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Negative Findings Cultural Resource Survey of the Highway 2303 Solar Field Erath County, Texas

Report prepared for

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ABSTRACT

On November 14 and 15, 2015, TAS Inc. conducted pedestrian survey and shovel testing of the proposed Highway 2303 Solar, LLC solar array project in central Erath County. The project is located 0.4 km (0.2 mile) southwest of the North Bosque River, and 4 km (2.5 miles) northwest of Stephenville, TX. At the request of Gremminger and Associates Inc., acting as agents for Highway 2303 Solar, LLC, pedestrian survey of the 71.3 acre (28.85 hectare) project area was augmented by 44 shovel probes. The area has been highly modified by terracing to control runoff and pond construction. No evidence of prehistoric or significant historic occupation or use was found within the APE, so cultural resources pose no impediment to the proposed solar field.

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INTRODUCTION

On November 14 and 15, 2015, TAS Inc. surveyed the proposed Area of Potential Effect (APE) for the Highway 2303 Solar, LLC solar array in central Erath County, Texas (Figure 1 Figure 2). As part of the permitting application process, Gremminger and Associates Inc., acting as agents for Highway 2303 Solar, LLC retained TAS Inc. to perform a cultural resource assessment of the project area. The field assessment consisted of pedestrian survey and shovel testing of the 71.3 acre (28.85 hectare) project area. The proposed solar field is 2.5 miles northwest of Stephenville and 0.4 km southwest of the North Fork of the North Bosque River. No evidence of prehistoric or significant historic occupation or use was found; therefore, cultural resources present no impediment to installation of the proposed solar array.

