

May 31, 2019 Final Investigation Summary Report



Virginia Beach Police Department

March 2021

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INTRODUCTION

This report provides the final account of the police investigation into the May 31, 2019 tragedy which occurred in and around 2405 Courthouse Drive, Building 2 of the Virginia Beach Municipal Center, in which the shooter took the lives of 12 people and injured 5 others, 4 critically.

Many of the details included in this report were previously released in September 2019 and April 2020. In November 2020, the FBI Firearms/Toolmarks Unit provided laboratory reports reconstructing the firearms trajectories during the crime. A report from the Behavioral Analysis Unit remains outstanding; it will be appended once provided.

While this report will address many questions, the overarching question regarding motive remains unanswered; the shooter, City of Virginia Beach Public Utilities Engineer Dewayne Craddock (hereafter referred to as “suspect”), left no note nor any other account that would explain his actions. There were no common characteristics among the victims who were killed and injured relating to their age, race or gender.

The entire incident lasted approximately 44 minutes. The timeframe from when the first victim was shot, just prior to 4:03 PM, to when the first 9-1-1 call was received at 4:06:32 PM was approximately 3 minutes and 30 seconds. Virginia Beach Police (VBPD) entered the building at 4:10 PM, less than two minutes after 9-1-1 dispatched the call at 4:08:19 PM. The suspect moved around three levels of Building 2 until encountered by police at approximately 4:18 PM.

Investigators reenacted the sequence of the shooting spree several times based on direct evidence that included the City’s electronic door entry system (Lenel), cellphone call logs, the fire alarm activation, 9-1-1 calls to Emergency Communications and Citizens Services (ECCS), police radio time stamps, and other evidence that anchored the suspect in certain areas of the building during the shooting spree. In addition to all of the evidence collected, VBPD investigators evaluated all testimonial evidence to help build the sequence of events and movements of the suspect. Once the scene was stabilized, the Police Department transitioned into investigating both the criminal incident initiated by the suspect and the officer-involved shooting of the suspect.

The investigation included more than 1,000 contacts and interviews with individuals, the analysis of over 10 terabytes of digital evidence, and the examination of 504 pieces of physical evidence. It required 20 months and the involvement of numerous detectives and agencies.

BUILDING 2

Building 2, located at 2408 Courthouse Drive, is a five-story (basement plus four floors) brick building totaling nearly 100,000 square feet. It had two public entrances on the north and south sides as well as two entrances on the east and west sides for employees only. The entrance on the east side had a tunnel connecting Building 1 (City Hall) with Building 2, which has since been removed as part of the construction of a new City Hall. At the time, the building was bounded by a large parking lot to the south (now the new City Hall), Courthouse Drive to the north, a large grassy area to the west (now a parking lot), and City Hall to the east.

This building was the primary work location for approximately 400 employees as well as contract staff, volunteers and interns assigned to the following departments:

- Public Works
- Public Utilities
- Planning
- Information Technology

Citizens visited the building for meetings and to receive a variety of services, including building permits and plans reviews.

SUMMARY OF EVENTS

On May 31, 2019, the suspect arrived to work at approximately 7:16 AM. He logged in to his computer by 7:23 AM and began to work. At 10:30 AM, he submitted a letter of resignation to his supervisor via email that read:

I want to officially put in my (2) weeks' notice to vacant (sic) my position of Engineer III with the City of Virginia Beach. It has been a pleasure to serve the City, but due to personal reasons I must relieve (sic) my position.

Early that afternoon, the suspect and two coworkers visited three job sites to discuss the status of the projects and provide pass-down information. At the conclusion of the site visits, the group returned to Building 2. Later in the day, a colleague who had been cordial with the suspect in the past approached him about the suspect leaving the City. The suspect mentioned his desire to reconnect with his ex-wife, who was out of state and dealing with medical issues.

At 3:55 PM, the suspect sent one final email to a coworker in which he addressed several routine work-related matters. A coworker who knew the suspect walked out ahead of him from the south entrance of Building 2 at approximately 4:00 PM. The departing employee observed the suspect standing in the open passenger door of his own car and waved at the suspect as he drove off. It was later learned the suspect was retrieving a .45 caliber handgun with a suppressor and a backpack that contained a second gun and additional ammunition.

The suspect walked two parking spaces over from where his vehicle was parked and shot his first victim, Robert “Bobby” Williams, killing him as he sat in his car. The suspect then proceeded toward Building 2 where he encountered his second victim, Herbert “Bert” Snelling, Jr., who he shot and killed on the walkway leading up to the rear public entrance to the building. Mr. Snelling was the only individual shot who was not a City employee.

The suspect then entered the building and shot and killed Michelle “Missy” Langer in the southern stairwell near the first floor. He continued up the stairwell and entered the third floor where he took the lives of LaQuita C. Brown, Mary Louise “Mary Lou” Cruisinger Gayle, Alexander Mikhail Gusev, Christopher Kelly Rapp, and Tara Welch Gallagher. Two others he shot were critically injured.

The suspect moved to the second floor and killed Katherine A. Lusich Nixon, Joshua O. Hardy, and Ryan Keith Cox. The suspect then re-entered the third floor where he shot and critically injured one additional employee. He again returned to the second floor and killed Richard H. Nettleton and shot the fourth surviving victim.

At 4:10 PM, two minutes after being dispatched, the first responding police personnel entered the building and began to search for the suspect, whose identity was unknown to the officers at that time. Responding officers reported locating numerous shooting victims as they searched for the suspect.

Initial descriptions of the shooter relayed to responding officers varied: one white male, one Black male, and potentially multiple assailants. Around 4:15 PM, the dispatcher broadcast a confirmed description of the suspect as a bald Black male wearing a blue polo shirt. Police searched for the suspect for 7 minutes and 50 seconds before encountering him on the northeast side of the second floor.

The officers fired at and struck the suspect, who was visible through a small window of a closed door, at approximately 4:18 PM. The suspect retreated into the work area on the northeast side of the building and out of sight of the officers. The officers were unable to pursue the suspect as they did not possess the necessary key card to gain access through the secured doors in the area. The area in which this event took place was a honeycomb of offices with internal connections to interior hallways. Unbeknownst to the officers, the suspect had circled behind them. Moments later, an intense firefight ensued during which the suspect shot and injured his last victim, a Virginia Beach Police sergeant. He was wearing his ballistic vest and survived the shooting with minor injuries.

Shots fired by the suspect and the officers traveled through doors, walls, and glass. A locked door with a window separated officers from the suspect throughout the exchange of gunfire. VBPD Special Weapons and Tactics (SWAT) officers arrived, established a tactical formation, and took the suspect into custody at 4:44 PM with no additional shots being fired. The suspect

struggled with police who were attempting to treat his injuries. He was quickly evacuated to a nearby ambulance. He was pronounced deceased at 5:26¹ PM by physicians at a nearby hospital.

At the conclusion of the incident, 12 persons had been murdered and 5 others had survived close range gunshot wounds. Throughout the ordeal, people had rendered aid to victims and VBPD officers safely guided people outside who had been sheltering in various locations in Building 2. Hundreds of others around the Municipal Center complex had been placed on lockdown while other emergency responders and employees throughout the organization responded to assist with the long list of urgent needs that arose from this enormous tragedy.

Detailed Timeline of Events

One aspect of the investigation involved recreating the suspect's movements on May 31, 2019, including his contacts with each victim.

May 31, 2019 was a Friday, and the City of Virginia Beach was under normal operating conditions. At 4:06 PM, the first of many 9-1-1 calls were received that reported the shooting.

The timeline of the suspect's movements was established by examining four known anchor points² and several reference points.³ The four anchor points are timestamps when the suspect used his access card to gain entry through locked doors. The reference points were based on timestamps embedded in cell phone records, fire alarm activation, body worn camera audio, and police radio transmission. Simulated walk-throughs⁴ using witness statements also informed the estimates. Note that the third floor of the building does not contain doors that require electronic key access. Witnesses reported that the suspect was seen walking, rather than running, throughout his travels. This helped with the calculations of his movements based on the anchor points.

Outside of Building 2

A co-worker placed the suspect in the parking lot at approximately 4:00 PM.

After the co-worker left the parking lot, the suspect shot and killed his first victim, Robert "Bobby" Williams (#1 on diagram 1), who was parked two spaces to the left of the suspect's vehicle. The suspect then walked toward the back entrance of the building and shot Herbert "Bert" Snelling, Jr. (#2 on diagram 1) on the sidewalk leading to the door. This encounter took

¹ Corrected time. Original timeline in an earlier document reflected a time of death of 5:32 PM.

² An anchor point is based on ability to place the suspect in a known location at a very specific time.

³ A reference point is based on ability to place the suspect in a general area during a close time frame.

⁴ To accomplish simulated walk-throughs, investigators used crime scene evidence and known anchor points along the suspect's travel path. They timed how long it would take to walk throughout the building and cross referenced that with all the known evidence gathered. The starting point was outside the south entrance to Building 2 and ended at the south/east second floor at 4:15 PM. Numerous walk-throughs, based on alternative theories, were conducted and replicated several times to determine the most likely path the suspect took while adhering to the established anchor points.

place on or shortly after 4:03 PM, based on Mr. Snelling’s cell phone carrier records and several simulations, during which it was determined that it took approximately 11 seconds for the suspect to reach the entrance of the building. This established the entry time at 4:03 PM.

