

MARSHALLTOWN

I O W A

PLAN AND ZONING COMMISSION

Notice of Regular Meeting

Thursday, March 13, 2025, at 5:00 pm

City Council Chambers, City Hall

10 West State Street, Marshalltown, IA 50158

1. CALL TO ORDER

2. ROLL CALL

- o Boston
- o Brodin
- o Casady
- o Harris-Medina
- o Gruendler
- o Isom
- o Valbracht

3. Approve Meeting Minutes From The January 30th, 2025 Special Planning And Zoning Commission Meeting

Documents:

[1-30-2025 Meeting Minutes.pdf](#)

4. Conduct A Public Hearing And Consider Making A Recommendation On Ordinance 15099 - An Ordinance Amending The Zoning Code Relating To The Use Of Barb Wire With Fencing Applications

Documents:

[PZ Staff Report - Ordinance 15099.pdf](#)
[Sector Spotlight - Electricity Substation Physical Security.pdf](#)
[Draft Ordinance 15099.pdf](#)
[City Ordinance Change Application.pdf](#)

MISSION STATEMENT

The City of Marshalltown collaborates to provide a welcoming, safe, vibrant and growing community.

Planning and Zoning Commission – Special Meeting

Meeting Minutes – January 30th, 2025

1. Call to Order

Meeting was called to order at 5:00 PM in the City Council Chambers at 10 W. State Street

2. Roll Call:

Present: Boston, Brodin, Casady (Doyle), Gruendler, Harris-Medina, Valbracht

Absent: Isom

3. Election of Officers:

Motion by Brodin to elect Jon Boston as Chairman and Stephen Valbracht as Vice-Chairman for the Planning and Zoning Commission for 2025. Seconded by Gruendler. All ayes upon roll call. Motion carries.

4. Conduct a Public Hearing and Consider Making a Recommendation on a Zoning Text Amendment Relating to Maximum Height for In-Ground Solar Array (Accessory Use)

Clayton Ender, Assistant Director of Housing and Community Development, provided a staff review of the draft ordinance.

Jon Boston inquired with the applicant for Agenda Item #5 some technical questions regarding height and slope of solar arrays. The representatives indicated that placement of an array too low to the ground, especially in colder climates such as Iowa, risked allowing for snow drifts along the lower edges of an array which can result in damage to the solar array.

Matthew Brodin asked if the minimum fence height should be increased with a taller solar array setup. Representatives of the applicant for Agenda Item #5 responded that increased height has potential to reduce power generation from a solar array due to increased shadow effects.

Ron Frantzen, applicant for Agenda Item #5, requested that increased fence height not be added to the ordinance.

John Hall, President & CEO of the Marshalltown Area Chamber of Commerce, spoke in favor of an increase in maximum solar array height to ten feet.

Motion by Brodin to recommend approval of Ordinance 15098 as drafted by city staff. Seconded by Gruendler. All ayes upon roll call. Motion carries.

5. Conduct a Public Hearing and Consider Making a Recommendation on a Special Use Permit for In-Ground Solar (Accessory Use) at 421 East Merle Hibbs Boulevard

Clayton Ender, Assistant Director of Housing and Community Development, provided a staff review of the special use permit application.

No discussion or comments relating to this agenda item. Refer to Agenda Item #4 for additional discussion pertaining to solar arrays.

Motion by Brodin to recommend approval of the special use permit for in-ground solar (accessory use) at 421 E Merle Hibbs Blvd. Seconded by Harris-Medina. All ayes upon roll call. Motion carries.

MARSHALLTOWN

— I O W A —

HOUSING & COMMUNITY DEVELOPMENT

Deb Millizer, Director
Clayton Ender, Assistant Director
24 North Center Street
Marshalltown, IA 50158-4911
Tel - (641) 754-5756
Fax - (641) 754-5717

TO: Planning and Zoning Commission
FROM: Clayton Ender, Assistant Housing & Community Development Director
DATE: March 7th, 2025
RE: Barb Wire Fencing Zoning Text Amendment

Recommendation: Staff recommends approval and provides the following motion for the Commission's consideration:

The Planning and Zoning Commission recommends approval of Ordinance 15099 – A zoning text amendment to allow for both inward and outward facing barb wire fencing detailed in the draft ordinance.

Synopsis:

ITC Midwest LLC is working towards construction of a new electric substation at 2999 E Main Street which would necessitate security measures due to the facility being critical infrastructure. One of the security measures they wish to implement is use of barb wire on top of their fence. Typically, the applicant would install a barb wire cradle at their electric substations in a "V" fashion with the barb wire angled both inward and outward of the fence line, but as presently written city code only permits inward facing barb wire. As a result of the current code restriction staff is not authorized to allow for installation of barb wire as desired by the applicant. The current zoning ordinance language is written as follows:

§156.F.005(E)(4)(c)4

"In the GI district, barbed wire cradles facing inward toward the property may be placed on top of fences enclosing public utility buildings or wherever the Zoning Administrator finds that such is necessary to address security interest so long as the extension is no more than one foot."

In the opinion of the zoning administrator there is valid concern for security of critical infrastructure within the city limits, including electric substations. The Cybersecurity and Infrastructure Security Agency, a component of the federal Department of Homeland Security, issued a sector spotlight resource in February 2023 addressing physical security measures for electricity substations. The sector spotlight acknowledges that preventing every attack or threat to a substation is impossible, but highlights mitigating steps that can be taken to reduce or

CITY COUNCIL

Melisa Fonseca, Barry Kell, Mike Ladehoff,
Mark Mitchell, Greg Nichols, Jeff Schneider, Gary Thompson



minimize the impact of an attack or threat. Relevant measures that can be surmised from this sector spotlight pertaining to the topic of use of barbed wire fencing include the following:

1. Deter
 - a. Install visible physical security measures to dissuade potential attackers.
2. Delay
 - a. Install physical security measures to delay an intruder or assailant's access to a physical asset, providing time for incident assessment and response.

The use of barb wire in both an inward and outward facing manner would fit within the deter and delay measure categories. These measures are not limited to only electric substations however considering that there are a multitude of utilities which would fall within the category of "critical infrastructure". To these ends, staff proposes several zoning text amendments to address both the immediate need for the ITC Midwest LLC substation at 2999 E main Street, but also security measures for all major utilities throughout the community.

