UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF NEW YORK

RSA PROTECTIVE TECHNOLOGIES, LLC, Plaintiff, v. THE PORT AUTHORITY OF NEW YORK AND NEW JERSEY; THORNTON TOMASETTI, INC.; SKANSKA USA, INC.; AECOM, Defendants.	CASE NO.: 18-cv-09960-JGK **THIRD AMENDED COMPLAINT**

Plaintiff RSA Protective Technologies LLC ("Plaintiff"), by and through its attorneys, alleges as follows for its Third Amended Complaint against Defendants The Port Authority of New York and New Jersey ("Port Authority"), Thornton Tomasetti Inc. ("Thornton Tomasetti"), Skanska USA, Inc. ("Skanska USA"), and AECOM (collectively "Defendants"), as Ordered by the Court (Dkt. 113, Exhibit D).[1]

NATURE OF THE CLAIMS

1. This is an action for patent infringement of Plaintiff's U.S. Patent No. 8,215,865 ("the '865 patent" or "the Asserted Patent"). The '865 patent is directed to an anti-ram system and method of constructing shallow mount bollards. Defendants infringe the Asserted Patent by either importing, making, using, offering, or selling infringing shallow mount bollards or for inducing others to make, use, sell, or offer to sell shallow mount bollards that infringe the '865

[1] Changes between the Second and Third Amended Complaints can be seen in red-line in Exhibit E.

patent.

THE PARTIES

RSA Protective Technologies

2. Plaintiff is a limited liability corporation organized and existing under the laws of Delaware, having its principal place of business at 223 Independence Drive, Claremont, CA 91711.

3. Plaintiff develops and implements large scale civil infrastructure inventions with a focus on public safety. RSA Protective Technologies has been in business for over seventeen years.

4. Plaintiff designs and manufactures shallow mount bollards and routinely bids on and provides shallow mount bollards for projects in New York City and around the world.

5. Plaintiff owns the Asserted Patent.

The Port Authority of New York and New Jersey

6. Upon information and belief, Port Authority is an authority created by a compact between the States of New York and New Jersey in 1921 (N.Y. Unconsol. Laws§ 6401 et. seq, N.J. Stat. Ann. § 32 1-1 et. seq.) with the consent of Congress of the United States of America with a principal place of business at 225 Park Avenue South, New York, New York, 10003.

7. Upon information and belief, the Port Authority owns, rents, or controls land on which shallow security bollards have been installed, including but not limited to LaGuardia Airport, JFK Airport, Newark Liberty International Airport, Port Authority Bus Terminal, the World Trade Center, Journal Square Transportation Center, Harrison Station PATH station, and

the Exchange Place PATH station. These security bollards have been designed and/or manufactured by, but not limited to, Thornton Tomasetti, Guardiar Solutions, Inc. (formerly Secure USA, Inc.) ("Guardiar/Secure USA"), Nasatka, and AECOM.

Thornton Tomasetti

8. Upon information and belief, Thornton Tomasetti is a domestic business corporation organized and existing under the laws of the state of New York with its principal place of business at 51 Madison Avenue, New York, New York 10010. Upon further information and belief, Thornton Tomasetti has a second office in New York City at 40 Wall Street, 18th Floor New York, NY 10005-1304.

9. Upon information and belief, Thornton Tomasetti provides engineering design, investigation and analysis services in the areas of structural, construction, and façade engineering.

10. Upon information and belief, Thornton Tomasetti is a designer of shallow mount bollards. Upon further information and belief, Thornton Tomasetti's shallow mount bollards are used on land owned, rented, or controlled by Port Authority, including but not limited to the World Trade Center, (including but not limited to One World Trade), LaGuardia Airport, and JFK Airport, as well as elsewhere in New York City, including but not limited to Hudson Yards.

11. Upon information and belief, Weidlinger & Associates ("Weidlinger") is an engineering firm that Thornton Tomasetti acquired. Upon further information and belief, Weidlinger & Associates also designed and manufactured shallow mount bollards for use in New York City, including but not limited to on land owned, rented, or controlled by Port Authority.

Skanska USA

12. Upon information and belief, Skanska USA is a corporation organized under the laws of New York, with its principal place of business at 350 Fifth Avenue, 32nd Floor, New York, New York 10118.

13. Upon information and belief, Skanska USA is a construction and development company. Upon further information and belief, Skanska USA managed the construction of various New York City projects including those for the Port Authority, including but not limited to LaGuardia Airport, JFK Airport, Moynihan Train Station, and, the World Trade Center, in which they managed the bidding, selection, purchase, distribution, and installation of shallow mount security bollards. Upon further information and belief, those bollards selected, purchased, distributed, and installed by Skanska USA were designed or manufactured by companies including, but not limited to, Guardiar/Secure USA and Thornton Tomasetti and/or Weidlinger.

AECOM

14. Upon information and belief, AECOM is a corporation registered to do business in New York with a principal place of business at 605 3rd Avenue, New York, New York 10158.

15. Upon information and belief, AECOM is a multinational engineering, design, and construction management company. Upon further information and belief, in 2010 AECOM purchased Tishman Construction Corporation, a construction management firm, which is now a wholly owned subsidiary of AECOM, and known as AECOM Tishman. AECOM Tishman has a principal place of business at 100 Park Avenue, 5th Floor, New York, NY 10017.

16. Upon information and belief, AECOM, Tishman Construction Corporation, and AECOM Tishman managed the construction of various New York City projects including those

for the Port Authority, including but not limited to the Journal Square Transportation Center and the World Trade Center, in which they managed and otherwise participated in the bidding, selection, purchase, distribution, manufacture, and installation of shallow mount security bollards. Upon further information and belief, those shallow mount bollards selected, purchased, distributed, manufactured, and installed by AECOM and Tishman Construction Corporation were designed and/or manufactured by companies including, but not limited to, Nasatka, while others were designed and/or manufactured by AECOM itself.

17. Upon information and belief, Defendants Port Authority, Thornton Tomasetti, Skanska USA, and AECOM are co-conspirators, aiders, and abettors; were at all times acting within the scope of such relationship, and actively participated in and/or subsequently ratified and adopted each and all of the acts or conduct alleged herein with full knowledge of all the facts and circumstances, including with full knowledge of each and every wrongful act committed, and of Plaintiff's damages caused therefrom.

JURISDICTION AND VENUE

18. This action arises under the patent laws of the United States, 35 U.S.C. § 1 *et seq.*, including 35 U.S.C. § 271. This Court has subject matter jurisdiction under 28 U.S.C. §§ 1331 and 1338(a).

19. This Court has personal jurisdiction over Port Authority because it is organized under the laws of New York and has a principal place of business in New York City. This Court also has personal jurisdiction over Port Authority because it directly infringed the Asserted Patent by, at least, using infringing products in New York City. Additionally, the States of New York and New Jersey waived The Port Authority's sovereign immunity by enacting N.Y.

Unconsolidated Laws§ 7101 et. seq.

20. This Court has personal jurisdiction over Thornton Tomasetti and Skanska USA because they are organized under the laws of New York and have principal places of business in the Southern District of New York. This Court also has personal jurisdiction over Thornton Tomasetti and Skanska USA because they infringed the Asserted Patent in this district by at least making, using, selling, offering to sell and/or importing infringing products or inducing others to make, use, sell or offer to sell infringing products.

21. This Court has personal jurisdiction over AECOM because it has a principal place of business in the Southern District of New York, is registered to do business in New York, having been assigned Department of State ID #4477453, and infringed the Asserted Patent in this district by at least, making, using, selling, offering to sell and/or importing infringing products or inducing others to make, use, sell or offer to sell infringing products.

22. Venue is proper in this district pursuant to 28 U.S.C. §§ 1391(b), 1391(c), 1391(d), and/or 1400(b) with respect to Port Authority, Skanska, and Thornton Tomasetti because they are organized under the laws of New York, have regular and established places of business in this District, and committed acts of infringement in this District. Venue is proper with respect to AECOM because it has a regular and established place of business in this District and committed acts of infringement in this District.

FACTUAL BACKGROUND

Asserted Patent

23. On July 10, 2012, the United States Patent and Trademark Office ("USPTO") duly and legally issued the '865 patent, entitled "Anti-Ram System and Method of Installation."

A copy of the ’865 patent is attached as Exhibit A.

24. The application leading to the ’865 patent published, and was available to the public, on July 1, 2010, as Publication No. US 2010/0166498 A1.

25. Plaintiff owns all right, title, and interest in the ’865 patent, including the right to use and enforce the ’865 patent.

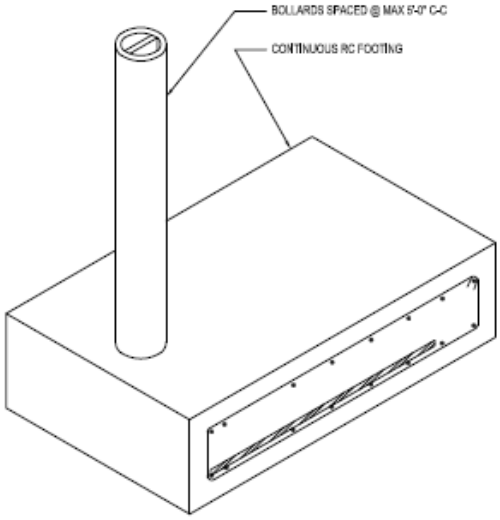
26. The ’865 patent claims an anti-ram system and method of constructing shallow mount bollards.

27. Upon information and belief, Defendants had knowledge of the ’865 patent as RSA provided notice of the ’865 patent to Defendants Skanska and Port Authority on multiple occasions including but not limited to at the time it submitted its quotes in support of its bids to provide RSA bollards for Port Authority projects including but not limited to: LaGuardia and JFK airports and the World Trade Center. Defendant AECOM received notice of the ’865 patent at least as of the time RSA submitted bids to provide RSA bollards for the World Trade Center in 2013, Hudson Yards in 2014, the Barclays Center and the Turkevi Center in 2017, and One Vanderbilt in 2018.

28. RSA Protective Technologies was, and continues to be, the owner of the ’865 patent.

The Thornton Tomasetti/Weidlinger Accused Products

29. Thornton Tomasetti (and formerly Weidlinger) designs and sells shallow mount bollards with the following structure:



30. On information and belief, the Thornton Tomasetti/Weidlinger shallow bollard practices and infringes the ’865 patent.

31. On information and belief, Thornton Tomasetti designs and engineers its shallow mount bollards, either directly or through intermediaries (including distributors, retailers, and others), ships, distributes, offers for sale, sells, and advertises the infringing bollards in the United States, the State of New York, and in this district. Upon further information and belief, Thornton Tomasetti (and formerly Weidlinger) instructs others to manufacture its shallow mount bollards.

