T.C. Memo. 2016-130

UNITED STATES TAX COURT

CHRISTINA A. ALPHONSO, Petitioner v.
COMMISSIONER OF INTERNAL REVENUE, Respondent*

Docket No. 17130-08. Filed July 14, 2016.

Harvey R. Poe and Amy M. Van Fossen, for petitioner.

Patrick F. Gallagher and Erika B. Cormier, for respondent.

SUPPLEMENTAL MEMORANDUM FINDINGS OF FACT AND OPINION

CHIECHI, Judge: This case is before the Court on remand from the U.S. Court of Appeals for the Second Circuit in Alphonso v. Commissioner, 708 F.3d

*This opinion supplements the Court's previously filed opinion Alphonso v. Commissioner, 136 T.C. 247 (2011), vacated and remanded, 708 F.3d 344 (2d Cir. 2013).

[*2] 344 (2d Cir. 2013), vacating and remanding 136 T.C. 247 (2011). The issues for decision on remand are (1) whether the collapse of a certain retaining wall is a casualty within the meaning of section 165(c)(3)[1] and (2) if the collapse of that retaining wall is a casualty within the meaning of that section, the amount of the deduction to which petitioner is entitled under section 165(a) and (h) and the regulations thereunder with respect to any loss from that casualty. We hold that the collapse of that certain retaining wall is not a casualty within the meaning of section 165(c)(3).[2]

FINDINGS OF FACT

Some of the facts have been stipulated and are so found.

At the time petitioner filed the petition in this case, she resided in New York.

During 2005, the year at issue, petitioner owned certain shares of stock in Castle Village Owners Corp. (Castle Village), a cooperative housing corporation as defined in section 216(b), that was incorporated in mid-December 1986. At all

[1]All section references are to the Internal Revenue Code in effect for the year at issue. All Rule references are to the Tax Court Rules of Practice and Procedure.

[2]As a result of our holding on the first issue presented, we need not, and do not, consider the second issue presented.

[*3] relevant times, Castle Village owned a cooperative apartment complex that consisted of a seven-acre tract of land (seven-acre tract or grounds) overlooking the Hudson River in New York, New York, on which there were a two-story cottage and five apartment buildings (Castle Village apartment buildings). The Castle Village apartment buildings ranged in height from 12 to 15 stories and contained a total of 589 apartments.[3] Before May 12, 2005, the grounds near those five Castle Village apartment buildings were supported by a retaining wall of stone masonry construction (retaining wall in question) that had been built between 1921 and 1925. (We shall refer collectively to the seven-acre tract and all of the improvements thereon that Castle Village owned at all relevant times as the Castle Village complex.) Before May 12, 2005, the retaining wall in question ran parallel to Riverside Drive[4] for approximately 800 feet and had an average height of 65 feet.

Before May 12, 2005, the retaining wall in question had 14 locations known as pilasters; at each of the pilasters an approximately seven-foot-wide section of the retaining wall in question extended beyond the face of that wall by approxi-

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[3]One of the reports that is part of the record indicated that the Castle Village apartment buildings had been constructed between 1939 and 1945.

[4]Riverside Drive is on the west side of the Castle Village complex.

[*4] mately one foot. Before that date, the 14 pilasters spanned the retaining wall in question from the southern edge of the Castle Village grounds that was adjacent to the Castle Village apartment building at 120 Cabrini Boulevard to an approximate point adjacent to the northernmost point of the Castle Village apartment building at 160 Cabrini Boulevard.

Two semicircular turrets were constructed near the top of the retaining wall in question. One of those turrets was adjacent to the eighth southernmost pilaster, and the other turret was adjacent to the tenth southernmost pilaster.

At the top of the retaining wall in question was a parapet that consisted of a thin concrete wall with concrete columns, or balusters, spaced at regular intervals across the top of that retaining wall. There were a total of 64 balusters, each having a diameter of 14 inches and a height of four feet nine inches. Of the 64 balusters, 33 were south of the southernmost turret (i.e., south of the eighth southernmost pilaster).

Three tunnels were constructed through the retaining wall in question. The respective tunnels were approximately 10 feet north of the tenth southernmost pilaster, adjacent to the ninth southernmost pilaster, and approximately 10 feet south of the eighth southernmost pilaster.

[*5] At some time before August 28, 1985, Castle Village retained John J. Flynn (Mr. Flynn), an engineer,[5] to perform an inspection of the retaining wall in question. In a letter dated August 28, 1985 (August 28, 1985 Flynn letter), Mr. Flynn indicated that a portion of the retaining wall in question south of the southernmost turret (i.e., south of the eighth southernmost pilaster) showed signs of movement and instability. In that letter, Mr. Flynn further indicated that the following conditions existed in and around the portion of the retaining wall in question between the eighth southernmost pilaster and the first southernmost pilaster: (1) a vertical crack through the retaining wall in question beginning about 20 feet from the base, (2) relief drains, referred to in the August 28, 1985 Flynn letter as drainage tiles, that appeared not to function properly, and (3) a crack between the fifth southernmost pilaster and the fourth southernmost pilaster.

In the August 28, 1985 Flynn letter, Mr. Flynn also indicated that the damage to the southern portion of the retaining wall in question "is of serious magni-

[5]The record does not establish whether Mr. Flynn specialized in any particular field of engineering.

[*6] tude" and that a stone in the area of the fourth so-called panel[6] had "dropped inward into what may be a hollow development behind the stone wall."

Around September 1985, Castle Village retained Mueser Rutledge Consulting Engineers (MRCE), an engineering firm, to conduct a study of the retaining wall in question.[7] MRCE discussed the results of that study in a report dated November 4, 1985 (November 4, 1985 MRCE report). In the November 4, 1985 MRCE report, MRCE stated in pertinent part:

> In accordance with our proposal letter dated October 1, 1985, we have completed our study of the condition of the large stone masonry retaining wall, tunnel, two cottages and balustrade at the Castle Village. We report herein our findings, specific recommendations for structural repairs and a recommended allowance of $250,000 for the repairs.
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> Executive Summary
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> In our opinion, the condition of these structures is, more or less, unsightly and in need of repairs but is not hazardous to the present village occupants. Structural repairs can be made in an orderly fashion followed by repairs or replacement to finishes in the cottages and elsewhere as desired. As the next phase of this rehabilitation program, we will provide drawings and specifications for the structural repairs and inspect the work in the field. Finally, we will

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[6]The record does not establish the meaning of the term "panel". It appears from our examination of various reports that are part of the record that that term may refer to each section of the retaining wall in question between each of the 14 pilasters.

[7]MRCE specialized in so-called foundation engineering.

[*7] report back to you when these repairs have been completed to our satisfaction.

MRCE set forth in the November 4, 1985 MRCE report its conclusions with respect to the retaining wall in question in pertinent part as follows:

> Stone Masonry Retaining Wall
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> * * * * * * *
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> Visual observations of the existing retaining wall reveal several local problem areas, scattered cracking and widespread prior surface patching with cement mortar of the joints and cracks between individual stones. The more pronounced problem areas were observed at the southwest corner at the lower wall south of the turrets. No indications were seen that the wall is unstable or shows damage other than that related to weathering and volume changes due to shrinkage of mortar and temperature.
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> Photograph No. 1 shows south face of Pilaster No. 1 located at the southwest corner of the wall [the first southernmost pilaster]. A nearly vertical crack was observed, located approximately 2.5 feet from the easterly edge of pilaster and extending vertically for several feet. Another crack was visible between the pilaster and the recessed wall panel extending upward to the coping stones and branching eastward into the lower coping stone above and westward through the coping stones up to the top of the lower wall.
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> * * * * * * *
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> Similarly, a crack ranging from 1/8" to 1 inch was observed at the junction of Pilaster No. 1 [the first southernmost pilaster] and the adjacent west wall panel. Several small vertical cracks were observed in Panel No. 1, which is north of Pilaster No. 1 [the first southernmost pilaster]. The most southerly extends full height of the panel and

[*8] partially into the coping. A narrow void, approximately 2 feet into the wall, was observed at the lower middle of the panel.

Pilasters Nos. 2 and 3 [the second and third southernmost pilasters] and Panel No. 2 appear to be in generally good condition, without any obvious defects.

A horizontal crack was observed at the top of Pilaster No. 4 [the fourth southernmost pilaster] near the coping stones. A second horizontal crack was observed at the base of the pilaster. A large recessed stone with multiple cracks around it, and local bulging in the stones below was observed in the upper north corner of the panel adjoining Pilaster No. 4 [the fourth southernmost pilaster]. Slight bulging of the upper portion of Pilaster No. 4 [the fourth southernmost pilaster] was observed, as shown in Photograph No. 3. Multiple areas of loose surface mortar and scattered narrow cracks were seen in the middle and upper portions of Panel No. 3.

Photographs Nos. 4 and 5 show Panel No. 4 between the 4th and 5th pilasters [fourth and fifth southernmost pilasters]. A vertical crack extends from the bottom of panel at midbay upward to the top of panel and partially through the coping. A dark oblong stone, located in the lower central third of the panel is cracked vertically, parallel to the wall face.

Photograph No. 6 shows the lower portion of Pilaster No. 5 [the fifth southernmost pilaster]. Two inclined cracks were observed in the lower portion of this pilaster. One propagates through a dark lower stone upward to the south edge of the pilaster and the other, approximately 3 feet north of it, extends through the long stone above. A wide crack, approximately 3 inches wide by 4 feet high was observed between the two cracked stones and the panel face, extending about 6 feet into the pilaster in the northerly direction.

Photograph No. 7 shows Pilaster No. 7 [the seventh southernmost pilaster] and the upper northerly corner of the Panel No. 6. A narrow crack was observed, beginning at the bottom of pilaster

[*9] at Panel No. 6 and extending upward and to the south to the underside of a dark stone and to the ledge. Another nearly vertical crack was noticed in Panel No. 7, north of the pilaster. This crack extends from approximately 1/4 height of the panel upward into the ledge stone, where it appears to be about 1 inch wide.

The wall north of Panel No. 7 appears to be in better condition, with only scattered small voids between individual stones at several locations. More pronounced voids were noticed at the lower portion of Pilaster No. 9 [the ninth southernmost pilaster], between the two turrets, and in Panels No. 9 and 10 near Pilaster No. 10 [the 10th southernmost pilaster].

Scattered areas of loose mortar covering stone joints were observed mainly over the southern half of the west wall. These however have no effect on the stability of the wall. For the long term they might contribute to local deterioration of the joints by permitting access of water and the formation of ice, which could in turn loosen individual stones and cause more cracks to appear in the wall.

A number of relief drains, consisting of 6 inch diameter clay pipes, slanted downward away from the face of the wall, were observed scattered over the entire wall area. Some sand was visible inside the drain pipes but none of them contained any moisture in spite of heavy rain that fell several days before the day of observation. There are no signs of discoloration on the stones below the individual drains, indicating very little drainage flow, if any.

The 2-foot wide coping at top of the lower wall is covered with cement mortar which contains many small cracks.

