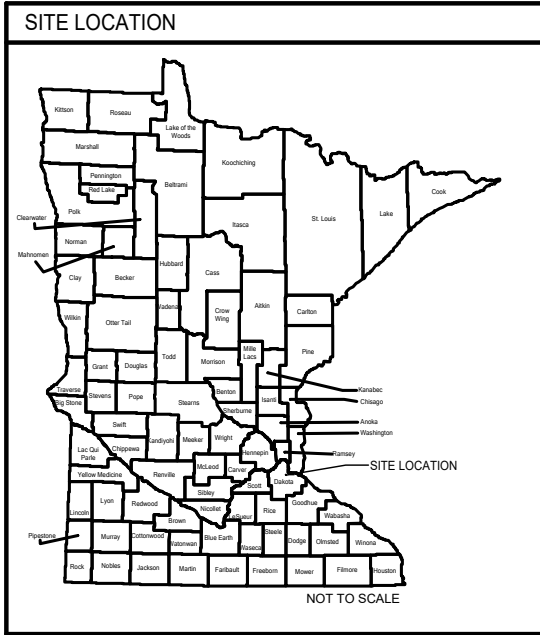


# 2026 NOVOTNY ROAD IMPROVEMENTS

BAXTER, MINNESOTA

## ELECTRICAL DRAWINGS



SYMBOL	LIGHTING SYSTEM
	SURFACE, BOLLARD LIGHT FIXTURE
	RECESSED LIGHT FIXTURE
	WALL LIGHT FIXTURE
	FLOOD LIGHT
	POLE MOUNTED

SYMBOL	POWER AND SWITCHING SYSTEMS
	WEATHER PROOF GROUND FAULT INTERRUPTING RECEPTACLE
	SPECIAL PURPOSE RECEPT. AS NOTED ON DWGS.
	PHOTO SENSOR
	DIMMER OR DIMMER CONTROL
	PUSH BUTTON
	SINGLE POLE SWITCH

SYMBOL	EQUIPMENT SYSTEMS
	BRANCH CIRCUIT PANELS (250V OR LESS)
	BRANCH CIRCUIT PANELS (277/480V)
	DISTRIBUTION PANEL OR SWITCHBOARD
	SWITCHBOARD MAIN
	DRY TYPE TRANSFORMER - SIZE AS NOTED ON DRAWING
	DISCONNECT SWITCH
	MAGNETIC MOTOR STARTER
	DISCONNECT SWITCH & MAGNETIC MOTOR STARTER IN SAME LOCATION
	AUXILIARY EQUIPMENT (AS NOTED)
	JUNCTION BOX
	MANHOLE
	HAND HOLE
	GROUNDING SYSTEM BUS BAR

SYMBOL	WIRING SYSTEMS
	#10 INDICATES WIRE SIZE. IF NOT NOTED #12 AWG CONDUCTORS SHALL BE USED HOME RUN
	NOTE: ANY CIRCUITS WITHOUT FURTHER DESIGNATION IS A TWO WIRE CIRCUIT. A GREATER NUMBER OF WIRES ARE INDICATED BY CROSS MARKS
	PANELBOARD/CIRCUIT NUMBER
	FIXTURE TYPE
	LIGHTING ASSEMBLY
	CIRCUIT NUMBER
	GROUNDING CONDUCTOR
	HOT CONDUCTOR
	NEUTRAL CONDUCTOR
	CONDUIT CAPPED OR BUSHED
	CONDUIT CONTINUATION
	BRANCH CIRCUIT (UNDER FLOOR OR UNDER GROUND)
	GROUND

SYMBOL	MISC. DEVICES
	INDICATES NOTE ON PLAN
	RELAY NUMBER
	MECHANICAL EQUIPMENT CROSS REFERENCE (NO. REFERS TO SCHEDULE)