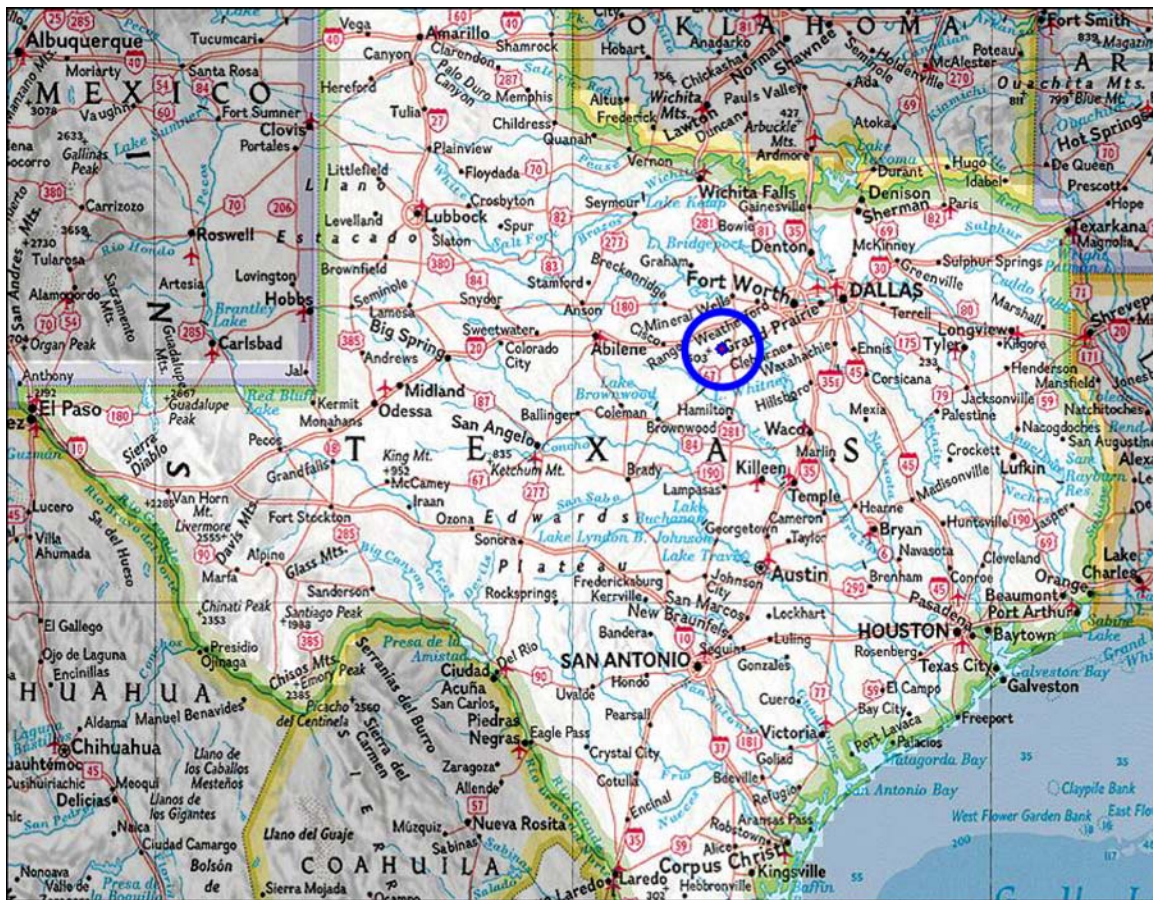


Figure 1. General location of project area (source: Terrain Navigator).

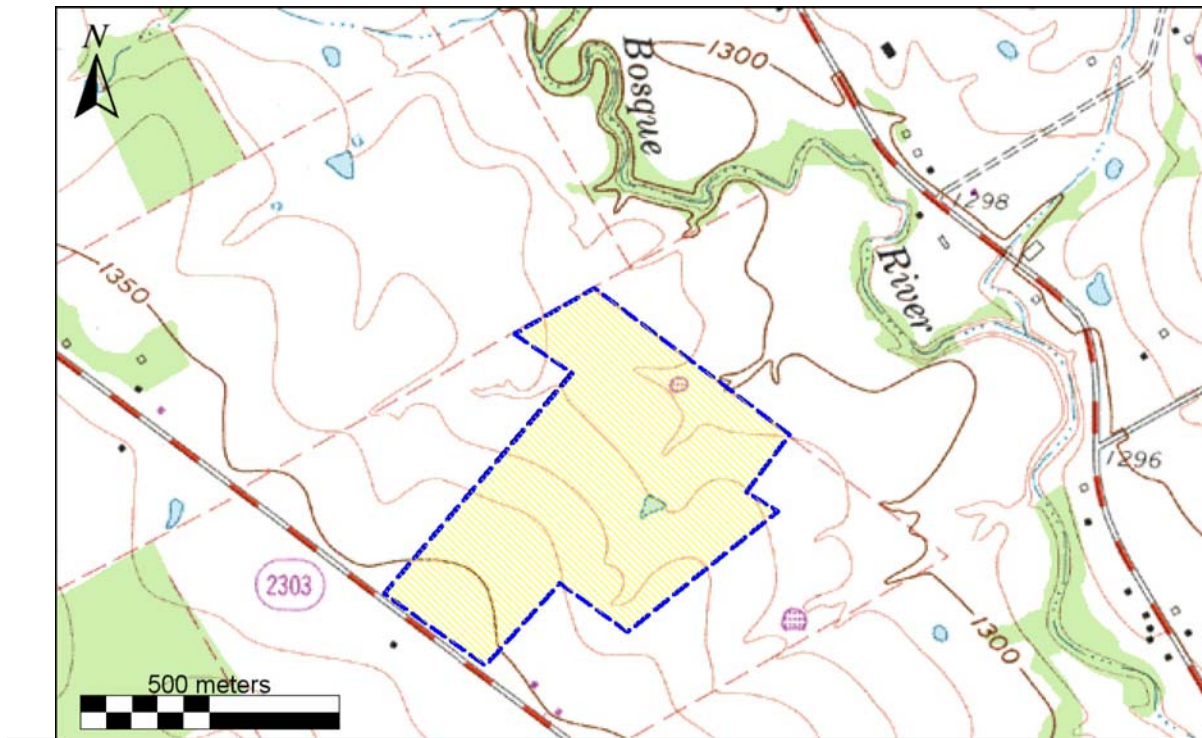


Figure 2. Project location map (source: Terrain Navigator).