Fence Height

The zoning code establishes the maximum height for fences and walls based upon zoning district. Major utilities however are permitted within all zoning districts subject to issuance of a special use permit. Lesser fence or wall heights in certain zoning districts restrict the ability to implement adequate physical security measures. To these ends, staff proposes that a new fence height category pertaining only to Major Utility Uses in all zoning districts be adopted. Staff proposes that Major Utilities Uses in all zoning districts be permitted to install a fence or wall with a height not to exceed ten (10) feet.

Barbed Wire in GI, General Industrial Zoning Districts

The city has historically allowed for use of barbed wire in our industrial zoning districts. While we do presently still allow for use of barbed wire in the GI, General Industrial Zoning District the current restriction to only allow for inward facing placement of barbed wire prevents adequate deterrence and delay of an intrusion. Staff proposes that within the GI district barb wire cradles be allowed to be installed both inward and outward facing. Installation would still be restricted to no more than one-foot height, which is consistent with historical allowances. The allowance for use of barbed wire in the GI district would apply for all uses within the GI district and would be an administrative approval subject to issuance of a building permit if the height of fence/wall exceeds six (6) feet.

One difference from historical usage is that old code limited usage of barbed wire to fences/walls not exceeding six (6) feet in height, even if a greater maximum fence height was permitted. Staff recommends that as long as the combined height of fence/wall + barbed wire does not exceed the maximum height then usage of barbed wire would be permissible (ex. 9' height fence/wall + 1' barbed wire = 10').

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Barbed Wire for Major Utility Uses

Major Utilities are not limited to just the GI, General Industrial Zoning District and as such staff recommends that an allowance for use of barbed wire as a physical security measure should be made available for Major Utility uses in all zoning districts. When located outside of the GI zoning district staff does recommend that usage of barbed wire be subject to issuance of a special use permit. The purpose of the special use permit is to allow for oversight on the application of barbed wire and to inform neighboring property owners of the intended usage considering these major utilities may be sited in places in which barbed wire may not be a common material used (ex. Residential zoning districts).

As with the GI zoning district proposed regulations, staff recommends that as long as the combined height of fence/wall + barbed wire does not exceed the maximum height for a fence or wall associated with a major utility usage then usage of barbed wire would be permissible (ex. 9' height fence/wall + 1' barbed wire = 10').

Temporary Security Barbed Wire

In addition to the usage of barbed wire associated with industrial uses and major utility uses there are instances in which barb wire is needed for temporary security purposes. Compiling a complete list of possible circumstances necessitating use of temporary barb wire would be difficult to complete, but there is at least one example to illustrate the intended usage of this provision. The former McFarland Clinic facility at 312 E Main Street presently has fencing and barb wire installed on the roof of the facility at the skywalk bridge across E Main Street. This installation was completed to deter trespass from the abandoned former hospital on the south side of E Main Street. Per the current zoning code this installation is not permitted, but in the opinion of the zoning administrator there is reasonable need to permit temporary security measures for the building as a result of the abandoned status of the neighboring building.

The intent of this provision is to authorize the zoning administrator to administratively permit usage of barb wire in all zoning districts for temporary security measures. The provision also establishes that temporary barbed wire shall be removed within 30 days of an order of the zoning administrator to remove such barbed wire or upon cessation of the conditions which necessitated the temporary security measures, whichever occurs first.

Attachments: Zoning Ordinance Change Application
CISA Sector Spotlight: Electricity Substation Physical Security
Draft Ordinance 15099

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Date Submitted & Fee Paid: _____

HOUSING & COMMUNITY DEVELOPMENT DEPARTMENT

36 North Center Street, Marshalltown, IA 50158

Ph: 641-754-5756 Fax: 641-754-5742

www.ci.marshalltown.ia.us

Zoning Ordinance Change Application Packet

All items listed must be submitted with this application:

Failure to complete and submit all the required materials as a part of this application will result in a delay in accepting your application until it is complete. In addition, other information may be requested at the required public meetings.

_____ **Application fee.** A \$500 fee is required payable to “City of Marshalltown.” The fee must be paid when the application is submitted to the Zoning Office.

_____ **Description of Ordinance Change.** Please attach a sheet of paper explaining in detail why you are seeking an ordinance change. Information should include how proposed changes would affect other properties.

Please type or print legibly in ink.

Requester's Name:

ITC Midwest LLC

Mailing Address:

3165 Edgewood Parkway SW, Cedar Rapids, IA 52404

Phone:

319-297-6765

Email:

clevi@itctransco.com

Current Zoning Classification of Property in Question (if related to ordinance change) :

GI

Current Use (if related to ordinance change):

NA

Proposed Use (if related to ordinance change):

Electric Transmission Substation

Signature and Date:

February 17, 2025



ITC Midwest proposes a Zoning Text Amendment to City Code Section 156.F.005(E)(4)(c). The current code states:

“In the GI district, barbed wire cradles facing inward toward the property may be placed on top of fences enclosing public utility buildings or wherever the Zoning Administrator finds that such is necessary to address security interest so long as the extension is no more than one foot.”

ITC Midwest proposes a change in the text that states any or all of the following:

1. *“In the GI district, barbed wire cradles facing **outward** toward the property may be placed on top of fences enclosing public utility buildings or wherever the Zoning Administrator finds that such is necessary to address security interest so long as the extension is no more than one foot.”*
2. *“In the GI district, barbed wire cradles facing **both inward and outward** toward the property may be placed on top of fences enclosing public utility buildings or wherever the Zoning Administrator finds that such is necessary to address security interest so long as the extension is no more than one foot.”*
3. *In the GI district, barbed wire cradles may be placed on top of the fences enclosing public utility buildings where higher security is needed or wherever the Zoning Administrator finds that such is necessary to address security interest so long as the extension is no more than one foot and as long as the extension is over the fence owners property.*

The reason for this request is due to outward-facing barbed wire being essential for critical infrastructure, as it's nearly impossible to climb over from outside the fence. Inward-facing barbed wire reduces the effectiveness of security and safety, as it's easy to scale the fence and jump over the inward-facing barbs.

ITC Midwest uses a V-wire that faces both inward and outward at a 45-degree angle (see attachment). This prevents both ingress and egress over the fence and enhances both security and safety.

At present, ITC Midwest has four electric transmission substations in Marshalltown, with the construction of a fifth slated to begin in the next month. ITC Midwest also has assets in two Alliant Energy-owned substations. In addition, Alliant has several distribution-only substations located in Marshalltown. All substations would benefit from this change, adding an extra security measure. I believe most of these, if not all, already have outward-facing barbed wire.



