



















## FIRE ALARM EQUIPMENT LEGEND

	FIRE ALARM CONTROL PANEL
	FIRE ALARM PULL STATION
	FIRE ALARM HORN
	FIRE ALARM STROBE
	FIRE ALARM HORN/STROBE
	CEILING MOUNTED SPEAKER
	DUCT DETECTOR
	REMOTE LAMP
	SMOKE DETECTOR - PHOTOELECTRIC
	135° STANDARD HEAT DETECTOR
	PIR DETECTOR
	DOOR HOLD - MAGNETIC HOLD
	FLOW SWITCH
	TAMPER SWITCH

### COMMUNICATION LEGEND

	CLOCK ONLY
	CLOCK / PA SPEAKER WALL MOUNTED
	ROUND CEILING MOUNTED SPEAKER
	SQUARE SPEAKER
	INTERCOM PUSH TO CALL SWITCH
WAP 	WIRELESS ACCESS POINT ABOVE THE CEILING
PROJECTOR 	ABOVE THE CEILING PROJECTOR CONNECTION
 HDMI	WALL MOUNTED HDMI
	PLAIN DATA OUTLET
 80"	PLAIN DATA OUTLET WITH MOUNTING HEIGHT
	COMBINATION DATA/TELEPHONE
	FLOOR MOUNTED COMBINATION DATA/TELEPHONE
	CEILING MOUNTED COMBINATION DATA/TELEPHONE
	TELEVISION OUTLET

SECURITY SYSTEM LEGEND	
	SECURITY CAMERA
	ADA DOOR OPERATOR PUSH BUTTON
	ELECTRIC DOOR STRIKE
	CARD READER FOR DOOR OPERATOR

## LIGHTING LEGEND

NOTES:

SYMBOLS SHOWN ARE STANDARD. VARIATION AND/OR COMBINATIONS MAY BE USED ON THE PLANS. THIS LIST SHOWS STANDARD SYMBOLS AND ALL MAY NOT APPEAR ON THE PROJECT DRAWINGS; HOWEVER, WHEREVER THE SYMBOL ON THE PROJECT DRAWINGS OCCUR, THE ITEM SHALL BE PROVIDED AND INSTALLED.

VARIATION AND/OR COMBINATION MAY BE USED ON THE PLANS.




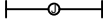








A NUMBER NEXT TO A RECEPTACLE OR DEVICE INDICATES A CIRCUIT NUMBER.

AN UPPER CASE LETTER NEXT TO A SWITCH INDICATES THE FUNCTION OF THE SWITCH. A LOWER CASE LETTER INDICATES THE SWITCH CIRCUIT.










AN UPPER CASE LETTER NEXT TO A LIGHT FIXTURE INDICATES THE TYPE OF FIXTURE. REFER TO THE LUMINAIRE SCHEDULE FOR FIXTURE SPECIFICATIONS. A LOWER CASE LETTER NEXT TO A LIGHT CORRESPONDS TO THE SWITCH DESIGNATION.

## SWITCHES

\$	SINGLE POLE SWITCH
\$2	TWO POLE SWITCH
\$3	THREE-WAY SWITCH
\$4	FOUR-WAY SWITCH
\$4	DIMMER SWITCH
\$3D	3 WAY DIMMER SWITCH - (4D INDICATES A 4WAY DIMMER)
\$OR	DOOR ACTIVATED SWITCH
\$MA	WALL MOUNTED DUAL TECHNOLOGY MANUAL ON / AUTO OFF VACANCY SENSOR SWITCH
\$LV	LOW VOLTAGE LIGHT SWITCH
\$TO	MANUAL MOTOR STARTER
\$P	PILOT LIGHT SWITCH
\$OS	AUTO ON / AUTO OFF LIGHT SWITCH
\$MO	DUAL TECHNOLOGY MOTION / OCCUPANCY SENSOR LIGHT SWITCH
\$MA	MANUAL ON / AUTO OFF DIMMING LIGHT SWITCH
\$K	KEY OPERATED LIGHT SWITCH
\$T	MANUAL ON - TIMED OFF LIGHT SWITCH
(CS) (OS)	CEILING MOUNTED DUAL TECHNOLOGY OCCUPANCY SENSOR SWITCH
(MA) (MA)	CEILING MOUNTED DUAL TECHNOLOGY MANUAL ON / AUTO OFF VACANCY SENSOR
(OS) (OS)	CEILING MOUNTED DAYLIGHT HARVESTING SENSOR
\$SC	SCENE CONTROL STATION
\$MS	UNIT LIGHTING MANAGEMENT CONTROL STATION.
















<h2 style="margin: 0;">LIGHT FIXTURES</h2>	
A 	1'x4' LED TROFFER OR DIRECT/INDIRECT TYPE FIXTURE GRID, FLANGE OR SURFACE MOUNTED
A 	2'x4' LED TROFFER OR DIRECT/INDIRECT TYPE FIXTURE GRID, FLANGE OR SURFACE MOUNTED
A 	2'x2' LED TROFFER OR DIRECT/INDIRECT TYPE FIXTURE GRID, FLANGE OR SURFACE MOUNTED
	OPEN STRIP FIXTURE
	WALL BRACKET LINEAR FIXTURE
A 	WALL MOUNTED SCONCE LIGHT FIXTURE
A 	RECESSED DOWNLIGHT CAN FIXTURE
A 	SURFACE CEILING OR PENDANT MOUNTED FIXTURE
EX2 	DOUBLE FACE EXIT SIGN, WALL AND CEILING MOUNTED
EX1 	SINGLE FACE EXIT SIGN, WALL AND CEILING MOUNTED
EM 	WALL MOUNTED EMERGENCY LIGHT
EMR 	EMERGENCY EXTERIOR EGRESS FIXTURE

## ELECTRICAL EQUIPMENT LEGEND

	BRANCH CIRCUIT PANELBOARD
	TELEPHONE TERMINAL BOARD
	ELECTRIC MOTOR
	FUSED SAFETY SWITCH / DISCONNECT COMBINATION
	MOTOR STARTER
	CONTACTOR
	CIRCUITRY HOMERUN: PANEL LA - CIR. #7
	CONDUIT OR WIRE CONCEALED IN WALL/CLG. (SOLID LINE TYPE)
	CONDUIT OR WIRE UNDERFLOOR/UNDERGND. (CENTER LINE TYPE)

The diagram illustrates several common electrical symbols used in single-line diagrams:

- CIRCUIT BREAKER IN A PANEL BOARD:** Represented by a circle with a vertical line through it and two horizontal lines at the top.
- PAD MOUNTED UTILITY TRANSFORMER:** Represented by two vertical lines with a circle around them, indicating the transformer core and windings.
- FUSED DISCONNECT:** Represented by a rectangle with a diagonal line through it, indicating the fuse.
- 100 A 2 POLE FUSED DISCONNECT:** Represented by a rectangle with a diagonal line through it, and the text "100 A 2 POLE FUSED DISCONNECT" below it.
- ELECTRICAL METER SHOWN ON ONE-LINE DIAGRAMS:** Represented by a circle with the letter "M" inside, indicating a meter.
- ELECTRICAL POWER PANEL WITH MAIN LUG OR MAIN BREAKER:** Represented by a rectangle with a vertical line through it, indicating the panel.

	CEILING JUNCTION BOX - SURFACE/FLUSH
	WALL JUNCTION BOX - SURFACE/FLUSH
	DUPLEX RECEPTACLE
	FLOOR MOUNTED RECEPTACLE
	SPLIT WIRED DUPLEX RECEPTACLE
	CEILING MOUNTED DUPLEX RECEPTACLE
	FLOOR MOUNTED FOURPLEX RECEPTACLE
	APPLIANCE RECEPTACLE - 3 WIRE
	DUPLEX RECEPTACLE
	FOURPLEX RECEPTACLE
	ABBREVIATIONS PERTAIN TO ALL DUPLEX AND FOURPLEX RECEPTACLES:
AC	ABOVE COUNTER
AC GF	ABOVE COUNTER WITH GROUND FAULT CIRCUIT INTERRUPTER
ACF	ABOVE COUNTER WITH USB PORT
AF	ARC FAULT PROTECTED
AF USB	ARC FAULT PROTECTED WITH USB PORT
AF GF	ARC FAULT WITH GROUND FAULT CIRCUIT INTERRUPTER
D	DEDICATED RECEPTACLE
D USB	DEDICATED RECEPTACLE WITH USB PORT
EN	RECEPTACLE CIRCUITED TO THE EMERGENCY PANEL WITH RED COVER PLATE
GF	GROUND FAULT CIRCUIT INTERRUPTER
GF WP	WEATHER PROOF GROUND FAULT CIRCUIT INTERRUPTER
PL	PLUG LOAD
72"	GENERAL PURPOSE WITH MOUNTING HEIGHT.
	ELECTRIC HAND DRYER
	THERMOSTAT
	OPEN/CLOSE/STOP PUSH BUTTON
	DRAWING KEY NOTES
ROOM	ROOM DESIGNATION
100	

