
S R G



SPARROW RISK GROUP

Residential Security Assessment:



Recommended Actions: Exterior

No.	Action Recommended	Tier
1.1	Redesign of a surveillance system using existing wiring and placement to ensure proper coverage, integration of better technology, and creation of a single system reducing points of failure. <u>SRG can source</u> (Page 7)	1
1.2	Removal of Ring devices prone to short battery life, replacing with a new provider, creating a seamless security surveillance system. <u>SRG can source</u> (Page 7)	1
1.3	Most likely approach is from the C-Side of home. Installation of LED motion activated lighting around home, with priority being the A-Side and C-Side of property. Adequate lighting will also assist surveillance cameras. (Pages 10)	2
1.4	Install of 3M security window film no less than 4mm w/ adequate anchoring on large windows/doors. (Page 11)	2
1.5	Securing of garage emergency release chord. Velcro is commonly used. (Page 12)	2
1.6	Replacement of locks and lock hardware to ensure heightened security, key control, and proper function. (Page 13)	1
1.7	Replace signage with company other than that being used. Old sign can be used once updated.	2

Recommended Actions: Interior

No.	Action Recommended	Tier
2.1	Due to access control considerations from past security teams, as well as potential knowledge of current specifics, it is recommended a new security company be sourced and update system using existing wiring. <u>SRG can source</u> (Page 17)	1
2.2	Motion sensor placement not effective. Recommend relocating sensors and adding 2-3 more to cover entirety of home. <i>Included with system upgrade.</i> (Page 18)	1
2.3	Overview of successful covert entry attempt conducted on property. (Page 19)	1
2.4	Acoustic glass-break sensors should be installed throughout home. Maximum 15ft from sensor to coverage area. (Page 20)	1
2.5	Keep vehicle keys away from doors or low windows. Dedicated router for any security devices on a network. Removal of signage identifying power to security system items. (Page 21)	2

Goals & Expectations

Purpose:

To conduct a detailed physical security assessment to include:

- Perimeter Strength & Exploitation Opportunities
- Surveillance & Intrusion Detection Systems
- Physical Access Control & Exploitation Opportunities
- Information Security (INFOSEC) Considerations

Location: Private Residence

123 MAIN ST
ANYWHERE, MA

Date:

Time: On-Site 1200 EST

Known Threats:

surveillance, it is determined that a **moderate threat level is assigned to the client and any corresponding homes and properties.**

Considerations:

Location of property is in proximity of multiple public high traffic areas to include a park and school. **Allowing a threat actor to use as cover for action and surveil or pre-plan an event with ease and minimal likelihood of detection.**

Site Overview

Location: Private Residence/Rental

123 MAIN ST
ANYWHERE, MA

Structure size*: 5,000 sqft

Lot size*: .8 acres

Year Built: 2011

Security System Present: [REDACTED]

- Hard Wired Intrusion Detection Sensors on Exterior Doors
 - Plunger and recessed magnetic contact sensors on hinged exterior doors, sliding glass doors and casement-style windows utilize exposed magnetic contact sensors.
 - Passive Infrared Motion Sensors (PIR), corner & wall mounted
 - **No glass break sensors**
 - Primary Communication: Network Cellular
 - Link to First Responders: Yes
-

