

INDIVIDUAL COLD SEQUENCE MPP FAULT CURRENT TABLE FOR TRAFFIC CABINET

METER POWER PEDESTAL	SERVICE MAIN CIRCUIT BRKR.	TRANSFORMER KVA	'ISCA-T'	SEC. VOLTAGE-PHASE	SERVICE LATERAL FEEDER (1)	MIN. CONDUCTOR LENGTH TO MPP ~	MAX. CONDUCTOR LENGTH TO MPPA	INTERRUPT SHORT CIRCUIT AMPACITY 'ISCA-P' @ MIN. CONDUCTOR LENGTH	MINIMUM AIC RATING FOR MAIN CIRCUIT BREAKER
NEW-MPP	100A-2P	25kVA	7440 A	120/240V-1PH	(3#1 XHHW CU) 2" PVC	10-FT	190-FT	6,872 A	10,000 A
NEW-MPP	100A-2P	25kVA	7440 A	120/240V-1PH	(3#1/0 XHHW CU) 2" PVC	20-FT	240-FT	6,566 A	10,000 A
NEW-MPP	100A-2P	25kVA	7440 A	120/240V-1PH	(3#2/0 XHHW CU) 2" PVC	20-FT	305-FT	6,712 A	10,000 A
NEW-MPP	100A-2P	50 kVA	14881 A	120/240V-1PH	(3#1 XHHW CU) 2" PVC	35-FT	190-FT	9,423 A	10,000 A
NEW-MPP	100A-2P	50 kVA	14881 A	120/240V-1PH	(3#1 XHHW CU) 2" PVC	10-FT	190-FT	12,768 A	22,000 A
NEW-MPP	100A-2P	50 kVA	14881 A	120/240V-1PH	(3#1/0 XHHW CU) 2" PVC	40-FT	240-FT	9,711 A	10,000 A
NEW-MPP	100A-2P	50 kVA	14881 A	120/240V-1PH	(3#2/0 XHHW CU) 2" PVC	50-FT	305-FT	9,646 A	10,000 A

~ = MINIMUM SERVICE LATERAL CONDUCTOR LENGTH FOR THE ISCA VALUE GIVEN. IF CONDUCTOR LENGTH IS LESS THAN THIS VALUE THE PANEL SHALL BE BRACED AT THE NEXT HIGHER AIC RATING CALCULATED BY AN ELECTRICAL ENGINEER.

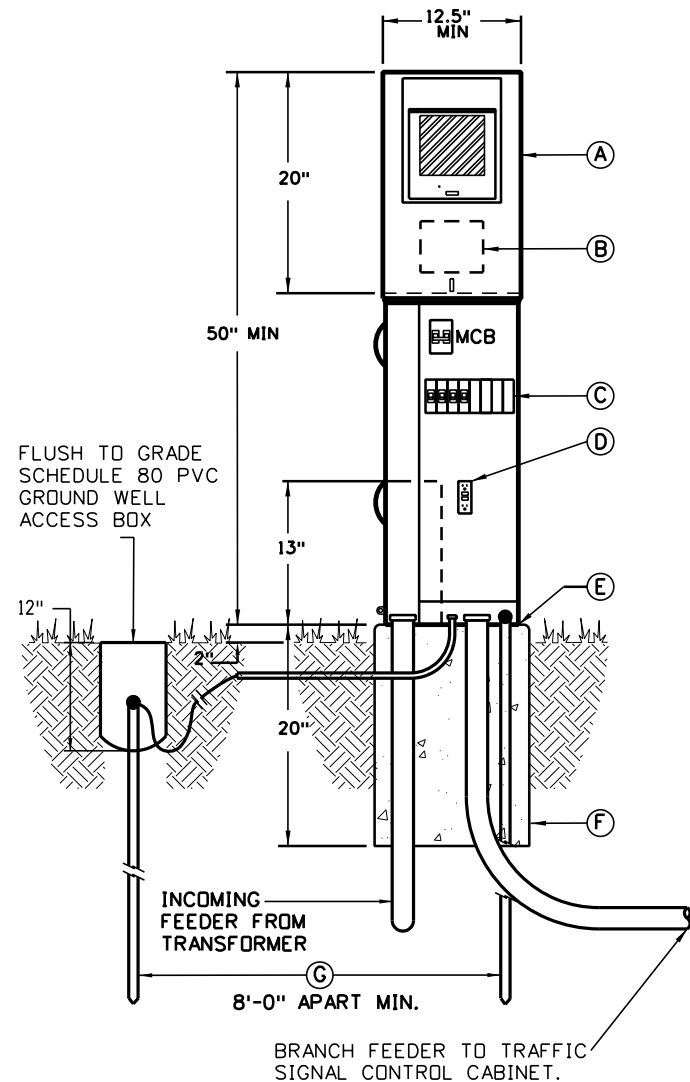
^ = MAXIMUM FEEDER LENGTH TO MAINTAIN LESS THAN 2% VOLTAGE DROP.

Component List

- (A) 200A meter socket, 100A MCB, 120/240V, NEMA 3R combination service entrance rated, cold sequence, meter/power pedestal with lever bypass, load center, MCB and fused tee-handle pull out disconnect ahead of meter. See panel schedule on this sheet for size of main and number and size of branch breakers. Set on new concrete pad plumb and level.
- (B) Tee-handle, pull-out fuse type, disconnect flush mounted into the back side of the enclosure with tab for seal.
- (C) Service entrance panel breaker section, for customer loads. See panel schedules on this sheet for size of breakers and number of poles required.
- (D) Built-in GFCI NEMA 5-20R, duplex, GFCI maintenance receptacle flush mounted in panel dead-front.
- (E) Provide recessed concrete pad mounting plate with L-bolts to match the enclosure base bolt pattern.
- (F) Option 1: Polymer concrete pedestal foundation with fiberglass reinforcement. The pad shall be continuous cloth reinforcement on the inside and outside perimeter. Weight of the foundations shall be stenciled on the sidewall of the foundation.

Option 2: Provide 4000 psi, re-bar re-enforce, concrete with a minimum direct earth bury depth of 18-inch, 2-inch overlap of the enclosure on all sides front and back and 2-inch exposure above grade. Provide 3/4-inch chamfered edges. Provide structural engineered stamped drawing for pad.
- (G) 3/4 inch x 10 feet long, copper-clad driven ground rod with exothermic weld or underground lug connect conductor to rod. (2) rods required.

Note:
All components listed shall be included in the pay item '613-50109 Meter Power Pedestal'. All components shall meet current National Electric Code (NEC) and be UL listed for the application.

