

Bonding and Grounding

- 8-20.3(9)

Ground Tile



17 1:53 PM

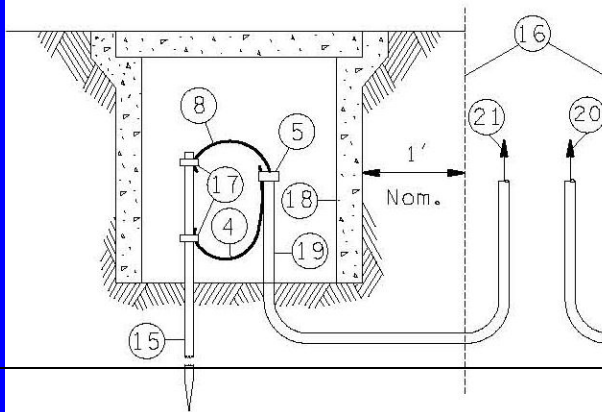
Approved Ground Clamp



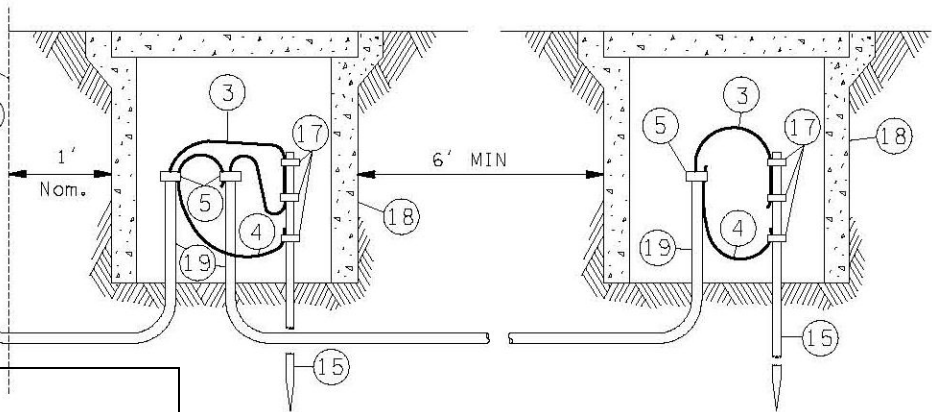
NOTES

1. If parallel circuits of different sizes are contained in one conduit, the size of the grounding conductor shall be determined on the basis of the largest conductor. Only one grounding conductor is required for each conduit regardless of the number of circuits contained.
2. Service ground per serving utility requirement. If the utility uses aluminum service conductors, an approved Al-Cu pressure type ground connector shall be used to secure the service neutral to the copper neutral bar in the service enclosure. Except for the above, all grounding conductors shall be copper.
3. Equipment grounding conductors and grounding electrode conductors shall be sized in accordance with the National Electric Code (No. 8 minimum).

SUPPLEMENTAL GROUND



SERVICE GROUND



Required to supplement equipment grounding for luminaires, standards, wire, direct burial, gas, oil feeds, or where required in plans.

Required at all services and separately derived systems.

J-9a Grounding

GROUND ROD DETAILS

Ground Rod in Tile



The Service Ground

J-9a

- J-9A Key note 20: To Neutral Buss.
- 8-20.3(9): The first service ground rod shall be connected to a continuous ground electrode conductor running to the service neutral buss.
- NEC 250.30 (A)



Use SS Hardware to Bond JB Not Zinc Plated

J-11a



Bond the Box



29 3:00 PM

Crimp Ground Wires to Braided Strap



Services and Transformers

- 8-20.3(10)
- 9-29.24 service cabinets
- 9-29.24(1) painting
- 9-29.24(2) electrical circuit breakers and contactors