LINETYPE LEGEND	
	NEW FIXTURE
	EXISTING FIXTURE TO BE REMOVED
	EXISTING FIXTURE TO REMAIN OR BE REUSED
	NEW DEVICE
	EXISTING DEVICE TO BE REMOVED
	EXISTING DEVICE TO REMAIN OR BE REUSED
	NEW DEVICE
	EXISTING DEVICE TO BE REMOVED
	EXISTING DEVICE TO REMAIN OR BE REUSED

ELECTRICAL ABBREVIATIONS			
A.C	ALTERNATING CURRENT	KCMIL	THOUSAND CIRCULAR MILS
AC	ABOVE COUNTER	MILS	
AFF	ABOVE FINISH FLOOR	KV	KILOVOLT
AMP	AMPERE	KVA	KILOVOLT AMPERE
ARCH	ARCHITECTURAL	KVAR	KILOVOLT AMPERE REACTIVE
ASC	ADJUSTABLE SPEED CONTROLLER	KW	KILOWATT
ATS	AUTOMATIC TRANSFER SWITCH	LA	LIGHTING ARRESTOR
AUTO	AUTOMATIC	LTG	LIGHTING
AWG	AMERICAN WIRE GAUGE	MCC	MOTOR CONTROL CENTER
BC	BELOW COUNTER	MCM	THOUSAND CIRCULAR MILS
BRKR	BREAKER	MILS	
BSMT	BASEMENT	MECH	MECHANICAL
C	CONDUIT, CABLE	MEZZ	MEZZANINE
CAB	CABINET	MFR	MANUFACTURE
CAP	CAPACITOR	MH	MAN HOLE
CB	CIRCUIT BREAKER	ML	MULTILINE
CCT	CIRCUIT	MLO	MAIN LUGS ONLY
CCTV	CLOSED CIRCUIT TELEVISION	MMS	MANUAL MOTOR SWITCH (OVERLOADS)
CLG	CEILING	MS	MOTOR SWITCH
CON	CONSOLE TELEPHONE	MS & P	MOTOR SWITCH & PILOT
CP	CHILDPROOF	MTD	MOUNTED
CPT	CONTROL POWER TRANSFORMER	MTG	MOUNTING
CR & SA	COMO RESEARCH & SERVICE	MTR	MOTOR
CT	CURRENT TRANSFORMER	MTRS	MOTORS
CU	COPPER	NC	NORMALLY CLOSED
D	DESK MOUNDED	NEU	NEUTRAL
DISC	DISCONNECT	NF	NON-FUSED
DISTR	DISTRIBUTION	NIC	NOT IN CONTRACT
DPDT	DOUBLE POLE, DOUBLE THROW	NL	NIGHT LIGHT
DPST	DOUBLE POLE, SINGLE THROW	NO	NORMALLY OPEN
DWG	DRAWING	NTS	NOT TO SCALE
EA	EACH	OC	ON CENTER
ELEC	ELECTRIC/ELECTICAL	P	POLE
EMERG	EMERGENCY	PA	PUBLIC ADDRESS SYSTEM
EMS	ENERGY MANAGEMENT SYSTEM	PE	PNEUMATIC ELECTRIC SWITCH
EP	ELECTRICAL PNEUMATIC VALVE	PF	POWER FACTOR
EXIST	EXISTING	PH(-)	PHASE
EWC	ELECTRIC WATER COOLER	PNL	PANEL
EW	ELECTRIC WATER HEATER	PP	POWER POLE
F	FUSED (D)	PVC	POLYVINYL CHLORIDE
FA	FIRE ALARM	PWR	POWER
FAAP	FIRE ALARM ANNUNCIATOR PANEL	QTY	QUANTITY
FC	FUSED CONTACT	REC	RECESSED
FACP	FIRE ALARM CONTROL	RM	ROOM
PANEL		RL	RELOCATE
FIXT	FIXTURE	S	SURGE SUPPRESSION RECEPTACLE
FL	FLUSH	SHT	SHEET
FLOUR	FLUORESCENT	SPEC	SPECIFICATION
FS	FUSED SWITCH	SPKR	SPEAKER
F-STAT	FREEZE STAT	SPST	SINGLE POLE, SINGLE THROW SWITCH
GEN	GENERATOR	SW	SWITCH
GB	GROUND BUS	SWBD	SWITCHBOARD
GFI	GROUND FAULT INTERRUPTING	SV	SOLENOID VALVE
GND	GROUND	SYS	SYSTEM
GYP	GYP SUM BOARD	TEL	TELEPHONE
HDCP	HANDICAPPED	TERM	TERMINAL
HTR	HEATER	TFMR(T)	TRANSFORMER
H-O-A	HAND-OFF-AUTOMATIC	T-STAT	THERMOSTAT
HH	HAND HOLE	TV	TELEVISION
HP	HORSEPOWER	TYP	TYPICAL
HT	HEIGHT	W	WATT
HZ	HERTZ	W/	WITH
IMC	INTERMEDIATE METALLIC CONDUIT	W/O	WITHOUT
INCAND	INCANDESCENT	WP	WEATHERPROOF
JB	JUNCTION BOX	UEP	UNDERGROUND ELECTRIC PRIMARY
JCT	JUNCTION	UES	UNDERGROUND ELECTRIC SECONDARY
		V	VOLT
		VA	VOLT AMPERE
		VM	VOLTMETER
		VS	VOLTMETER SWITCH
		X	EXISTING
		XC	EXISTING DEVICE TO BE REMOVED
		XFMR	TRANSFORMER
		XR	EXISTING TO BE RELOCATED