Surveillance System: "Ring" & Wired surveillance system

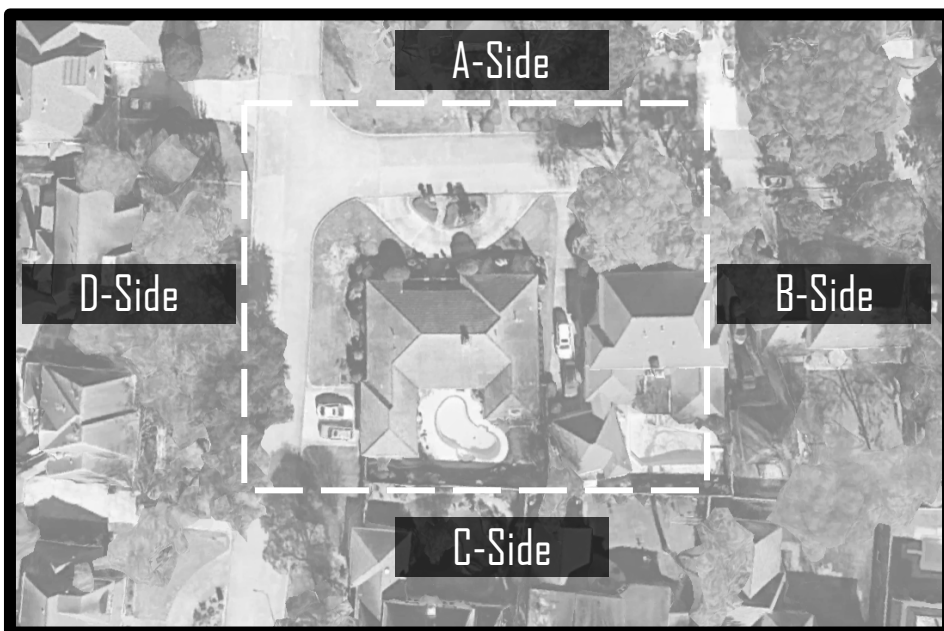
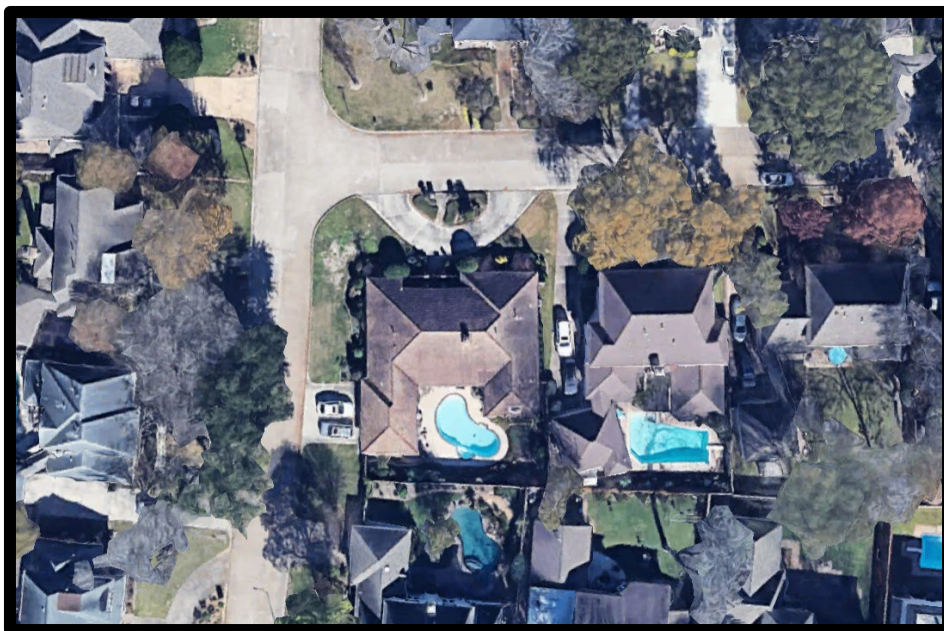
- Power: Internal battery/PoE
 - Information: Wi-Fi, PoE
 - Camera Type: Doorbell, bullet, turret
 - Storage: Cloud
 - **Monitoring: No, self monitored**
-

Perimeter Fencing/Countermeasures:

- Fencing Present: Yes-Wooden privacy
- Anti-Climb: **No (See page 7 for security concerns)**
- Ground Sensors: No

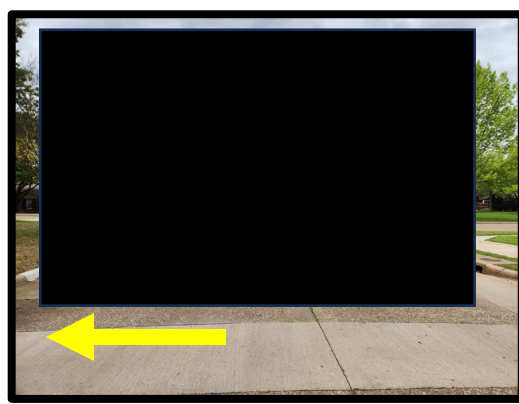
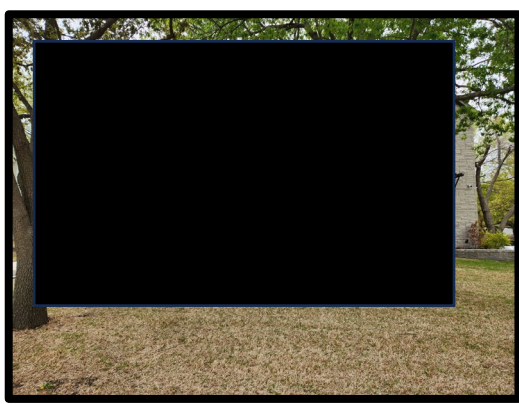
Orientation