RESPONSIBLE DIVISION:				
UNLESS OTHERWISE INDICATED ALL HEATING, VENTILATING, AIR CONDITIONING, PLUMBING, AND OTHER MECHANICAL EQUIPMENT, MOTORS, AND CONTROLS SHALL BE FURNISHED, SET IN PLACE AND WIRED AS FOLLOWS:				
ITEM	FURNISHED	SET	POWER WIRED	CONTROL WIRED
EQUIPMENT	23	23	26	--
COMBINATION MAGNETIC MOTOR STARTERS, MAGNETIC MOTOR STARTERS, VFD'S AND CONTACTORS	23(1)	26	26(2)	23
FUSED AND UNFUSED DISCONNECT SWITCHES; THERMAL OVERLOAD SWITCHES AND HEATERS, MANUAL MOTOR STARTERS	26	26	26	--
MANUAL-OPERATING AND MULTI-SPEED SWITCHES	23	26	26	26
CONTROLS, RELAYS, TRANSFORMERS	23	23	26	23
THERMOSTATS (LOW VOLTAGE) AND TIME SWITCHES	23	23	26	23
THERMOSTATS (LINE VOLTAGE)	23	23	26	26
TEMPERATURE CONTROL PANELS	23	23	26	23
MOTOR AND SOLENOID VALVES, DAMPER MOTORS, PE & EP SWITCHES	23	23(2)	--	23(2)
PUSH-BUTTON STATIONS AND PILOT LIGHTS	23	23(2)	--	23(2)
HEATING, COOLING, VENTILATION AND AIR CONDITIONING CONTROLS	23	23	26	23
EXHAUST FAN SWITCHES	23	26	26	23(2)

SUBSCRIPT FOOTNOTES:

1. MOTOR STARTER TO INCLUDE CONTROL TRANSFORMER, HOA SWITCH, (1) NO AND (1) NC AUXILIARY CONTACT, AND "ON" AND "OFF" PILOT LIGHTS.
2. IF ITEM IS FOR LINE VOLTAGE, SET IN PLACE AND CONNECT UNDER DIVISION 26. WHERE FACTORY MOUNTED ON EQUIPMENT OR ATTACHED TO PIPING OR DUCTS AND USING LINE VOLTAGE FURNISH AND SET UNDER DIVISION 23. CONNECT UNDER DIVISION 26.

ABBREVIATIONS:	
44" MOUNTING HEIGHT ABOVE FINISHED FLOOR TO CENTER OF DEVICE	DIA DIAMETER
A AMPS	DIAG DIAGRAM
A.D. ACCESS DOOR	DIFF DIFFERENTIAL
AAV AIR ADMITTANCE VALVE	DISCH DISCHARGE
ABV ABOVE	DIV DIVISION
AC AIR CONDITIONING UNIT	DN DOWN
AC ABOVE COUNTER	DS DUCT SILENCER
AC AREA DRAIN (SEE SYMBOLS)	DWG DRAWING
A.F.C. ABOVE FINISHED CEILING	DX DIRECT EXPANSION
A.F.G. ABOVE FINISHED GRADE	(E) EXISTING
AC AMPERE INTERRUPTING CAPACITY	EA EXHAUST AIR GRILLE/REGISTER
AFCI ARC FAULT CIRCUIT INTERRUPTERS	EAT ENTERING AIR TEMPERATURE
A.F.F. ABOVE FINISHED FLOOR	EC ELECTRICAL CONTRACTOR
AHU AIR HANDLING UNIT	ECC ECCENTRIC
ALUM ALUMINUM	EFF EXHAUST FAN
AP ACCESS PANEL OR DOOR	EFF EFFICIENCY
ATS AUTOMATIC TRANSFER SWITCH	EL ELEVATION
AV AUDIO / VIDEO	ELEC ELECTRIC
AVG AVERAGE	ELEV ELEVATOR
AWG AMERICAN WIRE GAGE	EM EMERGENCY FUNCTION
BAS BUILDING AUTOMATION SYSTEM	ENT ENTERING
BB BASEBOARD	EMT ELECTRIC METALLIC TUBE
BD BACK DRAFT DAMPER	EQ EQUAL
BFP BACK FLOW PREVENTOR	EQUIP EQUIPMENT
BL BOLLER	EQUIV EQUIVALENT
BLDG BUILDING	ES END SWITCH
BLW BELOW	ESP EXTERNAL STATIC PRESSURE
BOB BOTTOM OF BEAM	ET EXPANSION TANK
BOD BOTTOM OF DUCT	EWL ELECTRIC WATER COOLER
BOP BOTTOM OF PIPE	EWT ENTERING WATER TEMPERATURE
BSMT BASEMENT	EX EXHAUST
BTU BRITISH THERMAL UNIT	EXPAN EXPANSION
C CHILLER	EXT EXTERNAL
CAFSCI COMBINATION ARC FAULT CIRCUIT INTERRUPTERS	F DEGREES FAHRENHEIT
CAP CAPACITY	FA FREE AREA
CB CIRCUIT BREAKER	FC FAN COIL UNIT
CBV CIRCUIT BALANCING VALVE	FC FOOTCANDLE
CCCT CORRELATED COLOR TEMPERATURE	FCV FLOW CONTROL VALVE
CKT CIRCUIT	FD FIRE DAMPER
CFH CUBIC FEET PER HOUR	FD FLOOR DRAIN
CFM CUBIC FEET PER MINUTE	FIN FINISHED
CHWR CHILLED WATER RETURN	FLA FULL LOAD AMPS
CHWS CHILLED WATER SUPPLY	FLEX FLEXIBLE
CI CAST IRON	FLR FLOOR
CL CENTER LINE	FOB FLAT ON BOTTOM
CLG CEILING	FOF FLAT ON TOP
CMU CONCRETE MASONRY UNIT	FP FIRE PROTECTION
CO CLEAN OUT	FP FIRE PUMP
COL COLUMN	FS FEET PER MINUTE
COMP COMPRESSOR	FPS FEET PER SECOND
CONC CONCRETE	FS FLOW SWITCH
COND CONDENSATE	FSD FIRE/SMOKE DAMPER
CONN CONNECTION	FT FEET
CONT CONTINUATION	FXC FLEXIBLE CONNECTION
CONTR CONTRACTOR	GROUND GROUND
CRI COLOR RENDERING INDEX	GA GAUGE
CT COOLING TOWER	GAL GALLON
CT CURRENT TRANSFORMER	GALV GALVANIZED
CU CONDENSING UNIT	GECC GROUND ELECTRODE CONDUCTOR
CU COPPER	GF/GFI GROUND FAULT CIRCUIT INTERRUPTER
CUB CABINET UNIT HEATER	GC GENERAL CONTRACTOR
CVH CONSTANT VOLUME BOX	GPH GALLONS PER HOUR
CWR CONDENSER WATER RETURN	GPM GALLONS PER MINUTE
CWS CONDENSER WATER SUPPLY	GRSLB GRAINS PER POUND
DB DRY BULB	H2O WATER
DEPT DEPARTMENT	HD HOSE BIBB
DE DRINKING WATER MAIN	HD HEAD (SEE SCHEDULES)
	HP HEAT PUMP

## **SUBSTITUTIONS:**

A. SUBSTITUTIONS: SUBSTITUTION OF SPECIFIED EQUIPMENT WILL BE ALLOWED THROUGH A PRIOR APPROVAL PROCESS INITIATED BY THE CONTRACTOR. CONTRACTOR SHALL SUBMIT INTENDED SUBSTITUTION AT LEAST FIVE DAYS PRIOR TO APPROVAL FROM ENGINEER. SUBMITTAL SHALL INCLUDE CAPACITIES, DIMENSIONS AND OPERATING INSTRUCTIONS FOR EACH PIECE OF EQUIPMENT. SUBSTITUTION SHALL OCCUR AT NO COST TO THE OWNER. SUBSTITUTION OF EQUIPMENT FOR EQUIPMENT OF EQUAL OR GREATER CAPACITY AND SHALL INCUR ALL COSTS ASSOCIATED WITH THE SUBSTITUTION INCLUDING STRUCTURAL MODIFICATIONS, SPACE LAYOUT AND REDESIGN COSTS. SEE ALSO DIVISION 1 GENERAL REQUIREMENTS.

**EXAMINATION OF SITE, DRAWINGS, SPECIFICATIONS:**

A. EXAMINE CAREFULLY THE SITE AND CONDITIONS OF THE SITE. PROVIDE ALL NECESSARY EQUIPMENT AND LABOR TO INSTALL A COMPLETE WORKING SYSTEM WITHIN THE SITE CONDITIONS.

B. EXAMINE THE DRAWINGS AND SPECIFICATIONS AND 5 DAYS PRIOR TO BIDDING REPORT ANY ERRORS, OMISSIONS, INCONSISTENCIES, AND CONFLICTS TO THE ENGINEER TO BE REMEDIATED IN AN ADDENDUM TO THE PROJECT PRIOR TO BID TIME.

C. DRAWINGS ARE DIAGRAMMATIC AND CATALOG NUMBERS GIVEN ARE FOR REFERENCE ONLY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING CAPACITY OF EQUIPMENT AND EQUIPMENT MEETS THE DRAWING REQUIREMENTS AND SHALL NOT DIMENSION FROM THE MECHANICAL, PLUMBING, OR PIPING DRAWINGS.

D. THE LATEST ADOPTED VERSIONS OF THE INTERNATIONAL BUILDING CODES SHALL BE USED AS REQUIRED. THIS WILL ALSO INCLUDE THE LATEST ADOPTED VERSIONS OF THE MECHANICAL, PLUMBING, AND ENERGY CONSERVATION CODES. THE LATEST ADOPTED VERSIONS OF THE REGIONS CODES SHALL BE REQUIRED BY THESE SPECIFICATIONS UNLESS INDICATED OTHERWISE. OTHER APPLICABLE LOCAL CODES AND ORDINANCES SHALL BE AS REQUIRED AND IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO BE KNOWLEDGEABLE OF THESE REQUIREMENTS.

