WAUFORD
J. R. Wauford & Company, Consulting Engineers, Inc.

ADDENDUM NO. 2
CONTRACT 18-02 GIBSON COUNTY INDUSTRIAL PARK ELEVATED TANK
SRF DW6 2019-213, DW7 2019-214 & DWF 2019-215
HUMBOLDT, TENNESSEE
WAUFORD PROJECT NO. 3638

Date of Addendum: Thursday, June 6, 2019
Construction Bid Date: **11:00 AM Local Time, Tuesday, June 18, 2019**

1. Detailed Specifications, Geotechnical Exploration Report, Page 14;

   Replace Page 14 with the attached revised Page 14, correcting approximate site elevations in Table 8 and 5.

   As stated in the report, the minimum required pile bearing elevation is **322**.

   All bidders shall bid on auger cast piles as recommended in the geotechnical exploration report. If the low bidder would like to evaluate an alternative foundation, this will be done after the bid.

2. Detailed Specifications, FAA Aeronautical Study;

   Replace the existing determination with the corrected FAA determination. **Note that NO light or marking is required.**

3. Detailed Specifications, Sub-Section 6, "Composite Elevated Water Storage Tank and Foundation", Paragraph 1 "Scope of the Work", Page DS 6-1;

   Add the following paragraphs:

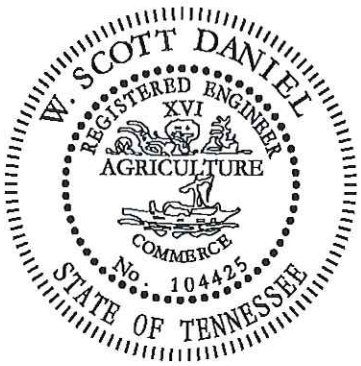
   > "The Tank Contractor shall provide professional design services for the design of the elevated water storage tank and the complete foundation proposed to support the tank. Please refer to the General Conditions, **Article 7.19 Delegation of Design Professional Services**.
   >
   > The design-constructor Contractor shall design a foundation, prepare and furnish foundation construction drawings and construct a foundation to support the composite elevated water storage tank described at this Section of these Detailed Specifications. The Owner has provided a geotechnical report entitled "*Geotechnical Exploration Report*" prepared by Bacon Farmer Workman Engineering & Testing, Inc. reproduced in its entirety and included at the end of Section 1 of these Detailed Specifications. The foundation and tank design shall comply with the requirements AWWA Standard D107. The concrete composite elevated storage tank design and foundation design shall be

prepared and sealed by a professional engineer licensed to practice in the State of Tennessee.

The Geotechnical Engineering Report provides the Owner's information for the Bidder's convenience and is intended to supplement rather than serve in lieu of the Bidder's own investigations. The Geotechnical Engineering Report is made available for the bidder's convenience and information but is not a warranty of existing conditions and is not part of the Contract Documents. The Bidder is responsible for examination of the project site and existing conditions including the presence of undocumented fill materials in the proposed tank footprint and adjacent areas."

4. Detailed Specifications, Sub-Section 6, "Composite Elevated Water Storage Tank and Foundation", Paragraph 6.A "Quality of Manufacturer", Sub-Paragraph 4, Page DS 6-7;

Delete this paragraph.



J. R. WAUFORD & COMPANY,
CONSULTING ENGINEERS, INC.

W. Scott Daniel, P.E.
Tennessee License No. 104425

Mail Processing Center
Federal Aviation Administration
Southwest Regional Office
Obstruction Evaluation Group
10101 Hillwood Parkway
Fort Worth, TX 76177

Aeronautical Study No.
2018-ASO-11217-OE

Issued Date: 09/04/2018

Scott Daniel
J. R. Wauford & Company Consulting Engineers, Inc.
60 Volunteer Blvd
Jackson, TN 38305

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Water Tank Tyson Elevated Tank
Location:	Humboldt, TN
Latitude:	35-51-24.52N NAD 83
Longitude:	88-55-36.94W
Heights:	410 feet site elevation (SE)
	190 feet above ground level (AGL)
	600 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

Based on this evaluation, marking and lighting are not necessary for aviation safety. However, if marking/ lighting are accomplished on a voluntary basis, we recommend it be installed in accordance with FAA Advisory circular 70/7460-1 L Change 1.