GENERAL NOTES	
1.	INSTALLATION OF ALL FIXTURES SHALL COMPLY WITH ALL INTERNATIONAL BUILDING CODE REQUIREMENTS.
2.	WHEREVER THE INSTALLATION OF ELECTRICAL EQUIPMENT CONFLICTS WITH EXISTING CONDITIONS NOT SHOWN ON THE PLANS OR SPECIFICATIONS, THE CONTRACTOR SHALL DETERMINE A SATISFACTORY ALTERNATIVE MEANS FOR INSTALLATION AND VERIFY IT WITH THE ENGINEER PRIOR TO INSTALLATION.
3.	FINAL CONNECTIONS TO EQUIPMENT SHALL BE PER MANUFACTURERS APPROVED WIRING DIAGRAMS, DETAILS AND INSTRUCTIONS. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO PROVIDE MATERIALS AND EQUIPMENT COMPATIBLE WITH EQUIPMENT ACTUALLY SUPPLIED.

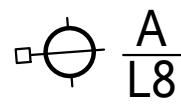
INDEX TO ELECTRICAL SHEETS	
E-1	ELECTRICAL TITLE SHEET
E-2	STREET LIGHTING - PHOTOMETRIC PLAN
E-3	STREET LIGHTING PLAN
E-4	ELECTRICAL - DETAILS

REVISIONS

DATE	CONSTR. DOC.	CITY REVIEW
1/26/26		
3/23/26		
6/2/26		

ELECTRICAL TITLE SHEET

2026 NOVOTNY ROAD IMPROVEMENTS  
BAXTER, MINNESOTA  
for:  
LEO A. DALY



LAKE

STM

Statistics						
Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
East Approach Leg	□	1.19 fc	2.20 fc	0.66 fc	3.3:1	1.8:1
Roundabout Drive Are Including Crosswalks	✕	2.12 fc	2.76 fc	1.14 fc	2.4:1	1.9:1

