

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
PROPOSED
HIGHWAY PLANS

FAP ROUTE 325 (IL 16)
SECTION (14, 116)L
MACOUPIN COUNTY

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
325	(14, 116)L	MACOUPIN	8	1
FED. ROAD DIST. NO.	ILLINOIS	CONTRACT NO. 72C17		

★ 8+1=9

D-96-091-08

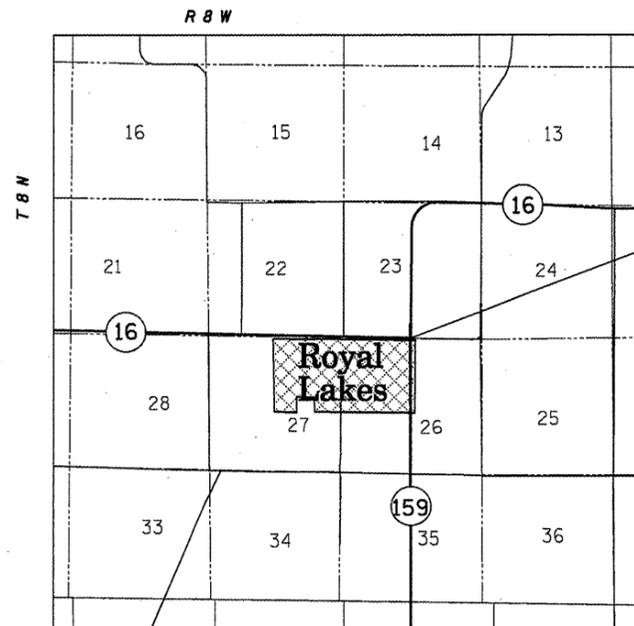
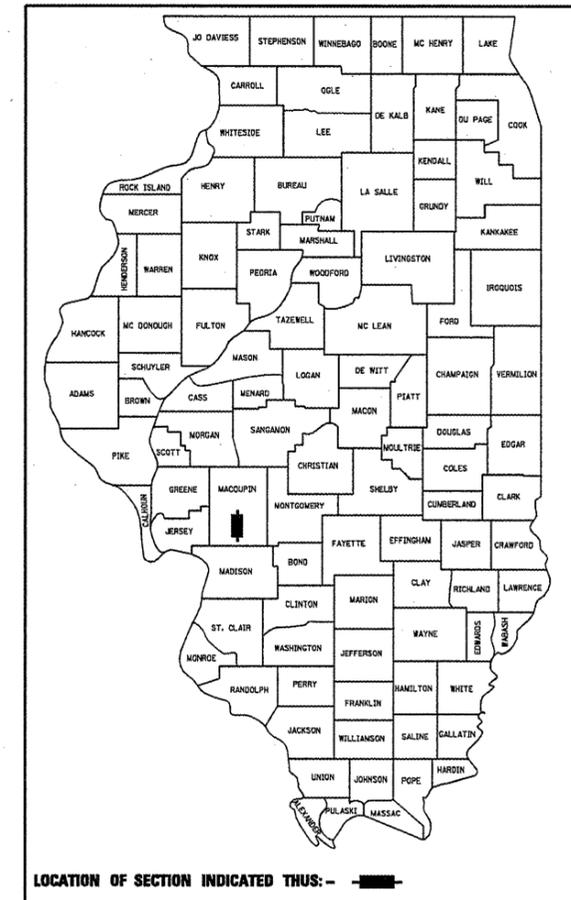
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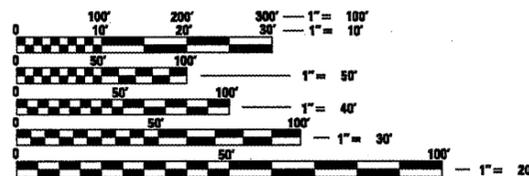
HIGHWAY STANDARDS

701001-01	701901
701006-02	805001
701301-02	000001-05
701201-02	

C-96-091-08



PROJECT LOCATION:
 INTERSECTION OF IL 16 WITH
 IL 159 AT ROYAL LAKES



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
 1-800-892-0123
 OR 811

0 1 2 3 4 5 MILES



SCALE

PROJECT ENGINEER: SAL MADONIA (217) 782-4761
 PROJECT MANAGER: JEFF MYERS (217) 524-7940

CONTRACT NO. 72C17

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS

SUBMITTED Aug 5, 2008
Robert L. Dikell
 DEPUTY DIRECTOR OF HIGHWAYS, REGION ENGINEER

October 3, 2008
Eric E. Harn
 ENGINEER OF DESIGN AND ENVIRONMENT

October 3, 2008
Christine M. Reed
 DIRECTOR OF HIGHWAYS, CHIEF ENGINEER

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 OF THE STATE OF ILLINOIS**

Rev.

