IN THE SUPERIOR COURT OF THE STATE OF DELAWARE

IN AND FOR SUSSEX COUNTY

STATE OF DELAWARE DEPARTMENT OF TRANSPORTATION	)	
Plaintiff	)	**C.A. No. _____**
v.	)	
FIGG BRIDGE ENGINEERS, INC. AND MACTEC ENGINEERING AND CONSULTING, INC.	)	**JURY TRIAL DEMANDED**
Defendants	)	

COMPLAINT

Plaintiff, State of Delaware Department of Transportation ("DelDOT"), by its undersigned attorneys, brings this action for breach of contract and negligent provision of information, and alleges as follows:

NATURE OF THE ACTION

1. In bringing this suit, DelDOT, as owner of the bridge carrying Delaware State Route 1 over the Indian River Inlet, located in Sussex County, asserts that Defendant Figg Bridge Engineers, Inc. ("Figg") has breached its design contract with DelDOT for work on a replacement bridge at that location as a result of errors and omissions by Figg's subconsultant, MACTEC Engineering and Consulting, Inc. ("MACTEC"), and that MACTEC has breached contractual obligations relating to the earthen roadway embankments leading to the replacement bridge owed to DelDOT, the intended beneficiary of the subconsultancy agreement between Figg and MACTEC.

2. In bringing this suit, DelDOT further asserts that MACTEC's errors and omissions constitute the negligent provision of information, for which MACTEC is liable to DelDOT under principles of Delaware law.

3. DelDOT's investigation of the circumstances requiring removal of the earthen embankments after Figg and MACTEC's work ended has revealed information regarding MACTEC's performance not previously known to DelDOT. Among other things, on a number of occasions between August 2004 and January 2006, other Project participants -- as well as MACTEC's own engineers -- warned MACTEC of the potential for undrained lateral shear deformation (lateral squeezing of soft clay) and differential settlement (non-uniform vertical settlement across a section of embankment) in the soft clay under the embankments. MACTEC, nevertheless, did not critically evaluate its analyses to address those concerns, MACTEC did not meet the standard of care with respect to considering the possibility of undrained lateral shear deformation and differential settlement and MACTEC negligently provided information regarding settlement of the earthen embankments to DelDOT and its designers on the Project.

4. Specifically, during pre-construction and construction, MACTEC did not provide accurate or complete information concerning the expected vertical settlement behavior of the embankments. It failed to provide accurate information concerning the magnitude of expected differential settlement, transverse to the centerline, that would occur because of the presence of the existing SR-1 roadway embankment or due to undrained lateral shear deformation in the underlying soft

clay.

5. Moreover, through its errors and omissions, MACTEC did not adequately analyze monitoring data and thus did not recognize that the factor of safety for embankment stability was decreasing as the magnitude of vertical settlement increased, and, by the time the embankments were de-constructed in May 2008, that the embankments were perilously close to the failure criterion line.

6. Significantly, MACTEC's errors and omissions not only deprived DelDOT of the opportunity to properly monitor and account for construction phasing requirements relating to the embankments, but also deprived it of the opportunity to undertake potential mitigation measures to salvage the earthen embankments for the purposes for which they were intended.

7. A significant portion of those embankments required removal. Moreover, despite that removal of large portions of the embankments, the settlement continues on the remaining portions of the original embankments and further removal and mitigation will be required.

8. Because Figg and MACTEC did not perform their services relating to the earthen roadway approach embankments for the replacement Indian River Inlet Bridge in accordance with the standards of care to which they were bound under the terms of their contracts and principles of Delaware law, DelDOT has incurred, and shall continue to incur, substantial costs and expenses to correct MACTEC's acts, errors and omissions, for which both Figg and MACTEC are liable. This suit seeks recovery of those damages.

PARTIES

9. DelDOT is an agency of the State of Delaware, with the stated mission of providing a safe, efficient and environmentally-sensitive transportation network that offers a variety of convenient and cost-effective choices for the movement of people and goods throughout the State.

10. Figg, a Florida corporation with its principal place of business in Florida, is a design, engineering and inspection firm that focuses exclusively on bridges.

11. MACTEC, a Delaware corporation with its principal place of business in Georgia, is a consulting firm that provides engineering, environmental and construction services on both public and private projects.

JURISDICTION

12. The Court has subject matter jurisdiction as the state trial court of general jurisdiction in suits seeking monetary damages in excess of $15,000.

