SECURITY INSTALLATION & HARDWARE
WHAT TO CONSIDER — Tip Sheet

- 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
Continued:

- 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.

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

EXAMPLES:

<table>
<thead>
<tr>
<th>Quantity</th>
<th>Item Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>813908024371</td>
<td>HIKVISION DS-2CE16D5T-AIR3ZH 2MP TURBO HD BULLET CAMERA IP66, 2.8-12MM LENS, 40M IR</td>
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<td>17</td>
<td>813908020441</td>
<td>HIKVISION DS-2CE56D1T-VPIR 2MP TURBO HD VANDAL DOME CAM IP66, 20M IR, HX-OD56D1T2</td>
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<tr>
<td>1</td>
<td>813908020281</td>
<td>HIKVISION DS-7332HGH1-SH 32 CH TURBO HD DVR W/HDMI AND VGA OUT UP TO 1920X1080</td>
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<td>1,000</td>
<td>LABOR-HOME</td>
<td>LABOR - HOME AIM/FOCUS CAMERAS SETUP DVR NETWORK AND PHONES</td>
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<tr>
<td>2</td>
<td>088429284596</td>
<td>SPYCLOPS SPY-DB18W20A POWER DISTRIBUTION BOX FOR CAMERAS 18-WAY 20 AMP</td>
</tr>
<tr>
<td></td>
<td></td>
<td>CUSTOMER TO PROVIDE STATIC IP FOR REMOTE VIEW</td>
</tr>
<tr>
<td></td>
<td></td>
<td>UNIQUE: MOUNT AND WIRE CAMERAS LABOR AND MATERIALS</td>
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<table>
<thead>
<tr>
<th>Qt</th>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>NAP K120 Kit</td>
<td>1632 kit with K4 keypad, battery, phone kit, transformer and Siren (keypad for back door)</td>
</tr>
<tr>
<td>1</td>
<td>CONTACT OHD O...</td>
<td>OVERHEAD DOOR CONTACT WITH 24&quot; LEADS</td>
</tr>
<tr>
<td>2</td>
<td>Contact Surface M...</td>
<td>Surface Mt. 1085T-M contact Brown</td>
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<tr>
<td>2</td>
<td>NAP C-100STE</td>
<td>NAP C-100STE Duel Tec 30x35 Motion Detector 4 conductor Wire (non Plenum)</td>
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<tr>
<td>350</td>
<td>Wire 22/4</td>
<td></td>
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<tr>
<td>1</td>
<td>NAP GEM-K4RF K...</td>
<td>NAP GEM-K4RF Keypad for K120 Kits, Wireless Receiver Built in. (for front door)</td>
</tr>
<tr>
<td>2</td>
<td>NAP GEM-WPPAN...</td>
<td>Wireless Pendant Transmitter, Waterproof single button</td>
</tr>
<tr>
<td></td>
<td>Labor</td>
<td>Labor to install equipment listed above</td>
</tr>
</tbody>
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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](#)