ELECTRICAL SYMBOL LIST

LIGHTING SYMBOLS

- 2X4 LIGHT FIXTURE, RECESSED
- 2X4 LIGHT FIXTURE, RECESSED – EMERGENCY
- 1X4 LIGHT FIXTURE, SURFACE MOUNT
- 1X4 LIGHT FIXTURE, SURFACE MOUNT – EMERGENCY
- 4FT LIGHT FIXTURE, PENDANT MOUNT
- 4FT LIGHT FIXTURE, PENDANT MOUNT – EMERGENCY
- 4FT LIGHT FIXTURE, STRIP
- 4FT LIGHT FIXTURE, STRIP – EMERGENCY
- DOWNLIGHT FIXTURE, RECESSED
- DOWNLIGHT FIXTURE, RECESSED, WALLWASH
- DOWNLIGHT FIXTURE, RECESSED – EMERGENCY
- 2FT LIGHT FIXTURE, WALL MOUNT
- 4FT LIGHT FIXTURE, WALL MOUNT
- LIGHT FIXTURE, CEILING MOUNT
- LIGHT FIXTURE, WALL MOUNT
- EXIT SIGN, UNIVERSAL MOUNT, W/ DIRECTIONAL ARROW
- BOLLARD LUMINAIRE
- AREA LUMINAIRE, WALL MOUNT
- AREA LUMINAIRE, POLE MOUNT

SWITCH SYMBOLS

- $ SWITCH, SPST +48" A.F.F.
- $2 SWITCH, DPST +48" A.F.F.
- $3 SWITCH, 3–WAY +48" A.F.F.
- $D SWITCH, DIMMER +48" A.F.F.
- $K SWITCH, KEY–OPERATED +48" A.F.F.
- $T SWITCH, TIMED +48" A.F.F.
- PC PHOTOCELL CONTROL
- OS OCCUPANCY SENSOR CONTROL

SIGNAL SYMBOLS

- TELEPHONE OUTLET +18" A.F.F.
- DATA OUTLET +18" A.F.F.
- DATA/TELEPHONE OUTLET +18" A.F.F.
- CLOCK
- SIGNAL BELL
- SIGNAL BUZZER
- SIGNAL HORN
- S P.A. SPEAKER
- CATV OUTLET (LOCATE AS SHOWN ON PLANS)
- CCTV CAMERA
- INTRUSION SENSOR

WIRING SYMBOLS

- FLEXIBLE CONNECTION
- CONDUIT, STUBBED & CAPPED
- CIRCUIT ON EMERGENCY/STANDBY POWER

POWER SYMBOLS

- RECEPTACLE, DUPLEX +18" A.F.F.
- T RECEPTACLE, DUPLEX +18" A.F.F. (TAMPER PROOF)
- RECEPTACLE, QUAD +18" A.F.F.
- RECEPTACLE, DUPLEX +6" ABV COUNTER
- RECEPTACLE, DUPLEX +18" A.F.F. (ONE OUTLET SWITCHED)
- RECEPTACLE, DUPLEX +18" A.F.F. (BOTH OUTLETS SWITCHED)
- RECEPTACLE, DUPLEX, PEDESTAL MOUNT
- RECEPTACLE, DUPLEX, FLUSH FLOOR MOUNT
- OR RECEPTACLE, SPECIAL (COORDINATE WITH EQUIPMENT SERVED)
- TIME CLOCK CONTROL
- PUSHBUTTON STATION
- JUNCTION BOX
- THERMOSTAT
- T TRANSFORMER
- DISCONNECT, NON–FUSED
- F DISCONNECT, FUSED
- ELECTRICAL CONNECTION
- ELECTRICAL CONNECTION, SINGLE MOTOR
- ELECTRICAL CONNECTION, MULTI–MOTOR
- ELECTRICAL DISTRIBUTION PANEL, RECESSED
- ELECTRICAL DISTRIBUTION PANEL, SURFACE
- MISCELLANEOUS PANEL, RECESSED
- MISCELLANEOUS PANEL, SURFACE
- FLUSH FLOOR BOX (W/ DEVICES AS SHOWN ON PLAN)

FIRE ALARM SYMBOLS

- F FIRE ALARM MANUAL PULL STATION, +48" A.F.F.
- M MAGNETIC DOOR HOLDER
- I SMOKE DETECTOR, DUCT, IONIZATION TYPE W/SAMPLING TUBE
- P SMOKE DETECTOR, DUCT, PHOTO TYPE W/SAMPLING TUBE
- I SMOKE DETECTOR, IONIZATION TYPE
- P SMOKE DETECTOR, PHOTO TYPE
- H HEAT DETECTOR, RATE–OF–RISE OR FIXED TEMP.
- FIRE MAIN FLOW DETECTION SWITCH
- FIRE MAIN TAMPER DETECTION SWITCH
- F FIRE ALARM BELL, +80" A.F.F.
- F FIRE ALARM HORN, +80" A.F.F.
- F FIRE ALARM HORN/STROBE, +80" A.F.F.
- F OR F FIRE ALARM STROBE, +80" A.F.F.

NOTATIONS

- 1 DRAWING NOTE
- 2 / E3 DETAIL REFERENCE: TOP=DETAIL NO., BOTTOM=SHEET NO.
- EF / 2 MECHANICAL EQUIPMENT MARK NO. (SEE EQUIPMENT SCHEDULE)
- A EQUIPMENT NO. (SEE EQUIPMENT SCHEDULE)
- AA EQUIPMENT NO. (SEE EQUIPMENT SCHEDULE)
- AAA EQUIPMENT NO. (SEE EQUIPMENT SCHEDULE)
- 'A' / 2–32 FIXTURE REFERENCE: TOP=TYPE, BOTTOM=LAMP QTY & WATTS

ONE–LINE DIAGRAM SYMBOLS

- PANEL 'A' — ELECTRICAL DISTRIBUTION PANELBOARD (MLO)
- 400 PANEL 'A' 300 — ELECTRICAL DISTRIBUTION PANELBOARD (MCB); SUB–FEED CIRCUIT BREAKER
- 200/3 — CIRCUIT BREAKER (TRIP RATING & POLES AS INDICATED ON PLAN)
- GROUND — GROUND SYSTEM (SIZE AS INDICATED ON PLAN)
- WATER PIPE GROUND ELECTRODE
- TVSS — TRANSIENT VOLTAGE SURGE SUPPRESSOR
- M — UTILITY METER & METER BASE
- CT — UTILITY METER CURRENT TRANSFORMER
- 1 — FEEDER NO. (SEE FEEDER SCHEDULE)

