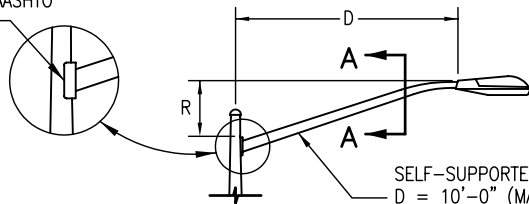
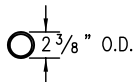


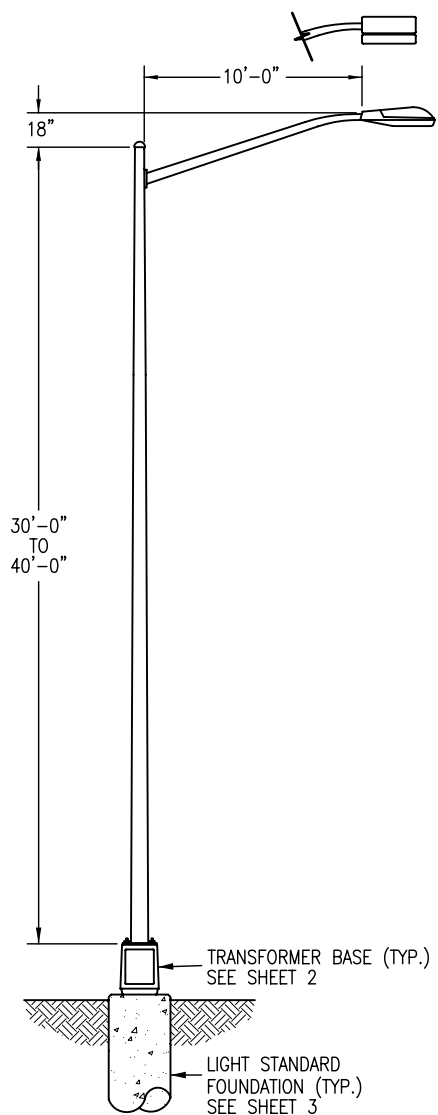
ARM PLATE SHALL CONFORM TO APPLICABLE AASHTO REQUIREMENTS



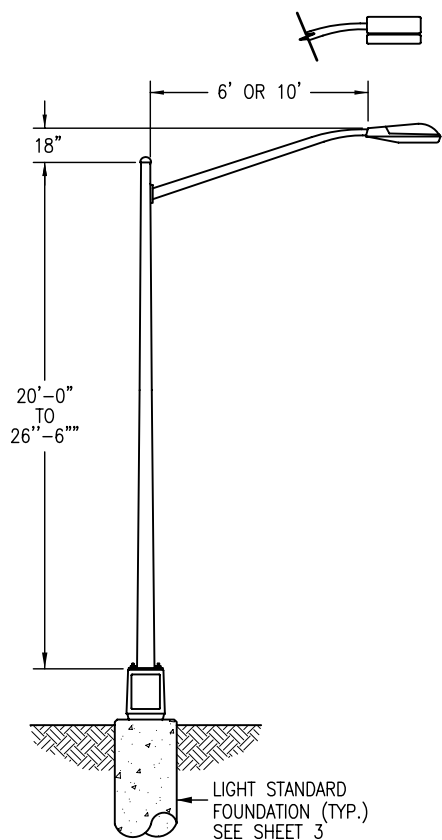
SELF-SUPPORTED ARM:  
 D = 10'-0" (MAXIMUM)  
 R = 5'-0" (MAXIMUM)  
 D/R = 2.0 RATIO (MAXIMUM)