After setting forth its conclusions with respect to the condition of the retaining wall in question, MRCE made the following recommendations in the November 4, 1985 MRCE report:

[*10] Retaining Wall--Corrective Measures

> As is described above, the condition of the retaining wall needs remedial measures as part of its regular maintenance. It contains no signs of instability and considering its age of 77 years,[8] is in good condition. Local repairs to be performed with [sic] consist of raking out and placing mortar in cracks of more than 1/4 inch width. At Pilaster No. 5, the separation of the 4-foot high portion above grade, will be repaired by drilling and grouting several rock bolts into the wall behind the gap. The gap will then be filled with grout. Grouted rock pins may be required at other locations in order to confine individual stones.
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> * * * * * * *
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> Balustrade--Corrective Measures
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> Six of the balusters have deviations from vertical of more than one inch per 24 inches (4%). We will correct this condition by either resetting the balusters to a plumb position and grouting or, if probing indicates they cannot be reset, by drilling and grouting vertical anchor dowels for the inside edge. Cracks in the baluster bases will be filed with sand-epoxy grout.

In or around 1986, eight rock anchors and three rock bolts were installed in the retaining wall in question.[9]

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[8]As discussed above, construction of the retaining wall in question was completed in 1925. As a result, that retaining wall had been in place approximately 60 years, not 77 years, when MRCE prepared the November 4, 1985 MRCE report.

[9]Although it is not altogether clear from the record, it appears that the installation of the eight rock anchors and three rock bolts through the retaining wall in question was in response to the recommendation by MRCE in the

(continued...)

[*11] At some time before April 14, 1994, Castle Village retained Antonucci & Lawless, Architects & Engineers (Antonucci), an architectural and engineering firm,[10] to evaluate the retaining wall in question. Antonucci issued a report dated April 14, 1994 (April 14, 1994 Antonucci report) that Antonucci limited "only to readily observable conditions." Consequently, Antonucci added in its April 14, 1994 Antonucci report the caveat that "[p]otential underground or hidden problems that may exist and would not be apparent without an extensive investigation or unless selected excavation, opening of walls, testing, etc. were performed are not included [in this report]."

In the April 14, 1994 Antonucci report, Antonucci indicated that the mortar joints along the retaining wall in question were deteriorating as a result of water penetration, freezing and thawing action, and penetrating root systems from vegetation.

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[9](...continued)
November 4, 1985 MRCE report with respect to the wide crack that it had observed in the retaining wall in question, which was approximately three inches wide by four feet high and was between two cracked stones in the fifth southernmost pilaster and the panel. However, the record does not establish the nature of any problems with that wall that that installation was intended to address. Nor does the record establish where the eight rock anchors and three rock bolts were installed in the retaining wall in question.

[10]The record does not establish whether Antonucci specialized in any particular field of architecture or engineering.

[*12] At some time before June 22, 1998, Castle Village retained Cutsogeorge & Tooman Architects, P.C. (Cutsogeorge), an architectural firm,[11] to inspect the retaining wall in question. On June 22, 1998, Cutsogeorge conducted that inspection and thereafter prepared a so-called architect's field report that it sent to Castle Village with a cover letter dated June 24, 1998. (We shall refer collectively to the letter dated June 24, 1998 and the architect's field report as the June 24, 1998 Cutsogeorge report.)

In the June 24, 1998 Cutsogeorge report, Cutsogeorge indicated that it had inspected the retaining wall in question with Frank Nadal (Mr. Nadal), the property manager of Castle Village, to investigate a report of fallen masonry from the retaining wall in question "adjacent to the public sidewalk at the entrance ramp to the Henry Hudson Parkway."[12] As a result of its June 22, 1998 inspection of that part of the retaining wall in question, Cutsogeorge indicated in the June 24, 1998 Cutsogeorge report that approximately six cubic feet of rock and mortar had fallen to the sidewalk from a point that was about 20 feet up the wall.

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[11]The record does not establish whether Cutsogeorge specialized in any particular field of architecture.

[12]In the June 24, 1998 Cutsogeorge report, Cutsogeorge indicated that a resident of the Castle Village apartment building adjacent to the south end of the retaining wall in question had found the masonry that had fallen.

[*13] In the June 24, 1998 Cutsogeorge report, Cutsogeorge also indicated that, in addition to inspecting the part of the retaining wall in question with respect to which there had been a report of fallen masonry, it had inspected other areas of that retaining wall on June 22, 1998. As a result of its inspection of those other areas, Cutsogeorge indicated in the June 24, 1998 Cutsogeorge report that areas of the retaining wall in question had severely deteriorated mortar and cement patches and that approximately 80 percent of that retaining wall was overgrown with vegetation. As a result of what it observed upon its inspection of the retaining wall in question, Cutsogeorge recommended in the June 24, 1998 Cutsogeorge report that Castle Village retain a person qualified to undertake an assessment of the structure and the facade of that retaining wall and thereafter to indicate what repairs were recommended as a result of those assessments.

On March 17, 1999, at the request of Castle Village, MRCE submitted a proposal to Castle Village (March 17, 1999 MRCE proposal) "for the performance of engineering services for the investigation of structural distress to the west retaining wall and to determine remedial measures to stabilize the wall." In that proposal, MRCE indicated that the "southerly portion of the stone masonry retaining wall along the Riverside Drive on the west side of the site has experienced structural distress since that work was performed [i.e., installation of eight

[*14] rock anchors and three rock bolts in and around 1986 after MRCE submitted the November 4, 1985 MRCE report to Castle Village and certain remedial work was done on the retaining wall in question]."

On March 19, 1999, at the request of Castle Village, MRCE submitted to Castle Village a second proposal dated March 19, 1999 "for the performance of engineering services for the investigation of structural distress to the plaza 'east' retaining wall[13] and to provide recommendations for reconstruction of the wall."

At the request of Castle Village, Gregory Pillori, P.E., P.A. (Pillori), a geotechnical engineering firm, submitted to Castle Village a proposal dated May 19, 1999 (May 19, 1999 Pillori proposal) for inspecting the retaining wall in question for structural integrity and the surrounding grounds as follows: (1) inspecting all outdoor sidewalks, staircases, and retaining walls for structural integrity; (2) photographing any items in need of repair, describing their present condition, and making recommendations for repair; (3) inspecting lawn drain inlet boxes to ascertain the existing drainage scheme; and (4) evaluating the site drainage system with recommendations for repair or replacement.

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[13]In addition to the retaining wall in question, there was another masonry retaining wall in the Castle Village complex. That other retaining wall, which was approximately 25 feet high and was at the north end of the west boundary of the Castle Village complex, formed the exterior corner of the parking garage structure in that complex and supported a terrace.

[*15] On September 16, 1999, Pillori sent to Castle Village an initial engineering report dated September 16, 1999 (September 16, 1999 Pillori report). In that report, Pillori indicated that pursuant to the May 19, 1999 Pillori proposal it had performed an inspection and evaluation of the retaining wall in question. Pillori set forth in the September 16, 1999 Pillori report the following conclusions and recommendations as a result of that inspection and that evaluation: (1) thermal expansion, freeze-thaw cycles, exposure to water, and inadequacies in design had led to significant deterioration of the Castle Village infrastructure, most prominently in the retaining walls and stormwater control system; (2) the retaining wall in question exhibited vertical and horizontal cracks throughout and bulged outward at the midpoint; (3) replacement of the retaining wall in question was required but was a medium priority as opposed to a high priority; (4) the stormwater control system was not capable of handling stormwater runoff; (5) in the areas of the Castle Village complex grounds that were west of Castle Village apartment buildings at 120 Cabrini Boulevard and 140 Cabrini Boulevard, some catch basins had collapsed and most drainage pipes were filled with silt; (6) replacement of the stormwater control system was required but was a medium priority as opposed to a high priority; and (7) designing and constructing a new drainage system and regrading sections of the lawn area would be necessary.

[*16] On January 7, 2002, at the request of Castle Village, Langan Engineering & Environmental Services, Inc. (Langan), an engineering firm,[14] submitted to Castle Village a letter dated January 7, 2002 (January 7, 2002 Langan proposal letter) in which it made a proposal for undertaking the inspection and the evaluation of, and making recommendations as a result of that inspection and that evaluation with respect to, ground subsidence (i.e., the gradual sinking or downward movement of ground surface resulting in depressions therein) in the southerly portion of the Castle Village complex and the condition of the retaining wall in question. In that proposal letter, Langan indicated its understanding that its inspections, evaluations, and recommendations were to be used as part of an ongoing understanding of the conditions and long-range planning that Castle Village was undertaking.

In the January 7, 2002 Langan proposal letter, Langan indicated that before preparing that letter it had visited the Castle Village complex and had observed that there were extensive depressions throughout the lawn area above the retaining wall in question as well as an existing drainage system along and in the general vicinity of a north-south walkway which may not have functioned properly and for

[14]One of the fields of engineering in which Langan specialized was so-called soil engineering.

[*17] which the outlet was not known. Langan set forth the following proposal in the January 7, 2002 Langan proposal letter:

> 1. Make a detailed inspection of the grounds and identify and understand the areas where the depressions have occurred. You have supplied us with a plan from a previous report showing the depressions. We would use that and expand upon it to better understand the conditions. During that time, we would also investigate the existing drainage system by lifting covers and evaluating the size of the pipe and determine the routing of the pipes. The previous report indicates that the pipes are typically filled with silt. We would also research [New York] City records in hopes of finding some information with regard to the drainage outlet from the development.
>
> 2. Prepare topographic survey of the lawn area in the key areas to understand the conditions regarding slopes and depressions as part of our evaluation and determining recommendations for correction of the problems. Survey area will be limited from the edge of the buildings towards the retaining wall and encompass approximately 2 acres of land. We would also survey the existing wall in three locations to document the geometry. This plan would be used to present our evaluations and recommendations. A digital copy of the previous plan would be helpful.
>
> 3. Make a physical inspection of the retaining wall along Riverside Drive. The masonry rock wall was constructed seventy plus years ago and the geometry and size of the wall (other than height) is not known. You did report that within the last few years a portion of the wall was tied back using soil or rock anchors. In the meantime, there has [sic] been some depressions [that] have developed and [sic] [behind] a portion of the wall that has a terrace on the Riverside Drive side. There has also been some spalling occurring in locations. We would document the existing wall conditions and assess the short-term and long-term needs for maintenance and possibly monitoring of the wall.

[*18] 4. Prepare a report indicating our findings, evaluation and recommendation. We expect to prepare some preliminary drainage calculations, possibly some grading and schematic design of a new drainage system.

In early 2002, Castle Village sought additional assistance from MRCE with respect to the retaining wall in question. In a letter dated March 27, 2002 (March 27, 2002 MRCE letter), MRCE stated in pertinent part:

> Terrace Area:
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> * * * * * * *
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> We suggest that it would be prudent for Castle Village to engage a landscape architect with civil capabilities to design and implement a coordinated program of site regrading, site drainage, repair or replacement of the storm sewer system coordinated with possible reconstruction of the lawn watering system, repair or replacement of pavements, and the repair of retaining walls as described in the Pillory report.
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> High, masonry retaining wall:
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> We understand that the 70 foot high, masonry retaining wall paralleling Riverside drive was originally constructed in 1906.[15] There is a soil filled setback at mid height that suggests the wall was constructed in two sections, with the lower half essentially a facing on bedrock and the upper half a separate, gravity retaining wall bearing on bedrock. However, we are not aware of any descriptions of wall construction, plans or sections that confirm the actual configuration of the wall, including the thickness of the masonry and the character of the foundations.