ABBREVIATIONS

'A'	LIGHT FIXTURE TYPE (SEE FIXTURE LIST)
A.F.F.	ABOVE FINISHED FLOOR
C	CONDUIT
C.O.	CONDUIT ONLY
CATV	CABLE TELEVISION
CCTV	CLOSED CIRCUIT TELEVISION
C.T.	CURRENT TRANSFORMER
(E)	EXISTING
E.L.	EMERGENCY LIGHT
FACP	FIRE ALARM CONTROL PANEL
G.F.I.	GROUND FAULT INTERRUPTER
GND	GROUND
HP	HORSEPOWER
JB	JUNCTION BOX
MCB	MAIN CIRCUIT BREAKER
MLO	MAIN LUGS ONLY
N.I.C.	NOT IN CONTRACT
N.L.	NIGHT LIGHT
P	POLE
P.A.	PUBLIC ADDRESS
PH	PHASE
T.V.S.S.	TRANSIENT VOLTAGE SURGE SUPPRESSOR
U.G.	UNDERGROUND
U.O.N.	UNLESS OTHERWISE NOTED
W	WIRE
W.G.	WIRE GUARD
W.P.	WEATHERPROOF

NOTE: SOME OF THE SYMBOLS AND ABBREVIATIONS ON THIS LIST MAY NOT APPLY TO THIS PROJECT.

#	DATE	DESC.
	12.22.21	ISSUE FOR PERMIT

REGISTERED PROFESSIONAL ENGINEER 16,597 OREGON JULY 20, 1993 ROBERT L. CONNELL
EXPIRES 12-31-2021

LIVERMORE ARCHITECTURE & ENGINEERING, INC.
1500 SW First Ave. Suite 240
Portland, Oregon 97201
Phone: 503-892-3002
www.livermorese.com

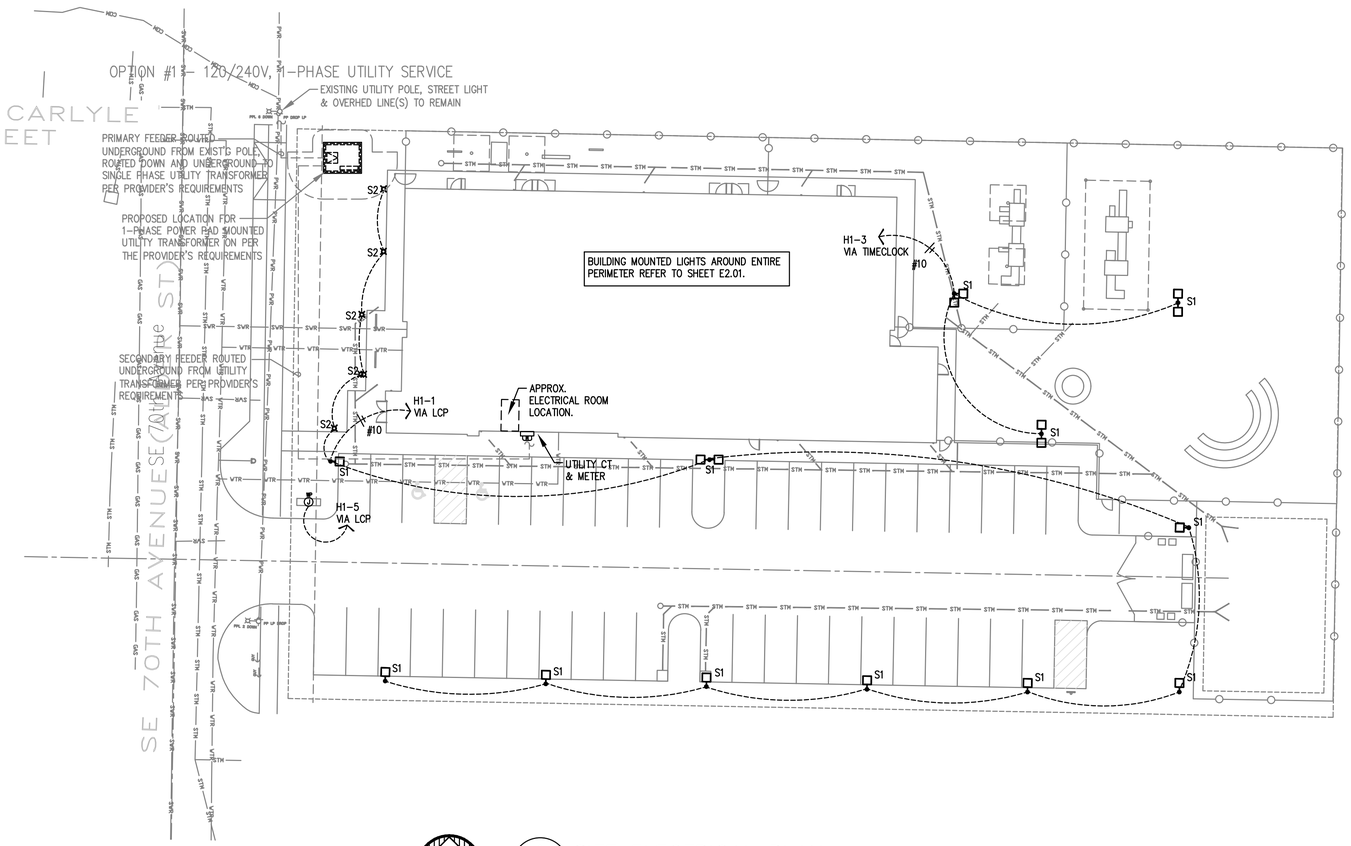
Livermore
JOB NO: 221059.00

NEW BUILDING FOR
GUIDEPOST MONTESSORI DAYCARE
SE TUALATIN VALLEY HWY AND SE 70TH AVENUE
HILLSBORO, OREGON

DRAWING TITLE: **ELECTRICAL SYMBOL LIST**
DRAWN BY: **DMT**
CHECKED BY: **RLC**

E1.00

MFIA INC. Consulting Engineers
2007 S.E. Ash St.
Portland, OR 97214
PHN: (503) 234-0548
FAX: (503) 234-0677
WWW.MFIA-ENG.COM
CONTACT: .