ENVIRONMENTAL CONTEXT

The proposed corridor is in the Cross Timbers physiographic zone, and the Texan biotic zone, where oak savannah, rangeland, and agriculture dominate. The climate is warm-temperate, and frequently humid. The average temperature is 64.3 degrees Fahrenheit and average humidity ranges from 50 to 80 percent (USDA 1973: 78).

The APE is located on an improved Bermuda grass field that has been augmented by the formation of man-made terraces to control erosion (Figure 3). The land gently slopes northeast toward the Bosque River, but is otherwise relatively flat. The average elevation of the project area is 1330 feet above mean sea level (amsl), and ranges from a high of 1361 feet at the southwest corner to a low of 1301 feet at a minor drainage in the northern part.

The dominant hydrological features are the southeast-flowing North Fork North Bosque River which is 400 meters northeast of the APE, and the east-flowing South Fork North Bosque River, located 1.6 km south of the APE. The confluence of the North and South Forks of the North Bosque River is 3.3 km southeast of the APE, just north of the Stephenville city limits.



Figure 3. View eastward from southern project area.

The parent material for the majority of soils in Erath County derives from Cretaceous age sandy and calcareous marl deposits separated by limestone formations (Figure 4). The soils in and adjacent to the APE, Windthorst and Duffau, were formed from the Paluxy Sand formation (USDA 1973: 77). A typical soil profile was encountered in shovel test 593 with 10YR 4/4 orangish brown loamy sand from 0 to 35 cm below the surface (cmbs) over dense clay of a similar color. A small number of shovel tests demonstrated heavy mixing of the soil with mixed loamy sand and clay down to 80–90 cmbs until clayey hardpan was encountered.

Windthorst and Duffau are the two dominant soil types mapped across the region. Windthorst soils underlie the entire APE and are characterized as very deep and moderately well drained. Duffau soils are inferior in extent relative to the Windthorst soils and occupy areas adjacent to the project area (NRCS).

Windthorst soils are of the order Alfisols which are moderately leached soils that have relatively high native fertility, and of the suborder Ustalfs which typically support savanna vegetation and grassland. They consist of very deep, moderately well-drained, moderately slowly permeable soils that formed in loamy and clayey materials stratified with packsand. These soils are on very gently to strongly sloping uplands, with slopes ranging from 1 to 12 percent. The dry color is a grayish brown, 10YR 5/2 on the Munsell color system (NRCS).