SECTOR SPOTLIGHT: Electricity Substation Physical Security

In recent months, there has been an increase in reports of physical attacks on electric substations. Some incidents have resulted in thousands of customer outages. Attacks at several substations located in the Pacific Northwest during November 2022 resulted in customer outages and damage to substation equipment. On December 3, 2022, a physical attack on two substations in Moore County, North Carolina caused severe damage to the facilities. According to an energy provider, the ballistic attack resulted in approximately 45,000 outages. Federal authorities have also disrupted recent planned attacks before they were perpetrated.¹ Providing stakeholders and service providers with updated threat information and protective measures can improve a substation's on-site physical security—a vital strategy whether an attack is the result of domestic violent extremist (DVE) agendas or criminal actions by individuals.

The **Sector Spotlight: Electricity Substation Physical Security** increases awareness of available options that can enhance the physical security of electrical substations, establishes a means and path forward toward protected and resilient substations, and helps mitigate the inherent risks of owning and operating an electrical substation. Layered physical security is of the utmost importance to protecting an electrical substation and each substation requires a security plan tailored to its unique operating environment.

A substation is a high-voltage (HV) electric system facility used to switch generating stations, transmission systems, distribution systems, and to step voltages up or down, with some substations transforming and converting power from alternating current (AC) to direct current (DC) or DC to AC, respectively. Some substations are small with little more than a transformer and associated switches.

Step-Up Transmission Substations receive electric power from a nearby generating facility and use a large power transformer to increase the voltage for transmission to distant locations.

Step-Down Transmission Substations are located at switching points in an electrical grid. They connect different parts of a grid and are a source for subtransmission lines or distribution lines. The step-down substation can change the transmission voltage to a subtransmission voltage. The subtransmission voltage lines can then serve as a source to distribution substations.

Distribution Substations are located near end users with substation transformers changing the transmission or subtransmission voltage to lower levels for use by end users, including industrial, commercial, and residential customers.

LAYERED SECURITY STRATEGY

While it is impossible to prevent every attack against substations, there are mitigating steps—including physical protective security measures—to reduce or minimize the impact of an attack. Substation owners and operators should adopt a layered approach to physical security involving the following concepts:

Deter: Install visible physical security measures to dissuade potential attackers.

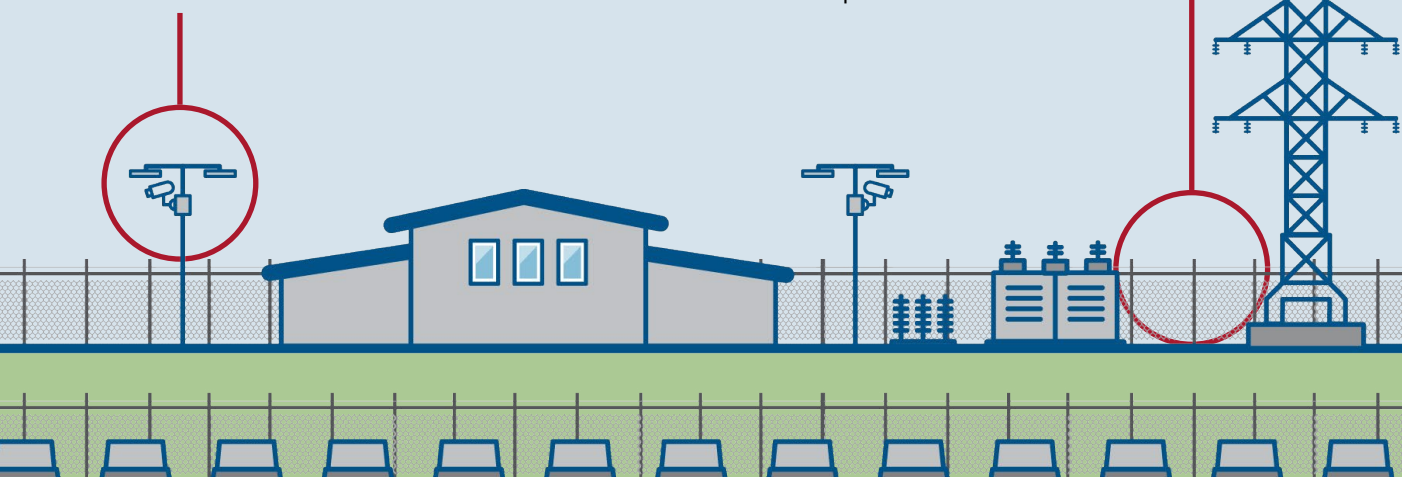
Assess: Develop a process to evaluate the legitimacy of an alarm and the procedural steps required to respond.

Communicate: Utilize communication systems to send and receive alarm/video signals and voice and data information. Include a documented process to communicate and report detected intrusions.

Respond: Develop measures to immediately assess, interrupt, or apprehend an intruder.

Detect: Install physical security measures to detect unauthorized intrusion and provide local or remote intruder alerts or notifications.

Delay: Install physical security measures to delay an intruder or assailant's access to a physical asset, providing time for incident assessment and response.



Intelligence Analysis: Design measures to collect, process, analyze, evaluate, and interpret information on potential threats.

Audit: Periodically review and inspect physical security measures to evaluate their effectiveness. This will be useful in post-incident forensics.

THREAT ENVIRONMENT

The North American electrical grid infrastructure is vulnerable to security breaches.² Consequences of security breaches include the possible damage or destruction of substation components resulting in service outages, as well as cross-sector impacts to other supported and supporting critical infrastructure sectors.

There are over 79,000 transmission substations in the United States;³ attacks on these substations could result in severe outages or damage to the electrical grid. For more than 10 years, the electric utility industry and government agencies have engaged in activities to secure HV transformers from physical attack and to improve recovery in the event of a successful attack. These activities include coordination and information sharing, spare equipment programs, security standards, security exercises, and other measures.

