NEW HOLSTEIN UTILITIES
ELECTRIC SERVICE
INFORMATION MANUAL
NEW HOLSTEIN UTILITIES
ELECTRIC SERVICE INFORMATION MANUAL
INTRODUCTION

For many years, customers, electricians, architects and others have had questions with regards to the electric service installations for our customers. These questions were typically answered via verbal communication and some times through a letter or a sketch. In some instances this lead to miscommunication, inconsistencies in applications and providing service to customers in an untimely manner.

This Electric Service Information Manual is published for use by New Holstein Utilities’ (NHU) customers and their representatives (i.e. architects, general contractors, electricians). The information contained in this manual is in addition to the various municipal electric codes, the Wisconsin Administrative Code, the National Electric Code, and any other regulations that may apply. New Holstein Utilities reserves the right to make revisions to the information in this manual whenever changes are needed. The information in this manual is intended for standard electric service installations. When, due to physical limitations of the premises or other circumstances, that it is impractical to follow the information provided, NHU shall be consulted in a reasonable time frame for permissible modifications. The information contained in this manual does not cover the requirements of our rate schedules, extension rules or general rules.

New Holstein Utilities reserves the right to discontinue electric service to a customer should the customer not comply with the information presented in this manual. A customer will first be notified and afforded a reasonable opportunity to comply with any codes or rules that have been established. The electric service may be discontinued without prior notice when a dangerous condition exists on the customer’s premise. A dangerous condition is defined as a violation of any of the electric codes referenced above or as determined by an employee of NHU that poses a health or safety hazard that could result in injury or death to the customer, a NHU employee or any individual with access to the customer’s electric service equipment.

This manual does not take exception to any local, state or federal electric codes. Please contact New Holstein Utilities is you have any questions.

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New Holstein Utilities
Electric Service Information Manual
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CHAPTER 1
GENERAL INFORMATION

100 – CONTINUITY OF SERVICE

New Holstein Utilities strives to provide our customers with economically-priced and reliable electric service. The utility will maintain its electric infrastructure in such a manner to attempt to provide continuous service to our customers. In the event that electric service is disrupted, it will be restored in a safe, timely and efficient manner. Because of the challenges to providing continuous service at standard voltages and frequency, customer may need to employ, at their expense, power conditioning equipment to protect their sensitive and/or critical electric loads.

101 – POINT OF SERVICE

The electricity supplied by New Holstein Utilities changes ownership at the point of service. This is the location where the customer’s wiring starts and New Holstein Utilities’ wiring ends. On an overhead service, the point of service is where the utility attaches its service drop to the building or structure. The utility will supply the attachment equipment. With an underground service, the point of service is either the metering point or the termination box.

102 – CODES AND REGULATIONS

New Holstein Utilities requires that all customer wiring meet the minimum requirements of the national, state and local codes. NHU reserves the right to refuse to provide service where the customer’s installation does not meet the code requirements or does not comply with the requirements set forth in this Electric Service Information Manual. Also, NHU shall de-energize any electric service when that service is found to be in an unsafe condition. The customer may or may not be notified prior to de-energizing the electric service if it is found in an unsafe condition.

103 – SERVICE VOLTAGE AVAILABILITY

New Holstein Utilities will provide only one electric service (either overhead or underground) to each structure. The following secondary service voltages are provided by New Holstein Utilities:

- 120/240 volt single phase
- 120/208 volt single phase
- 120/208 volt three phase
- 277/480 volt three phase

Service conductors will be provided by the utility from New Holstein Utilities’ transformer to the customer’s service entrance equipment.

104 – TRANSFORMERS

The customer will be served by either an overhead or pad-mounted transformer. A pad-mounted transformer will be considered, provided all the necessary clearances can be safely achieved. Large three-phase pad-mount transformers require the use of a foundation. Depending on the size of the transformer required, the foundation will be provided by either the utility or the customer. The customer will bear the responsibility for the cost of the foundation; in some cases this may be a utility provided box pad.
105 - SERVICES

For single-phase service up to and including 400 amps, New Holstein Utilities will provide the service lateral. For an underground service greater than 400 amps, the customer is also responsible for the costs to install the conduits and service wires between the transformer and the main disconnect. For large services, the customer will be responsible for having the fault current calculated for the service entrance equipment.

New Holstein Utilities will make all service connections to its electric distribution system. Any connection to and/or alteration of the utility’s electric service facilities or other equipment is prohibited and will be subject to immediate disconnection of service. Any deviation from this rule must have prior approval by a representative of New Holstein Utilities.

106 - METERING

Generally, New Holstein Utilities uses 200-amp plug-in meters for self-contained installations, and current and potential transformers (CTs and PTs) on services rated at or above 400 amps. NHU furnishes this equipment. On service installations at or above 400 amps, NHU will work with the customer to determine where to locate the CTs, PTs and metering equipment. The customer is responsible for providing the necessary CT cabinet and approved meter socket. Preapproved equipment is listed in the back of this manual.

107 – COMPANY EQUIPMENT ON CUSTOMER PREMISES

The customer shall grant New Holstein Utilities the right to install its equipment on the customer’s premises in order to supply electric service. The equipment shall remain the property of New Holstein Utilities. When the electric service is no longer needed at the premises, the equipment shall be removed.

While the equipment remains on the premises, New Holstein Utilities shall maintain the right to access its equipment for the purpose of inspecting, maintaining, restoring or removing the service. As New Holstein Utilities deems necessary, the customer shall provide, at no cost to NHU, any necessary easements and/or right-of-way that is needed to install, maintain or access equipment on the customer’s property. NHU will attempt to notify the customer in advance when there is a need to access equipment on the customer’s premises; however, this may not be feasible in emergency situations.

Customers are expected to take reasonable care of New Holstein Utilities’ equipment located on their premises, which includes installing protection equipment where needed. Customers may be responsible to damage to NHU equipment located on their property unless the damage is beyond the control of the customer.
CHAPTER 2
Procedure for Receiving Electric Service

The following steps need to be completed in order to have an electric service upgraded or to have a new electric service installed. The applicant should allow several weeks for the installation of a new electric service or service upgrade following the first contact with New Holstein Utilities. The electric service will not be energized until all requirements are completed.

200 – APPLICATION FOR SERVICE

After the building permit is obtained (if one is needed), the customer or contractor (acting on behalf of the customer) should contact New Holstein Utilities for the purpose of applying for utility service. The customer or contractor must provide, at a minimum, the following information on the Application for Service Form:

- Customer name
- New service address
- Billing address
- Phone number(s)
- Electric service information including service amperage, desired voltage, desired phase, and preference for overhead or underground service
- Contractor name(s) and contact information

The customer or contractor must complete the form and present it to a NHU employee. The NHU employee will sign the form and provide a copy to the customer or contractor. The form will then be provided to the Electric Operations Department for processing. The application for service should be completed well in advance of the date the utility service is required. Adequate lead time is required in order to plan and schedule the work to be completed.

201 – SITE PLAN

The applicant must provide NHU with a copy of the site plan for a new service request. A site plan is not required for an electric service upgrade unless the service entrance location is being moved from its current location. The site plan will include the location of the proposed building(s) on the property. The site plan must also indicate the location of a deck, patio, pool, well, septic system, retaining wall, loading dock, or any other potential hindrance to the electric service installation.

The preferred electric meter location must be clearly marked on the site plan. Dimensions from a specific location to the preferred electric meter location must be provided (i.e. 12’ from NE corner of the house towards the east). NHU has the authority to approve or reject the preferred electric meter location.

202 – PROJECT IS ENGINEERED

NHU staff engineers the electric service request to determine the materials and labor required to complete the installation. Construction requirements to be met by the applicant are determined after the project is engineered and communicated to the applicant.

203 – CONSTRUCTION COST PAYMENT

After the project is engineered, NHU determines if there will be a cost to the applicant to install the electric service. If there will be a cost to the applicant, a written cost estimate will be provided. The estimate must be paid before NHU will schedule the project for construction. When the project is
complete, NHU will tabulate the actual cost to complete the project. If the estimate is higher than the actual cost, the applicant will receive a refund. If the estimate is lower than the actual cost the applicant will be billed the difference.

204 - EASEMENTS

Easements may be required by the applicant, utility or other party where the utility service is to be installed. The parties involved are responsible for determining who will bear the cost of the easement. Permanent structures, shrubs, trees, gardens, and fences are not allowed on utility easements.

205 – CLEARANCE OF OBSTRUCTIONS FOR SERVICE ROUTE

The applicant is responsible for clearing the right-of-way on the property for the route of the electric service construction. The width of the right-of-way depends on whether the route is for the installation of overhead or underground materials. Clearing the right-of-way can include any of the following:

- Removal of relevant trees, brush, rocks, dirt piles, etc.
- Backfill and/or grading must be completed to within 6” of final grade
- Mechanical equipment (i.e. bulldozers, dump trucks, cranes) or building construction materials must not be blocking the construction route

206 – SERVICE ENTRANCE WIRING

All services within the New Holstein city limits need approval by the City of New Holstein’s electric inspector prior to the utility energizing the service. All installations completed in the Brothertown, Charlestown, Eaton, New Holstein or Schleswig townships require either an inspection report, or a wiring affidavit from the electrical contractor, submitted to New Holstein Utilities. A wiring affidavit card is available from New Holstein Utilities.

207 – JOB SCHEDULING

Prior to scheduling the work to be completed by the utility, the following construction requirements must be completed, where applicable:

- Easement(s) must be completed, signed and in possession of the utility.
- Service route must be cleared of all obstructions.
- Service entrance equipment must be installed and a wiring affidavit or inspection report provided to the utility.
- Construction estimate must be paid in full.
- Backfill must be completed to within 6” of final grade
- Any other requirement as noted by New Holstein Utilities
CHAPTER 3
Temporary Service

300 – GENERAL INFORMATION

All temporary services must be approved by New Holstein Utilities. Temporary service installations will only be allowed for a maximum of one year from the time the service is installed. Temporary services are typically used for new construction work or special projects. Once the temporary service is no longer needed, the customer shall contact New Holstein Utilities to have the temporary service removed.

The customer is responsible for the entire cost of the installation and removal of the temporary service. If a transformer is needed for an overhead service drop, the customer will not be charged for the transformer.

Temporary services may not be reclassified as a permanent service unless they meet all of the requirements of a permanent service as noted in the Electric Service Information Manual.

Customer-owned temporary services are not permitted to be installed on New Holstein Utilities’ poles.

The customer shall consult with New Holstein Utilities in regards to the installation of a three-phase temporary service.
NEW HOLSTEIN UTILITIES

301. OVERHEAD TEMPORARY SERVICE, SINGLE-PHASE, 3-WIRE, 120/240 VOLT, 200 AMP MAX. (FOR CONSTRUCTION SITES)

□ UTILITY FURNISHES, INSTALLS & MAINTAINS

1. SERVICE DEAD-END
2. OVERHEAD SERVICE DROP MAX. LENGTH 100 FEET
3. METER

□ CUSTOMER FURNISHES, INSTALLS & MAINTAINS

4. POLE MIN. CLASS 7 OR 4"x4" TREATED POST MIN. 4' IN GROUND
5. SERVICE ENTRANCE WIRES WITH 36" LEADS
6. RIGID CONDUIT OR SE CABLE
7. GROUND IN ACCORDANCE WITH THE CODE
8. TWO BRACES OF 2"x4"x16' OR GUY WIRE CAPABLE OF SUPPORTING SERVICE DROP
9. FUSED MAIN DISCONNECT SWITCH OR MAIN CIRCUIT BREAKER
10. APPROVED METER SOCKET
NEW HOLSTEIN UTILITIES

302. UNDERGROUND TEMPORARY/PERMANENT SERVICE-SINGLE PHASE, 3-WIRE, 120/240 VOLT, 200 AMP MAX. (FOR CONSTRUCTION SITES) PREFERRED CONSTRUCTION

UTILITY FURNISHES, INSTalls & MAINTAINS
1. UTILITY METER
2. UTILITY UNDERGROUND SERVICE CONDUCTORS

CUSTOMER FURNISHES, INSTalls & MAINTAINS
3. APPROVED PEDESTAL
4. CUSTOMER'S MAIN
5. CUSTOMER'S FEEDER PANEL
6. GROUND IN ACCORDANCE WITH THE CODE
303. UNDERGROUND TEMPORARY SERVICE-SINGLE PHASE, 3-WIRE, 120/240 VOLT, 200 AMP MAX. (FCR CONSTRUCTION SITES)

UTILITY FURNISHES, Installs & Maintains

1. METER

CUSTOMER FURNISHES, Installs & Maintains

2. SERVICE LATERAL LFMC* OR LFNC** WITH CONDUCTORS APPROVED FOR DIRECT BURIAL CONNECTIONS AT UTILITY PEDESTAL TO BE MADE BY NEW HOLSTEIN UTILITIES.
3. APPROVED METER SOCKET
4. GROUND IN ACCORDANCE WITH THE CODE
5. FUSED MAIN DISCONNECT SWITCH OR MAIN CIRCUIT BREAKER WITH GFCI OUTLETS
6. 4"X4" TREATED WOOD POST OR APPROVED MANUFACTURED PEDESTAL

*LFMC- LIQUID TIGHT FLEXIBLE METAL CONDUIT-SEE NEC-350
**LFNC- LIQUID TIGHT FLEXIBLE NON-METAL CONDUIT-SEE NEC-356
CHAPTER 4
Overhead Secondary Service

400 – GENERAL INFORMATION

The customer’s structure shall be strong enough to support the service drop and provide enough height/distance to meet the necessary clearance codes (i.e. ground level, decks, windows).

