### Description:

- **Steel CCTV Pole**
  - Dome Type CCTV Camera
  - Pole Mounted Cabinet
  - Wire Screen
  - Concrete
  - 1/2" Diameter By 20’ Long Copper-Clad Steel Ground Rods Driven Into Undisturbed Earth
  - Exothermic Weld
  - 2" Min, 8" Max. Primary Ground Rod Assembly (See Inset A)
  - Ground Rod A
  - Ground Rod B
  - Ground Rod C
  - Ground Rod D
  - 2’ Min, 8’ Max. Ground Rod B As Required

- **Concrete CCTV Pole**
  - Dome Type CCTV Camera
  - Pole Mounted Cabinet
  - Concrete
  - 1/2" Diameter By 20’ Long Copper-Clad Steel Ground Rods Driven Into Undisturbed Earth
  - Exothermic Weld
  - 2’ Min, 8’ Max. Ground Rod B As Required
  - #2 AWG To Ground Rod A As Required
  - #2 AWG To Ground Rod B As Required
  - #2 AWG To Ground Rod C As Required
  - #2 AWG To Ground Rod D As Required

### Grounding and Lightning Protection

- **Revised Design Standards FY 2017-18**
- 40’ Typ.
  - 36” Max.
  - 12” Min.
- **Concrete Pole**
  - Pole Mounted Cabinet
  - 1½” x 10’ PVC Conduit Sleeve Shall Be Provided To Protect Any External Ground Wire From Mechanical Damage. Ensure Conduits Are Sealed To Prevent Water Intrusion.
  - Steel Pole May Be Used As A Grounding Conductor If It Has Sufficient Cross-Sectional Area To Equal The Conductivity Of Main Lightning Conductors Per NFPA 780 And A Minimum Wall Thickness Of 16” Or Greater.
  - Copper Ground Wire To The Air Terminal.
  - Bond #6 AWG Tin-Plated Bare Solid Copper Wire To Camera Support Base As Required.
  - Bond #2 AWG Tin-Plated Bare Solid Copper Wire To Camera Support Base As Required.
  - Bond #3 AWG Tin-Plated Copper Ground Wire To The Air Terminal.
  - Bond #2 AWG Tin-Plated Bare Solid Copper Wire To Ground Rod As Required.
  - Bond #6 AWG Tin-Plated Bare Solid Copper Wire To Camera Support Base As Required.

- **Steel Pole**
  - Pole Mounted Cabinet
  - Concrete
  - 1½” x 10’ PVC Conduit Sleeve Shall Be Provided To Protect Any External Ground Wire From Mechanical Damage. Ensure Conduits Are Sealed To Prevent Water Intrusion.
  - Steel Pole May Be Used As A Grounding Conductor If It Has Sufficient Cross-Sectional Area To Equal The Conductivity Of Main Lightning Conductors Per NFPA 780 And A Minimum Wall Thickness Of 16” Or Greater.
  - Copper Ground Wire To The Air Terminal.
  - Bond #6 AWG Tin-Plated Bare Solid Copper Wire To Camera Support Base As Required.
  - Bond #2 AWG Tin-Plated Bare Solid Copper Wire To Ground Rod As Required.
  - Bond #3 AWG Tin-Plated Copper Ground Wire To The Air Terminal.
  - Bond #2 AWG Tin-Plated Bare Solid Copper Wire To Camera Support Base As Required.
  - Bond #6 AWG Tin-Plated Bare Solid Copper Wire To Ground Rod As Required.

### Notes:

- Conduit for Grounding Conductors
- Pull Box
- Ground Rod A
- Exothermic Weld
- #3 AWG To Ground Rod C As Required
- #2 AWG To Ground Rod D As Required
- Ground Rod B
- 2’ Min, 8’ Max. Ground Rod B As Required
- 2’ Min, 8’ Max. Ground Rod C As Required
- 2’ Min, 8’ Max. Ground Rod D As Required
- 2’ Min, 8’ Max. Ground Rod A As Required
- #2 Wire May Be Routed Internally Or Externally According To Project Requirements

### Index

- Index No. 18102
- Sheet No. 1 of 4
AIR TERMINAL PLACEMENT (Lowering Device Pole)