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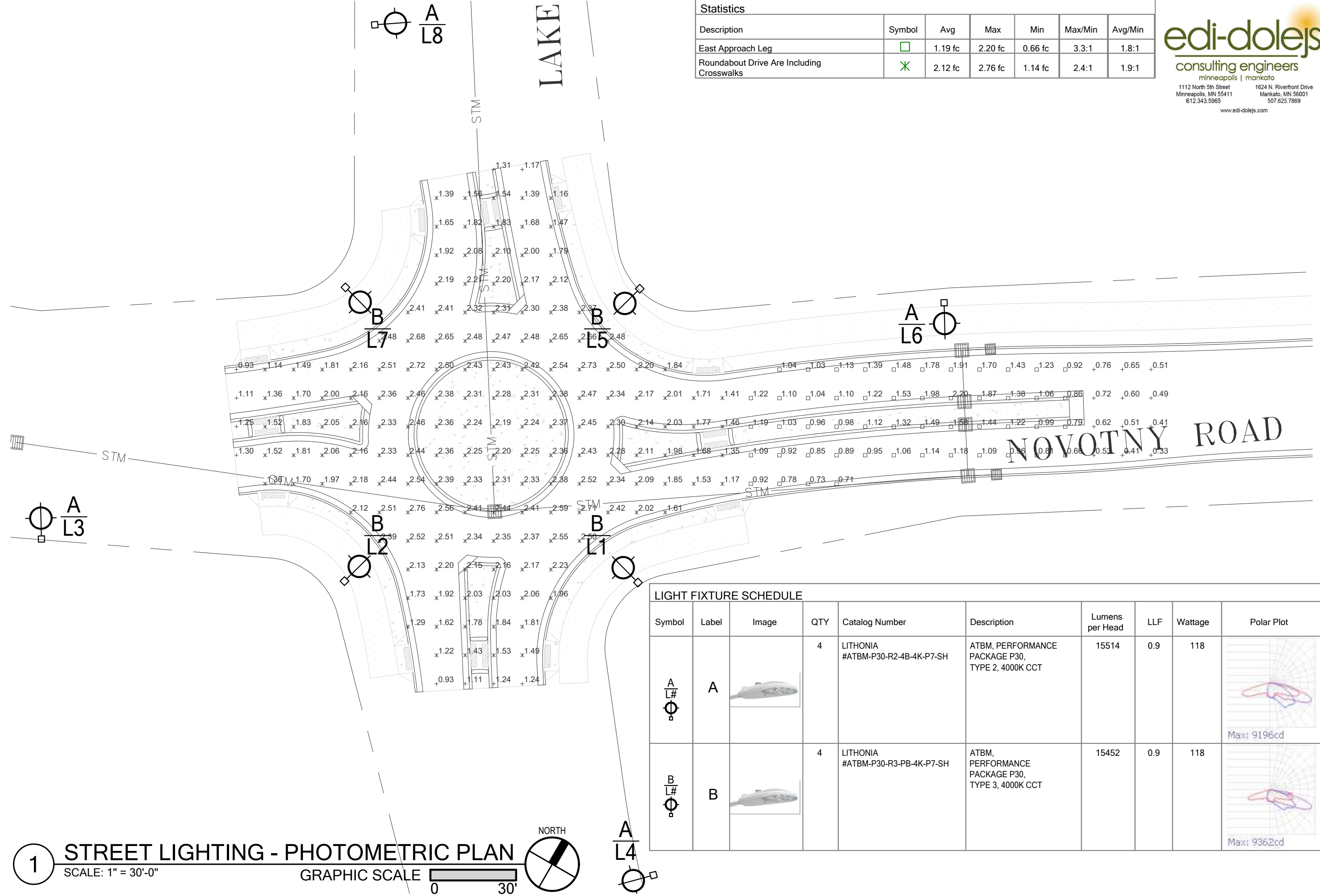
**STARKS**  
ENGINEERING  
www.starksengineer.com  
320-248-2811  
Sault Rapids, Minnesota

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.  
*[Signature]*  
Date: 02/26/2026 Registration No. 40290

REVISIONS	DATE	BY	DESCRIPTION
1	1/26/26	CONST. DOC.	
2	3/23/26	CITY REVIEW	
3	6/2/26	CITY REVIEW	

STREET LIGHTING -  
PHOTOMETRIC PLAN

2026 NOVOTNY ROAD IMPROVEMENTS  
BAXTER, MINNESOTA  
for:  
LEO A. DALY



LIGHT FIXTURE SCHEDULE									
Symbol	Label	Image	QTY	Catalog Number	Description	Lumens per Head	LLF	Wattage	Polar Plot
A/L#	A		4	LITHONIA #ATBM-P30-R2-4B-4K-P7-SH	ATBM, PERFORMANCE PACKAGE P30, TYPE 2, 4000K CCT	15514	0.9	118	
B/L#	B		4	LITHONIA #ATBM-P30-R3-PB-4K-P7-SH	ATBM, PERFORMANCE PACKAGE P30, TYPE 3, 4000K CCT	15452	0.9	118	

