

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PLANS FOR PROPOSED FEDERAL AID HIGHWAY

F. A. U. P. NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2943	09-00033-00-LT	COOK	10	1
STA. 70+00	TO STA. 86+30			
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT ARA-9003 (574)		

CONTRACT #63271

INDEX OF SHEETS

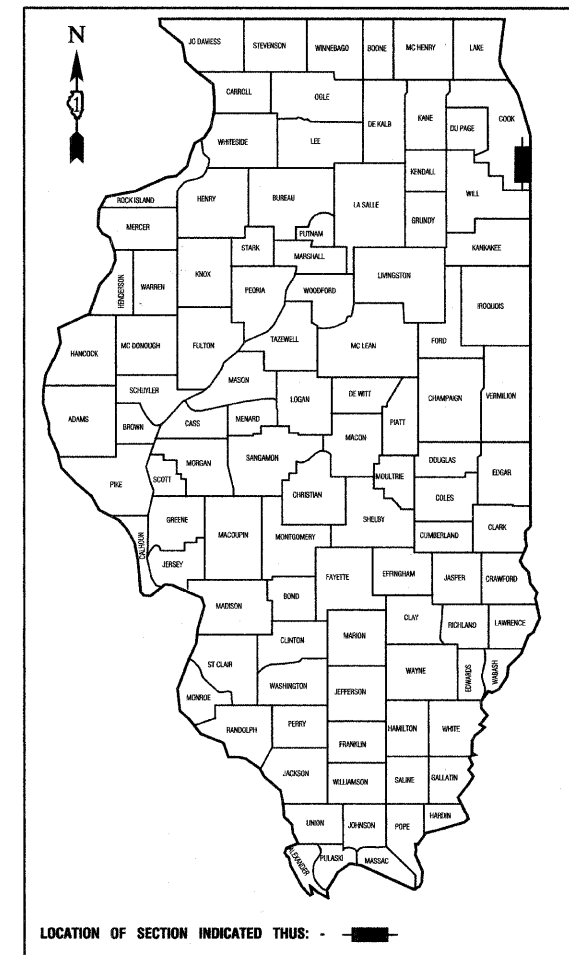
1. COVER SHEET
2. SUMMARY OF QUANTITIES & GENERAL NOTES
3. STREET LIGHTING PLANS
4. SINGLE LINE DIAGRAM
- 5.-10. DETAIL DRAWINGS

STATE STANDARDS

- 000001-05 STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS
- 701501-05 URBAN LANE CLOSURE, 2L, 2W, UNDIVIDED
- 701606-06 URBAN LANE CLOSURE, MULTILANE, 2W, WITH MOUNTABLE MEDIAN
- 701701-06 URBAN LANE CLOSURE, MULTILANE INTERSECTION
- 701801-04 LANE CLOSURE, MULTILANE 1W OR 2W CROSSWALK OR SIDEWALK CLOSURE
- 701901-01 TRAFFIC CONTROL DEVICES

FAU 2943 (BURNHAM AVENUE)
STREET LIGHTING
BRIDGE TO SOUTH OF BRAINARD AVENUE
SECTION NO.: 09-00033-00-LT
C-91-657-09
VILLAGE OF BURNHAM
COOK COUNTY
ARA-9003 (574)

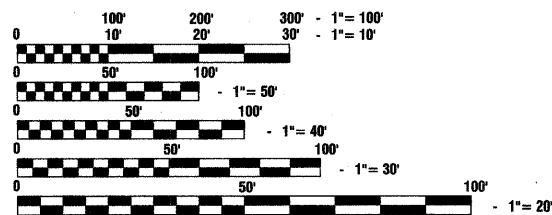
RANGE R 15 E



LOCATION OF SECTION INDICATED THIS: - [Symbol] -

BURNHAM AVENUE COLLECTOR
ADT=13,900 (2009)
=13,900 (2030)
DESIGN SPEED=40 MPH
SPEED LIMIT= 40 MPH

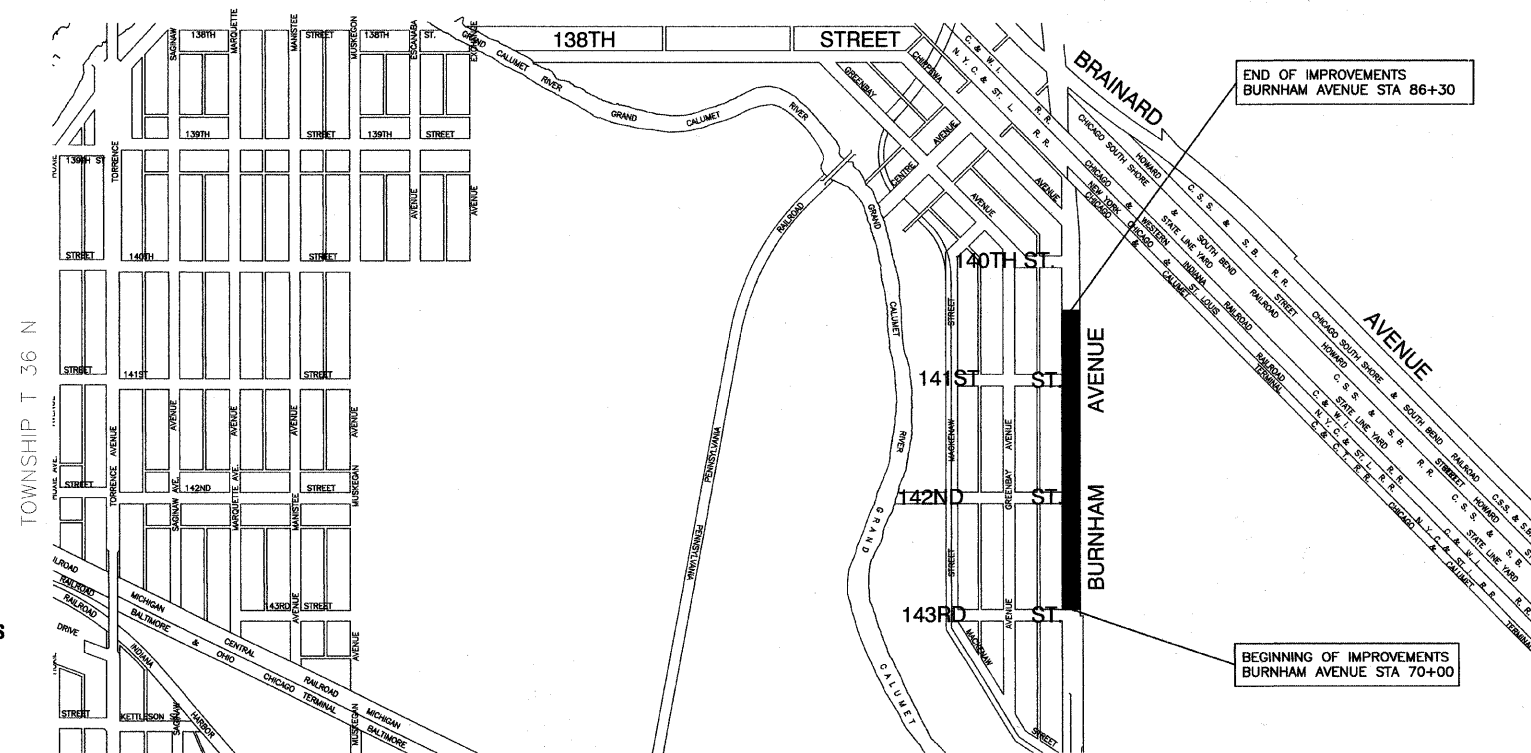
SCALES
PLAN - 1"=50'
PROFILE HORIZ. - 1"=50'
PROFILE VERT. - 1"=5'
CROSS SECTIONS - 1"=10'



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

CONTRACT NO. 63271



LOCATION MAP

- [Symbol] - INDICATES PROPOSED IMPROVEMENT
GROSS LENGTH=1,630 FEET=0.31 MILES
NET LENGTH=1,630 FEET=0.31 MILES

STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

Approved: 12-8-2009
Robert E. Pels
President, Village of Burnham

Passed: 12-10-2009
CT Holtz
District Engineer of Local Roads & Streets

Released for Bid Based on Limited Review: DECEMBER 14, 2009
Diane M. O'Keefe
Deputy Director of Highways, Region 1 Engineer

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THE STATE OF ILLINOIS

PREPARED BY OR UNDER THE DIRECT SUPERVISION OF:

Edward J. Tomalin
12-09-2009



I.D.O.T. FIELD ENGINEER: MELCHOR MANGOBA: 847-705-4408
CONSULTANTS: ROBINSON ENGINEERING, LTD. 708-331-6700

DATE	
BY	
REVISIONS	
PLOTTED	
ALIGNMENT CHECKED	
CONSTRUCTION CHECKED	
DATE FILE NAME	
PLAN	
NOTE BOOK	
NO.	

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GRADES CHECKED	
DATE NOTED	
PROFILE	
NOTE BOOK	
NO.	