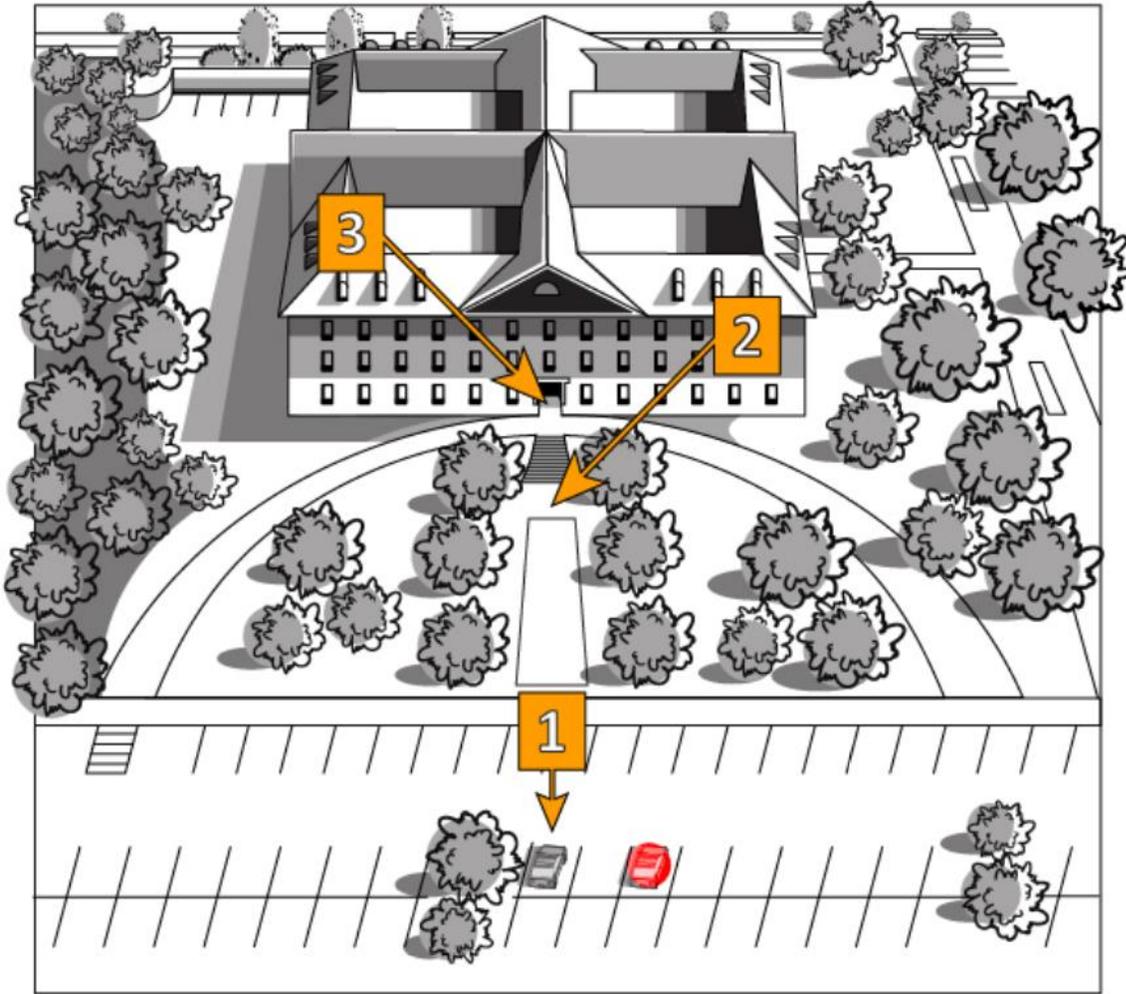


Diagram 1

Inside of Building 2

The suspect entered the building at approximately 4:03 PM and encountered and killed Michelle “Missy” Langer (#3 on diagram 1) on the stairwell near the first floor. It took the suspect approximately 37 seconds to reach the third floor, southeast door (Right-of-Way unit side), which he accessed at approximately 4:04 PM.

Third Floor

The suspect entered the floor, followed LaQuita C. Brown and shot her in her office (#4 on diagram 2). The suspect then shot his next two victims, Mary Louise “Mary Lou” Cruisinger Gayle (#5 on diagram 2) and Alexander Mikhail Gusev (#6 on diagram 2). The order of these

two shootings cannot be determined, but it is known that Ms. Gayle was shot in the hallway outside of her office, and Mr. Gusev was shot in his office.

The suspect then shot and injured an employee who survived (Victim #7 on Diagram 2) and shot and killed Christopher Kelly Rapp (#8 on diagram 2) in the same room, then shot and injured Victim #9, and then shot and killed Tara Welch Gallagher (#10 on diagram 2).



Diagram 2

Second Floor

The suspect arrived at the second floor, southeast door, at 4:05 PM. He entered the area, shot Katherine A. Lusich Nixon (#11 on diagram 3) at approximately 4:06 PM and then encountered Joshua O. Hardy (#12 on diagram 3) in the doorway of the shared office space and shot him. As Mr. Hardy moved to the back of the office, the suspect followed while continuing to shoot. The suspect returned to Mrs. Nixon's office and shot her a second time. This conclusion is based on a cell phone call Mrs. Nixon placed to her husband lasting 19 seconds during which she reported being shot.

Evidence suggests that during the encounter between the suspect and Mr. Hardy, the suspect's backpack fell. It was later found adjacent to Mrs. Nixon's office.

As he walked away, the suspect encountered another co-worker with whom he had an emotional conversation earlier in the day, well before the shooting started. He pointed a firearm at this co-worker but did not shoot or talk to them as he walked past.

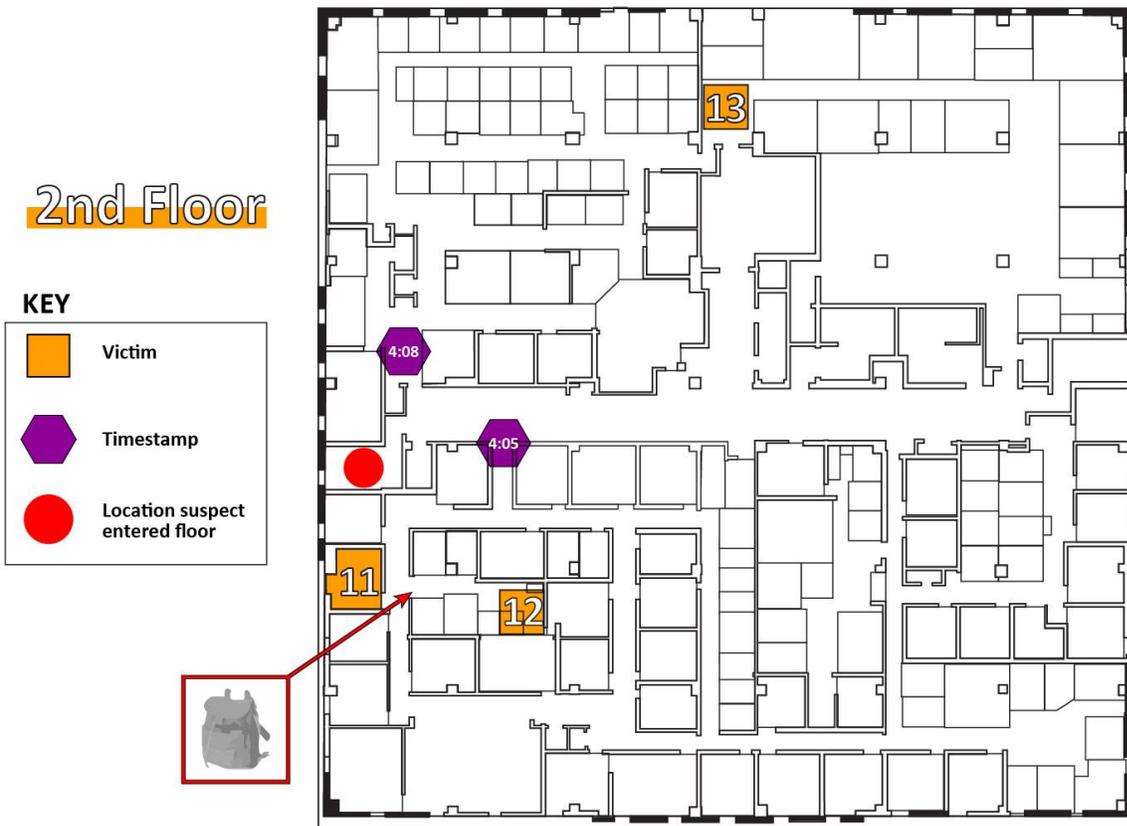


Diagram 3

The suspect then left the southeast area at about 4:07 PM. This projected path includes 20 seconds of unaccounted for time before the next known time of 4:08 PM when he uses his access card at the southwest door.

Simulated runs were conducted using the anchor point of 4:08 PM at the southwest door. Multiple witnesses informed investigators that Ryan Keith Cox (#13 on diagram 3) gathered at least seven fellow employees into a secure room and left the room to locate more employees. Shortly after he secured the door, witnesses reported hearing a gunshot. Mr. Cox's body was found on the floor near the secured room.

The suspect then traveled to the north stairwell and climbed to the third floor where he shot and injured another co-worker (#14 on diagram 4) before traveling back to the second floor. The fire alarm was activated at 4:11 PM, which provided a reference point. Evidence collected during the investigation suggests the suspect reentered the second floor before the fire alarm was activated.

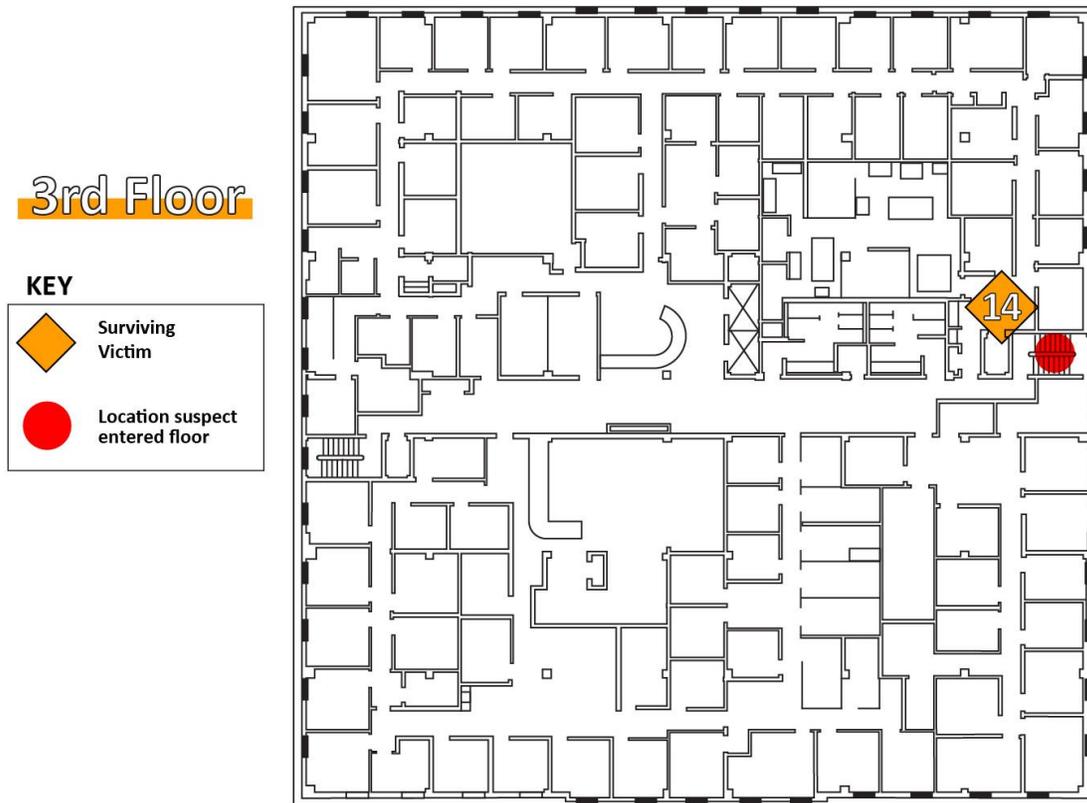


Diagram 4

The suspect used his access card at the southwest door at 4:12 PM, creating the next anchor point. The next movements of the suspect in this space are not known until the last anchor point when he entered the southeast door at 4:15 PM. The suspect then proceeded to kill Richard H. Nettleton (#15 on diagram 5) and injure another co-worker (#16 on diagram 5).