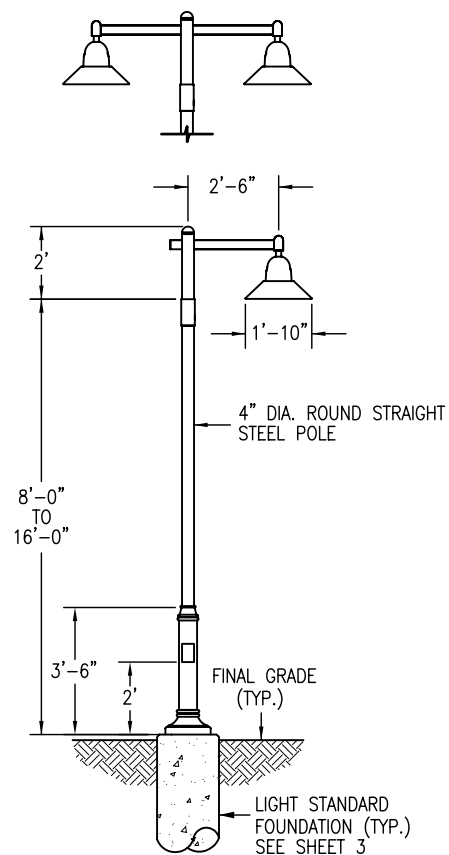
SECTION A-A



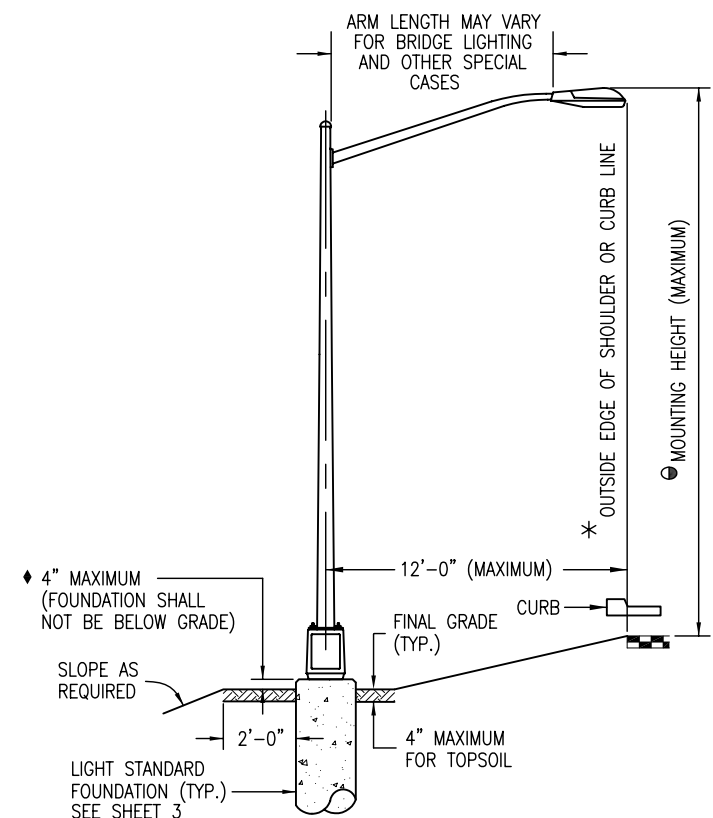
30 FT. TO 40 FT. STANDARD



20 FT. TO 26 FT.-6 IN. STANDARD



10 FT. TO 18 FT. STANDARD



LIGHT STANDARD LOCATION

**GENERAL NOTES**

1. LUMINAIRES WITH LAMPS RATED MORE THAN 3200 LUMENS SHALL BE IESNA FULL CUTOFF DISTRIBUTION.
  2. FLAT LENS IS REQUIRED ON ALL INSTALLATIONS, UNLESS OTHERWISE SPECIFIED IN THE CONTRACT.
  3. PHOTOELECTRIC CONTROLS SHALL BE LOCATED AT THE LIGHTING CONTROL CENTER. SEE SHEET 4 DETAILS FOR ADDITIONAL INFORMATION.
  4. LIGHT STANDARDS SHALL NOT BE PLACED IN DITCHES OR OTHER LOW AREAS. EMBANKMENT AND BACKFILL SHALL BE COMPACTED IN ACCORDANCE WITH SECTION 203.
  5. POLE CAPS ARE REQUIRED.
- ☉ POLE ASSEMBLY SHALL BE SUPPLIED IN SUFFICIENT LENGTH TO ACCOMMODATE MOUNTING HEIGHT.
  - \* FINAL LOCATION OF THE LUMINAIRES SHALL BE APPROVED BY THE ENGINEER.
  - ◆ WHERE FOUNDATION IS LOCATED IN THE SIDEWALK, THE TOP OF THE FOUNDATION SHALL BE FLUSH WITH THE TOP OF THE SIDEWALK CONFORMING TO ADA REQUIREMENTS.

**Computer File Information**

Creation Date: 07/04/06	Initials: SJR
Last Modification Date: 07/04/06	Initials: LTA
Full Path: www.dot.state.co.us/DesignSupport/	
Drawing File Name: 613010104.dwg	
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English	

**Sheet Revisions**

Date:	Comments
(R-X)	
(R-X)	
(R-X)	
(R-X)	

