

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
668	28L-1	SANGAMON	20	1
		ILLINOIS	CONTRACT NO. 72C46	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROPOSED
HIGHWAY PLANS

FAP ROUTE 668 (DIRKSEN PARKWAY)
SECTION 28L-1
PROJECT : HSIP-0668 (005)
HIGHWAY LIGHTING
SANGAMON COUNTY

C-96-025-09



ADT 19,500 (2007)
 % MU 1.5
 % SU 4.5
 % PV 94.0

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS

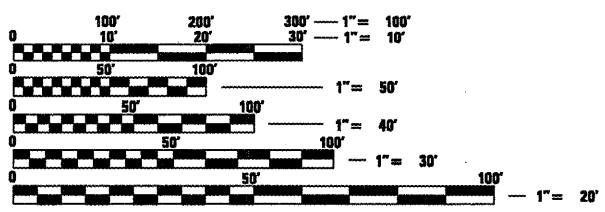
SUBMITTED *February 5, 2009*
Robert Z. Smith
 DEPUTY DIRECTOR OF HIGHWAYS, REGION ENGINEER

March 27, 2009
Charles J. Ingersoll
 ENGINEER OF DESIGN AND ENVIRONMENT

March 27, 2009
Christine M. Reed
 DIRECTOR OF HIGHWAYS, CHIEF ENGINEER

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OF THE STATE OF ILLINOIS

FOR INDEX OF SHEETS, SEE SHEET NO. 2
 FOR LIST OF STANDARDS, SEE SHEET NO. 2

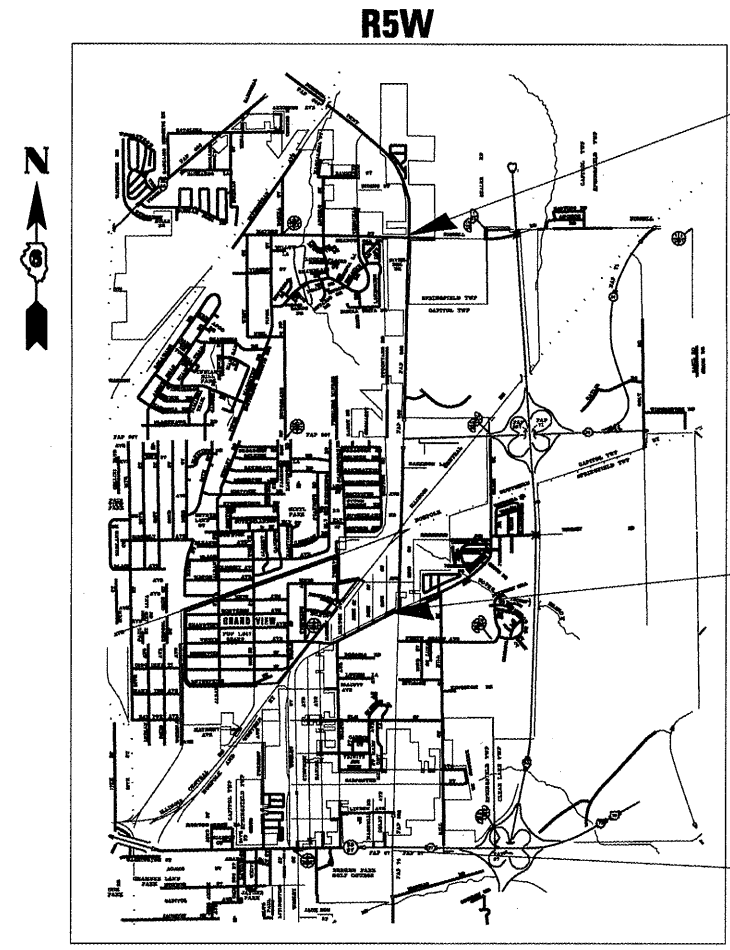


FULL SIZE PLANS HAVE BEEN PREPARED USING STANDARD ENGINEERING SCALES. REDUCED SIZED PLANS WILL NOT CONFORM TO STANDARD SCALES. IN MAKING MEASUREMENTS ON REDUCED PLANS, THE ABOVE SCALES MAY BE USED.

J.U.L.I.E.
 JOINT UTILITY LOCATION INFORMATION FOR EXCAVATION
 1-800-992-0123
 OR 811

PROJECT ENGINEER JOHN NEGANGARD 217/782-6990
 PROJECT MANAGER VINCE MADONIA 217/785-9046

CONTRACT NO. 72C46



BEGIN PROJECT
MAYDEN / BISSEL RD
STA 71+97

END PROJECT
RIDGE AVENUE
STA 166+89

GROSS LENGTH = 9492 FT. = 1.80 MILE
 NET LENGTH = 9492 FT. = 1.80 MILE

GENERAL NOTES

1. ALL LIGHTING UNITS SHALL BE LABELED ACCORDING TO THE STANDARD SPECIFICATIONS, WITH POLE NUMBERS ATTACHED WITH STAINLESS STEEL BANDING. LIGHTING UNIT NUMBERING SHALL BE AS SHOWN ON THE PLANS AND AS DIRECTED BY THE ENGINEER.
2. CONTRACTOR SHALL BE RESPONSIBLE TO COORDINATE ELECTRICAL WORK WITH OTHER TRADES.
3. THE PROPOSED LIGHT POLES SHALL BE INSTALLED AT THE OFFSETS INDICATED OR 5 FEET BEHIND GUARDRAIL AS APPLICABLE. LIGHT POLE FOUNDATIONS SHALL BE INSTALLED PLUMB AND FLUSH WITH THE EXISTING GRADE AND SHALL MEET THE HEIGHT REQUIREMENTS OF ARTICLE 836.03 OF THE STANDARD SPECIFICATIONS.
4. CONTRACTOR SHALL INSTALL LIGHT POLES AT THE LOCATIONS INDICATED ON THE PLANS, MAINTAINING ADEQUATE CLEARANCE FROM OVERHEAD UTILITY LINES. CONTRACTOR SHALL BE RESPONSIBLE TO VERIFY CLEARANCES PER THE NATIONAL ELECTRICAL SAFETY CODE AND/OR THE REQUIREMENTS OF THE UTILITY COMPANIES. THE LOCATION OF BURIED AND ABOVE GROUND UTILITIES SHOWN ARE APPROXIMATE AND ARE SHOWN FOR INFORMATION ONLY. REROUTING, DISCONNECTION, RELOCATION, PROTECTION ETC., OF ANY UTILITIES MUST BE COORDINATED BETWEEN THE CONTRACTOR, UTILITY COMPANY, AND OWNER. THE CONTRACTOR SHALL VERIFY THE EXACT LOCATION OF ALL UNDERGROUND UTILITIES PRIOR TO CONSTRUCTION.
5. THE CONTRACTOR IS RESPONSIBLE FOR UNCOVERING OR HAND DIGGING AROUND UTILITIES AS NECESSARY. THE COST OF THIS WORK IS TO BE INCLUDED WITH THE TRENCH AND BACKFILL FOR ELECTRICAL WORK PAY ITEM.
6. NO POLES TO BE SET CLOSER THAN 2' FROM THE FACE OF THE CURB
7. POLES BEHIND GUARDRAIL DO NOT REQUIRE BREAKAWAY COUPLERS

COMMITMENTS

THE RESIDENT ENGINEER SHALL CONTACT STUDIES AND PLANS CONCERNING ANY MAJOR PLAN CHANGES TO MAKE SURE NO PREVIOUS COMMITMENTS (NOT LISTED) WERE MADE AFFECTING THE DESIGN, AND ALLOW AN IMPROVED DESIGN FOR FUTURE PROJECTS.

WORK WILL BE STARTED IN SUMMER 2009

AGREEMENTS:
CITY OF SPRINGFIELD (CWLP)
AMEREN

LIST OF STANDARDS

- 000001-05
- 001006
- 701101-02
- 701106-02
- 701602-04
- 701701-06
- 701801-04
- 701901-01

INDEX OF SHEETS

SHEET	DESCRIPTION
1	COVER SHEET
2	GENERAL NOTES
3	SUMMARY OF QUANTITIES
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15	CONTROL INSTALLATION- PEDESTAL MOUNT CABINET
16	LIGHT POLE FOUNDATION
17	CONTROL INSTALLATION - SERVICE POLE MOUNTED
18	POLE HANDHOLE WIRING
19	POLE STANDARDS
20	DETAIL FOR NIGHTTIME LIGHTING INSPECTION

DISTRICT SIX	
EXAMINED	<u>Feb 03</u> 20 <u>09</u> <i>Louis J. Haast</i> OPERATIONS ENGINEER
EXAMINED	<u>Feb 03</u> 20 <u>09</u> <i>Louis J. Haast</i> PROGRAM IMPLEMENTATION ENGINEER
EXAMINED	<u>Feb 05</u> 20 <u>09</u> <i>Re 2 Dm</i> PROGRAM DEVELOPMENT ENGINEER

Location
Ridge to Bissel/Mayden
Safety Funding
90% Fed, 10% State
Y030 - 1E

Pay Item	Description	Unit	Total	Quantity
67100100	MOBILIZATION	L SUM	1	1
70102632	TRAFFIC CONTROL AND PROTECTION, STANDARD 701602	L SUM	1	1
70102635	TRAFFIC CONTROL AND PROTECTION, STANDARD 701701	L SUM	1	1
70102640	TRAFFIC CONTROL AND PROTECTION, STANDARD 701801	L SUM	1	1
80400100	ELECTRIC SERVICE INSTALLATION	EACH	3	3
81020500	CONDUIT PUSHED, 2" DIA., INTERMEDIATE METAL	FOOT	3,614	3,614
81020700	CONDUIT PUSHED, 3" DIA., INTERMEDIATE METAL	FOOT	244	244
81603000	UNIT DUCT, 600V, 2-1C NO.8, 1/C NO.8 GROUND, (XLP-TYPE USE), 3/4" DIA. POLYETHYLENE	FOOT	10,256	10,256
81603005	UNIT DUCT, 600V, 2-1C NO.10, 1/C NO.8 GROUND, (XLP-TYPE USE), 3/4" DIA. POLYETHYLENE	FOOT	7,980	7,980
81900200	TRENCH AND BACKFILL FOR ELECTRICAL WORK	FOOT	13,544	13,544
82102400	LUMINAIRE, SODIUM VAPOR, HORIZONTAL MOUNT, 400 WATT	EACH	61	61
82500520	LIGHTING CONTROLLER TYPE CB - RCS 60AMP - 480VOLT	EACH	2	2
82500605	LIGHTING CONTROLLER PHOTOCELL RELAY	EACH	1	1
83004600	LIGHT POLE, ALUMINUM, 50 FT. M.H., 15 FT. DAVIT ARM	EACH	61	61
83600357	LIGHT POLE FOUNDATION METAL, 15" BOLT CIRCLE, 8" X 8'	EACH	61	61
83800650	BREAKAWAY DEVICE, COUPLING, WITH STAINLESS STEEL SCREEN	EACH	196	196

Rev.

