PORTABLE DRIVE POWER SUPPLY

LUMINAIRES
4 QTY AS REQUIRED

WEATHERPROOF FLANGED MALE INLET
480-VOLT, 3-WIRE, 30-AMP,
NEMA LB-30R

WEATHERPROOF TWIST-LOCK FEMALE CONNECTOR
480-VOLT, 3-WIRE, 30-AMP,
NEMA LB-30R

HEAVY DUTY POWER CORD
TYPE "SOOW", #10/3
MIN. LENGTH EQUAL POLE HEIGHT PLUS 6'

WEATHERPROOF TWIST-LOCK MALE CONNECTOR
480-VOLT, 3-WIRE, 30-AMP,
NEMA LB-30P

WEATHERPROOF TWIST-LOCK FEMALE CONNECTOR
480-VOLT, 3-WIRE, 30-AMP,
NEMA LB-30R

ENCLOSED CIRCUIT BREAKER
480-VOLT, 2-POLE, 30-AMP

PROJECT LOCATION: 
TIP NO.: 
LET DATE: 
XFORMER PRIMARY VOLTAGE: 
LOWERING DEVICE MFG.: 

STORAGE CASE LABEL

STORAGE CASE
(12" X 6")

SKIDS
FOLD DOWN STEEL HANDLES
ROLLING OVERLAPPING EDGES
PADLOCKING MECHANISM
RUST-RESISTANT PAINT INSIDE & OUTSIDE

NOTES
△ IF SOOW CABLE CONTAINS A WHITE CONDUCTOR USED AS AN UNGROUNDED CONDUCTOR, THE WHITE CONDUCTOR SHALL BE PERMANENTLY REIDENTIFIED AS AN UNGROUNDED CONDUCTOR IN ACCORDANCE WITH ARTICLE 200.7 OF THE 2017 NEC, AND ANY SUBSEQUENT UPDATES.

DEPT. OF TRANSPORTATION
RALEIGH, N.C.
DIVISION OF HIGHWAYS
NORTH CAROLINA
STATE OF
TABLE OF FOUNDATION DIMENSIONS AND QUANTITIES

<table>
<thead>
<tr>
<th>HEIGHT OF HIGH MOUNT FT</th>
<th>DIAMETER &quot;C&quot; FT</th>
<th>STIRRUPS SIZE</th>
<th>DEPTH &quot;D&quot; FT</th>
<th>V BARS QTY</th>
<th>V BARS SIZE</th>
<th>CONCRETE CY</th>
<th>DEPTH &quot;D&quot; FT</th>
<th>V BARS QTY</th>
<th>V BARS SIZE</th>
<th>CONCRETE CY</th>
<th>DEPTH &quot;D&quot; FT</th>
<th>V BARS QTY</th>
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<th>CONCRETE CY</th>
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<tr>
<td>60</td>
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<td>#8</td>
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<td>636</td>
<td>9.4</td>
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*Includes stirrups and vertical bars (V bars)

NOTES

- **ANCHOR BOLTS**
  - Conform number, size, and length of anchor bolts, bolt circle diameter "BC", and anchor bolt projection "P" to approved high mount standard drawings.

- **CONDUITS**
  - Match orientation, quantity, type, and size of conduits to the layout sheets. Stub and cap one spare conduit at each foundation. Project conduit a maximum of 2" above top of foundation. Place conduit 30" beneath finish grade. Include 3/4" conduit for grounding electrode conductor to ground rod in high mast junction box.

- **DIMENSIONS & QUANTITIES**
  - Dimensions and quantities of concrete and reinforcing steel are given for the purpose of obtaining bid prices only. See project special provisions for other structural requirements.

- **WORK AREA**
  - Provide a level work area around each foundation. Cut/fill slopes may be adjusted as directed by the engineer.

- **ELEVATION**
  - Set top of foundation at 6" above level work area. See detail "B".

- **GUARDRAIL**
  - Where guardrail is required to be installed as part of lighting work, set guardrail no more than 8" from center of high mast foundation.
TYPICAL CONFIGURATION TYPES

TYPE A

7 PIN PHOTOCONTROL RECEPTACLE WITH SHORTING CAP INSTALLED

TYPE B

7 PIN PHOTOCONTROL RECEPTACLE WITH SHORTING CAP INSTALLED

LED LUMEN PACKAGES

<table>
<thead>
<tr>
<th>MOUNTING HEIGHT</th>
<th># OF LUMINAIRES</th>
<th>MAXIMUM LUMINAIRE WATTAGE</th>
<th>MINIMUM LUMINAIRE MAINTAINED LUMENS</th>
<th>MINIMUM PERCENT OF INITIAL OUTPUT (70K HOURS &amp; 25° C)</th>
<th>COLOR TEMP.</th>
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<tr>
<td>60'</td>
<td>4</td>
<td>320</td>
<td>320</td>
<td>87%</td>
<td>3,500K ±500K</td>
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<tr>
<td>80'</td>
<td>8</td>
<td>320</td>
<td>320</td>
<td>87%</td>
<td>3,500K ±500K</td>
</tr>
<tr>
<td>100'</td>
<td>6</td>
<td>550</td>
<td>550</td>
<td>87%</td>
<td>3,500K ±500K</td>
</tr>
<tr>
<td>120'</td>
<td>8</td>
<td>550</td>
<td>550</td>
<td>87%</td>
<td>3,500K ±500K</td>
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</tbody>
</table>