13. The Court has personal jurisdiction over Figg, pursuant to 10 *Del. C.* ¶ 3104, inasmuch as Figg transacts business and contracts to supply services in the State.

14. The Court has personal jurisdiction over MACTEC inasmuch as it is a Delaware corporation, as well as transacts business and contracts to supply services in the State (10 *Del. C.* § 3104).

FACTUAL ALLEGATIONS

A. The Indian River Inlet Bridge

15. The Indian River Inlet Bridge ("IRIB") spans the Indian River Inlet and carries State Route 1 ("SR-1"). The current substructure of the existing IRIB was constructed between 1963 and 1965; at that time, the channel near the bridge's pier foundations was approximately 20 feet deep.

16. Approximately twenty years after construction, the depth of the channel had increased to approximately 50 feet near the bridge piers, as a result of swiftly-moving tidal waters creating conditions (known as "scour") that resulted in creation of underwater cavities within the inlet and the immediate area surrounding the existing bridge piers. Underwater inspections revealed that a large cavity created by the scour existed near one of the bridge piers, exposing the piles that supported that pier and potentially threatening the integrity of the structure.

17. DelDOT, thereafter, installed stone armor around the bridge piers to reduce the effects of scour; nevertheless, since that time, studies have shown that new large scour holes in excess of 100 feet deep have formed to the east and west of the bridge.

18. In April 2002, after receipt of a feasibility study that examined alternatives for replacement of the existing bridge, DelDOT proceeded with the process for design and construction of an entirely new bridge structure. In June 2002, DelDOT issued a request for design services for the new bridge and, a year later, selected Figg to provide the professional services necessary to design that bridge

replacement. A construction contract with a separate construction firm to build the replacement bridge designed by Figg was contemplated, employing the traditional design-bid-build process.

19. By 2004, results of new studies indicated that the continued aggressive scour conditions in the inlet had created an undeniable need for timely replacement of the existing structure.

B. The DelDOT/Figg Agreement

20. In the meantime, on June 17, 2003, DelDOT had entered into a design agreement with Figg (the "Agreement"), which detailed the scope of services to be performed by Figg, including design of a new bridge, roadway approaches and environmental mitigation, demolition of the existing bridge and improvements to an adjacent park.

21. The Agreement divided Figg's work into three phases: (1) preparation of survey plans, conducting soil borings, soil tests, foundation analysis and certain specified plans; (2) preparation of preliminary construction plans, preliminary construction cost estimates, right-of-way plans and construction plans; and (3) construction consultation, reviewing working drawings, construction engineering, inspection services, surveying and preparation of as-built drawings.

22. The Agreement specifically identified certain subconsultants that Figg was to engage, including MACTEC, which was to perform geotechnical field investigation and foundation studies (including preparation of a geotechnical report) and on-site construction inspection and engineering office support for testing of foundations, for both the replacement bridge structure and earthen

roadway embankments. The Agreement expressly provided that its terms and conditions "shall apply to and bind" subconsultants such as MACTEC "as fully and completely" as Figg was bound and obligated to DelDOT under the Agreement.

23. The foundation study to be performed by MACTEC, as set forth in the Agreement, was to include a Site Assessment and Preliminary Foundation Study, consisting of taking soil borings, conducting a file reconnaissance to review available subsurface data and published geological information in the vicinity of the work, and preparing a written report to describe the exploration and provide recommendations, including a "preliminary evaluation of feasible foundation alternatives". Geotechnical reports also were to be prepared by MACTEC for both the roadway and bridge structure, with the roadway report to include the following information: (a) a summary of subsurface conditions; (b) evaluation of feasible ground improvement technologies; (c) an evaluation of embankment construction; (d) information for design requirements and construction of retaining walls; (e) information regarding compacted fills; and (f) general recommendations for pavement design requirements and construction.

C. The Figg/MACTEC Subconsultancy Agreement

24. Figg thereafter engaged MACTEC, by a subconsultancy agreement dated June 18, 2003 (the "Figg/MACTEC Subconsultancy Agreement"), to perform the scope of geotechnical services delineated in the Agreement between DelDOT and Figg. The Figg/MACTEC Subconsultancy Agreement expressly referenced those services, noted that MACTEC had been furnished a copy of the DelDOT/Figg Agreement,

and that "the OWNER [DelDOT] and the CONSULTANT [Figg] desire to retain SUBCONSULTANT [MACTEC] for the purpose of performing those services as defined in the scope of work."

25. The Figg/MACTEC Subconsultancy Agreement also expressly obligated MACTEC to perform all its work in accordance with the applicable requirements of the DelDOT/Figg Agreement and to abide by the provisions of that Agreement.

