



TIP SHEET

Security installation & hardware: What to consider

Minnesota requires that companies installing alarms hold a [Technology Systems Contractor](#) license. In addition, qualifying agents must also hold a [Power Limited Technician](#) license. Some municipalities require the registration of security systems.

Possible topics and questions to ask of vendors on equipment:

- **Is the equipment UL Listed?**

- UL Certification demonstrate that the products have been tested to applicable standards.

- **Is the recorder a Direct Video Recorder (DVR) or Network Video Recorder (NVR) or a hybrid of both?**

- NVRs receives preprocessed video files from IP cameras
- DVRs preprocess the video sent from the cameras

- **Main styles of Cameras**

- Vandal Dome Style
 - Vandal resistant, tough to break
 - Can't see what way camera is facing.
 - Poor Infrared
- Bullet Style
 - Highly visual, sends a warning that they are being watched.
 - Large type of lens variations-advanced features. Strong night vision.
- Turret Dome Style
 - Turret swivels, ceiling or wall mountable; Strong night vision.
 - These are not motorized unlike Pan-tilt-zoom (PTZ) cameras

- **HD Video Capture: Megapixels**

- May help ensure more improved surveillance in terms of image clarity and video quality.
- Can be limited by the sheer amount of data that needs to be processed and might be too slow to capture fast-moving details.
- Increased Storage needs/costs.
- Correct Positioning and Lens Angle is more important than Megapixel

- **What will be the Frame Rate and Shutter Speeds for each camera?**

- Frame Rate: Standard 11 to 25 FPS (Frames Per Second)
- A default 1/30s will result in a blurry subject if moving. 1/1000 and 1/2000 second shutter speeds significantly reduces blur. 1/4000 will eliminate it.

TIP SHEET

Security installation & hardware

Continued:

- **Depth of field and width of zone**
 - [Security Camera Field of View \(FOV\) Tool](#)
- **Night Vision or Infrared**
 - Be aware Vandal Dome Style does a poor job with infrared.
- **Exterior camera - Ingress Protection Rating**
 - Exterior cameras should have at least a IP65 weatherproof rating
- **Motion Activated**
 - Camera comes equipped with a motion sensor. Good for conserving video storage space.
- **Wired vs Wireless Communication**
 - Wireless gives you more placement options; wired gives you clear and reliable signals
- **Remote Monitoring/Mobile Access**
 - Need an internet connection.
- **Wide Dynamic Range**
 - Refers to its ability to record in conditions that are bright and dark accurately.
- **Storage**
 - Local Storage Security Camera, Solid State Storage/Hard Drive, or Cloud Storage?
- **Will there be a Battery Backup for your Security Camera System?**
 - UPS (Uninterruptible Power Supply) is basically a surge protector that has a built-in backup battery for your security cameras and DVR/NVR.

TIP SHEET

Security installation & hardware

Sample vendor bids:

Vendor bids should provide significant detail to help understand the specifications of what equipment is being installed.

Date		Ship Via		F.O.B.	
01/09/18					
Purchase Order Number			Sales Person		
			[REDACTED]		
Quantity			Item Number	Description	
Required	Shipped	B.O.			
3			813908024371	HIKVISION DS-2CE16D5T-AIR3ZH 2MP TURBO HD BULLET CAMERA IP66, 2.8-12MM LENS, 40M IR	
17			813908020441	HIKVISION DS-2CE56D1T-VPIR 2MP TURBO HD VANDAL DOME CAM IP66, 20M IR, HX-OD56D1T2	
1			813908020281	HIKVISION DS-7332HGHI-SH 32 CH TURBO HD DVR W/HDMI AND VGA OUT UP TO 1920X1080	
1.000			LABOR-HOME	LABOR - HOME AIM/FOCUS CAMERAS SETUP DVR NETWORK AND PHONES	
2			086429284696	SPYCLOPS SPY-DB18W20A POWER DISTRIBUTION BOX FOR CAMERAS 18-WAY 20 AMP CUSTOMER TO PROVIDE STATIC IP FOR REMOTE VIEW UNIQUE: MOUNT AND WIRE CAMERAS LABOR AND MATERIALS	