NOTES

- SEE PLANS FOR IES DISTRIBUTION
- CONTRACTOR SHALL ENSURE AND PROVIDE EVIDENCE THAT REQUIRED NUMBER SELECTED LUMINAIRES CAN BE MOUNTED ON SELECTED LOWERING DEVICE.
- OTHER LUMINAIRE TYPES MEETING THE SPECIFICATIONS FOUND IN THE PROJECT SPECIAL PROVISIONS ARE ALSO ACCEPTABLE.
- SEE PROJECT SPECIAL PROVISIONS FOR MINIMUM MAINTAINED DELIVERED LUMEN VALUES.
NOTES

- SINGLE-MEMBER ARMS MAY BE PROVIDED IN LIEU OF TRUSS ARMS, WHEN SPECIFIED ARM LENGTH IS 3' OR LESS AND MOUNTING HEIGHT IS 35' OR LESS.
- INSERT MOUNTING HEIGHT (MH) AND ARM LENGTH (AL) FROM PAY ITEM DESCRIPTION TO DETERMINE PROPOSED TWIN-ARM LIGHT STANDARDS. MTLS IS METAL POLE SHORT, 32' OR LESS. MTLT IS METAL POLE TALL, GREATER THAN 35'. MOUNTING HEIGHT SHOWN IN THE PLANS.
- SEE SHEET 1 OF 3 FOR DETAIL "I".
- PROVIDE ACCESSIBLE GROUNDING LUG INSIDE.
- REQUIRED BARRIER NOTCH NOT SHOWN FOR CLARITY. SEE NOTCH PROFILE VIEW, THIS SHEET.
- SEE STANDARD DRAWING 140S.01 FOR FOUNDATION DETAILS.

NOTCH PROFILE VIEW

- ALL DIMENSIONS ARE EXACT

BASE PLATE DETAIL

- ALL DIMENSIONS ARE EXACT

POLE SHAFT

- BASE PLATE (PROTECTIVE SHROUD NOT SHOWN)

CONCRETE BARRIER

- CONCRETE BARRIER INSTALLATION

LIGHT STANDARD ON BARRIER

- TYPE MTLT/MTLS (MH) SA OR TA (AL)

LIGHT STANDARDS

- DRAWING NOT TO SCALE

STATE OF NORTH CAROLINA

DEPARTMENT OF TRANSPORTATION

RALEIGH, N.C.

ROADWAY STANDARD DRAWING FOR

CONCRETE BARRIER INSTALLATION

SHEET 2 OF 3

1404.01
NOTES

- Mounting height includes breakaway base for light standards with transformer bases.
- Fit protective shroud snugly around base plate to protect conduit and wiring at base of standard.
- Provide washers and shims required by base manufacturer.
- Provide accessible grounding lug inside.
- Label all bases to show compliance with AASHTO breakaway requirements.

Other notes include:

- Provide accessible grounding lug inside.
- Label all bases to show compliance with AASHTO breakaway requirements.

Diagrams illustrate base details with various components such as:
- SLIP BASE
- BOLT COVER(S)
- FRANGIBLE BASE INSERT/ADAPTER
- TRANSFORMER BASE
- BASE PLATE
- TRANSFORMER BASE
- BOLT COVER(S)
- REMOVABLE METAL DOOR
- HANDHOLE
- MOUNTING HEIGHT (MH)
- CONNECTING BOLT(S)
- PROTECTIVE SHROUD
- FINISH GRADE
- FOUNDATION
- SLIP SLEEVE
- BOLT COVER(S)
- FRANGIBLE BASE INSERT/ADAPTER
- TRANSFORMER BASE
- BOLT COVER(S)
- REMOVABLE METAL DOOR
- HANDHOLE
- MOUNTING HEIGHT (MH)
- CONNECTING BOLT(S)
- PROTECTIVE SHROUD
- FINISH GRADE
- FOUNDATION
- SLIP SLEEVE
- BOLT COVER(S)
ANCHOR BOLT DETAIL

1.5
1

8 #5 VERTICAL REINFORCING BARS WITH #3 TIES 12” ON CENTER

BOLT CIRCLE (BC) DIAMETER

Diameter

12’ MIN

GALV. MIN

HEAVY HEX NUT

* LOCK WASHER

FLAT WASHER

ASTM A153 OR EQUAL

GALVANIZED PER

ASTM F1554, GRADE 55, 55,000 PSI MIN

HEX NUT

TOP & BOTTOM

1/2” FLAT BAR (2 EA) LENGTH AND WIDTH AS REQUIRED PER “BC” DIAMETER ASTM A36

NOTES

CONFORM ANCHOR BOLT SIZE, LENGTH, BOLT CIRCLE (BC) DIAMETER AND PROJECTION TO APPROVED LIGHT STANDARD SHOP DRAWINGS.