D. The MACTEC Geotechnical Studies

26. MACTEC thereafter undertook studies to determine the nature of the in-place conditions, including where the roadway embankments were proposed, as well as to provide information necessary to design the roadway embankments. The roadway approaches, designed by Figg and another subconsultant, ultimately consisted of earthen embankments retained by six mechanically stabilized earth ("MSE") walls, cast-in-place concrete facing and stabilized slopes.

27. MACTEC reported that the underlying foundation soils for the embankments consisted of approximately 30 feet of compact sand (Stratum 1) over varying depths (up to 60 feet) of very soft clay (Stratum 2) over a dense sand layer (Stratum 3).

28. Based on its expertise, MACTEC also provided, in its various reports, information concerning expected rates of settlement and time rates of consolidation for the proposed embankments; MACTEC stated that the maximum consolidation settlement would be approximately 31 inches for the north embankment and approximately 55 inches for the south embankment and that utilization of techniques such as "surcharging" and use of prefabricated vertical ("PV") drains

would allow for consolidation settlement to take place within approximately 9 to 10 months.

29. In December 2003, MACTEC submitted an expanded Final Roadway Report, in which maximum consolidation settlement for the south embankment was restated at 60 inches (revised from the initially-proposed 55 inches), with maximum consolidation settlement for the north embankment at 34 inches (revised from the previously-stated 31 inches). Consolidation time based on surcharging and PV drains was also revised; MACTEC stated that primary consolidation could be achieved in approximately 3 to 4 months (compared with the initial statement that it would require 9 to 10 months).

E. The Construction Contracting

30. The scour conditions and the uncertainty as to how prolonged exposure to continued swift tidal movements and severe weather would affect the existing scour holes near the bridge piers required the earliest practical completion of the replacement bridge. DelDOT advertised and awarded the roadway embankment approaches construction contract in 2005, separate and apart from the larger contemplated contract for the mainspan structure of the bridge. Later in 2005, DelDOT advertised for construction of a Figg-designed 1,000-foot mainspan single rib cable-supported arch structure. However, the resulting construction bids for the bridge structure were not within the project budget, and, as no contract was awarded, bridge construction was deferred.

31. With embankment/roadway approach construction already underway and the existing bridge remaining vulnerable to scour, DelDOT

proceeded in 2006 with a different procurement concept -- a design-build procurement -- to accelerate the design and construction of the new bridge within the footprint of the original arch design and with a 2010 completion date. DelDOT maintained the required clearances and other basic geometric parameters of a newly-designed bridge as part of the design-build scope of work, and the year 2010 was held as a completion date. The new bridge structure was to use the earthen embankments designed by Figg based on the information provided by MACTEC.

32. During the design-build procurement, formal price proposals were received that confirmed that a new bridge could be designed and constructed within budget; however, a bidder protested the award of the contract. In the course of the administrative bid protest review, DelDOT exercised its right to reject all bids due to concerns about its statutory authority to employ a design-build procurement process. Express statutory authority for a design-build procurement subsequently was enacted, a new design-build procurement was initiated, and a replacement bridge structure contract thereafter awarded on that basis.

F. MACTEC's Revised Geotechnical Information

33. In the meantime, in late April 2005 -- two weeks after bids had been due for construction of the embankments and roadways -- MACTEC submitted a Geotechnical Summary Report.

34. MACTEC again submitted revised consolidation settlement amounts for the embankments, including consolidation for the western edge of the new embankment and for the existing SR-1 roadway. The

figures reflecting settlement at the centerline of the embankments were different from those in the earlier reports, including the December 2003 Final Geotechnical Roadway Report.

35. Information relating to expected consolidation again was revised by MACTEC in that new report, including new figures that reflected the time that would be required to achieve 95% consolidation (as opposed to the time to reach 1 inch or less of remaining settlement), with consolidation times also revised. MACTEC's revised information was that 95% of consolidation settlement could be achieved within 4 to 8 months.

36. Unknown to DelDOT at the time, subsequent review and analysis has demonstrated that certain information presented by MACTEC in its Geotechnical Summary Report did not accurately reflect information contained in the plans and specifications for construction of the embankment and roadway that were being bid upon by potential contractors. Among other things, the MACTEC settlement figures did not reflect changes made to the embankment design -- specifically the reduction of the overall length of each embankment by approximately 50 feet to accommodate the foundation design for the bridge structure. As a result, MACTEC's calculations showed north and south abutment "stations" located at points that were different than the location as shown on the plans submitted to bidders.

