

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS
**PLANS FOR PROPOSED
 FEDERAL AID HIGHWAY**

**FAU 3754 (191ST STREET)
 STREET LIGHTING
 80TH AVENUE (FAU 2755) TO HARLEM AVENUE (FAP 0348)
 SECTION NO.: 09-00107-00-LT
 PROJECT NO. ARA-9003 (669)
 VILLAGE of TINLEY PARK
 WILL COUNTY
 JOB NO.: C-91-685-10**

INDEX OF SHEETS

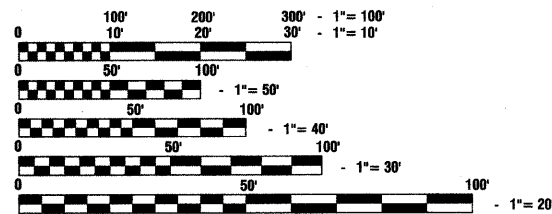
1. COVER SHEET
2. SUMMARY OF QUANTITIES AND GENERAL NOTES
- 3.-6. STREET LIGHTING PLANS
7. SINGLE LINE DIAGRAM
- 8.-12. DETAIL DRAWINGS

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

191ST STREET COLLECTOR
 ADT=8,650 (2009)
 =21,000 (2030)
 DESIGN SPEED=45 MPH
 SPEED LIMIT= 50 MPH

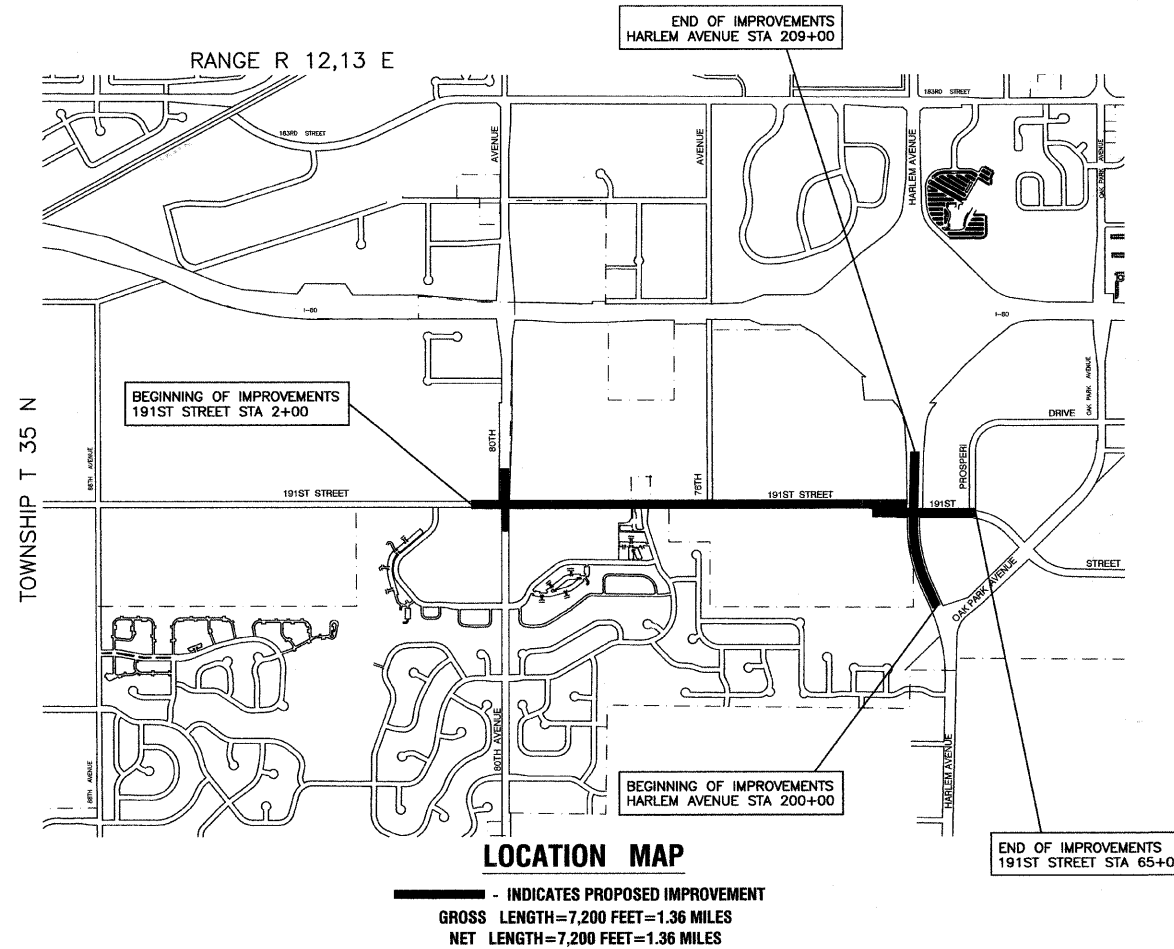
SCALES
 PLAN - 1"=50'
 PROFILE HORIZ. - 1"=50'
 PROFILE VERT. - 1"=5'
 CROSS SECTIONS - 1"=10'



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

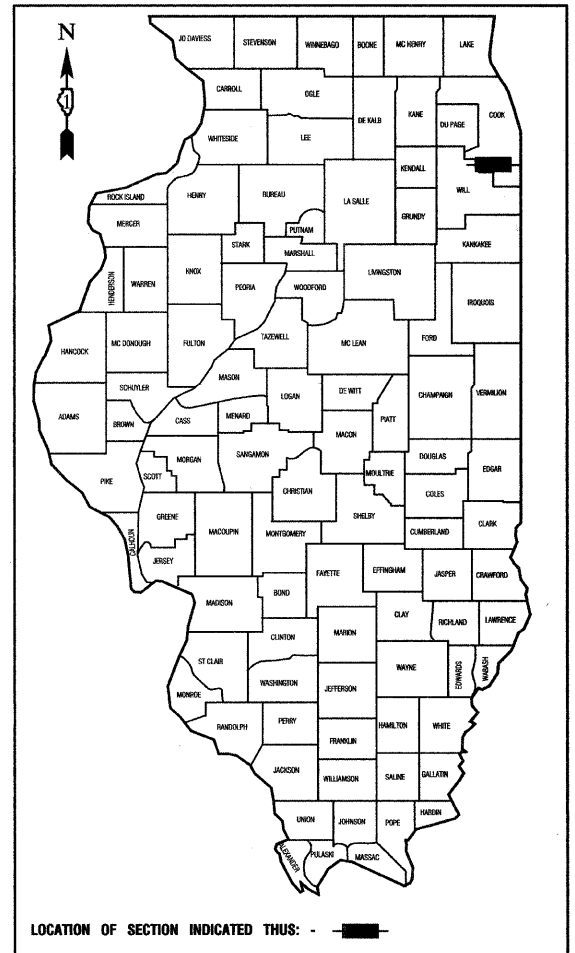
CONTRACT NO. 63288



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

F. A. I. D. NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3754	09-00107-00-LT	WILL	12	1
STA. 2+00 TO 200+00			TO STA. 65+00 TO 208+00	
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT #09-9003 (669)		

CONTRACT #63288



STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS

Approved: 10-20-09
Edward J. Tinley
 Mayor, Village of Tinley Park

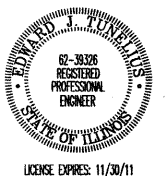
Passed: OCTOBER 26, 2009
Christophe
 District 1 Engineer of Local Roads & Streets

Released for Bid Based on Limited Review: OCTOBER 26, 2009
Diana M. O'Keefe
 Deputy Director of Highways, Region 1 Engineer

PRINTED BY THE AUTHORITY OF THE STATE OF ILLINOIS

PREPARED BY OR UNDER THE DIRECT SUPERVISION OF:

Edward J. Tinley
 10/20/09



SUMMARY OF QUANTITIES					PAVEMENT	LANDSCAPE	LIGHTS
S.I. CODE NO.	PAY ITEM	UNIT	QUANTITIES	CONSTRUCTION TYPE CODE			
				1000	Y003	Y030-1E	
XX008195	EXPLORATION EXCAVATION (UTILITY)	FOOT	150			150	
25000210	SEEDING, CLASS 2A	ACRE	0.25			0.25	
25100105	MULCH, METHOD 1	ACRE	0.25			0.25	
25200650	SODDING, SALT TOLERANT (SPECIAL)	SQ YD	560			560	
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 1/2" DIA., GALVANIZED STEEL	FOOT	690			690	
81018900	CONDUIT PUSHED, 4" DIA., GALVANIZED STEEL	FOOT	330			330	
81702460	ELECTRIC CABLE IN CONDUIT, 600V (XLP-TYPE USE) 3-1/C NO. 3/0	FOOT	50			50	
81900200	TRENCH AND BACKFILL FOR ELECTRICAL WORK	FOOT	1030			1030	
82102250	LUMINAIRE, SODIUM VAPOR, HORIZONTAL MOUNT, 250 WATT	EACH	62			62	
82102400	LUMINAIRE, SODIUM VAPOR, HORIZONTAL MOUNT, 400 WATT	EACH	15			15	
83008400	LIGHT POLE, ALUMINUM, 40 FT. M.H., 10 FT. MAST ARM	EACH	62			62	
83050800	LIGHT POLE, ALUMINUM, 47.5 FT. M.H., 12 FT. MAST ARM	EACH	15			15	
83600200	LIGHT POLE FOUNDATION, 24" DIAMETER	FOOT	610			610	
83600215	LIGHT POLE FOUNDATION, 24" DIAMETER, OFFSET	FOOT	20			20	
83600400	POLE FOUNDATION, METAL	EACH	16			16	
83800205	BREAKAWAY DEVICE, TRANSFORMER BASE, 15 INCH BOLT CIRCLE	EACH	77			77	
84200500	REMOVAL OF LIGHTING UNIT, SALVAGE	EACH	2			2	
84200804	REMOVAL OF POLE FOUNDATION	EACH	4			4	
82500505	LIGHTING CONTROLLER, SPECIAL	EACH	1			1	
XB163090	UNIT DUCT, 600V, 3-1C NO. 4, 1/C NO. 6 GROUND, (XLP-TYPE USE), 1 1/2" DIA., POLYETHYLENE	FOOT	13700			13700	