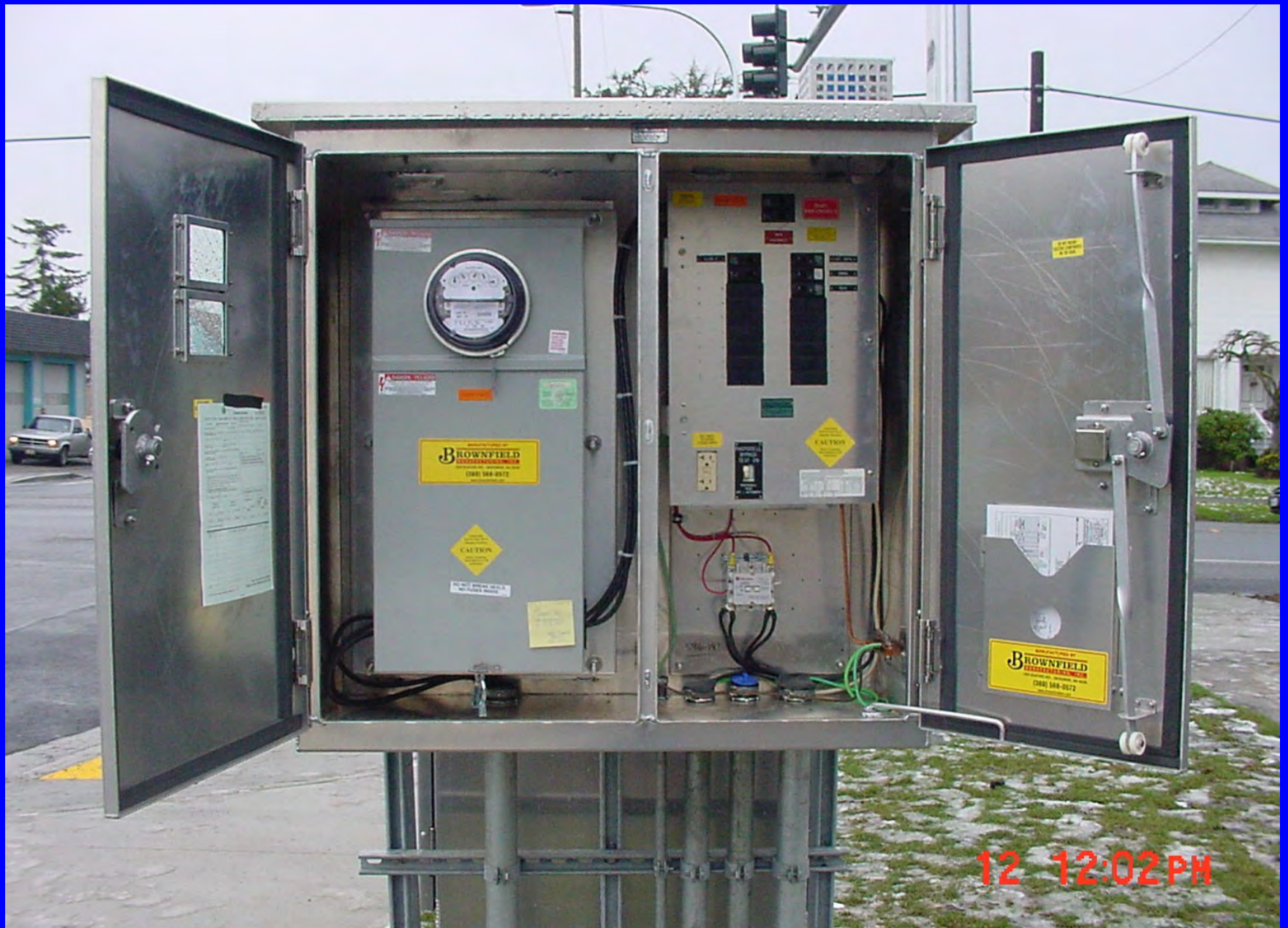
J-3b

Type "B"
Service

Type "B" Service



“B” Service Inside



12 12:02 PM

Three “D” Services

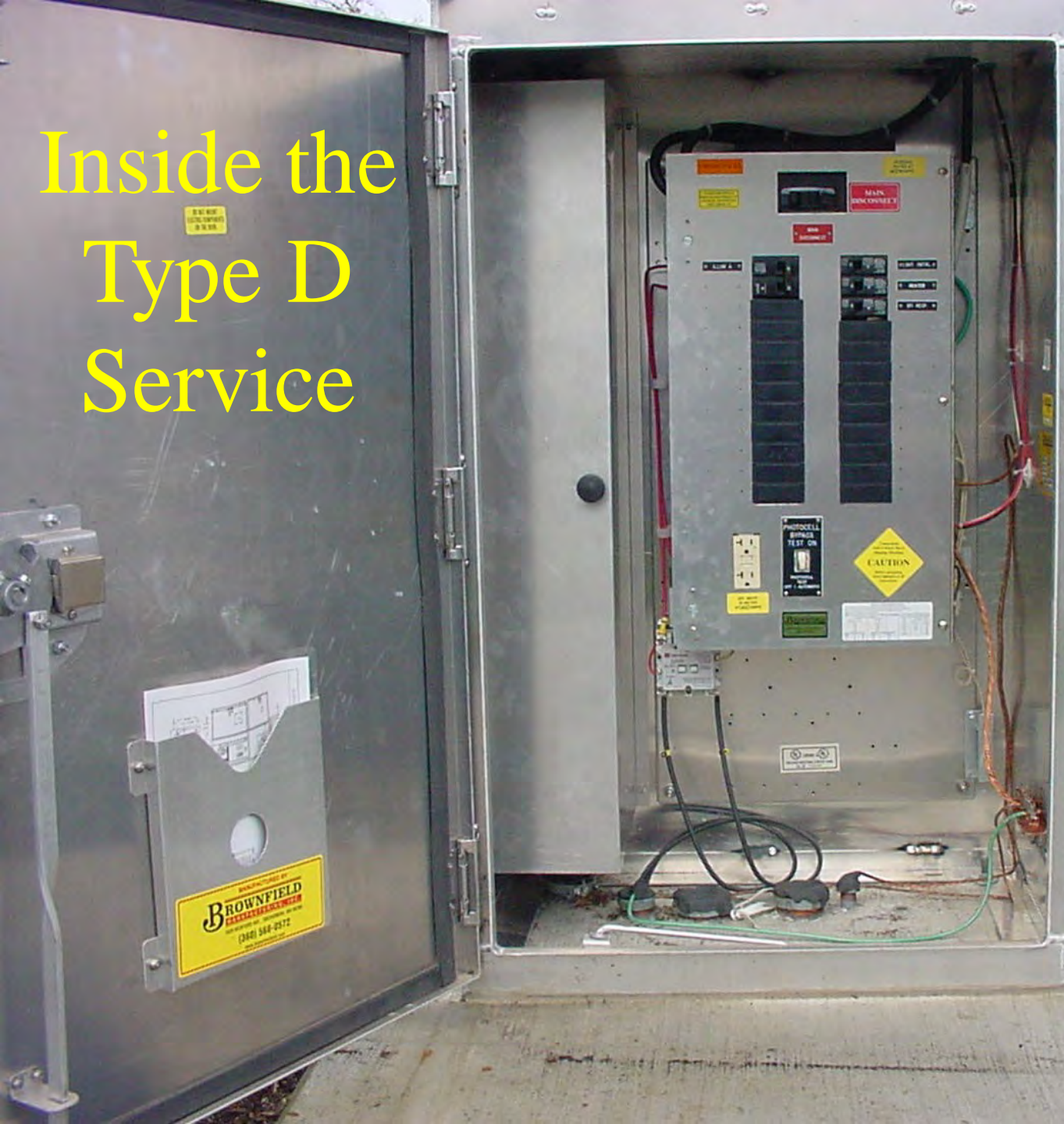
J-3c



Type “D” Service



Inside the Type D Service



13 11:50 AM

MANUFACTURED BY
BROWNFIELD
MANUFACTURING, INC.
1820 BICKFORD AVE., SNOHOMISH, WA 98290
(360) 568-0572
www.brownfieldent.com

TO RESTORE SERVICE
PRESS HANDLE FIRMLY TO
EXTREME OFF POSITION
THEN THROW ON



120/240 VOLTS

MAIN
DISCONNECT

400 Amp Type D Service

Inside 400 Amp Type D Service

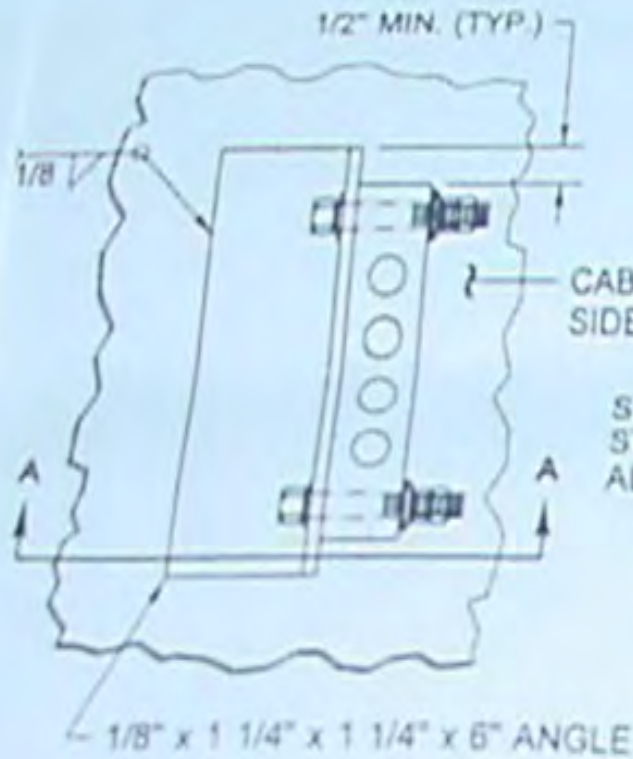


Inside the Type "E" Service



J-3d





ELEVATION VIEW



SIDE VIEW

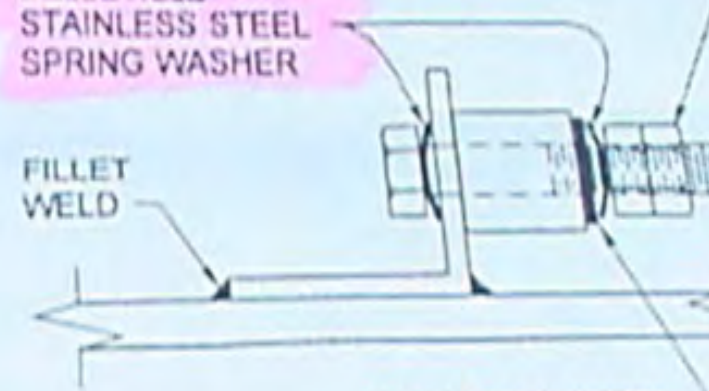


1/4" x 2" STAINLESS STEEL BOLT WITH 2 STAINLESS STEEL NUTS. LIBERALLY COAT THIS ASSEMBLY WITH ANTI OXIDANT COMPOUND.