GENERAL NOTES

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING UTILITY PROPERTY FROM CONSTRUCTION OPERATIONS AS OUTLINED IN ARTICLE 107.31 OF THE STANDARD SPECIFICATIONS. THE JULIE NUMBER IS 800-892-0123. A MINIMUM OF FORTY-EIGHT HOURS ADVANCE NOTICE IS REQUIRED. ANY DAMAGE TO THE UNDERGROUND FACILITIES, CAUSED BY THE CONTRACTOR SHALL BE REPAIRED TO THE SATISFACTION OF THE DEPARTMENT AT THE CONTRACTOR'S EXPENSE, INCLUDING TEMPORARY REPAIRS WHICH MAY BE REQUIRED TO KEEP THE FACILITY OPERATIONAL WHILE MATERIAL IS BEING OBTAINED TO MAKE PERMANENT REPAIRS.
2. THE LOCATIONS OF THOSE BURIED AND ABOVEGROUND UTILITIES SHOWN ARE APPROXIMATE, ARE SHOWN FOR CONTRACTOR INFORMATIONAL USE ONLY, AND ARE NOT TO BE REFERENCED FOR CONSTRUCTIONS PURPOSES. THE IMPLIED PRESENCE OR ABSENCE OF UTILITIES IS NOT TO BE CONSTRUED BY THE OWNER, ENGINEER, CONTRACTOR, OR SUBCONTRACTORS TO BE AN ACCURATE AND COMPLETE REPRESENTATION OF UTILITIES THAT MAY OR MAY NOT EXIST ON THE CONSTRUCTION SITE. BURIED AND ABOVEGROUND UTILITY LOCATION, IDENTIFICATION, AND MARKING ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. REROUTING, DISCONNECTION, PROTECTION, ETC. OF ANY UTILITIES MUST BE COORDINATED BETWEEN THE CONTRACTOR, UTILITY COMPANY, AND OWNER. SITE SAFETY, INCLUDING THE AVOIDANCE OF HAZARDS ASSOCIATED WITH BURIED AND ABOVEGROUND UTILITIES, REMAINS THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
3. FOR STABILIZATION, ALL TYPE III BARRICADES SHALL REQUIRE A MINIMUM OF FOUR SANDBAGS PER BARRICADE.
4. WHERE SECTION OR SUBSECTION MONUMENTS ARE ENCOUNTERED, THE ENGINEER SHALL BE NOTIFIED BEFORE SUCH MONUMENTS ARE REMOVED. THE CONTRACTOR SHALL PROTECT AND CAREFULLY PRESERVE ALL MONUMENTS UNTIL AN AUTHORIZED SURVEYOR OR AGENT HAS WITNESSED OR OTHERWISE REFERENCED THEIR LOCATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR HAVING AN AUTHORIZED SURVEYOR RE-ESTABLISH ANY SECTION OR SUBSECTION MONUMENTS DESTROYED BY HIS OPERATIONS.
5. ANY REFERENCE TO A STANDARD IN THESE PLANS SHALL BE INTERPRETED TO MEAN THE EDITION AS INDICATED BY THE SUBNUMBER LISTED ON THE INDEX OF SHEETS OR THE COPY OF THE STANDARD INCLUDED IN THESE PLANS.
6. UNLESS NOTED OTHERWISE, STATIONS AND OFFSETS REFER TO CENTERLINE OF PROJECT.
7. IN ADDITION TO FIELD SURVEYS AND AERIAL SURVEYS, PLAN DIMENSIONS AND DETAILS RELATIVE TO THE EXISTING FACILITIES HAVE BEEN TAKEN FROM EXISTING PLANS AND ARE SUBJECT TO CONSTRUCTION VARIATIONS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY SUCH DIMENSIONS AND DETAILS IN THE FIELD. SUCH VARIATIONS SHALL NOT BE A CAUSE FOR ADDITIONAL COMPENSATION DUE TO A CHANGE IN THE SCOPE OF THE WORK. HOWEVER, THE CONTRACTOR WILL BE PAID FOR THE QUANTITY ACTUALLY FURNISHED AT THE UNIT PRICE BID FOR THE WORK.

COMMITMENTS:

THERE ARE NO COMMITMENTS ON THIS PROJECT.

DISTRICT SIX	
EXAMINED <u>July 18</u>	20 <u>08</u>
<i>[Signature]</i>	
OPERATIONS ENGINEER	

