



\*\*\*Sample of ENGIE scope of work description -- not actual Adams Solar specifications\*\*\*

## Civil Work

---

Provide all labor, materials, equipment and taxes necessary to perform the Civil Work as described herein.

The line items match the line items on the Bid Form. Please fill out the Bid Form in its entirety and include all mark-ups and sales tax in each line item.

Note – the project requires a significant amount of trenching and backfilling to facilitate the installation of electrical cables. That work is included in the Electrical Work package. If you are interested in that work, provide associated pricing in Bid Item 6 – Electrical Work. Owner shall assist in coordinating communication between the bidders of the Civil Work and the Bidders of the Electrical Work.

### *Surveying*

- a) Owner shall provide 3 Control Points and Control Point Map.
- b) Civil Contractor shall be responsible for providing surveying for the work for the following;
  - a. Site Entrances
  - b. Laydown Area(s)
  - c. Roads
  - d. Fencing (1 stake per 300' along fence runs), fence corners and fence gates. Coordinate required off-sets with fencing contractor.
  - e. Inverter Pads (70 total; 4 points per pad).
  - f. Substation control building pad and fence corners.
  - g. Operation and Maintenance Building pad and fence corners.
- c) Coordinate off-sets with individual contractors.
- d) Owner shall provide Civil Drawings in DWG format. Contractor shall be responsible for developing a list of survey points from these files.
- e) The following survey work is not included in this scope of work.
  - a. Piles for single axis tracker system
  - b. Trenching for medium voltage collection system
  - c. Trenching for DC collection system (tracker rows to inverters)
  - d. Substation foundations or equipment pads

### *Site Clearing / Mowing*

- a) General vegetation mowing – this work will include about 10% of the site.

### *Site Entrances and Turn-out*

- a) Install permanent Entrances as shown.
- a) Provide grading as required. Scarify subgrade to 8", moisture condition to within 3% of optimal, and compact to 90% modified proctor.

- b) Fill material shall be moisture conditioned to within 3% of optimal, placed in lifts not exceeding 8", unless otherwise approved by Geotechnical Engineer, and compacted to 90% modified proctor.
- c) Rock shall be placed and compacted as shown.
- d) Transition between concrete driveway and asphalt at highway shall be constructed in accordance with TxDOT requirements.
- e) While performing work; Contractor shall implement and maintain all safety and traffic control measures necessary to ensure the safety of the workers, other Contractors and their workers, and the Public.

*Stabilized Construction Entrances*

- a) Install stabilized construction entrances as shown between the site and County Road 185.

*Laydown Area*

- a) Construct the laydown areas where shown.
- b) Grade the area relatively flat, while maintaining the natural slope of the area.
- c) Scarify subgrade to 8", moisture condition to within 5% of optimal, and compact material to 85% proctor.
- d) Place 3" rock section and compact to 85% modified proctor. Note, the section indicated is the compacted section; not the placed section.

*Construct Dirt Roads*

- a) Roads shall follow existing contours and shall allow for the natural drainage of the site to be maintained. Road elevations are not shown. It shall be the Contractor's responsibility to establish these proper grades in the field to meet this requirement.
- b) Construct dirt roads where shown. Fill voids from roots removed during clearing and grubbing using moisture conditioned material within 5% of optimum and compacted to 85% proctor.
- a) Upon completion of filling of the voids, scarify subgrade to 8", moisture condition, and compact material to 85% proctor.

*Construct Rock Roads*

- a) Roads shall follow existing contours and shall allow for the natural drainage of the site to be maintained. Road elevations are not shown. It shall be the Contractor's responsibility to establish these proper grades in the field to meet this requirement.
- b) If necessary, excavate road subgrade to allow for top of rock section to match existing grades on either site to meet the requirements of item (a).
- c) Construct rock roads where shown. Fill voids from roots removed during clearing and grubbing using moisture conditioned material within 5% of optimum and compacted to 85% proctor.
- d) Upon completion of filling of the voids, scarify subgrade to 8", moisture condition, and compact material to 85% proctor.
- e) Place rock to the section and widths indicated. Compact to 90% modified proctor. Note the section indicated is the compacted section; not the placed section.

*Site Grading*

- f) Some grading will need to be done to facilitate the construction of the single axis tracker system "SAT". The SAT is the steel pile and beam system the solar panels are mounted to. The site is made up of 70 blocks and 8,733 SAT rows. There are 7,562 rows that have 87 solar panels, and 1,171 rows that have 84 solar panels. Each row is approximately 300' long.

- g) The areas where grading for the rows is required, is called out on civil drawing detail sheets. See the Road Plans for detail call-outs. The majority of the areas within the site do not require grading to accommodate the construction of the rows.
- h) When constructing rows, the minimum above-grade height of the row is 3.05'. The maximum above-grade height of the 5.00' above grade, providing an allowable variance of 23.4". The rows can be level, or they can be pitched to match the slope of the ground. Thus, the grade along the 300' length of the row must be within 23.4" of the plane of the grade in that area.
- i) Provide site grading in the areas shown on the detail sheets. The details depict the area to be graded and the general recontouring of the area to meet the 23.4" variation tolerance. It shall be the responsibility of the Contractor to determine and construct the final grades to meet the allowable tolerances.
- j) Areas requiring fill shall be constructed using native materials free of deleterious materials. Fill voids using moisture conditioned material within 5% of optimum and compacted to 85% proctor. Scarify subgrade to 8", moisture condition, and compact material to 85% proctor. Fills shall be placed in lifts not exceeding 8" unless otherwise approved by Geotechnical Engineer.

