

March 20, 2025  
 Project No. 609083001

Ms. Julie Lead, PE  
 Peak Engineering  
 201 East Birch Avenue, Suite 3  
 Flagstaff, Arizona 86001

Subject: Addendum No. 1 to Geotechnical Evaluation Dated February 6, 2026  
 JW Powell Boulevard Extension  
 Station 200+00 to Station 246+00  
 Flagstaff, Arizona

Dear Ms. Lead:

Ninyo & Moore is pleased to present this addendum to the Geotechnical Evaluation report we prepared for the above-mentioned project and dated February 6, 2026. This addendum is being issued to provide supplemental recommendations related to the recommended subgrade preparation measures, moisture conditioning, compaction, backfill, and settlement parameters for spread footings associated with the proposed bridge abutments, and boring log information related to the project. The parameters presented in this letter assume our recommendations presented in the Geotechnical Evaluation report dated February 6, 2026 will be followed, except as noted below.

The below table has been prepared to summarize the suitability of on-site and imported soils used as engineered fill below foundations, pavements, grade slabs, trenches, and flatwork areas and the recommended moisture conditioning and compaction requirements on this project.

Table 1 – Engineered Fill Summary			
Engineered Fill Description <sup>1,2,3</sup>	Percent Compaction per ASTM D698	Moisture Content	Engineered Fill Requirements
Below raised grade fill, foundations, grade slabs, and flatwork	95 percent	±2 percent of optimum	- Maximum Particle Size = 4-inches - Maximum Plasticity Index = 15
Grade raised fill within 3 feet below pavements	95 percent	±2 percent of optimum	- Minimum tested or correlated R-Value of 35
Aggregate Base (AB) below areas not subject to traffic	95 percent	±3 percent of optimum	- Per MAG Section 702
AB below areas subject to traffic	100 percent	±3 percent of optimum	- Per MAG Section 702

**Table 1 – Engineered Fill Summary**

Engineered Fill Description <sup>1,2,3</sup>	Percent Compaction per ASTM D698	Moisture Content	Engineered Fill Requirements
Granular Trench Backfill – Within 2 feet below pavements <sup>4</sup>	100 percent	±3 percent of optimum	- Per MAG Section 601
Non-Granular Trench Backfill – Within 2 feet below pavement	95 percent	±3 percent of optimum	- Per MAG Section 601
Trench Backfill – Deeper than 2 feet below pavement	95 percent		- Per MAG Section 601

**Notes:**

<sup>1</sup> Import material in contact with ferrous metals should have a low corrosion potential (minimum resistivity more than 2,000 ohm-cm, chloride content less than 25 parts per million [ppm]).

<sup>2</sup> Imported material in contact with concrete should have a soluble sulfate content of less than 0.1 percent.

<sup>3</sup> In lieu of the two requirements above, corrosion techniques such as cathodic protection, pipe wrapping, etc., can be implemented. A corrosion specialist should also be consulted for recommendations of an appropriate corrosion protection technique.

<sup>4</sup> Granular material is material for which the sum of the PI and the percent passing a No. 200 sieve does not exceed 23.

Based on the available soil boring information, spread footings associated with the bridge abutments may be designed using a net allowable bearing capacity of 2,000 pounds per square foot for static conditions provided the effective footing width does not exceed 5 feet. Total and differential settlements of about 1 inch and ½-inch respectively, may occur. Factored bearing resistance limits and estimated settlements are presented on Figure 1.

Additionally, the below table has been prepared to summarize the approximate locations of our borings and their approximate elevations with respect to the North American Vertical Datum (1998). A registered land surveyor should be consulted with to confirm elevations for design and construction.

**Table 2 – Boring Elevation Summary**

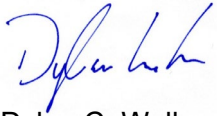
Boring ID	Latitude (degree)	Longitude (degree)	Approximate Elevation (feet - MSL) <sup>1</sup>
B-1	35.171046	-111.615725	6,811
B-2	35.172743	-111.615640	6,815
B-3	35.173842	-111.615066	6,796
B-4	35.174774	-111.614413	6,792
B-5	35.176091	-111.613785	6,788
B-6	35.176342	-111.613661	6,787
B-7	35.177714	-111.613460	6,799
B-8	35.179097	-111.613459	6,832
B-9	35.180579	-111.613755	6,844
B-10	35.182566	-111.613354	6,868

**Note:**

<sup>1</sup> With respect to North American Vertical Datum of 1988 (NAVD 88) [<https://ascehazardtool.org/>]

We appreciate the opportunity to be of service to you on this project.

Respectfully submitted,  
**NINYO & MOORE**



Dylan C. Walker, PE  
Project Engineer



Steven D. Nowaczyk, PE  
Managing Principal Engineer

DCW/SDN/amg

Attachment: Figure 1 – Factored Bearing Resistance Chart for Bridge Abutments



**Figure 1**  
**Factored Bearing Resistance Chart**  
**Bridge Abudments**

