

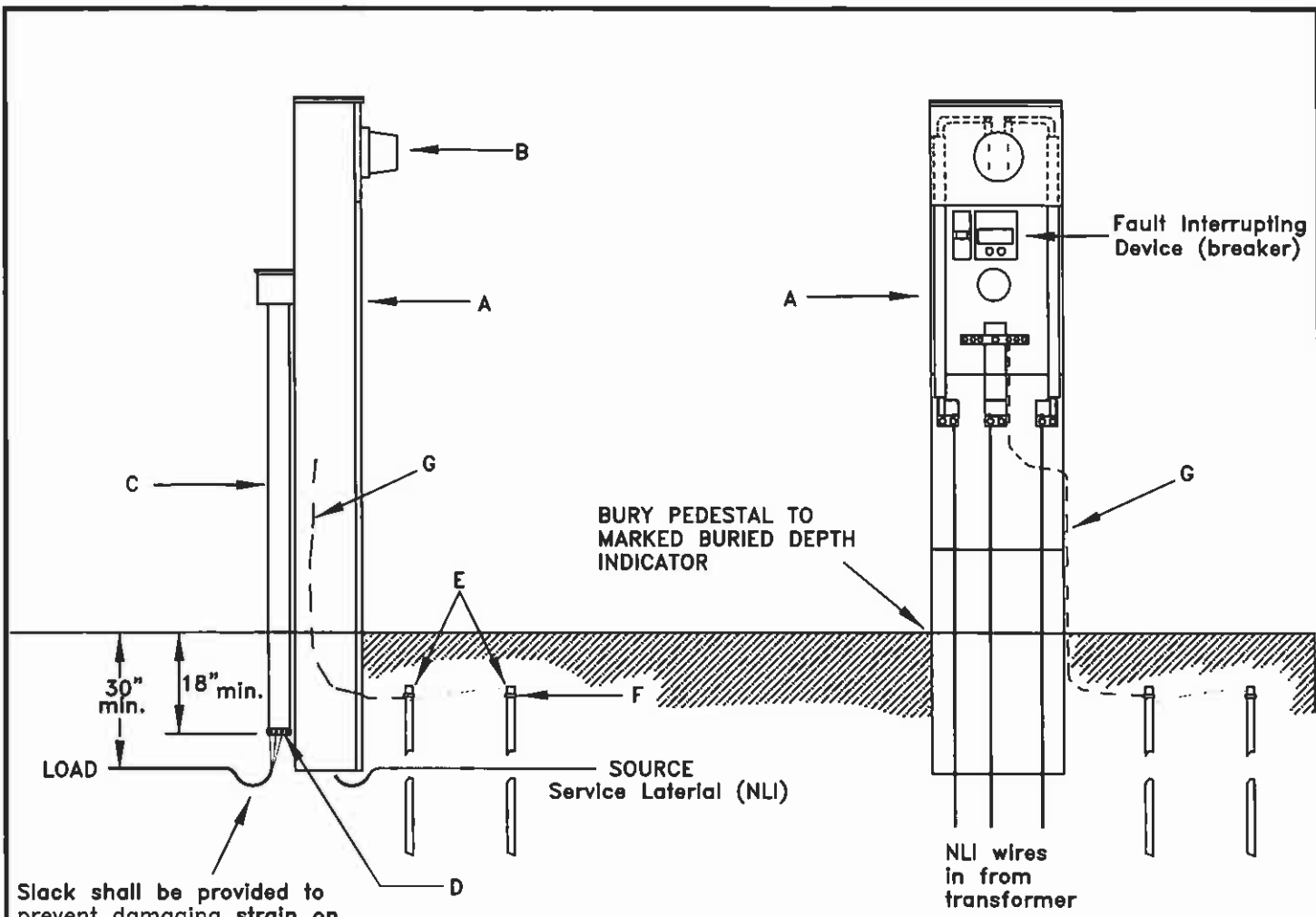


The power of local service

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Slack shall be provided to prevent damaging strain on the cable after backfilling.

NOTES:

1. Service must be grounded prior to NLI energizing service.
2. NLI must receive Electrical Inspection tag prior to job being placed on construction schedule or energizing the service. (Montana requires electrical permit only.)
3. The 2nd ground rod is required to be driven at least 6 feet from the first, with continuous ground wire.
4. Conduit attachments are shown for steel conduit, and or schedule 80 PVC.
5. 2-1/2" conduit for 200 amp services.
6. 3" conduit for 400 amp services.
7. NLI will make connection at the transformer.
8. A Fault interrupting device will be required, electrically following the meter.
9. NLI accepts class 320, form 2S meters, for 320 Amp continuous, 400 Amp maximum services.

ALL ITEMS PROVIDED BY MEMBER EXCEPT AS NOTED

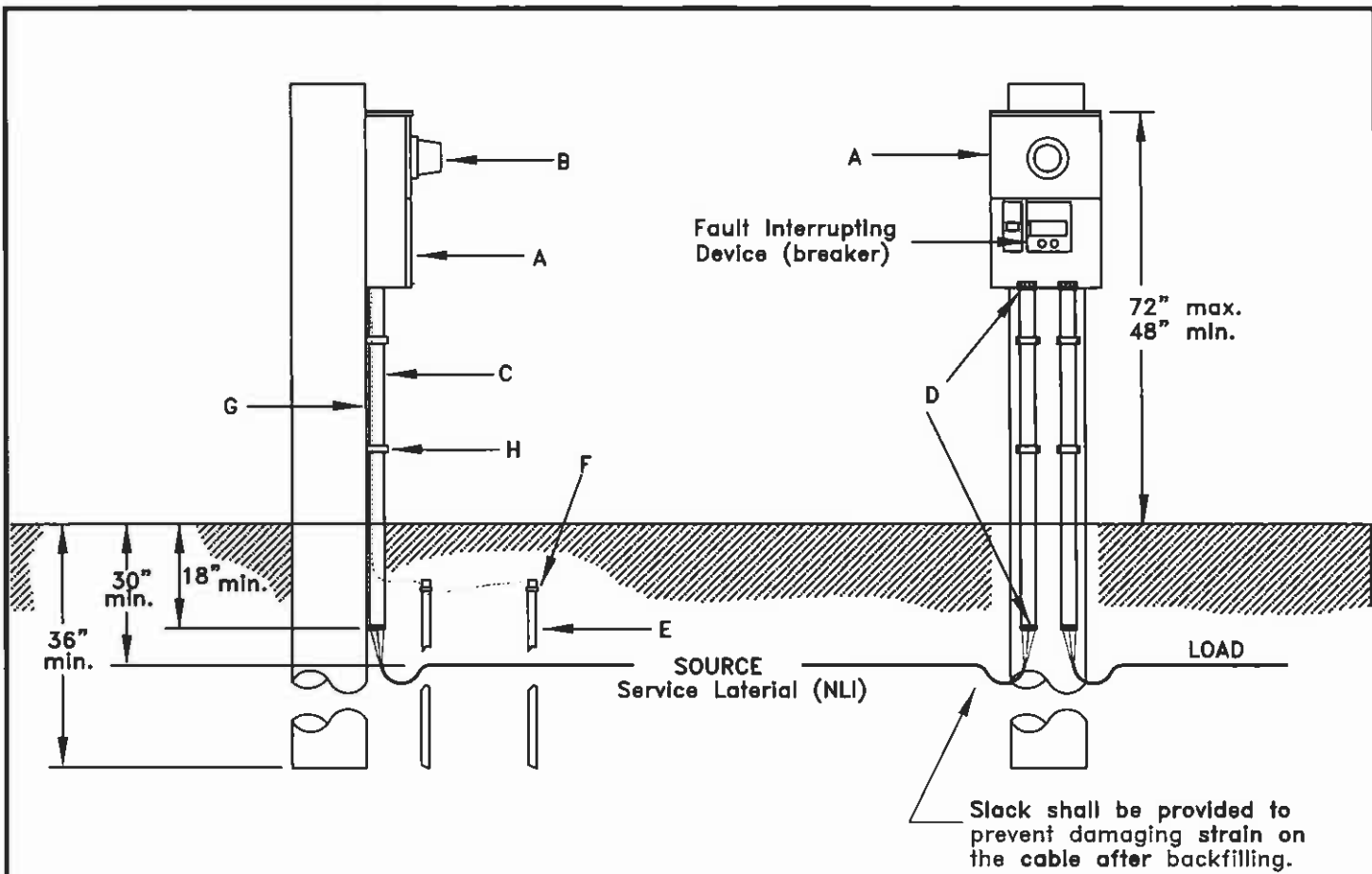
ITEM	NO.	MATERIAL	ITEM	NO.	MATERIAL
A	1	Meter pedestal	E	2	Ground rod, 5/8"x8'
B	1	Meter (NLI)	F	2	Clamp, ground rod
C	1	Conduit, diameter & length as required	G		#6 Copper ground wire
D	2	2-1/2" or 3" Insulated bushing			



**METER PEDESTAL
FREE STANDING**

JAN. 1, 2011

S-1



NOTES:

1. Service must be grounded prior to NLI energizing service.
2. NLI must receive Electrical Inspection tag prior to job being placed on construction schedule or energizing the service. (Montana requires electrical permit only.)
3. The 2nd ground rod is required to be driven at least 6 feet from the first, with continuous ground wire.
4. Conduit attachments are shown for steel conduit, and or schedule 80 PVC.
5. 2-1/2" conduit for 200 amp services.
6. 3" conduit for 400 amp services.
7. NLI will make connection at the transformer.
8. A Fault Interrupting device will be required, electrically following the meter.
9. NLI accepts class 320, form 2S meters, for 320 Amp continuous, 400 Amp maximum services.

ALL ITEMS PROVIDED BY MEMBER EXCEPT AS NOTED

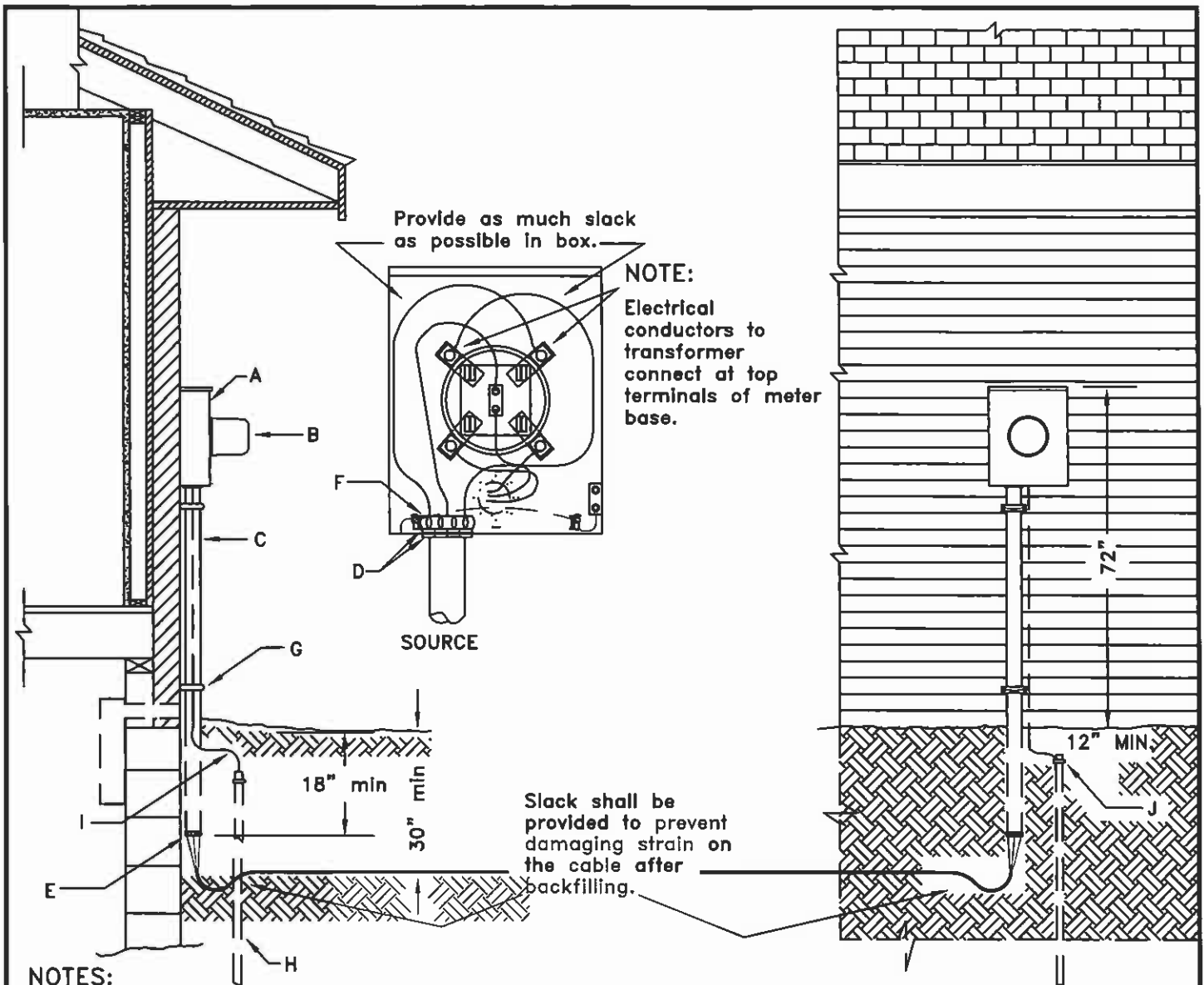
ITEM	NO.	MATERIAL	ITEM	NO.	MATERIAL
	1	8' post, fully treated, 6"x6" if wood	E	2	Ground rod, 5/8"x8'
A	1	Meter base	F	2	Clamp, ground rod
B	1	Meter (NLI)	G		#6 Copper ground wire
C	1	Conduit, diameter & length as required	H		Pipe strap, as required
D	4	2-1/2" or 3" Insulated bushing			



METER PEDESTAL
POST MOUNTED

JAN. 1, 2011

S-2



NOTES:

1. Service must be grounded prior to NLI energizing service. State Electrical Code requires 2 ground rods not less than 6' apart, if there is not a 2nd grounding point on the service.
2. Electrical inspection permit tag must be in receipt of NLI prior to being placed on the construction schedule or energizing service.
3. If the meter base is located more than 36" from the main breaker, a separate fault interrupting device will be mounted on the outside wall, electrically following the meter.
4. Conduit attachments are shown for Schedule 80 PVC. 2 1/2" for 200 AMP, 3" for 400 AMP.
5. NLI will make connection at the transformer.
6. NLI accepts class 320, form 2S meters, for 320 Amp continuous, 400 Amp maximum services.