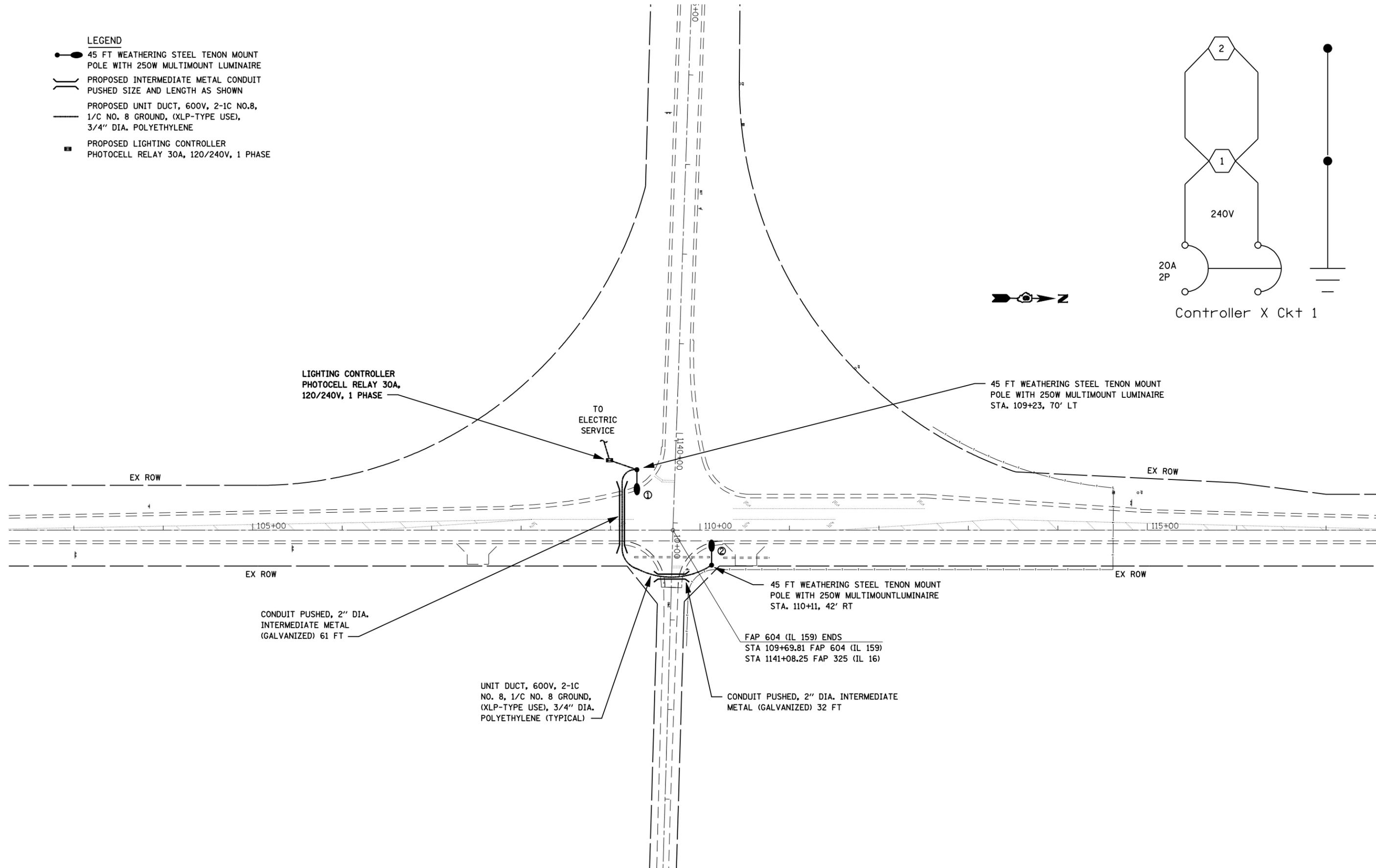
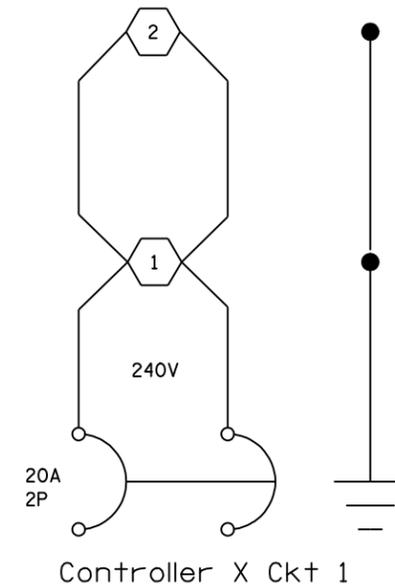
EXAMINED <u>July 22</u>	20 <u>08</u>
<i>[Signature]</i>	
PROGRAM IMPLEMENTATION ENGINEER	
EXAMINED <u>Aug 5</u>	20 <u>08</u>
<i>[Signature]</i>	
PROGRAM DEVELOPMENT ENGINEER	

FILE NAME =	USER NAME = laughlinc1	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	GENERAL NOTES	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
c:\pwwork\VP\DOT\LAUGHLIN\LDMS20847	672c17-ht-gennote.dgn	DRAWN -	REVISED -			325	(14, 116)L	MACOUPIN	8	2
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	PLOT DATE = Aug-04-2008 02:22:14PM	DATE -	REVISED -		SCALE:	SHEET NO.	OF	SHEETS	STA.	TO STA.
								FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT	CONTRACT NO. 72C17

ILLINOIS DEPARTMENT OF TRANSPORTATION
SUMMARY OF QUANTITIES

LOCATION OF WORK				<i>100% STATE</i>
SUMMARY OF QUANTITIES				CONSTRUCTION TYPE CODE
CODE NO.	ITEM	UNIT	TOTAL QUANTITY	Y030-1E
67100100	MOBILIZATION	L SUM	1	1
70100450	TRAFFIC CONTROL AND PROTECTION, STANDARD 701201	L SUM	1	1
80400100	ELECTRIC SERVICE INSTALLATION	EACH	1	1
81020500	CONDUIT PUSHED, 2" DIA., INTERMEDIATE METAL	FOOT	93	93
81603000	UNIT DUCT, 600V, 2-1C NO. 8, 1/C NO. 8 GROUND, (XLP-TYPE USE), 3/4" DIA. POLYETHYLENE	FOOT	260	260
81900200	TRENCH AND BACKFILL FOR ELECTRICAL WORK	FOOT	147	147
82103900	LUMINAIRE, SODIUM VAPOR, MULTI-MOUNT, 250 WATT	EACH	2	2
82500605	LIGHTING CONTROLLER PHOTOCELL RELAY	EACH	1	1
83062730	LIGHT POLE, WEATHERING STEEL, 45 FT. M. H., TENON MOUNT	EACH	2	2
83600355	LIGHT POLE FOUNDATION METAL, 15" BOLT CIRCLE, 8" X 6'	EACH	2	2
83800650	BREAKAWAY DEVICE, COUPLING, WITH STAINLESS STEEL SCREEN	EACH	8	8

- LEGEND**
- 45 FT WEATHERING STEEL TENON MOUNT POLE WITH 250W MULTIMOUNT LUMINAIRE
 - ⎓ PROPOSED INTERMEDIATE METAL CONDUIT PUSHED SIZE AND LENGTH AS SHOWN
 - PROPOSED UNIT DUCT, 600V, 2-1C NO.8, 1/C NO. 8 GROUND, (XLP-TYPE USE), 3/4" DIA. POLYETHYLENE
 - PROPOSED LIGHTING CONTROLLER PHOTOCELL RELAY 30A, 120/240V, 1 PHASE