BELLEVILLE STAINLESS STEEL SPRING WASHER

FILLET WELD

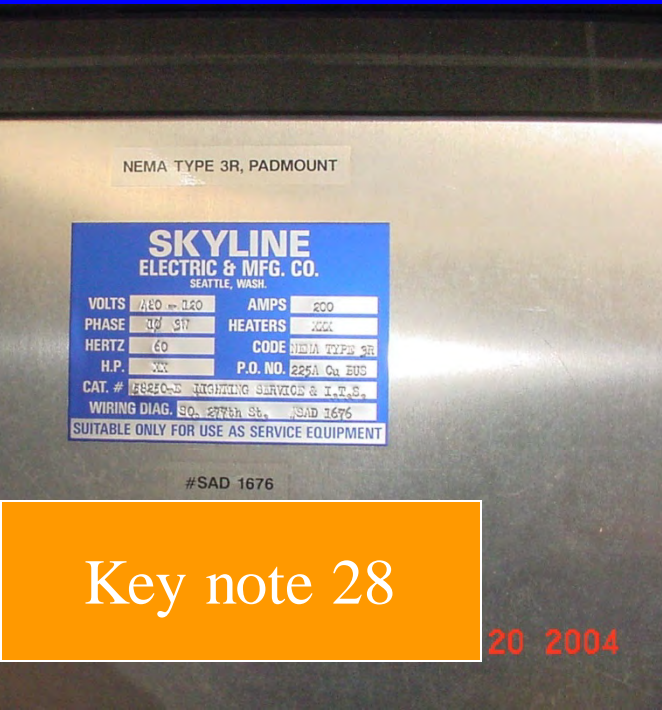
STAINLESS STEEL FLAT WASHER



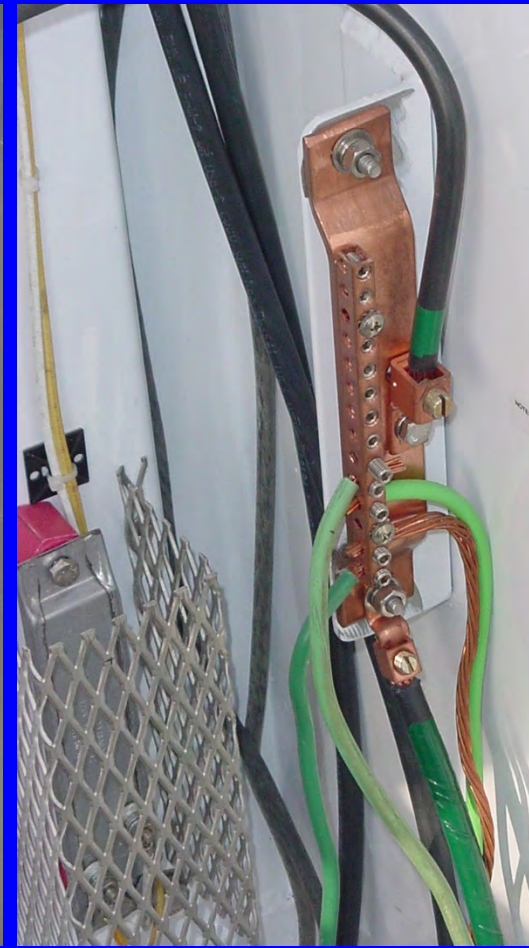
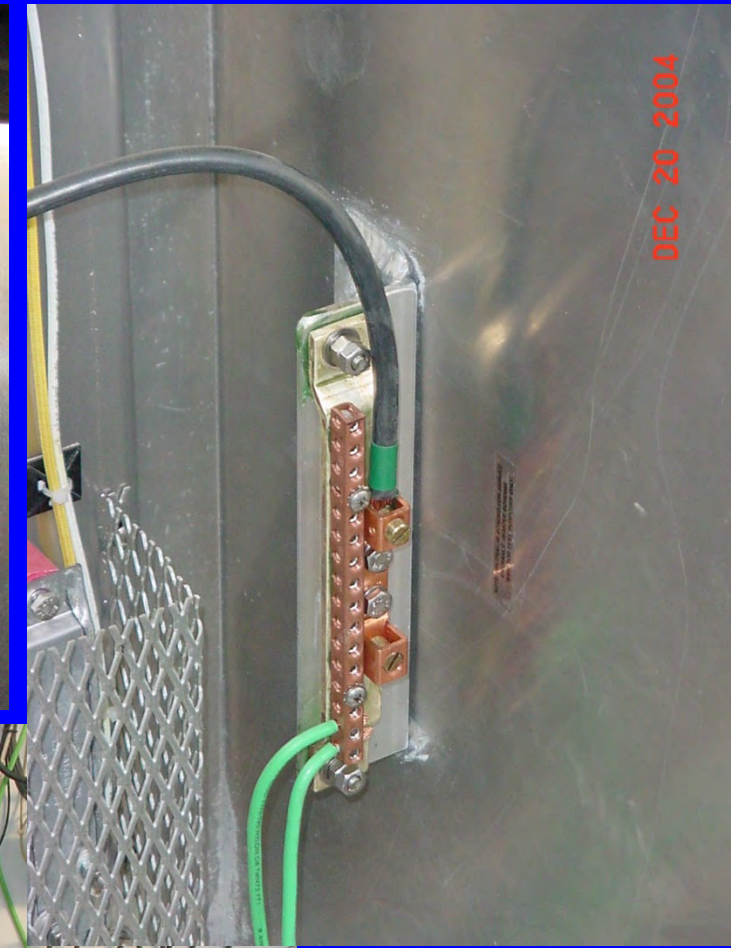
DETAIL A-A

Cabinet Main Bonding Jumper Detail

Common Problems

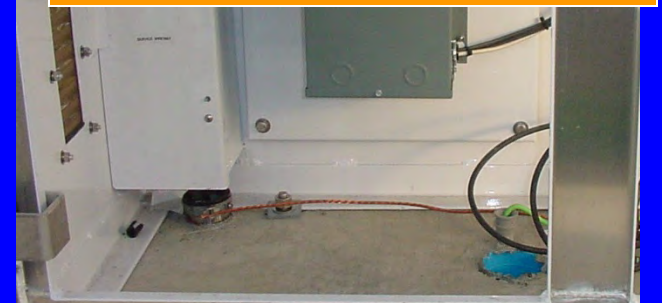


Key note 28



Power Conduit Should Extend Into Wireway

Tinned copper, Anti oxidant, Double nuts



J-3d

key note 15

More Problems



Phenolic Tag on
bypass switch

DEC 22 2004



Plastic holder
on door



DEC 21 2004

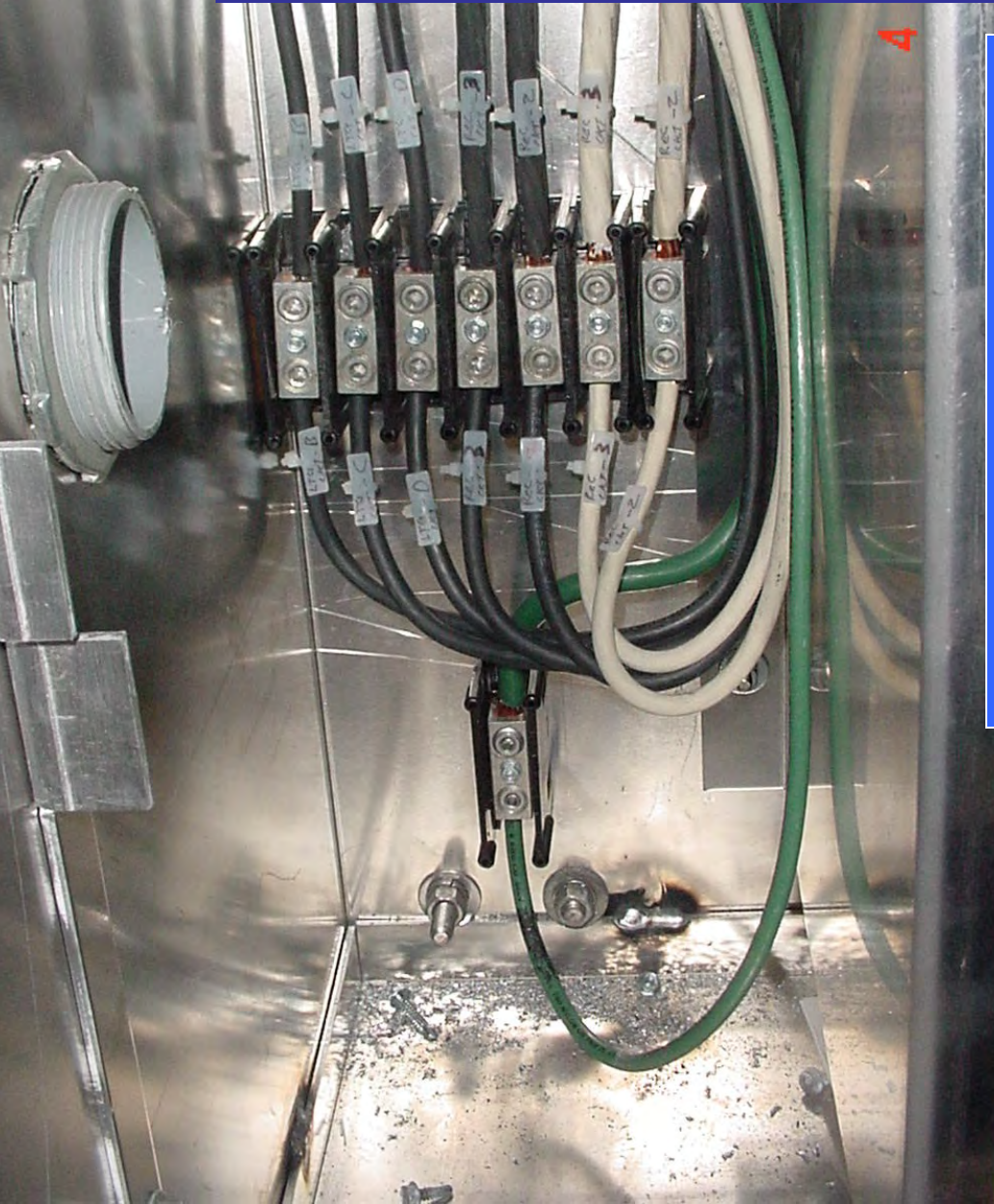


Controller Cab. Type D and E Services

Transformer and 120 V Cabinet



Conductors Too Large for Lugs



9-29.24 (B)

If field wiring larger than that which the contactors or breakers will accommodate is required by the contract, a terminal board shall be supplied for use as a splicing block.

