

Building Fire  
324 E. Diamond  
Avenue  
August 17, 2009



Fire on the third floor and through the roof @ 2012 hours  
Occupancy – Abandoned Three Story Garden Apartment

324 E. Diamond Avenue  
DIAMOND COURT APARTMENTS  
August 17, 2009

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## *I. Introduction*

On August 17, 2009 at 20:13 Hours, Montgomery County Fire and Rescue ECC dispatched Box Alarm 08-14 for the intersection of E Diamond and N. Summit Avenues abandoned apartment building behind the school, fire on the third floor.

After initial dispatch, Montgomery notified BC-705 on 7-C of multiple calls and they are starting the Rapid Intervention Dispatch (RID). BC-705 also requested a second alarm be dispatched—as there was a visible large column of black smoke seen from Frederick Road and Shady Grove Road. It was later discovered that ECC could manipulate the traffic cameras and see the structure, therefore confirming the calls and BC-705's visual.

Upon arrival Safety 700 arrived on the scene and reported a 3-story garden apartment with fire on third floor extending into the attic. He confirmed that a second alarm was called and he established command on Side A.

324 E. Diamond Avenue is a three-story residential garden apartment built in 1970 and valued at \$1.3 Million as of January 1, 2008. The structure is Type III construction. It was last inhabited in early 2008.

The building is owned by Archstone Westchester at Old Towne LP, 9200 E Panorama Circle, Englewood CO 80112-3481. The local manager is, Jeffrey Harris, Vice President, Archstone, 2345 Crystal Drive, Suite 1100, Arlington, VA 22202.

On the evening of the incident, the structure was abandoned and waiting City of Gaithersburg approvals for razing. It had no interior furnishings, and was partially burned by a fire under similar circumstances in April 2008. At the time of this fire the Montgomery County Fair was underway and MCFRS had units equal to a first alarm assigned to the site. Both placed significant demands on the Fire and Rescue Service.

The temperature was 80 °F with a dew point of 66 °F and the winds 2-7 MPH.

E. Diamond Avenue and N. Summit Avenue both have 10" water mains.

## *II. Building Structure and Site Layout.*

324 E. Diamond Avenue is a three-story residential garden apartment built in 1970 and valued at \$1.3 Million as of January 1, 2008. It is Type III construction. It was last inhabited in early 2008.

The Structure has no protection systems and the likelihood of arson caused the rapid acceleration throughout the third floor and roof.

During the April 2008 fire, AT-708 was able to access the Delta side of the building as shown in Figure 6. Since the same crew was working August 17, 2009, they anticipated the same placement; however, the owners had placed a chain link fence around the structure in a way that prevented AT-708's access. Instead, they nosed-in on the Alpha side—See Figure 3. AT-708 was still able to reach the fire area with their ladder pipe.

On the Charlie and Delta sides, crews had to make an opening in the chain link fence to gain access for Rapid Intervention Crews (RIC), Blitz Fire attack, Search Teams, Fire Investigators, and other needs.

## *III. Fire Code History*

This is a vacant building with plans to raze it as soon as approvals are made from Gaithersburg City.

## *IV. Communications*

Communications operated primarily on 7C. Staging was placed on 7D. 7E was not used, but 7F was used to communicate to all units operating on the fire ground.

There were no problems noted with Communications.

## *V. Pre-emergency Planning*

Pre-fire plans were available both by book and on the Mobile Data Computer (MDC). They were not used on this incident because of the familiarity with structure. When the building is razed, drawings of the new structure will have to be completed.

## *VI. On Scene Operations*

A stationary Command Post (CP) was established on Side A in BC-705's vehicle.

An Incident Action Plan (IAP) of a defensive operation was communicated to all responding personnel. During the initial phase of command, Safety 700 assisted in gathering information, setting up the water supply, aerial locations, and other functions.

Life Safety Priority: Primary life safety consideration was given to responding personnel. And while there was a possibility of vagrants living in or using the structure for other means, the condition of the structure from its abandonment and the fire that had occurred in April, 2008, created an unsafe environment for Fire Fighter entry.