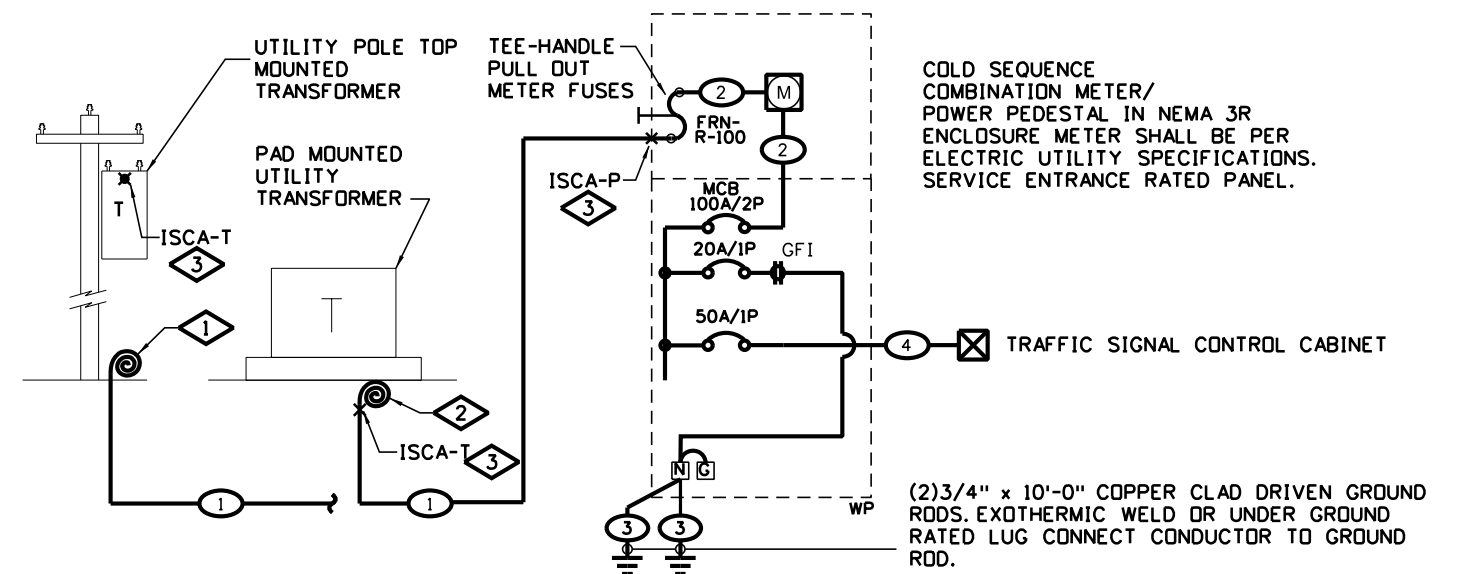


Cold Sequence Meter Power Pedestal Elevation Detail for Traffic Signal

Not To Scale

MOUNTING: PEDESTAL		PANEL "MPP_"		120/240V-1PH-3W								
FEEDER: BOTTOM		NEMA 3R ENCLOSURE SERVICE ENTRANCE RATED		100 AMPS MAIN BREAKER								
		BRANCH BREAKER										
DESCRIPTION	Size	P	Ckt#	LEFT PHASE LOAD		RIGHT PHASE LOAD		Ckt#	Size	P	DESCRIPTION	
				L1	L2	L1	L2					
SPARE	20	1	1				180		2	20	1	MPP_MAINTENANCE RECEPT.
SPARE	20	1	3				4800		4	50	1	TRAFFIC CONTROL CABINET
SPACE ONLY			5						6			SPACE ONLY
SPACE ONLY			7						8			SPACE ONLY
				0	0		180	4800				
				180	4800	Total Connected V.A.						
						4980 = Total Connected VA Both Phases						
LOAD	CONNECTED	D.FACT.	Est. KVA	AMPS								
LIGHTING	0 VA	1.25	0.00			180 VA=Total Receptacle Load						
RECEPTACLES (1ST 10000)	180 VA	1.00	0.18									
RECEPTACLES (REMAINING)	0 VA	0.50	0.00									
MOTOR (LARGEST)	0 VA	1.25	0.00									
MOTORS (REMAINING)	0 VA	1.00	0.00									
ELECTRICAL HEATING	0 VA	1.25	0.00									
ELECTRICAL MISC.	4800 VA	1.00	4.80									
TOTAL ESTIMATED LOAD	4980 VA		4.98	21								

NOTE:
ALL LIGHTING CONTROL CENTERS AND ELECTRICAL EQUIPMENT SHALL BE PROVIDED WITH "ARC-FLASH HAZARD WARNING" LABELS PER THE NATIONAL ELECTRIC CODE NEC 110.16 AND NFPA 70E, AND ALL OTHER LABELS REQUIRED BY NFPA 70.



Feeder Schedule

- (1) See the "Individual Cold Sequence MPP Fault Current Table For Traffic Cabinet" on this sheet for these ISCA values.
- (2) Internal feeder supplied with pedestal
- (3) 1•4 stranded bare copper through feeder enclosure to ground rods.
- (4) (2•6THWN CU & 1•10GND) 2 inch PVC conduit

One-Line Notes:

- (1) Coil enough conductors at the base of the pole to reach the transformer terminals at the top of the pole. Final routing of conductors up the pole and connection to transformer by electric utility.
- (2) Coil minimum of 5 feet of conductors at the transformer base. Final connection to transformer by electric utility.
- (3) See the "Individual Cold Sequence MPP Fault Current Table For Traffic Cabinet" on this sheet for these ISCA values.

Cold Sequence Meter Power Pedestal One-line Diagram for Traffic Signal

Not To Scale

Computer File Information	
Creation Date:	06/14/2023
Created By:	KUCZKOWSKI
Last Modification Date:	07/01/26
Last Modified By:	GLY
CAD Ver.:	ORD 10.12 Scale: Not to Scale Units: English

Sheet Revisions	
Date:	Comments

Colorado Department of Transportation
Traffic Safety & Engineering Services
 2829 West Howard Place
 Denver, CO 80204
 EB

Traffic Signal One-Line Diagrams
 Issued by the Traffic Safety & Engineering Services: July 01, 2026

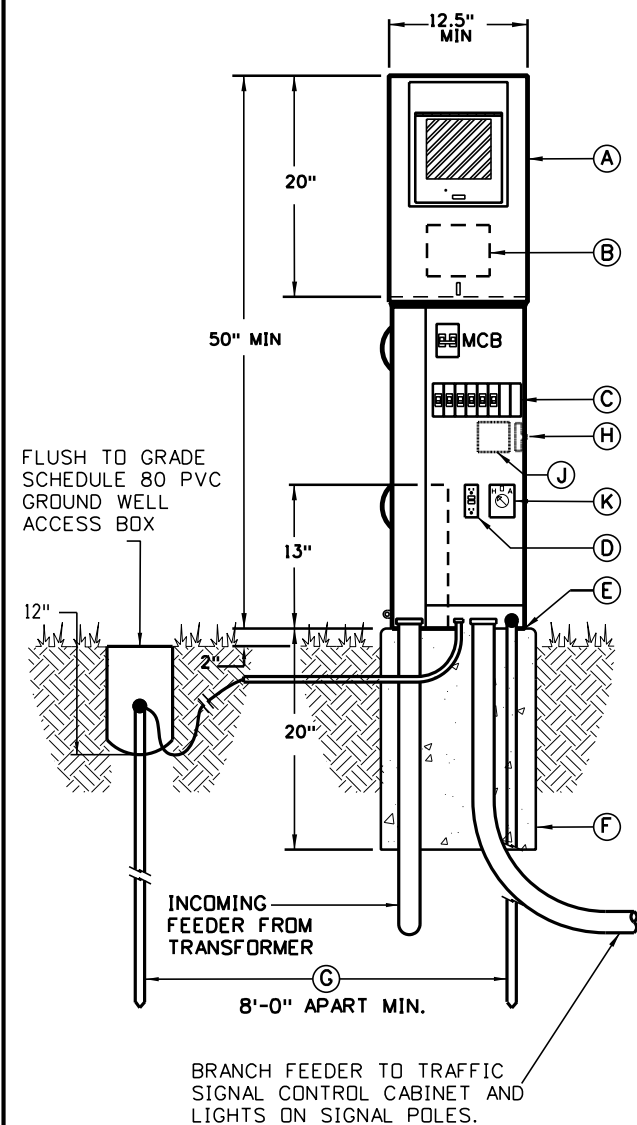
Standard Plan No. S-613-4
 Standard Sheet No. 1 of 6
 Project Sheet Number:

INDIVIDUAL COLD SEQUENCE MPP FAULT CURRENT TABLE FOR TRAFFIC SIGNAL WITH LUMINAIRES

METER POWER PEDESTAL	SERVICE MAIN CIRCUIT BRKR.	TRANSFORMER KVA	'ISCA-T'	SEC. VOLTAGE-PHASE	SERVICE LATERAL FEEDER (1)	MIN. CONDUCTOR LENGTH TO MPP~	MAX. CONDUCTOR LENGTH TO MPP^	INTERRUPT SHORT CIRCUIT AMPACITY 'ISCA-P' @ MIN. CONDUCTOR LENGTH	MINIMUM AIC RATING FOR MAIN CIRCUIT BREAKER
NEW-MPP	100A-2P	25kVA	7440 A	120/240V-1PH	(3#1 XHHW CU) 2" PVC	10-FT	190-FT	6,872 A	10,000 A
NEW-MPP	100A-2P	25kVA	7440 A	120/240V-1PH	(3#1/0 XHHW CU) 2" PVC	20-FT	240-FT	6,566 A	10,000 A
NEW-MPP	100A-2P	25kVA	7440 A	120/240V-1PH	(3#2/0 XHHW CU) 2" PVC	20-FT	305-FT	6,712 A	10,000 A
NEW-MPP	100A-2P	50 kVA	14881 A	120/240V-1PH	(3#1 XHHW CU) 2" PVC	35-FT	190-FT	9,423 A	10,000 A
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NEW-MPP	100A-2P	50 kVA	14881 A	120/240V-1PH	(3#1/0 XHHW CU) 2" PVC	40-FT	240-FT	9,711 A	10,000 A
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~ = MINIMUM SERVICE LATERAL CONDUCTOR LENGTH FOR THE ISCA VALUE GIVEN. IF CONDUCTOR LENGTH IS LESS THAN THIS VALUE THE PANEL SHALL BE BRACED AT THE NEXT HIGHER AIC RATING CALCULATED BY AN ELECTRICAL ENGINEER.

^ = MAXIMUM FEEDER LENGTH TO MAINTAIN LESS THAN 2% VOLTAGE DROP.



Component List

- (A) 200A meter socket, 100A MCB, 120/240V, NEMA 3R combination service entrance rated, cold sequence, meter/power pedestal with lever bypass, load center, MCB and fused tee-handle pull out disconnect ahead of meter. See panel schedule on this sheet for size of main and number and size of branch breakers. Set on new concrete pad plumb and level.
- (B) Tee-handle, pull-out fuse type, disconnect flush mounted into the back side of the enclosure with tab for seal.
- (C) Service entrance panel breaker section, for customer loads. See panel schedules on this sheet for size of breakers and number of poles required.
- (D) Built-in GFCI NEMA 5-20R, duplex, GFCI maintenance receptacle flush mounted in panel dead-front.
- (E) Provide recessed concrete pad mounting plate with L-bolts to match the enclosure base bolt pattern.
- (F) Option 1: Polymer concrete pedestal foundation with fiberglass reinforcement. The pad shall be continuous cloth reinforcement on the inside and outside perimeter. Weight of the foundations shall be stenciled on the sidewall of the foundation.
Option 2: Provide 4000 psi, re-bar re-enforce, concrete with a minimum direct earth bury depth of 18-inch, 2-inch overlap of the enclosure on all sides front and back and 2-inch exposure above grade. Provide 3/4-inch chamfered edges. Provide structural engineered stamped drawing for pad.
- (G) 3/4 inch x 10 feet long, copper-clad driven ground rod with exothermic weld or underground lug connect conductor to rod. (2) rods required.
- (H) Built-in photocell for on/off control of luminaires on signals poles.
- (J) Built-in, 2-pole 20A, lighting contactor for on/off control of lights on signal poles
- (K) Optional hand-off-auto switch when items 'H' and 'J' above are used. Provide this HOA switch with the photocell control wired in the auto position.