**Colorado Department of Transportation**

4201 East Arkansas Avenue  
 Denver, Colorado 80222  
 Phone: (303) 757-9083  
 Fax: (303) 757-9820

Project Development Branch SRJ/LTA

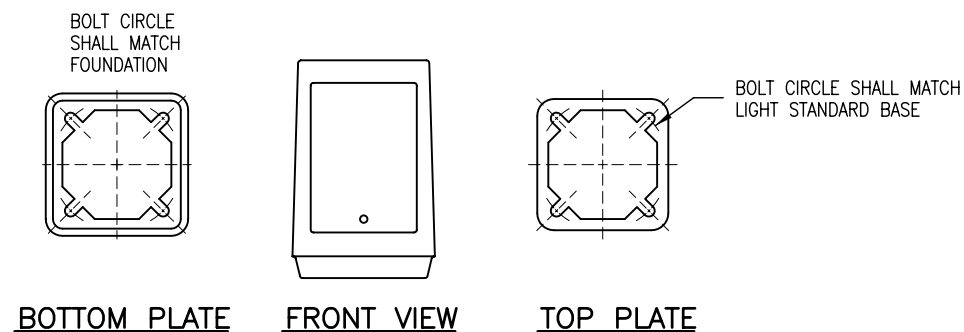
**ROADWAY LIGHTING**

Issued By: Project Development Branch on July 04, 2006

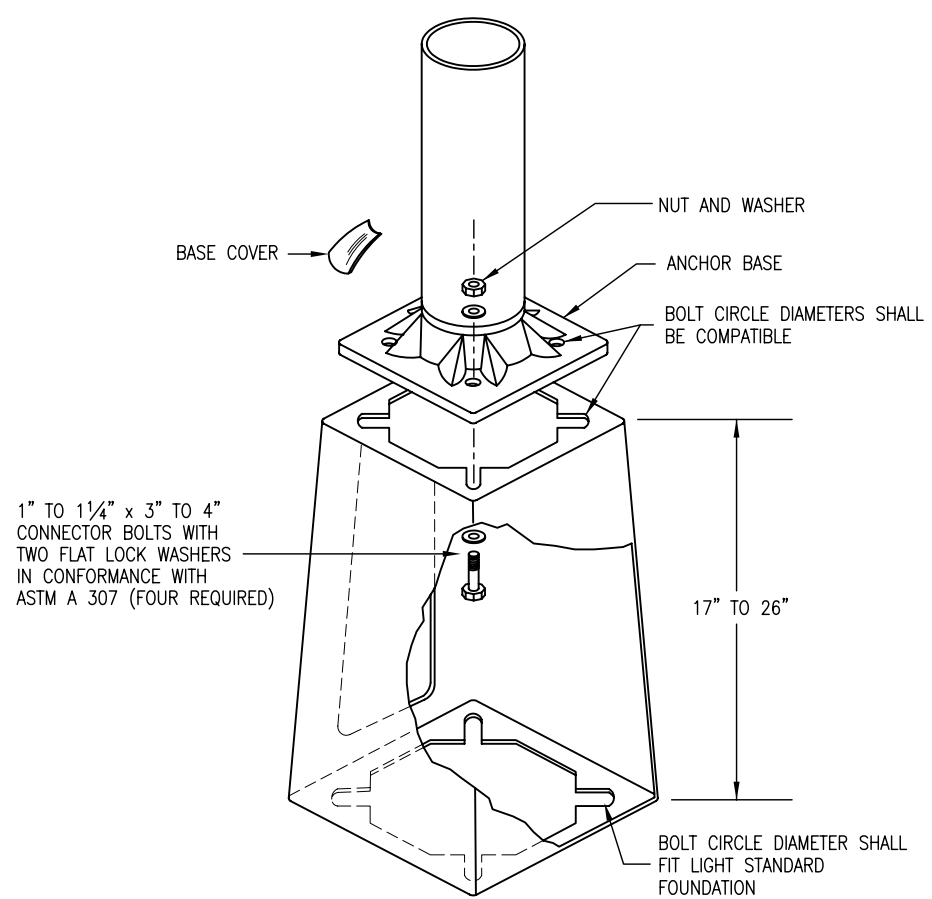
**STANDARD PLAN NO.**

M-613-1

Sheet No. 1 of 4



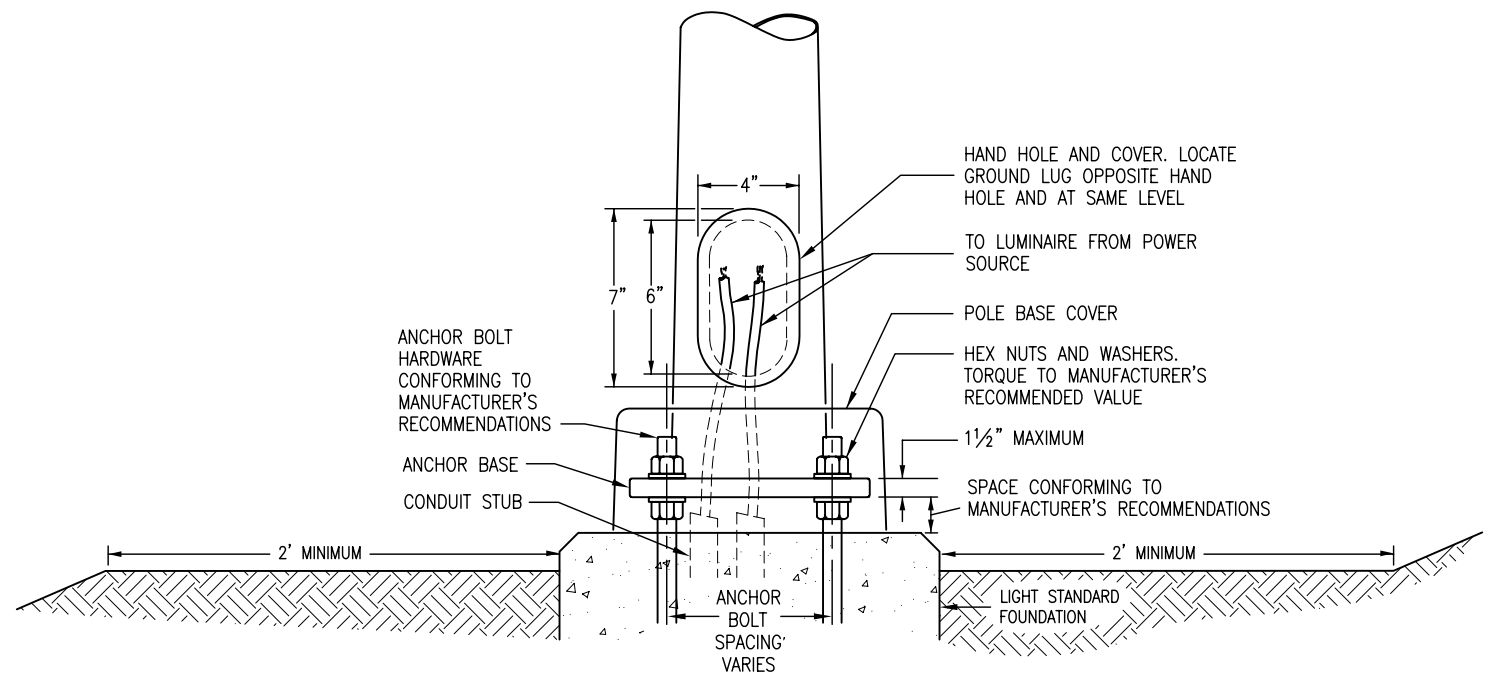
NOTE: MATCH EXISTING BREAKAWAY TRANSFORMER BASE AS CLOSELY AS POSSIBLE.