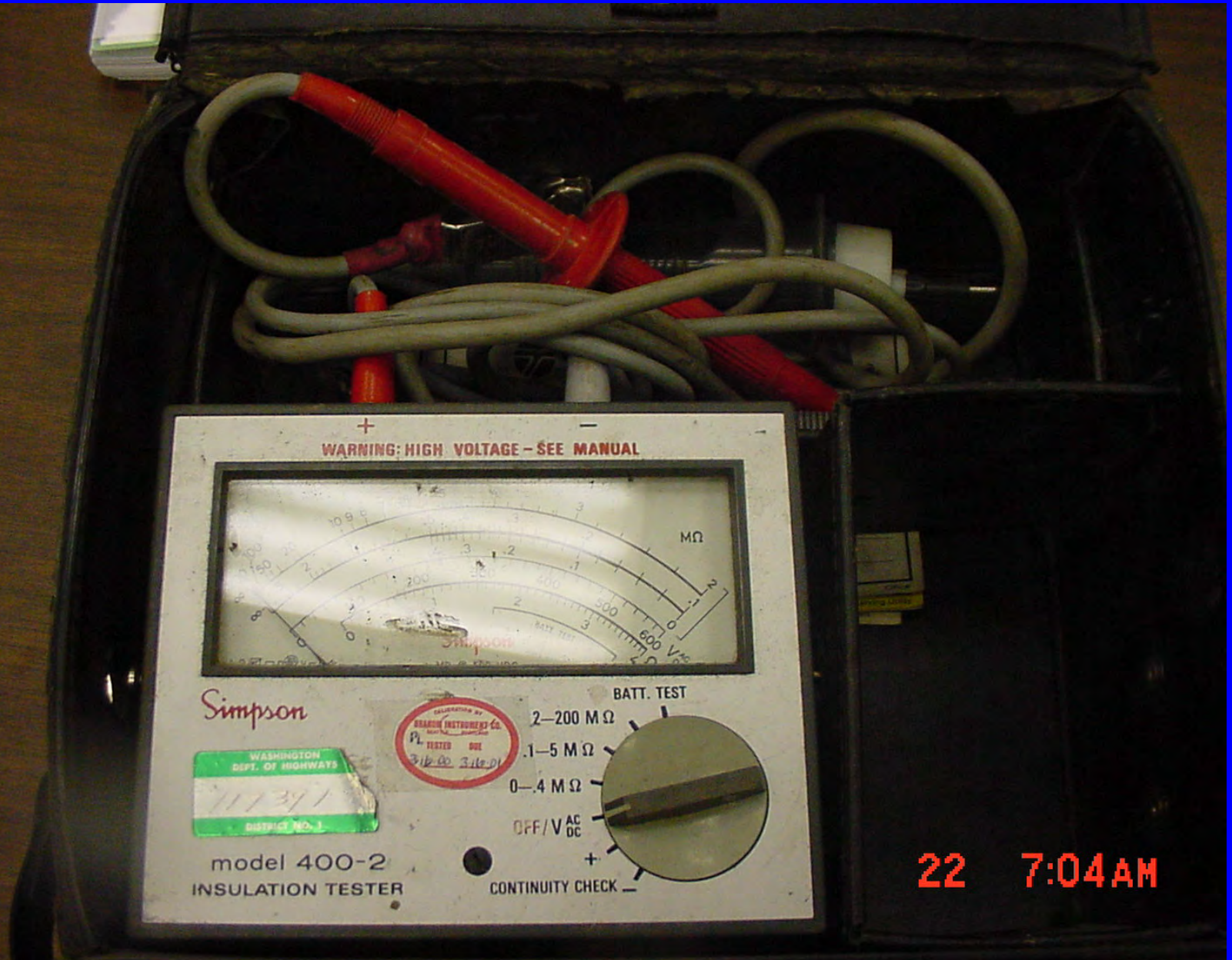
Field Test

- 8-20.3(11)



8-20.3(11)
Page 656

Megometer



Field Test Illumination Circuits



SHEET T61

FOR CONSTRUCTION NOTES, BREAKER, WIRING SCHEDULES



Illumination Systems

- 8-20.3(13)
- 8-20.3(13)a light standards
- 8-20.3(13)b luminaires
- 9-29.6 light and signal standards
- 9-29.6(1) steel light and signal standards
- 9-29.6(2) slip base hardware
- 9-29.6(3) timber light standards
- 9-29.6(4) welding
- 9-29.10 luminaires



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J-1b

Put
Together
Slip Base

17 10:48AM

Put Pole Together





17 11:16 AM



Drill
Galvicon
and Bolt
the Arm

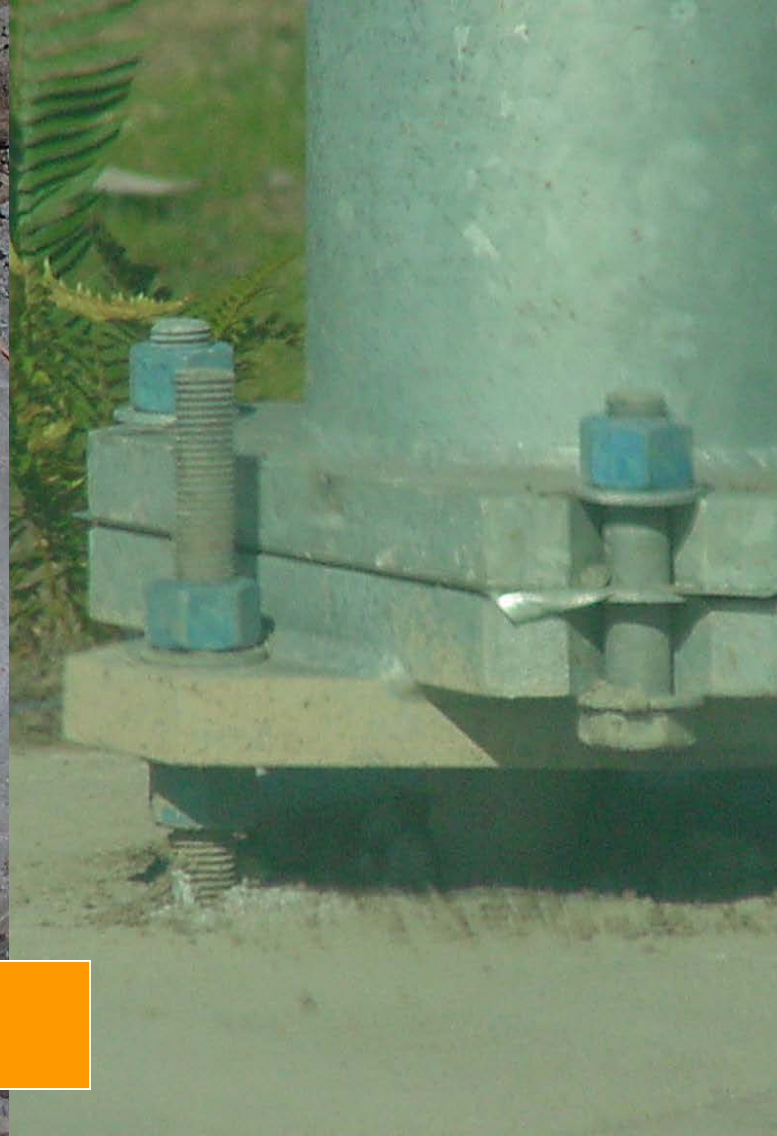
Slip Base Luminaire Pole With Base Poured Backwards Left Correct Right




Slip Base

OK

Bolts Too High No Plate Washer



J-1b



**Base
Needs
Material**

15 3:37 AM

A photograph showing a vertical metal rod or pipe protruding from a concrete base. The concrete surface is uneven and shows signs of wear or cracking. The background is dark, suggesting an indoor or nighttime setting. The text "Base and JB Too Low" is overlaid in the center, and a timestamp "5 11:54 PM" is in the bottom right.