Diagram 5

Officers searching for the suspect located him on the second floor. The lead officer saw the suspect through a window in the door pointing a handgun at the officer. The officer fired and struck the suspect. The suspect, injured but still active, maneuvered out of the view of the officers. The officers were unable to pursue the suspect through that door as they did not have rights to the key entry doors (Lenel) within Building 2.

The suspect positioned himself behind a second locked door located north of and behind the officers. The suspect ambushed the officers by rapidly firing multiple shots of .45 caliber handgun rounds through the locked door directly at the four officers who were standing in the hallway. One of the officers (a sergeant) was shot in the torso (4:19 PM, #17 on diagram 5). The shot was absorbed by the officer's ballistic panel. As the injured officer was being evacuated under fire, remaining officers continued to return fire. A stand-off existed until police SWAT executed a tactical maneuver to breach the locked door and take the suspect into custody. Once in custody, medical care was immediately rendered and maintained through transport to the hospital. The suspect succumbed to his injuries. He was pronounced deceased at 5:26 PM.

Time* All Times Are PM	Emergency Response Chronology
4:06	Virginia Beach Emergency Communication and Citizen Services (9-1-1 Center) received the first 9-1-1 call about a male bleeding behind Building 2. Detective Bureau staff responded on foot to Building 2, entered the building upon arrival and began searching for the suspect.
4:10	9-1-1 caller indicated suspect was a Black male
4:10	Active shooter reported by 9-1-1 caller
4:11	9-1-1 Dispatch received a call incorrectly identifying the shooter as a different employee who was fired the day before
4:12	9-1-1 callers indicated the shooter had a silencer on his weapon
4:13	9-1-1 caller provided actual suspect's name as the shooter
4:15	An additional 9-1-1 caller incorrectly identified the shooter
4:15	9-1-1 caller described shooter as Black male wearing blue Polo shirt who worked in Public Utilities
4:18	All available Virginia Beach Police Department (VBPD) Special Weapons and Tactics (SWAT) officers called to respond
4:18	Two carbine rifle shots heard over officer's body camera
4:19	Reports of shooter on the second floor
4:19	VBPD sergeant called over the radio in reference to a person jumping from the second-floor window
4:19	VBPD sergeant transmits over the air an officer had been shot
4:20	Radio transmission "officer down"
4:23	Suspect was still actively shooting
4:24	Officer who was shot was evacuated out of Building 2
4:25	Federal Bureau of Investigation (FBI) Task Force provided information on suspect
4:26	VBPD SWAT officers entered Building 2
4:28	Regional air ambulance "Nightingale" placed on standby
4:29	VBPD sniper on scene
4:30	FBI agents assigned to the Joint Terrorism Task Force Squad 6 initiated a controlled response to the scene. Upon arrival they assisted with relocating witnesses to the basement of the courthouse to provide written statements
4:34	Officers isolated shooter in hallway
4:40	VBPD detective responded to Detective Bureau to obtain background information on the suspect
4:41	Officers reported having the suspect on the ground
4:44	Officers placed the suspect into custody
4:44	Additional VBPD personnel began forming teams upon arrival to make entry to clear the building
4:48	Officers advise a tourniquet was placed on suspect's leg and he had a chest wound
4:50	Virginia State Police (VSP) rescue team entered Building 2
4:57	Third floor cleared

4:58	Second floor secured
4:59	VBPD deputy chief requested assistance from FBI for evidence response
5:00	FBI supervisor confirmed FBI intelligence group would work directly with VBPD Intelligence
5:01	Regional air ambulance "Nightingale" landed near the scene
5:03	Alcohol Tobacco Firearms (ATF) supervisor contacted VBPD advising that ATF staff will be responding to assist
5:03	Suspect placed in an ambulance
5:05	VSP assisted with clearing the building
5:08	First floor cleared
5:11	Command Post set up behind 1st Precinct; Special Operations captain in command
5:12	FBI Norfolk Evidence Response Team (ERT) put on standby
5:12	Fourth (top) floor secured
5:13	FBI advised VBPD they had initiated a mass shooting investigation. No additional FBI assets requested at that time other than ERT to remain on standby
5:20	Investigative command post established by VBPD
5:25	Basement of building cleared
5:31	VBPD drone placed in flight
5:32	VBPD officer called suspect deceased at Virginia Beach General Hospital. Actual time of death was 5:26
5:37	Detectives on scene began interviewing witnesses
5:37	Chesapeake Police Department detectives assisted with interviewing witnesses at courthouse complex
5:39	Explosives dogs from VBPD and VSP entered building for search
5:44	The suspect's vehicle was located directly in front of South entrance. Backpacks observed inside vehicle
5:44	ATF National Tracing Center (NTC) on standby to conduct urgent trace on weapons found
5:44	Building 2 is secured
6:00	VBPD Forensic Services Unit initiated evidence scanning process
6:09	Explosive sweep commenced
6:10	VBPD officers from Special Investigations set up perimeter on the suspect's residence while search warrant was being obtained
6:14	Family Assistance Center was established at Princess Anne Middle School
6:15	Request was made of ATF for assistance on the scene of the search warrant at suspect's residence
6:20	ATF advised the suspect had been approved to purchase firearms twice in the last 12 months. ATF was contacting firearms dealer to obtain Firearm Transaction Records (ATF form 4473)
6:30	FBI Norfolk Field Office Evidence Response Team arrived on scene
6:32	VBPD detective executed search warrant to Cellco Partnership / Verizon Wireless for the suspect's cell phone
7:02	Additional explosive dogs and technicians made entry to finish clearing building

7:18	Explosive sweep of Building 2 completed, clear for Forensics and detectives to enter scene
7:18	FBI Norfolk field office deployed agents from Violent Crime/Major Offenders, Evidence Response Team, Lab Division, Bomb Technicians, and Washington Field Officer Shooting Team at the request of VBPD
7:40	VBPD detective obtained a search warrant for the suspect's residence
7:51	VBPD detective obtained a search warrant for the suspect's 2016 white Subaru
8:00	VBPD obtained a search warrant for the suspect's 2016 white Chevy Camaro
8:00	FBI Evidence Recovery Team took control over the crime scene, and all persons inside Building 2 were directed to evacuate
8:23	Bomb Squad cleared the suspect's vehicle for explosives
9:10	VBPD SWAT made entry into the suspect's residence
9:20	Investigators from the Office of the Medical Examiner arrived on scene and directed all deceased victims be transported to their office

SUSPECT PROFILE

Interviews were conducted with those who knew the suspect, and investigators examined his personal belongings, home, vehicles, online activity and work as well as personal records.

The suspect was born October 15, 1978 and grew up in Hampton Roads. He graduated from Denbigh High School in Newport News in 1996. The suspect was married in 2008 and divorced in 2017. He had no close friends and withdrew from his family connections around the time of his divorce in 2017. The suspect was not a member of any social clubs and had no known significant other in his life since his divorce.

In April 1996, the suspect enlisted in the Army National Guard in Hampton, Virginia. He attended basic training at Fort Sill, Oklahoma. Upon completion, he was assigned to an infantry brigade combat team in Norfolk, Virginia. The suspect was not deployed during his enlistment in the Army National Guard. He received an Honorable Discharge from the Army National Guard in April 2002.

The suspect graduated from Old Dominion University in May 2002 with a Bachelor of Science in Civil Engineering and began his professional career. In June 2008, the suspect passed his engineering exam and became a professional licensed engineer. The investigation confirmed there were no performance issues reported by the suspect's previous employers. He was laid off from one position, but it was attributed to economic reasons. There was an instance where the suspect took exception to a supervisor's criticism and as such was transferred to another supervisor. This occurred with an employer prior to the City of Virginia Beach, the suspect was not written up, and the conflict did not involve violence.

The suspect legally purchased a total of six firearms between 2006 and 2019. He also obtained a concealed carry permit and a suppressor license.

The suspect was hired as an Engineer II by the City of Virginia Beach in February 2010 and performed well until he started to experience performance issues in 2017. Several significant personal events occurred in the suspect's life in 2017, including finalizing his divorce and paying his ex-wife \$25,000.

The suspect's immediate family observed that in 2017 the suspect began to withdraw and had very little social interactions with others. The suspect's ex-wife observed that the suspect exhibited signs of paranoia and relayed that he believed others were talking about him.

In June 2017, the suspect received a Performance Improvement Plan (PIP) due to paperwork issues with his projects. His August 2017 annual evaluation indicated that he did meet expectations for his job performance.

In July 2018, the suspect received a written reprimand for poor performance, and in August 2018 he received an evaluation that indicated he did not meet the expectations of his job requirements. As a result of this evaluation, the suspect did not receive a merit increase in salary for that year. At times, the suspect referenced the belief he was being tasked with work outside of his pay

grade. This concern was specifically addressed by his supervisor in 2018. The suspect was told that he had been making improvements and was given encouragement.

There were no substantiated witness reports of any incidents involving threatening behaviors or statements, nor did investigators locate any written statements to that effect. There was one instance in which the suspect allegedly used a “snarky” tone in an email; the suspect acknowledged it and said he would be more mindful of his tone. Work associates used various words to describe the suspect, including “quiet,” “introverted,” a person who would not make eye contact, “nice,” and one person described him as “a jerk.”

One witness reported that the suspect believed he was being singled out because of his race and that he was being asked to carry more work than he believed was reasonable. However, there is no evidence to suggest he had shared with his supervisor this perception that he was being singled out because of his race. Another witness characterized the suspect as schizophrenic, although this was only the opinion of one person who had no medical or psychological expertise.

During the investigation, investigators became aware of an alleged incident in which the suspect claimed to his supervisor that a co-worker used an extremely offensive racial slur to describe him. This alleged incident occurred several years before the shooting. The supervisor investigated the allegation, and the co-worker denied the claim. The supervisor attempted to mediate the matter in the presence of both employees. The employee who allegedly made the comment left City employment two months after the mediation. That allegation could not be substantiated.

As part of his normal duties, the suspect was required to compile documents for work performed. In early 2019, there was an issue with the payment for one of the projects he managed. A vendor sought payment for work performed, but when the suspect submitted the request, a discrepancy was discovered that prevented the payment from being processed. City Purchasing representatives reviewed the matter and sought advice from the Office of the City Attorney about how to address the issue. A coworker reported that the suspect spoke with him on May 30, 2019 and stated he would make the payment, less than \$5,000, out of his personal funds, if necessary.