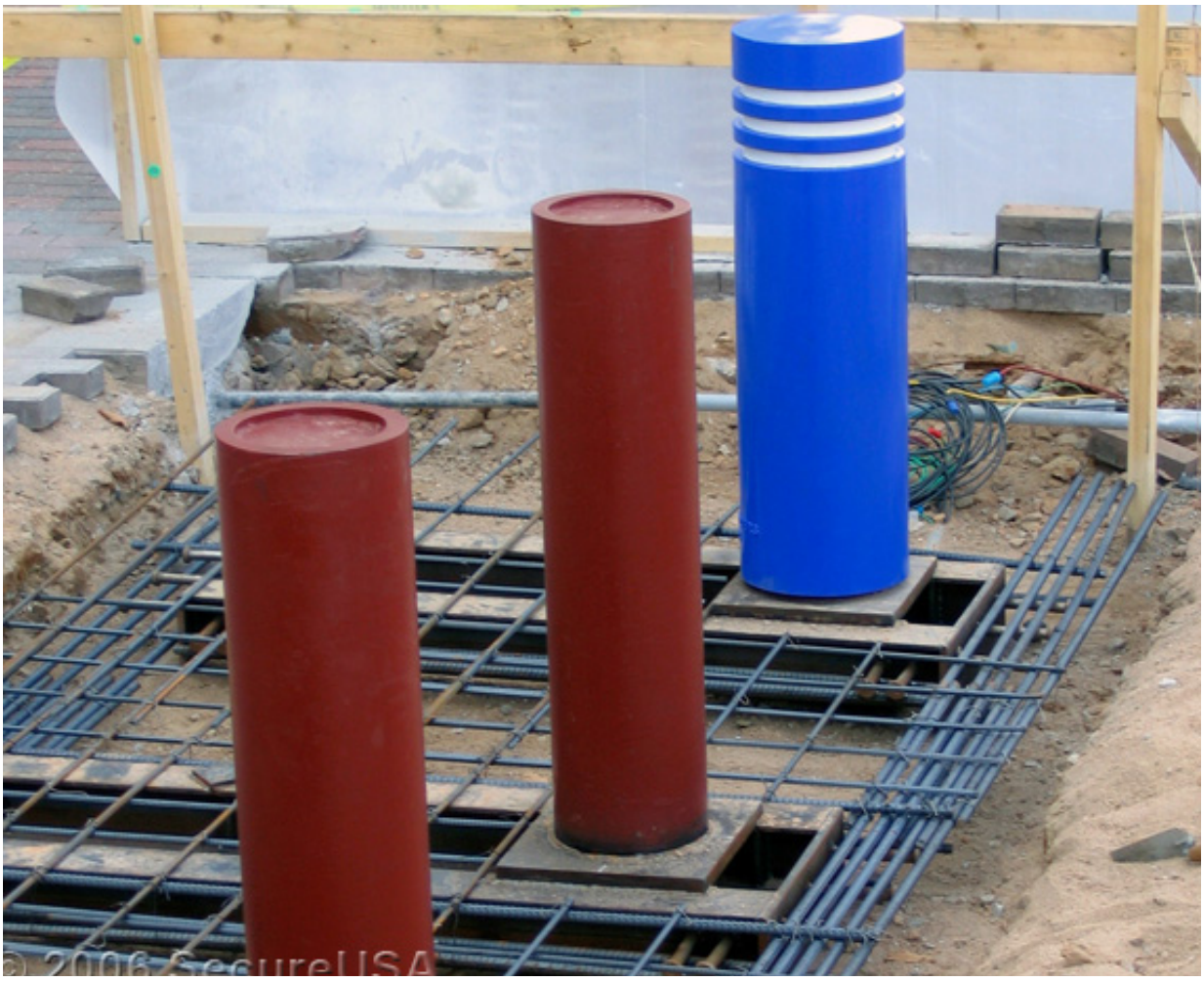
32. On information and belief, Skanska USA selected, purchased, distributed, and installed shallow mount bollards designed by Thornton Tomasetti/Weidlinger on more than one occasions, including but not limited to in 2014 when it purchased, distributed, and installed infringing bollards into JFK and LaGuardia airports.

33. On information and belief, Port Authority began using Thornton Tomasetti/Weidlinger designed shallow mount bollards at least as early as 2014 when these

shallow mount bollards were installed into JFK and LaGuardia airports, and will continue to use the infringing bollards.

The Guardiar/Secure USA Accused Products

34. Guardiar/Secure USA designs and sells shallow mount bollards with the following structure:



35. On information and belief, the Guardiar/Secure USA shallow bollard practices and infringes the ’865 patent.

36. On information and belief, Guardiar/Secure USA designs, engineers, and

manufactures its shallow mount bollards, either directly or through intermediaries (including distributors, retailers, and others), ships, distributes, offers for sale, sells, and advertises the infringing bollards in the United States, the State of New York, and in this district.

37. On information and belief, Skanska USA selected, purchased, distributed, and installed shallow mount bollards designed by Guardiar/Secure USA on more than one occasions, including but not limited to in 2013 when it purchased, distributed, and installed infringing bollards into The Moynihan Train Station.

38. On information and belief, Port Authority began using Guardiar/Secure USA designed shallow mount bollards at least as early as 2015 when these shallow mount bollards were installed into the PATH Station at Exchange Place, and will continue to use the infringing bollards.

The Nasatka Accused Products

39. Upon information and belief, Nasatka designs, manufactures, and sells shallow mount bollards with designs including those depicted in sealed Exhibit B, which practice and infringe the ’865 patent.

40. Upon information and belief, Nasatka designs, engineers, and manufactures its shallow mount bollards, either directly or through intermediaries (including distributors, retailers, and others), ships, distributes, offers for sale, sells, and advertises the infringing bollards in the United States, the State of New York, and in this district.

41. Upon information and belief, AECOM selected, purchased, distributed, and installed shallow mount bollards designed by Nasatka, including but not limited to in 2018 when it purchased, distributed, and installed infringing bollards into the Journal Square Transportation

Center.

42. Upon information and belief, Port Authority is currently using Nasatka shallow mount bollards and will continue to use the infringing bollards.

The AECOM Accused Products

43. Upon information and belief, AECOM designs, manufactures, sells, and installs shallow mount bollards with designs including those depicted in sealed Exhibit C, which practice and infringe the ’865 patent.

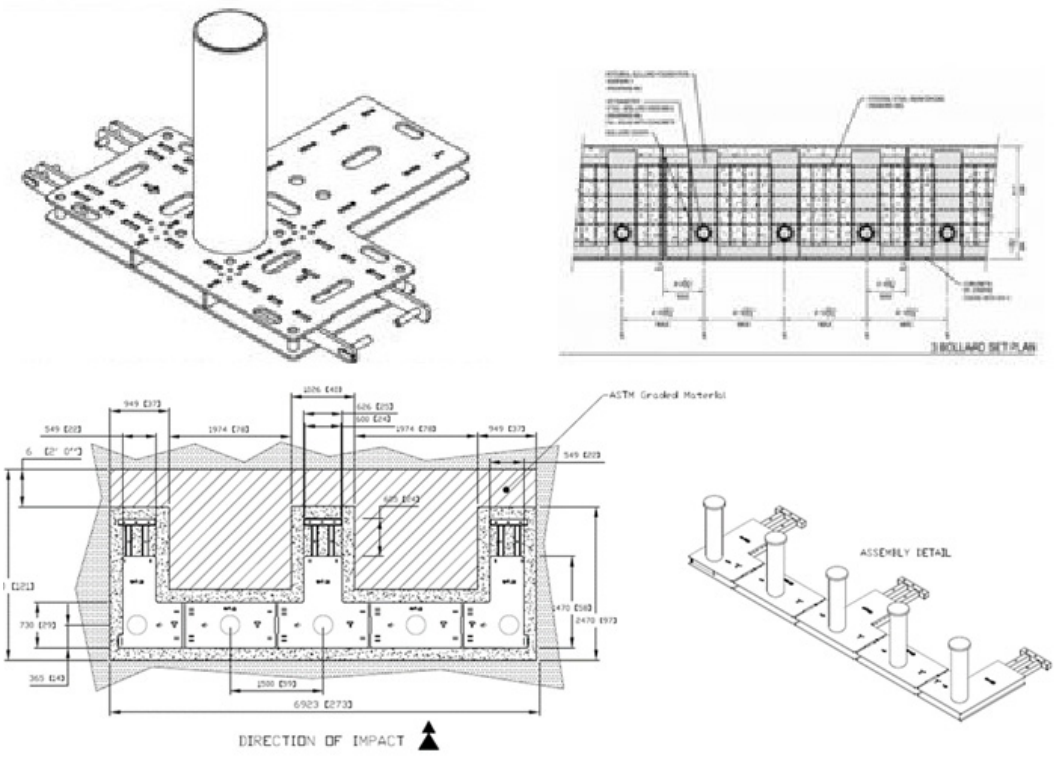
44. Upon information and belief, AECOM designs, engineers, and manufactures its shallow mount bollards, either directly or through intermediaries (including distributors, retailers, and others), ships, distributes, offers for sale, sells, advertises, and installs the infringing bollards in the United States, the State of New York, and in this district.

45. Upon information and belief, AECOM designed, manufactured, and installed its shallow mount bollards, including for use at the World Trade Center.

46. Upon information and belief, Port Authority is currently using AECOM shallow mount bollards and will continue to use the infringing bollards.

The Ameristar Accused Products

47. Ameristar designs, manufactures, and sells shallow mount bollards with the following structures:



48. Upon information and belief, the Ameristar shallow mount bollards practice and infringe the ’865 patent.

49. Upon information and belief, Ameristar designs, engineers, and manufactures its shallow mount bollards, either directly or through intermediaries (including distributors, retailers, and others), ships, distributes, offers for sale, sells, and advertises the infringing bollards in the United States, the State of New York, and in this district.

50. Upon information and belief, Skanska selected, purchased, distributed, and installed shallow mount bollards designed by Ameristar, including but not limited to at Moynihan Train Station.

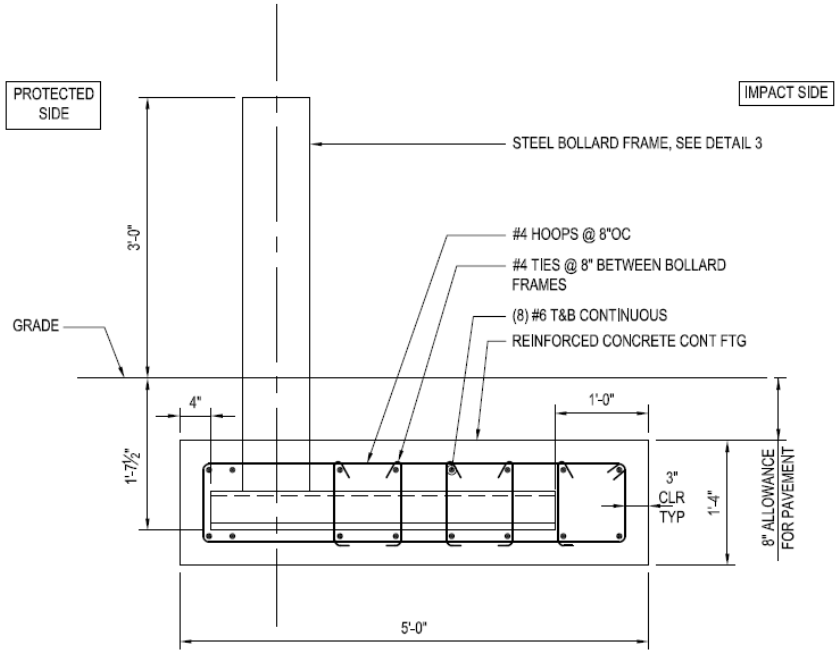
51. Upon information and belief, Port Authority is currently using Ameristar shallow mount bollards and will continue to use the infringing bollards.

Infringement of the '865 Patent by Thornton Tomasetti/Weidlinger Shallow Mount Bollards

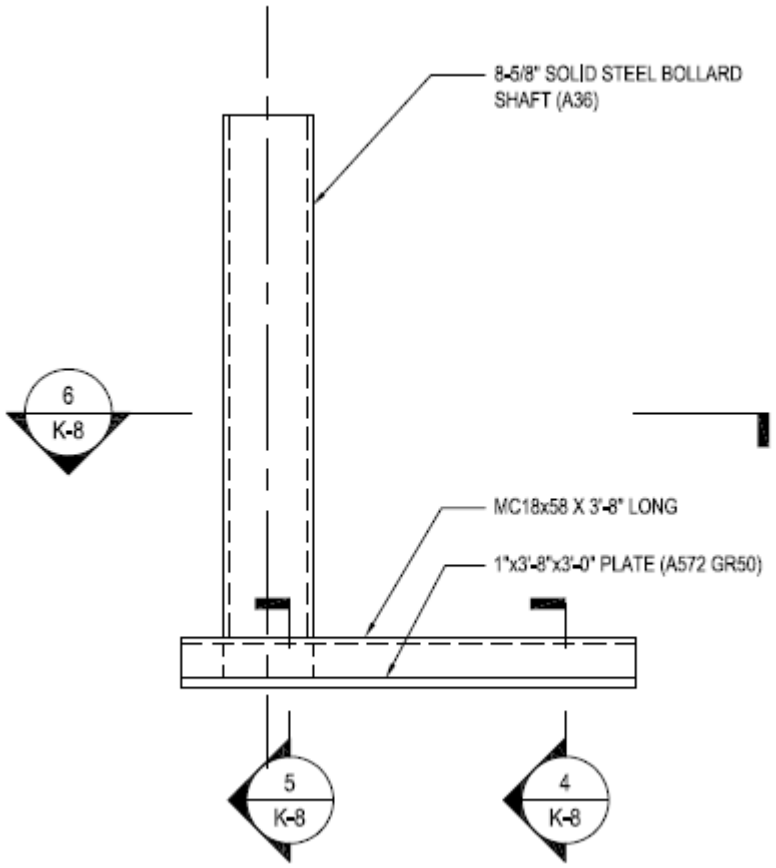
52. The shallow mount bollards designed by Thornton Tomasetti/Weidlinger infringe the claims of the '865 patent.