FILE NAME : c:\pwork\pwork\DOT\LAUGHLIN\ldms76543\672C46-shr-500.dgn	USER NAME : laughl	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	SUMMARY OF QUANTITIES				F.A.P. RTE. 668	SECTION 28L-1	COUNTY SANGAMON	TOTAL SHEETS 20	SHEET NO. 03
PLOT SCALE : 2.0000 ' / IN.	CHECKED -	REVISED -	SCALE:		SHEET NO.	OF	SHEETS	STA.	TO STA.	ILLINOIS FED. AID PROJECT			
PLOT DATE : Feb-05-2009 02:54:39PM	DATE -	REVISED -											
CONTRACT NO. 72C46													

STA/OFFSET	POLE ALUMINUM 50' MH 15' DAVIT ARM (EACH)	LIGHT POLE FOUNDATION 15" BOLT CIRCLE 8" x 8' (EACH)	LUMINAIRE SODIUM VAPOR HORIZ. MOUNT 400 WATT (EACH)	UNIT DUCT 2-1C NO. 8 1/C NO 8 GROUND (XLP-TY USE) 3/4" POLYETHYLENE (FOOT)	UNIT DUCT 2-1C NO. 10 1/C NO 10 GROUND (XLP-TY USE) 3/4" POLYETHYLENE (FOOT)	CONDUIT PUSHED, 2" DIA INTERMEDIATE METAL (FOOT)	CONDUIT PUSHED, 3" DIA INTERMEDIATE METAL (FOOT)	TRENCH AND BACKFILL FOR ELECTRICAL WORK (FOOT)
73+27 51' LT	1	1	1					
				311	--	--	--	301
76+27 39' LT	1	1	1					
				329	--	126	--	193
79+37 49' LT	1	1	1					
				318	--	--	--	308
82+42 39' LT	1	1	1					
				335	--	79	--	246
85+67 37' LT	1	1	1					
				286	--	--	--	276
88+42 48' LT	1	1	1					
				269	--	123	--	136
90+99 43' LT	1	1	1					
				296	--	--	--	286
93+85 43' LT	1	1	1					
				486	--	229	--	247
97+28	LIGHTING CONTROLLER #1 (SEE CONTROLLER SCHEDULE)							
				230	--	98	--	122
95+20 47' RT	1	1	1					
				296	--	147	--	139
92+35 39' RT	1	1	1					
				296	--	90	--	196
89+49 35' RT	1	1	1					
				247	--	109	--	128
87+12 37' RT	1	1	1					
				315	--	79	--	226
84+07 37' RT	1	1	1					
				335	--	127	--	198
80+82 37' RT	1	1	1					
				300	--	48	--	242
77+92 36' RT	1	1	1					
				330	--	92	--	228
74+72 37' RT	1	1	1					
				285	--	124	--	151
71+97 37' RT	1	1	1					
97+28	LIGHTING CONTROLLER #1 (SEE CONTROLLER SCHEDULE)							
				--	182	--	--	172
99+02 36' RT	1	1	1					
				--	220	82	--	128
97+82 50' LT	1	1	1					
				--	239	--	--	229
100+09 43' LT	1	1	1					
				--	237	--	--	227
102+36 39' LT	1	1	1					
				--	450	104	--	336
106+50 47' LT	1	1	1					
				--	230	--	--	220
108+70 44' LT	1	1	1					
				--	241	--	--	231
111+01 44' LT	1	1	1					

STA/OFFSET	POLE ALUMINUM 50' MH 15' DAVIT ARM (EACH)	LIGHT POLE FOUNDATION 15" BOLT CIRCLE 8" x 8' (EACH)	LUMINAIRE SODIUM VAPOR HORIZ. MOUNT 400 WATT (EACH)	UNIT DUCT 2-1C NO. 8 1/C NO 8 GROUND (XLP-TY USE) 3/4" POLYETHYLENE (FOOT)	UNIT DUCT 2-1C NO. 10 1/C NO 10 GROUND (XLP-TY USE) 3/4" POLYETHYLENE (FOOT)	CONDUIT PUSHED, 2" DIA INTERMEDIATE METAL (FOOT)	CONDUIT PUSHED, 3" DIA INTERMEDIATE METAL (FOOT)	TRENCH AND BACKFILL FOR ELECTRICAL WORK (FOOT)
99+02 36' RT	INCLUDED ABOVE							
				--	225	100	--	115
101+16 42' RT	1	1	1					
				--	440	179	--	251
105+40 40' RT	1	1	1					
				--	233	76	--	147
107+63 37' RT	1	1	1					
				--	225	33	--	182
109+78 36' RT	1	1	1					
115+01 50' LT	1	1	1					
				--	286	--	--	276
117+76 39' LT	1	1	1					
				--	318	97	--	211
120+84 39' LT	1	1	1					
				--	261	39	87	125
122+14 50' RT	1	1	1					
				--	281	64	INCLUDED ABOVE	120
119+44 40' RT	1	1	1					
				--	333	133	--	190
116+21 35' RT	1	1	1					
				--	247	76	--	161
113+86 35' RT	1	1	1					
120+84 39' LT	INCLUDED ABOVE							
				--	27	--	--	17
120+80	LIGHTING CONTROLLER #2 (SEE CONTROLLER SCHEDULE)							
				569	--	91	157	311
126+15 47' LT	1	1	1					
				326	--	154	--	162
129+30 35' LT	1	1	1					
				249	--	119	--	120
131+69 39' LT	1	1	1					
				319	--	142	--	167
134+78 38' LT	1	1	1					
				319	--	--	--	309
138+18 35' LT	1	1	1					
				370	--	--	--	360
141+78 36' LT	1	1	1					
				370	--	--	--	360
145+38 35' LT	1	1	1					

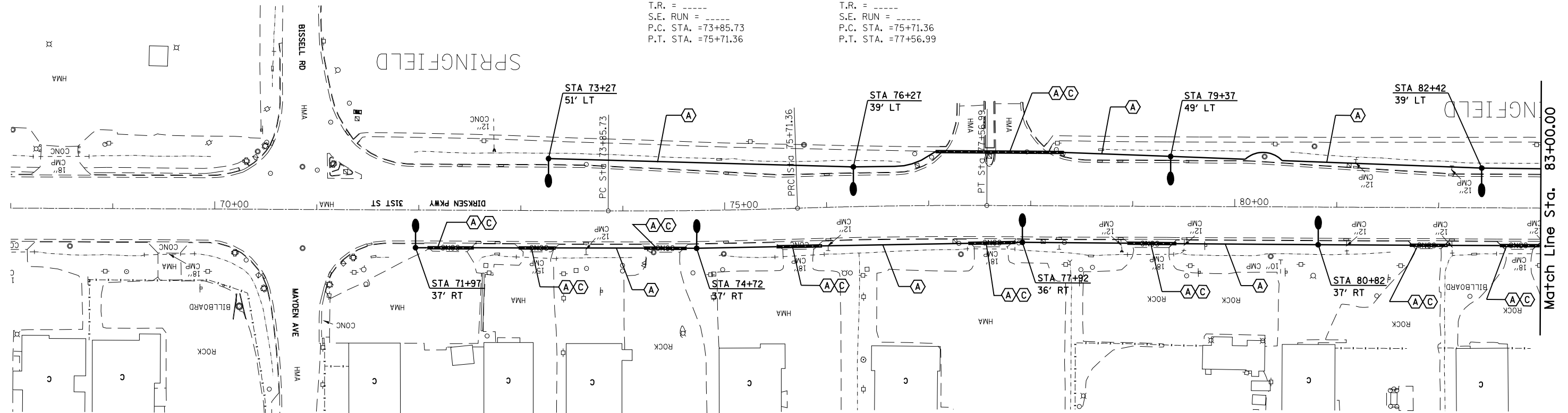
STA/OFFSET	POLE ALUMINUM 50' MH 15' DAVIT ARM (EACH)	LIGHT POLE FOUNDATION 15" BOLT CIRCLE 8" x 8' (EACH)	LUMINAIRE SODIUM VAPOR HORIZ. MOUNT 400 WATT (EACH)	UNIT DUCT 2-1C NO. 8 1/C NO 8 GROUND (XLP-TY USE) 3/4" POLYETHYLENE (FOOT)	UNIT DUCT 2-1C NO. 10 1/C NO 10 GROUND (XLP-TY USE) 3/4" POLYETHYLENE (FOOT)	CONDUIT PUSHED, 2" DIA INTERMEDIATE METAL (FOOT)	CONDUIT PUSHED, 3" DIA INTERMEDIATE METAL (FOOT)	TRENCH AND BACKFILL FOR ELECTRICAL WORK (FOOT)
120+80	LIGHTING CONTROLLER #2 (SEE CONTROLLER SCHEDULE)			517	--	91	INCLUDED ABOVE	259
124+65 39' RT	1	1	1	325	--	153	--	162
127+80 35' RT	1	1	1	289	--	45	--	234
130+59 36' RT	1	1	1	270	--	37	--	223
133+19 38' RT	1	1	1	334	--	49	--	275
136+43 35' RT	1	1	1	365	--	--	--	355
139+98 35' RT	1	1	1	370	--	--	--	360
143+58 36' RT	1	1	1					
150+44 35' RT	1	1	1	--	370	--	--	360
154+04 35' RT	1	1	1	--	365	--	--	375
157+59 35' RT	1	1	1	--	305	--	--	295
160+54 35' RT	1	1	1	--	210	51	--	149
159+19 36' LT	1	1	1	--	160	16	--	134
160+59	LIGHTING CONTROLLER #3 (SEE CONTROLLER SCHEDULE)							
152+24 36' LT	1	1	1	--	370	--	--	360
155+84 35' LT	1	1	1	--	345	--	--	335
159+19 36' LT	INCLUDED ABOVE							
160+59	LIGHTING CONTROLLER #3 (SEE CONTROLLER SCHEDULE)			--	114	37	--	67
161+44 42' LT	1	1	1	--	275	42	--	223
164+09 44' LT	1	1	1	--	291	25	--	256
166+89 50' LT	1	1	1					
161+44 42' LT	INCLUDED ABOVE			--	210	59	--	141
162+69 39' RT	1	1	1	--	290	49	--	231
165+49 39' RT	1	1	1					
TOTALS	61	61	61	10256	7980	3614	244	13544

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	PLOT SCALE = 100.0000' / IN.	CHECKED -	REVISED -		ILLINOIS FED. AID PROJECT								
	PLOT DATE = Feb-19-2009 02:04:01PM	DATE -	REVISED -										



EXIST. CURVE380
 PI STA. =74+78.55
 $\Delta = 2^\circ 09' 47''$ (LT)
 $D = 1^\circ 09' 55''$
 $R = 4,916.84'$
 $T = 92.83'$
 $L = 185.63'$
 $E = 0.88'$
 $e = \text{-----}$
 $T.R. = \text{-----}$
 $S.E. \text{ RUN} = \text{-----}$
 $P.C. \text{ STA.} = 73+85.73$
 $P.T. \text{ STA.} = 75+71.36$

EXIST. CURVE37
 PI STA. =76+64.18
 $\Delta = 2^\circ 09' 48''$ (RT)
 $D = 1^\circ 09' 55''$
 $R = 4,916.47'$
 $T = 92.83'$
 $L = 185.63'$
 $E = 0.88'$
 $e = \text{-----}$
 $T.R. = \text{-----}$
 $S.E. \text{ RUN} = \text{-----}$
 $P.C. \text{ STA.} = 75+71.36$
 $P.T. \text{ STA.} = 77+56.99$



LEGEND

- Electric service installation, 240/480V, one phase, 4 wire
- Proposed lighting controller
- Light pole, aluminum, 50 ft. M.H., 15 ft. davit arm, with 400W HPS luminaire
- Unit duct in trench
- - - Unit duct in conduit
- Conduit pushed

CABLE/CONDUIT SCHEDULE

- (A) Unit duct, 600V, 2-1C No. 8, 1/C No. 8 ground, (XLP - Type USE), 3/4" dia. polyethylene
- (B) Unit duct, 600V, 2-1C No. 10, 1/C No. 8 ground, (XLP - Type USE), 3/4" dia. polyethylene
- (C) Conduit pushed, 2" dia., intermediate metal

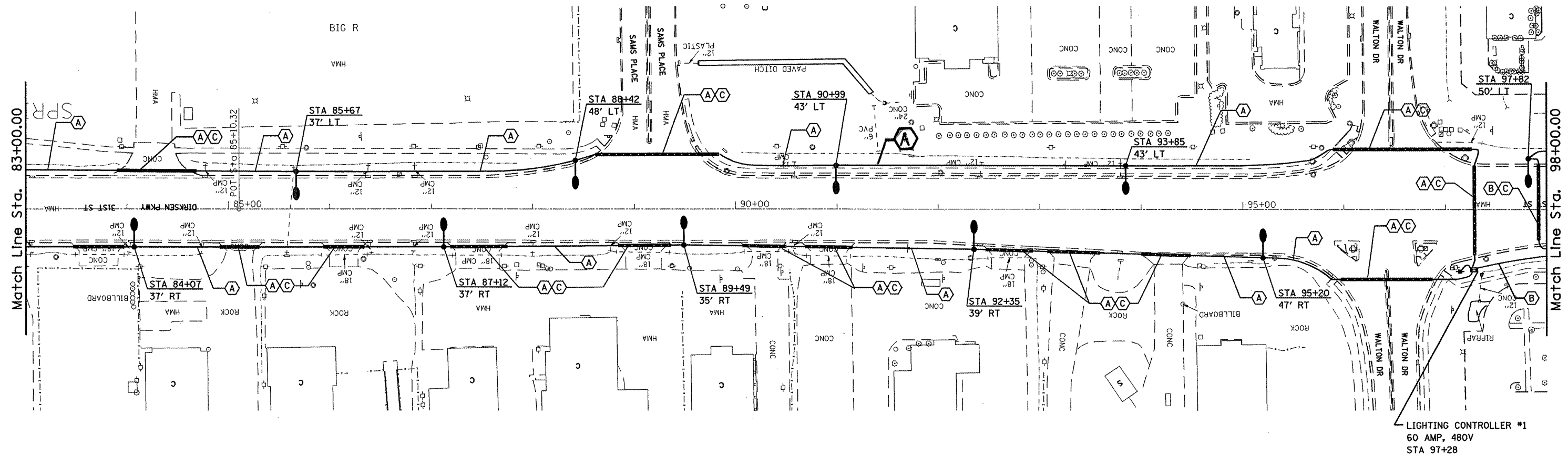
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STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