ALL ITEMS PROVIDED BY MEMBER EXCEPT AS NOTED

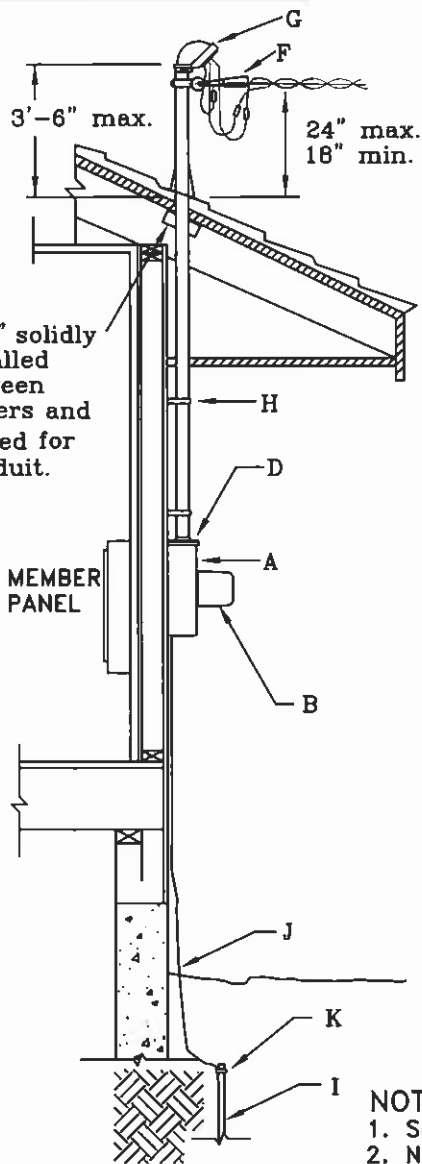
ITEM	NO.	MATERIAL	ITEM	NO.	MATERIAL
A	1	Meter base	F	2	Insulated bushing with ground, size as required.
B	1	Meter (NLI)			
C		Conduit, See note 4 for Diameter,length as required.	G		Pipe strap, as required
D	4	Conduit locknuts, size as required	H	2	Ground rod, 5/8"x8'
E	1	2-1/2" or 3" Insulated bushing	I	1	#6 Copper ground wire
			J	2	Clamp, ground rod



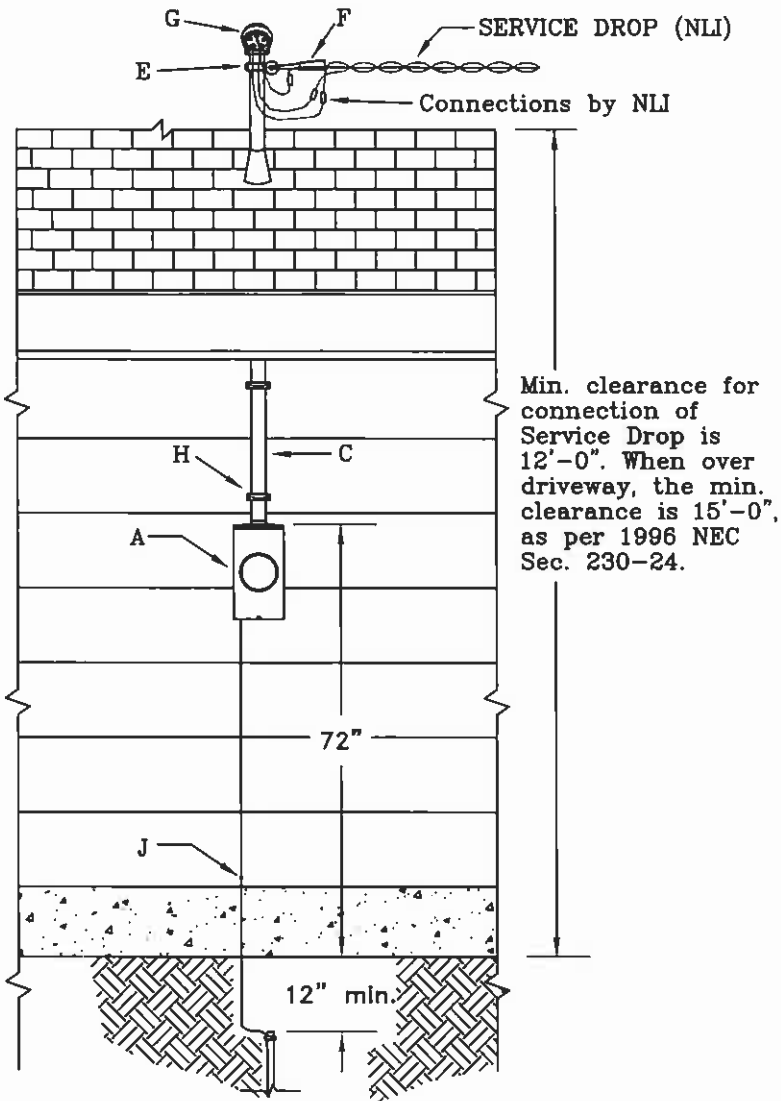
**METER INSTALLATION GUIDE
SINGLE PHASE URD SERVICE
120/240 VOLT 200-400 AMP**

JAN. 1, 2011

S-3



ALL ITEMS PROVIDED BY MEMBER EXCEPT AS NOTED.



NOTES:

1. Service must be grounded prior to NLI energizing service.
2. NLI must receive Electrical Inspection tag prior to job being placed on construction schedule or energizing the service.
3. A 2nd ground rod is required to be driven 6' from the first, with continuous ground wire.
4. Conduit attachments are shown for steel conduit.
5. If the meter base is located more than 36" from the main breaker, a separate Fault Interrupting device will be mounted on the outside wall, electrically following the meter.
6. Leave 18" minimum of wire for drip loop beyond weatherhead.
7. NLI accepts class 320, form 2S meters, for 320 Amp continuous, 400 Amp maximum services.

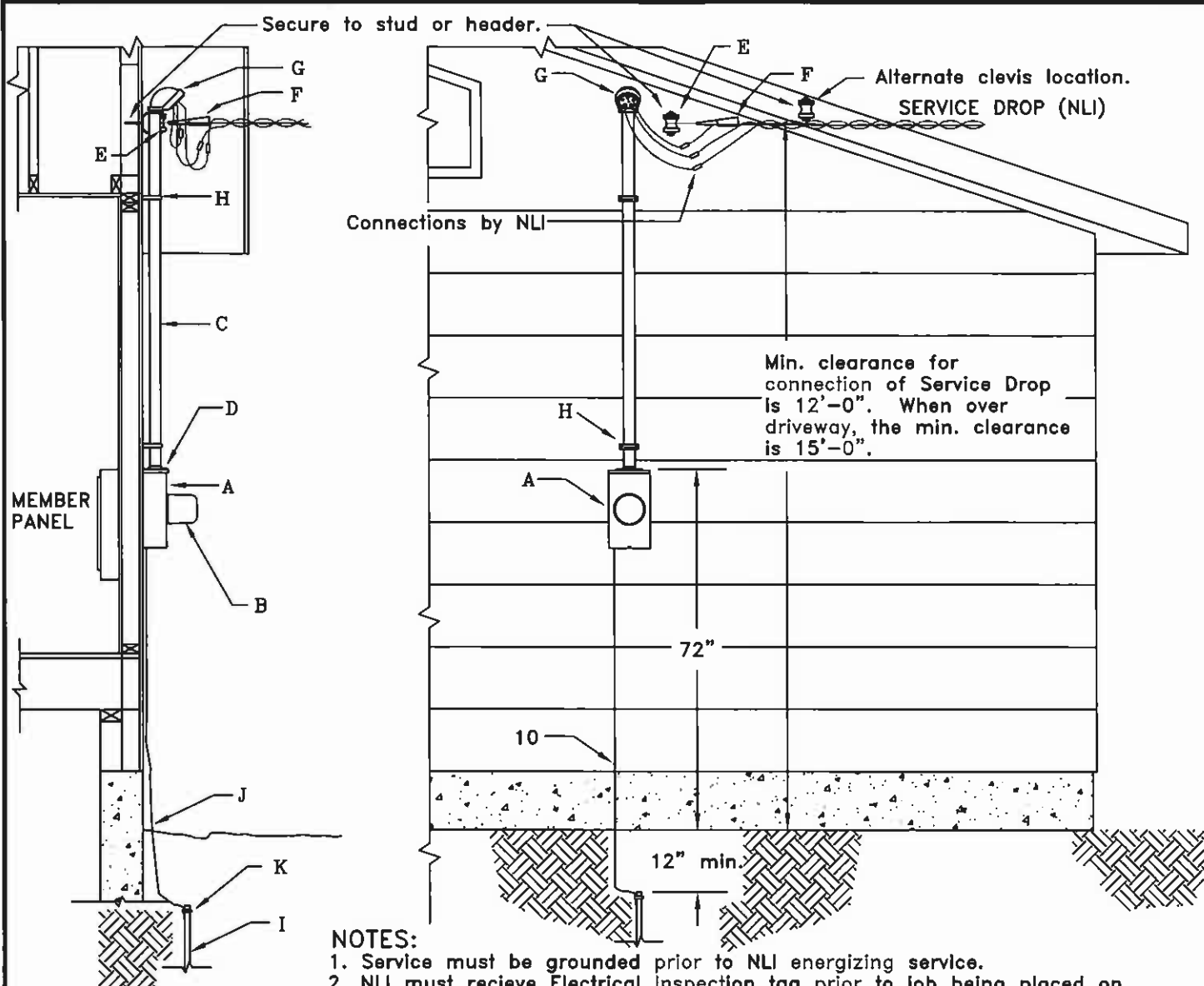
ITEM	NO.	MATERIAL	ITEM	NO.	MATERIAL
A	1	Meter base	F	1	Wedge clamp, service deadend (NLI)
B	1	Meter (NLI)	G	1	Weatherhead, size as required.
C		Conduit, RGS, IMC or schedule 80 PVC size and length as required.	H		Pipe strap, as required
D	1	Hub, size as required.	I	2	Ground rod, 5/8"x8'
E	1	Clevis, conduit insulated	J		#6 Copper ground wire
			K	2	Clamp, ground rod



**METER INSTALLATION GUIDE
SINGLE PHASE OVERHEAD SERVICE
120/240 VOLT 200-400 AMP**

JAN. 1, 2011

S-4



ALL ITEMS PROVIDED BY MEMBER EXCEPT AS NOTED.

NOTES:

1. Service must be grounded prior to NLI energizing service.
2. NLI must receive Electrical Inspection tag prior to job being placed on construction schedule or energizing the service.
3. A 2nd ground rod is required to be driven 6' from the first, with continuous ground wire.
4. Conduit attachments are shown for steel conduit.
5. If the meter base is located more than 36" from the main breaker, a separate Fault Interrupting Device will be mounted on the outside wall, electrically following the meter.
6. Leave 18" minimum of wire for drip loop beyond weatherhead.
7. NLI accepts class 320, form 2S meters, for 320 Amp continuous, 400 Amp maximum services.