Additional resources requested: Rapid Intervention Dispatch and a Second Alarm (Units told to respond on 7 Delta and stage in town on E Diamond). E-722 identified the circle in front of the school as Staging—See Figure 5

The dispatch information coupled with the shape, layout, and fencing around the structure created a confusing scenario of “what side am I on.” After announcing the IAP to the responding units, communication came from the CP identifying Side Alpha as the E. Diamond Avenue side—See Figures 1 and 2. This allowed for good tactical operations and a coordinated flow of water from: AT-708 Side A; T-731 Side C; and AT-703 Side D. The initial water supply came from E-753 on Side A to AT-708 and E-708 on Side D—See Figure 3

The amount of fire involvement on arrival provided too high of a risk to initiate an initial search in an abandoned structure. Command understood the potential for unlawful inhabitants and it was also reported by FM 62 of the possibility of life safety issues, however, the stabilization of the incident prior to conducting any type of search was critical to Fire Service Personnel.

After nearly one hour of operations, the fire was approximately 90 % extinguished. A plan was then developed to create two recon teams and a fresh Rapid Intervention Team in the Charlie Division for the purposes search and overhaul.

Recon was divided into two Groups based on the areas which needed to be searched. The layout of the building is an “L” shape. Side Alpha was the short leg and is considered Tier A—See Figure 4: The longer portion housed Tier B (the April 2008 fire area) and Tier C and D. Tier C Recon had Special Operations Chief (SOC) 700 as the Supervisor and Tier D had Safety 700 as the Supervisor. During this phase, E-731, AT-708, RS-729, and M-708B were assigned to the Rapid Intervention Group with E-731 as the Supervisor. A complete primary and secondary search of Tier C were negative. Tier D was

determined to be off limits to personnel and a visual search was conducted with nothing noted. At 2203 hours, A Personal Accountability Report (PAR) was conducted all personnel involved in the Tier C and D groups with all PAR.

At 2205 hours T-731 and AT-703 started flowing water and overhaul was completed.

The final action prior to clearing the incident, T-731 hydraulically knocked over the upper portion of the end wall on Side D—See Figure 9 This was to prevent the potential for injuries should Fire Rescue have to return or trespassers or graffitist engaged in illegal activities.

At approximately 2300 hours, all personnel and units were released from the incident and the Gaithersburg City Police were going to make a round to assure no fire or other activity every hour until 0700 August 18, 2009.

On September 30, 2009 a post-incident an assessment of the water supply was conducted. E. Diamond Avenue has a 10" water main; N. Summit Avenue has a 12" water main; and there is a 12" water main which loops past Gaithersburg Elementary School and connects to Girard Street and then to E. Diamond. The hydrant at 320 E. Diamond has a static pressure of 60 PSI and a residual of 26 PSI. The NFPA discharge table for 4.5" circular outlets indicates a flow of 2776 GPM. On a loop system, each of the three hydrants use on this fire should have the same capability without effect from the other, or a total flow capability of 8328 GPM. Initially, E-753 supplied AT-708 and E-708 (who tried to supply a Blitz Fire and AT-703). This was corrected by having E-703 supply E-708 and AT-703 from another hydrant on the E. Diamond main. See Figure 10.

## *VII. Staging*

The second alarm units were not dispatched to a specific staging location other than 324 E. Diamond Avenue. Being familiar with the area after having been to a fire in that unit block a year earlier, E-722 chose Gaithersburg Elementary on Summit Avenue as the staging area. The staging area was on side Bravo of the fire building, included a bus turnaround that was utilized and a side parking lot on side Bravo of the school. Upon arrival at the school, command called for 2 engines from staging to report to the Delta division to assist with fire attack in the Delta exposure. E729 and E717 were sent to that division, confirmed by Command. That left E722, E723, AT729, and T723 in staging. M708B which was initially dispatched on the 2<sup>nd</sup> alarm was used immediately on the fire ground, thus they never reported to staging.

The crew on E722 assisted initially with securing a perimeter with Fire Line tape on the Bravo and Charlie sides of the fire building. There were approximately one hundred or more citizens within harms reach of the fire building. The crew

was directed to cordon off a perimeter with yellow fire line tape on side Bravo and Charlie.

### *VIII. Support Functions*

Rehab was located on Side Charlie with EMS-703 as the group supervisor. Canteen 733, A-708, and M-708B were the support units in this group.

Gaithersburg Police were utilized for traffic flow and a building watch after fire units cleared the scene.

### *IX. Safety Group*

Safety 700 was the first to arrive and established command. As command was passed to BC-705, Safety 700 assisted with command functions and then performed a circle check.

A RIG was assigned with E-731 as the group supervisor. Units assigned to this group included T-703, RS-717, A708.