The maximum height that New Holstein Utilities will attach a service drop to a building is 20’ above the ground. If a higher attachment point is needed, prior approval must be received from New Holstein Utilities.

New Holstein Utilities will supply a standard service attachment device.

The customer’s service entrance conductors must extend a minimum of 36” beyond the weatherhead. NHU staff will connect the utility’s service drop conductors to the customer’s service entrance conductors.

401 – SERVICE MAST INSTALLATIONS

A service mast installed through the roof line shall be constructed of rigid galvanized steel with a minimum inside diameter of 2”. Any service mast installed above the roof line shall be continuous in length (no use of couplings). No service mast shall extend beyond 5 feet above a sloped roof line. Any service mast extending beyond three (3) feet will require the installation of guying material.

Service conduit shall be securely fastened to the building/structure every 3 feet. Service conduit shall also be fastened just above the meter socket and below the weatherhead. If the mast extends through the roof line the conduit shall be secured prior to going through the roof line.

The customer shall own, install and maintain the overhead service material except for the utility’s service drop, connectors, and cable dead-end.
NEW HOLSTEIN UTILITIES

402. WALL OR THROUGH-THE-ROOF INSTALLATION

FOR 480 VOLT SERVICE ONLY

Ground Line

SEE SECTION 501 FOR GROUNDING ELECTRODE INFORMATION

UTILITY FURNISHES, Installs & Maintains

1. OVERHEAD SERVICE DROP
2. METER
3. HOUSE KNOB OR CABLE WIRE HOLDER

CUSTOMER FURNISHES, Installs & Maintains

4. CABLE WIRE HOLDER
5. CONDUIT OR SERVICE CABLE AND WEATHERHEAD
6. DISCONNECT FOR 480 VOLT SERVICE
7. CONDUIT OR CABLE SUPPORTS (AS REQUIRED)
8. APPROVED METER SOCKET
9. GROUND IN ACCORDANCE WITH THE CODE
10. CUSTOMER'S SERVICE ENTRANCE PANEL
11. RIGID STEEL CONDUIT
12. CONDUIT GUY IF REQUIRED -\( \frac{1}{4} \)" MIN. GALV. STEEL
13. BRACING BETWEEN STUDS FOR GUYING HARDWARE
403. POLE MOUNTED SERVICE ENTRANCE UP TO 300 AMP-240 VOLTS
MAXIMUM- OPTIONAL CONSTRUCTION

UTILITY FURNISHES, INSTALLS & MAINTAINS
1. OVERHEAD SERVICE CABLE
2. SOCKET TYPE METER

CUSTOMER FURNISHES, INSTALLS & MAINTAINS
3. POLE, TREATED, CLASS 6 MINIMUM, 5" DIA. AT TOP, LENGTH NECESSARY TO MEET ALL APPLICABLE CLEARANCE
4. BUY, GALV. STRANDED STEEL, ¼" MINIMUM
5. GROUND IN ACCORDANCE WITH THE CODE
6. CONDUIT OR SERVICE ENTRANCE CABLE
7. RAIN-TIGHT WEATHERHEAD
8. SERVICE ENTRANCE EQUIPMENT
9. APPROVED METER-SOCKET
10. GUY GUARD
11. ANCHOR
NEW HOLSTEIN UTILITIES

404. SERVICE RISER REQUIREMENTS

ONE METER (WITH OUTDOOR METERING TRANSFORMERS)

(2 TO 6 SERVICE DISCONNECTS)

(2 TO 6 METERS) (MAXIMUM 3 SERVICE RISERS)
(2 TO 6 SERVICE DISCONNECTS)

(2 TO 6 METERS) (MAXIMUM 3 SERVICE DISCONNECTS)

2 TO 6 METERS (SELF-CONTAINED)
CHAPTER 5
Underground Secondary Service

500 – GENERAL INFORMATION

The underground service lateral is defined as New Holstein Utilities’ underground service conductors from the last pole, pedestal, transformer or other structure connecting to the customer’s metering point, termination equipment or means of disconnect. New Holstein Utilities will not terminate service lateral conductors inside of a customer’s building or in customer-owned switchgear.

New Holstein Utilities will own, install and maintain underground service lateral conductors, meters, meter test switches, instrument transformers, and instrument transformer wiring.

Before New Holstein Utilities will install any underground conductor, the proposed cable route must be clear of obstructions. The route must be at least 10’ wide and be within 6” of final grade. The customer is responsible for ensuring these requirements are met. Once the underground conductor is installed, the customer shall not change the grade over the conductor by more than 6”.

501 – SIZING FOR UNDERGROUND FACILITIES

New Holstein Utilities will work with a customer’s architect, electrical engineer or electric contractor to determine the size and number of underground conductors to install, as well as the size of the box or concrete pad to install for the transformer. These facilities will be sized to meet the customer’s main disconnect and their projected electric load.

502 – LOCATION OF SECONDARY UNDERGROUND CONDUCTOR

As noted in previous sections, the customer is to provide New Holstein Utilities with a copy of their construction plans to ensure the utility’s underground conductor will not be installed in an undesirable location. New Holstein Utilities requires that underground conductor shall not be located under buildings or pools. Customers should be aware of possible locations for building expansions.

If the customer plans to install a sidewalk, parking lot, driveway, patio, or deck over the top of underground conductor, the customer should make provisions to install the underground conductor in conduit or provide a conduit (capped at both ends) running parallel to the underground conductor as a spare in case of an underground fault with the conductor. The customer is responsible for installing the conduit.

When a direct buried conductor installation has been compromised (is out of compliance with any utility, local, state or national codes), the customer shall be responsible for any and all costs to bring the installation into compliance.
NEW HOLSTEIN UTILITIES

503. WALL MOUNTED PEDESTAL SERVICE- SINGLE OR DUPLEX- SINGLE OR THREE-PHASE- WITH OR WITHOUT MAINS 300 AMPS MAX.-240 VOLTS

UTILITY FURNISHES, INSTALLS & MAINTAINS
1. METER
2. UNDERGROUND SERVICE LATERAL

CUSTOMER FURNISHES, INSTALLS & MAINTAINS
3. APPROVED METER PEDESTAL
4. GROUNDING IN ACCORDANCE WITH THE NEC
5. CONCRETE SLEEVE
NEW HOLSTEIN UTILITIES

504. FREE STANDING PEDESTAL SERVICE ENTRANCE - SINGLE PHASE OR THREE-PHASE
300 AMPS MAX.- 240 VOLTS

UTILITY FURNISHES, INSTALLS & MAINTAINS

1. METER
2. UNDERGROUND SERVICE LATERAL

CUSTOMER FURNISHES, INSTALLS & MAINTAINS

3. APPROVED METER PEDESTAL
4. SERVICE ENTRANCE EQUIPMENT
5. PEDESTAL
6. GROUND IN ACCORDANCE WITH THE NEC
7. FACTORY STABILIZATION FOOT
8. RIGID CONDUIT
NEW HOLSTEIN UTILITIES

505. PAD SPECIFICATIONS FOR THREE-PHASE, PAD-MOUNT TRANSFORMERS 75-2500 KVA

PAD DIMENSIONS

3/4" TO 1-1/2" FRAMING MAT'L (CONTRACTOR TO REMOVE WHEN CONCRETE SET)

<table>
<thead>
<tr>
<th>SERVICE SIZE</th>
<th>THICKNESS</th>
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<tbody>
<tr>
<td></td>
<td>XFMR 208Y/120 480Y/277</td>
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<tr>
<td>PAD KVA AMPs AMPs IN. IN. IN. IN. IN. IN. IN. IN.</td>
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<tr>
<td>I 75-500 100-1200 100-600</td>
<td>84</td>
</tr>
<tr>
<td>II 750-2500 1600-3000 800-3000</td>
<td>105</td>
</tr>
</tbody>
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NEW HOLSTEIN UTILITIES

506. PAD LAYOUT FOR THREE-PHASE, PAD-MOUNT TRANSFORMERS 75-2500 KVA

CONTRACTOR TO CONTACT NEW HOLSTEIN UTILITIES FOR SIZE AND NUMBER OF PRIMARY AND SECONDARY CONDUITS

CONTACT NEW HOLSTEIN UTILITIES FOR PAD ORIENTATION AND LOCATION

PLUG ENDS OF CONDUIT MARK ENDS OF CONDUIT WITH A STAKE - LABEL STAKE "CONDUIT"

CONTRACTOR TO INSTALL PRIMARY CONDUIT WITH 36" OR 48" STANDARD ELBOWS FOR NEW HOLSTEIN UTILITIES PRIMARY CONDUCTORS
BACKFILL AREA AROUND CONDUITS WITH SAND OR SOIL - NOT GRAVEL

NOTES:
2. ALL METALLIC CONDUITS SHALL BE FITTED WITH AN INSULATING BUSHING.
3. WHEN AN OIL SUMP IS REQUIRED, EXCAVATE 18" UNDER, AND AROUND THE PAD, AND FILL WITH COARSE CRUSHED ROCK. CHECK WITH LOCAL BUILDING CODE TO DETERMINE IF AN OIL SUMP IS REQUIRED.
4. CONCRETE MIX SHALL HAVE A MINIMUM STRENGTH OF 4000 LB/SQ. IN. AFTER 28 DAYS
5. THE TOP OF THE PAD SHALL BE LEVEL AND ALL EDGES AND CORNERS ROUNDED OFF
6. THE PAD SHALL BE REINFORCED WITH #4 WIRE, 4"X4" WELDED MESH OR EQUIVALENT MATERIALS WITH ADDITIONAL 3/8 REINFORCING RODS AROUND THE CABLE OPENING. THE MESH SHALL NOT BE LESS THAN 1" FROM THE EDGES AND OPENING, AND 3" BELOW THE SURFACE. IF THE #4 WIRE, 4"X4" MESH IS NOT AVAILABLE, 2 LAYERS OF #10 WIRE 6"X6" MESH, HORIZONTALLY STAGGERED, MAY BE SUBSTITUTED FOR THE #4 WIRE.
NEW HOLSTEIN UTILITIES

507. SINGLE PHASE BOX PAD
NEW HOLSTEIN UTILITIES FURNISHES AND INSTALLS BOX-PAD- CUSTOMER PROVIDES AND INSTALLS CONDUIT.

UTILITY WILL PROVIDE AND INSTALL THE BOX PAD BUT THE CUSTOMER IS RESPONSIBLE FOR PAYING FOR THE BOX PAD AND INSTALLATION.
508. TRANSFORMER PAD FOUNDATION WALL
FOUNDATIONS SHALL BE USED WHERE UNSTABLE SOIL CONDITIONS EXIST (TO AVOID TILTING OF PAD) OR WHERE A LARGE NUMBER OF SECONDARY CABLES ARE REQUIRED TO PROVIDE ADDITIONAL CABLE TRAINING AREA.
509. TRANSFORMER PAD FOUNDATION - ALTERNATE

NOTE:
THIS AREA TO BE BACKFILLED W/ WELL TAMPERED GRAVEL

ALL WALLS ARE 8" THICK

TOP VIEW

FRONT VIEW

WIRE MESH
CHAPTER 6
Metering

600 – METERING FACILITIES

All New Holstein Utilities’ meters will be installed into New Holstein Utilities approved meter sockets. Approved meter sockets are listed in the back of the manual. All residential meter sockets shall be ringless and equipped with a manual operated bypass (horned or lever). All commercial meter sockets shall be ringless and equipped with a lever bypass, locking jaw and have an individual cover. All raceway and cable connections to meter sockets or enclosures shall be rain-tight.