* - INDICATES SPECIALTY ITEMS

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 ComEd.
- 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 LIGHT POLE ITEMS.
- 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 LIGHT POLE ITEMS.
- A PERMIT FOR THIS PROJECT WILL BE REQUIRED FROM THE WILL COUNTY HIGHWAY DEPARTMENT. THE PERMIT HAS BEEN APPLIED FOR BUT THE CONTRACTOR SHALL BE RESPONSIBLE FOR SECURING THIS PERMIT, PERMIT BOND AND ANY OTHER ASSOCIATED FEES BEFORE CONSTRUCTION BEGINS.
- THE WILL COUNTY DEPARTMENT OF HIGHWAYS SHALL BE NOTIFIED A MINIMUM OF TWO (2) WORKING DAYS IN ADVANCE OF ANY CONSTRUCTION WITHIN THE COUNTY RIGHT OF WAY.
- 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 VILLAGE.
- 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 COST OF WHICH SHALL BE CONSIDERED INCIDENTAL TO THE LIGHT POLE ITEMS.
- 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.
- ALL EXCAVATED SOILS FROM HARLEM AVENUE (IL43) MUST REMAIN IN THE STATE ROW AND SHALL NOT BE MOVED OFF SITE OR PLACED ELSEWHERE ON THE PROJECT.

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FILE NAME = 09302-QUAN-01 - P01	USER NAME =	DESIGNED -- DWS	REVISED -- 02-16-10
		CHECKED -- EJT	REVISED --
		DRAWN -- MJD	REVISED --
		CHECKED -- PAP	REVISED --

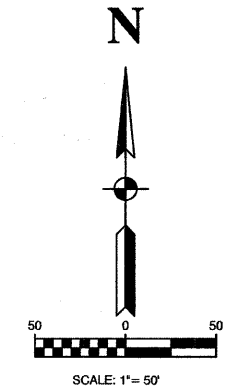
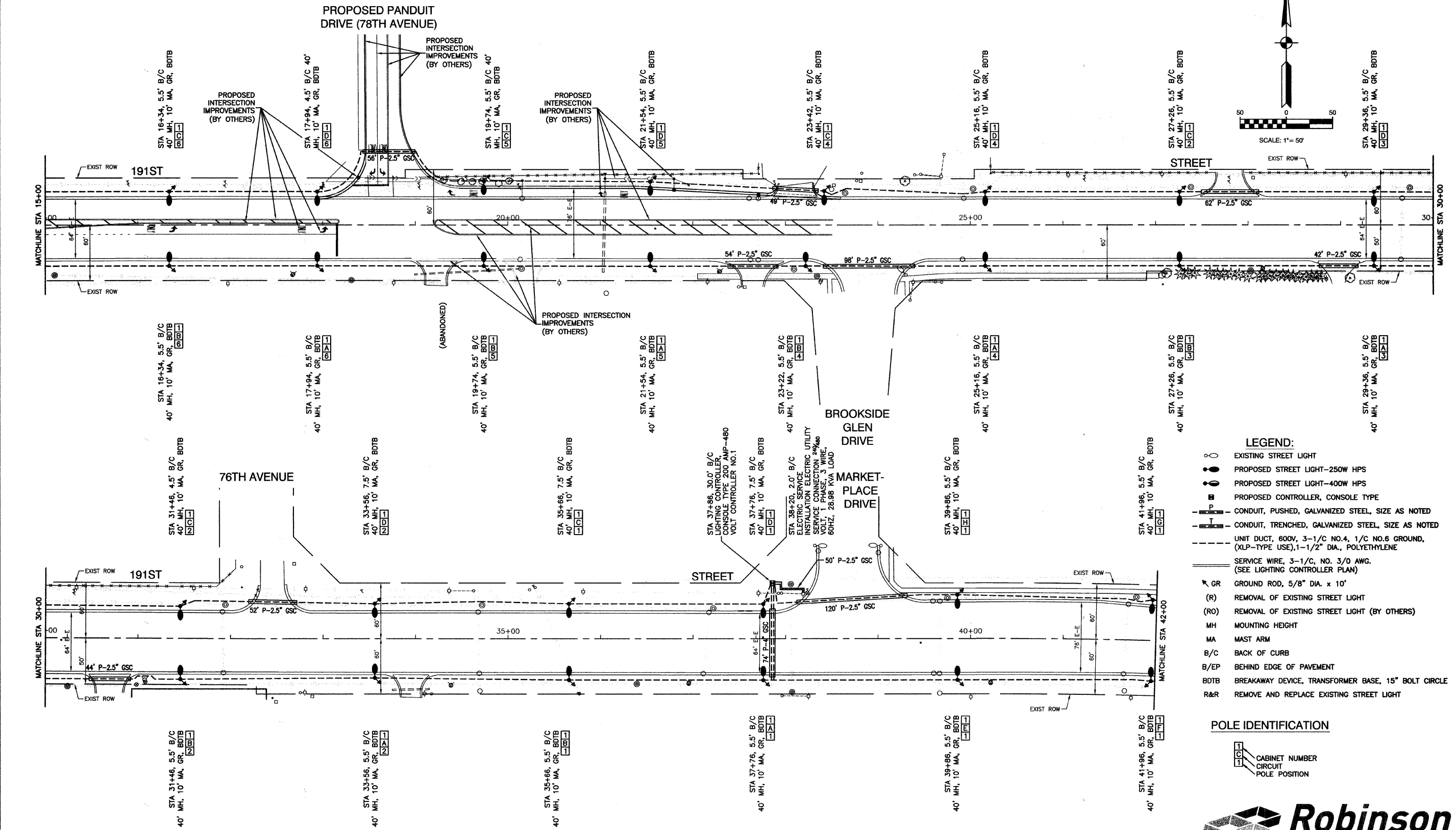
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

191ST STREET
80TH AVENUE (FAU 2755) TO HARLEM AVENUE (FAP 0348)
SUMMARY OF QUANTITIES
SCALE: N/A SHEET NO. 2 OF 12 SHEETS STA. N/A TO STA. N/A

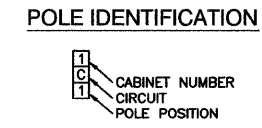
F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3754	09-00107-00-LT	WILL	12	2
CONTRACT NO. 63288				
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT M-6003 (331)				



SECTION 1, TOWNSHIP 35, RANGE 12
SECTION 12, TOWNSHIP 35, RANGE 12



- LEGEND:**
- EXISTING STREET LIGHT
 - PROPOSED STREET LIGHT-250W HPS
 - PROPOSED STREET LIGHT-400W HPS
 - PROPOSED CONTROLLER, CONSOLE TYPE
 - P- CONDUIT, PUSHED, GALVANIZED STEEL, SIZE AS NOTED
 - T- CONDUIT, TRENCHED, GALVANIZED STEEL, SIZE AS NOTED
 - U- UNIT DUCT, 600V, 3-1/2" NO.4, 1/2" NO.6 GROUND, (XLP-TYPE USE), 1-1/2" DIA., POLYETHYLENE
 - S- SERVICE WIRE, 3-1/2" NO. 3/0 AWG. (SEE LIGHTING CONTROLLER PLAN)
 - GR GROUND ROD, 5/8" DIA. x 10'
 - (R) REMOVAL OF EXISTING STREET LIGHT
 - (RO) REMOVAL OF EXISTING STREET LIGHT (BY OTHERS)
 - MH MOUNTING HEIGHT
 - MA MAST ARM
 - B/C BACK OF CURB
 - B/EP BEHIND EDGE OF PAVEMENT
 - BDTB BREAKAWAY DEVICE, TRANSFORMER BASE, 15" BOLT CIRCLE
 - R&R REMOVE AND REPLACE EXISTING STREET LIGHT



DATE: _____ BY: _____

REVISIONS

NO.	DESCRIPTION	DATE

PLAN

REVISIONS
PLOTTED
ALIGNMENT CHECKED
GRADE CHECKED
NOTE BOOK NO. _____
CADD FILE NAME _____

DATE: _____ BY: _____

REVISIONS

NO.	DESCRIPTION	DATE

PROFILE

REVISIONS
PLOTTED
GRADES CHECKED
NOTE BOOK NO. _____
FILE NOTED _____

FILE NAME = 09302-PLAN-01 - IDOT P02

USER NAME = _____	DESIGNED = DWS	REVISED = _____
CHECKED = EJT	REVISED = _____	
DRAWN = MJD	REVISED = _____	
CHECKED = PAP	REVISED = _____	

