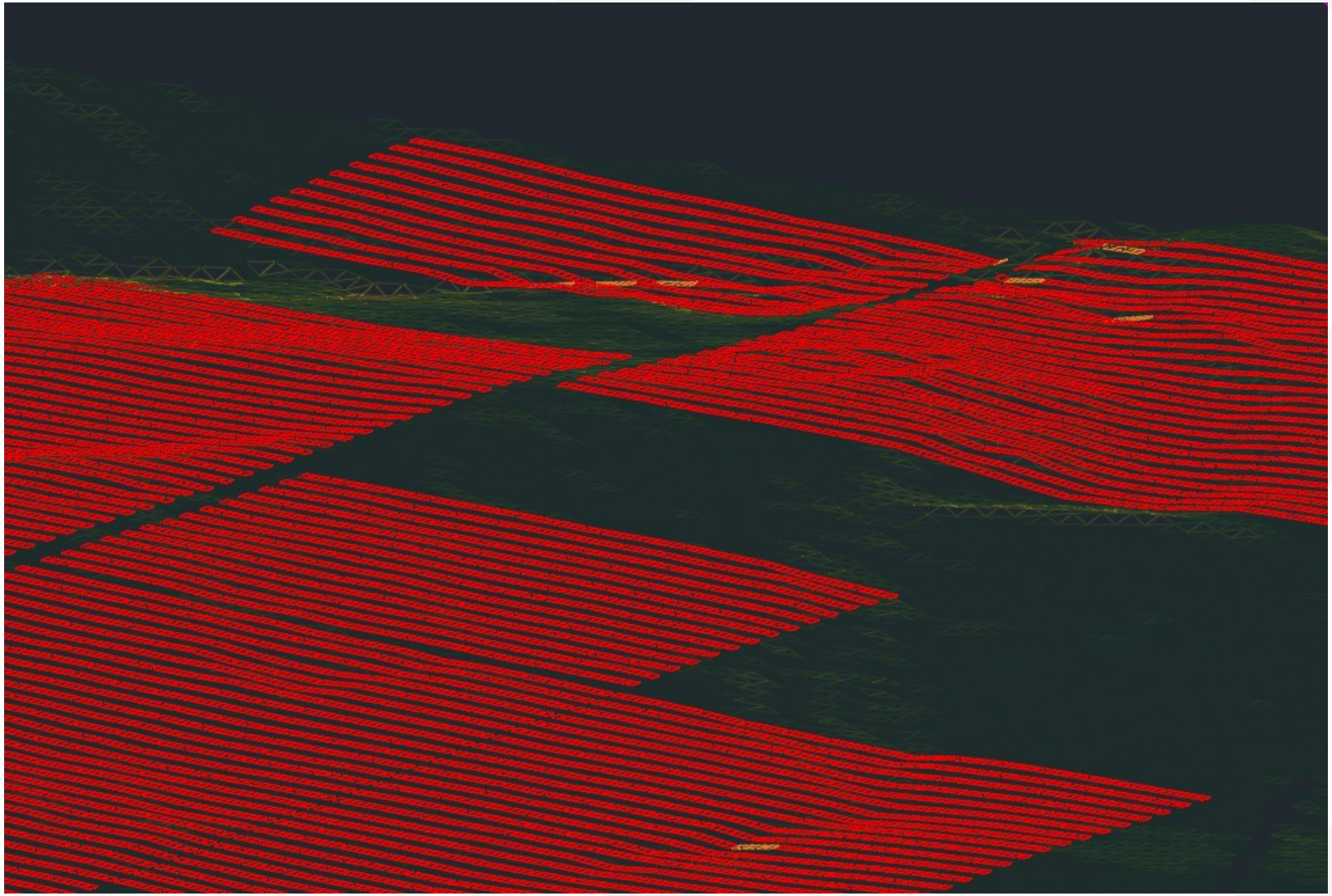
Process Overview

Cross Section, slope at point and bearing angle at point



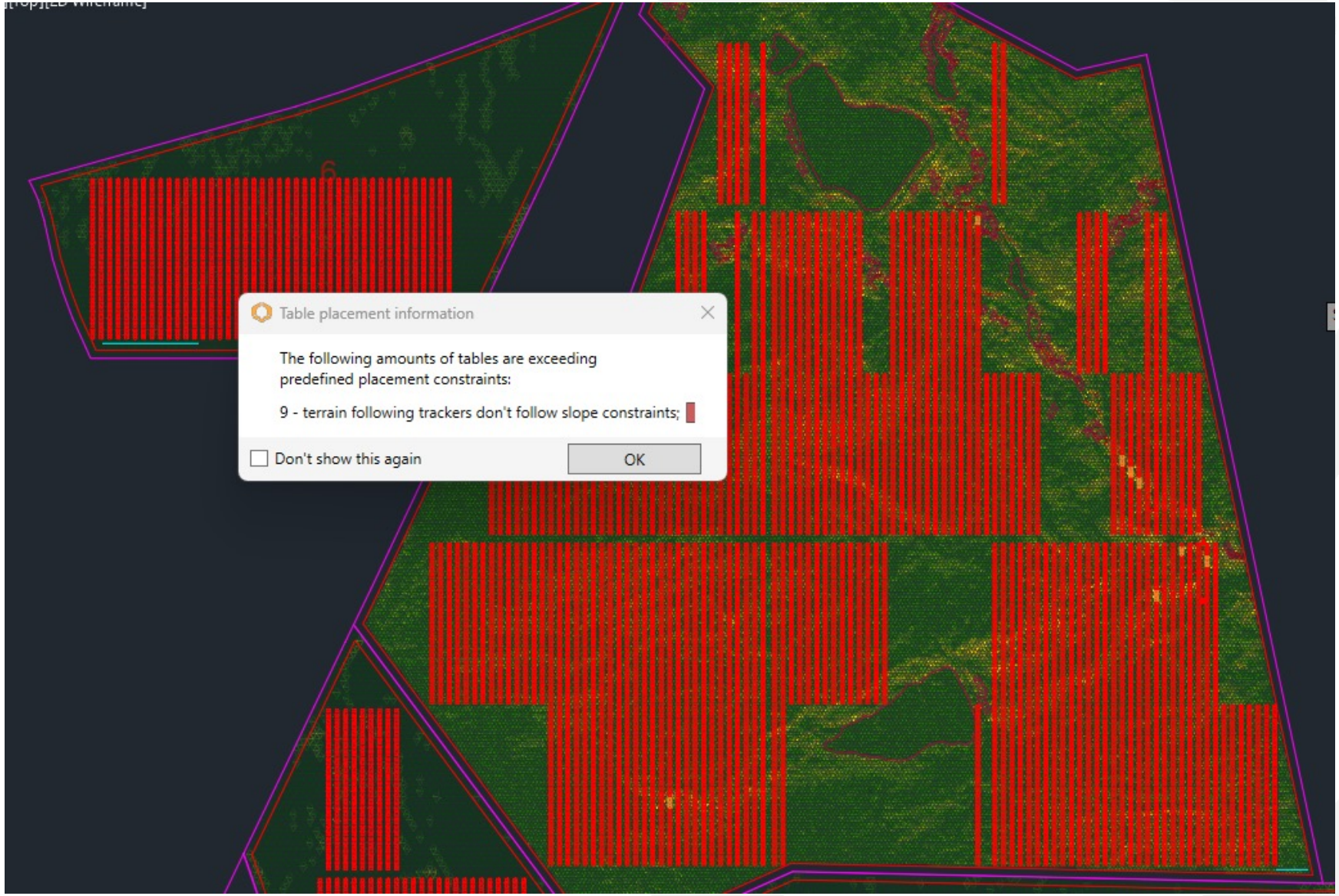
Process Overview

Indicative frames showing angle greater than set point



Process Overview

These show bays that need double articulating bearings