Drone provided HD overview



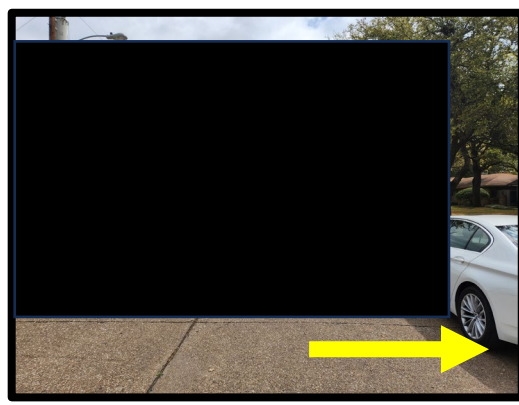
Orientation

A-Side

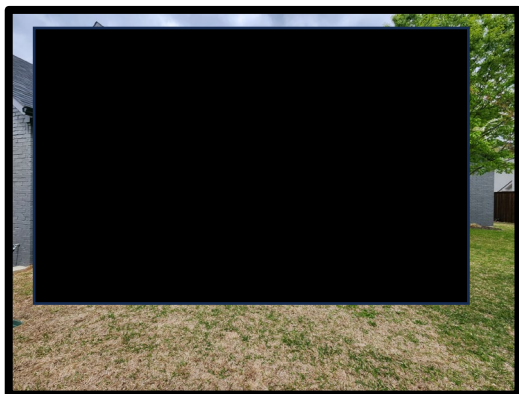


View of entry to street.

B-Side



C-Side



surveillance to be conducted with minimal risk of exposure.

Timing of surveillance to coincide with increased traffic patterns is to be considered.