**1 STREET LIGHTING - PHOTOMETRIC PLAN**  
SCALE: 1" = 30'-0"  
GRAPHIC SCALE 0 30'  
NORTH

# GENERAL NOTES:

- A. WIRE COUNTS MAY NOT BE SHOWN. IT IS THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR TO COORDINATE THE NUMBER OF CONDUCTORS REQUIRED. PROVIDE A SEPARATE NEUTRAL FOR EACH CIRCUIT; NO SHARED NEUTRALS.
- B. ALL WORK SHALL COMPLY WITH THE CURRENT EDITION OF THE N.E.C., AND WHERE APPLICABLE, SHALL COMPLY WITH MNDOT ELECTRICAL AND ROADWAY LIGHTING SYSTEMS STANDARDS.
- C. PROVIDE IN-GROUND HANDHOLES WHERE NECESSARY, SEE SHEET DETAIL SHEET FOR HANDHOLE DETAIL.
- D. UNDERGROUND CONDUIT SHALL BE 2-INCH SCHEDULE 80 PVC INSTALLED AT A MINIMUM OF 24 INCHES BELOW GRADE, UNLESS INDICATED OTHERWISE.
- E. CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UTILITIES PRIOR TO BEGINNING WORK.
- F. THE CONTRACTOR SHALL ADJUST EXISTING CONDUITS AND/OR UTILITIES WHICH MAY CONFLICT WITH LIGHT POLE FOUNDATION INSTALLATION.
- G. THE CONTRACTOR SHALL FIELD COORDINATE THE PLACEMENT OF CONDUIT, FOUNDATIONS AND OTHER ELECTRICAL EQUIPMENT WITH OTHER TRADES AND CONSTRUCTION ACTIVITIES IN THE AREA.
- H. LIGHT POLES AND FIXTURES SHALL MAINTAIN A MINIMUM CLEARANCE OF 10' FROM OVERHEAD POWER LINES.

# PLAN NOTES:

- 1. APPROXIMATE LOCATION OF EXISTING SERVICE CABINET.
- 2. PROVIDE QUAZITE SERVICE BOX BOLTED COVER WITH "STREET LIGHTING" LOGO OR APPROVED EQUAL. SIZE PER N.E.C. REQUIREMENTS. SEE DETAILS FOR ADDITIONAL INFORMATION.
- 3. PROVIDE ADDITIONAL HANDHOLE(S) AS NECESSARY. SEE DETAILS FOR ADDITIONAL INFORMATION.
- 4. SEE LIGHTING SERVICE - ONE-LINE DETAIL ON SHEET E-4 FOR ADDITIONAL WIRING INFORMATION.
- 5. PROVIDE (2) #10 PLUS #10 GROUND.