G. The Embankment Construction

37. Roadway approach construction began thereafter.

38. The MSE walls fronting and retaining both faces of the free-standing north and south embankments were to be constructed by

placing and compacting layers (or “lifts”) of backfill material in conjunction with soil reinforcement in multiple vertical layers. The design utilized a soil reinforcement material (geogrid), which is made of high density polyethylene and is designed to react to tensile forces in the wall system. The outer vertical edges of the MSE walls were to consist of a drainage layer of stone and geogrid materials contained by a wire mesh basket facing, with fabric installed to separate the stone material of the drainage layer from the select backfill material placed behind (inbound) the drainage layer. Common backfill material was to be used inbound of the limits of the MSE walls to create the remainder of the embankments. The walls ultimately were to receive a cast-in-place concrete facing that would connect to the soil reinforcement and conceal the wire baskets used to form the outer face of the walls during construction.

39. Construction of the embankments and roadway commenced in June 2005, under contract by DelDOT with Kuhn Construction Co. (“Kuhn”). Major work items under that contract also included the temporary realignment of SR-1, the reconstruction of access roads to Delaware Seashore State Park, extensive environmental mitigation, utility relocation, interim park improvements and construction of the new roadway approaches to meet the proposed new bridge over the Indian River Inlet.

H. MSE Wall Problems Emerged

40. As MSE wall construction was nearing completion, excessive vertical settlement, bulging, sagging and other deformation of the embankment walls was observed on both the north and south embankments.

Additional measurements and observations indicated that one embankment had “moved” in a westward direction, while tilt between the top and bottom of the walls exceeded 6 inches in certain locations. In addition, horizontal bulging was common along the face of certain walls, with a bulge of nearly 12 inches measured in one location as of June 2007. Localized bulging of almost 3 inches per basket was observed along other walls.

41. Contract requirements specified by Figg/MACTEC limited the permissible deformations within the temporary wall to 1 inch per 10 feet of wall height, with a maximum horizontal bulge of 2 inches from the face of the wall. Both of these criteria were significantly exceeded, with movements still continuing as of the Fall of 2007.

42. Movement also occurred within the contiguous approaches carrying SR-1 to the existing bridge, as well as at the newly constructed access roads. At the ground surface, lateral movements of more than 9 inches were measured more than 100 feet from the new embankments’ footprint. Those movements continued into the Fall 2007, resulting in significant maintenance costs along SR-1 and Access Road B.

43. MACTEC episodically updated settlement information, but without explanation or advice as to how to address the growing information discrepancies. For instance, MACTEC’s original 95% consolidation forecast at Station 285+00 was 15 inches after 6 months, which was changed in November 2007 to an estimate of 32 inches after 16 months (more than twice the original amount advised by MACTEC). The original 35 inches of settlement forecast at Station 289+00 after

7 months was changed to 61 inches after 12 months; and the original 36 inches of settlement forecast at Station 292+70 after 8 months was changed to 57 inches after 9 months. It became increasingly clear to DelDOT that MACTEC's information was not reliable.

I. DelDOT Commissioned An Independent Geotechnical Investigation

44. The discrepancies between the information provided by MACTEC concerning what was to be expected and the actual field conditions resulted in multiple work stoppages and delays.

45. By early 2007, the Federal Highway Administration ("FHWA"), which was funding a significant portion of the cost of the Project, approved a proposal to engage an independent consultant to evaluate, on an expedited basis, the unanticipated settlement experienced with the embankments.

46. On March 8, 2007, a Critical Need for Professional Services was issued by DelDOT for performance of an independent investigation and analysis of the south approach embankment. Geocomp Corporation ("Geocomp"), recommended by FHWA, was contracted to provide the analysis.

47. Geocomp's independent investigation was limited to the south embankment approach in order to expedite its work and to focus on the areas with the largest deformations and embankment stability risk and because similar geotechnical conditions and soil mechanics apply to both the north and south embankments.

48. Geocomp's analysis indicated that, at the time of testing in May 2007, the south embankment's factor of safety was below the established design factor of safety of 1.30.

49. Geocomp also advised that the total long-term vertical consolidation settlement was expected to be approximately 20% greater than originally stated by MACTEC.

50. Geocomp further advised that horizontal displacement of the clay layer was expected to result in additional vertical settlement at the analysis location; in other words, as the soft clay layer squeezed outward, the overlying soils would continue to sink vertically and the MSE walls would continue to move, twist and tilt.