**TYPICAL BREAK-AWAY TYPE TRANSFORMER BASE DETAIL**

- NOTES:
1. HARDWARE SHALL CONFORM TO MANUFACTURER'S REQUIREMENTS.
  2. A HAND HOLE IS NOT REQUIRED IN POLE IF A BREAK-AWAY TRANSFORMER BASE IS USED.

- NOTES**
1. BREAK-AWAY TRANSFORMER BASES MAY BE OMITTED AND THE POLES MOUNTED DIRECTLY ON THE LIGHT STANDARD FOUNDATION, BUT ONLY WHERE DESIGNATED ON THE PLANS.
  2. ALL BREAK-AWAY TRANSFORMER BASES SHALL CONFORM TO AASHTO "STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS".
  3. LIGHT STANDARD FOUNDATIONS MAY BE PRECAST CONCRETE OR CAST-IN-PLACE CONCRETE.
  4. LIGHT STANDARDS SHALL BE WIRED WITH BREAKAWAY FUSED CONNECTORS AND BE GROUNDED IN ACCORDANCE WITH THE SPECIFICATIONS.

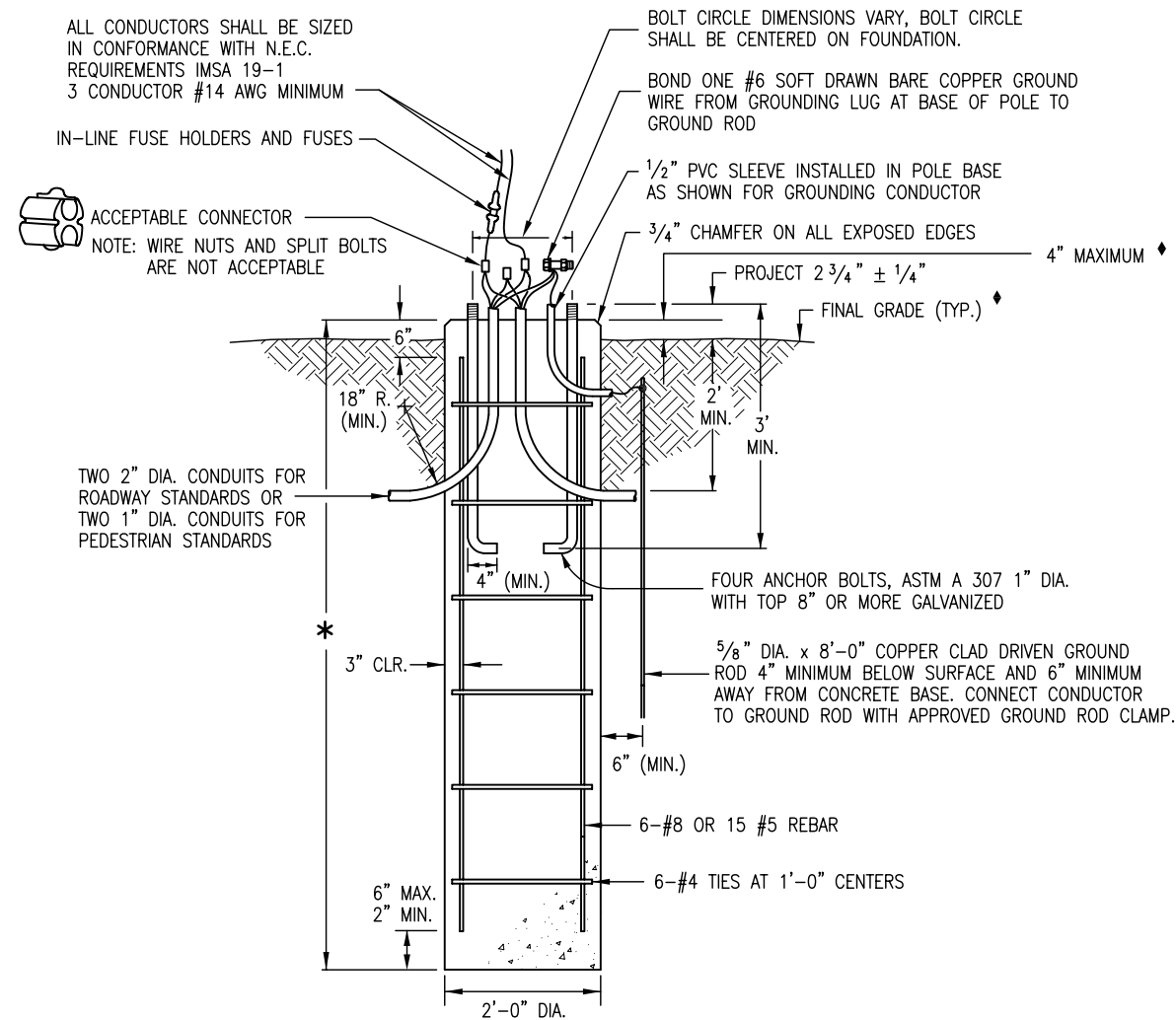


**TYPICAL NON-BREAKAWAY BASE DETAIL**  
FOR USE ONLY OUTSIDE CLEAR ZONE OR IN PROTECTED INSTALLATIONS.

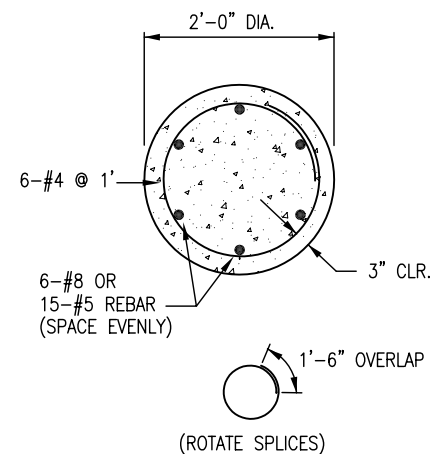
<b>Computer File Information</b>		<b>Sheet Revisions</b>		<b>Colorado Department of Transportation</b>  4201 East Arkansas Avenue Denver, Colorado 80222 Phone: (303) 757-9083 Fax: (303) 757-9820 <b>Project Development Branch</b> <b>SRJ/LTA</b>	<h1>ROADWAY LIGHTING</h1>	<b>STANDARD PLAN NO.</b>
Creation Date: 07/04/06	Initials: SJR	Date:	Comments:			M-613-1
Last Modification Date: 07/04/06	Initials: LTA					