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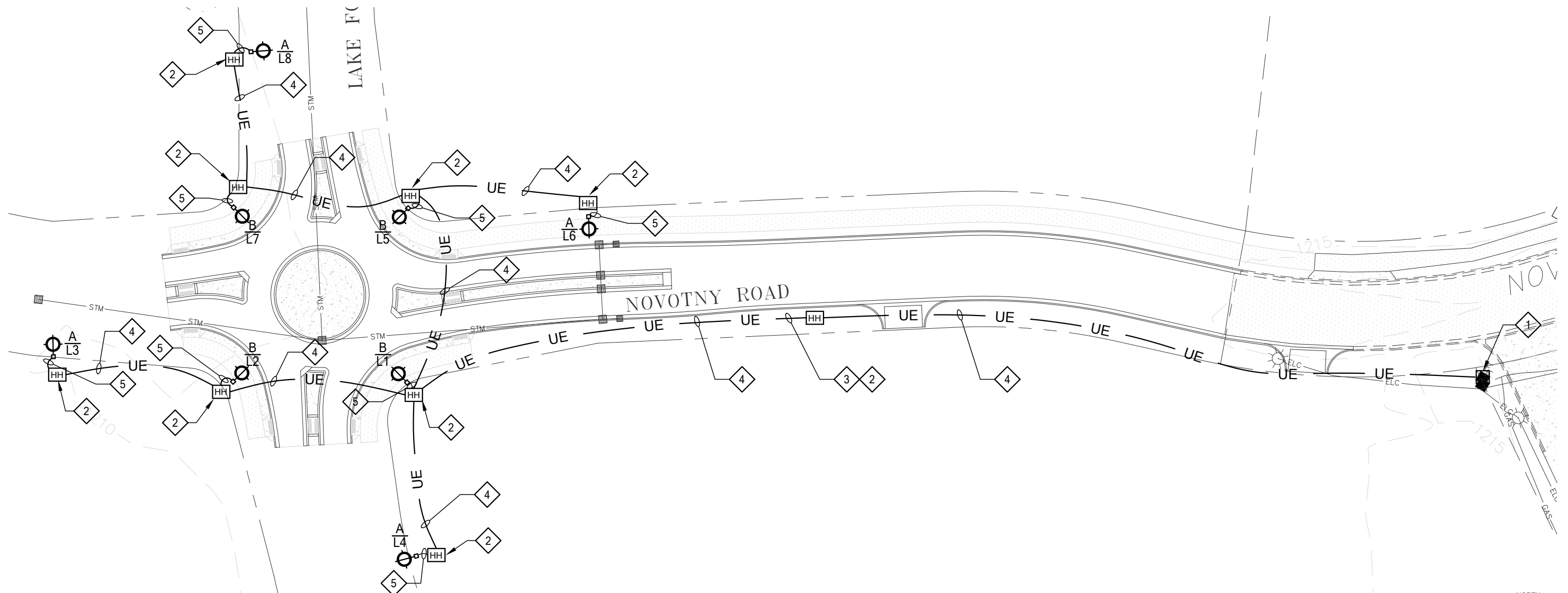
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 www.starksengineer.com  
 320-248-2811  
 Sauk Rapids, Minnesota

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.  
 Date: 02/26/2026 Registration No. 40290  
 Leo A. Daly P.E.