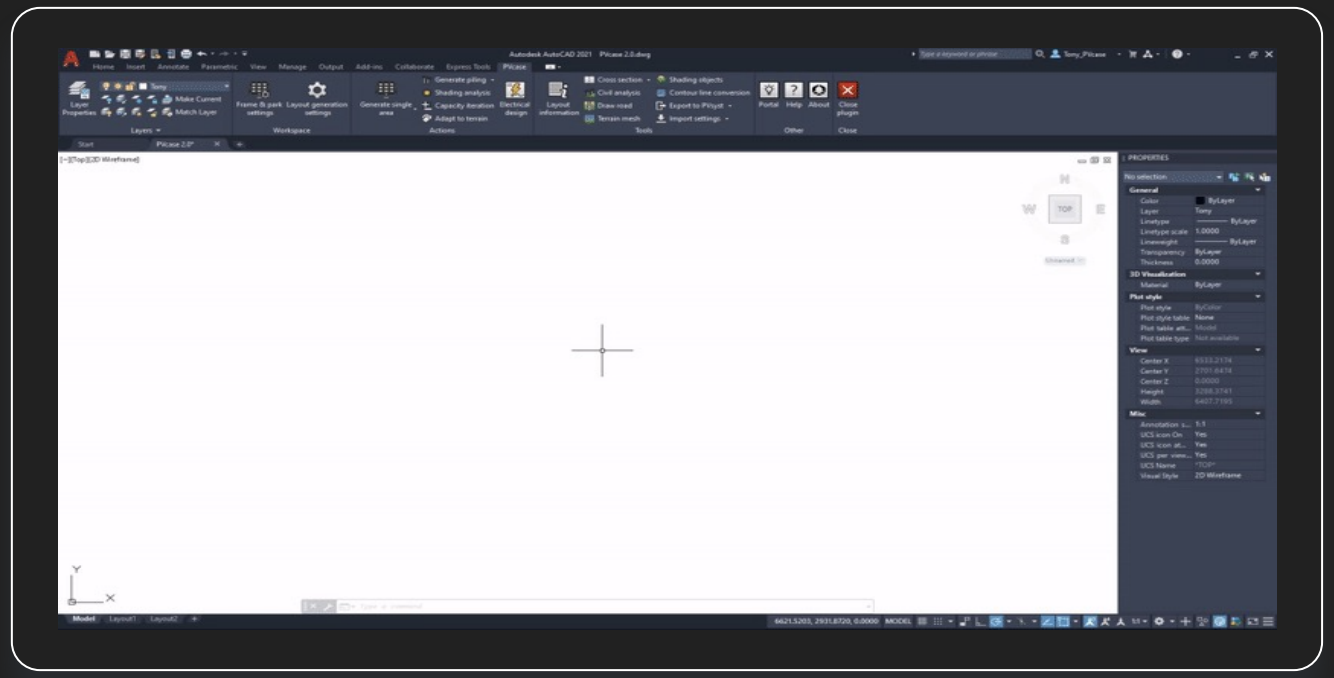
Demo

GROUND MOUNT PVcase

AUTODESK. Authorised Developer

Highlights

- 30x faster designs
- 11% increase in capacity
- 9% more precise cable lengths
- 13% increase in energy production
- Operating in over 60 countries



NEVADOS® BayWa r.e. CanadianSolar eDF renouvelables TOTAL

NEVADOS