E. WHERE INSTALLATION PROCEDURES OR ANY PART THEREOF ARE REQUIRED TO BE IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE MANUFACTURER OF THE MATERIAL BEING INSTALLED, PRINTED COPIES OF THESE RECOMMENDATIONS SHALL BE FURNISHED TO THE ENGINEER PRIOR TO INSTALLATION. INSTALLATION OF THE ITEM WILL NOT BE ALLOWED TO PROCEED UNTIL THE RECOMMENDATIONS ARE RECEIVED. FAILURE TO FURNISH THESE RECOMMENDATIONS CAN BE CAUSE FOR REJECTION OF THE MATERIAL.

HP	HORSEPOWER	PTAC	PACKAGED TERMINAL AIR CONDITIONER
HR	HOUR	PV	PLUG VALVE
HT	HEIGHT	PVC	POLYVINYL CHLORIDE
HTR	HEATER	QTY	QUANTITY
HWR	HEATING WATER RETURN	RA	RETURN AIR GRILLE / REGISTER
HWS	HEATING WATER SUPPLY	RCP	REFLECTED CEILING PLAN
HX	HEAT EXCHANGER	RD	ROOF DRAIN
HZ	HERTZ	REL	RELIEF
ID	INSIDE DIAMETER	REQD	REQUIRED
IG	ISOLATED GROUND	RF	RETURN FAN
IN	INCHES	RH	RELATIVE HUMIDITY
INV	INVERT	RHC	REHEAT COIL
JBOX	JUNCTION BOX	RLA	RATED LOAD AMPS
K	KELVIN	RM	ROOM
KW	KILOWATT	RPM	REVOLUTIONS PER MINUTE
KVA	KILO VOLT - AMPS	SA	SUPPLY AIR GRILLE / REGISTER
L	LENGTH	SC	SHORT CIRCUIT
LAT	LEAVING AIR TEMPERATURE	SCA	SHORT CIRCUIT AVAILABLE
LV	LABORATORY	SCCR	SHORT CIRCUIT CURRENT RATING
LB	POUND	SCH	SCHEDULE
LD	LINEAR DIFFUSER	SD	SMOKE DAMPER
LF	LINEAR FEET	SEF	SMOKE EXHAUST FAN
LN	LINEAR	SF	SUPPLY FAN
LQ	LIQUID	SH	SENSIBLE HEAT
LM	LUMEN	SH	SHOWER
LRA	LOCKED ROTOR AMPS	SP	STATIC PRESSURE
LV	LOUVER	SPD	SURGE PROTECTION DEVICE
LVG	LEAVING	SPEC	SPECIFICATION
LWT	LEAVING WATER TEMPERATURE	SQ	SQUARE
MBH	THOUSANDS OF BTU PER HOUR	SS	STAINLESS STEEL
MC	MECHANICAL CONTRACTOR	SS	SAFETY SHOWER
MCA	MINIMUM CIRCUIT AMPACITY	STD	STANDARD
MCB	MAIN CIRCUIT BREAKER	STL	STEEL
MD	MOTORIZED DAMPER	SYS	SYSTEM
MDP	MAIN DISTRIBUTION PANEL	TEMP	TEMPERATURE
MD	MEDIUM	TR	TRANSFER GRILLE / REGISTER
MFR	MANUFACTURER	TR	TAMPER RESISTANT
MIN	MINIMUM	TT	TEMPERATURE TRANSMITTER
MISC	MISCELLANEOUS	TTB	TELECOMMUNICATIONS TERMINAL BACKBOARD
MLO	MAIN LUG ONLY	TY	TYPICAL
MOP	MAXIMUM OVERCURRENT PROTECTION	TX	TRANSFORMER
MTD	MOUNTED	UC	UNDERCUT DOOR
MUA	MAKE-UP AIR UNIT	UH	UNIT HEATER
N	NEUTRAL	UNO	UNLESS NOTED OTHERWISE
NC	NORMALLY CLOSED	UNOCC	UNOCCUPIED
NEG	NEGATIVE	UR	URNAL
NIC	NOT IN CONTRACT	V	VOLTS
NL	NIGHT / SECURITY LIGHT - DO NOT SWITCH	VA	VOLT AMPERE
NO	NORMALLY OPEN	VA	VALVE
NOM	NOMINAL	VAV	VARIABLE AIR VOLUME UNIT
NTS	NOT TO SCALE	VFD	VARIABLE FREQUENCY DRIVE
OA	OUTSIDE AIR	VRF	VARIABLE REFRIGERANT FLOW
OB	OPPOSED BLADE DAMPER	VOLT	VOLTAGE
OC	ON CENTER	VTR	VENT THROUGH ROOF
OCC	OCCUPIED	W	WIDTH
OCP	OVER CURRENT PROTECTION	W	WATTS
OD	OUTSIDE DIAMETER	W/	WITH
OL	OVERLOAD	W/O	WITHOUT
ORD	OVERFLOW ROOF DRAIN	WB	WET BULB
OZ	OUNCE	WC	WATER COLUMN
PBD	PARALLEL BLADE DAMPER	WC	WATER CLOSET
PD	PRESSURE DROP	WG	WATER GAUGE
PH	PHASE	WP	WEATHERPROOF
POS	POSITIVE PRESSURE	WPIU	WEATHERPROOF IN-USE
POS	POINT OF SALES	WSR	WITHSTAND RATING
PRV	PRESSURE REDUCING VALVE	XFMR	TRANSFORMER
PS	PRESSURE SWITCH		
PSI	POUNDS PER SQUARE INCH		
PT	PRESSURE TRANSMITTER		

DO NOT REPRODUCE THESE DRAWINGS AND SPECIFICATIONS WITHOUT THE EXPRESSED WRITTEN PERMISSION OF THE DESIGNER. THE DRAWINGS AND SPECIFICATIONS ARE INSTRUMENTS OF THE SERVICE AND SHALL REMAIN THE PROPERTY OF THE DESIGNER WHETHER THE PROJECT FOR WHICH THEY ARE MADE IS EXECUTED OR NOT. THESE DRAWINGS AND SPECIFICATIONS SHALL NOT BE USED BY ANYONE ON ANY OTHER PROJECTS FOR ADDITIONS TO THIS PROJECT BY OTHERS EXCEPT BY THE EXPRESSED WRITTEN PERMISSION OF THE DESIGNER.

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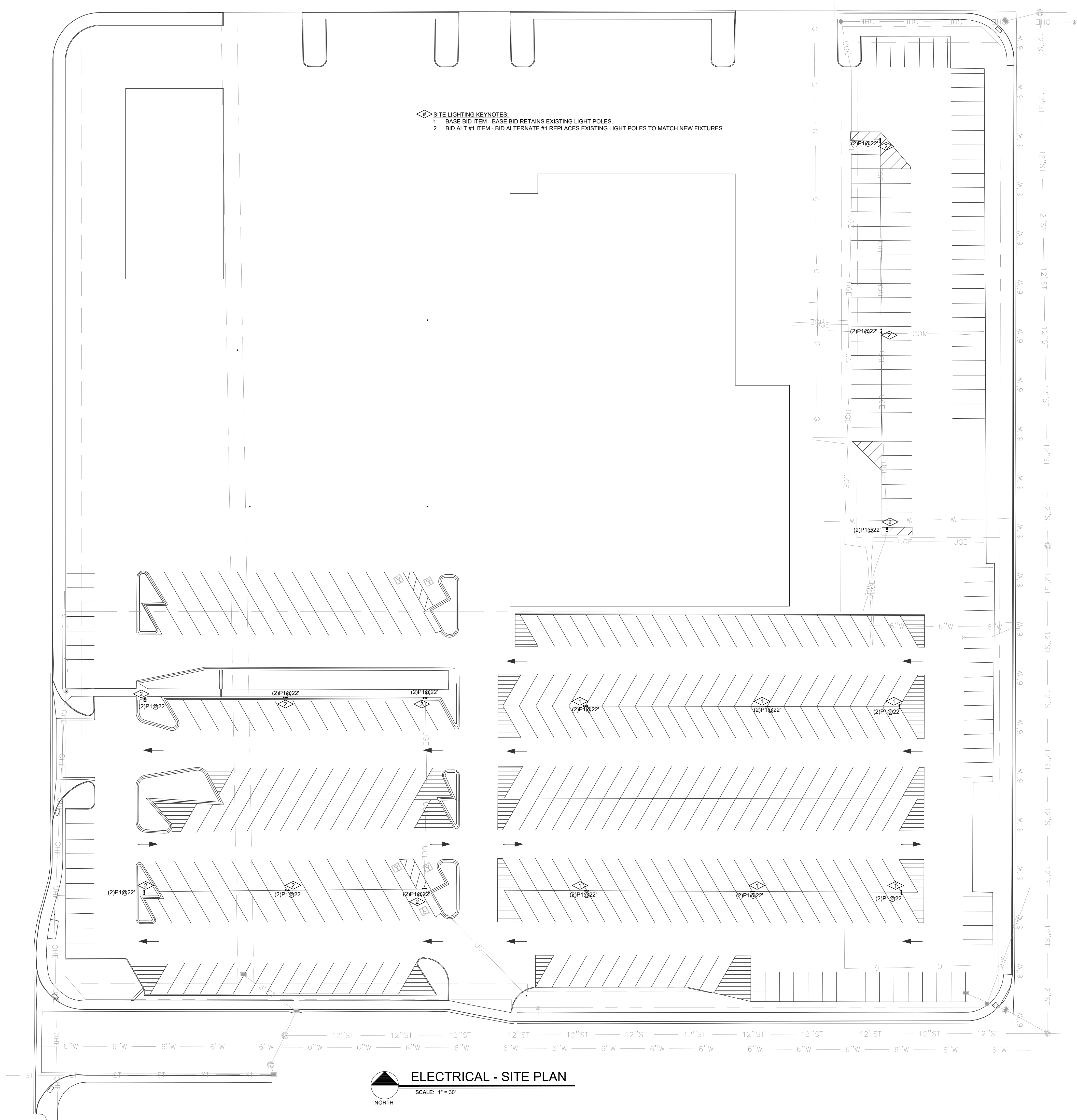
CMU ALBERTSON'S  
ELECTRICAL - COVER SHEET  
1803 N. 12TH STREET  
GRAND JUNCTION, COLORADO

DATE:	ISSUED FOR:
06/13/2025	SITE LIGHTING PERMIT
06/17/2025	SITE LIGHTING PERMIT REV #1

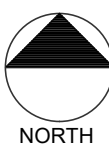


DATE:	06/10/2025
JOB NO:	25-249
DRAWN BY:	KB
CHECKED BY:	DB
SCALE:	
SHEET NUMBER:	





- SITE LIGHTING KEYNOTES:**
1. BASE BID ITEM - BASE BID RETAINS EXISTING LIGHT POLES.
  2. BID ALT #1 ITEM - BID ALTERNATE #1 REPLACES EXISTING LIGHT POLES TO MATCH NEW FIXTURES.

