March 17, 2025

City of Madison
100 Hughes Road
Madison, Alabama 35758

ATTN: Ms. Michelle Dunson

SUBJECT: Addendum to Proposal for
Additional Inclinometer Installation and Periodic Monitoring of
Slope Stability at Hughes Road Railroad Overpass Embankment
Madison, Alabama
OMI Proposal No. P.8127.G.1 Addendum

To Whom It May Concern:

OMI Inc. is pleased to present this addendum to our proposal for additional monitoring of the Hughes Road railroad overpass embankment slope. The original proposal was to install a third inclinometer and monitor all three inclinometers for a year, once every two months. This addendum, requested by the City of Madison Engineering Department, is for installing a fourth inclinometer and monitoring it along with the other three inclinometers. The purpose is to monitor potential slope movements.

Preparatory to this proposal addendum, Dr. David Noe of OMI discussed the project with Ms. Michelle Dunson of The City of Madison Engineering Department.

PROJECT INFORMATION

The original OMI proposal (10/24/24; PO #2025-0239) was to expand the existing inclinometer network on the southeast overpass embankment, from two to three inclinometers, and to provide periodic instrument readings of those three inclinometers to recognize any slope movements.

This proposal addendum is to add a fourth inclinometer at a different location, at the northeast overpass embankment, and to provide for periodic instrument readings there, as well.

SCOPE OF SERVICES

This addendum will cover work at the northeast embankment location, which is shown in drawing P.8127.G.1-1 (Addendum). The scope of services new location is similar to that of the original proposal, which includes 1) OMI installing a fourth inclinometer, and 2) OMI performing regular inclinometer monitoring at two-month intervals, concurrently with monitoring the other three inclinometers. Additionally, we will request an extra $1,000 to cover drilling-contractor cost increases that were not anticipated in the original proposal (for the third inclinometer installation).

Ultimately, if needed, these data can be used for developing a plan for mitigation of any slope movements within the embankment fills. Such mitigation is generally based on reducing driving forces or increasing resisting forces. At the Hughes Road site, besides water-infiltration reduction by sealing the pavement, there is little opportunity to modify the crest of the berm to reduce driving forces. The main mitigation option, therefore, would involve bolstering the base of the embankment to increase the resisting forces.

To help prevent or slow any slope movements at the present time, we also recommend that the City seals the cracks that have developed in the asphalt road surface and along the edge of the road in the vicinity of the guard rail, to inhibit water infiltration into the embankment fill.

OMI proposes to do the following:

Install a fourth inclinometer at the northeast embankment site.

The optimal location for a single inclinometer at the northeast embankment is lower on the embankment slope, where the horizontal, compressional, outward-pushing or uplifting elements of slope failure can be measured. If the slope is going to fail, monitoring near the toe of the slope is a must because the movements will be focused there.

OMI recommends installing an inclinometer near the base of the slope, approximately as shown in drawing P.8127.G.1-1. A 25-ft-deep geotechnical boring would be drilled, ensuring that the inclinometer pipe extends down through the lower part of the slope fill and into the underlying, in-

place residual soils. Any developing failure surface would pass across that inclinometer, which allows for optimal early warning capabilities. The pipe would be sealed to prevent groundwater inflow.

Access to the drilling area has some difficulties that will need to be overcome. Namely, the embankment slope is rather steep at its toe, which prevents drilling rig access, and there is a utility corridor with buried gas, fiber, and storm-sewer lines that runs along the base of the slope. OMI proposes that a temporary earthen ramp be constructed at the base of the slope, over the utility lines and the steepest part of the slope. The ramp would be installed by an earthwork company. After the inclinometer is drilled and installed, the ramp would be deconstructed by the same earthwork company and the dirt spread or removed so as not to cover the utility lines, as directed by the city. The cost of the earthen ramp materials and labor is included with this proposal addendum.

The drilling site has already been marked. As was done previously, we would ask for the city to clear small trees and brush from that area to allow access by a tracked drilling rig.

Provide a yearly program of regular inclinometer monitoring.

OMI would integrate monitoring of this fourth inclinometer such that it is done at the same time the other three inclinometers. This proposal addendum provides the cost of monitoring the additional inclinometer. The original proposal covered monitoring of the other three inclinometers.

The monitoring readings will be collected and compared with any previous readings, as before. OMI will issue a letter report containing the results and interpretations, within three weeks of the readings. For 2025, six readings will be taken for existing inclinometers 1 and 2; five will be taken for the new inclinometers 3 and 4 after they are drilled. Findings of incipient slope failure may require a separate contract between the City and OMI to deal with slope-failure analyses and mitigation actions.