On that same day, he also called relatives with whom he had not spoken for many months.

Those closest to him reported that the suspect kept his home and workspaces immaculate. They described him as being very reserved and organized, not a violent person and humble about his accomplishments. Those close to him reported that the suspect would drink on occasion and did not use drugs.

He started collecting swords as a young man and began collecting guns as an adult. Between 2006 and 2019, he legally purchased six weapons and a suppressor. A review of the suspect’s internet search history showed he visited news sites around the time of other mass shootings, like Las Vegas. The suspect did not have any criminal history that suggested violence. He was well-educated and had a stable work history. The suspect did not have any financial issues, and all bills were paid and current. No information was discovered that showed the suspect held any radical religious or anti-government views. The suspect had no diagnoses of mental illness or

prescriptions for any controlled medications for the two years previous to the shooting. The suspect did not have any financial issues and had a sizeable amount of cash in his bank accounts. No social media accounts or writings indicative of violence or reasons for his actions were found.

Virginia Beach Work Issues

- **1/17/2017** - Record of Incident for a paperwork issue that occurred on 12/21/2016; not documented as a disciplinary action.
- **6/20/2017** - The suspect was placed on a Performance Improvement Plan (PIP) for deficiencies in project management skills.
- **8/7/2017** - The suspect's annual performance evaluation concluded that he met expectations.
- **7/12/2018** - Written reprimand for performance. Letter of Expectations provided to the suspect:
 - **7/31/2018** - The suspect and first supervisor met to verbally discuss the 7/12/2018 written reprimand but no resolution reached.
 - **8/8/2018** - The suspect and second supervisor in chain of command met to verbally discuss the written reprimand, but no resolution was reached.
 - **8/9/2018** - The suspect filed grievance in response to his written reprimand. His grievance referenced the feeling that he was being overtasked.
 - **9/7/2018** - The suspect received notice that the written reprimand was upheld. This same letter addressed his work assignments were in fact within his pay grade and he would continue to be assigned projects of this complexity.
- **8/22/2018** - The suspect's annual performance evaluation indicated overall poor performance. It should be noted that the suspect was told that he had been making improvements and was given encouragement. Leadership within his department indicated that he would have met job performance standards in his upcoming 2019 performance evaluation.

SUSPECT'S ACTIVITIES LEADING UP TO THE INCIDENT

5/20/2019		The suspect searched on his work computer for maps of Building 2 and the Municipal Center.
5/29/2019 3:39 PM		Purchasing employee left a voicemail on his work phone indicating a procurement issue had been referred to the City's legal department.
5/30/2019		The suspect met with his immediate supervisors who assured him that the situation was being addressed. This was not considered to be a "big deal" by Public Utilities leadership, and this was conveyed to the suspect.
5/30/2019		The suspect called his ex-wife that evening. This was unusual since the two had not spoken since October 2018. During this phone call the suspect was apologetic for their failed marriage and assured her she was not at fault. The suspect then called his mother. This was also unusual since they had not spoken for several months. The suspect told her he had been having trouble sleeping and inquired about other family members.
5/31/2019	<p>7:21 AM</p> <p>7:23 AM</p> <p>7:41 AM</p> <p>10:00-10:30 AM</p> <p>10:30 AM</p> <p>10:46 AM</p> <p>10:52 AM</p> <p>11:23 AM</p> <p>11:44 AM</p> <p>11:58 AM</p> <p>12:08 PM</p> <p>1:00 PM</p> <p>1:04 PM</p> <p>1:06-3:06 PM</p> <p>3:06 PM</p> <p>3:24 PM</p> <p>3:55 PM</p>	<p>The suspect swiped his card for entry into Building 2.</p> <p>The suspect started his work computer and checked his Outlook email.</p> <p>The suspect plugged in his iPod.</p> <p>Suspect used his City computer for internet searches of: Building 2 Maps, ECCS, and Municipal Center Building Map.</p> <p>The suspect emailed his supervisor his resignation notice citing personal reasons.</p> <p>The supervisor responded, stating he was hopeful that the suspect resolves his personal reasons and asked for confirmation that his last day will be June 14th. The supervisor cc'd his manager, Richard Nettleton, on the response.</p> <p>The suspect swiped card for entry to another area of the second floor.</p> <p>The suspect sent a work-related email.</p> <p>The suspect sent a work-related email.</p> <p>The suspect swiped his card for entry to another area of the second floor.</p> <p>The suspect swiped his card for entry to another area of the second floor.</p> <p>The suspect swiped his card for entry to another area of the second floor.</p> <p>The suspect left Building 2.</p> <p>The suspect and 2 co-workers visited three project sites as part of a "ride-around" inspection process.</p> <p>The suspect and two co-workers arrive back to Building 2</p> <p>The suspect swiped card for entry to the second floor.</p> <p>The suspect sent a work-related email.</p>

VICTIMS

<p>LaQuita C. Brown</p> <p>Public Works Right-of-Way Agent</p>			<p>Ryan Keith Cox</p> <p>Public Utilities Account Clerk</p>
<p>Tara Welch Gallagher</p> <p>Public Works Stormwater Management Regulatory Engineer</p>			<p>Mary Louise "Mary Lou" Crutsinger Gayle</p> <p>Public Works Right-of-Way Agent</p>
<p>Alexander Mikhail Gusev</p> <p>Public Works Right-of-Way Agent</p>			<p>Joshua O. Hardy</p> <p>Public Utilities Engineering Technician</p>
<p>Michelle "Missy" Langer</p> <p>Public Utilities Administrative Assistant</p>			<p>Richard H. Nettleton</p> <p>Public Utilities Engineer</p>
<p>Katherine A. Lusich Nixon</p> <p>Public Utilities Compliance Manager</p>			<p>Christopher Kelly Rapp</p> <p>Public Works Stormwater Management Regulatory Engineer</p>
<p>Herbert "Bert" Snelling, Jr.</p> <p>Eagle Construction Project Manager</p>			<p>Robert "Bobby" Williams</p> <p>Public Utilities Special Projects Coordinator</p>
 <p>Injured Employee Public Works</p>			
 <p>Injured Employee Public Works</p>			
 <p>Injured Employee Virginia Beach Police Department</p>			

Sixteen of the 17 victims were City of Virginia Beach employees, and all but one of those (the police officer) worked in Building 2. Herbert “Bert” Snelling, Jr. was a project manager for a local construction company.

The background of each victim was examined to determine whether the suspect had any motive related to the race, sex, religion, political affiliation, sexual identity, or age of the victims. Personnel files and work emails were examined to establish any documented, stated, or inferred problems between the shooter and his victims.

Victim demographics:

1. Eleven (11) men; eight (8) white and three (3) Black
2. Six (6) women; five (5) white and one (1) Black

The investigation uncovered no evidence of any commonalities among the victims that established a general motive.

For additional information about the victims, visit www.LoveForVB.com.

CONCLUSION

The evidence is clear that the suspect was a very private person who shared little personal information or feelings with coworkers. Despite exhaustive investigative work and in spite of unsubstantiated rumors and accusations, it appears we may never know why he committed this heinous act.

VBPD's continuing investigation focused on the suspect's personal and professional life, particularly his relationships with coworkers to determine what motivated the suspect to commit this act and if he gave any indications of his intentions prior to May 31, 2019.

All persons who were known to be present or possessed helpful information were interviewed, and all evidence was reviewed and analyzed. This included cell phone records, emails, computers, an iPad, and City phone records involving the suspect. Despite careful and meticulous inquiry, the investigators were unable to identify what motivated the suspect to carry out these shootings. They were also unable to identify any possible co-conspirators or persons with prior knowledge of the incident. They could not identify any specific actions, statements, or documents that would have allowed a reasonable person to believe such an incident would occur.

Except for two minor traffic offenses, the suspect had no criminal history. The only known interactions the suspect had with Virginia Beach Police, excluding his two traffic infractions, was reporting a burglary of his home in 2006, and when he was the victim of a larceny from his vehicle in 2013. Since 2006, he passed 11 firearms-related background checks and last renewed his Concealed Handgun Permit in 2016. His home did not display any artifacts or symbols of alignment with any radical ideologies, he did not attend church and did not utilize any social media. He had a gaming computer at his home that was unremarkable. He briefly participated in a work volleyball group but withdrew from that years prior to May 31, 2019.

The suspect was consistently described as a quiet, introverted, and a polite young man. The investigation did not uncover any indications of violent tendencies or acts of violence committed by the suspect prior to May 31, 2019. He left no note.

For additional information, including the incident website, FAQs, materials made public through Freedom of Information Act requests and the repository of reports, visit:

<https://archive.loveforvb.com/>

<https://www.vbgov.com/May31>

SUPPORT AGENCIES AND ORGANIZATIONS

The Virginia Beach Police Department recognizes and thanks the following investigative agencies and organizations for their assistance throughout the investigation:

Bureau of Alcohol, Tobacco, Firearms and Explosives (ATF)
Chesapeake Police Department
Federal Bureau of Investigation (FBI) Behavioral Science Unit
Federal Bureau of Investigation (FBI) Norfolk Field Office
Office of the Chief Medical Examiner
Virginia Beach Office of the Commonwealth's Attorney
Virginia Beach Sheriff's Office
Virginia State Police
United States Postal Inspection Service

EVIDENCE

The evidence in this case is organized into three categories: (1) witness interviews; (2) physical evidence; and (3) digital evidence. There are 38 affidavits for search warrants that included City official personnel files for the all but one of the City employees killed or injured, digital items such as flash drives and cell phones found inside the building, City work computers, and assorted computer tablet devices.

Witness Interviews

More than 1000 contacts and interviews were conducted with 523 citizens and family members, and there had been hundreds of memorandums from VBPD law enforcement officers, Chesapeake Police Department personnel, Virginia Beach Fire/EMS personnel, NCIS, Virginia State Police, and Virginia Beach Sheriff's Office.

It is important to note that no single witness or group of people witnessed the shooting spree incident from start to finish. Many witnesses saw a portion of the incident, and either extrapolated or compiled other employee comments that were not in concert with the Investigative Division's conclusions based on the evidence collected. This is not an uncommon occurrence and is the reason for separating witnesses until statements can be taken.

The scale of this incident in combination with the instant communication via text messaging and social media platforms made taking uncontaminated statements essentially impossible. Eyewitness statements of the suspect's actions were evaluated against additional evidence such as Lenel card reader time stamps and Emergency Communications and Citizen Services (ECCS) call logs, and cross referenced between City staff and law enforcement responders. All conflicting suspect movement statements were physically re-enacted numerous times to gauge adherence to the time stamps, including the activation of the fire alarm.

