

## Specifications for Commercial Underground Current Transformer Metering Requirements for a Single Three-Phase Customer Served from a New Underground Padmount Transformer

### Available ONLY by pre-approval from SLEMCO prior to construction.

Applicable to a commercial service requiring greater than 200 Amps and will be the only service receiving three-phase power at 120/208 volts (*V*) from a new underground padmount transformer. Also applicable to a commercial service that will be the only service receiving three-phase power at 277/480V from a new underground padmount transformer. Current transformers (*CTs*) and Voltage Transformers (*VT Pack*) are enclosed within the padmount transformer with metering conductors run through conduit between the padmount transformer and meter base. The meter base will be attached to building requiring service. The service conductors run through underground conduit from the padmount transformer to disconnect switch and to optional wire trough. These requirements can also be applied to a standalone structure such as a panel board adjacent to the padmount transformer. A VT Pack (2.5:1) is only required for 277/480V services.

The *Point of Connection* is the point of demarcation between SLEMCO and the customer. It shall be the customer's responsibility for compliance with the National Electrical Code (*NEC*) and any Governing Authority for all equipment beyond the *Point of Connection*. The customer is advised to use the services of a qualified electrician to assure compliance with all codes and regulations.

It should be noted that electrical pipe is the gray pipe and white water pipe is not acceptable. Therefore, schedule 40 or 80 electrical pipe discussed in this section is approved electrical conduit.

- A. Secondary conductors from transformer (*Point of Connection*) to disconnect switch furnished and installed by customer. The secondary conductors shall be sized according to the load, as required by the NEC or Governing Authority. Diesel Locomotive (*DLO*) conductors are prohibited. The neutral of the secondary conductors shall be sized no smaller than two sizes less than the other conductors. Termination of conductors must be made in disconnect switch by customer. Wire trough is optional. Each pole of the disconnect switch will only be allowed one lug attachment. Therefore, multi-conductor connections to a single pole made within the disconnect switch must include a multi-conductor lug. More than one conductor connected within a single lug will not be allowed. An extension of at least 48" of secondary conductor is required to be left out of conduit at padmount transformer location. Termination of conductors in padmount transformer (*Point of Connection*) performed by customer.
- B. Secondary conduit furnished and installed by customer. The customer is required to trench and install one (1) electrical conduit (3" minimum) per conductor run. Electrical schedule 40 pipe is acceptable for below ground use.
- C. Above ground riser conduit must be a minimum of a 3" electrical schedule 80 pipe. If elbows are required, then PVC elbows shall be used. LB elbows and flex conduit cannot be used. **5**

## Specifications for Commercial Underground Current Transformer Metering Requirements for a Single Three-Phase Customer Served from a New Underground Padmount Transformer

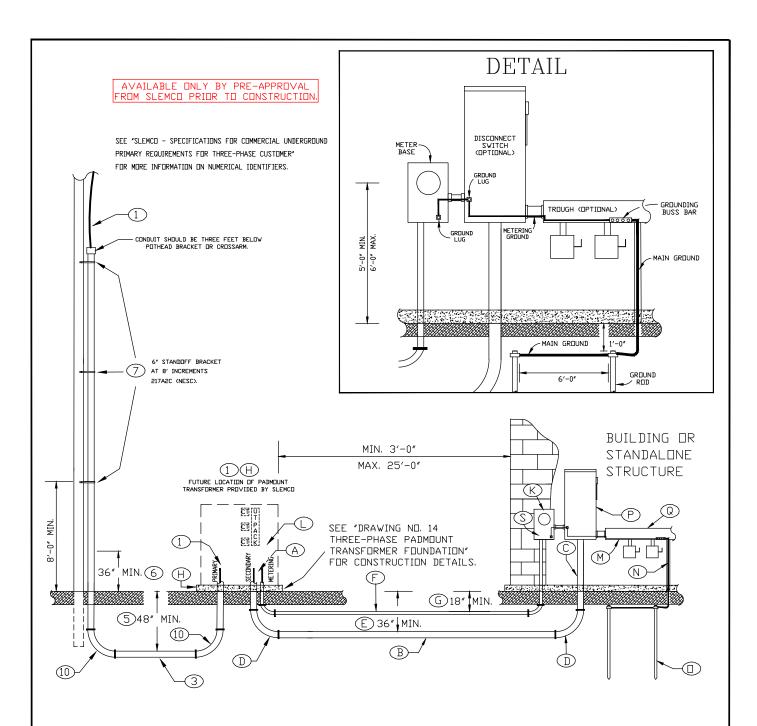
- D. No standard steel 90° elbows are allowed since conduit will house conductors carrying greater than 200 Amps. Therefore, any underground service that requires three 90° turns or is further than 150', the customer must use PVC long radius 90° elbows with a 48" turn. A maximum of three 90° turns are allowed. Any underground service which is less than 150' with two or less 90° turns, the customer is allowed to use PVC long radius 90° elbows with a 36" turn.
- E. Customer must maintain a depth of 36" when installing electrical conduit for secondary conductors. **6**
- F. The customer shall furnish, trench, and install one 1" metering conduit from meter base to the location of new padmount transformer. This metering conduit must be continuous electrical schedule 40 pipe and inaccessible. Therefore, if elbows are required then PVC elbows shall be used. LB elbows and flex conduit cannot be used. Metering conductors furnished and installed by SLEMCO.
- G. Customer must maintain a depth of 18" when installing electrical conduit for metering conductors. **5**
- H. Padmount transformer foundation constructed and grounded by customer according to *Drawing No. 14 Three-Phase Padmount Transformer Foundation*. SLEMCO must inspect foundation before concrete is poured. Padmount transformer furnished and installed by SLEMCO. **6**
- I. The customer shall stub up the secondary and metering electrical conduit as indicated on Drawing No. 14 - Three-Phase Padmount Transformer Foundation at the location of new padmount transformer.
- J. After trenching, all trenches may be backfilled and covered by customer.
- K. Meter base furnished by SLEMCO and installed by customer. The meter base shall be mounted on the outside of the building such that the center of the meter socket window is between 5' and 6' above finished grade. Meter base cannot be mounted to the siding of a metal building unless additional support is used behind the meter base. The top hole of meter base must be plugged with 1" plug.
- L. CTs and VT Pack furnished by SLEMCO and installed by SLEMCO in the secondary compartment of the padmount transformer. A VT Pack (2.5:1) is only required for 277/480V services.