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

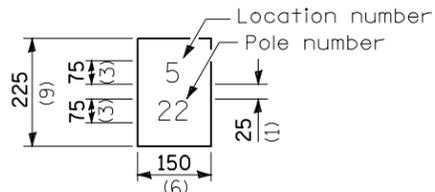
PLAN SHEET

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

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
325	(14, 116)L	MACOUPIN	8	4
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT			CONTRACT NO. 72C17	

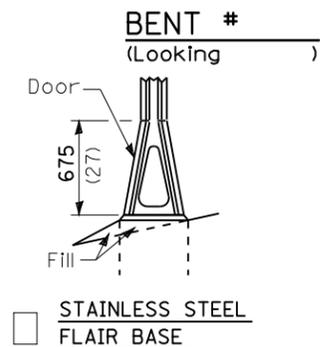
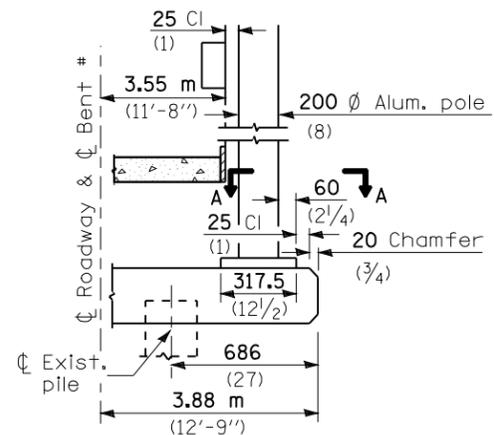
"Install and orient arm bracket over pole tenon and firmly hand tighten the two set screws. Use third hole in arm bracket as a guide to drill a 8.3 (2/64) diameter hole through tenon. Install and tighten self-tapping screw. Tighten set screws an additional (1/4 to 3/8) turn with hex key (not provided).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

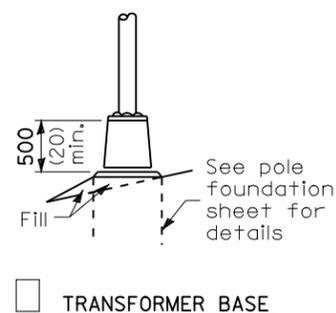


The contractor shall furnish and install a light pole identification of each new light pole, as shown above, incidental to the respective light pole pay item. The numerals shall be 75 (3) series "D", black, screened on silver-white type B pressure sensitive reflective sheeting conforming to the requirements 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.

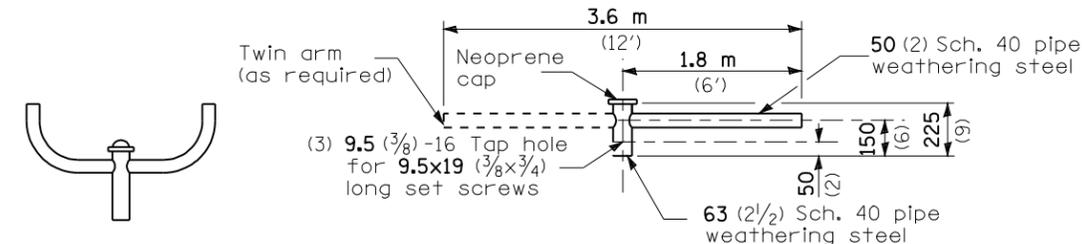


STAINLESS STEEL FLAIR BASE



TRANSFORMER BASE

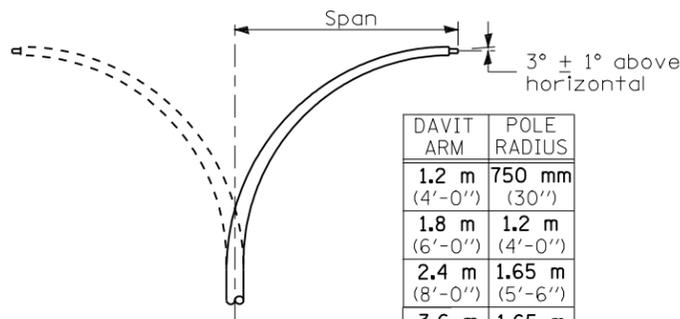
FRANGIBLE



TWIN TENON

TENON MOUNT BRACKET ARM

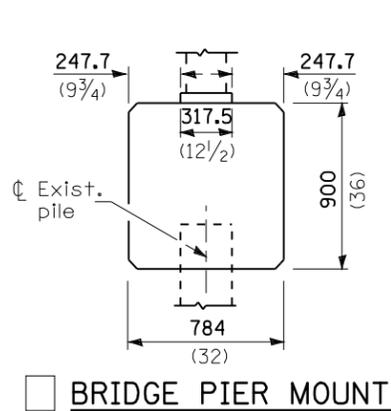
NOTE: Single or twin arm assembly shall be tilted 3° above horizontal.