A thought on Command and Control as it relates here and to stations with multiple units providing the same service needs. Vis a Vis, Station 8 has an Alpha and a Bravo Medic unit. They alternate calls when both are in quarters (or close proximity). The Engine and Tower, both AFRAs, but obviously offering a different service by name sake, also alternate on EMS dispatches. Station 8 also staffs two Ambulances. On rapidly escalating incidents with multiple EMS units coming, this practice causes confusion and unnecessary changes and communications.

On this incident, the 1<sup>st</sup> Alarm had A-708 on the dispatch. The Rapid Intervention Dispatch (RID) was M-708B. And the 2<sup>nd</sup> Alarm was for M-708B because the Alpha medic took the RID. The Rapid Intervention Group (RIG) was established on the Delta Side with E-731 as the supervisor. He reported during a PAR that the Ambulance (A-708) did not show up. When Command contacted A-708, they reported that they were setting up Rehab with both Medic units. Command assigned M-708 to the RIG and they acknowledged that assignment. They did not perform that function. In fact, their Fire House report stated,

Moved cot from one spot to another; geared up and moved the cot some more; then took our gear off and moved the cot; then gathered our gear and moved the cot again. Finally, notified the chief that he had two medic units and an ambulance – and he placed us in service after doing a face to face.

During this event, the EMS units failed to follow established SOPs as they pertain to Rapid Intervention. Without specific direction from the Command Post,

personnel must adhere to SOPs and must make certain that Command is aware of what apparatus response order changes were made.

Officers assigned to stations similar to this should review this portion of the PIA with personnel to prevent this lapse in the future.

## *X. Accountability*

All Personnel were accounted for and a PAR was conducted after search of the structure. Near the end of the incident, one Fire Marshall cleared on 7 Alpha and was still listed on the command chart as on the scene. ECC confirmed that the FM had cleared.

## *XI. Investigations*

FM 62 SYNOPSIS: At approx 2000 hrs this evening [8/17/2009] Battalion 5 units were dispatched for a building fire at the corner of E Diamond and N Summit Ave. Safety 700 arrived on the scene and reported fire showing from the third floor of a vacant apartment building and requested a second alarm. Command was established and an exterior fire attack with master streams was initiated. This building is the site of a multi alarm fire from June 2008 and recently a possible suspect has been developed for that event by FM62. The on duty Fire Investigators responded to the scene.

Upon arrival on the scene the I/O's began to capture photos of the crowd and interview witnesses. The fire was advancing to the entire roof structure and was spreading rapidly across the top floor of the building. FM62, who has recently been working with Gaithersburg City PD on a suspect from the previous fire, proceeded to the suspect's home with GPD to conduct an interview.

After a significant time of flowing master streams, the fire was eventually reported out and a recon of the building by the safety officer deemed the building unsafe to occupy for any O&C activities. The third story exterior brick walls were hydraulically knocked down into the structure to make the scene safe. FM62 is preparing a search warrant for the home of the suspect and will be serving it in the morning. A check of the buildings structural integrity will be taken in the morning to determine if any O&C investigation can be done.

## *XII. Lessons Learned*

Operating on a fire ground under any circumstance is inherently dangerous. Firefighters constantly weigh the risks they need to assume to the probable outcome: Risk a lot to save a lot. Fire fighters are trained to save Life, Limb, and Property. Vacant, unsecured structures tempt Firefighters to do their job. The vacant structure itself may not be the driving force; but the potential for vagrants or squatters, especially in the current economic environment and the potential for the fire to spread to other occupied structures provides just enough possibility to cause a reaction. This fire had both of those potentials: The school to the rear and the knowledge that some locals may be inside the building.

April 2009, Marty Ahrens, NFPA, Fire Analysis and Research Division, reported,

2003-2006, U.S. fire departments responded to an estimated average of 31,000 structure fires in vacant buildings. These fires resulted in an average of 50 civilian deaths, 141 civilian injuries, and \$642 million in direct property damage per year. 4,500 firefighters were injured annually at these incidents. Only 6% of all reported structure fires were at vacant buildings, but they accounted for 13% of the firefighter injuries incurred at structure fires. From 1998 to 2007, 15 firefighters were fatally injured at vacant building fires.

A second challenge on this fire was structural stability and how it may affect fire fighter safety. The need to conduct a search posed the highest risk. Anthony Avillo, *Fire Ground Strategies*, writes, "Buildings that have suffered previous fires should be treated with extra caution. Not only will the fire compromise the building, but fire fighting activities will also have a detrimental effect on the structure. Master streams will often knock structural elements out of plumb, making them unstable." How fire fighters would maneuver during this process had to be considered. Units in the Re-con group worked from structurally sound areas inward under the observation of Safety-700. Areas determined unsafe to enter were visually searched and documented to command.