Note:
All components listed shall be included in the pay item '613-50109 Meter Power Pedestal'. All components shall meet current National Electric Code (NEC) and be UL listed for the application.

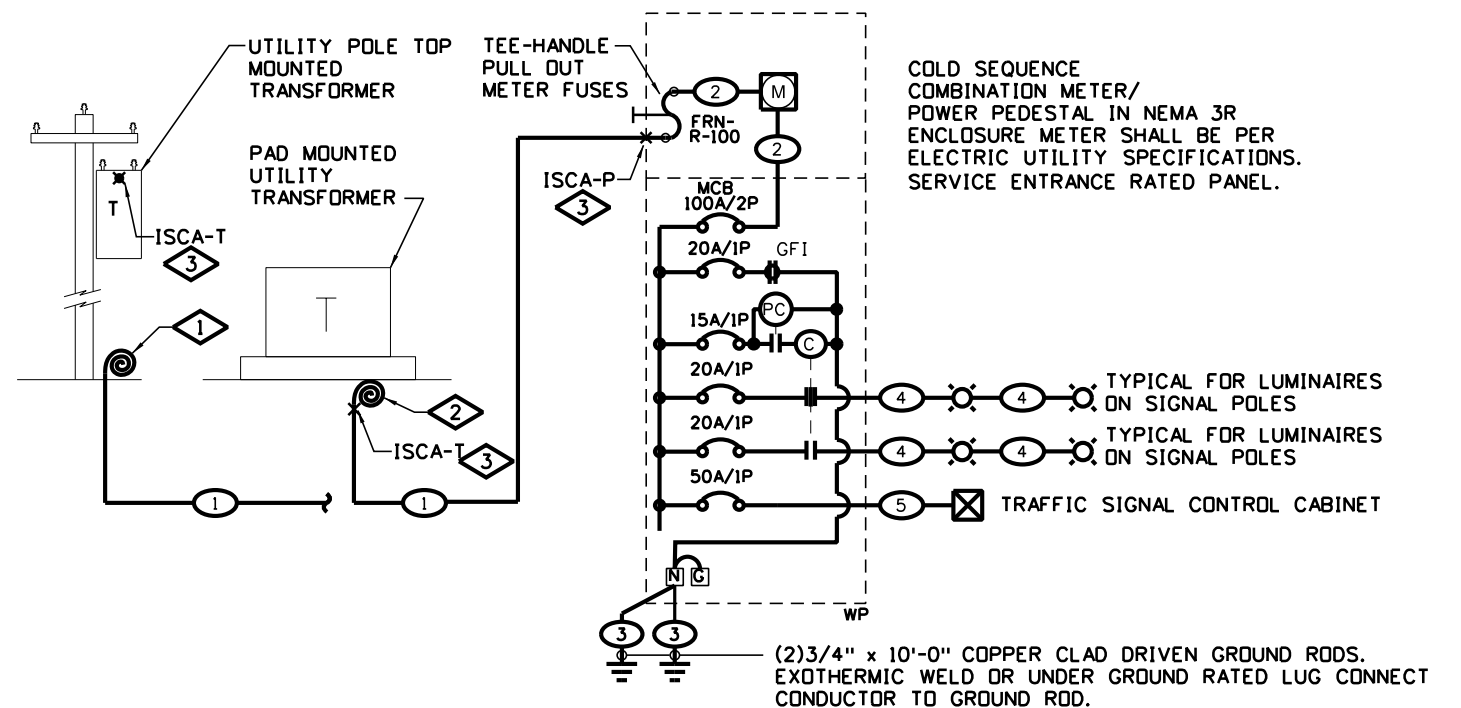
Cold Sequence Meter Power Pedestal Elevation Detail for Traffic Signal with Luminaires

Not To Scale

MOUNTING: PEDESTAL		PANEL "MPP_"		120/240V-1PH-3W							
FEEDER: BOTTOM		NEMA 3R ENCLOSURE SERVICE ENTRANCE RATED		100 AMPS MAIN BREAKER							
		BRANCH BREAKER									
		LEFT PHASE LOAD		RIGHT PHASE LOAD							
DESCRIPTION	Size	P	Ckt#	L1	L2	Ckt#	Size	P	DESCRIPTION		
TRAFFIC SIGNAL POLE LIGHTING	20	1	1	240			180	2	20	1	MPP_MAINTENANCE RECEPT.
TRAFFIC SIGNAL POLE LIGHTING	20	1	3		240		4800	4	50	1	TRAFFIC CONTROL CABINET
MPP_LIGHTING CONTROL CKT.	15	1	5	200				6			SPACE ONLY
SPARE	20	1	7					8			SPACE ONLY
				440	240						
				620	5040	Total Connected V.A.					
				5660		=Total Connected VA Both Phases					
LOAD	CONNECTED	D.FACT.	Est. KVA	AMPS							
LIGHTING	480 VA	1.25	0.60								
RECEPTACLES (1ST 10000)	180 VA	1.00	0.18								
RECEPTACLES (REMAINING)	0 VA	0.50	0.00								
MOTOR (LARGEST)	0 VA	1.25	0.00								
MOTORS (REMAINING)	0 VA	1.00	0.00								
ELECTRICAL HEATING	0 VA	1.25	0.00								
ELECTRICAL MISC.	5000 VA	1.00	5.00								
TOTAL ESTIMATED LOAD	5660 VA		5.78	24							

180 VA=Total Receptacle Load

NOTE:
ALL LIGHTING CONTROL CENTERS AND ELECTRICAL EQUIPMENT SHALL BE PROVIDED WITH "ARC-FLASH HAZARD WARNING" LABELS PER THE NATIONAL ELECTRIC CODE NEC 110.16 AND NFPA 70E-2015, AND ALL OTHER LABELS REQUIRED BY NFPA 70.



Feeder Schedule

- (1) See the "Individual Cold Sequence MPP Fault Current Table For Traffic Signal With Luminaires" on this sheet for these ISCA values.
- (2) Internal feeder supplied with pedestal
- (3) 1•4 stranded bare copper through feeder enclosure to ground rods.
- (4) (2•10THWN CU & 1•10GND) 2 inch PVC conduit
- (5) (2•6THWN CU & 1•10GND) 2 inch PVC conduit

One-Line Notes:

- (1) Coil enough conductors at the base of the pole to reach the transformer terminals at the top of the pole. Final routing of conductors up the pole and connection to transformer by electric utility.
- (2) Coil minimum of 5 feet of conductors at the transformer base. Final connection to transformer by electric utility.
- (3) See the "Individual Cold Sequence MPP Fault Current Table For Traffic Cabinet" on this sheet for these ISCA values.

Cold Sequence Meter Power Pedestal One-line Diagram for Traffic Signal with Luminaires

Not To Scale

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Sheet Revisions	
Date:	Comments

Colorado Department of Transportation



Traffic Safety & Engineering Services
2829 West Howard Place
Denver, CO 80204

EB

Traffic Signal One-Line Diagrams

Issued by the Traffic Safety & Engineering Services: July 01, 2026

Standard Plan No.

S-613-4

Standard Sheet No. 2 of 6

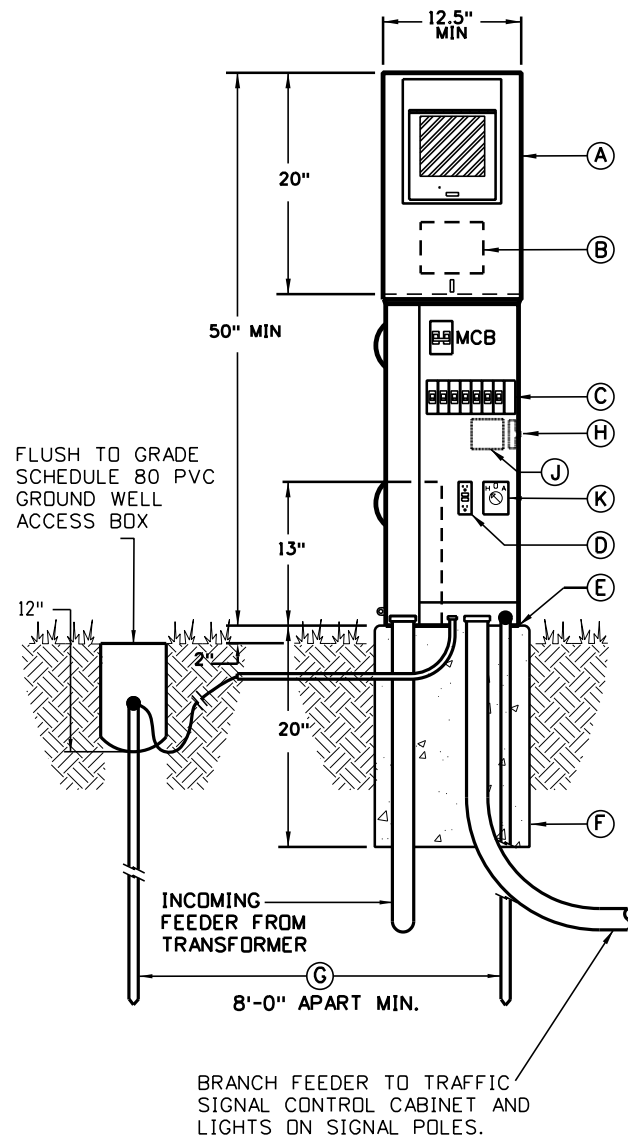
Project Sheet Number:

INDIVIDUAL COLD SEQUENCE MPP FAULT CURRENT TABLE FOR SIGNAL WITH LUMINAIRES AND CAMERA

METER POWER PEDESTAL	SERVICE MAIN CIRCUIT BRKR.	TRANSFORMER KVA	'ISCA-T'	SEC. VOLTAGE-PHASE	SERVICE LATERAL FEEDER	MIN. CONDUCTOR LENGTH TO MPP~	MAX. CONDUCTOR LENGTH TO MPP^	INTERRUPT SHORT CIRCUIT AMPACITY 'ISCA-P' @ MIN. CONDUCTOR LENGTH	MINIMUM AIC RATING FOR MAIN CIRCUIT BREAKER
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Component List

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- (B) Tee-handle, pull-out fuse type, disconnect flush mounted into the back side of the enclosure with tab for seal.
- (C) Service entrance panel breaker section, for customer loads. See panel schedules on this sheet for size of breakers and number of poles required.
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- (G) 3/4 inch x 10 feet long, copper-clad driven ground rod with exothermic weld or underground lug connect conductor to rod. (2) rods required.
- (H) Built-in photocell for on/off control of luminaires on signals poles.
- (J) Built-in, 2-pole 20A, lighting contactor for on/off control of lights on signal poles
- (K) Optional hand-off-auto switch when items 'H' and 'J' above are used. Provide this HOA switch with the photocell control wired in the auto position.

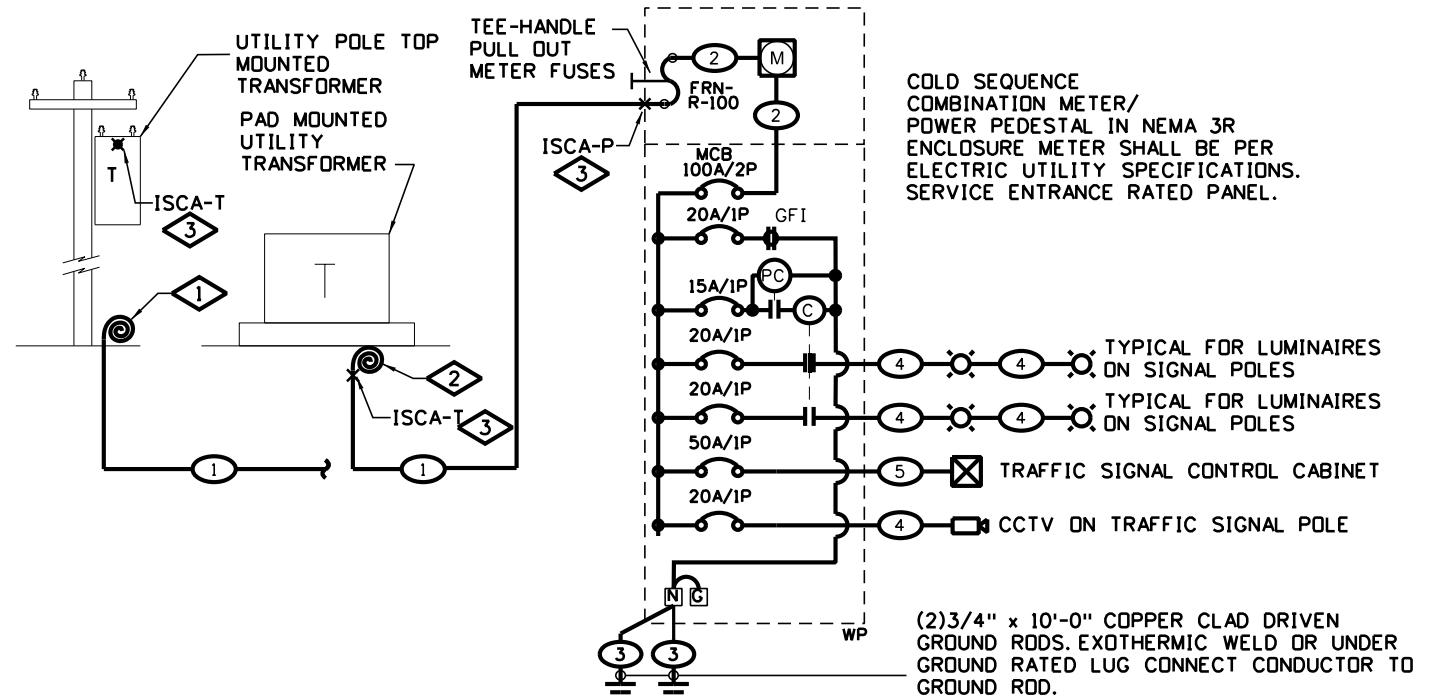
Note:
All components listed shall be included in the pay item '613-50109 Meter Power Pedestal'. All components shall meet current National Electric Code (NEC) and be UL listed for the application.

Cold Sequence Meter Power Pedestal Elevation Detail for Traffic Signal with Camera

Not To Scale

MOUNTING: PEDESTAL		PANEL "MPP_"		120/240V-1PH-3W							
FEEDER: BOTTOM		NEMA 3R ENCLOSURE SERVICE ENTRANCE RATED		100 AMPS MAIN BREAKER							
		BRANCH BREAKER									
		LEFT PHASE LOAD		RIGHT PHASE LOAD							
DESCRIPTION	Size	P	Ckt#	L1	L2	Ckt#	Size	P	DESCRIPTION		
TRAFFIC SIGNAL POLE LIGHTING	20	1	1	240			180	2	20	1	MPP_ MAINTENANCE RECEPT.
TRAFFIC SIGNAL POLE LIGHTING	20	1	3	240			4800	4	50	1	TRAFFIC CONTROL CABINET
MPP_ LIGHTING CONTROL CKT.	15	1	5	200			300	6	20	1	CCTV CAMERA ON SIGNAL POLE
SPARE	20	1	7					8			SPACE ONLY
				440	240			480	4800		
				920	5040	Total Connected V.A.					
				5960		=Total Connected VA Both Phases					
LOAD	CONNECTED	D.FACT.	Est. KVA	AMPS							
LIGHTING	480 VA	1.25	0.60			180 VA=Total Receptacle Load					
RECEPTACLES (1ST 10000)	180 VA	1.00	0.18								
RECEPTACLES (REMAINING)	0 VA	0.50	0.00								
MOTOR (LARGEST)	0 VA	1.25	0.00								
MOTORS (REMAINING)	0 VA	1.00	0.00								
ELECTRICAL HEATING	0 VA	1.25	0.00								
ELECTRICAL MISC.	5300 VA	1.00	5.30								
TOTAL ESTIMATED LOAD	5960 VA		6.08	25							

NOTE:
ALL LIGHTING CONTROL CENTERS AND ELECTRICAL EQUIPMENT SHALL BE PROVIDED WITH "ARC-FLASH HAZARD WARNING" LABELS PER THE NATIONAL ELECTRIC CODE NEC 110.16 AND NFPA 70E-2015, AND ALL OTHER LABELS REQUIRED BY NFPA 70.



Feeder Schedule

- (1) See the "Individual Cold Sequence MPP Fault Current Table For Signal With Luminaires And Camera" on this sheet for these ISCA values.
- (2) Internal feeder supplied with pedestal
- (3) 1•4 stranded bare copper through feeder enclosure to ground rods.
- (4) (2•10THWN CU & 1•10GND) 2 inch PVC conduit
- (5) (2•6THWN CU & 1•10GND) 2 inch PVC conduit

One-Line Notes:

- (1) Coil enough conductors at the base of the pole to reach the transformer terminals at the top of the pole. Final routing of conductors up the pole and connection to transformer by electric utility.
- (2) Coil minimum of 5 feet of conductors at the transformer base. Final connection to transformer by electric utility.
- (3) See the "Individual Cold Sequence MPP Fault Current Table For Traffic Cabinet" on this sheet for these ISCA values.