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[15] As discussed above, construction of the retaining wall in question was completed in 1925.

[*19] We examined the wall in and appurtenances in 1985 and recommended remedial measures that were implemented in 1986 and 1987 and which included reinforcement of a tunnel through the wall and repair of the wall face. At that time we found no indications of displacement or tilting of the wall that would indicate potential instability of the wall as a retaining structure. We also observed no indications of potential instability during our March 1, 2002 site visit. We did note that soil has washed into the drainage holes in the wall, and we observed sinkholes in the soil filling the mid-height setback that may be related to the loss of soil into the drainage holes; but, these do not affect the basic stability of the wall.

Recognizing that the wall has apparently remained stable for 96 years,[16] and that observed deteriorations to date have been essentially cosmetic in nature, we suggest that a minimum program to mitigate deteriorations and to confirm the continuing stability of the wall should include a detailed examination of the wall by MRCE Engineers, and the making of test pits at the location of sinkholes in the soil filling the setback to attempt to determine the cause of the sinkholes. We also suggest the program include a photogrammetric survey of the face of wall from fixed points to establish the horizontal position of the face of the wall. This technique has the ability to determine the horizontal position of selected target points on the wall to within 1/16 inch. Once a baseline survey is completed the photogrammetry can be repeated at selected time intervals to determine if the wall is moving. In addition to fixing the horizontal position of the entire face of the wall, the procedure obtains a complete photographic record of the condition of the face each time the survey is made.

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[16] As discussed above, construction of the retaining wall in question was completed in 1925. As a result, that retaining wall had been in place approximately 77 years, not 96 years, when MRCE prepared the March 27, 2002 MRCE letter. See supra note 8.

[*20] MRCE's product would be a report summarizing the field work, our interpretation of the test pit and photogrammetric data, and including recommendations for cosmetic repairs to the face of the wall, cleaning of drains and mitigation of the sinkholes in the soil filling the setback in the wall.

> Note that the minimum program is intended to establish that the high, masonry retaining wall maintains the degree of stability that has been demonstrated by 96 years of satisfactory performance. However, we are not aware of any available information that defines the cross section of the wall or the character of the wall foundations. Thus, the minimum program cannot determine the actual safety factor of the wall against failure, either against present static loads or against dynamic loads in the event of an earthquake during the life of the wall.
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> If Castle Village desires to establish the actual safety factors of the wall under various conditions of loading for comparison with presently accepted values, it will be necessary to define the wall cross section, the character of the backfill and the character of the foundations by a rather extensive program of test pits and borings behind and in front of the wall, as well as coring horizontally through the wall at several levels to determine its actual thickness. * * *

On June 27, 2002, MRCE submitted a letter dated June 27, 2002 (June 27, 2002 MRCE proposal letter) to Castle Village with respect to proposed consulting engineering services relating to rehabilitation of the face of the retaining wall in question. In that proposal letter, MRCE acknowledged that Castle Village was interested in obtaining a quantitative assessment of the long-term stability of the retaining wall in question. In the June 27, 2002 MRCE proposal letter, MRCE also acknowledged that there recently had been pieces of masonry and mortar that

[*21] had fallen from the face of the retaining wall in question onto Riverside Drive, which was an indication that maintenance work on the face of the retaining wall in question was necessary. In that proposal letter, MRCE stated that, except for observed deteriorations to date that had essentially been cosmetic in nature, the retaining wall in question had remained stable for 96 years.[17]

In the June 27, 2002 MRCE proposal letter, MRCE proposed to Castle Village that MRCE provide the following consulting services in two phases: (1) during the first phase, MRCE would inspect the face of the retaining wall in question in order to estimate the scope of maintenance work necessary to mitigate the deterioration of the face of that retaining wall, and (2) during the second phase, MRCE would arrange for subcontractors to make borings and test pits to investigate the thickness of the retaining wall in question, foundation conditions, and the character of the wall backfill.

Castle Village did not accept MRCE's proposal in the June 27, 2002 MRCE proposal letter.

In a letter dated July 3, 2002, Castle Village retained Langan to evaluate the ground subsidence and structural integrity of the retaining wall in question and authorized it to begin a topographical survey.

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[17]See supra note 16.

[*22] In a letter dated August 9, 2002 (August 9, 2002 Langan proposal letter), Langan noted that it had been reported that the retaining wall in question had previously exhibited structural distress and that within the past few years several tieback anchors were installed. Langan proposed to Castle Village in that letter that Langan perform, inter alia, the following services: (1) review available subsurface investigation data; (2) visually inspect the face of the retaining wall in question to determine signs of structural distress and inspect in detail the depression behind that retaining wall at terrace level; and (3) investigate subsurface conditions behind the retaining wall in question by means of a combination of test borings, test probes, and test pit excavations.

With respect to the test borings and test probes that Langan proposed as part of its investigation of subsurface conditions, Langan proposed in the August 9, 2002 Langan proposal letter drilling a series of test borings and test probes behind the re-taining wall in question in order to better define the top of the rock contour behind that retaining wall. With respect to the test pit excavations that Langan proposed as part of its investigation of subsurface conditions, Langan proposed in that proposal letter to perform two days of exploratory test pit excavations at the inboard edge of the retaining wall in question in order to determine conditions immediately behind that retaining wall.

[*23] In a letter dated September 13, 2002 (September 13, 2002 Langan revised proposal letter), Langan modified the August 9, 2002 Langan proposal letter by eliminating as services that it proposed to perform for Castle Village the investigation of subsurface conditions behind the retaining wall in question by means of a combination of test borings, test probes, and test pit excavations.[18] In lieu of those services, Langan proposed in the September 13, 2002 Langan revised proposal letter that Langan monitor the retaining wall in question using control point prisms at six sections that would be approximately 100 feet apart, with multiple points in each section, and with measurements taken initially, and at three, six, and 12 months in order to determine the magnitude and rate of wall movement. In that letter, Langan reaffirmed that it would perform the following services that it had proposed in the August 9, 2002 Langan proposal letter: (1) review available subsurface investigation data and (2) visually inspect the face of the retaining wall in question to determine signs of structural distress and a detailed inspection of the depression behind that retaining wall at terrace level.

On November 4, 2002, Castle Village accepted the proposal in the September 13, 2002 Langan revised proposal letter.

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[18]The record does not establish why Langan modified the August 9, 2002 proposal letter about a month after it had sent that letter to Castle Village.

[*24] In a report dated January 6, 2003 (January 6, 2003 Langan report), Langan informed Castle Village that it had performed the following services on November 25 and 26, 2002: (1) visually inspected approximately 600 feet of the retaining wall in question; (2) used a 50-foot lift bucket and a 55-foot truck lift bucket to inspect the upper portion of the retaining wall in question and to access the tunnels; (3) established a series of survey control points at six sections of the retaining wall in question; (4) permanently mounted optical survey control points on the retaining wall in question; and (5) installed those survey control points so that a series of five control points were distributed vertically from the top to the base of the retaining wall in question at about 100-foot intervals along the length of that retaining wall. Langan stated in the January 6, 2003 Langan report that it intended 30 control points to be monitored three times during a one-year period.

In the January 6, 2003 Langan report, Langan further stated in pertinent part as follows with respect the conditions that it had observed during its visual inspection of the retaining wall in question:

> We have established three categories of overall condition of the structure as an indication of the subjective evaluations of the observable conditions only. The ratings and corresponding definitions are as follows:

[*25] Rating	Description
I	Little to Moderate deterioration. Stability and safety concerns are unlikely over the next 12 months.
II	Moderate to Heavy deterioration. Possible stability and safety concerns over the next 12 months.
III	Heavy to Severe damage. Probable safety and stability concern over the next 12 months.

Station 0+00 to 1+00[19]

1. The face of retaining wall in this location is covered in vegetation, mainly vines. The face of the stones appears to have been weakened/eroded by the plant growth in several locations.

2. Loose/missing mortar was observed throughout.

3. The weepholes all sloped downwards into the wall face, and are typically filled with sand, vegetation, and birds nests. Evidence of soil washing out from behind the retaining wall was observed at several locations, mainly beneath the setback level. Water was observed seeping out of the wall through the mortar/joints. All of the weep holes were dry.

4. Minor vertical and horizontal cracking was note as [sic] several locations along the base of the wall.

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[19] According to certain diagrams included with the January 6, 2003 Langan report, "Station 0+00 to 1+00" encompassed the most northerly portion of the retaining wall in question and each subsequent station encompassed a portion of the retaining wall in question that is south of the one immediately before it.

[*26] The retaining wall from Sta. 0+00 to 1+00 is given an overall condition rating of I.

Station 1+00 to 2+00

1. The face of the retaining wall is covered in vegetation. The face of the stones appears to have been weakened/eroded by the plant growth in several locations.

2. The weepholes all sloped downwards into the wall face, and are typically filled with sand, vegetation, and birds nests. Evidence of soil washing out from behind the retaining wall was observed at several locations, mainly beneath the setback level. Water was observed seeping out of the wall through the mortar/joints. All of the weep holes were dry.

3. Minor vertical and horizontal cracking was note as [sic] several locations along the base of the wall.

The retaining wall from Sta. 1+00 to 2+00 is given an overall condition rating of I.

Station 2+00 to 3+00

1. The retaining wall is covered in vegetation. The face of the stones appears to have been weakened/eroded by the plant growth in several locations.

2. The overall shape of the retaining wall changes from concave at about Station 2+00 to convex at about Station 2+70.

3. Minor vertical and horizontal cracks, loose mortar/stones, and soil staining were observed along the base of the wall from about Station 2+00 to about Station

[*27]

2+60. Vertical cracks were observed extending from the bottom of the wall to the terrace level at about Stations 2+80 and 3+10.

4. The weepholes all sloped downwards into the wall face, and are typically filled with sand, vegetation, and birds nests. All of the weep holes were dry.

The retaining wall from Sta. 2+00 to 2+60 is given an overall condition rating of I. The retaining wall from Sta. 2+60 to 3+00 * * * is given an overall condition rating of II.

Station 3+00 to 4+00

1. Scattered portions of the retaining wall are covered in vegetation. The face of the stones appears to have been weakened/eroded by the plant growth in several locations.

2. The weepholes all sloped downwards into the wall face, and are typically filled with sand, vegetation, and birds nests. The base of the wall is stained with soil from about Station 3+00 to 3+50. Water was observed seeping out of the bottom of the buttress at Station 3+50. All of the weep holes were dry.

3. The lower portion of the wall appears to be bulging outward from about Station 3+00 to 3+60. The portion of the wall below the setback at about Station 3+10 appears to have moved outward more than 2 inches.

4. Vertical cracks were observed extending from the bottom of the wall to the terrace level at about Station 3+10. Large vertical cracks and offset of adjacent stones were also observed at about Stations 3+80 to 3+90.

[*28] The retaining wall from Sta. 3+00 to 4+00 is given an overall condition rating of II.

Station 4+00 to 5+00

1. Most of the vegetation appears to have been removed from the retaining wall. The face of the stones appears to have been weakened/eroded by the plant growth in several locations.

2. Repointing of the mortar between the stones was observed on the upper portion of the wall (extending from about 10-ft above the base to the top of the retaining wall).