Full Path: www.dot.state.co.us/DesignSupport/						
Drawing File Name: 613010204.dwg						
CAD Ver.: MicroStation V8	Scale: Not to Scale	Units: English			Issued By: Project Development Branch on July 04, 2006	Sheet No. 2 of 4

**NOTES**

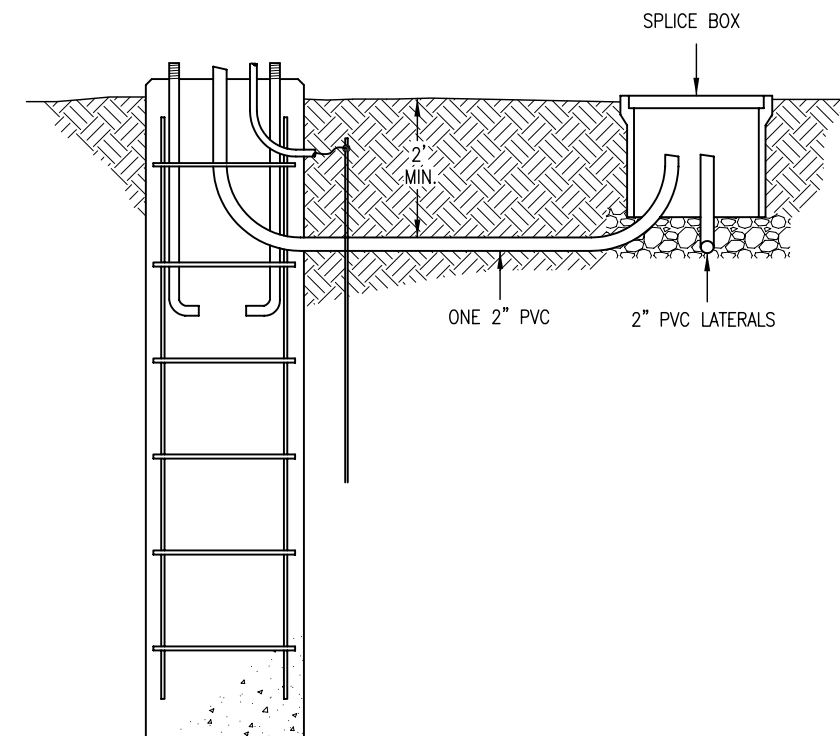
1. DIMENSIONS FOR THE TRANSFORMER BASE, ANCHOR BASE AND ANCHOR BOLTS ARE VARIABLE FOR THE HEIGHT OF THE LIGHT STANDARD AND THE MAST ARM CONFIGURATION. ALL COMPONENTS SHALL FIT AND ACCOMMODATE THE REQUIREMENTS OF THE LIGHT STANDARD SUPPLIED.
  - \* 2. FOUNDATION SHALL BE 7 FT. FOR LIGHT STANDARDS 20 FT. THRU 40 FT., AND 6 FT. FOR LIGHT STANDARDS LESS THAN 20 FT.
  3. LIGHT STANDARD FOUNDATION DEPTH IS BASED ON A MAXIMUM POLE HEIGHT OF 40 FT. IN STIFF CLAY WITH  $N > 8$  OR MEDIUM SAND WITH  $N > 15$  AS DETERMINED BY ASTM D 1586 STANDARD PENETRATION TEST.
  4. CONCRETE SHALL BE CLASS B.
  5. FOUNDATIONS FOR LIGHT STANDARDS HIGHER THAN 40 FT. OR LIGHT STANDARDS WITH MULTIPLE LUMINAIRES OR BANNERS, OR VARYING SOIL OR WIND CONDITIONS, SHALL BE DESIGNED BY THE CONTRACTOR'S ENGINEER IF NOT SHOWN ON THE PLANS.
- ◆ WHERE FOUNDATION IS LOCATED IN THE SIDEWALK, THE TOP OF THE FOUNDATION SHALL BE FLUSH WITH THE TOP OF THE SIDEWALK CONFORMING TO ADA REQUIREMENTS.