Per NFPA 780-4.16.3
Minimum Contact Area Surface Base Of 8 Square-Inch
ETP Alloy 110 Copper #2 AWG Tin-Plated Bare Solid Copper Ground Wire. Bond To Air Terminals

AIR TERMINAL PLACEMENT (Span DMS)

Per NFPA 780-4.16.3
Minimum Contact Area Surface Base Of 8 Square-Inch
ETP Alloy 110 Copper #2 AWG Tin-Plated Bare Solid Copper Ground Wire. Bond To Air Terminals

Guardrail (if shown in Plans)

AIR TERMINAL PLACEMENT (Cantilever DMS)

Guardrail (if shown in Plans)
GROUND ROD ARRAY PLACEMENT
(Typical)
20' RODS, 40' SPACING

"Sphere Of Influence: 120 Degree"

Primary Ground Rod A
Ground Rod B
Ground Rod C
Ground Rod D

Foundation: CCTV or DMS Pole

GROUND ROD ARRAY PLACEMENT
(Typical Modified)
20' RODS, 40' SPACING

"Modified Sphere Of Influence: 90 Degree"

Primary Ground Rod A
Ground Rod B
Ground Rod C
Ground Rod D

Foundation: CCTV or DMS Pole

INSET "A"

- #2 AWG Tin-Plated Bare Solid Copper Wire Continuous To Air Terminal
- #2 AWG Tin-Plated Bare Solid Copper Wire To Ground
- Rods B, C And D As Wire To Ground
- #2 AWG Tin-Plated Bare Solid Copper #2 AWG #2 AWG
- Foundation: CCTV or DMS Pole
- Air Terminal
- Modified Sphere Of Influence: 90 Degree
- Inset "A"
- Foundation: CCTV or DMS Pole
- Ground Mounted
- Wire To Pole Mounted
- Ground Rod C
- Ground Rod D
- Ground Rod B
- Ground Rod A

INSET "A"

- #2 AWG Tin-Plated Bare Solid Copper Wire Continuous To Air Terminal
- #2 AWG Tin-Plated Bare Solid Copper Wire To Ground
- Rods B, C And D As Wire To Ground
- #2 AWG Tin-Plated Bare Solid Copper #2 AWG #2 AWG
- Foundation: CCTV or DMS Pole
- Air Terminal
- Modified Sphere Of Influence: 90 Degree
- Inset "A"
- Foundation: CCTV or DMS Pole
- Ground Mounted
- Wire To Pole Mounted
- Ground Rod C
- Ground Rod D
- Ground Rod B
- Ground Rod A

INSET "A"

- #2 AWG Tin-Plated Bare Solid Copper Wire Continuous To Air Terminal
- #2 AWG Tin-Plated Bare Solid Copper Wire To Ground
- Rods B, C And D As Wire To Ground
- #2 AWG Tin-Plated Bare Solid Copper #2 AWG #2 AWG
- Foundation: CCTV or DMS Pole
- Air Terminal
- Modified Sphere Of Influence: 90 Degree
- Inset "A"
- Foundation: CCTV or DMS Pole
- Ground Mounted
- Wire To Pole Mounted
- Ground Rod C
- Ground Rod D
- Ground Rod B
- Ground Rod A
GROUNDING AND LIGHTNING PROTECTION

GROUND ROD ARRAY PLACEMENT
(Communication Tower)
20' RODS, 40' SPACING

GROUND ROD ARRAY PROFILE
(Communication Tower)

COMMUNICATION TOWER

"Sphere Of Influence: With Ground Ring"

Primary Ground Rod A

Foundation: Communication Tower

Ground Rod B

Ground Rod E

Ground Rod C

Ground Rod D

Ground Rod F

EXOTHERMIC WELD

Ground Rod A

Primary Ground Rod Assembly
(See Inset A)

#2 AWG (Typical)

#2 AWG (Typical)

#2 AWG (Typical)

#2 AWG

#2 AWG

#2 AWG

#2 AWG

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

Grounding Conductors

GROUNDING AND LIGHTNING PROTECTION

GROUND ROD ARRAY PLACEMENT
(Communication Tower)
20' RODS, 40' SPACING

GROUND ROD ARRAY PROFILE
(Communication Tower)