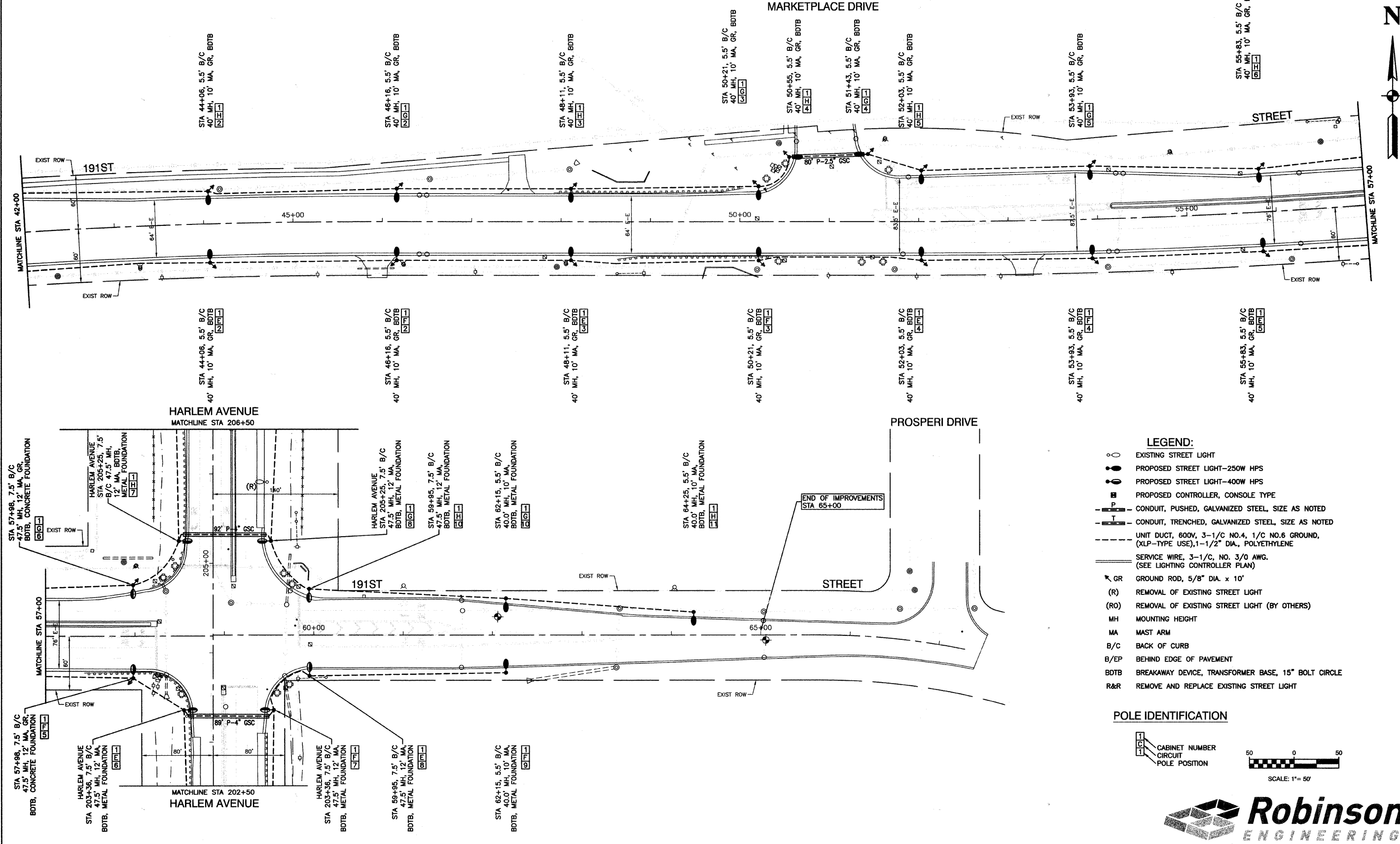
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

191ST STREET 80TH AVENUE (FAU 2755) TO HARLEM AVENUE (FAP 0348)		F.A.U. RITE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
STREET LIGHTING PLANS		3754	09-00107-00-LT	WILL	12	4
SCALE: 1"=50'		SHEET NO. 4 OF 12 SHEETS		STA. 15+00 TO STA. 42+00		CONTRACT NO. 63288
				FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT M-9003 (331)

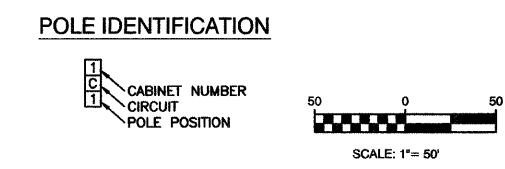
SECTION 1, TOWNSHIP 35, RANGE 12
 SECTION 12, TOWNSHIP 35, RANGE 12
 SECTION 7, TOWNSHIP 35, RANGE 13

PLAN	REVISIONS	DATE
NO.	PLOTTED	
	ALIGNMENT CHECKED	
	GRADE CHECKED	
	FILE NAME	

PROFILE	REVISIONS	DATE
NO.	PLOTTED	
	GRADES CHECKED	
	FILE NAME	



- LEGEND:**
- EXISTING STREET LIGHT
 - PROPOSED STREET LIGHT—250W HPS
 - PROPOSED STREET LIGHT—400W HPS
 - PROPOSED CONTROLLER, CONSOLE TYPE
 - P — CONDUIT, PUSHED, GALVANIZED STEEL, SIZE AS NOTED
 - T — CONDUIT, TRENCHED, GALVANIZED STEEL, SIZE AS NOTED
 - UNIT DUCT, 600V, 3-1/2" NO.4, 1/2" NO.6 GROUND, (XLP-TYPE USE), 1-1/2" DIA., POLYETHYLENE
 - SERVICE WIRE, 3-1/2", NO. 3/0 AWG. (SEE LIGHTING CONTROLLER PLAN)
 - GR GROUND ROD, 5/8" DIA. x 10'
 - (R) REMOVAL OF EXISTING STREET LIGHT
 - (RO) REMOVAL OF EXISTING STREET LIGHT (BY OTHERS)
 - MH MOUNTING HEIGHT
 - MA MAST ARM
 - B/C BACK OF CURB
 - B/EP BEHIND EDGE OF PAVEMENT
 - B/TB BREAKAWAY DEVICE, TRANSFORMER BASE, 15" BOLT CIRCLE
 - R&R REMOVE AND REPLACE EXISTING STREET LIGHT



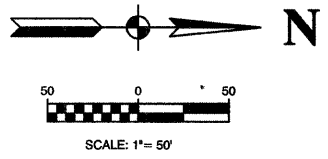
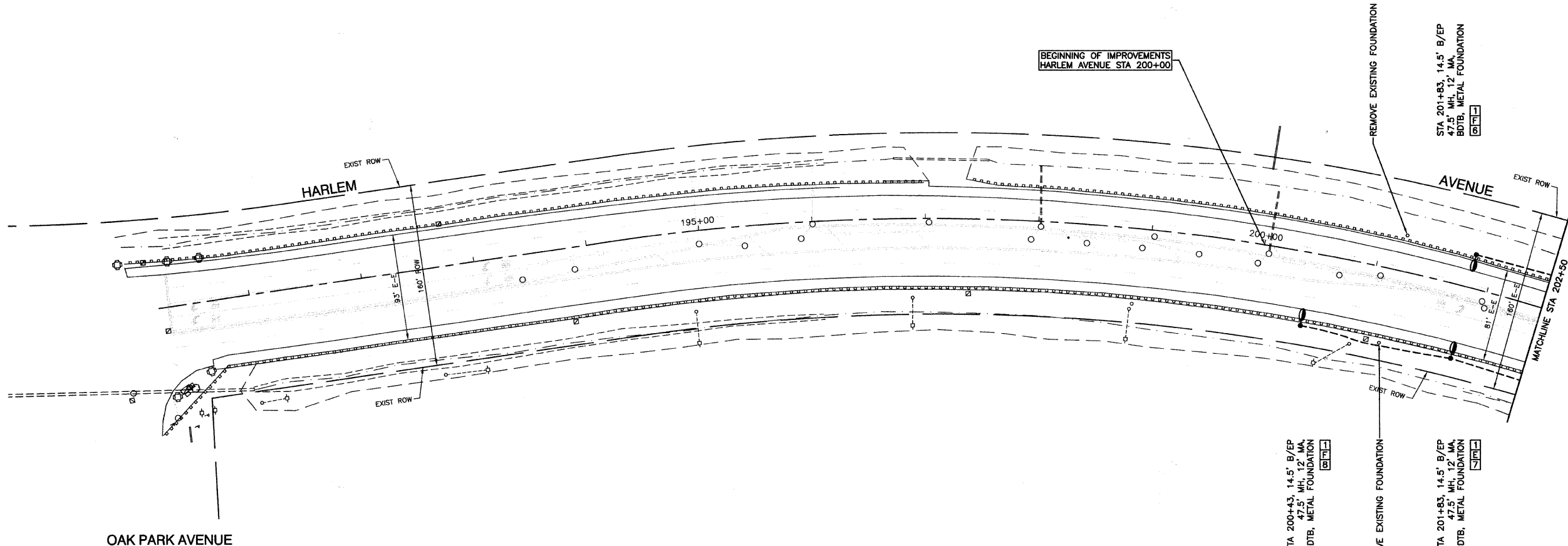
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	PLOT SCALE = 1"=50'	CHECKED -- EJT	REVISED --		3754 09-00107-00-LT WILL 12 5		
	PLOT DATE = 10-20-09	DRAWN -- MJD	REVISED --		CONTRACT NO. 63288		
		CHECKED -- PAP	REVISED --		FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT M-9003 (331)		



