



TEXAS ENGINEERING  
EXPERIMENT STATION

Texas Center for Applied Technology



January 9, 2009

Commissioner Hector "Tito" Palacios  
Precinct 2  
Hidalgo County, Texas  
301 E. State St.  
Pharr, TX 78577

Dear Commissioner Palacios,

This letter is the official proposal from the Texas Engineering Experiment Station (TEES) and the Texas State Energy Conservation Office (SECO) to allow siting of an axial flow wind turbine built by students at the Science Academy of South Texas at the Hidalgo County South Tower CRC Park on South Tower Road in Alamo, TX. As you know, SECO has funded TEES to provide a hands-on engineering project experience for high school engineering magnet program students that is developing plans for a wind turbine to be used by colonia residents to provide nighttime controllable lighting for those dwellings that are not grid connected. The plans will be translated to Spanish and will be available for distribution to local residents. To validate their plans, the Science Academy is building two turbines. The first will be on the campus and the students would like to place the second turbine in a location that is visible to the community and easily accessible for display to the public. In our discussions with County Administrator Mr. Humberto Garza, we have identified that a location that meets these requirements at the S. Tower CRC Park currently under construction. This letter summarizes the location and makes a formal recommendation for the Commission's action.

The location desired is in the center of the park (Location 1 on the attached diagram). This location has excellent wind exposure and will allow the turbine to power the lighting of the planned pavilion to the north of the location. We are also asking that the County donate and install the concrete pads for the turbine and install a safety fence around the site. The details have been provided to Mr. Garza, Mr. Ramiro Gutierrez (your consulting engineer on this S. Tower project) and Mr. Tommy Canulo, the representative of VA Architecture for the project.

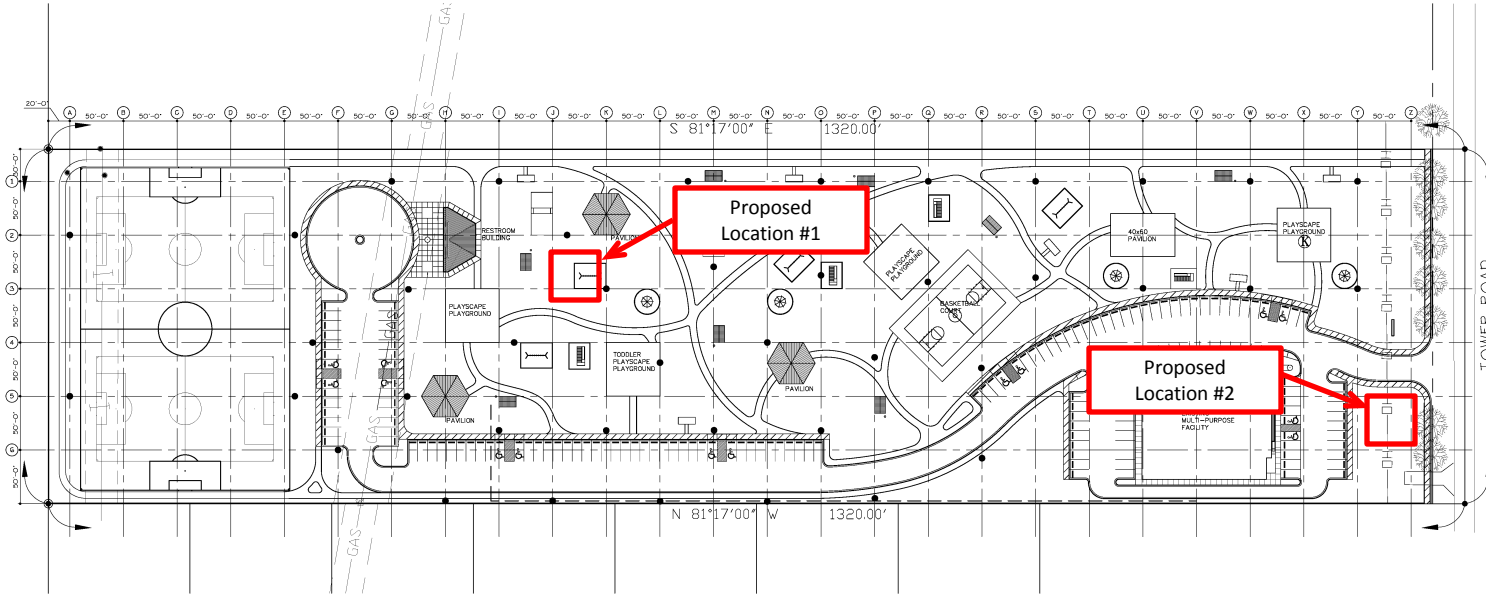
We are scheduled to install the turbines on Friday and Saturday April 3<sup>rd</sup> and April 4<sup>th</sup>, 2009 with the S. Tower installation on Saturday the 4<sup>th</sup>. We look forward to hearing from you. If you have any questions, please feel free to contact me at 210-385-1008 or d-schneider@tamu.edu.

