

**POWER & COMMUNICATION LEGEND**

⊕ 120V DUPLEX OUTLET	⊕ MOTOR CONNECTION
⊕ 120V QUAD OUTLET	⊕ ELECTRICAL DISCONNECT
⊕ 240 VOLT RECEPTACLE	⊕ ELECTRICAL STARTER DISCONNECT
⊕ DATA/COMMUNICATIONS OUTLET	⊕ ELECTRICAL CONNECTION W/NON-FUSED DISCONNECT
⊕ TELEPHONE OUTLET	⊕ ELECTRICAL CONNECTION W/WEATHER PROOF DISCONNECT
⊕ TELEVISION OUTLET	⊕ PANELBOARD
⊕ DATA/TV COMBO OUTLET	⊕ THERMOSTAT MOUNTED AT 48" A.F.F.
⊕ FLOOR OUTLET	⊕ SMOKE/CO ALARM
⊕ JUNCTION BOX	⊕ SMOKE ALARM
⊕ PUSHBUTTON STATION	⊕ NITROGEN DIOXIDE DETECTOR
⊕ EMERGENCY E-STOP FOR GRILL OR FIREPIT	⊕ CARBON MONOXIDE DETECTOR
⊕ TIME CLOCK	⊕ GFI
⊕ TIMER FOR GRILL OR FIREPIT	⊕ GFI
⊕ BC BELOW COUNTER OUTLET	⊕ WEATHER PROOF COVER WITH GROUND FAULT CIRCUIT INTERRUPTER
⊕ AC ABOVE COUNTER OUTLET	

**LIGHTING LEGEND**

⊕ RECESSED 2x4 FIXTURE	⊕ SINGLE POLE SWITCH
⊕ RECESSED 2x2 FIXTURE	⊕ 2-POLE SWITCH
⊕ INDICATES NIGHTLIGHT FIXTURE	⊕ 3-WAY SWITCH
⊕ INDICATES EMERGENCY FIXTURE	⊕ 4-WAY SWITCH
⊕ INDICATES EMERGENCY/NIGHTLIGHT FIXTURE	⊕ WALL MOUNTED SINGLE LEVEL OCCUPANCY SENSOR - SEE SCHEDULE
⊕ SURFACE MOUNT 1x4 FIXTURE	⊕ WALL MOUNTED DUAL LEVEL OCCUPANCY SENSOR - SEE SCHEDULE
⊕ HIGH BAY 2x4 FIXTURE	⊕ CEILING MOUNTED OCCUPANCY SENSOR - SEE SCHEDULE
⊕ SURFACE WALL MOUNTED FIXTURE	⊕ INDICATES FIXTURE TO REMAIN ON FOR SECURITY PURPOSES
⊕ SURFACE CEILING MOUNT FIXTURE	⊕ INDICATES LIGHT FIXTURE SWITCH-LEGS
⊕ RECESSED DOWNLIGHT OR DISC FIXTURE	⊕ P-X INDICATES PANEL AND CIRCUIT NUMBER
⊕ SURFACE WALL MOUNTED FIXTURE	⊕ I INDICATES LIGHT FIXTURE TYPE
⊕ SURFACE MOUNTED FIXTURE	⊕ EX INDICATES EXISTING FIXTURE
⊕ SURFACE MOUNTED PENDANT FIXTURE	⊕ RL INDICATES RELOCATED FIXTURE
⊕ OUTSIDE POLE-MOUNT LIGHT FIXTURE	⊕ TC INDICATES FIXTURE CONTROLLED BY TIME/CLOCK
⊕ EXTERIOR GROUND MOUNTED LIGHT FIXTURE	⊕ EM INDICATES FIXTURE ON EMERGENCY OR STANDBY POWER
⊕ EMERGENCY LIGHTING FIXTURE	
⊕ LED EXIT SIGN-SHADED AREA INDICATES ILLUMINATED FACE	
⊕ LED EXIT/EMERGENCY SIGN-SHADED AREA INDICATES ILLUMINATED FACE	
⊕ EXTERIOR EMERGENCY EGRESS LIGHT	