Non-eyewitnesses are often swayed by hearsay and rumor. For example, multiple people who called ECCS identified the shooter as a former employee terminated the day before the incident even though they were not eyewitnesses to the murders. The former employee was ultimately cleared of any knowledge or association with this crime.

The suspect's family was interviewed by VBPD detectives. Initial out-of-state contacts were made in person by FBI agents. Recognizing the potential for witnesses remaining unknown, the task force took the initiative to issue a survey to ensure all staff in the units assigned to Building 2 were provided an opportunity to offer information on the incident.

On July 1, 2019, the distribution lists for Public Works, Public Utilities, Information Technology and Planning were sent an email communication that provided a survey link. The survey included a one-page reference for employee support services and five questions. Based upon the responses, detectives conducted new or supplemented existing interviews.

Physical Evidence Inside the Building

Then-Police Chief Jim Cervera accepted the FBI's offer of assistance, and the resources of the FBI's Evidence Recovery Unit (ERT) were utilized. The FBI Norfolk Office team was on site in two hours, followed by the Quantico unit and their self-contained evidentiary trucks in 12 hours. The FBI ERT assumed evidence processing for the building, the two exterior homicide scenes and the suspect's vehicle in the parking lot.

There were 40-person evidence teams working 12-hour shifts for 8 days continuously to fully process the building and surrounding parking lot. The records supplied by the FBI show 504 discrete items such as bullet fragments, shell casings, jump drives, and cell phones were gathered. There are 31,459 digital files provided by the FBI for the crime scene and overview photographs, which currently totals 195 gigabytes. The FBI conducted an analysis of the ballistic evidence recovered and briefed investigators on the results. The information affirmed the findings of the investigation. The laboratory report is Addendum II.

The VBPD's Forensic Services Unit worked in concert with the FBI and documented 189 items of evidence and another 258 items of property. The bulk of the seized items were evaluated and determined to be non-evidentiary and were later returned to the owners. Property and Evidence and the FBI Victim Witness Services unit worked long hours to mitigate biohazard contamination on the items prior to return.

Digital Evidence

The digital evidence in this case is vast and grew extensively as the case unfolded. The protection of the digital evidence began on May 31, 2019 once the victims and witnesses had left the building. The building was locked down; all ingress and egress was closely monitored and documented by the FBI Evidence Recovery Team. The suspect's office was identified, and his City computer was disconnected from the network and processed in accordance with standard evidence recovery standards. The FBI immediately initiated the creation of a mirrored digital image of the hard drive, and that image was provided to VBPD investigators within 24 hours of the incident.

The City of Virginia Beach complies with Continuity of Operations best practices, and network drives are backed up and stored at a remote site. Content is maintained on the physical hard drive and the cloud; a forensic examination was conducted to ensure consistency of the data. The Computer Crimes Unit assisted the Building 2 investigation by creating forensic backups and analyzing numerous electronic and digital devices that were collected from the crime scene and the suspect's residence. These devices included personal and City-issued cell phones, tablets, iPads, desktop computers, laptop, external hard drives, USB devices, and camera memory cards. Forensic backups are created by capturing all data from a source media (computers, cell phones, tablets, etc.) so that all the original data is in an unaltered state. This means the entire contents of the source media are being collected, including unused space, all slack data, all unallocated space, and other media. The hard drives from all the victims City computers were imaged and files reviewed programmatically using multiple variations of key word searches and character recognition, looking for any correlation between the suspect to the victims. This is independent

of the email review of all 15 victims who worked in Building 2, which was also programmatically reviewed for linkages between the suspect and victims.

The 5 supplemental staff hires were assigned to read all the suspect's e-mails individually to ensure no communication from the suspect was overlooked. The Computer Crimes Unit conducted detailed analyses of 81 items. The results of item analysis completed in the Computer Crimes Unit office was cross-referenced by the investigative team. Of the items recovered from the suspect's home, one tablet was password protected and as of this date cannot be accessed. The FBI and the Virginia State Police were consulted and also were unable to access the data. Despite months of programmatic and human review of the digital evidence, the investigation was unable to identify any markers, documents, files, or photographs that would identify a common denominator of why the suspect selected specific victims and spared others. Some of the victims had no nexus at all to the suspect. With respect to assertions made by some individuals that the suspect possessed a laptop computer, neither the FBI nor the Virginia Beach Police Department located or seized a laptop computer belonging to the shooter. Neither agency is aware of the existence of a personal laptop or desktop computer belonging to the shooter.

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FBI Laboratory

2501 Investigation Parkway
Quantico, Virginia 22135

4940 Fowler Road
Huntsville, Alabama 35898

LABORATORY REPORT

To: Justin Goodrich
Norfolk

Date: May 18, 2020

Case ID No.: NF-3117116

Lab No.: 2019-01417-14

Communication(s):

Agency Reference(s):

Subject(s): Antonio Dewayne Craddock

Victim(s): Virginia Beach Municipal Center - Building 2

Discipline(s): Firearms/Toolmarks

FBI Laboratory Evidence Designator(s):

Request 1 Request only (SIR)

Predicated on a request from the Norfolk Police Department, a Laboratory Shooting Reconstruction Team (LSRT) was deployed to Virginia Beach, Virginia, on May 31st, 2019 to perform a Shooting Incident Reconstruction (SIR). The members of the LSRT included personnel from the following units:

Firearms/Toolmarks Unit (FTU)

Physical Scientist Forensic Examiner	Bryce A. Ziegler
Physical Scientist Forensic Examiner	Michael Van Arsdale
Physical Scientist Non-Examiner	Megan B. Gilpin

Operational Projects Unit (OPU)

Supervisory Visual Information Specialist	Steve Jameson
Visual Information Specialist	Jennifer L. Throneburg
Visual Information Specialist	Saige E. Libertore
Photographer	Howard E. Kersh
Photographer	Daniel B. Korb

Enclosures: (14) Graphics

UNCLASSIFIED

Technical Hazards Response Unit (THRU)

Forensic Operations Specialist	Kevin W. Johnson
Forensic Operations Specialist	D. Mark Bledsoe
Forensic Operations Specialist	Terrence J. McAndrews
Forensic Operations Specialist	Christopher P. Robbins
Forensic Operations Specialist	James A. Perkins Jr.

Evidence Response Team Unit (ERTU)

Supervisory Special Agent	Kathleen M. McCarthy
Supervisory Special Agent	Angela M. Sercer
Supervisory Special Agent	Richard B. Marx
Supervisory Special Agent	J. Brad Geeslin

These examinations were conducted on May 31st through June 9th, 2019 at the Virginia Beach Municipal Center, Building 2, located at 2405 Courthouse Drive, Virginia Beach, VA 23456. Graphical depictions of the SIR examination results have been prepared by the OPU and are included in this report.

For the purpose of this report, please refer to the following legend:

T = Trajectory	Holes or impacts that are a result of the same bullet and/or debris
H = Hole	Holes that were generated by the passage of a bullet and/or debris
I = Impact	Impacts that were generated by the striking of a bullet and/or debris
#	The number following item descriptor and room designator, designates the sequential number of that particular item that was documented
→	Indicates a continuation of a reconstructed trajectory between two or more holes or impacts
Example:	Trajectory number 1: Hole 1 continues to Hole 10, which continues to Impact 2 (note: for the purposes of this report, the Trajectory numbers (T#) appear as they were reconstructed during the examination)
T1 H1 → H10 → I2	

The results of the SIR are included in this report.

Results of Examinations:

Two bullet trajectories were reconstructed on the exterior of Building 2 involving three separate vehicles:

Green Chevrolet Suburban/Blue Ford Explorer located in the south parking lot

T1 H2 → H2A

(Through the front passenger side window of the green Chevrolet Suburban (several entrances were observed and a large section of glass was missing), through the open front driver side door, into the lower front passenger side door of the Blue Ford Explorer, terminates within the door, originating from an eastern direction at a downward angle)

White Acura MDX (reported as being located in north parking lot, facing south)

T15 H275 → H276 → H277 → H278

(Into the front grille of the vehicle, through the AC condenser coil, through the radiator, changes direction creating a hole in the right fan housing and terminates inside the engine compartment at an undetermined location, originating from a southern direction (vehicle position as reported) at a downward angle)

(Note: Original location of vehicle could not be verified. Therefore, the trajectory could only be documented, not put into place within the scene. Also, H278 could not be measured due to its position within the engine compartment and its change in direction, therefore its position in the supporting graphic is approximate.)

The following holes and impacts were located on the exterior of Building 2, but could not be associated with a particular trajectory:

- H1 *Large hole in passenger side front window of green Chevrolet Suburban*
- I3 *Impact in brick wall leading to south entrance of building*
- I4 *Impact in brick wall leading to south entrance of building*
- H5 *Lower trim of blue Ford Explorer, behind passenger side front wheel*

A presumptive chemical test for the presence of lead was performed on the following items:

- I3 *Positive for lead*
- I4 *Positive for lead*

Two bullet trajectories were reconstructed in the south stairwell between the first and second floor of Building 2:

T16 I74 → I76 → I78 → I80

(Into the east wall of the stairwell, deflecting to the southeast corner, to the ceiling of the south side of the stairwell, into the window frame along the south wall of stairwell, originating from a northern direction at an upward angle)

T17 I75 → I77 → I79

(Into the east wall of the stairwell, deflecting to the southeast corner, to the ceiling of the south side of the stairwell, originating from a northern direction at an upward angle)

The following holes and impacts were located in the south stairwell between the first and second floor of Building 2, but could not be associated with a particular trajectory:

H73 *Large crater in east wall above railing near landing*

Thirteen bullet trajectories were reconstructed on the 3rd floor of Building 2:

T2 I7 → H8 → H19 → I20 → I21

(Impacting the east wall of hallway C, through the north wall into closet HH3, striking a calculator (position changed due to bullet strike), into a binder along the west wall of closet HH3, originating from a southern direction at a downward angle)

T3 H9 → H22 → H25 → H26

(Through north wall of hallway C into room LL3, through the curtain and window along north wall of room LL3, exiting the building, originating from a southern direction at a downward angle)

T4 H10 → H23 → H24

(Through north wall of hallway C into room LL3, into the north wall of room LL3, terminating in the wall, originating from a southern direction at a downward angle)

**T5 I12 → I13 → H15 → H16 → H17 → I18
→ I14**

(Impacting door frame along south wall of room A, impacting the top left hinge of refrigerator, jacket and core separate, jacket terminated in a west wall bump out, lead core continues through the bump out wall, into the drop ceiling, impacting an insulated duct, originating from an eastern direction at an upward angle)

**T6 H52 → H54 → H59
→ I56 → I57 → I58**

(Through south wall of hallway MM2 into room NN2, portion goes into a binder on the

bookshelf along east wall, portion strikes a paper, deflecting off a binder and impacting the southern wall, originating from a northwestern direction at a downward angle)