3. Vertical cracks and offset adjacent stones were observed throughout the lower portion of the wall.

4. Five rock anchors were observed at the base of the buttress at Station 4+00. Three rock anchors were observed at the top of the buttress at Station 4+50, and three were observed immediately adjacent to the buttress, below the terrace setback.

5. The wall appears to be bulging outward immediately below the installed anchors. The base of the buttress has pulled away from surrounding stone more than 4 inches. Vertical cracks were observed adjacent to the buttress in this location from the base of the wall to a height of about 20-ft. Additional vertical cracking was observed between the two buttresses from the base of the wall to a height of about 5 to 10-ft.

6. The weepholes all sloped downwards into the wall face, and are typically filled with sand, vegetation, and birds nests. All of the weep holes were dry.

[*29] The retaining wall from Sta. 4+00 to 5+00 is given an overall condition rating of II.

Station 5+00 to 6+00

1. Minor vegetation growth was observed on the face of the retaining wall.

2. Loose/crumbling mortar/stones were observed throughout. Scaffolding is in place along this portion of the wall due to potential of falling blocks.

3. Missing stones and were also observed.

4. Water was observed seeping out of the wall through joints at about Station 5+25, and mold growth was observed throughout the base of the wall. The weep holes all sloped downwards into the wall face, and are typically filled with sand, vegetation, and birds nests. All of the weep holes were dry.

The retaining wall from Sta. 5+00 to 6+00 is given an overall condition rating of I.

Southern face of the retaining wall (Station 6+00 to 7+00)

1. A vertical crack was observed along the southern face of the retaining wall beginning at the base of the wall and extending diagonally eastward to the top of the wall.

2. Loose mortar was observed throughout this section of the wall.

3. The weepholes all sloped downwards into the wall face, and are typically filled with sand, vegetation, and birds nests. All of the weep holes were dry.

[*30] The retaining wall on the south property line is given an overall rating of I.

Top of the Retaining Wall

1. Sidewalk slabs above the southern portion of the retaining wall exhibit signs of differential settlement; this [sic] could be indications of soil erosion.

After setting forth a description of the conditions Langan observed during its visual observation of the retaining wall in question, Langan in the January 6, 2003 Langan report made the following recommendations for continuing maintenance and observation of that wall:

RECOMMENDATIONS

Our evaluation of the retaining wall is as follows:

1. Locations identified with a conditions rating II appear to have undergone movement since the 1980's repair. Additional effort should be focused on these areas to determine if [sic] the magnitude and rate of wall deformation.

2. Localized areas of loose mortar/stones should be cleaned out and repointed to minimize the potential for rocks falling from the face of the wall.

3. All vegetation should be removed from the face of the fall [sic] to minimize additional spalling of the rock face.

4. The soil loss at the top of the retaining wall is likely due to the ponding of water behind the wall, and subsequent migration through loose mortar/joints in the retaining

[*31] wall. Additional investigation including soil borings/test pits behind the retaining wall is strongly encouraged to evaluate the extent of the soil erosion. We recommend investigating the subsurface conditions behind the retaining wall by means of a combination of test borings, test probes, and test pit excavations. A series of test probes behind the training [sic] wall will better define the top of rock contour and will identify subsurface conditions. Test pits will help to determine conditions immediately behind the wall.

5. If seepage continues through the mortar, weepholes may be required throughout the wall to relieve any hydro-static pressure. The existing "weepholes" are not oriented in the conventional manner for a weephole to drain water from behind the wall; i.e., downward toward the face of the wall, or horizontal through the wall. The weepholes do not appear to have been compromised other than being filled in with dirt and debris. Any benefit from cleaning out the existing weepholes is un-clear as there [sic] purpose is unknown.

6. The wall is currently scheduled to be monitored for potential lateral movements using optical level survey equipment. The monitoring frequency is currently scheduled for February, May, and December. Additional monitoring may be required based on the results of the measurements. Additional monitoring could consist of crack gauges, and more frequent surveying of the optical points to check for movements.

7. The retaining wall should be reexamined within a year to evaluate changes in conditions. If the monitoring shows continual lateral movement an investigation of the back-fill material, and the rock profile behind the retaining wall should also be performed. If additional bulging

[*32] out/lateral movement of the base of the wall is observed, structural repair may be necessary.

In a memorandum dated February 27, 2003, Langan informed Castle Village of the results of a three-month survey of the observation survey points on the retaining wall in question. In that memorandum, Langan stated in pertinent part that "the measured wall movement is neglible [sic]."

In a memorandum dated May 20, 2003, Langan informed Castle Village of the results of a six-month survey of the observation survey points on the retaining wall in question. In that memorandum, Langan stated in pertinent part:

> The six month survey indicates wall movement near the southern portion of the wall (survey line 5; points 21 to 25). The readings indicate greater than one inch of lateral movement outward movement (toward the highway) at this location. Longitudinal movements up to about 1 inch were also recorded in this section. Survey line 5 was identified as an area of "Moderate to Heavy deterioration. Possible stability and safety concern over the next 12 months" in our "Retaining Wall inspection and Evaluation" report dated 6 January 2003.
>
> Vertical movements show a consistent change of about less than 3/8 inch along the entire length of the wall. A portion of this apparent vertical movement could be attributed to the reestablishment of the control elevation.
>
> The lateral and longitudinal movements along survey lines 1, 2, 3, 4 and 6 indicated negligible change in movement.
>
> The next scheduled reading is the twelve month reading, scheduled for November 2003. We recommend an addition survey visit within the next month. The measured movement could be a function of a

[*33] change in weather condition from the winter freeze to the spring thaw. Additional survey readings will isolate/establish the trend in movement independent of weather. These additional readings will provide better insight in the degree of urgency for stabilization of this portion of the wall.

In a memorandum dated August 8, 2003 (August 8, 2003 Langan memorandum), Langan summarized for Castle Village Langan's findings to that date with respect to onsite storm drainage. In that memorandum, Langan indicated that on or around June 13, 2003, it had inspected the Castle Village grounds to evaluate the site storm drainage system. As a result of that inspection, Langan indicated in the August 8, 2003 Langan memorandum that (1) it had observed that the existing drainage inlets located on the east side of the pedestrian walkway that ran in a north-south direction at the rear of the property were in very poor condition and full of sediment and debris; (2) Langan had been "informed that the existing drainage system drains to the west to Riverside Drive" but that Langan could not find the exact connections; (3) it would not be viable to rehabilitate the existing drainage system and that a new drainage system should be constructed; and (4) it recommended that the area be regraded to redirect runoff from ponding near the retaining wall in question.

In a memorandum dated September 12, 2003, Langan provided Castle Village with the results of a 10-month survey of the observation survey points on

[*34] the retaining wall in question. In that memorandum, Langan indicated in pertinent part:

> The ten month survey indicates wall movement near the southern portion of the wall (survey line 4; points 16 to 20, and survey line 5, points 21 to 25). The readings indicate greater than one inch of lateral movement outward movement (toward the highway) at survey line 4, and up to 3.5 inches of lateral movement at survey line 5. Long-itudinal movements up to about 1 inch, and vertical movements greater than 3/4 inch were also recorded in this section. The lateral and longitudinal movements along survey lines 1, 2, 3, and 6 indicated less change in movement.
>
> Survey lines 4 and 5 were previously identified as an area of "Moderate to Heavy deterioration. Possible stability and safety concern over the next 12 months" in our "Retaining Wall Inspection and Evaluation" report dated 6 January 2003.
>
> The next scheduled reading is the twelve month reading, scheduled for November 2003. We recommend an addition [sic] survey visit within the next month. A Langan engineer will visit the site on Monday, 15 September 2003 to observe the condition of the retaining wall in the vicinity of survey lines 4 and 5, and to evaluate if the wall condition in these areas should be downgraded to Level III rating indicating "Heavy to Severe damage. Probable safety and stability concern over the next 12 months".

In a memorandum dated September 16, 2003 (September 16, 2003 Langan memorandum), Langan summarized for Castle Village Langan's findings to that date with respect to the retaining wall in question. In that memorandum, Langan indicated that (1) the water ponding near the retaining wall in question was nega-

[*35] tively impacting the performance of that retaining wall, and (2) Langan's monitoring data collected through September 16, 2003, showed an apparent trend of lateral movement in sections four and five of the retaining wall in question.

Langan made the following recommendations in the September 16, 2003 Langan memorandum: (1) the areas of the retaining wall in question that were given a conditions rating of II should continue to be monitored; (2) loose mortar should be cleaned out and repointed to minimize the potential for rocks falling from the face of the retaining wall in question; (3) all vegetation should be removed from the face of the retaining wall in question; and (4) soil borings and test pits should be excavated behind the retaining wall in question in order to evaluate the extent of the soil erosion and wall construction details.

In a memorandum dated September 29, 2003, Langan provided to Castle Village the results of an additional survey of the retaining wall in question. In that memorandum, Langan stated in pertinent part:

> This latest survey was performed on 25 September 2003, approximately 2 weeks after the ten month survey. Attached for your reference are summary plots of the survey readings to date.
>
> Lateral Movement (East-West)
>
> The latest survey indicates less than 1/8 inch of additional lateral wall movement since the previous survey along all survey lines. Total lateral movements near the southern portion of the wall remain

[*36] greater than one inch of lateral movement outward movement (toward the highway) at survey line 4 (points 16 to 20, greater than 1 inch) and survey line 5 (points 21 to 25, up to 3.5 inches). Less than 1 inch total lateral movement has been observed along survey lines 1, 2, 3, and 6.

Longitudinal Movement (North-South)

Longitudinal movements along all sections of the wall remain unchanged since the previous reading. Total longitudinal movements measure up to about 1 inch on the south section of the wall (survey lines 4 and 5). Less than 1 inch total movement has been observed along survey lines 1, 2, 3 and 6.

Vertical Movement (Elevation)

About 1/8 inch of additional vertical movement was recorded along survey lines 4 and 5. Total vertical movement along survey lines 4, 5, and 6 now ranges from about 1/2 inch to 1.5 inches. Less than 1/2 inch of total vertical movement has been recorded along survey lines 1, 2, and 3.

In a memorandum dated November 5, 2003 (November 5, 2003 Langan memorandum), Langan summarized for Castle Village the observations and concerns that Langan had identified during its field investigation of the retaining wall in question in which it initiated a subsurface investigation (Langan subsurface investigation) in order to evaluate the causes of movement of that retaining wall. In that memorandum, Langan indicated that it had identified the following conditions: (1) subsurface conditions in the vicinity of the retaining wall in question that consisted of a thin layer of topsoil over a boulder/cobble fill above

[*37] bedrock; (2) a surface sinkhole that had opened near the location of drilling associated with the Langan subsurface investigation; (3) potentially large underground voids that were present beneath both the sidewalk and landscaped areas adjacent to the retaining wall in question and that may have been connected with movement of that retaining wall; and (4) numerous depressions in the landscaped areas adjacent to the retaining wall in question together with significant unevenness of the sidewalk path that may have been indicative of potential loss of material behind that retaining wall.

