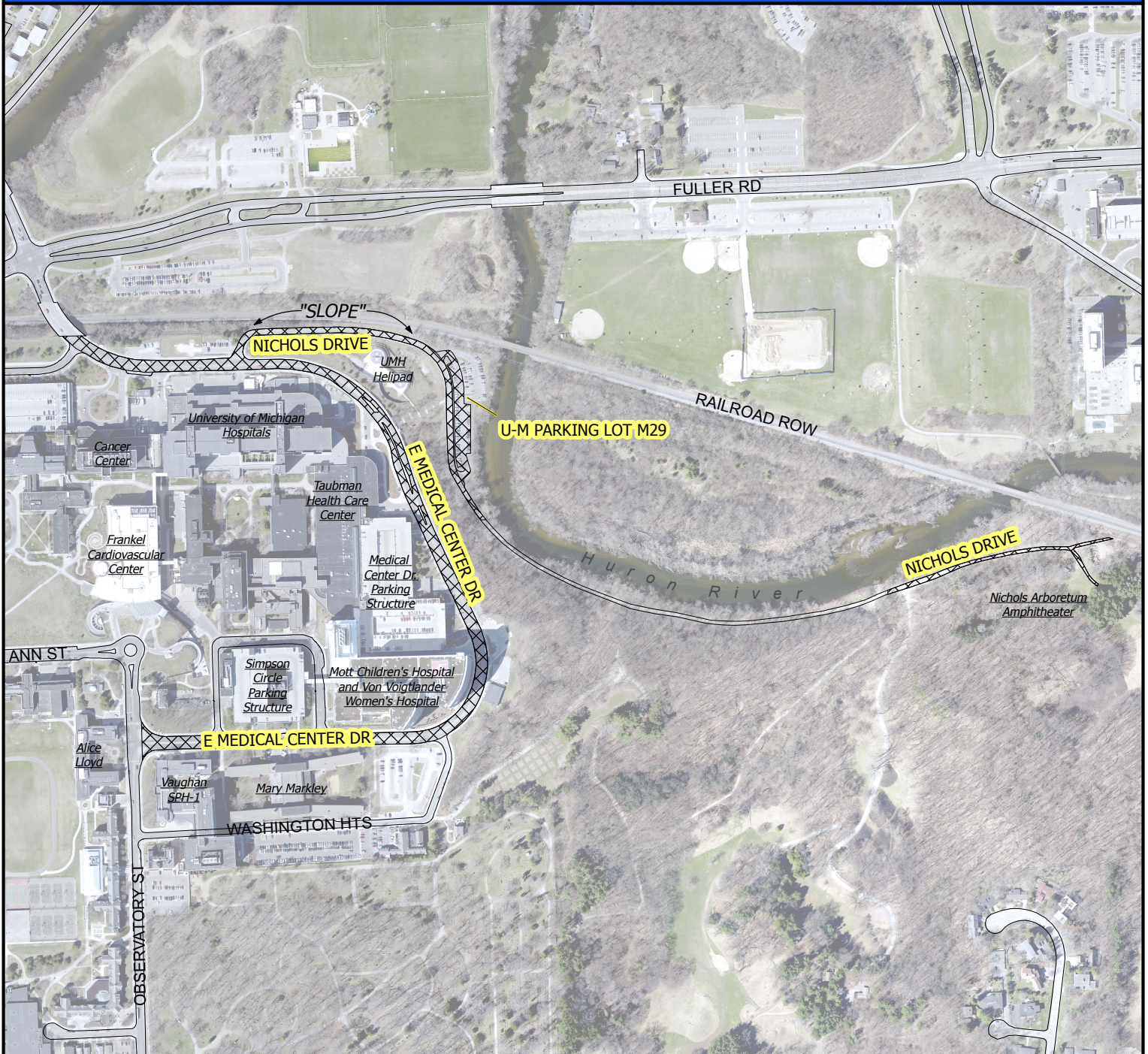


Exhibit D ACCESS ROUTE



Legend

 Access Route

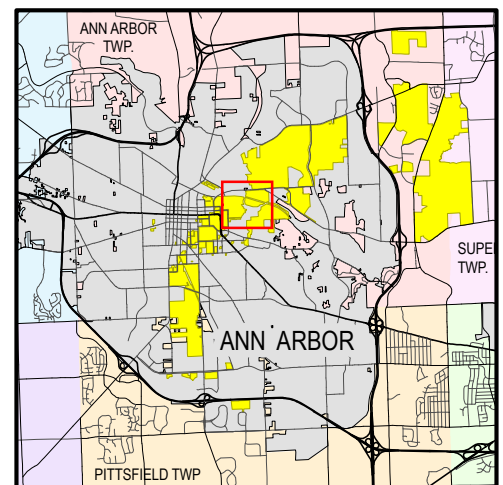


0 275 550 1,100 Feet

Michigan State Plane Coordinate System, South Zone
Map Units: International Survey Feet
Horizontal Datum: NAD 1983
Digital orthophoto images based on 2014 aerial photography

Notes:

 **UNIVERSITY OF MICHIGAN**
ARCHITECTURE, ENGINEERING AND CONSTRUCTION
Real Estate & Leasing



APPENDIX D



3301 Tech Circle Drive
Kalamazoo, MI 49008-5611

T (269) 323-3555

www.sme-usa.com

April 14, 2016

Ms. Patti Spence, PE
University of Michigan
Architecture, Engineering and Construction
326 East Hoover Avenue, Mail Stop D
Ann Arbor, Michigan 48109-1002

Via e-mail: paspenca@umich.edu (PDF file)

RE: Nichols Drive Slope
UM Medical Campus
Ann Arbor, Michigan
SME Project No. 073412.00

Dear Ms. Spence:

SME has completed a review of the current conditions associated with the slope along Nichols Drive on the University of Michigan (UM) Medical Campus in Ann Arbor, Michigan. Our services were authorized by UM Architecture, Engineering and Construction (AEC) and were performed in general accordance with the scope outlined in SME Proposal No. P00558.15-Final-Rev. dated November 9, 2015.

EXECUTIVE SUMMARY

The current inclinometer data indicate the slope that supports Nichols Drive has continued to move to the north at a relatively slow and steady rate. The most recent inclinometer data do not show a definitive increase in the rate of movement compared to slope movements over the last few years. More rapid slope movement will likely occur before the slope fails, but such movement may occur over a relatively short time frame. Therefore, simply monitoring the inclinometers at discrete intervals does not serve as an advanced warning system for when the slope will fail.

Since the slope has moved and is continuing to do so, the slope is considered unstable and will eventually fail in some manner. An accurate prediction of when the slope will fail cannot be made because slope failure is a complex phenomenon, and the stability of a slope is influenced by many variables. Therefore, the sense of urgency of this project for planning purposes to move forward with stabilization measures cannot be specifically categorized.

Further discussion and our opinions about the slope are presented below under "Analysis and Discussion". This Executive Summary should not be reviewed without also reading the remainder of this summary report.

PROJECT DESCRIPTION AND BACKGROUND

The project site consists of an existing slope along the north side of Nichols Drive on the UM Hospital Campus. The slope provides grade separation between Nichols Drive and railroad property to the north that is situated at lower elevations than Nichols Drive. Visual evidence of movements along the slope has been noticed by UM since at least 2002. Evidence of movement has included distortion of the guard rail along the north side of Nichols Drive, cracking in the pavement of Nichols Drive, and offsets in the concrete curb along the north side of Nichols Drive. Somat Engineering (Somat) was retained by UM in early 2003 to install two inclinometers near the top of the slope to monitor the magnitude and rate of slope movement.