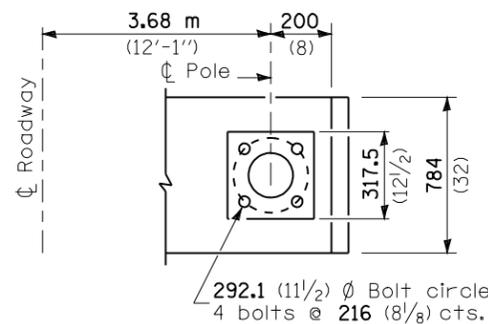
DAVIT ARM

DAVIT ARM-TWIN

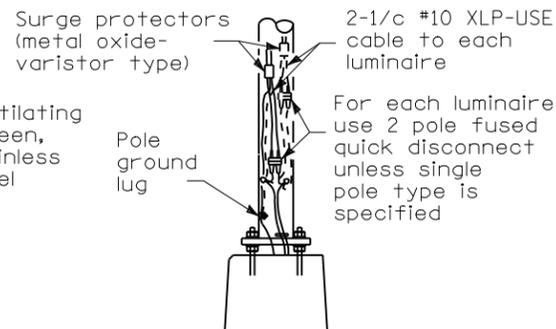
DAVIT ARM	POLE RADIUS
1.2 m (4'-0")	750 mm (30")
1.8 m (6'-0")	1.2 m (4'-0")
2.4 m (8'-0")	1.65 m (5'-6")
3.6 m (12'-0")	1.65 m (5'-6")



BRIDGE PIER MOUNT



SECTION A-A



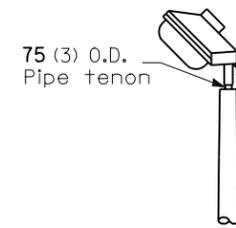
ANCHOR

METAL

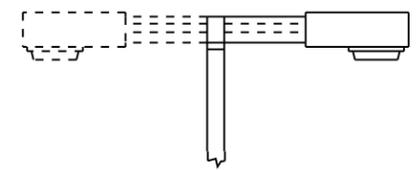
OR

CONCRETE

Details for underground distribution if required

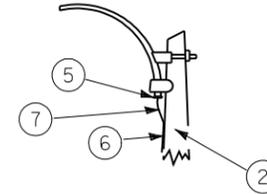


TENON

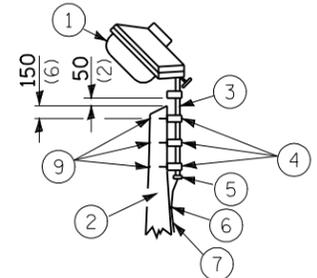


SHORT BRACKET

SHORT BRACKET - TWIN



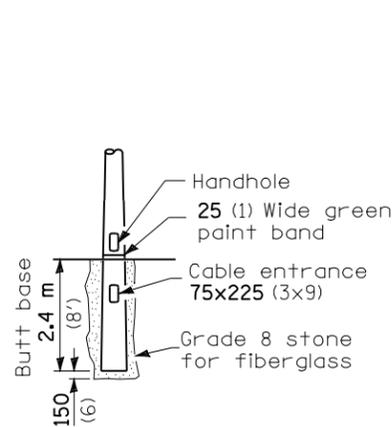
MAST ARM



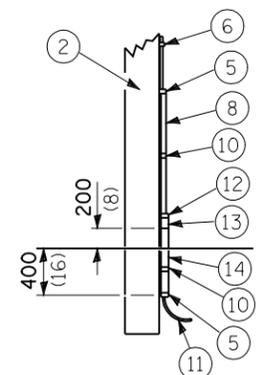
TENON

- 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.



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')

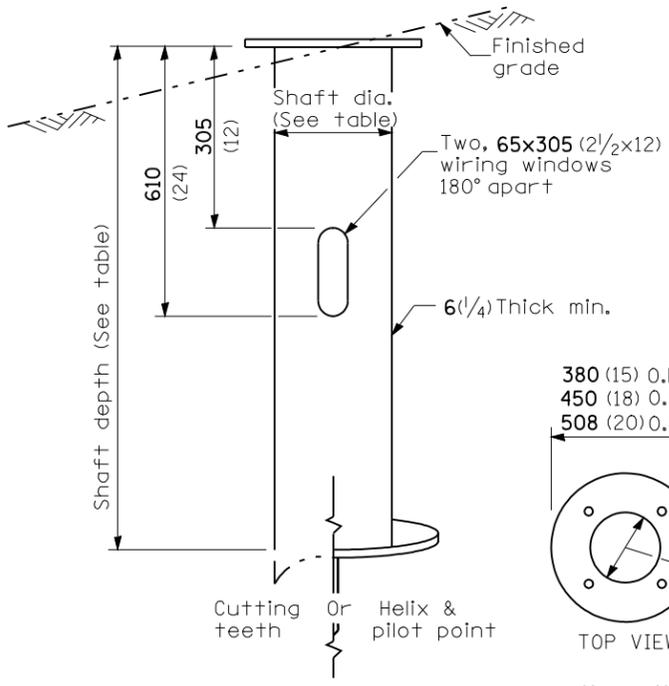
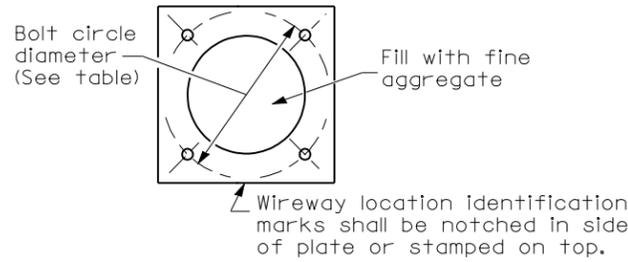
All dimensions are in millimeters (inches) unless otherwise shown.