ADJUST SURROUNDING GRADE AS REQUIRED FOR ANCHOR BOLT PROJECTION TO MEET 4” CLEARANCE REQUIREMENT OVER 60” CHORD, AS SHOWN IN STUB HEIGHT REQUIREMENTS BELOW.

PROVIDE WASHERS AND SHIMS REQUIRED BY APPROVED BASE MANUFACTURER.

FEEDER CIRCUIT CONDUIT CONTINUES TO LIGHT STANDARD JUNCTION BOX (LSJB). SEE STANDARD DRAWING 1406.01.

ANCHOR BOLT SIZE AND LENGTH AS PROVIDED IN SHOP DRAWINGS.

STANDARD FOUNDATION

TYPE R1 & TYPE R2

SLOPE CONDITIONS

STANDARD FOUNDATION

TYPE R1 & TYPE R2

ANCHOR BOLT

GROUND LINE

4” MAXIMUM

60” CHORD

VEHICLE TIRE

STUB HEIGHT REQUIREMENTS

FORAGE

0’-8’

GREATER THAN 4:1

ANY SLOPE

FORAGE

0’-8’

ANY SLOPE

FORAGE

6’

ANY SLOPE

1/2” FLAT BAR (2 EA)

TOP & BOTTOM

1’-6” FORMED

3” TYP

1’-6” FORMED

3” TYP

24” DIA.

3” TYP

3/4” CONDUIT FOR GROUNDING CONDUCTOR

TOP VIEW

1.5

1

3/4” CONDUIT FOR FEEDER CIRCUIT

8 #5 VERTICAL REINFORCING BARS WITH #3 TIES 12” ON CENTER

DRILLED PIER

1/2” FLAT BAR (2 EA) LENGTH AND WIDTH AS REQUIRED PER “BC” DIAMETER ASTM A36

GROUNDED CONDUCTOR

3" TYP

24" DIA.

1’-6” FORMED

3” TYP

24” DIA.

8 #5 VERTICAL REINFORCING BARS WITH #3 TIES 12” ON CENTER

STUB OF BREAKAWAY TRANSFORMER BASE

STUB HEIGHT REQUIREMENTS

FORAGE

0’-8’

GREATER THAN 4:1

ANY SLOPE

FORAGE

0’-8’

ANY SLOPE

FORAGE

6’

ANY SLOPE

1/2” FLAT BAR (2 EA)

TOP & BOTTOM

1’-6” FORMED

3” TYP

1’-6” FORMED

3” TYP

24” DIA.

3” TYP

24” DIA.

1/2” FLAT BAR (2 EA)
**ANCHOR BOLT DETAIL**

- **TYPE M1 FOUNDATION**
  - #8 L1 BARS Ø 14" CTRS
  - #4 BARS Ø 14" CTRS
  - 8 #6 L1 BARS Ø 8" CTRS
  - 8 #3 STIRRUPS
  - FIELD BEND AS REQUIRED
  - 14" CUT OUT
  - 5½" CTR

**NOTES**

- LOCATE EXPANSION OR CONTRACTION JOINT 5' MINIMUM FROM CENTER LINE OF LIGHT STANDARD FOUNDATION.
- ALL SPECIFIED STEEL AND CONCRETE ON THIS SHEET IS IN ADDITION TO THAT REQUIRED FOR THE MEDIAN BARRIER.
- DIMENSIONS FOR #3 STIRRUPS ARE APPROXIMATE. FIT STIRRUPS TIGHTLY AROUND ANCHOR BOLTS.
- PROTECT ANCHOR BOLTS AND CONDUIT DURING PLACEMENT OF CONCRETE.
- FURNISH ALL ANCHOR BOLTS WITH HEAVY HEX NUTS, LEVELING NUTS, FLAT WASHERS, LOCK WASHERS AND FLAT CONNECTING BAR.
- PROVIDE ½" RADIUS ON ALL EXPOSED EDGES SIMILAR TO TOP OF BARRIER.
- USE TYPE M1 STANDARD FOUNDATION WITH TYPE T AND TYPE T1 MEDIAN BARRIER. SEE STANDARD DRAWING 854.02 FOR BARRIER DIMENSIONS.
- SEE LIGHTING LAYOUT PLANS FOR SIZE AND ORIENTATION OF CONDUIT FOR FEEDER CIRCUITS.

