

# Exhibit M. Industrial Drive Minden Webster Site Preliminary Desktop Geotechnical Review



# Industrial Drive Minden Webster Site Preliminary Desktop Geotechnical Review



## ECS Southeast, LLP

Geotechnical Engineering Letter

**Industrial Drive Minden Webster Site – Webster Parish, LA**

Industrial Drive  
Minden, Louisiana

ECS Project Number 65-1121

January 6, 2022





January 6, 2022

Ms. Liz Pierre  
North Louisiana Economic Partnership  
1816 North 18<sup>th</sup> Street  
Suite 501  
Monroe, Louisiana 71210

ECS Project No. 65-1121

Reference: Preliminary Geotechnical Site Characterization Letter  
**Industrial Drive and Minden Webster Site**  
Industrial Drive  
Minden, LA 71055

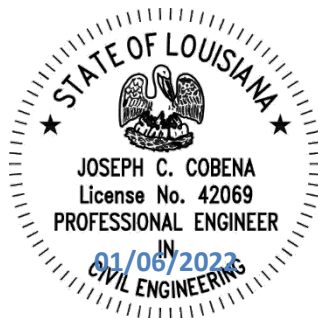
Dear Ms. Pierre:

ECS Southeast, LLP (ECS) has completed the geotechnical engineering analyses for the referenced project. Our services were performed in general accordance with our Proposal No. 65-1241-P dated June 28<sup>th</sup>, 2021. ***This letter is not a comprehensive geotechnical engineering report but is solely designed to summarize preliminary issues posed in a June 23, 2021, document from CSRS relative to this site. It must be emphasized that borings and testing will be required prior to development of the site.*** This letter presents our understanding of the geotechnical aspects of the project based on similar projects and experience in the area. The letter contains our findings and preliminary recommendations for design and construction.

It has been our pleasure to be of service to the North Louisiana Economic Partnership during the design phase of this project. We would appreciate the opportunity to remain involved during the continuation of the design phase, and we would like to provide our services during construction phase operations as well to verify the assumptions of subsurface conditions made for this report. Should you have any questions concerning the information contained in this report, or if we can be of further assistance to you, please contact us.

Respectfully,  
ECS SOUTHEAST, LLP

  
Joe Cobena, P.E.  
Office Manager



  
David Marsh, P.E.  
Principal Engineer

**To Whom It May Concern:**

My name is Joe Cobena, P.E.. I am a registered professional engineer in the state of Louisiana by the Louisiana Professional Engineering and Land Surveying Board (LAPELS); registration #42069. I have been practicing Geotechnical Engineering in Louisiana for 10 years. In addition to Louisiana, I am also a registered P.E. in Texas, Arkansas, and Mississippi, with similar experience in those states.

I have been asked to render an opinion about the expected/likely soils located at the Industrial Drive Minden Webster site composed of approximately 26± acres in Webster Parish as part of the LED site certification requirements.

I have completed over 10 projects in this region, and my opinion expressed below is based on my experience on those projects. However, my experience with other sites, even sites close by, is no guarantee that the soils on this site will match with my expectations. I did not visit the site, and I did not examine or test any soil samples from the site. The insights below are merely my opinion based on my prior experience working in Louisiana and in the Parish of interest.

**Overall Suitability of The Site For A 100,000 Ft<sup>2</sup> Light Manufacturing Building:** In my opinion, the proposed site is generally compatible with the intended industrial development with limited soil augmentation being required to reduce moisture sensitivity for construction of foundation and roadway elements.

**Type of Soils Typically Expected in this Area:** I would expect the site's soils would generally be characterized as Lean Clays, Silts and Sands and able to be reused in the event mass grading is required.

**Groundwater Depth:** Typically, in this area of the state, the depth to groundwater will be in the range of 50 ft – 65 ft.

**Soil Bearing Pressure:** I estimate the soils in the vicinity of this site will likely have a soil bearing pressure for foundation design in the range of 2,000 – 2,500 psf.

**Shallow Spread Footing Expectations for:** Typically, I would expect shallow square spread footings up 6.5 feet side length be able to support column loads up to 100 kips with a safety factor of 3.0 with less than 1 inch of total settlement and less than ½ inch of differential settlements between columns.

**Pile Loading Expectations for a 100,000 ft<sup>2</sup> light manufacturing building:** for 14-inch square precast piles driven to depths between 35 to 50 feet below grade would achieve compression capacities ranging from 90 to 120 tons with a safety factor of 2.0, interpreted linearly, with respect to depth.

**Disclaimer/Limitations:** The insights given above are an opinion, are extremely preliminary, and are not based on any actual visits to the site or tests on the soils at the site. No construction or design should ever be undertaken using the above observations. These observations are not to be used for construction, bidding, recordation, conveyance, sales or as the basis for the issuance of a permit. Design

and construction should always be based on actual soil data extracted via professional soil borings, CPTs, and laboratory testing. No warranties are implied or expressed by the observations presented above.

## 6.0 REPORT LIMITATIONS AND CLOSING

ECS has prepared this report of findings, evaluations, and ***preliminary*** recommendations to generally characterize the sites soil and groundwater conditions to evaluate whether geotechnical concerns were observed at the site.

The preliminary recommendations provided in this report are based on the data obtained from the limited field exploration and laboratory testing at the specified boring locations for the purpose of a general site characterization. The recommendations are not intended for use in final design or construction. Final design and construction recommendations for any structure proposed on the site will require a an investigation and engineering analysis.

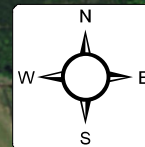
The description of the proposed site is based on information provided to ECS by the client. If any of this information is inaccurate, either due to our interpretation of the documents provided or site that may occur later, ECS should be contacted immediately in order that we can review the report in light of the changes and provide additional or alternate recommendations as may be required to reflect the proposed site.

## **APPENDIX A – Figures**

Site Location Diagram



Service Layer Credits: Esri, HERE, Garmin, (c) OpenStreetMap contributors



**SITE LOCATION DIAGRAM**  
**INDUSTRIAL DRIVE MINDEN WEBSTER**

**INDUSTRIAL DRIVE, MINDEN, LA**

ENGINEER  
DM01

SCALE  
AS NOTED

PROJECT NO.  
65:1241

SHEET  
1 OF 1

DATE  
6/29/2021