**SITE NOTES**

- THE CONTRACTOR SHALL PROVIDE ALL LABOR, MATERIALS AND EQUIPMENT NECESSARY FOR A COMPLETE AND FUNCTIONAL ELECTRICAL SYSTEM.
- MATERIALS AND INSTALLATION SHALL COMPLY WITH CODES, UTILITY REQUIREMENTS, LAWS AND ORDINANCES OF FEDERAL, STATE, OSHA AND LOCAL GOVERNING BODIES HAVING JURISDICTION.
- THE CONTRACTOR SHALL COMPLY WITH ALL CODES AND STANDARDS APPLICABLE TO THIS PROJECT THAT ARE LISTED BUT NOT LIMITED TO: NEC, NFPA, NEMA, ANS, IES, IEEE, NFPA LIFE SAFETY 101, ASHRAE 90.1, IECC ENERGY CODE AND IBC BUILDING CODE.
- PRIOR TO ANY DIGGING, TRENCHING, ETC. CONTACT ALL LOCAL UTILITY COMPANIES AND MUNICIPALITIES AND CONFIRM EXACT LOCATIONS OF ALL EXISTING UTILITIES.
- MATERIALS AND EQUIPMENT SHALL BE LISTED AND/OR LABELED BY UL OR ANOTHER NATIONALLY RECOGNIZED TESTING LABORATORY.
- ALL MATERIAL, EQUIPMENT, WIRING DEVICES, ETC SHALL BE NEW, UNLESS SPECIFICALLY NOTED AS EXISTING TO BE REUSED.
- ALL MATERIALS AND EQUIPMENT SHALL BE STORED, HANDLED, ERECTED, INSTALLED, CONNECTED, CLEANED, ADJUSTED, TESTED, CONDITIONED AND PLACED IN SERVICE IN ACCORDANCE WITH THE MANUFACTURER'S DIRECTIONS AND RECOMMENDATIONS.
- COORDINATE THE UTILITY COMPANY SERVICE FEEDS AND INSTALLATION.
- ALL POLE FIXTURES TO BE LOCATED 4' AWAY FROM EDGE OF CURB.
- ALL EXTERIOR LIGHT FIXTURES TO BE CONNECTED TO A COMMON EQUIPMENT GROUND. USE #8, TYPE THWN.
- ALL CIRCUIT TO BE PLACED IN 1" CONDUITS UNLESS OTHERWISE NOTED. CIRCUIT TO USE COPPER WIRE, TYPE THWN.
- THE CONTROLLING LIGHTING CONTACTORS SHALL BE MOUNTED INSIDE THE BUILDING WITH TIME-CLOCK CONTROL & REMOTE PHOTOCELLS LOCATED ON THE EXTERIOR SIDE OF THE BUILDING WALL. INSTALL PHOTOCELLS AT LOCATIONS WHERE BUILDING OR OTHER OBSTRUCTIONS WILL NOT INTERFERE WITH THEIR PROPER OPERATION. FINAL BRANCH CIRCUIT SUPPLY CONNECTIONS WILL BE PROVIDED BY THE BUILDING ELECTRICAL CONTRACTORS.
- MIN. BURIAL DEPTH FOR THE LIGHTING CIRCUIT SHALL BE 24". A SLIGHT DECREASE IN DEPTH IS ALLOWED WITHIN 10' OF THE POLES.
- VERIFY CONSTRUCTION AREAS ON OTHER SITE PLANS FOR POTENTIAL OBSTACLES AND CONSTRUCTION LIMITS.