All instrument transformer cabinets shall be approved by New Holstein Utilities. Approved instrument transformer cabinets are listed in the back of the manual. The cabinets must be matched to the service size for the customer. Instrument transformer cabinets must have factory bus bars installed to accommodate New Holstein Utilities’ bar style current and/or potential transformers.

601 – LOCATION OF METERS

The location of all meters and metering equipment must be approved by New Holstein Utilities. All meter sockets, enclosures or cabinets must be installed outdoors on a substantial building or structure and shall not be installed in an area where there is exposure to excessive dust or moisture, corrosive vapors or vibration.

602 – METERING INSTALLATIONS

The customer is responsible for furnishing and installing all meter sockets, ganged meter sets, instrument transformer cabinets, galvanized steel metering conduit and troughs. New Holstein Utilities will provide all meters, instrument transformers, meter test switches, meter wiring and secondary instrument transformer brackets for overhead services. All equipment must be securely mounted to the building or support structure with rust resistant equipment.

All meters shall be installed so the height to the center of the meter is approximately five (5) feet above final grade with the following exceptions:
(1) Group mounted meter sockets shall be mounted so the center of the meters are between 2.5’ and 6’ above final grade, or
(2) Outdoor wall-mounted or free standing meter pedestals shall be installed so the center of the meter is a minimum of 3’ above final grade.

The area around the meter or metering instrument transformer cabinets must be kept clear to provide adequate work space for utility personnel. A minimum of 4’ must be provided in front of the equipment. A minimum of 1’ shall be available to each side of the metering equipment to allow for space to open covers, doors or compartments. This work space should be clear of all permanent structures, signs, shrubs, etc.

603 – METER IDENTIFICATION

For multiple metering installations (two or more), each meter socket shall be marked on the outside with the address of the unit served. The marking shall also be placed on the corresponding distribution panel for the customer. The marking shall be completed with some type of permanent label, with a minimum of 1” block numbering or lettering on the label so it is easily visible. Meters will not be installed until this requirement is met.
604 – METER SEALS

Each meter, meter enclosure and/or access point to unmetered wiring shall be sealed by New Holstein Utilities. Customers or contractors shall not be allowed to remove meters. If access is needed to the meter socket, meter enclosure or access point, the customer or contractor shall contact New Holstein Utilities to make arrangements for access to this equipment.

605 – METERED AND UNMETERED CONDUCTORS

Metered circuit wires shall not be enclosed with unmetered circuit wires in the same raceway or cable trough, except as required in meter equipment assemblies.

Where metered circuit conductors are run parallel to unmetered service entrance conductors, they shall be at least 6" apart at their termination where not in conduit and exposed, such as weatherheads.

The customer or their electric contractor shall not install accessible fittings in conduit risers that enclose unmetered service conductors.

606 – METER SOCKET REQUIREMENTS

<table>
<thead>
<tr>
<th>Self Contained Metering</th>
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</thead>
<tbody>
<tr>
<td><strong>Phase</strong></td>
<td><strong>Wire</strong></td>
</tr>
<tr>
<td>1</td>
<td>3</td>
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<tr>
<td>1</td>
<td>3</td>
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<table>
<thead>
<tr>
<th>Instrument Transformer Metering</th>
<th></th>
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</thead>
<tbody>
<tr>
<td><strong>Phase</strong></td>
<td><strong>Wire</strong></td>
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<tr>
<td>1</td>
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<td>3</td>
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</table>

606 – METER SOCKET REQUIREMENTS (Continued)

Line and load side conductors entering a meter socket for underground service shall enter and leave the meter socket on opposite sides. If a center knockout is positioned in the bottom of the socket, it shall not be used. Line conductors shall enter the meter socket on the bottom left side (when facing the front of the meter socket) and the load conductors shall leave on the bottom right side of the meter socket.

Self-contained meters for single and three phase services shall not exceed loads of 300 amps. The maximum allowable amperage rate of 300 amps along with adjustable breaker and fuse or a combination guarantees the accuracy of the self-contained meters. Service with loads greater than 300 amps shall use instrument transformer rated equipment.
NEW HOLSTEIN UTILITIES

FIG 607A

WALL MOUNTED METER SOCKET

OUTSIDE WALL

METER SOCKET

NEUTRAL BUS

SERVICE DISCONNECT

GROUNDING ELECTRODE CONDUCTOR

GROUNDING ELECTRODE

FIG 607B

GROUNDING SINGLE SELF-CONTAINED WALL MOUNTED METER SOCKETS AND PEDESTALS

OUTSIDE WALL

SERVICE DISCONNECT

METER PEDESTAL ENCLOSURE

NEUTRAL BUS

RACEWAY FOR SERVICE CONDUCTORS

GROUNDING ELECTRODE CONDUCTOR

GROUNDING ELECTRODE

GROUND LINE
FIG 607C
GROUNDING FREE STANDING PEDESTALS

SERVICE DISCONNECT

GROUNDING ELECTRODE CONDUCTOR
MUST BE CONNECTED TO THE NEUTRAL BUS IN THE CUSTOMER'S SERVICE DISCONNECT.

GROUND LINE

GROUNDING ELECTRODE(S)

GROUNDING ELECTRODE CONDUCTOR

FIG 607D
INSTRUMENT TRANSFORMER CABINETS

METER SOCKET EQUIPMENT BONDING CONDUCTOR
MIN. #8 CU

C.T. CABINET

NEUTRAL BUS

OUTSIDE WALL

SERVICE DISCONNECT

NEUTRAL BUS

RACEWAY FOR SERVICE CONDUCTORS

GROUNDING ELECTRODE CONDUCTOR

CABINET BONDING POINT
NEW HOLSTEIN UTILITIES

FIG 607E

GROUNDING FARM SERVICE YARD POLES

ELECTRODE GROUNDING CONDUCTOR FROM GROUND(S) (PROVIDED BY CUSTOMER) WHEN NEUTRAL NOT TIED INTO SWITCH. CUSTOMER TO EXTEND UP TO SWITCH WITH TAIL FOR UTILITY TO TIE INTO SYSTEM NEUTRAL.

TRANSFER SWITCH

TRANSFER SWITCH HANDLE

METERING CONDUIT

METER SOCKET

EQUIPMENT BONDING

CONDUCTOR

NEUTRAL

ELECTRODE GROUNDING CONDUCTOR FROM (TRANSFER SWITCH/MAIN DISCONNECT)

4'-5'

NOTES:

1. POLE TOP DISCONNECT SWITCH GROUNDING CONDUCTOR AND TIE GROUNDING ELECTRODE SHALL CONFORM TO NEC 250.

2. THE CUSTOMER GROUNDING ELECTRODE AND GROUNDING ELECTRODE CONDUCTOR SHALL BE COMPLETELY SEPARATE FROM NEW HOLSTEIN UTILITIES TRANSFORMER GROUNDING ELECTRODE AND GROUNDING ELECTRODE CONDUCTOR.
NEW HOLSTEIN UTILITIES

608. 120/240 VOLT SINGLE PHASE-OVERHEAD-SELF CONTAINED

100/200 AMP SOCKET
LINE
RESIDENTIAL BYPASS (HORNED)

COMMERCIAL BYPASS (LEVER)
LOAD

320 AMP SOCKET (300 AMP MAX.)
LINE
COMMERCIAL BYPASS (LEVER)
LOAD
NEW HOLSTEIN UTILITIES

609. 120/240 VOLT SINGLE PHASE-UNDERGROUND-SELF CONTAINED

610. 120/208 VOLT SINGLE PHASE (NETWORK)- OVERHEAD-SELF CONTAINED
611. THREE-PHASE-4-WIRE-OH/UG-SELF CONTAINED

WILD PHASE LOCATION FOR 240VOLT DELTA CONNECTED LOWER RIGHT

COMMERCIAL BYPASS (LEVER)

COMMERCIAL BYPASS (LEVER)
NEW HOLSTEIN UTILITIES

612. 277/480 VOLT, THREE-PHASE, UP TO 200 AMPS-OH & UG-SELF CONTAINED-LIMITED TO 10,000 AMPS MAXIMUM AVAILABLE FAULT CURRENT

OVERHEAD SERVICE

UNDERGROUND SERVICE

UTILITY FURNISHES, Installs & Maintains

1. UNDERGROUND SERVICE LATERAL
2. SOCKET TYPE METER

CUSTOMER FURNISHES, Installs & Maintains

3. RIGID CONDUIT
4. INDIVIDUAL LOAD BREAK DISCONNECT SWITCH WITH MEANS OF LOCKING OPEN & CLOSED, AND SEALABLE
5. APPROVED UNDERGROUND METER SOCKET
6. GROUND IN ACCORDANCE WITH THE CODE
7. SERVICE LATERAL RIGID CONDUIT
8. SERVICE ENTRANCE PANEL
9. EXPANSION JOINT
10. CONCRETE SLEEVE (IF REQUIRED)
11. TERMINATION CABINET
NEW HOLSTEIN UTILITIES

613 AB. SELF CONTAINED MULTIPLE METERING GROUP & MODULAR (2 OR MORE METERS) UP TO 200 AMPS PER SOCKET, 250 VOLTS MAXIMUM.
MULTIPLE METERING

METER PAK - 2-6 METERS

CUSTOMERS BREAKER

2 TO 4 SOCKETS

FIGURE 613-AB

UTILITY FURNISHES, INSTALLS & MAINTAINS

1. SOCKET TYPE METER
2. NEW HOLSTEIN UTILITIES UNDERGROUND LATERAL IN CUSTOMER PROVIDED CONDUIT

CUSTOMER FURNISHES, INSTALLS & MAINTAINS

3. UNDERGROUND CONDUIT
4. EXPANSION SLEEVE
5. MULTIPLE METERING EQUIPMENT
NEW HOLSTEIN UTILITIES

613-C. MODULAR METERING (2 OR MORE METERS) UP TO 200 AMPS PER SOCKET, 250 VOLTS MAXIMUM

MODULAR MULTIPLE METERING

HORIZONTAL BUSSED

CABINETS

BREAKER SWITCH OR TERMINATION

SPACER SECTION

CUSTOMER BREAKER

HORIZONTAL BUS

FIGURE 613-AC

☐ UTILITY FURNISHES, INSTALLS & MAINTAINS

1. SOCKET TYPE METER

☐ CUSTOMER FURNISHES, INSTALLS & MAINTAINS

2. MULTIPLE METERING EQUIPMENT
NEW HOLSTEIN UTILITIES

615. OUTDOOR FREE STANDING (FIELD BUILT) METER STRUCTURES

[Diagram of a meter structure with dimensions and annotations like 2"X6", 6"X6", 6'-0' MIN, 4'-0' MIN, 24" MAX, FINAL GRADE, and 4']
NEW HOLSTEIN UTILITIES

616. METERING TRANSFORMER INSTALLATION - OVERHEAD SERVICE - ON BUILDING ONLY (DO NOT INSTALL ON POLE).

301-600 AMP-120-240 VOLTS-SINGLE PHASE
301-1200 AMP-120/208 VOLTS-THREE PHASE
100-600 AMP-277/480 VOLTS-THREE PHASE

TYPICAL 277/480 VOLT THREE PHASE 4 WIRE INSTALLATION WITH CT'S & PT'S

GROUND LEVEL
TYPICAL 120/208 VOLT THREE PHASE 4 WIRE INSTALLATION WITH CT'S

☐ UTILITY FURNISHES, INSTALL, AND MAINTAINS

1. OVERHEAD SERVICE DROP
2. SERVICE CONNECTORS
3. SOCKET TYPE METER
4. METER CABLE
5. OUTDOOR CURRENT TRANSFORMERS
6. OUTDOOR POTENTIAL TRANSFORMER
7. TRANSFORMER MOUNTING BRACKET - CUSTOMER TO MOUNT

☐ CUSTOMER FURNISHES, INSTALLS AND MAINTAINS

8. APPROVED METER SOCKET
9. SERVICE ENTRANCE CONDUIT, CONDUCTORS AND WEATHER-HEAD (MAXIMUM OF 3)
10. METERING CONDUIT 1" RIGID GALV. STEEL WITH WEATHERHEAD. MAXIMUM ALLOWABLE CONDUIT RUN IS 50' WITH A TOTAL OF 2-90° BENDS. EXCESSIVELY LONG RUNS OR RUNS WITH MORE THAN 2-90° BENDS WILL REQUIRE NEW HOLSTEIN UTILITIES APPROVAL.
NEW HOLSTEIN UTILITIES

WALL MOUNTED OUTDOOR METERING TRANSFORMER CABINET OVERHEAD SERVICE.