SUMMARY OF QUANTITIES					PAVEMENT	LANDSCAPE	LIGHTS
S.I.	CODE NO.	PAY ITEM	UNIT	QUAN	CONSTRUCTION TYPE CODE		
							Y030-1E
	21300010	EXPLORATION TRENCH, SPECIAL	FOOT	100			100
	25200650	SODDING, SALT TOLERANT (SPECIAL)	SQ YD	185			185
*	42400200	PORTLAND CEMENT CONCRETE SIDEWALK 5 INCH	SQ FT	200			200
*	44000600	SIDEWALK REMOVAL	SQ FT	200			200
	67100100	MOBILIZATION	L SUM	1			1
	70102620	TRAFFIC CONTROL AND PROTECTION, STANDARD 701501	L SUM	1			1
	70102625	TRAFFIC CONTROL AND PROTECTION, STANDARD 701606	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	1			1
	80400200	ELECTRIC UTILITY SERVICE CONNECTION	L SUM	1			1
	81018600	CONDUIT PUSHED, 2.5" DIA., GALVANIZED STEEL	FOOT	215			215
	81603090	UNIT DUCT, 600V, 3-1/C NO. 4 AND 1/C NO. 6 GROUND, (XLP-TYPE USE), 1 1/4" DIA., POLYETHYLENE	FOOT	1905			1905
	81702440	ELECTRIC CABLE IN CONDUIT, 600V (XLP-TYPE USE) 3-1/C NO. 1/0	FOOT	60			60
	81900200	TRENCH AND BACKFILL FOR ELECTRICAL WORK	FOOT	330			330
	82102250	LUMINAIRE, SODIUM VAPOR, HORIZONTAL MOUNT, 250 WATT	EACH	15			15
	83600200	LIGHT POLE FOUNDATION, 24" DIAMETER	FOOT	150			150
	83600215	LIGHT POLE FOUNDATION, 24" DIAMETER, OFFSET	FOOT	10			10
	83800505	BREAKAWAY DEVICE, COUPLING, WITH ALUMINUM SKIRT	EACH	60			60
	84200500	REMOVAL OF EXISTING LIGHTING UNIT, SALVAGE	EACH	5			5
	84200806	REMOVAL OF POLE FOUNDATION, CONCRETE	EACH	5			5
	84500110	REMOVAL OF LIGHTING CONTROLLER	EACH	1			1
	X0323574	MAINTENANCE OF LIGHTING SYSTEM	CAL MO	1			1
	XX001579	LIGHTING CONTROLLER, CONSOLE TYPE	EACH	1			1
	XX006937	GROUND ROD, 5/8" DIA. X 10 FT., COPPER	EACH	16			16
	XX001136	LIGHT POLE, SPECIAL	EACH	15			15
	XX008228	LUMINAIRE, SODIUM VAPOR, 70 WATT, COACH LIGHT	EACH	15			15

GENERAL NOTES :

- ALL WORK TO CONFORM TO THE NATIONAL ELECTRICAL CODE AND ANY APPLICABLE LOCAL CODES.
- CONTRACTOR TO VERIFY LOCATION OF ALL UNDERGROUND UTILITIES BEFORE TRENCHING OR AUGERING.
- BEFORE INSTALLING STANDARDS NEAR OVERHEAD FACILITIES CALL ComEd FOR APPROVAL OF LOCATION.
- FOR LOCATION OF EXISTING UNDERGROUND ELECTRICAL CABLE CALL Com Ed.
- ALL CONDUIT TO BE 2.5" DIAMETER UNLESS OTHERWISE SPECIFIED.
- ANY TREE TRIMMING REQUIRED AS DIRECTED BY THE ENGINEER SHALL BE PERFORMED BY THE CONTRACTOR, AND THE COST OF THIS WORK SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT.
- CONTRACTOR SHALL TAKE ALL NECESSARY MEASURES TO RESTORE ANY SPECIALIZED LANDSCAPING, (i.e. DECORATIVE ROCKS, SHRUBS, PLANTS, ETC.) OR SHALL REPLACE IT, THE COST OF WHICH SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT.
- CARE IS TO BE TAKEN AS NOT TO DAMAGE ANY OF THE EXISTING TRAFFIC SIGNAL CONDUITS, DETECTORS AND EQUIPMENT. IF ANY OF THE TRAFFIC SIGNAL CONDUIT AND/OR EQUIPMENT IS DAMAGED, THE CONTRACTOR SHALL REPAIR AND/OR REPLACE THE CONDUIT AND/OR EQUIPMENT AT NO COST TO THE COUNTY, STATE, OR THE CITY.
- THE CONTRACTOR SHALL MAKE SPECIAL NOTE OF THE REQUIREMENT FOR BURIED WARNING TAPE, SPECIFIED AS PART OF "TRENCH AND BACKFILL FOR ELECTRICAL WORK". THE INSTALLATION OF THE TAPE SHALL BE INSPECTED AND APPROVED BY THE RESIDENT ENGINEER PRIOR TO BACKFILLING OR DURING PLOWING OPERATIONS, AS APPLICABLE.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE ESTABLISHMENT OF FINISHED GRADE. THE RESIDENT ENGINEER MAY ASSIST THE CONTRACTOR, AS APPLICABLE, BUT THE RESPONSIBILITY FOR COORDINATING THE FINISHED GRADE ELEVATION WITH THE TOP OF THE FOUNDATION HEIGHTS AND THE LIGHT SHALL REMAIN WITH THE CONTRACTOR.
- NO POLES SHALL BE ERECTED UNTIL THE RESPECTIVE FOUNDATIONS HAVE CURED, AS APPROVED BY THE ENGINEER.
- THE CONTRACTOR SHALL MAKE SPECIAL NOTE OF THE REQUIREMENTS FOR WIRE MARKERS AND SHALL TAG ALL WIRE MARKERS AND SHALL TAG ALL WIRE ACCORDINGLY.
- EQUIPMENT GROUND CONDUCTORS SHALL BE SPLICED AND BONDED AT EACH LIGHT POLE OR OTHER PIECE OF EQUIPMENT.
- CONDUIT AND UNIT DUCT MUST BE POSITIONED IN THE FIELD TO AVOID CONFLICT WITH TREES, BUSHES, DRAINS AND OTHER UTILITIES AND LANDSCAPING.
- ALL DISTURBED AREAS WHERE RESTORATION IS NOT COVERED BY APPLICABLE SECTIONS OF THE SPECIAL PROVISIONS MUST BE RESTORED TO THE SATISFACTION OF THE ENGINEER. THE WORK MUST BE CONSIDERED INCIDENTAL TO THE CONTRACT. SEPARATE PAYMENT WILL NOT BE MADE.
- THE EXACT LOCATIONS OF ALL UTILITIES SHALL BE VERIFIED BY THE CONTRACTOR BEFORE THE INSTALLATION OF ANY COMPONENTS OF THE LIGHTING SYSTEM. FOR THE LOCATIONS OF THE UTILITIES, CALL JULIE TOLL FREE AT 1-800-892-0123. IT IS THE CONTRACTOR'S RESPONSIBILITY TO LOCATE EXISTING TRAFFIC SIGNAL CABLES AND CONDUITS.

* - INDICATES SPECIALTY ITEMS

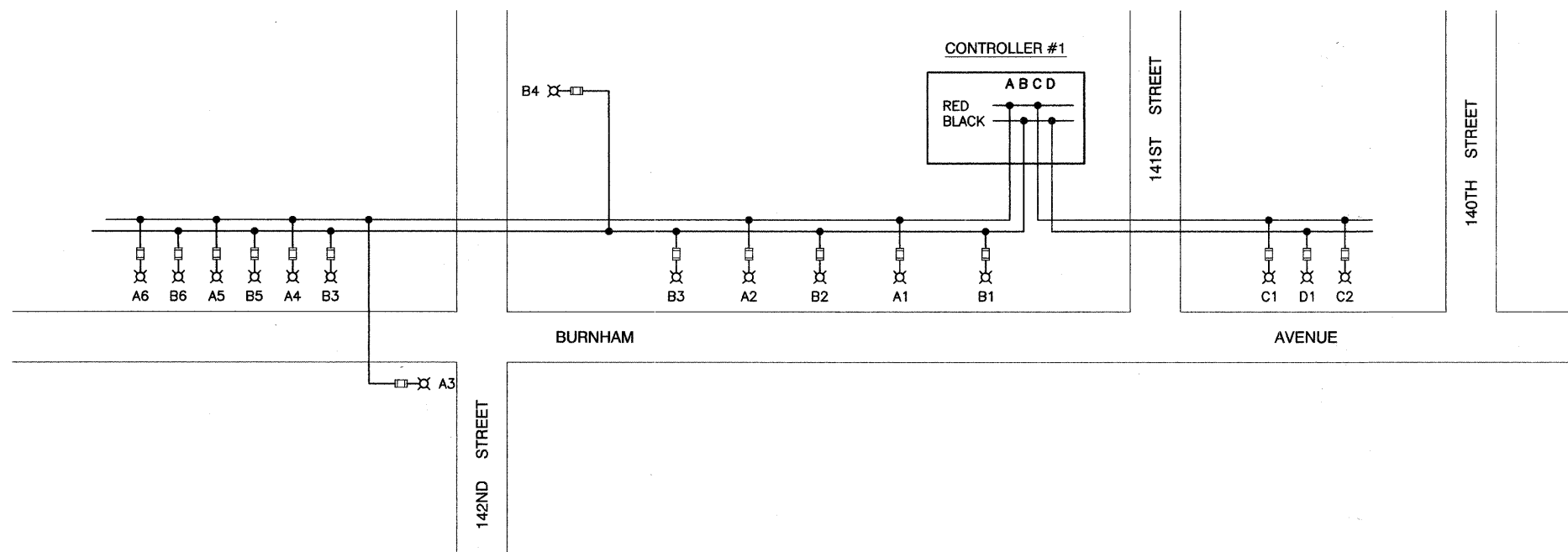


FILE NAME = 09308-QUAN-01 - P01	USER NAME =	DESIGNED -- PAP	REVISIONS --	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	BURNHAM AVENUE STREET LIGHTING SUMMARY OF QUANTITIES	F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
PLOT SCALE = N/A	CHECKED -- EJT	REVISIONS --	2943			09-00033-00-LT	COOK	10	2	
PLOT DATE = 12-09-09	DRAWN -- MJD	REVISIONS --	CONTRACT NO. 63271							
CHECKED -- DWS	REVISIONS --	SCALE: N/A				SHEET NO. 2 OF 10 SHEETS	STA. N/A	TO STA. N/A	FED. ROAD DIST. NO. 1	ILLINOIS

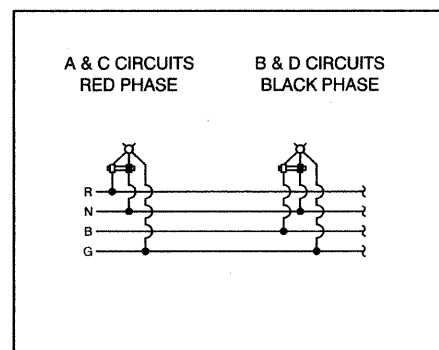


LOAD TABULATIONS CONTROLLER #1			
CIRCUIT	WATTS	AMPS @ 240V	
		RED PHASE	BLACK PHASE
A	2,352	10.20	
B	2,352		10.20
C	784	3.40	
D	392		1.70
SUBTOTAL	5,880	13.60	11.90
TOTAL AMPS @ 240 V		25.50	