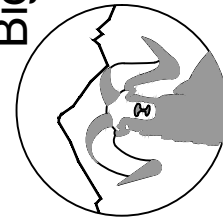


**ELECTRICAL - SITE PLAN**

SCALE: 1" = 30'

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**CMU ALBERTSON'S**  
ELECTRICAL - SITE PLAN  
1803 N. 12TH STREET  
GRAND JUNCTION, COLORADO

DATE:	ISSUED FOR:
06/13/2025	SITE LIGHTING PERMIT
06/17/2025	SITE LIGHTING PERMIT REV #1



DATE:	06/10/2025
JOB NO:	25-249
DRAWN BY:	KB
CHECKED BY:	DB
SCALE:	AS SHOWN
SHEET NUMBER:	ES1-1

[REDACTED]



SITE LIGHTING LUMINAIRE SCHEDULE NOTES:

1. THE ELECTRICAL CONTRACTOR IS TO ORDER ALL HARDWARE AND COMPONENTS NECESSARY FOR A FULL AND COMPLETE INSTALLATION AND MOUNTING OF ALL LUMINAIRES.
2. ALL POLES TO BE STRAIGHT POLE, COLOR TO MATCH LUMINAIRES. POLE SHAFT WILL BE RATED FOR WIND SPEEDS OF 100 MILES/HOUR.
3. ALL OUTSIDE LIGHT SOURCES SHALL CONFORM TO ALL LOCAL MUNICIPAL ZONING & DEVELOPMENT CODES, LIGHT TRESPASS AND DARK SKY INITIATIVES.
4. NOTIFY ENGINEER OF ANY OBSTRUCTIONS TO POLE PLACEMENT IMMEDIATELY BEFORE PROCEEDING.
5. ORDER ALL EXTERIOR LUMINAIRES WITH MULTI-TAP BALLAST AND FIELD VERIFY AVAILABLE VOLTAGE FOR EACH LUMINAIRE PRIOR TO INSTALLATION.

SITE LIGHTING CONTROL NOTES:

1. ALL EXTERIOR LIGHTING CONTROLS SHALL BE IN COMPLIANCE WITH THE 2018 IECC, SECTION C405.2.6. BUILDING FACADE AND LANDSCAPE LIGHTING SHALL AUTOMATICALLY SHUT OFF FROM NOT LATER THAN 1 HOUR AFTER BUSINESS CLOSING TO NOT EARLIER THAN 1 HOUR BEFORE BUSINESS OPENING (SECTION 405.2.6.2). ALL OTHER EXTERIOR LIGHTING FIXTURES SHALL BE CONTROLLED SO THAT THE TOTAL WATTAGE OF SUCH LIGHTING IS AUTOMATICALLY REDUCED BY NOT LESS THAN 30% BY SELECTIVELY SWITCHING OFF OR DIMMING LUMINAIRES AT ONE OF THE TIMES DESCRIBED IN SECTION C405.2.6.3. TIME-CLOCK SHALL HAVE ALL CAPABILITIES AS REQUIRED BY SECTION C405.2.6.4.

PHOTOMETRIC CALCULATION DISCLAIMER:

1. LIGHTING PATTERN USED FOR LUMINAIRES REPRESENTS ILLUMINATION LEVELS CALCULATED FROM LABORATORY DATA TAKEN UNDER CONTROLLED CONDITIONS IN ACCORDANCE WITH ILLUMINATING ENGINEERING SOCIETY APPROVED METHODS. ACTUAL PERFORMANCE OF ANY LUMINAIRE MAY VARY DUE TO VARIATION IN VOLTAGE, TOLERANCE IN LAMPS AND OTHER VARIABLE FIELD AND EQUIPMENT CONDITIONS.

EXTERIOR LIGHTING DESIGN CONCEPTS:

1. CALCULATIONS ARE USING POINT-TO-POINT METHOD WITH TEN FEET DISTANCE BETWEEN CALCULATION GRID POINTS, USING VISUAL LIGHTING CALCULATIONS SOFTWARE.
2. THE IESNA STANDARDS REPRESENT THE LOWEST ACCEPTABLE LEVELS FOR PROPER VISIBILITY AND RECOMMEND MINIMUM MAINTAINED LIGHT LEVELS FOR OPEN PARKING LOTS AT 0.2-0.5 FOOT CANDLE LEVELS FOR ENHANCED SECURITY CONDITIONS.
3. PROPOSED LIGHT FIXTURES AND LIGHT LEVELS ARE TO BE IN ACCORDANCE WITH ALL LOCAL REQUIREMENTS.

EXTERIOR LIGHTING NOTES:

1. LIGHT FIXTURES SHALL BE INSTALLED AND MAINTAINED IN A MANNER CONSISTENT WITH THE LIGHTING PLAN APPROVED BY THE CITY PLANNING DEPARTMENT. THE PROPERTY OWNER SHALL BE RESPONSIBLE FOR THE PROPER MAINTENANCE OF THE LIGHTING FIXTURES ON THEIR PROPERTY.
2. REFER TO LANDSCAPE PLANS FOR MATURE HEIGHT OF EXISTING AND PROPOSED TREES.
3. REFER TO ARCHITECTURAL ELEVATIONS FOR BUILDING HEIGHT INFORMATION.
4. ALL EXTERIOR LIGHT FIXTURES SHALL BE OPERATED BY ASTRONOMICAL TIME CLOCK OR PHOTOCCELL.
5. POST-CURFEW LIGHT LEVELS FOR PARKING LOTS SHALL BE REDUCED BY AT LEAST 50%. ENTRY LIGHTS MAY BE LEFT ON.
6. FACILITIES & SITE DEVELOPMENT OF THIS SITE ARE TO BE CONSTRUCTED IN ACCORDANCE WITH CITY OF GRAND JUNCTION CONSTRUCTION SPECIFICATIONS AND STANDARDS USING CITY OF GRAND JUNCTION CONSTRUCTION DETAILS.
7. ALL OUTSIDE LIGHT SOURCES SHALL CONFORM TO SECTION 21.06.080 GRAND JUNCTION ZONING & DEVELOPMENT CODE.
8. PARKING LOT LIGHTS SHALL OPERATE DUSK TO PRE-SET OFF, SO THAT THEY EXTINGUISH ONE HOUR AFTER CLOSE OF BUSINESS OR NO LATER THAN 10 P.M. BUILDING SECURITY LIGHTS WILL OPERATE FROM DUSK TO DAWN.