# Specifications for Commercial Underground Current Transformer Metering Requirements for a Single Three-Phase Customer Served from a New Underground Padmount Transformer

- M. The customer will be responsible to furnish a metering ground wire (*minimum* #6 soft drawn copper or #6 insulated copper) and install this wire from the meter base through disconnect switch to the optional wire trough. This metering ground wire must be continuous and installed in electrical conduit between the meter base, disconnect switch, and optional wire trough. The metering ground wire must be connected to the ground lugs in the meter base, disconnect switch, and the grounding buss bar inside of the optional wire trough. If optional wire trough is omitted, the metering ground wire would end in the disconnect switch. This is the minimum required by SLEMCO. Additional grounding may be required by the NEC or Governing Authority.
- N. Main ground wire shall be furnished and installed by customer. The main ground wire must be continuous and installed in ½" electrical conduit between optional wire trough and the first ground rod. The continuous main ground wire must be connected to the grounding buss bar inside of the optional wire trough and each of the ground rods. If the optional wire trough is omitted, then the main ground wire must be continuous and installed in ½" electrical conduit between disconnect switch and the first ground rod. The continuous main ground wire must be connected to the grounding buss bar inside of the disconnect switch and each of the ground rods, if the optional wire trough is omitted. **⑤** The main ground wire shall be sized according to the load, as required by the NEC or Governing Authority.
- O. Ground rods, minimum of two 5/8" x 8' copperweld or 1/2" x 8' copper, furnished and installed by customer. Must have one ground rod for every 200 Amps of service. Ground rods shall be installed 6' apart. Ground rods must be set 1" below finished grade. This is the minimum required by SLEMCO. Additional grounding may be required by the NEC or Governing Authority.
- Ρ. **Disconnect switch is optional.** Disconnect switch isolates power from services connected. Disconnect switch furnished and installed by customer between the CT Enclosure and services connected (wire trough optional). Disconnect switch is for SLEMCO use only and shall be locked and sealed open or closed by use of SLEMCO padlock. Disconnect switch shall be a three pole, be non-fused or fused with properly sized slugged (dummy/neutral) fuse, have a voltage rating of at least 240V (120/208V service) or 600V (277/480V service), and have an ampacity rating no less than the total of the amp ratings of all connected services. Enclosure for disconnect switch shall be UL listed, be weather proof and rain tight (*NEMA 3R*), have a locking mechanism to secure it in the open or close position with a SLEMCO padlock. All terminations within disconnect switch will be made by customer. Any multi-conductor connections to a single pole made within the disconnect switch must include a multi-conductor lug. More than one conductor connected within a single lug will not be allowed. The electrical conduit from CT enclosure to disconnect switch shall be a minimum of 3" electrical schedule 40 pipe. This conduit will be furnished and installed by customer. If elbows are required, then PVC elbows shall be used. LB elbows and flex conduit cannot be used.

## Specifications for Commercial Underground Current Transformer Metering Requirements for a Single Three-Phase Customer Served from a New Underground Padmount Transformer

- Q. Main disconnects (*service panels*) and optional wire trough shall be furnished and installed by customer as required by the NEC or Governing Authority. **6** All terminations will be made in optional wire trough or to main disconnects by customer.
- R. Variations of this design may be considered equal as long as NEC requirements are met. To assure acceptability where variations arise, contact SLEMCO prior to installation.
- S. If a Governing Authority requires inspection, inspection tag must be in place and marked approved before SLEMCO will connect service. **6**
- T. Prior to secondary service connection and meter installation, a SLEMCO serviceman must inspect the total job for readiness. When ready for this inspection, notify the Lafayette Service Department by calling (337) 896-5551.
- U. SLEMCO does not allow any applicable metering equipment (*meter base and CT enclosure*) to be mounted on the side of an underground padmount transformer.



SEE "SLEMCO - SPECIFICATIONS FOR COMMERCIAL UNDERGROUND CURRENT TRANSFORMER METERING REQUIREMENTS FOR A SINGLE THREE-PHASE CUSTOMER SERVED FROM A NEW UNDERGROUND PADMOUNT TRANSFORMER" FOR MORE INFORMATION.



SOUTHWEST LOUISIANA ELECTRIC MEMBERSHIP CORPORATION LOUISIANA 9 LAFAYETTE

THREE-PHASE CURRENT TRANSFORMER METERING
REQUIREMENTS FROM A NEW PADMOUNT
TRANSFORMER FOR A SINGLE CUSTOMER

		DRAWN BY:	CREATED ON:	09/08/89   SCA	LE: N.1.5.	
SLEMCO ELECTRICAL STANDARDS		REVISIONS	REVISED BY	DATE REV.	DRAWING. NO.	REV.
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APPROVED: DATE:	PAGE NUMBER:	ENHANCEMENT TO DRAWINGS & SPECIFICATIONS	L. MECHE	01/26/16 5		7
	52	ADDED DISCONNECT SWITCH	D. C.	02/11/19 6		'
		MADE DISCONNECT SWITCH OPTIONAL, ADDED PRE-APPROVAL REQUIRED	H.HUGHES	10/28/22 7		

# Specifications for Commercial Underground Current Transformer Metering Requirements for a Three-Phase Customer Served from a New Underground Padmount Transformer

Applicable to a commercial service requiring greater than 200 Amps receiving three-phase power at 120/208 volts (*V*) from a new underground padmount transformer. Also applicable to a commercial service receiving three-phase power at 277/480V from a new underground padmount transformer. Current transformers (*CTs*) are enclosed within the applicable metering equipment (*meter base and CT enclosure*) that will be attached to building requiring service. The service conductors run through underground conduit from the padmount transformer to CT enclosure. The meter base will contain three (2.5:1) potential transformers (*PTs*) for 277/480V services. These requirements can also be applied to a standalone structure such as a panel board adjacent to the padmount transformer.

The *Point of Connection* is the point of demarcation between SLEMCO and the customer. It shall be the customer's responsibility for compliance with the National Electrical Code (*NEC*) and any Governing Authority for all equipment beyond the *Point of Connection*. The customer is advised to use the services of a qualified electrician to assure compliance with all codes and regulations.

It should be noted that electrical pipe is the gray pipe and white water pipe is not acceptable. Therefore, schedule 40 or 80 electrical pipe discussed in this section is approved electrical conduit.

- A. Secondary conductors from transformer (*Point of Connection*) to disconnect switch furnished and installed by customer. The secondary conductors shall be sized according to the load, as required by the NEC or Governing Authority. Diesel Locomotive (*DLO*) conductors are prohibited. The neutral of the secondary conductors shall be sized no smaller than two sizes less than the other conductors. Termination of conductors must be made in disconnect switch by customer. Wire trough is optional. Each pole of the disconnect switch will only be allowed one lug attachment. Therefore, multi-conductor connections to a single pole made within the disconnect switch must include a multi-conductor lug. More than one conductor connected within a single lug will not be allowed. An extension of at least 48" of secondary conductor is required to be left out of conduit at padmount transformer location. Termination of conductors in padmount transformer (*Point of Connection*) performed by customer.
- B. Secondary conduit furnished and installed by customer. The customer is required to trench and install one (1) electrical conduit (3" minimum) per conductor run. Electrical schedule 40 pipe is acceptable for below ground use.
- C. Above ground riser conduit must be a minimum of a 3" electrical schedule 80 pipe. If elbows are required, then PVC elbows shall be used. LB elbows and flex conduit cannot be used. **6**

# Specifications for Commercial Underground Current Transformer Metering Requirements for a Three-Phase Customer Served from a New Underground Padmount Transformer