REVISIONS	DATE	BY	DESCRIPTION
1	1/26/26	CONST. DOC.	
2	3/23/26	CITY REVIEW	
3	6/2/26	CITY REVIEW	

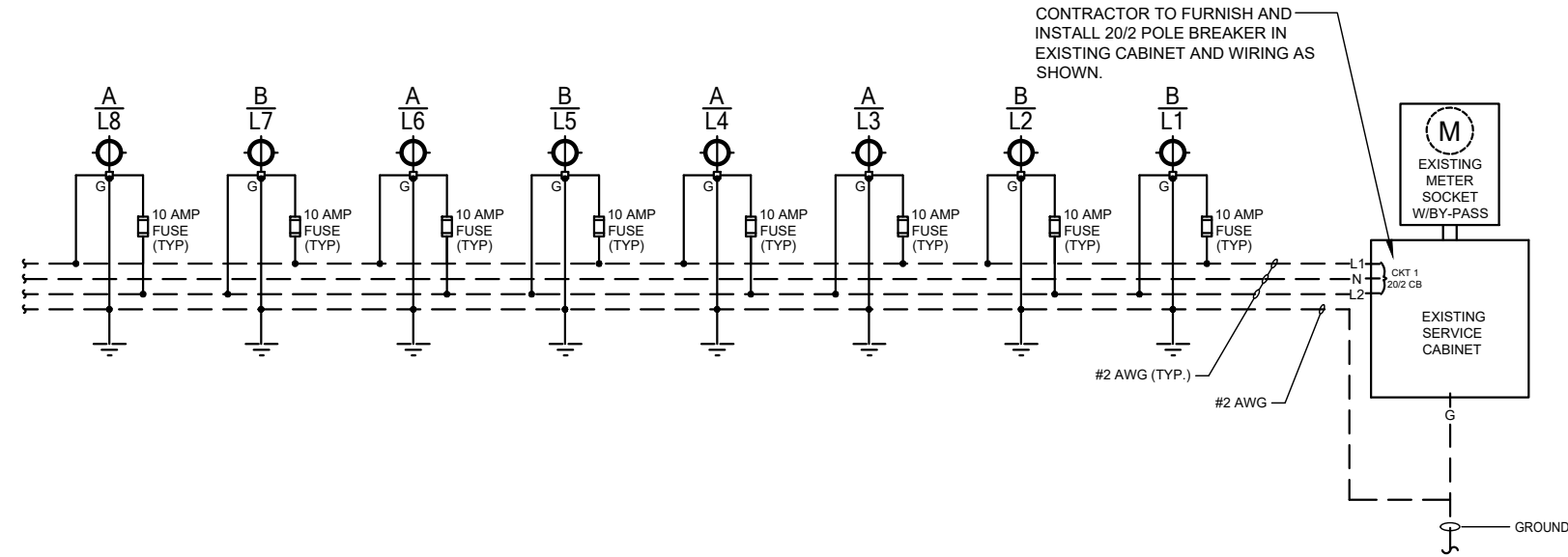
STREET LIGHTING PLAN

2026 NOVOTNY ROAD IMPROVEMENTS  
 BAXTER, MINNESOTA  
 for:  
 LEO A. DALY



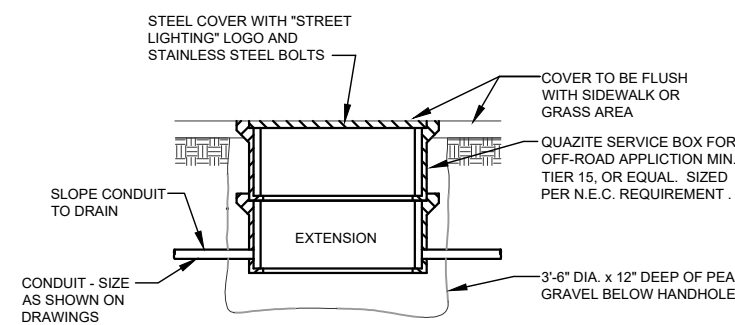
**1 STREET LIGHTING PLAN**  
 SCALE: 1" = 60'-0"