D-Side

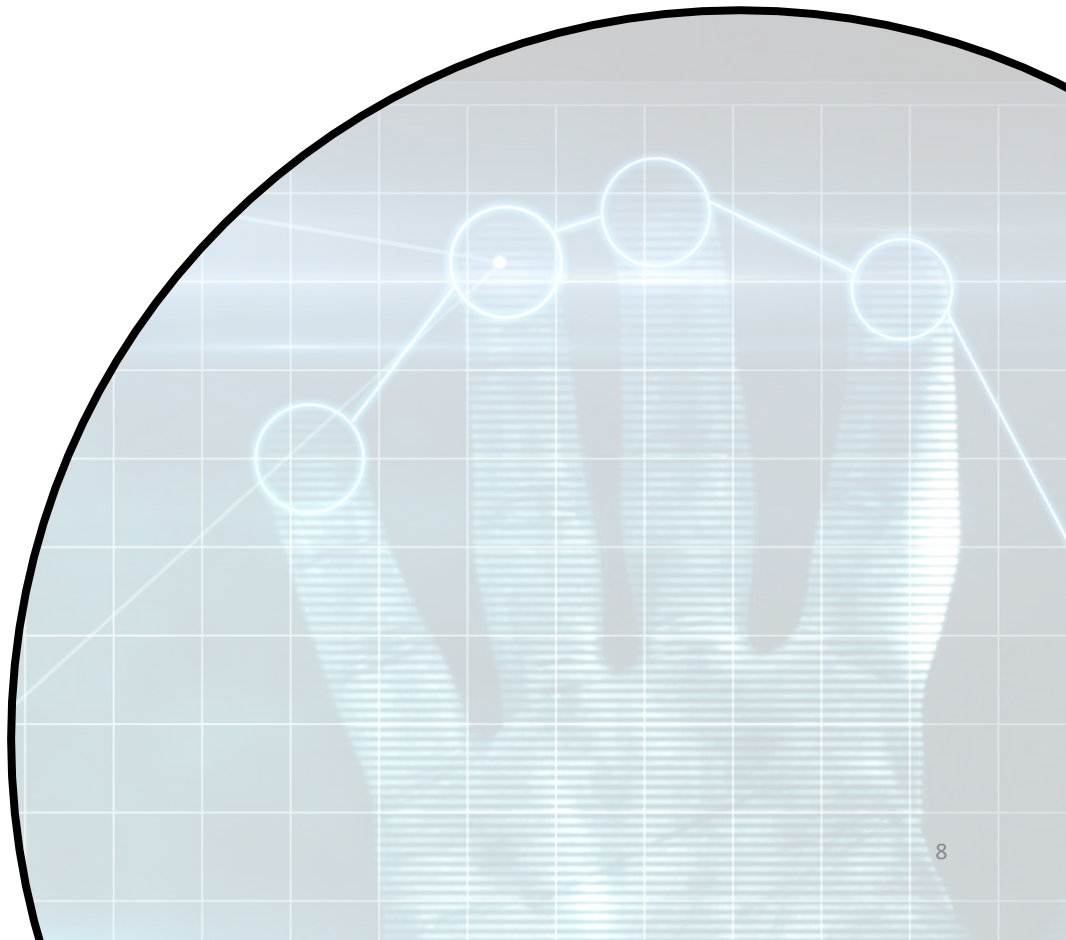


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Building Exterior



Exterior: Current Surveillance Examples

Surveillance System:

- Ring doorbell camera, Ring "Stick Up" Cameras, Bullet Cameras, Turret Cameras
- Power: Internal battery (Rings), PoE (Turret & Bullet)
- Information: [REDACTED] PoE
- Active Notifications: Yes
- Functional Field of View (FFV): Variable range 120-150 degrees (horizontal)
- Motion Activation: Yes (**delay of up to 4 seconds is common in Ring**)
- Night Vision: Yes



Ring "Stick Up" Cameras



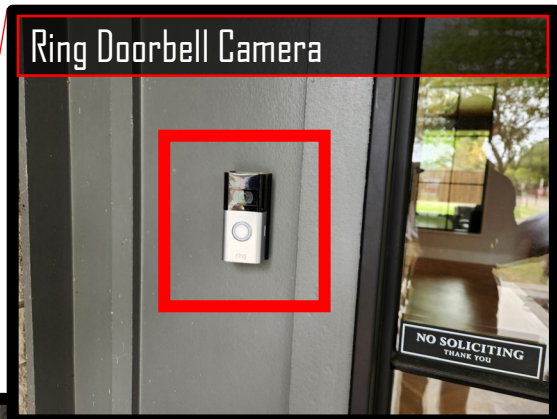
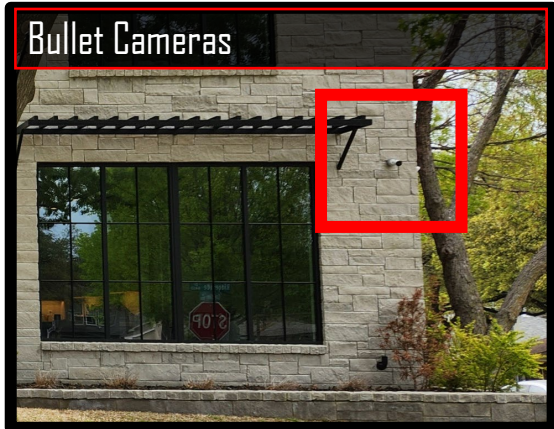
Ring "Stick Up" Cameras



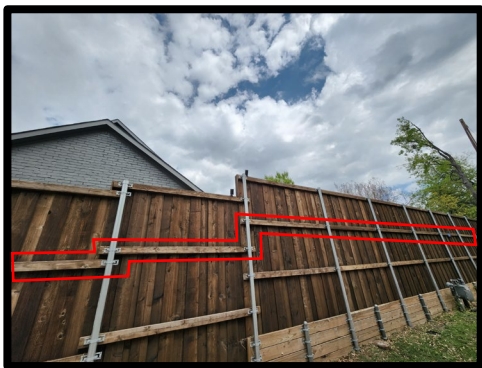
Recommend Action:

1.1

Exterior: Current Surveillance Examples



Exterior: Perimeter



Horizontal support beams located on outside

- 2x4 support beams are located on the outside of the fencing into an alley. This alley provides adequate coverage to scale perimeter fencing with minimal risk of detection.