Base and JB Too Low

5 11:54 PM

Foundation Too Low or Grade Too High



Slip Base After Knock Down



Looking Inside Pole at Conduit



Fuse Kit



• Pin kit Apart



• Together

9-29.7
Page 858, 9

1:44 PM

Fuse Kits Installed and Wire Markers



8-20.3(8)
Pages 653,4

Screw Together Fuse Kit



Break Away Bolt Adapters



8-20.3(13)A
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Pole Skirt



17 1:47 PM



Pole With Skirt in Place

7 4:19 AM



Fixed Base
Pole

J-1b

LUM NO 57
400 WATTS
240 VOLTS

Lum. Pole Tag

8-20.3(13)A
Pages 658, 9



41

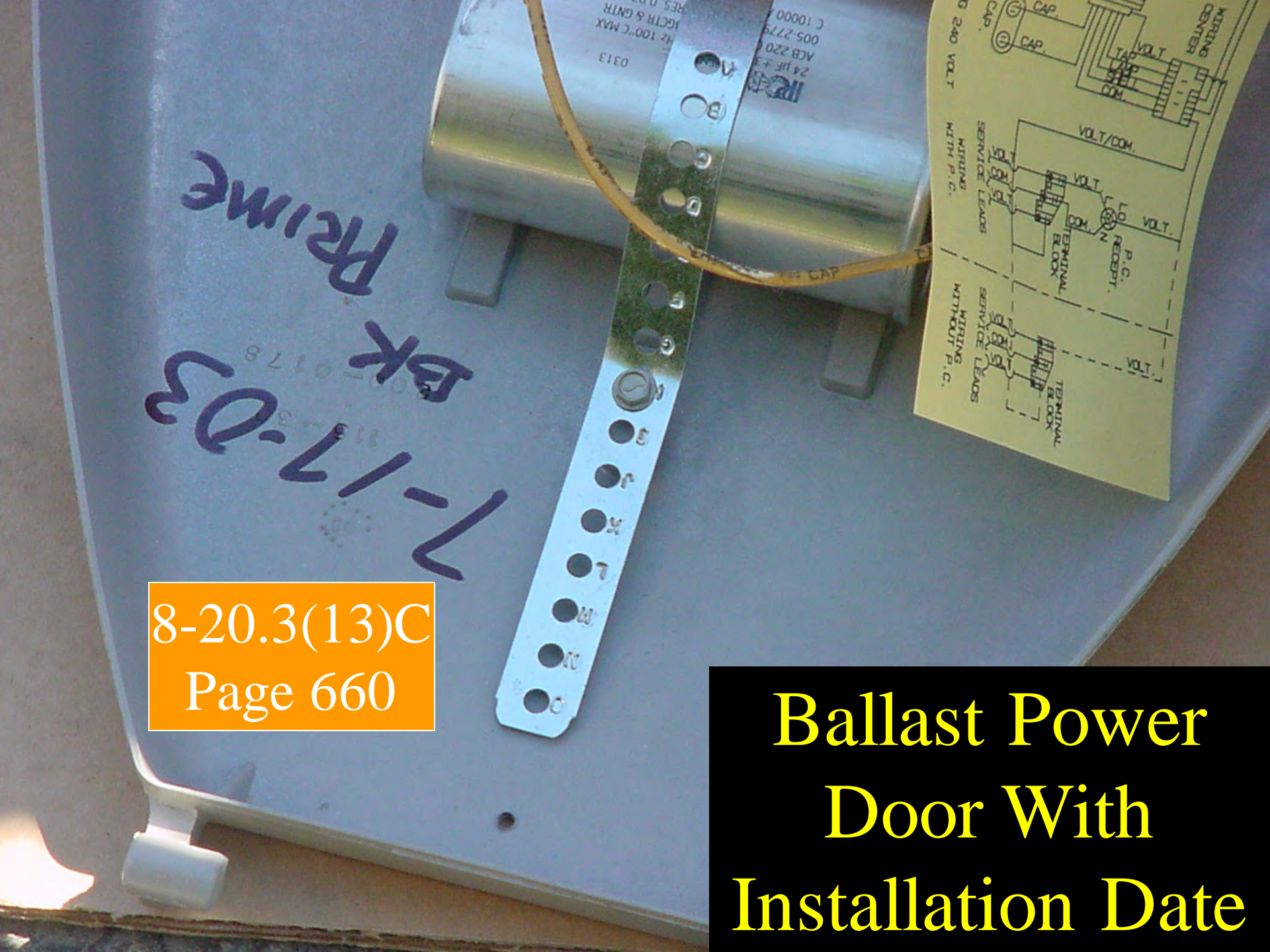
Identify Pole
With 3-inch
Series “C”
Block Numbers