Common attack methods and tactics, techniques, and procedures include:

- Vandalism, Theft, and Sabotage:** A physical attack that could potentially impact electric power system adequacy or reliability; vandalism which targets components of any security systems; damage or destruction of a facility that results from actual or suspected intentional human action.
- Suspected Suspicious Behavior:** Behavior such as unusual photography, surveillance, or pre-operational activities at a facility (excluding weather or natural disaster related threats) which has the potential to degrade the normal operation of the facility.
- Physical Attack:** A physical threat to a facility (excluding weather or natural disaster related threats) which has the potential to degrade the normal operation of the facility.
- Cyberattacks:** Attacks on cyber-components that could potentially impact electric power system adequacy or reliability.
- Ballistic Attack:** An attack involving small arms being fired at close range or those from high-caliber rifles fired from long distances against substation transformers and other critical components.
- Explosive Device:** An improvised explosive device (IED), vehicle-borne IED, or improvised incendiary device (IID) that could be used as a terrorist bomb attack against substation transformers and other critical components.
- Vehicle Ramming Attack:** The use of a vehicle as a weapon against security measures, substation transformers, and other critical components.
- Unmanned Aircraft System (UAS):** Unmanned Aircraft Systems can easily bypass traditional security measures to conduct surveillance and damage transmission lines and substations, and possibly be used to gain access to unsecured networks and critical operational components.

1 U.S. Federal Energy Regulatory Commission. *Docket No. RD23-2-000*, by Kimberly D. Bose. Order directing report. 2022. [ferc.gov/media/e-27-rd23-2-000](https://www.ferc.gov/media/e-27-rd23-2-000)

2 National Academies of Sciences, Engineering, and Medicine. 2021. *The Future of Electric Power in the United States*. Washington, DC: The National Academies Press. doi.org/10.17226/25968

3 U.S. Department of Homeland Security. n.d. Homeland Infrastructure Foundation-Level Data (HIFLD) Open Data. hifld-geoplatform.opendata.arcgis.com/



SECTOR SPOTLIGHT: Electricity Substation Physical Security

PHYSICAL SECURITY PROTECTIVE MEASURES

The first step in determining whether to adopt or implement any protective measures is to conduct a threat and vulnerability assessment (TVA) unique to each substation and in compliance with local and federal regulations. Protective measures should only be implemented based on a tailored threat assessment for each substation; a 'boilerplate' TVA approach—wherein the same TVA is applied to all substations—is highly discouraged and unlikely to adequately address specific threats for each unique substation.

Facility Controls

Control Center: If the substation is large enough to have a control center, all entrances should be electronically monitored and where possible, covered by closed-circuit television (CCTV) systems. All doors should be metal and fitted with an intrusion detection system (IDS); any windows should be covered with metal bars and shatter-resistant film.

Control Cabinet: For smaller substations with no control house and fitted with a control cabinet mounted with the substation yard, all control cabinets should ideally be fitted with IDS, monitored by CCTV, and be ballistic resistant.

Monitoring and Surveillance

CCTV: Ensure CCTV covers the control house or control cabinet as well as access points to include vehicle gates and the entire perimeter of the substation. The CCTV feed should be recorded to enable better post-incident forensics.

Security Monitoring: Ensure security, operations, or maintenance personnel check substations—including small distribution substations—on a regular basis, and possibly on a varied timetable, so that attackers cannot take advantage of a predictable schedule. Regular site visits, along with a generally well-maintained substation site (both inside and outside the fence line), are important deterrents.

Physical Access

Locks and Key Control: Establish and document key control procedures for key issuance, tracking, collection, loss, and unauthorized duplication. Use patented keys to prevent unauthorized duplication; conduct key inventories/audits in accordance with local standards.

Physical Security Control: Methods to control, monitor, and log physical access:

- Controlling physical access via card keys, special locks, or other authentication devices.
- Monitoring physical access via alarm systems or human observation of access points.
- Logging physical access via computerized logging, video recording, or manual logging.

After TVA completion for each substation, determine which substations should be prioritized. This distinction will assist with allocating limited resources to those substations whose loss or outage would have the greatest impact on the operation of facilities or assets served by the substation. Prioritizing by criticality is notably more important than prioritizing strictly by substation physical vulnerability.

Vehicle Access

Vehicle Gates: Ensure gates are properly functioning, well maintained, and secured with appropriate locking devices designed to resist tampering.

Vehicle Barriers: Consider use of penetration resistant physical barriers, such as concrete jersey-style barriers or other barriers to mitigate the use of vehicle as a weapon.

Personnel

Personnel Training: Provide security awareness briefings, including insider threat mitigation, to all personnel upon hiring and refresher training at regular intervals.

Outreach:

- Conduct outreach with local first responders and ensure they are aware of each substation's criticality/significance and which substations are the most important.
- Conduct outreach with residents living near substations (if applicable) and encourage them to report suspicious activity.

Drills and Exercises: Conduct periodic security drills or exercises in coordination with emergency responders.

Procedures

Communication: Develop written internal and external notification requirements and procedures for security events. Document and update contact information for local, state, and federal law enforcement agencies. Record law enforcement response times for each substation.

Maintenance and Testing: Develop written procedures to ensure security equipment is in functioning order with deficiencies addressed promptly.

Regulations: All substations must comply with federal regulations through the American National Standards Institute's *National Electrical Safety Code*, Occupational Safety and Health Administration guidelines, chemical safety and reporting standards, the National Energy Reliability Corporation (NERC) Critical Infrastructure Protection (CIP) standards, and follow all local regulations.

Perimeter Security

Ballistic Shielding: Consider installing shielding or obscuring the line of sight to protect critical components of the most important/critical substations.

Facility Lighting:

Provide sufficient lighting for human or technological recognition of intrusion into facility perimeter or critical areas.

Perimeter Fencing: Ensure fencing completely encloses the substation; is well maintained; is updated in accordance with organizational standards; has appropriate signage indicating 'Trespass is a violation of local laws' to discourage trespassing; and is free of vegetation to aid in facility access and sight lines.