1 E1.01 SITE ELECTRICAL PLAN
SCALE: 1" = 20'-0"

GENERAL POWER NOTES:

A. ALL PLANS ARE CONSIDERED DIAGRAMMATICAL. THEREFORE ALL EQUIPMENT SIZES AND DEVICE LOCATIONS ARE APPROXIMATE AND SUBJECT TO FIELD CONDITIONS AND PRODUCT APPROVAL.

B. ELECTRICAL SERVICE ENTRANCE EQUIPMENT DESIGN IS BASED ON TYPICAL PRODUCTS. ACTUAL PRODUCTS USED MAY DIFFER IN SIZE AND CONFIGURATION AND SHALL BE NOTED IN FINAL PROJECT DOCUMENTS.

C. COORDINATE WITH LOCAL UTILITY PROVIDER FOR EXACT SERVICE CONDUIT AND CONDUCTORS REQUIREMENTS.

D. ALL UTILITY WORK SHALL BE DONE IN ACCORDANCE WITH THE UTILITY PROVIDER'S ELECTRICAL SERVICE REQUIREMENTS.

E. REFER TO THE UTILITY PROVIDER'S ELECTRICAL SERVICE REQUIREMENTS PRIOR TO THE START OF ANY WORK. ALL ELECTRICAL UTILITY WORK SHALL ADHERE TO THESE REQUIREMENTS.

F. REFER TO SHEET E1.11 FOR TYPICAL FEEDER SCHEDULE AND ONE-LINE DIAGRAM.

G. U.G. PRIMARY FEEDER SHALL HAVE A MINIMUM 48 INCH BURY.

H. U.G. SECONDARY FEEDER SHALL HAVE A MINIMUM 36 INCH BURY.

I. SECONDARY CONDUIT SWEEPS SHALL BE MINIMUM 60 INCH RADIUS WITH A MINIMUM OR 7'-0" STRAIGHT CONDUIT RUN BETWEEN SWEEPS.

J. LOCATION AND INSTALLATION OF THE PRIMARY AND SECONDARY CONDUITS, TRANSFORMER, ETC. SHALL BE PROVIDED PER PGE ELECTRICAL SERVICE REQUIREMENTS.

K. REFER TO SHEET E3.01 FOR ELECTRICAL EQUIPMENT LAYOUT.

L. OVERHEAD SERVICE ENTRANCE SECONDARY CONDUCTORS AND WEATHERHEAD LOCATION SHALL BE PER THE UTILITY PROVIDES DIRECTION.

M. CUSTOMER TO PROVIDE ALL TRENCHING AND BACKFILLING. TRENCH TO BE 36 INCHES DEEP AND 30 INCHES WIDE, MEASURED FROM FINAL GRADE.

N. UTILITY PROVIDER'S CONDUCTORS TO BE INSTALLED IN GRAY SCHEDULE 40, ELECTRICAL GRADE, PVC CONDUIT WITH NYLON PULL STRINGS (MIN 500 LBS. TEST). UTILITY PROVIDER TO DETERMINE THE SIZE AND NUMBER OF CONDUITS REQUIRED. ALL ELBOWS TO BE 36 INCH (MIN) RADIUS. ALL BENDS MAY BE FACTORY MADE. IF MORE THAN 270 DEGREES OF BENDS OR IF RUN IS LONGER THAN 150 FEET, BENDS MUST BE RIGID STEEL.

O. CONSULT WITH UTILITY PROVIDER'S REPRESENTATIVE 2 WEEKS BEFORE STARTING MAIN POWER TRENCHING FOR A PRE-CONSTRUCTION CONFERENCE. INCLUDED IN THIS CONFERENCE WILL BE EXCAVATOR, UTILITY PROVIDER, TELCO, CATV, AND GAS.

P. CONTRACTOR TO LOCATE ALL UNDERGROUND UTILITIES BEFORE TRENCHING. COORDINATE WITH CIVIL.

Q. ELECTRICAL SITE WORK SHALL BE COORDINATED WITH ALL OTHER TRADES, PRIOR TO AND THROUGH OUT CONSTRUCTION.

R. REFER TO DIVISION 26 SPECIFICATIONS FOR ADDITIONAL INFORMATION.

S. REFER TO SHEET E1.21 FOR LIGHT FIXTURE SCHEDULE.

MFIA INC. Consulting Engineers
2007 S.E. Ash St.
Portland, OR 97214
PHN: (503) 234-0548
FAX: (503) 234-0677
WWW.MFIA-ENG.COM
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NEW BUILDING FOR
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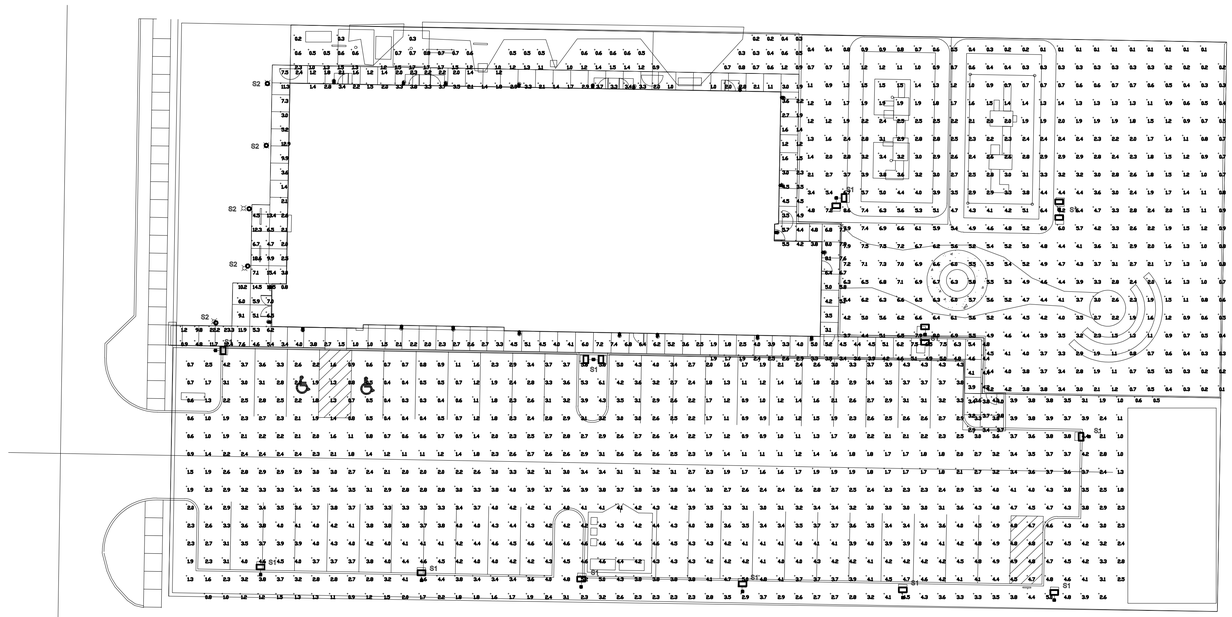
SE TUALATIN VALLEY HWY AND SE 70TH AVENUE
HILLSBORO, OREGON