240/480V, 1 ϕ , 3 WIRE, 60HZ
6.53 KVA LOAD



TYPICAL POLE WIRING



LEGEND

- ⊗ LUMINAIRE, 250W HPS, 240V
- FUSE, 3.0 AMP
- A1 LUMINAIRE CIRCUIT
- { CIRCUIT BREAKER
- CONNECTION



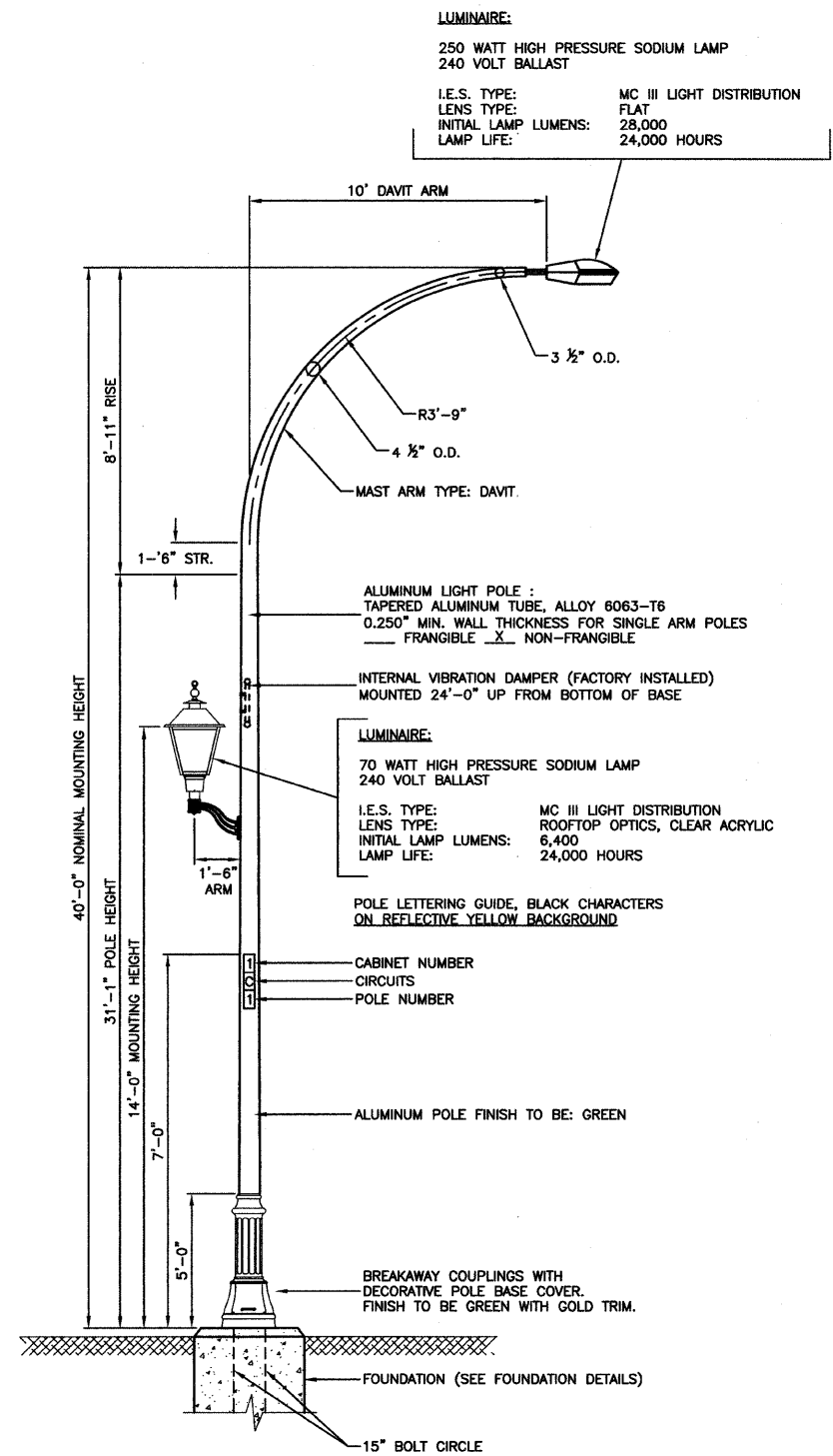
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GRADES CHECKED	
NOTE BOOK NO.	
B.M. NOTED	

FILE NAME = 09306-DTLS-01 - P01	USER NAME =	DESIGNED -- PAP	REVISIONS --	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	BURNHAM AVENUE STREET LIGHTING SINGLE LINE WIRING DIAGRAM	F.A.U. RTE. 2943	SECTION 09-00033-00-LT	COUNTY COOK	TOTAL SHEETS 10	SHEET NO. 4
PLOT SCALE = N/A	DRAWN -- MJD	CHECKED -- EJT	REVISIONS --			CONTRACT NO. 63271				
PLOT DATE = 12-09-09	CHECKED -- DWS	DRAWN -- MJD	REVISIONS --			FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT ARA-9003 (341)				
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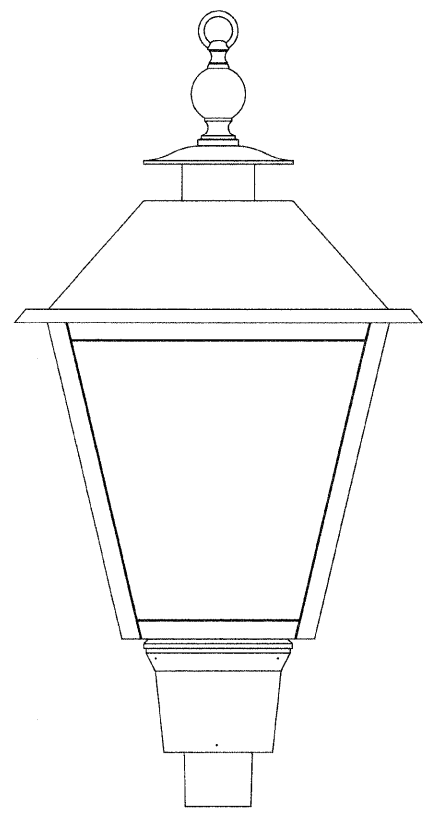
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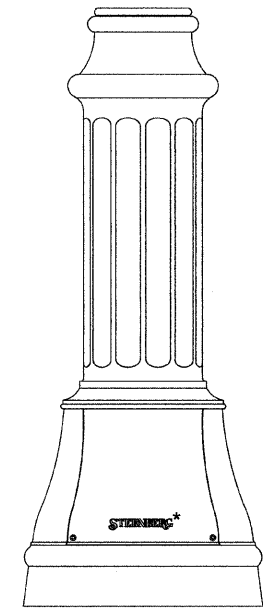


- NOTES:**
1. THE LIGHTING UNITS SHALL MEET AASHTO DESIGN CRITERIA. DESIGN FOR 90 M.P.H. WIND WITH 30% GUST AND 75 POUND LUMINAIRE HAVING AN E.P.A. OF 1.6 SQ.FT. AND PROPER ICE LOADING.
 2. ALUMINUM ALLOY 6063-T6 SHALL BE USED.

TYPICAL POLE INSTALLATION
BURNHAM AVENUE
*OR APPROVED EQUAL

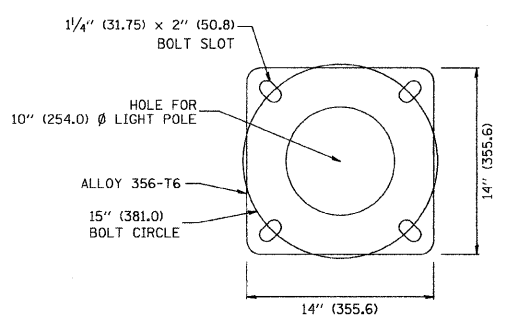


DETAIL OF COACH LIGHT
*OR APPROVED EQUAL

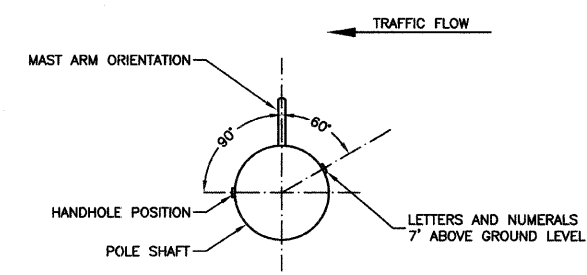


DETAIL OF BASE OF LIGHT POLE
*OR APPROVED EQUAL

- NOTES:**
1. ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN.
 2. MOUNTING HEIGHT IS DEFINED AS THE DISTANCE FROM THE CENTERLINE OF THE TENON TO THE BOTTOM OF THE ANCHOR BASE.
 3. TWO PIECE SHAFT WILL BE MATCHED MARKED AND INTERCHANGEABLE BETWEEN DIFFERENT UNITS. FIELD DRILLING OF THE HOLES WILL NOT BE ALLOWED.
 4. THE LIGHT POLE WILL MEET AASHTO DESIGN CRITERIA AS SPECIFIED.
 5. THE INSTALLING CONTRACTOR WILL PROVIDE A UL LISTED GROUNDING CONNECTOR. BURNDY K2C23, T&B SP4DL OR APPROVED EQUAL.
 6. LIGHT POLES WILL NOT BE INSTALLED WITHOUT MAST ARMS AND LUMINAIRES.
 7. LIGHT POLES WILL BE SET PLUMB ON THE FOUNDATION WITHOUT THE USE OF LEVELING NUTS, WASHERS OR SHIMS.
 8. LIGHTING UNIT IDENTIFICATION NUMBERS SHALL BE INSTALLED BEFORE THE LIGHTING UNIT IS ENERGIZED.