51. Finally, Geocomp predicted another 6 inches of secondary compression vertical settlement over the subsequent 30 years at the analysis location.

J. DelDOT's Assessment Of The Embankment Condition Implications

52. By late Summer and early Fall of 2007, it was clear to DelDOT that the observed and anticipated behavior of the newly-constructed roadway approach embankments was not consistent with the information provided by MACTEC to DelDOT, particularly with respect to consolidation of the embankments.

53. DelDOT analyzed the implications of those shortcomings in an October 2007 "White Paper". Among DelDOT's contemporaneous considerations at the time were the following:

> (a) The excessive vertical settlement would require additional fill just to achieve the current requirements for finished grade elevations. The addition of any more weight, however, would cause further embankment movement and possible instability.
>
> (b) Unless additional surcharge/excess fill were to be placed above and beyond the finished grade requirements to accelerate consolidation, predictions indicated that the consolidation requirements would not be met within the then-current schedule constraints, thereby creating a continual maintenance

concern of repaving approaches to provide a smooth riding surface.

(c) A minimum of nine to twelve months additional time would be needed to properly investigate and analyze all appropriate locations within each approach embankment and to develop fully mitigative measures that would maintain stable embankments and satisfy all project criteria. Because the soil conditions at the site had proven to be inconsistent with what DelDOT had expected based on MACTEC's earlier advices, completion of such design would involve no guarantees of successful accomplishment. Moreover, completion of additional analysis would further postpone delivery of a safe, stable, inspectable, fully functioning replacement bridge.

(d) If additional fill was placed, it was expected that the fill would need to be placed in incremental subsequent lifts of material with significant wait times between lifts in order to maintain safety and stability. The wait times then would cause further delays to the bridge contract, as the approaches were required for bridge contractor access.

(e) It was not deemed advisable to proceed with the design-build contract until the embankment issues had been resolved and future directions determined. The uncertainties associated with the embankment resolution would increase the design-builder's risk and therefore the price because of the unknown impact any future earthmoving operations might have on the design-builder's access and sequence of work.

(f) The wire baskets forming the temporary wall facing along the east walls were not galvanized due to the expectation that they would be buried below grade within four years of placement. However, corrosion had been far more aggressive than expected. The additional exposure time associated with the bridge delays could render the wire baskets useless prior to the backfilling operations to the east upon the completion of the new bridge. Loss of the wire baskets would likely result in further bulging of the geogrid material at the wall face, increased strains within the geogrid material, and loss of stone due to movement along the wall face.

(g) The geogrid materials used were only rated for 4500 hours of Ultraviolet (UV) exposure before becoming less resistant to loss of load capacity and/or structural integrity (The average annual

daylight hours in Delaware is 4,448 per year). Reduced capacities and integrity would likely lead to additional deformations and eventually localized rupture of the material. This could affect the system's ability to retain the backfill material and restrain the cast-in-place concrete wall facing.

(h) The horizontal position and alignment of the MSE walls were not expected to stabilize fully until the post-consolidation period. However, it was not practical to construct the finished wall facing with up to six inches of additional horizontal movement over the subsequent seven years, as well as various levels of differential movement, both vertically and horizontally. Maintaining a smooth, neat finished wall surface would be impossible.

(i) The anticipated long-term wall deformations associated with the substantial secondary compression settlement prediction of six inches over the following thirty years would result in an extremely dangerous situation with the proposed rigid wall facing. The large cast-in-place concrete wall panels were to be restrained by uniaxial geogrid materials that could be excessively strained as a result of any long-term movement between the reinforced earth system and the wall facing. This critical connection would be inaccessible to hands-on or visual inspections resulting in a limited confidence level over the safety and serviceability of the wall facing subjected to continued movements. The long-term strength of this connection would be further compromised due to extended ultraviolet (UV) exposure until the wall facing was finally completed.

(j) The proposed cast-in-place concrete wall facing would need to be replaced with an alternative system. Short of providing a completely independent wall, the wall supplier had no proven method of retrofitting the existing embankment system with an alternative wall facing.

(k) If the concrete facing that was to be installed on the embankments were to be constructed as designed (assuming that was even possible given the wall bulging), it was expected that removal and replacement would be required within thirty years because of cracking due to differential settlement. The replacement cost of the wall facing could be in excess of $5 million.