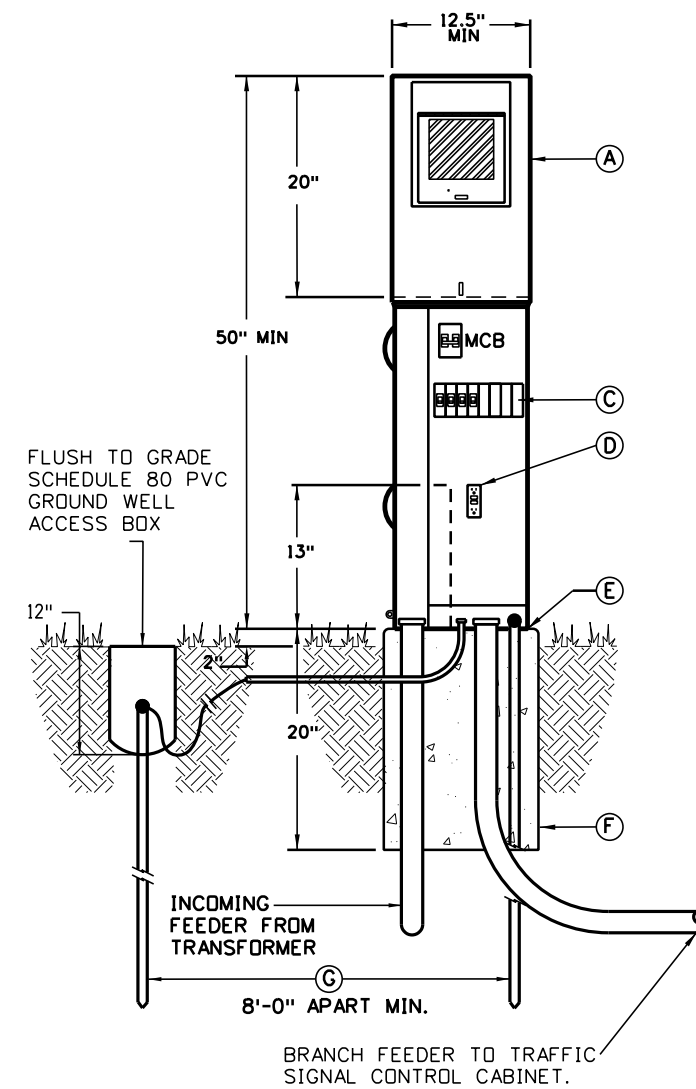
Cold Sequence Meter Power Pedestal One-Line Diagram for Traffic Signal with Camera

Not To Scale

Computer File Information		Sheet Revisions		Colorado Department of Transportation		Traffic Signal One-Line Diagrams		Standard Plan No.	
Creation Date: 06/14/2023		Date:	Comments			Traffic Safety & Engineering Services 2829 West Howard Place Denver, CO 80204		S-613-4	
Created By: KUCZKOWSKI								Standard Sheet No. 3 of 6	
Last Modification Date: 07/01/26						Issued by the Traffic Safety & Engineering Services: July 01, 2026		Project Sheet Number:	
Last Modified By: GLY									
CAD Ver.: ORD 10.12	Scale: Not to Scale	Units: English							

INDIVIDUAL HOT SEQUENCE MPP FAULT CURRENT TABLE FOR TRAFFIC CABINET									
METER POWER PEDESTAL	SERVICE MAIN CIRCUIT BRKR.	TRANSFORMER			SERVICE LATERAL FEEDER (1)	MIN. CONDUCTOR LENGTH TO MPP ~	MAX. CONDUCTOR LENGTH MPP^	SHORT CIRCUIT AMPACITY 'ISCA-P' @ MIN. CONDUCTOR LENGTH	MINIMUM AIC RATING FOR MAIN CIRCUIT
		KVA	'ISCA-T'	SEC. VOLTAGE-PHASE					
NEW-MPP	100A-2P	15 kVA	4464 A	120/240V-1PH	(3#1 XHHW CU) 2" PVC	10-FT	190-FT	4,253 A	10,000 A
NEW-MPP	100A-2P	15 kVA	7440 A	120/240V-1PH	(3#1/0 XHHW CU) 2" PVC	15-FT	240-FT	4,212 A	10,000 A
NEW-MPP	100A-2P	25 kVA	7440 A	120/240V-1PH	(3#1 XHHW CU) 2" PVC	10-FT	190-FT	6,872 A	10,000 A
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NEW-MPP	100A-2P	50 kVA	14881 A	120/240V-1PH	(3#1 XHHW CU) 2" PVC	10-FT	190-FT	12,768 A	22,000 A
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 ^ = MAXIMUM FEEDER LENGTH TO MAINTAIN LESS THAN 2% VOLTAGE DROP.



Component List

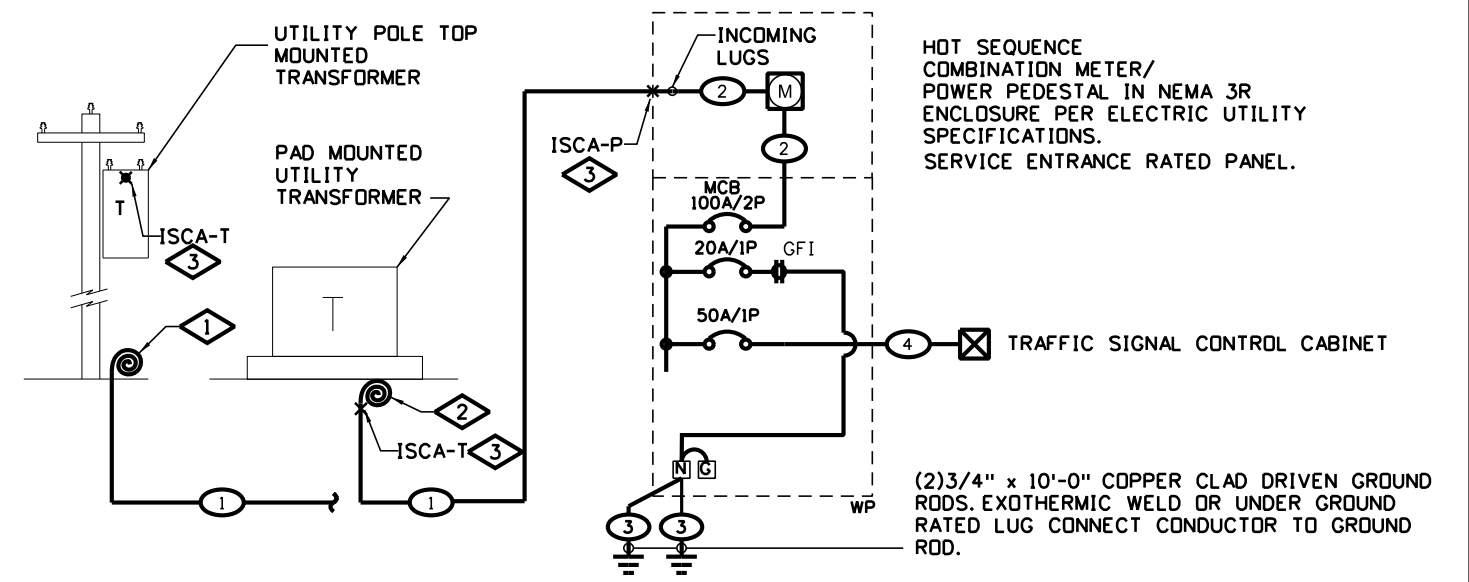
- (A) 200A meter socket, 100A MCB, 120/240V, NEMA 3R combination service entrance rated, hot sequence, meter/power pedestal with lever bypass, load center, and MCB. See panel schedule on this sheet for size of main and number and size of branch breakers. Set on new concrete pad plumb and level.
 - (C) Service entrance panel breaker section, for customer loads. See panel schedules on this sheet for size of breakers and number of poles required.
 - (D) Built-in GFCI NEMA 5-20R, duplex, GFCI maintenance receptacle flush mounted in panel dead-front.
 - (E) Provide recessed concrete pad mounting plate with L-bolts to match the enclosure base bolt pattern.
 - (F) Option 1: Polymer concrete pedestal foundation with fiberglass reinforcement. The pad shall be continuous cloth reinforcement on the inside and outside perimeter. Weight of the foundations shall be stenciled on the sidewall of the foundation.
 Option 2: Provide 4000 psi, re-bar re-enforce, concrete with a minimum direct earth bury depth of 18-inch, 2-inch overlap of the enclosure on all sides front and back and 2-inch exposure above grade. Provide 3/4-inch chamfered edges. Provide structural engineered stamped drawing for pad.
 - (G) 3/4 inch x 10 feet long, copper-clad driven ground rod with exothermic weld or underground lug connect conductor to rod. (2) rods required.
- Note:
 All components listed shall be included in the pay item '613-50109 Meter Power Pedestal'. All components shall meet current National Electric Code (NEC) and be UL listed for the application.