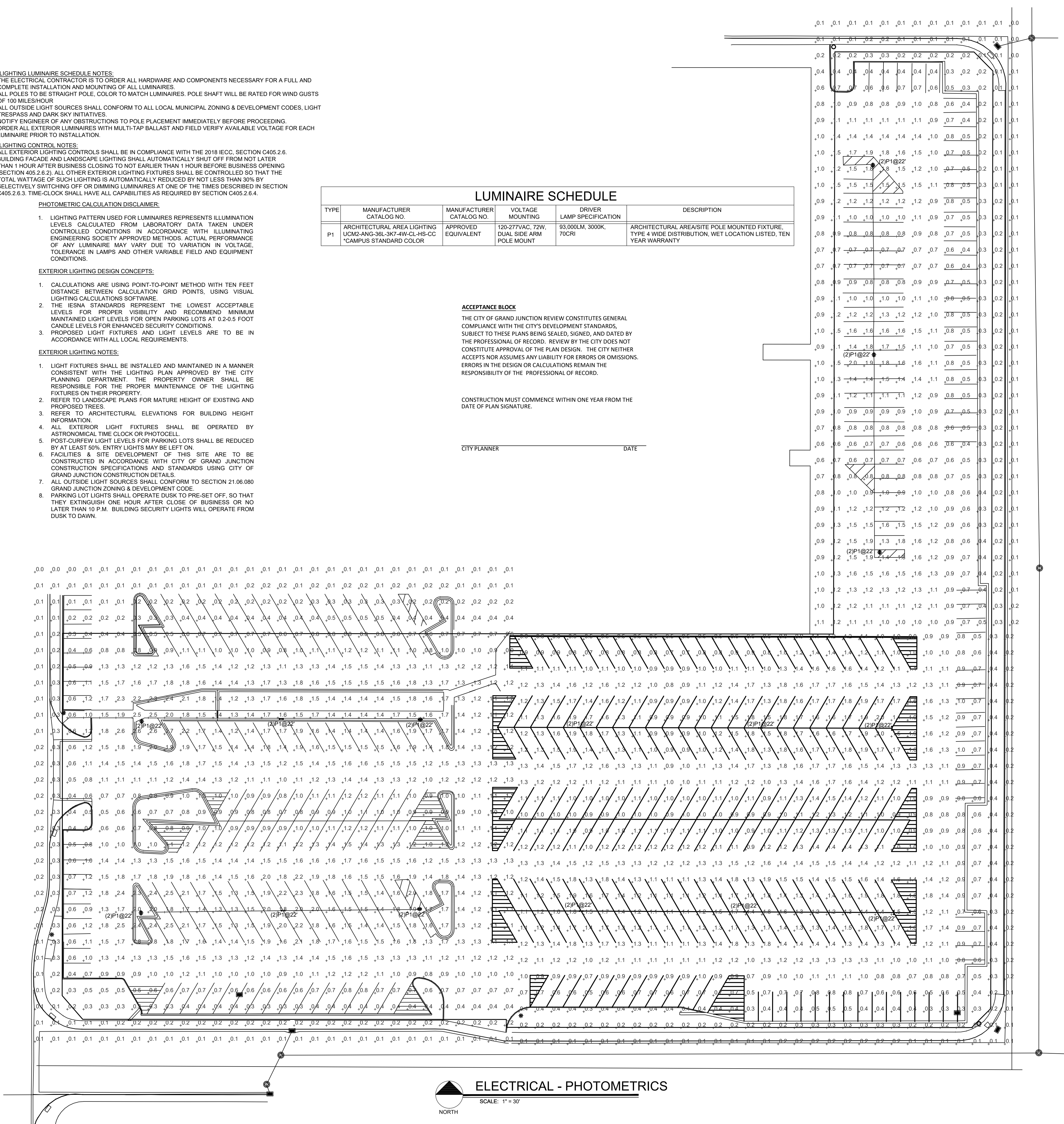
LUMINAIRE SCHEDULE					
TYPE	MANUFACTURER CATALOG NO.	MANUFACTURER CATALOG NO.	VOLTAGE MOUNTING	DRIVER LAMP SPECIFICATION	DESCRIPTION
P1	ARCHITECTURAL AREA LIGHTING UCM2-ANG-36L-3K7-4W-CL-HS-CC *CAMPUS STANDARD COLOR	APPROVED EQUIVALENT	120-277VAC, 72W, DUAL SIDE ARM POLE MOUNT	93,000LM, 3000K, 70CRI	ARCHITECTURAL AREA/SITE POLE MOUNTED FIXTURE, TYPE 4 WIDE DISTRIBUTION, WET LOCATION LISTED, TEN YEAR WARRANTY

ACCEPTANCE BLOCK

THE CITY OF GRAND JUNCTION REVIEW CONSTITUTES GENERAL COMPLIANCE WITH THE CITY'S DEVELOPMENT STANDARDS, SUBJECT TO THESE PLANS BEING SEALED, SIGNED, AND DATED BY THE PROFESSIONAL OF RECORD. REVIEW BY THE CITY DOES NOT CONSTITUTE APPROVAL OF THE PLAN DESIGN. THE CITY NEITHER ACCEPTS NOR ASSUMES ANY LIABILITY FOR ERRORS OR OMISSIONS. ERRORS IN THE DESIGN OR CALCULATIONS REMAIN THE RESPONSIBILITY OF THE PROFESSIONAL OF RECORD.

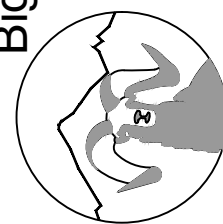
CONSTRUCTION MUST COMMENCE WITHIN ONE YEAR FROM THE DATE OF PLAN SIGNATURE.

CITY PLANNER \_\_\_\_\_ DATE \_\_\_\_\_



DO NOT REPRODUCE THESE DRAWINGS AND SPECIFICATIONS WITHOUT THE EXPRESSED WRITTEN PERMISSION OF THE DESIGNER. THE DRAWINGS AND SPECIFICATIONS ARE INSTRUMENTS OF THE SERVICE AND SHALL REMAIN THE PROPERTY OF THE DESIGNER. WHETHER THE PROJECT FOR WHICH THEY ARE MADE IS EXECUTED OR NOT. THESE DRAWINGS AND SPECIFICATIONS SHALL NOT BE USED BY ANYONE ON ANY OTHER PROJECTS FOR ADDITIONS TO THIS PROJECT BY OTHERS EXCEPT BY THE EXPRESSED WRITTEN PERMISSION OF THE DESIGNER.

Bighorn Consulting Engineers, Inc.  
Mechanical & Electrical Engineers  
386 Indian Road  
Grand Junction, CO 81501  
Phone: (970) 241-8709



CMU ALBERTSON'S  
ELECTRICAL - PHOTOMETRICS  
1803 N. 12TH STREET  
GRAND JUNCTION, COLORADO

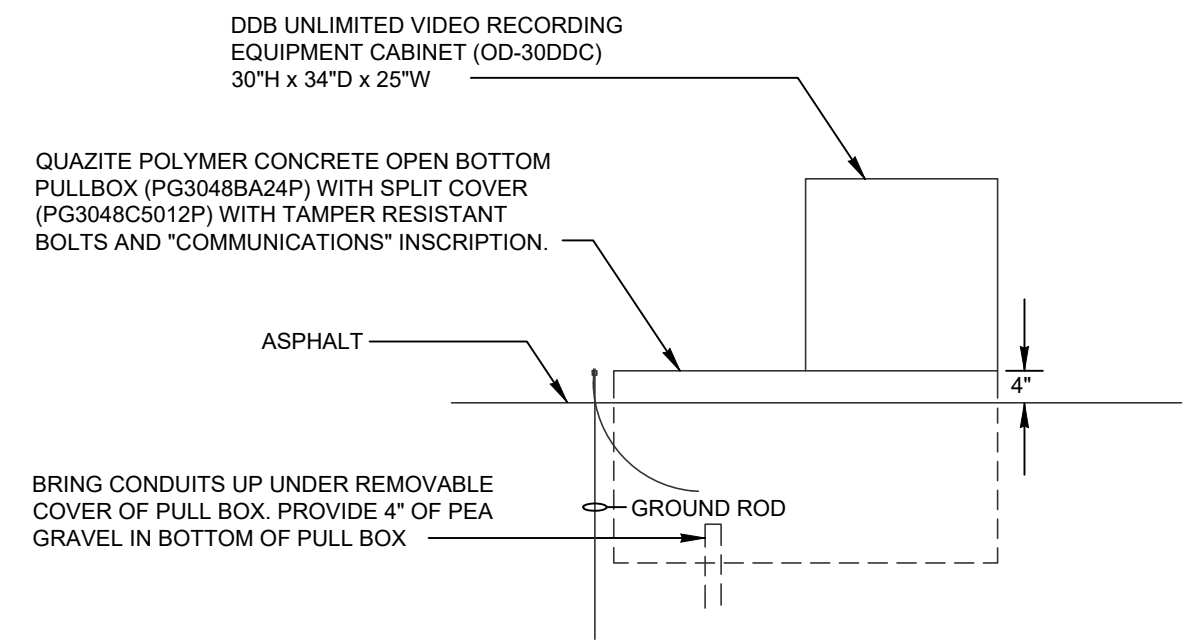
DATE: 06/10/2025  
ISSUED FOR: SITE LIGHTING PERMIT  
06/17/2025 SITE LIGHTING PERMIT REV #1



DATE: 06/10/2025  
JOB NO: 25-249  
DRAWN BY: KB  
CHECKED BY: DB  
SCALE: AS SHOWN  
SHEET NUMBER: ES1-2

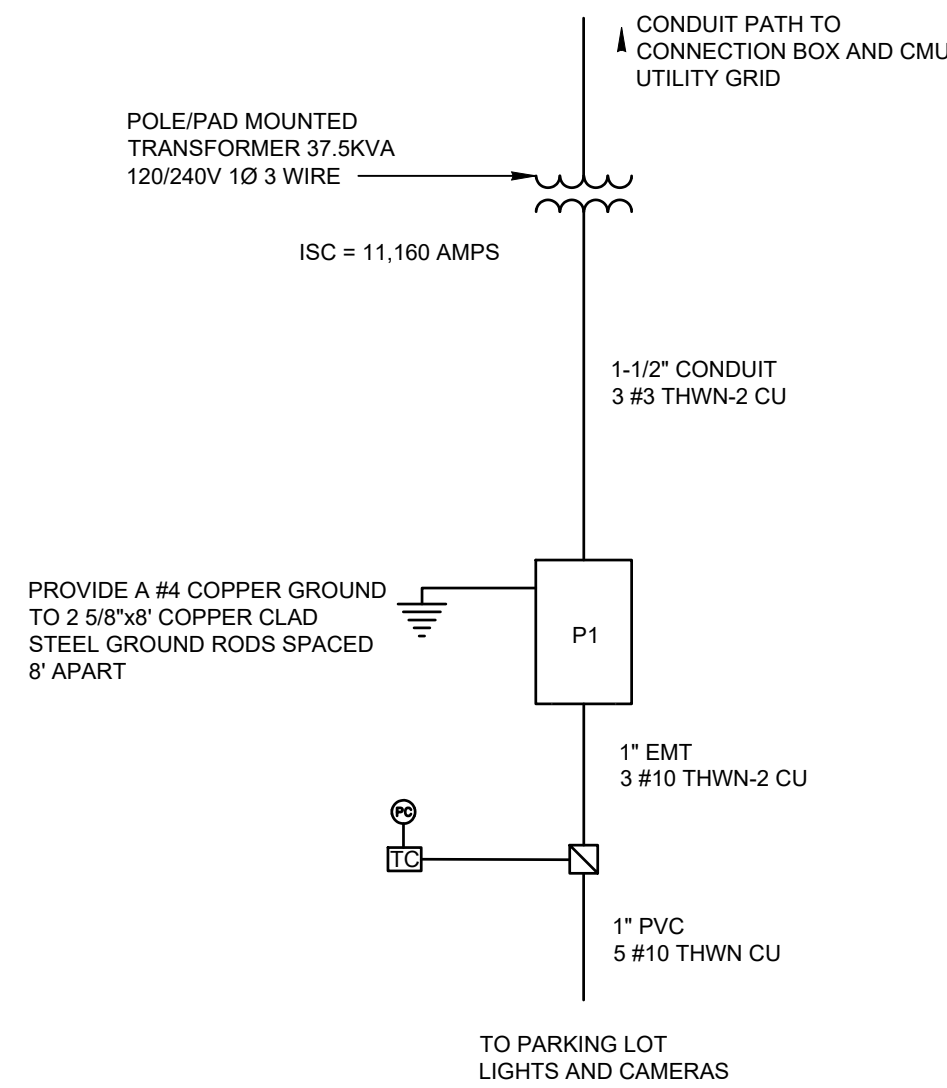
(TEXT) (TEXT)