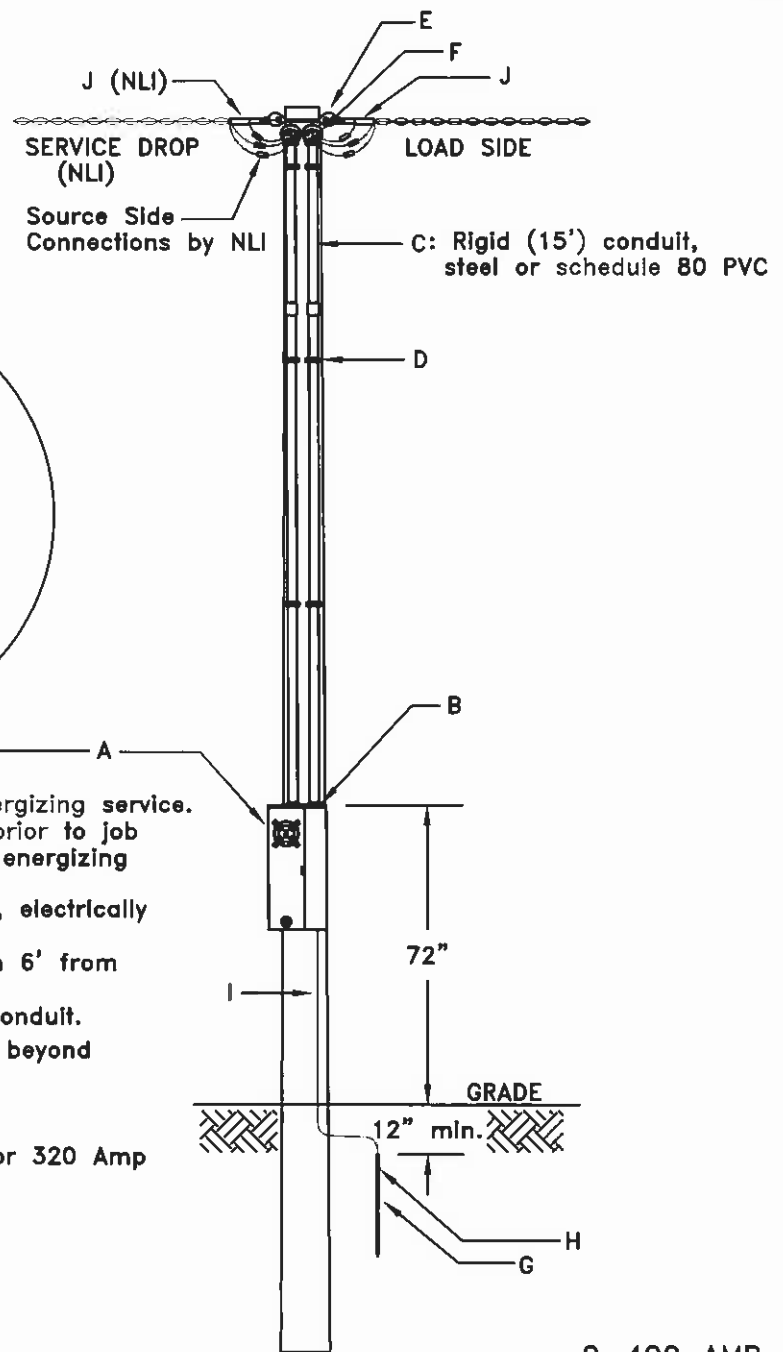
ITEM	NO.	MATERIAL	ITEM	NO.	MATERIAL
A	1	Meter base	F	1	Wedge clamp, service deadend (NLI)
B	1	Meter (NLI)	G	1	Weatherhead, size as required.
C		Conduit, RGS, IMC or schedule 80 PVC size and length as required.	H		Pipe strap, as required
D	1	Hub, size as required.	I	2	Ground rod, 5/8"x8'
E	1	Clevis, wireholder	J		#6 Copper ground wire
			K	2	Clamp, ground rod



**METER INSTALLATION GUIDE
SINGLE PHASE OVERHEAD SERVICE
120/240 VOLT 200-400 AMP**

JAN. 1, 2011

S-5



NOTES:

1. Service must be grounded prior to NLI energizing service.
2. NLI must receive Electrical Inspection tag prior to job being placed on construction schedule or energizing the service.
3. A Fault interrupting device will be required, electrically following the meter (WITHIN 36").
4. A 2nd ground rod is required to be driven 6' from the first, with continuous ground wire.
5. Conduit attachments are shown for steel conduit.
6. Leave 18" minimum of wire for drip loop beyond weatherhead.
7. 2-1/2" conduit for 200 amp service.
8. 3" conduit for 400 amp service.
9. NLI accepts class 320, form 2S meters, for 320 Amp continuous, 400 Amp maximum services.

ALL ITEMS PROVIDED BY MEMBER EXCEPT AS NOTED

ITEM	NO.	MATERIAL	ITEM	NO.	MATERIAL
	1	30' wood pole, treated (NLI)	E	1	Bolt, oval with eye-nut (NLI)
A	1	Meter base with panel	F	2	Weatherhead
B	2	Hub	G	2	Ground rod, 5/8"x8'
C		Conduit, RGS, IMC or schedule 80 PVC	H	2	Clamp, ground rod
		size and length as required	I		#6 Copper ground wire
D		Pipe strap, as required	J	2	Wedge clamp, service deadend:
					1 supplied by member



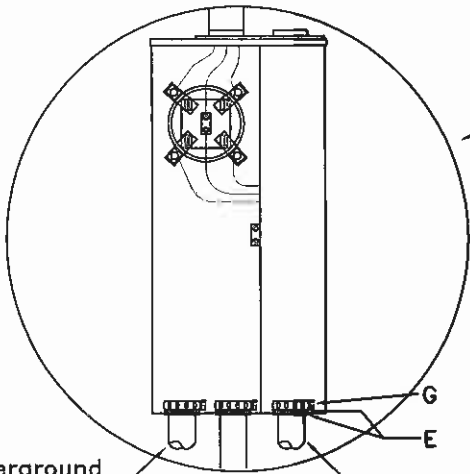
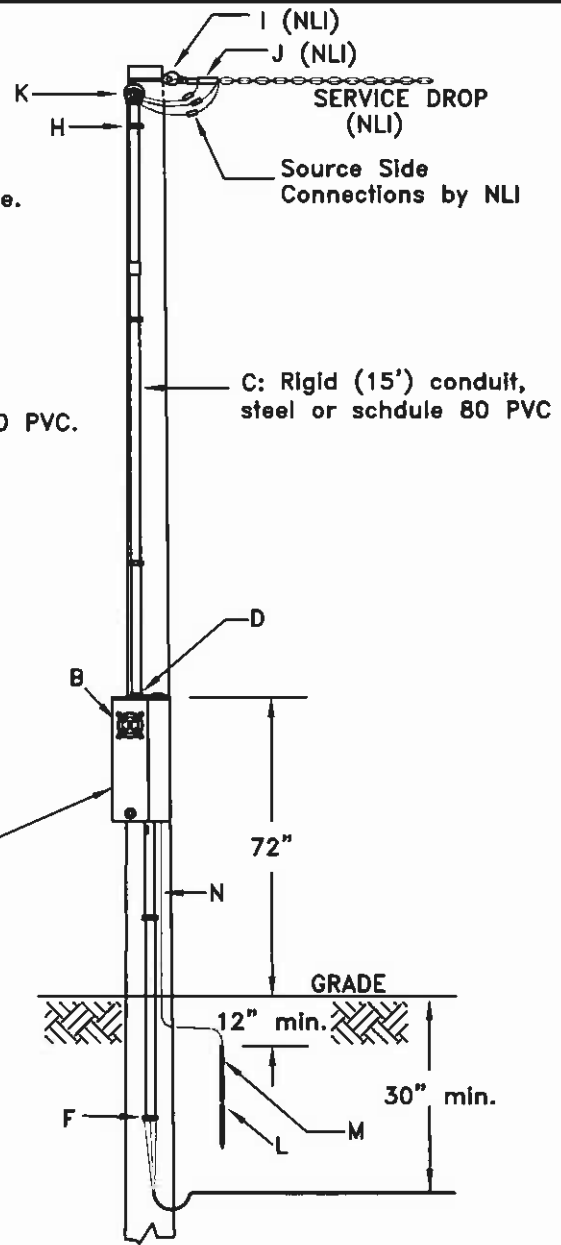
METER WITH PANEL INSTALLATION
OVERHEAD SOURCE
OVERHEAD LOAD

JAN. 1, 2011

S-6

NOTES:

1. Service must be grounded prior to NLI energizing service.
2. NLI must receive Electrical Inspection tag prior to job being placed on construction schedule or energizing the service.
3. A Fault interrupting device will be required, electrically following the meter. (WITHIN 36")
4. A 2nd ground rod is required to be driven 6' from the first, with continuous ground wire.
5. Conduit attachments are shown for steel or schedule 80 PVC.
6. Leave 18" minimum of wire for drip loop beyond weatherhead.
7. 2-1/2" conduit for 200 amp service.
8. 3" conduit for 400 amp service.
9. NLI accepts class 320, form 2S meters, for 320 Amp continuous, 400 Amp maximum services.



Underground to well pump. (example)

Underground to other building. (example)

ALL ITEMS PROVIDED BY MEMBER EXCEPT AS NOTED

0-400 AMP

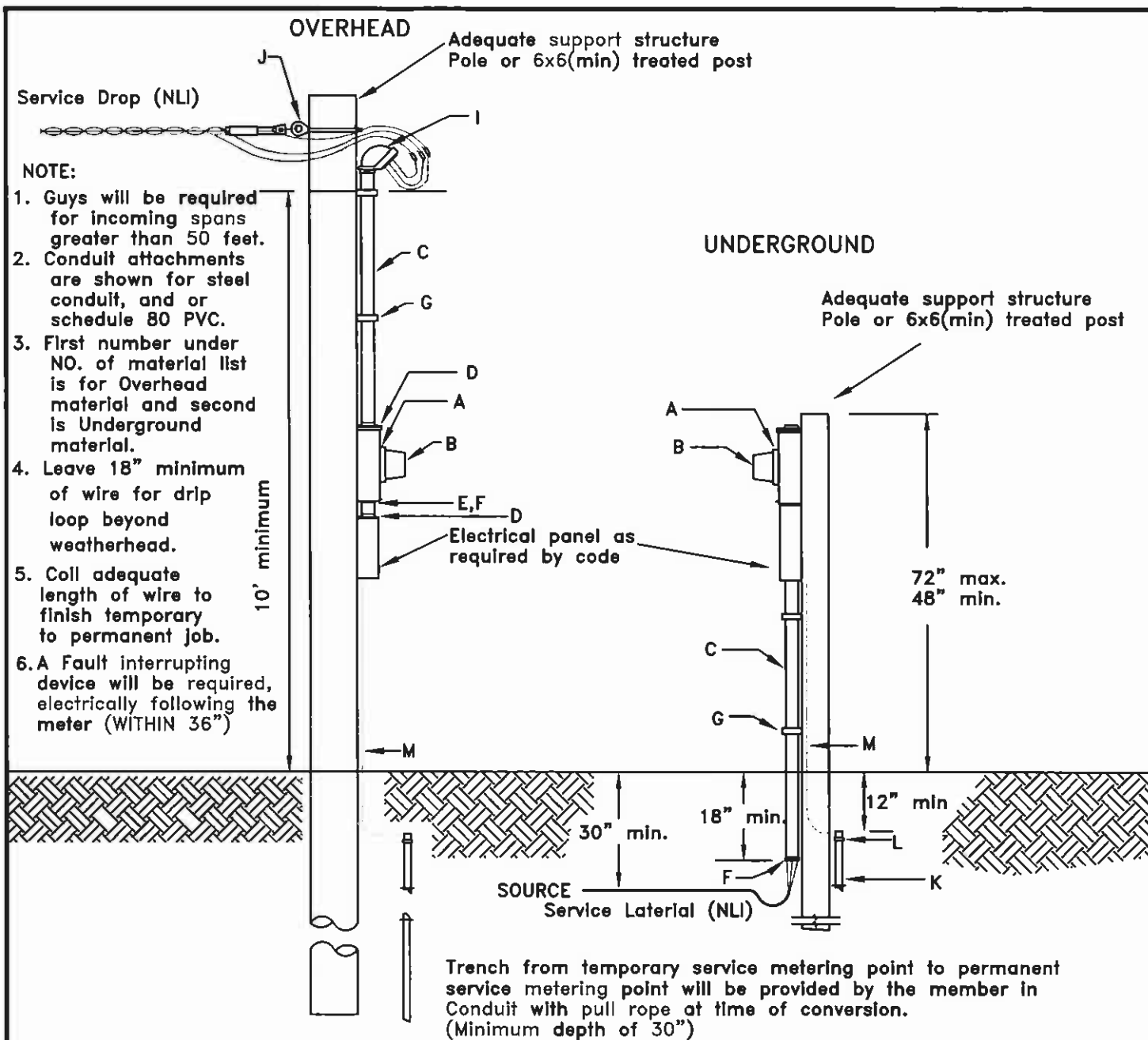
ITEM	NO.	MATERIAL	ITEM	NO.	MATERIAL
A	1	Meter base with panel	G	4	Insulated bushing+ground, size as req'd
B	1	Meter (NLI)	H		Pipe strap, as required
	1	30' wood pole, treated (NLI)	I	1	Eyebolt, 5/8", (NLI)
C		Conduit,RGS or IMC or schedule 80PVC, size and length as required.	J	1	Wedge clamp, service deadend (NLI)
			K	1	Weatherhead
D	2	Hub	L	2	Ground rod, 5/8"x 8'
E	8	Conduit locknuts, as required	M	2	Clamp, ground rod
F	1	Insulated bushing, size as req'd	N		#6 Copper ground wire



GUIDE TO YARD METER POLE INSTALLATION (SHOWING ALL BUILDING SERVICES CARRIED UNDERGROUND)