GRAPHIC SCALE 0 60'  
 NORTH

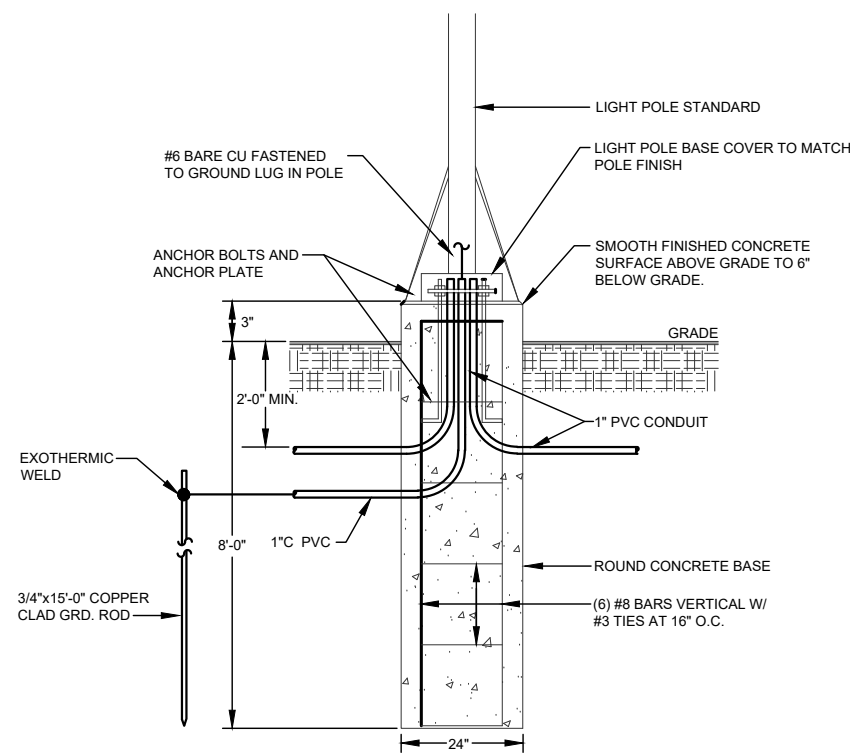


**4 LIGHTING SERVICE - ONE-LINE DETAIL**  
 NOT TO SCALE

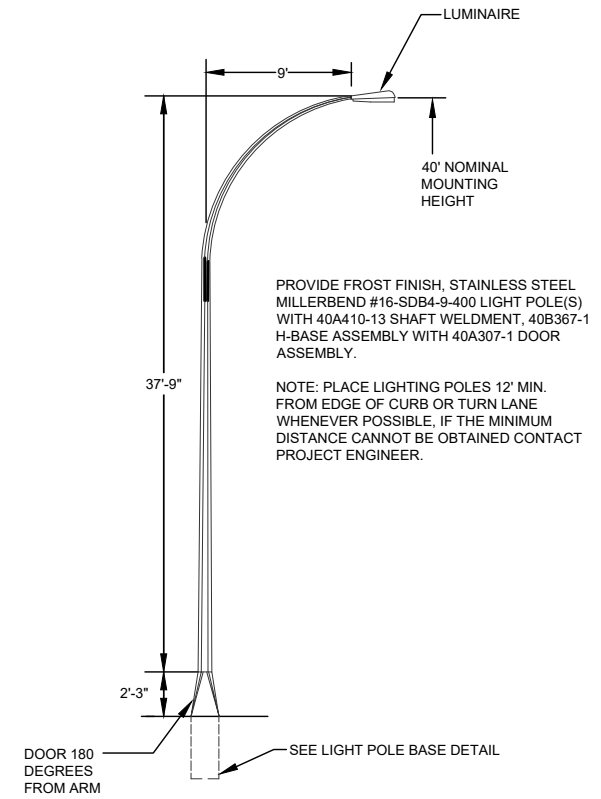
- ALL LIGHTING CONDUITS SHALL BE A MIN. 2" SCHEDULE 80 PVC UNLESS OTHERWISE NOTED.
- ALL CONDUCTORS SHALL BE A MIN. #6 AWG. UNLESS OTHERWISE NOTED.
- ALL UNDERGROUND CONDUIT SHALL BE BURIED 24" MIN. BELOW FINISHED GRADE.
- ALL WIRES INSIDE POLE SHALL BE TIED @ 5'-0" INCREMENTS.
- HANDHOLES SHALL BE INSTALLED FLUSH WITH FINISHED GRADE LEVEL. PROVIDE 10' OF EXCESS WIRING IN EACH HANDHOLE.
- ALL CONDUITS SHALL SLOPE TO DRAIN INTO HANDHOLES.
- CONNECT ALL WIRING AT THE HANDHOLE.



**3 ELECTRICAL HANDHOLE DETAIL**  
 NOT TO SCALE



**2 LIGHTING POLE BASE DETAIL**  
 NOT TO SCALE



**1 LIGHTING POLE DETAIL**  
 NOT TO SCALE

REVISIONS	DATE	BY	CHKD.
1	7/26/26	CONST.	DOC.
2	3/23/26	CITY REVIEW	
3	6/2/26	CITY REVIEW	

ELECTRICAL - DETAILS

2026 NOVOTNY ROAD IMPROVEMENTS  
 BAXTER, MINNESOTA  
 for: LEO A. DALY