In the November 5, 2003 Langan memorandum, Langan recommended that Castle Village take the following steps: (1) cordon off and restrict access to the sidewalk adjacent to the retaining wall in question and the landscaped area within about 25 feet of that retaining wall; (2) turn off the yard irrigation until the area becomes stabilized; (3) prohibit heavy objects within the restricted access areas; (4) authorize the excavation of test pits; and (5) implement a remedial repair program in order to stabilize the area and minimize future problems that should include filling in surface voids and underground cavities in the boulders and cobble that had previously been placed as fill behind that retaining wall.

[*38] In a letter dated November 12, 2003, Langan made the following preliminary recommendations to Castle Village with respect to the stabilization of the walkway above the retaining wall in question:

> 1. Remove about 190 linear ft of the concrete sidewalk adjacent to the inboard side (east side) of the existing wall, extending south from the southern turret. A Location Plan is attached as drawing 1 and shows the limits of the work.
>
> 2. Excavated [sic] about 5 ft below the sidewalk elevation extending from the inboard side of the retaining wall to about 4 ft east of the eastern edge. The excavation should expose the limits of the existing voids below the sidewalk and adjacent landscaping.
>
> 3. Place a layer of filter fabric in the bottom of the excavation and extend up the sides of the excavation. The fabric will span the existing voids and help prevent future soil migration into the lower boulder fill. Drawing 2 shows a section through the proposed excavation.
>
> 4. Install a perforated collection pipe along the western extent of the excavation to collect surface runoff.
>
> 5. Backfill the excavation to within 1 ft of the existing ground surface with 3/4 inch gravel and place a second layer of filter fabric above the gravel backfill creating a continuous envelope. This will allow for topsoil to be placed and the landscaping repaired. At this time we recommend replacing the concrete sidewalk as part of the site drainage work.
>
> 6. We recommend drilling 2 new rows of 2" diameter weep holes in the existing wall to aid in the drainage of subsurface water. The first row of weep holes should be drilled about 5 ft down from the existing inboard sidewalk elevation. The perforated collection pipe would be connected to the newly drilled weep holes. The second row of weep

[*39] holes would be installed about 4 ft above the outboard sidewalk to help drain water from behind the wall. All weep holes should be drilled at about 10 ft centers. Drawing 3 identifies the locations of the proposed weep holes.

7. Clean out the existing clay pipe lined weep holes along entire face of the wall to allow drainage of subsurface water and prevent hydrostatic pressures from building up behind the wall.

In a letter dated December 16, 2003 (December 16, 2003 Langan proposal letter), Langan made a proposal to Castle Village with respect to the design of an onsite drainage system. In that proposal letter, Langan proposed (1) surveying services and (2) grading and drainage design. The scope of that proposal related to site grading, drainage design for the site, and regulatory permitting for the work. In the December 16, 2003 Langan proposal letter, Langan indicated that during the construction phase it would provide support services relating to review of certain drawings, requests for information, and controlled inspection of work performed by the selected contractor.

In a memorandum dated December 16, 2003, Langan provided to Castle Village the results of the 12-month survey of the observation survey points on the retaining wall in question. In that memorandum, Langan stated in pertinent part:

This survey completes a one year cycle as per our initial monitoring agreement. This latest survey was performed on 12 December 2003. Survey readings are being compared with the data from a 27 September survey, which was summarized in our last monitoring

[*40] memorandum, dated 29 September 2003. Survey monitoring was also performed in October and November 2003 (before and after the subsurface investigation program). The attached summary plots contain data from all of the survey readings recorded to-date.

Lateral Movement (East-West)

The latest survey indicates additional lateral wall movement along survey line 5. About 1/2 inch of lateral movement was recorded at the top of the wall, and about 1/8 inch of movement near the center terrace, and along the bottom of the wall. This is indicative of outward rotation of the top of the wall toward the west. Less than 1/8 inch movement was recorded along survey lines 4 and 6. Readings along survey lines 1, 2, and 3 indicate that the wall is moving back toward the initial reading, and movements recorded in these areas may be partially due to thermal effects (i.e., stone expanding and contracting with temperature variations).

Longitudinal Movement (North-South)

The latest survey indicates up to about 1/2 inch additional longitudinal wall movement since the September 27 survey. This movement was recorded at the top of the wall along survey line 5. Less than 1/8 inch of additional longitudinal wall movement was recorded at the bottom of the wall at survey line 5 and along the other survey lines. Total longitudinal movements measure up to about 1.8 inches on the south section of the wall (survey lines 4 and 5). Less than 1/2 inch total movement has been observed along survey lines 1, 2, 3 and 6.

Vertical Movement (Elevation)

About 3/8 inch of additional vertical movement was recorded along the top of the wall at survey line 5. Measured vertical movement along survey lines 1, 2, 3, 4, and 6, remained essentially unchanged since the September 2003 readings. Total vertical movement along survey lines 4, 5, and 6 now ranges from about 1/2 inch to 1.5 inches

[*41] from initial. Less than 1/2 inch of total vertical movement has been recorded along survey lines 1, 2, and 3.

In a report dated December 30, 2003 (December 30, 2003 Langan report), Langan summarized for Castle Village the results of the Langan subsurface investigation and provided recommendations for the long-term stability of the retaining wall in question. In that report, Langan indicated that during the latter half of 2003 it had performed that subsurface investigation behind the retaining wall in question and that that subsurface investigation had included three borings and two lines of probes drilled on the east side of that retaining wall.

In the December 30, 2003 Langan report, Langan indicated that (1) it had uncovered numerous voids; (2) during the drilling of one of the borings a sinkhole had opened near that boring; (3) drill fluid had flowed out of a clay drainage pipe for one of the borings; and (4) water had seeped through the mortar joints at the base of the retaining wall in question but did not flow through the pipes during the other borings or probes, which suggested that water either flowed into existing voids and stopped traveling or flowed to the top of the rock and ponded behind that retaining wall.

In January 2004, Castle Village accepted the December 16, 2003 Langan proposal letter.

[*42] On January 7, 2004, Langan provided Castle Village with a proposal for a walkway void repair on the Castle Village grounds. Thereafter, in January 2004, Castle Village accepted that proposal.

On March 29, 2004, Castle Village sent an email to Langan in which it requested a status update with respect to the sidewalk sinkhole repair plans.

On April 6, 2004, Langan provided Castle Village with plans and specifications for walkway remediation, along with a list of potential contractors.

In a memorandum dated April 20, 2004, Langan addressed for Castle Village design issues associated with the walkway remediation.

In a memorandum dated April 27, 2004, Langan summarized for Castle Village a prebid meeting that had taken place with respect to the walkway remediation project.

On June 11, 2004, Mr. Nadal, the Castle Village property manager, sent to the Castle Village board of directors Langan's plans to correct sidewalk, sinkhole, and drainage problems on the Castle Village grounds.

On August 24, 2004, Castle Village's Mr. Nadal sent to the Castle Village board of directors Langan's proposal to remediate and abate conditions that affected the stability of the retaining wall in question.

[*43] In a memorandum dated September 14, 2004 (September 14, 2004 Langan memorandum), Langan addressed the stability of the parapet of the retaining wall in question. In that memorandum, Langan indicated that on September 9, 2004, it had (1) observed excavations by Morris Park Contracting Corp. (Morris Park) associated with the repair of the walkway above the retaining wall in question; (2) inspected the inboard side of the upper portion of the retaining wall in question;[20] and (3) observed at about 3.5 to 4 feet below grade on the inbound side of the retaining wall in question relatively large cracks along the interface of the parapet wall and the main portion of that retaining wall. As a result of those observations and that inspection, Langan recommended in the September 14, 2004 Langan memorandum that Castle Village take steps to reinforce the parapet of the retaining wall in question.[21]

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[20]The open excavations of the grounds at the south end of the retaining wall in question allowed Langan to inspect the inboard side of the upper portion of that retaining wall.

[21]The parties stipulated that the September 14, 2004 Langan memorandum indicated that between September 1 and November 5, 2004, Morris Park (1) installed new catch basins, regraded grounds, and placed a geotextile-wrapped gravel blanket beneath a new sidewalk behind the retaining wall in question and (2) installed a tieback-and-deadman system to the parapet of the retaining wall in question. Those stipulations are clearly contrary to the facts that we have found are established by the record, and we shall disregard them. See Cal-Maine Foods, Inc. v. Commissioner, 93 T.C. 181, 195 (1989). The record establishes, and we

(continued...)

[*44] In a memorandum dated September 30, 2004 (September 30, 2004 Langan memorandum), Langan informed Castle Village that there was an opening or empty space (void space) discovered on or around September 23, 2004, under the lawn area adjacent to the northwest wing of the Castle Village apartment building at 140 Cabrini Boulevard, that opened into the tunnel below that lawn area. According to Langan, that void space consisted of a horizontal slab of concrete about three feet below grade that supported the soil above and formed the so-called roof of the opening which, before it extended into the tunnel, was about 18 inches high and about 24 inches wide. In the September 30, 2004 Langan memorandum, Langan recommended plugging the east end of the tunnel to prevent further soil erosion.

At some time between September 30 and November 5, 2004, Morris Park filled various voids and closed a tunnel opening at the Castle Village complex.

In a memorandum dated April 7, 2005 (April 7, 2005 Castle Village memorandum), Castle Village followed up with two representatives of Langan

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[21](...continued)
have found from our review of the September 14, 2004 Langan memorandum and a memorandum from Langan dated April 11, 2005 (discussed below) that that later memorandum, and not the September 14, 2004 Langan memorandum, discussed the services performed by Morris Park between September 1 and November 5, 2004.

[*45] who had been assigned to work on the Castle Village project regarding a recent telephone call with one of those representatives with respect to the preparation of plans for the maintenance of the retaining wall in question that had been approved by Castle Village in August 2004. In that memorandum, Castle Village advised those representatives that Castle Village wanted to proceed with those plans and also suggested that measurements be taken of the retaining wall in question in order to assess its condition. In the April 7, 2005 Castle Village memorandum, Castle Village also informed the Langan representatives that there were some holes that had formed around the catch basins and manholes in the grounds and that the grounds near the retaining wall in question had settled overall about two inches after the sidewalk repair that took place around the fall of 2004, although there was one area on the sidewalk by that retaining wall that had settled unevenly.

In a memorandum dated April 11, 2005 (April 11, 2005 Langan memorandum), Langan informed Castle Village that it had inspected the conditions of the grounds above the retaining wall in question in order to evaluate the long-term maintenance requirements of that retaining wall and had observed the following conditions: (1) the appearance of sinkholes adjacent to the new catch basins and manholes; (2) vertical and lateral displacement of concrete slabs encompassing the

[*46] new sidewalk near the retaining wall in question; (3) soil tension cracks that generally were parallel to that retaining wall, that were adjacent to the inboard side of the retaining wall in question, and that extended up to 25 feet from that inboard side; (4) an increase in the size of the existing sinkholes at the terrace level; and (5) cracks along previously parged joints of the retaining wall in question, suggesting additional movement of that retaining wall. Langan did not refer to any recent rainfall in the April 11, 2005 Langan memorandum.

In the April 11, 2005 Langan memorandum, Langan indicated that starting on or around September 1 and continuing through November 5, 2004, Morris Park had performed the following services for Castle Village: (1) installation of new catch basins above the retaining wall in question; (2) regrading of the grounds above the retaining wall in question; and (3) placement of a geotextile-wrapped gravel blanket beneath a new sidewalk. (We shall refer collectively to the services that Morris Park performed during the period September 1 through November 5, 2004, as the 2004 drainage modifications.)