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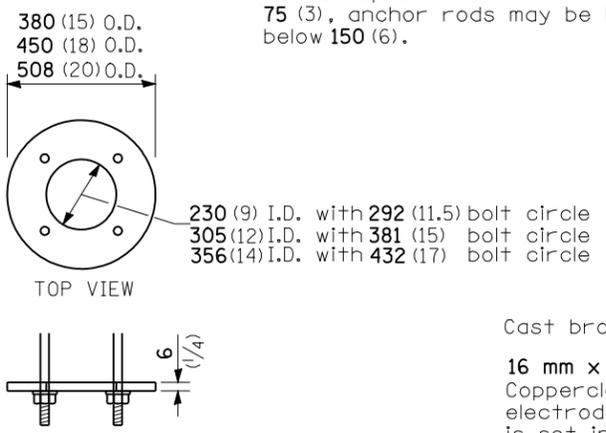
FILE NAME =	USER NAME = laughlinr1	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	POLE STANDARDS				F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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PLOT DATE = Aug-04-2008 02:19:47PM		DATE -	REVISED -		FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT							
					SCALE:	SHEET NO.	OF SHEETS	STA.	TO STA.				

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 ③ (15)	220 (8 5/8)	1.83 m ② (6')	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 ③ (15)	220 (8 5/8)	1.83 m ② (6')	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 ③ (15)	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.

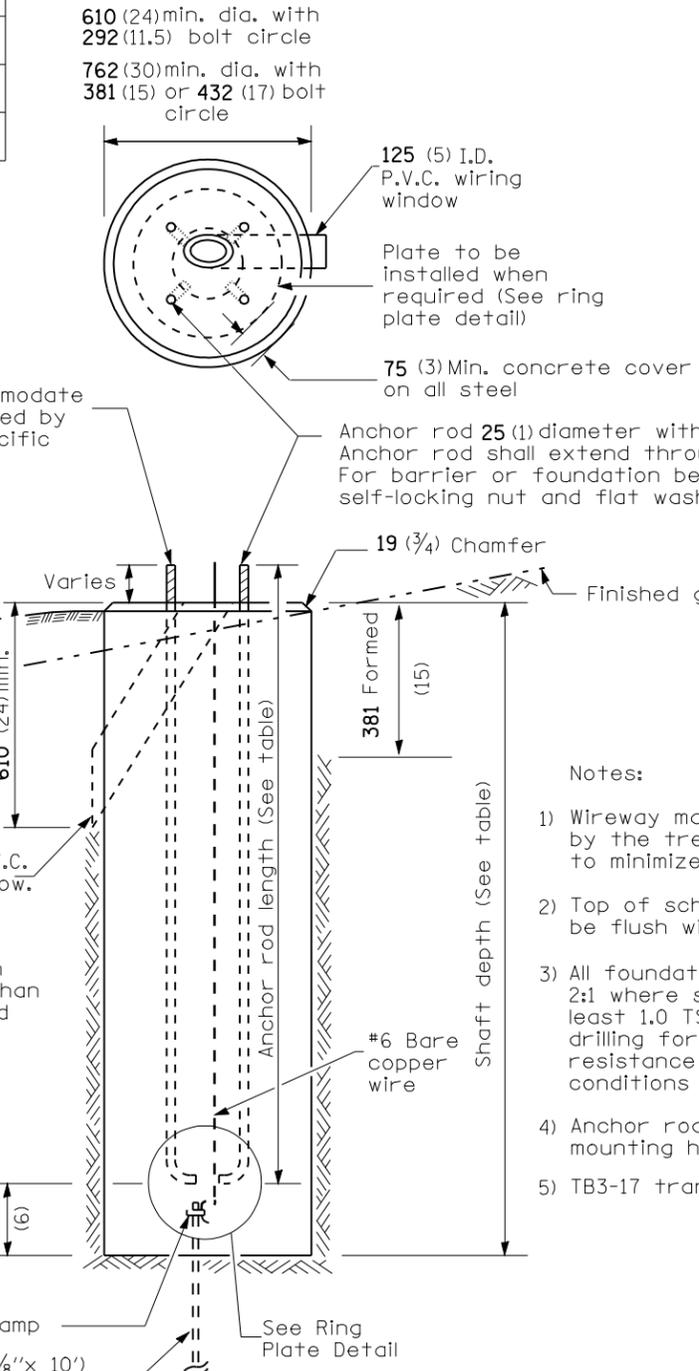
Use dirt removed from foundation to meet 1.52m (5 ft.) chord fill around foundation top. Grade dirt level with bottom of concrete chamfer.

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

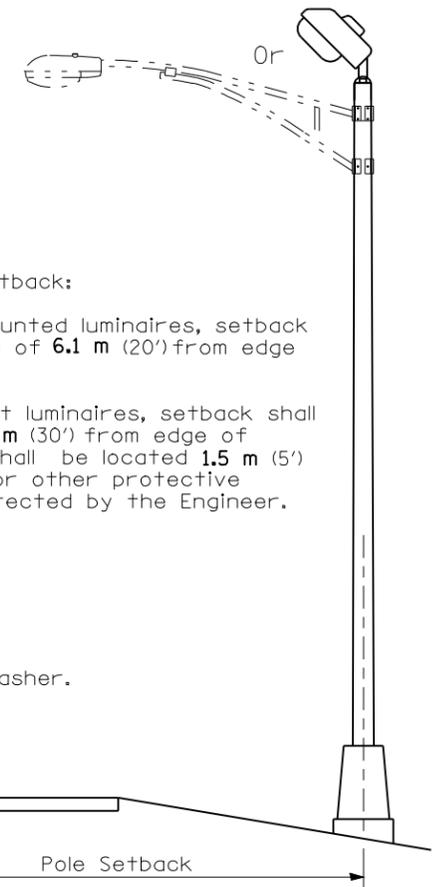
Cast bronze clamp

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



Notes:

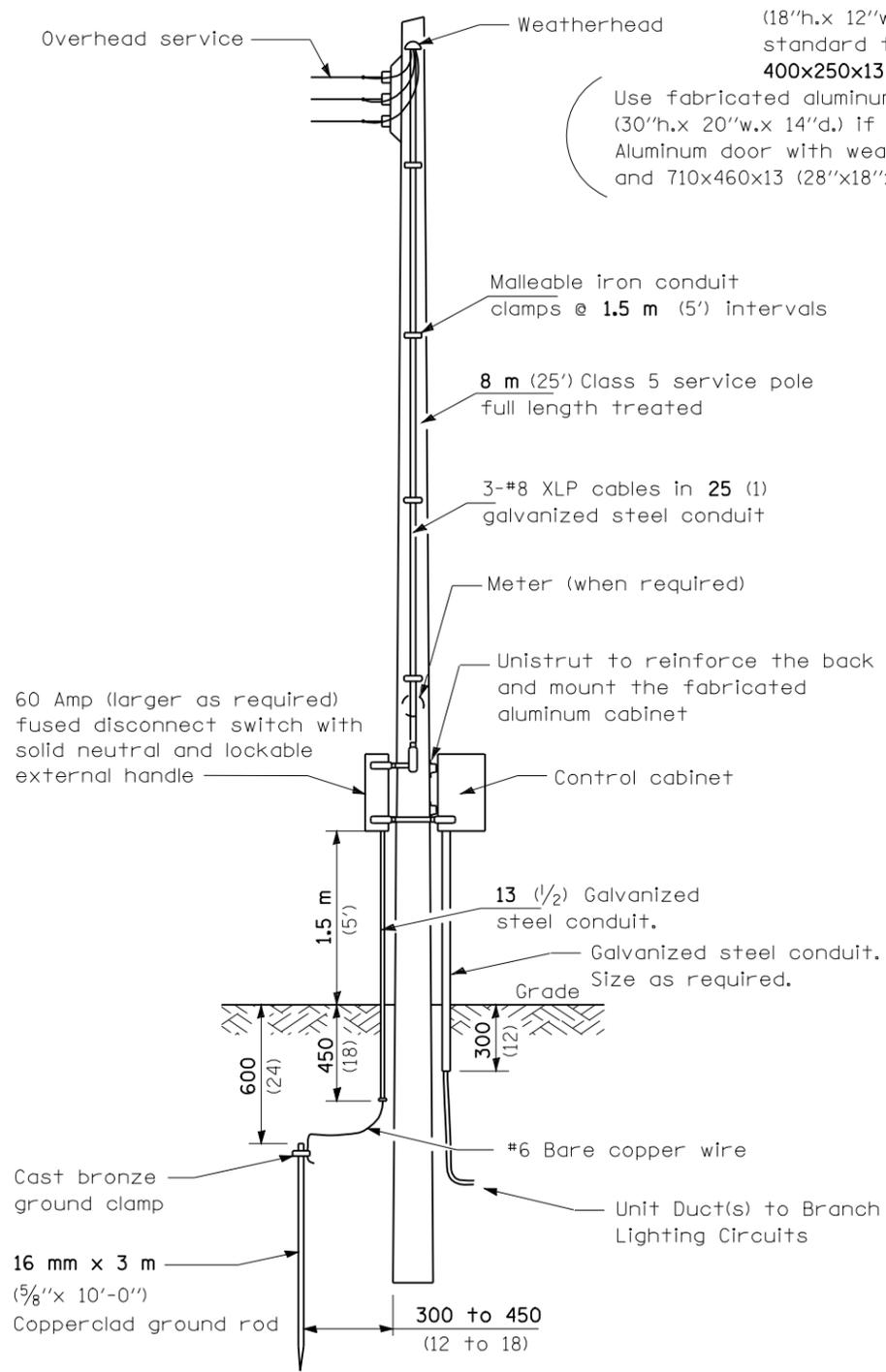
- 1) Wireway may be on front, back or side of foundation as required by the trenching. Place door of transformer base on wireway side to minimize the number of unit duct bends.
- 2) Top of schedule 40 125 (5) I.D. PVC wiring window, shall be flush with the top of foundation for drainage.
- 3) All foundations 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

10/7/02 Bridge Office depth calc.