COST ESTIMATE AND SCHEDULE

OMI Inc. can provide these services for a total fee of $15,877.00. This includes the construction and deconstruction of the temporary earthen ramp, including the clay soil and contractor fees; drilling and

installation of the fourth inclinometer, including contractor fees, inclinometer pipe, plugs, grout, and sealant; and the cost of monitoring the fourth inclinometer for calendar year 2025.

OMI would like the city to know that drilling contractor costs have increased since we submitted the original proposal. The estimates we have received are at least $1,000 more than we budgeted for that proposal. There are few options for drillers in the north Alabama area. Accordingly, we have added $1,000 to this proposal to fully fund the contract drilling services for inclinometer number 3. The increased driller costs have been accounted for in the current cost-estimate addendum for inclinometer number 4.

To summarize, here is the requested project breakdown:

Drilling and installation of inclinometer no. 4	$ 8,907.00
Includes access ramp earthwork and deconstruction	
Includes soil sampling and testing and OMI geologist	
Includes inclinometer supplies, grout, sealant, etc.	
Periodic inclinometer no. 4 monitoring	$ 5,970.00
Includes five readings per year	
And a credit for only five readings for inclinometer 3	
Additional funding to meet the drilling contractor costs	$ 1,000.00
This is for inclinometer no. 3	
To cover cost increases since original proposal	
Total Costs	$15,877.00

The first readings for inclinometers 1 and 2 are done. We envision that the installation for inclinometers 3 and 4 and monitoring readings for all four inclinometers would take place in early to mid-April 2025. Four additional periodic readings would occur bimonthly through December 2025. Other services which are required or requested will be performed in accordance with our standard Fee Schedule. Naturally, additional work will not be performed without proper authorization.

AUTHORIZATION

To authorize OMI, Inc., to provide these services, please execute and return the attached Work Authorization Sheet or issue a purchase order. Please note any special instructions or information such as billing or site access requirements on this Work Authorization Sheet. Also enclosed with this proposal are General Conditions which discuss such items as right-of-entry, insurance, and invoicing. These Conditions are considered an integral part of this proposal.

* * * * * *

OMI, Inc., appreciates the opportunity to provide this proposal for services to The City of Madison. Please direct any questions regarding this proposal to the undersigned.

Respectfully submitted,

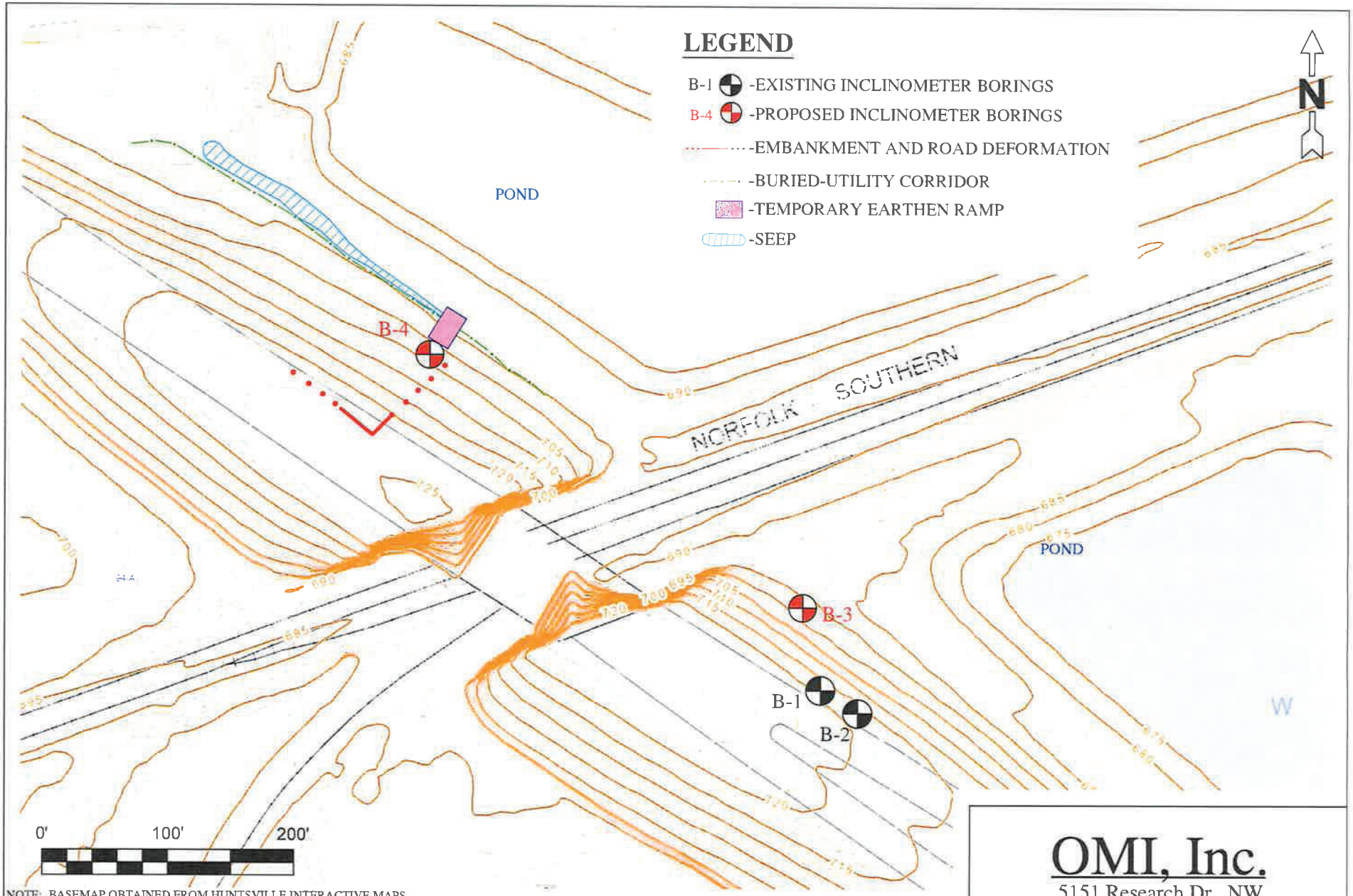
OMI, Inc.