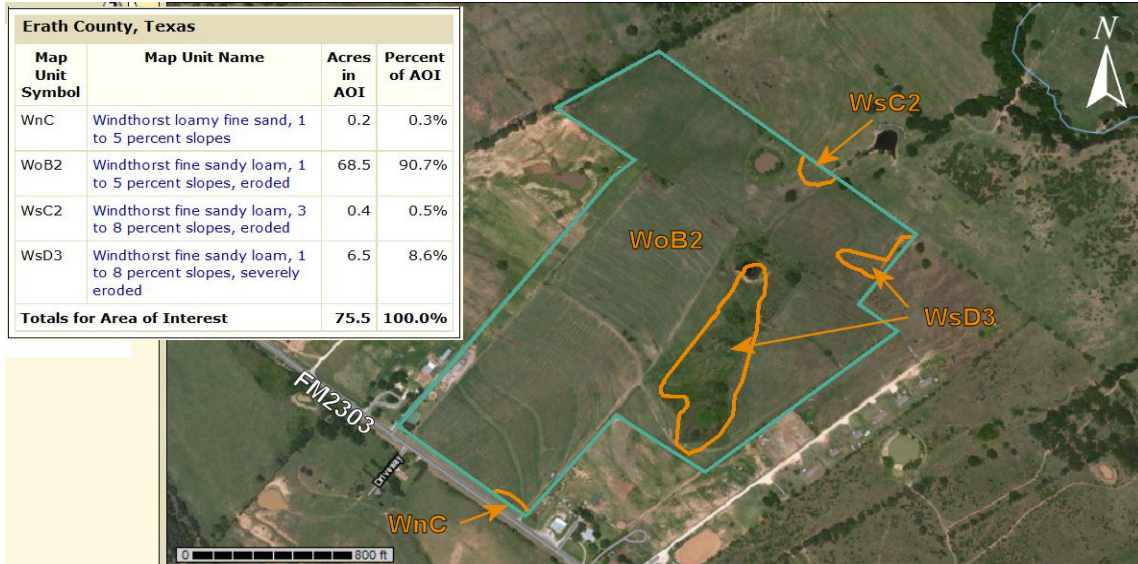


Figure 4. Soil map of the survey area (source: NRCS, Google Earth).

CULTURAL CONTEXT

Over 50 archeological sites have been recorded in Erath County. Fifty-two abstracts are available on THC's Atlas. There are also three State Historic Landmarks, The President's House at Tarleton State University, the Erath County Courthouse, and the Bluff Dale Suspension Bridge. No previously recorded archeological sites were found near the study area (Atlas).

Several cultural resource surveys have been conducted in the vicinity of the current APE. The largest was conducted by Ecological Communications Corporation and included a survey of ROW and acreage along the Bosque River about 1.5 miles south of Stephenville. According to the Atlas, no sites were found as a result of that survey. The closest recorded archeological site to the current project area is 41ER41, which lies within the Stephenville city limits, about 5 km southeast of the APE. This site consists of the remains of two houses constructed around 1915 and destroyed in 2001 (Atlas).

METHODS

Prior to the start of fieldwork, the county site files and maps on the THC's Archeological Site Atlas were searched for previously recorded site locations and references to archeological surveys undertaken in the vicinity of the proposed pipeline. Pedestrian survey of 71.3 acres (28.85 hectares) at 30 m intervals was augmented by 44 negative shovel tests, spaced at approximate 100 m intervals along NE-SW trending transects 100 m apart. Surface visibility was poor due to the dense cover of Bermuda grass. The shovel tests, typically 30 cm in diameter, were excavated to a depth of one meter where testable soils were encountered. Shovel test matrix was sifted through ¼-inch wire mesh; the locations were recorded with hand-held GPS units, and transferred to mapping software (Appendix).

SURVEY RESULTS

The APE lies on a parcel of land that has been terraced to control erosion (Figure 5). Historical aerial photography indicates the land has been plowed as recently as 2005 but has since been allowed to go fallow and is now covered with grasses (Google Earth). The intensive pedestrian survey, augmented by 44 shovel tests, revealed no evidence of prehistoric or significant historic occupation or use.

CONCLUSIONS

At the request of Gremminger and Associates Inc., acting as agents for Highway 2303 Solar LLC, a 28.85 hectare (71.3 acre) proposed solar array field was examined for cultural resources. A total of 44 shovel probes was dug across the APE. No evidence of prehistoric or significant historic occupation or use was found, therefore, cultural resources present no impediment to construction of the proposed solar field.

REFERENCES CITED

- Atlas
2015 Texas Archeological Sites Atlas. <http://www.nueces.thc.state.tx.us/>.
(Accessed 12/19/15).
- Google Earth
2015 (accessed December 23, 2015)

NRCS (Natural Resources Conservation Service)
<http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx> (accessed 12/18/15).

USDA U.S. Department of Agriculture
1973 *Soil Survey of Erath County, Texas*
http://www.nrcs.usda.gov/Internet/FSE_MANUSCRIPTS/texas/erathTX1973/erathTX1973.pdf (accessed 12/18/15).

