1. I use the term, "wheatchex" to refer to the prefabricated sets of three outer columns, three stories tall, connected with spandrel plates as shown in Figure 1. As shown in Exhibit B included in this filing, the NCSTAR 1 summary document states that the outer columns bowed and buckled. However, that is inconsistent with the data.

![Figure 1. Perimeter column/spandrel assembly and floor structure.](image1)

Figure 1. Perimeter column/spandrel assembly and floor structure.

![Figure 2. Diagram of a "wheatchex" (image2)](image2)

Figure 2. Diagram of a "wheatchex"

![Figure 3. Vertical loading on perimeter columns. (image3)](image3)

Figure 3. Vertical loading on perimeter columns.
If the WTC was destroyed by a gravity collapse, what would engineers expect to see?

Figure 4. Loading  
Figure 5. Cross-section diagram of floor truss connections.

2. Either the truss supports hold or they don't. If they don't hold and there is pancaking of the floors, there will not be column failure. If the floors pancake down, the columns will no longer be carrying a significant load. If the truss supports hold and there is no pancaking, and if the columns are overloaded and/or tremendously weakened, there may be column buckling. Consider the case of buckling.

Figure 6. Buckling  
Figure 7. Wheatchex  
Figure 8. Outward-bowing columns.  
Figure 9. Loading diagram
3. If there is more force (overload and/or high temperature) than the column can carry, it will bow outward or inward, depending on the minor lateral loading.
Figure 20. The outer columns are subjected to a vertical axial load. If overloaded, bending in this direction is likely.

Figure 21. Resulting deformation.

Figure 22. Bending about a horizontal axis (expected in a "collapse" from overload and/or weakening).

Figure 23. Buckling.
Figure 24. Contrary to the preceding analysis, we encounter this extraordinary "rolled-up carpet phenomenon." This is explained below. I refer to this as the "rolled-up-carpet" phenomenon. (Cropped and lightened photo.) Original is on the NIST website: http://wtc.nist.gov/media/gallery.htm
http://wtc.nist.gov/images/steel11_hires.jpg
4. The cluster of beams showed on this page, wrapped in their own spandrel plates, look more like rolled-up carpets than perimeter columns of the WTC (wheatchex).
Figure 30. In a gravity collapse, the outer columns are essentially subjected to no loading in this direction.

Figure 31. This makes no sense.

Figure 32. Bending about a vertical axis makes no sense. The building is not loaded in that way.

Source:

Figure 33. Erection of floor framing during original construction.

http://www.911review.org/images/wtc-gallery/fema403-2/2-8_exterior-wall.jpg
Figure 34. Undeformed columns.

Figure 35. Deformed (buckled) columns

Figure 36. Load diagram.

Figure 37. Bending around a vertical axis is inconsistent with an overload from above or a "gravity collapse."

Figure 38. Axially loaded structure, demonstrating buckling.

Figure 39. Loading diagram.

Figure 40. Loading diagram.

Gilsanz Murray Steficek LLP (GMS)
R-- Development of WTC 7 Structural Models and Collapse Hypotheses, Gilsanz knows better.
Figure 41. WTC beams wrapped like a burrito. 

Figure 42. "Pepperoni roll" WTC beams.  

Figure 43. WTC beams that look like poured cake mix.  

Figure 44. Straight WTC outer columns with spandrel belts wilted over them like tissue paper.  
**Figure 45.** The spandrel belt looks like a wet tissue was draped across the beams and spraypainted bright red. Rigid once again.

**Figure 46.** "Jellification"of WTC core columns.

**Figure 47.** Another example of jellification: spandrel belts appear to have had the mechanical properties of wet tissue paper before resolidifying.
Figure 48. These outer columns are not buckled from an axial load, but the spandrel belts are folded about a vertical axis. There is essentially no applied mechanical load that would cause this.

Figure 49. WTC beams. These beams did not buckle. The beam on the left is straight with portions missing. Images show deterioration due to erosion/corrosion mechanism.


Figure 50. Buckling behavior. Buckling doesn't leave beams straight with missing material, like that shown in Figures 48 and 49.

Figure 51. Kneeling and buckling.

Critical load formula

\[ F_{cy} = \frac{E I \pi^2}{L^2} \]

5. If the WTC "collapsed" from overload, columns would exhibit buckling failure. However, there is a lack of buckled columns in the "rubble pile." For that matter, there is also a lack of a significant rubble pile.

No matter what hypothetical fire event is posited, the following cannot explain the "rolled-up carpets."

6. A gravity collapse with or without heat won't cause this type of failure.
   • Bombs won't cause this type of failure.
   • A nuclear explosive won't cause this type of failure.
   • Cutting torches won't cause this type of failure.
   • Thermite can't cause this type of failure.
Figure 52. Large pieces of steel recovered from the World Trade Center site sit in Hangar 17 at Kennedy International Airport. (Photo by Lane Johnson)

Figure 53. These columns don't look like 500,000 tons of building landed on them.

Figure 54. These WTC beams (wheatchex) stabbed into the street without buckling.

Figure 55. Those wheatchex flew a long way, approximately 500 feet.

Figure 56. Massive core column with anomalous smooth bend.

Figure 57. This set of columns doesn't look crushed by 500,000 tons of building.
Figure 58. A bike rack removed from the World Trade Center site is kept with other artifacts in Hangar 17 at Kennedy International Airport. (Photo by Lane Johnson). Curled core column is seen in the background.

Figure 59. Large pieces of steel called tridents recovered from the World Trade Center site, and once a structural part of the ground level exterior arches of the twin towers, are preserved in Hangar 17 of Kennedy International Airport. There are about 1,350 pieces of steel, many weighing over 30 tons. (Photo by Lane Johnson)

Figure 60. Heat change the molecular structure of human hair. The non-uniform change causes curling.

Figure 61. Chemicals can also alter molecular structures. Plastic attacked by whatever.

7. Changing the molecular structure in one area of a material can produce anomalous bending.
Figure 62. Solid molybdenum, Hutchison-Effect beam, now in the possession of Col. John Alexander. 
(Solid circular bar, 2.5-inch or 3-inch diameter)

Figure 63. Solid copper bar bent from the Hutchison Effect. 
(Solid circular bar, 2.5-inch or 3-inch diameter)

Figure 64. I-beams deformed in the wrong direction. This deformation is inconsistent with overload. 
Source: NIST http://wtc.nist.gov/media/gallery.htm

Figure 65. (a) loading of I-beam, (b) expected deformation from this loading, (c) actual deformation seen in beams found at GZ, as seen in Figure 64. The vertical loading should not cause the I-beams to bend around a vertical axis.

Figure 66. WTC core column curled, not buckled. A gravity-driven "collapse" would not do this. The beam above has smooth curves, without kinks. 
(2002)

Figure 67. Buckled beams, characteristic of a gravity-driven collapse, were virtually non-existent at the WTC site. This bend is greater than 180°. 
(2002)
Figure 68. Overloading a structural column to the point of failure produces buckling, easily identified by kinks in the beam.

Figure 69. Buckling occurs near the midpoint of an unsupported length in a zone where the material is weakest. If buckling initiates at a point, it cannot deform a straight beam into a smooth arc of greater than a 180° bend.

This is what a gravity-driven collapse looks like.

Figure 70. The can kinks. The kinks are sharp.

Figure 71. The result.

This is what a directed-energy effect looks like.

Figure 72. Red Bull can before. (6/06)

Figure 73. Red Bull can after being "DEWed." (6/06)