Hot Sequence Meter Power Pedestal Elevation Detail for Traffic Signal

Not To Scale

MOUNTING: PEDESTAL		PANEL "MPP."		120/240V-1PH-3W					
FEEDER: BOTTOM		NEMA 3R ENCLOSURE SERVICE ENTRANCE RATED		100 AMPS MAIN BREAKER					
		BRANCH BREAKER							
		LEFT PHASE LOAD		RIGHT PHASE LOAD					
DESCRIPTION	Size	P	Ckt#	L1	L2	Ckt#	Size	P	DESCRIPTION
SPARE	20	1	1				180		MPP_MAINTENANCE RECEPT.
SPARE	20	1	3				4800	4	50 1 TRAFFIC CONTROL CABINET
SPACE ONLY			5					6	SPACE ONLY
SPACE ONLY			7					8	SPACE ONLY
				0	0		180	4800	
				180	4800	Total Connected V.A.			
						4980 = Total Connected VA Both Phases			
LOAD	CONNECTED	D.FACT.	Est. KVA	AMPS					
LIGHTING	0 VA	1.25	0.00			180 VA=Total Receptacle Load			
RECEPTACLES (1ST 10000)	180 VA	1.00	0.18						
RECEPTACLES (REMAINING)	0 VA	0.50	0.00						
MOTOR (LARGEST)	0 VA	1.25	0.00						
MOTORS (REMAINING)	0 VA	1.00	0.00						
ELECTRICAL HEATING	0 VA	1.25	0.00						
ELECTRICAL MISC.	4800 VA	1.00	4.80						
TOTAL ESTIMATED LOAD	4980 VA		4.98	21					

NOTE:
 ALL LIGHTING CONTROL CENTERS AND ELECTRICAL EQUIPMENT SHALL BE PROVIDED WITH "ARC-FLASH HAZARD WARNING" LABELS PER THE NATIONAL ELECTRIC CODE NEC 110.16 AND NFPA 70E, AND ALL OTHER LABELS REQUIRED BY NFPA 70.



Feeder Schedule

- (1) See the "Individual Hot Sequence MPP Fault Current Table For Traffic Cabinet" on this sheet for these ISCA values.
- (2) Internal feeder supplied with pedestal
- (3) 1•4 stranded bare copper through feeder enclosure to ground rods.
- (4) (2•6THWN CU & 1•10GND) 2 inch PVC conduit

One-Line Notes:

- (1) Coil enough conductors at the base of the pole to reach the transformer terminals at the top of the pole. Final routing of conductors up the pole and connection to transformer by electric utility.
- (2) Coil minimum of 5 feet of conductors at the transformer base. Final connection to transformer by electric utility.
- (3) See the "Individual Hot Sequence MPP Fault Current Table For Traffic Cabinet" on this sheet for these ISCA values.

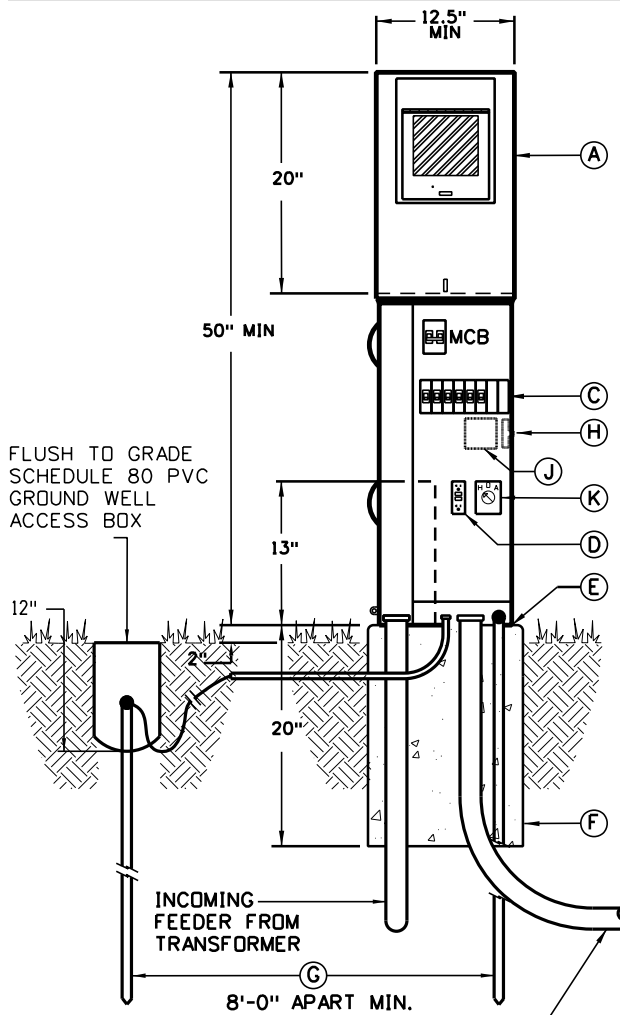
Hot Sequence Meter Power Pedestal One-Line Diagram for Traffic Signal

Not To Scale

Computer File Information Creation Date: 06/14/2023 Created By: KUCZKOWSKI Last Modification Date: 07/01/26 Last Modified By: GLY CAD Ver.: ORD 10.12 Scale: Not to Scale Units: English		Sheet Revisions <table border="1"> <tr> <th>Date:</th> <th>Comments</th> </tr> <tr> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> </tr> </table>		Date:	Comments					Colorado Department of Transportation Traffic Safety & Engineering Services 2829 West Howard Place Denver, CO 80204 EB		Traffic Signal One-Line Diagrams Issued by the Traffic Safety & Engineering Services: July 01, 2026		Standard Plan No. S-613-4 Standard Sheet No. 4 of 6 Project Sheet Number:	
Date:	Comments														

INDIVIDUAL HOT SEQUENCE MPP FAULT CURRENT TABLE FOR TRAFFIC SIGNAL WITH LUMINAIRES									
METER POWER PEDESTAL	SERVICE MAIN CIRCUIT BRKR.	TRANSFORMER			SERVICE LATERAL FEEDER	MIN. CONDUCTOR LENGTH TO MPP ~	MAX. CONDUCTOR LENGTH MPP^	SHORT CIRCUIT AMPACITY 'ISCA-P' @ MIN. CONDUCTOR LENGTH	MINIMUM AIC RATING FOR MAIN CIRCUIT
		KVA	'ISCA-T'	SEC. VOLTAGE-PHASE					
NEW-MPP	100A-2P	15 kVA	4464 A	120/240V-1PH	(3#1 XHHW CU) 2" PVC	10-FT	190-FT	4,253 A	10,000 A
NEW-MPP	100A-2P	15 kVA	7440 A	120/240V-1PH	(3#1/0 XHHW CU) 2" PVC	15-FT	240-FT	4,212 A	10,000 A
NEW-MPP	100A-2P	25 kVA	7440 A	120/240V-1PH	(3#1 XHHW CU) 2" PVC	10-FT	190-FT	6,872 A	10,000 A
NEW-MPP	100A-2P	25 kVA	7440 A	120/240V-1PH	(3#2/0 XHHW CU) 2" PVC	30-FT	305-FT	6,399 A	10,000 A
NEW-MPP	100A-2P	50 kVA	14881 A	120/240V-1PH	(3#1 XHHW CU) 2" PVC	10-FT	190-FT	12,768 A	22,000 A
NEW-MPP	100A-2P	50 kVA	14881 A	120/240V-1PH	(3#1 XHHW CU) 2" PVC	35-FT	190-FT	9,423 A	10,000 A
NEW-MPP	100A-2P	50 kVA	14881 A	120/240V-1PH	(3#1/0 XHHW CU) 2" PVC	40-FT	240-FT	9,711 A	10,000 A
NEW-MPP	100A-2P	50 kVA	14881 A	120/240V-1PH	(3#2/0 XHHW CU) 2" PVC	50-FT	305-FT	9,646 A	10,000 A

~ = MINIMUM SERVICE LATERAL CONDUCTOR LENGTH FOR THE ISCA VALUE GIVEN. IF CONDUCTOR LENGTH IS LESS THAN THIS VALUE THE PANEL SHALL BE BRACED AT THE NEXT HIGHER AIC RATING CALCULATED BY AN ELECTRICAL ENGINEER.
^ = MAXIMUM FEEDER LENGTH TO MAINTAIN LESS THAN 2% VOLTAGE DROP.



Component List

- (A) 200A meter socket, 100A MCB, 120/240V, NEMA 3R combination service entrance rated, hot sequence, meter/power pedestal with lever bypass, load center, and MCB. See panel schedule on this sheet for size of main and number and size of branch breakers. Set on new concrete pad plumb and level.
- (C) Service entrance panel breaker section, for customer loads. See panel schedules on this sheet for size of breakers and number of poles required.
- (D) Built-in GFCI NEMA 5-20R, duplex, GFCI maintenance receptacle flush mounted in panel dead-front.
- (E) Provide recessed concrete pad mounting plate with L-bolts to match the enclosure base bolt pattern.
- (F) Option 1: Polymer concrete pedestal foundation with fiberglass reinforcement. The pad shall be continuous cloth reinforcement on the inside and outside perimeter. Weight of the foundations shall be stenciled on the sidewall of the foundation.
Option 2: Provide 4000 psi, re-bar re-enforce, concrete with a minimum direct earth bury depth of 18-inch, 2-inch overlap of the enclosure on all sides front and back and 2-inch exposure above grade. Provide 3/4-inch chamfered edges. Provide structural engineered stamped drawing for pad.
- (G) 3/4 inch x 10 feet long, copper-clad driven ground rod with exothermic weld or underground lug connect conductor to rod. (2) rods required.
- (H) Built-in photocell for on/off control of luminaires on signals poles.
- (J) Built-in, 2-pole 20A, lighting contactor for on/off control of lights on signal poles
- (K) Optional hand-off-auto switch when items 'H' and 'J' above are used. Provide this HOA switch with the photocell control wired in the auto position.