LIGHT POLE BASE PLATE DETAIL
15 INCH (381.0) BOLT CIRCLE



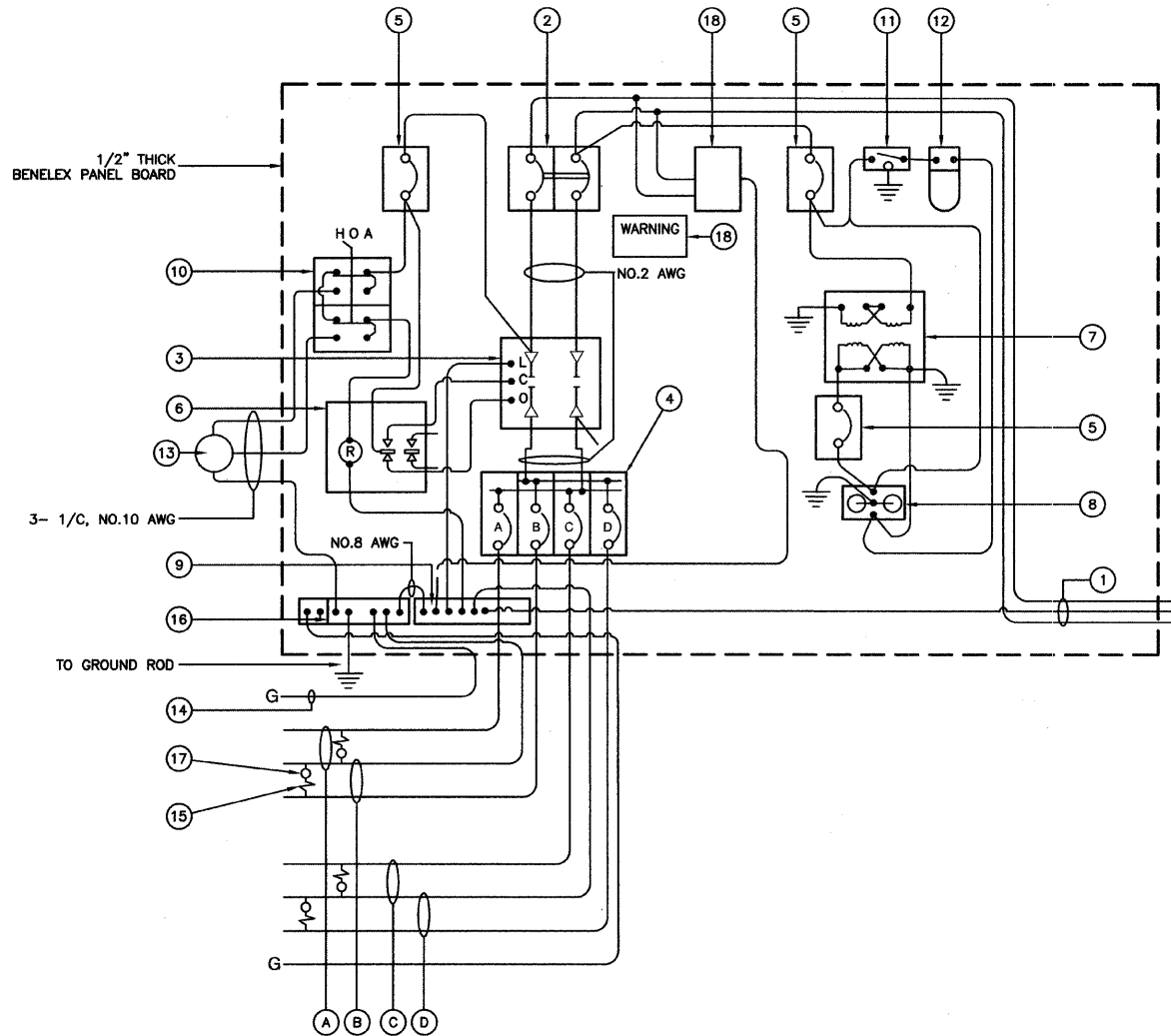
POSITION OF HANDHOLE AND NUMERALS ON POLE



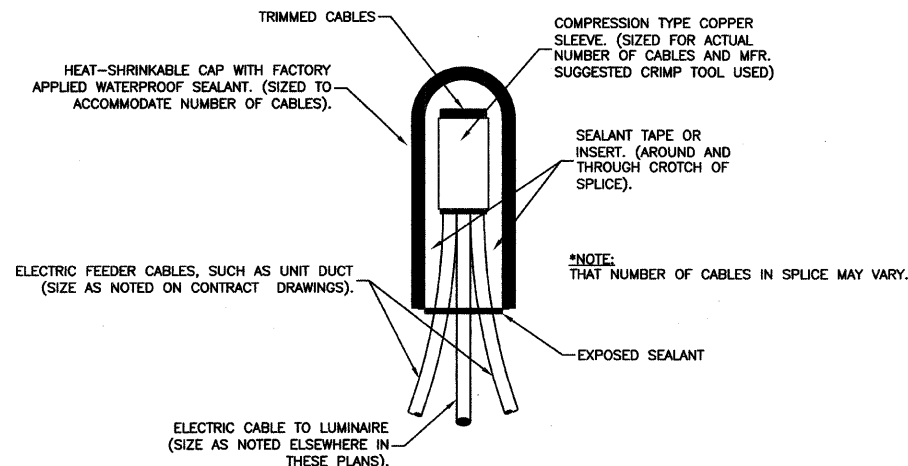
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	PLOT SCALE = N/A	CHECKED -- EJT	REVISIONS --			SCALE: N/A	SHEET NO. 5 OF 10 SHEETS	STA. N/A	TO STA. N/A	CONTRACT NO. 63271		
	PLOT DATE = 12-09-09	DRAWN -- MJD	REVISIONS --			FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT ARA-9003 (341)						
		CHECKED -- DWS	REVISIONS --									

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FILE NAME	



CONTROLLER WIRING DIAGRAM
CONTROLLER #1



SPLICING ELECTRIC CABLES
BASIC MATERIALS AND METHODS

CONTROLLER WIRING DIAGRAM LEGEND

- ① 3-1/C. NO. 1/0 600V SERVICE WIRE IN 2" DIA GALVANIZED STEEL CONDUIT FOR 240/480 VOLT, 1Ø, 3 WIRE, 60HZ. SERVICE.
 - ② (1) 60 AMP MAIN CIRCUIT BREAKER, 2 POLE, 600 VOLT, 100 AMP BASE, NON-INTERCHANGEABLE TRIP INTERRUPTING RATING NEMA - 14000 AMP AT 480 V.
 - ③ (1) 60 AMP CONTACTOR SWITCH, ELECTRICALLY OPERATED, MECHANICALLY HELD, 2 POLE, 600 VOLT
 - ④ (4) 30 AMP CIRCUIT BREAKER, 1 POLE, 240 VOLT, 100 AMP BASE, NON-INTERCHANGEABLE TRIP INTERRUPTING RATING NEMA - 14000 AMP AT 240 VOLTS.
 - ⑤ (3) 20 AMP CONTROL CIRCUIT-CIRCUIT BREAKER, 1 POLE, 240 VOLT, 100 AMP BASE, NON-INTERCHANGEABLE TRIP INTERRUPTING RATING NEMA 14000 AMP AT 240 V.
 - ⑥ (1) 20 AMP, 1 POLE DOUBLE THROW, 240 VOLT RELAY
 - ⑦ (1) 1.5 KVA, SINGLE PHASE, ENCAPSULATED TRANSFORMER 240 X 480/120 X 240 VOLT, 60HZ.
 - ⑧ (1) 20 AMP, 120 VOLT DUPLEX GFCI RECEPTACLE.
 - ⑨ NEUTRAL BUS BAR, 1/4"x1"x12" LONG MOUNTED ON PANEL WITH TAPS.
 - ⑩ 3 POSITION SELECTOR SWITCH
 - ⑪ SWITCH FOR LIGHTING FIXTURE MOUNTED IN BOX.
 - ⑫ WEATHER-PROOF INCANDESCENT LIGHTING FIXTURE WITH 60 WATT, 120 V LAMP.
 - ⑬ PHOTOCELL MOUNTED TO CABINET, 240 V.
 - ⑭ NO.2 AWG INSULATED GROUND WIRE
 - ⑮ IN-LINE FUSEHOLDER WITH FUSE AS NOTED IN FUSE TABLE
 - ⑯ GROUND BUS BAR 1/4"x1"x12" MINIMUM LENGTH MOUNTED ON PANEL WITH TAPS.
 - ⑰ LUMINAIRE
 - ⑱ WARNING PLATE TO READ: WARNING, MAINTENANCE CIRCUIT IS LIVE WHEN MAIN BREAKER IS SWITCHED OFF.
- (A) CIRCUIT (RED)
(B) CIRCUIT (BLACK)
(C) CIRCUIT (RED)
(D) CIRCUIT (BLACK)

GENERAL NOTES FOR CONTROL CABINET

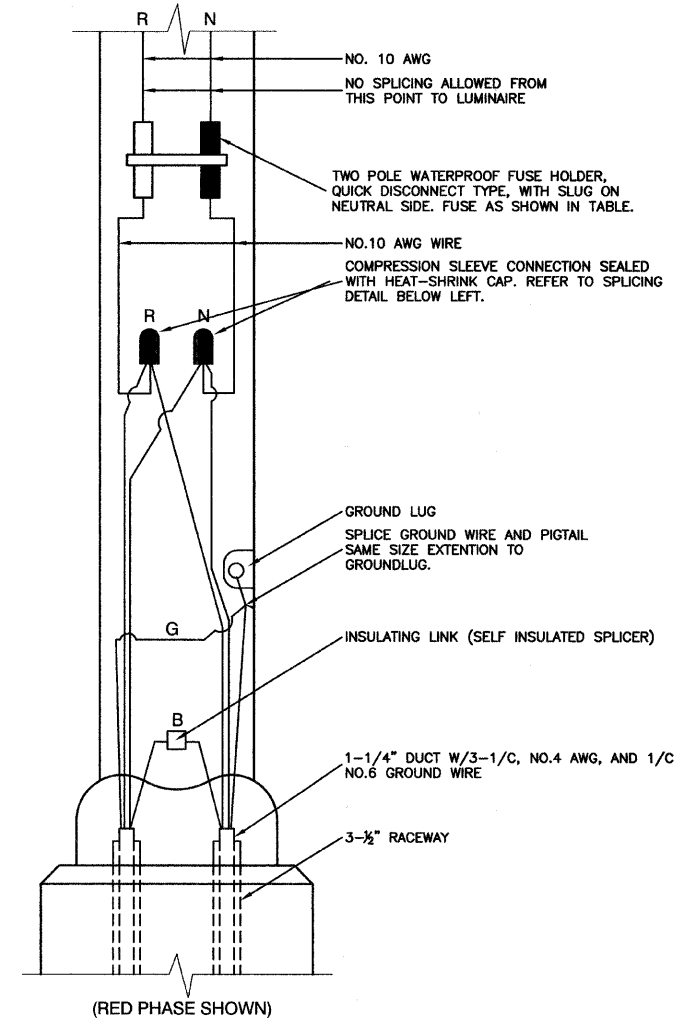
1. ENTIRE CONTROL CABINET SHALL BE GROUNDED.
2. ALL WIRING SHALL BE TAGGED WITH SELF-STICKING WIRE MARKERS.
3. GROUND BUS TO BE COLOR CODED GREEN, NEUTRAL BUS WHITE, AND BONDED TO CABINET ENCLOSURE, BY LISTED PRESSURE CONNECTORS OR LISTED CLAMPS.
4. ALL INTERNAL CONTROLLER WIRING TO BE NO.12 AWG UNLESS OTHERWISE SPECIFIED.
5. CABINET WIRING INSULATION TO BE TYPE XHHW OR APPROVED EQUAL.