53. The Thornton Tomasetti/Weidlinger shallow mount bollards meet all of the limitation in claim 1 of the '865 patent because, for example:

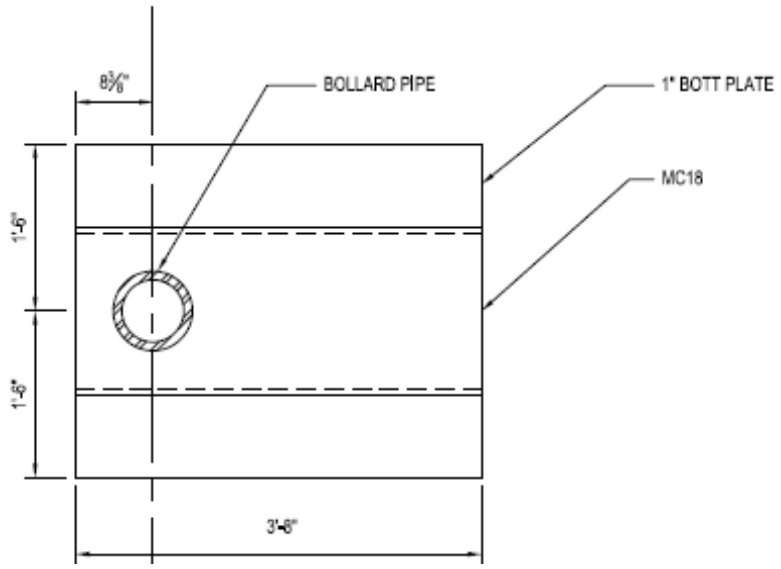
54. Upon information and belief, the Thornton Tomasetti/Weidlinger shallow mount bollards have a base with opposed ends as shown in the following drawing:



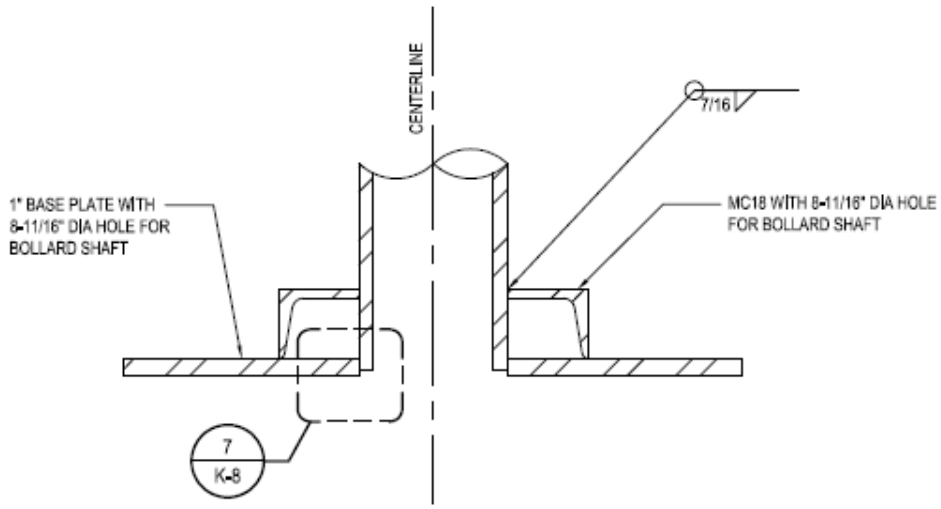
55. Upon information and belief, the Thornton Tomasetti/Weidlinger bollards have "a plurality of structural members," which include reinforced concrete footing, steel channel members, and steel plates, or the equivalent thereof. Upon further information and belief, these structural members intersect with each other and are tied together, or the equivalent thereof, as seen below:



56. For each bollard of the shallow bollard structure, at least one first structural member extends from a first of the opposed ends if the base to a second of the opposed ends of the base in a first direction intersection with the opposed ends and at least one structural members extends to intersect with the at least one first structural member, or the equivalent thereof. Upon information and belief, the channel member in the base extends from a first of the opposed ends to a second of the opposed ends. As shown below, the steel plates can be seen as one structural member extending to intersect with the channel members.



57. Upon information and belief, the Thornton Tomasetti/Weidlinger shallow mount bollards are secured to the channel members and the plate, shown below, and extends upwardly from the base so as to transmit forces applied to the at least one bollard to the base, or the equivalent thereof.



58. Upon information and belief, the base of the Thornton Tomasetti/Weidlinger shallow mount bollards have been configured to be mounted in a shallow excavation with at least

one bollard extending above grade, or the equivalent thereof. The shallow bollard specifications indicate that the "K-8" model of bollard is named "shallow foundation tapered bollard" and that the "K-12" model is named "reversed shallow foundation tapered bollard.

59. Upon information and belief, the Thornton Tomasetti/Weidlinger shallow mount bollards also have structural members that are configured or tied together to retain within the base supporting media introduced into the base when the base is mounted. The channel members and the steel plate allow the bollard to be supported by media and resist rotation, or the equivalent thereof.

60. The Thornton Tomasetti/Weidlinger shallow mount bollards also infringe dependent claim 2 of the '865 patent, which recites "[t]he bollard structure of claim 1, wherein at least one of the opposed ends is formed by a structural member to which an end of the at least one first structural member is secured." On information and belief, the structural members are secured to one another where they intersect (as seen in the picture in paragraphs 33 and 34), or the equivalent thereof.

61. The Thornton Tomasetti/Weidlinger shallow mount bollards infringe dependent claim 3 of the '865 patent, which recites "[t]he bollard structure of claim 1, wherein the intersecting structural members have axes that extend parallel to a plane of the base." On information and belief, the structural members appear to run parallel to the plane of the base and are equidistant from the base at all points along their length, or the equivalent thereof.The Thornton Tomasetti/Weidlinger shallow mount bollards also infringe dependent claim 4 of the '865 patent, which recites "[t]he bollard structure of claim 1, wherein the base has a height of 3 inches to 14 inches." Upon information and belief, the specification drawing reproduced in

paragraphs 32 and 33 contains measurements of parts of the bollard structure, indicating that the base is between 3 and 14 inches, or the equivalent thereof.

62. The Thornton Tomasetti/Weidlinger shallow mount bollards also infringe dependent claim 5 of the '865 patent, which recites "[t]he bollard structure of claim 1, wherein the plurality of structural members comprise one or more tubular member." Upon information and belief, at least some of the structural members depicted above appear to be tubular, or the equivalent thereof.

63. The Thornton Tomasetti/Weidlinger shallow mount bollards also infringe dependent claim 7 of the '865 patent, which recites "[t]he bollard structure of claim 5, wherein at least one tubular member comprises a tube" because, upon information and belief, the structural members in the images above are long and appear to be hollow, or the equivalent thereof.

64. The Thornton Tomasetti/Weidlinger shallow mount bollards also infringe dependent claim 8 of the '865 patent, which recites "[t]he bollard structure of claim 5, wherein at least one tubular member comprises an comprises an angle." Upon information and belief, at least some of the tubular members appear to be made of two perpendicular pieces, or the equivalent thereof.

65. The Thornton Tomasetti/Weidlinger shallow mount bollards also infringe dependent claim 9 of the '865 patent, which recites "[t]he bollard structure of claim 5, wherein at least one tubular member comprises a channel," because, on information or belief, the tubular members appears to be shaped like a channel, or the equivalent thereof.

66. The Thornton Tomasetti/Weidlinger shallow mount bollards also infringe dependent claim 10 of the '865 patent, which recites "[t]he bollard structure of claim 1, wherein

the plurality of structural members comprises at least one tube" because, on information or belief, at least one of the structural members appears to be a tube, or the equivalent thereof.

67. The Thornton Tomasetti/Weidlinger shallow mount bollards also infringe dependent claim 12 of the '865 patent, which recites "[t]he bollard structure of claim 1, wherein the plurality of structural members comprises at least one angle" because, upon information and belief, at least one structural member appears to be made of two perpendicular pieces, or the equivalent thereof.

68. The Thornton Tomasetti/Weidlinger shallow mount bollards also infringe dependent claim 13 of the '865 patent, which recites "[t]he bollard structure of claim 1, wherein the plurality of structural members comprises at least one channel" because, upon information and belief, at least one structural member appears to be shaped like a channel, or the equivalent thereof.

69. The Thornton Tomasetti/Weidlinger shallow mount bollards also infringe dependent claim 14 of the '865 patent, which recites "[t]he bollard structure of claim 1, wherein the plurality of structural members comprises at least one plate" because, upon information and belief, at least one structural member appears to be a flat structure shaped like a plate, or the equivalent thereof.

70. The Thornton Tomasetti/Weidlinger shallow mount bollards also infringe dependent claim 15 of the '865 patent, which recites "[t] bollard structure of claim 1, wherein the plurality of structural members comprise structural steel members" because, upon information and belief, the structural members are made of steel, or the equivalent thereof.

71. The Thornton Tomasetti/Weidlinger shallow mount bollards also infringe

independent claim 16 of the '865 patent, which states:

> **16**. A bollard structure comprising:
> a plurality of bollards; and
> a base comprising opposed ends and a plurality of structural members which intersect and are tied together, for each bollard of the bollard structure at least one first structural member extending from a first of the opposed ends of the base to a second of the opposed ends of the base in a first direction intersecting with the opposed ends, and at least one structural member extending to intersect with the at least one first structural member;
> each of the plurality of bollards being secured to at least one of the at least one first structural member and the at least one structural member of the base for the respective bollard and extending upwardly from the base so as to transmit forces applied to the at least one bollard to the base;
> wherein the base is configured to be mounted in a shallow excavation with the plurality of bollards extending above grade of the excavation; and
> wherein the at least one first structural member or the at least one structural member or both are configured or tied together to retain within the base supporting media introduced into the base when the base is mounted in the excavation such that the rotation is resisted of a bollard or bollards and the base from an impact against the bollard or bollards.

72. Upon information and belief, the below rendering of the Hudson Yards site, in which Thornton Tomasetti/Weidlinger shallow mount bollards are used, demonstrates a plurality of bollards lined up in a row. The Thornton Tomasetti/Weidlinger shallow mount bollards infringe independent claim 16 for this reason along with those reasons set forth in paragraphs 54-59 above.

73. The Thornton Tomasetti/Weidlinger shallow mount bollards infringe dependent claims 17, 19-21, 23-26, 28-31 for the same reasons set forth in paragraphs 60-70.

74. The Thornton Tomasetti/Weidlinger shallow mount bollards infringe dependent claim 18, which recites "[t]he bollard structure of claim 16, wherein the bollard structure is configured to resist impact from a direction of expected impact and the first direction is parallel to the direction of expected impact, and wherein each of the plurality of bollards is secured to at least one structural member that extends in the first direction." Upon information and belief, the

specification of Thornton Tomasetti/Weidlinger's shallow shallow mount bollards reproduced in paragraph 54 shows that the bollard is configured to resist impact from a vehicle and that the first direction is parallel to the direction of expected impact, and that each bollard is secured to at least one structural member extending in such first direction, or the equivalent thereof.

75. The Thornton Tomasetti/Weidlinger shallow mount bollards infringe dependent claim 32, which recites "[t]he bollard structure of claim 16, comprising a rebar grillage comprising intersecting and tied together rebar members extending coextensively with at least a portion of the base that includes a structural member to which a bollard is secured." Upon information and belief, the Thornton Tomasetti/Weidlinger bollard structures are connected by rebar members that intersect and are tied together and extends with the part of the base that includes the member to which the bollard is secured, or the equivalent thereof. The specification drawing in paragraph 54 refers to "ties between bollard frames."

76. The Thornton Tomasetti/Weidlinger shallow mount bollards also infringe independent claim 33 of the '865 patent, which states:

> **33**. A bollard structure comprising:
> a plurality of bollards; and
> a base comprising opposed ends and a plurality of members which intersect and are tied together, for each bollard of the bollard structure at least one first structural member extending from a first of the opposed ends of the base to a second of the opposed ends of the base in a first direction intersecting with the opposed ends, and at least one structural member extending to intersect with the at least one first structural member;
> each of the plurality of bollards being secured to at least one of the at least one first structural member and the at least one structural member of the base for the respective bollard and extending upwardly from the base so as to transmit forces applied to the at least one bollard to the base;
> at least one of the plurality of members that extend parallel to the ends of the base extending between a structural member to which a first bollard is secured and a structural member to which a second bollard adjacent to the first bollard is secured;
> wherein the base is configured to be mounted in a shallow excavation with the plurality of bollards extending above grade of the excavation; and
> wherein the at least one first structural member or the at least one structural member or both are configured or tied together to retain within the base supporting media introduced into the base when the base is mounted in the excavation such that the rotation is resisted of a bollard or bollards and the base from an impact against the bollard or bollards.