301-600 AMP-120-240 VOLTS-SINGLE PHASE
301-1200 AMP-120/208 VOLTS-THREE PHASE
100-600 AMP-277/480 VOLTS-THREE PHASE

TO OVERHEAD SERVICE

5' X 3''

METERING TRANSFORMER CABINET

to service disconnect

to customer's service entrance equipment

400 AMP - 1000 AMP - 24 TO 30 INCHES
1200 AMP - 20 TO 24 INCHES

FINAL GRADE

UTILITY FURNISHES, Installs and Maintains

1. SOCKET TYPE METER
2. METERING CABLE
3. INSTRUMENT TRANSFORMERS IN CABINET

CUSTOMER FURNISHES, Installs and Maintains

4. APPROVED METER SOCKET
5. 1'' RIGID GALV. STEEL CONDUIT. MAXIMUM ALLOWABLE CONDUIT RUN IS 50' WITH A TOTAL OF
   2-90° BENDS. MIN. 6' NIPPLE IS REQUIRED. RUNS MORE THAN 50' OR RUNS WITH MORE THAN
   2-90° BENDS WILL REQUIRE NEW HOLSTEIN UTILITIES APPROVAL.
6. METERING TRANSFORMER CABINET
7. RIGID GALV. STEEL CONDUIT
8. SERVICE CONDUCTORS
9. SERVICE CONDUIT(S) OR TROUGH
NEW HOLSTEIN UTILITIES

WALL MOUNTED OUTDOOR METERING TRANSFORMER CABINET. UNDERGROUND SERVICE

301-400 AMP-120/240 VOLTS-SINGLE PHASE (FROM POLE XFMR)
301-600 AMP-120/240 VOLTS-SINGLE PHASE (FROM PAD XFMR)
301-3000 AMP-120-208 VOLTS-THREE PHASE (FROM PAD XFMR)
100-400 AMP-277/480 VOLTS-THREE PHASE (FROM POLE XFMR)
100-3000 AMP-277/480 VOLTS-THREE PHASE (FROM PAD XFMR)

UTILITY FURNEISHES, INSTILLS & MAINTAINS
1. INSTRUMENT TRANSFORMERS IN CABINET
2. SERVICE LATERAL
3. METER
4. METERING CABLE

CUSTOMER FURNEISHES, INSTILLS & MAINTAINS
5. INSTRUMENT TRANSFORMER CABINET
6. RIGID CONDUIT
7. CONDUIT STRAPS
8. EXPANSION JOINT
9. APPROVED METER SOCKET
10. INSULATED BUSHING
11. GROUND IN ACCORDANCE WITH THE CODE
12. SLEEVE IF CONDUIT PASSES THROUGH CONCRETE OR ASPHALT
13. 1" RIGID GALVANIZED STEEL CONDUIT. MAXIMUM ALLOWABLE CONDUIT RUN IS 50' WITH A TOTAL OF 2-90° BENDS. MIN. 6" NIPPLE IS REQUIRED. RUNS MORE THAN 50' OR RUNS WITH MORE THAN 2-90° BENDS WILL REQUIRE NEW HOLSTEIN UTILITIES APPROVAL.
NEW HOLSTEIN UTILITIES

619. MODULAR METERING WHERE NEW HOLSTEIN UTILITIES TERMINATES IN A NEW HOLSTEIN UTILITIES APPROVED TERMINATION CABINET AND THE CUSTOMER EXTENDS SERVICE LATERAL CONDUCTORS TO A CUSTOMER TERMINATION BOX (LESS THAN 6 METERS) OR A MAIN BREAKER (MORE THAN 6 METERS).

301-400 AMP-120/240 VOLTS-SINGLE PHASE (FROM POLE XFMER)
301-600 AMP-120/240 VOLTS-SINGLE PHASE (FROM PAD XFMER)
301-3000 AMP-120-208 VOLTS-THREE PHASE (FROM PAD XFMER)
100-400 AMP-277/480 VOLTS-THREE PHASE (FROM POLE XFMER)
100-3000 AMP-277/480 VOLTS-THREE PHASE (FROM PAD XFMER)

☐ UTILITY FURNISHES, INSTALLS & MAINTAINS

1. SOCKET TYPE METER
2. NEW HOLSTEIN UTILITIES UNDERGROUND LATERAL IN CUSTOMER PROVIDED CONDUIT
3. METERING CABLE

☐ CUSTOMER FURNISHES, INSTALLS & MAINTAINS

4. UNDERGROUND CONDUIT
5. MULTIPLE METERING EQUIPMENT
6. TERMINATION CABINET
7. CURRENT TRANSFORMER CABINET
8. GROUNDING ACCORDANCE TO CHAPTER 5
9. SERVICE DISCONNECT
10. METERING CONDUIT (1" RIGID STEEL)
11. EXPANSION SLEEVE(S)
12. APPROVED METER SOCKET

---

NEW HOLSTEIN UTILITIES APPROVED TERMINATION CABINET
NON-APPROVED TERMINATION CABINET OR MAIN DISCONNECT
CT CABINET OR OTHER APPROVED MODULAR DEVICE IF NEEDED
NEW HOLSTEIN UTILITIES

SELF CONTAINED, MULTIPLE METERING,
240 VOLTS AND BELOW, PREBussed/WIRED EQUIPMENT

BUSSed MODULAR METERING
PANELS WITH MAIN BREAKER
MORE THAN 6 DISCONNECTS

UNDERGROUND-UP TO 3000 AMPS

UTILITY FURNISHES, INSTALLS & MAINTAINS

1. SOCKET TYPE METER
2. NEW HOLSTEIN UTILITIES UNDERGROUND LATERAL IN CUSTOMER PROVIDED CONDUIT

CUSTOMER FURNISHES, INSTALLS & MAINTAINS

3. UNDERGROUND CONDUIT
4. MULTIPLE METERING EQUIPMENT
5. GROUNDING ACCORDANCE TO CHAPTER 5
6. SERVICE DISCONNECT
7. EXPANSION SLEEVE(S)
NEW HOLSTEIN UTILITIES

619B. COMBINED INSTRUMENT TRANSFORMER, SELF CONTAINED, MULTIPLE METERING, 240 VOLTS AND BELOW, PREBUSSED/ WIRED EQUIPMENT

BUSSED COMBINATION
MODULAR PANEL METERING PANEL & METERING TRANSFORMER CABINET
WITH TERMINATION CABINET
2-6 DISCONNECTS

UNDERGROUND UP TO 3000 AMPS

UTILITY FURNISHES, Installs & Maintains

1. SOCKET TYPE METER
2. NEW HOLSTEIN UTILITIES UNDERGROUND LATERAL IN CUSTOMER PROVIDED CONDUIT
3. METERING CABLE

CUSTOMER FURNISHES, Installs & Maintains

4. UNDERGROUND CONDUIT
5. MULTIPLE METERING EQUIPMENT
6. TERMINATION CABINET
7. CURRENT TRANSFORMER CABINET
8. GROUNDING ACCORDANCE TO CHAPTER 5
9. SERVICE DISCONNECT
10. METERING CONDUIT (1" RIGID STEEL)
11. EXPANSION SLEEVE(S)
12. APPROVED METER SOCKET
NEW HOLSTEIN UTILITIES

619C. COMBINED INSTRUMENT TRANSFORMER, SELF CONTAINED, MULTIPLE METERING, 240 VOLTS AND BELOW, PREBussed/WIRED EQUIPMENT

BUSSED COMBINATION
MODULAR PANEL METERING PANEL & METERING TRANSFORMER CABINET
WITH MAIN DISCONNECT
MORE THAN 6 DISCONNECT

UNDERGROUND UP TO 3000 AMPS

□ UTILITY FURNISHES, INSTALLS & MAINTAINS

1. SOCKET TYPE METER
2. NEW HOLSTEIN UTILITIES UNDERGROUND LATERAL IN CUSTOMER PROVIDED CONDUIT
3. METERING CABLE

○ CUSTOMER FURNISHES, INSTALLS & MAINTAINS

4. UNDERGROUND CONDUIT
5. MULTIPLE METERING EQUIPMENT
6. CURRENT TRANSFORMER CABINET
7. GROUNDING ACCORDANCE TO CHAPTER 5
8. SERVICE DISCONNECT
9. METERING CONDUIT (1" RIGID STEEL)
10. EXPANSION SLEEVE(S)
11. APPROVED METER SOCKET
NEW HOLSTEIN UTILITIES

619D. COMBINED INSTRUMENT TRANSFORMER, SELF CONTAINED, MULTIPLE METERING, 240 VOLTS AND BELOW, PREBUSSED/ WIRED EQUIPMENT

CABLE IN-CABLE OUT
MODULAR METERING PANELS & METER TRANSFORMER CABINET
WITH TERMINATION CABINET

2-6 DISCONNECTS

UNDERGROUND SERVICE UP TO 3000A

UTILITY FURNISHES, INSTALLS & MAINTAINS
1. SOCKET TYPE METER
2. NEW HOLSTEIN UTILITIES UNDERGROUND LATERAL IN CUSTOMER PROVIDED CONDUIT
3. METERING CABLE

CUSTOMER FURNISHES, INSTALLS & MAINTAINS
4. UNDERGROUND CONDUIT
5. MULTIPLE METERING EQUIPMENT
6. TERMINATION CABINET
7. CURRENT TRANSFORMER CABINET
8. GROUNDING ACCORDANCE TO CHAPTER 5
9. SERVICE DISCONNECT
10. METERING CONDUIT (1" RIGID STEEL)
11. EXPANSION SLEEVE(S)
12. APPROVED METER SOCKET
CHAPTER 7
MOBILE OR MANUFACTURED HOMES

700 – GENERAL INFORMATION

New Holstein Utilities will provide and install service conductor to individual or group metering points for mobile or manufactured homes. The customer is responsible for providing and installing the metering and service equipment. For group metering installations, the customer or developer should contact New Holstein Utilities.

For group metering installations (i.e. mobile home park, development), each metering point shall be permanently marked with the corresponding mobile or manufactured home (See Section 603 – Meter Identification). Meters will not be installed until identification requirements are met.

The minimum rating for a mobile or manufactured home service entrance shall be 100 amps. All receptacles shall have overcurrent protection no greater than their rated capacity; this includes connections of electrical equipment that is located outside of the home. The electric service entrance equipment shall not be located more than thirty (30) feet from the mobile or manufactured home. If a permanent foundation is installed for the mobile or manufactured home, it is preferred to have the metering equipment installed to the foundation.

701 – DEFINITIONS

HUD Mobile Home is defined as “a factory assembled structure(s) transportable in one or more sections that is built on a permanent chassis and designed to be used as a dwelling without a permanent foundation, connected to the required utilities and that includes plumbing, heating, air conditioning, and electric systems contained therein.”