**ELECTRIC GENERAL NOTES**

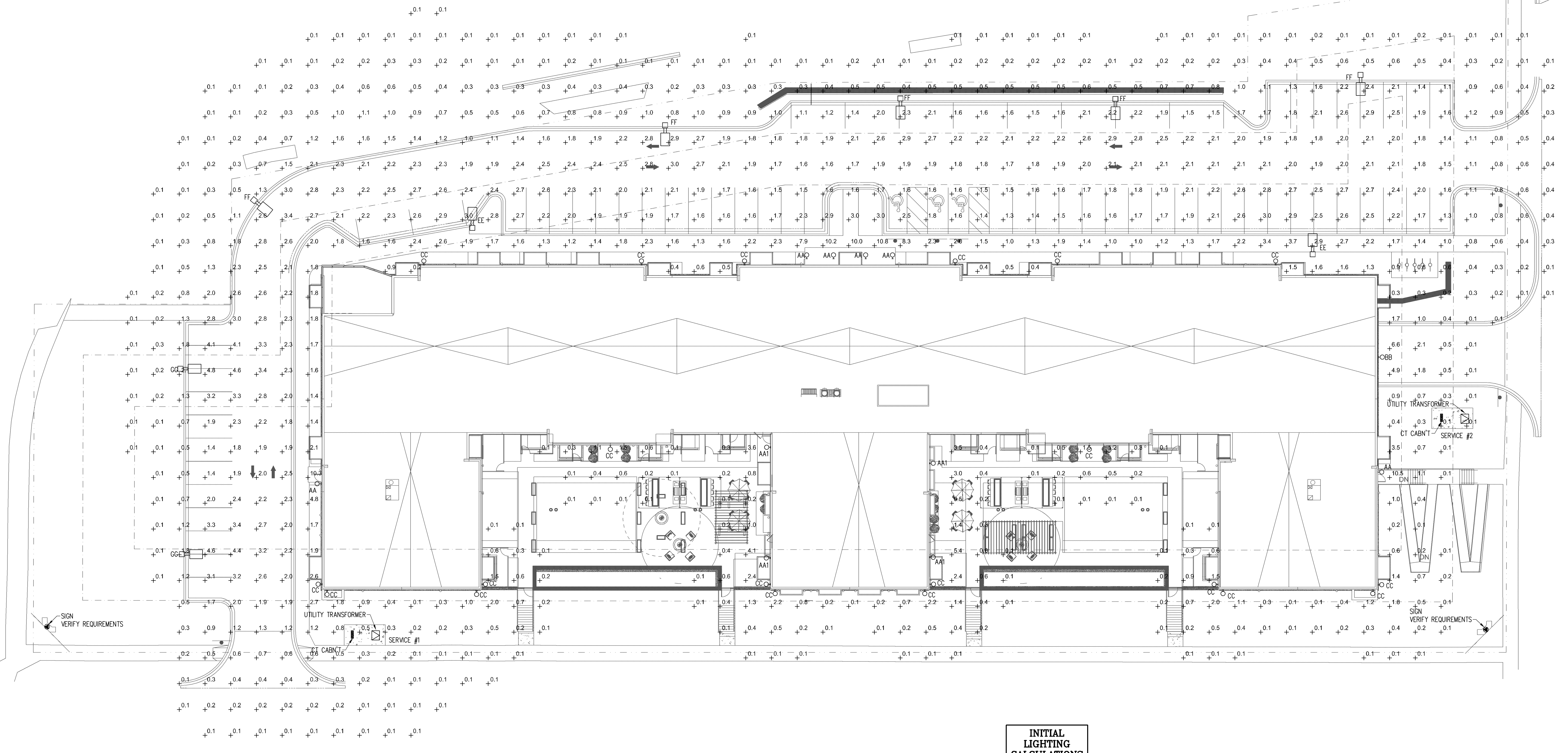
- ALL WORK SHALL BE COMPLETED IN ACCORDANCE WITH NATIONAL, STATE AND LOCAL ELECTRICAL CODES.
- ENERGY CODE WILL BE IN ACCORDANCE WITH ASHRAE 90.1 2010.
- COORDINATE WORK WITH ALL OTHER TRADES.
- EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
- ALL WIRING SHALL BE INSTALLED IN APPROVED RACEWAYS.
- ALL EQUIPMENT GROUNDING CONDUCTORS SHALL BE INSTALLED AT ALL LOCATIONS.
- ALL MEASUREMENTS TO TOP OF BOX. RECEPTACLES SHALL BE 20" A.F.F. SWITCHES SHALL BE 48" A.F.F.
- GFI PROTECT ALL RECEPTACLES WITHIN 6' OF EVERY SINK.
- DRAWINGS ONLY REPRESENT AN APPROXIMATE LOCATION OF ALL RECEPTACLES, SWITCHES, LIGHTS, TV/DATA JACKS, ELECTRICAL EQUIPMENT, ETC. FINAL LOCATIONS WILL BE DETERMINED IN THE FIELD AND MAY VARY FROM DRAWINGS DUE TO UNFORESEEN CIRCUMSTANCES.
- PROVIDE GFCI PROTECTION FOR ALL AREAS LISTED UNDER NEC 210.8.
- PROVIDE TAMPER RESISTANT RECEPTACLES IN ALL AREAS LISTED UNDER NEC 406.12.

**LIGHTING FIXTURE SCHEDULE - INITIAL**

TYPE	LAMPS	WATTAGE	LLF	LUMENS	DESCRIPTION	NOTES
AA	LED	20	1	2310	SMALL EXTERIOR WALL PACK	HUBBELL
AA1	LED	20	1	2310	SMALL EXTERIOR WALL PACK - EMERGENCY BATTERY BACKUP	HUBBELL
BB	LED	30	1	3060	MEDIUM EXTERIOR WALL PACK	HUBBELL
CC	LED	13	1	1280	3" WALL MOUNTED DOWNLIGHT	RP
DD	LED	-	-	-	LED STRING LIGHTS	-
EE	LED	105	1	12753	POLE MOUNT FIXTURE, TYPE II OPTICS, 25' POLE	ALED
FF	LED	105	1	12042	POLE MOUNT FIXTURE, TYPE III OPTICS, 25' POLE	ALED
GG	LED	105	1	13204	POLE MOUNT FIXTURE, TYPE IV OPTICS, 25' POLE	ALED