SME was initially retained by UM for this project in early 2006 to perform a peer review of Somat's preliminary evaluation of the condition of the subject slope. SME's peer review was summarized in a report dated March 30, 2006. SME was subsequently retained by UM to develop schematic concepts for stabilization of the subject slope. Three schematic concepts for potential repair and stabilization of the slope were presented in an SME report dated June 20, 2006. In 2010, UM engaged SME for a preliminary construction cost and schematic design for one of the concepts.

CURRENT EVALUATION OF SLOPE CONDITIONS

INCLINOMETER READINGS

As part of our current scope for the project, SME retained Somat to collect an updated reading of the two inclinometers located at the top of the slope along Nichols Drive. The updated readings of the inclinometers were collected on December 10, 2015. Somat prepared a summary report (dated January 6, 2016) with the updated inclinometer data. A copy of the Somat report is attached for reference. The locations of the two inclinometers (I-1 and I-2) are depicted in a figure included with the Somat report. A brief discussion by SME on the updated inclinometer data is presented below under "Current Inclinometer Data".

SITE RECONNAISSANCE

Mr. Jeff Krusinga, PE, GE, of SME, visited the project site on December 12, 2015. During the visit, Mr. Krusinga visually reviewed the conditions along Nichols Drive at the top of the slope, the conditions along the face of the slope, and the conditions at the toe of the slope. Photographs were collected during the site visit to document the conditions observed.

Select photographs collected on December 12, 2015, were compared to photographs collected from similar vantage points by SME during a site visit performed on June 11, 2010. These photographs (Photo Nos. 1A and 1B through 4A and 4B) are attached to this report. Additional photographs (Photo Nos. 5 through 12) collected by SME during the site visit on December 12, 2015, are also attached to this report to illustrate conditions at the time of the most recent site visit.

ANALYSIS AND DISCUSSION

CURRENT INCLINOMETER DATA

Based on the latest inclinometer data collected in December 2015, the slope has experienced movement to the north since the last inclinometer readings were collected in April 2014. The current rate of movement on an annualized basis is generally consistent with the rates from previous readings. There is not an apparent increase in the rate of movement based on the new data, just a steady progression toward the north. Total movement to the north since the installation of the inclinometers in March 2003 is

about 5 inches at one inclinometer (I-2) and almost 8 inches at the other inclinometer (I-1). The rate of movement at Inclinometer I-1 (located farthest west along the top of the slope) since the last reading in April 2014 is about 0.3-inch per year. The rate of movement at Inclinometer I-2 (located to the east of Inclinometer I-1) since the last reading in April 2014 is less than 0.1-inch per year.

CURRENT OBSERVATIONS OF THE SLOPE

As indicated above, SME performed a visual review of the slope on December 12, 2015. Photograph Nos. 1A and 1B through 4A and 4B (attached) provide a qualitative comparison of the conditions observed on December 12, 2015, to the conditions observed on June 11, 2010. In our opinion, based on our review of these photographs, there is not a well-defined difference in the conditions illustrated in these photographs between the two visit dates, which are separated by a span of 5.5 years. In other words, even though the inclinometers indicate ongoing movement, there has not been a discernable visual change in the conditions at the top of the slope along Nichols Drive.

Photographs Nos. 5 through 12 (attached) provide additional documentation on the conditions observed during the site visit on December 12, 2015. Photograph Nos. 5 through 8 depict conditions along the north curb line of Nichols Drive in the area of the inclinometers where most of the discernable movement has been experienced. Photograph Nos. 9 through 12 depict conditions along the soldier pile retaining wall at the toe of the slope.

DISCUSSION

Our review of the latest inclinometer data indicates the slope is still continuing to move to the north at a relatively constant rate. There is no reason to expect that the movement will stop, although the rate of movement in the future may dissipate or increase compared to the average, long-term rate experienced since the inclinometers were installed in 2003. In general, based on our experience, an increase in the rate of movement would likely be an early indicator of pending slope failure. This rate increase may occur over a relatively short period of time (months, weeks, or even days).

Since a significant amount of movement of the slope along Nichols Drive in the area of the inclinometers has already occurred, the slope is considered only marginally stable and will eventually fail. A subtle increase in the driving forces tending to destabilize the slope (e.g., groundwater in the slope) could trigger more rapid movement of the slope. As we have indicated in our previous analysis of the slope in 2006, we believe the slope is unstable because the slope inclination is too steep. Based on the inclinometer data, the movement appears to be within about the upper 15 feet at the inclinometer locations. Based on this depth, the distress seen in the pavement along Nichols Drive, and on our experience with similar types of slopes, it is our opinion that when the slope fails, the back-scarp of the failure will likely extend somewhere into the parking lane along the north side of Nichols Drive. In our opinion, if this were to occur, a portion of the north side of Nichols Drive would need to be barricaded with Jersey barriers to keep traffic suitably away from the back-scarp until the slope is stabilized.

We cannot accurately predict when the slope will fail because slope failure is a complex phenomenon, and the stability of a slope is influenced by many variables, such as soil shear strength, soil stress history, slope geometry, the presence (or absence) of groundwater, the presence (or absence) of adverse bedding planes, and the presence (or absence) of root reinforcement below the slope face and vegetative cover on the slope face. In addition, many soil properties, such as strength, are non-linear (as compared to materials such as steel), and slopes are non-homogenous, which makes evaluating and accurately predicting the behavior of soil masses, such as slopes, difficult. In an ideal situation, we would be able to predict when an unstable slope would fail, and the slope Owner could then initiate a project such that the design and construction of slope stabilization measures would be completed just in time before failure were to occur. Such an ideal situation is not reality in the practice of geotechnical engineering and soil mechanics. Therefore, we cannot neatly categorize the urgency of this project for planning purposes as "Immediate" (needing attention now), "Priority 1" (needing attention in 1 to 2 years), or "Priority 2" (needing attention in 3 to 5 years).

Our viewpoint on stabilization of the slope is that the project can be executed with either a proactive approach or a reactive approach. A proactive approach would involve moving forward with the project before the slope fails so that appropriate planning, design, and construction can be performed without operating under an emergency situation. A reactive approach would involve waiting too long to move forward with the project such that the slope fails and the stabilization measures need to be planned for, designed, and constructed under potentially an emergency situation. A reactive approach would also require measures to stabilize the slope and/or protect Nichols Drive on a temporary basis if the slope were to fail.

Until the project moves forward with design and construction, we recommend routine inspections by UM staff be performed on a quarterly basis to assess whether visual changes in the conditions at the top of the slope indicate more rapid movement of the slope may be occurring. If discernable movement is noticed, SME should be contacted to observe the slope, and another reading of the inclinometers should be collected to provide a quantitative measure of the movement. We also recommend parking along the north side of Nichols Drive continue to be prohibited within the unstable area until the slope is repaired. Figure No. 1, Restricted Parking Area Diagram, which is attached to this report, provides the approximate area where we believe parking along the north curb lane of Nichols Drive should be prohibited at least until the slope is stabilized.

We appreciate the opportunity to be of service. If you have any questions regarding the information in this report, or if we can be of further assistance, please call.