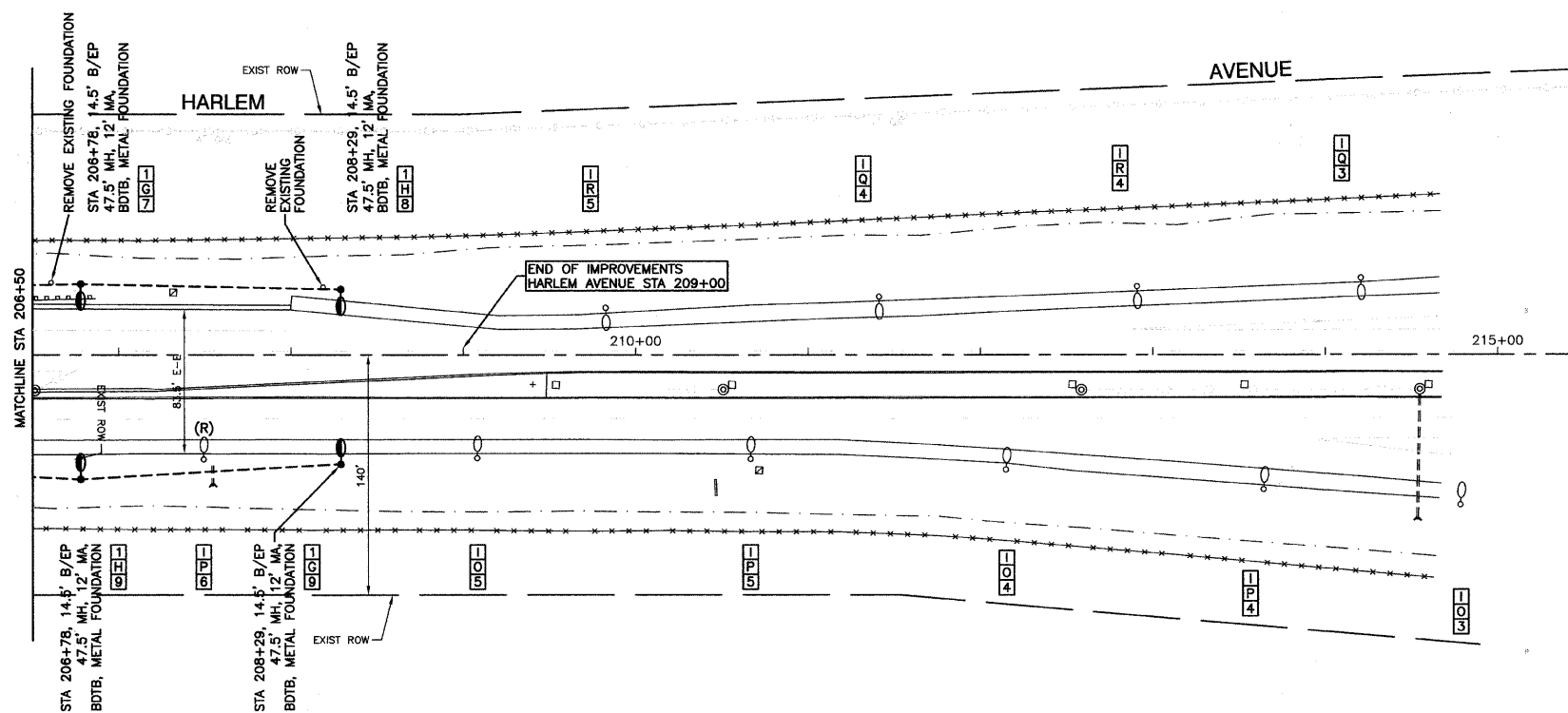
SECTION 1, TOWNSHIP 35, RANGE 12
 SECTION 12, TOWNSHIP 35, RANGE 12
 SECTION 7, TOWNSHIP 35, RANGE 13

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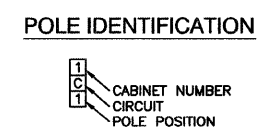
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- NOTE:**
 EXISTING LIGHTING UNITS THAT ARE CONNECTED TO CABINET "1" ARE OWNED BY IDOT. THE FOLLOWING SHALL APPLY TO ALL IDOT OWNED LIGHTING UNITS:
1. THE CONTRACTOR SHALL COORDINATE WITH THE IDOT ELECTRICAL MAINTENANCE DEPARTMENT BEFORE AND DURING CONSTRUCTION.
 2. AT ALL TIMES, EQUIPMENT GROUND SHALL BE CONTINUOUS FROM THE CONTROLLER TO THE LAST POLE OF EACH CIRCUIT. RESISTANCE SHALL CONFORM TO IDOT SPECIFICATIONS.
 3. REMOVAL OF UNIT DUCT AND CONDUCTORS TO THE NEXT REMAINING POLE IN LINE SHALL BE INCLUDED IN THE REMOVAL OF LIGHTING UNITS.
 4. REMOVED LIGHTING UNITS SHALL BE DELIVERED TO THE LOCAL IDOT MAINTENANCE YARD.



- LEGEND:**
- EXISTING STREET LIGHT
 - PROPOSED STREET LIGHT-250W HPS
 - PROPOSED STREET LIGHT-400W HPS
 - PROPOSED CONTROLLER, CONSOLE TYPE
 - CONDUIT, PUSHED, GALVANIZED STEEL, SIZE AS NOTED
 - CONDUIT, TRENCHED, GALVANIZED STEEL, SIZE AS NOTED
 - UNIT DUCT, 600V, 3-1/C NO.4, 1/C NO.6 GROUND, (XLP-TYPE USE), 1-1/2" DIA., POLYETHYLENE
 - SERVICE WIRE, 3-1/C, NO. 3/0 AWG. (SEE LIGHTING CONTROLLER PLAN)
 - ✕ GR GROUND ROD, 5/8" DIA. x 10'
 - (R) REMOVAL OF EXISTING STREET LIGHT
 - (RO) REMOVAL OF EXISTING STREET LIGHT (BY OTHERS)
 - MH MOUNTING HEIGHT
 - MA MAST ARM
 - B/C BACK OF CURB
 - B/EP BEHIND EDGE OF PAVEMENT
 - BDTB BREAKAWAY DEVICE, TRANSFORMER BASE, 15" BOLT CIRCLE
 - R&R REMOVE AND REPLACE EXISTING STREET LIGHT

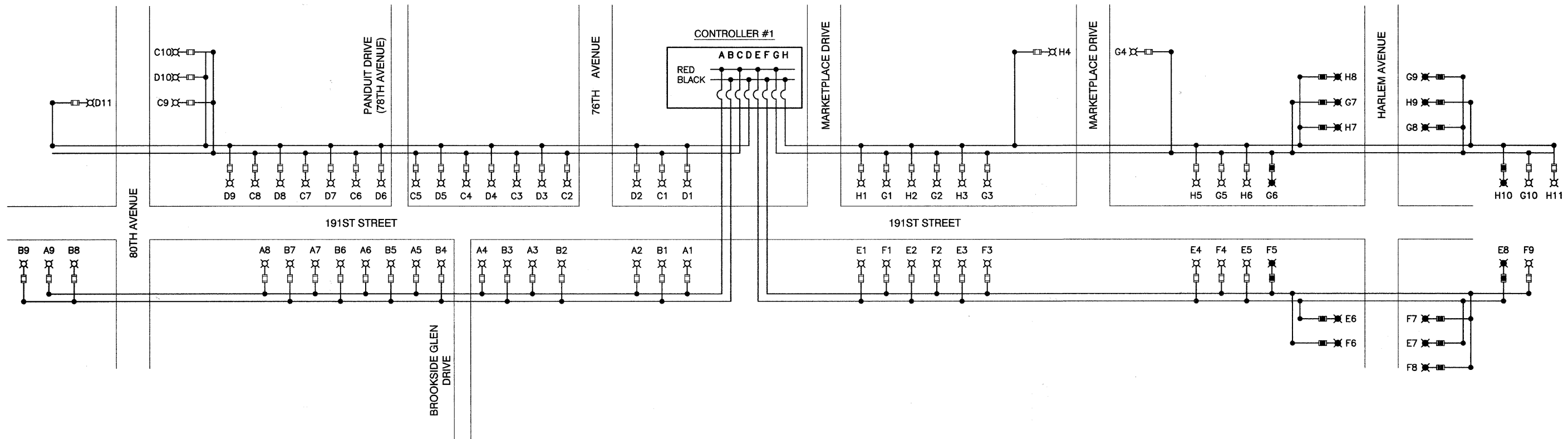


FILE NAME = 06302-PLAN-01 - IDOT P04	USER NAME =	DESIGNED — DWS	REVISED —	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	191ST STREET 80TH AVENUE (FAU 2755) TO HARLEM AVENUE (FAP 0348) STREET LIGHTING PLANS		F.A.U. RTE. 3754	SECTION 09-00107-00-LT	COUNTY WILL	TOTAL SHEETS 12	SHEET NO. 6	
	PLOT SCALE = 1"=50'	CHECKED — EJT	REVISED —		SCALE: 1"=50'	SHEET NO. 6 OF 12 SHEETS	STA. 191+00 TO STA. 215+00	CONTRACT NO. 63288				
	PLOT DATE = 10-20-09	DRAWN — MJD	REVISED —		FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT M-9003 (331)							
		CHECKED — PAP	REVISED —									



LOAD TABULATIONS CONTROLLER #1			
CIRCUIT	WATTS	AMPS @ 240V	
		RED PHASE	BLACK PHASE
A	2,745	11.70	
B	2,745		11.70
C	3,050	13.00	
D	3,355		14.30
E	2,959	12.50	
F	3,437		14.50
G	3,742	15.80	
H	4,047		17.10
SUBTOTAL	26,080	53.00	57.60
TOTAL AMPS @ 240 V		110.60	

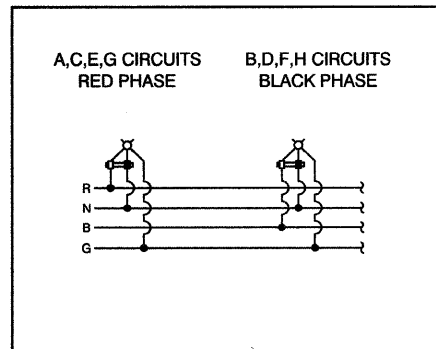
240/480V, 1Ø, 3 WIRE, 60HZ
28.98 KVA LOAD



PLAN	DATE
REVISIONS	BY
PLANNED	
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RECORDED	
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PROFILE	DATE
REVISIONS	BY
PLANNED	
GRADES	
CHECKED	
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TYPICAL POLE WIRING



LEGEND

- ⊗ LUMINAIRE, 250W HPS, 240V
- ⊗ LUMINAIRE, 400W HPS, 240V
- FUSE, 3.5 AMP
- FUSE, 6.0 AMP
- A1 LUMINAIRE CIRCUIT
- { CIRCUIT BREAKER
- CONNECTION

FILE NAME = 09302-DTLS-01 - P01

USER NAME =	DESIGNED -- DWS	REVISED --
	CHECKED -- EJT	REVISED --
PLOT SCALE = N/A	DRAWN -- MJD	REVISED --
PLOT DATE = 10-20-09	CHECKED -- PAP	REVISED --