- D. No standard steel 90° elbows are allowed since conduit will house conductors carrying greater than 200 Amps. Therefore, any underground service that requires three 90° turns or is further than 150', the customer must use PVC long radius 90° elbows with a 48" turn. A maximum of three 90° turns are allowed. Any underground service which is less than 150' with two or less 90° turns, the customer is allowed to use PVC long radius 90° elbows with a 36" turn.
- E. Customer must maintain a depth of 36" when installing electrical conduit for secondary conductors. **6**
- F. Padmount transformer foundation constructed and grounded by customer according to Drawing No. 14 - Three-Phase Padmount Transformer Foundation. SLEMCO must inspect foundation before concrete is poured. Padmount transformer furnished and installed by SLEMCO. 6
- G. The customer shall stub up the secondary electrical conduit as indicated on *Drawing No. 14 Three-Phase Padmount Transformer Foundation* at the location of new padmount transformer.
- H. After trenching, all trenches may be backfilled and covered by customer.
- I. Meter base furnished by SLEMCO and installed by customer. The meter base will contain three PTs (2.5:1) for 277/480V services. The meter base shall be mounted on the outside of the building such that the center of the meter socket window is between 5' and 6' above finished grade. Meter base cannot be mounted to the siding of a metal building unless additional support is used behind the meter base. The top hole of meter base must be plugged with 1" plug.
- J. CTs furnished by SLEMCO. Must be mounted to back of CT enclosure by customer. 6
- K. CT enclosure is to be supplied by customer and must be a minimum of 30" x 36" x 10". The CT enclosure must have a way to secure the door with a SLEMCO padlock. When installed by customer, the bottom of the CT enclosure should be at a height of 2' to 4' above finished grade.
- L. The electrical conduit from CT enclosure to meter base shall be 1" electrical schedule 40 pipe. This conduit will be furnished and installed by customer. If elbows are required, then PVC elbows shall be used. LB elbows and flex conduit cannot be used.
- M. A ground lug will be installed by customer in the CT enclosure and must be attached with a nut and bolt. This is the minimum required by SLEMCO. Additional grounding may be required by the NEC or Governing Authority.

# Specifications for Commercial Underground Current Transformer Metering Requirements for a Three-Phase Customer Served from a New Underground Padmount Transformer

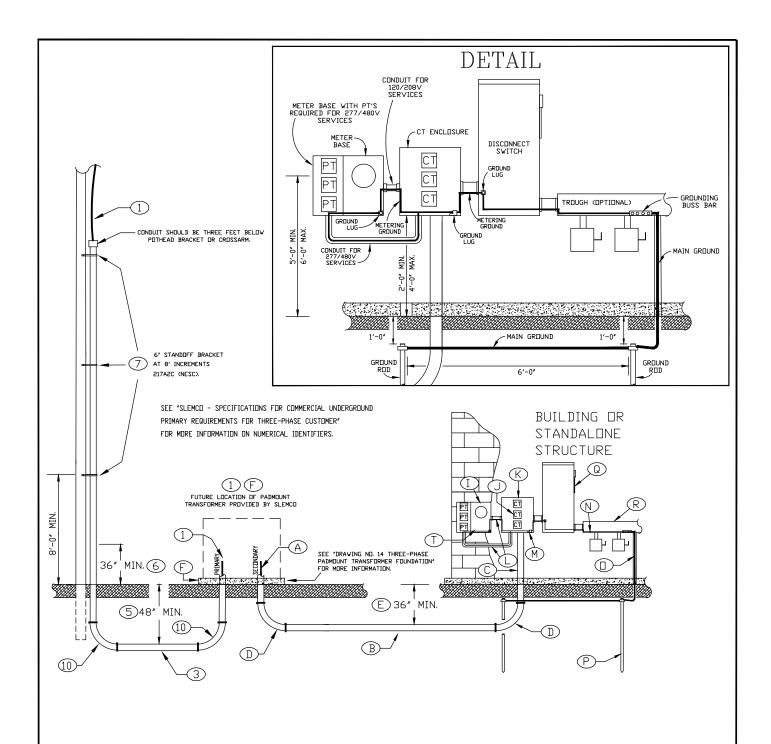
- N. The customer will be responsible to furnish a metering ground wire (*minimum* #6 soft drawn copper or #6 insulated copper) and install this wire from the meter base through CT enclosure and disconnect switch to the optional wire trough. This metering ground wire must be continuous and installed in electrical conduit between the meter base, CT enclosure, disconnect switch, and optional wire trough. The metering ground wire must be connected to the ground lugs in the meter base, CT enclosure, disconnect switch, and the grounding buss bar inside of the optional wire trough. If optional wire trough is omitted, the metering ground wire would end in the disconnect switch. This is the minimum required by SLEMCO. Additional grounding may be required by the NEC or Governing Authority.
- O. Main ground wire shall be furnished and installed by customer. The main ground wire must be continuous and installed in ½" electrical conduit between optional wire trough and the first ground rod. The continuous main ground wire must be connected to the grounding buss bar inside of the optional wire trough and each of the ground rods. If the optional wire trough is omitted, then the main ground wire must be continuous and installed in ½" electrical conduit between disconnect switch and the first ground rod. The continuous main ground wire must be connected to the grounding buss bar inside of the disconnect switch and each of the ground rods, if the optional wire trough is omitted. The main ground wire shall be sized according to the load, as required by the NEC or Governing Authority.
- P. Ground rods, minimum of two 5/8" x 8' copperweld or 1/2" x 8' copper, furnished and installed by customer. Must have one ground rod for every 200 Amps of service. Ground rods shall be installed 6' apart. Ground rods must be set 1" below finished grade. This is the minimum required by SLEMCO. Additional grounding may be required by the NEC or Governing Authority.
- Q. Disconnect switch isolates power from services connected. Disconnect switch furnished and installed by customer between the CT Enclosure and services connected (wire trough optional). Disconnect switch is for SLEMCO use only and shall be locked and sealed open or closed by use of SLEMCO padlock. Disconnect switch shall be a three pole, be nonfused or fused with properly sized slugged (dummy/neutral) fuse, have a voltage rating of at least 240V (120/208V service) or 600V (277/480V service), and have an ampacity rating no less than the total of the amp ratings of all connected services. Enclosure for disconnect switch shall be UL listed, be weather proof and rain tight (NEMA 3R), have a locking mechanism to secure it in the open or close position with a SLEMCO padlock. 6 All terminations within disconnect switch will be made by customer. Any multi-conductor connections to a single pole made within the disconnect switch must include a multiconductor lug. More than one conductor connected within a single lug will not be allowed. The electrical conduit from CT enclosure to disconnect switch shall be a minimum of 3" electrical schedule 40 pipe. This conduit will be furnished and installed by customer. If elbows are required, then PVC elbows shall be used. LB elbows and flex conduit cannot be used.

# Specifications for Commercial Underground Current Transformer Metering Requirements for a Three-Phase Customer Served from a New Underground Padmount Transformer

Items marked with **6** are indicated on Drawing No.16 – *Three-Phase Current Transformer Metering Requirements from a New Padmount Transformer*.