**SECTION A-A**

**LIGHT STANDARD PEDESTAL**

- CONCRETE PEDESTAL
- CONCRETE LIGHT STANDARD FOOTING
- 48"
- 3" CLR
- 12"
- 8" #6 L1 BARS
- 0"-12"
- 12" #4 BARS Ø 14" CTRS

**CONDUIT FOR FEEDER CIRCUIT**

- FIELD BEND AS REQUIRED
- 14" CUT OUT
- 5½" CTR
- 12"
- 8" #6 L1 BARS
- 48"
- 8 #3 STIRRUPS Ø 7" CTRS

**EXPANSION OR CONTRACTION JOINT**

- 5' MIN

**HEAVY HEX NUT**

- CONNECTING BAR.

**FLAT WASHER**

- BASE

**LOCK WASHER**

- FLAT WASHER LEVELING NUT

**METAL SHROUD**

- PROTECTIVE

**SHAFT**

- ½”

**BASE**

- 12½” X 4” X 10” FLAT BAR (2 EA) ASTM A36

**HEX NUT TOP & BOTTOM**

- PROTECTIVE METAL SHROUD

**FEEDER CIRCUIT**

- FIT STIRRUPS TIGHTLY AROUND ANCHOR BOLTS.

**BARREL**

- 1" TYP 2"

**LIGHT STANDARD**

- 5½” X 4” X 10” FLAT BAR (2 EA) ASTM A36

**ANCHOR BOLT DETAIL**

- BARRIER CUT OUT NOT SHOWN
ANCHOR BOLT DETAIL

#6 L-1 BAR
#3 STIRRUP

NOTES

LOCATE EXPANSION OR CONTRACTION JOINT 5’ MINIMUM FROM CENTER LINE OF LIGHT STANDARD FOUNDATION.

ALL SPECIFIED STEEL AND CONCRETE ON THIS SHEET IS IN ADDITION TO THAT REQUIRED FOR THE MEDIAN BARRIER.

DIMENSIONS FOR #3 STIRRUPS ARE APPROXIMATE. FIT STIRRUPS TIGHTLY AROUND ANCHOR BOLTS.

PROTECT ANCHOR BOLTS AND CONDUIT DURING PLACEMENT OF CONCRETE.

FURNISH ALL ANCHOR BOLTS WITH HEAVY HEX NUTS, LEVELING NUTS, FLAT WASHERS, LOCK WASHERS AND FLAT CONNECTING BAR.

PROVIDE ½” RADIUS ON ALL EXPOSED EDGES SIMILAR TO TOP OF BARRIER.

USE TYPE M2 STANDARD FOUNDATION WITH TYPE T2 MEDIAN BARRIER. SEE STANDARD DRAWING 854.02 FOR BARRIER DIMENSIONS.

SEE LIGHTING LAYOUT PLANS FOR SIZE AND ORIENTATION OF CONDUIT FOR FEEDER CIRCUITS.
LIGHT STANDARDS.

BREAKAWAY FUSEHOLDERS REQUIRED AT ALL BREAKAWAY LIGHT STANDARD LUMINAIRES

NOTES

1. PROVIDE ACCESS TO FUSEHOLDERS FROM HANDHOLE OR TRANSFORMER BASE.
2. SEE STANDARD SPECIFICATIONS SECTION 1400-4(F) FOR WIRING METHODS. USE TAPE OR HEAT SHRINK TO COLOR CONDUCTORS TO MATCH PHASE COLOR (RED/BLACK/BLUE).
3. MAKE SPLICES IN ACCORDANCE WITH SECTION 1400-4(F) OF THE STANDARD SPECIFICATIONS.
4. BREAKAWAY FUSEHOLDERS REQUIRED AT ALL BREAKAWAY LIGHT STANDARDS.
5. SIZE FEEDER CIRCUIT CONDUCTORS AS SHOWN IN THE PLANS.
6. SEE STANDARD SPECIFICATIONS SECTION 1400-2(E) FOR FUSEHOLDERS.
7. INSERT STYLE AND SIZE FROM PAY ITEM DESCRIPTION TO DETERMINE PROPOSED LUMINAIRES.
8. PERMANENTLY ATTACH GROUNDING CONDUCTOR TO GROUND ROD VIA IRREVERSIBLE CLAMP.
9. SEE STANDARD DRAWING 1411.01 FOR LIGHT STANDARD JUNCTION BOX REQUIREMENTS.
10. SEE PROJECT SPECIAL PROVISIONS FOR MINIMUM MAINTAINED DELIVERED LUMEN VALUES.