RESOURCES

Chemical Facility Anti-Terrorism Standards: [cisa.gov/chemical-facility-anti-terrorism-standards](https://www.cisa.gov/chemical-facility-anti-terrorism-standards)

ChemLock: [cisa.gov/chemlock](https://www.cisa.gov/chemlock)

CISA's Critical Infrastructure Exercises: [cisa.gov/critical-infrastructure-exercises](https://www.cisa.gov/critical-infrastructure-exercises)

Critical Infrastructure Vulnerability Assessments: [cisa.gov/critical-infrastructure-vulnerability-assessments](https://www.cisa.gov/critical-infrastructure-vulnerability-assessments)

CISA Infrastructure Security: [cisa.gov/infrastructure-security](https://www.cisa.gov/infrastructure-security)

CISA Sector Spotlight: Cyber-Physical Considerations Electricity Sub-Sector: [cisa.gov/sector-spotlight-cyber-physical-security-considerations-electricity-sub-sector](https://www.cisa.gov/sector-spotlight-cyber-physical-security-considerations-electricity-sub-sector)

CISA Protective Security Advisors: [cisa.gov/protective-security-advisors](https://www.cisa.gov/protective-security-advisors)

Department of Commerce National Institute of Standards and Technology: [nist.gov/](https://www.nist.gov/)

Electricity Information Sharing and Analysis Center: [eisac.com/](https://www.eisac.com/)

North American Electric Reliability Corporation: [nerc.com/Pages/default.aspx](https://www.nerc.com/Pages/default.aspx)

US Department of Energy Office of Cybersecurity, Energy Security, and Emergency Response (CESER): [energy.gov/ceser/office-cybersecurity-energy-security-and-emergency-response](https://www.energy.gov/ceser/office-cybersecurity-energy-security-and-emergency-response)

For more information or to seek additional help, contact us at Central@cisa.gov.

ORDINANCE 15099

AN ORDINANCE TO AMEND THE CODE OF ORDINANCES, CITY OF MARSHALLTOWN, IOWA, CHAPTER 156: ZONING, CRITICAL INFRASTRUCTURE AND BARB WIRE FENCING

WHEREAS, the City Council of the City of Marshalltown, Iowa, has adopted Chapter 156 (Zoning); and

WHEREAS, the City Council has identified various provisions of Chapter 156 requiring amendment; and

WHEREAS, the City Council finds the following amendments to Chapter 156 to be in the best interest of the City and the public in general.

NOW THEREFORE BE IT ORDAINED BY THE COUNCIL OF THE CITY OF MARSHALLTOWN, IOWA:

Section 1. Amendment. A new Section 156.F.005(E)(2)(f), which pertains to the maximum height of a fence or wall, shall be added with the following language:

“Shall be ten feet for all major utility uses in all zoning districts.”

Section 2. Amendment. Section 156.F.005(E)(4)(c)4 shall be deleted in its entirety and replaced with the following language:

“In the GI district, all permitted uses may place barbed wire cradles on top of fences or walls facing both inward and outward toward the property so long as the extension is no more than one foot and as long so the extension is over the fence or wall owner’s property. The combined height of the barbed wire cradle and the fence or wall shall not exceed the maximum height of the fence or wall.”

Section 3. Amendment. A new Section 156.F.005(E)(4)(c)5 shall be added with the following language:

“Subject to issuance of a special use permit for properties outside the GI zoning district, all major utility uses may place barbed wire cradles on top of fences or walls facing both inward and outward toward the property so long as the extension is no more than one foot and so long as the extension is over the fence or wall owner’s property. The combined height of the barbed wire cradle and the fence or wall shall not exceed the maximum height of the fence or wall.”

Section 4. Amendment. A new Section 156.F.005(E)(4)(c)6 shall be added with the following language:

“Temporary barbed wire cradles may be placed on top of fences or walls in all zoning district so long as the extension is no more than one foot and so long as the zoning administrator determines

that such an installation is necessary to address temporary security interest. Placement shall be permitted to be facing both inward and outward toward the property so long as the extension is over the fence or wall owner's property. The combined height of the barbed wire cradle and the fence or wall shall not exceed the maximum height of the fence or wall. Temporary barbed wire shall be removed within 30 days of an order of the zoning administrator to remove such barbed wire or upon cessation of the conditions which necessitated the temporary security measures, whichever occurs first."

Section 5. Severability Clause. If any section, provision, or part of this ordinance shall be adjudged invalid or unconstitutional, such adjudication shall not affect the validity of the ordinance as a whole or any section, provision or part thereof not adjudged invalid or unconstitutional.

Section 6. When Effective. This ordinance shall be in full force and effect after its final passage, approval and publication as provided by law.

Passed this _____ day of _____ 2025 and signed this _____ day of _____ 2025.

CITY OF MARSHALLTOWN, IOWA

Joel Greer, Mayor

ATTEST:

Alicia Hunter, City Clerk

I, Alicia Hunter, City Clerk of the City of Marshalltown, Iowa, do hereby certify that the foregoing ORDINANCE was passed and approved by the City Council of the City of Marshalltown, Iowa, on the _____ day of _____ 2025, and was published in the Marshalltown Times-Republican, a newspaper of general circulation in the City of Marshalltown, Iowa, on the _____ day of _____ 2025.

Alicia Hunter, City Clerk



SECTOR SPOTLIGHT: Electricity Substation Physical Security

In recent months, there has been an increase in reports of physical attacks on electric substations. Some incidents have resulted in thousands of customer outages. Attacks at several substations located in the Pacific Northwest during November 2022 resulted in customer outages and damage to substation equipment. On December 3, 2022, a physical attack on two substations in Moore County, North Carolina caused severe damage to the facilities. According to an energy provider, the ballistic attack resulted in approximately 45,000 outages. Federal authorities have also disrupted recent planned attacks before they were perpetrated.¹ Providing stakeholders and service providers with updated threat information and protective measures can improve a substation's on-site physical security—a vital strategy whether an attack is the result of domestic violent extremist (DVE) agendas or criminal actions by individuals.

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LAYERED SECURITY STRATEGY

While it is impossible to prevent every attack against substations, there are mitigating steps—including physical protective security measures—to reduce or minimize the impact of an attack. Substation owners and operators should adopt a layered approach to physical security involving the following concepts:

Deter: Install visible physical security measures to dissuade potential attackers.