LIGHTING GENERAL NOTES

1. ALL WORK TO CONFORM TO THE MOST RECENT NATIONAL ELECTRICAL CODE AND ANY APPLICABLE LOCAL CODES.
2. CONTRACTOR TO VERIFY LOCATION OF ALL UNDERGROUND UTILITIES BEFORE TRENCHING OR AUGERING.
3. BEFORE INSTALLING STANDARDS NEAR OVERHEAD FACILITIES CALL ComEd FOR APPROVAL OF LOCATION.
4. FOR LOCATION OF EXISTING UNDERGROUND ELECTRICAL CABLE CALL ComEd.
5. CONTRACTOR SHALL TAKE ALL NECESSARY MEASURES TO RESTORE ANY SPECIALIZED LANDSCAPING, (I.E. DECORATIVE ROCKS, SHRUBS, PLANTS, ECT.) OR SHALL REPLACE IT, THE COST OF WHICH SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT.
6. CARE IS TO BE TAKEN AS NOT TO DAMAGE ANY OF THE EXISTING TRAFFIC SIGNAL CONDUIT, MAGNETIC DETECTORS AND EQUIPMENT. IF ANY OF THE TRAFFIC SIGNAL CONDUIT AND/OR EQUIPMENT IS DAMAGED, THE CONTRACTOR SHALL REPAIR AND/OR REPLACE THE CONDUIT AND/OR EQUIPMENT AT NO COST TO THE CITY OR STATE.
7. THE CONTRACTOR SHALL MAKE SPECIAL NOTE OF THE REQUIREMENT FOR BURIED WARNING TAPE, SPECIFIED AS PART OF "TRENCH AND BACK FILL FOR ELECTRICAL WORK". THE INSTALLATION OF THE TAPE SHALL BE INSPECTED AND APPROVED BY THE RESIDENT ENGINEER PRIOR TO BACKFILLING OR DURING PLOWING OPERATIONS, AS APPLICABLE.
8. THE CONTRACTOR WILL BE RESPONSIBLE FOR THE ESTABLISHMENT OF FINISHED GRADE. THE RESIDENT ENGINEER MAY ASSIST THE CONTRACTOR, AS APPLICABLE, BUT THE RESPONSIBILITY FOR COORDINATING THE FINISHED GRADE ELEVATION WITH THE TOP OF THE FOUNDATION HEIGHTS AND THE LIGHT SHALL REMAIN WITH THE CONTRACTOR.
9. NO POLES SHALL BE ERECTED UNTIL THE RESPECTIVE FOUNDATIONS HAVE CURED, AS APPROVED BY THE ENGINEER.
10. THE CONTRACTOR SHALL MAKE SPECIAL NOTE OF THE REQUIREMENTS FOR WIRE MARKERS AND SHALL TAG ALL WIRE ACCORDINGLY.
11. EQUIPMENT GROUND CONDUCTORS SHALL BE SPLICED AND BONDED AT EACH LIGHT POLE OR OTHER PIECE OF EQUIPMENT.
12. UNDERGROUND SPLICES OF LIGHTING CONDUCTORS WILL NOT BE ALLOWED EXCEPT AT LIGHT POLE BASE.
13. CONDUITS AND UNIT DUCTS MUST BE POSITIONED IN THE FIELD TO AVOID CONFLICT WITH TREE, BUSHES, DRAINS AND OTHER UTILITIES.
14. THE CONTROLLER SHALL BE UL LISTED, NEMA 3R, AND BE SUITABLE FOR USE AS SERVICE ENTRANCE RATED.

NOMINAL WATTAGE	FUSE SIZE
250W COBRAHEAD WITH 70W COACHLIGHT	3.0 AMP

LUMINAIRE FUSE SIZE TABLE



POLE HANDHOLE WIRING DIAGRAM
(TYPICAL FOR SINGLE LUMINAIRE INSTALLATION)

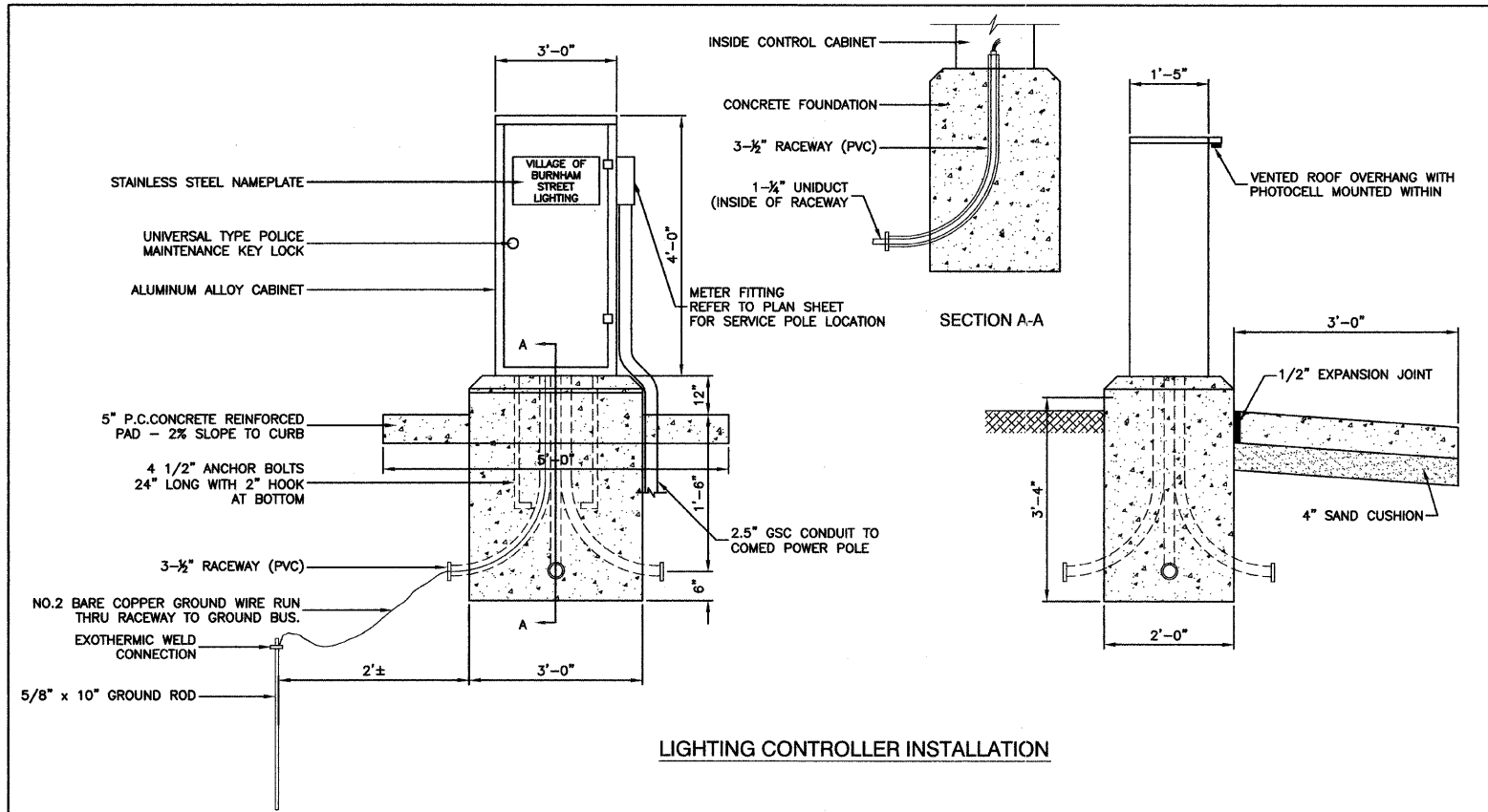
NOTE:
ALLOW 36" LOOP OF CABLES TO INSURE SUFFICIENT SLACK FOR WITHDRAWAL OF THE CONNECTORS OUTSIDE OF THE POLE HANDHOLE.