HUD Manufactured Home is defined as “a structure transportable in one or more sections that is (8’) or more in width, or (40”) or more in length in the traveling mode or, when erected on site is 320 square feet or more, which is built on a chassis, and designed to be used as a dwelling with or without a permanent foundation when connected to the required utilities including the plumbing, heating, air conditioning and electric systems therein.”
CHAPTER 8
FARM SERVICES

800 — GENERAL INFORMATION

New Holstein Utilities will provide single phase, and where available, three phase service to farms and irrigation system installations. These services can be provided as overhead or underground services to yard service poles or to field-built structures as noted in this chapter. Separate electric services to homes or structures on farm properties are covered under the rules in other chapters of this book.

801 — DEFINITION OF FARM CUSTOMER

A farm is defined as a person or organization using electric service for the operation of an individual farm, or for residential use in living quarters on the farm occupied by persons principally engaged in the operation of the farm and by their families. A farm is a tract of land used to raise or produce agricultural and dairy products, for raising livestock, poultry, game, fur-bearing animals, or for floriculture or similar purposes, and embracing not less than 3 acres; or, if small, where the principal income of the operator is derived therefrom.

802 — FARM SERVICE YARD POLES OR METERING STRUCTURES

The farm service yard pole or metering structure is owned by the customer and must be located on the customer’s property. The customer is responsible for protecting the yard pole or metering structure from potential damage which could be caused by vehicular traffic or farm equipment that is operating in close proximity to the pole or structure.

Farm services with livestock shall maintain a minimum of 12’ and a maximum of 20’ horizontal separation between New Holstein Utilities’ pad-mount transformer and the customer’s service equipment. The minimum separation between the transformer pole and the customer’s metering point is 12’ and the maximum horizontal separation for overhead service is 30’.

All underground circuits extending from the farm service yard pole or metering structure shall be feeders or branch circuits. Vertical runs on a farm service yard pole shall be in rigid conduit.

The utility meter(s) shall be installed so that the meter(s) face an area that will accommodate motor vehicle access to the meter.

Pole top switch installations shall have a minimum switch size of 400 amps and shall be approved by New Holstein Utilities prior to its installation. The bonding conductor from the pole top transfer switch and all grounding and grounded conductors for the customer’s wiring system shall be connected together at the yard pole.

New Holstein Utilities’ distribution poles shall not be used as farm service yard poles.
NEW HOLSTEIN UTILITIES

803. OVERHEAD SERVICE TO A FARM YARD POLE, WITH GRADE LEVEL DISCONNECT AND OVERCURRENT PROTECTION, 300 AMP MAX, & 240 VOLT MAX. (DIAGRAM NEXT PAGE)

☐ UTILITY FURNISHES, INSTALLS AND MAINTAINS

1. SERVICE DROP
2. SERVICE CONNECTORS
3. METER

☐ CUSTOMER FURNISHES, INSTALLS AND MAINTAINS

4. POLE-TREATED 35' CLASS 5 MIN.
5. DOWN GUY, ANCHOR, & GUY GUARD
6. SERVICE ENTRANCE
7. OVERHEAD SERVICE CONDUIT
8. WEATHER HEAD
9. APPROVED METER SOCKET
10. GROUNDING IN ACCORDANCE WITH APPLICABLE ELECTRICAL CODE
11. FEEDER CONDUIT
12. FEEDER CONDUCTORS
NEW HOLSTEIN UTILITIES

803. OVERHEAD SERVICE TO A FARM YARD POLE, WITH GRADE LEVEL DISCONNECT AND OVERCURRENT PROTECTION, 300 AMP MAX, & 240 VOLT MAX.
NEW HOLSTEIN UTILITIES

804. OVERHEAD SERVICE TO A FIELD BUILT STRUCTURE, WITH GRADE LEVEL DISCONNECT AND OVERCURRENT PROTECTION, 300 AMP MAX & 240 VOLT MAX.

UTILITY FURNISHES, INSTALLS AND MAINTAINS

1. SERVICE DROP
2. METER

CUSTOMER FURNISHES, INSTALLS AND MAINTAINS

3. FIELD BUILT STRUCTURE-SEE 615
4. APPROVED METER SOCKET
5. POLE-TREATED 35' CLASS 5 MIN.
6. DOWN GUY & ANCHOR AND GUY GUARD
7. GROUNDS IN ACCORDANCE WITH APPLICABLE ELECTRICAL CODE
8. SERVICE ENTRANCE (OPTIONAL: SERVICE RATED TRANSFER SWITCH)
9. OVERHEAD SERVICE CONDUIT WITH WEATHER HEAD
10. FEEDER PANELS OR BRANCH CIRCUITS, IF NEEDED
11. EXPANSION JOINTS AS REQUIRED BY THE NEC
NEW HOLSTEIN
UTILITIES

804B. OVERHEAD SERVICE TO A FIELD BUILT STRUCTURE, WITH GRADE LEVEL DISCONNECT
AND CURRENT TRANSFORMER METERING FOR FARM/OR IRRIGATION. (DIAGRAM NEXT PAGE)

301-800 AMP-SINGLE PHASE-120/240 VOLT
301-800 AMP-THREE PHASE-120-208 VOLT
100-800 AMP-THREE PHASE-277/480 VOLT

☐ UTILITY FURNISHES, INSTALLS AND MAINTAINS

1. SERVICE DROP
2. CURRENT TRANSFORMERS & POTENTIAL TRANSFORMERS
3. METER

☐ CUSTOMER FURNISHES, INSTALLS AND MAINTAINS

4. CURRENT TRANSFORMER CABINET
5. METERING CONDUIT (1" RIGID GALV. STEEL)
6. APPROVED METER SOCKET
7. CUSTOMER SERVICE CONDUIT (RIGID)
8. CUSTOMER'S SERVICE ENTRANCE PANEL, OPTIONAL IF LESS THAN 6 FEEDER PANELS
9. CUSTOMER FEEDER PANELS
10. GROUNDING IN ACCORDANCE WITH APPLICABLE ELECTRICAL CODE
11. CUSTOMER FEEDER CONDUIT
12. EXPANSION SLEEVES
13. DOWN GUY, ANCHOR, GUY GUARD
14. FIELD BUILT STRUCTURE SEE SECTION 615
15. POLE-TREATED 35' CLASS 5 MIN
NEW HOLSTEIN UTILITIES

804B. OVERHEAD SERVICE TO A FIELD BUILT STRUCTURE, WITH GRADE LEVEL DISCONNECT AND CURRENT TRANSFORMER METERING FOR FARM/OR IRRIGATION.

301-800 AMP-SINGLE PHASE-120/240 VOLT
301-800 AMP-THREE PHASE-120/208 VOLT
100-800 AMP-THREE PHASE-277/480 VOLT
NEW HOLSTEIN UTILITIES

805. OVERHEAD SERVICE TO A FARM YARD POLE, WITH POLE TOP TRANSFER SWITCH (DIAGRAM NEXT PAGE)

301-800 AMP-SINGLE PHASE-120/240 VOLT
301-800 AMP-THREE PHASE-120/208 VOLT
100-800 AMP-THREE PHASE-277/480 VOLT

☐ UTILITY FURNISHES, INSTALLS AND MAINTAINS
   1. SERVICE DROP
   2. CURRENT TRANSFORMERS
   3. POTENTIAL TRANSFORMERS
   4. METER

☐ CUSTOMER FURNISHES, INSTALLS AND MAINTAINS
   5. POLE-TREATED 35' CLASS 5 MIN.
   6. POLE TOP TRANSFER SWITCH (2-POLE FOR 1 PHASE, 3-POLE FOR 3 PHASE)
   7. METERING CONDUIT
   8. APPROVED METER SOCKET
   9. OVERHEAD CIRCUIT (CUSTOMER’S)
  10. DOWN GUY, ANCHOR, GUY GUARD
  11. STAND-BY GENERATOR CIRCUIT (OPTIONAL)
  12. OPERATING HANDLE FOR POLE TOP DISCONNECT
  13. GROUNDING IN ACCORDANCE WITH APPLICABLE ELECTRICAL CODE
NEW HOLSTEIN UTILITIES

805. OVERHEAD SERVICE TO A FARM YARD POLE-WITH POLE TOP TRANSFER SWITCH

301-800 AMP-SINGLE PHASE-120/240 VOLT
301-800 AMP-THREE PHASE-120/208 VOLT
100-800 AMP-THREE PHASE-277/480 VOLT
NEW HOLSTEIN UTILITIES

806. OVERHEAD SERVICE FOR FARM/IRRIGATION SERVICE (DIAGRAM NEXT PAGE)

100-1200 AMP, 120/208 VOLT, THREE PHASE
100-800 AMP, 277/480 VOLT, THREE PHASE

☐ UTILITY FURNISHES, Installs AND MAINTAINS

1. SERVICE DROP
2. CURRENT TRANSFORMERS
3. POTENTIAL TRANSFORMERS, REQUIRED FOR 480 VOLTS ONLY
4. METER

☐ CUSTOMER FURNISHES, Installs AND MAINTAINS

5. POLE TREATED 35' CLASS 5 MIN.
6. METERING CONDUIT, 1" RIGID GALV. STEEL
7. SERVICE RISER CONDUIT
8. METER SOCKET, 20 AMP, 13 TERMINAL
9. SERVICE ENTRANCE (OPTIONAL- SERVICE RATED TRANSFER SWITCH)
10. GROUNDING IN ACCORDANCE WITH APPLICABLE ELECTRICAL CODE
11. ELECTRICAL FEEDER PANELS OR BRANCH CIRCUIT PANELS, IF NEEDED
12. UNDERGROUND CIRCUITS
13. DOWN GUY AND ANCHOR
14. EXPANSION JOINTS AS REQUIRED BY THE NEC
15. FIELD BUILT STRUCTURE - SEE SECTION 615
NEW HOLSTEIN UTILITIES

806. OVERHEAD SERVICE FOR FARM/IRRIGATION SERVICE (DIAGRAM NEXT PAGE)

100-1200 AMP, 120/208 VOLT, THREE PHASE
100-800 AMP, 277/480 VOLT, THREE PHASE

☐ UTILITY FURNISHES, INSTALLS AND MAINTAINS

1. SERVICE DROP
2. CURRENT TRANSFORMERS
3. POTENTIAL TRANSFORMERS, REQUIRED FOR 480 VOLTS ONLY
4. METER

☐ CUSTOMER FURNISHES, INSTALLS AND MAINTAINS

5. POLE TREATED 35' CLASS 5 MIN.
6. METERING CONDUIT- 1" RIGID GALV. STEEL
7. SERVICE RISER CONDUIT
8. METER SOCKET- 20 AMP- 13 TERMINAL
9. SERVICE ENTRANCE (OPTIONAL- SERVICE RATED TRANSFER SWITCH)
10. GROUNDING IN ACCORDANCE WITH APPLICABLE ELECTRICAL CODE
11. ELECTRICAL FEEDER PANELS OR BRANCH CIRCUIT PANELS, IF NEEDED
12. UNDERGROUND CIRCUITS
13. DOWN GUY AND ANCHOR
14. EXPANSION JOINTS AS REQUIRED BY THE NEC
15. FIELD BUILT STRUCTURE - SEE SECTION 615
NEW HOLSTEIN UTILITIES

806. OVERHEAD SERVICE FOR FARM/IRRIGATION SERVICE
100-1200 AMP, 120/208 VOLT, THREE PHASE
100-800 AMP, 277/480 VOLT, THREE PHASE
NEW HOLSTEIN UTILITIES

807. UNDERGROUND SERVICE FROM AN OVERHEAD TRANSFORMER TO A FARM, ON A FIELD BUILT STRUCTURE. (DIAGRAM NEXT PAGE)

100-300 AMP, 120/240 VOLT, SINGLE-PHASE
100-300 AMP, 120/208 VOLT, THREE-PHASE

☐ UTILITY FURNISHES, INSTALLS AND MAINTAINS

1. SERVICE LATERAL
2. METER

CUSTOMER FURNISHES, INSTALLS AND MAINTAINS

☐ 3. APPROVED METER SOCKET
4. FIELD BUILT STRUCTURE (SEE SECTION 615)
5A. SERVICE DISCONNECT-OPTIONAL-(REQUIRED IF 5B UTILIZED)
5B. TRANSFER SWITCH-2 POLE OR 3 POLE -OPTIONAL
5C. STAND-BY GENERATOR CIRCUIT & OUTLET-OPTIONAL
6. CONDUIT EXPANSION JOINT- REQUIRED WHERE HORIZONTAL CONDUIT RUNS ARE INSTALLED
7. GROUNDING IN ACCORDANCE WITH APPLICABLE ELECTRICAL CODE
8. FEEDER PANELS IF NEEDED, OR SERVICE RATED EQUIPMENT (1 TO 6 DISCONNECTS) IF NO SERVICE OVERCURRENT DEVICE IS USED.
9. POLE-OPTIONAL
10. EXPANSION JOINT AS REQUIRED BY THE NEC
11. CUSTOMER'S CONDUIT.
807. UNDERGROUND SERVICE FROM AN OVERHEAD TRANSFORMER TO A FARM, ON A FIELD BUILT STRUCTURE.