77. Upon information and belief, the Thornton Tomasetti/Weidlinger shallow mount bollard structures use rebar members that extend parallel to the ends of the base and connect the structural members to which a first bollard is secured and a structural member to which a second adjacent bollard is secured, or the equivalent thereof. The Thornton Tomasetti/Weidlinger

shallow mount bollard structures infringe independent claim 33 for this reason along with those reasons set forth in paragraphs 54-59 and 72 above.

78. The Thornton Tomasetti/Weidlinger shallow mount bollards infringe dependent claim 34 of the '865 patent, which recites "[t]he bollard structure according to claim 33, wherein the at least one of the plurality of members that extend between a structural member to which a first bollard is secured and a structural member to which a second bollard adjacent to the first bollard is secured comprises a structural member" because, upon information and belief, the plurality of members connecting the bollards are structural members, or an equivalent thereof.

79. The Thornton Tomasetti/Weidlinger shallow mount bollards infringe dependent claim 35 of the '865 patent, which recites "[t] bollard structure according to claim 33**,** wherein the at least one of the plurality of members that extend between a structural member to which a first bollard is secured and a structural member to which a second bollard adjacent to the first bollard is secured comprises a rebar member" because, upon information and belief, the plurality of members connecting the bollards are rebar, or an equivalent thereof.

80. Thornton Tomasetti (and previously Weidlinger) sold its shallow mount bollards for use by Port Authority.

81. Skanska USA selected, purchased, distributed, and installed Thornton Tomasetti/Weidlinger shallow mount bollards. Port Authority is currently using Thornton Tomasetti/Weidlinger shallow mount bollards in, at least, the World Trade Center, LaGuardia Airport, and JFK Airport, and will continue to use these bollards.

Infringement of the '865 Patent by Guardiar/Secure USA Shallow Mount Bollards

82. The shallow bollards designed and manufactured by Guardiar/Secure USA infringe the claims of the '865 patent.

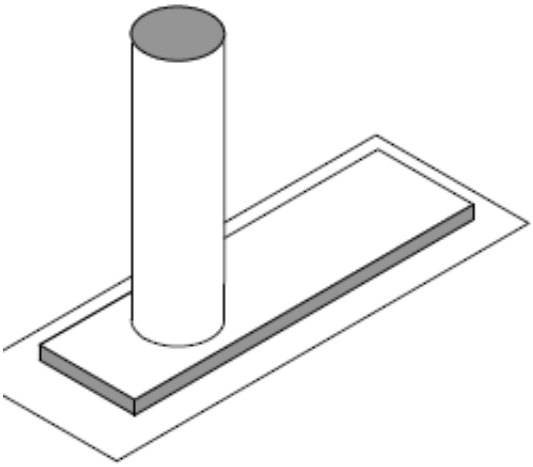
83. Claim 1 of the '865 patent states:

> **1**. A bollard structure comprising:
> at least one bollard; and
> a base comprising opposed ends and a plurality of structural members which intersect and are tied together, for each bollard of the bollard structure at least one first structural member extending from a first of the opposed ends of the base to a second of the opposed ends of the base in a first direction intersecting with the opposed ends, and at least one structural member extending to intersect with the at least one first structural member;
> each bollard being secured to at least one of the at least one first structural member and the at least one structural member of the base for the respective bollard and extending upwardly from the base so as to transmit forces applied to the at least one bollard to the base;
> wherein the base is configured to be mounted in a shallow excavation with the at least one bollard extending above grade; and
> wherein the at least one first structural member or the at least one structural member or both are configured or tied together to retain within the base supporting media introduced into the base when the base is mounted in the excavation such that the rotation is resisted of a bollard or bollards and the base from an impact against the bollard or bollards.

84. The Guardiar/Secure USA shallow bollards meet all of the limitations of claim 1 of the '865 patent because, for example:

85. On information and belief, the Guardiar/Secure USA' bollards have a base with

opposed ends, or the equivalent thereof, as shown in the following drawing:



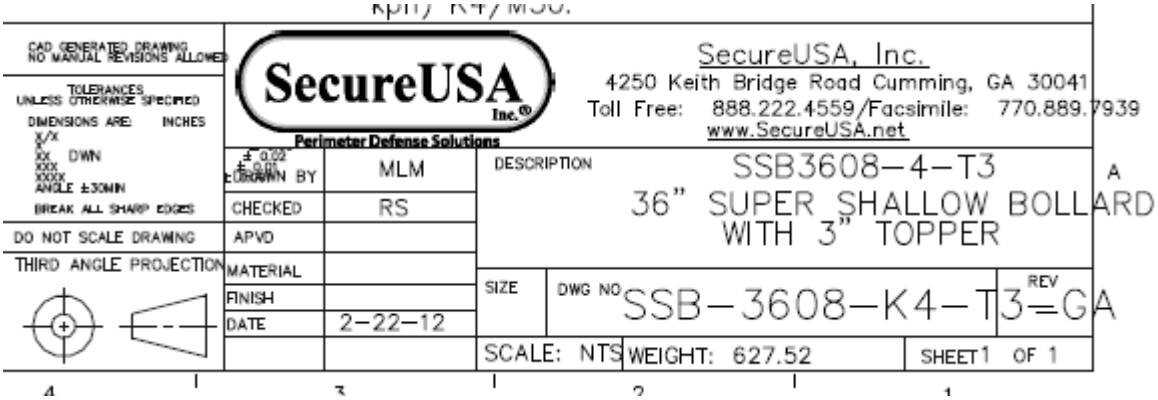
86. On information and belief, Guardiar/Secure USA's shallow bollards have "a plurality of structural members which intersect and are tied together." As can be seen in the photograph below, there are numerous structural members that intersect and are connected to one another, or the equivalent thereof:

87. On information and belief, for each bollard of the bollard structure, at least one

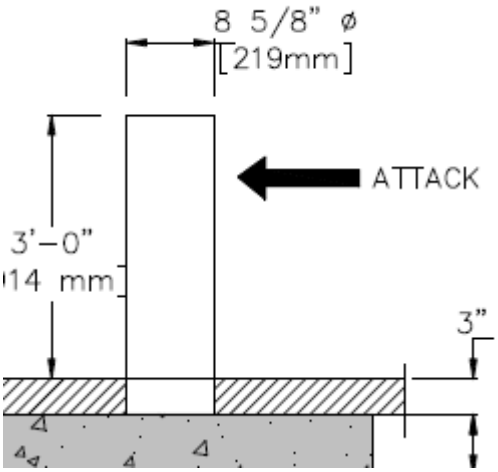
first structural member extends from a first of the opposed ends of the base to a second of the opposed ends of the base in a first direction intersecting with the opposed ends and at least one structural members extending to intersect with the at least one first structural member, or the equivalent thereof.

88. On information and belief, each bollard is secured to at least one of the first structural members, including but not limited to the base plate, or the equivalent thereof. Upon further information and belief, the bollards then extend upwardly from the base so as to transmit forces applied to the at least one bollard to the base, or the equivalent thereof.

89. Upon information and belief, the base of the Guardiar/Secure USA' shallow bollards have been configured to be mounted in a shallow excavation with at least one bollard extending above grade, or the equivalent thereof. Upon information and belief, Guardiar/Secure USA advertise its SideWALK® Shallow-Foundation Bollards Series on their website for use in urban environments where "the area under the pavement and streets are crowded with utilities and other infrastructure, a four foot foundation is virtually impossible." Specification drawings of a different bollard product, the Super Shallow Bollard Series (as seen below) are described as "Super Shallow."



90. Upon information and belief, Guardiar/Secure USA's bollards have structural members that are configured or tied together, or the equivalent thereof. Upon information and belief, the positioning of the structural members allow the base to retain media resist rotation, or the equivalent thereof:



91. The Guardiar/Secure USA bollards also infringe dependent claim 2 of the '865 patent, which recites "[t]he bollard structure of claim 1, wherein at least one of the opposed ends is formed by a structural member to which an end of the at least one first structural member is secured." On information and belief, the two structural members are secured to one another where they intersect (as seen in the picture in the picture in paragraph 86), or the equivalent

thereof.

92. The Guardiar/Secure USA's bollards infringe dependent claim 3 of the '865 patent, which recites "[t]he bollard structure of claim 1, wherein the intersecting structural members have axes that extend parallel to a plane of the base." On information and belief, the structural members appear to run in straight lines horizontally above the plane of the base and are equidistant from the base at all points along their length, or the equivalent thereof.

93. The Guardiar/Secure USA's bollards also infringe dependent claim 4 of the '865 patent, which recites "[t]he bollard structure of claim 1, wherein the base has a height of 3 inches to 14 inches." Upon information and belief, the specification drawing reproduced in paragraph 73 contains measurements of parts of the bollard structure, indicating that the base is between 3 and 14 inches, or the equivalent thereof.

94. The Guardiar/Secure USA's bollards also infringe dependent claim 5 of the '865 patent, which recites "[t]he bollard structure of claim 1, wherein the plurality of structural members comprise one or more tubular member." Upon information and belief, at least some of the structural members depicted above appear to be tubular, or the equivalent thereof.

95. The Guardiar/Secure USA's bollards also infringe dependent claim 7 of the '865 patent, which recites "[t]he bollard structure of claim 5, wherein at least one tubular member comprises a tube" because, upon information and belief, the structural members in the image above are long and appear to be hollow, or the equivalent thereof.

96. The Guardiar/Secure USA's bollards also infringe dependent claim 8 of the '865 patent, which recites "[t]he bollard structure of claim 5, wherein at least one tubular member comprises an comprises an angle." Upon information and belief, at least the tubular member on

the shorter edge of the base appear to be made of two perpendicular pieces, or the equivalent thereof.

97. The Guardiar/Secure USA's bollards also infringe dependent claim 9 of the '865 patent, which recites "[t]he bollard structure of claim 5, wherein at least one tubular member comprises a channel," because, on information or belief, the tubular members appears to be shaped like a channel, or the equivalent thereof.

98. The Guardiar/Secure USA's bollards also infringe dependent claim 10 of the '865 patent, which recites "[t]he bollard structure of claim 1, wherein the plurality of structural members comprises at least one tube" because, on information or belief, at least one of the structural members appears to be a tube, or the equivalent thereof.

99. The Guardiar/Secure USA's bollards also infringe dependent claim 12 of the '865 patent, which recites "[t]he bollard structure of claim 1, wherein the plurality of structural members comprises at least one angle" because, upon information and belief, at least one structural member appears to be made of two perpendicular pieces, or the equivalent thereof.

100. The Guardiar/Secure USA's bollards also infringe dependent claim 13 of the '865 patent, which recites "[t]he bollard structure of claim 1, wherein the plurality of structural members comprises at least one channel" because, upon information and belief, at least one structural member appears to be shaped like a channel, or the equivalent thereof.

101. The Guardiar/Secure USA's bollards also infringe dependent claim 14 of the '865 patent, which recites "[t]he bollard structure of claim 1, wherein the plurality of structural members comprises at least one plate" because, upon information and belief, at least one structural member appears to be a flat structure shaped like a plate, or the equivalent thereof.

102. The Guardiar/Secure USA's bollards also infringe dependent claim 15 of the '865 patent, which recites "[t] bollard structure of claim 1, wherein the plurality of structural members comprise structural steel members" because, upon information and belief, the structural members appear to be made of steel, or the equivalent thereof.

103. The Guardiar/Secure USA's bollards also infringe independent claim 16 of the '865 patent, which states:

> **16**. A bollard structure comprising:
> a plurality of bollards; and
> a base comprising opposed ends and a plurality of structural members which intersect and are tied together, for each bollard of the bollard structure at least one first structural member extending from a first of the opposed ends of the base to a second of the opposed ends of the base in a first direction intersecting with the opposed ends, and at least one structural member extending to intersect with the at least one first structural member;
> each of the plurality of bollards being secured to at least one of the at least one first structural member and the at least one structural member of the base for the respective bollard and extending upwardly from the base so as to transmit forces applied to the at least one bollard to the base;
> wherein the base is configured to be mounted in a shallow excavation with the plurality of bollards extending above grade of the excavation; and
> wherein the at least one first structural member or the at least one structural member or both are configured or tied together to retain within the base supporting media introduced into the base when the base is mounted in the excavation such that the rotation is resisted of a bollard or bollards and the base from an impact against the bollard or bollards.