LIGHTING PLAN

SCALE: SHEET NO. OF SHEETS STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
668	28L-1	SANGAMON	20	06
CONTRACT NO. 72C46			ILLINOIS FED. AID PROJECT	



LEGEND

- Electric service installation, 240/480V, one phase, 4 wire
- ⊞ Proposed lighting controller
- Light pole, aluminum, 50 ft. M.H., 15 ft. davit arm, with 400W HPS luminaire
- Unit duct in trench
- - - Unit duct in conduit
- ▬ Conduit pushed

CABLE/CONDUIT SCHEDULE

- (A) Unit duct, 600V, 2-1C No. 8, 1/C No. 8 ground, (XLP - Type USE), 3/4" dia. polyethylene
- (B) Unit duct, 600V, 2-1C No. 10, 1/C No. 8 ground, (XLP - Type USE), 3/4" dia. polyethylene
- (C) Conduit pushed, 2" dia., intermediate metal

EXIST. CURVE340 PI STA. =106+97.83 Δ =2° 09' 49" (RT) D =1° 09' 56" R =4,915.56' T =92.82' L =185.63' E =0.88' e = T.R. = S.E. RUN = P.C. STA. =106+05.00 P.T. STA. =107+90.63	EXIST. CURVE33 PI STA. =108+83. Δ =2° 09' 51" (L) D =1° 09' 57" R =4,914.41' T =92.82' L =185.63' E =0.88' e = T.R. = S.E. RUN = P.C. STA. =107+91 P.T. STA. =109+71
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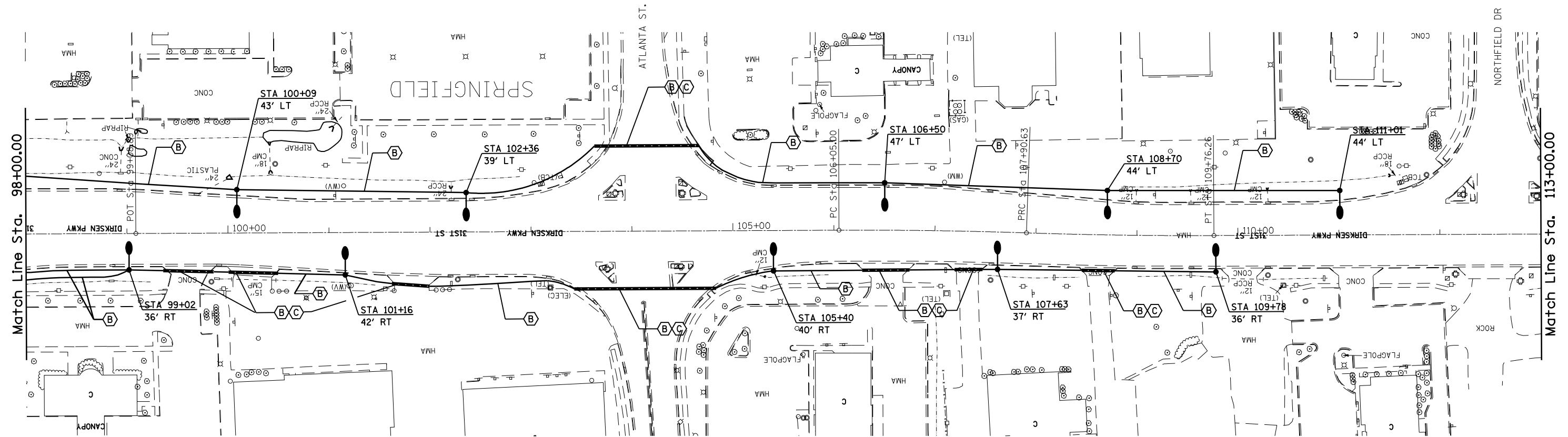
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**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

LIGHTING PLAN			
SCALE:	SHEET NO.	OF SHEETS	STA. TO STA.

F.A.P. RTE. 668	SECTION 28L-1	COUNTY SANGAMON	TOTAL SHEETS 20	SHEET NO. 07
CONTRACT NO. 72C46				
ILLINOIS FED. AID PROJECT				



LEGEND

- Electric service installation, 240/480V, one phase, 4 wire
- Proposed lighting controller
- Light pole, aluminum, 50 ft. M.H., 15 ft. davit arm, with 400W HPS luminaire
- Unit duct in trench
- - - Unit duct in conduit
- Conduit pushed

CABLE/CONDUIT SCHEDULE

- (A) Unit duct, 600V, 2-1C No. 8, 1/C No. 8 ground, (XLP - Type USE), 3/4" dia. polyethylene
- (B) Unit duct, 600V, 2-1C No. 10, 1/C No. 8 ground, (XLP - Type USE), 3/4" dia. polyethylene
- (C) Conduit pushed, 2" dia., intermediate metal

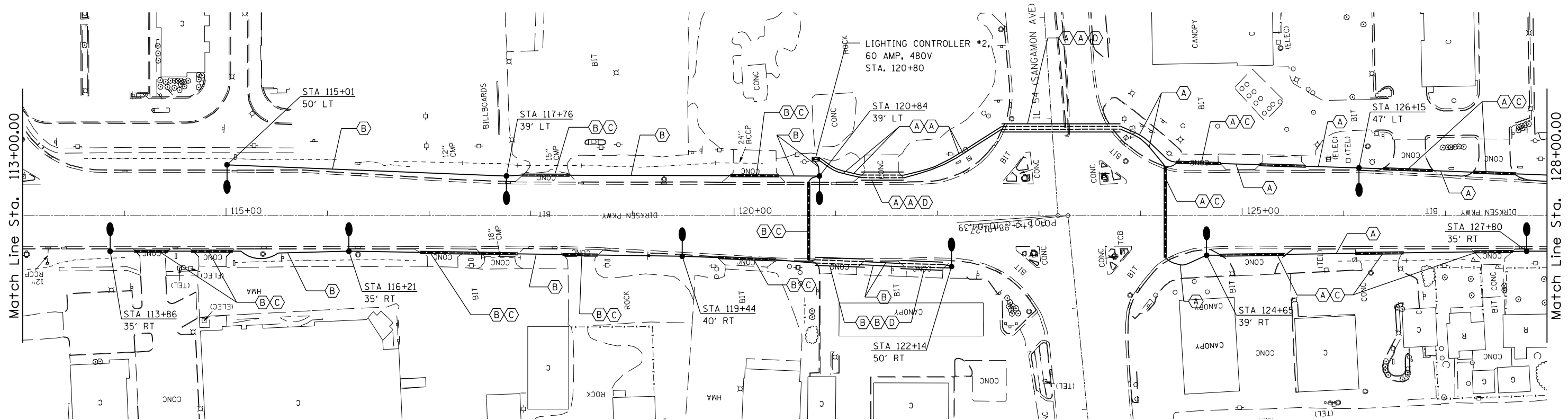
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

LIGHTING PLAN

SCALE: SHEET NO. OF SHEETS STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
668	28L-1	SANGAMON	20	08
CONTRACT NO. 72C46			ILLINOIS FED. AID PROJECT	



LEGEND

- Electric service installation, 240/480V, one phase, 4 wire
- ⊠ Proposed lighting controller
- Light pole, aluminum, 50 ft. M.H., 15 ft. davit arm, with 400W HPS luminaire
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CABLE/CONDUIT SCHEDULE

- (A) Unit duct, 600V, 2-1C No. 8, 1/C No. 8 ground, (XLP - Type USE), 3/4" dia. polyethylene
- (B) Unit duct, 600V, 2-1C No. 10, 1/C No. 8 ground, (XLP - Type USE), 3/4" dia. polyethylene
- (C) Conduit pushed, 2" dia., intermediate metal
- (D) Conduit pushed, 3" dia., intermediate metal

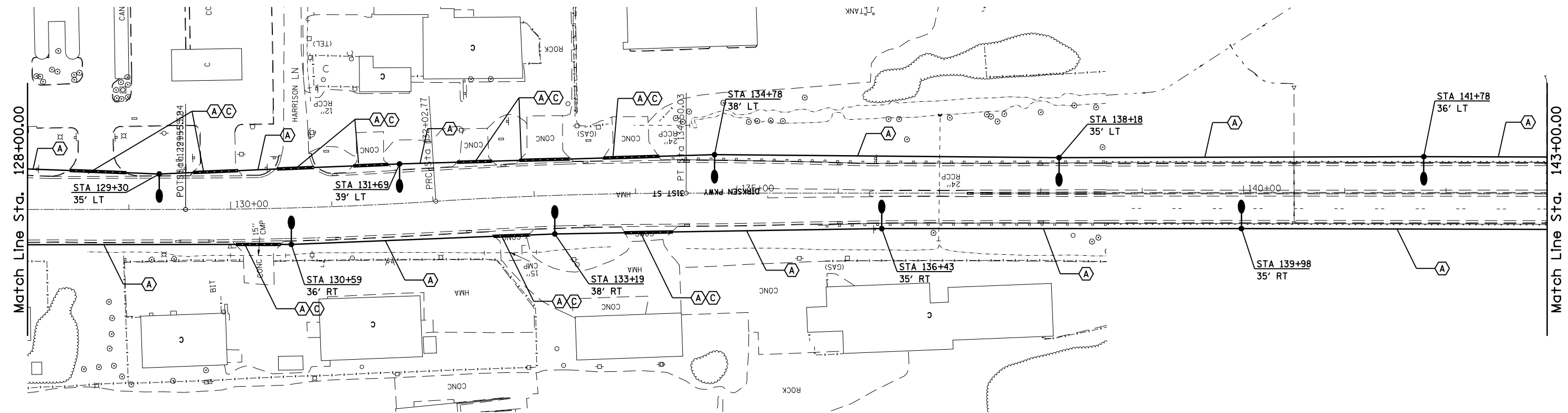
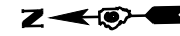
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

LIGHTING PLAN

SCALE: SHEET NO. OF SHEETS STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
668	28L-1	SANGAMON	20	09
CONTRACT NO. 72C46			ILLINOIS FED. AID PROJECT	



LEGEND

- Electric service installation, 240/480V, one phase, 4 wire
- Proposed lighting controller
- Light pole, aluminum, 50 ft. M.H., 15 ft. davit arm, with 400W HPS luminaire
- Unit duct in trench
- - - Unit duct in conduit
- Conduit pushed

CABLE/CONDUIT SCHEDULE

- (A) Unit duct, 600V, 2-1C No. 8, 1/C No. 8 ground, (XLP - Type USE), 3/4" dia. polyethylene
- (B) Unit duct, 600V, 2-1C No. 10, 1/C No. 8 ground, (XLP - Type USE), 3/4" dia. polyethylene
- (C) Conduit pushed, 2" dia., intermediate metal

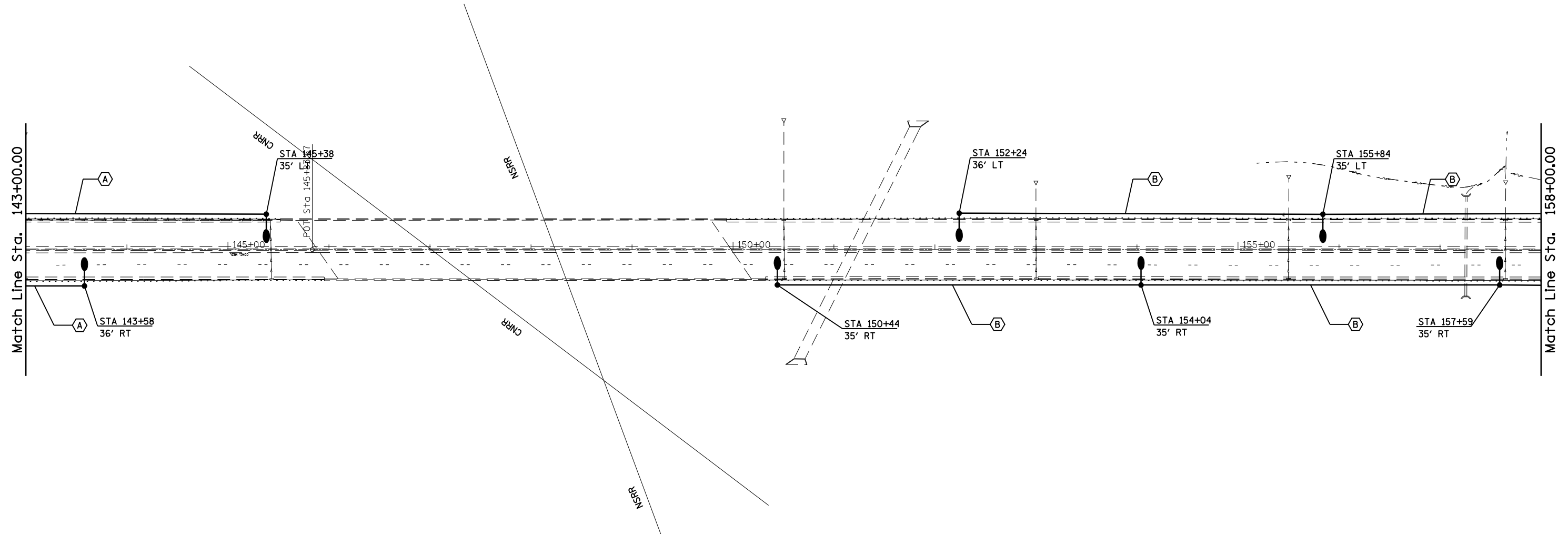
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PLOT DATE = Feb-05-2009 02:55:52PM		DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