NOTES:

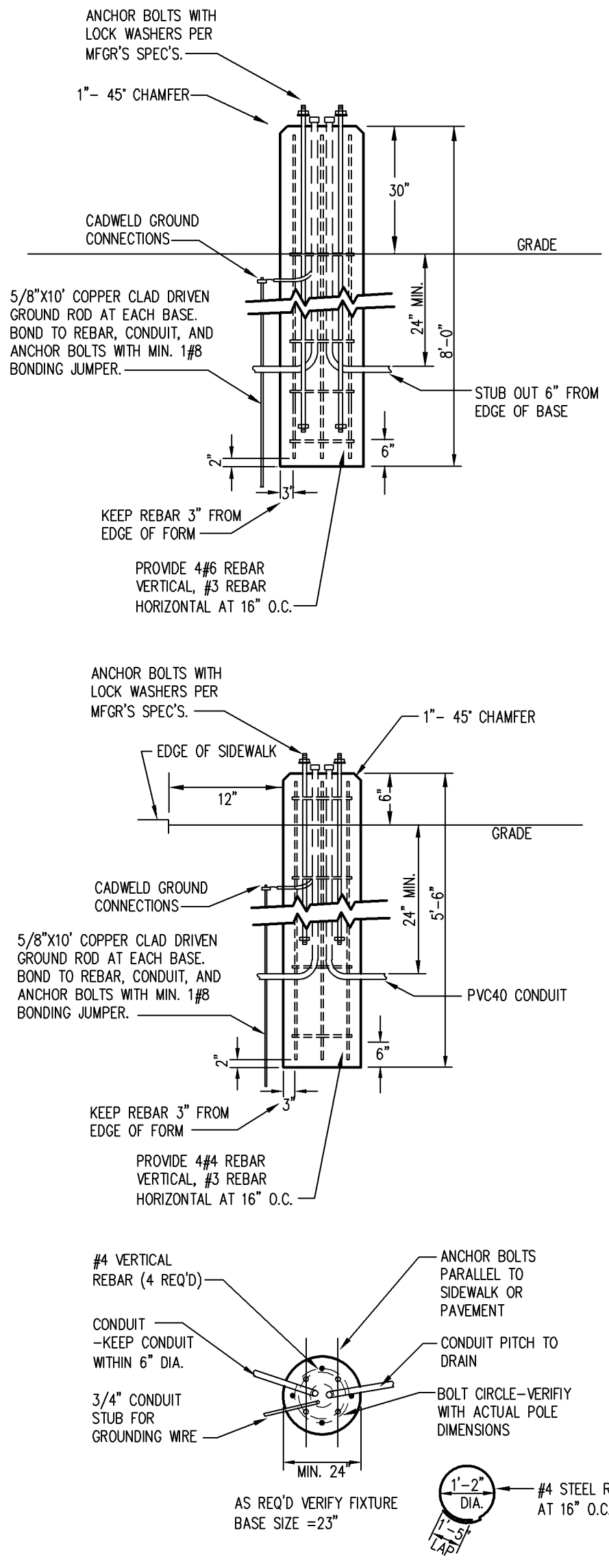
APPROVED - ZONING REVIEW  
M. Centinario  
09/28/2022



**INITIAL LIGHTING CALCULATIONS**

AVERAGE:	2.2 fc
MAXIMUM:	4.6 fc
MINIMUM:	1.2 fc
MAX/MIN:	3.8:1

1 INITIAL SITE LIGHTING CALCULATION  
SCALE: 1" = 20'-0"



2 POLE BASE DETAIL  
NOT TO SCALE

- NOTE:
- USE MFG'S DIMENSIONS FOR EXACT ANCHOR BOLT AND COVER PLACEMENT.
  - INSTALL IN-LINE FUSES IN EACH UNGROUNDED CONDUCTOR WITHIN POLE BASE HAND HOLD.
  - TROWEL FINISH EXPOSED PORTION OF BASE TO REMOVE/COVER FORM MARKS.