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

191ST STREET 80TH AVENUE (FAU 2755) TO HARLEM AVENUE (FAP 0348)		F.A.U. RTE. 3754	SECTION 09-00107-00-LT	COUNTY WILL	TOTAL SHEETS 12	SHEET NO. 7
SCALE: N/A		SHEET NO. 7 OF 12 SHEETS		STA. N/A TO STA. N/A		FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT M-9003 (331)



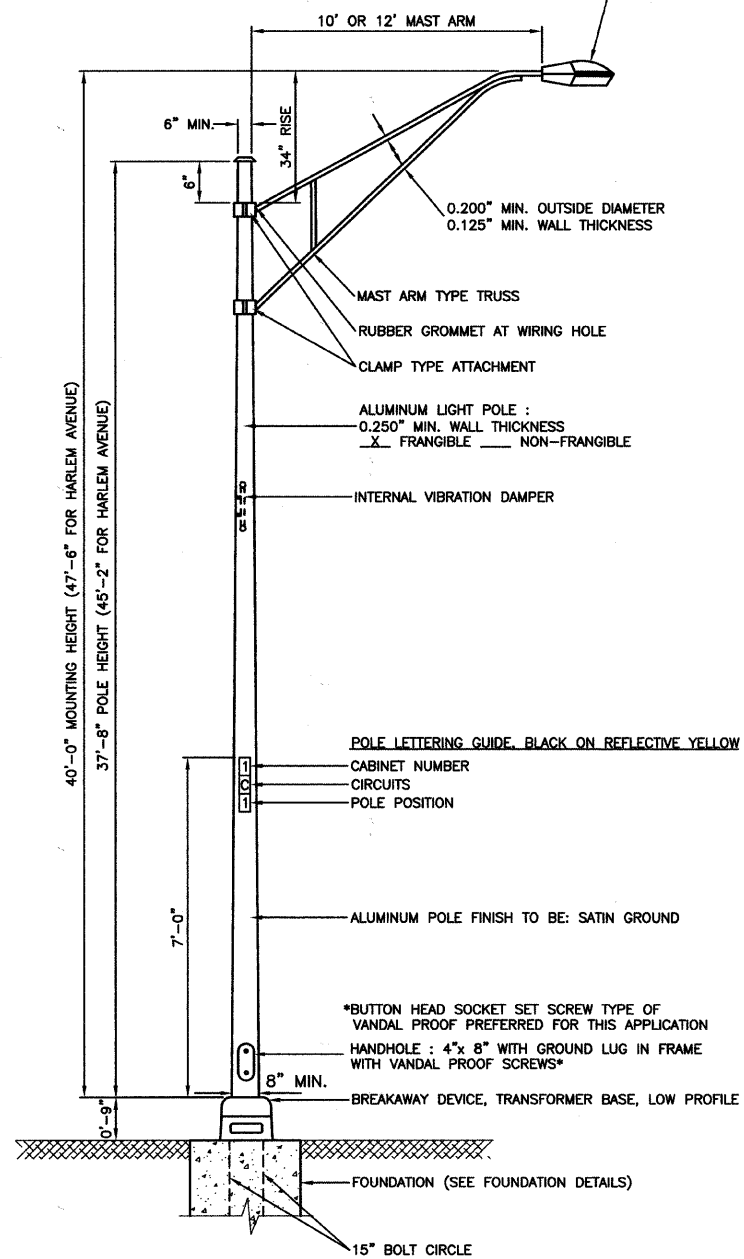
LUMINAIRE:
 250 WATT HIGH PRESSURE SODIUM LAMP
 240 VOLT BALLAST
 I.E.S. TYPE: MC III LIGHT DISTRIBUTION, OR
 FULL CUTOFF
 LENS TYPE: FLAT
 INITIAL LAMP LUMENS: 28,000
 LAMP LIFE: 24,000 HOURS

LUMINAIRE:
 400 WATT HIGH PRESSURE SODIUM LAMP
 240 VOLT BALLAST
 I.E.S. TYPE: MC III LIGHT DISTRIBUTION,
 FULL CUTOFF
 LENS TYPE: FLAT
 INITIAL LAMP LUMENS: 50,000
 LAMP LIFE: 24,000 HOURS

IMPORTANT NOTE:
 TRANSFORMER BASE AND LIGHTPOLE
 TO BE LEVELED AS ONE UNIT. USING
 LEVELING SHIMS IF REQUIRED.

DATE	
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REVISIONS	
PLANNED	
ALIGNED	
CHECKED	
NOTE BOOK	
NO.	

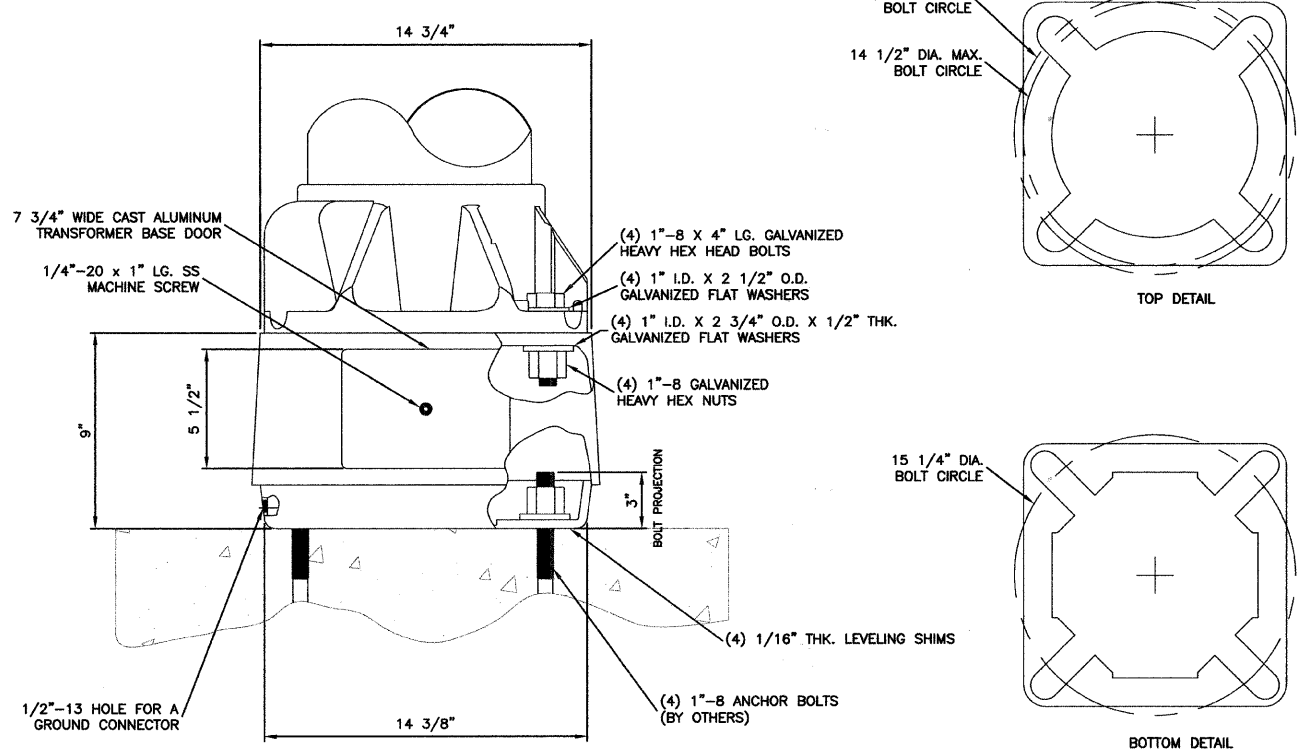
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REVISIONS	
PLANNED	
GRADES	
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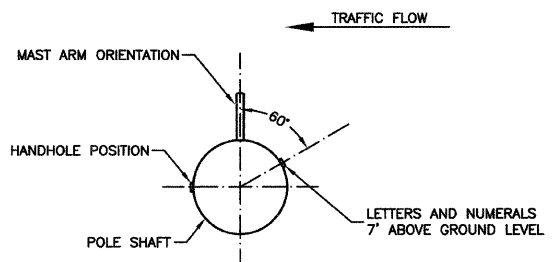
NOTES:

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.
3. LIGHT POLE AND ASSOCIATED EQUIPMENT TO BE U.L. LISTED

TYPICAL POLE INSTALLATION



BREAKAWAY TRANSFORMER BASE DETAIL



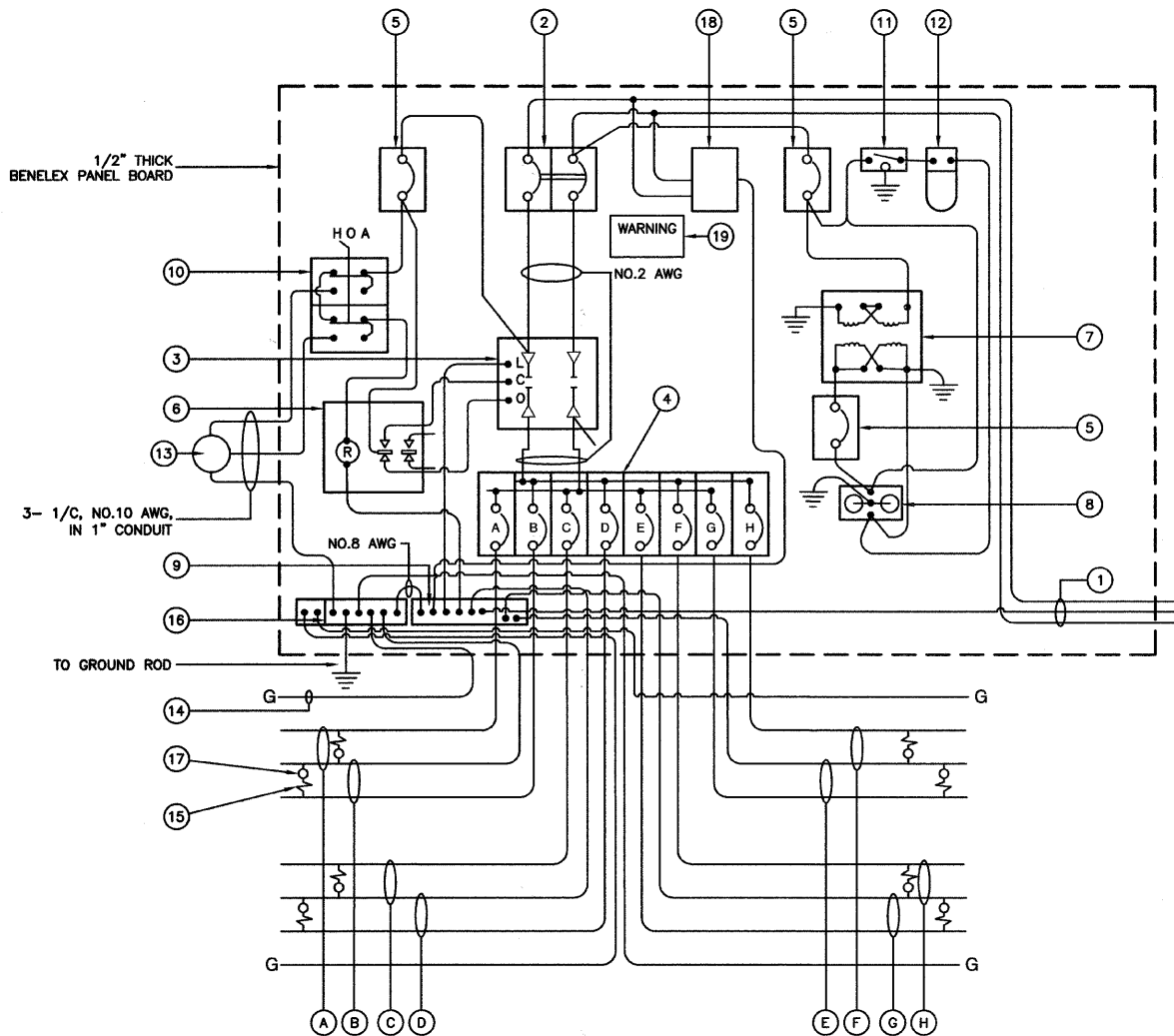
POSITION OF HANDHOLE AND NUMERALS ON POLE



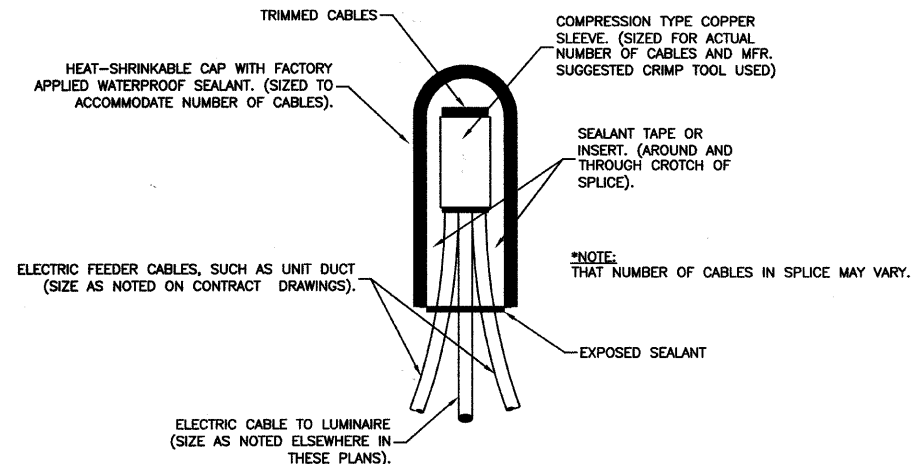
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PLOT DATE = 10-20-09	CHECKED -- PAP	DRAWN -- MJD	REVISED --			CONTRACT NO. 63288					
						SCALE: N/A	SHEET NO. 8 OF 12 SHEETS	STA. N/A	TO STA. N/A	FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT M-9003 (331)	

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CONTROLLER WIRING DIAGRAM
CONTROLLER NO. 1



SPLICING ELECTRIC CABLES
BASIC MATERIALS AND METHODS

CONTROLLER WIRING DIAGRAM LEGEND

- ① 3-1/C, NO. 3/0 600V SERVICE WIRE IN 2" DIA GALVANIZED STEEL CONDUIT FOR 240/480 VOLT, 1ϕ, 3 WIRE, 60HZ. SERVICE.
 - ② (1) 200 AMP MAIN CIRCUIT BREAKER, 2 POLE, 600 VOLT, 100 AMP BASE, NON-INTERCHANGEABLE TRIP INTERRUPTING RATING NEMA - 14000 AMP AT 480 V.
 - ③ (1) 200 AMP CONTACTOR SWITCH, ELECTRICALLY OPERATED, MECHANICALLY HELD, 2 POLE, 600 VOLT
 - ④ (8) 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)
 - (E) CIRCUIT (RED)
 - (F) CIRCUIT (BLACK)
 - (G) CIRCUIT (RED)
 - (H) CIRCUIT (BLACK)

GENERAL NOTES FOR CONTROL CABINET

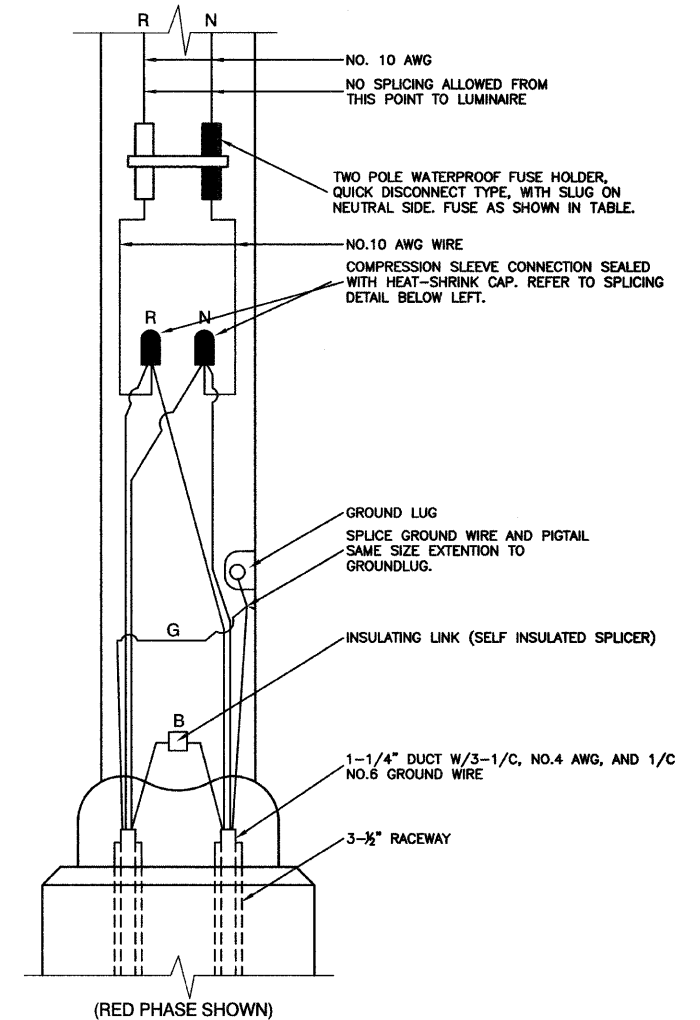
1. ENTIRE CONTROL CABINET SHALL BE GROUNDED.
2. ALL WIRING SHALL BE TAGGED WITH SELF-STICKING WIRE MARKERS.
3. GROUND BUS TO BE COLOR CODED GREEN, NEUTRAL BUS WHITE, AND BONDED TO CABINET ENCLOSURE, BY LISTED PRESSURE CONNECTORS OR LISTED CLAMPS.
4. ALL INTERNAL CONTROLLER WIRING TO BE NO.12 AWG UNLESS 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 C.E. Co. FOR APPROVAL OF LOCATION.
4. FOR LOCATION OF EXISTING UNDERGROUND ELECTRICAL CABLE CALL C.E. Co.
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 FLOWING 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
250	3.5 AMP
400	6.0 AMP

LUMINAIRE FUSE SIZE TABLE



POLE HANDHOLE WIRING DIAGRAM
(TYPICAL FOR SINGLE LUMINAIRE INSTALLATION)