Inside the Luminaire Head
With Strain Relief Clamp

8-20.3(13)C
Page 660

Ballast Power
Door With
Installation Date

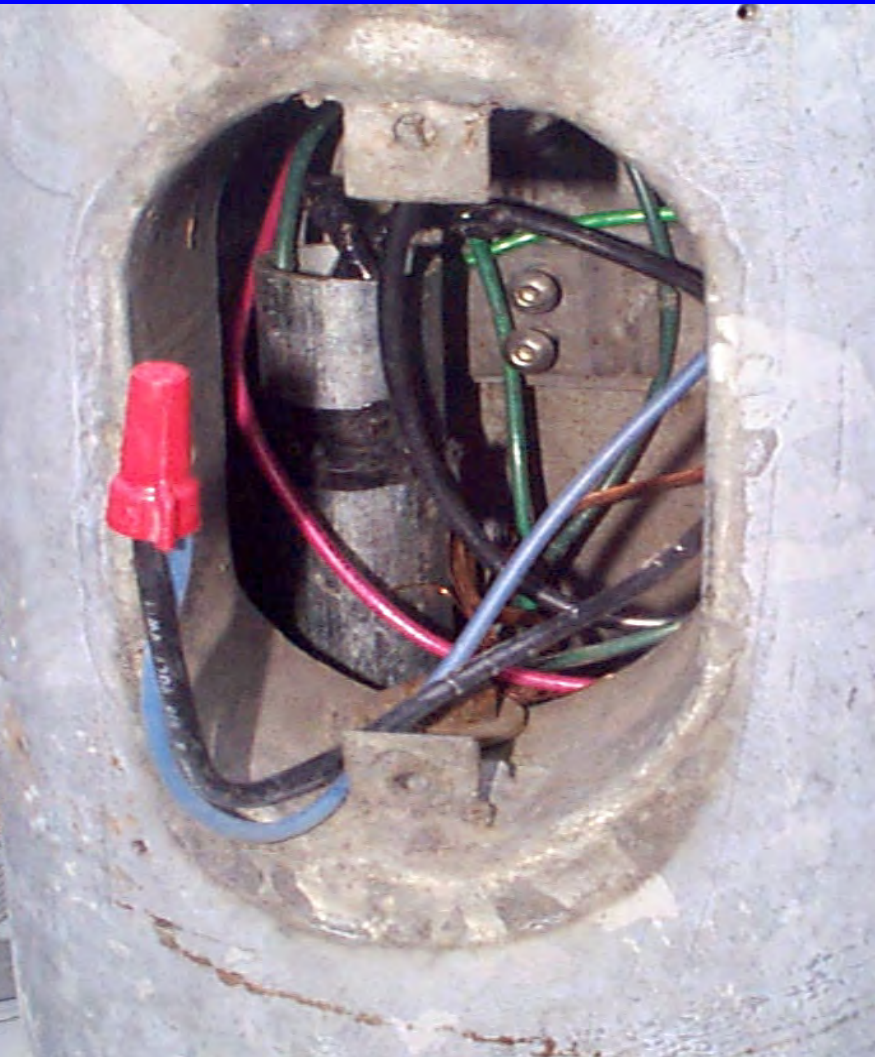




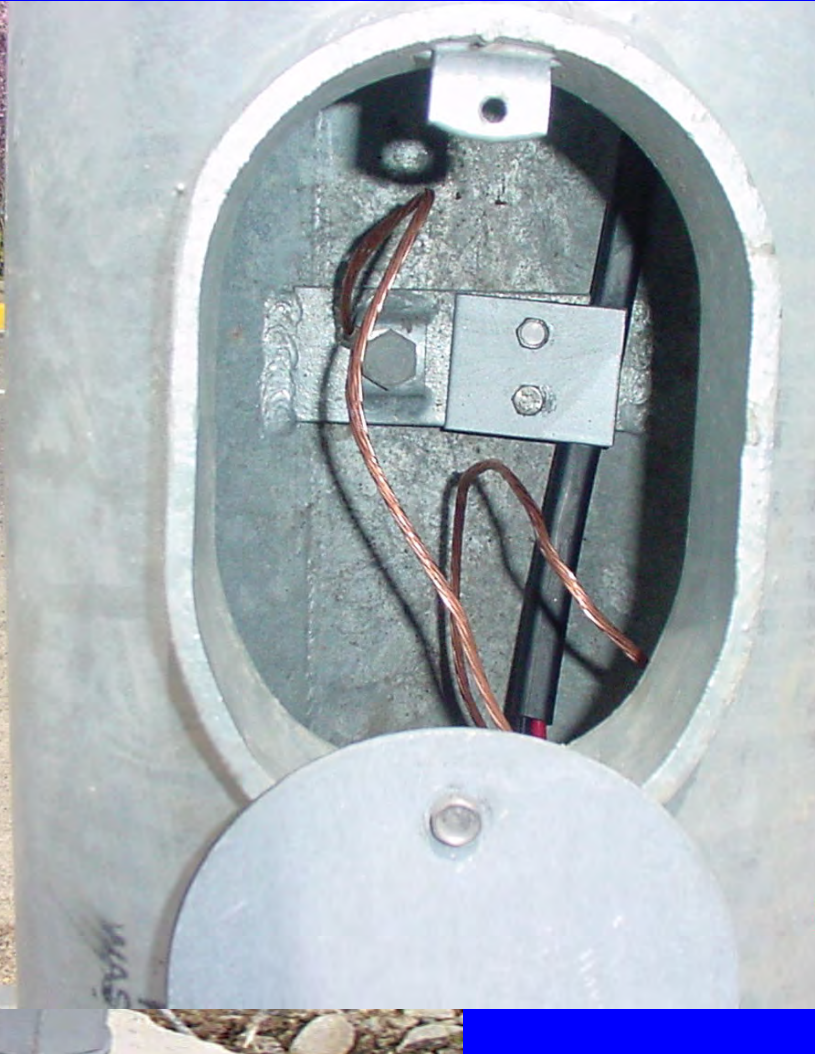
Luminaire With Tag

9-29.10
Page 862

Wrong



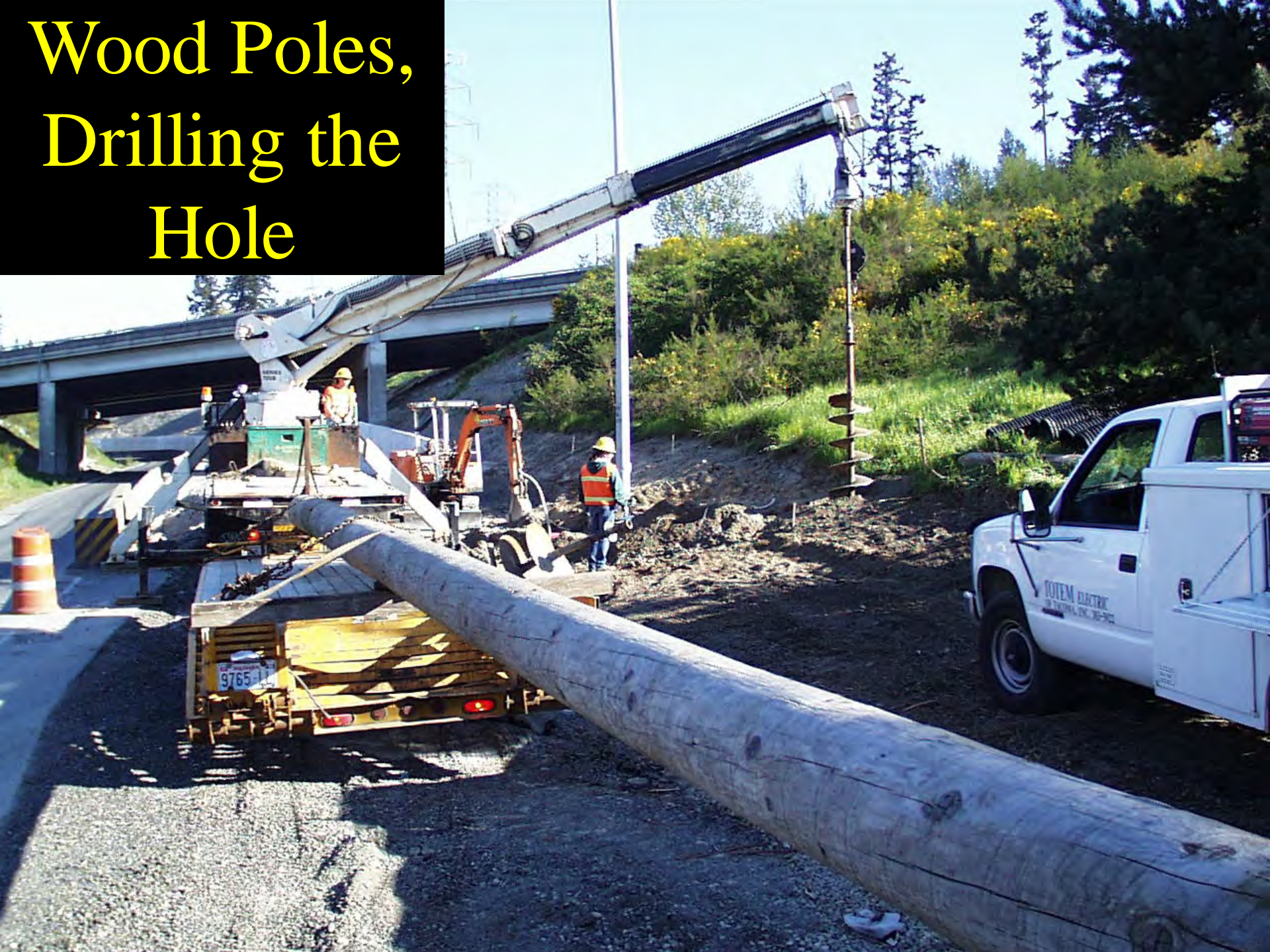
Correct

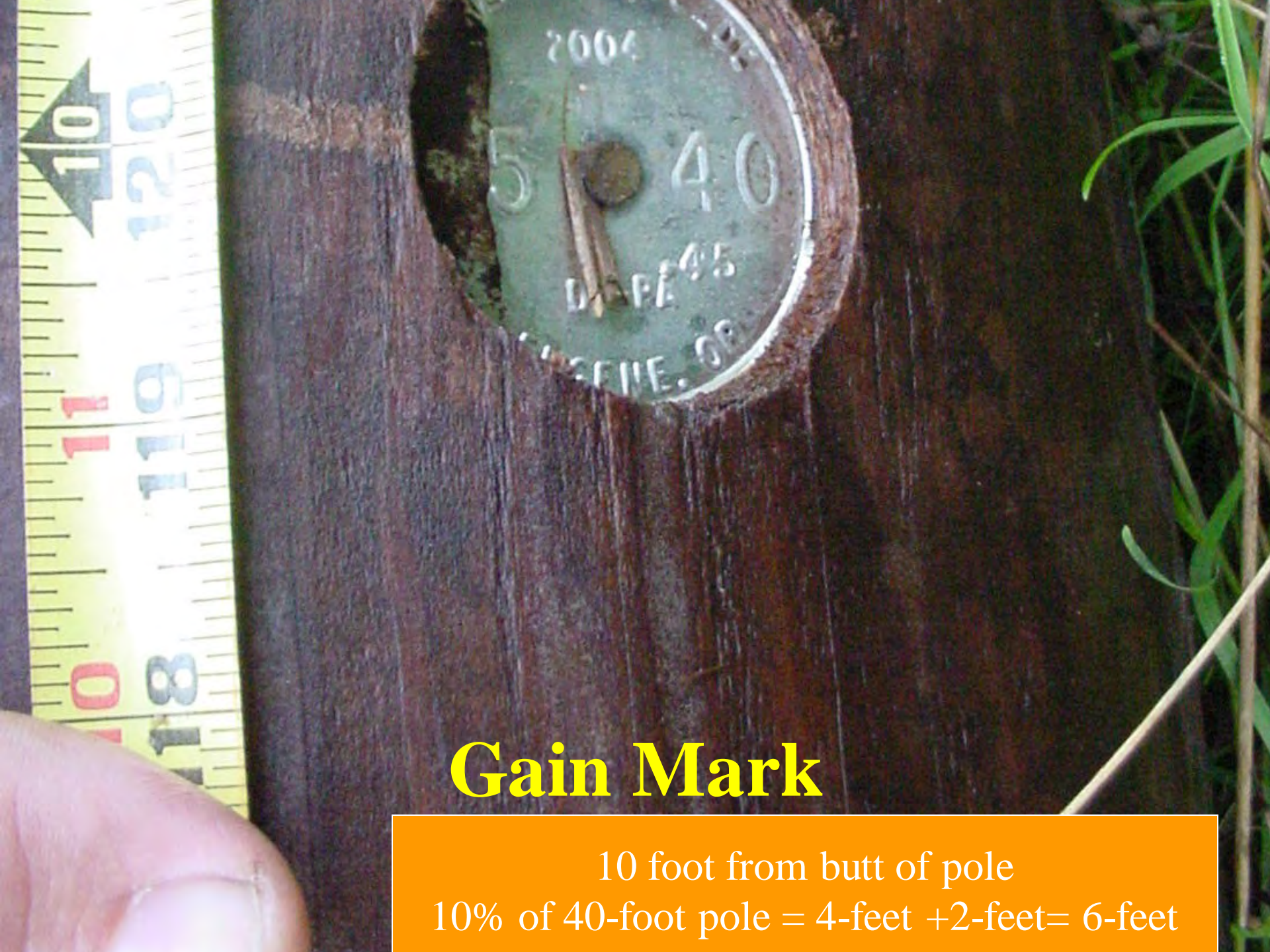


Street Light/Luminaire Pole Installation Checklist