DRAWING TITLE:
ELECTRICAL
SITE PLAN

DRAWN BY: DMT
CHECKED BY: RLC

E1.01



SITE LIGHTING PLAN
PHOTOMETRIC STUDY
1 / E1.02
SCALE: 1" = 20'-0"

Schedule									
Symbol	Label	Quantity	Manufacturer	Catalog Number	Description	Number Lamps	Lumens Per Lamp	Light Loss Factor	Wattage
▭	S1	16	Lithonia Lighting	DSX0 LED P3 40K T3M MVOLT HS	DSX0 LED P3 40K T3M MVOLT with houseside shield	1	6649	1	71
◯	S2	5	Lithonia Lighting	KBR8 LED 16C 700 40K SYM MVOLT	KBR8 WITH 4 LIGHT BOARDS (16 LEDs), 700mA DRIVER, 4000K COLOR TEMP, AND SYMMETRIC OPTIC	1	2022	1	39
^ ○	S3	21	EVERFINE			1	979	1	19.7
^ ○	S4	0	Lithonia Lighting	OLLWD LED P1 40K MVOLT	OUTDOOR LED WALL CYLINDER DOWN LIGHT & 4000K NICHIA 219C	1	576	1	9.02

Statistics						
Description	Avg	Max	Min	Max/Min	Avg/Min	Symbol
PARKING	3.0 fc	6.1 fc	0.3 fc	20.3:1	10.0:1	+
PLAY AREA #1 (NORTH)	0.9 fc	2.3 fc	0.2 fc	11.5:1	4.5:1	+
PLAY AREA #2 (EAST)	2.8 fc	8.6 fc	0.1 fc	86.0:1	28.0:1	+
WALKWAYS	4.5 fc	23.3 fc	0.8 fc	29.1:1	5.6:1	+

NOTES:
1. Photometric studies are for reference only and shall not be used for construction purposes.

2. Photometric data is based on manufacturer provided IES files and may differ from actual field measurements.

3. For the purposes of this study, areas with "0.0" lumen levels have been masked to provide the statistics shown in the table.

4. This study does not reflect light contribution from existing street lights or lights on adjacent properties.

5. Refer to site lighting plan on sheet E1.01 and the fixture schedule on sheet E1.00 for more information.

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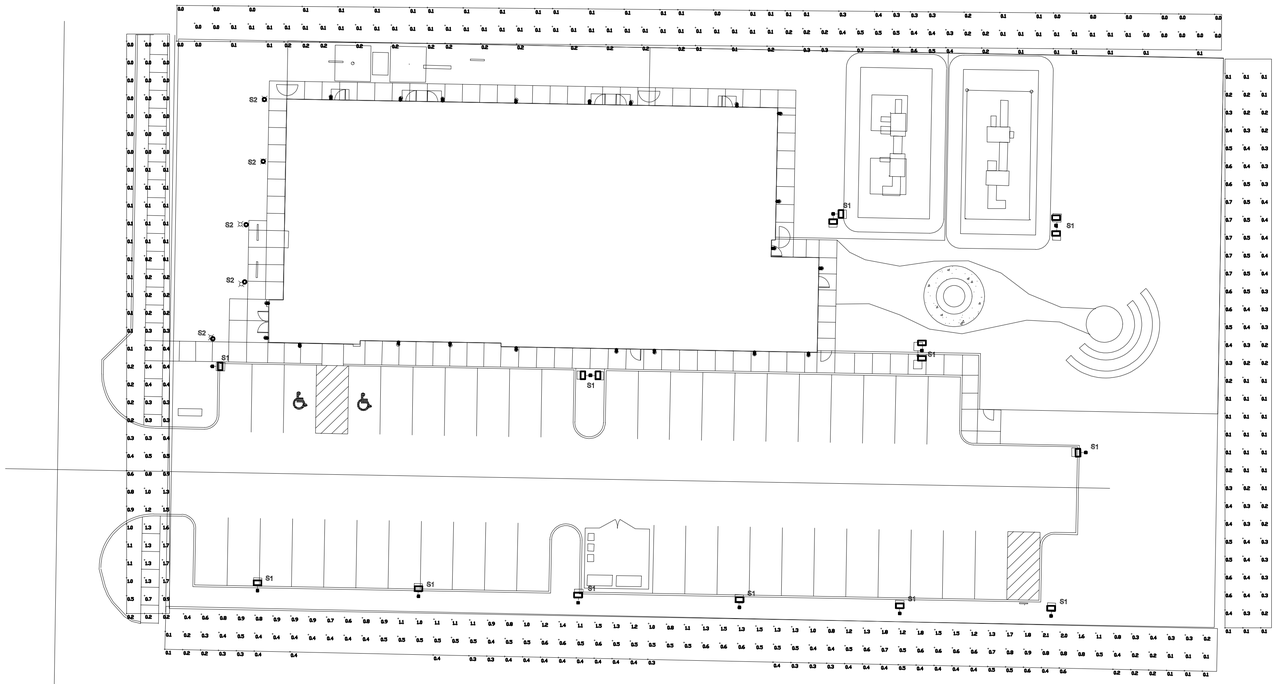
DRAWING TITLE:
SITE LIGHTING
PHOTOMETRIC STUDY

DRAWN BY: DMT
CHECKED BY: RLC

E1.02

MFIA INC.
Consulting Engineers
2007 S.E. Ash St.
Portland, OR 97214
PHN: (503) 234-0548
FAX: (503) 234-0677
WWW.MFIA-ENG.COM
CONTACT: .