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT ELECTRICAL SUPERVISION AND THAT I AM A LICENSED ELECTRICAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.  
*Bob Steffen*  
REG. NO. 48627192  
DATE: 7/25/22

**BIRDY ELECTRIC LLC**  
A Minnesota Business  
15000 Highway 101, Suite 100  
Bloomington, MN 55431  
Phone: 612-825-0227  
Fax: 612-825-0228

DATE	REVISION	DESCRIPTION
6/8/22	AS SHOWN	
7/1/22	OK	
7/1/22	BI	
7/1/22	660	

NOBLE APARTMENTS  
8200 HUMBOLDT AVE. S  
BLOOMINGTON, MN 55431  
INITIAL SITE LIGHTING CALCULATION

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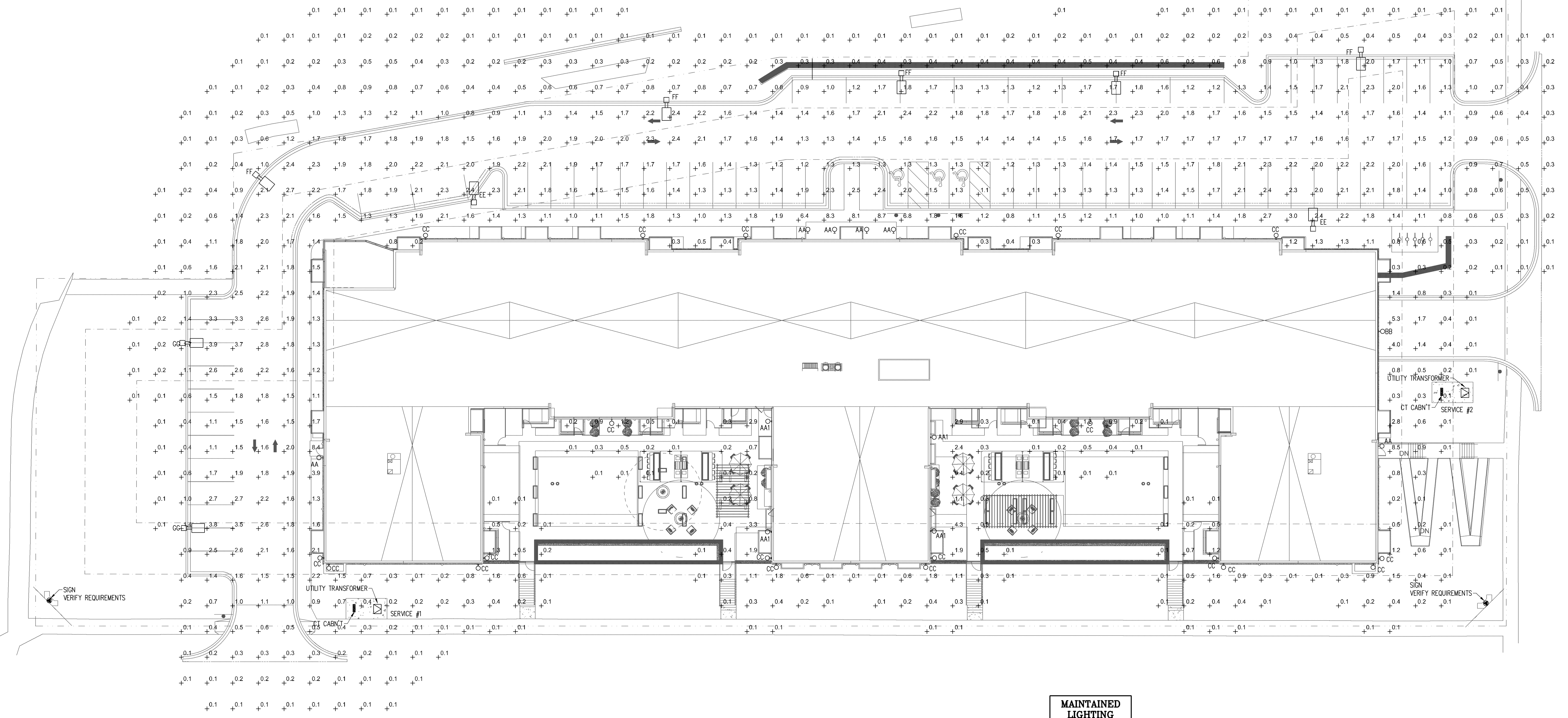
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- PROVIDE TAMPER RESISTANT RECEPTACLES IN ALL AREAS LISTED UNDER NEC 406.12.