100-300 AMP, 120/240 VOLT, SINGLE-PHASE
100-300 AMP, 120/208 VOLT, THREE-PHASE
NEW HOLSTEIN UTILITIES

808. UNDERGROUND SERVICE TO A FARM, ON FIELD BUILT STRUCTURE, WITH OVERCURRENT PROTECTION. (DIAGRAMS ON FOLLOWING 2 PAGES)

301-400 AMP-120/240 VOLTS-SINGLE PHASE (FROM POLE XFMR)
301-600 AMP-120/240 VOLTS-SINGLE PHASE (FROM PAD XFMR)
301-1200 AMP-120/208 VOLTS-THREE PHASE (FROM PAD XFMR)
100-400 AMP-277/480 VOLTS-THREE PHASE (FROM POLE XFMR)
100-1200 AMP-277/480 VOLTS-THREE PHASE (FROM PAD XFMR)

☐ UTILITY FURNISHES, INSTalls AND MAINTAINS

1. PAD-MOUNTED TRANSFORMER
2. SERVICE LATERAL
3. METER
4. BOX PAD FOR 1 PHASE

☐ CUSTOMER FURNISHES, INSTALLS AND MAINTAINS

5. FIELD BUILT STRUCTURE (SEE SECTION 615)
6. RIGID CONDUIT
7. METERING TRANSFORMER CABINET
8. APPROVED METER SOCKET
9A. SERVICE DISCONNECT-OPTIONAL-(REQUIRED IF 9B UTILIZED)
9B. TRANSFER SWITCH-OPTIONAL-(2 POLE FOR 1 PHASE, 3 POLE FOR 3 PHASE)
9C. STAND-BY GENERATOR WEATHERPROOF JUNCTION BOX - OPTIONAL
10. GROUNDING IN ACCORDANCE WITH APPLICABLE ELECTRICAL CODE
11. FEEDER PANELS (IF NEEDED) OR SERVICE RATED EQUIPMENT (1 TO 6 DISCONNECTS IF NO SERVICE OVERCURRENT DEVICE IS USED)
12. TRANSFORMER FOUNDATION: CONCRETE PAD FOR PHASE 3
13. EXPANSION JOINT
14. EXPANSION JOINT AS REQUIRED BY THE NEC
15. CUSTOMER POLE CLASS 5 MIN.
NEW HOLSTEIN UTILITIES

808. UNDERGROUND SERVICE TO A FARM, ON FIELD BUILT STRUCTURE, WITH OVERCURRENT PROTECTION.

301-400 AMP-120/240 VOLTS-SINGLE PHASE (FROM POLE XFMR)
301-600 AMP-120/240 VOLTS-SINGLE PHASE (FROM PAD XFMR)
301-1200 AMP-120/208 VOLTS-THREE PHASE (FROM PAD XFMR)
100-400 AMP-277/480 VOLTS-THREE PHASE (FROM POLE XFMR)
100-1200 AMP-277/480 VOLTS-THREE PHASE (FROM PAD XFMR)

UTILITY WILL PROVIDE AND INSTALL THE BOX PAD BUT THE CUSTOMER IS RESPONSIBLE FOR PAYING FOR THE BOX PAD AND INSTALLATION.
NEW HOLSTEIN UTILITIES

808A. UNDERGROUND SERVICE TO A FARM, ON FIELD BUILT STRUCTURE, WITH OVERCURRENT PROTECTION.

301-400 AMP-120/240 VOLTS-SINGLE PHASE (FROM POLE XFMR)
301-600 AMP-120/240 VOLTS-SINGLE PHASE (FROM PAD XFMR)
301-1200 AMP-120/208 VOLTS-THREE PHASE (FROM PAD XFMR)
100-400 AMP-277/480 VOLTS-THREE PHASE (FROM POLE XFMR)
100-1200 AMP-277/480 VOLTS-THREE PHASE (FROM PAD XFMR)
NEW HOLSTEIN UTILITIES

809. UNDERGROUND SERVICE TO A FARM, FROM A PAD-MOUNT TRANSFORMER, WITH PAD-MOUNT CURRENT TRANSFORMER CABINET, 301-3000 AMPS.

☐ UTILITY FURNISHES, INSTALLS AND MAINTAINS
1. PAD MOUNTED TRANSFORMER
2. SERVICE LATERAL IN CONDUIT
3. METER
4. BOX PAD FOR 1 PHASE TRANSFORMER

☐ CUSTOMER FURNISHES, INSTALLS AND MAINTAINS
5. CONCRETE TRANSFORMER PAD-3 PHASE
6. RIGID CONDUIT
7. PAD MOUNTED INSTRUMENT TRANSFORMER CABINET
8. APPROVED METER SOCKET
9. EXPANSION JOINT
10. FIELD BUILT STRUCTURE (SEE SECTION 615)

UTILITY WILL PROVIDE AND INSTALL THE BOX PAD BUT THE CUSTOMER IS RESPONSIBLE FOR PAYING FOR THE BOX PAD AND INSTALLATION.
CHAPTER 9
SPECIAL SERVICES

900 – GENERAL INFORMATION

New Holstein Utilities recognizes that this Electric Service Rules Manual does not cover every electric service installation. There may be electric service requests for non-standard or special installations (i.e. communication facilities, DOT projects, primary metering packages). The customer should contact New Holstein Utilities with as much advance notice as possible to allow for New Holstein Utilities to engineer, build and install an electric service to meet the customer’s needs. New Holstein Utilities can not guarantee the installation of electric service in a timely manner if we are not given proper notice for a request for service based on the scope of the expected service installation.
CHAPTER 10
CLEARANCES

1000 – GENERAL INFORMATION

The clearances in this chapter are provided to conform to the National Electric Code (NEC) and the National Electric Safety Code (NESC). If there are questions regarding the clearances as illustrated in the diagram, please contact our office.

Also, because of the large number of potential clearance issues with utility services, not all situations regarding clearances are covered in this chapter. If there are questions regarding clearances at a customer’s premise, please contact New Holstein Utilities to ensure proper clearances are provided in order to provide the customer with safe and reliable electric service.

In some cases, the customer may be required to install items to ensure safety and reliability of service. These items may include barrier walls, posts, etc.
NEW HOLSTEIN
UTILITIES

1001. MINIMUM CLEARANCES FOR SERVICES 300 VOLTS AND BELOW
NEW HOLSTEIN UTILITIES

1001. MINIMUM CLEARANCES FOR SERVICE 300 VOLTS AND BELOW (CONT'D FROM PREVIOUS PAGE)

A. 10-FEET MINIMUM TO DRIP LOOPS OF TRIPLEX, IF VOLTAGE TO GROUND IS LESS THAN 150 VOLTS

B. 1-FOOT MINIMUM AND 2-FEET MAXIMUM HORIZONTAL, 6 TO 12 INCH VERTICAL ABOVE OR BELOW SERVICE HEAD AND ATTACHMENT

C. EXPOSED CONDUCTORS SHALL BE NO LESS THAN 3-FEET FROM WINDOW, DOORS, PORCHES, FIRE ESCAPES, AWNINGS, SIGNS, AND SIMILAR CONSTRUCTION, WHEN SERVICE IS ATTACHED TO BUILDING. THE EXPOSED SERVICE CONDUCTORS SHALL BE 3-FEET FROM ALL SIDES EXCEPT TOP OF WINDOW. WHEN THE SERVICE CONDUCTORS ARE ATTACHED ABOVE A WINDOW THE DRIP LOOP SHALL NOT SAG BELOW THE TOP OF THE WINDOW.

D. IN WISCONSIN, PSC 114.234.1 CHANGES THE NESC REQUIREMENTS WHERE THE SERVICE PASSES OVER A BUILDING BUT DOES NOT ATTACH, TO 8 FEET OVER A ROOF THAT IS NON-ACCESSIBLE AND 3 FEET IF THE ROOF IS NON-ACCESSIBLE AND HAS A SLOPE 4/12 SLOPE.

E. 5-FEET WHEN WIRES PASS OPPOSITE A WINDOW, WHERE THE SERVICE IS ATTACHED. (NESC TABLE 234-1)

F. 2-FEET FROM COMMUNICATION WIRES. (NESC TABLE 233-1)

G. 12- FEET. IF THE HEIGHT OF BUILDING DOES NOT PERMIT 12-FEET, IT CAN BE REDUCED TO 10.5-FEET. IF THE VOLTAGE TO GROUND IS LESS THAN 150 VOLTS, IT CAN BE REDUCED TO 10-FEET.

H. CENTER OF METER 4-5 FEET ABOVE FINISHED GRADE.

I. ON BUILDINGS WHERE SERVICE ATTACHES, THE VERTICAL CLEARANCE OVER A PORCH OR BALCONY SHALL BE A MINIMUM OF 10 FEET IF THE AREA IS ACCESSIBLE. FOR INACCESSIBLE AREAS IT MAY BE REDUCED. (NESC 234C 3D)

J. WHEN A DOOR OPENS OUTWARD, MOUNT THE METER SOCKET A DOOR'S WIDTH PLUS 6-INCHES ON THE HINGED SIDE AWAY FROM THE DOOR OPENING. DON'T MOUNT THE METER ALONG HIGH TRAFFIC PASSAGEWAYS.

K. THE CLEARANCES IN SECTION 1102 APPLY EXCEPT FOR TRIPLEX CABLES MEETING 230.C.3 (NESC) WHICH ARE 10-FEET OR MORE HORIZONTALLY FROM THE EDGE OF THE POOL, DIVING PLATFORM OR DIVING TOWER.

L. A MINIMUM HORIZONTAL SEPARATION OF 3-FEET SHALL BE MAINTAINED BETWEEN NATURAL GAS SERVICE EQUIPMENT (VENTED REGULATORS) AND ELECTRIC METERING OR TERMINATION EQUIPMENT. TRANSFORMERS SHALL HAVE A MINIMUM SEPARATION OF 5-FEET FROM NATURAL GAS SERVICE EQUIPMENT. A MINIMUM SEPARATION OF 5- FEET SHALL BE MAINTAINED BETWEEN ELECTRIC METERING OR TERMINATION EQUIPMENT AND LIQUID PETROLEUM FACILITIES ON SITE BUT NOT FILLED ON SITE. IN THE LIQUID PETROLEUM FACILITIES ARE FILLED ON SITE THE MINIMUM SEPARATION IS 10-FEET

M. 16 FT. OVER A DRIVEWAY, MAY BE REDUCED ON RESIDENTIAL-ONLY DRIVES TO 12.5-FEET FOR INSULATED DROPS LIMITED TO 300 VOLTS TO GROUND OR 12.0-FEET FOR TRIPLEX SERVICE DROPS LIMITED TO 150 VOLTS TO GROUND. (NESC TABLE 232-1)

N. THE HORIZONTAL CLEARANCE TO BUILDINGS, SIGNS ETC. WHERE SERVICES (AT REST) PASS BUT ARE NOT ATTACHED TO THE BUILDING AT THIS LOCATION IS 4.5 FEET. IF THE DROP MEETS (NESC) 230C1 THE CLEARANCE MAY BE REDUCED TO 2-FEET IF THE BUILDING IS MAINTENANCE FREE. IF THE DROP IS SUBJECT TO WIND MOVEMENT, THEN THE HORIZONTAL CLEARANCE IS 3.5-FEET AT BLOW OUT POSITION.
CHAPTER 11
SERVICE IMPAIRING EQUIPMENT

1100 – GENERAL INFORMATION

Some types of customer electrical equipment (i.e. welders, arc furnaces, motor driven compressors, instantaneous water heaters) having highly fluctuating or large instantaneous demands, when compared to their average operating demands or with loads which cause harmonic distortion (some large computer systems and variable speed drives) or other electrical disturbances, are defined as “service impairing” equipment. These unusual variations can impair the quality of service to other customers and shall be eliminated or controlled with performance limits determined by New Holstein Utilities. The customer shall install equipment that causes minimum service impairment or install corrective equipment at the load location.