The requirement of this disconnect switch for service to an agricultural customer when customer is only service on transformer can be waived only by pre-approval from SLEMCO prior to construction.

- R. Main disconnects (*service panels*) and optional wire trough shall be furnished and installed by customer as required by the NEC or Governing Authority. All terminations will be made in optional wire trough or to main disconnects by customer.
- S. Variations of this design may be considered equal as long as NEC requirements are met. To assure acceptability where variations arise, contact SLEMCO prior to installation.
- T. If a Governing Authority requires inspection, inspection tag must be in place and marked approved before SLEMCO will connect service. **6**
- U. Prior to secondary service connection and meter installation, a SLEMCO serviceman must inspect the total job for readiness. When ready for this inspection, notify the Lafayette Service Department by calling (337) 896-5551.
- V. SLEMCO does not allow any applicable metering equipment (*meter base and CT enclosure*) to be mounted on the side of an underground padmount transformer.



SEE "SLEMCO - SPECIFICATIONS FOR COMMERCIAL UNDERGROUND CURRENT TRANSFORMER METERING REQUIREMENTS FOR THREE-PHASE CUSTOMERS SERVED FROM A NEW UNDERGROUND PADMOUNT TRANSFORMER" FOR MORE INFORMATION.



SOUTHWEST LOUISIANA ELECTRIC
MEMBERSHIP CORPORATION
LOUISIANA 9 LAFAYETTE

THREE-PHASE CURRENT TRANSFORMER METERING REQUIREMENTS FROM A NEW PADMOUNT TRANSFORMER

			DRAWN BY:	CREATED ON:	09/08/89	SCAL	E: N.T.S.	
SLEMCO ELECTRICAL STANDARDS		REVISIONS	REVISED BY	DATE	REV.	DRAWING. NO.	REV.	
				07/20/10	4	4		
APPROVED:	DATE:	PAGE NUMBER:	ENHANCEMENT TO DRAWINGS & SPECIFICATIONS	L. MECHE	01/26/16	5		7
		57	ADDED DISCONNECT SWITCH	D. C.	02/11/19	6		' '
	37	REMOVED MULTIPLE CUSTOMERS FROM TITLE	H.HUGHES	10/31/22	7			
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# Specifications for Commercial Underground Current Transformer Metering Requirements for a Three-Phase Customer Served from an Existing Underground Padmount Transformer

Applicable to a commercial service requiring greater than 200 Amps receiving three-phase power at 120/208 volts (*V*) from an existing underground padmount transformer. Also applicable to a commercial service receiving three-phase power at 277/480V from an existing underground padmount transformer. Current transformers (*CTs*) are enclosed within the applicable metering equipment (*meter base and CT enclosure*) that will be attached to building requiring service. The service conductors run through underground conduit from the padmount transformer to CT enclosure. The meter base will contain three (*2.5:1*) potential transformers (*PTs*) for 277/480V services. These requirements can also be applied to a standalone structure such as a panel board adjacent to the padmount transformer.

The *Point of Connection* is the point of demarcation between SLEMCO and the customer. It shall be the customer's responsibility for compliance with the National Electrical Code (*NEC*) and any Governing Authority for all equipment beyond the *Point of Connection*. The customer is advised to use the services of a qualified electrician to assure compliance with all codes and regulations.

It should be noted that electrical pipe is the gray pipe and white water pipe is not acceptable. Therefore, schedule 40 or 80 electrical pipe discussed in this section is approved electrical conduit.

Items marked with **1** are indicated on Drawing No.17 – *Three-Phase Current Transformer Metering Requirements from an Existing Padmount Transformer*.

- A. Secondary conductors from transformer (*Point of Connection*) to disconnect switch furnished and installed by customer. The secondary conductors shall be sized according to the load, as required by the NEC or Governing Authority. Diesel Locomotive (*DLO*) conductors are prohibited. The neutral of the secondary conductors shall be sized no smaller than two sizes less than the other conductors. Termination of conductors must be made in disconnect switch by customer. Wire trough is optional. Each pole of the disconnect switch will only be allowed one lug attachment. Therefore, multi-conductor connections to a single pole made within the disconnect switch must include a multi-conductor lug. More than one conductor connected within a single lug will not be allowed. An extension of at least 48" of secondary conductor is required to be left out of conduit in secondary compartment of padmount transformer. Termination of conductors in padmount transformer (*Point of Connection*) performed by customer.
- B. Secondary conduit furnished and installed by customer. The customer is required to trench and install one (1) electrical conduit (3" minimum) per conductor run. Electrical schedule 40 pipe is acceptable for below ground use.
- C. Above ground riser conduit must be a minimum of a 3" electrical schedule 80 pipe. If elbows are required, then PVC elbows shall be used. LB elbows and flex conduit cannot be used. **1**
- D. No standard steel 90° elbows are allowed since conduit will house conductors carrying greater than 200 Amps. Therefore, any underground service that requires three 90° turns or is further than 150', the customer must use PVC long radius 90° elbows with a 48" turn. A maximum of three 90° turns are allowed. Any underground service which is less than 150' with two or less 90° turns, the customer is allowed to use PVC long radius 90° elbows with a 36" turn. **1**

# Specifications for Commercial Underground Current Transformer Metering Requirements for a Three-Phase Customer Served from an Existing Underground Padmount Transformer

Items marked with **1** are indicated on Drawing No.17 – Three-Phase Current Transformer Metering Requirements from an Existing Padmount Transformer.

- E. Customer must maintain a depth of 36" when installing electrical conduit for secondary conductors. **10**
- F. The customer shall stub up the secondary electrical conduit adjacent to existing secondary electrical conduit within the existing padmount transformer. Prior to this, a SLEMCO serviceman must be present to de-energize the padmount transformer. The customer must notify the Lafayette Service Department by calling (337) 896-5551and schedule a serviceman.
- G. After trenching, all trenches may be backfilled and covered by customer.
- H. Meter base furnished by SLEMCO and installed by customer. The meter base will contain three PTs (2.5:1) for 277/480V services. The meter base shall be mounted on the outside of the building such that the center of the meter socket window is between 5' and 6' above finished grade. Meter base cannot be mounted to the siding of a metal building unless additional support is used behind the meter base. The top hole of meter base must be plugged with 1" plug.
- I. CTs furnished by SLEMCO. Must be mounted to back of CT enclosure by customer. •
- J. CT enclosure is to be supplied by customer and must be a minimum of 30" x 36" x 10". The CT enclosure must have a way to secure the door with a SLEMCO padlock. When installed by customer, the bottom of the CT enclosure should be at a height of 2' to 4' above finished grade. •
- K. The electrical conduit from CT enclosure to meter base shall be 1" electrical schedule 40 pipe. This conduit will be furnished and installed by customer. If elbows are required, then PVC elbows shall be used. LB elbows and flex conduit cannot be used.
- L. A ground lug will be installed by customer in the CT enclosure and must be attached with a nut and bolt. **1** This is the minimum required by SLEMCO. Additional grounding may be required by the NEC or Governing Authority.
- M. The customer will be responsible to furnish a metering ground wire (*minimum #6 soft drawn copper or #6 insulated copper*) and install this wire from the meter base through CT enclosure and disconnect switch to the optional wire trough. This metering ground wire must be continuous and installed in electrical conduit between the meter base, CT enclosure, disconnect switch, and optional wire trough. The metering ground wire must be connected to the ground lugs in the meter base, CT enclosure, disconnect switch, and the grounding buss bar inside of the optional wire trough. If optional wire trough is omitted, the metering ground wire would end in the disconnect switch. This is the minimum required by SLEMCO. Additional grounding may be required by the NEC or Governing Authority.
- N. Main ground wire shall be furnished and installed by customer. The main ground wire must be continuous and installed in ½" electrical conduit between optional wire trough and the first ground rod. The continuous main ground wire must be connected to the grounding buss bar inside of the optional wire trough and each of the ground rods. If the optional wire