(l) Periodic corrective measures would be needed to

> address the differential settlement between the new bridge and the approach embankments. Items affected would include bridge approach slabs, sidewalks, barrier heights, and the sand by-pass system support. The cost to repair these items over the life of the structure could exceed $1 million.
>
> (m) If a fully independent wall system were constructed, deep foundations would be most appropriate for wall heights of twenty feet or more. Any deep foundations would need to account for below grade ground movements and would need to be strengthened accordingly. It was anticipated that a drilled shaft foundation type would be required. This solution would be very costly and would likely exceed $10 million in foundation costs alone.

K. Options Considered By DelDOT

54. By October 2007, neither Figg nor MACTEC had been able to adequately explain (a) why the vertical settlement had been so much greater than originally estimated, (b) why the period of significant settlement was continuing for so much longer than originally estimated or (c) why the horizontal settlement (about which MACTEC had not informed DelDOT) was occurring. DelDOT did not trust the accuracy of MACTEC's advices regarding expected embankment settlement and -- given Geocomp's very different assessment -- questioned how successful any mitigative measure might be and whether settlement and movement would continue.

55. Based on its detailed analysis, DelDOT considered several options related to embankment solutions and bridge configuration, including: (a) partial removal and reconstruction of the embankments using lightweight materials such as foamed concrete; (b) additional ground improvements, including additional surcharging and wick drain installation; and (c) various bridge span configurations for different clearances.

56. However, at that point, the long-term effects that the excessive deformations and environmental exposure likely were having on the MSE wall systems' safety and serviceability were unknown.

57. Moreover, prospective bidders on the design-build bridge portion of the Project had advised DelDOT that they were unwilling or unable to accept or undertake the risks associated with the condition of the embankments, and that leaving the embankments in place would either discourage bidders entirely or would result in significantly higher bids that reflected the enormous risks associated with accepting those embankments and their associated deficiencies.

58. As a result, DelDOT determined that the potential for possibly mitigating the deficiencies -- short of removing the embankments -- would result in additional unacceptable delays, would compromise criteria and lower standards that were required for the Project, and would pose continual and costly maintenance, construction and safety problems and risks.

59. Ultimately, DelDOT concluded that it would be prudent, given the exigent circumstances, to increase the length of the bridge structure with elevated concrete piers to support the roadway approaches, coupled with removal of a large portion of the embankments (retaining only a small section leading to the approaches).

L. FHWA's Concurrence

60. In late November 2007, DelDOT furnished its "White Paper" to the United States Department of Transportation's Federal Highway Administration ("FHWA"), primarily to seek FHWA's concurrence with the recommendation made by DelDOT for proceeding forward.

61. By letter dated December 6, 2007, FHWA advised that it, too, believed that partial embankment removal was the only prudent choice "to minimize safety concerns for the traveling public, project delays, and future maintenance consideration."

M. DelDOT's Further Investigation

62. DelDOT engaged the engineering firm of O'Connell & Lawrence, Inc. ("OCL") to conduct an independent investigation to determine what had gone wrong and who bore responsibility for the failure of the embankments. OCL, in turn, retained Golder Associates Inc. ("Golder Associates"), a leading international geotechnical consulting firm, as a sub-consultant. OCL and Golder Associates' personnel were on-site daily during the demolition and the deconstruction of the embankments and MSE walls, which took place from May through December of 2008.

63. As to the embankments, OCL and Golder Associates collected samples and performed in-place density testing of the embankment materials. Laboratory analyses were performed on the samples to determine compliance with material specifications. As the embankments were deconstructed, the geogrid soil reinforcement was located and measured to determine its compliance with the plans and specifications. Samples of the geogrid and filter cloth material were also taken.

64. The MSE walls were deconstructed in a controlled manner that allowed OCL and Golder Associates personnel to inspect the layers of the MSE walls as they were demolished. OCL and Golder Associates personnel also inspected the length of the uniaxial reinforcement

(geogrid) and compared it with the requirements of the approved shop drawings. The geogrids were measured and then located with global positioning equipment. Samples were taken to confirm that the correct type of geogrid material was used in the construction of the walls.

65. Based on their observations during the deconstruction of the embankments and MSE walls, OCL and Golder Associates were able to determine that the MSE walls had been built in substantial conformance with the design specifications; nothing was observed to indicate that the contractor, Kuhn, caused or contributed to the embankment deficiencies.