LIGHTING PLAN

SCALE:	SHEET NO.	OF SHEETS	STA.	TO STA.
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F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
668	28L-1	SANGAMON	20	10
CONTRACT NO. 72C46			ILLINOIS FED. AID PROJECT	



LEGEND

- Electric service installation, 240/480V, one phase, 4 wire
- Proposed lighting controller
- Light pole, aluminum, 50 ft. M.H., 15 ft. davit arm, with 400W HPS luminaire
- Unit duct in trench
- - - Unit duct in conduit
- ▬ Conduit pushed

CABLE/CONDUIT SCHEDULE

- Ⓐ Unit duct, 600V, 2-1C No. 8, 1/C No. 8 ground, (XLP - Type USE), 3/4" dia. polyethylene
- Ⓑ Unit duct, 600V, 2-1C No. 10, 1/C No. 8 ground, (XLP - Type USE), 3/4" dia. polyethylene
- Ⓒ Conduit pushed, 2" dia., intermediate metal

FILE NAME =	USER NAME = laughlinr1	DESIGNED -	REVISED -
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

LIGHTING PLAN

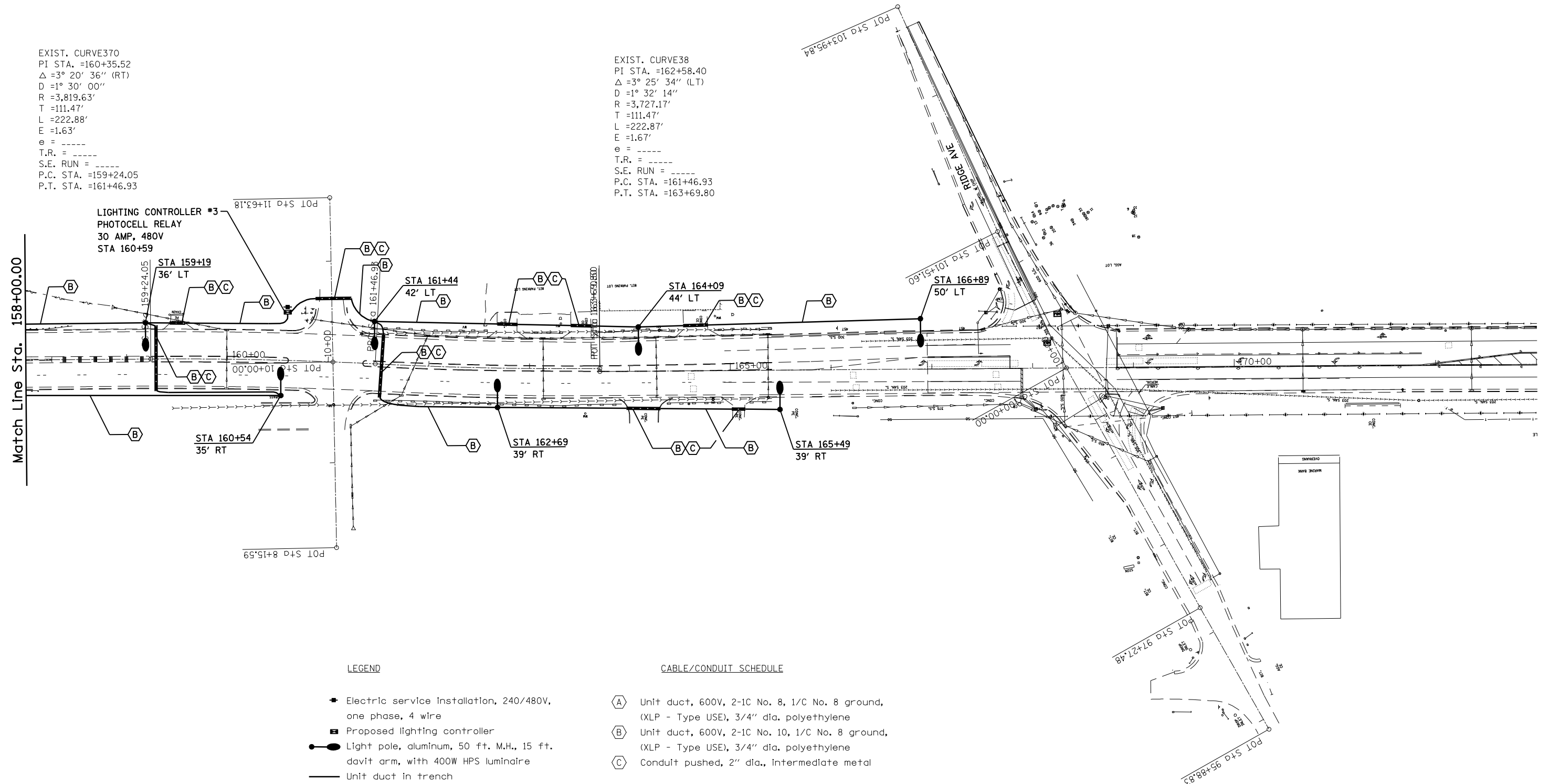
SCALE: SHEET NO. OF SHEETS STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
668	28L-1	SANGAMON	20	11
CONTRACT NO. 72C46			ILLINOIS FED. AID PROJECT	



EXIST. CURVE370
 PI STA. =160+35.52
 $\Delta = 3^\circ 20' 36''$ (RT)
 $D = 1^\circ 30' 00''$
 $R = 3,819.63'$
 $T = 111.47'$
 $L = 222.88'$
 $E = 1.63'$
 $e = \text{-----}$
 $T.R. = \text{-----}$
 $S.E. \text{ RUN} = \text{-----}$
 $P.C. \text{ STA.} = 159+24.05$
 $P.T. \text{ STA.} = 161+46.93$

EXIST. CURVE38
 PI STA. =162+58.40
 $\Delta = 3^\circ 25' 34''$ (LT)
 $D = 1^\circ 32' 14''$
 $R = 3,727.17'$
 $T = 111.47'$
 $L = 222.87'$
 $E = 1.67'$
 $e = \text{-----}$
 $T.R. = \text{-----}$
 $S.E. \text{ RUN} = \text{-----}$
 $P.C. \text{ STA.} = 161+46.93$
 $P.T. \text{ STA.} = 163+69.80$



LIGHTING CONTROLLER #3
 PHOTOCELL RELAY
 30 AMP, 480V
 STA 160+59

LEGEND

- ⬤ Electric service installation, 240/480V, one phase, 4 wire
- ⊞ Proposed lighting controller
- Light pole, aluminum, 50 ft. M.H., 15 ft. davit arm, with 400W HPS luminaire
- Unit duct in trench
- - - Unit duct in conduit
- ▬ Conduit pushed

CABLE/CONDUIT SCHEDULE

- (A) Unit duct, 600V, 2-1C No. 8, 1/C No. 8 ground, (XLP - Type USE), 3/4" dia. polyethylene
- (B) Unit duct, 600V, 2-1C No. 10, 1/C No. 8 ground, (XLP - Type USE), 3/4" dia. polyethylene
- (C) Conduit pushed, 2" dia., intermediate metal

FILE NAME =	USER NAME = laughlinr1	DESIGNED -	REVISED -
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	PLOT DATE = Feb-05-2009 02:56:05PM	DATE -	REVISED -

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

LIGHTING PLAN

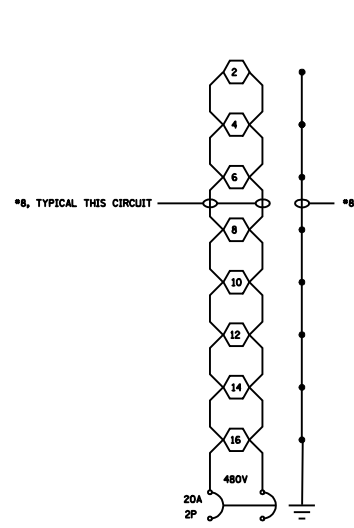
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F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
668	28L-1	SANGAMON	20	12
CONTRACT NO. 72C46			ILLINOIS FED. AID PROJECT	

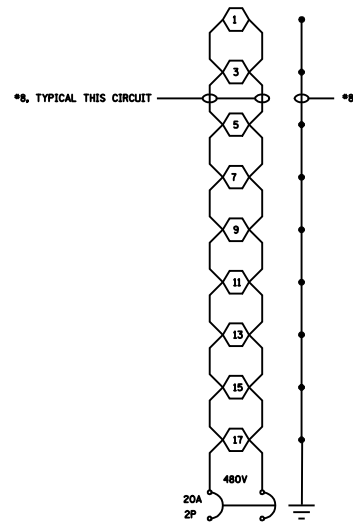
NOTES:

1. ALL NECESSARY REVISIONS TO THE WIRING SHOWN ON THIS SHEET SHALL BE MADE AT NO ADDITIONAL COST TO THE DEPARTMENT AND TO THE SATISFACTION OF THE ENGINEER.

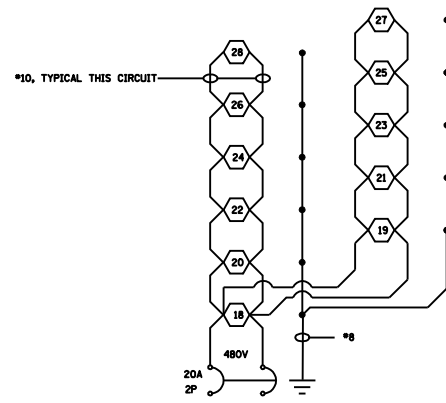
⬡ 400W ROADWAY LUMINAIRE



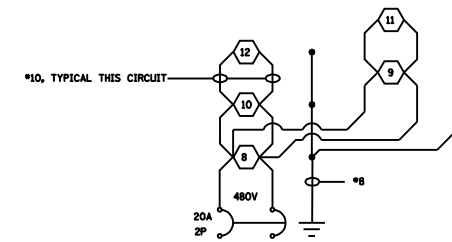
LIGHTING CKT 1
PROPOSED LIGHTING CONTROLLER NO. 1



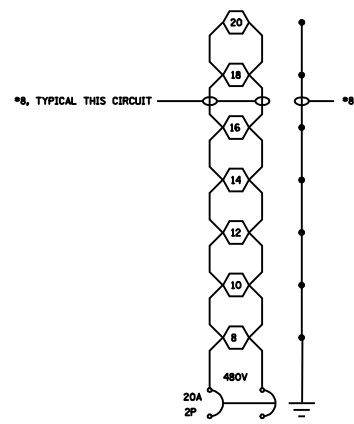
LIGHTING CKT 2
PROPOSED LIGHTING CONTROLLER NO. 1



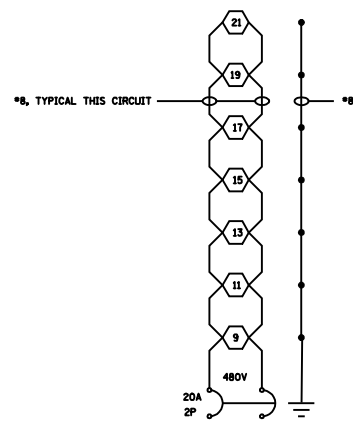
LIGHTING CKT 3
PROPOSED LIGHTING CONTROLLER NO. 1