APPENDIX

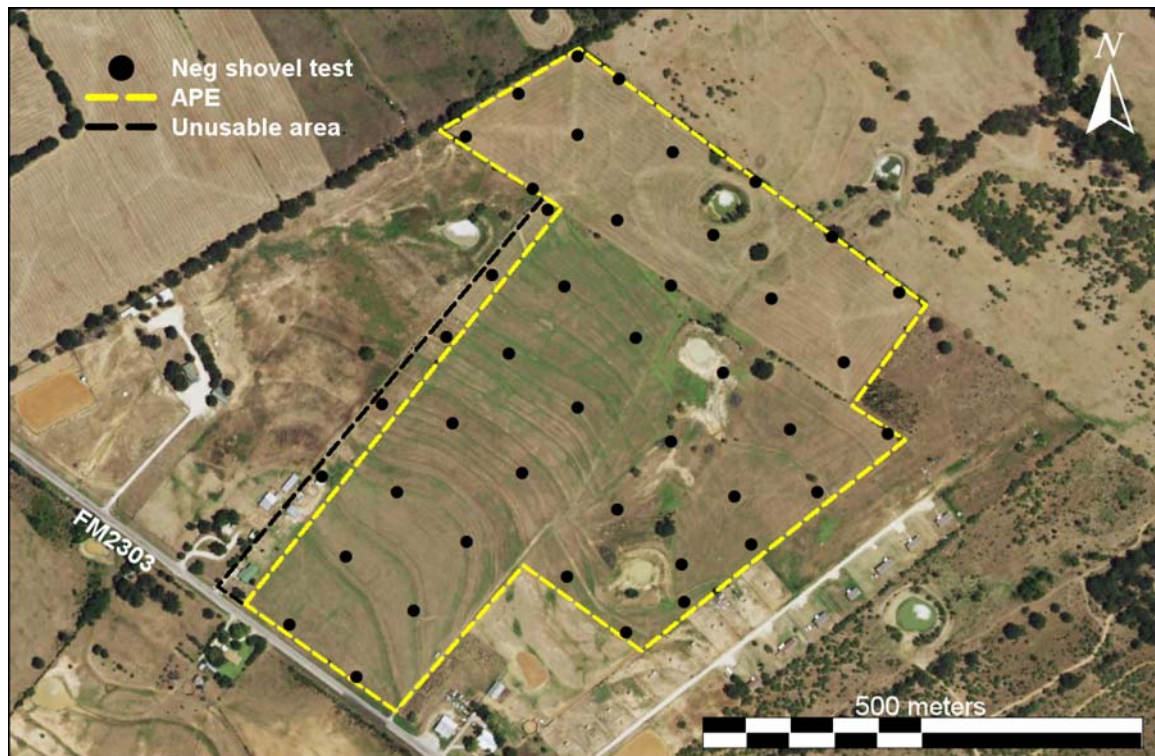


Figure 5. Shovel test locations (note terracing and pond construction).

Table. Shovel test results.

Shovel Test Field ID	Depth	Results	Comments
tb241	70 cm	Neg	terraced Bermuda grass field, 0-20 cm orange/brown sandy loam, 20-70 cm darker orange/brown sandy loam, @70 cm orange/brown clay w/a few iron stones
tb242	25 cm	Neg	0-25 cm orange/brown sandy loam, @25 cm orange clay
tb243	25 cm	Neg	0-25 cm orange/brown sandy loam, @25 cm orange clay
tb244	20 cm	Neg	0-20 cm darker orange/brown sandy loam, @20 cm darker orange/brown clay w/limestone-CaCO ₃
tb245	20 cm	Neg	0-20 darker orange/brown sandy loam, @20 darker orange/brown clay
tb246	25 cm	Neg	0-25 darker orange sandy loam, @25 dark red clay
tb247	0 cm	Neg	dark brown clay @surface at fence line
589	25 cm	Neg	0-25 cm orange/brown sandy loam; @25 cm orange/brown clay; in an improved bermuda grass pasture
590	35 cm	Neg	0-35 cm orange/brown sandy loam; @35 cm orange/brown clay; in an improved bermuda grass pasture
591	30 cm	Neg	0-30 cm orange/brown sandy loam; @30 cm orange/brown clay with ironstones and mottling; in an improved bermuda grass pasture
592	25 cm	Neg	0-25 cm orange/brown sandy loam; @25 cm orange/brown clay; in an improved bermuda grass pasture
593	35 cm	Neg	0-35 cm orange/brown sandy loam; @35 cm orange/brown clay; in an improved bermuda grass pasture
594	35 cm	Neg	0-35 cm orange/brown sandy loam; @35 cm orange/brown clay; in an improved bermuda grass pasture
595	20 cm	Neg	0-20 cm orange/brown sandy loam; @20 cm orange/brown clay; in an improved bermuda grass pasture
596	20 cm	Neg	0-20 cm orange/brown sandy loam; @20 cm orange/brown clay; in an improved bermuda grass pasture
597	observation	Neg	pond dam
598	70 cm	Neg	0-20 cm orange/brown clay loam; 20-70 cm mottled brown hydric sandy loam; at 70 cm brown clay; probably disturbed ground from pond construction; in an improved bermuda grass pasture
599	80 cm	Neg	soil is disturbed down to 80 cm evidenced by mix of colors and soil types