Privacy fencing provides a threat actor with coverage from outside surveillance from neighbors or police once the outer security layer is penetrated.



Batteries on fence mounted Ring "Stick Up" cameras are dead-leaving the entire C-side exposed to outer security ring penetration.

Exterior: Surveillance

Coverage Exploitation

Visible cameras will channel the movement and path of an individual or team attempting to remain undetected.

Ring cameras have a documented 2-4 second delay on motion activation to recording. Threat actors can exploit this, using the delay to conduct signal jamming or physical exploitation by removing or covering lenses with tape.

NOTE: Ring units dead on C-Side fence, internal battery power.

The C-Side (rear) of the property is adjacent to an alley providing adequate cover for movement and intent. This, in addition to fencing vulnerability (see page 7) make this the most likely path of approach from unskilled actors looking to gain access.

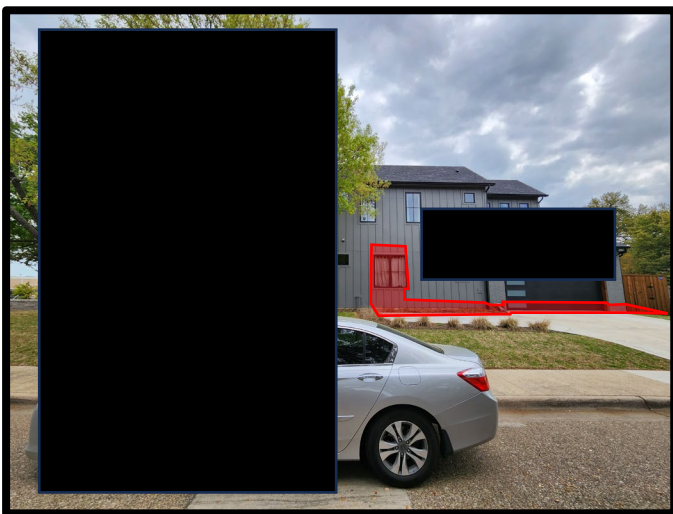


Exterior: Surveillance

Coverage Exploitation

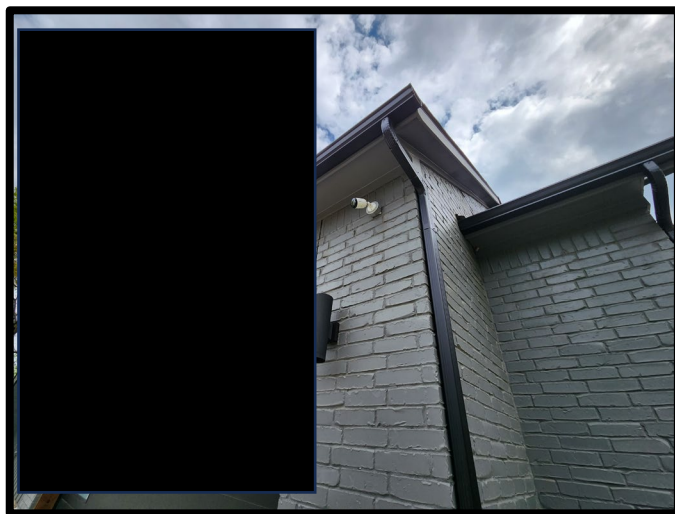
Path of Entry:

- Travel along C-Side fencing through the alleyway
- Due to the positioning of cameras on C/D-Side and D/A-Side corners, a coverage gap exists. Using deliberate travel along the base of the home allows surveillance system exploitation possibility.
- Ground-floor casement-style window access is possible. The exposed magnetic contact sensor is visible from the outside making exploitation possible



Path of Approach

Entry onto the property from C-Side perimeter.