David C. Noe, Ph.D., P.G.
Senior Professional Geologist

Keith J. Mandel, P.E.
Principal Engineer

Distribution via email to: michelle.dunson@madisonal.gov

Attachments: Drawing: P.8127.G.1-1 Addendum
General Conditions
Work Authorization Sheet
Property Access Authorization



NOTE: BASEMAP OBTAINED FROM HUNTSVILLE INTERACTIVE MAPS

JOB NAME:
HUGHES RD OVERPASS INCLINOMETERS
MADISON, ALABAMA

BORING LOCATION MAP

DRAWING NO: P.8127.G.1-1 ADDENDUM

JOB NO: P.8127.G.1
DATE: 03-17-2025
SCALE: 1"=100'
DRAWN BY: AGH

OMI, Inc.
5151 Research Dr. NW
Huntsville, AL 35805
PH: (256) 837-7664 FAX (256)837-7677

WORK AUTHORIZATION SHEET

The Terms and Conditions of OMI Proposal No. P.8127.G.1, dated March 17, 2025, including the General Conditions, are accepted this _____ day of _____, 2025, by:

_____
Print or Type individual, firm, or corporate body name

_____
Signature of authorized representative

_____
Print or Type name of authorized representative and title

PAYMENT OF CHARGES (Charge the invoice to the account of):

FIRM: _____

ADDRESS: _____

City: _____ State: ____ Zip Code: _____ Phone No. _____

ATTN: _____ TITLE: _____

APPROVAL OF CHARGES (If the invoice is to be mailed for approval to someone other than the account charged, please indicate where to mail the invoice):

FIRM: _____

ADDRESS: _____

City: _____ State: ____ Zip Code: _____ Phone No. _____

ATTN: _____ TITLE: _____

PROPERTY OWNER (If other than above):

NAME: _____

ADDRESS: _____

City: _____ State: ____ Zip Code: _____ Phone No. _____

ATTN: _____ TITLE: _____

SPECIAL INSTRUCTIONS _____
EMAIL ADDRESS _____

PROPERTY ACCESS AUTHORIZATION

PROPERTY ACCESS

Date: _____

FACILITY OWNER

Facility Name: _____

_____

Facility Location: _____

_____

Authorized Representative: _____

I, _____, authorize OMI, Inc., and its personnel access to the above referenced property for the purpose of conducting a Geotechnical Engineering Study and Subsurface Exploration. Furthermore, I hereby waive any claim against and hold harmless OMI, Inc. and its employees from any liability or loss which may result from the discovery and report of any adverse environmental conditions identified at the above referenced site.

_____ _____

Signature of authorized representative Title

P.8127.G.1 Hughes Rd Slope Monitoring - City of Madison - Addendum 031725

Final Audit Report 2025-03-17

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