In the April 11, 2005 Langan memorandum, Langan further indicated that at some point between September 1 and November 5, 2004, Morris Park had installed a tieback-and-deadman system to the parapet.

[*47] In a memorandum dated April 13, 2005 (April 13, 2005 Langan memorandum), Langan informed Castle Village that (1) cracks in the retaining wall in question generally coincided with the locations of relatively large sinkholes at the terrace level of that retaining wall; (2) there was probably ongoing deep-seated global movement of an approximately 50-foot section of the retaining wall in question adjacent to the area between Castle Village apartment buildings at 120 Cabrini Boulevard and 140 Cabrini Boulevard; and (3) that critical section of the retaining wall in question required immediate action. Langan did not refer to any recent rainfall in the April 13, 2005 Langan memorandum.

In a memorandum to residents of the Castle Village complex dated April 28, 2005, the board of directors of Castle Village indicated that spalling of the surface material on the retaining wall in question had occurred during the last decade.

On May 12, 2005, at approximately 4 p.m., a portion of the retaining wall in question collapsed onto Riverside Drive. Minutes later, a second larger portion of that retaining wall collapsed. In total, a 150-foot section collapsed. The 150-foot section of the retaining wall in question that collapsed was around the portion of that wall between the second southernmost pilaster and the eighth southernmost pilaster and was adjacent to the area between the Castle Village apartment buildings at 120 Cabrini Boulevard and 140 Cabrini Boulevard. (For

[*48] convenience, we shall sometimes refer to the collapse on May 12, 2005, of the 150-foot portion of the retaining wall in question as the collapse of the retaining wall in question.) The cause of the collapse of the retaining wall in question was progressive deterioration in and around that wall that had begun at least 20 years before that collapse occurred on May 12, 2005.

As discussed above, the various consultants (i.e., Mr. Flynn, MRCE, Antonucci, Cutsogeorge, Pillori, & Langan) whom Castle Village had retained since at least as early as 1985 to inspect the retaining wall in question had observed certain problems in and around that wall, which they described in the respective letters, reports, proposals, and/or memoranda that they had prepared and sent to Castle Village. Most of the major problems in and around the retaining wall in question that those consultants had observed and described in those respective documents were observed in and around the 150-foot section of that retaining wall that collapsed on May 12, 2005. That 150-foot section included the approximately 50-foot section of the retaining wall in question which, in Langan's judgment, was a "critical section (i.e., cracks reopening and large sinkholes within the terrace)" of that wall.

Petitioner filed timely Form 1040, U.S. Individual Income Tax Return, for her taxable year 2005 (2005 return). In that return, petitioner claimed (1) a

[*49] casualty loss (2005 casualty loss) of $26,390[22] and (2) a casualty loss deduction (2005 casualty loss deduction) of $23,188.[23]

Respondent issued to petitioner a notice of deficiency (notice) with respect to her taxable year 2005. In that notice, respondent, inter alia, disallowed the 2005 casualty loss deduction of $23,188 that petitioner had claimed.[24] In the notice,

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[22]Petitioner attached to the 2005 return Form 4684, Casualties and Thefts (petitioner's 2005 Form 4684). In that form, petitioner reported a casualty loss related to the "CO-OP RETAINING WALL". In petitioner's 2005 Form 4684, petitioner claimed that (1) the "[c]ost or other basis of each property" was $26,390; (2) the "[f]air market value before casualty or theft" was $26,390; and (3) the "[f]air market value after casualty or theft" was zero. In petitioner's 2005 Form 4684, petitioner determined a casualty loss of $26,390 by first subtracting the "[f]air market value after casualty or theft" of zero from the "[f]air market value before casualty or theft" of $26,390, which produced a balance of $26,390. She then calculated the amount of the casualty loss that she claimed (i.e., $26,390) as equal to the lesser of that balance of $26,390 and the "[c]ost or other basis of each property" of $26,390. Petitioner argues here that she incorrectly calculated the amount of the casualty loss shown in petitioner's 2005 Form 4684 because the entries that she made in that form were incorrect.

[23]In petitioner's 2005 Form 4684, petitioner reduced the amount of the 2005 casualty loss of $26,390 shown in that form, as required by sec. 165(h)(1) and (2), in order to arrive at the amount of the 2005 casualty loss deduction of $23,188 that she claimed in her 2005 return. Consistent with her argument that the amount of the casualty loss claimed in petitioner's 2005 Form 4684 was erroneous, petitioner argues here that she incorrectly calculated the amount of the casualty loss deduction shown in that form and that she claimed in her 2005 return.

[24]Except for certain correlative adjustments, the only other determination that respondent made in the notice was to disallow certain employee business expenses of $5,266 that petitioner claimed in her 2005 return. Petitioner concedes

(continued...)

[*50] respondent determined that "[t]he cause of the collapse of the Castle Village Retainer [sic] Wall was * * * the result of a gradual weakening of the wall" and that therefore the loss from that collapse does not constitute a casualty loss under section 165(c)(3).

Petitioner filed an amended petition in this case in which she alleged that the 2005 casualty loss deduction that she claimed in the 2005 return should be increased to $149,843.[25] In that amended petition, petitioner alleged that $149,843 "represent[s] the full value of the property loss due to the collapse of the Castle Village retainer [sic] wall".

Respondent filed an answer to petitioner's amended petition. In that answer, respondent denied the allegations in the amended petition with respect to the increased amount of the casualty loss deduction to which petitioner alleges she is entitled for her taxable year 2005.

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[24](...continued)
respondent's determination to disallow those claimed employee business expenses.

[25]Petitioner refers in the amended petition to what she alleges is the correct amount of the casualty loss to which she is entitled. We believe that she intended to refer to what she alleges is the correct amount of the casualty loss deduction to which she is entitled.

[*51] OPINION

Petitioner bears the burden of establishing that the determination in the notice that remains at issue is erroneous. See Rule 142(a); Welch v. Helvering, 290 U.S. 111, 115 (1933). She also bears the burden of establishing the allegations in the amended petition with respect to the increased casualty loss deduction that she is claiming. See Rule 142(a).

The initial dispute between the parties is over whether the collapse of the retaining wall in question is a casualty within the meaning of section 165(c)(3). As pertinent here, section 165(a) and (c)(3) allows an individual taxpayer to deduct "losses of property not connected with a trade or business or a transaction entered into for profit, if such losses arise from fire, storm, shipwreck, or other casualty". A loss is treated as sustained during the taxable year in which the loss occurs, as evidenced by closed and completed transactions and as fixed by identifiable events occurring in such taxable year. Sec. 1.165-1(d)(1), Income Tax Regs.

The term "other casualty" in section 165(c)(3) refers to an event that shares characteristics with a fire, storm, or shipwreck. See Coleman v. Commissioner, 76 T.C. 580, 589 (1981); see also Shearer v. Anderson, 16 F.2d 995, 996 (2d Cir. 1927). A casualty is an event which is due to a sudden, unexpected, or unusual

[*52] cause. See Matheson v. Commissioner, 54 F.2d 537, 539 (2d Cir. 1931), aff'g 18 B.T.A. 674 (1930). The progressive deterioration of property though a steadily operating cause is not a casualty. See Fay v. Helvering, 120 F.2d 253, 253 (2d Cir. 1941), aff'g 42 B.T.A. 206 (1940).

A collapse, even one that occurs suddenly, is not a casualty when the collapse is caused by progressive deterioration. See, e.g., Carlson v. Commissioner, T.C. Memo. 1981-702, 1981 Tax Ct. Memo. LEXIS 41, at *5-*6; Chipman v. Commissioner, T.C. Memo. 1981-194, 1981 Tax Ct. Memo. LEXIS 550, at *8. A loss that is accelerated by a contributing factor such as rain or wind is not a casualty if the loss is caused by progressive deterioration. See, e.g., Hoppe v. Commissioner, 42 T.C. 820, 824-825 (1964), aff'd, 354 F.2d 988 (9th Cir. 1965); Chipman v. Commissioner, 1981 Tax Ct. Memo. LEXIS 550, at *8.

It is petitioner's position that the collapse of the retaining wall in question is a casualty within the meaning of section 165(c)(3). At the core of petitioner's position is that "[t]he cause of the collapse of the Retaining Wall [in question] was the excessive rainfall during the months of January through May 2005,[26] which

[26]There is no evidence in the record to support petitioner's contention that the rainfall between January and May 12, 2005, the date on which the 150-foot section of the retaining wall in question collapsed, was "excessive". However, we shall assume arguendo that the rainfall during that period was "excessive". That is

(continued...)

[*53] overstressed the recently installed faulty drainage system [2004 drainage modifications] and caused rapidly accelerating movement in the four weeks immediately preceding the collapse." (We shall refer to the "excessive rainfall" that petitioner contends caused the collapse of the retaining wall in question as the spring 2005 rainfall.) Proceeding from that core contention, petitioner argues that Helstoski v. Commissioner, T.C. Memo. 1990-382, 1990 Tax Ct. Memo. LEXIS 400, supports her position that the collapse of the retaining wall in question is a casualty within the meaning of section 165(c)(3).[27]

According to petitioner, the event that caused the collapse of a portion of the retaining wall in question and the loss to petitioner's property in the instant

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[26](...continued)
because, as discussed herein, we have found that progressive deterioration of the retaining wall in question, not the rainfall that occurred in 2005 before May 12, 2005, caused the 150-foot portion of that wall to collapse.

[27]In further support of her position that the collapse of the retaining wall in question is a casualty within the meaning of sec. 165(c)(3), petitioner relies on Heyn v. Commissioner, 46 T.C. 302 (1996), Bailey v. Commissioner, T.C. Memo. 1983-685, and Grant v. Commissioner, 30 B.T.A. 1028 (1934). We find the facts in each of those cases to be materially distinguishable from the facts that we have found in this case and petitioner's reliance on each of those cases to be misplaced. Suffice it to say that we did not find on the respective records presented to us in Heyn, Bailey, and Grant that the respective events that were at issue in those cases were caused by progressive deterioration. In contrast, as discussed herein, we find on the record presented to us in the instant case that the collapse of the retaining wall in question was caused by the progressive deterioration of that wall that occurred over a period of at least 20 years before it collapsed.

[*54] case was the spring 2005 rainfall, and the event that caused the failure of the dam, the draining of the pond, and the loss to the taxpayers' property in Helstoski was "a violent storm" with extraordinary amounts of rainfall. As a result, petitioner maintains, the holding in Helstoski that the event that caused the loss there was a casualty within the meaning of section 165(c)(3) applies with equal force in the instant case. We disagree. For reasons explained below, we find the facts in Helstoski with respect to the cause of the failure of the dam, the draining of the pond, and the loss to the taxpayers' property to be materially distinguishable from the facts that we have found in this case with respect to the cause of the collapse of the retaining wall in question and the loss to petitioner's property. As a result, we find petitioner's reliance on Helstoski to be misplaced.