- Provided in your book

Wood Poles, Drilling the Hole





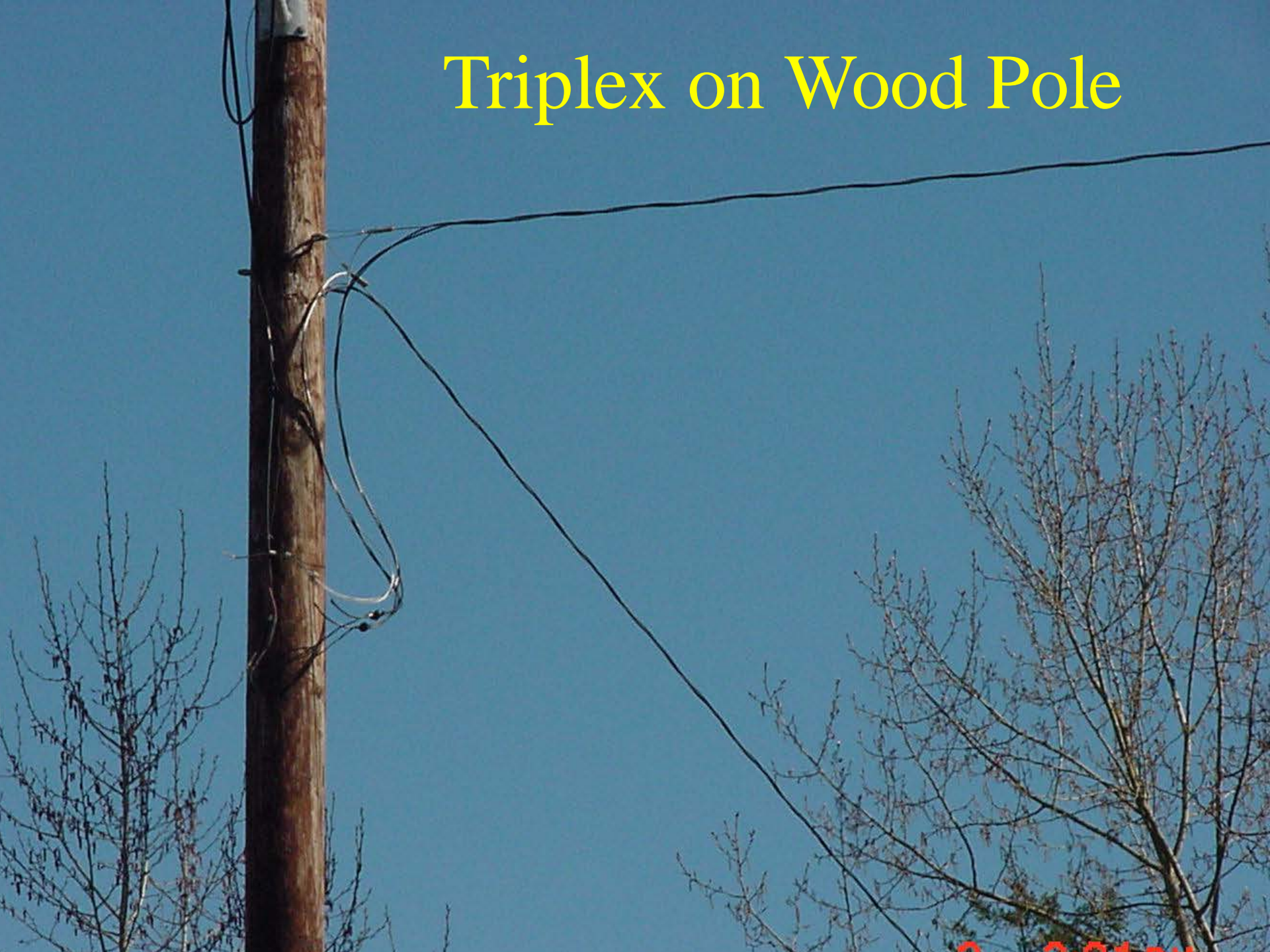
Gain Mark

10 foot from butt of pole
 $10\% \text{ of } 40\text{-foot pole} = 4\text{-feet} + 2\text{-feet} = 6\text{-feet}$

Luminaire Mounted With Through Bolt



Triplex on Wood Pole



Wedge Clamp



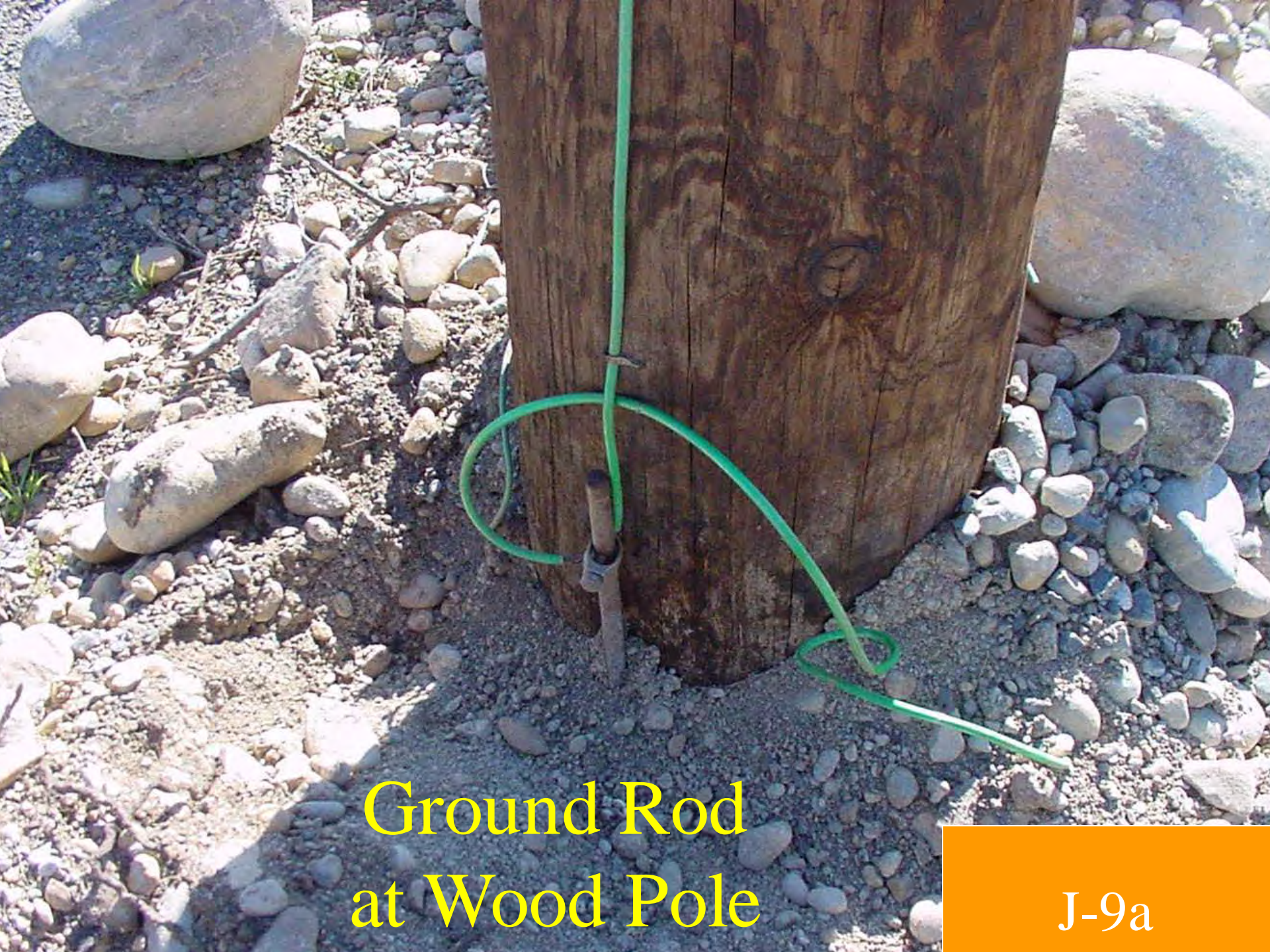
14 12:53 PM



Two Temp Lts.