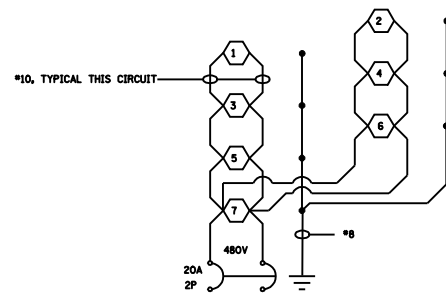
LIGHTING CKT 1
PROPOSED LIGHTING CONTROLLER NO. 3



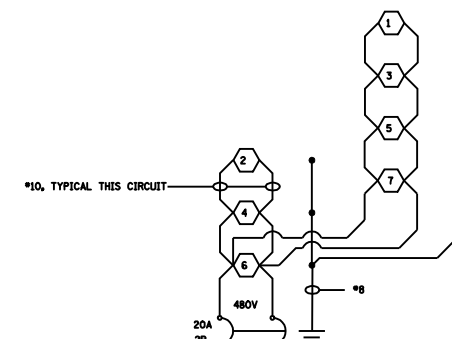
LIGHTING CKT 1
PROPOSED LIGHTING CONTROLLER NO. 2



LIGHTING CKT 2
PROPOSED LIGHTING CONTROLLER NO. 2



LIGHTING CKT 3
PROPOSED LIGHTING CONTROLLER NO. 2



LIGHTING CKT 2
PROPOSED LIGHTING CONTROLLER NO. 3

FILE NAME =	USER NAME = laughlinr1	DESIGNED -	REVISED -
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PLOT DATE = Feb-05-2009 02:56:08PM		DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

LIGHTING CIRCUITS

SCALE: SHEET NO. OF SHEETS STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
668	28L-1	SANGAMON	20	13
CONTRACT NO. 72C46				
ILLINOIS FED. AID PROJECT				

ILLINOIS DEPARTMENT OF TRANSPORTATION
400W LUMINAIRE PERFORMANCE TABLE (SINGLE SIDED)

ILLINOIS DEPARTMENT OF TRANSPORTATION
400W LUMINAIRE PERFORMANCE TABLE (STAGGERED)

GIVEN CONDITIONS

ROADWAY DATA:	Pavement Width	<u>60 FT</u>
	Number Of Lanes	<u>5</u>
	Median Width	<u>N/A</u>
	IES Surface Classification	<u>R3</u>
	Q-Zero Value	<u>.07</u>
LIGHT POLE DATA:	Mounting Height	<u>50 FT</u>
	Mast Arm Length	<u>15 FT</u>
	Pole Set-Back From Edge Of Pavement	<u>9 FT</u>
LUMINAIRE DATA:	Lamp Type	<u>HPS</u>
	Lamp Lumens	<u>50,000</u>
	IES Vertical Distribution	<u>M</u>
	IES Control Of Distribution	<u>FC</u>
	IES Lateral Distribution	<u>2</u>
	Total Light Loss Factor	<u>0.684</u>
LAYOUT DATA:	Spacing	<u>120 FT</u>
	Configuration	<u>Single Sided</u>
	Luminaire Overhang Over Edge Of Pavement Lane	<u>6 FT</u>

NOTE: Variations from the above specified IES distribution pattern may be requested and acceptance of variations will be subject to review by the Engineer based on how well the performance requirements are met.

PERFORMANCE REQUIREMENTS

NOTE: These performance requirements shall be the minimum acceptable standards of photometric performance for the luminaire, based on the given conditions listed above.

ILLUMINATION:	Average Horizontal Illumination, (E_{Ave})	<u>1.30 fc</u>
	Uniformity Ratio, (E_{Ave}/E_{Min})	<u>3.0</u>
LUMINANCE:	Average Luminance: (L_{Ave})	<u>0.90 Cd/m²</u>
	Uniformity Ratios: (L_{Ave}/L_{Min})	<u>3.0</u>
	(L_{Max}/L_{Min})	<u>5.0</u>
	Maximum Veiling Luminance Ratio: (L_v/L_{Ave})	<u>0.30</u>

GIVEN CONDITIONS

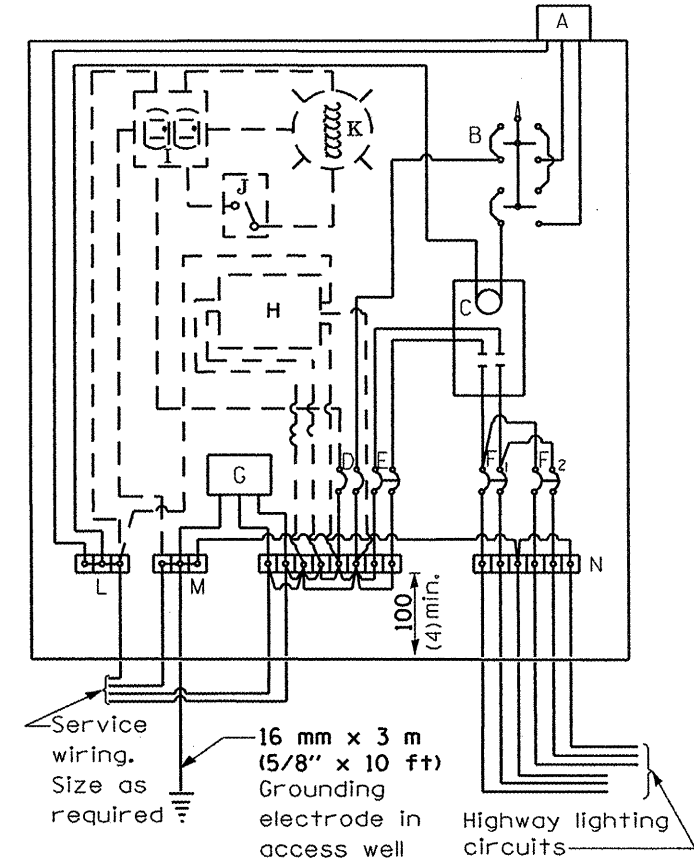
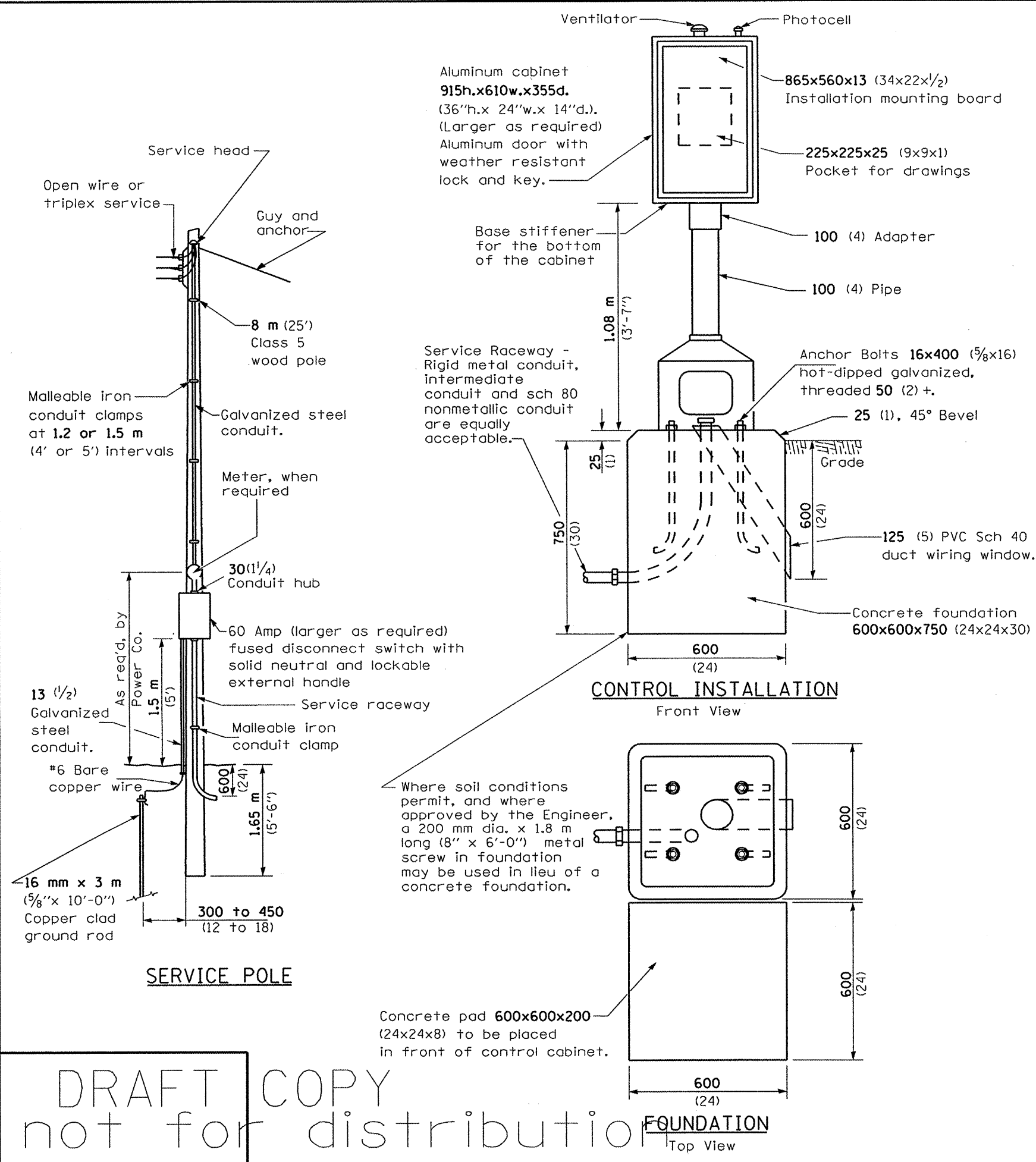
ROADWAY DATA:	Pavement Width	<u>73 FT</u>
	Number Of Lanes	<u>6</u>
	Median Width	<u>N/A</u>
	IES Surface Classification	<u>R3</u>
	Q-Zero Value	<u>.07</u>
LIGHT POLE DATA:	Mounting Height	<u>50 FT</u>
	Mast Arm Length	<u>15 FT</u>
	Pole Set-Back From Edge Of Pavement	<u>12 FT</u>
LUMINAIRE DATA:	Lamp Type	<u>HPS</u>
	Lamp Lumens	<u>50,000</u>
	IES Vertical Distribution	<u>M</u>
	IES Control Of Distribution	<u>FC</u>
	IES Lateral Distribution	<u>2</u>
	Total Light Loss Factor	<u>0.684</u>
LAYOUT DATA:	Spacing	<u>280 FT</u>
	Configuration	<u>Staggered</u>
	Luminaire Overhang Over Edge Of Pavement Lane	<u>3 FT</u>

NOTE: Variations from the above specified IES distribution pattern may be requested and acceptance of variations will be subject to review by the Engineer based on how well the performance requirements are met.

PERFORMANCE REQUIREMENTS

NOTE: These performance requirements shall be the minimum acceptable standards of photometric performance for the luminaire, based on the given conditions listed above.

ILLUMINATION:	Average Horizontal Illumination, (E_{Ave})	<u>1.30 fc</u>
	Uniformity Ratio, (E_{Ave}/E_{Min})	<u>3.0</u>
LUMINANCE:	Average Luminance: (L_{Ave})	<u>0.90 Cd/m²</u>
	Uniformity Ratios: (L_{Ave}/L_{Min})	<u>3.0</u>
	(L_{Max}/L_{Min})	<u>5.0</u>
	Maximum Veiling Luminance Ratio: (L_v/L_{Ave})	<u>0.30</u>



- MATERIALS**
- A Photocell w/ integral surge arrester (remote mount in urban areas)
 - B 3 position selector switch HAND-OFF-AUTO
 - C 2 pole, 100 amp*, electrically held contactor, 120V operating coil
 - D 15 amp, 1 pole, circuit breaker
 - E 60 amp*, 2 pole, main circuit breaker
 - F 20 amp*, 2 pole, branch circuit breaker (typ). 2 spare c.b. required but not shown
 - G Surge arrester
 - H Transformer (see notes), 1 KVA*, 240/480V primary, 120/240V sec, single phase
 - I GFCI duplex receptacle
 - J Single pole, single throw switch
 - K Shielded security fixture with 100W lamp
 - L Neutral bar
 - M Equipment ground bar
 - N Terminal block (typ)
- (* = Size larger as needed)

CONTROL SCHEMATIC

GENERAL NOTES

Locate service pole and control installation adjacent to R.O.W. line with a minimum distance of 9 m (30') from the edge of pavement. Locate in close proximity to the utility transformer so the service drop does not exceed 46 m (150ft) and the total distance of overhead and underground cable (utility transformer to lighting controller) does not exceed 76 m (250ft). Exact location shall be established by the Engineer.