N. Initiation Of DelDOT's Errors & Omissions Process

66. The DelDOT/Figg Agreement requires Figg to "meet with [DelDOT] and others in the event that any matter arising out of [the] Agreement cannot be resolved in a mutually satisfactory manner," and further provides that Figg must "agree . . . subject to any and all defenses available at law, in equity and in contract, to participate [in] any law suit, administrative and/or arbitration proceeding in which its work pursuant to [the] Agreement . . . shall be the subject of any such proceeding." MACTEC agreed, pursuant to its subconsultancy agreement with Figg, similarly to be bound.

67. Attached to and made a part of the DelDOT/Figg Agreement is DelDOT's Policy Implement No. A-26, which sets forth DelDOT's errors and omissions policy (the "E&O Policy"). Pursuant to that policy, "errors" are defined as "unknown, ignorant or unintentional deviations from accuracy or correctness," which may "arise from mistaken judgment, misplaced confidence, incorrect belief as to the existence

or effect of matters of fact, or other actions", and may also include "failure to meet established Delaware requirements, or design standards for [the] type of project." "Omissions" are defined as "missing or unmentioned detail or requirements through either failure to perform properly, neglect, or failure to use reasonable care," including "failure to identify and implement cost-effective solutions."

68. Pursuant to that E&O Policy, Figg and MACTEC's professional responsibility did not terminate with "acceptance of the product and/or final payment for its development," and the failure "to discover the error and/or omission during the design, review or implementation of the Project [did] not relieve [Figg or MACTEC] of their responsibility to correct the effects of the error and/or omission."

69. The E&O Policy also outlined procedures for the resolution of an identified error or omission. As part of that policy, DelDOT sought Figg and MACTEC's cooperation in assessing both the errors and omissions and the financial responsibility for the costs arising therefrom.

70. By letter dated October 23, 2008, DelDOT's Secretary formally advised Figg and MACTEC that DelDOT "continues to have serious concerns regarding the engineering studies and design furnished by Figg and MACTEC on [the] project," and stated that the parties should "begin consideration and discussion of the 'error and/or omissions' resolution procedures called for under the agreement," including "the procedural framework and timing . . . for

[DelDOT] to review its findings with [Figg and MACTEC], to determine the required action to correct any error and/or omission and to analyze the cost impact of the resolution."

71. Thereafter, in furtherance of that E&O Policy process, DelDOT and its consultants were allowed access to, and review of, Figg and MACTEC's files for the first time.

72. As part of the E&O Policy process, DelDOT's Project Manager transmitted, by letter dated July 23, 2010, provisional findings of errors and omissions on the part of Figg and MACTEC; accompanying that letter were assessments by both Golder Associates and OCL. Figg and MACTEC's responses and suggested modifications, if any, were sought pursuant to the E&O Policy.

O. DelDOT's Findings

73. DelDOT's investigation -- as reflected in the provisional findings of errors and omissions that were transmitted on July 23, 2010 -- revealed various warnings from other Project participants as to the potential for undrained lateral shear deformation and differential settlement in the soft clay foundation. MACTEC had failed to address those potential problems, leading Golder Associates to opine that MACTEC had not met the applicable standard of care.

74. Among the other conclusions and opinions expressed by Golder Associates and adopted by DelDOT were the following:

(a) MACTEC allowed the factor of safety for embankment stability to drop below minimally acceptable levels during and upon completion of construction.

(b) MSE approach embankments on the Project settled and deformed substantially more than MACTEC had advised DelDOT would be the case, with MACTEC erroneously only having calculated primary consolidation settlement in

the soft clay and not having taken into account settlement from other mechanisms.

(c) MACTEC erred by not reporting any settlement in the upper sand stratum, which was located between the embankment and the soft clay.

(d) MACTEC erred in its calculation of settlement from primary consolidation.

(e) MACTEC erred by not reporting any vertical embankment settlement caused by lateral undrained shear deformation in the soft clay.

(f) MACTEC erred in its calculation of the magnitude of settlement from secondary compression.

P. MACTEC's Refusal To Participate In The Errors & Omissions Policy Process

75. Figg cooperated in the E&O Policy process. However, despite being contractually obligated to participate in the E&O Policy process, MACTEC challenged the legality of the process, advised that it would not participate as a party to that process, and maintained that its role would be solely advisory to Figg.

76. DelDOT responded that MACTEC's refusal to participate was inconsistent with the terms of its obligations under the Figg/MACTEC Subconsultancy Agreement and its conduct to that point in time.

77. On October 20, 2010, DelDOT's Project Manager, along with representatives of both Golder Associates and OCL, met with Figg's and MACTEC's representatives and afforded them the opportunity to ask questions regarding DelDOT's findings.