# Specifications for Commercial Underground Current Transformer Metering Requirements for a Three-Phase Customer Served from an Existing Underground Padmount Transformer

Items marked with **1** are indicated on Drawing No.17 – *Three-Phase Current Transformer*Metering Requirements from an Existing Padmount Transformer.

trough is omitted, then the main ground wire must be continuous and installed in ½" electrical conduit between disconnect switch and the first ground rod. The continuous main ground wire must be connected to the grounding buss bar inside of the disconnect switch and each of the ground rods, if the optional wire trough is omitted. The main ground wire shall be sized according to the load, as required by the NEC or Governing Authority.

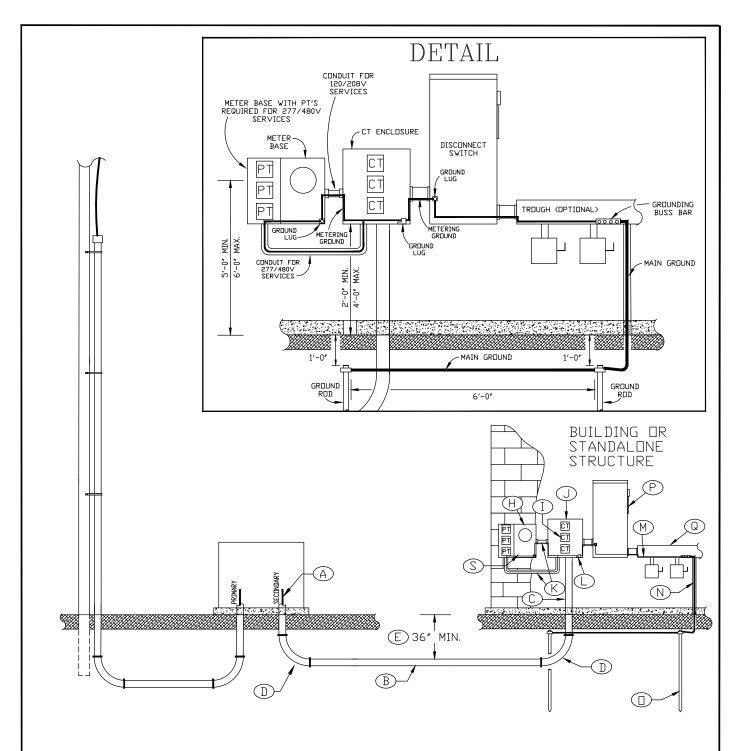
- O. Ground rods, minimum of two 5/8" x 8' copperweld or 1/2" x 8' copper, furnished and installed by customer. Must have one ground rod for every 200 Amps of service. Ground rods shall be installed 6' apart. Ground rods must be set 1" below finished grade. This is the minimum required by SLEMCO. Additional grounding may be required by the NEC or Governing Authority.
- Ρ. Disconnect switch isolates power from services connected. Disconnect switch furnished and installed by customer between the CT Enclosure and services connected (wire trough optional). Disconnect switch is for SLEMCO use only and shall be locked and sealed open or closed by use of SLEMCO padlock. Disconnect switch shall be a three pole, be nonfused or fused with properly sized slugged (dummy/neutral) fuse, have a voltage rating of at least 240V (120/208V service) or 600V (277/480V service), and have an ampacity rating no less than the total of the amp ratings of all connected services. Enclosure for disconnect switch shall be UL listed, be weather proof and rain tight (NEMA 3R), have a locking mechanism to secure it in the open or close position with a SLEMCO padlock. • All terminations within disconnect switch will be made by customer. Any multi-conductor connections to a single pole made within the disconnect switch must include a multiconductor lug. More than one conductor connected within a single lug will not be allowed. The electrical conduit from CT enclosure to disconnect switch shall be a minimum of 3" electrical schedule 40 pipe. This conduit will be furnished and installed by customer. If elbows are required, then PVC elbows shall be used. LB elbows and flex conduit cannot be used.

The requirement of this disconnect switch for service to an agricultural customer when customer is only service on transformer can be waived only by pre-approval from SLEMCO prior to construction.

- Q. Main disconnects (*service panels*) and optional wire trough shall be furnished and installed by customer as required by the NEC or Governing Authority. All terminations will be made in optional wire trough or to main disconnects by customer.
- R. Variations of this design may be considered equal as long as NEC requirements are met. To assure acceptability where variations arise, contact SLEMCO prior to installation.
- S. If a Governing Authority requires inspection, inspection tag must be in place and marked approved before SLEMCO will connect service. **1**

## Specifications for Commercial Underground Current Transformer Metering Requirements for a Three-Phase Customer Served from an Existing Underground Padmount Transformer

- T. Prior to secondary service connection and meter installation, a SLEMCO serviceman must inspect the total job for readiness. When ready for this inspection, notify the Lafayette Service Department by calling (337) 896-5551.
- U. SLEMCO does not allow any applicable metering equipment (*meter base and CT enclosure*) to be mounted on the side of an underground padmount transformer.



SEE "SLEMCO - SPECIFICATIONS FOR COMMERCIAL UNDERGROUND CURRENT TRANSFORMER METERING REQUIREMENTS FOR THREE-PHASE CUSTOMERS SERVED FROM AN EXISTING UNDERGROUND PADMOUNT TRANSFORMER" FOR MORE INFORMATION.



SOUTHWEST LOUISIANA ELECTRIC
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THREE-PHASE CURRENT TRANSFORMER METERING
REQUIREMENTS FROM AN EXISTING
PADMOUNT TRANSFORMER

DRAWN BY: L. MECHE CREATED ON: 01/27/16 SCALE: N.T.S. REVISIONS REVISED BY DATE REV. DRAWING. NO. REV. SLEMCO ELECTRICAL STANDARDS ADDED DISCONNECT SWITCH 02/11/19 REMOVED MULTIPLE CUSTOMERS FROM TITLE H.HUGHES 10/31/22 2 APPROVED: DATE: PAGE NUMBER: 2 62

## Specifications for Commercial Underground Current Transformer Metering Requirements for a Three-Phase Customer Served from an Overhead Transformer Bank

Applicable to a commercial service requiring greater than 200 Amps receiving three-phase power at 120/208 or 120/240 volts (*V*) from an overhead transformer bank. Also applicable to a commercial service receiving three-phase power at 277/480V or 480V from an overhead transformer bank. Current transformers (*CTs*) are enclosed within the applicable metering equipment (*meter base and CT enclosure*) that will be attached to building requiring service. The service conductors run through underground conduit from the overhead transformer bank to CT enclosure. The meter base will contain three (2.5:1) potential transformers (*PTs*) for 277/480V services or two (4:1) potential transformers (*PTs*) for 480V services. 120/208V and 120/240V services will not require PTs. These requirements can also be applied to a standalone structure such as a panel board.