JAN. 1, 2010

S-7



ALL ITEMS PROVIDED BY MEMBER EXCEPT AS NOTED

ITEM	NO.	MATERIAL	ITEM	NO.	MATERIAL
A	1 : 1	Meter base	I	1 : 0	Weatherhead
B	1 : 1	Meter (NLI)	J	1 : 0	Eyebolt (NLI)
C		Conduit, diameter & length as required	K	2 : 2	Ground rod, 5/8"x8'
D	2 : 0	Hub	L	2 : 2	Clamp, ground rod
E	2 : 2	Conduit locknuts, size as required	M		#6 Copper ground wire
F	1 : 2	2-1/2" or 3" Insulated bushing			
G		Pipe strap, as required			

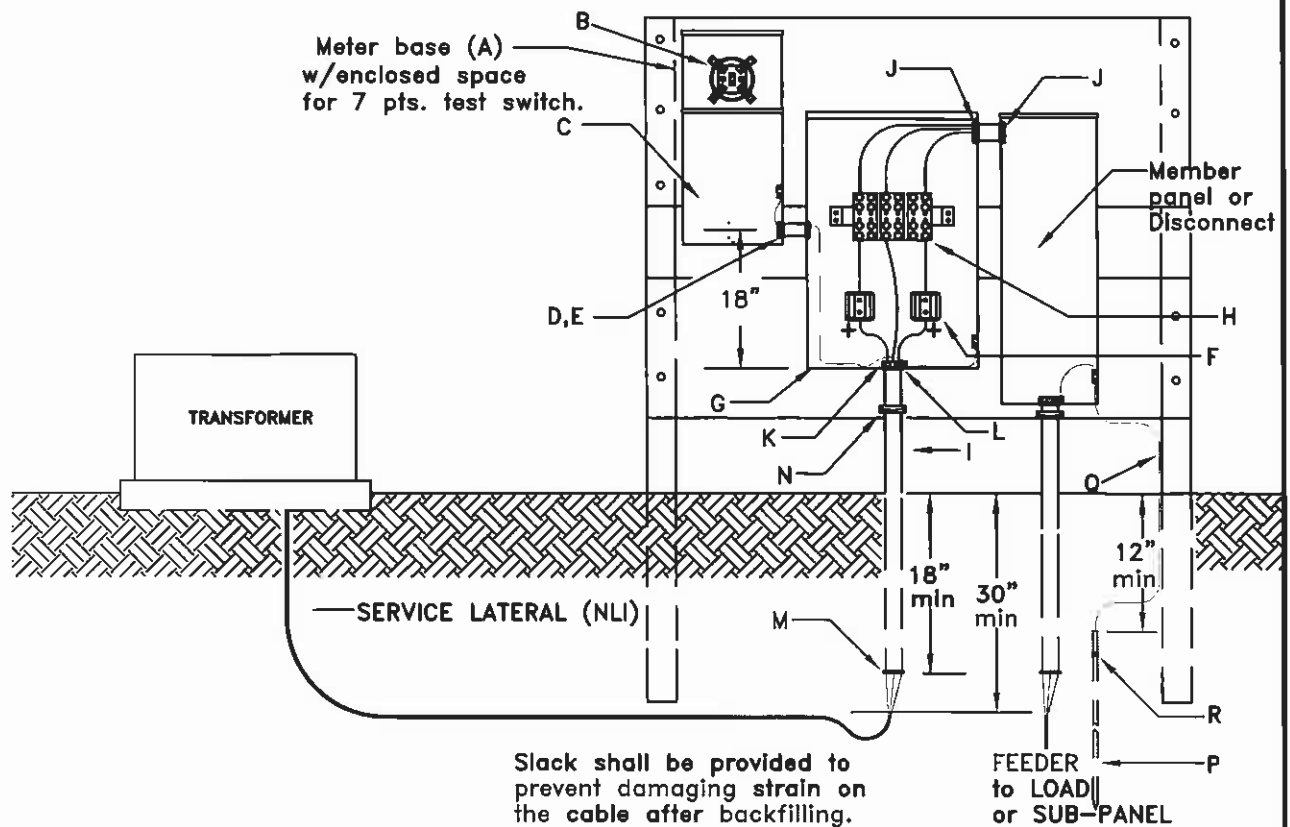


The power of local service

TEMPORARY SERVICE
120/240 volt Single Phase

JAN. 1, 2011

S-8



EXAMPLE OF CURRENT TRANSFORMER MOUNTED ON SUPPORT, OVER 400 AMP.

NOTES:

1. NLI requires a Fault interrupting device for installations.
2. NLI makes connection to member disconnect.
3. Meter wiring by NLI; meter can by NLI; CT's by NLI; CT enclosure by member.
4. Service must be grounded prior to NLI energizing service.
5. Electrical inspection permit tag must be in receipt of NLI prior to being placed on the construction schedule or energizing service.
6. A 2nd ground rod is required to be driven 6 feet from the first.
7. Conduit attachments are shown for schedule 80 PVC.
8. See NLI standards manual for meter type.

ALL ITEMS PROVIDED BY MEMBER EXCEPT AS NOTED

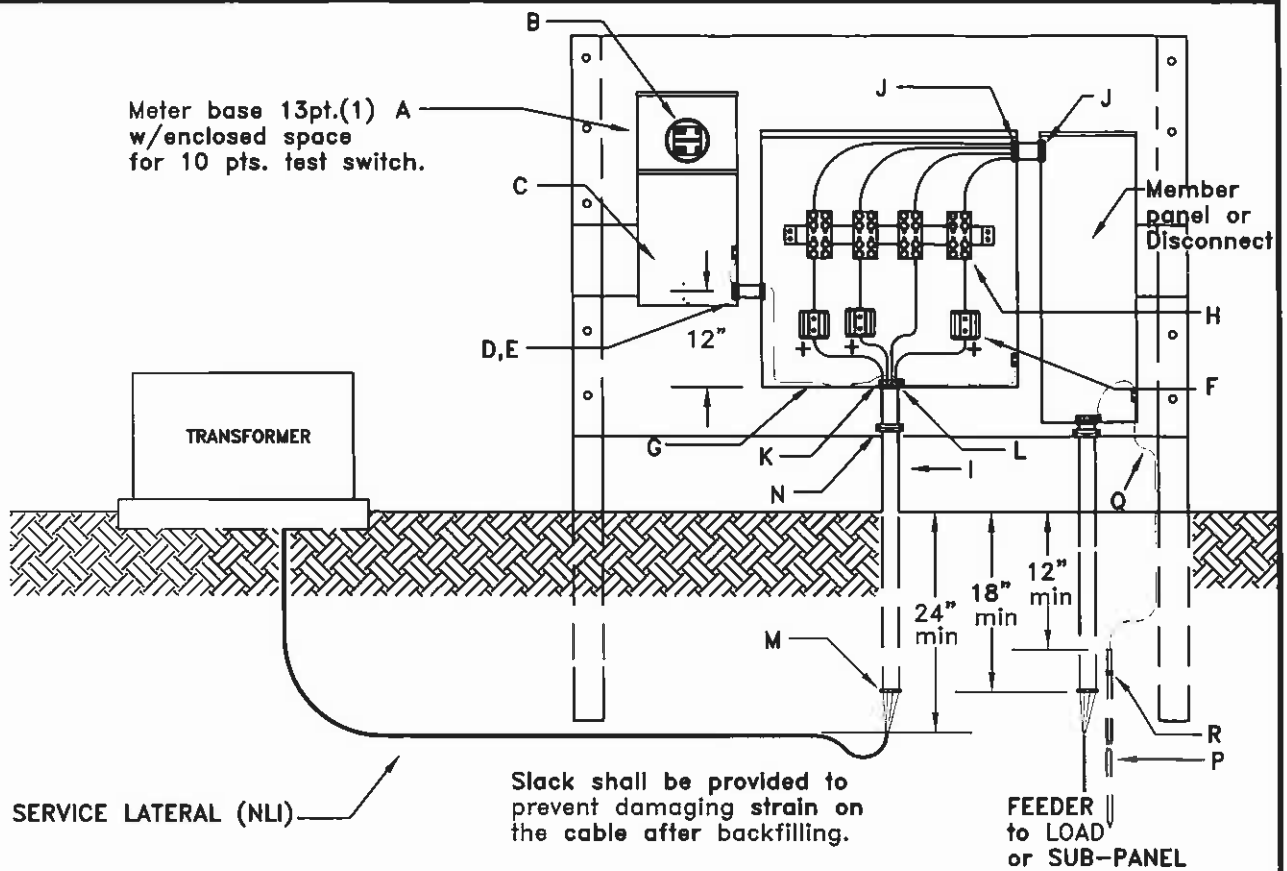
ITEM	NO.	MATERIAL	ITEM	NO.	MATERIAL
A	1	Meter base 6 pt. (NLI)	I		Conduit, 3" diameter & length as req'd
B	1	Meter (NLI) 4S	J	2	Hub, conduit side mounted, 3"
C	1	7 pt. test switch (NLI)	K	2	Insulated bushing with ground, 3"
D		Conduit, 1-1/2", length as req'd (NLI)	L	4	Conduit locknuts, 3"
E	2	Hub, conduit side mt., 1-1/2" (NLI)	M	2	Insulated bushing 3"
F	2	Current transformer (NLI)	N		Pipe strap, as required
G	1	CT enclosure, 36x36x11, WP, lockable	P	2	Ground rod, 5/8"x8'
H	3	Lugs for up to 500 MCM wire	Q		#6 Copper ground wire
			R	1	Clamp, ground rod



METER INSTALLATION GUIDE
SINGLE PHASE UNDERGROUND SOURCE
WITH CURRENT TRANSFORMERS

JAN. 1, 2011

S-9



EXAMPLE OF CURRENT TRANSFORMER MOUNTED ON SUPPORT, OVER 400 AMP.

NOTES:

1. NLI requires a Fault interrupting device for installations.
2. NLI makes connection to member disconnect.
3. Meter wiring by NLI; meter can by NLI; CT's by NLI; CT enclosure by member.
4. Service must be grounded prior to NLI energizing service.
5. Electrical inspection permit tag must be in receipt of NLI prior to being placed on the construction schedule or energizing service.
6. A 2nd ground rod is required to be driven 6 feet from the first.
7. Conduit attachments are shown for schedule 80 PVC.
8. See NLI standards manual for meter type.

ALL ITEMS PROVIDED BY MEMBER EXCEPT AS NOTED

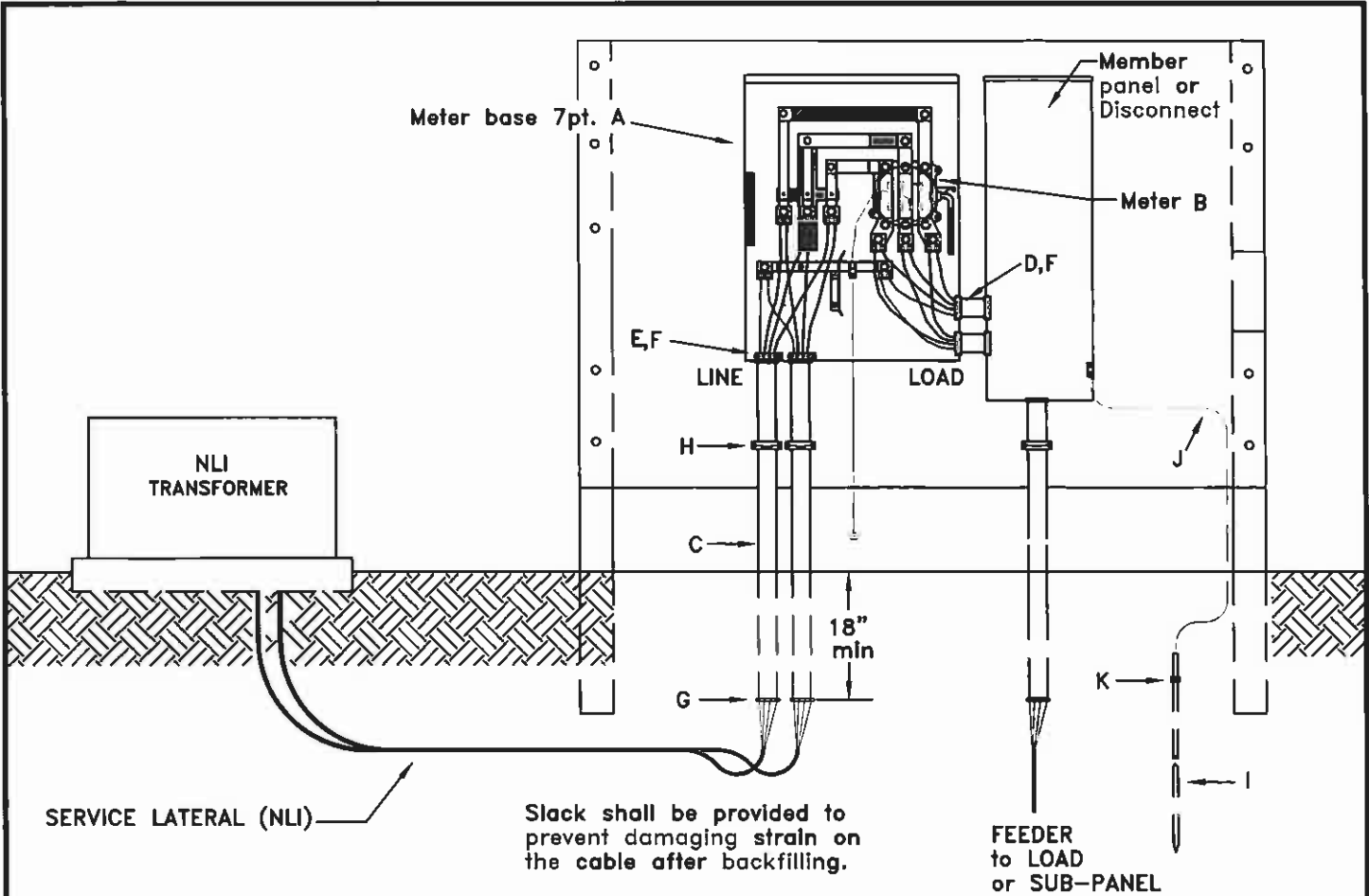
ITEM	NO.	MATERIAL	ITEM	NO.	MATERIAL
A	1	Meter base 13 pt. (NLI)	I		Conduit, 3" diameter & length as req'd
B	1	Meter (NLI)	J	2	Hub, conduit side mounted, 3"
C	1	10 pt test switch (NLI)	K	2	Insulated bushing with ground, 3"
D		Conduit, 1-1/2", length as req'd (NLI)	L	4	Conduit locknuts, 3"
E	2	Hub, conduit side mt., 1-1/2" (NLI)	M	2	Insulated bushing 3"
F	3	Current transformer (NLI)	N		Pipe strap, as required
G	1	CT enclosure, 36x36x11, WP, lockable	P	2	Ground rod, 5/8"x8'
H	4	Lugs for up to 500 MCM wire	Q		#6 Copper ground wire
			R	1	Clamp, ground rod