Based on this information, the Fire Marshall's office was contacted and asked to coordinate with Gaithersburg City to step up the planned razing of this and the surrounding structures that are part of the complex. After the April 2008 fire, a fence was placed around this particular building. Following this fire, the development company was directed to place a fence around the entire complex to deter future vandalism.

“The worst building fire in terms of loss of life to firefighters<sup>1</sup> in nearly 23 years killed six Worcester, MA, firefighters on Dec. 3, 1999. Two firefighters immediately began searching for homeless people known to be living in the vacant cold storage warehouse building.” Harvey Eisner, *Firehouse Magazine*.

The number of vacated structures has risen to nearly double the units since 1999. Understanding the burden that is currently placed on all areas of local governments, Planning Commissions, Fire and Rescue, Zoning, and Building Inspections, these entities should develop for passage a code that will require vacant, abandoned, or uninhabitable structures at the time of their sale come with plans for completing demolition or begin rehabilitation within six months of date of sale. Short of that process, adoption of the current NFPA requirements for vacant structures will also help—the full report can be located at <http://www.nfpa.org/assets/files//OS.VacantBuildings.pdf> Current Safe Structure Fire Fighting SOP does not address actions at vacant structures. One may say “we were lucky this time,” because there were no injuries. The vision on these types of structures needs to mirror Departmental focus on collision prevention; sans this vision, catastrophe lies ahead.

### *Dollar Loss Analysis*

Since the building is to be razed, there is no dollar loss associated with the property. However, from a Fire Rescue Operational viewpoint, one can account for \$30,000 in employee salaries and an estimated \$10,000 to \$30,000 in related apparatus, equipment, foam, and maintenance costs. These figures are based on the Average Hourly Costs and Apparatus Replacement estimates.

### *General Command and Control*

The need for a trained and assigned Battalion Driver is critical to the safe and effective leadership on incident scenes. On this incident, Montgomery dispatched the initial box alarm, rapid intervention, and second alarm within 5 minutes. A command officer without a driver is paralyzed from documenting units, radio transmissions, water supply locations, and other critical incident notices while responding. Too often, units are out of position because of training, previous calls, or just the fact that the location is at the far end of a box area and the arrival of units is different. Radio communications to play catch-up after arriving on the scene is likely to interfere with other critical radio traffic.

On this incident, the arrival of Safety 700 (who established command) and the arrival of Battalion Chief 705 less than one minute later, allowed for two personnel in a command vehicle to quickly gain control of responding units, communicate an Incident Action Plan, and track and assign units. Safety 700

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<sup>1</sup> This report was completed prior to the September 11, 2001 attacks.

was able to communicate with the Duty Operations Chief on 7 Delta regarding April, 2008's fire and the need to control the water supply.

The added benefit of the same shift and many of the same personnel that were working in April, 2008 greatly worked in command's favor on this call and slightly attenuate the true need for a Battalion Driver. However, it is a rarity that fire fighters get a second chance to fight the same fire, let alone with the same crew. Therefore, the Department should consider battalion drivers a high priority.

### *Bring your Tennis Shoes*

Battalion Chief Barry Reid had a significant incident at 101 Odendhal Avenue. In his corresponding PIA he wrote a section titled: *Bring your Tennis Shoes*. This concept should be supported. Not only as outlined by Battalion Chief Reid, but during inclement weather also. Fire Fighters should keep a small dry sack with a pair of socks, a tee shirt, and a pair of shorts.

I have always told my folks to bring their street shoes if they are dispatched on a greater alarm for a high rise fire because they would be running the stairs to help Logistics. In this case the first alarm could have used them. Once the fire threat was over, it became a humanitarian effort. The IC has the authority "dress down" or wear less PPE. In Phase 2 and Phase 3 of this incident, a Class C or Class E uniform (with comfortable shoes) was appropriate. Conducting the labor intensive operations in Phase 2 and Phase 3 of the incident in partial PPE (trousers & boots) further increased firefighter fatigue.

He went further to suggest, Battalion Chiefs should encourage personnel to carry comfortable clothing with them on the apparatus. It may be as simple throwing your street shoes on the piece when you get dressed. You never know when you will be deployed to perform a task (e.g. wide area evacuation, humanitarian effort in a shelter, etc) that would simply require street clothing.

