



BORREGO SOLAR

Truck Traffic Analysis

Waterloo Solar 1, LLC

Date: 12/12/2018

Borrego Solar System has prepared the following analysis of construction truck traffic including types of trucks, truck trips, truck delivery routes and potential truck staging areas (on-site and off-site).

Truck Deliveries

Based on a typical solar project that Borrego Solar Systems, Inc. has constructed over the past 5 years we have developed a schedule of truck deliveries for this 2 MW (AC) solar energy generating facility.

Quantities

- 7128 Modules
- 297 each racking (4 screws, 4 posts, cabling and 4 purlins)
- 16 Inverters
- 1 Transformer
- 792 CY of gravel road
- 0 CY of paved road
- 0 CY of pervious road
- Switchgear
- DAS
- 2368 lineal feet of fencing
- 1336 lineal feet of electrical wiring

General Scope of Work:

1. Construct gravel access road
2. Install fencing
3. Excavate electrical trenches/equipment pads/install conduits
4. Install racking screws
5. Construct racking
6. Install solar modules/inverters
7. Install electrical equipment



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Typical Truck Generation Quantities per Scope of Work

1. Construct gravel access road
 - a. Bull dozer on flat bed
 - b. Excavator on flat bed
 - c. 792 cubic yards of gravel
 - i. 27 tri-axes
 - d. Bull dozer and excavator to remain on site
2. Install fencing
 - a. Type of truck
 - i. 2 flatbeds
3. Excavate electrical trenches and equipment pads/install conduits
 - a. Use 1.a and 1.b above
 - b. Back hoe
 - c. Concrete truck (2)
4. Install racking screws
 - a. 57' tractor trailers with screws/posts/cablings/purlins
 - i. 12 trucks (over 3 weeks)
 - b. One drill rig (pick up truck trailer)
5. Construct racking
 - a. No delivery trucks needed for installation
6. Install solar modules/inverters
 - a. 57' tractor trailers with modules
 - i. (620 modules per truck)
 - ii. 2 trucks every other day
 - b. 57' tractor trailer with inverters
 - i. 2 trucks
7. Install electrical equipment
 - a. Type of truck
 - i. Transformer (1 on 1 truck)
 - ii. Switchgear (1 on 1 truck)
 - iii. DAS (3 on 1 truck)
 - a. Electrical supply trucks (box trucks)
 - b. 24 miscellaneous trucks (2 per week for 3 months)



Truck Traffic Analysis

2179 IL-156
Waterloo, IL 62298

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Truck Count

	Skidders	Tri-Axles	Low Bed	57' TT	Box Truck	Trailer	Flatbed	Misc.	Subtotal
Gravel Trucks Tri-Axles (roadway surface)	-	27	20	-	-	-	-	-	47
Racking (297)	-	-	-	12	-	-	-	-	12
Modules (620/truck)	-	-	-	12	-	-	-	-	12
Fencing (2368 ft)	-	-	-	-	-	-	2	-	2
Inverters (16)	-	-	-	2	-	-	-	-	2
Transformer (1)	-	-	-	-	-	-	1	-	1
Switchgear (1)	-	-	-	-	-	-	1	-	1
Dumpster (2)	-	-	-	-	-	-	-	1	1
Office Trailer (1)	-	-	-	-	-	1	-	-	1
Misc. Electrical	-	-	-	-	24	-	-	-	24
Misc. Site work (i.e. bulldozer, backhoe, excavator, hoe ram)	-	-	-	-	-	-	6	-	6
									109

The above mentioned work will occur over 3.5 months (70 days). The average number of trucks per day would be $109/70=2$ trucks. Some days will be closer to four (4) per day during electrical trenching and backfill.

Truck delivery routes

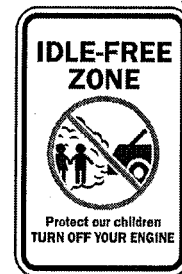
Truck Route

Truck Staging Areas

Many of our major materials suppliers travel from all over the country and their arrival times are fluid. Based on much of what is described above and limited area on site for parking multiple trucks, along with the expected delivery times, we will stage on-site along access drive. Access to the site will be available each day during work hours 7:30-5:00.

On-Site

We will be able to accommodate as many as five (5) tractor-trailer trucks on site for deliveries. Refer to plans for anticipated laydown areas on site where vehicles may off-load materials/equipment. Any trucks that will not be off-loaded will not be allowed to idle for more than five minutes. No idling sign(s) will be placed at appropriate locations. See example of sign.



Personal Vehicles

The totals above are estimates of the number of delivery truck trips needed to complete the projects. In addition to material and equipment deliveries, workers will be arriving to the site each weekday using personal vehicles. For similar projects of this scale, approximately 40 personal vehicles may be on site at a time. These vehicles will arrive each day in the morning and leave in the afternoon. The total number of vehicles on site will fluctuate depending on the phase of the project.