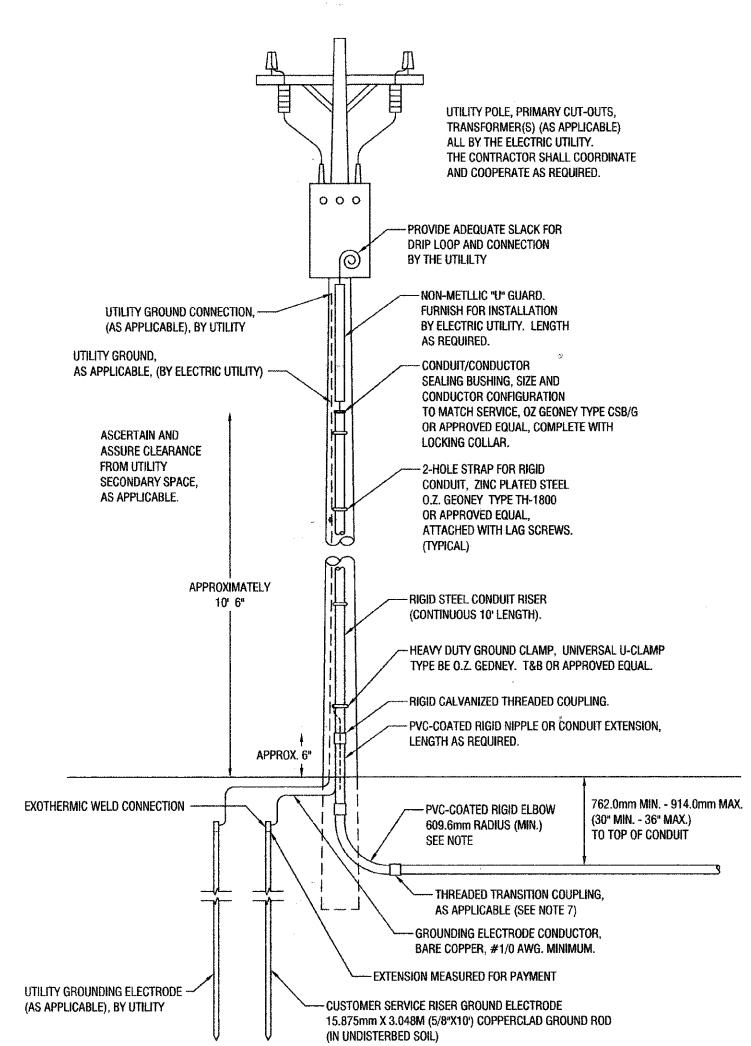
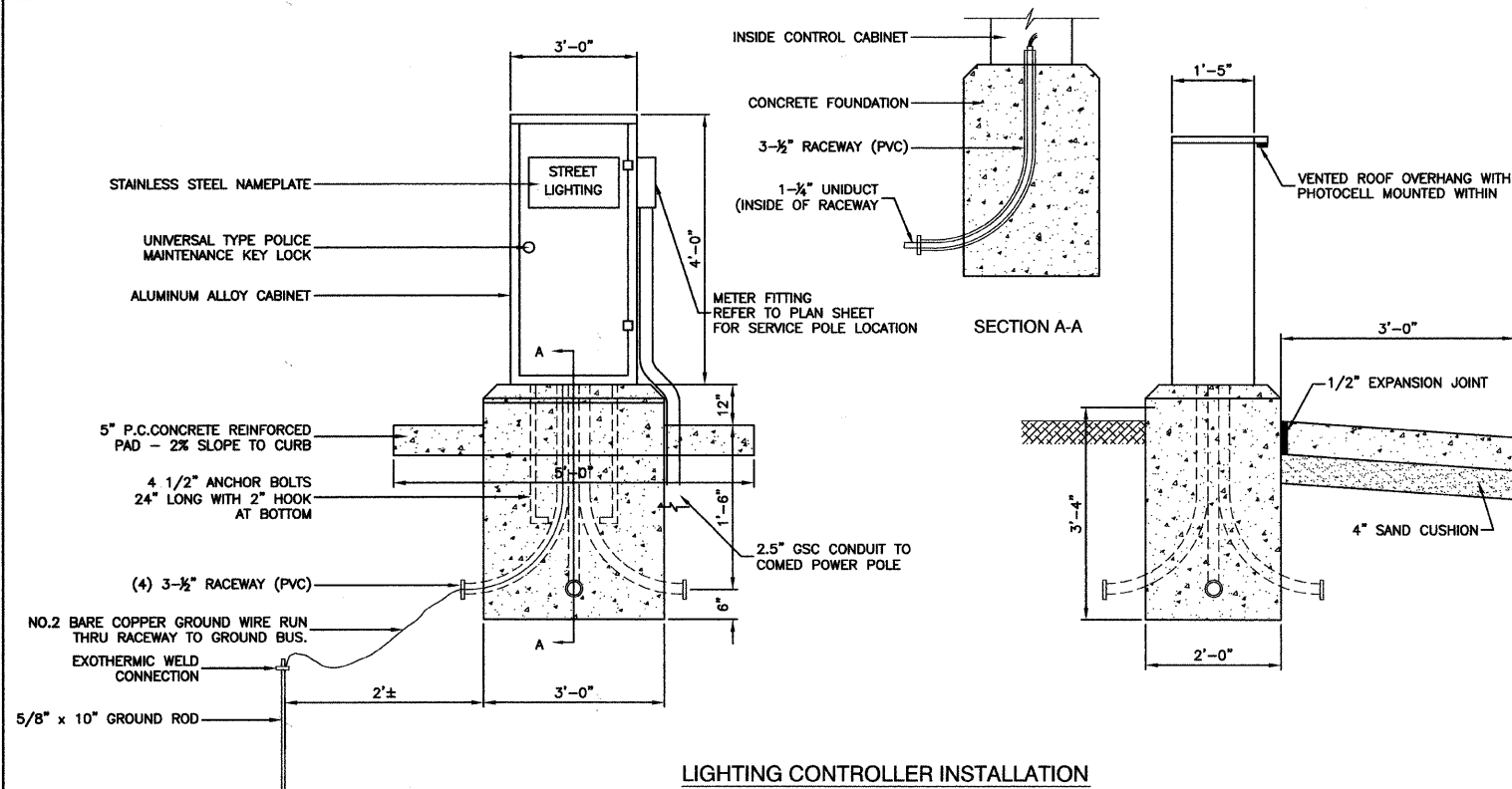
NOTE:
ALLOW 36" LOOP OF CABLES TO INSURE SUFFICIENT SLACK FOR WITHDRAWAL OF THE CONNECTORS OUTSIDE OF THE POLE HANDHOLE.



FILE NAME = 09302-DTLS-01 - P03	USER NAME =	DESIGNED - DWS	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	191ST STREET 80TH AVENUE (FAU 2755) TO HARLEM AVENUE (FAP 0348) STREET LIGHTING DETAILS	F.A.U. RTE. 3754	SECTION 09-00107-00-LT	COUNTY WILL	TOTAL SHEETS 12	SHEET NO. 9	
	PLOT SCALE = N/A	CHECKED - EJT	REVISED -	SCALE: N/A	SHEET NO. 9 OF 12 SHEETS	STA. N/A	TO STA. N/A	CONTRACT NO. 63288			
	PLOT DATE = 10-20-09	DRAWN - MJD	REVISED -	FED. ROAD DIST. NO. 1 ILLINOIS			FED. AID PROJECT M-9003 (331)				
		CHECKED - PAP	REVISED -								

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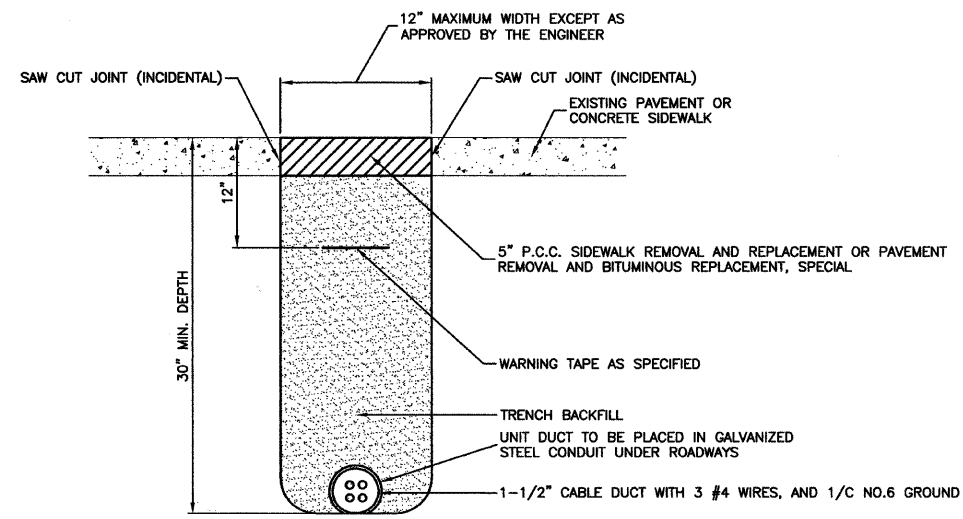
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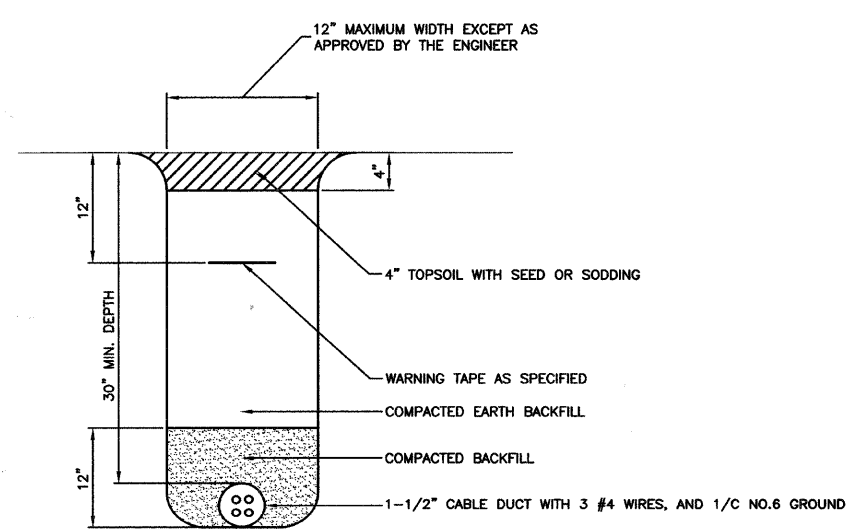
240/480 VOLT, 1Ø, 3 WIRE, 60HZ SERVICE
28.98 KVA LOAD, CONTROLLER #1

- 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 CONDUCTOR 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.

