



NTB Associates, Inc.

ENGINEERS · SURVEYORS · GIS

May 16, 2012

NTBA Project. No. 12-021-000

Mr. Stevan Spencer, P.E.  
South Louisiana Flood Protection Authority-East  
2045 Lakeshore Drive Room 442  
New Orleans, LA. 70122

RE: **Confirming the Elevation of UASCOE PBM  
"TED" ay Bayou Dupree**

Dear Mr. Spencer,

Permanent Benchmark "TED" is the top of a 1 ½" galvanized cap set on a 1 ½" galvanized pipe stamped "TED" located at Lat. 29° 56' 01.6" North and 89° 50' 12.5" West at Bayou Dupree in St. Bernard Parish, Louisiana. "TED" was observed by the U.S. Army Corps of Engineers in 2008 and positioned utilizing the National Geodetic Survey's Online Positioning User Service. Results were published reporting the Orthometric Height as 1.753 m +/- 0.107m.

On March 5, 2012, NTB Associates, Inc. was tasked with furnishing observations on "TED" which were a combination of CORS (Continually Operating Reference Stations), Smart Net and an independent differential GPS short baseline set to at least two (2) NGS Height Modernization marks. In addition NTBA was to tie to the NASA BM at the Michoud Facility. At the time of the survey the Michoud BM was inaccessible due to its permanent occupation by the LSU Center for GeoInformatics who are attempting to have the mark accepted into the NGS CORS network.

NTBA's survey crews occupied "TED" and collected positional data for eighteen (18) consecutive hours on March 14 and 15, 2012. Additional observations were performed on April 11, 2012 to provide redundancy and make an observation to "Waste Well 2 Reset". Static observations during these hours were collecting using a TRIMBLE GPS Model 5700 receiver and TRIMBLE "Zephyr" geodetic antenna. GPS RTK ties to "TED" were made utilizing the LEICA GS15 GPS

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antenna and Smart Net Real Time positioning and TRIMBLE R8 Model 2 GPS antenna and the C4Gnet Real-Time Network.

NTBA's survey crews also occupied Stations "ALCO", "C189" and "REGGIO 02" for eighteen (18) consecutive hours on March 14 and 15, 2012. Static observations for these stations also utilized TRIMBLE GPS Model 5700 receivers and TRIMBLE "Zephyr" geodetic antennas.

Static observations of "TED" were processed utilizing the National Geodetic Survey's Online Positioning User Service with results generated from the Rapid and Precise Ephemerides. Observed elevations ranged between 1.769m (5.80') (Precise), 1.761m (5.78') (Rapid), 1.660m (5.45') (RTK Broadcast) all using epoch 2002.0000 Geoid 03. A single observation of 1.711m (5.61') was made using epoch 2002.0000 Geoid 09. A full result report accompanies this summary.

NTBA is committed to providing professional surveying services to our clients and looks forward to working on future projects with the South Louisiana Flood Protection Authority-East.

Respectfully yours,



L. Lyles Budden, P.L.S.

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**OBSERVATIONS OF PBM "TED"**  
**Located in Section 78, T-13-S,R-14-E**  
**St. Bernard Parish**

<b>Station</b>	<b>Reference Monument</b>	<b>Orthometric Height (US Survey Feet)</b>
TED	ALCO	5.835
TED	C189	5.873
TED	REGGIO 2	5.816
TED	WASTE WELL 2 RESET	5.7
TED	COVG,HAMM,NOLA	5.761
TED	ALCO, C189, REGGIO 2	5.727
TED	OPUS	5.803
TED	C4GNET	5.308
TED	SMARTNET	5.45
TED	SMARTNET	5.47
WALL TOP	C4GNET	28.356
WALL TOP	SMARTNET	28.45
WALL TOP	TED	28.801