METER INSTALLATION GUIDE
THREE PHASE UNDERGROUND SOURCE
WITH CURRENT TRANSFORMERS

JAN. 1, 2011

S-10



**EXAMPLE OF THREE PHASE 4 WIRE 320 AMP SERVICE
MOUNTED ON SUPPORT (400 AMP MAX)**

NOTES:

1. NLI requires a Fault interrupting device for installations.
2. NLI makes connection to member disconnect.
3. Conduit attachments are shown for schedule 80 PVC.
4. Service must be grounded prior to NLI energizing service.
5. Electrical inspection permit tag must be in receipt of NLI prior to being placed on the construction schedule or energizing service.
6. A 2nd ground rod is required to be driven 6 feet from the first.
7. Conduit attachments are shown for schedule 80 PVC.
8. When customer is installing secondary conduits, conduits are to be buried at 30" minimum.
9. Meter base to accept a 7 lug meter.

** BEFORE INSTALLATION, PLEASE CONTACT METER TECHNICIAN AT NLI SAGLE OFFICE.
(208) 263-5141 ext. 138

ALL ITEMS PROVIDED BY MEMBER EXCEPT AS NOTED

ITEM	NO.	MATERIAL	ITEM	NO.	MATERIAL
A	1	Meter base (7 pt.)	F	4	Conduit locknuts, 3"
B	1	Meter (NLI)	G	2	Insulated bushing 3"
C		Conduit, 3" diameter & length as req'd	H		Pipe strap, as required
D	2	Hub, conduit side mounted, 3"	I	2	Ground rod, 5/8"x8'
E	2	Insulated bushing with ground, 3"	J		#6 Copper ground wire
			K	2	Clamp, ground rod



**METER INSTALLATION GUIDE
THREE PHASE UNDERGROUND SOURCE
NON-CT**

JAN. 1, 2011

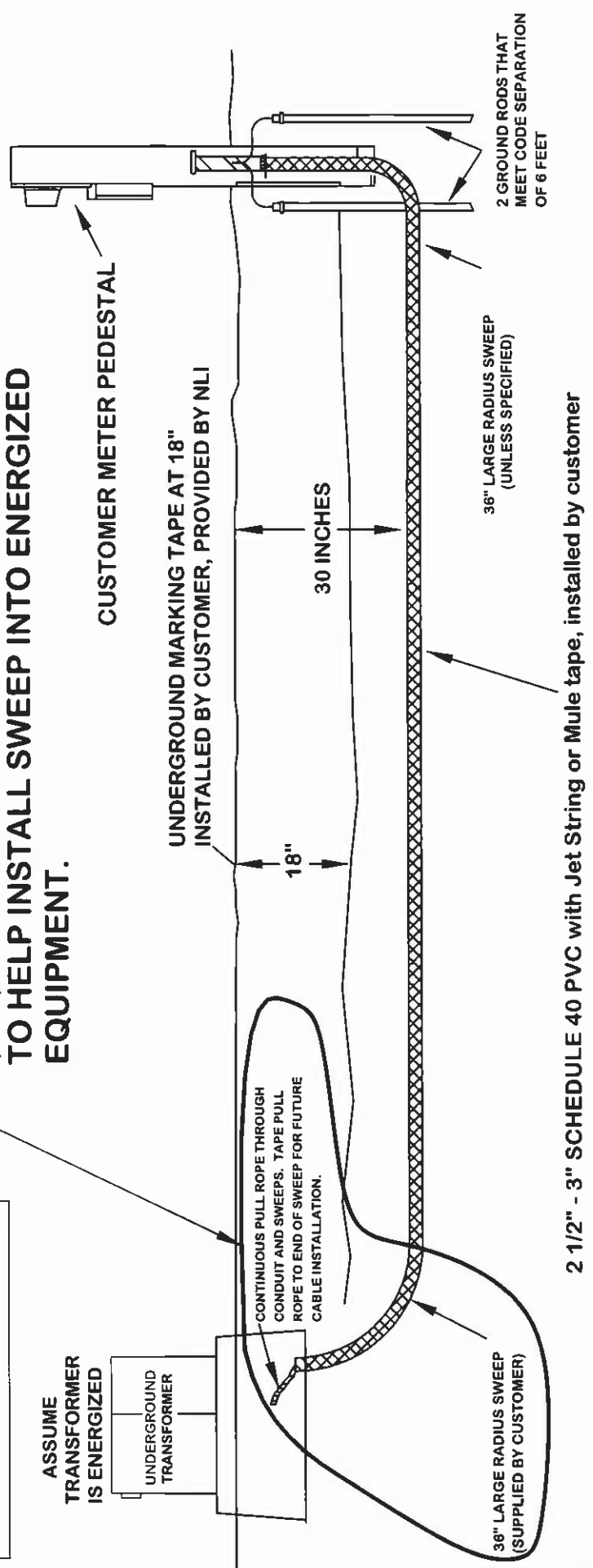
S-11

NORTHERN LIGHTS, Inc.

EXISTING UNDERGROUND TRANSFORMER UNDERGROUND TO METER PEDASTAL

811
 Know what's BELOW.
 CALL before you dig.

WHEN TRANSFORMER EXISTS, CONTACT NLI (208)263-5141 ext.144. NLI WILL SEND OUT A CREW TO HELP INSTALL SWEEP INTO ENERGIZED EQUIPMENT.



2 1/2" - 3" SCHEDULE 40 PVC with Jet String or Mule tape, installed by customer

Less than 200 feet

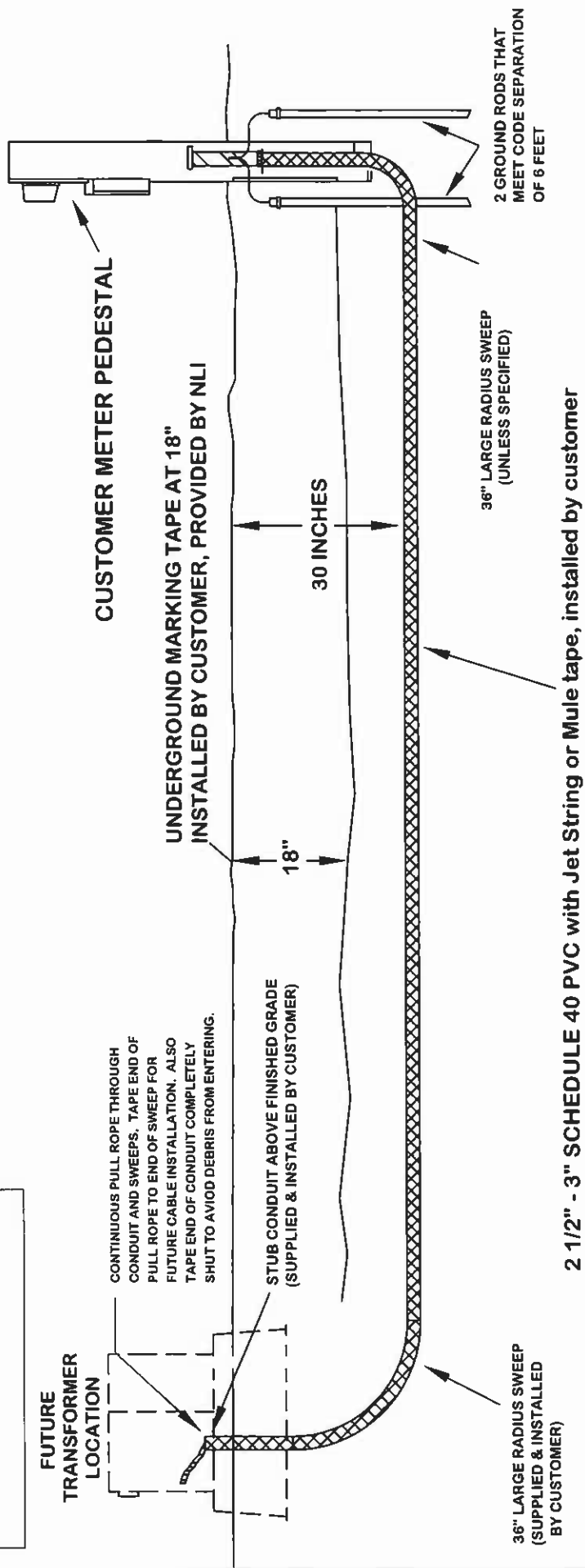
NORTHERN LIGHTS, Inc.



FUTURE UNDERGROUND TRANSFORMER UNDERGROUND TO METER PEDASTAL



**Know what's BELOW.
CALL before you dig.**



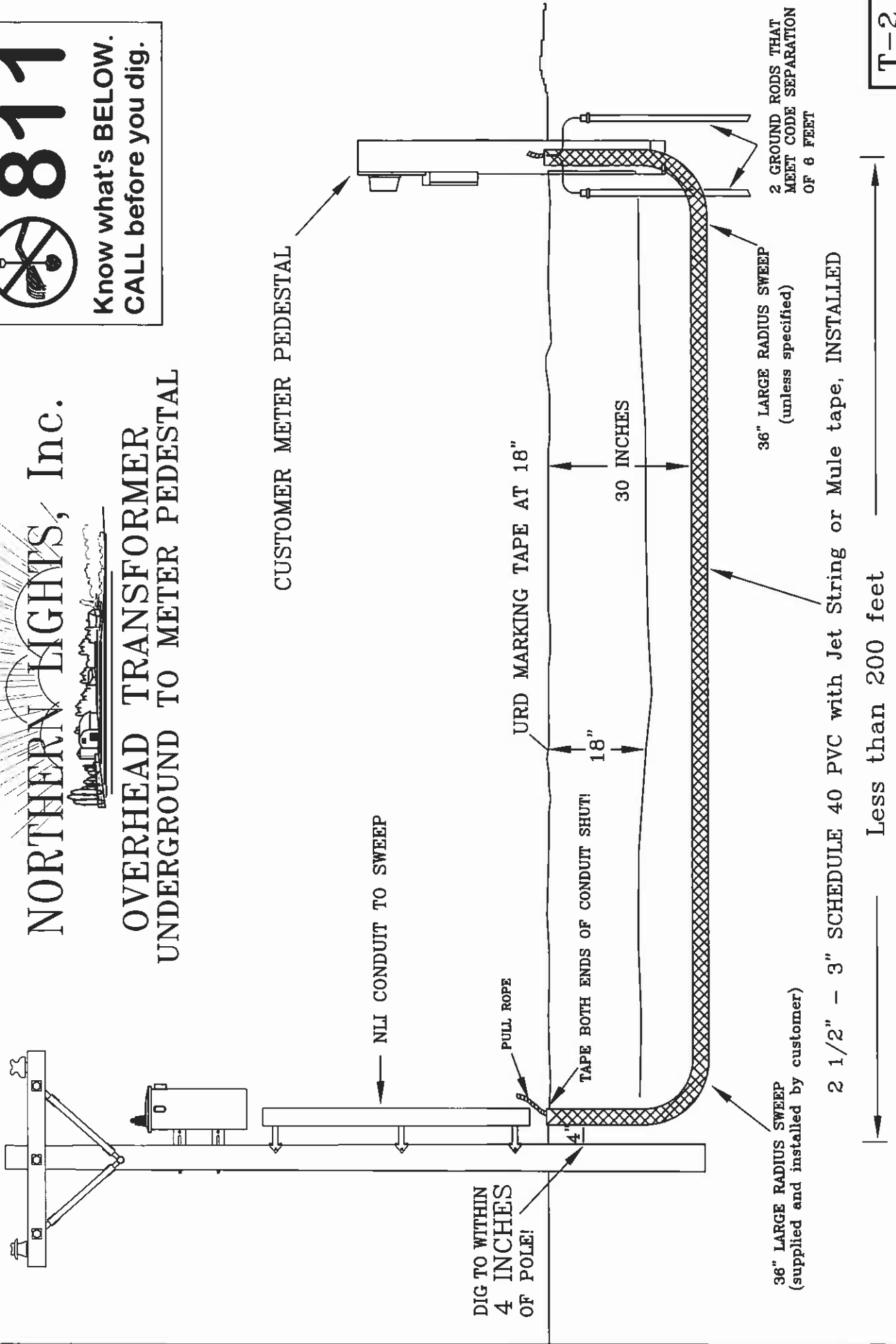


811

Know what's BELOW.
CALL before you dig.