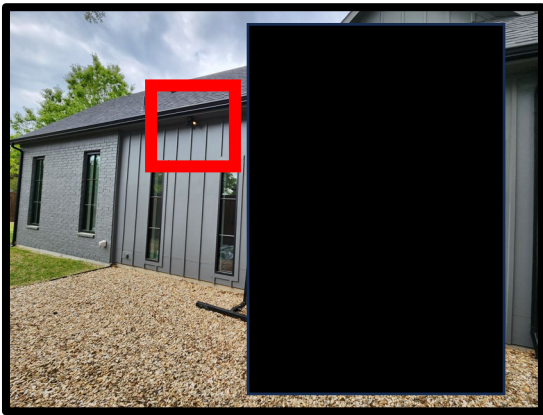


Camera Angle

Cameras vertical angle coverage is exploitable.

Exterior: Lighting

Exterior lighting is a useful deterrent for threat actors. Additionally, properly placed lighting will assist surveillance systems, cutting down on shadows from a hat or hood hiding a face.



Hardwired motion sensor lights should be upgraded.

Even the most advanced Infrared (IR) capable cameras lose resolution when operating under IR assistance. Proper lighting allows the highest resolution possible with installed surveillance.



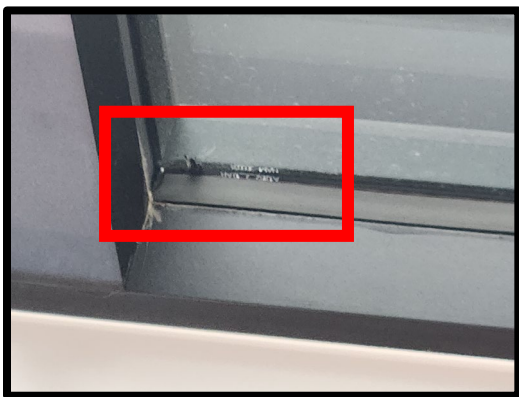
Lumens on current security lighting are low due to age, debris buildup, and light type. The current output will have little effect on surveillance system assistance or visual identification.

Exterior: Windows

- Type(s):
 - Fixed and casement windows throughout the home.
 - Aluminum locking mechanisms.
 - Annealed glass on casement windows
 - Tempered glass on large exterior fixed windows



Casement windows with aluminum locking mechanisms.



Sliding glass door into the living room

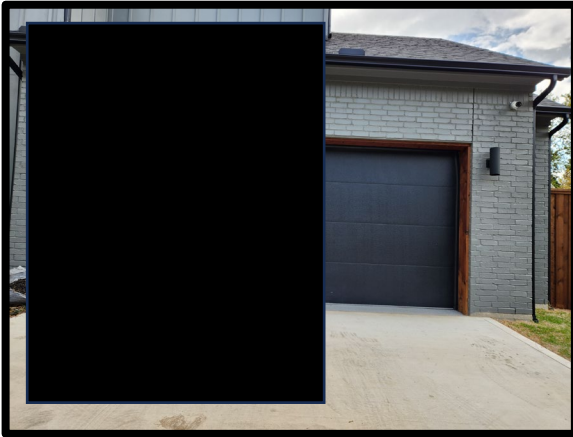
Tempered glass markings from glass manufacturer.

Advances in the development of security window films further enhance brute force entry deterrence and overall safety. Larger glass doorways should have security film installed.

Security film used in conjunction with glass break sensors creates an effective redundancy of security layers.

Exterior: Garage

Garage has no exterior handle, making exploitation difficult.



Garage has no exterior handle and frosted privacy windows making exploitation of emergency release chord difficult.



Purpose-made tools are designed and marketed to exploit the existence of emergency release chords in garages leading into the home. These releases are positioned in the center of the door, so visibility inside the garage is unnecessary for trained individuals to perform such attacks.