**LIGHTING FIXTURE SCHEDULE - MAINTAINED**

TYPE	LAMPS	WATTAGE	LF	LUMENS	DESCRIPTION	NOTES
AA	LED	20	.81	1871	SMALL EXTERIOR WALL PACK	HUBBELL
AA1	LED	20	.81	1871	SMALL EXTERIOR WALL PACK - EMERGENCY BATTERY BACKUP	HUBBELL
BB	LED	30	.81	2478	MEDIUM EXTERIOR WALL PACK	HUBBELL
CC	LED	13	.81	1036	3" WALL MOUNTED DOWNLIGHT	RP
DD	LED	-	-	-	LED STRING LIGHTS	-
EE	LED	105	.81	10329	POLE MOUNT FIXTURE, TYPE II OPTICS, 25' POLE	ALED
FF	LED	105	.81	9754	POLE MOUNT FIXTURE, TYPE III OPTICS, 25' POLE	ALED
GG	LED	105	.81	10695	POLE MOUNT FIXTURE, TYPE IV OPTICS, 25' POLE	ALED

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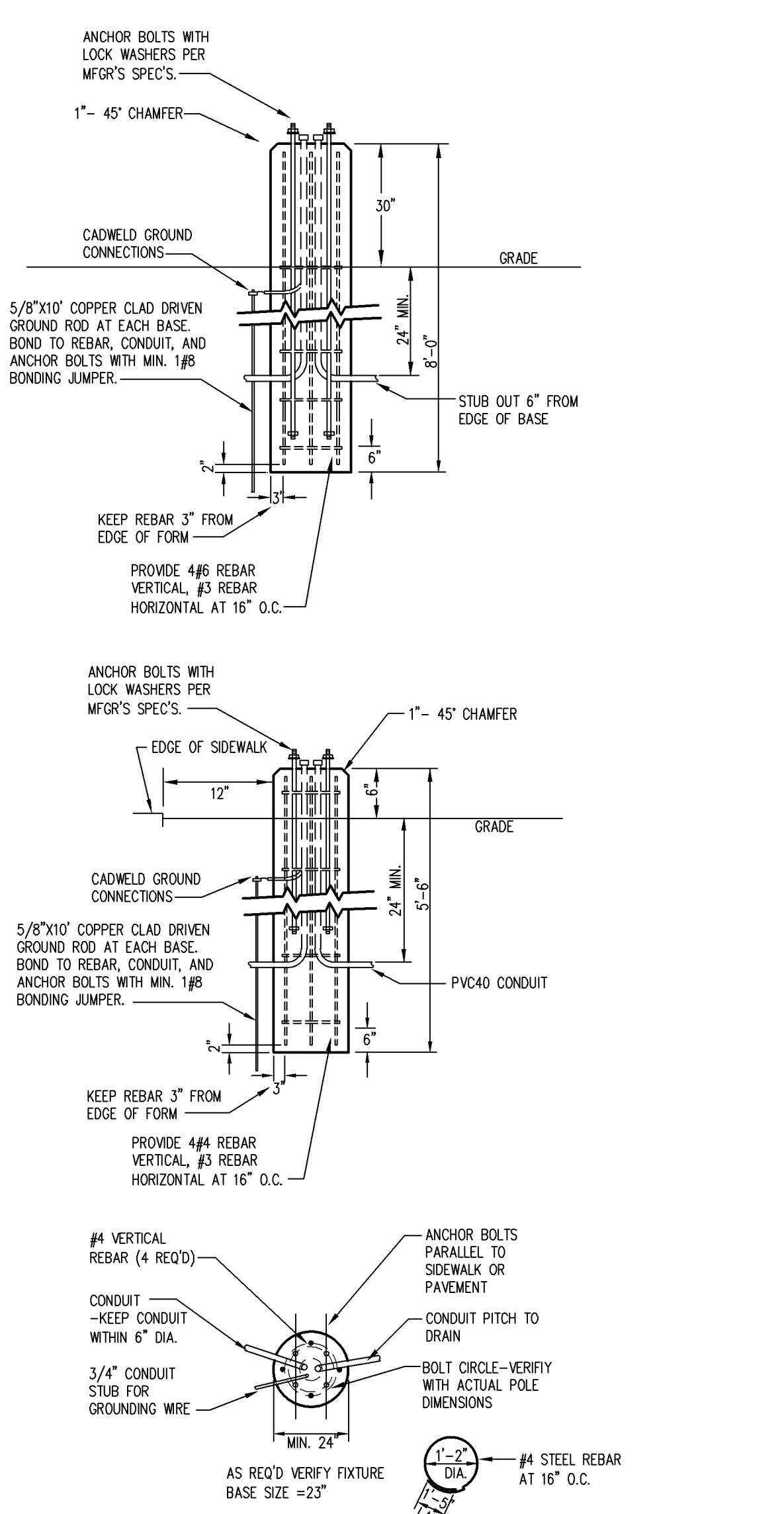
APPROVED - ZONING REVIEW  
M. Centinaro  
09/28/2022