SITE LIGHTING PLAN
PHOTOMETRIC STUDY
1 / E1.03
SCALE: 1" = 20'-0"

Schedule

Symbol	Label	Quantity	Manufacturer	Catalog Number	Description	Number Lamps	Lumens Per Lamp	Light Loss Factor	Wattage
▭ ▫	S1	16	Lithonia Lighting	DSX0 LED P3 40K T3M MVOLT HS	DSX0 LED P3 40K T3M MVOLT with houseside shield	1	6649	1	71
◯	S2	5	Lithonia Lighting	KBR8 LED 16C 700 40K SYM MVOLT	KBR8 WITH 4 LIGHT BOARDS (16 LEDs), 700mA DRIVER, 4000K COLOR TEMP, AND SYMMETRIC OPTIC	1	2022	1	39
◠ ○	S3	21	EVERFINE			1	979	1	19.7
◠ ○	S4	0	Lithonia Lighting	OLLWD LED P1 40K MVOLT	OUTDOOR LED WALL CYLINDER DOWN LIGHT & 4000K NICHIA 219C	1	576	1	9.02

Statistics

Description	Avg	Max	Min	Max/Min	Avg/Min	Symbol
NORTH PROPERTY LINE (+10'-0")	0.1 fc	0.7 fc	0.0 fc	N/A	N/A	+
WEST PROPERTY LINE (+10'-0")	0.4 fc	1.7 fc	0.0 fc	N/A	N/A	+
EAST PROPERTY LINE (+10'-0")	0.3 fc	0.7 fc	0.1 fc	7.0:1	3.0:1	+
SOUTH PROPERTY LINE (+10'-0")	0.7 fc	2.1 fc	0.1 fc	21.0:1	7.0:1	+

NOTES:
1. Photometric studies are for reference only and shall not be used for construction purposes.

2. Photometric data is based on manufacturer provided IES files and may differ from actual field measurements.

3. For the purposes of this study, areas with "0.0" lumen levels have been masked to provide the statistics shown in the table.

4. This study does not reflect light contribution from existing street lights or lights on adjacent properties.

5. Refer to site lighting plan on sheet E1.01 and the fixture schedule on sheet E1.00 for more information.

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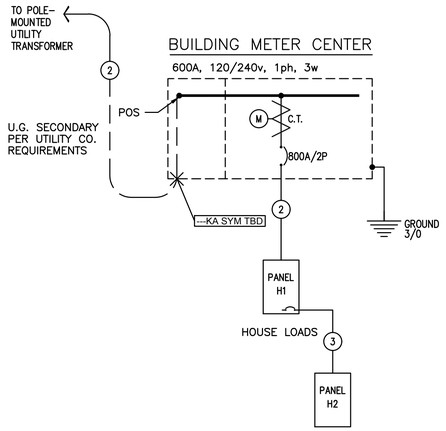
PHOTOMETRIC STUDY

DRAWN BY: DMT
CHECKED BY: RLC

⚠

E1.03



1 / E1.11 ELECTRICAL ONE-LINE DIAGRAM

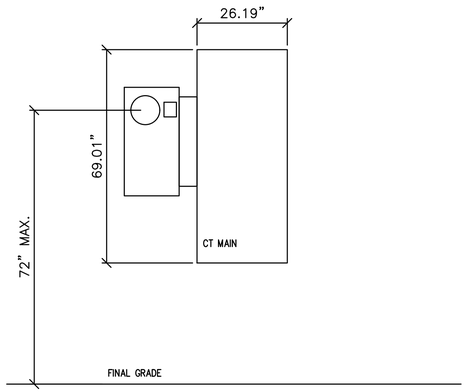
120/240V, 1ø, 3 WIRE

ONE-LINE GENERAL NOTES:

A. COORDINATE ALL WORK ASSOCIATED WITH ELECTRIC SERVICE WITH LOCAL UTILITY. PROVIDE ALL CONDUIT & CONDUCTORS, GROUNDING, TRANSFORMER VAULT/PAD, ETC., IN ACCORDANCE WITH SERVING UTILITY REQUIREMENTS.

B. COORDINATE METERING REQUIREMENTS WITH UTILITY.

C. FOR LOAD CENTER FEEDER LENGTHS GREATER THAN 145'-0" FROM METER CENTER, INCREASE WIRE SIZE ONE SIZE UP FOR VOLTAGE DROP.



2 / E1.11 TYPICAL METER ELEVATION

NOT TO SCALE

TYPICAL METER ARRANGEMENT PER UTILITY PROVIDER'S REQUIREMENTS. COMPONENTS SHOWN ARE APPROXIMATE BASED ON VENDOR INFORMATION. ACTUAL EQUIPMENT TO BE INSTALLED MAY VARY. ELECTRICAL CONTRACTOR TO PROVIDE CUTSHEETS OF THE PRODUCTS INSTALLED UPON SUBMITTAL REVIEW & APPROVAL.

FEEDER SCHEDULE (COPPER)

NO.	AMPS	CONDUIT	CONDUCTOR		
1		**	BY UTILITY CO.	& (1)	GND
2	600A	(2) 3"	ea w/ (3) #350Kcmil	& (1) #1	GND
3	250A	2 1/2"	(3) #250KCMIL	& (1) #4	GND

** SIZE AND QUANTITY OF CONDUITS SHALL BE DETERMINED BY THE ELECTRICAL UTILITY PROVIDER, AND PROVIDED & INSTALLED BY THE ELECTRICAL CONTRACTOR WHERE NOT PROVIDED BY THE UTILITY PROVIDER.