Wiring shall be panel board fashion. All bends shall be right angles. All runs shall vertical or parallel to panel board. Wires shall be grouped or laced.

All control installation components shall be U.L. listed.

Add receptacle, light, and switch in control cabinet, when specified.

For 480 V service, a step down transformer (dashed lines) is required.

Raceways shall terminate 75 (3) above top of concrete foundation.

Label equipment ground buss and neutral buss.

- 240 V. SERVICE
- 480 V. SERVICE

All dimensions are in millimeters (inches) unless otherwise shown.

DATE	REVISIONS
1/20/06	Corrected
1/31/08	Cabinet size increased
2/3/09	Surge arrester wiring

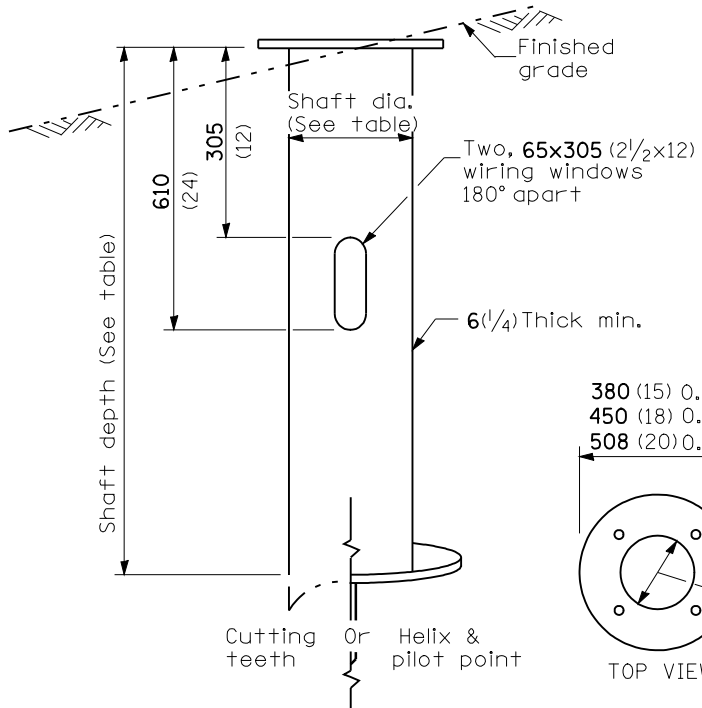
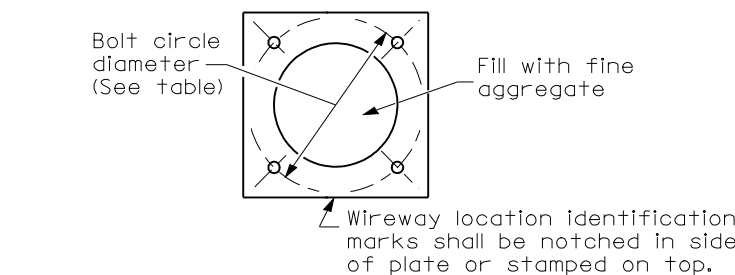
**CONTROL INSTALLATION
Pedestal Mount Cabinet**

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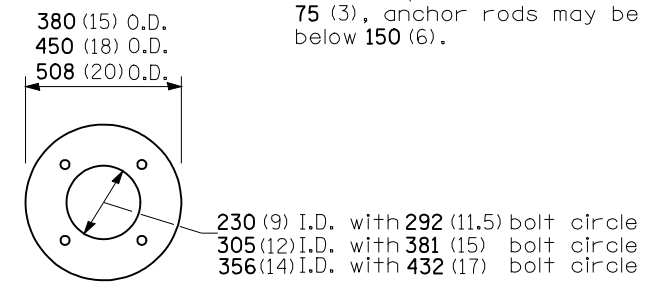
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LIGHT POLE MOUNTING HEIGHT	BOLT CIRCLE DIAMETER	STEEL FOUNDATION			CONCRETE FOUNDATION		
		SHAFT DIAMETER	SHAFT DEPTH	TOP PLATE (min)	SHAFT DIAMETER	SHAFT DEPTH	ANCHOR ROD LENGTH ①
< 9.1 m (30')	292 (11.5)	220 (8 5/8)	1.83 m (6')	300 x 300 x 25 12 x 12 x 1	610 (24)	1.52 m (5'-0")	1.45 m (4'-9")
9.4 m - 10.7 m (31'-35')	292 (11.5)	220 (8 5/8)	1.83 m (6')	300 x 300 x 25 12 x 12 x 1	610 (24)	1.67 m (5'-6")	1.60 m (5'-3")
10.9 m - 12.2 m (36'-40')	381 (15) ③	220 (8 5/8)	1.83 m (6') ②	375 x 375 x 31 15 x 15 x 1 1/4	762 (30)	1.83 m (6'-0")	1.75 m (5'-9")
12.5 m - 13.7 m (41'-45')	381 (15) ③	220 (8 5/8)	1.83 m (6') ②	375 x 375 x 31 15 x 15 x 1 1/4	762 (30)	1.98 m (6'-6")	1.90 m (6'-3")
14.0 m - 15.2 m (46'-50')	381 (15) ③	220 (8 5/8)	2.44 m (8')	375 x 375 x 31 15 x 15 x 1 1/4	762 (30)	2.13m (7'-0")	2.00 m (6'-9")

- ① Length does not include 100(4)hook
- ② 220 mm x 2.44 m (8 5/8" x 8'-0") for Twin luminaires
- ③ Bolt circle diam. shall be 430 (17) when a TB3-17 transformer base is used



STEEL FOUNDATION



RING PLATE DETAIL

(When rock is encountered and foundation is shallower)

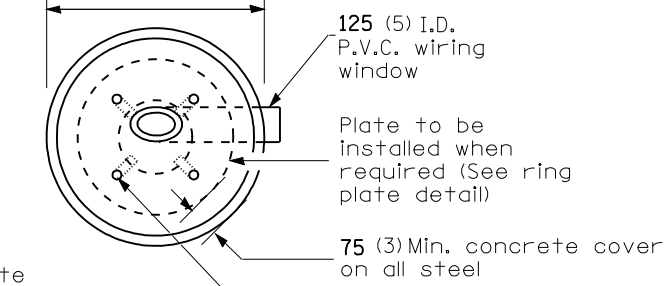
Length above foundation shall be adjusted to accommodate breakaway devices furnished by the contractor for a specific installation.

Use dirt removed from foundation to meet 1.52m (5 ft.) chord fill around foundation top. Grade dirt level with bottom of concrete chamfer.

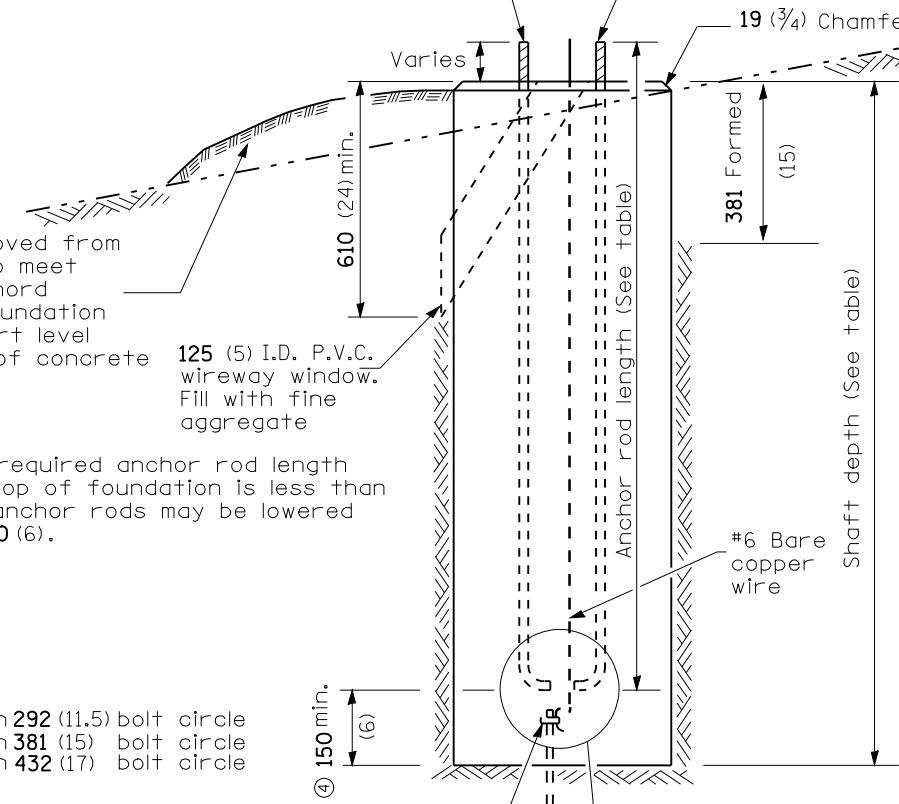
- ④ If the required anchor rod length above top of foundation is less than 75 (3), anchor rods may be lowered below 150 (6).

610 (24) min. dia. with 292 (11.5) bolt circle

762 (30) min. dia. with 381 (15) or 432 (17) bolt circle



Anchor rod 25 (1) diameter with 230 (9) threads. Anchor rod shall extend through nut 25 (1). For barrier or foundation behind guardrail, use self-locking nut and flat washer. Do not use lock washer.



Cast bronze clamp

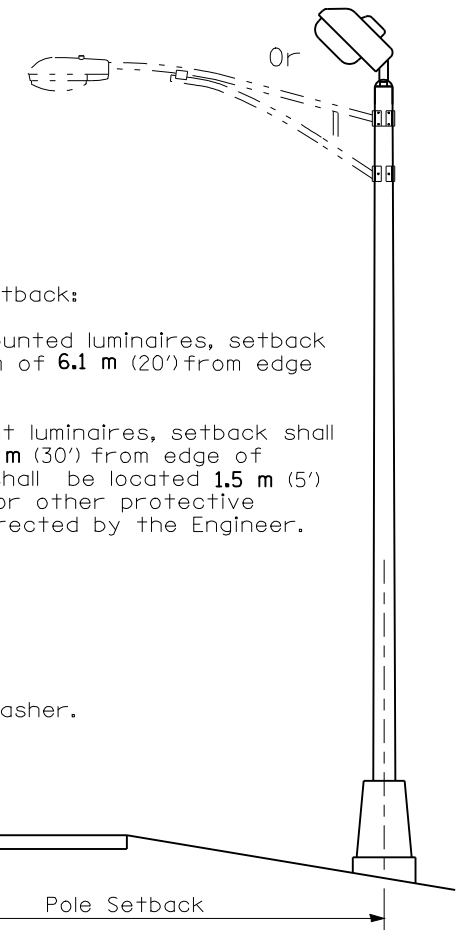
16 mm x 3 m (5/8" x 10') Copperclad grounding electrode. When foundation is set in rock, install ground electrode in cable trench.

CONCRETE FOUNDATION

Pole Foundation Setback:

For horizontal mounted luminaires, setback shall be a minimum of 6.1 m (20') from edge of pavement.

For vertical mount luminaires, setback shall be a minimum of 9 m (30') from edge of pavement. Poles shall be located 1.5 m (5') behind guardrail or other protective barriers, or as directed by the Engineer.