Where New Holstein Utilities’ electric supply facilities are adequate and have ample capacity to serve customers under normal load additions, all New Holstein Utilities costs for additional facilities, equipment, metering and alterations specifically required to prevent impairment of service to other customers, will be billed to the customer installing service impairing equipment.

1101 – PHASE BALANCING

The customer shall balance its electrical loads on the service entrance. Each phase conductor shall carry a minimum of 25% of the total KVA at maximum load conditions.

1102 – POWER FACTOR CORRECTION

Customers may install power factor correction equipment. The customer may be required to limit the size of static capacitor installations or to maintain effective control of the capacitors in order to prevent the use of such equipment from causing excessive voltage at the service. Corrective equipment must be installed on the load side of the service disconnecting device and metering.

1103 – ARC WELDERS

Before installing arc welders or furnaces, the customer shall consult with New Holstein Utilities to obtain approval for the installation. The customer shall provide New Holstein Utilities with the following name plate information on the equipment:

- Manufacturer, model and type
- Frequency (Hz)
- Primary voltage
- Maximum input amps at rated output
- Output volts at rated output amps
- Rated output amps
- Rated duty cycle
- Temperature rise
- Open circuit voltage

Arc welders with a rated maximum operating input under 20 amps may be used by residential or general service accounts as long as they do no impair service to other customers.
1104 – PROTECTION AND CONTROL

The customer shall be responsible for the protection against low voltage or phase loss wherever low voltage, phase loss, or unexpected restarting could cause damage to the customer’s equipment or property, or result in personal injury.

Control apparatus equipped with reverse-phase relays of an approved type shall be installed by the customer on all poly-phase motor installations for elevators, hoists, cranes and those manufactured processes where accidental reversal of rotation is liable to cause injury to persons or damage to equipment or work in progress.

1105 – MOTOR SPECIFICATIONS

Single phase motors that are started manually or automatically more than four times per hour are classified as frequently started motors. A frequently started motor may be connected to 120, 208, or 240 volt circuits provided its lock rotor current does not exceed 60 amps.

A motor started four or fewer times per hour may be connected to 120, 208, or 240 volt circuits provided its inrush current does not exceed 100 amps. Customers must consult with New Holstein Utilities prior to purchasing and installing a single phase or three phase motor rated more than five (5) horsepower (HP), or having an inrush current exceeding 100 amps. Customers may be responsible for the cost of installing additional facilities (such as soft start equipment) on their motors that may be necessary to maintain service to other customers so as not to create a voltage problem.

Air conditioning systems, including air-to-air and geothermal heat pumps, shall have Locked Rotor Current (Locked Rotor Amps – LRA- as listed on most unit’s nameplates) not to exceed 100 amps. Exceeding this limit may cause voltage dip or light flicker problems. If service to another customer(s) is negatively affected by this type of installation, the cost to provide equipment necessary to provide adequate service or to correct the problem shall be the expense of the customer who causes the problem.
### Permitted Maximum Horsepower for Single Phase Motors

<table>
<thead>
<tr>
<th>Locked Rotor KVA Code</th>
<th>Maximum HP Frequently Started Motors 120V</th>
<th>Maximum HP Frequently Started Motors 208V or 240V</th>
<th>Maximum HP Infrequently Started Motors 120V</th>
<th>Maximum HP Infrequently Started Motors 208V or 240V</th>
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### Permitted Maximum Horsepower for Three Phase Motors

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<th>Maximum Horsepower Frequently Started Motors</th>
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CHAPTER 12
STANDBY GENERATION SYSTEMS

SECTION 1200 – GENERAL INFORMATION

This chapter applies to customer-owned portable (temporary) or permanently installed standby generators that are not to be operated in parallel with New Holstein Utilities’ electric distribution system (as per NEC 702). The customer shall contact New Holstein Utilities regarding any other installation of a standby generation system.

SECTION 1201 – SAFETY

The customer (or their representative) shall consult New Holstein Utilities before connecting any generating equipment to any customer circuit that is or can be supplied from New Holstein Utilities’ electric distribution system.

Transfer switches may only be located before the main service disconnect where the available fault current is less than 10,000 amps.

The customer’s transfer device shall be constructed and connected as to prevent any possibility of electricity from the customer’s emergency source feeding back into New Holstein Utilities’ distribution system.

SECTION 1202 – TRANSFER SYSTEM REQUIREMENTS

Where applicable, the customer may supply all or a portion of their electric load from their standby generation system.

The customer shall install a transfer switch or contactor to transfer all ungrounded conductors load to either the generator or normal supply.

New Holstein Utilities shall approve all automatic transfer systems before it is installed.

All transfer devices shall:
   a. Prevent connecting the generator to the load until after the load is disconnected from New Holstein Utilities’ distribution system. **Exception:** closed transition type transfer switches that interconnect the emergency generators and the normal supply for a maximum of a ¼ second.
   b. Positively prevent accidental connection of the generator to New Holstein Utilities’ electric distribution system at any time.
   c. Closed transition type transfer switches shall have a lockable, visually open break in the circuit between the normal supply and the transfer switch.

SECTION 1203 – TRANSFER SWITCH OPTIONS

The following transfer switch options are permitted:
   a. Manual or automatic double throw switches
   b. Double throw relays
   c. Mechanically interlocked switches
   d. Mechanically interlocked fuse block
   e. Breakers with factory designed mechanical interlocks (in dry corrosion free, dust
free environments only)

The following **are not** permitted:

a. Key interlocked switches
b. Key interlocked breakers
# NEW HOLSTEIN UTILITIES

## 1204. CONNECTION AND NEUTRAL SWITCHING REQUIREMENTS. (FIGURE DIAGRAMS ON FOLLOWING TWO PAGES)

<table>
<thead>
<tr>
<th>FIGURE</th>
<th>TRANSFER SWITCH LOCATION</th>
<th>SEPARATELY DERIVED SYSTEM STANDBY GENERATORS* (INCLUDES PORTABLE GENERATORS)</th>
<th>NON-SEPARATELY DERIVED SYSTEM STANDBY GENERATORS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>TRANSFER SWITCH IS INSTALLED ON A FEEDER WITH SEPARATE EQUIPMENT GROUNDING AND NEUTRAL CONDUCTORS OR ON A BRANCH CIRCUIT</td>
<td>THE GENERATOR'S NEUTRAL IS BONDED TO THE GENERATOR'S EQUIPMENT GROUNDING CONDUCTOR AT THE GENERATOR AND A GROUNDING ELECTRODE SYSTEM IS REQUIRED AT THE GENERATOR.</td>
<td>THE GENERATOR'S NEUTRAL IS NOT BONDED TO THE GENERATOR'S EQUIPMENT GROUNDING CONDUCTOR AT THE GENERATOR AND A GROUNDING ELECTRODE SYSTEM IN NOT REQUIRED AT THE GENERATOR.</td>
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<tr>
<td>2</td>
<td>TRANSFER SWITCH ON THE SOURCE SIDE OF A SINGLE FAMILY RESIDENTIAL SERVICE ENTRANCE RATED 200 AMPS OR LESS (AVAILABLE FAULT CURRENT OF 10,000 AMPS OR LESS). NEC 547-AGRICULTURAL BUILDING POLE TOP SITE-ISOLATING DEVICE (TRANSFER SWITCH)</td>
<td>1. CONNECT THE GENERATOR'S EQUIPMENT GROUNDING CONDUCTOR TO THE FEEDER'S/BRANCH CIRCUIT'S EQUIPMENT GROUNDING CONDUCTOR AND THE GENERATOR'S NEUTRAL CONDUCTOR TO THE FEEDER'S/BRANCH CIRCUIT'S NEUTRAL CONDUCTOR. 2. NEUTRAL MUST BE SWITCHED.</td>
<td>1. CONNECT THE GENERATOR'S EQUIPMENT GROUNDING CONDUCTOR TO THE FEEDER'S/BRANCH CIRCUIT'S EQUIPMENT GROUNDING CONDUCTOR AND THE GENERATOR'S NEUTRAL CONDUCTOR TO THE FEEDER'S/BRANCH CIRCUIT'S NEUTRAL CONDUCTOR. 2. DO NOT SWITCH THE NEUTRAL.</td>
</tr>
<tr>
<td>3</td>
<td>SERVICE ENTRANCE RATED TRANSFER SWITCH</td>
<td>1. CONNECT THE GENERATOR'S EQUIPMENT GROUNDING CONDUCTOR AND NEUTRAL CONDUCTOR TO SYSTEMS GROUNDED NEUTRAL CONDUCTOR. 2. DO NOT SWITCH THE NEUTRAL.</td>
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<tr>
<td>4</td>
<td>TRANSFER SWITCH IS LOCATED ON A FEEDER WITH A GROUND NEUTRAL (ALLOWED PRIOR TO 2008 NEC).</td>
<td>1. CONNECT THE GENERATOR'S EQUIPMENT GROUNDING CONDUCTOR AND NEUTRAL CONDUCTOR TO SYSTEMS GROUNDED NEUTRAL CONDUCTOR. 2. DO NOT SWITCH THE NEUTRAL.</td>
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* A SEPARATELY DERIVED GENERATOR IS A GENERATOR THAT CAN BE OPERATED WITHOUT BEING INTERCONNECTED TO A SERVICE ENTRANCE PANEL BY A TRANSFER SWITCH. A TYPICAL APPLICATION IS TO PROVIDE POWER TO PORTABLE EQUIPMENT. A NON-SEPARATELY DERIVED GENERATOR CANNOT PROVIDE POWER DIRECTLY TO PORTABLE EQUIPMENT. SWITCHING CRITERIA: DO NOT SWITCH THE EQUIPMENT GROUNDING CONDUCTOR OR THE GROUNDED NEUTRAL CONDUCTOR. DO NOT RE-GROUND THE NEUTRAL AFTER THE GROUNDED NEUTRAL CONDUCTOR HAS BEEN SEPARATED INTO A NEUTRAL CONDUCTOR AND AN EQUIPMENT GROUNDING CONDUCTOR.
NEW HOLSTEIN UTILITIES

TRANSFER SWITCH IS INSTALLED ON A FEEDER WITH SEPARATE EQUIPMENT GROUNDING AND NEUTRAL CONDUCTORS OR ON A BRANCH CIRCUIT

FIGURE 1

SEPARATELY DERIVED SYSTEM

NON-SEPARATELY DERIVED SYSTEM

FIGURE 2

TRANSFER SWITCH ON THE SOURCE SIDE OF A SINGLE FAMILY RESIDENCE'S SERVICE ENTRANCE OR NEC 547 AGRICULTURAL BUILDING, POLE TOP SITE ISOLATED DEVICE

SEPARATELY DERIVED SYSTEM
TRANSFER SWITCH OR POLE TOP TRANSFER SWITCH

NON-SEPARATELY DERIVED SYSTEM
TRANSFER SWITCH OR POLE TOP TRANSFER SWITCH

DO NOT SWITCH THE NEUTRAL
NEW HOLSTEIN UTILITIES

FIGURE 3
SERVICE ENTRANCE RATED TRANSFER SWITCH

SEPARATELY DERIVED SYSTEM

DO NOT SWITCH
THE NEUTRAL

SERVICE RATED
TRANSFER SWITCH

NON-SEPARATELY DERIVED SYSTEM

DO NOT SWITCH
THE NEUTRAL

SERVICE RATED
TRANSFER SWITCH

FIGURE 4
TRANSFER SWITCH IS LOCATED ON A FEEDER WITH A GROUNDED NEUTRAL (PRIOR TO NEC 2008)

SEPARATELY DERIVED SYSTEM

UTILITY FEED

METER

1, 2, OR 3Ø

G/N

CUSTOMER'S SERVICE ENTRANCE

TRANSFER SWITCH

TO FEEDER PANEL

GENERATOR

DO NOT SWITCH
THE NEUTRAL

UTILITY FEED

METER

1, 2, OR 3Ø

G/N

CUSTOMER'S SERVICE ENTRANCE

TRANSFER SWITCH

TO FEEDER PANEL

GENERATOR

NON-SEPARATELY DERIVED SYSTEM

UTILITY FEED

METER

1, 2, OR 3Ø

G/N

CUSTOMER'S SERVICE ENTRANCE

TRANSFER SWITCH

TO FEEDER PANEL

GENERATOR

DO NOT SWITCH
THE NEUTRAL
1206. STAND BY GENERATOR INSTALLATION (GENERATOR SUPPLIES ALL OF CUSTOMER'S LOAD AT TWO DIFFERENT LOCATIONS) SINGLE-PHASE, 120/240 VOLTS, UP TO 300 AMPS.