Sincerely,

SME

Jeffery M. Krusinga, PE, GE
Senior Consultant

Timothy H. Bedenis, PE
Chief Geotechnical Engineer

Attachments: Figure No. 1: Restricted Parking Area Diagram
Site Photograph Nos. 1A and 1B through 4A and 4B
Site Photograph Nos. 5 through 12
Somat Inclinometer Report (dated January 6, 2016)

W:\073412.00\Final\073412.00+041416+GEL.doc



PHOTO NO. 1A –June 11, 2010: Looking west along the north curb line of Nichols Drive. Inclinometer I-2 is in the right of the photo between the curb and the guardrail.



PHOTO NO. 1B – December 12, 2015: Looking west along the north curb line of Nichols Drive. Inclinometer I-2 is also visible in this photo between the guardrail and the curb line.

SME Project No.:	073412.00
Photographs by:	Jeffery M. Krusinga, PE, GE
Date:	June 11, 2010 and December 12, 2015
Project:	Nichols Drive Slope
Location:	Ann Arbor, Michigan



PHOTO NO. 2A - June 11, 2010: Looking east along Nichols Drive.



PHOTO NO. 2B – December 12, 2015: Looking east along Nichols Drive from a similar vantage point as PHOTO NO. 2A.

SME Project No.:	073412.00
Photographs by:	Jeffery M. Krusinga, PE, GE
Date:	June 11, 2010 and December 12, 2015
Project:	Nichols Drive Slope
Location:	Ann Arbor, Michigan



PHOTO NO. 3A – June 11, 2010: Looking west along the north curb line of Nichols Drive.

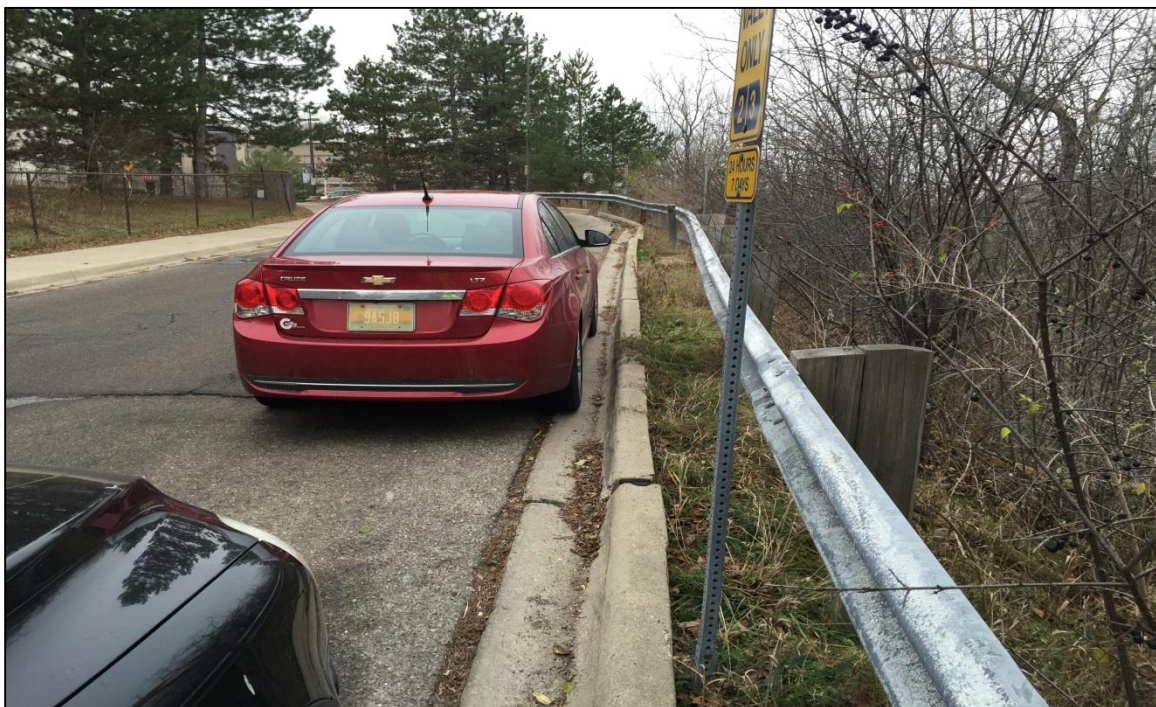


PHOTO NO.3B – December 12, 2015: Looking west along Nichols Drive from a similar vantage point as PHOTO NO. 3A.

SME Project No.:	073412.00
Photographs by:	Jeffery M. Krusinga, PE, GE
Date:	June 11, 2010 and December 12, 2015
Project:	Nichols Drive Slope
Location:	Ann Arbor, Michigan



PHOTO NO. 4A – June 11, 2010: Looking at the soldier pile retaining wall at the toe of the slope on the south side of the railroad line.



PHOTO NO. 4B – December 12, 2015: Looking at the soldier pile retaining wall from a similar vantage point as PHOTO NO. 4A.

SME Project No.:	073412.00
Photographs by:	Jeffery M. Krusinga, PE, GE
Date:	June 11, 2010 and December 12, 2015
Project:	Nichols Drive Slope
Location:	Ann Arbor, Michigan



PHOTO NO. 5: Looking east along the north curb line of Nichols Drive.



PHOTO NO. 6: Looking east along the north curb line of Nichols Drive.

SME Project No.:	073412.00
Photographs by:	Jeffery M. Krusinga, PE, GE
Date:	December 12, 2015
Project:	Nichols Drive Slope
Location:	Ann Arbor, Michigan



PHOTO NO. 7: Close-up of the drop in the pavement surface along the north curb line of Nichols Drive. Inclinator I-1 is located immediately to the left of this location.



PHOTO NO. 8: Looking west along the north curb line of Nichols Drive. Inclinator I-2 is in the right of the photo between the curb line and the guardrail.

SME Project No.:	073412.00
Photographs by:	Jeffery M. Krusinga, PE, GE
Date:	December 12, 2015
Project:	Nichols Drive Slope
Location:	Ann Arbor, Michigan



PHOTO NO. 9: Looking west at the soldier pile retaining wall at the toe of the slope.



PHOTO NO. 10: Looking west along the top of the soldier pile retaining wall at the toe of the slope.

SME Project No.:	073412.00
Photographs by:	Jeffery M. Krusinga, PE, GE
Date:	December 12, 2015
Project:	Nichols Drive Slope
Location:	Ann Arbor, Michigan



PHOTO NO. 11: Looking east at the soldier pile retaining wall at the toe of the slope.



PHOTO NO. 12: Looking east along the top of the soldier pile retaining wall at the toe of the slope.

SME Project No.:	073412.00
Photographs by:	Jeffery M. Krusinga, PE, GE
Date:	December 12, 2015
Project:	Nichols Drive Slope
Location:	Ann Arbor, Michigan



January 6, 2016
G03006F

Jeffery M. Krusinga, P.E., G.E.
SME
3301 Tech Circle Drive
Kalamazoo, MI 49008

RE: Measurement of Slope Movement
Nichols Drive Slope Stability Project
University of Michigan
Ann Arbor, Michigan
Ref: SME Project No. 073412.00

Dear Mr. Bedenis:

At the request of the SME, Inc. (SME), Somat Engineering, Inc. (Somat) is providing this letter report subsequent to readings taken from the two (2) inclinometers (I-1 and I-2) located at the top of the existing slope along Nichols Drive, north of the University of Michigan Hospital complex. The most recent data measurements were taken on December 10, 2015.