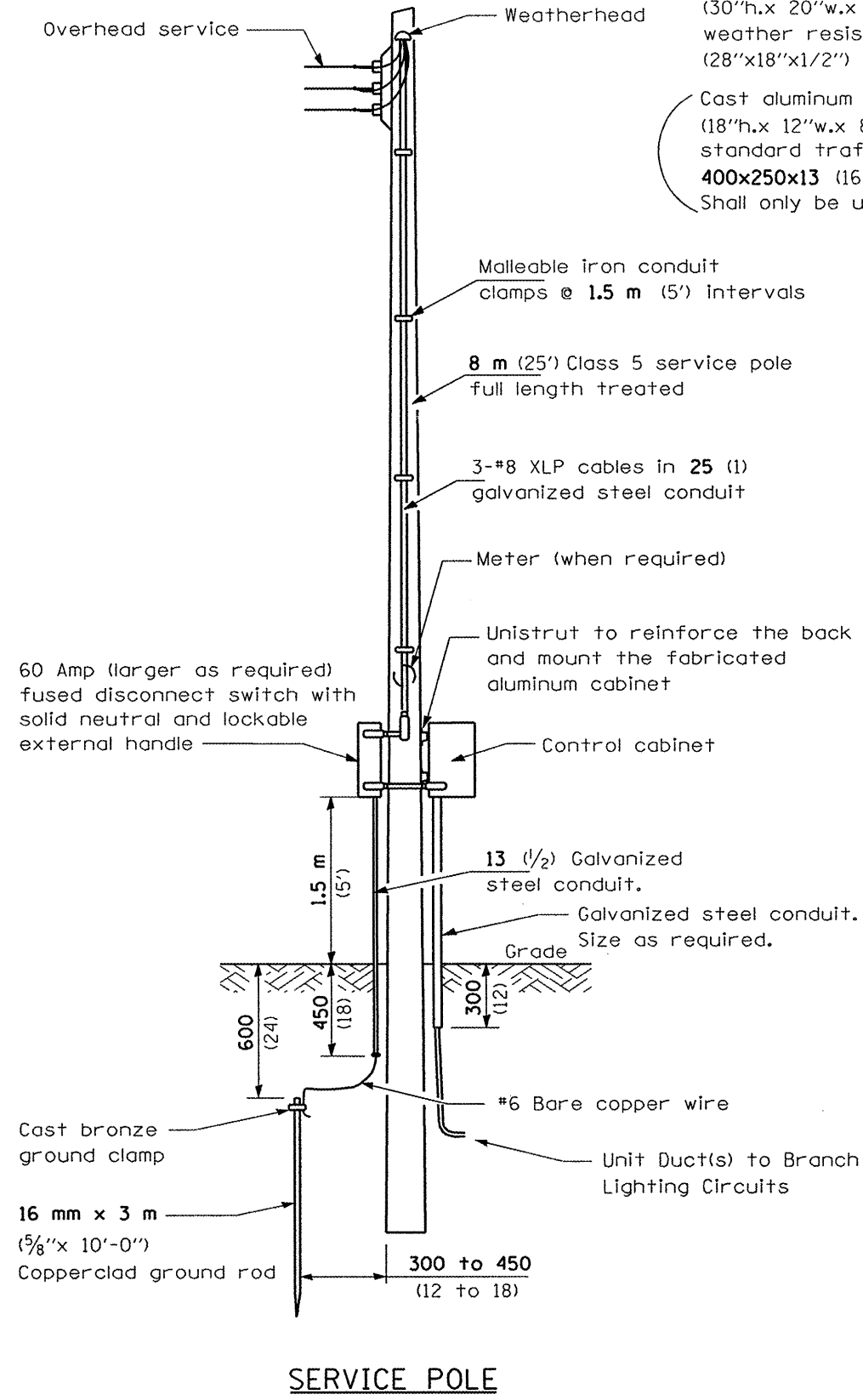


Notes:

- 1) Wireway may be on front, back or side of foundation as required by the trenching. Place door of transformer base on wireway side to minimize the number of unit duct bends.
- 2) Top of schedule 40 125 (5) I.D. PVC wiring window, shall be flush with the top of foundation for drainage.
- 3) All foundations are designed to be located on slopes not exceeding 2:1 where soils have an unconfined compressive strength of at least 1.0 TSF. The contractor shall verify the soil strength during drilling for concrete foundations or by monitoring installation resistance on steel foundations and notify the engineer if other conditions are encountered.
- 4) Anchor rod shall be increased to 31 (1 1/4) diameter for 15.24 (50') mounting height or above.
- 5) TB3-17 transformer base is not to be used on metal foundation

All dimensions are in millimeters (inches) unless otherwise shown.

120/240V., 1 PHASE, 3 WIRE SERVICE

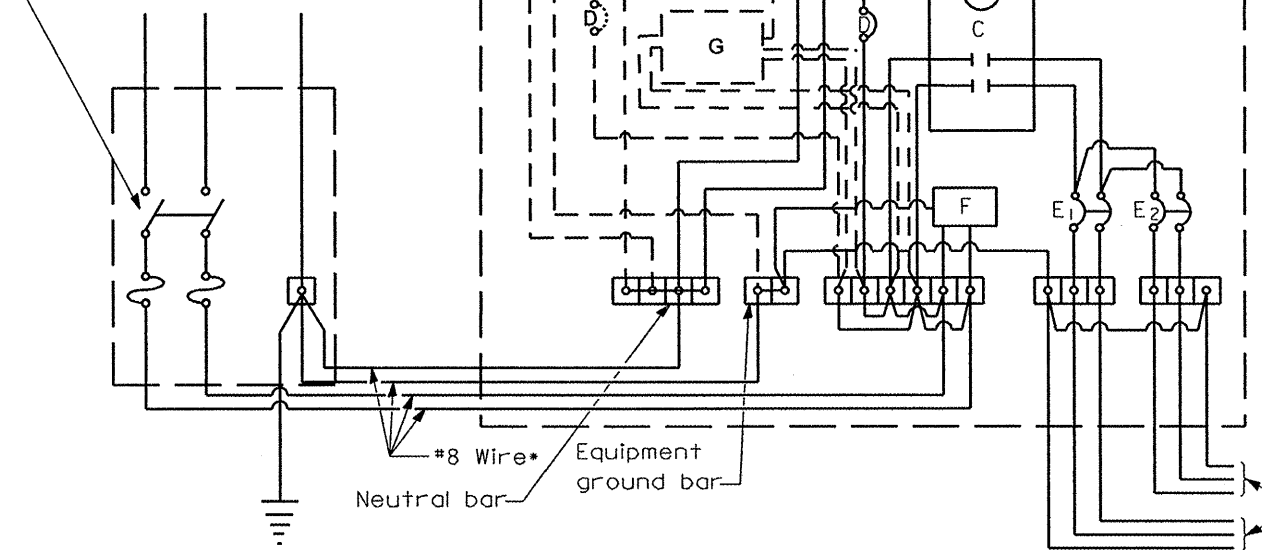


SERVICE POLE

Fabricated aluminum cabinet 760h.x510w.x355d.* (30"h.x 20"w.x 14"d.). Aluminum door with weather resistant lock and key and 710x460x13* (28"x18"x1/2") mounting board.

Cast aluminum cabinet 450h.x300w.x200d. (18"h.x 12"w.x 8"d.). Aluminum door with standard traffic signal lock and key and 400x250x13 (16"x10"x1/2") mounting board. Shall only be used when specified.

2 Pole, 3 wire, 60A.* disconnect switch, NEMA 3R, fused 30A.*



- A Photocell with integral surge arrester
 - B 3 Position selector switch HAND-OFF-AUTO
 - C 60 amp* electrically held contactor
 - D 15 amp, 1 pole, circuit breaker
 - E 20 amp*, 2 pole, branch circuit breaker. Two spare breakers are required but are not shown
 - F Surge arrester
 - G Transformer (see notes), 1 KVA*, 240/480V primary, 120/240V sec, single phase
 - H GFCI duplex receptacle
 - I Single pole, single throw switch
 - J Shielded security fixture with 100W lamp
- (* = Size larger as needed)

GENERAL NOTES

Wiring shall be panel board fashion. All bends shall be right angles. All runs shall be vertical or parallel to panel board. Wires shall be grouped or laced.

All control installation components shall be U.L. listed.

Label equipment ground and neutral.

Locate service pole and control installation adjacent to R.O.W. line with a minimum distance of 9 m (30') from the edge of pavement. Exact location shall be established by the Engineer.

The total distance between the control installation and primary transformer shall not exceed 76 m (250').

For 480 V service, a step down transformer (dashed lines) is required.

Add receptacle, light, and switch in control cabinet, when specified.

All dimensions are in millimeters (inches) unless otherwise shown.

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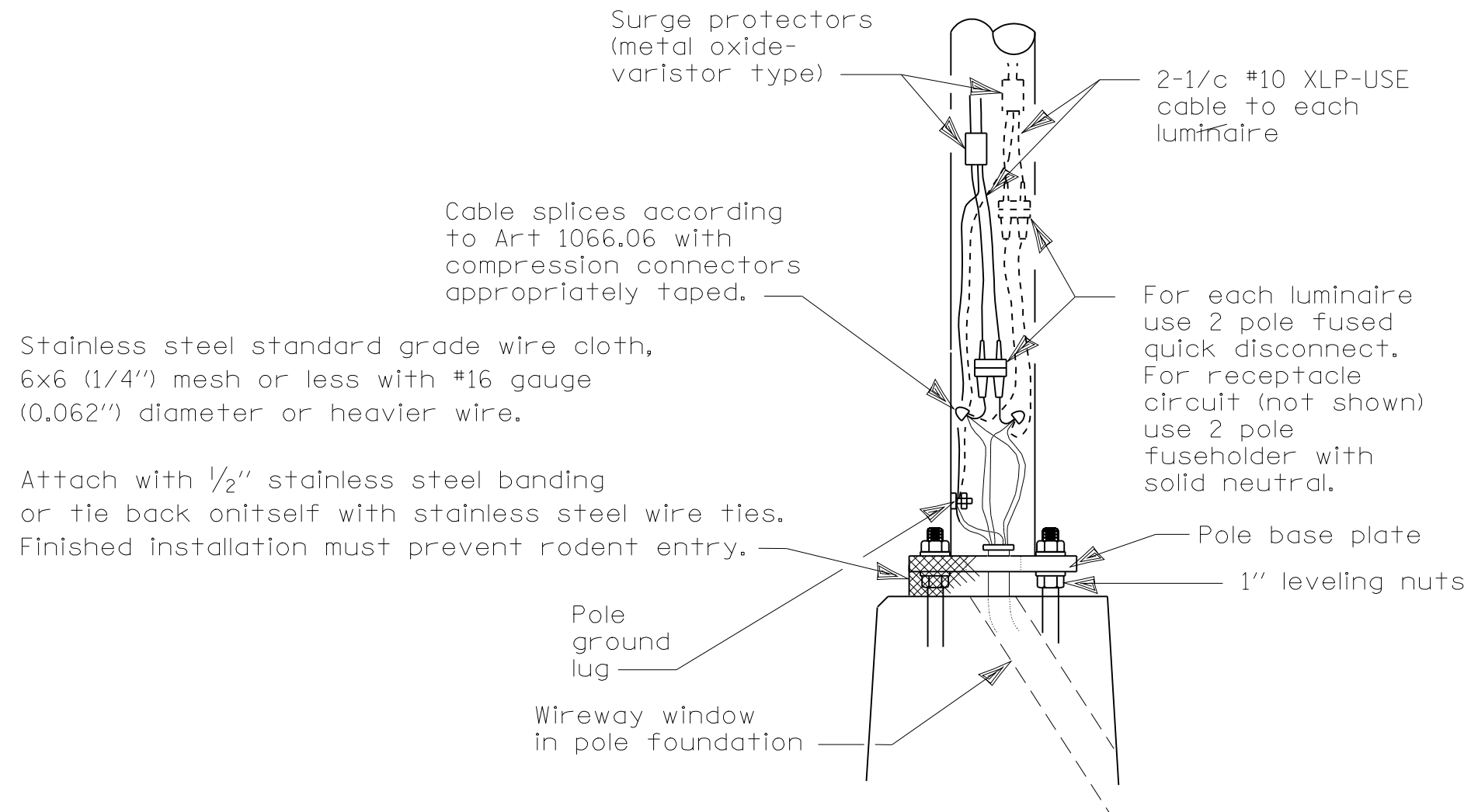
240 V. SERVICE

480 V. SERVICE

DATE	REVISIONS
	Corrected 1/19/06
1/17/08	Service disconnect
2/3/08	SA wiring, cabinet notes

CONTROL INSTALLATION Service Pole Mounted

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WIRING DETAIL

NO SCALE

GENERAL NOTES

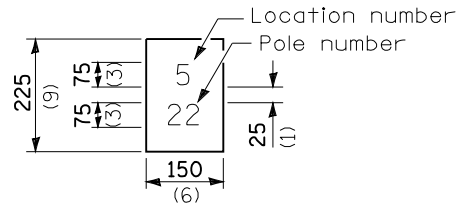
- All taped splices shall use 2 layers of electrical tape over 3 layers of rubber tape as required by the Standard Specifications. Coat the finished taped splice with bonding compound.
- All cable splices shall be taped unless another method has been specifically approved by the Engineer.
- For example purposes the pole is shown on an anchor base. If the pole is required to be set on a breakaway base, consult the Standard Specifications.

All dimensions are in millimeters (inches) unless otherwise shown.

FILE NAME =	USER NAME = laughlinr1	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	POLE HANDHOLE WIRING				F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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PLOT SCALE = 40.0000 ' / IN.		CHECKED -	REVISED -		CONTRACT NO. 72C46				ILLINOIS FED. AID PROJECT				
PLOT DATE = Feb-05-2009 02:56:34PM		DATE -	REVISED -		SCALE:	SHEET NO.	OF SHEETS	STA.	TO STA.				