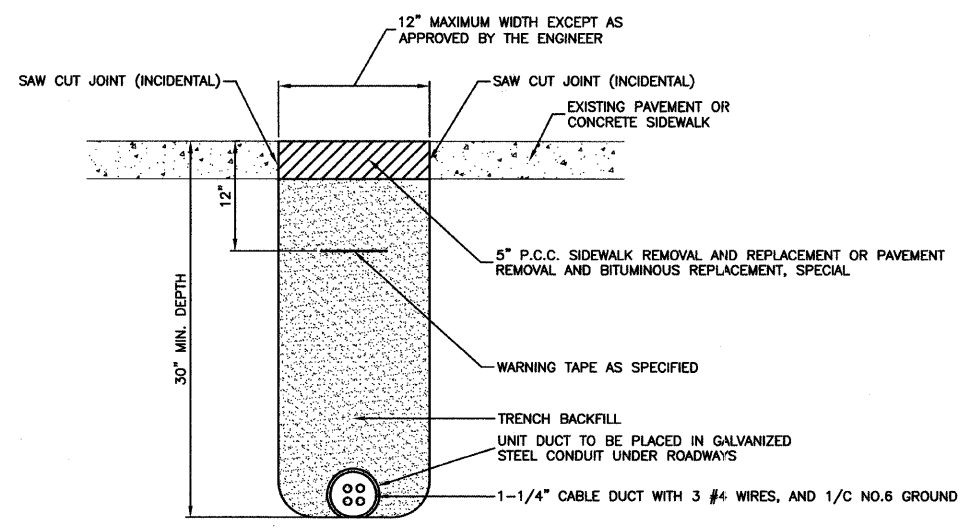
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PLOT SCALE = N/A	DRAWN -- MJD	CHECKED -- EJT	REVISED --			SCALE: N/A	SHEET NO. 6 OF 10 SHEETS	STA. N/A	TO STA. N/A	CONTRACT NO. 63271		
PLOT DATE = 12-09-09	CHECKED -- DWS	REVISIONS	REVISIONS			FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT ARA-9003 (341)						

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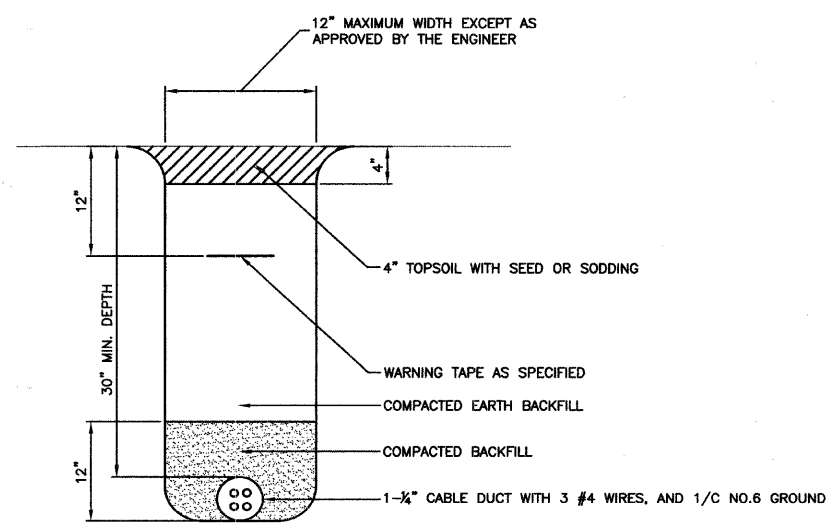
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LIGHTING CONTROLLER INSTALLATION



HOT-MIX ASPHALT PAVEMENT OR CONCRETE SIDEWALK REMOVAL AND REPLACEMENT



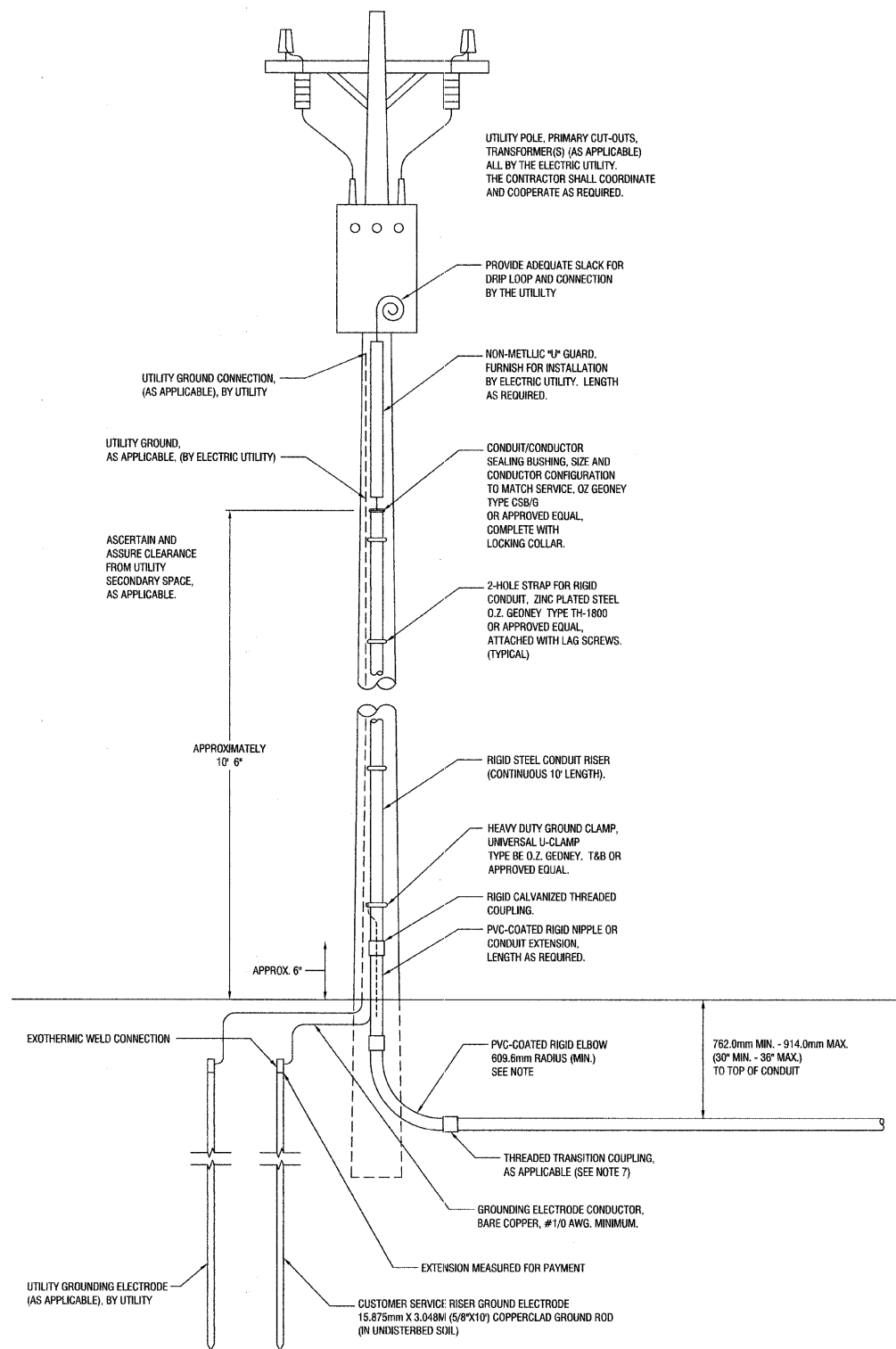
TRENCH DETAIL



FILE NAME = 09006-DTL9-01 - P04	USER NAME =	DESIGNED -- PAP	REVISED --	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	BURNHAM AVENUE STREET LIGHTING DETAILS	F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
	CHECKED -- EJT	REVISED --				2943	09-00033-00-LT	COOK	10	7	
	DRAWN -- MJD	REVISED --				CONTRACT NO. 63271					
	CHECKED -- DWS	REVISED --				FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT ARA-9003 (341)					
						SCALE: N/A	SHEET NO. 7 OF 10 SHEETS	STA. N/A	TO STA. N/A		

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REVISIONS	
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ADD FILE NAME	

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BY	
REVISIONS	
PLOTTED	
GRADES CHECKED	
NOTE BOOK NO.	
ADD FILE NAME	



SERVICE CONNECTION FOR ALL CONTROLLERS

240/480 VOLT, 1Ø, 3 WIRE, 60HZ SERVICE
6.53 KVA LOAD, CONTROLLER #1

NOTES:

- SERVICE VOLTAGE SHALL BE AS INDICATED ELSEWHERE IN THE DRAWINGS.
- UNLESS OTHERWISE INDICATED, ITEMS AND WORK SHALL BE INCLUDED AND PAID AS PART OF ELECTRIC UTILITY SERVICE INSTALLATION.
- CONDUIT AND CONNECTOR DIAMETER SHALL MATCH THE DIAMETER OF THE SERVICE CONDUCTOR RACEWAY AS INDICATED.
- PVC COATED RACEWAYS AND ACCESSORIES SHALL BE CAREFULLY INSTALLED WITH MF RECOMMENDED TOOLS AND PROCEDURES TO AVOID DAMAGE. ANY DAMAGE SHALL BE REPAIRED WITH COMPATIBLE PVC TOUCH-UP MATERIAL TO THE SATISFACTION OF THE ENGINEER OR THE DAMAGED MATERIAL SHALL BE REPLACED AT NO ADDITIONAL COST.
- THE CONTRACTOR SHALL OBTAIN INSPECTION AND APPROVAL BY THE ENGINEER OF SERVICE RISER GROUND ELECTRODE, RISER ELBOW, NIPPLE AND CONNECTION TO SERVICE CONDUCTOR RACEWAY EXTENSION BEFORE BACKFILL AND SHALL ALSO OBTAIN INSPECTION OF SERVICE RISER AND SEALING BUSHING BEFORE UTILITY "U" GUARD INSTALLATION AND SERVICE CONNECTION.
- THE SERVICE METER SOCKET, AS APPLICABLE, MOUNTED ELSEWHERE AS INCLUDED SHALL BE INCLUDED AND PAID AS PART OF THE ELECTRICAL UTILITY SERVICE INSTALLATION PAY ITEM.
- THE SERVICE CONDUCTOR RACEWAY SHALL BE AS INDICATED AND SHALL BE MEASURED SEPARATELY FOR PAYMENT. WHEN THE RACEWAY IS PVC-COATED RIGID GALVANIZED STEEL THE COUPLING SHALL BE THE SAME. WHEN THE RACEWAY IS PVC CONDUIT (IN CONCRETE), THE COUPLING SHALL BE A METALIC TO NON-METALIC ADAPTER. WHEN THE RACEWAY IS ENCASED IN CONCRETE, THE CONCRETE SHALL EXTEND TO COVER THE COUPLING.
- PLANS AND DETAILS INDICATE THE GENERAL NATURE AND REQUIREMENTS. THEY DO NOT SHOW EVERY ACCESSORY AND ATTACHMENT, AND THEY DO NOT RELIEVE THE CONTRACTOR OF THE REQUIREMENTS OF THE SPECIFICATIONS AND SPECIAL PROVISION TO ASCERTAIN UTILITY REQUIREMENTS AND TO COORDINATE ACCORDINGLY, FURNISHING ALL ITEMS AND WORK NOT PROVIDED BY THE UTILITY, BUT NECESSARY FOR A COMPLETE SERVICE INSTALLATION.