T7 H53 → H55

(Through south wall of hallway MM2 into room NN2, originating from a northwest direction at a flat trajectory)

T8 H60 → H61 → H62 → H63 → I65 → H64 → H66 → I67 → I68

(Through east wall of room B3 into room B, through the door (open), striking the top of the computer, through the east wall into room E3, striking a computer and impacting the east wall, originating from a western direction at a downward angle)

T9 H34 → H31 → I32 → I33 → I29 → I30

(Through north wall of room E into room II2, striking table top and then paper cutter, impacting ceiling and a manila folder near the west wall, originating from a southern direction at a downward angle)

T10 H46 → H47

(Through the seat of the office chair in room E, at a downward angle, position of chair could not be determined, T10 does not appear in supporting graphic)

T11 I39 → H43 → H44 → H35

(Impacting the carpet of room E deflecting upward through a trashcan and terminating in the north wall, originating from a southeastern direction at a downward angle)

T12 I40 → I41 → H42

(Impacting the carpet in room E deflecting upward into a bookshelf along west wall and into a shoe box, originating from a southeastern direction at a downward angle)

T13 H38 → H37 → H36 → H28 → ? → H27

(Through a bookshelf in room E, through the west wall into hallway C, appears to impact the floor (could not be located) and terminates in the west wall of hallway C, originating from a southeastern direction at a downward angle)

T14 H81 → terminates in wall

(Into the north wall above the elevator bank in room FF2, terminates in the wall, originating from a southeastern direction at an upward angle)

The following holes and impacts were located on the 3rd floor of Building 2, but could not be associated with a particular trajectory:

H6 *Into picture of lighthouse on east wall of hallway C, entry, south to north direction*

H11 *Into the closet door of room A, left of refrigerator, entry*

H45 *Into west wall in room E, left of bookshelf, entry*

H48 *In back of office chair in room E, exit*
 H49 *Hole through lower mesh of office chair in room E*
 I50 *Impact in plastic frame of office chair in room E*
 I51 *Impact in desk drawer along north wall of room E*
 H69 *Into right side door frame of room G, entry*
 I70 *Impact in left side of door frame in room K3*
 I71 *Impact in bump out along north wall of room K3*
 H72 *Into north wall of room K3, entry*
 I82 *Impact behind lighthouse picture in hallway C*
 I83 *Impact behind lighthouse picture in hallway C*

A presumptive chemical test for the presence of lead was performed on the following items:

I18	<i>Positive for lead</i>	I57	<i>Positive for lead</i>
H45	<i>Positive for lead</i>	I58	<i>Positive for lead</i>
I56	<i>Positive for lead</i>	H81	<i>Positive for lead</i>

Three bullet trajectories were reconstructed in the west side cubicle area on the 2nd floor of Building 2:

T18 H85 → H88 → H554 → H96 → H97 → H98

(Through door on west wall of room B into room X6, through yellow extension cord on top of file cabinet (location is approximate), through north partition into room Z4, into window frame on west wall of room Z4, originating from southeastern direction at an upward angle)

(Note: location of H554 is approximate in supporting graphic due to being located in a moveable object)

T19 H86 → H90 → H91 → H94 → H95

(Through door on west wall of room B into room X6, through file cabinet, into partition on north side of room, terminates in the partition, originating from a southeastern direction at a downward angle)

T20 H87 → H89 → H92 → H93

(Through door on west wall of room B into room X6, into file cabinet, impacts back side of file cabinet, does not exit, originating from a southeastern direction at an upward angle)

The following holes and impacts were located in the west side cubicle area on the 2nd floor of Building 2, but could not be associated with a particular trajectory:

H84 *Hole in glass portion of door along west wall of room A, H84 was not physically consistent with a bullet hole*

A presumptive chemical test for the presence of lead was performed on the following items:

H84 *Negative for lead and copper*

Four bullet trajectories were reconstructed in the south side of the main hallway on the 2nd floor of Building 2:

T54 I301 → H297 → H298 → I299
(*Impacting*)

west wall of hallway XX near “recycling closet”, deflects and goes through south wall of hallway into electrical room W4, impacts electrical panel on south wall of room W4, originating from a northern direction at an upward angle)

T55 H399 → H400 → H402 → H403 → I404 → I405 → I406
(*Through a sign hanging in the middle of hallway XX, into a drop ceiling panel, and into a light fixture creating several impacts, originating from a southern direction at an upward angle)*

T111 H293 → H293A
(*Into a recessed area along the east wall of hallway XX near the middle of the hallway, terminating in the wall, originating from a northern direction at a downward angle)*

T134 H398 → H397
(*Through sign hanging from ceiling in hallway XX near south stairwell, originating from a blank direction, originating from a northern direction, trajectory rod could not be supported, T134 does not appear in supporting graphic)*

The following holes and impacts were located in the south hallway (XX) on the 2nd floor of Building 2, but could not be associated with a particular trajectory:

H294 *Into east wall of hallway XX near the south corner, appears to deflect out*

H295 *Into south wall of hallway XX near east corner, entry*

I296 *Impact in door on south wall of hallway XX*

I300 *Impact in west wall of hallway XX near south end of hallway*

I401 *Impact in drop ceiling near the display case in south end of hallway XX*

I581 *Impact in top of door to south stairwell, south end of hallway XX*

A presumptive chemical test for the presence of lead and copper was performed on the following items:

I581 *Negative for lead and copper*

Eleven bullet trajectories were reconstructed in the south east offices and cubicle area on the 2nd floor of Building 2:

T21 H99 → H100 → H101

(Through the edge of the desk in room D near chair, through the keyboard, originating from a northeastern direction at a downward angle)

T22 H107 → H106 → H105 → H425 → I426

(Through door in room D, through east wall into room L, into a backpack hanging on the west wall, originating from a western direction at a downward angle)

T23 H108 → H110 → H112 → H114 → H115 → H116 → H117

(Through a bump out wall in hallway F into room L, through the door in room L, through the east wall into room O, into binder on bookshelf along east wall, originating from a western direction at an upward angle)

T24 H109 → H111 → H113

(Through a bump out along south wall of hallway F into room L, into the door of room L, terminates in the door, originating from a western direction at a downward angle)

T25 I124 → I122 → H121 → H118 → I119, I120

(Deflects off of floor in hallway F, deflects off of north wall, through east wall of hallway F into room P, appears to split and impact a bookshelf and paper shredder, originating from a western direction at downward angle)

T26 I138 → I139

(Deflects off of floor in hallway F leading to cubicles to the north, impacts north partition of cubicle G, originating from a southern direction at a downward angle)

T27 H128 → H129

(Through north side of cubicle partition in room K, originating from a south west direction at a downward angle)

T28 H130 → H135 → H137 → I578

(Through door along the east wall from room K into room Q, into a stack of papers on a table along the north wall, travels through the papers and impacts the wall behind a

metal paper rack, originating from a southwest direction at a downward angle)

T29 I131 → H132 → I136

(Impact on metal shelf near northeast corner of room K, into corner of wall behind shelf, embeds within partition between room K and room Q, originating from a southwest direction at a downward angle)

T30 H133 → H134 → H141

(Through a wooden board leaning against the northeast corner of room K, through the wall behind the board into room C6, originating from a southwest direction at a downward angle (angle measured and end of trajectory))

T31 H126 → I140

(Through the north wall of hallway F near cubicle G, impacts the metal frame of the partition behind the desk in cubicle G, originating from a southwestern direction at a downward angle)

The following holes and impacts were located in the south east offices and cubicle area on the 2nd floor of Building 2, but could not be associated with a particular trajectory:

H102 *Hole in right side of office chair in room D, entry, blows out plastic back*

H103 *Into CPU unit below desk on west side of room D*

H104 *Into desk drawer in room D near southwest corner of desk, entry*

I123 *Impact in ceiling of hallway F, near corkboard*

I125 *Impact in floor of hallway F, near room D*

H127 *Into lower left of map in room G, entry*

I553 *Impact behind wooden plank in northeast corner of room K*

A presumptive chemical test for the presence of lead was performed on the following items:

I119 *Lead particulate only*

H127 *Positive for lead*

I120 *Positive for lead*

I139 *Positive for lead*

Twenty two bullet trajectories were reconstructed in the east hallway (U) and offices (rooms S, T, and X) on the 2nd floor of Building 2:

T32 H142 → H243 → H240 → H236 → I237

(Through the south wall of room X into room T, through the bookshelf and into a book on the shelf, originating from a northern direction at a downward angle)

T33 H143 → H243 → H240 → H239 → H238

(Through the south wall of room X into room T, through the bookshelf, through a book on

the shelf, originating from a northern direction at a downward angle)

T34 H144 → H244 → H242 → H241

(Through the south wall of room X into room T, through the bookshelf and into book on the shelf, originating from a northern direction at a downward angle)

T35 H145 → H245 → H271 → H272 → H227 → H226 → H225 → H219

(Through the south wall of room X into room T, through the top of a chair at the conference table, through the circular shelf near the south wall, through the south wall into room S, originating from a northern direction at a downward angle)

T36 H146 → H246 → H186

(Through the south wall of room X into room T, into back of door from room S to room U, originating from a northeastern direction at a downward angle)

T37 H147 → H247 → I248 → H262 → H263 → H270 → I158

(Through the south wall of room X into room T, impacts the bottom edge of a canvas print on north wall of room T, through the blue office chair deflecting upward, and into the west wall of room T, originating from a northeastern direction at a downward angle)

T38 H148 → H253 → H258 → H259 → I257

(Through the south wall of room X into room T, through the right hand monitor and embedding into the left side of the blocked door to hallway U, originating from a northeastern direction at a downward angle)

T39 H149 → H254 → H256 → H150 → H157

(Through the south wall of room X into room T, through the blocked door of room T into hallway U, into the west wall, originating from a northeast direction at a downward angle)

T40 H249 → H182 → I184 → I185

(Through north wall of room T into room X, impacts the floor and deflects upward, impacts and embeds into a roll of paper near the north wall, originating from a southern direction at a downward angle)

**T41 I255 → H250 → H183 → I575 → I576
→ H252**

(Impacts the floor of room T near the north wall and splits, one portion enters the north wall and does not exit, a second portion travels through the north wall into room X, impacts the bottom frame of a chair, originating from a southern direction at a downward angle)