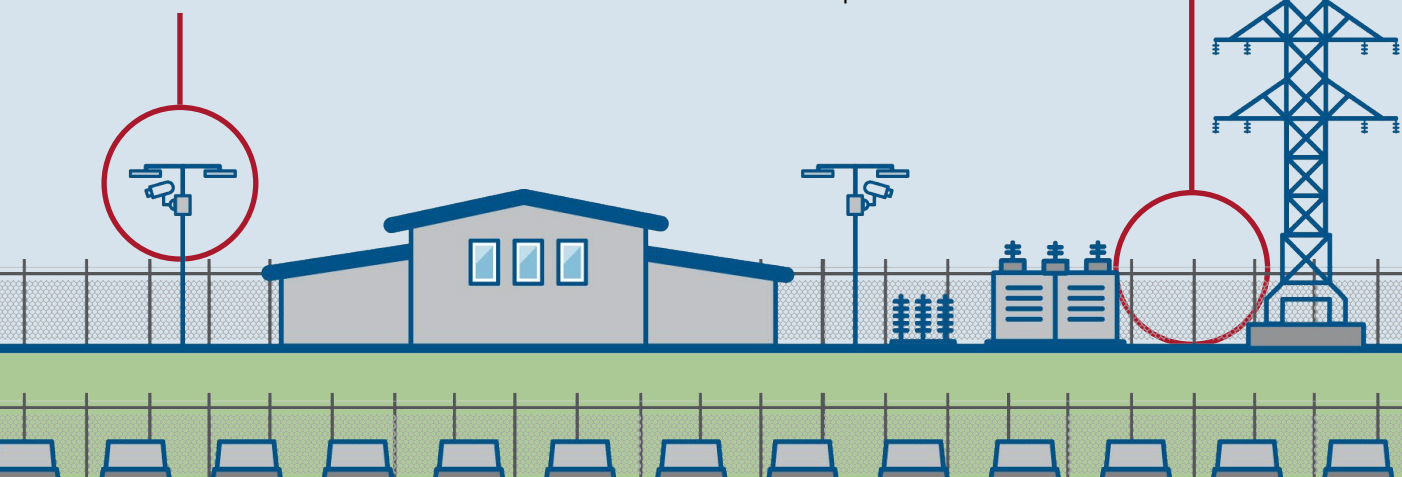
Assess: Develop a process to evaluate the legitimacy of an alarm and the procedural steps required to respond.

Communicate: Utilize communication systems to send and receive alarm/video signals and voice and data information. Include a documented process to communicate and report detected intrusions.

Respond: Develop measures to immediately assess, interrupt, or apprehend an intruder.

Detect: Install physical security measures to detect unauthorized intrusion and provide local or remote intruder alerts or notifications.

Delay: Install physical security measures to delay an intruder or assailant's access to a physical asset, providing time for incident assessment and response.



Intelligence Analysis: Design measures to collect, process, analyze, evaluate, and interpret information on potential threats.

Audit: Periodically review and inspect physical security measures to evaluate their effectiveness. This will be useful in post-incident forensics.

THREAT ENVIRONMENT

The North American electrical grid infrastructure is vulnerable to security breaches.² Consequences of security breaches include the possible damage or destruction of substation components resulting in service outages, as well as cross-sector impacts to other supported and supporting critical infrastructure sectors.

There are over 79,000 transmission substations in the United States;³ attacks on these substations could result in severe outages or damage to the electrical grid. For more than 10 years, the electric utility industry and government agencies have engaged in activities to secure HV transformers from physical attack and to improve recovery in the event of a successful attack. These activities include coordination and information sharing, spare equipment programs, security standards, security exercises, and other measures.

Common attack methods and tactics, techniques, and procedures include:

- Vandalism, Theft, and Sabotage:** A physical attack that could potentially impact electric power system adequacy or reliability; vandalism which targets components of any security systems; damage or destruction of a facility that results from actual or suspected intentional human action.
- Suspected Suspicious Behavior:** Behavior such as unusual photography, surveillance, or pre-operational activities at a facility (excluding weather or natural disaster related threats) which has the potential to degrade the normal operation of the facility.
- Physical Attack:** A physical threat to a facility (excluding weather or natural disaster related threats) which has the potential to degrade the normal operation of the facility.
- Cyberattacks:** Attacks on cyber-components that could potentially impact electric power system adequacy or reliability.
- Ballistic Attack:** An attack involving small arms being fired at close range or those from high-caliber rifles fired from long distances against substation transformers and other critical components.
- Explosive Device:** An improvised explosive device (IED), vehicle-borne IED, or improvised incendiary device (IID) that could be used as a terrorist bomb attack against substation transformers and other critical components.
- Vehicle Ramming Attack:** The use of a vehicle as a weapon against security measures, substation transformers, and other critical components.
- Unmanned Aircraft System (UAS):** Unmanned Aircraft Systems can easily bypass traditional security measures to conduct surveillance and damage transmission lines and substations, and possibly be used to gain access to unsecured networks and critical operational components.

1 U.S. Federal Energy Regulatory Commission. *Docket No. RD23-2-000*, by Kimberly D. Bose. Order directing report. 2022. [ferc.gov/media/e-27-rd23-2-000](https://www.ferc.gov/media/e-27-rd23-2-000)

2 National Academies of Sciences, Engineering, and Medicine. 2021. *The Future of Electric Power in the United States*. Washington, DC: The National Academies Press. doi.org/10.17226/25968

3 U.S. Department of Homeland Security. n.d. Homeland Infrastructure Foundation-Level Data (HIFLD) Open Data. hifld-geoplatform.opendata.arcgis.com/



SECTOR SPOTLIGHT: Electricity Substation Physical Security

PHYSICAL SECURITY PROTECTIVE MEASURES

The first step in determining whether to adopt or implement any protective measures is to conduct a threat and vulnerability assessment (TVA) unique to each substation and in compliance with local and federal regulations. Protective measures should only be implemented based on a tailored threat assessment for each substation; a 'boilerplate' TVA approach—wherein the same TVA is applied to all substations—is highly discouraged and unlikely to adequately address specific threats for each unique substation.

Facility Controls

Control Center: If the substation is large enough to have a control center, all entrances should be electronically monitored and where possible, covered by closed-circuit television (CCTV) systems. All doors should be metal and fitted with an intrusion detection system (IDS); any windows should be covered with metal bars and shatter-resistant film.

Control Cabinet: For smaller substations with no control house and fitted with a control cabinet mounted with the substation yard, all control cabinets should ideally be fitted with IDS, monitored by CCTV, and be ballistic resistant.

Monitoring and Surveillance

CCTV: Ensure CCTV covers the control house or control cabinet as well as access points to include vehicle gates and the entire perimeter of the substation. The CCTV feed should be recorded to enable better post-incident forensics.

Security Monitoring: Ensure security, operations, or maintenance personnel check substations—including small distribution substations—on a regular basis, and possibly on a varied timetable, so that attackers cannot take advantage of a predictable schedule. Regular site visits, along with a generally well-maintained substation site (both inside and outside the fence line), are important deterrents.