LUMINAIRE CHARACTERISTICS

<table>
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<tr>
<th>TYPE</th>
<th>SPEC</th>
<th>HP REPLACEMENT EQUIVALENT</th>
<th>COLOR TEMP</th>
<th>MINIMUM PERCENT OF INITIAL OUTPUT (70K HOURS &amp; 25°C)</th>
<th>MINIMUM MAINTAINED LUMENS</th>
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<tr>
<td>180W (MAX) LED FIXTURE</td>
<td>250W</td>
<td>3,500K +500K</td>
<td>83%</td>
<td>△</td>
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<tr>
<td>285W (MAX) LED FIXTURE</td>
<td>400W</td>
<td>3,500K +500K</td>
<td>83%</td>
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WIRING DIAGRAM

- 1-1/2" FEEDER CIRCUIT CONDUIT TO LIGHT STANDARD
- 1-1/2" PVC CONDUIT TO LIGHT STANDARD
- GROUNDING CONDUCTOR IN 3/4" PVC CONDUIT
- MAIN CIRCUIT RUN CONDUIT
- SET SCREW CONNECTOR(S)
- SET SCREW CONNECTOR
- JUMPER #6 MHD
- GROUNDING LUG
- HANDHOLE/DOOR
- #12 AWG SOOW CABLE
- PHASE CONDUCTORS
- DUAL FUSEHOLDER(S)
- #12 AWG SOOW CABLE
- FEEDER CIRCUIT CONDUCTORS
- LIGHT STANDARD JUNCTION BOX
- LIGHT STANDARD LUMINAIRE (TYPICAL) TYPE (STYLE) (SIZE)
- 2" SLIPFITTER SWING DOWN SERVICE DOOR
- DOOR LATCH MECHANISM
- CAST ALUMINUM HOUSING
- COOLING FINS
- 7 PIN PHOTOCELL RECEPTACLE WITH SHORTING CAP
- #12 CONDUCTORS TO BALLAST (LOAD SIDE)
- #12 CONDUCTORS TO FEEDER CIRCUIT (LINE SIDE)
- KTK FUSE
NOTES

△ CURRENT TRANSFORMER (CT) CABINET AND METER MAY BE MOUNTED ON BACK OF LIGHT CONTROL SYSTEM ENCLOSURE.

△ SEE SECTION 1408 OF THE STANDARD SPECIFICATIONS FOR LIGHT CONTROL SYSTEM.

WEATHERHEAD SYSTEM.

SPECIFICATIONS FOR LIGHT CONTROL

BACK OF LIGHT CONTROL SYSTEM AND METER MAY BE MOUNTED ON CURRENT TRANSFORMER (CT) CABINET

TO LIGHT CONTROL SYSTEM

SERVICE POLE

10' MAX

2' MAX

WEATHERHEAD

SERVICE LATERAL 3 #1/0 USE 2" RGC

CT CABINET & METER

18' MIN

SERVICE GROUND #6 CU 3/4" RGC

GROUND ROD

5'-6" MIN

SERVICE LATERAL 3 #1/0 USE 2" RGC

5'-6"

C/A FENCE

FROM UTILITY COMPANY

30' POLE CLASS 4

2" RGC 3 #1/0 USE SERVICE LATERAL

18' MIN

5'-6"
Schematic Photocell Connections

Interior Panel Component Layout

Component List

<table>
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<tr>
<th>#</th>
<th>QTY</th>
<th>DESCRIPTION</th>
<th>SPECIFICATIONS</th>
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<tr>
<td>1</td>
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<td>Neutral Bar</td>
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<tr>
<td>2</td>
<td>1</td>
<td>Service Circuit Breaker</td>
<td>2P, 480V, 150A</td>
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<tr>
<td>3</td>
<td>1</td>
<td>Control Circuit Breaker</td>
<td>1P, 240V, 15A</td>
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<td>4</td>
<td>Mechanically Held Contactors</td>
<td>4P, 480V, 60A W/240V Coil</td>
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<tr>
<td>5</td>
<td>1</td>
<td>Control Relay W/NC &amp; NO Contact</td>
<td>240V, 10A, W/240V Coil</td>
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<td>7</td>
<td>Feeder Circuit Breakers</td>
<td>2P, 480V, 50A Max</td>
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<td>7</td>
<td>1</td>
<td>Type 1 Surge Protection Device</td>
<td>20,000A Rated</td>
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<td>8</td>
<td>1</td>
<td>Selector Switch (ON-OFF-AUTO)</td>
<td>240V, 10A</td>
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<tr>
<td>9</td>
<td>2</td>
<td>Power Distribution Lugs or Blocks</td>
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Notes

Equipment grounds (G) shall be sized according to circuit description. See plans.

System ground (SG) shall be continuous from the neutral bar to the grounding electrode (ground rod).

The neutral bar shall be bonded to the panel.

Install 6 conduits as shown. Unused conduit shall be capped in the control system junction box.

Install a grounding bushing on each metal conduit. Connect bonding jumper as required by NEC.

See Sheet 3 of 3 for enclosure.

The control system must be labeled "suitable for use as service equipment." Refer to standard specification 1408-2 for other requirements.

See plans for breaker sizes.

Provide multi-tap load lugs or power distribution blocks.

Provide manufacturer supplied mounting brackets or screw studs permanently attached to the back panel, for mounting components, and provide and install a conduit choke on the underground end of the ¾” RGS system ground conduit.

*Number of contactors vary based on number of feeder circuits shown in the load schedule. For 2 to 3 feeder circuits, provide 2 contactors; for 4 to 6 feeder circuits, provide 3 contactors.