**TYPICAL CONCRETE LIGHT STANDARD FOUNDATION**

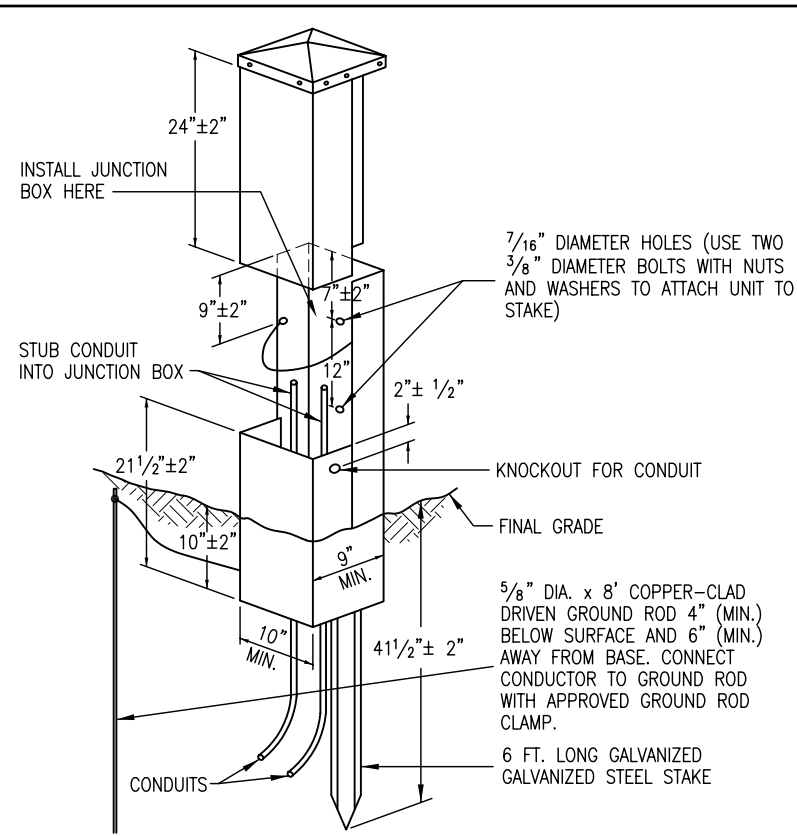


**TYPICAL FOUNDATION SECTION**

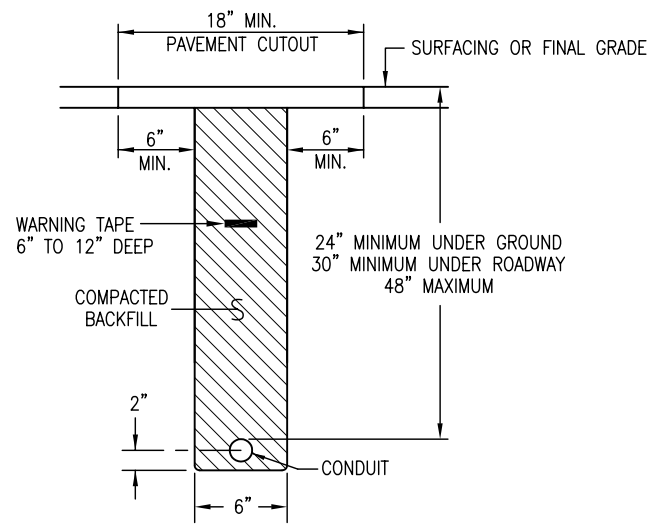


**ALTERNATIVE CONCRETE LIGHT STANDARD FOUNDATION WITH SPLICE BOX**

<b>Computer File Information</b>		<b>Sheet Revisions</b>		<b>Colorado Department of Transportation</b>  4201 East Arkansas Avenue Denver, Colorado 80222 Phone: (303) 757-9083 Fax: (303) 757-9820 <b>Project Development Branch</b> <b>SRJ/LTA</b>	<h1>ROADWAY LIGHTING</h1>	<b>STANDARD PLAN NO.</b>
Creation Date: 07/04/06	Initials: SJR	Date:	Comments:			M-613-1
Last Modification Date: 07/04/06	Initials: LTA	(R-X)				
Full Path: www.dot.state.co.us/DesignSupport/		(R-X)				
Drawing File Name: 613010304.dwg		(R-X)				
CAD Ver.: MicroStation V8	Scale: Not to Scale	Units: English			Issued By: Project Development Branch on July 04, 2006	Sheet No. 3 of 4