600	30 cm	Neg	0-30 cm reddish brown loam with limestone inclusions; @30 cm caliche; in improved bermuda grass pasture
601	10 cm	Neg	0-10 cm brown sandy loam; @10 cm brown clay
602	20 cm	Neg	0-20 cm brown sandy loam; @20 cm red/brown clay; in improved bermuda grass pasture
603	20 cm	Neg	0-20 cm red/brown sandy loam; @20 cm red/brown clay; in improved bermuda grass pasture
604	25 cm	Neg	0-25 cm or/brown sandy loam; @25 cm or/brown clay; in improved bermuda grass pasture
605	15 cm	Neg	0-15 cm or/brown sandy loam; @15 cm or/brown clay; in improved bermuda grass pasture
606	20 cm	Neg	0-20 cm brown loam; @20 cm red/brown clay; in improved bermuda grass pasture
607	25 cm	Neg	0-25 cm or/brown sandy loam; @25 cm red/brown clay; in improved bermuda grass pasture
608	15 cm	Neg	0-15 cm brown sandy loam; @15 cm red/brown clay; in improved bermuda grass pasture
609	30 cm	Neg	0-30 cm or/brown sandy loam; @30 cm or/brown clay; in improved bermuda grass pasture
610	25 cm	Neg	0-25 cm or/brown sandy loam; @25 cm red/brown clay; in improved bermuda grass pasture
611	observation	Neg	bulldozed area beside pond
612	0 cm	Neg	mottled, hydric clay at surface; disturbed ground
613	45 cm	Neg	0-45 cm brown sandy loam; @45 cm or/brown clay; in improved bermuda grass pasture
614	30 cm	Neg	0-30 cm brown sandy loam; @30 cm or/brown clay; in improved bermuda grass pasture
615	30 cm	Neg	0-30 cm brown sandy loam; @30 cm or/brown clay; in improved bermuda grass pasture
616	60 cm	Neg	0-60 cm orange-brown sandy loam; @60 cm or/brown clay; in improved bermuda grass pasture
617	70 cm	Neg	0-75 cm brown sandy loam; @70 cm water table; in improved bermuda grass pasture
618	90 cm	Neg	0-90 cm disturbed soils, mixed colors and soil types; @90 cm clayey hardpan; in improved bermuda grass pasture
619	10 cm	Neg	0-10 cm orange-brown sandy loam; @10 cm or/brown clay; in improved bermuda grass pasture
620	25 cm	Neg	0-25 cm orange-brown sandy loam; @25 cm or/brown clay; in improved bermuda grass pasture
621	0 cm	Neg	wet area in a drainage; in improved bermuda grass pasture
622	30 cm	Neg	0-30 cm brown sandy loam; @30 cm or/brown clay; in improved bermuda grass pasture
623	25 cm	Neg	0-25 cm orange-brown sandy loam; @25 cm orange clay; in improved bermuda grass pasture
624	25 cm	Neg	0-25 cm brown sandy loam; @25 cm brown clay; in improved bermuda grass pasture
625	observation	Neg	small barn