- T42 H151 → H264 → H261 → H260 → I233 → H234**
(Through east wall of hallway U into room T, through a monitor, impacting the underside of the desk top along the east wall of room T, into the door of the desk, originating from a western direction at a downward angle)
- T43 H152 → H265 → H232 → H573 → I235**
(Through east wall of hallway U into room T, through the desk along the east wall of room T, into the east wall of room T, originating from a western direction at a downward angle)
- T44 H153 → H266 → H231**
(Through east wall of hallway U into room T, into the east wall of room T, originating from a western direction at a downward angle)
- T45 H154 → H267 → H230**
(Through east wall of hallway U into room T, into the east wall of room T left of the window near the south wall, originating from a western direction at a downward angle)
- T46 H155 → H268 → I228 → H229**
(Through east wall of hallway U into room T, striking the edge of the circular shelf near the south wall, into the west wall of room T near the south corner, originating from a northwest direction at a downward angle)
- T47 H156 → H269 → H224 → H218 → I195**
(Through east wall of hallway U into room T, through south wall into room S, impacts the right door of a cabinet along the east wall of room S, originating from a northwest direction at a downward angle)
- T48 I165 → H179 → H191 → I215 → I214**
(Impacts into left doorjamb of door from hallway U into room S, deflects and goes through the door into room S, into a gray canvas case leaning against the north wall of room S, deflects into the metal desk frame along the north wall, originating from a western direction at a downward angle)
- T49 H170 → H187 → H209 → H210 → I211 → I212**
(Through the door from hallway U into room S, through chair seat at desk along north wall, creates several impacts on frame of chair, originating from a western direction at a downward angle)
- T50 H176 → H188 → I208 → H204 → H205 → H197**
(Through the door from hallway U into room S, deflects off of table top along north wall, through the back of the chair at the desk along the north wall, into left door of cabinet along east wall, originating from a western direction at a downward angle)

T51 H206 → I207

(Through the laptop on the desk along the north wall in room S, original position could not be determined, T51 does not appear in the supporting graphic)

T132 H177 → H189

(Through the door from hallway U into room S, originating from a western direction, trajectory rod could not be supported due to blowout on inside of door, T132 does not appear in supporting graphic)

T133 H178 → H190

(Through the door from hallway U into room S, originating from a western direction, trajectory rod could not be supported due to blowout on inside of door, angle could not be determined, T133 does not appear in supporting graphic)

The following holes and impacts were located in the east hallway (U) and offices (rooms S, T, and X) on the 2nd floor of Building 2, but could not be associated with a particular trajectory:

I159, H160, I161, I162, I163, I164, H166, H167, H168, H169, H171, H172, H173, I174, I175, and I180 *Series of holes and impacts in the door/door frame from hallway U into room S*

I181 *Impact in the south wall of hallway U, left of the door to room V*
 I192 *Impact in front of desk in room S*
 I193 *Impact in back of black folder rack on desk in room S*
 I194 *Impact on south wall of room S, below poster*
 I196 *Impact in right door panel of cabinet along east wall in room S*
 I198 *Impact in left door panel of cabinet along east wall in room S*
 I199 *Impact in door of leftmost cabinet along east wall in room S*
 I200 *Impact on east wall of room S near north corner above cabinets*
 I201 *Impact on left trim piece of leftmost cabinet along east wall in room S*
 I202 *Impact on north wall of room S, near east corner, between wall and cabinet*
 H203 *Into east wall of room S, near north corner, between wall and cabinet, entry*
 I213 *Impact into rear left chair frame in room S*
 H216 *Into gray canvas case resting along north wall of room S*
 I217 *Impact in gray canvas case resting along north wall of room S*
 I220 *Impact in right side of door jamb from room S to room T*
 I221 *Impact in right side of door jamb from room S to room T*
 222 *Not used*
 I223 *Impact in left side of door jamb from room S to room T*
 I251 *In north wall of room T near outlet, entry*
 I273 *Impact in back wooden frame of chair 1 in room T*
 H274 *Into top front of chair 2, entry*
 I574 *Impact on inside rear of cabinet along east wall of room T*

A total of seventy-five bullet trajectories were reconstructed in the north region of the 2nd floor of Building 2. These trajectories were grouped into 9 approximate shooting positions.

Three bullet trajectories were reconstructed traveling into the north stairwell (E6) from the main hallway (XX), originating from a southern direction (Group 1).

T56 H329 → H331 → H327 → H453 → H455

(Through the door from hallway XX into stairwell E6, through the north wall of the stairwell into room VV, into the north wall of room VV, terminates in wall, at downward angle)

T57 H328 → H330 → H325 → H452 → H563 → I565 → H564

(Through the door from hallway XX into stairwell E6, through the north wall of stairwell into room VV, into the drop ceiling in room VV, impacting the metal frame of drop ceiling then the north wall above the ceiling, at an upward angle)

T58 H326 → H454 → H456

(Through the north wall of stairwell E6 into room VV, into the north wall of room VC, terminates in wall, at a flat trajectory)

Nine bullet trajectories were reconstructed traveling into the north office area (WW) from the main hallway (XX), originating from a western direction (Group 2).

T62 H337 → I544

(Through the lower left corner of the door jamb from hallway XX into room WW, impacting the inside of the doorjamb, at an upward angle)

T63 H363 → H514

(Through the door from hallway XX into room WW, at an upward angle)

T64 H367 → H518

(Through the door from hallway XX into room WW, at an upward angle)

T65 H364 → H517

(Through the door from hallway XX into room WW, at an upward angle)

T78 H280 → H280A

(Into the east wall of hallway XX near door to room WW below a fire extinguisher, terminates in wall, at an upward angle)

T79 H281 → H492 → H580 → I493

(Through the east wall of hallway XX near the door to room WW, blows out the wall in room WW, into the back of a cubicle in area SS creating an impact on the inside of the cubicle, at an upward angle)

T106 H357 → I512

(Into the door from hallway XX to room WW, creates impact on room WW side of door, at an upward angle)

T107 H360 → I516

(Into the door from hallway XX to room WW, creates impact on room WW side of door, at an upward angle)

T108 H355 → I577

(Into the door from hallway XX to room WW, creates impact on room WW side of door, at an upward angle)

Nine bullet trajectories were reconstructed traveling into the north office area (WW) from the main hallway (XX), originating from a southwestern direction (Group 3).

T66 H339/H340 → H497 → H542 → I548

(Through the door and doorframe of left side of door from hallway XX into room WW, impacting interior of door frame, at an upward angle)

T67 H341 → H498

(Through the left door frame from hallway XX into room WW, at an upward angle)

T68 H342 → H499

(Through the door from hallway XX into room WW, at an upward angle)

T69 H345 → H504

(Through the door from hallway XX into room WW, at a flat trajectory)

T70 H343 → H505 → H543 → H545

(Into the left side of the door from hallway XX into room WW, through the door trim of door into room WW, at an upward angle)

T71 H346 → H509

(Through the door from hallway XX into room WW, at an upward angle)

T72 H354 → H500 → I446

(Through the door from hallway XX into room WW, impacting the right side of the door to room VV, at a flat trajectory)

- T73 H359 → H510 → H447 → H471 → H468 → H467 → I466 → I465**
(Through the door from hallway XX into room WW, through the door from room WW into room VV, through the right panel of bookshelf along east wall, impacting the east wall and into a white binder on the bookshelf, at a downward angle)
- T80 H344 → H546**
(Through the left doorjamb from hallway XX into room WW, at an upward angle)
- Seven bullet trajectories were reconstructed traveling into the north office area (WW) from the main hallway (XX), originating from a southern direction (Group 4).
- T74 H372 → H521 → I478**
(Through the door from hallway XX into room WW, impacting the door from room WW to room VV, at a downward angle)
- T75 H379 → H529 → I568 → H477 → H472 → I462**
(Through the door from hallway XX into room WW, impacting floor of room WW and deflecting upward, through the door from room WW into room VV, impacting the baseboard along the north wall of room VV, at a downward angle)
- T76 H385 → H530 → I572 → H436 → H450 → H474 → H476**
(Through the door from hallway XX into room WW, impacting the floor of room WW and deflecting upward, through the bottom left corner of the north wall into room VV, into the back of a desk along the south wall of room VV, at a downward angle)
- T77 H380 → H531 → I571 → H435 → H451 → I473 → I475**
(Through the door from hallway XX into room WW, impacting the floor of room WW and deflecting upward, through the bottom left corner of the north wall into room VV, impacting the top of a CPU and the back of the desk along the south wall of room VV, at a downward angle)
- T81 H370 → H550 → I428**
(Through the left doorjamb from hallway XX into room WW, impacting the west wall of room WW near the door to hallway XX, at a downward angle)
- T82 H390 → H491 → H445 → H469 → I464**
(Through the right doorjamb from hallway XX into room WW, through the door from room WW into room VV, impacting foam board along the north wall of room VV, at a downward angle)
- T119 H347 → H503**
(Through the door from hallway XX into room WW, at an upward angle)

Four bullet trajectories were reconstructed traveling into the north office area (WW) from the main hallway (XX) originating from a northwestern direction (Group 5).

T59 H332 → H429 → H511 → H358

(Through east wall in hallway XX near the north stairwell into room WW, through the door from room WW into hallway XX, at an upward angle)

T60 H333 → H429 → H486 → H487 → H488

(Through east wall in hallway XX near the north stairwell into room WW, through the right trim piece of the metal cabinet, into the south wall behind the cabinet, at an upward angle)

T61 H334/H335 → H427 → H520 → H368 → I395 → H394

(Through east wall in hallway XX near the north stairwell into room WW, through the door from room WW into hallway XX, impacting the floor and deflecting into the baseboard along the east wall, at a downward angle)

T93 H519 → H369

(Through the door from room WW into hallway XX, at a downward angle)

Five bullet trajectories were reconstructed traveling into the north office (VV), originating from a southern direction (Group 6), however due to the limitations of the examination could not be associated with other trajectories entering the north office area (WW) from the main hallway (XX).

T112 I430 → I431 → H434

(Impact in west wall of room WW near fire extinguisher, impacting the left side of the fire extinguisher, into the north wall of room WW, terminates in the wall, at a downward angle)

T113 H433 → H449 → H460 → H461

(Through the north wall of room WW into room VV, through the right side curtains of window along north wall of room VV and through the double pane glass of the window, at an upward angle)

T114 H437 → H448

(Through the left doorjamb from room WW into room VV, at an upward angle)

T115 I438 → H439 → H441 → H442

(Impacting the left doorjamb from room WW into room VV, through the inner doorjamb and into the door from room WW into room VV, does not exit, at a an upward angle)

T116 H443 → H470 → H463

(Through the door from room WW into room VV, into the north wall of room VV right of the window, terminates in the wall, at a downward angle)

Twenty-six bullet trajectories were reconstructed traveling into the main hallway (XX) from the north office area (WW), originating from a north/northeastern direction (Group 7).