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

LGT007-836

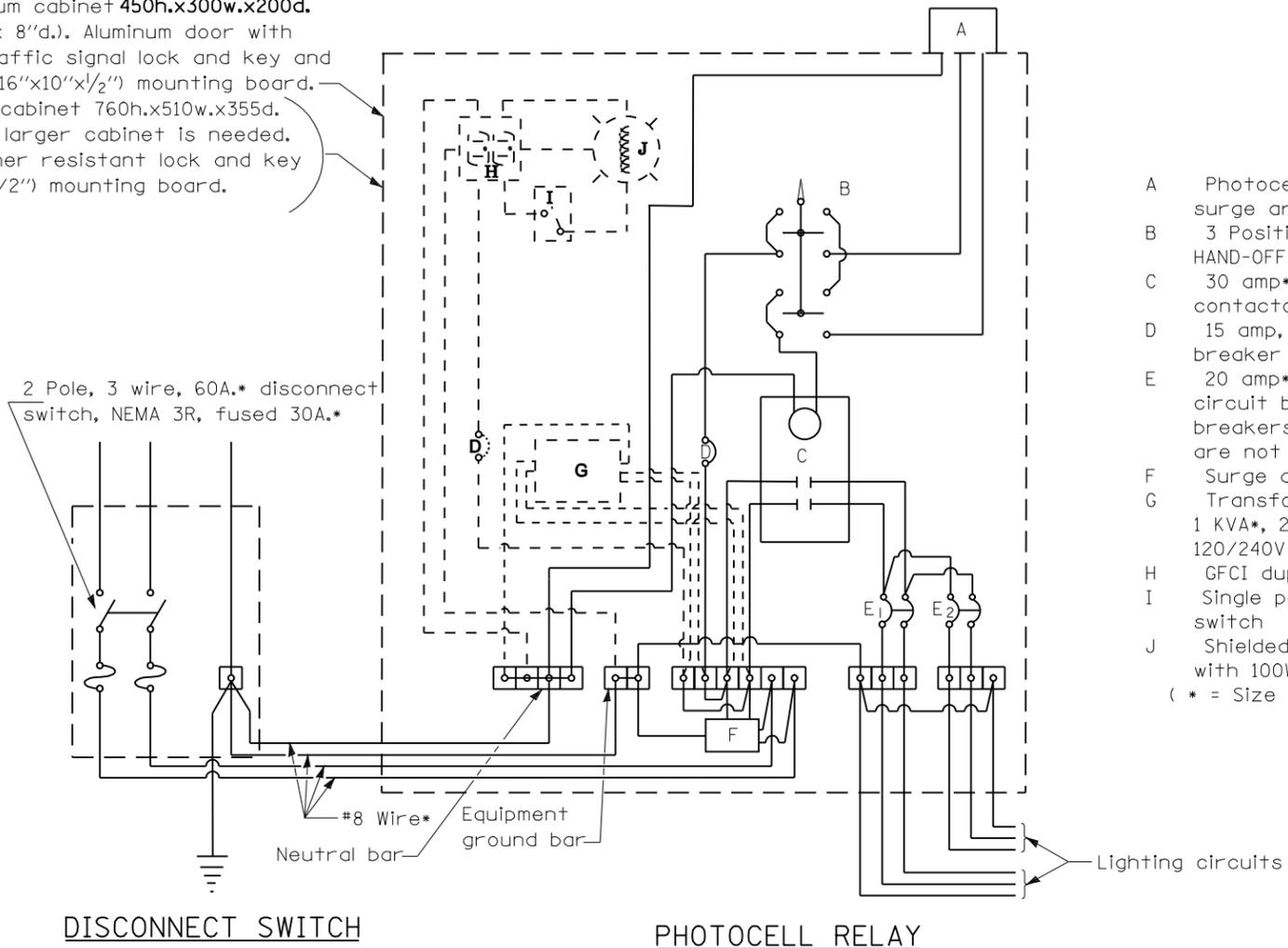
120/240V., 1 PHASE, 3 WIRE SERVICE



SERVICE POLE

*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.

Use fabricated aluminum cabinet 760h.x510w.x355d. (30"h.x 20"w.x 14"d.) if a larger cabinet is needed. Aluminum door with weather resistant lock and key and 710x460x13 (28"x18"x1/2") mounting board.



- A Photocell with integral surge arrester
 - B 3 Position selector switch HAND-OFF-AUTO
 - C 30 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.

Corrected 1/19/06
1/17/08 Service disconnect

- 240 V. SERVICE
- 480 V. SERVICE

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

LGTO03.DGN

FILE NAME =	USER NAME = laughlinr1	DESIGNED -	REVISED -
et:\pw\work\PWIDOT\LAUGHLINRL\dms20847\672C17-sht-1g003.dgn		DRAWN -	REVISED -
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	PLOT DATE = Aug-04-2008 02:19:52PM	DATE -	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**CONTROL INSTALLATION
Service Pole Mounted**

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

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
325	(14, 116)L	MACOUPIN	8	7
FED. ROAD DIST. NO.			ILLINOIS FED. AID PROJECT	
			CONTRACT NO. 72C17	

ILLINOIS DEPARTMENT OF TRANSPORTATION
LUMINAIRE PERFORMANCE TABLE

GIVEN CONDITIONS

ROADWAY DATA:	Pavement Width	48	FT
	Number Of Lanes	4	
	Median Width	0	FT
	IES Surface Classification	R3	
	Q-Zero Value	.07	
LIGHT POLE DATA:	Mounting Height	45	FT
	Mast Arm Length	-	FT
	Pole Set-Back From Edge Of Pavement	30	FT
LUMINAIRE DATA:	Lamp Type	HPS	
	Lamp Lumens	28000	
	IES Vertical Distribution	L	
	IES Control Of Distribution	N	
	IES Lateral Distribution	IV	
	Total Light Loss Factor	0.70	
LAYOUT DATA:	Spacing	275	FT
	Configuration	Staggered	
	Luminaire Overhang Over Edge Of Pavement Lane	-30	FT

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})	0.90	fc
	Uniformity Ratio, (E_{Ave}/E_{Min})	3.0	
LUMINANCE:	Average Luminance: (L_{Ave})	0.60	Cd/m ²
	Uniformity Ratios: (L_{Ave}/L_{Min})	3.5	
	(L_{Max}/L_{Min})	6.0	
	Maximum Veiling Luminance Ratio: (L_v/L_{Ave})	0.30	

LUMINAIRE PERFORMANCE
TABLE