We understand that in planning for the rehabilitation of the existing slope condition along Nichols Drive, north of the University of Michigan Hospital complex, SME acting as consultant to the university requested an additional reading be taken from these inclinometers. The inclinometers were installed in the spring of 2003. They were monitored periodically from March 2003 thru October 2003 for the first phase of this project. Four supplemental investigations were performed in order to obtain one additional reading at each inclinometer in June 2006, December 2009, March 2011, and April 2014. This letter details the findings of the fifth supplemental investigation. An evaluation of recent data obtained in 2015 will provide an estimate of the criticalness of the proposed slope rehabilitation.

Data Evaluation

Initial readings taken between the spring of 2003 and October 2003 from both inclinometers reflected up to 0.1 inches of lateral movement of the slope towards the north. Subsequent readings from the instruments in June 2006 indicated additional northward movement of the slope of about 1.5 inches since the fall of 2003. The readings from December 23, 2009 indicated additional lateral slope movement towards the north of about 0.9 inches since the summer of 2006. Readings obtained in March 2011 indicated lateral slope movement since winter 2009 towards the north at Inclinometers I-1 and I-2 at depths of 10 feet or less. An additional movement of 0.4 inch was observed at I-1. Minimal additional movement of 0.1 inch was observed at I-2.

Readings obtained in April 2014 indicated lateral slope movement since spring 2011 towards the north at Inclinometers I-1 and I-2 at depths of 10 feet or less. An additional movement of 0.8 inch was observed at I-1 at a depth of 2 feet below the top of casing. This corresponds with a total cumulative displacement of 6.3 inches since installation in 2003. Additional incremental movement of 0.3 inch was observed at I-2 at a depth of 7 feet below the top of the casing. This corresponds with a total cumulative displacement of 4.7 inches since installation in 2003.

Recent readings obtained in December 2015 indicated lateral slope movement since spring 2014 towards the north at Inclinometers I-1 and I-2 at depths of 10 feet or less. An additional movement of 0.5 inches was observed at I-1 at a depth of 2 feet below the top of casing. This corresponds with a total cumulative displacement of 7.6 inches since installation in 2003. Additional incremental movement of 0.1 inch was observed at I-2 at a depth of 7 feet below the top of the casing. This corresponds with a total cumulative displacement of 4.8 inches since installation in 2003. Note the maximum cumulative displacement observed at I-2 since installation in 2003 is 5.0 inches at a depth of 5 feet below the top of the casing.

The data collected between spring of 2014 and winter of 2015 suggested an annual rate of *0.3 inches to 0.06 inches* of slope movement toward the north within this 1.6-year period for inclinometers I-1 and I-2, respectively. The maximum observed annual rate obtained at I-1 is consistent with the previous rate observed during the periods from summer 2006 to spring 2014, as indicated in the table below.

Date of Readings	Elapsed Time	Annual rate of slope movement towards the north
Spring 2003 to Summer 2006	3 years	0.5 inches/year
Summer 2006 to Winter 2009	3 years	0.3 inches/year
Winter 2009 to Spring 2011	1.25 years	0.3 inches/year to 0.1 inches/year
Spring 2011 to Spring 2014	3 years	0.3 inches/year to 0.1 inches/year
Spring 2014 to Winter 2015	1.6 years	0.3 inches/year to 0.06 inches/year

The accompanying graphical presentations of field readings obtained from inclinometers I-1 and I-2 since the fall of 2003 through April 2014 indicated cumulative possible slope movement of *7.6 to 5.0 inches* towards the north. It appears that the recorded slope movements indicated by both inclinometers has occurred within the upper 15 feet of fill soil below the pavement at the top of the slope.



It is our opinion the slope is continuing to creep downhill at a slow rate. In this condition of slow continuing movement, a heavy rainfall could destabilize the slope and the rate of movement could increase dramatically. Based on the accumulated readings, this is certainly a possibility, but it is definitely not a certainty.

We hope the information in this report will be helpful in planning for the proposed slope rehabilitation project. Should you have any questions or require further information, please do not hesitate to contact us.

Sincerely yours,
Somat Engineering, Inc.