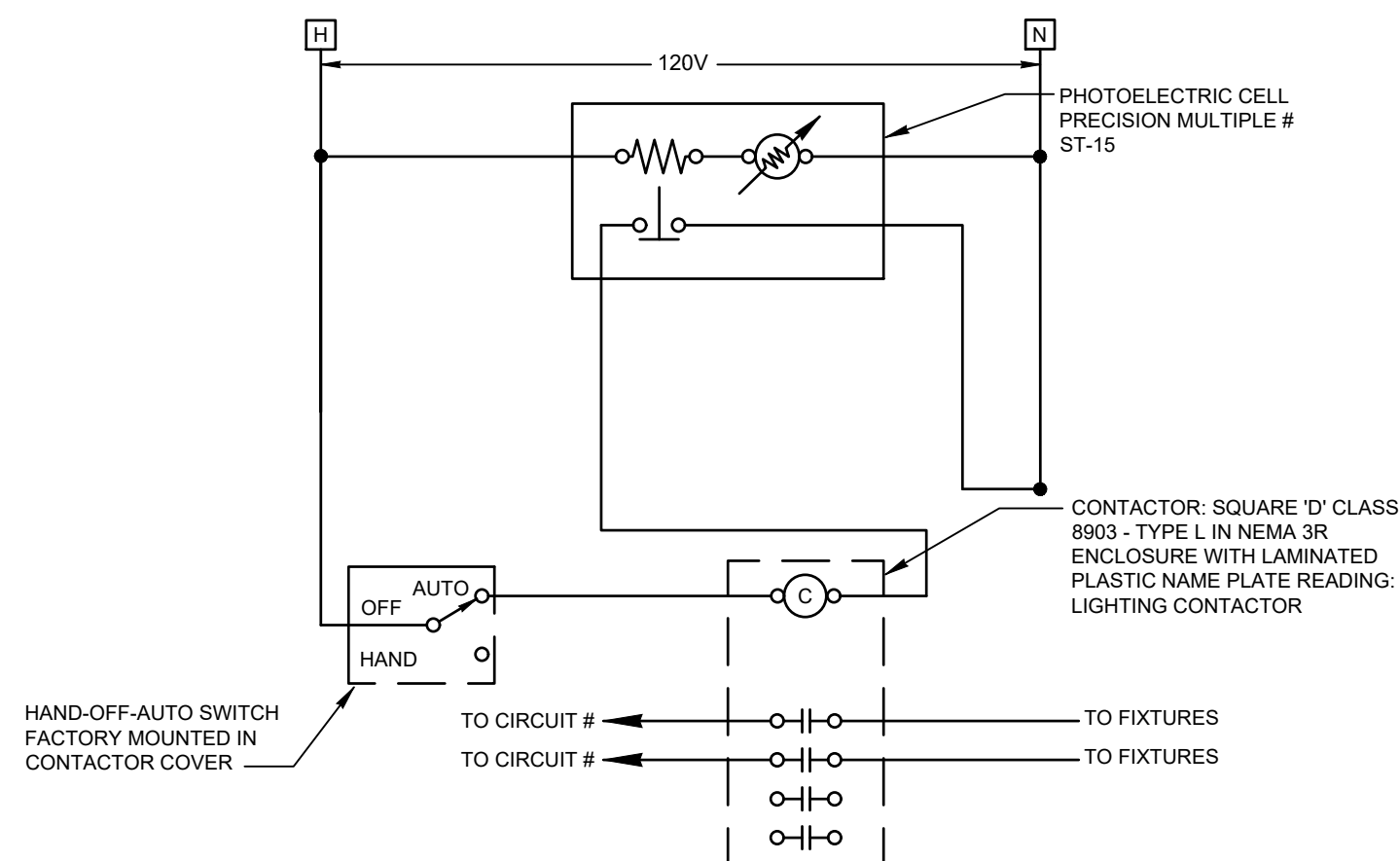
## DETAIL - POWER & VIDEO EQUIPMENT

NOT TO SCALE



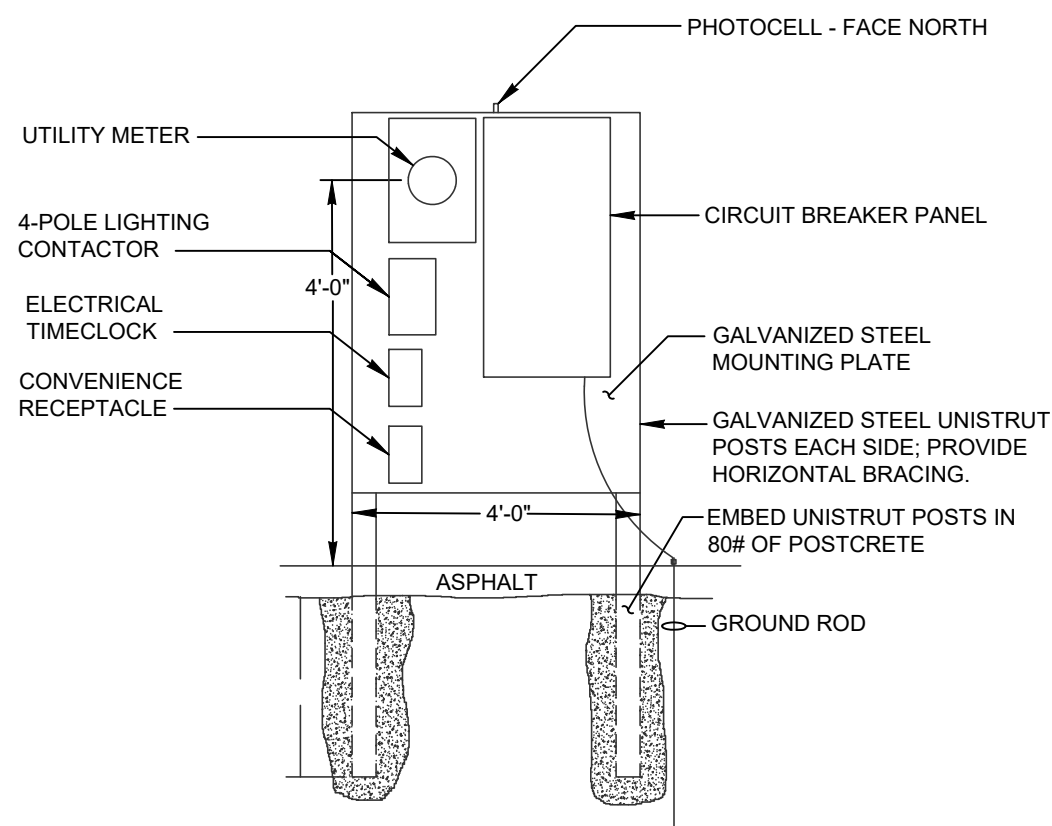
## TYPICAL ONE LINE DIAGRAM

NOT TO SCALE



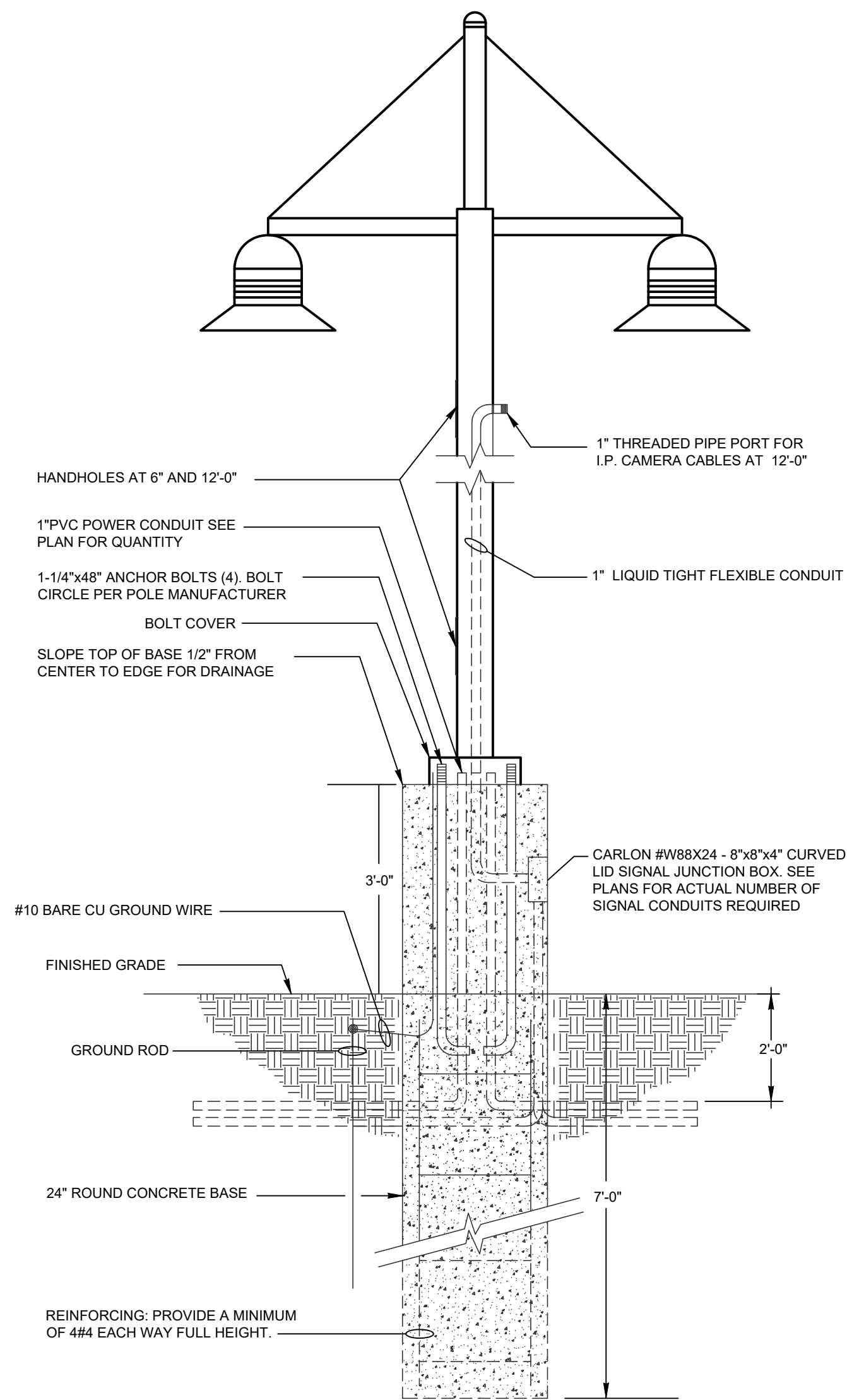