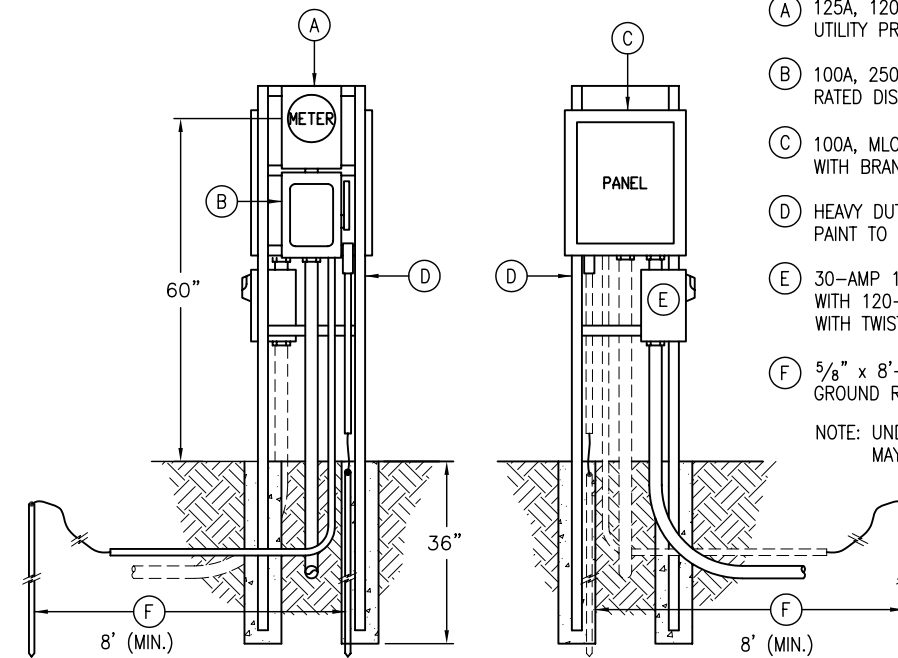


**SECONDARY SERVICE PEDESTAL**  
(FRONT VIEW WITH COVER LIFTED)



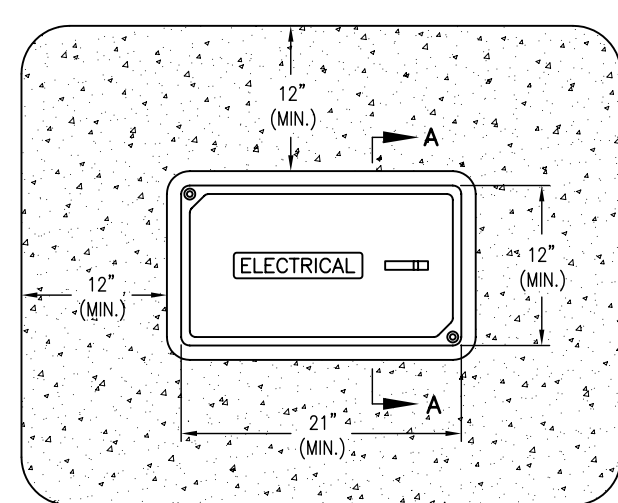
**SECTION-TYPICAL CONDUIT BURIAL**

- NOTES:
- CONTRACTOR SHALL COORDINATE TRENCHING WITH OTHER UNDERGROUND UTILITIES, RAMP METERING AND IRRIGATION. CONTRACTOR SHALL USE COMMON TRENCHES AT ALL ROAD CROSSINGS WHERE POSSIBLE.
  - ONE #14 AWG LOCATE WIRE AND A NYLON PULL STRING IN ALL EMPTY CONDUITS.

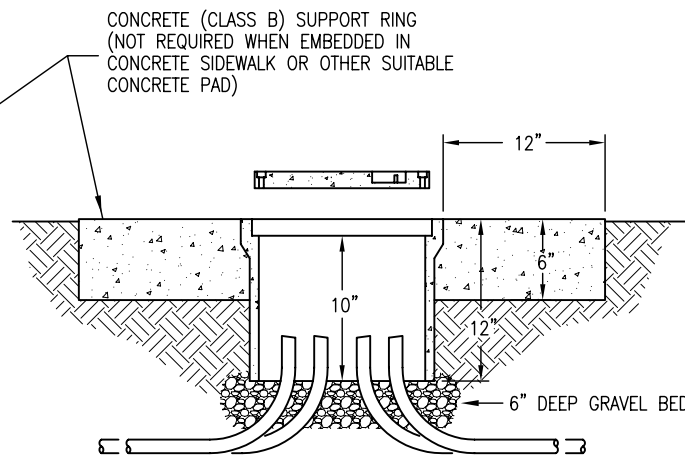


**FRONT ELEVATION REAR ELEVATION**  
**LIGHTING CONTROL CENTER (PEDESTAL)**

- PEDESTAL COMPONENT LIST**
- (A) 125A, 120/240V, NEMA 3R METER HOUSING CONFORMING TO UTILITY PROVIDER REQUIREMENTS.
  - (B) 100A, 250V, HEAVY DUTY, 2-POLE, NEMA 3R, SERVICE ENTRANCE RATED DISCONNECT SWITCH WITH GROUND AND NEUTRAL BARS.
  - (C) 100A, MLO, 120/240V-1Ø-3W, 8-SPACE, NEMA 3R LOAD CENTER WITH BRANCH BREAKERS AS LISTED ON THE PANEL SCHEDULE.
  - (D) HEAVY DUTY, GALVANIZED C-CHANNEL TYPE RACKING SET IN CONCRETE. PAINT TO MATCH PANEL COLOR.
  - (E) 30-AMP 12-POLE ELECTRICALLY HELD LIGHTING CONTACTOR FURNISHED WITH 120-VOLT COIL AND NEMA 3R 120V PHOTO ELECTRIC CONTROL WITH TWIST-LOCK RECEPTACLE BASE.
  - (F) 5/8" x 8'-0" COPPER-CLAD DRIVEN GROUND ROD WITH APPROVED GROUND ROD CLAMP.
- NOTE: UNDERGROUND COMBINATION METER/SERVICE PANEL ASSEMBLY MAY BE USED IF APPROVED BY ENGINEER.