C. Weirauch

Catherine J. Weirauch, P.E.
Project Engineer

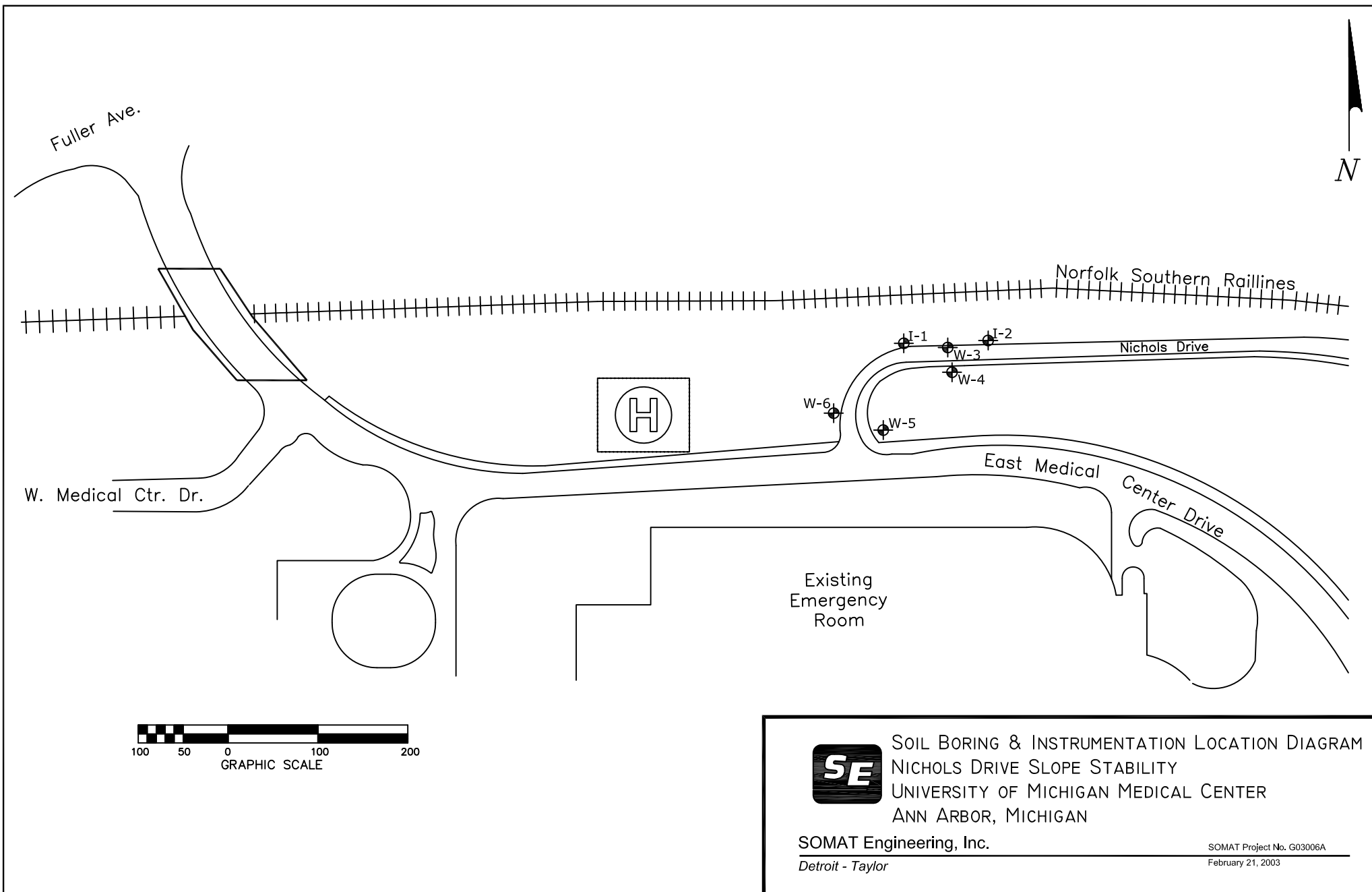
Jon Madri

For Jonathan D. Zaremski, P.E.
Project Manager

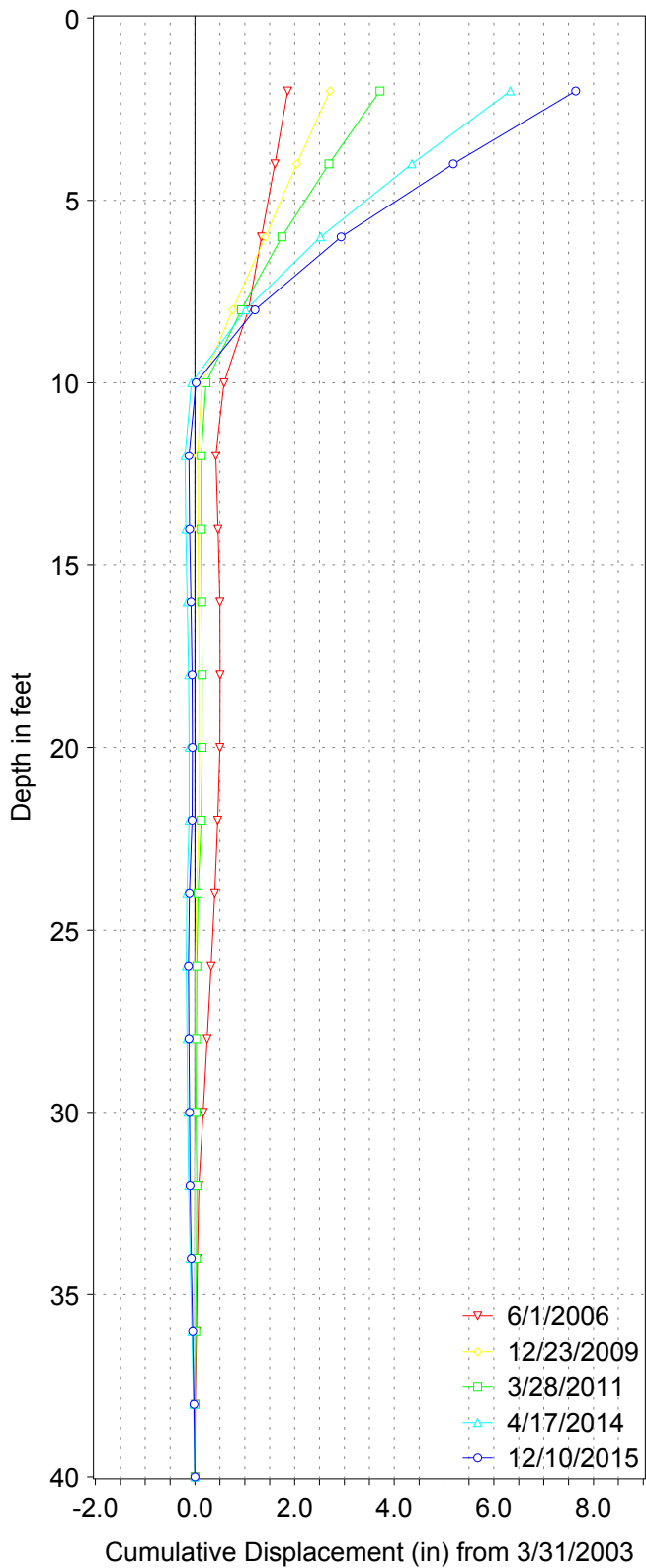
CJW/JDZ

Attachments: Location plan of inclinometers
Cumulative displacement graph for I-1 and I-2
Incremental displacement graph for I-1 and I-2
Photographs

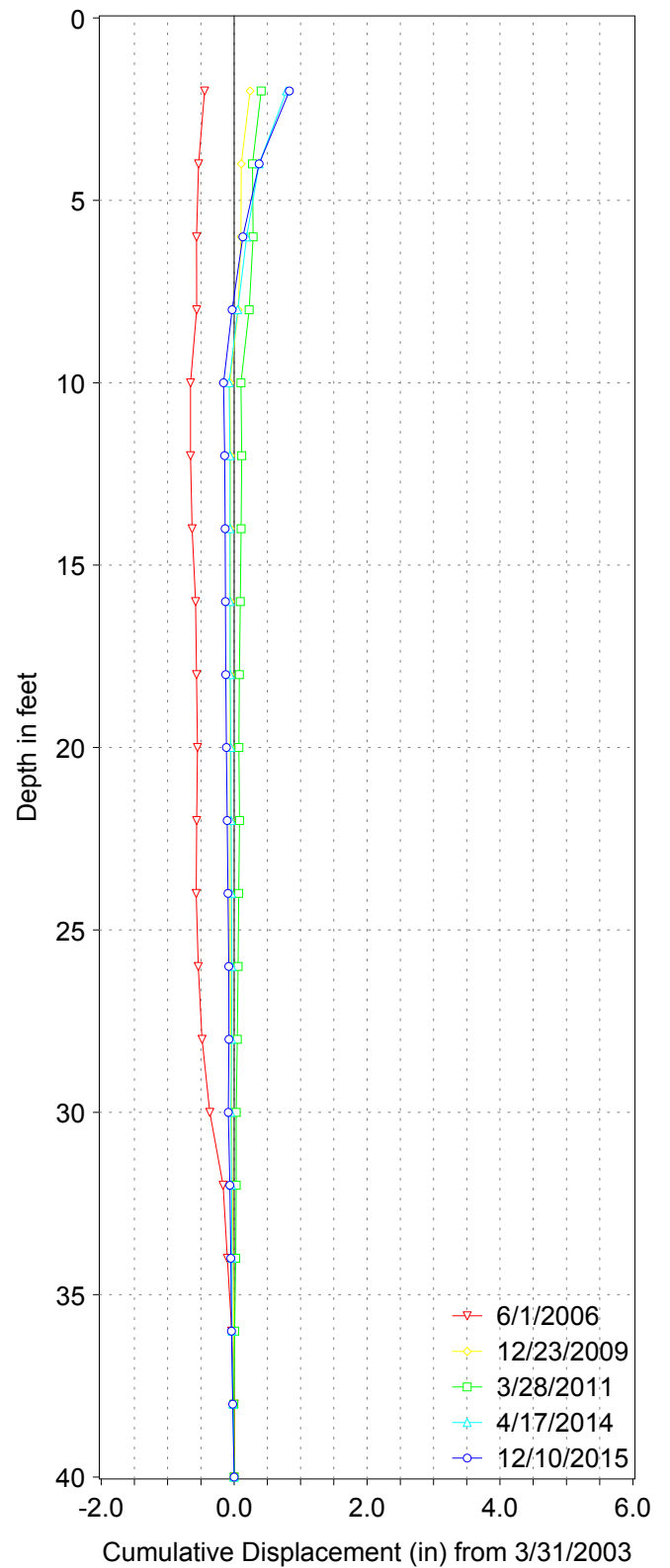




I-1, N-S Axis (AO=North)