T83 I552 → I484 → H489 → H392 → H421 → I424

(Two impacts in cabinet along east wall of room WW, through the south wall of room WW into hallway XX above the door frame, into drop ceiling in hallway XX, impacting the concrete ceiling, at an upward angle)

T84 H490 → H393 → H420 → I423

(Through the south wall of room WW left of the doorframe into hallway XX, into the drop ceiling in hallway XX, into the drywall/metal trim above drop ceiling along east wall, at an upward angle)

T85 H495 → H350

(Through the door from room WW into hallway XX, at a downward angle)

T86 H501 → H352

(Through the door from room WW into hallway XX, at a downward angle)

T87 H502 → H351

(Through the door from room WW into hallway XX, at a downward angle)

T88 H506 → H353

(Through the door from room WW into hallway XX, at a downward angle)

T89 H507 → H349 → H413 → H414 → H415 → I422 → H579

(Through the door from room WW into hallway XX, through an antenna cover in the ceiling, through an insulated pipe above ceiling, impacting concrete ceiling and deflecting into a piece of insulation, at an upward angle)

T90 H508 → H348 → H417 → H416

(Through the door from room WW into hallway XX, into the drop ceiling in hallway XX, into blue plastic tubing above drop ceiling, at an upward angle)

T91 H513 → H356 → H409 → H410 → H411 → H412

(Through the door from room WW into hallway XX, into the drop ceiling above women's room in hallway XX, through an insulated pipe and into a second insulated pipe, at an upward angle)

- T92 H515 → H361 → H407 → I408**
(Through the door from room WW into hallway XX, through the drop ceiling near the janitor closet, impacting a conduit pipe above the ceiling, origi at an upward angle)
- T94 H522 → H371 → H315 → H315A → H316**
(Through the door from room WW into hallway XX, into the west wall of hallway XX, deflects of cinderblock and begins to exit wall, bullet remained in the hole coming from inside the wall, at an upward angle)
- T95 H524 → H378**
(Through the door from room WW into hallway XX, at an upward angle)
- T96 H525 → H377**
(Through the door from room WW into hallway XX, at an upward angle)
- T97 H526 → H376**
(Through the door from room WW into hallway XX, at a flat trajectory)
- T98 H527 → H375**
(Through the door from room WW into hallway XX, at an upward angle)
- T99 H528 → H374**
(Through the door from room WW into hallway XX, at an upward angle)
- T100 H533 → H381 → ? → H323 → H323A**
(Through the door from room WW into hallway XX, appears to impact floor and deflect upward (impact could not be located), into the west wall of hallway XX, at a downward angle)
- T101 H539 → H384**
(Through the door from room WW into hallway XX, at a downward angle)
- T102 H538 → H386**
(Through the door from room WW into hallway XX, at a downward angle)
- T103 H540 → H387**
(Through the door from room WW into hallway XX, at an upward angle)
- T104 [H534, H535, H536, H537] → H388 (blowout) → H303 → H303A → H308 → H308A → I307**
(Group of holes through bottom of door from room WW into hallway XX, creating a large blowout on the back side of the door, leading to two holes on the west wall of hallway XX, trajectory rod could not be supported due to blowout)

T105 H523 → H373 → H318 → H318A

(Through the door from room WW into hallway XX, into the west wall of hallway XX, at an upward angle)

T109 H532 → I382

(Through the door from room WW into hallway XX, into the lower left doorjamb, at a downward angle)

T110 H551 → H336 → H324

(Through the south wall of room WW near the west corner, into hall way XX, into the west side of a recessed wall near the north end of the hallway, at a flat trajectory)

T117 H555 → H556 → H557 → I558

(Into ceiling of room WW near the door to hallway XX, through the circular duct above the ceiling, impacting the concrete ceiling, at an upward angle)

T118 H559 → H560 → H561 → I562

(Into ceiling of room WW near door to hallway XX, through circular duct above ceiling, impacting the concrete ceiling, at an upward angle)

An additional ten bullet trajectories were reconstructed in the west wall of the main hallway (XX) originating from a northeastern direction (Group 8), however due to the limitations of the examination could not be associated with other trajectories originating from the north office area (WW).

T121 H304 → H304A**T122 H305 → H305A****T123 H306 → H306A****T125 H309 → H309A → I310****T126 H312 → H312A → I311****T127 H314 → H314A → I313****T128 H317 → H317A****T129 H319 → H319A → I322****T130 H320 → (terminates in door)****T131 H321 → (terminates in door)**

Two bullet trajectories were reconstructed traveling into the east side offices of the north area (II and DD1), originating from northwestern direction (Group 9).

T52 H286 → (terminates in stud)

(Into corkboard on south wall of hallway II, terminates in wall, at an upward angle)

T53 H285 → H291 → I292

(Through south wall of hallway II in bottom right corner of corkboard, into room DD1, through a cubicle wall and impacting the back of a computer monitor, at an upward angle)

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The following holes and impacts were located in the east side offices near the northern area of 2nd floor of Building 2, but could not be associated with a particular trajectory:

- H287 *Into the bottom right of the corkboard in hallway II, entry*
- I288 *Impact on south wall of hallway II, right of the corkboard*
- I289 *Impact on south wall of hallway II, right of the corkboard*
- I290 *Impact on south wall of hallway II, right of the corkboard*

The following holes/impacts were located in north hallway (XX), but could not be associated with a particular trajectory:

- I279 *Impact in fire extinguisher panel on east wall near door to room WW*
- H282 *Into east wall right of fire extinguisher, entry*
- H283 *Into east wall right of fire extinguisher, entry*
- H284 *Into glass portion of door along east wall, entry*
- I302 *Impact in west wall, left of men's room*
- I338 *North wall of hallway, left of door to room WW, bulge from inside wall*
- I362 *Impact in middle hinge of door to room WW, possibly frag from H360*
- H365 *Into left doorjamb of door to room WW, leads to H366, could not support a rod*
- H366 *Into door to room WW from H365, could not support a rod*
- I383 *Impact in bottom left corner of door to room WW*
- I389 *Impact on bottom right edge of door to room WW*
- I391 *Impact in right side door trim to room WW, impact left to right, appears to go to I279*
- I396 *Impact in floor near women's room*
- I418 *Impact in drop ceiling near door to room WW, frag embedded*
- I419 *Impact in drop ceiling near door to room WW, frag embedded*

The following holes/impacts were located in room WW, but could not be associated with a particular trajectory:

- I432 *Impact on north wall near the top left corner*
- I440 *Impact on inner left doorjamb to room VV*
- I444 *Impact in door to room VV, right of handle*
- I479 *Impact on the north wall, right of the door to room VV*
- H480 *Into north wall between room VV and UU*
- H481 *Into north wall between room VV and UU*
- I482 *Impact in left side of file cabinet*
- I483 *Impact in right side of file cabinet, right of handle*
- I485 *Impact in top right door of file cabinet*
- I494 *Impact in top of doorjamb to hallway XX*
- H496 *Through glass portion of door to hallway XX, entry*
- I541 *Impact in right side of door to hallway XX, below handle*
- I547 *Impact in right doorjamb to hallway XX, impact from inside*
- I549 *Impact on right doorjamb to hallway XX*
- I569 *Impact in floor near door to room XX*

I570 *Impact in floor near door to room XX*

The following holes/impacts were located in room VV, but could not be associated with a particular trajectory:

I457 *Impact in top left corner of north wall*

H458 *Into curtains left of window along north wall, position could not be determined*

I459 *Impact in north wall, left of window*

I566 *Impact in middle of ceiling near north wall*

I567 *Impact in middle of ceiling near north wall*

Methods:

Shooting Incident Reconstruction

Trajectories can be determined by either measuring the (x,y,z) coordinates of at least two points along each trajectory, or by measuring the position of one hole/impact and taking horizontal angle (azimuth) and vertical angle (declension) measurements of the trajectory rods. These measurements can either be taken manually or by surveying equipment or laser scanning devices operated by the Operation Projects Unit.

Vehicle Examinations

For manual measurements, a Cartesian coordinate system is established by using tape measures to create an x-y dimension grid around the vehicle. A series of 3-D measurements (x,y,z) is recorded that establishes the vehicle's basic dimensions and its location within the grid. Points of interest (suspected bullet holes or impacts) on the exterior or in the interior of the vehicle are identified and labeled. These holes and impacts are examined to determine whether they have physical effects consistent with having been caused by a bullet. They are then examined to determine specific trajectories (holes caused by the same bullet) and to identify the direction the bullet was traveling. The direction of travel can be determined by the nature of the damage around the hole(s), the direction of transport of additional materials from a hole, the lack of an exit hole on one end of the trajectory, or by the recovery of a bullet or bullet fragments at one end of the trajectory. Holes and impacts of importance are labeled and measured from a position within the grid system. Manual measurements may be supplemented with or replaced by data from surveying equipment or laser scanning devices operated by the Operational Projects Unit.

Non-vehicle Examinations

Areas of interest for Shooting Incident Reconstruction are measured and/or surveyed and documented to allow for 3-D computer reconstruction of the shooting scene. Suspected bullet holes/impacts are examined to determine whether they have physical effects consistent with having been caused by a bullet and/or debris. They are then examined to determine specific trajectories (holes caused by the same bullet) and to identify the direction the bullet was

traveling. The direction of travel can be determined by the nature of the damage around the hole(s), the direction of transport of additional materials from a hole, the lack of an exit hole on one end of the trajectory, or by the recovery of a bullet or bullet fragments at one end of the trajectory. For manual measurements, coordinate systems are established within the shooting scene to allow for all holes/impacts of importance to be measured within the overall scene. Manual measurements may be supplemented with or replaced by data from surveying equipment or laser scanning devices operated by the Operational Projects Unit.

Bullet Testing Kit

Suspected bullet impacts or holes are examined visually and/or microscopically for the presence of physical effects that might have been produced by a bullet. If these conditions are noted, a series of presumptive chemical tests for the presence of lead and copper may be performed. Each of these tests is chemically specific and produces a colored reaction when in the presence of the specific chemical.

Limitations:

Shooting Incident Reconstruction

Due to vehicle glass breakage, bullet fragmentation, bullet deflection, intervening objects that are movable, and many other factors, not all trajectories can be successfully reconstructed. Consequently, the number of trajectories reconstructed may not indicate the number of shots that were fired.

Bullet Testing Kit

Presumptive chemical tests are not conclusive and are meant to provide additional information regarding the possibility of a bullet impact or passage. The presumptive test does not distinguish whether lead and copper are deposited by a bullet or by another source.

Remarks:

For questions about the content of this report, please contact Forensic Examiner Bryce A. Ziegler at 703-632-7887. The evidence (SIR request) is being retained.

This report contains the opinions and interpretations of the issuing examiner(s) and is supported by records retained in the FBI Laboratory files. Please allow a minimum of thirty days from the date of a discovery request for the FBI Laboratory to provide the related materials. The FBI cannot ensure timely delivery of discovery requests received in less time. The work described in this report was conducted at the Quantico Laboratory.

Bryce A. Ziegler
Firearms/Toolmarks Unit