The *Point of Connection* is the point of demarcation between SLEMCO and the customer. It shall be the customer's responsibility for compliance with the National Electrical Code (*NEC*) and any Governing Authority for all equipment beyond the *Point of Connection*. The customer is advised to use the services of a qualified electrician to assure compliance with all codes and regulations. According to National Electric Safety Code (*NESC*) Table 232-1, Item 5., Note 8(d), the lowest point of the service conductor (*drip loop*) must be at least 10' above final grade. A sufficient drip loop shall be present to prevent water ingress.

It should be noted that electrical pipe is the gray pipe and white water pipe is not acceptable. Therefore, schedule 40 or 80 electrical pipe discussed in this section is approved electrical conduit.

Items marked with **1** are indicated on Drawing No.18 – *Three-Phase Current Transformer Metering Requirements from an Overhead Source*.

- - A2 Services greater than 400A: Secondary conductors from weather head (*Point of Connection*) to disconnect switch furnished and installed by customer. The secondary conductors shall be sized according to the service load size (*ampacity*) and Commercial-Underground Secondary Conductor Table. Termination of conductors must be made in disconnect switch by customer. Wire trough is optional. Each pole of the disconnect switch will only be allowed one lug attachment. Therefore, multiconductor connections to a single pole made within the disconnect switch must include a multi-conductor lug. More than one conductor connected within a single lug will not be allowed. An extension of at least fifty feet (50') of secondary conductor is required to be left out of conduit at base of SLEMCO pole. Service cable from transformer to weather head (*Point of Connection*) are furnished and installed by SLEMCO. Termination of conductors at weather head (*Point of Connection*) performed by SLEMCO.
- B. Secondary conduit furnished and installed by customer. The customer is required to trench and install one (1) electrical conduit (3" minimum) per conductor run. Electrical schedule 40 pipe is acceptable for below ground use. After trenching, all trenches may be backfilled and covered by customer.

# Specifications for Commercial Underground Current Transformer Metering Requirements for a Three-Phase Customer Served from an Overhead Transformer Bank

Items marked with **1** are indicated on Drawing No.18 – *Three-Phase Current Transformer Metering Requirements from an Overhead Source*.

- C. Above ground riser conduit must be a minimum of a 3" electrical schedule 80 pipe. If elbows are required, then PVC elbows shall be used. LB elbows and flex conduit cannot be used. 

  B
- D. No standard steel 90° elbows are allowed since conduit will house conductors carrying greater than 200 Amps. Therefore, any underground service that requires three 90° turns or is further than 150', the customer must use PVC long radius 90° elbows with a 48" turn. A maximum of three 90° turns are allowed. Any underground service which is less than 150' with two or less 90° turns, the customer is allowed to use PVC long radius 90° elbows with a 36" turn.
- E. Customer must maintain a depth of 36" when installing electrical conduit for secondary conductors. © Customer will install a polypropylene pull string (*minimum strength of 210 lbs.*) in all electrical conduit that will require SLEMCO to install secondary conductors.
- F. The customer will furnish and install the riser (conduit) up the SLEMCO pole. The first 36" of riser above ground must be electrical schedule 80 pipe (3" minimum) and the remaining riser can be electrical schedule 40 pipe (3" minimum). The customer will also furnish and install a weather head (3" minimum) at the top of the riser. The installation height of the riser will be such that connection of the weather head on the riser is even with neutral or bottom of transformer bank. According to National Electric Safety Code (NESC) Table 232-1, Item 5., Note 8(d), the lowest point of the service conductor (drip loop) must be at least 10' above final grade.
- G. Standoff brackets furnished and installed by customer. ®
- H. Meter base furnished by SLEMCO and installed by customer. The meter base will contain three PTs (2.5:1) for 277/480V services or two PTs (4:1) for 480V services. The meter base shall be mounted on the outside of the building such that the center of the meter socket window is between 5' and 6' above finished grade. Meter base cannot be mounted to the siding of a metal building unless additional support is used behind the meter base. The top hole of meter base must be plugged with 1" plug.
- I. CTs furnished by SLEMCO. Must be mounted to back of CT enclosure by customer. ®
- J. CT enclosure is to be supplied by customer and must be a minimum of 30" x 36" x 10". The CT enclosure must have a way to secure the door with a SLEMCO padlock. When installed by customer, the bottom of the CT enclosure should be at a height of 2' to 4' above finished grade. ®

# Specifications for Commercial Underground Current Transformer Metering Requirements for a Three-Phase Customer Served from an Overhead Transformer Bank

Items marked with **1** are indicated on Drawing No.18 – *Three-Phase Current Transformer Metering Requirements from an Overhead Source*.

- K. The electrical conduit from CT enclosure to meter base shall be 1" electrical schedule 40 pipe. This conduit will be furnished and installed by customer. If elbows are required, then PVC elbows shall be used. LB elbows and flex conduit cannot be used.
- L. A ground lug will be installed by customer in the CT enclosure and must be attached with a nut and bolt. This is the minimum required by SLEMCO. Additional grounding may be required by the NEC or Governing Authority.
- M. The customer will be responsible to furnish a metering ground wire (*minimum #6 soft drawn copper or #6 insulated copper*) and install this wire from the meter base through CT enclosure and disconnect switch to the optional wire trough. This metering ground wire must be continuous and installed in electrical conduit between the meter base, CT enclosure, disconnect switch, and optional wire trough. The metering ground wire must be connected to the ground lugs in the meter base, CT enclosure, disconnect switch, and the grounding buss bar inside of the optional wire trough. If optional wire trough is omitted, the metering ground wire would end in the disconnect switch. This is the minimum required by SLEMCO. Additional grounding may be required by the NEC or Governing Authority.
- N. Main ground wire shall be furnished and installed by customer. The main ground wire must be continuous and installed in ½" electrical conduit between optional wire trough and the first ground rod. The continuous main ground wire must be connected to the grounding buss bar inside of the optional wire trough and each of the ground rods. If the optional wire trough is omitted, then the main ground wire must be continuous and installed in ½" electrical conduit between disconnect switch and the first ground rod. The continuous main ground wire must be connected to the grounding buss bar inside of the disconnect switch and each of the ground rods, if the optional wire trough is omitted. The main ground wire shall be sized according to the load, as required by the NEC or Governing Authority.
- O. Ground rods, minimum of two 5/8" x 8' copperweld or 1/2" x 8' copper, furnished and installed by customer. Must have one ground rod for every 200 Amps of service. Ground rods shall be installed 6' apart. Ground rods must be set 1" below finished grade. This is the minimum required by SLEMCO. Additional grounding may be required by the NEC or Governing Authority.