Sincerely,

Dean L. Schneider, Ph.D., PE  
Assistant Director, San Antonio Operations  
Texas Engineering Experiment Station  
The Texas A&M University System

Attachment: Proposed Location Diagram and Concrete Specifications

N 08°43'00" E  
330.00'



S 08°43'00" W  
330.00'

**A** MASTER SITE PLAN  
SCALE: N.T.S.  
WIND TERNING PLAN



● - SOLAR POWERED LIGHTS AND SOCCER FIELD LIGHTS

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Date: 12-22-08

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V.A. Architecture

**SOUTH TOWER CIRC/PARK**  
**PENDING CONSTRUCTION ITEMS**

FOR  
HIDALGO COUNTY  
COMMISSIONER HECTOR TITO PALACIOS

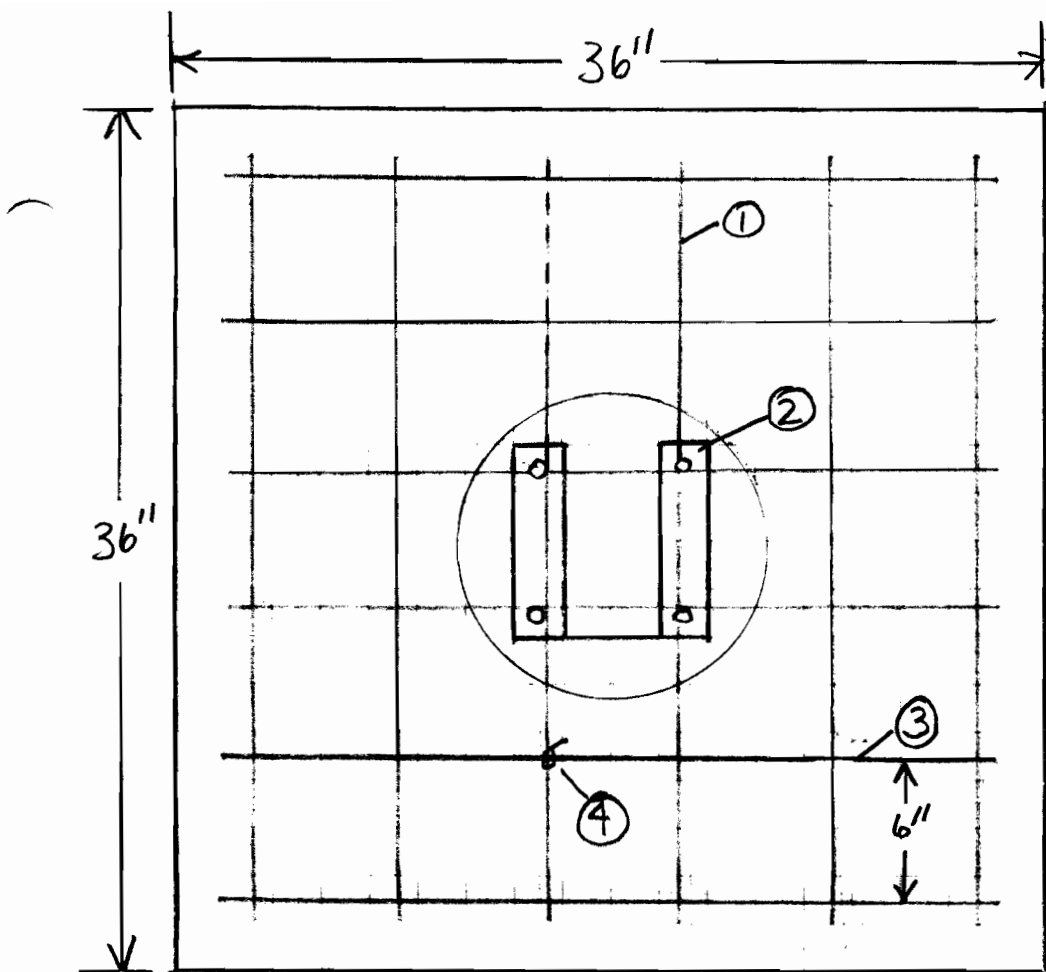
**V.A. Architecture**  
Vargas & Associates 2025 Industrial Drive, McAllen, Texas 78504 (956) 631-2242