**MAINTAINED LIGHTING CALCULATIONS**

AVERAGE:	1.8 fc
MAXIMUM:	3.7 fc
MINIMUM:	1.0 fc
MAX/MIN:	3.7:1

1 MAINTAINED SITE LIGHTING CALCULATION  
SCALE: 1" = 20'-0"



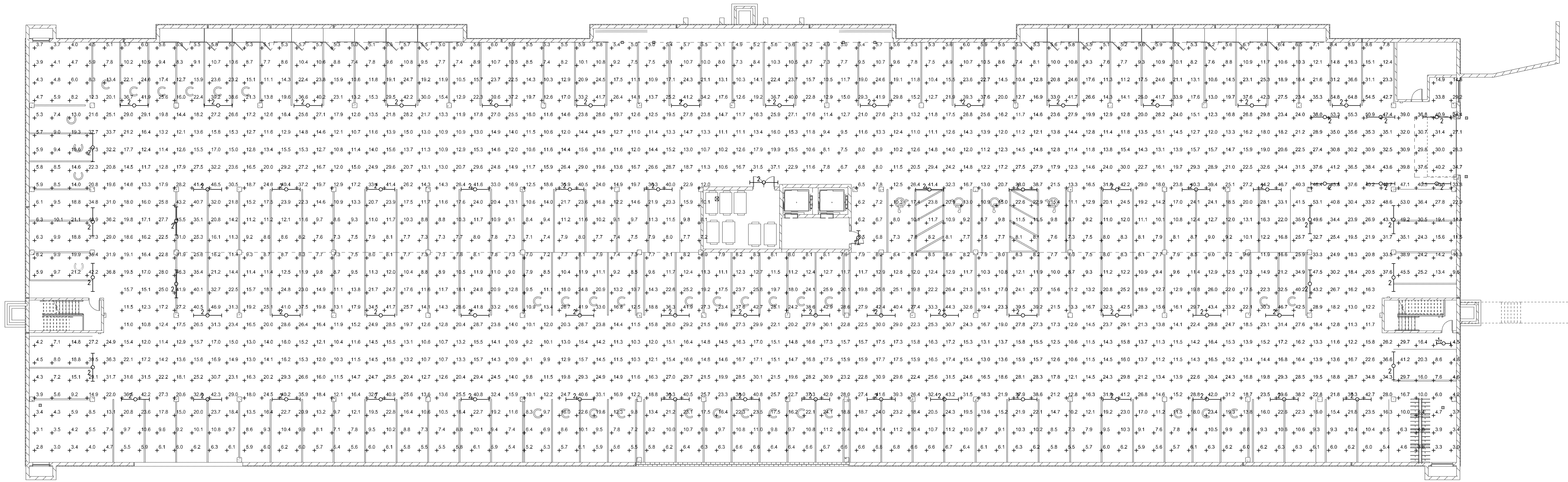
**POLE BASE DETAIL**  
E1.1  
NOT TO SCALE

NOTE:  
1) USE MFG'S DIMENSIONS FOR EXACT ANCHOR BOLT AND COVER PLACEMENT.  
2) INSTALL IN-LINE FUSES IN EACH UNGROUNDED CONDUCTOR WITHIN POLE BASE HAND HOLD.  
3) TROWEL FINISH EXPOSED PORTION OF BASE TO REMOVE/COVER FORM MARKS.

LIBRARY COPY HAS THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT ELECTRICAL ENGINEERING UNDER THE LAWS OF THE STATE OF MINNESOTA  
Berdry Electric, Inc.  
10000 Highway 101, Suite 100  
Bloomington, MN 55431  
Phone: 612-835-0257  
Fax: 612-835-0257  
DATE: 7/25/22  
JOB NO. 660

DATE: 6/8/22  
SCALE: AS SHOWN  
DRAWN BY: AS  
CHECKED BY: BI  
JOB NO. 660

NOBLE APARTMENTS  
8200 HUMBOLDT AVE. S  
BLOOMINGTON, MN 55431  
MAINTAINED SITE LIGHTING CALCULATION  
DRAWING NO. E1.3