Note:
All components listed shall be included in the pay item '613-50109 Meter Power Pedestal'. All components shall meet current National Electric Code (NEC) and be UL listed for the application.

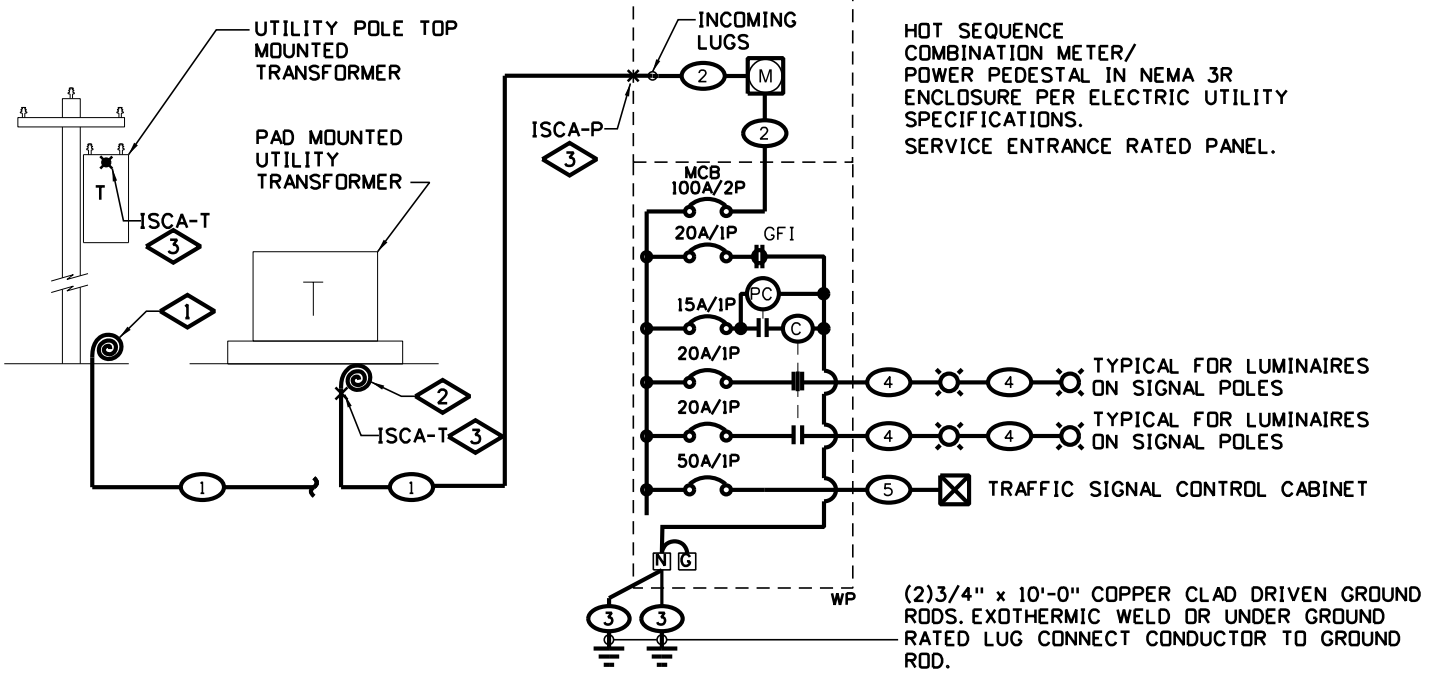
Hot Sequence Meter Power Pedestal Elevation Detail for Traffic Signal with Luminaires

Not To Scale

MOUNTING: PEDESTAL		PANEL "MPP_"		120/240V-1PH-3W	
FEEDER: BOTTOM		NEMA 3R ENCLOSURE SERVICE ENTRANCE RATED		100 AMPS MAIN BREAKER	
		BRANCH BREAKER			
		LEFT PHASE LOAD		RIGHT PHASE LOAD	
DESCRIPTION	Size	P	Ckt#	L1	L2
TRAFFIC SIGNAL POLE LIGHTING	20	1	1	240	
TRAFFIC SIGNAL POLE LIGHTING	20	1	3		240
MPP_LIGHTING CONTROL CKT.	15	1	5	200	
SPARE	20	1	7		
				440	240
				620	5040
				Total Connected V.A.	
				5660 = Total Connected VA Both Phases	
LOAD	CONNECTED	D.FACT.	Est. KVA	AMPS	
LIGHTING	480 VA	1.25	0.60		
RECEPTACLES (1ST 10000)	180 VA	1.00	0.18		
RECEPTACLES (REMAINING)	0 VA	0.50	0.00		
MOTOR (LARGEST)	0 VA	1.25	0.00		
MOTORS (REMAINING)	0 VA	1.00	0.00		
ELECTRICAL HEATING	0 VA	1.25	0.00		
ELECTRICAL MISC.	5000 VA	1.00	5.00		
TOTAL ESTIMATED LOAD	5660 VA		5.78	24	

180 VA=Total Receptacle Load

NOTE:
ALL LIGHTING CONTROL CENTERS AND ELECTRICAL EQUIPMENT SHALL BE PROVIDED WITH "ARC-FLASH HAZARD WARNING" LABELS PER THE NATIONAL ELECTRIC CODE NEC 110.16 AND NFPA 70E-2015, AND ALL OTHER LABELS REQUIRED BY NFPA 70.



Feeder Schedule

- (1) See the "Individual Hot Sequence MPP Fault Current Table For Traffic Signal With Luminaires" on this sheet for these ISCA values.
- (2) Internal feeder supplied with pedestal
- (3) 1•4 stranded bare copper through feeder enclosure to ground rods.
- (4) (2•10THWN CU & 1•10GND) 2 inch PVC conduit
- (5) (2•6THWN CU & 1•10GND) 2 inch PVC conduit

One-Line Notes:

- (1) Coil enough conductors at the base of the pole to reach the transformer terminals at the top of the pole. Final routing of conductors up the pole and connection to transformer by electric utility.
- (2) Coil minimum of 5 feet of conductors at the transformer base. Final connection to transformer by electric utility.
- (3) See the "Individual Hot Sequence MPP Fault Current Table For Traffic Cabinet" on this sheet for these ISCA values.

Hot Sequence Meter Power Pedestal One-Line Diagram for Traffic Signal with Luminaires

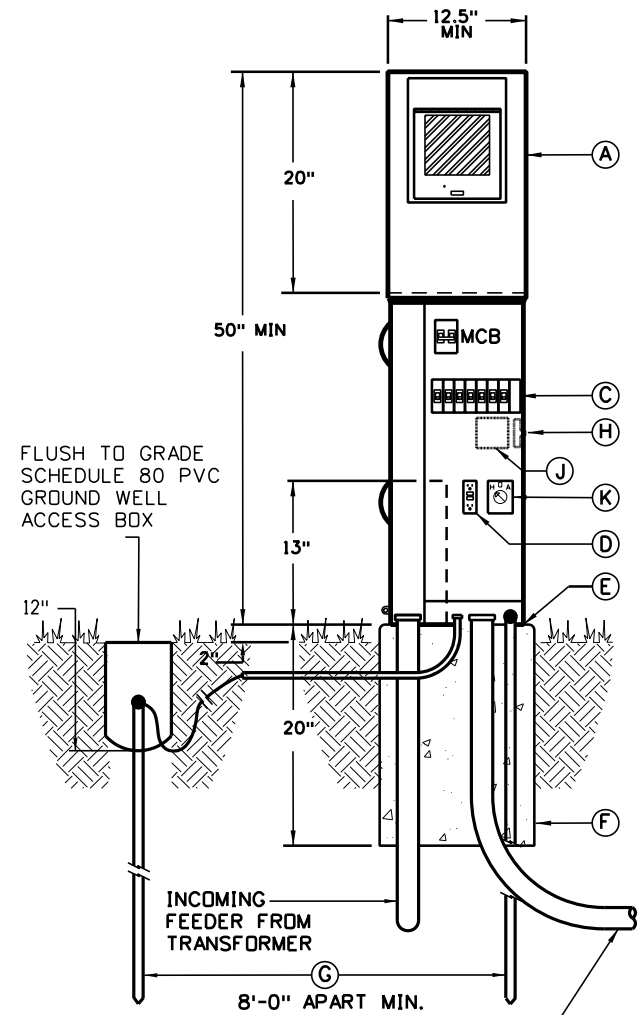
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Computer File Information		Sheet Revisions		Colorado Department of Transportation	Traffic Safety & Engineering Services	Traffic Signal One-Line Diagrams	Standard Plan No.
Creation Date: 06/14/2023	Created By: KUCZKOWSKI	Date:	Comments:				S-613-4
Last Modification Date: 07/01/26	Last Modified By: GLY			2829 West Howard Place Denver, CO 80204	Issued by the Traffic Safety & Engineering Services: July 01, 2026	Standard Sheet No. 5 of 6	Project Sheet Number:
CAD Ver.: ORD 10.12	Scale: Not to Scale	Units: English					EB