This determination expires on 03/04/2020 unless:

(a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.
(b) extended, revised, or terminated by the issuing office.
(c) the construction is subject to the licensing authority of the Federal Communications Commission (FCC) and an application for a construction permit has been filed, as required by the FCC, within 6 months of the date of this determination. In such case, the determination expires on the date prescribed by the FCC for completion of construction, or the date the FCC denies the application.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is based, in part, on the foregoing description which includes specific coordinates, heights, frequency(ies) and power. Any changes in coordinates, heights, and frequencies or use of greater power, except those frequencies specified in the Colo Void Clause Coalition; Antenna System Co-Location; Voluntary Best Practices, effective 21 Nov 2007, will void this determination. Any future construction or alteration, including increase to heights, power, or the addition of other transmitters, requires separate notice to the FAA.This determination includes all previously filed frequencies and power for this structure.

If construction or alteration is dismantled or destroyed, you must submit notice to the FAA within 5 days after the construction or alteration is dismantled or destroyed.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

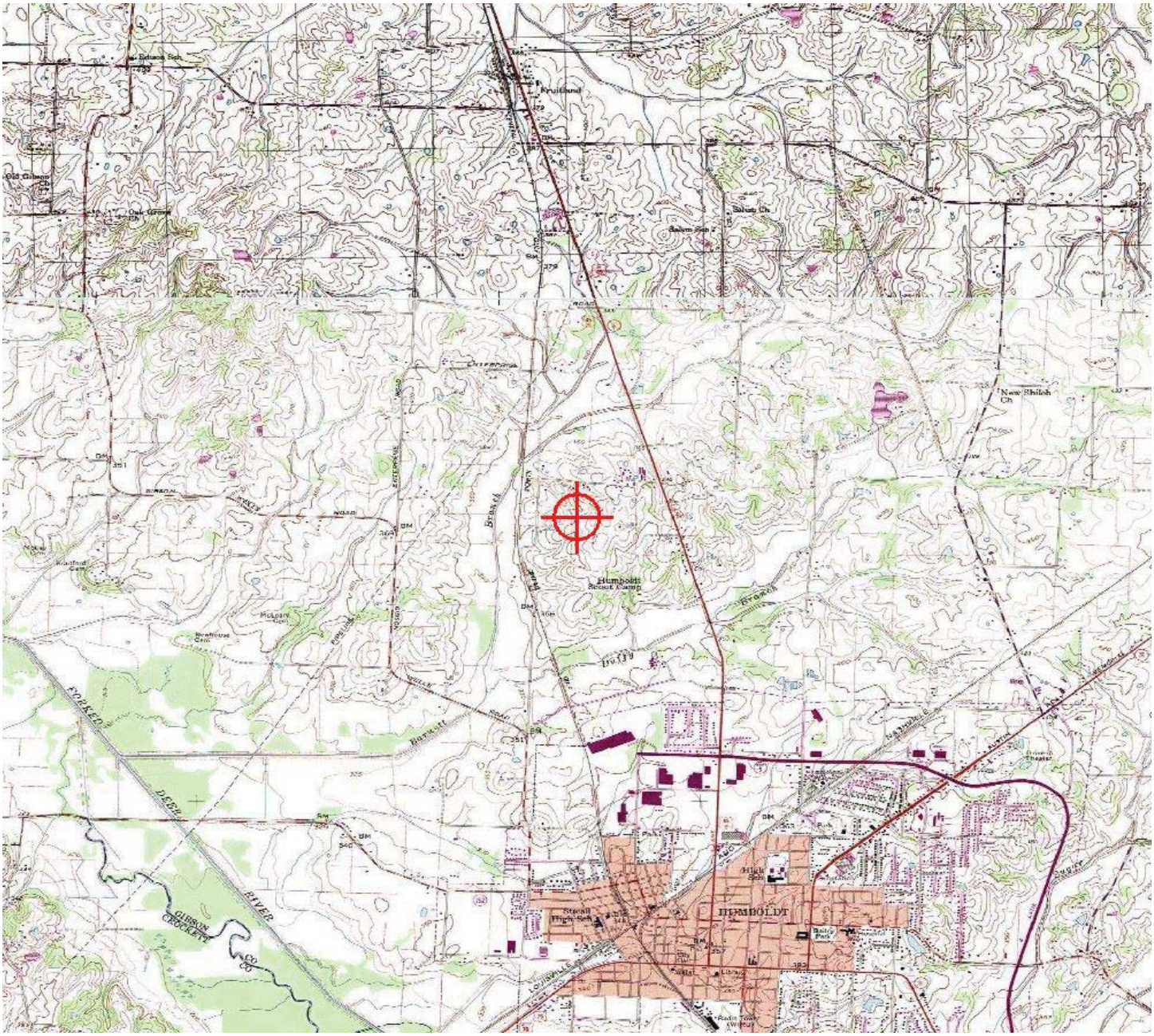
This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