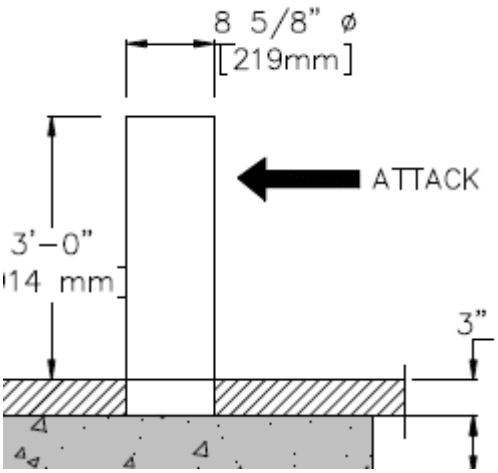
104. Upon information and belief, the below photograph of Guardiar/Secure USA's

product illustrates a bollard structure comprising more than bollard, or the equivalent thereof. Guardiar/Secure USA' product infringes independent claim 16 for this reason along with those reasons set forth in paragraphs 85-90 above.

105. The Guardiar/Secure USA's bollards infringe dependent claims 17, 19-21, 23-26, 28-31 for the same reasons set forth in paragraphs 91-102.

106. The Guardiar/Secure USA's bollards infringe dependent claim 18, which recites "[t]he bollard structure of claim 16, wherein the bollard structure is configured to resist impact from a direction of expected impact and the first direction is parallel to the direction of expected

impact, and wherein each of the plurality of bollards is secured to at least one structural member that extends in the first direction." Upon information and belief, the specification of Guardiar/Secure USA' product below shows that the bollard is configured to resist impact from an "attack" and that the first direction is parallel to the direction of expected impact, and that each bollard is secured to at least one structural member extending in such first direction, or the equivalent thereof.



107. The Guardiar/Secure USA's bollards infringe dependent claim 32, which recites "[t]he bollard structure of claim 16, comprising a rebar grillage comprising intersecting and tied together rebar members extending coextensively with at least a portion of the base that includes a structural member to which a bollard is secured." Upon information and belief, the photograph of the Guardiar/Secure USA' product above shows that the bollard structure is comprised of a rebar grillage (blue structural members) made up of many rebar members that intersect and are tied together and extends with the part of the base that includes the member to which the bollard is secured, or the equivalent thereof.

108. The Guardiar/Secure USA's bollards also infringe independent claim 33 of the

'865 patent, which states:

> **33**. A bollard structure comprising:
> a plurality of bollards; and
> a base comprising opposed ends and a plurality of members which intersect and are tied together, for each bollard of the bollard structure at least one first structural member extending from a first of the opposed ends of the base to a second of the opposed ends of the base in a first direction intersecting with the opposed ends, and at least one structural member extending to intersect with the at least one first structural member;
> each of the plurality of bollards being secured to at least one of the at least one first structural member and the at least one structural member of the base for the respective bollard and extending upwardly from the base so as to transmit forces applied to the at least one bollard to the base;
> at least one of the plurality of members that extend parallel to the ends of the base extending between a structural member to which a first bollard is secured and a structural member to which a second bollard adjacent to the first bollard is secured;
> wherein the base is configured to be mounted in a shallow excavation with the plurality of bollards extending above grade of the excavation; and
> wherein the at least one first structural member or the at least one structural member or both are configured or tied together to retain within the base supporting media introduced into the base when the base is mounted in the excavation such that the rotation is resisted of a bollard or bollards and the base from an impact against the bollard or bollards.

109. Upon information and belief, Guardiar/Secure USA's bollard structure contains rebar members (in blue) that extend parallel to the ends of the base and connect the structural members to which a first bollard is secured and a structural member to which a second adjacent bollard is secured, or the equivalent thereof. Guardiar/Secure USA' product infringes

independent claim 33 for this reason along with those reasons set forth in paragraphs 85-90 and 104 above.

110. Guardiar/Secure USA's bollards infringe dependent claim 34 of the '865 patent, which recites "[t]he bollard structure according to claim 33, wherein the at least one of the plurality of members that extend between a structural member to which a first bollard is secured and a structural member to which a second bollard adjacent to the first bollard is secured comprises a structural member" because, upon information and belief, the plurality of members connecting the bollards appear to be structural members, or an equivalent thereof.

111. Guardiar/Secure USA's bollards infringe dependent claim 35 of the '865 patent, which recites "[t] bollard structure according to claim 33**,** wherein the at least one of the plurality of members that extend between a structural member to which a first bollard is secured and a structural member to which a second bollard adjacent to the first bollard is secured comprises a rebar member" because, upon information and belief, the plurality of members connecting the bollards appears to be rebar, or an equivalent thereof.

112. Skanska USA selected, purchased, distributed, and installed Guardiar/Secure USA shallow mount bollards.

113. Port Authority purchased and uses shallow mount bollards designed and manufactured by Guardiar/Secure USA. Secure USA's website states that it has performed "various" projects for the Port Authority. *See* http://www.secureusa.net/wp-content/uploads/2014/04/secureusa-product-brochure-perimeter-defence-barriers.pdf. Port Authority is currently using Guardiar/Secure USA shallow mount bollards in, at least, the PATH station at Exchange Place, and will continue to use these bollards.

Infringement of the '865 Patent by Nasatka Shallow Mount Bollards

114. The shallow bollards designed and manufactured by Nasatka infringe the claims of the '865 patent.

115. The Nasatka shallow bollards meet all of the limitations of claim 1 of the '865 patent because, for example:

116. Upon information and belief, the Nasatka bollards have a rectangular base with opposed ends, or the equivalent thereof. This can be seen in the drawing of "Standard Type B Single Bollard" on the first page of Exhibit B.

117. Upon information and belief, Nasatka's shallow mount bollards have "a plurality of structural members which intersect and are tied together." There are numerous structural members in Nasatka's shallow mount bollard structure that intersect and are connected to one another, or the equivalent thereof, including the base plate and channel members, identified in the drawing of "Standard Type B Single Bollard", as well as the connecting rebar members, seen in "Bollard Type B, Typical Part Plan" in Exhibit B at page PANYNJ000787.

118. Upon information and belief, for each bollard of the bollard structure, at least one first structural member extends from a first of the opposed ends of the base to a second of the opposed ends of the base in a first direction intersecting with the opposed ends and at least one structural members extending to intersect with the at least one first structural member, or the equivalent thereof. The channel member and plate members extend from opposed ends and intersect. The rebar members also extend from opposed ends and intersect with each other as well as with the channel and plate members.

119. Upon information and belief, each bollard is secured to at least one of the first

structural members, including but not limited to the base plate, or the equivalent thereof. Upon further information and belief, the bollards then extend upwardly from the base so as to transmit forces applied to the at least one bollard to the base, or the equivalent thereof.

120. Upon information and belief, the base of the Nasatka shallow mount bollards have been configured to be mounted in a shallow excavation with at least one bollard extending above grade, or the equivalent thereof. Upon information and belief, the Nasatka shallow mount bollards require of an excavation of not more than 17.5 inches, as indicated on the drawings in Exhibit B on pages PANYNJ000706 and 728.

121. Upon information and belief, Nasatka's shallow mount bollards have structural members that are configured or tied together, or the equivalent thereof. Upon further information and belief, the positioning of the structural members allow the base to retain media and resist rotation, or the equivalent thereof. The Nasatka shallow mount bollards are described as having foundations made up of reinforced concrete and the drawings in Exhibit B show concrete within the base. Nasatka's shallow mount bollards are referred to on Nasatka's website as "crash rated," indicating that they resist rotation.

122. The Nasatka shallow mount bollards infringe dependent claim 2 of the '865 patent, which recites "[t]he bollard structure of claim 1, wherein at least one of the opposed ends is formed by a structural member to which an end of the at least one first structural member is secured." Upon information and belief, at least the channel and plate members form opposed ends and at least two structural members are secured to one another where they intersect, or the equivalent thereof.

123. The Nasatka shallow mount bollards infringe dependent claim 3 of the '865

patent, which recites "[t]he bollard structure of claim 1, wherein the intersecting structural members have axes that extend parallel to a plane of the base." Upon information and belief, the structural members in all drawings in Exhibit B appear to run in straight lines horizontally above the plane of the base and are equidistant from the base at all points along their length, or the equivalent thereof.

124. The Nasatka shallow mount bollards infringe dependent claim 4 of the '865 patent, which recites "[t]he bollard structure of claim 1, wherein the base has a height of 3 inches to 14 inches." Upon information and belief, specification drawings indicate that the base is approximately 17 inches, which is the equivalent of the depth limitation in claim 4.

125. The Nasatka shallow mount bollards infringe dependent claim 5 of the '865 patent, which recites "[t]he bollard structure of claim 1, wherein the plurality of structural members comprise one or more tubular member." Upon information and belief, at least some of the structural members in Nasatka's shallow mount bollard structure appear to be tubular, including but not limited to the rebar members, or the equivalent thereof.

126. The Nasatka shallow mount bollards infringe dependent claim 7 of the '865 patent, which recites "[t]he bollard structure of claim 5, wherein at least one tubular member comprises a tube" because, upon information and belief, the structural members in Nasatka's shallow mount bollard structure are long and appear to be hollow, or the equivalent thereof.

127. The Nasatka shallow mount bollards infringe dependent claim 9 of the '865 patent, which recites "[t]he bollard structure of claim 5, wherein at least one tubular member comprises a channel," because, upon information or belief, the base of Nasatka's shallow mount bollards includes a channel, or the equivalent thereof.

128. The Nasatka shallow mount bollards infringe dependent claim 10 of the '865 patent, which recites "[t]he bollard structure of claim 1, wherein the plurality of structural members comprises at least one tube" because, upon information or belief, at least one of the structural members in Nasatka's shallow mount bollard structure appears to be a tube, or the equivalent thereof.

129. The Nasatka shallow mount bollards infringe dependent claim 13 of the '865 patent, which recites "[t]he bollard structure of claim 1, wherein the plurality of structural members comprises at least one channel" because, upon information and belief, at least one of the members in Nasatka's shallow mount bollard structure is a channel, or the equivalent thereof.

130. The Nasatka shallow mount bollards infringe dependent claim 14 of the '865 patent, which recites "[t]he bollard structure of claim 1, wherein the plurality of structural members comprises at least one plate" because, upon information and belief, at least one of the members in Nasatka's shallow mount bollard structure is a plate, or the equivalent thereof.

131. The Nasatka shallow mount bollards infringe dependent claim 15 of the '865 patent, which recites "[t] bollard structure of claim 1, wherein the plurality of structural members comprise structural steel members" because, upon information and belief, the structural members are made out of structural steel, or the equivalent thereof.

132. The Nasatka shallow mount bollards also infringe independent claim 16 of the '865 patent.

133. Upon information and belief, Nasatka's shallow mount bollard structure is a structure comprising more than bollard, or the equivalent thereof. This can be seen in the drawing of two bollards in Exhibit B on page PANYNJ000728 as well as the top down view

drawings on PANYNJ000728 and PANYNJ000787, also showing structures with two bollards. Nasatka's shallow mount bollards infringe independent claim 16 for this reason along with those reasons set forth in paragraphs 116-121 above.

134. The Nasatka shallow mount bollards infringe dependent claims 17, 19-21, 23, 25-26, 29-31 for the same reasons set forth in paragraphs 122-131.

135. The Nasatka shallow mount bollards infringe dependent claim 18, which recites "[t]he bollard structure of claim 16, wherein the bollard structure is configured to resist impact from a direction of expected impact and the first direction is parallel to the direction of expected impact, and wherein each of the plurality of bollards is secured to at least one structural member that extends in the first direction." Upon information and belief, the specifications of Nasatka's shallow mount bollard product show that the bollard is configured to resist impact from an "attack" and that the first direction is parallel to the direction of expected impact, and that each bollard is secured to at least one structural member extending in such first direction, or the equivalent thereof. This can also be seen in the drawing of "Bollard Type B Typical Part Plan on PANYNJ000787, which shows the "threat side" and the "protective side," with the first direction being parallel to the direction of the expected threat.

136. The Nasatka shallow mount bollards infringe dependent claim 32, which recites "[t]he bollard structure of claim 16, comprising a rebar grillage comprising intersecting and tied together rebar members extending coextensively with at least a portion of the base that includes a structural member to which a bollard is secured." Upon information and belief, Nasatka's shallow mount bollard structure is comprised of a rebar grillage made up of many rebar members that intersect and are tied together, as shown in the drawing on page PANYNJ000787 of Exhibit

B, and extends with the part of the base that includes the member to which the bollard is secured, or the equivalent thereof.