# Specifications for Commercial Underground Current Transformer Metering Requirements for a Three-Phase Customer Served from an Overhead Transformer Bank

Items marked with **®** are indicated on Drawing No.18 – *Three-Phase Current Transformer Metering Requirements from an Overhead Source*.

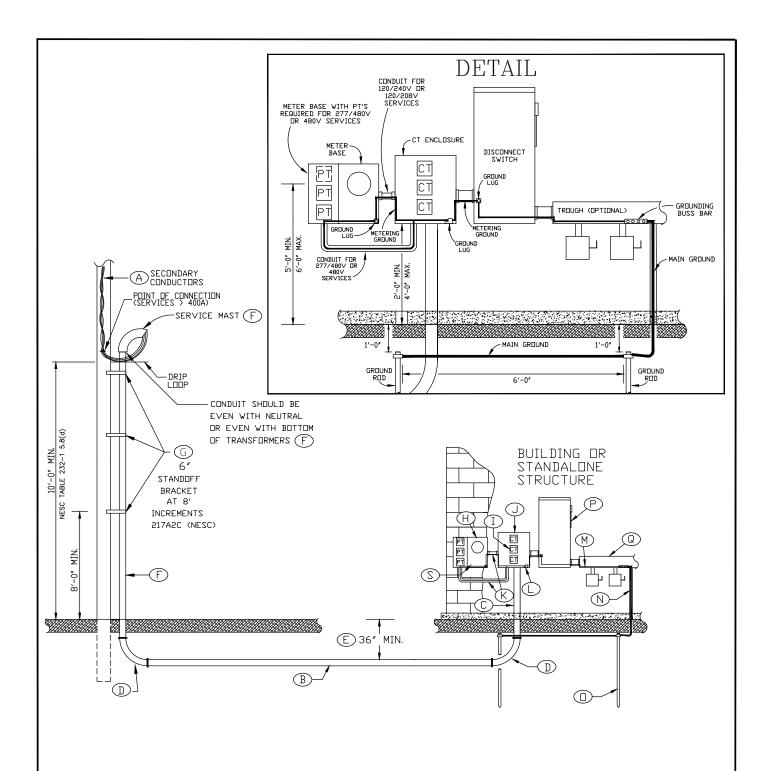
P. Disconnect switch isolates power from services connected. Disconnect switch furnished and installed by customer between the CT Enclosure and services connected (wire trough optional). Disconnect switch is for SLEMCO use only and shall be locked and sealed open or closed by use of SLEMCO padlock. Disconnect switch shall be a three pole, be nonfused or fused with properly sized slugged (dummy/neutral) fuse, have a voltage rating of at least 240V (120/208V or 120/240V services) or 600V (277/480V or 480V services), and have an ampacity rating no less than the total of the amp ratings of all connected services. Enclosure for disconnect switch shall be UL listed, be weather proof and rain tight (NEMA 3R), have a locking mechanism to secure it in the open or close position with a SLEMCO padlock. The electrical conduit from CT enclosure to disconnect switch shall be a minimum of 3" electrical schedule 40 pipe. This conduit will be furnished and installed by customer. If elbows are required, then PVC elbows shall be used. LB elbows and flex conduit cannot be used.

Any multi-conductor connections to a single pole made within the disconnect switch must include a multi-conductor lug. More than one conductor connected within a single lug will not be allowed.

- **P1** <u>Services up to 400A:</u> SLEMCO will be responsible for terminations to the source side of the disconnect switch. Customer will be responsible for terminations to the load side of the disconnect switch.
- **P2** <u>Services greater than 400A:</u> Customer will be responsible for all terminations in the disconnect switch.

The requirement of this disconnect switch for service to an agricultural customer when customer is only service on transformer can be waived only by pre-approval from SLEMCO prior to construction. In the case where no disconnect switch is required, the *Point of Connection* will be the wire trough or main disconnect for services up to 400A.

- Q. Main disconnects (*service panels*) and optional wire trough shall be furnished and installed by customer as required by the NEC or Governing Authority. All terminations will be made in optional wire trough or to main disconnect by customer.
- R. Variations of this design may be considered equal as long as NEC requirements are met. To assure acceptability where variations arise, contact SLEMCO prior to installation.
- T. Prior to secondary service connection and meter installation, a SLEMCO serviceman must inspect the total job for readiness. When ready for this inspection, notify the Lafayette Service Department by calling (337) 896-5551.



SEE "SLEMCO - SPECIFICATIONS FOR COMMERCIAL UNDERGROUND CURRENT TRANSFORMER METERING REQUIREMENTS FOR A THREE-PHASE CUSTOMER SERVED FROM AN OVERHEAD TRANSFORMER BANK" FOR MORE INFORMATION.



SOUTHWEST LOUISIANA ELECTRIC MEMBERSHIP CORPORATION LOUISIANA 9 LAFAYETTE

THREE-PHASE CURRENT TRANSFORMER
METERING REQUIREMENTS FROM AN
OVERHEAD SOURCE

			DRAWN BY:	CREATED ON:	09/08/89	SCALE:	N.T.S.	
		REVISIONS	REVISED BY	DATE	REV.	DRAWING. NO.	REV.	
		ENHANCEMENT TO DRAWINGS & SPECIFICATIONS	L. MECHE	04/21/16	4	4		
APPROVED:	DATE: PAG	GE NUMBER:	ADDED LABELING TO DRAWING	L. MECHE	10/11/16	5	1 🖳	7
		67	ADDED DISCONNECT SWITCH	D. C.	02/11/19	6		' '
		07	ADDED POC FOR SERVICES > 400A	H. HUGHES.	08/18/23	7		
		•	·					

# **Specifications for Commercial Overhead Current Transformer Metering Requirements**

Applicable to a commercial service requiring greater than 200 Amps receiving three-phase power at 120/208 or 120/240 volts (*V*) from an overhead transformer bank. Also applicable to a commercial service receiving three-phase power at 277/480V or 480V from an overhead transformer bank. Current transformers (*CTs*) are enclosed within the applicable metering equipment (*meter base and CT enclosure*) that will be attached to building requiring service. The service conductors run through underground conduit from the overhead transformer bank to CT enclosure. The meter base will contain three (*2.5:1*) potential transformers (*PTs*) for 277/480V services or two (*4:1*) potential transformers (*PTs*) for 480V services. 120/208V and 120/240V services will not require PTs. These requirements can also be applied to a standalone structure such as a panel board.

The *Point of Connection* is the point of demarcation between SLEMCO and the customer. It shall be the customer's responsibility for compliance with the National Electrical Code (*NEC*) and any Governing Authority for all equipment beyond the *Point of Connection*. The customer is advised to use the services of a qualified electrician to assure compliance with all codes and regulations. According to National Electric Safety Code (*NESC*) Table 232-1, Item 5., Note 8(d), the lowest point of the service conductor (*drip loop*) must be at least 10' above final grade. A sufficient drip loop shall be present to prevent water ingress.