In Helstoski v. Commissioner, 1990 Tax Ct. Memo. LEXIS 400, the taxpayers purchased property (taxpayers' property) around the center of which the previous owners had constructed a concrete dam supported by footings on a stream that was a tributary of a river and that flowed through that property. The construction of that dam resulted in the formation of a pond on the upstream side of the dam. There was an access road on one side of the pond. In the center of the dam, there was a cutout, or indentation, which was six inches lower than the rest of the dam. The prior owners also had a roadway built near the dam and installed

[*55] a culvert over part of the stream. In addition, they added wingwalls to the dam in order to prevent water from running around the dam. During a 10-year period before and after the taxpayers acquired the taxpayers' property, water from the stream flowed over the cutout or indented part of the dam (except during times of drought). After they acquired that property, the taxpayers occasionally had problems with the dam. For example, after a heavy rainfall, water flowed over the entire length of the dam and not just over the cutout or indentation in the dam. Moreover, the stream occasionally flowed around one or both ends of the dam, and the soil washed away. When that problem occurred, the taxpayers had the pond drained and the soil around the ends of the dam replaced. Storms occasionally washed away the roadway near the dam. However, no one storm caused more than a few hundred dollars of damage. See id. at *15-*16.

During the year at issue in Helstoski, violent thunderstorms (storm) occurred that caused the following damage to the taxpayers' property: (1) the dam's footings were undermined, which permitted the stream to pass under the dam and thereby caused the pond to drain; and (2) the access road to the taxpayers' pond was washed away. The damage to the taxpayers' property from the storm significantly decreased the fair market value of that property. See id. at *16-*17.

[*56] The taxpayers claimed in Helstoski that the damage to the taxpayers' property was caused by the storm and that consequently the loss attributable to that damage was a casualty loss within the meaning of section 165(c)(3). See id. at *32. The position of the Commissioner of Internal Revenue (Commissioner) regarding the cause of the damage to the taxpayers' property, which relied on the opinion of the Commissioner's expert, was that "the failure of the dam was due to gradual erosion of the earth around the dam's footings, which occurred 'over a period of years', and thus was not a casualty within the meaning of section 165(c)(3)". Id. We were unwilling to rely in Helstoski on the opinion of the Commissioner's expert as to the cause of the damage to the taxpayers' property. That was because although the expert on whom the Commissioner relied "attributed the dam's failure to the possibility that the dam did not conform to acceptable design standards * * * and to erosion over time", that expert nonetheless "admitted that he was not certain why the dam failed, and that several factors were probably involved." Helstoski v. Commissioner, 1990 Tax Ct. Memo. LEXIS 400, at *34-*35. Having been unwilling to rely on the opinion of the Commissioner's expert that the cause of the damage to the taxpayers' property was "erosion over time", we rejected the Commissioner's position that the cause of that damage was "gradual erosion of the earth around the dam's footings, which

[*57] occurred 'over a period of years'". Id. at *32. We found on the record presented to us in Helstoski that the storm caused the damage to the taxpayers' property and that the loss from the damage to the taxpayers' property that was caused by the storm was a casualty loss within the meaning of section 165(c)(3). See id. at *35.

In support of her contention (quoted above) that the cause of the collapse of a portion of the retaining wall in question was the spring 2005 rainfall, petitioner relies on her purported expert, David Thompson (Mr. Thompson), who prepared a purported expert report (Mr. Thompson's report). After voir dire examination of Mr. Thompson, we found him to be qualified as an expert in the field of geotechnical engineering (qualified field of expertise). However, because Mr. Thompson opined in Mr. Thompson's report on matters outside of the field in which we found him to be qualified as an expert, we admitted that report only to the extent that it pertained to his qualified field of expertise.

We were not impressed or persuaded by Mr. Thompson or by his various conclusions and his ultimate opinion in Mr. Thompson's report that were within his qualified field of expertise. Initially, we note that we were not impressed with Mr. Thompson because he was not fully prepared to answer questions on cross-examination. That is because Mr. Thompson had prepared Mr. Thompson's report

[*58] approximately five years before the trial in this case and had not reviewed the entirety of that report in order to prepare himself to testify at trial. Moreover, we were not persuaded by, and are unwilling to accept, Mr. Thompson's various conclusions and his ultimate opinion in Mr. Thompson's report that the cause of the collapse of the retaining wall in question was the spring 2005 rainfall. That is because, inter alia, he admitted during cross-examination by respondent's counsel that he had erroneously used an engineering guideline that applied to retaining walls constructed from materials that were different from the materials used to construct the retaining wall in question. We are unwilling to rely on the views of a purported expert who is at best careless and at worst not competent.

It is also significant and affects our evaluation of Mr. Thompson's various conclusions and his ultimate opinion in Mr. Thompson's report as to the cause of the collapse of the retaining wall in question that during cross-examination, after respondent's counsel asked Mr. Thompson to review certain other reports and proposals that are in the record, Mr. Thompson made certain acknowledgments that raise serious questions about those conclusions and that ultimate opinion.

With respect to the November 4, 1985 MRCE report, respondent's counsel asked Mr. Thompson to review a paragraph of that report in which MRCE indicated that it had inspected the retaining wall in question, including the

[*59] drainage pipes in that wall, and had observed certain indicia that led MRCE to conclude that there was "very little drainage flow, if any." After Mr. Thompson reviewed that paragraph, the following exchange occurred between respondent's counsel and Mr. Thompson:

Q: Does what's described in that paragraph indicate a functioning drainage system behind the wall?

A: No.

Q: Would a less-than-fully-functional drainage system affect the stability of the wall?

A: Yes.

With respect to the April 14, 1994 Antonucci report, respondent's counsel asked Mr. Thompson to review a paragraph of that report in which Antonucci indicated that it had inspected the retaining wall in question and had observed that the mortar joints of that wall were "deteriorating" and had been "subjected to water penetration, freezing/thawing action, and penetrating root systems from the vegetation." After Mr. Thompson reviewed that paragraph, the following exchange occurred between respondent's counsel and Mr. Thompson:

Q: Are the deterioration of mortar joints proper behavior for a retaining wall?

A: No.

[*60] * * * * * * *

Q: Now, is the presence of penetrating root systems, is that indicative of proper wall maintenance?

A: No.

Q: So Castle Village should have had the plants removed from the wall?

A: Yes.

With respect to the March 17, 1999 MRCE proposal, respondent's counsel asked Mr. Thompson to review that proposal. After Mr. Thompson reviewed that proposal, the following exchange occurred between respondent's counsel and Mr. Thompson with respect to a certain paragraph of that proposal:

Q: In the first paragraph of this report, Mueser Rutledge [MRCE] states that there is structural distress to the retaining wall. Does structural distress sound like normal behavior for a retaining wall?

A: No.

With respect to the January 7, 2002 Langan proposal letter, respondent's counsel directed Mr. Thompson to the following statement in that proposal:

> The area of interest with regard to this proposal is approximately 2 acres located between the buildings and Riverside Drive, where there is open lawn area with paths and walks. Along the retaining wall, there is also an existing walkway that is presently sloping down away from the retaining wall. There are extensive amounts of depressions throughout the lawn area. Also, there is an existing drainage system

[*61] located along and in the general vicinity of a north-south walkway that may not function properly and for which the outlet is not known.

After Mr. Thompson reviewed the above-quoted statement, the following exchange occurred between respondent's counsel and Mr. Thompson:

> Q: Now, in this report, starting on page 192, Langan reported extensive depressions in the grounds above the retaining wall. Are extensive depressions a sign of a properly-functioning retaining wall?
>
> * * * * * * *
>
> A: The answer to the question is no.

With respect to the January 6, 2003 Langan report, respondent's counsel asked Mr. Thompson to review several pages in that report with respect to, inter alia, numerous cracks in, vegetation on, missing masonry stones within, and ponding of water behind the retaining wall in question. After Mr. Thompson reviewed those pages, the following exchange occurred between respondent's counsel and Mr. Thompson:

> Q: In those pages, Langan stated that he observed numerous cracks in the retaining wall. And you believe those cracks are actually signs of proper maintenance?
>
> A: I'm not sure if the cracks have anything to do with maintenance. They have to do with the performance of the wall, though.
>
> Q: Do they indicate good performance of the wall?

[*62] A: No.

Q: I believe Langan also observed vegetation growing on the wall. Does the growth, continued growth of vegetation indicate good maintenance of the wall?

A: No.

Q: Langan also observed missing masonry stones within the wall; does that indicate good maintenance of the wall?

A: No.

Q: Langan noticed that there was ponding behind the wall; is that indicative of a properly-behaving retaining wall?

A: No.

We shall not rely on Mr. Thompson's conclusions and his ultimate opinion in Mr. Thompson's report that, as petitioner contends, the cause of the collapse of the retaining wall in question was the "excessive rainfall during the months of January through May 2005, which overstressed the recently installed faulty drainage system [2004 drainage modifications] and caused rapidly accelerating movement in the four weeks immediately preceding the collapse."

Our serious concerns about, and thus our unwillingness to rely on, Mr. Thompson and his various conclusions and his ultimate opinion in Mr. Thompson's report with respect to the cause of the collapse of the retaining wall in question are reinforced and confirmed by Thomas G. Thomann (Mr. Thomann),

[*63] respondent's expert, whom, after voir dire, we found to be qualified as an expert in the field of geotechnical engineering. As an expert in his qualified field of expertise, Mr. Thomann prepared a report (Mr. Thomann's report) and a rebuttal report with respect to Mr. Thompson's report (Mr. Thomann's rebuttal report). (We shall sometimes refer collectively to Mr. Thomann's report and Mr. Thomann's rebuttal report as Mr. Thomann's reports.) We found Mr. Thomann and Mr. Thomann's reports, as well as the materials on which he relied in preparing those reports, to be impressive and persuasive.

After setting forth a description of the analyses and the investigations that he and his company, URS Group, Inc., made into the cause of the collapse of the retaining wall in question, Mr. Thomann opined in Mr. Thomann's report as follows with respect to that cause:

> Based on the results of these analyses and supporting investigations,[28] the following opinion is made regarding the likely cause of the retaining wall collapse:
>
> The retaining wall in the collapse zone [150-foot portion of the retaining wall in question that collapsed] likely developed tension cracks at the back of the wall and at the face of the lower portion of the wall during and after construction. As groundwater developed

[28] Attached as an appendix is an excerpt from Mr. Thomann's report that is titled "Executive Summary". That excerpt includes a description of the analyses and the supporting investigations that he used in reaching his ultimate opinion about the cause of the collapse of the retaining wall in question.

[*64] behind the wall over time, this caused unintended pressure against the wall and also possibly resulted in a reduction in the mortar and/or rock strength over time due to weathering. This caused further cracking and deformations to occur and therefore continued weakening of the wall. As the wall continued to deform over time, the factors of safety decreased until the wall became unstable and collapsed. In addition, the deformations caused large tensile strains to occur near the face of the lower retaining wall thereby leading to the observed delamination of the front face of the lower wall. Following the loss of this resisting material, the remaining portion of the wall collapsed.

The adverse conditions on which Mr. Thomann relied in reaching his ultimate opinion about the cause of the collapse of the retaining wall in question are the same adverse conditions that the various consultants (i.e., Mr. Flynn, MRCE, Antonucci, Cutsogeorge, Pillori, & Langan) had observed and pointed out in the respective letters, reports, proposals, and/or memoranda that they had prepared and sent to Castle Village over a period of at least 20 years before the collapse of that wall.