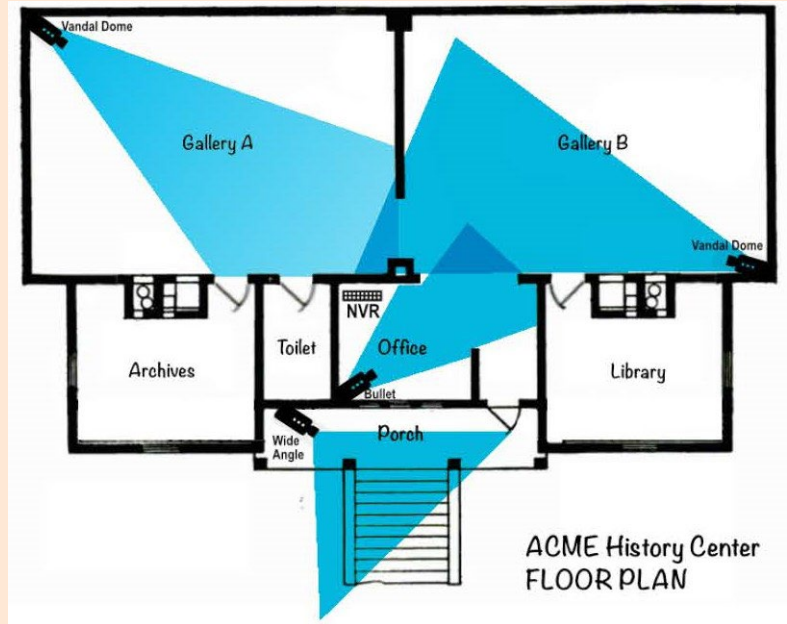
Qt	Item	Description
1	NAP K120 Kit	1632 kit with K4 keypad, battery, phone kit, transformer and Siren (keypad for back door)
1	CONTACT OHD O...	OVERHEAD DOOR CONTACT WITH 24" LEADS
2	Contact Surface Mt....	Surface Mt. 1085T-M contact Brown
2	NAP C-100STE	NAP C-100STE Duel Tec 30x35 Motion Detector
350	Wire 22/4	4 conductor Wire (non Plenum)
1	NAP GEM-K4RF K...	NAP GEM-K4RF Keypad for K120 Kits, Wireless Receiver Built in. (for front door)
2	NAP GEM-WPPAN...	Wireless Pendant Transmitter, Waterproof single button
	Labor	Labor to install equipment listed above

TIP SHEET

Security installation & hardware

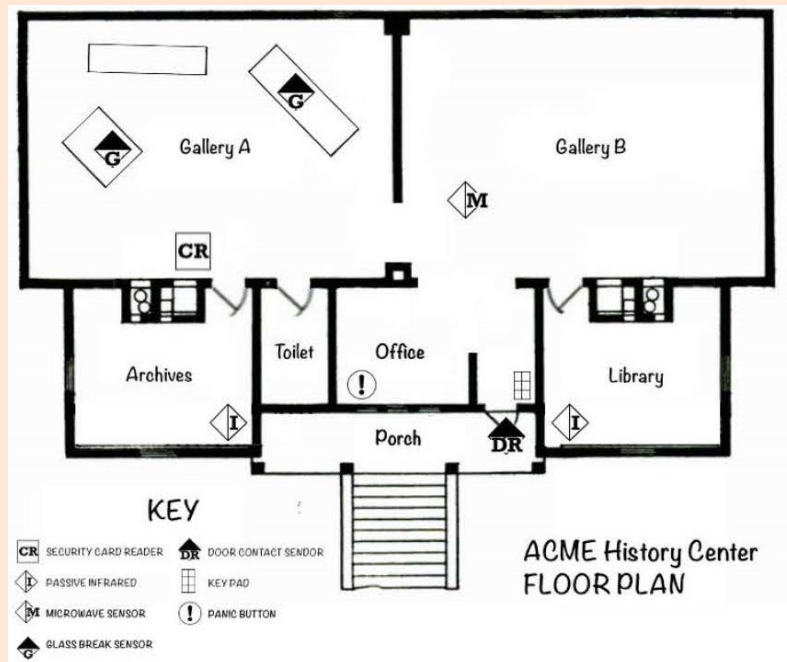
Sample floor plans:

Floor plans for cameras should show camera placement, angle, width of zone and ideally the depth of field. It should also show where the recording device (DVR/NVR) is located.



Floor plans for security systems

should show placement of components. A key should be provided.



For advice on bidding and RFPs see document [Tips & Common Practices During the Bidding/RFP Process](#)