### *Firehouse Reports*

Many unit reports were inadequate, lacking information on actions taken, and assignment in the incident organization. Out of 20 units that played critical roles, 1 Division Supervisor wrote nothing, 5 reports contained only one sentence and some incorrect data based on IC assignments, 6 contained good information but did not go far enough into their actions, 6 were well written. Division/Group Supervisors need to list units in their respective division or group and specify actions. For this incident, it should be a summary of findings in a geographic area and actions/general group accountability. Each officer was asked to complete an after action statement to the IC via Email, in most cases, these were better than the FH report. They should be putting that energy in their unit reports. The report needs to be written so that someone who was not on the incident can understand what occurred. Station officers should occasionally review each

employee's Fire House report for accuracy and completeness. Unit officers cannot just click their way through a report so it does not show up as incomplete. It must be thorough.

## **Final Thoughts**

There are no policies for abandoned or vacant structures. Most efforts are traditionally placed in responding to a building, performing a scene size-up, entering the front door (Side A) of a rectangular shaped structure on the addressed side of the street with an inch and three quarter hand line, conducting a search, fire suppression, and ventilation and overhaul. The first floor is Division one; the second floor Division two. Fire Fighting is a choreographed piece of work similar to synchronized swimming.

This building was an "L" shape. There were no rescues to be made. The building is going to be torn down in short order. Three tower / ladder pipes put it out with no hand lines and all in the same time that it would typically take on a 'real fire.' So why was it so easy? Well, look at the swimmers; they train and practice daily in a gym all of their movements; each swimmer knows where she will be at a given point because it is planned and they train. Then they move to the water. Then they travel all over the world and perform nearly flawlessly in different size and shape pools, different countries, different crowds, and at different times of the day.

Continuing to "Train, Train, Train, and flawlessly executing the basics every time" makes atypical fires or other type of incidents run well. This was flawless execution based on training, not a random reaction based on guessing what was best. You have trained, you have practiced, and now you should be proud!

## Incident Organization

Command and General Staff

IC – BC705 (Zuspan)

Incident Action Plan

Advisor – DOC 700 Assistant Chief M. Prete

SAFETY – Initially assisted with Command Organization, BC K. Frazier

PIO – Captain O. Garcia

First Alarm E-708, E-753, E-728, E-731, E-703, AT-708, T-731, RS-729, A-708, BC-705, BC-703, DC-700, C-708, C-703H, and Safety-700

RIG – E-731 T-703, RS-717, A708

Division A - AT-708\*, E-753

Division C - BC-703\*, E-728, ET-731, RS-729

Division D - C703H\*, E-708, E-703, AT-703

FM Group – FM 62 and FM 22

Second Alarm E-722-Staging Supervisor, E-729, E717,

Liaison - N/A

REHAB - (Located on Side D) EMS-703\*, A-708, M708B

On Scene Operations

Final Sweep – 360 IC Zuspan

City of Gaithersburg (police, inspectors)

Fire intentionally Set – Under Investigation

Approximate loss –

324 E. Diamond Avenue, August 17, 2009, Personnel Stats

Unit#	Staffing	Average hourly costs to operate	Hours of work	Total Cost
<b>FIRST ALARM</b>				
E708	4	\$265.96	3	\$3,191.52
E753	3	\$212.14	3	\$1,909.26
E728	4	\$265.96	3	\$3,191.52
E731	4	\$265.96	3	\$3,191.52
E703	3	\$212.14	3	\$1,909.26
AT708	4	\$265.96	3	\$3,191.52
T731	3	\$212.14	3	\$1,909.26
RS729	3	\$212.14	2.4	\$1,527.41
A708	2	\$122.78	3	\$736.68
BC705	1	\$105.77	3	\$317.31
BC703	1	\$105.77	1.5	\$158.66
Safety 700	1	\$105.77	3	\$317.31
DOC 700	1	\$105.77	2.5	\$264.43
<b>Estimated costs to operate a 1st alarm assignment</b>				<b>\$21,815.65</b>
<b>RAPID INTERVENTION</b>				
Unit#	Staffing	Average hourly costs to operate	Hours of work	Total Cost
AT703			3	\$0.00
RS717				\$0.00
M708	2	\$122.78	2.5	\$613.90
<b>Estimated costs to operate a Rapid Intervention</b>				<b>\$613.90</b>
<b>SECOND ALARM</b>				
Unit#	Staffing	Average hourly costs to operate	Hours of work	Total Cost
E722	4	\$265.96	1	\$1,063.84
E729	4	\$265.96	1	\$1,063.84
E717	3	\$212.14	2	\$1,272.84
E723	4	\$265.96	1	\$1,063.84
AT729	3	\$212.14	1	\$636.42
T723	3	\$212.14	1	\$636.42
M708B	2	\$122.78	3	\$736.68
<b>Estimated Costs to Operate a 2nd alarm</b>				<b>\$6,473.88</b>
<b>SUPPORT STAFF</b>				
Unit#	Staffing	Average hourly costs to operate	Hours of work	Total Cost
FM22	1	\$105.77	1.5	\$158.66
FM56	1	\$105.77	2.5	\$264.43
FM62	1	\$105.77	2.5	\$264.43
EMS703	1	\$105.77	2	\$211.54
U121	1	\$105.77	2.5	\$264.43
<b>Estimated Costs to Operate support staff</b>				<b>\$1,163.47</b>
<b>Total estimated costs to operate crews on Incident 09-0085320</b>				<b>\$30,066.90</b>