## EXTERIOR LIGHTING CONTROL SCHEMATIC

NOT TO SCALE: DIAGRAMMATIC ONLY, NOT ACTUAL WIRING CONFIGURATION



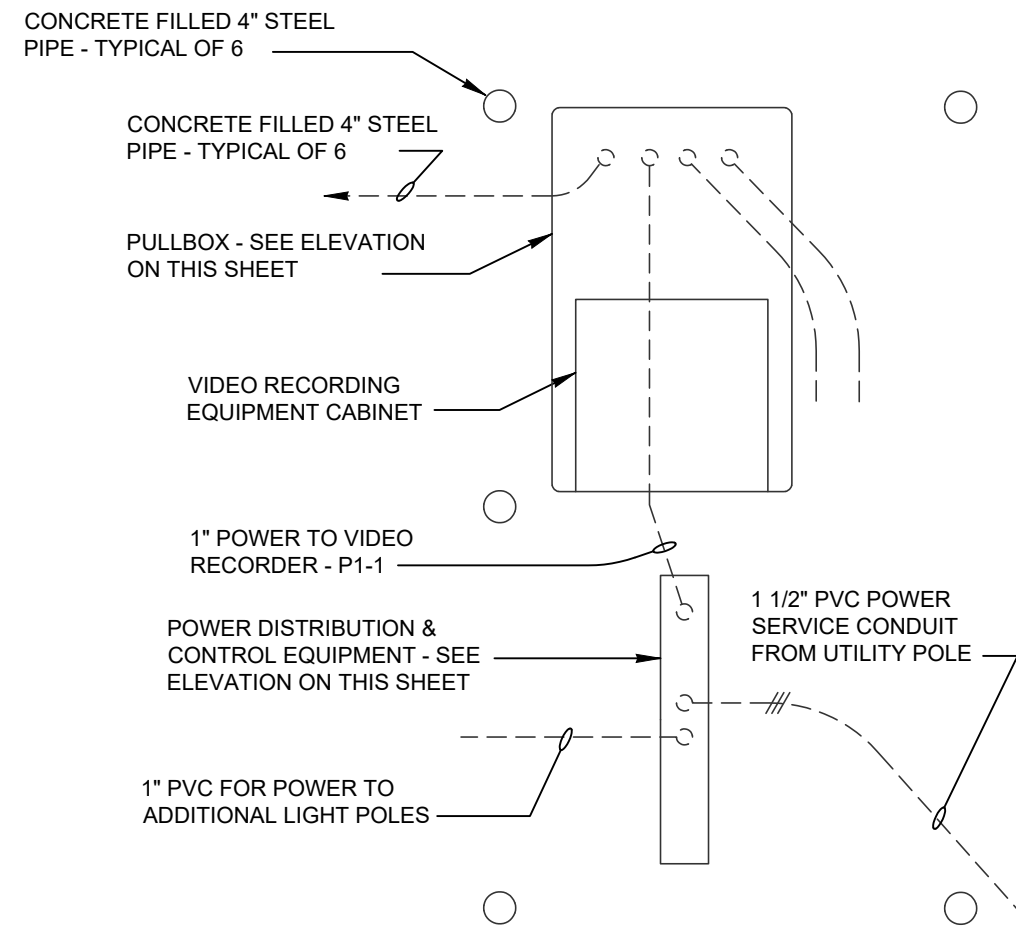
## EQUIPMENT PANEL ELEVATION

NOT TO SCALE



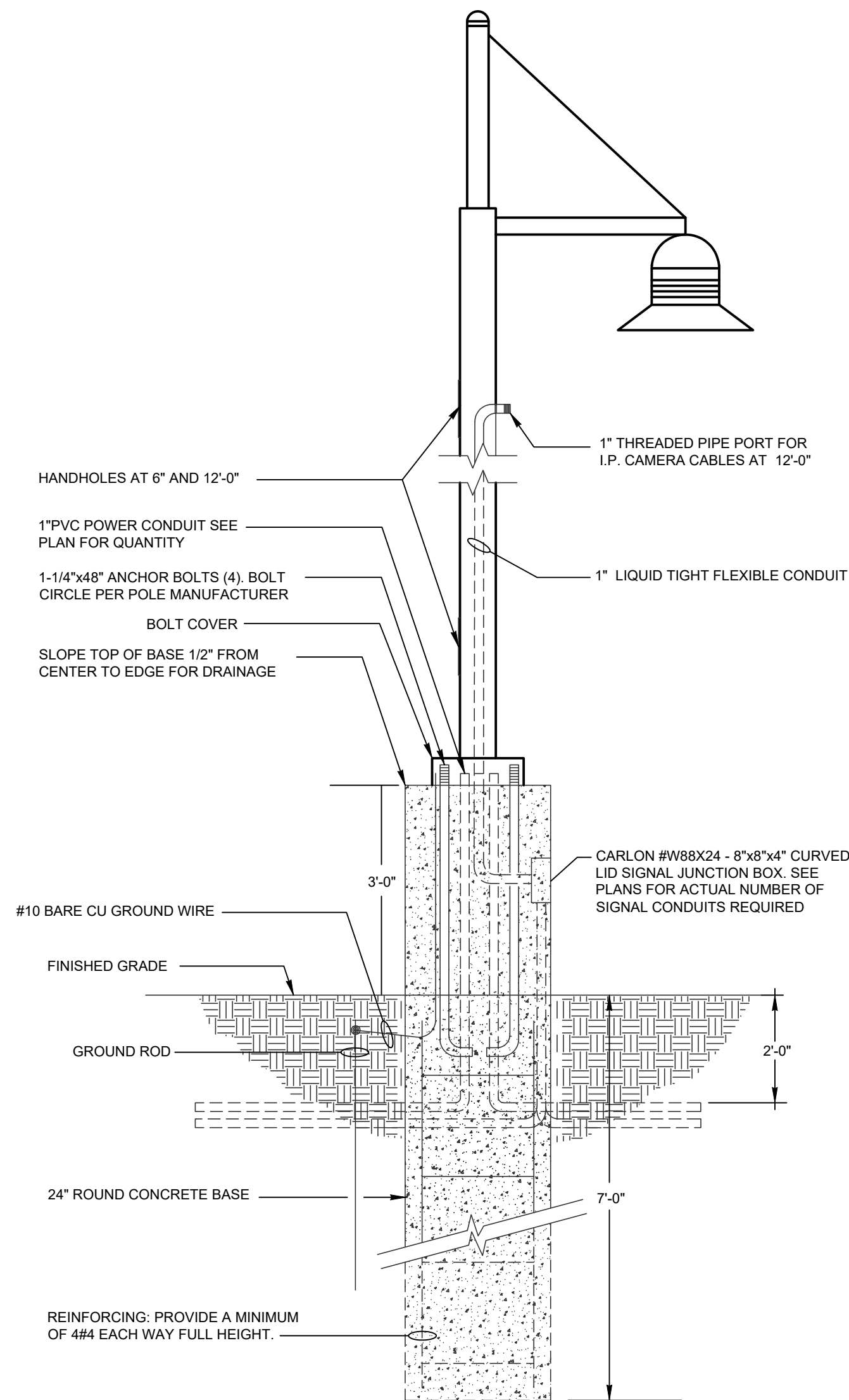
## LIGHT FIXTURE POLE BASE - DOUBLE HEAD DETAIL