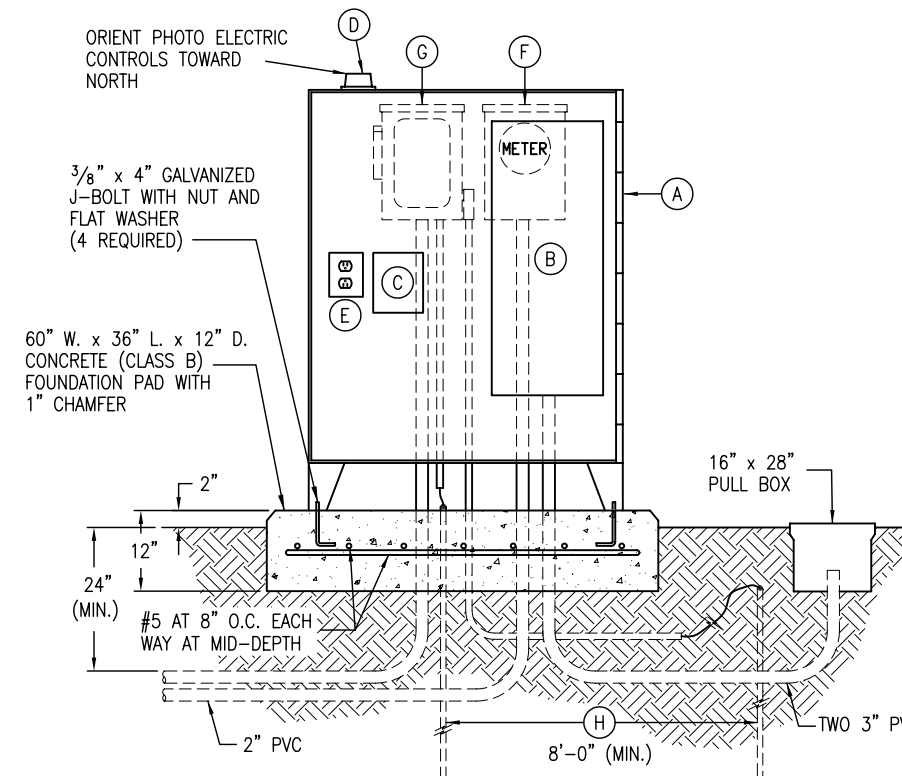
**PLAN VIEW**



**SECTION A-A**

**TYPICAL PULL OR SPLICE BOX**

- NOTES:
- ALL PULL OR SPLICE BOXES SHALL BE TRAFFIC RATED 20,000 PSI MINIMUM.
  - BOX DIMENSIONS SHOWN ARE FOR 2 IN. CONDUITS MAXIMUM. FOR CONDUITS LARGER THAN 2 IN. REFER TO N.E.C. SECTION 314.28A FOR BOX SIZE REQUIREMENTS.



**LIGHTING CONTROL CENTER (CABINET)**

- CABINET COMPONENT LIST**
- (A) 30 IN. W. x 48 IN. H. x 12 IN. D. NEMA 3R HINGED ENCLOSURE WITH 6 IN. LEGS ANCHORED TO THE CONCRETE FOUNDATION PAD. THE BACK OF THE CABINET SHALL BE LOCATED 6 IN. MAXIMUM FROM THE EDGE OF THE CONCRETE PAD.
  - (B) NEMA 1, 100-AMP MLO 120V/240V 1Ø 3W LOAD CENTER (SEE PANEL SCHEDULE). MINIMUM SPACES AS REQUIRED PLUS A MINIMUM OF TWO AVAILABLE SPACES FOR FUTURE USE. INSTALL IN CABINET WITH FULL-SIZE GROUND, COVER, AND BRANCH BREAKERS AS LISTED ON THE SCHEDULE.
  - (C) ELECTRICALLY HELD LIGHTING CONTACTOR FURNISHED WITH 120-VOLT COIL AND NUMBER OF POLES REQUIRED. INSTALL INSIDE CABINET.
  - (D) NEMA 3R 120V PHOTOELECTRIC CONTROL WITH 3-PRONG TWIST-LOCK RECEPTACLE BASE. INSTALL THE BASE INSIDE THE CABINET. THE PHOTOELECTRIC CONTROL SHALL BE MOUNTED ON TOP OF THE CABINET AND ORIENTED NORTHWARD TO MINIMIZE THE SUN'S INTERFERENCE.
  - (E) 20-AMP GFCI MAINT. RECEPTACLE IN A 1-GANG BACK BOX WITH COVER. INSTALL INSIDE THE CABINET.
  - (F) 125A, 120/240V, METER HOUSING CONFORMING TO THE UTILITY PROVIDER'S REQUIREMENTS.
  - (G) NEMA 3R, 100-AMP, 2-POLE FUSED DISCONNECT, UL LISTED FOR SERVICE EQUIPMENT AND FRN FUSES AS SHOWN ON ONE-LINE DIAGRAM WITH NEUTRAL AND GROUND BARS. MOUNTED ON BACK SIDE OF ENCLOSURE.
  - (H) 5/8" x 8'-0" COPPER-CLAD DRIVEN GROUND ROD WITH APPROVED GROUND ROD CLAMP.

**NOT SHOWN IN THE DETAIL:**

- VOLTAGE SURGE ARRESTOR, 650V A.C. TO GROUND MAX.
- "HAND-OFF-AUTO" KEY SWITCH. KEYED FOR AGENCY RESPONSIBLE FOR THE MAINTENANCE OF THE SYSTEM.

<b>Computer File Information</b> Creation Date: 07/04/06 Initials: SJR Last Modification Date: 07/04/06 Initials: LTA Full Path: www.dot.state.co.us/DesignSupport/ Drawing File Name: 613010404.dwg CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English		<b>Sheet Revisions</b> <table border="1"> <thead> <tr> <th>Date:</th> <th>Comments</th> </tr> </thead> <tbody> <tr><td>(R-X)</td><td></td></tr> <tr><td>(R-X)</td><td></td></tr> <tr><td>(R-X)</td><td></td></tr> <tr><td>(R-X)</td><td></td></tr> </tbody> </table>		Date:	Comments	(R-X)		(R-X)		(R-X)		(R-X)		<b>Colorado Department of Transportation</b>  4201 East Arkansas Avenue Denver, Colorado 80222 Phone: (303) 757-9083 Fax: (303) 757-9820 <b>Project Development Branch SRJ/LTA</b>		<b>STANDARD PLAN NO.</b> <b>ROADWAY LIGHTING</b> M-613-1 Issued By: Project Development Branch on July 04, 2006 <b>Sheet No. 4 of 4</b>	
Date:	Comments																
(R-X)																	
(R-X)																	
(R-X)																	
(R-X)																	