I-1, E-W Axis

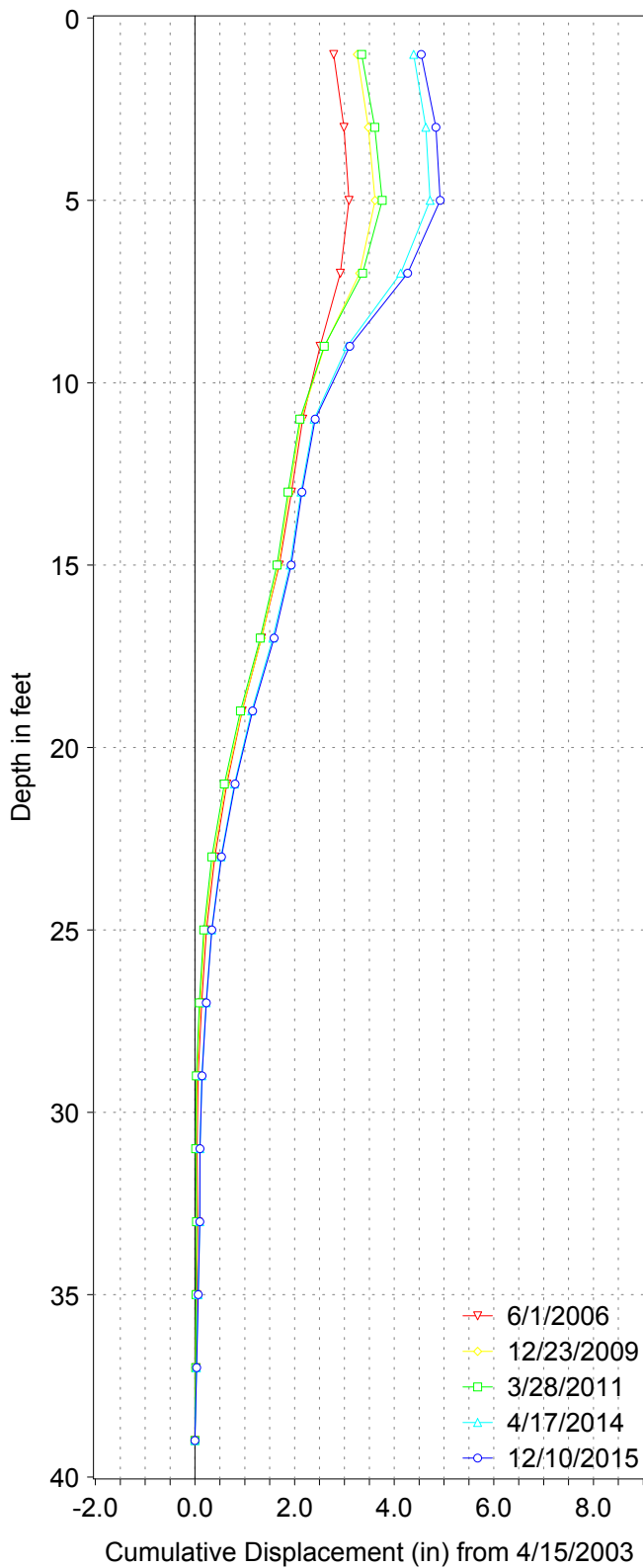


University of Michigan Hospital
Nichols Drive Slope Stability Study
Somat Engineering
Project No. G03006B

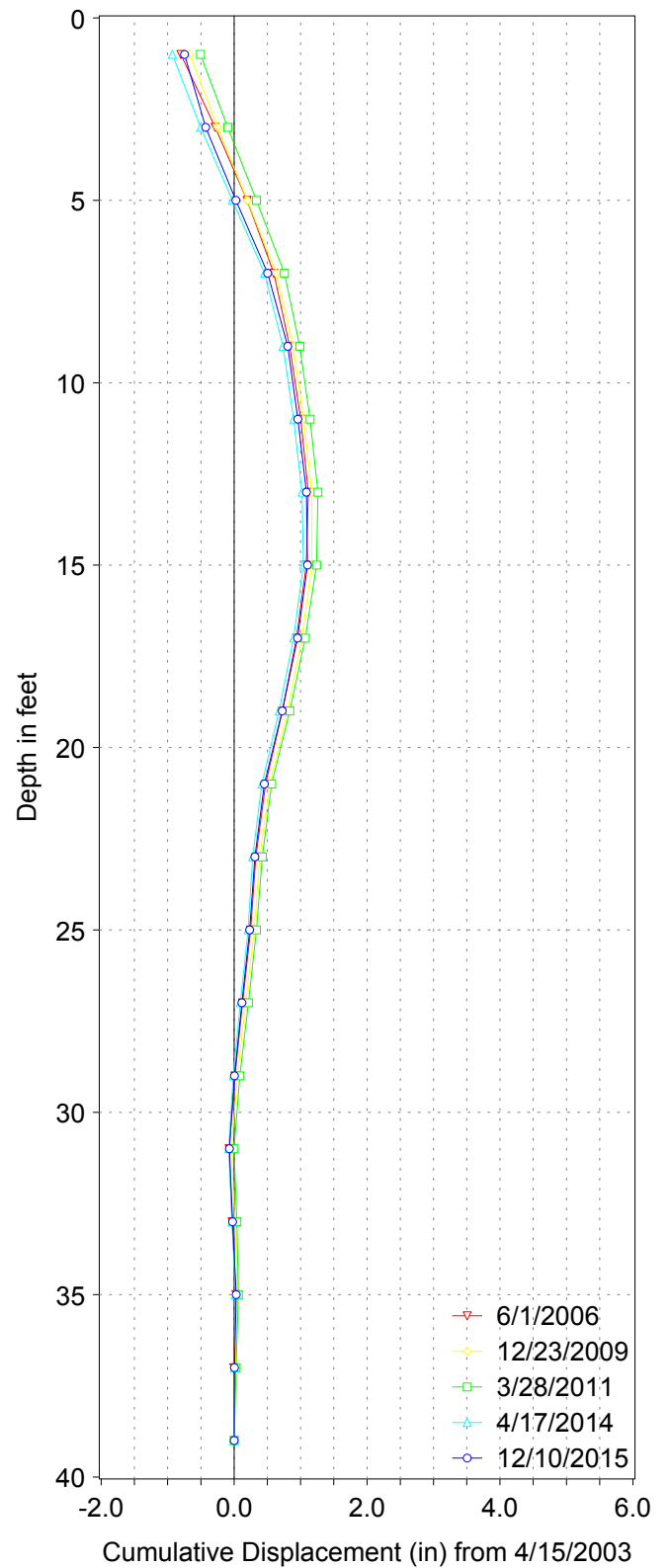
Inclinometer:I-1

Baseline Probe: S/N 28478
Reading Probe: S/N 27599B &
S/N 28478 & S/N 27343B

I-2, N-S Axis (AO=North)