J-1f

2P



Ground Rod
at Wood Pole

J-9a



Temp. Lt. Underground Feed



J-1f

High Mast Poles



9-29.10(3)

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100 Foot Pole With Fixture Lowered



1 12:44 PM

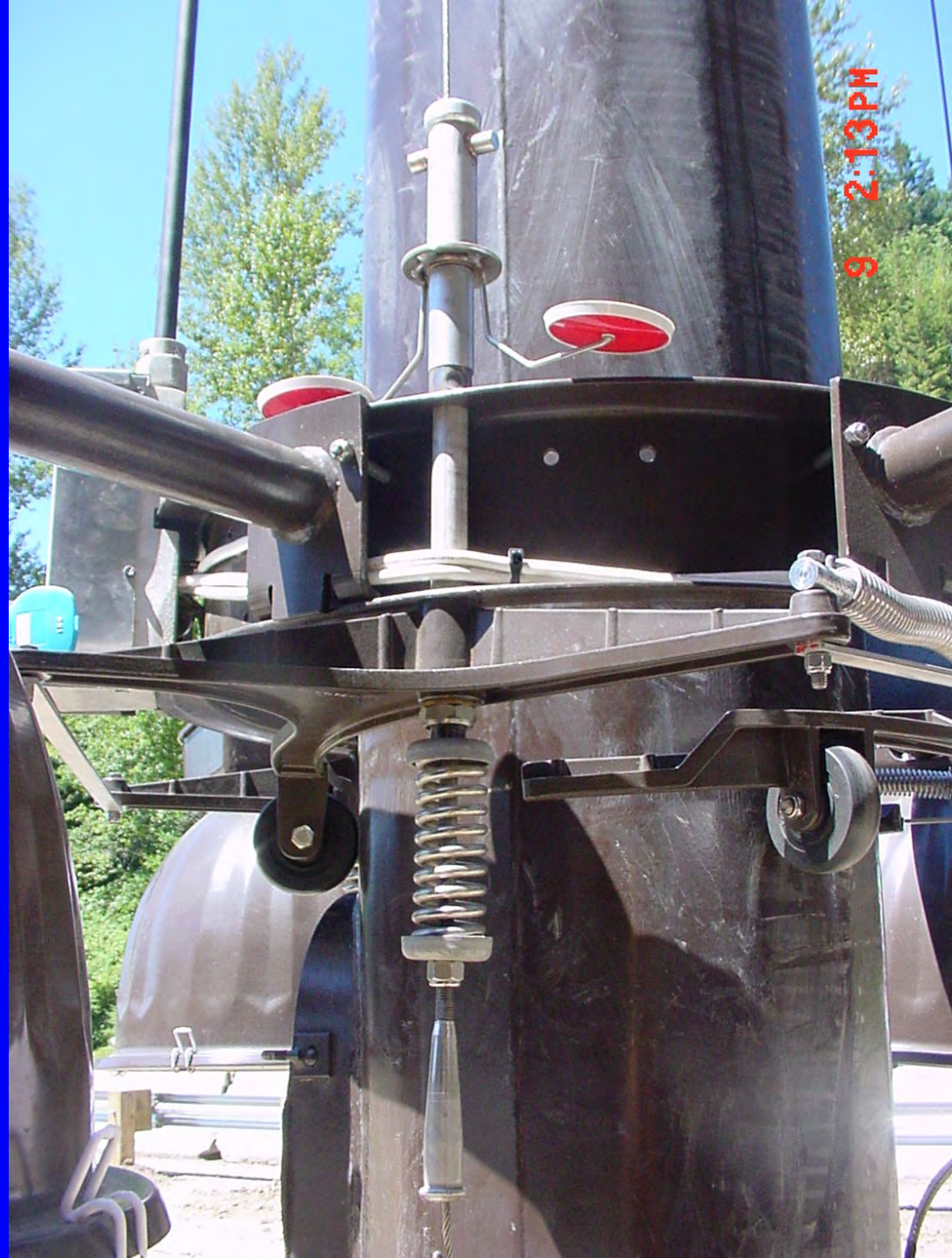
High Mast
Pole With
Fixture
Lowered

1 12:43 PM



**Lowered High Mast Fixture With
Adjusting Blocks Installed**

High Mast Locking Pin



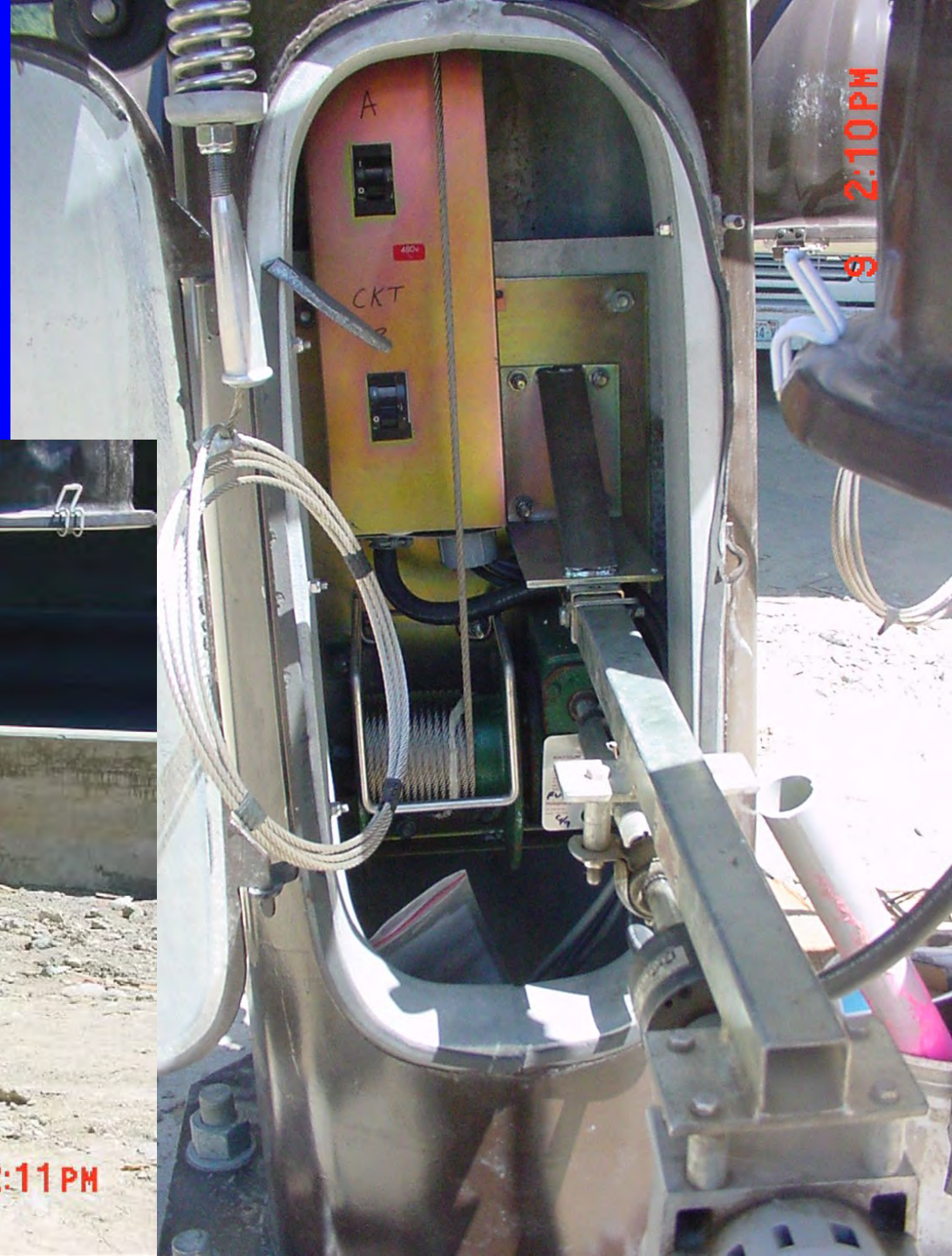


High Mast
Fixture



Access Door on
High Mast Pole

Winch and Circuit Breakers



Under Deck Lights



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