78. DelDOT also afforded Figg and MACTEC the opportunity to provide written submissions in technical response to the results of DelDOT's investigation. Instead, after four months' review of DelDOT's findings, MACTEC submitted a letter from its counsel on

November 19 that offered no substantive, technical refutation that merited any change in DelDOT's or its subconsultants' findings but, instead, generally challenged DelDOT's decision to remove the embankments.

79. Because MACTEC refuses to cooperate and participate in the resolution of financial responsibility of Figg and MACTEC for MACTEC's multiple errors and omissions, DelDOT files this suit.

80. As a result of MACTEC's errors and omissions for which Figg and MACTEC are responsible, DelDOT has incurred and will incur significant costs. Not only had DelDOT incurred initial costs to design and construct the original earthen embankments -- largely removed -- but it also has, among other things, now incurred the cost of design for the removal of portions of those embankments, the de-construction cost to remove portions of the embankments, the cost to re-design the roadway approaches to tie into the new bridge approaches, the cost to construct the approaches on a raised structure rather than earthen fill, and other consequential costs.

81. Embankment removal work has been completed, and a contract for the remaining roadway approach work and bridge demolition has been advertised. It has been determined that settlement still continues on portions of the embankments left intact and is expected, under current conditions, to continue long-term, despite the fact that those portions of the embankments have sat undisturbed for approximately 2 years since the embankment removal contract was completed.

COUNT I
(Breach of Contract – Figg)

82. DelDOT incorporates by reference, as if set forth in full herein, the averments of Paragraphs 1 through 81 of this Complaint.

83. Figg has a contractual obligation to DelDOT to ensure that work under the Agreement is performed so as to avoid errors and omissions, as those terms are defined in the DelDOT/Figg Agreement, and to be responsible for the errors and omissions of its subconsultants, including MACTEC.

84. MACTEC's numerous errors and omissions constituted a breach of that contractual obligation, for which Figg bears ultimate responsibility.

85. DelDOT has performed its obligations and conditions precedent under the Agreement.

86. DelDOT has suffered damages as a result of MACTEC's errors and omissions and Figg's breaches of the Agreement.

COUNT II
(Breach of Contract – MACTEC)

87. DelDOT incorporates by reference, as if set forth in full herein, the averments of Paragraphs 1 through 86 of this Complaint.

88. MACTEC expressly was identified in the DelDOT/Figg Agreement as a subconsultant to Figg and, pursuant to the terms of that Agreement, the Agreement was to apply to and bind MACTEC as fully and completely as Figg was bound and obligated to DelDOT.

89. Figg and MACTEC entered into the Figg/MACTEC Subconsultancy Agreement expressly for the purpose of having MACTEC perform a portion of Figg's work under its Agreement with DelDOT, and, in so

contracting, Figg and MACTEC both intended that DelDOT be the primary beneficiary of the work that MACTEC was to perform under the Figg/MACTEC Subconsultancy Agreement.

90. As a result of its status as an intended third party beneficiary of the Figg/MACTEC Subconsultancy Agreement, DelDOT was owed a contractual obligation by MACTEC to avoid errors and omissions, as those terms are defined by the DelDOT/Figg Agreement.

91. MACTEC breached its contractual obligation to DelDOT by committing numerous errors and omissions in the performance of its work.

92. DelDOT has been damaged as a result of MACTEC's breaches.

COUNT III
(Negligent Provision of Information – MACTEC)

93. DelDOT incorporates by reference, as if set forth in full herein, the averments of Paragraphs 1 through 92 of this Complaint.

94. In undertaking geotechnical studies and furnishing information based on those studies for use on the Project, MACTEC functioned as an information provider, and had a duty to ensure that the information that it provided was accurate, based on DelDOT's pecuniary interest in that information.

95. MACTEC, in fact, supplied information that was inaccurate and replete with errors and omissions.

96. MACTEC failed to exercise reasonable care in obtaining, analyzing and communicating the information that it provided to and on behalf of DelDOT.

97. DelDOT justifiably relied on the inaccurate, erroneous and incomplete information furnished by MACTEC and suffered a pecuniary

loss as a result.

WHEREFORE, for the foregoing reasons, DelDOT respectfully requests that the Court enter judgment on its behalf in an amount to be proven at the trial in this matter, along with its attorneys' fees, costs, prejudgment interest and such other relief as the Court deems necessary, just and proper.

STATE OF DELAWARE
DEPARTMENT OF JUSTICE

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