# PRELIMINARY NOT FOR CONSTRUCTION 12-22-08

ALL CONSTRUCTION MATERIALS, CONSTRUCTION SYSTEMS AND/OR COMPONENTS SHALL BE INSTALLED AS PER MANUFACTURER'S RECOMMENDATIONS OR REQUIREMENTS.

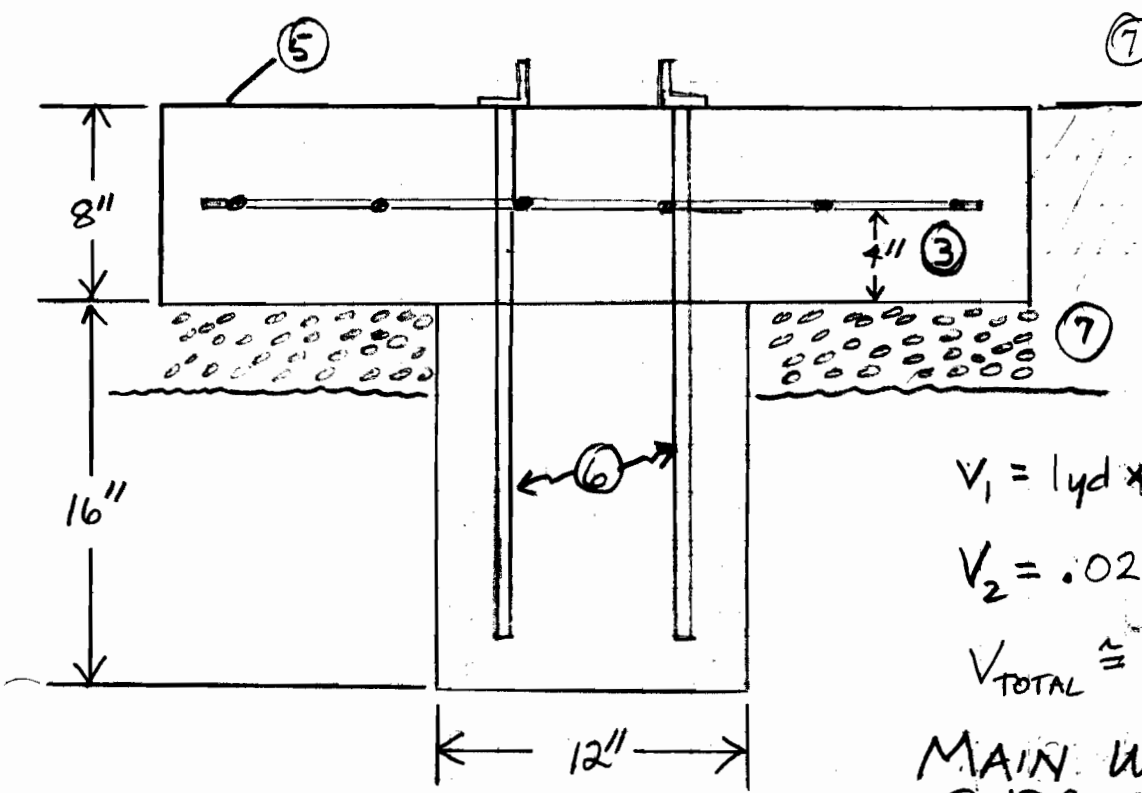
SHEET

01



Notes :