#### *SWPPP*

- a) Install silt fencing or triangular sediment filter dikes where shown.
- b) Install straw wattles where shown.

#### *Construction Water Supply and Transport*

- a) Provide water, delivered to site to accommodate the construction of the project including civil work, dust control, and for moisture conditioning trench backfill material.
- b) Water shall be delivered to site by either trucking or piping. Water supplier shall be solely responsible for coordinating and accomplishing water deliveries.
- c) Supplier shall maintain equipment at the water resource(s) to ensure the delivery requirements.
- d) If there is a possibility that the supplier's water source goes dry, it is highly recommended that the supplier contract with more than one source to ensure they can meet capacity.
- f) The quantities listed are assumed and may vary appreciably. Owner shall only pay for water used.

#### *Dust Control During Civil Work*

- a) Contractor shall provide dust control for the areas where civil work is being performed. Include all associated costs in this line item.

#### *Dust Control after Civil Work*

- a) Construction of the solar park will be performed in areas where civil work is completed and will continue after all the civil work is complete.
- b) The work of this line item is to provide dust control for areas where construction is on-going but the civil work is complete.
- c) The site will require a minimum of one 6,000-gallon water truck, operating 10 hours per day, 6 days a week to maintain dust control during the construction. We anticipate that a second 6,000-gallon truck may also be required much of the time and possibly all the time.
- d) The requirement of this line item is to provide operated water trucks as necessary to meet the demand of the Project. Total anticipated hours are approximately 1 ½ trucks x 12 months x 4.34 weeks x 60 hours = 4,700 hours. Provide the total cost to meet this requirement including all necessary fuel and maintenance.
- e) Payments will be made for work actually performed. Owner shall sign a daily tag from the truck operator and Contractor shall invoice for the actual work performed on a monthly basis.

### *Site Signage*

- a) Site signage will be provided by Owner.
- b) Contractor shall provide all posts and footings and erect the following signs up to the quantity indicated. Post height and depth are indicated as follows (6'/5') indicates 6' above grade / 5' below grade.
  1. Install 6 each – 4'x8' signs with 2 each 4"x 4" posts, (6'/5')
  2. Install 10 each – 3'x6' signs with 2 each 4"x 4" posts, (5'/5')
  3. Install 32 each – 18"x24" signs with 1 each 4"x 4" post, (6'/5')
  4. Install 152 each – 12"x18" signs with 1 each 4"x 4" post, (4'/4')
- c) Footings shall consist of a 6" diameter augured hole; and compacted earth. No concrete is required.

### *Quality Assurance / Quality Control – Civil Work*

- a) General
  1. Quality Control Documents and Logs shall be maintained using Procore software. Documents prepared in the field will be filled out using tablets and uploaded into Procore electronically.
  2. As part of the Quality Assurance / Quality Control process, testing and inspections will be performed by Owner's site management team. Contractor shall participate in the inspection process.
  3. Contractor shall participate with Owner in developing the Quality Assurance / Quality Control Report Forms and Logs to be used in Procore.
- b) The following testing and inspections will be performed:
  1. Surveying – Critical points such as Property Line off-sets and Road Intersections will be inspected.
  2. Site Demolition – Visual Inspection
  3. Site Entrance –
    - a) Subgrade Preparation
    - b) Rock Placement and Compaction
  4. Stabilized Construction Entrances – Visual Inspection
  5. Laydown Areas
    - a) Subgrade Preparation
    - b) Rock Placement
  6. Dirt Roads and Rock Roads
    - a) Subgrade Preparation
    - b) Compaction Test – Every 300'
    - c) Drainage – Visual
    - d) Rock Placement
  7. Reinforced Road Crossings
    - a) Subgrade Preparation
    - b) Fabric Placement
    - c) Block Placement
    - d) Grout Placement
  8. Site Grading and Additional Site Grading
    - a) Grades will be inspected by block
    - b) Compaction Testing – As required by Geotechnical Engineer
  9. SWPPP
    - a) Placement of SWPPP Measures
  10. Site Signage

- a) Sign locations

#### *General Requirements*

- a) Contractor shall be responsible for maintaining on-site facilities required for their work. Include all site management and temporary facilities costs in this line item.
- b) For other General Requirements that apply to this section, see the General Conditions section at the end of this document.
- c) Submittals – Contractor shall provide submittals as least 10 days prior to ordering materials and allow 1 weeks for Owner’s review and approval. Materials should not be ordered until submittals are reviewed and approved by Owner. Provide submittals as outlined below.
  - 1. Site Entrance
    - a) Concrete Mix
    - b) Control Joint Layout
    - c) Rebar
    - d) Transition Detail
    - e) Traffic Control Plan
  - 2. Rock for Roads
  - 3. Rock for Laydown Areas (If different than proposed materials to be used on Roads)
  - 4. Reinforced Road Crossings
    - a) Geotextile Fabric
    - b) Grout Mix
  - 5. SWPPP Materials
    - a) Silt Fencing
    - b) Sediment Filter Dike
    - c) Straw Wattle

#### *Schedule*

- a) See Exhibit B for the baseline schedule. The COD in the baseline schedule is December 31, 2020.
- b) The basis of the RFP is to construct the project in accordance with the baseline schedule.

## General Requirements

---

In general, Contractor will be responsible for providing all management, safety and temporary facilities for Contractor’s work. Power to job trailers at site entrance, and temporary toilets will be furnished and paid for by Owner. Power for other temporary facilities about the site will be the responsibility of the Contractor.

Site security will be provided by Owner. All Contractor employees will be required to obtain a badge and shall be badged in and out of the site on a daily basis.