SCALE: NOT TO SCALE



## VIDEO EQUIPMENT ENCLOSURE

NOT TO SCALE



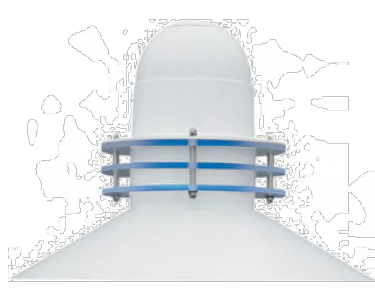
## LIGHT FIXTURE POLE BASE - SINGLE HEAD DETAIL

SCALE: NOT TO SCALE

- GENERAL SITE NOTES:
1. PROVIDE A SEPARATE GREEN INSULATED GROUND WIRE SIZE PER NATIONAL ELECTRICAL CODE TABLE 250.122 IN ALL BRANCH CIRCUIT AND FEEDER RACEWAYS CONTAINING POWER CONDUCTORS. GROUND WIRE IS NOT INCLUDED IN HACHURE COUNT ON DRAWINGS.
  2. ALL RACEWAYS INSTALLED UNDERGROUND, OR UNDER THE BUILDING SHALL BE NO SMALLER THAN 3/4". ALL CONDUCTORS INSTALLED UNDERGROUND OR UNDER THE BUILDING SHALL BE NO SMALLER THAN #12.
  3. ALL CONDUITS SHALL BE BURIED A MINIMUM OF 24" BELOW FINISHED GRADE. BED CONDUITS 6" BELOW AND 6" ABOVE IN LOCAL MATERIAL WITH NO ROCKS LARGER THAN 1" DIAMETER, OR IMPORT SAND IF ACCEPTABLE LOCAL MATERIAL IS UNAVAILABLE. PLACE WARNING TAPE 1'-0" ABOVE ALL BURIED CONDUITS. SEE L-LINE DIAGRAM FOR FEEDER CONDUIT SIZE. SEE SIGNAL RISERS FOR COMMUNICATION CONDUIT SIZES.
  4. SEE SPECIFICATIONS FOR ADDITIONAL CONSTRAINTS ON POWER SERVICE, AND OUTSIDE BRANCH CIRCUITS.
  5. COORDINATE SERVICE LOCATION AND INSTALLATION REQUIREMENTS WITH CMU UTILITY GRID DESIGNER.
  6. PROVIDE 1" PVC CONDUIT FROM VIDEO RECORDING EQUIPMENT CABINET TO EACH LIGHT POLE FOR OWNER'S VIDEO SECURITY SYSTEM. INSTALL PULL WIRE IN EACH CONDUIT.
  7. INSTALL A 1" FLEXIBLE CONDUIT FROM THE SIGNAL JUNCTION BOX IN THE LIGHT POLE BASE TO THE 1" NIPPLE AT THE TOP OF THE LIGHT POLE FOR THE OWNER'S VIDEO CABLE. INSTALL A PULL WIRE AND CAP END OF NIPPLE.



## UNIVERSE®



### FEATURES

- Reliable, uniform, illumination
- Types 1, 2, 3, 4W, 5Q, and 5W distributions
- 3000K, 4000K, 5000K CCT
- 0-10V dimming ready
- Integral surge protection: 10k in parallel, 20k in series
- Upgrade Kits
- Utilizes Strike Optics for precise distributions, maximum fixture spacing and minimal backlight.



### CONTROL TECHNOLOGY LIGHTGRID®

### SPECIFICATIONS

#### CONSTRUCTION

- All housing components die cast aluminum 360 alloy, sealed with continuous silicone rubber gaskets
- Standard configurations do not require a flat lens, optional lenses are tempered glass
- All internal and external hardware is stainless steel
- Finish: fade and abrasion resistant, electrostatically applied, thermally cured, triglycidyl isocyanurate (TGIC) polyester powdercoat
- Optical bezel finish matches the luminaire housing

#### LED/OPTICS

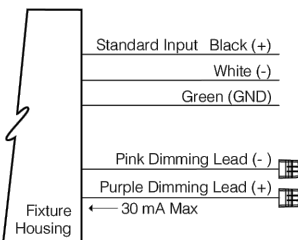
- Optical cartridge system consisting of a die cast heat sink, LED engine, TIR optics, gasket and bezel plate
- Optics are held in place without the use of adhesives
- Molded silicone gasket ensures a weather-proof seal around each individual LED
- Features individual LED optical control based on high performance TIR optical designs
- Back light control is available on Standard and Clear Lens options except any Type 5 distribution. Back light control is not available for any distribution using a Diffused Lens

#### INSTALLATION

- Fixtures must be grounded in accordance with national, state and/or local electrical codes. Failure to do so may result in serious personal injury

#### ELECTRICAL

- Luminaires have integral surge protection, UL recognized and have a surge current rating of 10,000 Amps using the industry standard 8/20uSec wave and surge rating of 372J
- Drivers are UL recognized with an inrush current maximum of <200 Amps maximum at 230VAC
- 100%-1% dimming range. Fixture will be wired for low voltage 0-10V dimming control



- Driver and surge suppressor are mounted to a prewired tray with quick disconnects that may be removed from the gear compartment

#### CONTROLS

- Egress adapter(s) shall slip over a 4"100mm DIA. pole with the luminaire or arm slipping over the adapter to add a total of 4.5"114mm to the overall height. Adapter(s) shall be prewired, independently rotatable 359°, and have a cast access cover with an integral lens and lanyard
- Photocell adapter shall include an internal twist lock receptacle. Photocell by others

#### CONTROLS, CONTINUED

- Egress adapter shall require an auxiliary 120 volt supply for operation of an integral MR16 lamp in the event of emergency. The lamp may be aimed and locked into position with an adjustment range of 15°-45°. Adapter shall have a socket that accepts miniature bi-pin MR16 lamps up to 50 watts, lamp by others

#### CERTIFICATIONS

- ETL listed under UL 1598 and CSA C22.2 No. 250.0-08 for wet locations

#### WARRANTY

- 5 Year Warranty  
Consult Factory  
10 Year Extended Warranty - Optional (at an additional cost)

	WEIGHT	EPA
UCM2	25.75 lbs / 1168 kg	.73 ft <sup>2</sup>

### ORDERING GUIDE

Example: UCM2-WND-LUM-BLU-FLR-36L-615-4K7-2-CL-BLS-WRSC-SLA7(5)-UNV

CATALOG #

UCM2					
Housing	LED Quantity	Lumen Output	CCT/CRI	Distribution	Optional Lens
<b>UCM2</b> Universe Medium 2.0	<b>36L</b> 36 LED	<b>260</b> 260mA, 32W, 1800-4300 Lumens <b>325</b> 325mA, 40W, 2200-5300 Lumens <b>420</b> 420mA, 50W, 2800-6700 Lumens <b>460</b> 460mA, 55W, 3000-7200 Lumens <b>615</b> 615mA, 72W, 3900-9300 Lumens	<b>AMB*</b> Amber 595nm Peak <b>3K7</b> 3000K, 70 CRI <b>4K7</b> 4000K, 70 CRI <b>5K7</b> 5000K, 70 CRI <b>4K9</b> 4000K, 90 CRI <b>5K9</b> 5000K, 90 CRI	<b>1</b> Type I <b>2</b> Type II <b>3</b> Type III <b>4W</b> Type IV Wide <b>5Q</b> Type V Square <b>5W</b> Type V Wide	<b>CL</b> Clear Lens <b>DL*</b> Diffused Lens
<b>Optional Element</b>					
<b>LUM</b> Universe Medium with Luminaire Rings					
<b>SR</b> Universe Medium with Luminaire Solid Rings					
<b>VSL</b> Universe Medium with Luminaire Vertical Slots					
<b>WND</b> Universe Medium with Optional Luminaire Windows					
<b>Optional Internal Lens</b>					
<b>BLU</b> Blue					
<b>RD</b> Red					
<b>GRN</b> Green					
<b>Hood Style</b>					
<b>ANG</b> Angled Hood					
<b>BEL</b> Bell Hood					
<b>FLR</b> Flared Hood					
<b>SKB</b> Skirted Bell Hood					
<b>STR</b> Straight Hood					

Optional Shield	Finish	Optional Controls	Optional Lens Cover	Optional Fuse
<b>HS*</b> House Side Shield	<b>BLS</b> Black Gloss Smooth <b>BLT</b> Black Matte Textured <b>DBS</b> Dark Bronze Gloss Smooth <b>DBT</b> Dark Bronze Matte Textured <b>GTT</b> Graphite Matte Textured <b>LGS</b> Light Grey Gloss Smooth <b>LGT</b> Light Grey Matte Textured <b>PSS</b> Platinum Silver Gloss Smooth <b>VGT</b> Verde Green Matte Textured <b>WHS</b> White Gloss Smooth <b>WHT</b> White Matte Textured	<b>WIR</b> LightGRD™ connectivity <b>WRSC*</b> LightGRD™ connectivity with Sensor <b>SCP-8F*</b> Sensor Control to 8' Mounting Height <b>SCP-20F*</b> Sensor Control 19' to 20' Mounting Height * Not available with lens options	<b>SLC*</b> Solid Lens Cover * SLC is a shield used to block the light from a luminous element	<b>SF</b> Single Fuse (20V, 27V, 34V) <b>DF</b> Double Fuse (208V, 240V, 480V)
	<b>Color Option</b> <b>CC*</b> Custom Color <b>CLA*</b> Clear Anodized Finish (Clear protective undercoat for added protection in coastal or other harsh environments)			

\*CAMPUS STANDARD COLOR