Exterior: Locks

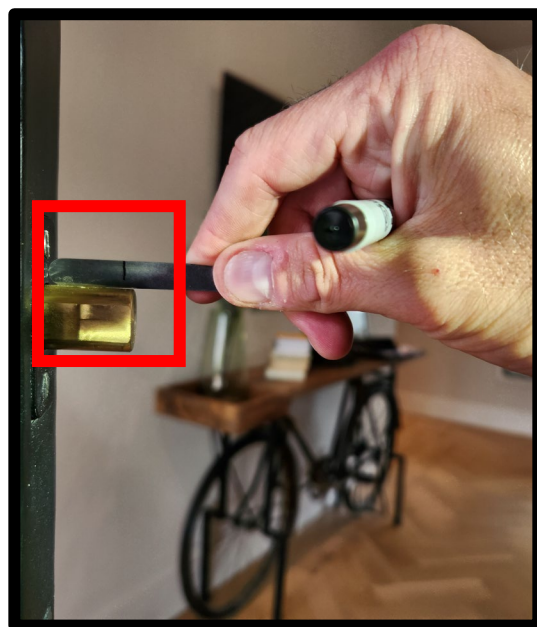
Locks

- Defiant Deadbolt: Schlage C
- Type(s): Deadbolt/Handle Set
- Keyway/Key: Schlage 5-pin (Most common for the region)

Defiant locks are considered a low-security solution. They are built outside the US, with a major contract with Home Depot as a discount lock option.



Dimpling seen on top of keyway suggests the lock has been “bumped” in the past as a bypass method.



Deadbolt installed improperly. Allowing simple exploitation by “walking” the deadbolt back.

Recommend Action:

1.6

Exterior: Considerations

Signage:

FCC guidelines require all alarm/intrusion detection systems on the commercial market to have their communication frequencies open source.

Utilizing a sign for a different company, therefore, a different operating frequency is advised to make signal exploitation more difficult.

Signage identifying current security provider allows trained threat actors to conduct social engineering attacks by impersonating the client, granting access to sensitive information.



Vehicle Parking:

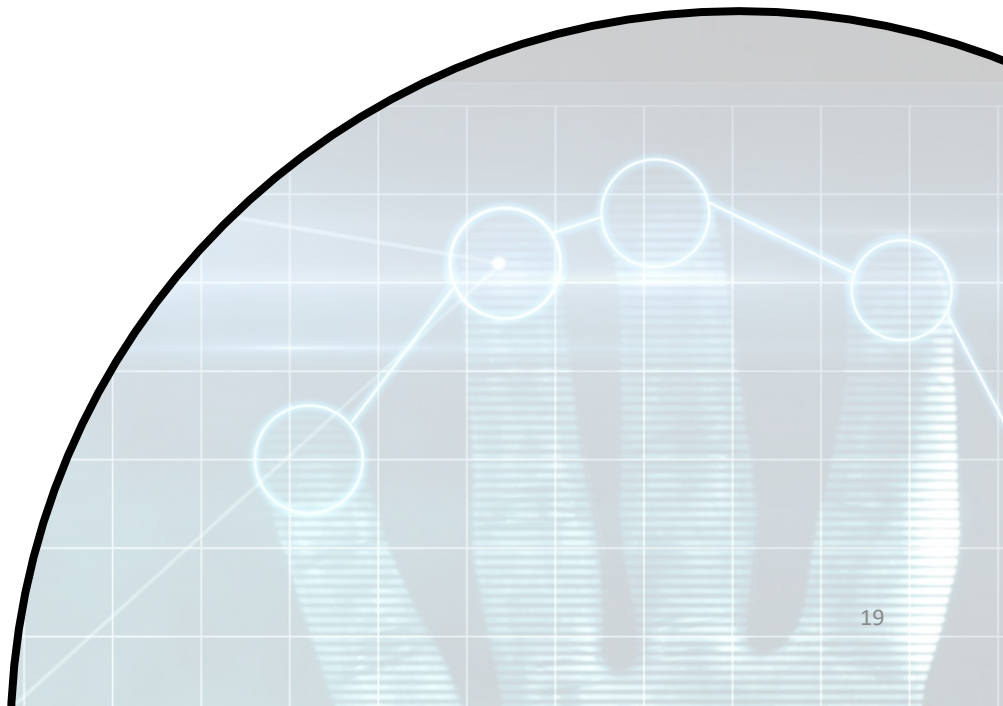
If utilizing the driveway, backing in is ideal. In the event of a threat approaching, statistically speaking it will be coming from outside of the home. Facing that direction when entering a vehicle drastically increases likelihood of detection of threats.

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Building Interior



Interior: Alarm Box

Alarm Communication Box Integrity/Security:

Alarm panels should always remain controlled and locked

Location: Second-floor hallway closet



The wired alarm box is located approximately 9 feet off the ground. Access requires a step stool or ladder.