It should be noted that electrical pipe is the gray pipe and white water pipe is not acceptable. Therefore, schedule 40 or 80 electrical pipe discussed in this section is approved electrical conduit.

Items marked with **1** are indicated on Drawing No.19 – *Three-Phase Overhead Current Transformer Metering Requirements*.

- A. Service cable from transformer bank to weather head (*Point of Connection*) are furnished and installed by SLEMCO. The Point of Attachment (*eye bolt, clevis bolt, etc.*) is furnished and installed by customer and shall be mounted at a minimum height of 12' (*NESC Table 232-1, Item 5*) above finished grade. ①
- B. Service entrance conductors from the weather head (*Point of Connection*) to the disconnect switch furnished and installed by customer. Termination of conductors must be made in disconnect switch by customer. Wire trough is optional. Each pole of the disconnect switch will only be allowed one lug attachment. Therefore, multi-conductor connections to a single pole made within the disconnect switch must include a multi-conductor lug. More than one conductor connected within a single lug will not be allowed. The service entrance conductors shall be sized according to the service load size (*ampacity*) and Commercial-Underground Secondary Conductor Table. An extension of at least 18" of service entrance conductor is required at the weather head (*Point of Connection*). Termination of conductors at weather head (*Point of Connection*) performed by SLEMCO.

The neutral of the service entrance conductors shall be identified with gray or white tape at the weather head and in the CT enclosure.

# SLEMCO Specifications for Commercial

# **Specifications for Commercial Overhead Current Transformer Metering Requirements**

Items marked with **1** are indicated on Drawing No.19 – *Three-Phase Overhead Current Transformer Metering Requirements*.

- C. The service mast and associated weather head are furnished and installed by customer. The service mast conduit shall be securely mounted with a minimum of three (3) conduit straps with a maximum of 30" (NEC 230.51A) apart. One (1) strap will be required installed no more than 12" (NEC 230.51A) from the weather head. The service mast conduit shall be electrical schedule 80 pipe or galvanized metal rigid conduit. The Service Mast conduit shall be galvanized metal rigid conduit or electrical schedule 80 pipe. If elbows are required, then PVC elbows shall be used. LB elbows and flex conduit cannot be used.
- D. Meter base furnished by SLEMCO and installed by customer. The meter base will contain three PTs (2.5:1) for 277/480V services or two PTs (4:1) for 480V services. The meter base shall be mounted on the outside of the building such that the center of the meter socket window is between 5' and 6' above finished grade. Meter base cannot be mounted to the siding of a metal building unless additional support is used behind the meter base. The top hole of meter base must be plugged with 1" plug.
- E. CTs furnished by SLEMCO. Must be mounted to back of CT enclosure by customer. 19
- G. The electrical conduit from CT enclosure to meter base shall be 1" electrical schedule 40 pipe. This conduit will be furnished and installed by customer. If elbows are required, then PVC elbows shall be used. LB elbows and flex conduit cannot be used.
- H. A ground lug will be installed by customer in the CT enclosure and must be attached with a nut and bolt. This is the minimum required by SLEMCO. Additional grounding may be required by the NEC or Governing Authority.
- I. The customer will be responsible to furnish a metering ground wire (*minimum #6 soft drawn copper or #6 insulated copper*) and install this wire from the meter base through CT enclosure and disconnect switch to the optional wire trough. This metering ground wire must be continuous and installed in electrical conduit between the meter base, CT enclosure, disconnect switch, and optional wire trough. The metering ground wire must be connected to the ground lugs in the meter base, CT enclosure, disconnect switch, and the grounding buss bar inside of the optional wire trough. If optional wire trough is omitted, the metering ground wire would end in the disconnect switch. This is the minimum required by SLEMCO. Additional grounding may be required by the NEC or Governing Authority.

# SLEMCO Specifications for Commercial Overhead Current Transformer Metering Requirements

Items marked with **1** are indicated on Drawing No.19 – *Three-Phase Overhead Current Transformer Metering Requirements*.

- J. Main ground wire shall be furnished and installed by customer. The main ground wire must be continuous and installed in ½" electrical conduit between optional wire trough and the first ground rod. The continuous main ground wire must be connected to the grounding buss bar inside of the optional wire trough and each of the ground rods. If the optional wire trough is omitted, then the main ground wire must be continuous and installed in ½" electrical conduit between disconnect switch and the first ground rod. The continuous main ground wire must be connected to the grounding buss bar inside of the disconnect switch and each of the ground rods, if the optional wire trough is omitted. The main ground wire shall be sized according to the load, as required by the NEC or Governing Authority.
- K. Ground rods, minimum of two 5/8" x 8' copperweld or 1/2" x 8' copper, furnished and installed by customer. Must have one ground rod for every 200 Amps of service. Ground rods shall be installed 6' apart. Ground rods must be set 1" below finished grade. This is the minimum required by SLEMCO. Additional grounding may be required by the NEC or Governing Authority.
- L. Disconnect switch isolates power from services connected. Disconnect switch furnished and installed by customer between the CT Enclosure and services connected (wire trough optional). Disconnect switch is for SLEMCO use only and shall be locked and sealed open or closed by use of SLEMCO padlock. Disconnect switch shall be a three pole, be nonfused or fused with properly sized slugged (dummy/neutral) fuse, have a voltage rating of at least 240V (120/208V or 120/240V services) or 600V (277/480V or 480V services), and have an ampacity rating no less than the total of the amp ratings of all connected services. Enclosure for disconnect switch shall be UL listed, be weather proof and rain tight (NEMA 3R), have a locking mechanism to secure it in the open or close position with a SLEMCO padlock. 

  All terminations within disconnect switch will be made by customer. Any multi-conductor connections to a single pole made within the disconnect switch must include a multi-conductor lug. More than one conductor connected within a single lug will not be allowed. The electrical conduit from CT enclosure to disconnect switch shall be a minimum of 3" electrical schedule 40 pipe. This conduit will be furnished and installed by customer. If elbows are required, then PVC elbows shall be used. LB elbows and flex conduit cannot be used.

The requirement of this disconnect switch for service to an agricultural customer when customer is only service on transformer can be waived only by pre-approval from SLEMCO prior to construction.

M. Main disconnects (*service panels*) and optional wire trough shall be furnished and installed by customer as required by the NEC or Governing Authority. **②** All terminations will be made in optional wire trough or to main disconnect by customer.

# **Specifications for Commercial Overhead Current Transformer Metering Requirements**

Items marked with **1** are indicated on Drawing No.19 – *Three-Phase Overhead Current Transformer Metering Requirements*.

- N. Variations of this design may be considered equal as long as NEC requirements are met. To assure acceptability where variations arise, contact SLEMCO prior to installation.
- O. If a Governing Authority requires inspection, inspection tag must be in place and marked approved before SLEMCO will connect service.
- P. Prior to secondary service connection and meter installation, a SLEMCO serviceman must inspect the total job for readiness. When ready for this inspection, notify the Lafayette Service Department by calling (337) 896-5551.