NORTHERN LIGHTS, Inc.

OVERHEAD TRANSFORMER UNDERGROUND TO METER PEDESTAL

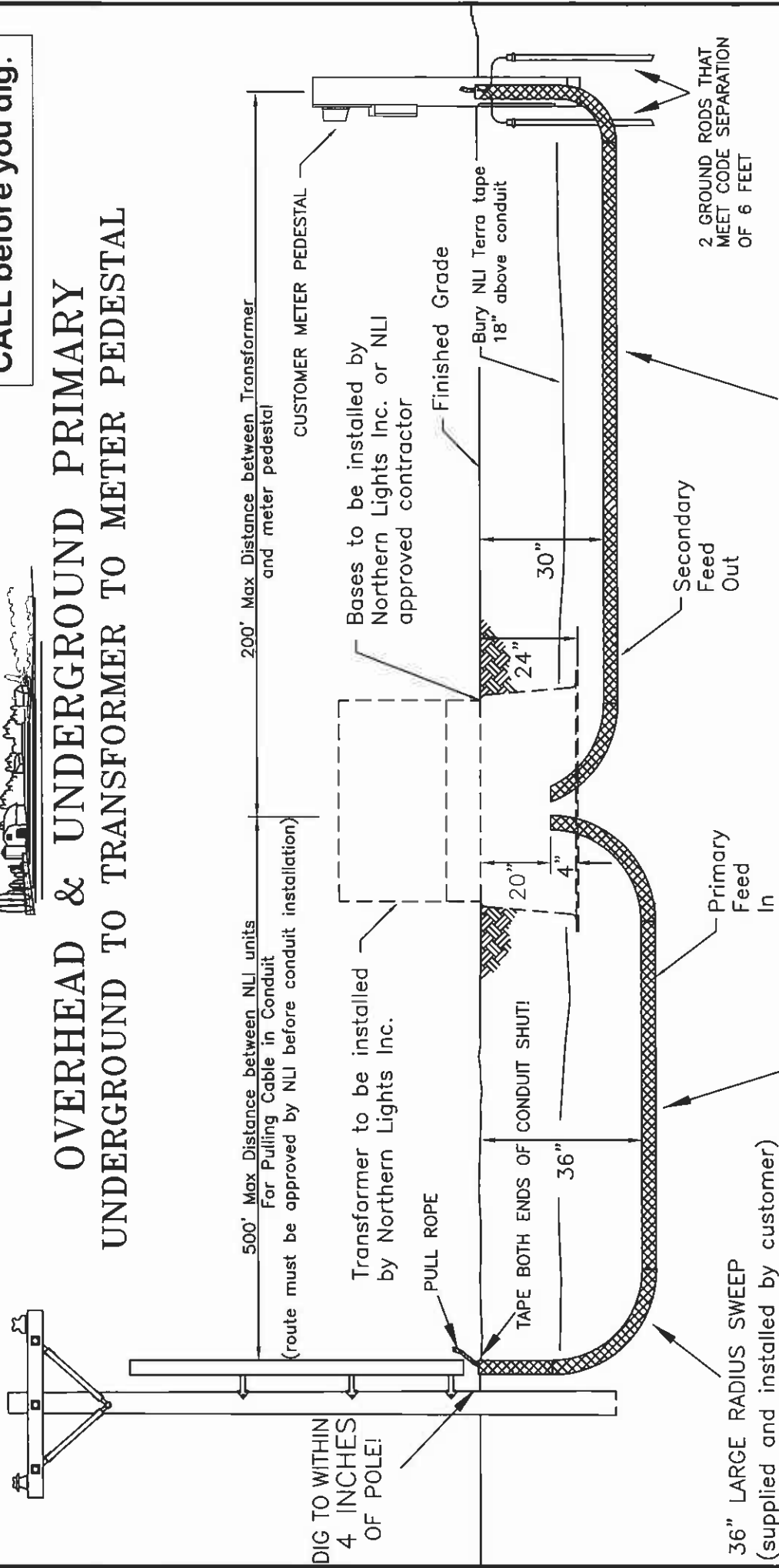




Know what's BELOW.
CALL before you dig.

NORTHERN LIGHTS, Inc.

OVERHEAD & UNDERGROUND PRIMARY UNDERGROUND TO TRANSFORMER TO METER PEDESTAL



2 1/2" - 3" SCHEDULE 40 PVC with Jet String or Mule tape, INSTALLED

36" LARGE RADIUS SWEEP
(supplied and installed by customer)

Secondary
Feed
Out

Primary
Feed
In

2 GROUND RODS THAT
MEET CODE SEPARATION
OF 6 FEET

200' Max Distance between Transformer
and meter pedestal

500' Max Distance between NLI units
For Pulling Cable in Conduit
(route must be approved by NLI before conduit installation)

DIG TO WITHIN
4 INCHES
OF POLE!

Transformer to be installed
by Northern Lights Inc.

Bases to be installed by
Northern Lights Inc. or NLI
approved contractor

PULL ROPE

TAPE BOTH ENDS OF CONDUIT SHUT!

Finished Grade

Bury NLI Terra tape
18" above conduit

NORTHERN LIGHTS, Inc.

EXISTING UNDERGROUND TRANSFORMER UNDERGROUND TO METER ON HOUSE

811
 Know what's BELOW.
 CALL before you dig.

CUSTOMER METER BASE (EYE HEIGHT)

WHEN TRANSFORMER EXISTS, CONTACT NLI (208)263-5141 ext.144. NLI WILL SEND OUT A CREW TO HELP INSTALL SWEEP INTO ENERGIZED EQUIPMENT.

CONDUIT ABOVE GROUND SCHEDULE 80 PVC

UNDERGROUND MARKING TAPE AT 18" INSTALLED BY CUSTOMER, PROVIDED BY NLI

30 INCHES

CONTINUOUS PULL ROPE THROUGH CONDUIT AND SWEEPS. TAPE PULL ROPE TO END OF SWEEP FOR FUTURE CABLE INSTALLATION.

2 GROUND RODS THAT MEET CODE SEPARATION OF 6 FEET

36" LARGE RADIUS SWEEP (UNLESS SPECIFIED)

ASSUME TRANSFORMER IS ENERGIZED

UNDERGROUND TRANSFORMER

36" LARGE RADIUS SWEEP (SUPPLIED & INSTALLED BY CUSTOMER)

2 1/2" - 3" SCHEDULE 40 PVC with Jet String or Mule tape, installed by customer

Less than 200 feet

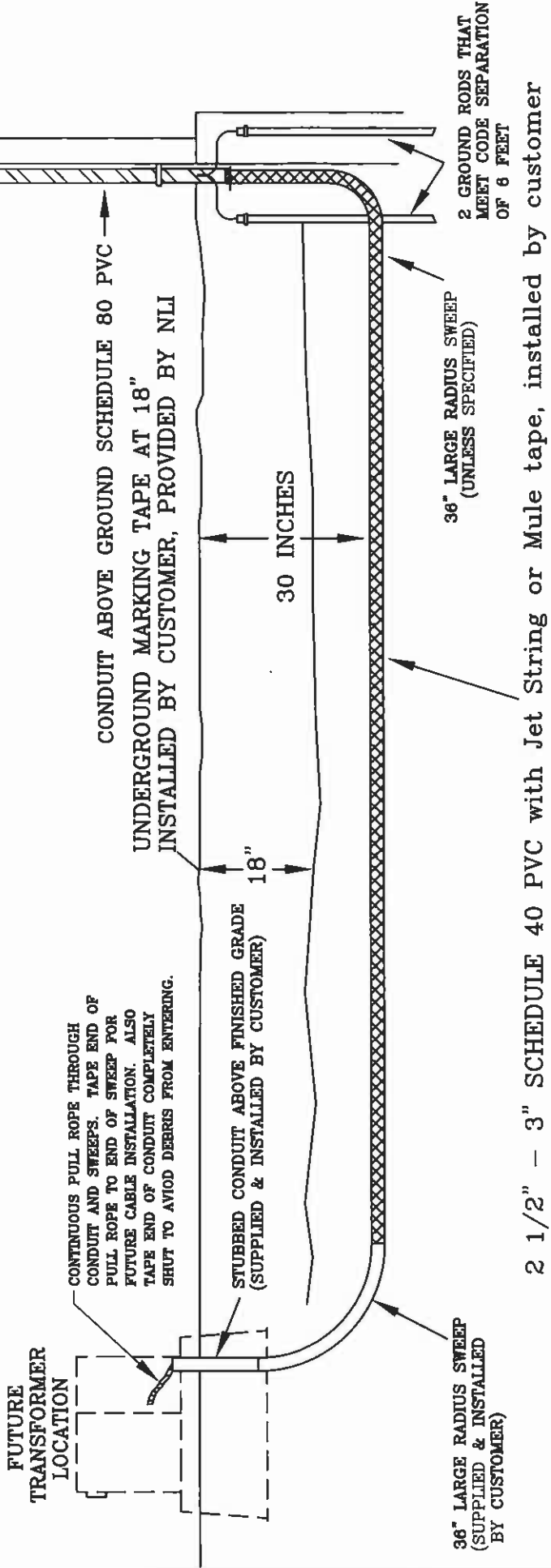
NORTHERN LIGHTS, Inc.

FUTURE UNDERGROUND TRANSFORMER UNDERGROUND TO METER ON HOUSE



811
Know what's BELOW.
CALL before you dig.

CUSTOMER METER BASE (EYE HEIGHT)



2 GROUND RODS THAT MEET CODE SEPARATION OF 6 FEET

36" LARGE RADIUS SWEEP (UNLESS SPECIFIED)

30 INCHES

18"

36" LARGE RADIUS SWEEP (SUPPLIED & INSTALLED BY CUSTOMER)

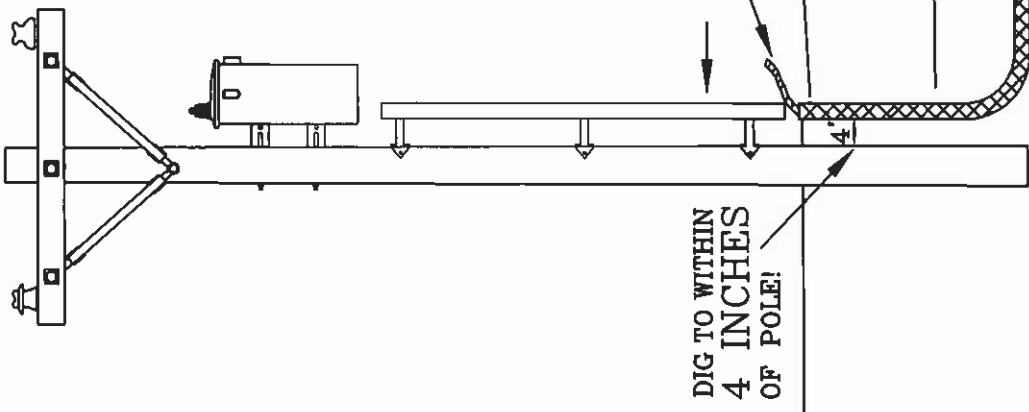
2 1/2" - 3" SCHEDULE 40 PVC with Jet String or Mule tape, installed by customer

Less than 200 feet

NORTHERN LIGHTS, Inc.

**OVERHEAD TRANSFORMER
UNDERGROUND TO METER ON HOUSE**

CALL BEFORE YOU DIG!!
 (MT) 1-800-424-5555
 (ID) 1-800-626-4950
 (ID) 1-800-428-4950
 (KOOTENAI COUNTY ONLY)



DIG TO WITHIN
4 INCHES
OF POLE!