Physical Access

Locks and Key Control: Establish and document key control procedures for key issuance, tracking, collection, loss, and unauthorized duplication. Use patented keys to prevent unauthorized duplication; conduct key inventories/audits in accordance with local standards.

Physical Security Control: Methods to control, monitor, and log physical access:

- Controlling physical access via card keys, special locks, or other authentication devices.
- Monitoring physical access via alarm systems or human observation of access points.
- Logging physical access via computerized logging, video recording, or manual logging.

After TVA completion for each substation, determine which substations should be prioritized. This distinction will assist with allocating limited resources to those substations whose loss or outage would have the greatest impact on the operation of facilities or assets served by the substation. Prioritizing by criticality is notably more important than prioritizing strictly by substation physical vulnerability.

Vehicle Access

Vehicle Gates: Ensure gates are properly functioning, well maintained, and secured with appropriate locking devices designed to resist tampering.

Vehicle Barriers: Consider use of penetration resistant physical barriers, such as concrete jersey-style barriers or other barriers to mitigate the use of vehicle as a weapon.

Personnel

Personnel Training: Provide security awareness briefings, including insider threat mitigation, to all personnel upon hiring and refresher training at regular intervals.

Outreach:

- Conduct outreach with local first responders and ensure they are aware of each substation's criticality/significance and which substations are the most important.
- Conduct outreach with residents living near substations (if applicable) and encourage them to report suspicious activity.

Drills and Exercises: Conduct periodic security drills or exercises in coordination with emergency responders.

Procedures

Communication: Develop written internal and external notification requirements and procedures for security events. Document and update contact information for local, state, and federal law enforcement agencies. Record law enforcement response times for each substation.

Maintenance and Testing: Develop written procedures to ensure security equipment is in functioning order with deficiencies addressed promptly.

Regulations: All substations must comply with federal regulations through the American National Standards Institute's *National Electrical Safety Code*, Occupational Safety and Health Administration guidelines, chemical safety and reporting standards, the National Energy Reliability Corporation (NERC) Critical Infrastructure Protection (CIP) standards, and follow all local regulations.

Perimeter Security

Ballistic Shielding: Consider installing shielding or obscuring the line of sight to protect critical components of the most important/critical substations.

Facility Lighting:

Provide sufficient lighting for human or technological recognition of intrusion into facility perimeter or critical areas.

Perimeter Fencing: Ensure fencing completely encloses the substation; is well maintained; is updated in accordance with organizational standards; has appropriate signage indicating 'Trespass is a violation of local laws' to discourage trespassing; and is free of vegetation to aid in facility access and sight lines.

RESOURCES

Chemical Facility Anti-Terrorism Standards: [cisa.gov/chemical-facility-anti-terrorism-standards](https://www.cisa.gov/chemical-facility-anti-terrorism-standards)

ChemLock: [cisa.gov/chemlock](https://www.cisa.gov/chemlock)

CISA's Critical Infrastructure Exercises: [cisa.gov/critical-infrastructure-exercises](https://www.cisa.gov/critical-infrastructure-exercises)

Critical Infrastructure Vulnerability Assessments: [cisa.gov/critical-infrastructure-vulnerability-assessments](https://www.cisa.gov/critical-infrastructure-vulnerability-assessments)

CISA Infrastructure Security: [cisa.gov/infrastructure-security](https://www.cisa.gov/infrastructure-security)

CISA Sector Spotlight: Cyber-Physical Considerations Electricity Sub-Sector: [cisa.gov/sector-spotlight-cyber-physical-security-considerations-electricity-sub-sector](https://www.cisa.gov/sector-spotlight-cyber-physical-security-considerations-electricity-sub-sector)

CISA Protective Security Advisors: [cisa.gov/protective-security-advisors](https://www.cisa.gov/protective-security-advisors)

Department of Commerce National Institute of Standards and Technology: [nist.gov/](https://www.nist.gov/)

Electricity Information Sharing and Analysis Center: [eisac.com/](https://www.eisac.com/)

North American Electric Reliability Corporation: [nerc.com/Pages/default.aspx](https://www.nerc.com/Pages/default.aspx)

US Department of Energy Office of Cybersecurity, Energy Security, and Emergency Response (CESER): [energy.gov/ceser/office-cybersecurity-energy-security-and-emergency-response](https://www.energy.gov/ceser/office-cybersecurity-energy-security-and-emergency-response)

For more information or to seek additional help, contact us at Central@cisa.gov.

ORDINANCE 15099

AN ORDINANCE TO AMEND THE CODE OF ORDINANCES, CITY OF MARSHALLTOWN, IOWA, CHAPTER 156: ZONING, CRITICAL INFRASTRUCTURE AND BARB WIRE FENCING

WHEREAS, the City Council of the City of Marshalltown, Iowa, has adopted Chapter 156 (Zoning); and

WHEREAS, the City Council has identified various provisions of Chapter 156 requiring amendment; and

WHEREAS, the City Council finds the following amendments to Chapter 156 to be in the best interest of the City and the public in general.

NOW THEREFORE BE IT ORDAINED BY THE COUNCIL OF THE CITY OF MARSHALLTOWN, IOWA:

Section 1. Amendment. A new Section 156.F.005(E)(2)(f), which pertains to the maximum height of a fence or wall, shall be added with the following language:

“Shall be ten feet for all major utility uses in all zoning districts.”

Section 2. Amendment. Section 156.F.005(E)(4)(c)4 shall be deleted in its entirety and replaced with the following language:

“In the GI district, all permitted uses may place barbed wire cradles on top of fences or walls facing both inward and outward toward the property so long as the extension is no more than one foot and as long so the extension is over the fence or wall owner’s property. The combined height of the barbed wire cradle and the fence or wall shall not exceed the maximum height of the fence or wall.”

Section 3. Amendment. A new Section 156.F.005(E)(4)(c)5 shall be added with the following language:

“Subject to issuance of a special use permit for properties outside the GI zoning district, all major utility uses may place barbed wire cradles on top of fences or walls facing both inward and outward toward the property so long as the extension is no more than one foot and so long as the extension is over the fence or wall owner’s property. The combined height of the barbed wire cradle and the fence or wall shall not exceed the maximum height of the fence or wall.”