137. The Nasatka shallow mount bollards also infringe independent claim 33 of the '865 patent.

138. Upon information and belief, Nasatka's shallow mount bollard structure contains rebar members that extend parallel to the ends of the base and connect the structural members to which a first bollard is secured and a structural member to which a second adjacent bollard is secured, or the equivalent thereof. This is illustrated in the drawing on page PANYNJ000787 of Exhibit B. Nasatka's shallow mount bollard structure infringes independent claim 33 for this reason along with those reasons set forth in paragraphs 116-121 and 133 above.

139. The Nasatka shallow mount bollards infringe dependent claim 34 of the '865 patent, which recites "[t]he bollard structure according to claim 33, wherein the at least one of the plurality of members that extend between a structural member to which a first bollard is secured and a structural member to which a second bollard adjacent to the first bollard is secured comprises a structural member" because, upon information and belief, the plurality of members connecting the bollards appear to be structural members, or an equivalent thereof.

140. The Nasatka shallow mount bollards infringe dependent claim 35 of the '865 patent, which recites "[t] bollard structure according to claim 33**,** wherein the at least one of the plurality of members that extend between a structural member to which a first bollard is secured and a structural member to which a second bollard adjacent to the first bollard is secured comprises a rebar member" because, upon information and belief, the plurality of members connecting the bollards appears to be rebar, or an equivalent thereof.

141. Upon information and belief, AECOM selected, purchased, distributed, and installed Nasatka shallow mount bollards.

142. Upon information and belief, Port Authority purchased and uses shallow mount bollards designed and manufactured by Nasatka. Upon further information and belief, Port Authority is currently using Nasatka shallow mount bollards in, at least, the Journal Square Transportation Center, and will continue to use these bollards.

Infringement of the '865 Patent by AECOM Shallow Mount Bollards

143. The shallow bollards designed and manufactured by AECOM infringe the claims of the '865 patent.

144. The AECOM shallow bollards meet all of the limitations of claim 1 of the '865 patent because, for example:

145. Upon information and belief, the AECOM shallow mount bollards have a rectangular base with opposed ends, or the equivalent thereof. This is illustrated in the drawings in Exhibit C.

146. Upon information and belief, AECOM's shallow mount bollards have "a plurality of structural members which intersect and are tied together." The drawings in Exhibit C show that AECOM's shallow mount bollards contain structural members including various "plates," "tubes," "anchor bolts," "anchor studs," as well as "rebars." which intersect and are tied together.

147. Upon information and belief, for each bollard of the AECOM shallow mount bollard structure, at least one first structural member extends from a first of the opposed ends of the base to a second of the opposed ends of the base in a first direction intersecting with the opposed ends and at least one structural members extending to intersect with the at least one first

structural member, or the equivalent thereof. At least the plates, tubes and rebar members extend between opposed ends and intersect with the opposed ends.

148. Upon information and belief, each bollard is secured to at least one of the first structural members, including but not limited to the various plates, or the equivalent thereof. Upon further information and belief, the bollards then extend upwardly from the base so as to transmit forces applied to the at least one bollard to the base, or the equivalent thereof.

149. Upon information and belief, the base of the AECOM shallow mount bollards have been configured to be mounted in a shallow excavation with at least one bollard extending above grade, or the equivalent thereof. Upon information and belief, the AECOM shallow mount bollards require an excavation of approximately 14 inches, as seen on the first page of Exhibit C.

150. Upon information and belief, AECOM's shallow mount bollards have structural members that are configured or tied together, or the equivalent thereof. Upon further information and belief, the positioning of the structural members allow the base to retain media and resist rotation, or the equivalent thereof. The specification drawings of the AECOM shallow mount bollards in Exhibit C depict "3 inch diameter holes" that allow the base to retain media, and show concrete within the base of the bollard structure, which, upon information and belief, allows the shallow mount bollards to resist rotation.

151. The AECOM shallow mount bollards infringe dependent claim 2 of the '865 patent, which recites "[t]he bollard structure of claim 1, wherein at least one of the opposed ends is formed by a structural member to which an end of the at least one first structural member is secured." Upon information and belief, at least the plates, tubes, and rebar structural members

are secured to one another where they intersect through welding, or the equivalent thereof.

152. The AECOM shallow mount bollards infringe dependent claim 3 of the '865 patent, which recites "[t]he bollard structure of claim 1, wherein the intersecting structural members have axes that extend parallel to a plane of the base." Upon information and belief, the structural members of the AECOM shallow mount bollard structures depicted in Exhibit C appear to run in straight lines horizontally above the plane of the base and are equidistant from the base at all points along their length, or the equivalent thereof.

153. The AECOM shallow mount bollards infringe dependent claim 4 of the '865 patent, which recites "[t]he bollard structure of claim 1, wherein the base has a height of 3 inches to 14 inches." Upon information and belief, the specification drawings of the AECOM shallow mount bollards indicate that the base is approximately 14 inches.

154. The AECOM shallow mount bollards infringe dependent claim 5 of the '865 patent, which recites "[t]he bollard structure of claim 1, wherein the plurality of structural members comprise one or more tubular member." Upon information and belief, at least some of the structural members of the AECOM shallow mount bollard structure appear to be tubular, including but not limited to the rebar members, or the equivalent thereof.

155. The AECOM shallow mount bollards infringe dependent claim 7 of the '865 patent, which recites "[t]he bollard structure of claim 5, wherein at least one tubular member comprises a tube" because, upon information and belief, the rebar members are long and appear to be hollow, or the equivalent thereof.

156. The AECOM shallow mount bollards infringe dependent claim 10 of the '865 patent, which recites "[t]he bollard structure of claim 1, wherein the plurality of structural

members comprises at least one tube" because, upon information or belief, at least one of the structural members appears to be a tube, or the equivalent thereof.

157. The AECOM shallow mount bollards infringe dependent claim 13 of the '865 patent, which recites "[t]he bollard structure of claim 1, wherein the plurality of structural members comprises at least one channel" because, upon information and belief, at least one of the structural members of the AECOM shallow mount bollards is a channel, or the equivalent thereof.

158. The AECOM shallow mount bollards infringe dependent claim 14 of the '865 patent, which recites "[t]he bollard structure of claim 1, wherein the plurality of structural members comprises at least one plate" because, upon information and belief, the AECOM shallow mount bollards include "vertical plates" and "steel plates," or the equivalent thereof.

159. The AECOM shallow mount bollards infringe dependent claim 15 of the '865 patent, which recites "[t] bollard structure of claim 1, wherein the plurality of structural members comprise structural steel members" because, upon information and belief, the structural members are made out of structural steel, including at least the "steel plate," or the equivalent thereof.

160. The AECOM shallow mount bollards infringe independent claim 16 of the '865 patent.

161. Upon information and belief, multiple AECOM shallow mount bollards can be connected with rebar, as seen on the first page of Exhibit C, resulting in a bollard structure comprising more than bollard, or the equivalent thereof. AECOM's shallow mount bollards infringe independent claim 16 for this reason along with those reasons set forth in paragraphs 145-150 above.

162. The AECOM shallow mount bollards infringe dependent claims 17, 19-21, 23, 26, 30-31 for the same reasons set forth in paragraphs 151-159.

163. The AECOM shallow mount bollards infringe dependent claim 18, which recites "[t]he bollard structure of claim 16, wherein the bollard structure is configured to resist impact from a direction of expected impact and the first direction is parallel to the direction of expected impact, and wherein each of the plurality of bollards is secured to at least one structural member that extends in the first direction." Upon information and belief, the specifications of the AECOM shallow mount bollard show that it is configured to resist impact from an "attack" and that the first direction is parallel to the direction of expected impact, and that each bollard is secured to at least one structural member extending in such first direction, or the equivalent thereof.

164. The AECOM shallow mount bollards infringe dependent claim 32, which recites "[t]he bollard structure of claim 16, comprising a rebar grillage comprising intersecting and tied together rebar members extending coextensively with at least a portion of the base that includes a structural member to which a bollard is secured." Upon information and belief, the AECOM shallow mount bollard structure is comprised of numerous rebar members, shown on the first page of Exhibit C, which intersect and are tied together and extends with the part of the base that includes the member to which the bollard is secured, or the equivalent thereof.

165. The AECOM shallow mount bollards infringe independent claim 33 of the '865 patent.

166. Upon information and belief, AECOM's shallow mount bollard structure contains rebar members, shown on the first page of Exhibit C, which extend parallel to the ends of the

base and connect the structural members to which a first bollard is secured and a structural member to which a second adjacent bollard is secured, or the equivalent thereof. AECOM's product infringes independent claim 33 for this reason along with those reasons set forth in paragraphs 145-150 and 161 above.

167. The AECOM shallow mount bollards infringe dependent claim 34 of the '865 patent, which recites "[t]he bollard structure according to claim 33, wherein the at least one of the plurality of members that extend between a structural member to which a first bollard is secured and a structural member to which a second bollard adjacent to the first bollard is secured comprises a structural member" because, upon information and belief, the plurality of members connecting the bollards appear to be structural members, or an equivalent thereof.

168. The AECOM shallow mount bollards infringe dependent claim 35 of the '865 patent, which recites "[t] bollard structure according to claim 33**,** wherein the at least one of the plurality of members that extend between a structural member to which a first bollard is secured and a structural member to which a second bollard adjacent to the first bollard is secured comprises a rebar member" because, upon information and belief, the plurality of members connecting the bollards are made of rebar, as shown in Exhibit C, or an equivalent thereof.

169. Upon information and belief, AECOM designed, manufactured, distributed, and/or installed its shallow mount bollards.

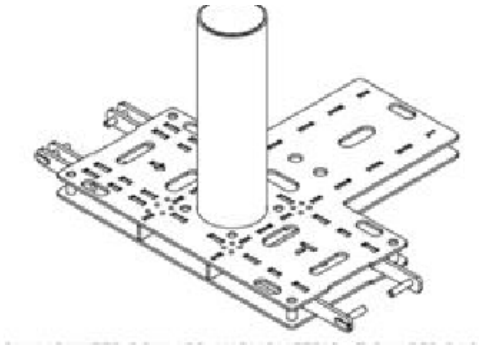
170. Upon information and belief, Port Authority purchased and uses shallow mount bollards designed and manufactured by AECOM. Upon further information and belief, Port Authority is currently using AECOM shallow mount bollards in, at least, the World Trade Center site, and will continue to use these bollards.

Infringement of the '865 Patent by Ameristar Shallow Mount Bollards

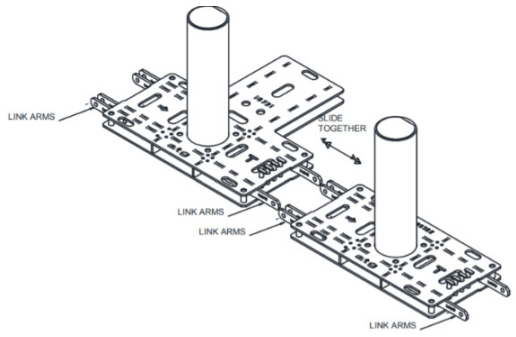
171. The Ameristar shallow mount bollards, including but not limited to Ameristar's Ultra Shallow Mounts Bollards, meet all of the claim limitations of the '865 patent.

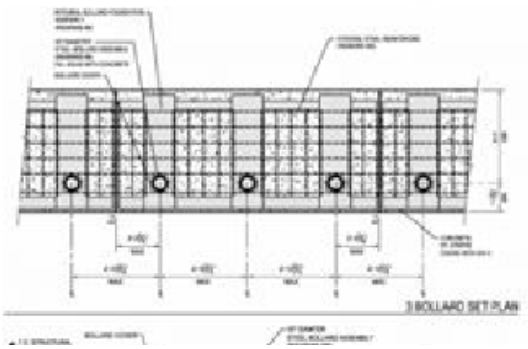
172. The Ameristar shallow mount bollards meet all of the limitations of claim 1 of the '865 patent because, for example:

173. Upon information and belief, Ameristar's bollards have a base with opposed ends, or the equivalent thereof, as shown in the following drawing:



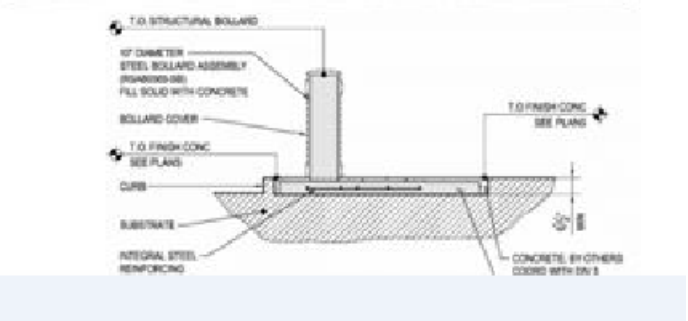
174. Upon information and belief, Ameristar's shallow mount bollards have "a plurality of structural members which intersect and are tied together." As can be seen in the drawings below, there are numerous structural members, including but not limited to the base plates, link arms, and rebar, which intersect and are connected to one another, or the equivalent thereof:

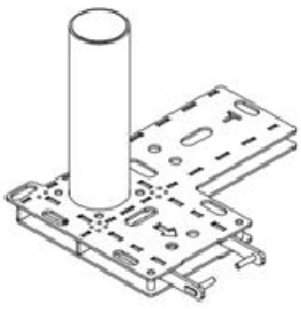




175. Upon information and belief, for each bollard of the bollard structure, at least one first structural member extends from a first of the opposed ends of the base to a second of the opposed ends of the base in a first direction intersecting with the opposed ends and at least one structural member extending to intersect with the at least one first structural member, or the equivalent thereof.