MFIA PANEL SCHEDULE — 22-Dec-21

panel		mounting			location			connected load	
H1		SURFACE			ELECTRICAL ROOM			449	
voltage		phase			bus & main			calculated load	
		1			600A		MCB	426	
C	service	va	a/p	no.	L1	L2	no.	a/p	va	service	C
1	LIGHTS - PARKING	1500	20/1	1	*		2	20/1	1260	RECEPT - RM 111,112,113	2
1	LIGHTS - PLAYGROUND	1500	20/1	3		*	4	20/1	1260	RECEPT - RM 110,111	2
1	MONUMENT SIGN	1500	20/1	5	*		6	20/1	1500	RECEPT - MIRCO	2
1	LIGHTS - BLDG EXTERIOR	1500	20/1	7		*	8	20/1	900	DISPOSAL	4
1	LIGHTS	1500	20/1	9	*		10	20/1	1500	DISH WASHER	4
1	LIGHTS	1500	20/1	11		*	12	20/1	1500	REFRIGERATOR	4
1	LIGHTS	1500	20/1	13	*		14	20/1	1500	REFRIGERATOR	4
1	EXTERIOR BUILDING SIGN	1500	20/1	15		*	16	20/1	1260	RECEPT - RM 101,118	2
	SPARE	0	20/1	17	*		18	20/1	1260	RECEPT - RM 101,116,117	2
5	DRINK FOUNTAIN	500	20/1	19		*	20	20/1	1080	RECEPT - RM 110,114	2
5	WASHER	1500	20/1	21	*		22	20/1	720	RECEPT - RM 114	2
5	DRYER	3600	30/2	23		*	24	20/1	1260	RECEPT - RM 129	2
5	*	3600	*	25	*		26	20/1	1500	RECEPT - RM 103	2
3	WH-1 WATER HEATER	2250	30/2	27		*	28	20/1	1500	RECEPT - RM 103	2
3	*	2250	*	29	*		30	20/1	1500	RECEPT - RM 104,131,HALL	2
2	RECEPT - RM 109, HALL	1500	20/1	31		*	32	20/1	1500	RECEPT - RM 104,105	2
2	RECEPT - RM 109, 108	1500	20/1	33	*		34	20/1	1500	RECEPT - 105,106	2
2	RECEPT - RM 108	1500	20/1	35		*	36	20/1	1500	RECEPT - RM 106, HALL	2
5	LTG CONTROL PNL (LCP)	1500	20/1	37	*		38	20/1	1500	RECEPT - RM 107	2
	SPARE	0	20/1	39		*	40	250/2	24088	PANEL H2	7
	SPARE	0	20/1	41	*		42	*	26396	*	7
	Line 1	56486 VA			NOTES:					line-line voltage	
	Line 2	51198 VA								240	
										largest motor (va)	
	Total Connected	107684 VA								0	
	load code:	line 1	line 2					total	factor	calculated load (va)	
	1. LIGHTS=	6000	6000					VA	12000	1.25	15000
	2. RECEPT.=	12240	12360					VA	24600	1 + 0.5	17300
	3. HEATING=	2250	2250					VA	4500	1.00	4500
	4. KITCHEN=	3000	2400					VA	5400	0.80	4320
	5. EQUIP.=	6600	4100					VA	10700	1.00	10700
	6. MOTORS=	0	0					VA	0	*	0
	7. SUB-PANEL.=	26396	24088					VA	50484	1.00	50484
	(* 125% of the largest motor + 100% of the balance)								TOTAL =		102304

MFIA PANEL SCHEDULE — 21-Dec-21

panel		mounting			location			connected load	
H2		SURFACE			ELECTRICAL ROOM			223	
voltage		phase			bus & main			calculated load	
		1			250A		MLO	223	
C	service	va	a/p	no.	L1	L2	no.	a/p	va	service	C
3	EH-1 VESTIBULE	500	20/1	1	*		2	20/1	500	EH-1 FIRE RISER RM.	3
2	RECEPT - ROOF GFCI	500	20/1	3		*	4	20/1	1500	AC/OAC-1	6
	SPARE	0	20/1	5	*		6	20/1	1500	*	6
6	EF-1, EF-2, EF-3	1584	20/1	7		*	8	20/1	1224	EF-4 & EF-5	6
6	RTU-1	4160	60/2	9	*		10	60/2	4160	RTU-2	6
6	*	4160	*	11		*	12	*	4160	*	6
6	RTU-3	4160	60/2	13	*		14	60/2	4160	RTU-4	6
6	*	4160	*	15		*	16	*	4160	*	6
6	RTU-5	3224	50/2	17	*		18	60/2	3224	RTU-6	6
6	*	3224	*	19		*	20	*	3224	*	6
	SPARE	0	20/1	21	*		22	20/1	0	SPARE	
	SPARE	0	20/1	23		*	24	20/1	0	SPARE	
				25	*		26				
				27		*	28				
				29	*		30				
				31		*	32				
				33	*		34				
				35		*	36				
				37	*		38				
				39		*	40				
				41	*		42				
	Line 1	25588 VA			NOTES:					line-line voltage	
	Line 2	27896 VA								240	
										largest motor (va)	
	Total Connected	53484 VA								0	
	load code:	line 1	line 2					total	factor	calculated load (va)	
	1. LIGHTS=	0	0					VA	0	1.25	0
	2. RECEPT.=	0	500					VA	500	1 + 0.5	500
	3. HEATING=	1000	0					VA	1000	1.00	1000
	4. KITCHEN=	0	0					VA	0	1.00	0
	5. EQUIP.=	0	0					VA	0	1.00	0
	6. MOTORS=	24588	27396					VA	51984	*	51984
	7. SUB-PANEL.=	0	0					VA	0	1.00	0
	(* 125% of the largest motor + 100% of the balance)								TOTAL =		53484