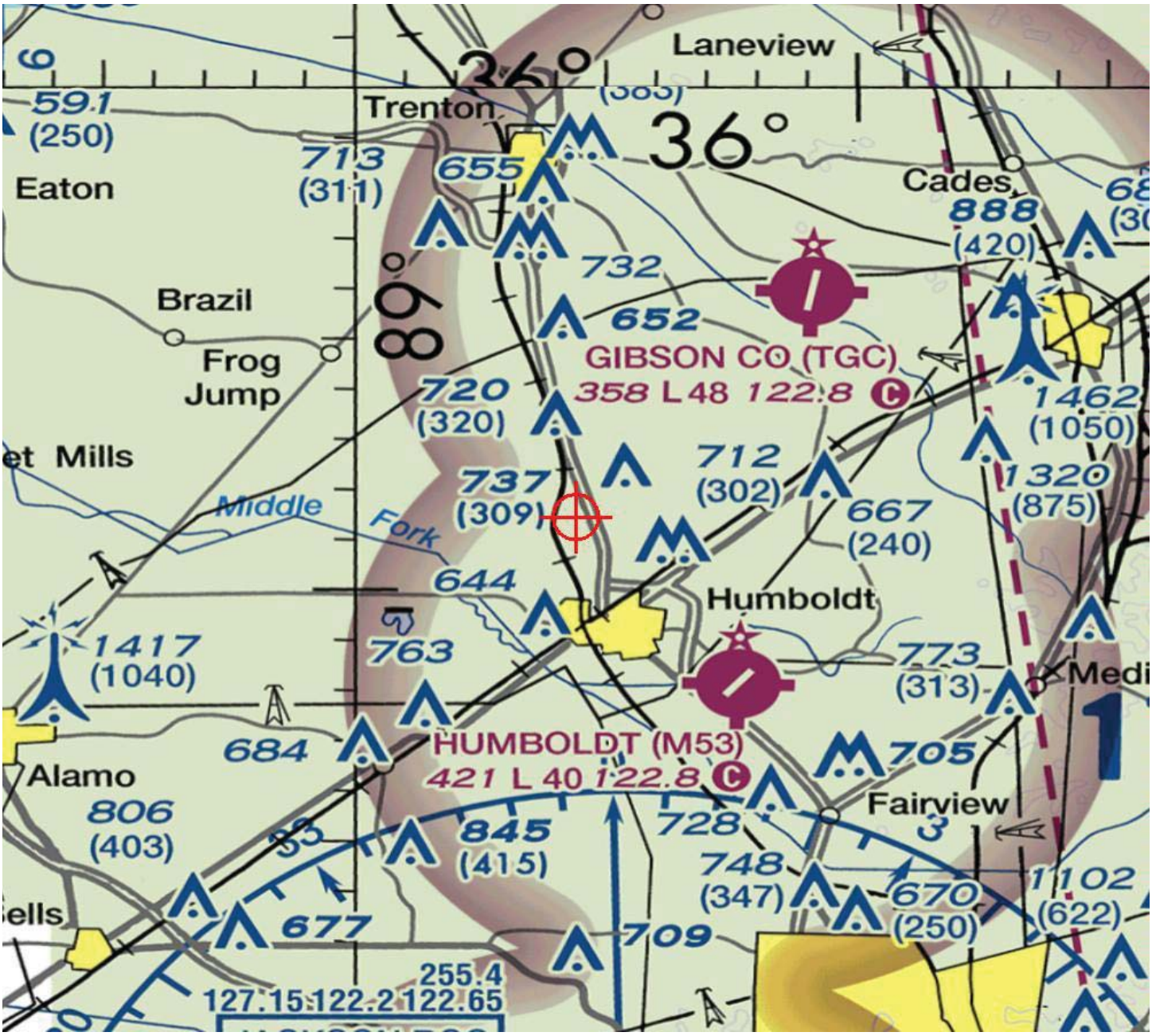
If we can be of further assistance, please contact our office at (907) 271-5863, or robert.van.haastert@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2018-ASO-11217-OE.