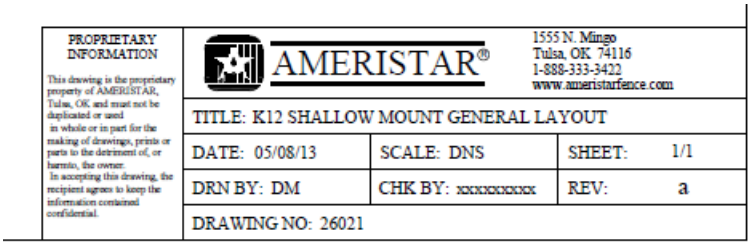
176. Upon information and belief, as seen in the below drawings, each bollard is secured to at least one of the structural members, including the base plates, or the equivalent thereof. Upon further information and belief, the bollards then extend upwardly from the base so as to transmit forces applied to the at least one bollard to the base, or the equivalent thereof.





177. Upon information and belief, the base of Ameristar's shallow mount bollards have been configured to be mounted in a shallow excavation with at least one bollard extending above grade, or the equivalent thereof. The name of its product is "Ultra Shallow Mount Bollards," and

Ameristar advertises on its website that all configurations of the Ultra Shallow Mount Bollard series require just 6”-10” of total excavation. Its specifications (as seen below) also describe its bollards as “Shallow Mount.”



PROPRIETARY INFORMATION	AMERISTAR®	1555 N. Mingo Tulsa, OK 74116 1-888-333-3422 www.ameristarfence.com	
This drawing is the proprietary property of AMERISTAR, Tulsa, OK and must not be duplicated or used in whole or in part for the making of drawings, prints or parts to the detriment of, or harmful, the owner. In accepting this drawing, the recipient agrees to keep the information contained confidential.	TITLE: K12 SHALLOW MOUNT GENERAL LAYOUT		
	DATE: 05/08/13	SCALE: DNS	SHEET: 1/1
	DRN BY: DM	CHK BY: xxxxxxxxx	REV: a
	DRAWING NO: 26021		

178. Upon information and belief, Ameristar’s bollards have structural members that are configured or tied together, or the equivalent thereof. Upon further information and belief, the various members allow the bollard to be supported by media, or the equivalent thereof. Ameristar’s installation instructions instruct to “pour concrete to back fill all excavated areas. Allow the concrete to flood and penetrate through all of the shallow mount biscuits. The concrete must fill all of the voids within the shallow mount bollard structure.”

179. Upon information and belief, Ameristar’s shallow mount bollards resist rotation, or the equivalent thereof. Ameristar advertises that its Ultra Shallow Mount bollards include those that are “M50/P1 Crash Test Certified / (K12/L3 Equivalent)” and “PAS68 Crash Test Certified / (M40/P2 Equivalent).” These crash ratings demonstrate that Ameristar’s shallow mount bollards resist rotation when impacted.

180. Ameristar’s shallow mount bollards infringe dependent claim 2 of the ’865 patent, which recites “[t]he bollard structure of claim 1, wherein at least one of the opposed ends is formed by a structural member to which an end of the at least one first structural member is secured.” Upon information and belief, at least one of the opposed ends of the Ameristar

shallow mount bollards is a structural member, including but not limited to the base plates and link arms, that is secured to at least one other structural member, including the base plates, link arms, or rebar, where they intersect, or the equivalent thereof.

181. Ameristar's shallow mount bollards infringe dependent claim 3 of the '865 patent, which recites "[t]he bollard structure of claim 1, wherein the intersecting structural members have axes that extend parallel to a plane of the base." Upon information and belief, the structural members of the Ameristar shallow mount bollards appear to run in straight lines horizontally above the plane of the base and are equidistant from the base at all points along their length, or the equivalent thereof.

182. Ameristar's shallow mount bollards infringe dependent claim 4 of the '865 patent, which recites "[t]he bollard structure of claim 1, wherein the base has a height of 3 inches to 14 inches." Upon information and belief, all products in Ameristar's Ultra Shallow Mount bollard series require only 6"-10" of total excavation.

183. Ameristar's shallow mount bollards infringe dependent claim 5 of the '865 patent, which recites "[t]he bollard structure of claim 1, wherein the plurality of structural members comprise one or more tubular member." Upon information and belief, at least some of the structural members of the Ameristar shallow mount bollards depicted above appear to be tubular, or the equivalent thereof.

184. Ameristar's shallow mount bollards infringe dependent claim 7 of the '865 patent, which recites "[t]he bollard structure of claim 5, wherein at least one tubular member comprises a tube" because, upon information and belief, the structural members of the Ameristar shallow mount bollards in the images above are long and appear to be hollow, or the equivalent thereof.

185. Ameristar's shallow mount bollards infringe dependent claim 8 of the '865 patent, which recites "[t]he bollard structure of claim 5, wherein at least one tubular member comprises an angle." Upon information and belief, at least the tubular member on the shorter edge of the base of the Ameristar shallow mount bollards appears to be made of two perpendicular pieces, or the equivalent thereof.

186. Ameristar's shallow mount bollards infringe dependent claim 9 of the '865 patent, which recites "[t]he bollard structure of claim 5, wherein at least one tubular member comprises a channel," because, upon information or belief, the tubular members of the Ameristar shallow mount bollards appear to be shaped like a channel, or the equivalent thereof.

187. Ameristar's shallow mount bollards infringe dependent claim 10 of the '865 patent, which recites "[t]he bollard structure of claim 1, wherein the plurality of structural members comprises at least one tube" because, upon information or belief, at least one of the structural members of the Ameristar shallow mount bollards appears to be a tube, or the equivalent thereof.

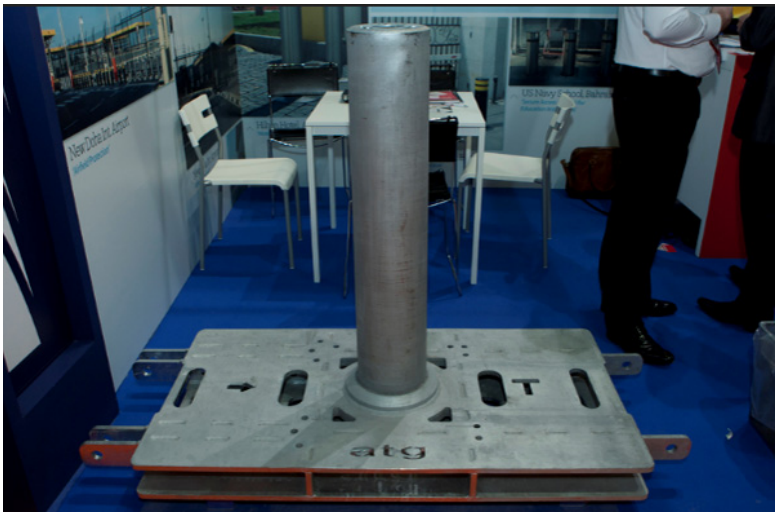
188. Ameristar's shallow mount bollards infringe dependent claim 12 of the '865 patent, which recites "[t]he bollard structure of claim 1, wherein the plurality of structural members comprises at least one angle" because, upon information and belief, at least one structural member of the Ameristar shallow mount bollards appears to be made of two perpendicular pieces, or the equivalent thereof.

189. Ameristar's shallow mount bollards infringe dependent claim 13 of the '865 patent, which recites "[t]he bollard structure of claim 1, wherein the plurality of structural members comprises at least one channel" because, upon information and belief, at least one

structural member of the Ameristar shallow mount bollards appears to be shaped like a channel, or the equivalent thereof.

190. Ameristar's shallow mount bollards infringe dependent claim 14 of the '865 patent, which recites "[t]he bollard structure of claim 1, wherein the plurality of structural members comprises at least one plate" because, upon information and belief, at least one structural member of the Ameristar shallow mount bollards appears to be a flat structure shaped like a plate, or the equivalent thereof.

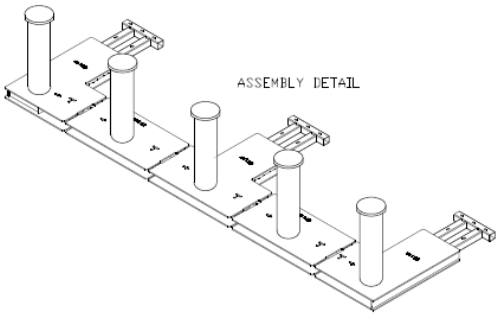
191. Ameristar's shallow mount bollards also infringe dependent claim 15 of the '865 patent, which recites "[t] bollard structure of claim 1, wherein the plurality of structural members comprise structural steel members" because, upon information and belief, the Ameristar shallow mount bollards in the below photograph shows structural members that appear to be made of steel, or the equivalent thereof.



192. Ameristar's bollards also infringe independent claim 16 of the '865 patent.

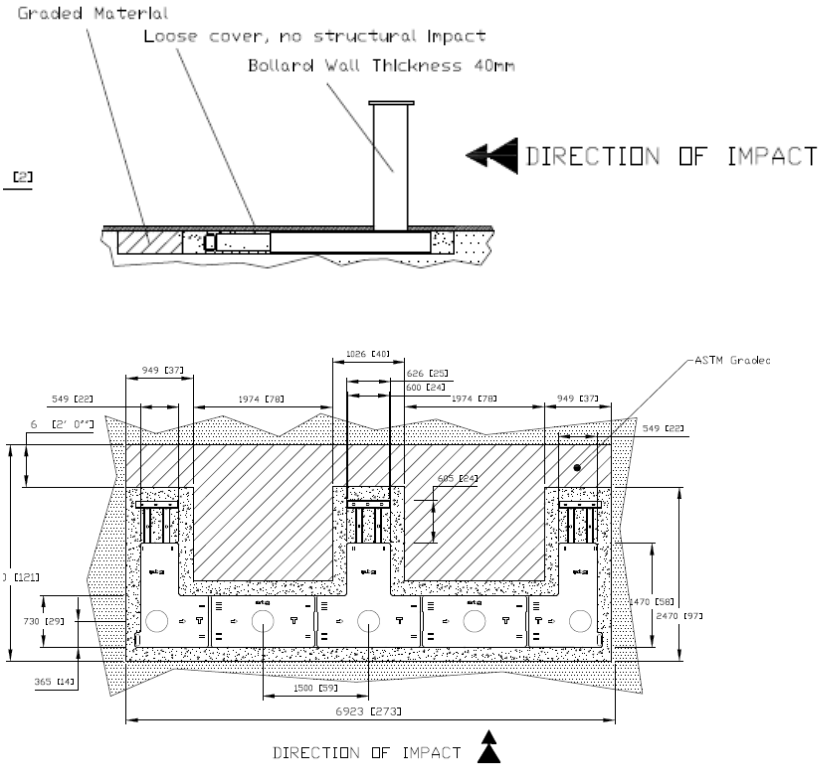
193. Upon information and belief, the below design drawing of Ameristar's shallow mount bollards depict a bollard structure comprising more than bollard, or the equivalent thereof.

Ameristar's shallow mount bollards infringe independent claim 16 for this reason along with those reasons set forth in paragraphs 173-179 above.

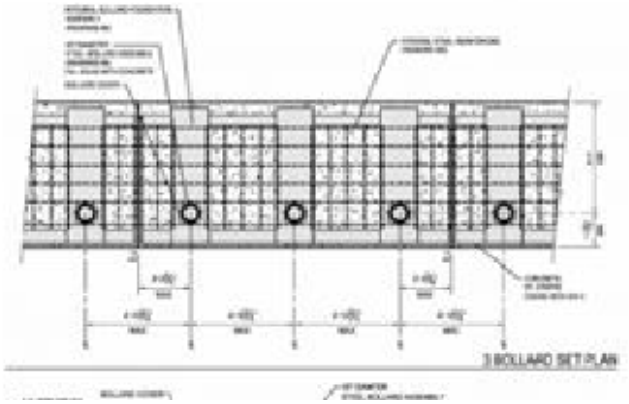


194. Ameristar's shallow mount bollards infringe dependent claims 17 and 19-21, 23-26, 28-31 for the same reasons set forth in paragraphs 180-191 above.

