

## Flood Rise Evaluation Report

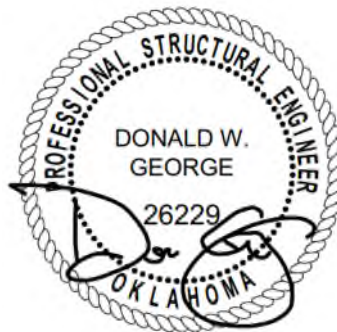
**Site ID:** 10006301  
**Site Name:** Trails  
**Project:** Generator Upgrade

**Prepared For:** AT&T

**Structure Description:** EMI 4'x10' Equipment Platform  
Diesel Backup Generator

**Site Location:** 1299 State HWY 9, HWY 9W  
Norman, OK 73072  
Cleveland County  
35.186812°, -97.461192°

**Evaluation Load Case:** AT&T Final Configuration  
**Evaluation Result:** Adequate w/ Recommendations  
See Conclusion



Date Signed:  
9/20/2024

10006301\_No Rise Letter\_R0 240919 5492

Revision 0  
September 20, 2024

**1.0 Introduction**

GeoStructural has completed a review of the proposed elevated steel platform assembly and diesel generator installation at the existing AT&T 10006301 communications site located in Cleveland County, OK. The purpose of the review was to provide an evaluation of the installation and its affect on anticipated base water elevation in the event of a 100-year flood event (design flood).

The existing communications structures/foundations are beyond the scope of this review.

**2.0 Evaluation Criteria**

This evaluation utilizes the following design criteria:

- ASCE 7-16 – Minimum Design Loads and Associated Criteria for Buildings and Other Structures.
- ASCE 24-14 – Flood Resistant Design and Construction

<b>Proposed Installation Elements:</b>
Kohler 50REOZK 50kW Generator w/ Enclosure = 2,369lbs 270gal Fuel Tank(Dry) = 1,452 lbs
EMI 4'x10' elevated equipment platform (1000-0030-0195) w/ eight (8) 1ft extension columns (1007-T006-0120) legs to helical pier anchors in grade
<b>100-yr Design Flood Loading Criteria:</b>
Non-coastal Zone AE; BFE = 1101.8 ft AMSL NAVD88 per Elevation Certificate
DFE = BFE+2 = 1103.8 ft AMSL NAVD88
Ground Elevation (G) / Lowest Adjacent Grade (LAG) = 1101.98 ft AMSL NAVD88 per Elevation Certificate

All data required to complete our evaluation was furnished by our client. GeoStructural has not conducted an independent study to verify existing site conditions and the results of this analysis are based solely on the information provided.

The following documents were provided:

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| <ul style="list-style-type: none"> <li>• <u>Construction Drawings – Generator Upgrade</u><br/>Benchmark Services, Inc., Rev-1, 6/6/24.</li> <li>• <u>FEMA Elevation Certificate – 3198 S. Berry Road, Norman, OK 73072</u><br/>AB Surveying, PLLC, 5/20/24.</li> <li>• <u>Structural Analysis – Elevated Steel Platform</u><br/>GeoStructural LLC, 9/20/24.</li> </ul> |
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The calculated volume of the proposed eight (8) elevated steel generator platform legs exposed to flood waters is approximately  $(8) \cdot A \cdot L = 8 \cdot \pi \cdot (6.625 / 12^2) / 4 \cdot 2.5 = 4.8 \text{ ft}^3$ . In order to compensate for the spatial volume being added to the cellular communications facility, and equivalent volume of soil must be removed from the facility. Using a factor of safety of 1.5 to account for uncertainties, we recommend removal of approximately 7.5 ft<sup>3</sup> of soil. The Construction Drawings shall denote the location, methods and means of this “negative” storage volume.

### **3.0 Conclusion**

Utilizing engineering judgement, and by comparison of increased volume exposed to flood waters due to proposed generator and elevation platform installation versus proposed provided new “negative” storage volume, we have determined that the construction project will not cause a rise of more than 0.05 ft on any adjacent property or cause any negative impact by altering flow patterns. **Removal of approximately 7.5 ft<sup>3</sup> of soil within the extents of the existing cellular communications facility is required.**

This evaluation only encompasses AT&T’s proposed elevated generator equipment platform. All other existing elements are beyond the scope of this evaluation. If any of the existing or proposed conditions reported in this evaluation are not properly represented, please contact our office immediately to request an amended report.

Prepared by:



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