Bonding and Grounding

- 8-20.3(9)
Ground Tile
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. B minimum).

SUPPLEMENTAL GROUND

SERVICE GROUND

Required to supplement equipment grounding for one or more services within the building envelope as required or where required in plans.

Required at all services and separately derived systems.

GROUND ROOD DETAILS
Ground Rod in Tile
The Service Ground

- 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
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
Type “B” Service

J-3b
Type “B” Service
Three “D” Services
Type “D” Service
Inside the Type D Service
400 Amp Type D Service
Inside the Type “E” Service

J-3d
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
- Plastic holder on door
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)
Megometer
Field Test Illumination Circuits
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
Put Together Slip Base

8-20.3(13)A
Page 658

J-1b
Put Pole Together
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
Base and JB Too Low
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
Fuse Kits Installed and Wire Markers

8-20.3(8)
Pages 653,4
Screw Together Fuse Kit
Pole Skirt
Pole With Skirt in Place
Fixed Base Pole
LUM. NO. 57
400 WATTS
240 VOLTS

Lum. Pole Tag

8-20.3(13)A
Pages 658, 9
Identify Pole With 3-inch Series “C” Block Numbers
Inside the Luminaire Head
With Strain Relief Clamp
Luminaire With Tag
Street Light/Luminaire Pole Installation Checklist

• Provided in your book
Wood Poles, Drilling the Hole
Gain Mark

10 foot from butt of pole
10% of 40-foot pole = 4-feet +2-feet= 6-feet
Luminaire Mounted With Through Bolt
Triplex on Wood Pole
Two Temp Lts.
Ground Rod at Wood Pole

J-9a
Temp. Lt.
Underground Feed

J-1f
100 Foot Pole With Fixture Lowered
Lowered High Mast Fixture With Adjusting Blocks Installed
High Mast
Locking Pin
Winch and Circuit Breakers
Under Deck Lights