Moderate security wafer lock located on box, adding additional hurdles for potential exploitation.

Interior: Alarm Panel

LCD Keypad



Keypad is in working order.

Manufacturer: [REDACTED]
current security provider.

Interior: Entry Sensors

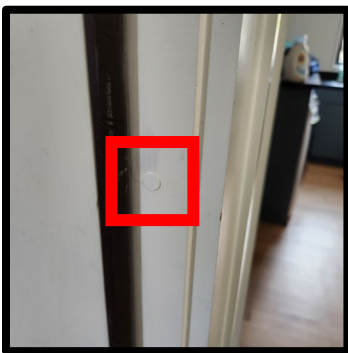
Power: Hardwired Type(s):

- Exposed Wireless Magnetic Contact Sensors on some doors and windows.
- Plunger Sensors on one exterior door (Main entrance)
- Recessed hardwired Magnetic Contact Sensors on garage entry door



Hardwired Plunger Sensor

Plunger sensor on main entrance. Placement allows for immediate visual identification for threat actor posing as visitor while in the reconnaissance phase for attack vectors.



Recessed Magnetic Contact Sensor

Recessed entry sensor installed on entry door from garage.



Exposed Magnetic Contact Sensor

Exposed magnetic contact sensor on all remaining casement windows and sliding glass doors.

Exposed sensors allow for external location ID and exploit planning

Interior: Motion Sensors

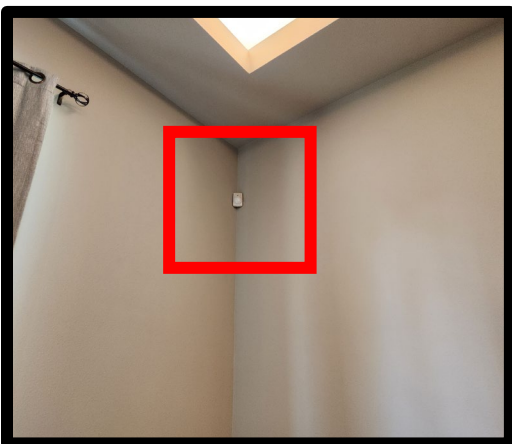
Hardwired Passive Infrared (PIR) Motion Sensors Present



PIR Motion Sensor located at end of the hallway near garage entrance. Deliberate movement from living room to stairway does not trip motion sensor due to distance.



No motion sensor covering the stairway to the second floor. Positioning of first-floor sensors makes stairway access possible.



Motion sensor placement in master bedroom allows deep entry into the room before tripping.

Recommend Action:

2.2

Interior: Exploitation of System

Coverage Exploitation

Path 1: Entry through front door

- Front door lock can be exploited due to improper installation of deadbolt.
- Alarm sensor easily identifiable so exploitation can be planned.
- Motion sensor coverage not effective with path of travel outlined.
- Successful entry into dining room, kitchen, and family room without detection.
- Successful movement onto second floor was attempted and successful without PIR motion sensor detection.



Deliberate movement along this path will stay out of detection range for both sensors on the floor.

Recommend Action:

2.3

Interior: Glass Break Sensors

Acoustic Glass Break Sensors Not Present



Example of wall mounted acoustic glass-break sensor.

Acoustic Glass Break Sensors:

- Industry standards require all glass break sensors be located no more than 15 feet from windows being covered.
- Sensors require a clear line of sight (and sound) to work optimally.
 - Two sounds are required in rapid succession to trigger a response, sound will be absorbed by walls diminishing effectiveness.

Interior: Considerations

Alarm Panel Integrity/Security:

Alarm panels should always remain controlled.

Nefarious “parasitic” devices can be quickly and easily installed negating the effectiveness of the system.

Key Control:

Key control of any vehicle keys should be kept far enough away from exterior of the home to negate the risk of signal amplifiers to “boost” signal and start vehicle.

Router:

Any security-related devices utilizing Wi-Fi should have a dedicated router so as not to encounter a reduction in speed due to overtasking unit, as well as having a dedicated password not known to any additional parties.

Security Information:



Labeling of control switch for security lighting. Identifies a way to lower security posture quickly and covertly.



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End of report

Assessment conducted by: Ryan Quirk

Report is 27 pages and no more