I-2, E-W Axis



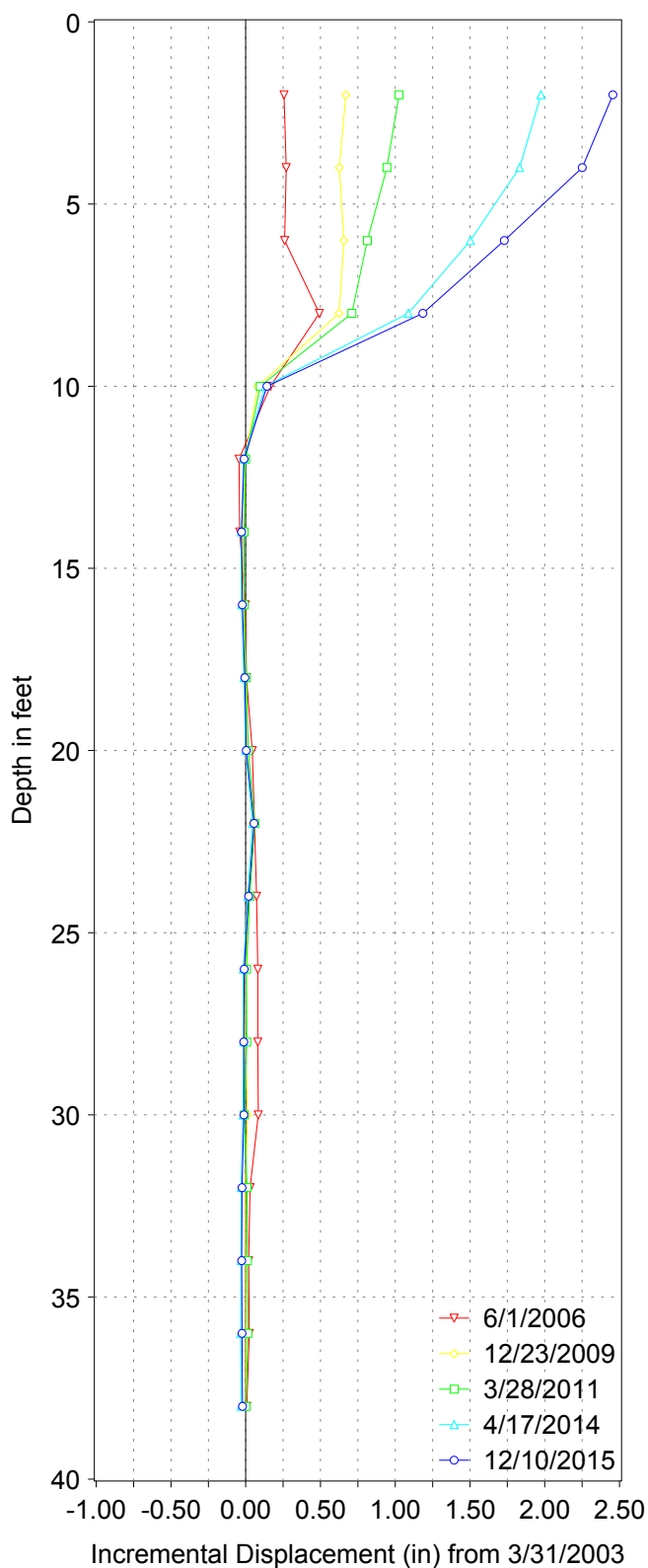
University of Michigan Hospital
Nichols Drive Slope Stability Study
Somat Engineering
Project No. G03006B

Inclinometer: I-2

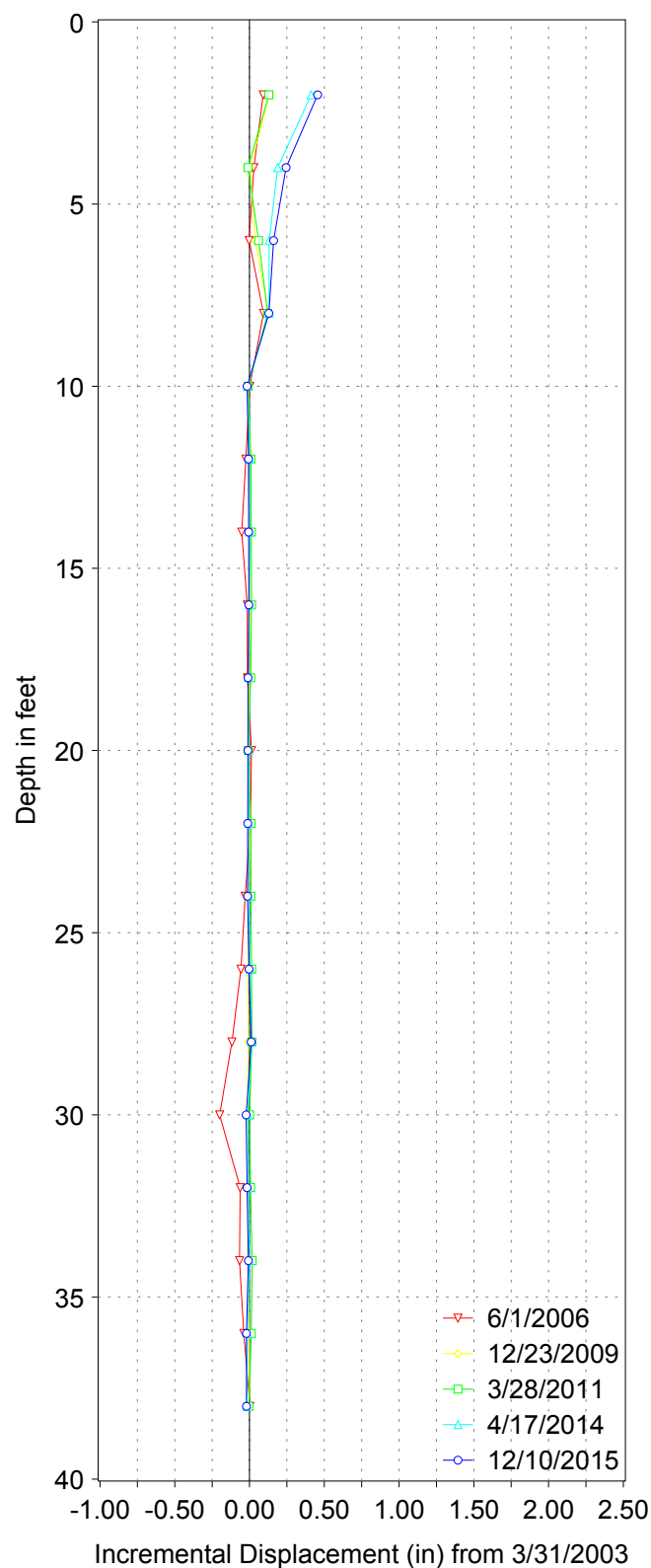
Baseline Probe: S/N 28478

Reading Probe: S/N 27599B &
S/N 28478 & S/N 27343B

I-1, N-S Axis (AO=North)