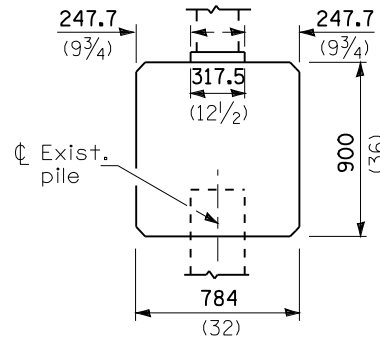
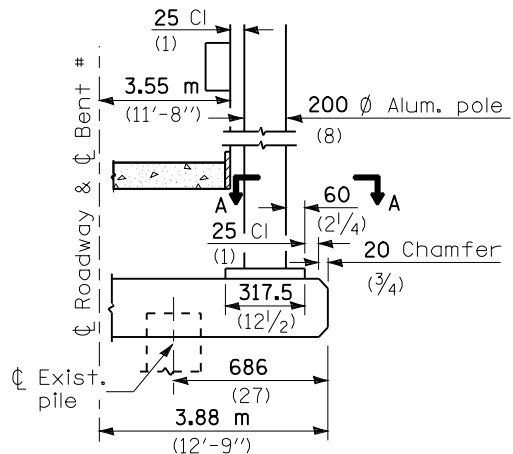
"Install and orient arm bracket over pole tenon and firmly hand tighten the two set screws. Use third hole in arm bracket as a guide to drill a 8.3 (2/64) diameter hole through tenon. Install and tighten self-tapping screw. Tighten set screws an additional (1/4 to 3/8) turn with hex key (not provided). Install locknuts on set screws if threaded projection allows."

Pole shall meet AASHTO Standard Specifications for 128.72 km (80 mph) wind loading and 40.82 kg (90 lb.), .37 m² (4.0 sq. ft.) E.P.A. luminaire.

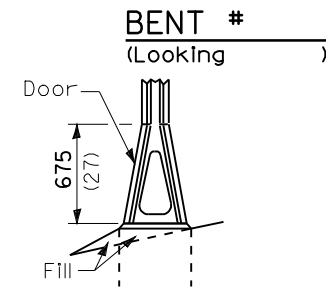


The contractor shall furnish and install a light pole identification of each new light pole, as shown above, incidental to the respective light pole pay item. The numerals shall be 75 (3) series "D", black, screened on silver-white type B pressure sensitive reflective sheeting conforming to the requirements of section T602.01 of the Standard Specifications for Traffic Control Items. The numerals shall conform to the FHWA "Standard Alphabets for Highway Signs".

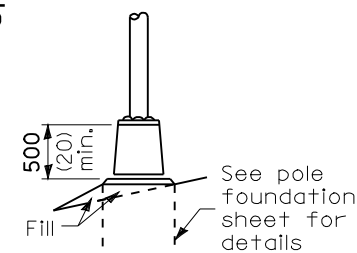
The light pole identification shall be applied to sign base material as specified in section 1085.05 of the Standard Specifications, approximately 180 (7) above the adjacent pavement grade visible to approaching traffic in accordance with Highway Standard 2319.



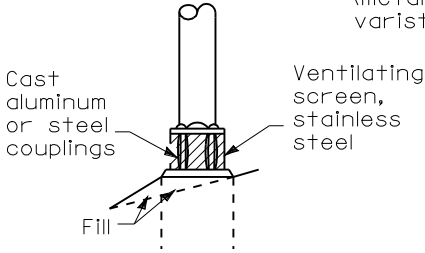
BRIDGE PIER MOUNT



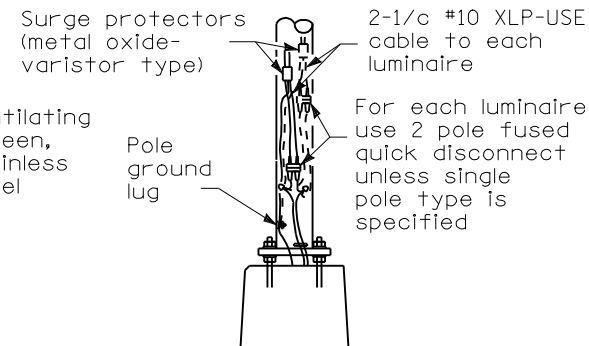
STAINLESS STEEL FLAIR BASE



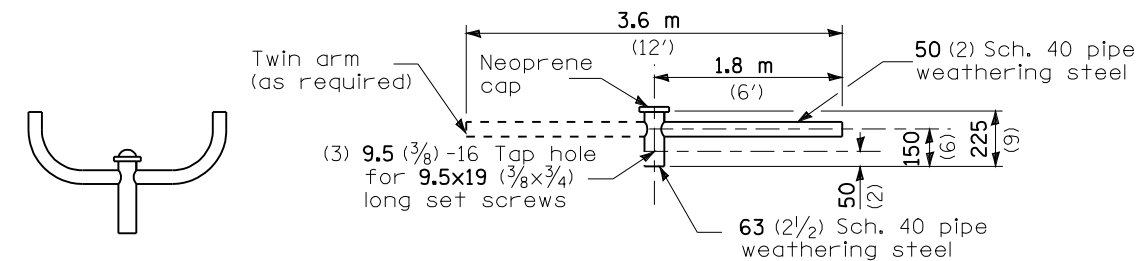
TRANSFORMER BASE



BREAKAWAY COUPLING



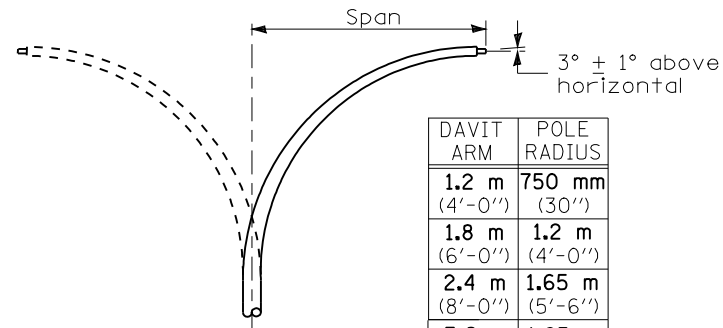
ANCHOR



TWIN TENON

TENON MOUNT BRACKET ARM

NOTE: Single or twin arm assembly shall be tilted 3° above horizontal.



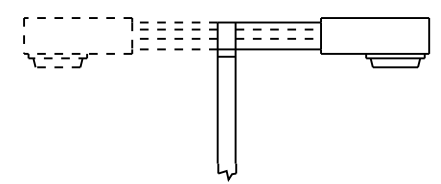
DAVIT ARM	POLE RADIUS
1.2 m (4'-0")	750 mm (30")
1.8 m (6'-0")	1.2 m (4'-0")
2.4 m (8'-0")	1.65 m (5'-6")
3.6 m (12'-0")	1.65 m (5'-6")

DAVIT ARM

DAVIT ARM-TWIN

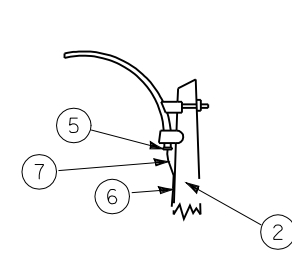


TENON

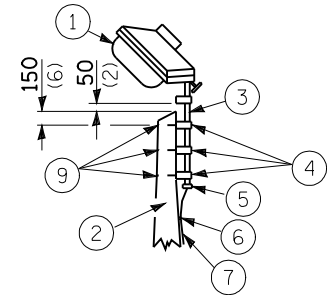


SHORT BRACKET

SHORT BRACKET - TWIN

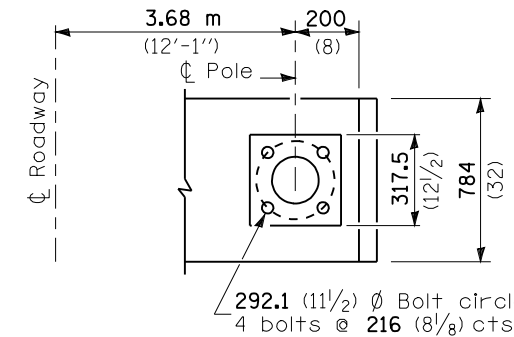


MAST ARM

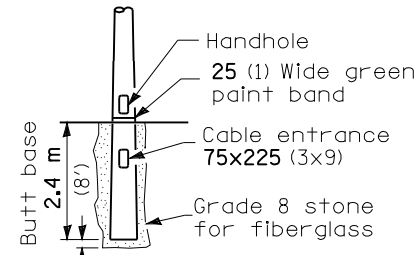


TENON

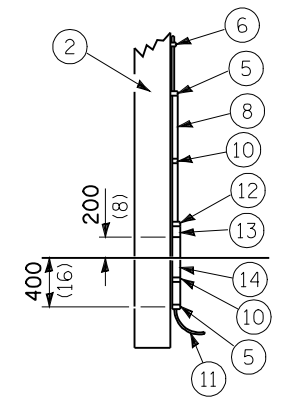
- ① Luminaire
- ② Wood pole, class 3 or better
- ③ 63 (2 1/2) Galv. steel conduit
- ④ Single offset pole band
- ⑤ Conduit bushing
- ⑥ Cable clamps on 600 (24) centers
- ⑦ 2/c #12 Type use cable
- ⑧ 25 (1) Galv. steel conduit 3.0 m (10') in length
- ⑨ 16 (5/8) Ø hot dipped galvanized bolt with flat washer & locknut (3 req'd)
- ⑩ Conduit clamps on 900 (36) centers
- ⑪ Unit duct
- ⑫ Threaded reducer
- ⑬ "C" Condulet, threaded
- ⑭ 40 (1 1/2) Galv. steel conduit for 1 unit duct or 75 (3) galv. steel conduit for 2 or 3 unit ducts.



SECTION A-A



BUTT BASE



POLE, WOOD

POLE LENGTH	DEPTH IN GROUND
19.8 m (65')	3.6 m (12')
18.0 m (60')	3.0 m (10')
16.8 m (55')	2.7 m (9')
16.0 m (50')	2.4 m (8')
13.7 m (45')	2.1 m (7')
12.0 m (40')	2.0 m (6.5')
10.7 m (35')	1.8 m (6')
9.0 m (30')	1.7 m (5.5')

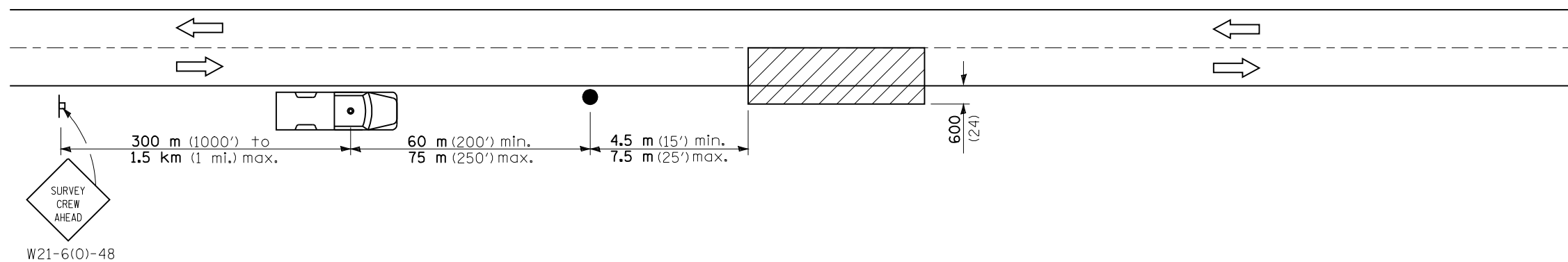
All dimensions are in millimeters (inches) unless otherwise shown.

METAL

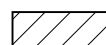
OR

CONCRETE

Details for underground distribution if required



SYMBOLS



Work area



Sign on portable or permanent support



Truck with flashing amber light and dual emergency flashers



Flagger with traffic control sign

TYPICAL APPLICATIONS
Utility operations

All dimensions are in millimeters (inches)
unless otherwise shown.

FILE NAME =	USER NAME = laughlinr1	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	DETAIL FOR NIGHTTIME LIGHTING INSPECTION				F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
et:\pw\work\PWIDOT\LAUGHLINRL\dms76543\672C46-shr-details.dgn		DRAWN -	REVISED -		668	28L-1	SANGAMON	20	20				
PLOT SCALE = 40.0000' / IN.		CHECKED -	REVISED -		CONTRACT NO. 72C46								
PLOT DATE = Feb-05-2009 02:56:40PM		DATE -	REVISED -		ILLINOIS FED. AID PROJECT								
				SCALE:	SHEET NO.	OF	SHEETS	STA.	TO STA.				