Figure 1



Figure 2



Figure 3



Figure 4

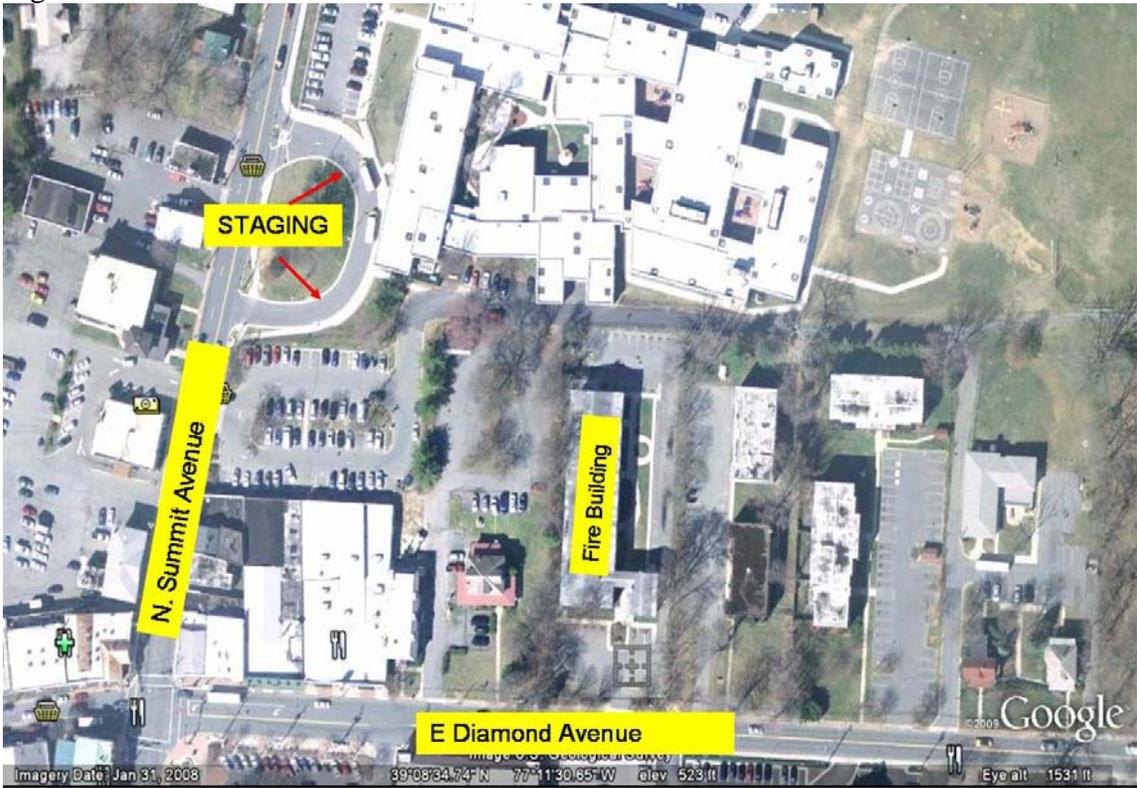


Figure 5



Figure 6. April 2008 Tier A—Access to this point in August 2009 was blocked by chain link fence.



Figure 7. April 2008 Tier B and Tier A heavily damaged.



Figure 8. August 2009 Tier D



Figure 9. Photo taken September 2009



Figure 10