NLL CONDUIT TO SWEEP

PULL ROPE

CONDUIT ABOVE GROUND SCHEDULE 80 PVC

CUSTOMER METER BASE (EYE HEIGHT)

URD MARKING TAPE AT 18"

18"

30 INCHES

36" LARGE RADIUS SWEEP
(supplied and installed by customer)

36" LARGE RADIUS SWEEP
(unless specified)

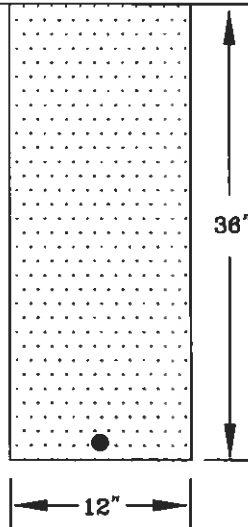
2 GROUND RODS THAT
MEET CODE SEPARATION
OF 6 FEET

2 1/2" - 3" SCHEDULE 40 PVC with JET STRING OR MULE TAPE, INSTALLED

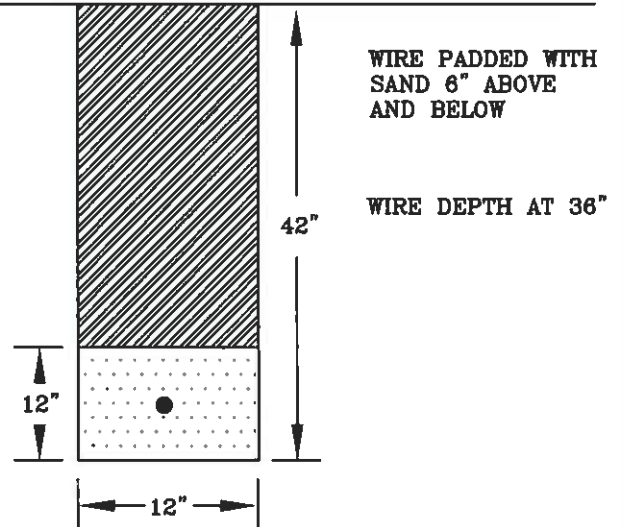
Less than 200 feet

NORTHERN LIGHTS INC. ONLY PRIMARY VOLTAGE

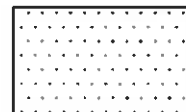
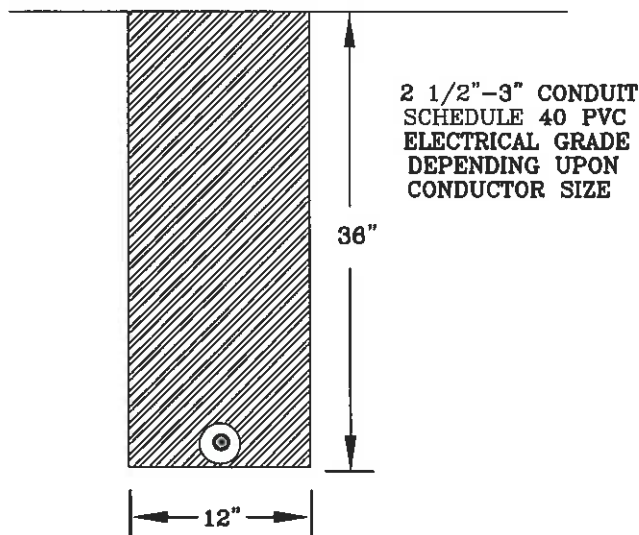
WITH ROCK FREE SOIL



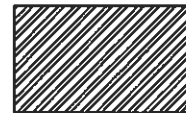
WITH BEDDING



WITH CONDUIT



ROCK FREE MATERIAL
SAND, LOAM, ETC



SOIL BACKFILL MATERIAL
MAY CONTAIN ROCKS,
GRAVEL, ETC



NL INC. CABLE

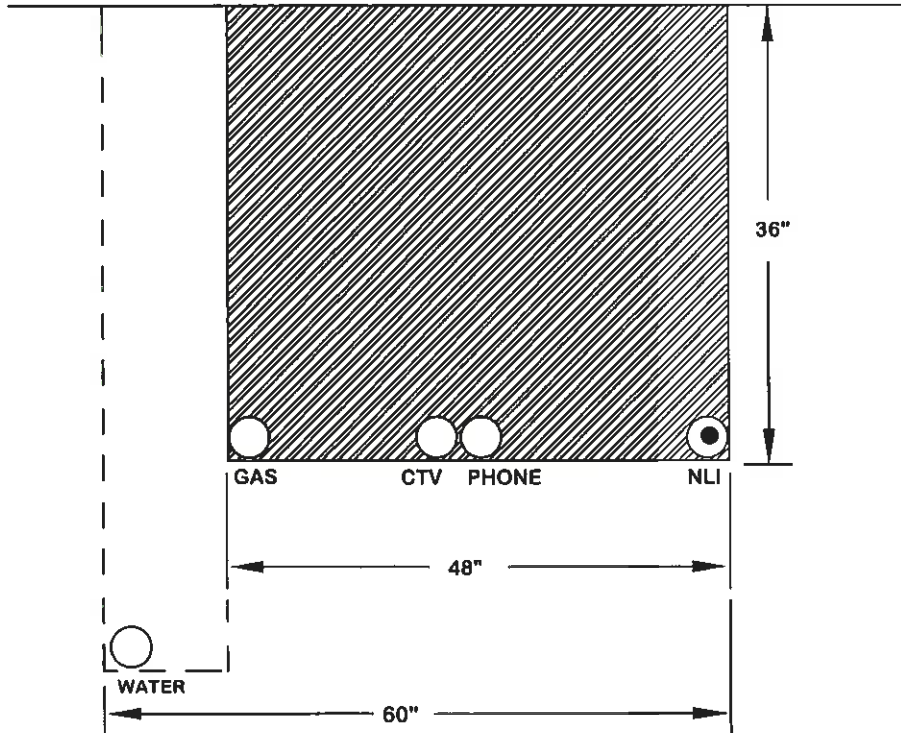


TRENCHING

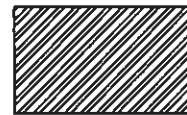
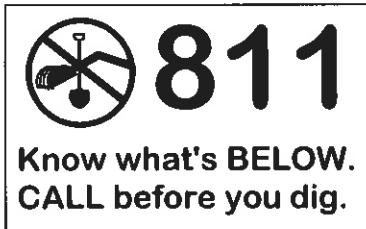
01/01/11

T-5

- 3" CONDUIT
- MUST BE AT LEAST 3' SEPARATION BETWEEN NLI AND AVISTA GAS LINE
- WHEN WATER IS INSTALLED IN SAME TRENCH, A 5' (60") WIDE DITCH IS REQUIRED



* CONTACT NLI OFFICE BEFORE STARTING PROJECT, SPECIFICATIONS MAY VARY ON INDIVIDUAL PROJECTS.



SOIL BACKFILL MATERIAL
MAY CONTAIN ROCKS,
GRAVEL, ETC



NLI INC. CABLE



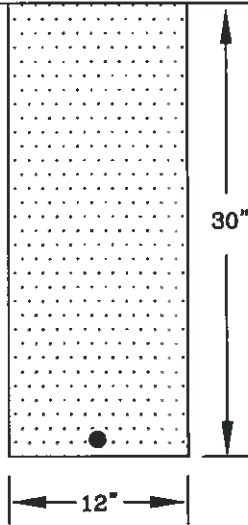
SUBDIVISION TRENCHING

01/01/2011

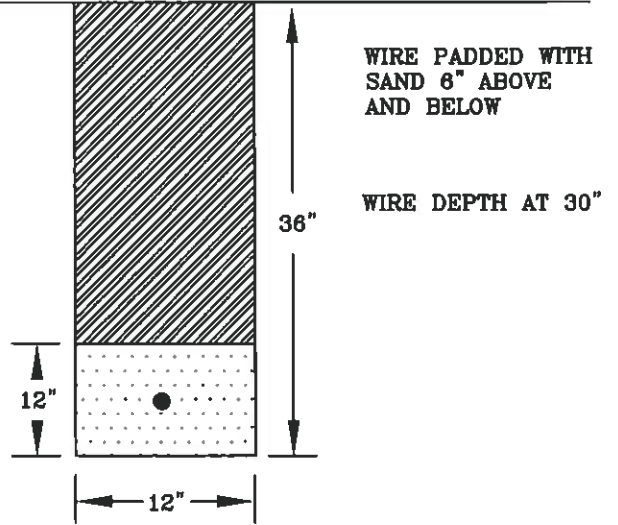
T-5-1

NORTHERN LIGHTS INC. SECONDARY VOLTAGE

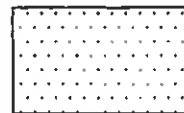
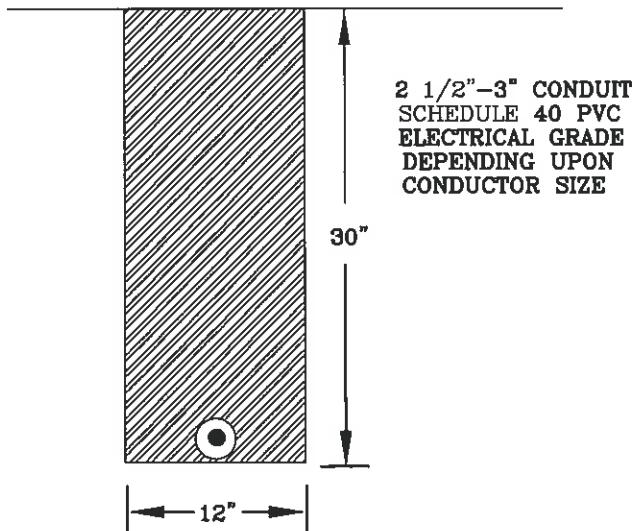
WITH ROCK FREE SOIL



WITH BEDDING



WITH CONDUIT



ROCK FREE MATERIAL
SAND, LOAM, ETC



SOIL BACKFILL MATERIAL
MAY CONTAIN ROCKS,
GRAVEL, ETC



NL INC. CABLE



TRENCHING

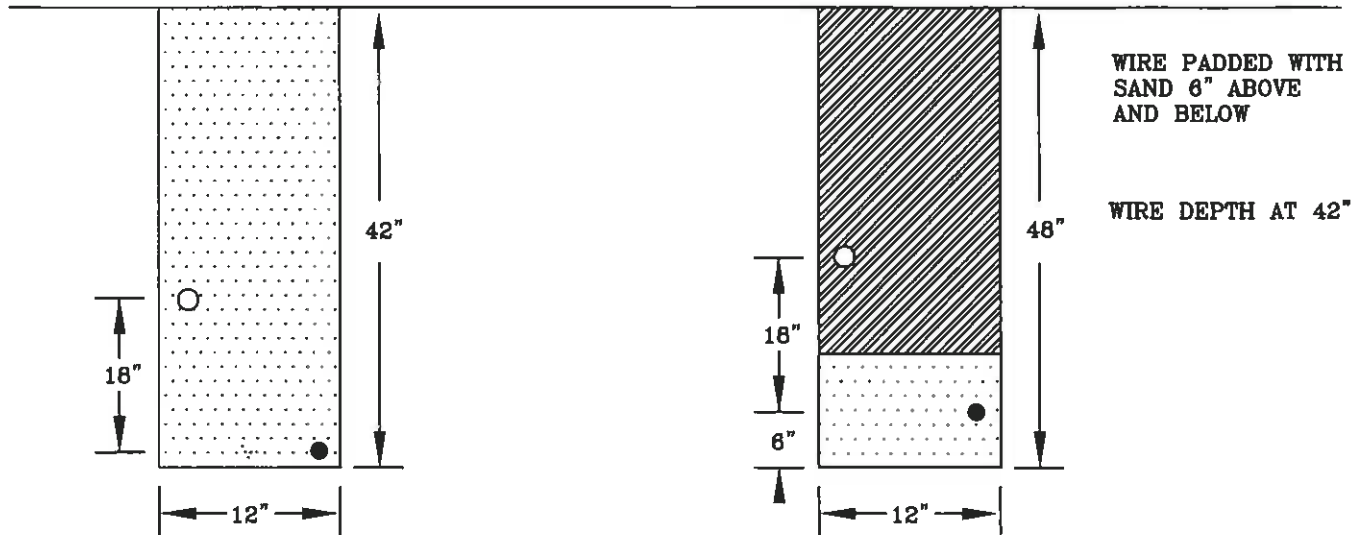
01/01/2011

T-6

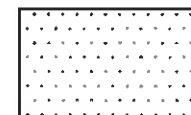
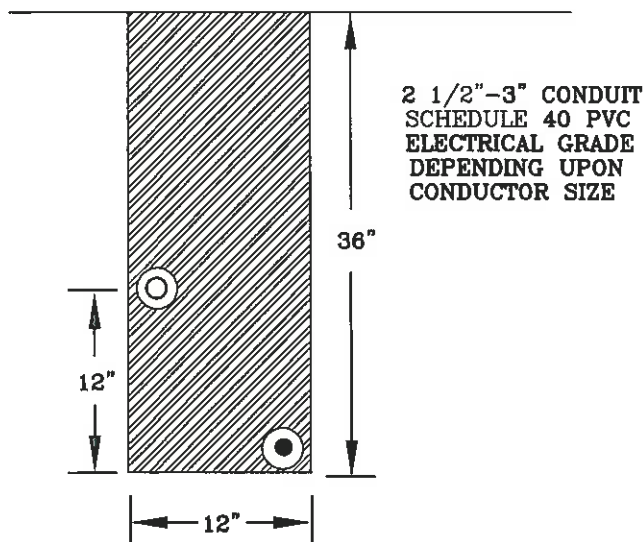
NORTHERN LIGHTS INC. PRIMARY VOLTAGE JOINT USE WITH COMMUNICATIONS