Section 4. Amendment. A new Section 156.F.005(E)(4)(c)6 shall be added with the following language:

“Temporary barbed wire cradles may be placed on top of fences or walls in all zoning district so long as the extension is no more than one foot and so long as the zoning administrator determines

that such an installation is necessary to address temporary security interest. Placement shall be permitted to be facing both inward and outward toward the property so long as the extension is over the fence or wall owner's property. The combined height of the barbed wire cradle and the fence or wall shall not exceed the maximum height of the fence or wall. Temporary barbed wire shall be removed within 30 days of an order of the zoning administrator to remove such barbed wire or upon cessation of the conditions which necessitated the temporary security measures, whichever occurs first."

Section 5. Severability Clause. If any section, provision, or part of this ordinance shall be adjudged invalid or unconstitutional, such adjudication shall not affect the validity of the ordinance as a whole or any section, provision or part thereof not adjudged invalid or unconstitutional.

Section 6. When Effective. This ordinance shall be in full force and effect after its final passage, approval and publication as provided by law.

Passed this ____ day of _____ 2025 and signed this ____ day of _____ 2025.

CITY OF MARSHALLTOWN, IOWA

Joel Greer, Mayor

ATTEST:

Alicia Hunter, City Clerk

I, Alicia Hunter, City Clerk of the City of Marshalltown, Iowa, do hereby certify that the foregoing ORDINANCE was passed and approved by the City Council of the City of Marshalltown, Iowa, on the ____ day of _____ 2025, and was published in the Marshalltown Times-Republican, a newspaper of general circulation in the City of Marshalltown, Iowa, on the ____ day of _____ 2025.

Alicia Hunter, City Clerk

MARSHALLTOWN

— I O W A —

HOUSING & COMMUNITY DEVELOPMENT DEPARTMENT

36 North Center Street, Marshalltown, IA 50158

Ph: 641-754-5756 Fax: 641-754-5742

www.marshalltown-ia.gov

Zoning Ordinance Change Application Packet

Application: Applications will not be accepted unless complete. All required items must be submitted with the application. Failure to complete and submit all the required materials as a part of this application will result in a delay in accepting your application until it is complete.

Notifications: A notice of public hearing with your name and request will be published in the Times-Republican newspaper.

1. The burden of providing sufficient evidence to make the applicant's case shall be on the applicant at all times.
2. The ordinance change request must be considered by the Plan Zoning Commission and the City Council. Contact the Housing & Community Development Director for a schedule of upcoming meetings.
3. The Commission will review the request at a regularly scheduled meeting at least once prior to the *public hearing*. A *public hearing* must be held by the Commission prior to making a recommendation to the City Council. The Plan Zoning Commission meets in the City Council Chambers at City Hall at 5:00 PM on the Thursday following the first Council meeting of the month.
4. The Marshalltown City Council meets on the 2nd and 4th Mondays of the month at 5:30 p.m. in the City Hall Council Chambers. According to Iowa Code, ordinance changes and amendments require three readings and a public hearing.
5. Under optimum conditions it takes about 4-6 months for an ordinance change if the issue is not controversial. More in-depth ordinance changes may require additional time.
6. The burden of research related to proposed changes is not to be put solely on City staff. **Applicants will be required to gather some information as part of the ordinance change process.** This may include, but not limited too, research on similar ordinances from other communities, the number/type of affected properties should change be approved, how proposed changes relate to other City departments, etc.

Date Submitted & Fee Paid: _____

HOUSING & COMMUNITY DEVELOPMENT DEPARTMENT

36 North Center Street, Marshalltown, IA 50158

Ph: 641-754-5756 Fax: 641-754-5742

www.ci.marshalltown.ia.us

Zoning Ordinance Change Application Packet

All items listed must be submitted with this application:

Failure to complete and submit all the required materials as a part of this application will result in a delay in accepting your application until it is complete. In addition, other information may be requested at the required public meetings.

_____ **Application fee.** A \$500 fee is required payable to “City of Marshalltown.” The fee must be paid when the application is submitted to the Zoning Office.

_____ **Description of Ordinance Change.** Please attach a sheet of paper explaining in detail why you are seeking an ordinance change. Information should include how proposed changes would affect other properties.

Please type or print legibly in ink.

Requester's Name:

ITC Midwest LLC

Mailing Address:

3165 Edgewood Parkway SW, Cedar Rapids, IA 52404

Phone:

319-297-6765

Email:

clevi@itctransco.com

Current Zoning Classification of Property in Question (if related to ordinance change) :

GI

Current Use (if related to ordinance change):

NA

Proposed Use (if related to ordinance change):

Electric Transmission Substation

Signature and Date:

February 17, 2025



ITC Midwest proposes a Zoning Text Amendment to City Code Section 156.F.005(E)(4)(c). The current code states:

“In the GI district, barbed wire cradles facing inward toward the property may be placed on top of fences enclosing public utility buildings or wherever the Zoning Administrator finds that such is necessary to address security interest so long as the extension is no more than one foot.”

ITC Midwest proposes a change in the text that states any or all of the following:

1. *“In the GI district, barbed wire cradles facing **outward** toward the property may be placed on top of fences enclosing public utility buildings or wherever the Zoning Administrator finds that such is necessary to address security interest so long as the extension is no more than one foot.”*
2. *“In the GI district, barbed wire cradles facing **both inward and outward** toward the property may be placed on top of fences enclosing public utility buildings or wherever the Zoning Administrator finds that such is necessary to address security interest so long as the extension is no more than one foot.”*
3. *In the GI district, barbed wire cradles may be placed on top of the fences enclosing public utility buildings where higher security is needed or wherever the Zoning Administrator finds that such is necessary to address security interest so long as the extension is no more than one foot and as long as the extension is over the fence owners property.*

The reason for this request is due to outward-facing barbed wire being essential for critical infrastructure, as it's nearly impossible to climb over from outside the fence. Inward-facing barbed wire reduces the effectiveness of security and safety, as it's easy to scale the fence and jump over the inward-facing barbs.

ITC Midwest uses a V-wire that faces both inward and outward at a 45-degree angle (see attachment). This prevents both ingress and egress over the fence and enhances both security and safety.

At present, ITC Midwest has four electric transmission substations in Marshalltown, with the construction of a fifth slated to begin in the next month. ITC Midwest also has assets in two Alliant Energy-owned substations. In addition, Alliant has several distribution-only substations located in Marshalltown. All substations would benefit from this change, adding an extra security measure. I believe most of these, if not all, already have outward-facing barbed wire.