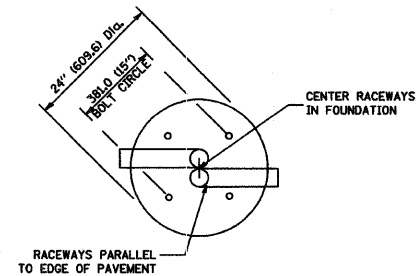
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	CHECKED -- EJT	REVISIONS --	2943			09-00033-00-LT	COOK	10	8	
PLOT SCALE = N/A	DRAWN -- MJD	REVISIONS --	CONTRACT NO. 63271							
PLOT DATE = 12-09-09	CHECKED -- DWS	REVISIONS --	FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT ARA-9003 (341)							
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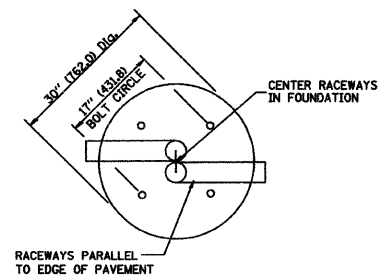
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GRADES CHECKED	
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FILE NAME	

LIGHT POLE FOUNDATION DEPTH TABLE
40 FT. (12.192 m) TO 47.5 FT. (14.478 m) MOUNTING HEIGHT

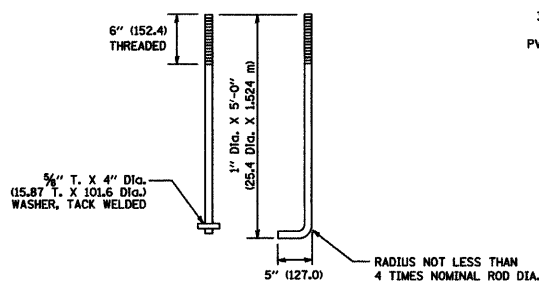
SOIL CONDITIONS	DESIGN DEPTH "D" OF FOUNDATION	
	SINGLE ARM POLE	TWIN ARM POLE
SOFT CLAY Qu = 0.375 TON/SQ. FT.	13'-0" (3.96 m)	15'-0" (4.57 m)
MEDIUM CLAY Qu = 0.75 TON/SQ.FT	9'-6" (2.93 m)	10'-9" (3.23 m)
STIFF CLAY Qu = 1.50 TON/SQ. FT.	7'-0" (2.13 m)	8'-0" (2.44 m)
LOOSE SAND φ = 34°	9'-0" (2.74 m)	10'-0" (3.05 m)
MEDIUM SAND φ = 37.5°	8'-3" (2.52 m)	9'-0" (2.74 m)
DENSE SAND φ = 40°	7'-9" (2.36 m)	9'-0" (2.74 m)



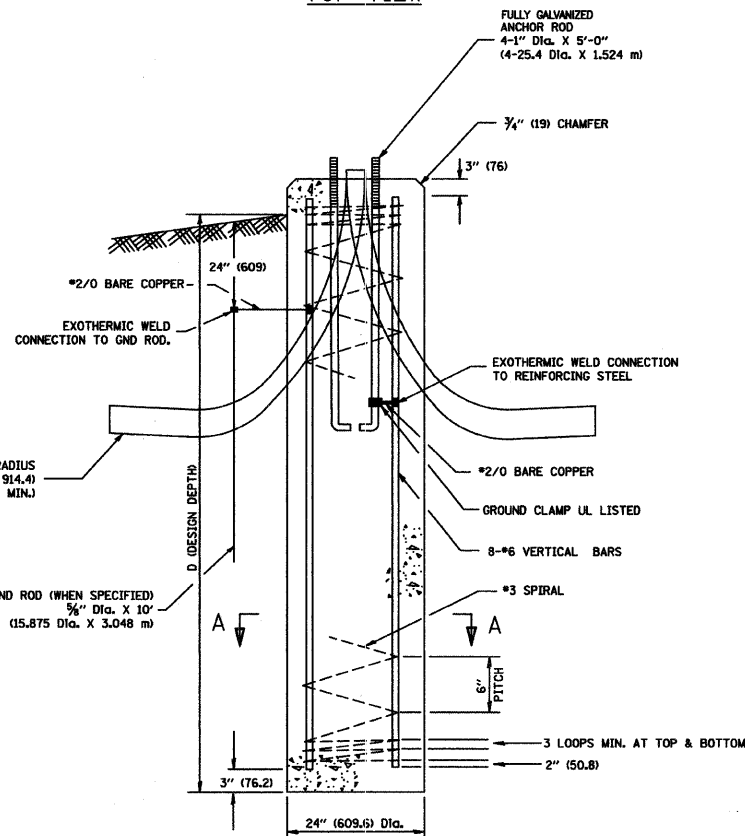
TOP VIEW



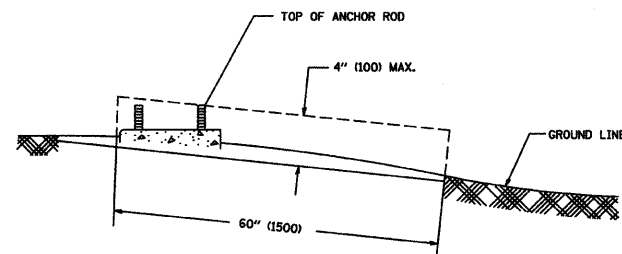
TOP VIEW



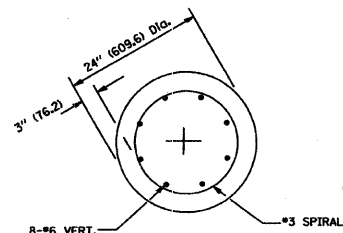
ANCHOR ROD DETAIL



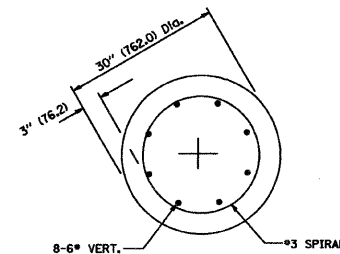
FOUNDATION DETAIL



FOUNDATION EXTENSION DETAIL



SECTION A-A



SECTION A-A

NOTES

- ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN.
- THE ANCHOR RODS AND RACEWAYS SHALL BE PROPERLY SECURED IN PLACE BEFORE THE CONCRETE IS PLACED.
- THE FOUNDATION SHALL NOT PROTRUDE MORE THAN 100MM (4 IN.) ABOVE THE FINISHED GRADE WITHIN A 60 IN. (1.5 m) CHORD ACROSS THE FOUNDATION, WITH ANCHOR RODS INCLUDED, IN ACCORDANCE WITH AASHTO GUIDELINES. IF THE FOUNDATION HEIGHT, INCLUDING ANCHOR RODS, EXTENDS BEYOND THESE SPECIFIED LIMITS, THE FOUNDATION SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE. SEE FOUNDATION EXTENSION DETAIL.
- THE HOLE FOR THE FOUNDATION SHALL BE MADE BY DRILLING WITH AN AUGER, OF THE SAME DIAMETER AS THE FOUNDATION. IF SOIL CONDITIONS REQUIRE THE USE OF A LINER TO FORM THE HOLE, THE LINER SHALL BE WITHDRAWN AS THE CONCRETE IS DEPOSITED.
- THE TOP OF THE FOUNDATION SHALL BE CONSTRUCTED LEVEL. A LINER OR FORM SHALL BE USED TO PRODUCE A UNIFORM SMOOTH SIDE TO THE TOP OF THE FOUNDATION. FOUNDATION TOP SHALL BE CHAMFERED 3/4-IN. (20 mm).
- THE CONCRETE SHALL BE CLASS SL. CONCRETE SHALL CURE ACCORDING TO ARTICLE 1020.13 BEFORE LIGHT POLES ARE INSTALLED.
- THE ANCHOR ROD SHALL BE A HOOK ROD TYPE. COLD BENDING OF THE ANCHOR ROD WILL NOT BE ALLOWED. THE RADIUS OF THE HOOK BEND SHALL NOT BE LESS THAN 4 TIMES THE NOMINAL DIAMETER OF THE ANCHOR ROD. A TACK WELDED ANCHOR ROD MAY BE SUBSTITUTED WITH THE APPROVAL OF THE ENGINEER.
- THE ANCHOR RODS SHALL BE ACCORDING TO ASTM F1554 GRADE 725 (GRADE 105). NUTS SHALL BE HEXAGON NUTS ACCORDING TO ASTM A 194 2H OR ASTM A 563 DH, AND WASHERS SHALL BE ACCORDING TO ASTM F 436.
- ANCHOR RODS, NUTS AND WASHERS SHALL BE COMPLETELY GALVANIZED BY EITHER THE HOT-DIPPED PROCESS CONFORMING WITH AASHTO M 232, THE MECHANICAL PLATING METHOD CONFORMING TO AASHTO M 298, CLASS 50 WITH A MAXIMUM COATING THICKNESS OF 150 UMG MILS) OR THE ELECTROLYTIC PROCESS ACCORDING TO ASTM F 1136.
- THE ANCHOR RODS SHALL BE THREADED A MINIMUM OF 6 INCHES (150 mm) WITH A MINIMUM OF 3 INCHES (75 mm) OF THREADED ANCHOR ROD EMBEDDED IN THE FOUNDATION.
- ANCHOR RODS SHALL PROJECT 2 3/4" (69.9 mm) ABOVE THE TOP OF THE FOUNDATION. IF BREAKAWAY COUPLINGS ARE SPECIFIED, THE CONTRACTOR SHALL CAREFULLY COORDINATE THE ANCHOR ROD PROJECTION WITH THE INSTALLATION REQUIREMENTS OF THE BREAKAWAY COUPLINGS.
- THE CONTRACTOR SHALL USE A #3 SPIRAL AT 6" (152.4 mm) PITCH OR MAY SUBSTITUTE #3 TIES AT 12" (304.8 mm) O.C. WITH THE APPROVAL OF THE ENGINEER.
- THE CABLE TRENCHES AND FOUNDATION SHALL BE BACK FILLED AND COMPACTED AS SPECIFIED BEFORE THE LIGHT POLE IS ERECTED.
- THE RACEWAYS SHALL PROJECT 1" (25.4 mm) ABOVE THE TOP OF THE FOUNDATION.