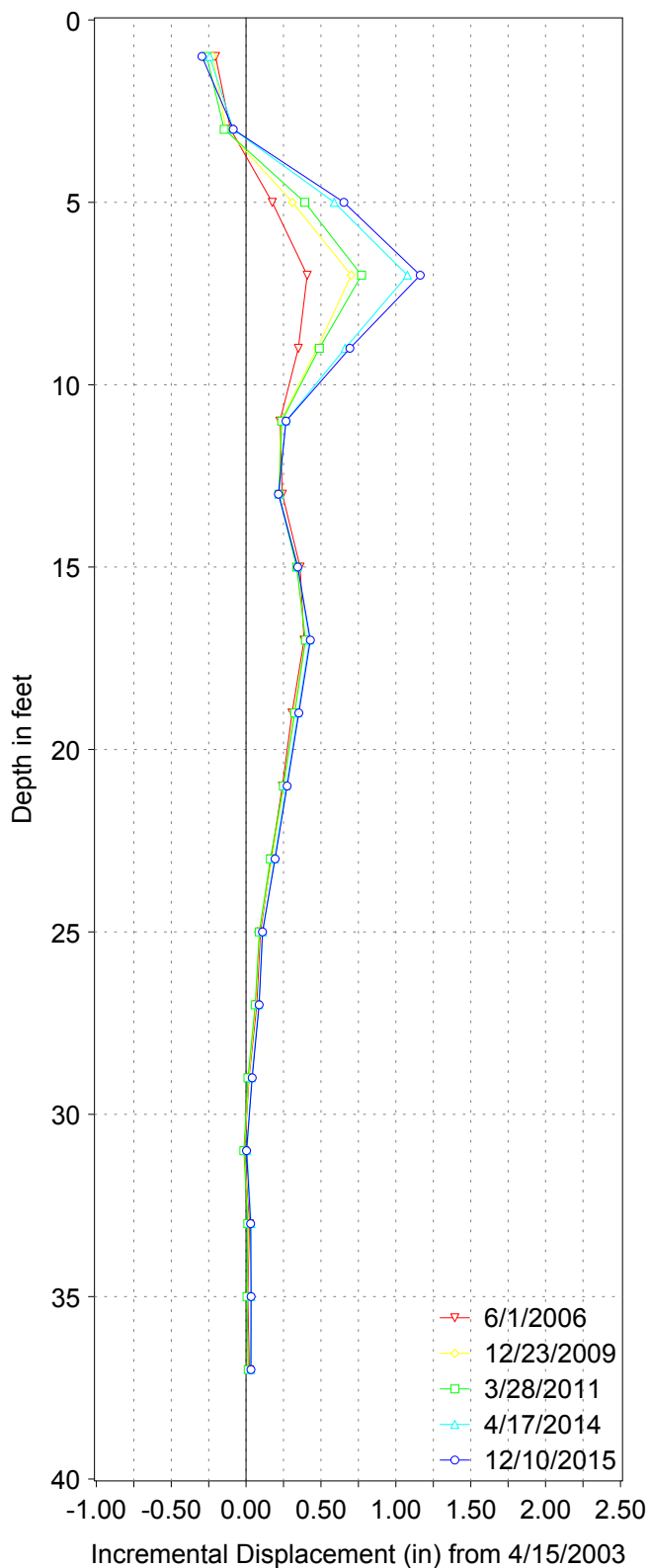
I-1, E-W Axis



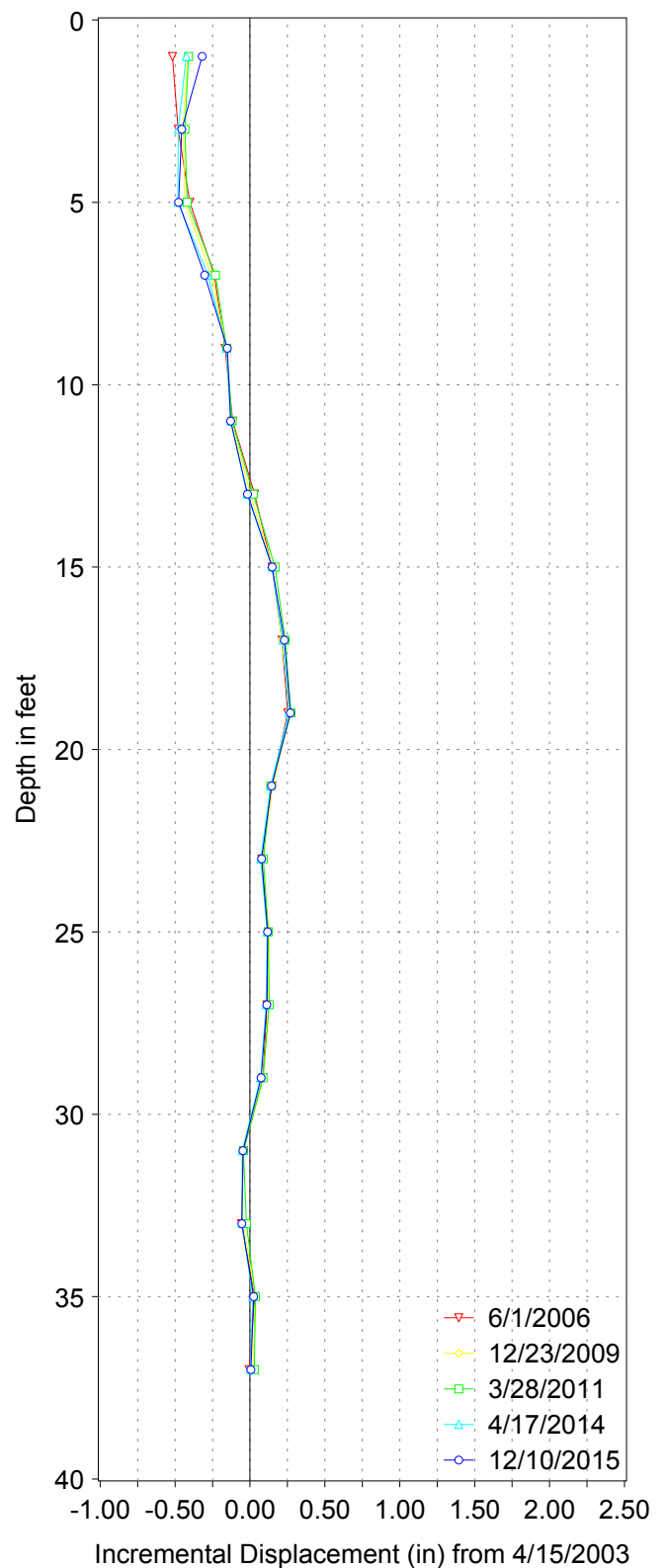
University of Michigan Hospital
Nichols Drive Slope Stability Study
Somat Engineering
Project No. G03006B

Inclinometer:I-1
Baseline Probe: S/N 28478
Reading Probe: S/N 27599B &
S/N 28478 & S/N 27343B

I-2, N-S Axis (AO=North)



I-2, E-W Axis



University of Michigan Hospital
Nichols Drive Slope Stability Study
Somat Engineering
Project No. G03006B

Inclinometer: I-2
Baseline Probe: S/N 28478
Reading Probe: S/N 27599B &
S/N 28478 & S/N 27343B



2014 Looking west, toward inclinometers I-1 and I-2 [provided for comparison]



2015 Looking west, toward inclinometers I-1 and I-2



2015 Looking east, toward inclinometer I-2



2015 Looking east, toward inclinometers I-1 and I-2