- ① Use #3 rebar in slab
- ② Place mounting pedestal approx. in slab center.
- ③ #3 rebar approx 6" on center and 4" from bottom of slab
- ④ Wire tie rebar at all cross locations (typical)
- ⑤ Broom finish
- ⑥ Existing rebar on mounting pedestal
- ⑦ Approximately 4" crushed rock; compacted.

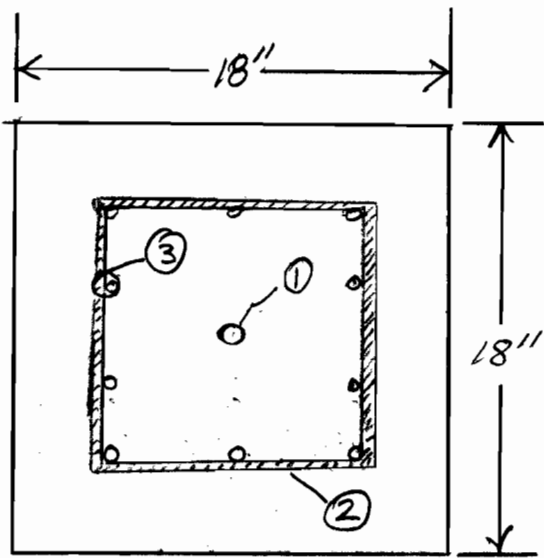


$$V_1 = 1\text{yd} \times 1\text{yd} \times .22\text{yd} = .22\text{yd}^3 \checkmark$$

$$V_2 = .02\text{yd}^3 \checkmark$$

$$V_{\text{TOTAL}} \approx .25\text{yd}^3$$

MAIN WIND TURBINE  
SUPPORT PAD

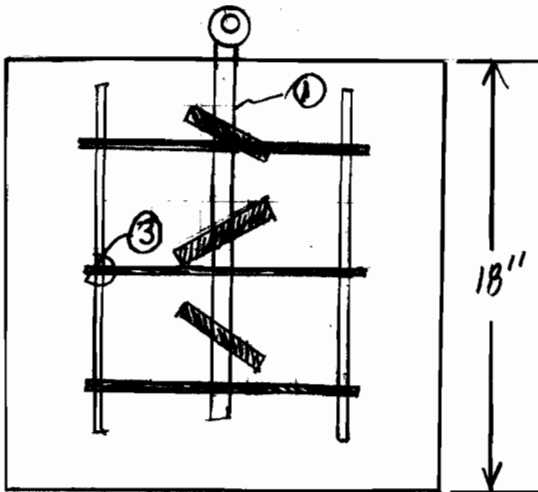


① Prefabricated guy anchor set in concrete center.

② Rebar "cage" using #3 rebar; overlap on exterior minimum 2"; stagger overlapping joints. SEE Detail A

③ Wire tie all rebar at cross locations

④ Actual rebar quantities 10 @ 14" for vertical and 3 @ 48" for horizontal.

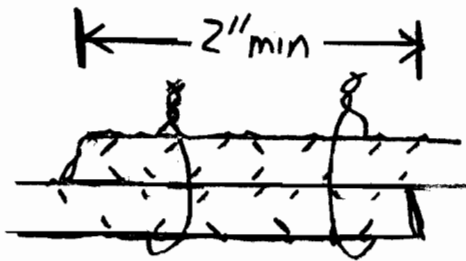


Note: Some vertical rebar not shown for clarity of guy wire anchor.

@ 3 each

$$V = .5 \times .5 \times .5 = .125 \text{ yd}^3$$

$$V_{\text{Total}} = .375 \text{ yd}^3$$



Detail A  
Horizontal Rebar Overlap

GUY WIRE  
ANCHOR BLOCKS