Signature Control No: 366898614-384185988 (DNE)
Robert van Haastert
Specialist

Attachment(s)
Map(s)

TOPO Map for ASN 2018-ASO-11217-OE




Laneview
Trenton
Eaton
Cades
Brazil
Frog Jump
et Mills
Middle Fork
GIBSON CO (TGC)
358 L 48 122.8
HUMBOLDT (M53)
421 L 40 122.8
Humboldt
Fairview
Alamo
ells
Medi
59.1 (250)
713 (311)
655
732
652
720 (320)
737 (309)
712 (302)
667 (240)
644
763
773 (313)
684
705
806 (403)
845 (415)
728
748 (347)
670 (250)
1102 (622)
677
709
888 (420)
1462 (1050)
1320 (875)
1417 (1040)
255.4
127.15 122.2 122.65

We recommend that piles be spaced no closer than three (3) pile diameters apart measured center to center. At this spacing, a group reduction factor is not warranted when estimating group axial capacity.

In order for the pile to bear beyond the potential liquefiable soil depth, the minimum required pile bearing elevation is Elev. 322 (approx. 80 feet) in the dense to very dense sand layer. Assuming pile penetration into the very dense silt below at the minimum pile elevation of Elev. 322, the estimate total pile settlements, would be on the order of 1/2 to 3/4-inch, with differential settlements between piles of about half the total settlement.

TABLE 8 – Static Vertical Pile Capacities

18-inch Dia. Augercast	Pile Depth (Approx. Surface Elev. 402)	Ultimate Bearing Capacity (tons)	Allowable Bearing Capacity FS=2 (tons)	Allowable Bearing Capacity FS=3 (tons)
	80	300	150	100
	85	315	157	105

All deep foundation equipment /methods furnished by the Contractor shall be subject to the approval of the design or geotechnical engineer.

7.3.3 Uplift Resistance

The design uplift capacity of a single pile should be taken as 1/3 of the ultimate shaft resistance calculated by static method.

TABLE 5 – Uplift Resistance

18-Inch Dia. Augercast	Pile Depth (Approx. Surface Elev. 402)	Ultimate Shaft Resistance (tons)	Allowable Uplift Resistance (tons)
	80	300	100
	85	315	105

7.3.4 Lateral Resistance

Lateral loads acting on the elevated storage tank from earthquake and wind, as well as other loadings, may be resisted by the lateral resistance provided by the deep foundations. The magnitude of lateral resistance developed by a deep foundation depends on the subsurface conditions encountered and the deep foundation type and size.

We have developed soil input parameters for use in lateral pile analysis using computer program such as LPILE. The lateral pile analyses shall be conducted by the tank foundation subcontractor. These input parameters are summarized in Appendix.