THE CUSTOMER SHALL INSTALL, OWN AND MAINTAIN THE ENTIRE INSTALLATION EXCEPT FOR NEW HOLSTEIN UTILITIES METERS.
CHAPTER 13
DISTRIBUTED GENERATION (NET METERING) SYSTEMS

SECTION 1300 – GENERAL INFORMATION

Prior to the installation of a distributed generation or net metering system, the customer (or the customer’s representative) shall contact New Holstein Utilities. The Public Service Commission of Wisconsin (PSC) has rules as outlined in PSC Chapter 119 with regards to the installation of distributed generation facilities. Application forms and interconnection agreements must be completed prior to the customer receiving approval for the installation of distributed generation facilities. The customer must allow New Holstein Utilities ample opportunity to review the plans for the installation of the facilities and order any material needed ensure that the electricity generated is safely incorporated into the utility’s infrastructure and that the electricity generated by the customer is accurately metered.
NEW HOLSTEIN UTILITIES

1301. NET-METERED SELF-CONTAINED DISTRIBUTED GENERATION
100-300AMP 1 PH 120/240
100-300AMP 1 PH 120/208

UTILITY FURNISHES, INSTALLS AND MAINTAINS
1. UNDERGROUND SERVICE CABLE
7. METER (OUTSIDE)

CUSTOMER FURNISHES, INSTALLS AND MAINTAINS
3. CUSTOMER SERVICE ENTRANCE PANEL (OUTSIDE OR INSIDE)
4. RIGID CONDUIT
5. APPROVED METER SOCKET (OUTSIDE)
6. CONCRETE SLEEVE (OPTIONAL)- REQUIRED WHERE CONDUIT PASSES THROUGH CONCRETE
7. CONDUIT EXPANSION JOINT- REQUIRED WHERE HORIZONTAL CONDUIT RUNS ARE INSTALLED
8. CONDUIT INSULATING BUSHING
9. CONDUIT STRAPS
10. GROUNDING IN ACCORDANCE WITH THE CODE
11. DISTRIBUTED GENERATION DISCONNECT (OUTSIDE)
NHU

New Holstein
Utilities

APPROVED
ELECTRIC SERVICE
EQUIPMENT

MAY, 2013
# NEW HOLSTEIN UTILITIES
## ELECTRIC SERVICE EQUIPMENT

### ELECTRIC SERVICE EQUIPMENT - METER SOCKETS

**Residential Meter Sockets - 250 Volts Maximum**

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<th>Manufacturer</th>
<th>Catalog #</th>
<th>Use</th>
<th>Phases</th>
<th>By-pass</th>
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<th>Mounting</th>
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# Residential/Commercial Meter Sockets - 250 Volt Maximum

## 200 Amp, 4 Terminal

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## 200 Amp, 5 Terminal

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## 300 Amp, 4 Terminal

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## 200 Amp, 7 Terminal

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## 300 Amp, 7 Terminal

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### Commercial Meter Sockets - 480 Volts Maximum

#### 200 Amp, 7 Terminal

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<td>Square D</td>
<td>USTS13-2B</td>
<td>OHD/UGD</td>
<td>3</td>
<td>CT</td>
<td>Wall</td>
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#### 100 Amp, 5 Terminal

<table>
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<th>Manufacturer</th>
<th>Catalog #</th>
<th>Use</th>
<th>Phases</th>
<th>By-pass</th>
<th>Meter Type</th>
<th>Mounting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cutler Hammer</td>
<td>UGHTRS111</td>
<td>OHD</td>
<td>1</td>
<td>Horn</td>
<td>Self/CT</td>
<td>Wall</td>
</tr>
<tr>
<td>Midwest</td>
<td>UGHTRS111</td>
<td>OHD</td>
<td>1</td>
<td>Horn</td>
<td>Self/CT</td>
<td>Wall</td>
</tr>
<tr>
<td>Milbank</td>
<td>U7487-RL-TG-KK-5T</td>
<td>OHD</td>
<td>1</td>
<td>Horn</td>
<td>Self/CT</td>
<td>Wall</td>
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<tr>
<td>Square D</td>
<td>UGHTRS111</td>
<td>OHD</td>
<td>1</td>
<td>Horn</td>
<td>Self/CT</td>
<td>Wall</td>
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### RESIDENTIAL METER PEDESTALS - 250 VOLT MAXIMUM

#### 200 Amp, 4 Terminal

<table>
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<th>Manufacturer</th>
<th>Catalog #</th>
<th>Use</th>
<th>Phases</th>
<th>By-pass</th>
<th>Meter Type</th>
<th>Mounting</th>
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</thead>
<tbody>
<tr>
<td>Cutler Hammer</td>
<td>UHTRP2423-63CH</td>
<td>UGD</td>
<td>1</td>
<td>Horn</td>
<td>Wall</td>
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<tr>
<td>Cutler Hammer</td>
<td>1009264 - (2 position)</td>
<td>UGD</td>
<td>1</td>
<td>Horn</td>
<td>Wall</td>
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<td>Midwest</td>
<td>UHTRP2423-63MEP</td>
<td>UGD</td>
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<tr>
<td>Midwest</td>
<td>1009264 - (2 position)</td>
<td>UGD</td>
<td>1</td>
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<tr>
<td>Milbank</td>
<td>U3358-O-KK</td>
<td>UGD</td>
<td>1</td>
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<td>Milbank</td>
<td>U1783-O-KK(S8988)(2P)</td>
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<td>Square D</td>
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### RESIDENTIAL METER PEDESTALS - 250 VOLT MAXIMUM (WITH RECEPTACLES)

#### 200 Amp, 4 Terminal

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<th>Catalog #</th>
<th>Use</th>
<th>Phases</th>
<th>By-pass</th>
<th>Meter Type</th>
<th>Mounting</th>
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<tbody>
<tr>
<td>Milbank</td>
<td>U5706-O-200S-KK</td>
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MANUFACTURED HOME METER PEDESTALS (W/MAIN) - 250 VOLTS MAXIMUM

100 Amp, 4 Terminal

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<th>Catalog #</th>
<th>Use</th>
<th>Phases</th>
<th>By-pass</th>
<th>Meter Type</th>
<th>Mounting</th>
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</thead>
<tbody>
<tr>
<td>Milbank</td>
<td>U5136-O-100S</td>
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<td>Post</td>
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<tr>
<td>Milbank</td>
<td>U5137-O-1002 (2 position)</td>
<td>UGD</td>
<td>1</td>
<td>Horn</td>
<td>Post</td>
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<tr>
<td>Midwest</td>
<td>R101CP6HP</td>
<td>UGD</td>
<td>1</td>
<td>Horn</td>
<td>Post</td>
<td></td>
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<tr>
<td>Midwest</td>
<td>R101CB6HP (2 position)</td>
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<td>Post</td>
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</table>

200 Amp, 4 Terminal

<table>
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<th>Catalog #</th>
<th>Use</th>
<th>Phases</th>
<th>By-pass</th>
<th>Meter Type</th>
<th>Mounting</th>
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<tbody>
<tr>
<td>Milbank</td>
<td>U5136-O-200S-22K</td>
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<td>Milbank</td>
<td>U5137-O-200S-22K (2 position)</td>
<td>UGD</td>
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<td>Midwest</td>
<td>R281C1B6H (2 position)</td>
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# METERING TRANSFORMER CABINETS

## Metering Transformer Cabinets - 400 Amps (Maximum 250 volts unless noted)

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<tr>
<th>Manufacturer</th>
<th>Catalog #</th>
<th>1-PH, 3W</th>
<th>3-PH, 4W</th>
<th>T(I)/B(O)</th>
<th>B(I)/T(O)</th>
<th>B(I)/B(O)</th>
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<tbody>
<tr>
<td>Erickson</td>
<td>CT41-ALI</td>
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<tr>
<td>Erickson</td>
<td>CT44-ALI</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<tr>
<td>Erickson</td>
<td>CT44-PT-ALI (600 volts)</td>
<td>X</td>
<td>X</td>
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<td>X</td>
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<tr>
<td>Erickson</td>
<td>CT41-ALI-SEA</td>
<td>X</td>
<td></td>
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<tr>
<td>Erickson</td>
<td>CT44-ALI-SEA</td>
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<td>Erickson</td>
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<td>Erickson</td>
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<td>Galva-Closure</td>
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<td>Galva-Closure</td>
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## Metering Transformer Cabinets - 600 Amps (Maximum 250 volts unless noted)

<table>
<thead>
<tr>
<th>Manufacturer</th>
<th>Catalog #</th>
<th>1-PH, 3W</th>
<th>3-PH, 4W</th>
<th>T(I)/B(O)</th>
<th>B(I)/T(O)</th>
<th>B(I)/B(O)</th>
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<tbody>
<tr>
<td>Erickson</td>
<td>CT61-ALI</td>
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<td>Erickson</td>
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<td>X</td>
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<tr>
<td>Galva-Closure</td>
<td>ALI613</td>
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<td>Galva-Closure</td>
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<td>Galva-Closure</td>
<td>ALI664 (600 volts)</td>
<td>X</td>
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<td>Galva-Closure</td>
<td>ALI613UGBX</td>
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## Metering Transformer Cabinets - 800 Amps (Maximum 250 volts unless noted)

<table>
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<th>Manufacturer</th>
<th>Catalog #</th>
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<th>3-PH, 4W</th>
<th>T(I)/B(O)</th>
<th>B(I)/T(O)</th>
<th>B(I)/B(O)</th>
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<td>Erickson</td>
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<tr>
<td>Erickson</td>
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<td>Galva-Closure</td>
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<td>Galva-Closure</td>
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# Metering Transformer Cabinets - 1200 Amps (Maximum 250 volts unless noted)

<table>
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<th>Manufacturer</th>
<th>Catalog #</th>
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<th>3-PH, 4W</th>
<th>T(I)/B(O)</th>
<th>B(I)/T(O)</th>
<th>B(I)/B(O)</th>
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<tbody>
<tr>
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<td>CT124-ALI</td>
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<td>Erickson</td>
<td>CT124-PT-ALI (600 volts)</td>
<td>X</td>
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<td>Galva-Closure</td>
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<td>ALI1264UGBX (600 volts)</td>
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# Metering Transformer Cabinets - 1600 Amps (Maximum 250 volts unless noted)

<table>
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<th>Manufacturer</th>
<th>Catalog #</th>
<th>1-PH, 3W</th>
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<th>B(I)/T(O)</th>
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<tbody>
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<td>Erickson</td>
<td>CT164-ALI</td>
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<tr>
<td>Erickson</td>
<td>CT164-PT-ALI (600 volts)</td>
<td>X</td>
<td>X</td>
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<tr>
<td>Galva-Closure</td>
<td>ALI1634</td>
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<tr>
<td>Galva-Closure</td>
<td>ALI1664 (600 volts)</td>
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<tr>
<td>Galva-Closure</td>
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<td>ALI1664UGBX (600 volts)</td>
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</table>

Note: For any equipment over 1600 amps or not listed in this section, please consult with New Holstein Utilities regarding equipment specifications that will be needed for the installation.