195. Ameristar's shallow mount bollards infringe dependent claim 18, which recites "[t]he bollard structure of claim 16, wherein the bollard structure is configured to resist impact from a direction of expected impact and the first direction is parallel to the direction of expected impact, and wherein each of the plurality of bollards is secured to at least one structural member that extends in the first direction." Upon information and belief, the specifications of Ameristar's shallow mount bollards show that the bollard is configured to resist impact from a vehicle or an "attack" and that the first direction is parallel to the direction of expected impact, and that each bollard is secured to at least one structural member extending in such first direction, or the equivalent thereof.

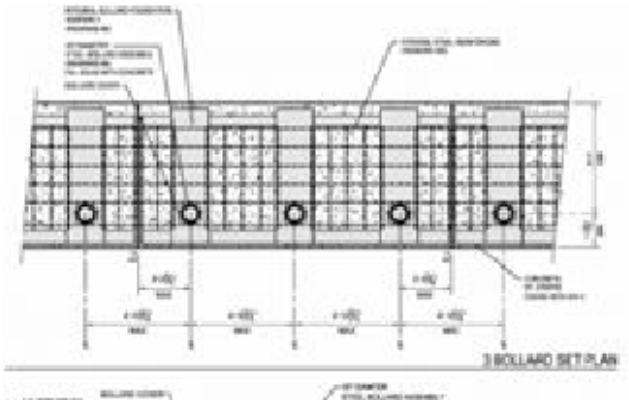


196. Ameristar's shallow mount bollards infringe dependent claim 32, which recites "[t]he bollard structure of claim 16, comprising a rebar grillage comprising intersecting and tied together rebar members extending coextensively with at least a portion of the base that includes a structural member to which a bollard is secured." Upon information and belief, the below diagram shows Ameristar's shallow mount bollard structures are comprised of a rebar grillage made up of many rebar members that intersect and are tied together and extends with the part of the base that includes the member to which the bollard is secured, or the equivalent thereof.



197. Ameristar's shallow mount bollards also infringe independent claim 33 of the '865 patent.

198. Upon information and belief, Ameristar's shallow mount bollard structure contains rebar members that extend parallel to the ends of the base and connect the structural members to which a first bollard is secured and a structural member to which a second adjacent bollard is secured, shown in the design drawing below, or the equivalent thereof. Ameristar's shallow mount bollards infringe independent claim 33 for this reason along with those reasons set forth in paragraphs 173-179 and 193 above.



199. Ameristar's shallow mount bollards infringe dependent claim 34 of the '865

patent, which recites "[t]he bollard structure according to claim 33, wherein the at least one of the plurality of members that extend between a structural member to which a first bollard is secured and a structural member to which a second bollard adjacent to the first bollard is secured comprises a structural member" because, upon information and belief, the plurality of members connecting the bollards appear to be structural members, or an equivalent thereof.

200. Ameristar's shallow mount bollards infringe dependent claim 35 of the '865 patent, which recites "[t] bollard structure according to claim 33, wherein the at least one of the plurality of members that extend between a structural member to which a first bollard is secured and a structural member to which a second bollard adjacent to the first bollard is secured comprises a rebar member" because, upon information and belief, the plurality of members connecting the bollards appears to be rebar, as shown in paragraph 84, or an equivalent thereof.

Indirect Infringement of the '865 Patent

201. Upon information and belief, Thornton Tomasetti had knowledge of the '865 patent as it was provided directly by RSA Technologies to players in the industry on numerous occasions.

202. Thornton Tomasetti induces infringement of the '865 patent by designing the infringing shallow mount bollards, which it then directs third-party manufacturing companies to build.

203. Skanska USA received knowledge of the '865 patent on numerous occasions, including but not limited to when it put out bids on projects they managed, after which they nonetheless selected infringing shallow mount bollards, including but not limited to those designed by Thornton Tomasetti/Weidlinger and Guardiar/Secure USA, and purchased,

distributed, and installed the infringing bollards for use by Port Authority and others.

204. Skanska USA induces infringement of the ’865 patent by, at least, managing the construction of projects in which Thornton Tomasetti/Weidlinger and Guardiar/Secure USA bollards were selected, purchased, distributed, and installed by Skanska USA, and directing the use of infringing shallow mount bollards, and directing the use of infringing shallow mount bollards by, at least, Port Authority.

205. Upon information and belief, AECOM received knowledge of the ’865 patent on numerous occasions, including but not limited to when it put out bids on projects they managed, including Hudson Yards and World Trade Center, after which they nonetheless selected infringing shallow mount bollards, including but not limited to those designed by Thornton Tomasetti/Weidlinger, Guardiar/Secure USA, Nasatka, or themselves, and purchased, manufactured, distributed, and installed the infringing bollards for use by Port Authority and others.

206. AECOM induces infringement of the ’865 patent by, at least, managing the construction of projects in which at least Nasatka and their own shallow mount bollards were selected, purchased, manufactured, distributed, and installed by AECOM, and directing the use of infringing shallow mount bollards by, at least, Port Authority. AECOM also induces infringement of the ’865 patent by designing the shallow mount bollards installed in, at least, the World Trade Center, and directing the use of these infringing shallow mount bollards by, at least, Port Authority.

COUNT I: DIRECT INFRINGEMENT OF THE ’865 PATENT

207. Plaintiff restates and realleges the foregoing allegations as if fully stated herein.

208. Port Authority has been and are directly infringing, both literally and/or under the doctrine of equivalents, the claims of the '865 patent in violation of 35 U.S.C. § 271(a), by making, using, importing, selling, and/or offering for sale in or into the United States shallow mount bollards.

209. Skanska USA has been and are directly infringing, both literally and/or under the doctrine of equivalents, the claims of the '865 patent in violation of 35 U.S.C. § 271(a), by making, using, importing, selling, and/or offering for sale in or into the United States shallow mount bollards.

210. AECOM has been and are directly infringing, both literally and/or under the doctrine of equivalents, the claims of the '865 patent in violation of 35 U.S.C. § 271(a), by making, using, importing, selling, and/or offering for sale in or into the United States shallow mount bollards.

211. Defendants have never been licensed, either expressly or impliedly, under the '865 patent.

212. The '865 patent is valid and enforceable.

213. Plaintiff has complied with the requirements of 35 U.S.C. § 287 by providing actual or constructive notice to Defendants of its alleged infringement.

214. Plaintiff has been, and continues to be, damaged and irreparably harmed by Defendants' infringement, which will continue unless this Court enjoins this infringement.

215. Plaintiff, under 35 U.S.C. § 284, may recover damages adequate to compensate for Defendants' infringement in an amount not presently known.

216. Defendants' infringement of the '865 patent has been, and continues to be,

deliberate, willful, and knowing.

217. The Court should declare this an exceptional case under 35 U.S.C. § 285, entitling Plaintiff to recover treble damages and attorney's fees.

COUNT II: INDUCED INFRINGEMENT OF THE '865 PATENT

218. Plaintiff restates and realleges the foregoing allegations as if fully stated herein.

219. Thornton Tomasetti has and is inducing infringement of the claims of the '865 patent in violation of 35 U.S.C. § 271(b).

220. Upon information and belief, Thornton Tomasetti had knowledge of the '865 patent on or before the manufacture of the infringing shallow mount bollards.

221. Upon information and belief, since receiving notice of the '865 patent, Thornton Tomasetti has induced and continues to induce others to infringe the '865 patent under 35 U.S.C. § 271(b) by, among other things, and with specific intent, actively and knowingly aiding and abetting others to infringe the '865 patent.

222. Upon information and belief, Thornton Tomasetti acted with specific intent to induce others to infringe the '865 patent.

223. Upon information and belief, Thornton Tomasetti engaged in such actions with specific intent to cause patent infringement or with willful blindness to the resulting infringement because Thornton Tomasetti had actual knowledge of the '865 patent and their acts induced manufacturers of their design of bollards to infringe by providing detailed drawings and directions on how to assemble, install, and use infringing bollards.

224. Skanska USA has been and is inducing infringement of the claims of the '865 patent in violation of 35 U.S.C. § 271(a).

225. Upon information and belief, Skanska USA had knowledge of the '865 patent on or before awarding bids to infringing shallow bollard manufacturers and purchasing, distributing, and installing the infringing shallow mount bollards.

226. Upon information and belief, since receiving notice of the '865 patent, Skanska USA has induced and continues to induce others to infringe the '865 patent under 35 U.S.C. § 271(b) by, among other things, and with specific intent, actively and knowingly aiding and abetting others to infringe the '865 patent.

227. On information and belief, Skanska USA engaged in such actions with specific intent to cause infringement or with willful blindness to the resulting infringement because Skanska USA had actual knowledge of the '865 patent and their acts induced users of bollards to infringe by, at least, selecting, purchasing, distributing, and installing infringing bollards and directing the use of infringing shallow mount bollards by, at least, Port Authority.

228. AECOM has been and is inducing infringement of the claims of the '865 patent in violation of 35 U.S.C. § 271(b).

229. Upon information and belief, AECOM had knowledge of the '865 patent on or before awarding bids to infringing shallow bollard manufacturers and purchasing, distributing, manufacturing, and installing the infringing shallow mount bollards.

230. Upon information and belief, since receiving notice of the '865 patent, AECOM has induced and continues to induce others to infringe the '865 patent under 35 U.S.C. § 271(b) by, among other things, and with specific intent, actively and knowingly aiding and abetting others to infringe the '865 patent by designing infringing shallow mount bollards for use by, at least Port Authority, and selling and installing infringing shallow mount bollards for use by, at

least, Port Authority

231. Upon information and belief, AECOM engaged in such actions with specific intent to cause infringement or with willful blindness to the resulting infringement because AECOM had actual knowledge of the '865 patent and their acts induced users of bollards to infringe by, at least, selecting, purchasing, distributing, manufacturing, and installing infringing bollards and directing the use of infringing shallow mount bollards by, at least, Port Authority.

232. Plaintiff has been, and continues to be, damaged and irreparably harmed by Defendants' infringement, which will continue unless this Court enjoins this infringement.

233. Plaintiff, under 35 U.S.C. § 284, may recover damages adequate to compensate for Defendants' infringement in an amount not presently known.

234. Defendants' infringement of the '865 patent has been, and continues to be, deliberate, and knowing.

235. The Court should declare this an exceptional case under 35 U.S.C. § 285, entitling Plaintiff to recover treble damages and attorney's fees.

DEMAND FOR JURY TRIAL

Plaintiff demands a trial by jury on all issues so triable.

PRAYER FOR RELIEF

Plaintiff prays for judgment in its favor and against Defendants as follows:

a) That Port Authority has infringed one or more claims of the '865 patent;

b) That Skanska USA has infringed one or more claims of the '865 patent;

c) That AECOM has infringed one or more claims of the '865 patent;

d) That Thornton Tomasetti has induced infringement of one or more claims of the '865

patent;

e) That Skanska USA has induced infringement of one or more claims of the ’865 patent;

f) That AECOM has induced infringement of one or more claims of the ’865 patent;

g) That Defendants’ infringement is willful, and that this case be deemed exceptional under 35 U.S.C. § 285, that Plaintiff’s damages be trebled, and that Plaintiff be awarded attorney’s fees and costs;

h) That Plaintiff be awarded damages adequate to compensate for Defendants’ infringement of the ’865 patent, including, e.g., lost profits, but in no event less than a reasonable royalty;

i) That Plaintiff be awarded pre-judgment and post-judgment interest;

j) That this court enjoin Skanska USA, AECOM, and Thornton Tomasetti, their officers, directors, principals, agents, servants, employees, successors, assigns, affiliates, and all that are in active concert or participation with them, or any of them, from further infringement of the ’865 patent;

k) That costs and expenses in this action be awarded to Plaintiff; and

l) For such further and other relief as the Court may deem appropriate.

Dated: January 27, 2020

Joseph V. Saphia [js3680]
JSaphia@haugpartners.com
Jessica H. Zafonte [jz7813]
JZafonte@haugpartners.com
HAUG PARTNERS LLP
745 Fifth Avenue
New York, New York 10151
Telephone: (212) 588-0800
Facsimile: (212) 588-0500

Attorneys for Plaintiff
RSA Protective Technologies, LLC