WITH ROCK FREE SOIL

WITH BEDDING



WITH CONDUIT



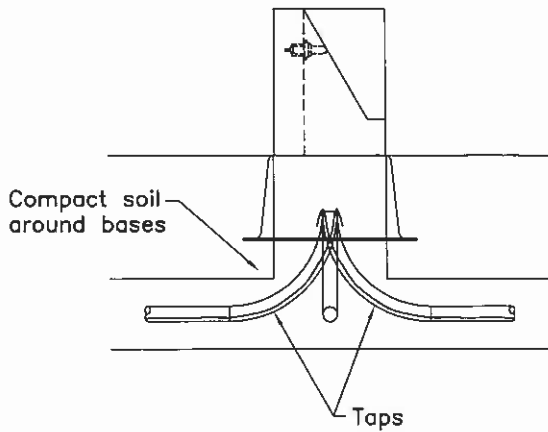
- COMMUNICATION CABLE
- NL INC. CABLE



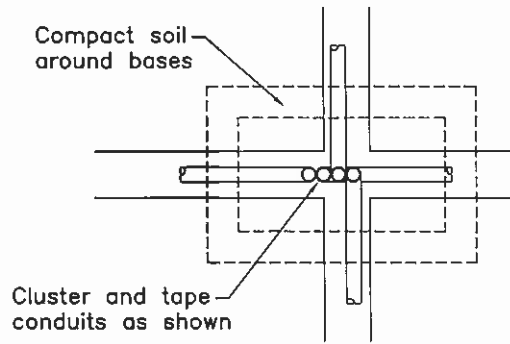
TRENCHING

01/01/2011

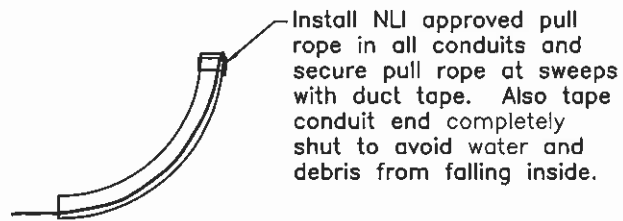
T-7



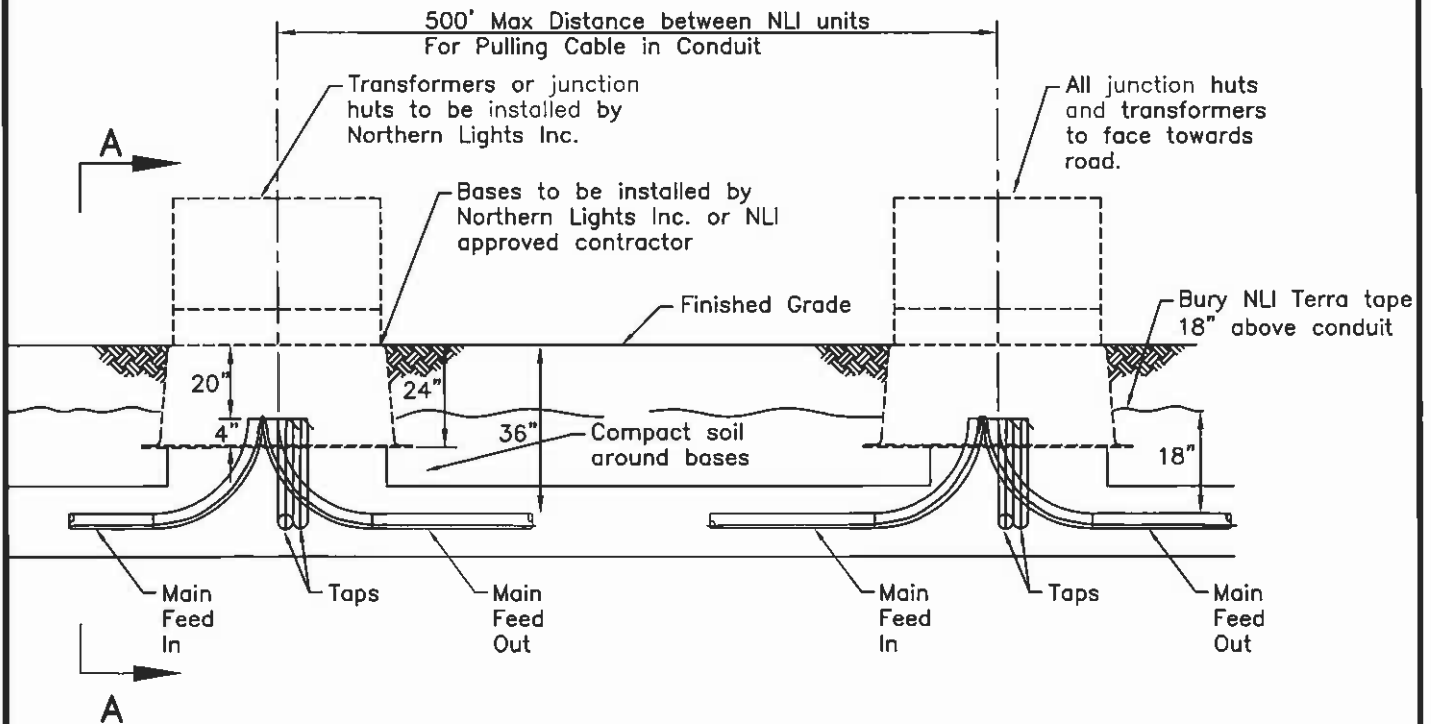
SECTION A-A



TRENCHING DETAIL



PULL ROPE DETAIL



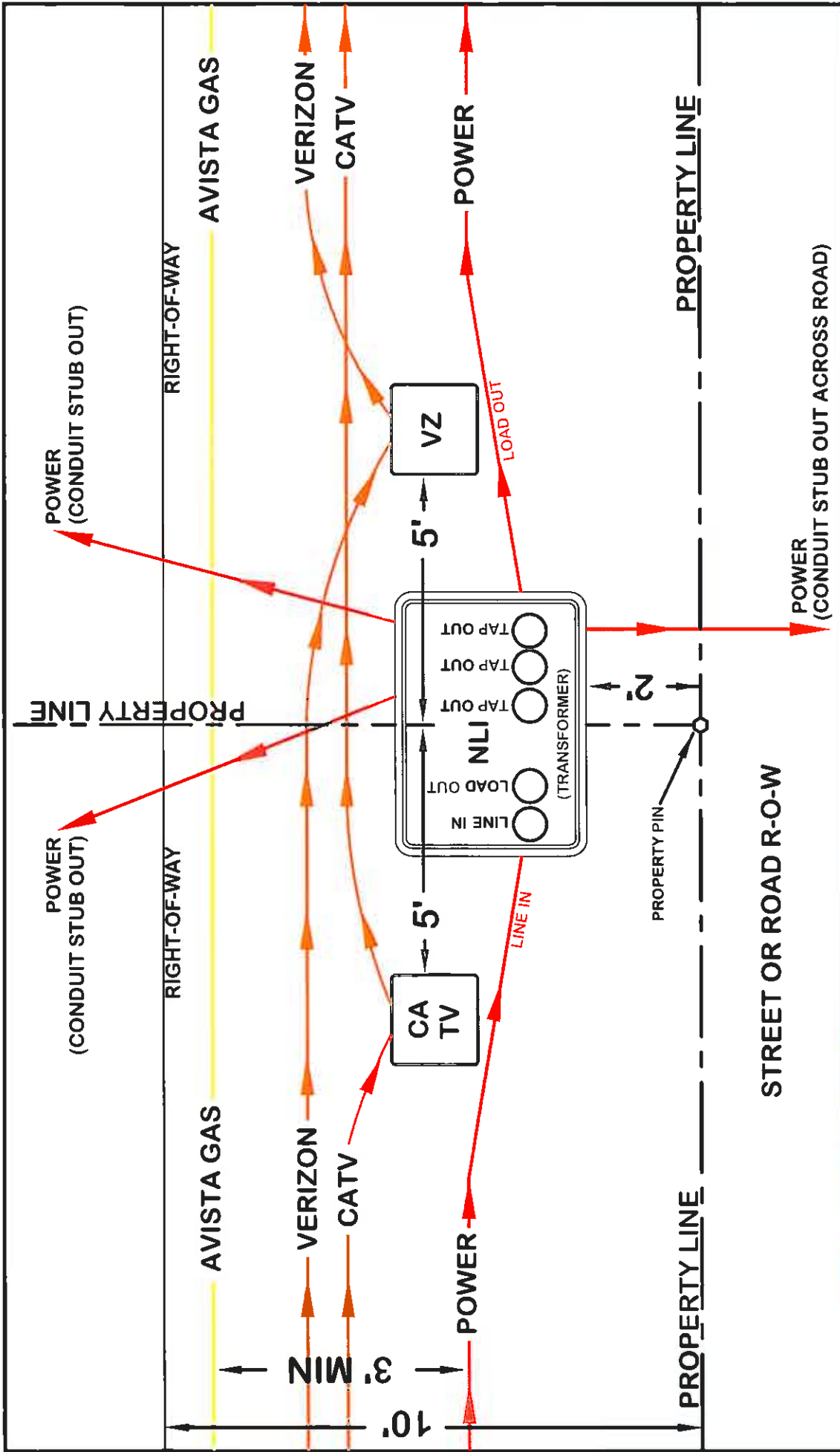
1. 2½" or 3" Schedule 40 electrical grade conduit. Conduit long-radius sweeps required.
2. All conduits to be buried a minimum depth of 36"
3. Terra tape to be installed 18" above the conduit. Tape can be picked up at NLI Sagle office or you may make arrangements to pick it up at your local NLI warehouse.
4. NLI approved pull rope required in all conduits. Secure ends of conduits with tape to secure pull rope and seal end of conduit.

CONDUIT DETAILS FOR JUNCTION HUTS OR TRANSFORMERS

01/01/11



T8

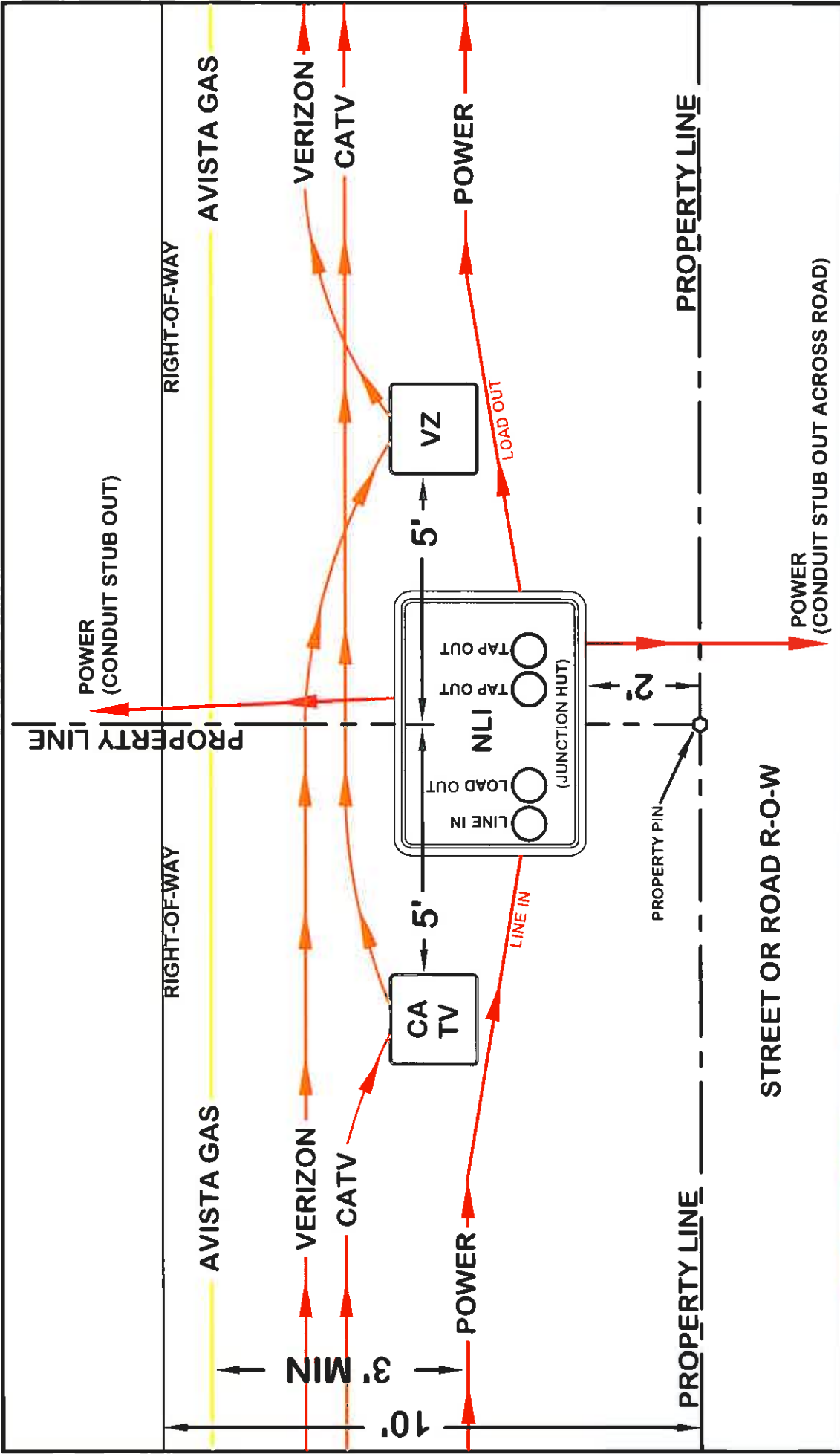


UTILITY PLAN

TRANSFORMER LAYOUT W/
 MULTIPLE SECONDARY DROPS

JAN. 1, 2011

T-9T



UTILITY PLAN

JUNCTION HUT LAYOUT W/
MULTIPLE PRIMARY TAPS

T-9J



JAN. 1, 2011