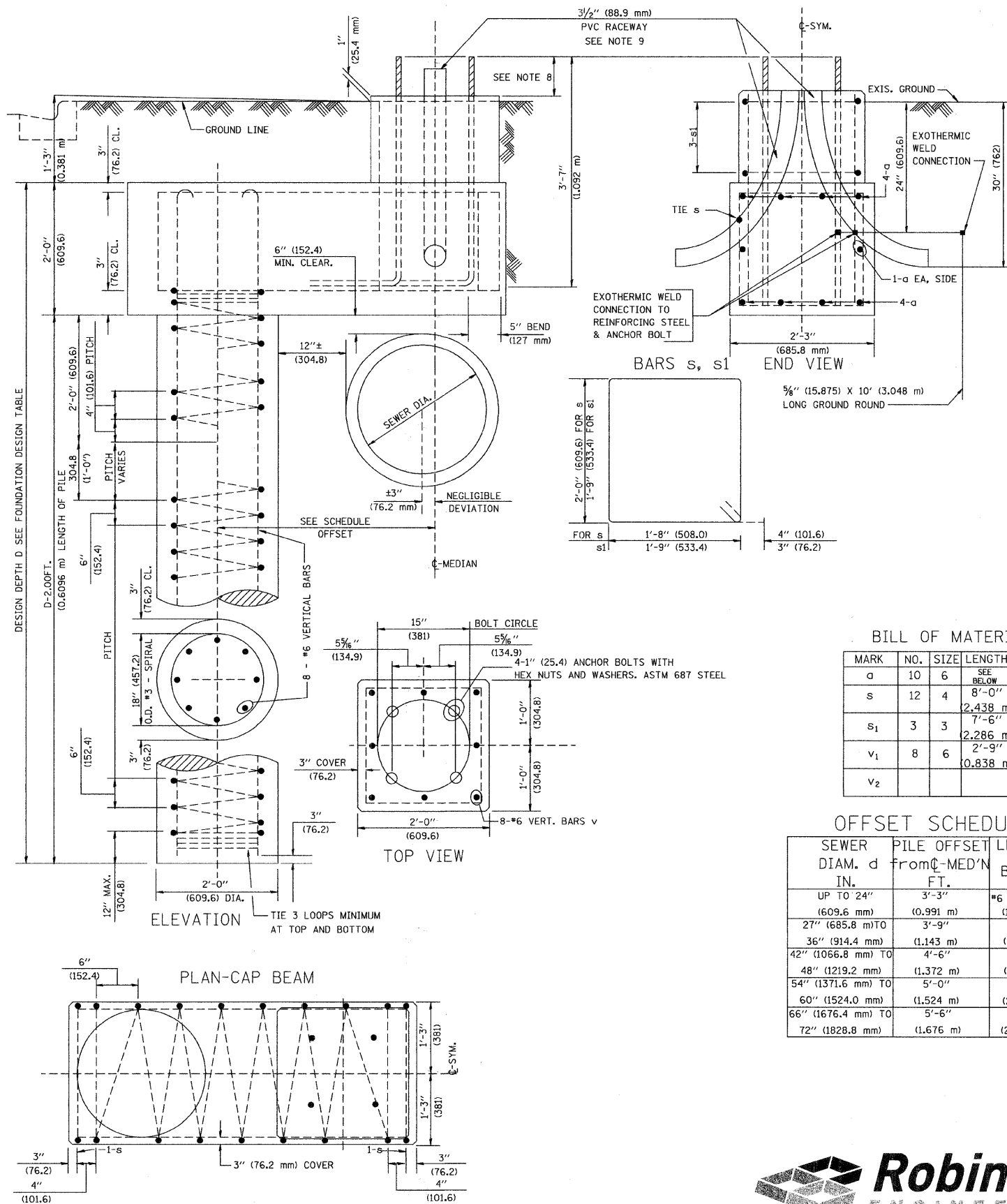
FILE NAME = 09306-DT15-01 - P06	USER NAME =	DESIGNED -- PAP	REVISED --	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	BURNHAM AVENUE LIGHTPOLE FOUNDATION DETAIL 40' - 47.5' MH, 15" BOLT CIRCLE	F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
	PLOT SCALE = N/A	CHECKED -- EJT	REVISED --			2943	09-00033-00-LT	COOK	10	9	
	PLOT DATE = 12-09-09	DRAWN -- MJD	REVISED --			CONTRACT NO. 63271					
		CHECKED -- DWS	REVISED --			FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT ARA-9003 (341)					

FOUNDATION DESIGN TABLE

TYPE OF SOIL	DESIGN DEPTH OF FOUNDATION		REINFORCEMENT IN FOUNDATION			
	SINGLE ARM D	TWIN ARM D	SINGLE ARM		TWIN ARM	
			VERT BARS	SPIRAL	VERT BARS	SPIRAL
SOFT CLAY	13'-0" (3.962 m)	15'-0" (4.572 m)	8-#6X12'-6" (3.810 m)	*3X122' (37.186 m)	8-#6X14'-3" (4.343 m)	*3X141' (42.977 m)
MEDIUM CLAY	9'-6" (2.896 m)	10'-9" (3.277 m)	8-#6X9'-0" (2.743 m)	*3X90' (27.432 m)	8-#6X10'-0" (3.048 m)	*3X100' (30.480 m)
STIFF CLAY	7'-0" (2.134 m)	8'-0" (2.438 m)	8-#6X6'-6" (1.981 m)	*3X66' (20.112 m)	8-#6X7'-6" (2.286 m)	*3X76' (23.165 m)
LOOSE SAND	9'-0" (2.743 m)	10'-0" (3.048 m)	8-#6X8'-6" (2.591 m)	*3X85' (25.908 m)	8-#6X9'-6" (2.896 m)	*3X94' (28.651 m)
MEDIUM SAND	8'-3" (2.515 m)	9'-0" (2.743 m)	8-#6X8'-0" (2.438 m)	*3X78' (23.774 m)	8-#6X8'-6" (2.591 m)	*3X85' (25.908 m)
DENSE SAND	7'-9" (2.362 m)	9'-0" (2.743 m)	8-#6X7'-6" (2.286 m)	*3X73' (22.250 m)	8-#6X8'-6" (2.591 m)	*3X85' (25.908 m)
ROCK OR SOLIDIFIED SLAG	5'-0" (1.524 m)	5'-0" (1.524 m)	NONE	NONE	NONE	NONE

NOTES

- ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN.
- THE ENGINEER SHALL DETERMINE THE CLASS OF SOIL DURING EXCAVATION AND SELECT THE DESIGN DEPTH OF FOUNDATION FROM THE DESIGN TABLE.
- EXCAVATION OF THE POLE FOUNDATION SHALL BE MADE WITH AN AUGER, 24" (609.6 mm) OR 30" (762.0 mm) IN DIAMETER.
- THE ANCHOR ROD SHALL BE A HOOK ROD TYPE. COLD BENDING OF THE ANCHOR ROD WILL NOT BE ALLOWED. THE RADIUS OF THE HOOK BEND SHALL NOT BE LESS THAN 4 TIMES THE NOMINAL DIAMETER OF THE ANCHOR ROD. A TACK WELDED ANCHOR ROD MAY BE SUBSTITUTED WITH THE APPROVAL OF THE ENGINEER.
- THE ANCHOR BOLTS AND RACEWAYS SHALL BE PROPERLY SECURED IN PLACE BEFORE THE CONCRETE IS PLACED IN THE FORM.
- THE ANCHOR RODS SHALL BE ACCORDING TO ASTM F1554 GRADE 725 (GRADE 105). NUTS SHALL BE HEXAGON NUTS ACCORDING TO ASTM A 194 2H OR ASTM A 563 DH, AND WASHERS SHALL BE ACCORDING TO ASTM F 436.
- THE CONTRACTOR SHALL COORDINATE EXTENSION OF ANCHOR BOLTS ABOVE TOP OF FOUNDATION WITH THE BREAKAWAY DEVICE MANUFACTURER'S REQUIREMENTS. IF LIGHT POLE IS MOUNTED WITHOUT BREAKAWAY DEVICE, ANCHOR BOLTS SHALL PROJECT 2 3/4" (69.9 mm) ABOVE TOP OF THE FOUNDATION. THE CONTRACTOR SHALL CONFIRM ANCHOR BOLT EXTENTION WITH ENGINEER.
- RACEWAYS SHALL PROJECT 1" (25.4 mm) ABOVE THE TOP OF THE FOUNDATION.
- THE CABLE TRENCH SHALL BE BACKFILLED AND FIRMLY COMPACTED BEFORE THE LIGHT IS ERCTED.



BILL OF MATERIAL

MARK	NO.	SIZE	LENGTH	SHAPE
a	10	6	SEE BELOW	—
s	12	4	8'-0" (2.438 m)	□
s1	3	3	7'-6" (2.286 m)	□
v1	8	6	2'-9" (0.838 m)	—
v2				

OFFSET SCHEDULE

SEWER DIAM. d IN.	PILE OFFSET from C-MED'N FT.	LENGTH of BAR a FT.
UP TO 24" (609.6 mm)	3'-3" (1.091 m)	*6 x 5'-3" (1.600 m)
27" (685.8 mm) TO 36" (914.4 mm)	3'-9" (1.143 m)	5'-9" (1.753 m)
42" (1066.8 mm) TO 48" (1219.2 mm)	4'-6" (1.372 m)	6'-6" (1.981 m)
54" (1371.6 mm) TO 60" (1524.0 mm)	5'-0" (1.524 m)	7'-0" (2.134 m)
66" (1676.4 mm) TO 72" (1828.8 mm)	5'-6" (1.676 m)	7'-6" (2.286 m)

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FILE NAME = 09306-DTLS-01 - P07

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DRAWN -- MJD	REVISED --	
CHECKED -- DWS	REVISED --	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BURNHAM AVENUE
OFFSET LIGHT POLE FOUNDATION DETAIL
40' - 47.5' MH, 15" BOLT CIRCLE

SCALE: N/A SHEET NO. 10 OF 10 SHEETS STA. N/A TO STA. N/A

F.A.U. RITE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2943	09-00033-00-LT	COOK	10	10
CONTRACT NO. 63271				
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT ARA-9003 (341)				