On cross-examination, petitioner's counsel attempted to undermine Mr. Thomann's ultimate opinion about the cause of the collapse of the retaining wall in question by asking him about the effect of the spring 2005 rainfall on the 2004 drainage modifications and thus on that retaining wall. Petitioner's counsel did not succeed in that attempt. Instead, as shown below, petitioner's counsel's cross-examination of Mr. Thomann reaffirmed our evaluation of Mr. Thomann and Mr.

[*65] Thomann's reports and our confidence in his opinion regarding the cause of the collapse of the retaining wall in question.

Petitioner's counsel read to Mr. Thomann a passage from Mr. Thomann's report in which Mr. Thomann opined as follows with respect to the effect of the spring 2005 rainfall on the 2004 drainage modifications and thus on the retaining wall in question: "Based on the trends shown in the stability and deformation analysis [sic], the estimated ground water pressure increase resulted in a small reduction in the factor of safety (approximately 4%)". After petitioner's counsel read that passage to Mr. Thomann, the following exchange occurred between petitioner's counsel and Mr. Thomann:

> Q: What does that mean?
>
> A: What that means is, if you read before that, it says seepage analysis results indicate that the 2004 drainage modifications may have increased the ground water pressure behind the retaining wall. The settlements in portions of the drainage modification system occurred. So what it's saying is that we looked at how much water may have been infiltrated into the ground and what impact that water had on the stability of the wall.
>
> Q: Okay. And what does the 4 percent represent?
>
> A: The 4 percent, what you have is the factor--let me explain a little bit about what the factor of safety is. If I have a retaining wall, I have forces on the back of that--the soil on the back of the retaining wall is acting to try to tilt the wall over, the

[*66] weight of the wall itself is what's resisting that. The ratio of that weight to the force is the factor of safety. As this force gets higher, the factor of safety goes down. So what we're saying is that that increase in water pressure resulted in a 4 percent decrease in the factor of safety.

Q: So what caused the wall to fall down?

A: The wall, there was movement of the wall. And as the wall continues to move, that wall is going to reduce in the factor of safety. Based on our analysis, what we found was that when the wall was originally constructed, and they backfilled, there was some tension that developed behind the wall. This type of wall, an unmortared masonry wall, cannot handle any tension. Tension is when I have something, I have two--and in this case, two rocks holding on to each other, and if they have some tension, they're going to come apart. Well, there's nothing to hold it from coming apart. There is that tension that developed. And there was also some tension that developed in the front of the wall. And as the wall tilted, and there was water pressure up against the back of the wall, that continued to reduce the factor of safety and the wall continued to move.

* * * * * * *

Q: So this 4 percent, according to your report, did not have a significant adverse impact on the stability of the wall, is that what you're saying?

A: Yes, that's what it says.

Q: So when you say stability of the wall, what does that mean?

A: The stability of the wall is related to the factor of safety that I was talking about.

[*67] Q: So it still had a 96 percent safety, right?

A: No.

Q: No? Okay.

A: No.

Q: Please explain again?

A: It's s [sic] a reduction--it says a small reduction in the factor of safety.

Q: Small. I'm saying, so the wall itself could have a 96 percent--

* * * * * * *

A: A factor of safety of 1 means failure, 1.0 means failure.

Q: Failure?

A: Yes.

Q: Okay. So the drainage work that was done by Castle Village in 2004 decreased the safety factor by only 4 percent?

A: That's correct.

Mr. Thomann's above-quoted testimony is consistent with Mr. Thomann's opinion in Mr. Thomann's report that a four percent decrease in the factor of safety "did not likely have a significant adverse impact on the stability of the retaining wall." Indeed, Mr. Thomann opined at trial that, absent taking appropriate steps to remedy the structural and other deficiencies in and around the

[*68] retaining wall in question, the conditions in and around that wall, which existed for at least 20 years before the spring 2005 rainfall, would have caused, and did cause, the collapse of the retaining wall in question.

Based upon an examination of the entire record before us, we find that petitioner has failed to carry her burden of showing that "[t]he cause of the collapse of the Retaining Wall [in question] was the excessive rainfall during the months of January through May 2005, which overstressed the recently installed faulty drainage system [2004 drainage modifications] and caused rapidly accelerating movement in the four weeks immediately preceding the collapse." On that record, we further find that although the spring 2005 rainfall and the 2004 drainage modifications may have been contributing factors to the particular time at which the retaining wall in question collapsed, they did not cause that collapse. On the record before us, we further find that the cause of the collapse of the retaining wall in question was progressive deterioration in and around that wall that had begun at least 20 years before that collapse occurred on May 12, 2005.

Based upon our examination of the entire record before us, we find that the collapse of the retaining wall in question was not a casualty within the meaning of section 165(c)(3). On that record, we hold that petitioner is not entitled to any

[*69] deduction under section 165(a) with respect to any loss that she is claiming for her taxable year 2005 with respect to that collapse.[29]

We have considered all of the contentions and arguments of the parties that are not discussed herein, and we find them to be without merit, irrelevant, and/or moot.

To reflect the foregoing,

Decision will be entered for respondent.

[29]See supra note 2.

[*70] APPENDIX

The following is an excerpt from Mr. Thomann's report that is titled "Executive Summary":

> On May 12, 2005, a 250 ft long section of the Castle Village retaining wall, located near West 181st Street and Riverside Drive in Manhattan, collapsed onto the Riverside Drive ramp and the Henry Hudson Parkway northbound lanes. URS Group Inc. (URS) has been retained by the IRS to provide an expert opinion regarding the likely reason(s) for the collapsed portion of the retaining wall.
>
> The retaining wall is of stone masonry construction and was probably completed between 1921 and 1925. The wall generally consists of slightly to moderately fractured and weathered mica schist boulders with occasional grout seams located between the boulders and with occasional voids and potential zones of soft material. The front face of the wall appears to have had more mortar than the remaining parts of the wall. The pre-collapse length of the retaining wall was approximately 800 ft with a height of 65 to 70 ft. Numerous inspections and investigations of the retaining wall since 1985 show evidence of cracking and wall movements, weepholes not functioning, the drainage system at the top of wall not functioning, observations of settlement of the ground surface behind the top of the wall, observations of bulging of the wall, observations of stones falling from the wall, and evidence of voids/sinkholes developing behind the top of the wall. In the retaining wall collapse zone, it is estimated that the wall may have experienced at least 4 ft of lateral movement at the top of the wall prior to collapse.
>
> The top of the bedrock slopes towards the west with the bedrock appearing to be lowest in the area of the collapse zone. Since the bedrock generally has a very low permeability, most of the groundwater that reaches the bedrock will flow along the top of the bedrock towards the back of the retaining wall. The retaining wall also did not have any drainage behind the wall, it was observed that the

[*71] weepholes were not working, and the drainage system at the top of the wall was not functioning between at least 1985 and 2004. Considering all of these conditions, it is likely that groundwater accumulated behind the wall.

Seepage, limit equilibrium (i.e., stability), and deformation analyses were performed by URS to better understand the factors that may have contributed to the collapse of the retaining wall. Steady state seepage analyses were performed to estimate the pre-collapse groundwater conditions prior to November 2004. Based on observations and the results of the seepage analyses, there was groundwater present behind and within the retaining wall. Since precipitation is transient, the groundwater, or phreatic, surface will increase and decrease over time. The results of three seepage analysis cases show that the phreatic surface will vary by approximately 7 to 15 ft, depending on the permeability of the materials. Therefore, the seepage appears to be very sensitive to the permeability of the materials.

The stability analyses indicate that the factor of safety against overturning for the original geometry and the May 2005 geometry under no groundwater pressure conditions is approximately 1.40 and 1.14 respectively. However, if groundwater conditions from the seepage analyses are included, the factor of safety against overturning varies from 1.29 to 1.05 for the original geometry and is approximately 1.0 or less than 1.0, for the May 2005 geometry. As the factor of safety approaches 1.0 (i.e., failure condition), the probability that the wall will move increases; therefore, it is possible that as the groundwater level increased behind the wall this resulted in movement of the wall.

Deformation analyses were performed for six different cases that consider the deformations and stresses that are developed after construction, after cracking of the wall takes place, and if groundwater pressures are developed within and behind the wall. The stresses within the wall indicate that tension developed behind the face of the wall and at the lower back portion of the wall during and after construction of the wall. Since the wall has limited tension

[*72] capacity, cracks may develop, which result in increased deformations of the wall.

The tension developed behind the face of the wall also indicates that a vertical crack may have developed behind the face of the wall, which is consistent with the initial collapse which showed a separation of the wall face from the rest of the wall. The results for a vertical crack show large deformations and bulging of the lower retaining wall, which was observed prior to the collapse. For some of the cases that include groundwater pressures, the deformations are very large and failure of the wall occurs. The results of sensitivity analyses indicate that the deformation of the wall is very sensitive to the tensile strength of the wall and the groundwater conditions within and behind the wall.

Based on the results of these analyses and supporting investigations, the following opinion is made regarding the likely cause of the retaining wall collapse:

The retaining wall in the collapse zone likely developed tension cracks at the back of the wall and at the face of the lower portion of the wall during and after construction. As groundwater developed behind the wall over time, this caused unintended pressure against the wall and also possibly resulted in a reduction in the mortar and/or rock strength over time due to weathering. This caused further cracking and deformations to occur and therefore continued weakening of the wall. As the wall continued to deform over time, the factors of safety decreased until the wall became unstable and collapsed. In addition, the deformations caused large tensile strains to occur near the face of the lower retaining wall thereby leading to the observed delamination of the front face of the lower wall. Following the loss of this resisting material, the remaining portion of the wall collapsed.

Typical maintenance for a wall of this type, that is not deforming, might consist of repointing the mortar joints, removing vegetation from the wall face, clearing the weepholes, and ensuring that the

[*73] storm water drainage system behind the top of the wall was functioning properly. Routine maintenance of this wall appeared to generally consist of repointing the mortar joints at the face of the wall and occasionally removing vegetation from the wall face. Since the weepholes only extend a few feet beyond the face of the wall, clearing the weepholes may not have a significant effect on the overall drainage of the wall. Maintenance of the storm water system behind the top of the wall prior to 2004 would have reduced the infiltration of precipitation in the area behind the top of the wall and would have reduced the water behind the wall.

There have been two documented times when work has been performed either directly on the wall or close to the wall. This primarily included the installation of rock anchors/bolts in 1986 and drainage modifications beyond the top of the wall in 2004. Based on the observations and testing of the retrieved rock anchors/bolts and seepage analyses, the following opinions/conclusions are made regarding the rock anchors/bolts and the drainage modifications:

1. The rock anchors do not appear to have been installed in the bedrock, as specified on the design drawings. The design intention of the rock anchors is not clear. If the three rock anchors located at approximately the mid-height of the wall had been installed in the rock, analyses indicate that they would not have had a significant effect on the overall stability of the wall.

2. Seepage analysis results indicate that the 2004 drainage modifications may have increased the groundwater pressure behind the retaining wall if settlements of portions of the drainage modification system occurred. Based on the trends shown in the stability and deformation analyses, the estimated groundwater pressure increase will result in a small reduction in the factor of safety (approximately 4%) and a small increase in the deformations. Therefore, the analyses indicate that the drainage modifications did not likely have a significant adverse impact on the stability of the retaining wall.