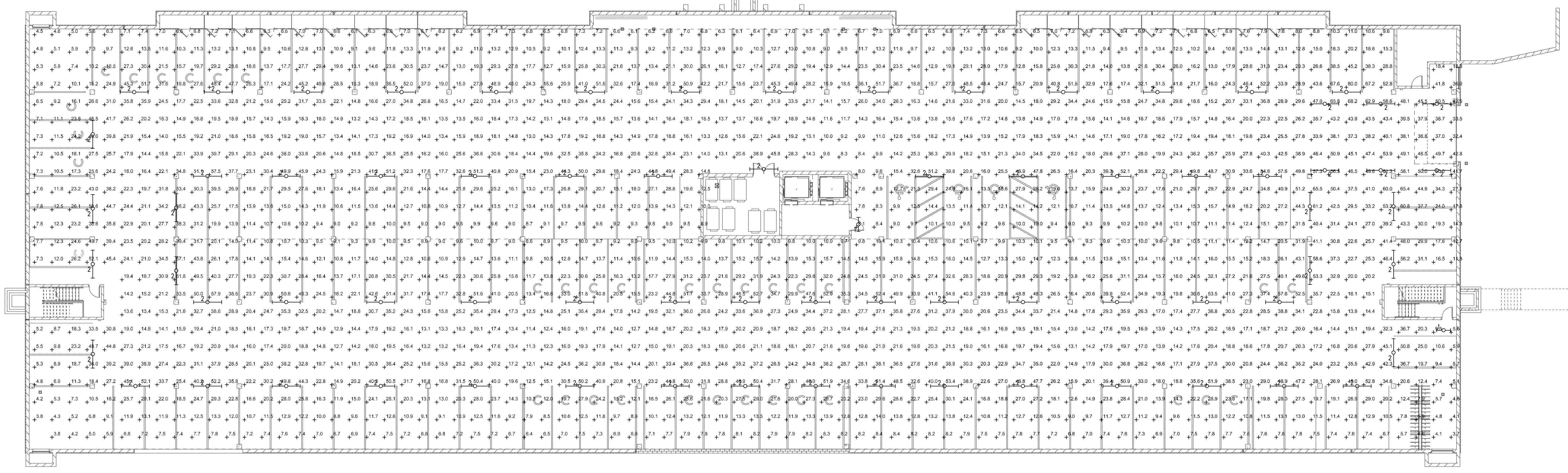
LIGHTING FIXTURE SCHEDULE - MAINTAINED						
TYPE	LAMPS	WATTAGE	LLF	LUMEN	DESCRIPTION	NOTES
1	LED	42	.81	4576	4' STRIP FIXTURE	-
2	LED	86	.81	9153	8' STRIP FIXTURE	-

NOTES:

2 GARAGE MAINTAINED LIGHTING CALCULATIONS  
SCALE: 1/16" = 1'-0"

MAINTAINED CALCULATIONS  
AVERAGE: 18.8 fc  
MAXIMUM: 54.1 fc  
MINIMUM: 6.1 fc  
MAX/MIN: 8.9:1

APPROVED - ZONING REVIEW  
M. Centinario  
09/28/2022



LIGHTING FIXTURE SCHEDULE - INTIAL						
TYPE	LAMPS	WATTAGE	LLF	LUMEN	DESCRIPTION	NOTES
1	LED	42	1	5650	4' STRIP FIXTURE	-
2	LED	86	1	11300	8' STRIP FIXTURE	-

NOTES:

1 GARAGE INITIAL LIGHTING CALCULATIONS  
SCALE: 1/16" = 1'-0"

INITIAL CALCULATIONS  
AVERAGE: 23.2 fc  
MAXIMUM: 66.8 fc  
MINIMUM: 7.5 fc  
MAX/MIN: 8.9:1

PL202100257  
PL2021-257

DATE: 7/25/22

REVISION

DATE	REVISION	DESCRIPTION
7/25/22	1	AS SHOWN
7/25/22	2	AS SHOWN
7/25/22	3	AS SHOWN
7/25/22	4	AS SHOWN
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7/25/22	91	AS SHOWN
7/25/22	92	AS SHOWN
7/25/22	93	AS SHOWN
7/25/22	94	AS SHOWN
7/25/22	95	AS SHOWN
7/25/22	96	AS SHOWN
7/25/22	97	AS SHOWN
7/25/22	98	AS SHOWN
7/25/22	99	AS SHOWN
7/25/22	100	AS SHOWN

DATE: 7/25/22  
SCALE: AS SHOWN  
DRAWN BY: BI  
CHECKED BY: BI  
JOB NO: 660

NOBLE APARTMENTS  
8200 HUMBOLDT AVE S  
BLOOMINGTON, MN 55431  
GARAGE LIGHTING CALCULATIONS

DRAWING NO. E.2.8