MECHANICAL EQUIPMENT SCHEDULE

NO.	EQUIPMENT NAME	HP/KW	VOLTS	PH	AMPS	CONDUIT	WIRE	GND	CIRCUIT
IAC-1	SPLIT SYSTEM NO.1 (INDOOR)		208	1		1/2"	#12	#12	INTERCONNECT W/OAC-1
OAC-1	SPLIT SYSTEM NO.1 (OUTDOOR)		208	1		1/2"	#12	#12	
EF-1	EXHAUST FAN NO.1	1/6HP	120	1		1/2"	#12	#12	H2-7 (PC)
EF-2	EXHAUST FAN NO.2	1/6HP	120	1		1/2"	#12	#12	H2-7 (PC)
EF-3	EXHAUST FAN NO.3	1/6HP	120	1		1/2"	#12	#12	H2-7 (PC)
EF-4	EXHAUST FAN NO.4	1/6HP	120	1		1/2"	#12	#12	H2-8 (PC)
EF-5	EXHAUST FAN NO.5	1/4HP	120	1		1/2"	#12	#12	H2-8 (PC)
EH-1	ELECT. HEATER NO.1	500	120	1		1/2"	#12	#12	REFER TO E3.01
RTU-1	ROOFTOP UNIT NO.1		208	1	40.0 MCA	1 1/4"	#4	#10	H2-9,11
RTU-2	ROOFTOP UNIT NO.2		208	1	40.0 MCA	1 1/4"	#4	#10	H2-10,12
RTU-3	ROOFTOP UNIT NO.3		208	1	40.0 MCA	1 1/4"	#4	#10	H2-13,15
RTU-4	ROOFTOP UNIT NO.4		208	1	40.0 MCA	1 1/4"	#4	#10	H2-14,16
RTU-5	ROOFTOP UNIT NO.5		208	1	31.0 MCA	1"	#6	#10	H2-17,19
RTU-6	ROOFTOP UNIT NO.6		208	1	31.0 MCA	1"	#6	#10	H2-18,20
WH-1	WATER HEATER NO.1	4500KW	208	1					H1-27,29

A. GENERAL MECHANICAL EQUIPMENT NOTES:

B. CONTRACTOR/DESIGNER SHALL VERIFY ALL MECHANICAL EQUIPMENT CONNECTION LOAD REQUIREMENTS WITH THE MECHANICAL EQUIPMENT PROVIDER PRIOR TO ROUGH IN.

C. MECHANICAL EQUIPMENT SIZES SHOWN IN THE MECHANICAL SCHEDULE ABOVE ARE FOR REFERENCE ONLY AND MAY NOT REFLECT THE ACTUAL EQUIPMENT TO BE INSTALLED.

D. INDOOR & OUTDOOR COMPONENTS OF THE MINI-SPLIT SYSTEMS ARE INTERCONNECTED. CONSULT WITH AND COORDINATE THE ELECTRICAL REQUIREMENTS AND EXACT LOCATIONS WITH THE HVAC EQUIPMENT INSTALLER PRIOR TO ROUGH IN.

REFER TO TYPICAL UNIT PLAN LOAD CENTER SCHEDULES ON THIS SHEET FOR CIRCUITING INFORMATION.

MFIA INC. Consulting Engineers
2007 S.E. Ash St.
Portland, OR 97214
PHN: (503) 234-0548
FAX: (503) 234-0677
WWW.MFIA-ENG.COM
CONTACT: .

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1500 SW First Ave. Suite 240
Portland, Oregon 97201
Phone: 503-892-3002
www.livermoreae.com

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NEW BUILDING FOR
GUIDEPOST MONTESSORI DAYCARE
SE TUALATIN VALLEY HWY AND SE 70TH AVENUE
HILLSBORO, OREGON

DRAWING TITLE:
ONE-LINE DIAGRAM & SCHEDULES

DRAWN BY: DMT
CHECKED BY: RLC

E1.11

LIGHTING FIXTURE LIST

TYPE	LAMP	MANUFACTURER	CATALOG NUMBER	DESCRIPTION	OPTIONS
A1 A1E	LED 4000K 3000LM/80CRI 20W	LITHONIA (OR APROVED OTHER)	CLXL48 SERIES	TYPE :4' WRAP AROUND MOUNTING :SURFACE HOUSING :STEEL LENS/REFL.:WIDE DIFFUSED VOLTAGE :MVOLT BALLAST :LED DRIVER	WIDE DISTRIBUTION STANDARD OUTPUT A1E – PROVIDE BATTERY BACK UP EQUIP & STOR RMS
B1	LED 3500K 1550LM 27W	LITHONIA (OR APROVED OTHER)	FMVCSLS SERIES	TYPE :2FT VANITY MOUNTING :SURFACE (+6" ABOVE MIRROR) HOUSING :STEEL LENS/REFL.:ACRYLIC VOLTAGE :120V BALLAST :LED DRIVER	 RESTROOMS
B2	LED 3500K 700LM 10W	HALO (OR APPROVED OTHER)	SMD4R SERIES	TYPE :4" DIA. DOWNLIGHT MOUNTING :SURFACE HOUSING :STEEL LENS/REFL.:ACRYLIC VOLTAGE :120V BALLAST :LED DRIVER	 RESTROOMS
C1 C1E	LED 3500K 4300LM 30W	LITHONIA (OR APPROVED OTHER)	STAKPAK2X4AL0335K SERIES	TYPE :2X4 INDIRECT MOUNTING :LAY-IN HOUSING :STEEL LENS/REFL.:ACRYLIC VOLTAGE :120V BALLAST :LED DRIVER (DIMMING)	C1E WITH BATTERY BACK-UP CLASSROOMS, LOBBY, CORRIDOR
C2 C2E	LED 3500K 4000LM 30W	MARK LIGHTING (OR APPROVED OTHER)	S4LID SERIES	TYPE :DIRECT/INDIRECT MOUNTING :SUSPENDED HOUSING :STEEL LENS/REFL.:ACRYLIC VOLTAGE :120V BALLAST :LED DRIVER (DIMMING)	C2E WITH BATTERY BACK-UP CONFIRM MOUNTING HEIGHT WITH ARCHITECT CLASSROOMS, LOBBY
C3 C3E	LED 3500K 1025LM 12W	USAI (OR APPROVED OTHER)	B4RDF SERIES	TYPE :4.5 INCH DIA. DOWNLIGHT MOUNTING :RECESSED HOUSING :STEEL LENS/REFL.:ACRYLIC VOLTAGE :MVOLT BALLAST :LED DRIVER (DIMMING)	C3E WITH BATTERY BACK-UP VESTIBULE
X	LED (GREEN LETTERS) 1.5W	LITHONIA (OR APROVED OTHER)	EXG LED EL SERIES	TYPE :EXIT SIGN MOUNTING :UNIVERSAL HOUSING :THERMOPLASTIC LENS/REFL.:SINGLE FACE/DUAL FACE VOLTAGE :MVOLT BALLAST :NICKLE CADMIUM BATTERY	
S1	LED 4000K 8450LM 71W	LITHONIA (OR APPROVED OTHER)	DSXO-LED-P3 SERIES	TYPE :AREA LIGHT MOUNTING :RND STEEL POLE (18'-0") HOUSING :ALUMINUM LENS/REFL.:ACRYLIC VOLTAGE :MVOLT BALLAST :LED DRIVER (DIMMING)	FINISH PER ARCHITECT. PHOTOCELL 50% LIGHT REDUCTION
S2	LED 4000K 1525LM 31W	LITHONIA (OR APPROVED OTHER)	KBR8 SERIES	TYPE :BOLLARD LIGHT MOUNTING :AT-GRADE HOUSING :ALUMINUM LENS/REFL.:ACRYLIC VOLTAGE :MVOLT BALLAST :LED DRIVER	FINISH PER ARCHITECT. PHOTOCELL 50% LIGHT REDUCTION
S3	LED 3000K 1700LM 20W	MAXIM (OR APPROVED OTHER)	55573 SERIES	TYPE :EXTERIOR WALL SCONCE MOUNTING :SURFACE (+7'-6" AFF) HOUSING :STEEL LENS/REFL.:ACRYLIC VOLTAGE :MVOLT BALLAST :LED DRIVER	FINISH PER ARCHITECT. PHOTOCELL
S4	PAR LED 4000-5000K 1500LM 15W	LOVE IT LIGHTING (OR APPROVED OTHER)	MODEL 20/850	TYPE :EXTERIOR ADJ. SIGN LIGHT MOUNTING :SURFACE (VERIFY) HOUSING :STEEL LENS/REFL.:ACRYLIC VOLTAGE :MVOLT BALLAST :LED DRIVER	FINISH PER ARCHITECT. VERIFY EXACT LOCATION PRIOR TO ROUGH-IN. PROVIDE WITH PAR TYPE LED LAMP. VERIFY COLOR TEMP W/OWNER. WET LOCATION LISTED