**Provide the number of breakers shown in the load schedule on the plans. Include spare breaker as well.

Bonding jumper #6 CU

Grounding bushing

Feeder circuit no.

1 2 3 4 5 Spare
NOTES

- CURRENT TRANSFORMER (CT) CABINET AND METER MAY BE MOUNTED ON SERVICE POLE OR BACK OF CONTROL ENCLOSURE.
- SEE SECTION 1407 OF THE STANDARD SPECIFICATIONS FOR SERVICE POLE AND SERVICE LATERAL.
- SEE PLANS FOR SIZE OF CONDUITS AND/OR ELECTRICAL DUCT.
- STUB FEEDER CIRCUIT CONDUITS INTO JUNCTION BOX. CAP UNUSED CONDUITS. FEEDER CIRCUITS MUST BE MINIMUM 30" BELOW GRADE.
- SEE SECTION 1411 OF THE STANDARD SPECIFICATIONS FOR JUNCTION BOX INSTALLATION.

ALL ABOVE GROUND CIRCUITRY TO BE INSTALLED IN RIGID GALVANIZED CONDUIT. UNDERGROUND FEEDER CIRCUITS MUST BE INSTALLED IN SCH 40 PVC CONDUIT.

TOP OF GROUND ROD(S) SHALL NOT BE NO MORE THAN FOUR INCHES BELOW GRADE TO ALLOW FOR EASE OF INSPECTION BY DEPARTMENT OF INSURANCE, OFFICE OF STATE FIRE MARSHAL PERSONNEL.

INSTALL A CONDUIT GROUND CHOOSE AND BOND THE EQUIPMENT GROUNDING CONDUCTOR TO THE END OF THE 34" CONDUIT UNDERGROUND PER NEC ARTICLE 250.64E.

GROUNDING ELECTRODE CONDUCTOR 34" CONDUIT SHALL NOT TERMINATE BELOW THE CONCRETE FOUNDATION PAD.

SEE STANDARD DRAWING 1411.01 FOR CONTROL SYSTEM JUNCTION BOX REQUIREMENTS.

SPECIFICATIONS FOR JUNCTION BOX SEE DETAIL "A"

MOUNTING HARDWARE

- 4" RIGID GALVANIZED CONDUIT (RGC)
- GALVANIZED SLOTTED CHANNEL
- HEX HEAD CAP SCREW (4 PLCS)
- CHANNEL NUT (4 PLCS)

CT CABINET

- Photocell
- Receptacle
- Weatherproof Hub

DRIP SHIELD

2" RGC CONDUIT BODY

34" RGC

6 RGC

SEE DETAIL "A"

240/480 VOLT SERVICE (BY UTILITY CO.)

SERVICE LATERAL
3 #1/0 USE
2" RGC

TO SERVICE POLE (IF REQUIRED)

ALTERNATE SERVICE LATERAL
3 #1/0 USE
2" RGC

RGC TO PVC ADAPTER

GROUND ROD

6' MIN

12" MAX

4" RGC

CIRCUIT BREAKER OPERATOR HANDLE

NEMA TYPE 3R SS ENCLOSURE

FEEDER CIRCUITS AND SPARE(S) TO CONTROL SYSTEM JUNCTION BOX

GROUNDING ELECTRODE CONDUCTOR 34" CONDUIT

INSTALL A CONDUIT GROUND CHOOSE AND BOND THE EQUIPMENT GROUNDING CONDUCTOR TO THE END OF THE 34" CONDUIT UNDERGROUND PER NEC ARTICLE 250.64E.

GROUNDING ELECTRODE CONDUCTOR 34" CONDUIT SHALL NOT TERMINATE BELOW THE CONCRETE FOUNDATION PAD.

SEE STANDARD DRAWING 1411.01 FOR CONTROL SYSTEM JUNCTION BOX REQUIREMENTS.

SPECIFICATIONS FOR SERVICE POLE AND SERVICE LATERAL.

SEE PLANS FOR SIZE OF CONDUITS AND/OR ELECTRICAL DUCT.

GROUNDING ELECTRODE CONDUCTOR 34" CONDUIT SHALL NOT TERMINATE BELOW THE CONCRETE FOUNDATION PAD.

SEE STANDARD DRAWING 1411.01 FOR CONTROL SYSTEM JUNCTION BOX REQUIREMENTS.

SPECIFICATIONS FOR SERVICE POLE AND SERVICE LATERAL.

SEE PLANS FOR SIZE OF CONDUITS AND/OR ELECTRICAL DUCT.

GROUNDING ELECTRODE CONDUCTOR 34" CONDUIT SHALL NOT TERMINATE BELOW THE CONCRETE FOUNDATION PAD.