INDIVIDUAL HOT SEQUENCE MPP FAULT CURRENT TABLE FOR SIGNAL WITH LUMINAIRES AND CAMERAS

METER POWER PEDESTAL	SERVICE MAIN CIRCUIT BRKR.	TRANSFORMER			SERVICE LATERAL FEEDER ①	MIN. CONDUCTOR LENGTH TO MPP ~	MAX. CONDUCTOR LENGTH MPP^	SHORT CIRCUIT AMPACITY 'ISCA-P' @ MIN. CONDUCTOR LENGTH	MINIMUM AIC RATING FOR MAIN CIRCUIT
		KVA	'ISCA-T'	SEC. VOLTAGE-PHASE					
NEW-MPP	100A-2P	15 kVA	4464 A	120/240V-1PH	(3#1 XHHW CU) 2" PVC	10-FT	190-FT	4,253 A	10,000 A
NEW-MPP	100A-2P	15 kVA	7440 A	120/240V-1PH	(3#1/0 XHHW CU) 2" PVC	15-FT	240-FT	4,212 A	10,000 A
NEW-MPP	100A-2P	25 kVA	7440 A	120/240V-1PH	(3#1 XHHW CU) 2" PVC	10-FT	190-FT	6,872 A	10,000 A
NEW-MPP	100A-2P	25 kVA	7440 A	120/240V-1PH	(3#2/0 XHHW CU) 2" PVC	30-FT	305-FT	6,399 A	10,000 A
NEW-MPP	100A-2P	50 kVA	14881 A	120/240V-1PH	(3#1 XHHW CU) 2" PVC	10-FT	190-FT	12,768 A	22,000 A
NEW-MPP	100A-2P	50 kVA	14881 A	120/240V-1PH	(3#1 XHHW CU) 2" PVC	35-FT	190-FT	9,423 A	10,000 A
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 ^ = MAXIMUM FEEDER LENGTH TO MAINTAIN LESS THAN 2% VOLTAGE DROP.



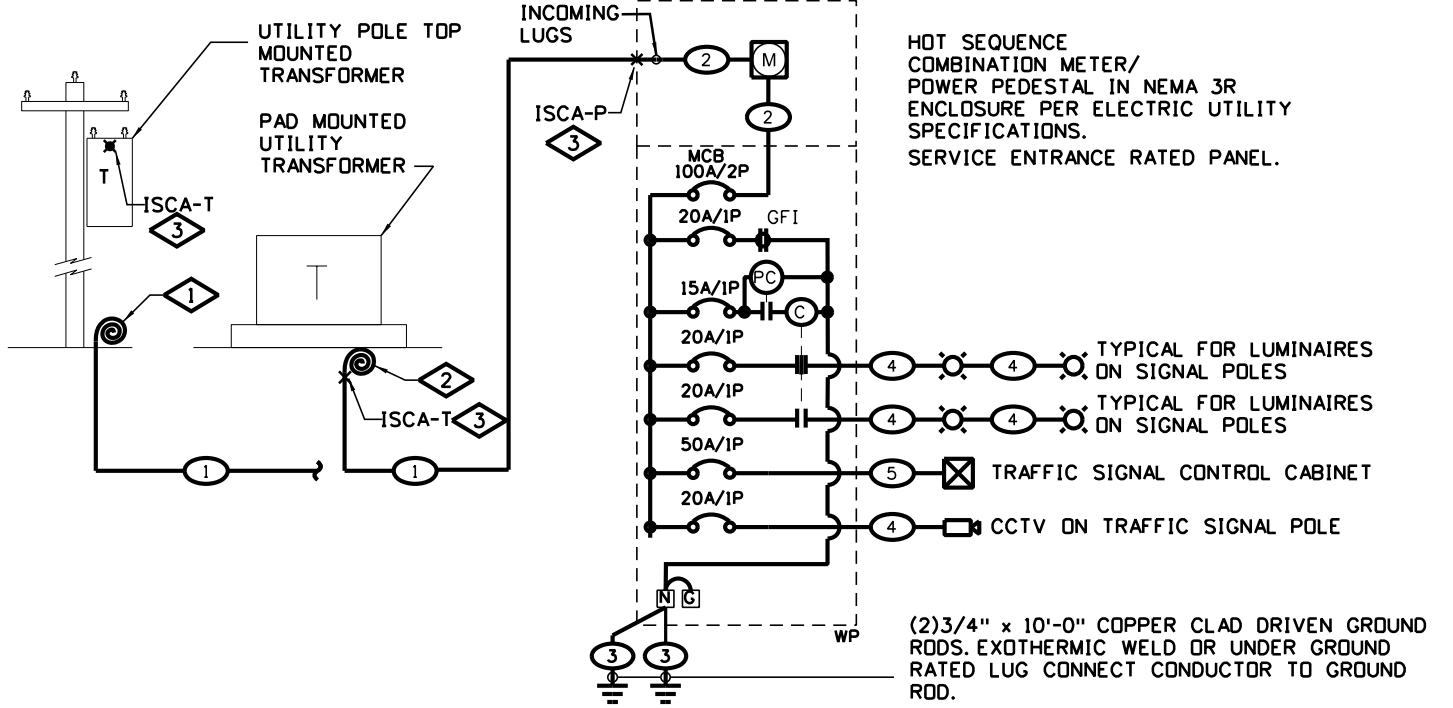
Component List

- (A) 200A meter socket, 100A MCB, 120/240V, NEMA 3R combination service entrance rated, hot sequence, meter/power pedestal with lever bypass, load center, and MCB. See panel schedule on this sheet for size of main and number and size of branch breakers. Set on new concrete pad plumb and level.
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 - (F) Option 1: Polymer concrete pedestal foundation with fiberglass reinforcement. The pad shall be continuous cloth reinforcement on the inside and outside perimeter. Weight of the foundations shall be stenciled on the sidewall of the foundation.
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 - (J) Built-in, 2-pole 20A, lighting contactor for on/off control of lights on signal poles
 - (K) Optional hand-off-auto switch when items 'H' and 'J' above are used. Provide this HOA switch with the photocell control wired in the auto position.
- Note:
 All components listed shall be included in the pay item '613-50109 Meter Power Pedestal'. All components shall meet current National Electric Code (NEC) and be UL listed for the application.

Hot Sequence Meter Power Pedestal Elevation Detail for Traffic Signal with Camera

Not To Scale

MOUNTING: PEDESTAL		PANEL "MPP"		120/240V-1PH-3W	
FEEDER: BOTTOM		NEMA 3R ENCLOSURE SERVICE ENTRANCE RATED		100 AMPS MAIN BREAKER	
		BRANCH BREAKER			
		LEFT PHASE LOAD		RIGHT PHASE LOAD	
DESCRIPTION	Size	P	Ckt#	L1	L2
TRAFFIC SIGNAL POLE LIGHTING	20	1	1	240	180
TRAFFIC SIGNAL POLE LIGHTING	20	1	3	240	4800
MPP LIGHTING CONTROL CKT.	15	1	5	200	300
SPARE	20	1	7		
				440	240
				920	5040
				Total Connected V.A.	
				5960 = Total Connected VA Both Phases	
LOAD	CONNECTED	D.FACT.	Est. KVA	AMPS	
LIGHTING	480 VA	1.25	0.60		
RECEPTACLES (1ST 10000)	180 VA	1.00	0.18		
RECEPTACLES (REMAINING)	0 VA	0.50	0.00		
MOTOR (LARGEST)	0 VA	1.25	0.00		
MOTORS (REMAINING)	0 VA	1.00	0.00		
ELECTRICAL HEATING	0 VA	1.25	0.00		
ELECTRICAL MISC.	5300 VA	1.00	5.30		
TOTAL ESTIMATED LOAD	5960 VA		6.08	25	



Feeder Schedule

- ① See the "Individual Hot Sequence MPP Fault Current Table For Signal With Luminaires And Cameras" on this sheet for these ISCA values.
- ② Internal feeder supplied with pedestal
- ③ 1•4 stranded bare copper through feeder enclosure to ground rods.
- ④ (2•10THWN CU & 1•10GND) 2 inch PVC conduit
- ⑤ (2•6THWN CU & 1•10GND) 2 inch PVC conduit

One-Line Notes:

- ① Coil enough conductors at the base of the pole to reach the transformer terminals at the top of the pole. Final routing of conductors up the pole and connection to transformer by electric utility.
- ② Coil minimum of 5 feet of conductors at the transformer base. Final connection to transformer by electric utility.
- ③ See the "Individual Hot Sequence MPP Fault Current Table For Traffic Cabinet" on this sheet for these ISCA values.

Hot Sequence Meter Power Pedestal One-line Diagram for Traffic Signal with Camera

Not To Scale

Computer File Information	
Creation Date:	06/14/2023
Created By:	KUCZKOWSKI
Last Modification Date:	07/01/26
Last Modified By:	GLY
CAD Ver.:	ORD 10.12 Scale: Not to Scale Units: English

Sheet Revisions	
Date:	Comments

Colorado Department of Transportation

Traffic Safety & Engineering Services

2829 West Howard Place
 Denver, CO 80204

EB

Traffic Signal One-Line Diagrams

Issued by the Traffic Safety & Engineering Services: July 01, 2026

Standard Plan No. S-613-4

Standard Sheet No. 6 of 6

Project Sheet Number: