



SCOPE OF WORK:

BID # 6777

Exhibit A

ON CALL SURVEYING CONTRACTOR

ALL LANDFILLS

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I. SCOPE OF WORK

San Joaquin County Public Works Department Solid Waste Division (COUNTY) seeks a Contractor to provide surveying and related tasks at all County-owned landfills. Typical tasks in a year include:

- Aerial survey
- Ground survey and construction staking
- Fill volume calculations from AutoCAD topographic maps

The County will provide specifications in writing for each ground survey and construction staking task,. County Solid Waste Engineering Section staff, may also provide verbal instructions in the field to the Contractor as needed.

The County will provide minimum of two (2) week's notice to the Contractor for aerial survey tasks and minimum of two (2) working days notice for ground survey work. The work schedule may be adjusted to accommodate the Contractor's work as approved in writing with the County. Aerial surveys will be scheduled primarily during the months of June and July.

A. GENERAL INFORMATION

1. DEFINITIONS

- i County: San Joaquin County Public Works Department Solid Waste Division.
- ii Engineer: The authorized representative of the County, in this case, Solid Waste Division staff.

2. WORK LOCATION

Work will be at the following landfills owned by the County:

1. Corral Hollow Sanitary Landfill is located at 31130 S. Corral Hollow Road, Tracy, CA 95376 near the intersection of Corral Hollow Road and Interstate 580 in southwestern San Joaquin County in Section 18, Township 3 South, Range 5 East, MDB&M (Figure 2).
2. Harney Lane Sanitary Landfill is located at 14750 E. Harney Lane, Lodi, CA 95240, approximately one mile east of Jack Tone Road in northeastern San Joaquin County, in Section 19, Township 3 North, Range 8 East, MDB&M (Figure 3).
3. Foothill Sanitary Landfill is located at 6484 N. Waverly Road, Linden, CA 95236, on the eastern edge of San Joaquin County in Sections 12 and 13, Township 2 North, Range 9 East, MDB&M (San Joaquin County APN # 09344002) (Figure 4).

4. North County Sanitary Landfill (NCSL) is located at 17720 E. Harney Lane, Lodi, CA 95240 just west of Atkins Road in northeastern San Joaquin County, in Section 21, Township 3 North, Range 8 East, (San Joaquin County APN # 06512004) MDB&M (Figure 5).

3. WORK HOURS

Work hours shall be Monday through Friday excluding public holidays as follows:

- North County: 7:00 A.M. to 4:00 P.M.
- Harney Lane landfill, Foothill Landfill and Corral Hollow Landfill:

7:00 A.M. to 4:30 P.M

4. SITE CONDITIONS

i GENERAL

a Refuse

Refuse at County Landfills are household refuse, demolition debris, tree trimmings, and miscellaneous refuse. Contractor shall minimize contact with refuse.

b Landfill Gas (LFG)

When buried in a landfill, refuse and other organic material produces LFG, which is approximately 50 percent methane by volume and may contain other contaminants. Methane gas is combustible and has a lower explosive limit of 5 percent by volume. The Contractor shall ensure that work is conducted when working conditions meet OSHA Requirements.

c Site Terrain

Some of the work will be on the landfill surfaces with gentle slopes. Some work will be on slopes up to 3:1. County will schedule work when surface conditions permit workability.

d Animals

Sheep are brought to all sites for vegetation control in the spring. Cattle are sometimes grazing at North County and Foothill Landfill. Contractor shall be aware of the presence of animals in the landfill property. Grazing animals may destroy flight cross or control points established in the field. Contractor shall make flight cross markings in the field animal-resistant as needed to complete the work.

e Verification of Site Conditions

Contractor shall verify existing conditions before commencing work and shall report discrepancies between the bid items and field conditions immediately to the Engineer who shall determine if a change order is needed. Contractor's failure to call discrepancies to the Engineer's attention constitutes acceptance of those conditions. Contractor shall not modify the work without prior authorization by the Engineer.

f SAFETY

The Contractor is solely and wholly responsible for the safety of workers and damage to equipment. Contractor shall practice OSHA and other applicable safety procedures.

B. USE OF SITE

1. SANITARY FACILITIES

- i Contractor shall provide drinking water.
- ii Contractor may use the portable toilets when available at the sites and the permanent toilet at North County Landfill.
- iii Contractor must sign for and will be provided a key for the locks of main entrance gates at all sites which shall be returned at the conclusion of the contract.
- iv Contractor shall keep gate chains looped to close the gate when on site.
- v Contractor shall collect meal trash and other litter generated by the Contractor and dispose of this material appropriately.
- vi The Contractor shall be responsible for contractor's materials and equipment. The County is not responsible for thefts, vandalism or damage to Contractor's material and equipment left on site. The sites have perimeter fences.
- vii Smoking will be allowed only in Contractor's vehicles when located in an area not subject to fire. Smoking materials shall be contained within Contractor's vehicle. Burning cigarettes shall not be thrown at the site. Failure to comply with this requirement will result in a smoking ban at the sites.

II. TASKS

A. AERIAL SURVEY

1. DESCRIPTION

Contractor shall perform aerial photogrammetric survey of each site's survey area as shown in contract figures. Resulting topographic map shall show two-foot contour intervals.

For the Corral Hollow and North County Landfill, a significant portion of the processing area is beyond County property. The County understands that accuracy of the topo diminishes as the distance from the control points increase. For areas beyond County property, the specified topo accuracy does not apply.

- i Contractor shall lay necessary flight cross or ground control targets.
 - a Ground control targets shall be placed on County property.
 - b The horizontal and vertical ground control points shall be tied to the existing on-site control points.
 - c Approximate location of the on-site control points are shown in the contract figures.
- ii Contractor shall provide stakes and other items to place ground control or flight crosses.
- iii Contractor shall field-survey the elevations of at least six (6) locations as directed by the Engineer. These elevations shall be used to draw the topographic contours.
- iv Natural and manmade features shall be represented in the aerial survey.

2. DELIVERABLES

Deliverables and any work product created under this contract, whether final or draft, whether produced by the contractors staff or by subcontractors under this contract, including but not limited to calculations and AutoCAD drawings will be owned by the County and shall include:

- i A topographic drawing (topo) of the area in AutoCAD version 2010 or higher.
 - a Topo lines shall be accurate within one foot of the indicated elevation, that is, the actual elevation of a location on the landfill shall vary no more than one foot from the indicated elevation.

- b The new topo shall x-ref into County's existing topo at 0, 0. County will provide the latest topos
- c Contour lines shall be poly lines with widths set to 0
- d UCS shall be set to "World"
- e Contractor shall use individual layers for each class of features in the topo, such as "roads", "paved areas", "buildings".
- f Contractor shall submit a list of the proposed layers and colors to the County after receiving notice to proceed. Contractor shall use layer colors as approved by the County. Index topo contours shall be color red. Intermediate contours shall be color No 8
- g Above ground piping shall be represented with un-broken lines.
- h Topo shall be to scale 1:1. The topo shall have a North arrow and a scale bar in model space of the topo on a separate layer
- i Control points shall be identified in the topo on a separate layer titled "Survey Controls".
- j The Topo shall have the date of the aerial survey.
- k One 24"x36" hard copy print of the topo. Contractor shall certify the topo to be accurate. The hard copy print shall list the survey control points of the topo and datum reference.
- l The topo's AutoCad file shall be saved on a CD and mailed to the County. All transmittals to the County shall clearly identify the sites name and the date of aerial survey.

B. GROUND SURVEY

1. DESCRIPTION

- i Contractor shall provide a two (2) person crew with GPS RTK surveying equipment (or equivalent) for ground survey work.
 - a The vertical accuracy for surveying ground water well casing elevations shall be +/- 0.01 foot.
 - b The vertical accuracy for general surveying shall be +/- 0.03 foot.
- ii Minimum of two working days of notice will be provided by the County for ground survey work.

- iii Minimum of four (4) hours of service will be requested for each service call
- iv Compensation for ground survey work will be based on time and materials.
- v County Solid Waste Engineer will identify, in writing, the area to be surveyed. Contractor will perform each ground survey. Ground survey tasks include:
 - a Construction staking
 - b Groundwater well casing survey
 - c Topographic mapping of small areas
- vi The Contractor shall use ½" rebar stakes 18 inches long with wooden lath to stake in areas where animals are present.
- vii Contractor shall label stakes and mark on stakes as directed by the Engineer.
- viii Contractor shall flag stakes with a ribbon.

2. DELIVERABLES

Deliverables and any work product created under this contract, whether final or draft, whether produced by the contractors staff or by subcontractors under this contract, including but not limited to calculations and AutoCAD drawings will be owned by the County and shall include:

- i X, Y, Z coordinates of surveyed items based on the on-site control points.
- ii Other data as requested by the Engineer.

C. VOLUME CALCULATIONS

Upon request by the County, Contractor shall use AutoCAD 3D or other software to calculate fill or cut volumes of areas identified by the County at each site. These volumes shall be based on the two topos taken at different times. The County will provide topographic maps and specify volume calculation areas.

The deliverables for the volume calculation shall be in cubic yards identified in a tabular format. A figure shall be provided to identify the cut or fill volumes of the area as identified by the County.

Compensation for volume calculations shall be based on time and materials basis. Approximate volume calculation hours are listed in the bid sheet. The Contractor shall provide the method of volume calculation to the Engineer upon receiving notice to proceed.