SEE STANDARD DRAWING 1411.01 FOR CONTROL SYSTEM JUNCTION BOX REQUIREMENTS.
BREAKER HANDLE
SERVICE CIRCUIT
DOOR HANDLE
PADLOCKABLE
(TIP #)

NOTES
PERMANENTLY ATTACH LABEL TO ENCLOSURE. SEE SHEET 1 OF 3 FOR INTERIOR PANEL AND COMPONENT LAYOUT. SEE SYSTEM LETTER DESIGNATION AND LOCATION VITAL CONTROL SYSTEM IN THE PLANS.

DANGER 480 VOLTS
CONTROL SYSTEM (LVT)

LABEL

NEAR TYPE 3R STAINLESS STEEL ENCLOSURE

MOUNTING FLANGE

TYPE 304 STAINLESS STEEL

CONTINUOUS HINGE

DRIP SHIELD

36" (MIN)

30" (MIN)

INTERIOR PANEL

10" (MIN)

10"

NOTES
PROVIDE DOOR CLOSING MECHANISM INTERLOCKED WITH SERVICE CIRCUIT BREAKER HANDLE. SEE STANDARD SPECIFICATIONS FOR DETAILS.

PHOTOCELL NOT SHOWN.

SEE SHEET 1 OF 3 FOR INTERIOR PANEL AND COMPONENT LAYOUT. See System Letter Designation and Location Vital Control System in the Plans.

DANGER 480 VOLTS
CONTROL SYSTEM (LVT)

LABEL

NEMA TYPE 3R STAINLESS STEEL ENCLOSURE

MOUNTING FLANGE

TYPE 304 STAINLESS STEEL

CONTINUOUS HINGE

DRIP SHIELD

36" (MIN)

30" (MIN)

INTERIOR PANEL

10" (MIN)

10"

NOTES
PROVIDE DOOR CLOSING MECHANISM INTERLOCKED WITH SERVICE CIRCUIT BREAKER HANDLE. SEE STANDARD SPECIFICATIONS FOR DETAILS.

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DANGER 480 VOLTS
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NEMA TYPE 3R STAINLESS STEEL ENCLOSURE

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PHOTOCELL NOT SHOWN.

SEE SHEET 1 OF 3 FOR INTERIOR PANEL AND COMPONENT LAYOUT. See System Letter Designation and Location Vital Control System in the Plans.
**ELECTRICAL DUCT INSTALLATION**

- **JUNCTION BOX**
  - Type BR

- **CONDUCTORS**: May vary for all installations.

- **FEEDER CIRCUIT CONDUCTORS**
  - Typical (quantity of conductors may vary)

- **BURIED DUCT**
  - Used as a protective sleeve

- **JACKED, DRILLED OR BURIED DUCT**

- **PAVED SHOULDER**

- **GUARD RAIL**

- **EDGE OF TRAVEL LANE**

SPECIFICATIONS:

- **30" MIN.**
- **24" MIN.**
- **15"**
- **42" MIN.**

APPLICATION:

- **PAVED SHOULDER**
- **TRAVEL LANE**
- **GUARD RAIL**

**LOCATION:**

- **RALEIGH, N.C.**
- **STATE OF NORTH CAROLINA**
- **DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS**

**SHEET:** 1 OF 1

**1409.01**
FEEDER CIRCUITS

FEEDER CIRCUIT INSTALLATION

CLEAN BACKFILL

TO COMPACT SURROUNDING MATERIAL

30" MINIMUM COVER

NORMAL SOIL

BY ENGINEER AS DIRECTED

3"

8"

NOTES

SEE PLANS FOR APPROPRIATE NUMBER OF CIRCUITS.
ELECTRICAL JUNCTION BOX TYPE IG (SIZE)

ELECTRICAL JUNCTION BOX TYPE BR (SIZE)

SECTION A-A

NOTES

- SEE STANDARD SPECIFICATIONS SECTION 1400-2(G) FOR SEALER AND MASTIC.
- INSERT PAY ITEM DESCRIPTION FOR (SIZE) TO DETERMINE PROPOSED JUNCTION BOX. HIGH MAST JUNCTION BOXES, LIGHT STANDARD JUNCTION BOXES AND CONTROL SYSTEM JUNCTION BOXES WILL BE PAID FOR AS RESPECTIVE JUNCTION BOX LINE ITEMS AND NOT AS PART OF HIGH MAST FOUNDATION, LIGHT STANDARD FOUNDATION OR CONTROL SYSTEM LINE ITEMS.
- SET TOP OF BOX FLUSH WITH CONCRETE IF REQUIRED TO BE PLACED IN SIDEWALKS OR OTHER CONCRETE STRUCTURES.
- SIZE IS SPECIFIED AS NOMINAL INSIDE DIMENSIONS FOR WIDTH (W), LENGTH (L) AND DEPTH (D). SEE PLANS FOR PROPOSED DIMENSIONS.
- SEE LAYOUT SHEETS FOR NUMBER AND SIZE OF FEEDER CIRCUITS AND ELECTRICAL DUCT.
- APPROPRIATELY IDENTIFY EACH CIRCUIT CONDUCTOR USING A NYLON CABLE TIE WITH LABEL.