SERVICE CONNECTION FOR ALL CONTROLLERS



HOT-MIX ASPHALT PAVEMENT OR CONCRETE SIDEWALK REMOVAL AND REPLACEMENT



TRENCH DETAIL



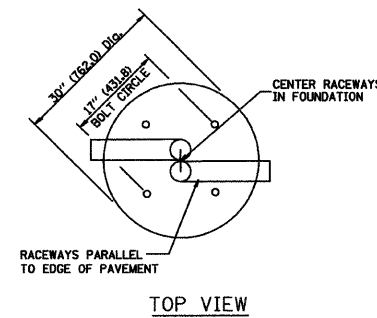
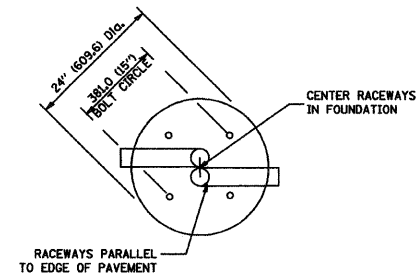
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	PLOT SCALE = N/A	CHECKED - EJT	REVISED -			3754	09-00107-00-LT	WILL	12	10	
	PLOT DATE = 10-20-09	DRAWN - MJD	REVISED -			CONTRACT NO. 63288					
		CHECKED - PAP	REVISED -			FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT M-9003 (331)					

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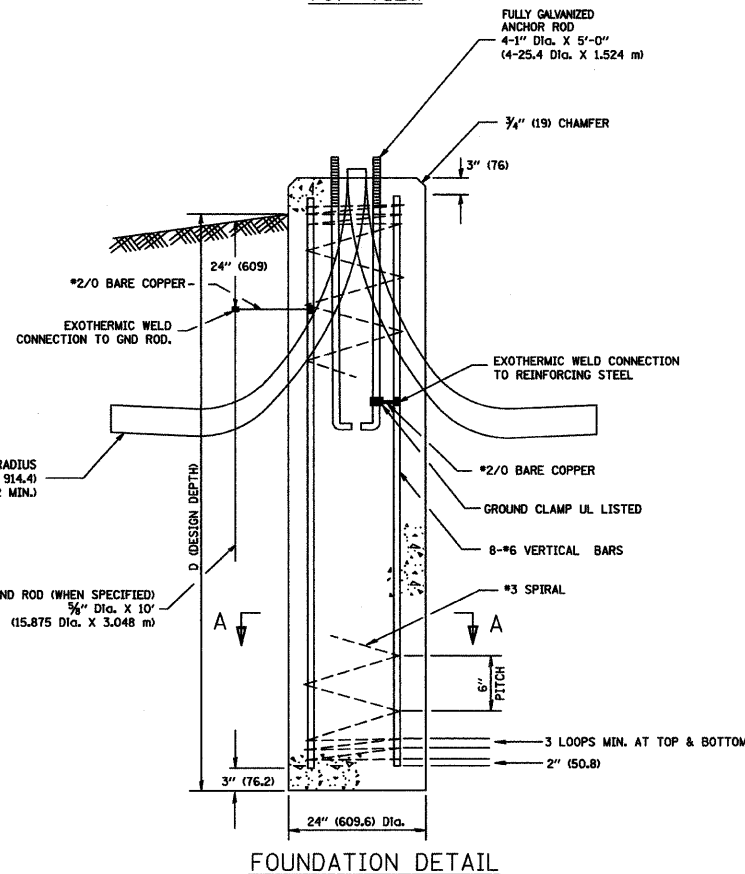
LIGHT POLE FOUNDATION DEPTH TABLE
40 FT. (12.192 m) TO 47.5 FT. (14.478 m) MOUNTING HEIGHT

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)

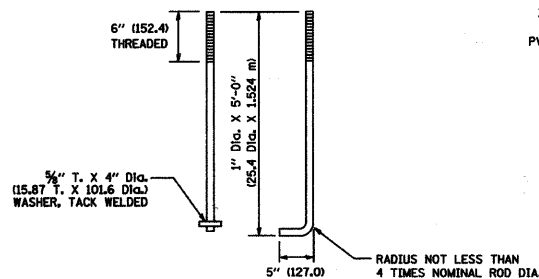


TOP VIEW

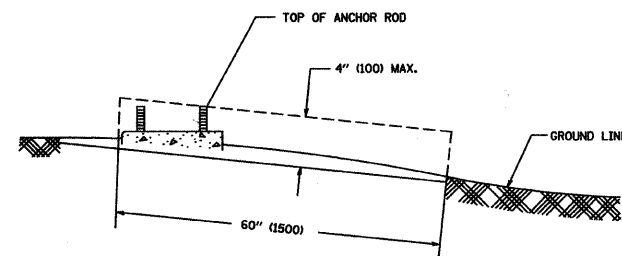
TOP VIEW



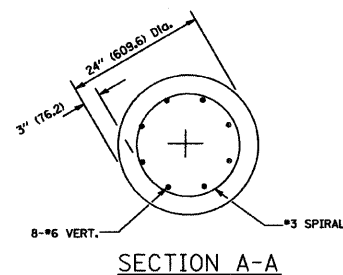
FOUNDATION DETAIL



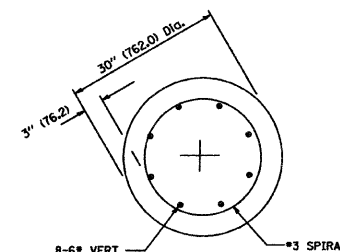
ANCHOR ROD DETAIL



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 UM(6 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.



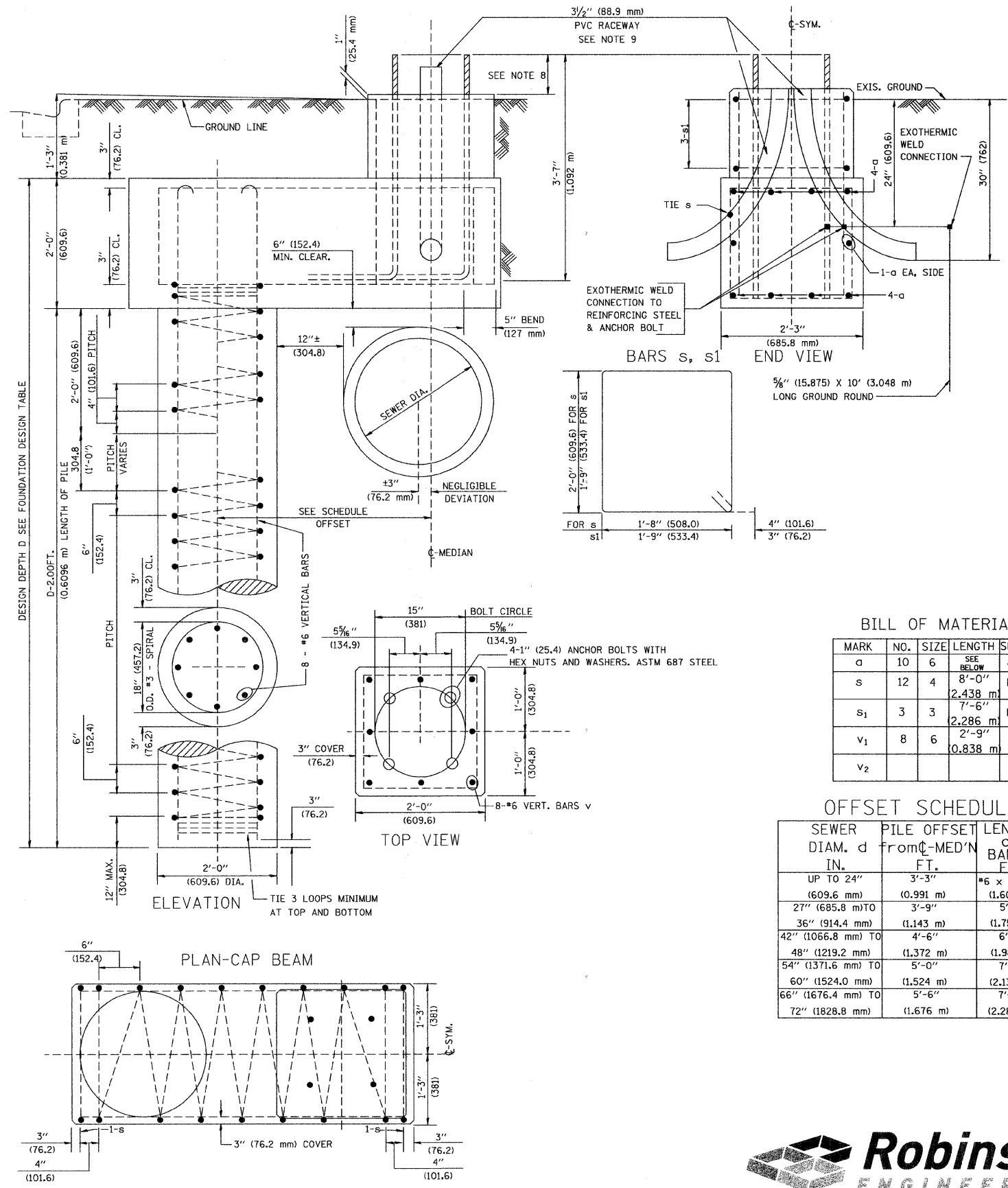
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	CHECKED -- EJT	REVISED --	3754			09-00107-00-LT	WILL	12	11	
PLOT SCALE = N/A	DRAWN -- MJD	REVISED --	CONTRACT NO. 63288							
PLOT DATE = 10-20-09	CHECKED -- PAP	REVISED --	FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT M-9003 (331)							
				SCALE: N/A	SHEET NO. 11 OF 12 SHEETS	STA. N/A	TO STA. N/A			

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 ERECTED.



BILL OF MATERIAL

MARK	NO.	SIZE	LENGTH	SHAPE
a	10	6	SEE BELOW	—
s	12	4	2.438 m	□
s ₁	3	3	2.286 m	□
v ₁	8	6	0.838 m	—
v ₂				

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" (0.991 m)	#6 x 5'-3" (1.600 m)
27" (685.8 mm) TO	3'-9" (1.143 m)	5'-9" (1.753 m)
36" (914.4 mm) TO	4'-6" (1.372 m)	6'-6" (1.981 m)
48" (1219.2 mm) TO	5'-0" (1.524 m)	7'-0" (2.134 m)
54" (1371.6 mm) TO	5'-6" (1.676 m)	7'-6" (2.286 m)
60" (1524.0 mm) TO		
66" (1676.4 mm) TO		
72" (1828.8 mm) TO		

DATE	BY	REVISIONS
		PLANNED
		ALIGNED
		CHECKED
		NOTE BOOK
		NO.
		CADD FILE NAME

DATE	BY	REVISIONS
		PLANNED
		ALIGNED
		CHECKED
		NOTE BOOK
		NO.
		CADD FILE NAME