MEDIAN BARRIER

SEALER

PUZZLE

TIER DESIGNATION

FEEDER CIRCUITS OR ELECTRICAL DUCT

467 WASHED STONE

Mastic

REMOVABLE FLANGE

GASKET

CHECKERED COVER

REFERENCES

REINFORCING RIB

FOOT

NOTES

- SEE STANDARD SPECIFICATIONS SECTION 1400-2(G) FOR SEALER AND MASTIC.
- INSERT PAY ITEM DESCRIPTION FOR (SIZE) TO DETERMINE PROPOSED JUNCTION BOX. HIGH MAST JUNCTION BOXES, LIGHT STANDARD JUNCTION BOXES AND CONTROL SYSTEM JUNCTION BOXES WILL BE PAID FOR AS RESPECTIVE JUNCTION BOX LINE ITEMS AND NOT AS PART OF HIGH MAST FOUNDATION, LIGHT STANDARD FOUNDATION OR CONTROL SYSTEM LINE ITEMS.
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- SEE LAYOUT SHEETS FOR NUMBER AND SIZE OF FEEDER CIRCUITS AND ELECTRICAL DUCT.
- APPROPRIATELY IDENTIFY EACH CIRCUIT CONDUCTOR USING A NYLON CABLE TIE WITH LABEL.
TYPE PM LUMINAIRE AND CIRCUITY

COMPONENTS

1. ELECTRICAL MOUNTING RECEPTACLE WITH 3/4" CONDUIT CONNECTION
2. SAFETY CHAIN
3. ALUMINUM DRIVER HOUSING WITH COOLING FINS
4. ACRYLIC PRISMATIC REFRACTOR
5. REFRACTOR ATTACHMENT SCREWS
6. REFRACTOR DOOR HINGE ATTACHMENT

NOTES

- MOUNT TYPE PM LUMINAIRE FLUSH WITH BOTTOM OF BEAMS.
- PROVIDE EXPANSION FITTINGS AT EACH BRIDGE EXPANSION JOINT. PROVIDE AT LEAST 1 EXPANSION JOINT IN SECTIONS OF CONDUIT GREATER THAN 20' BETWEEN JUNCTION BOXES OR LIGHT FIXTURES, AND 1 EXPANSION JOINT EVERY 80' FOR LONGER RUNS.
- REFER TO STANDARD SPECIFICATION 1074-2 FOR EXPANSION ANCHOR UNITS.

DETAIL "A"

1. 1/4" SS WEDGE ANCHOR
2. STRAP WITH BACK
3. 3/4" PVC CONDUIT
4. ROUND PVC BOX W/4-3/4" HUBS AND GASKETED COVER
5. CORD GRIP
6. 3 COND. "SOOW" CORD (12 AWG 600 VAC)
7. HOOK, FEMALE
8. 3/4" RGS CONDUIT
9. 3/8" GALV. EYE NUT
10. 3/8" SS THREADED ROD AND DROP IN OR EXPANSION ANCHOR
11. 3/8" SS FLAT WASHER
12. 3/8" SS HEX NUT
13. CHAIN "S" LINK
14. SAFETY CHAIN
15. SEALER

DETAIL "B"

1. 1/2" SS WEDGE ANCHOR
2. STRAP WITH BACK
3. 3/4" PVC CONDUIT
4. ROUND PVC BOX W/4-3/4" HUBS AND GASKETED COVER
5. CORD GRIP
6. 3 COND. "SOOW" CORD (12 AWG 600 VAC)
1. COMPONENTS
   a. Die cast aluminum housing, door & hinge
   b. Prismatic refractor
   c. Two screw latch

2. NOTES
   a. Mount WM LED luminaire at vertical center of bent cap.
   b. Provide expansion fittings in each section of conduit that is greater than 20' long between terminals at junction boxes on pier cap.
   c. Extend away from pier so that ground rod will miss footing.
   d. Install insulated grounding bushing for incoming and departing feeder circuit in RGC conduit.

3. INSTALLATION
   a. Transition adapter with gnd bar
   b. 120 V, 1PH, 15 amp circuit breaker
   c. NEMA 3R enclosure
   d. 2#12 THWN & #12 GND RGC conduit
   e. 1/2" RGC LB with 3/4" hubs & gasketed cover
   f. 3/4" RGC conduit
   g. Round RGC JB
   h. Strap w/back @ 3' spacing
   i. MOUNTING HOLE (3)
   j. 3/4" RGC LB
   k. 3/4" PVC CT

4. SECTIONS
   a. A-A
   b. B

5. COMPONENTS
   a. Pier anchor (s)
   b. SS wedge anchor
   c. Air space

6. INSTALLATION
   a. Pier
   b. 3/4" conduit entrance
   c. 3/4" RGC LB
   d. 3/4" NPT top entry
   e. Cone prismatic refraactor
   f. Transition adapter w/gnd bar