GENERAL NOTES:

A. ALL LIGHT FIXTURES SHALL HAVE ENERGY EFFICIENT LAMPING AND BALLASTS.

B. LIGHT FIXTURES FOR LIVING UNITS SHALL BE "ENERGY STAR" RATED.

C. EXTERIOR LIGHT FIXTURES SHALL BE "NIGHT SKY" FRIENDLY.

D. VERIFY ALL FIXTURE FINISHES WITH ARCHITECT PRIOR TO BID.

E. VERIFY ALL FIXTURE MOUNTING HEIGHTS WITH ARCHITECT PRIOR TO BID.

F. VERIFY ALL FIXTURE LOCATIONS WITH ARCHITECT PRIOR TO ROUGH IN.

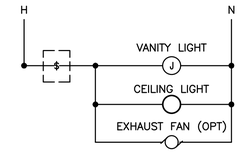
G. ALL INTERIOR LIGHTING SHALL BE 3000 KELVIN UNLESS OTHERWISE NOTED.

H. ALL PRODUCT SUBSTITUTIONS AND VALUE ENGINEERING SHALL BE SUBMITTED DURING BID PHASE, SHALL MEET DESIGN INTENT AND IS SUBJECT TO OWNER APPROVAL.

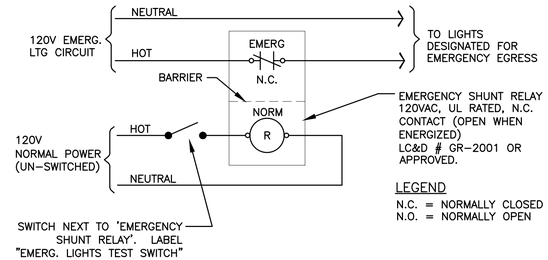
I. CONTRACTOR SHALL CONSULT MANUFACTURER INSTALLATION INSTRUCTIONS FOR ALL FIXTURES AND DEVICES AND INSTALL AS INSTRUCTED. THIS INCLUDES ALL ELECTRICAL COMPONENTS REQUIRED FOR COMPLETE INSTALLATION. WORK SHALL BE PERFORMED SUCH THAT MANUFACTURER WARRANTY IS NOT VOIDED.

J. IF NECESSARY, CONTRACTOR SHALL PROVIDE IC RATED BOXES FOR ANY APPROVED, SUBSTITUTED FIXTURES NOT MEETING INSULATED CEILING REQUIREMENTS.

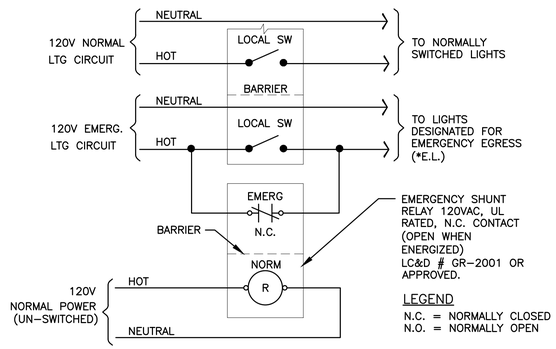
K. BUILDING MOUNTED EXTERIOR WALL LIGHT FIXTURES SHALL BE CONTROLLED VIA PHOTOCELL, EITHER REMOTE OR INTEGRAL, FOR DUSK-TILL-DAWN OPERATION.



1 / E1.21 BATHROOM SWITCHING DIAGRAMS – TYPICAL
NO SCALE



2 / E1.21 EMERGENCY EGRESS LIGHTING – UNSWITCHED
NO SCALE



3 / E1.21 EMERGENCY EGRESS LIGHTING – SWITCHED
NO SCALE

MFIA INC. Consulting Engineers
2007 S.E. Ash St.
Portland, OR 97214
PHN: (503) 234-0548
FAX: (503) 234-0677
WWW.MFIA-ENG.COM
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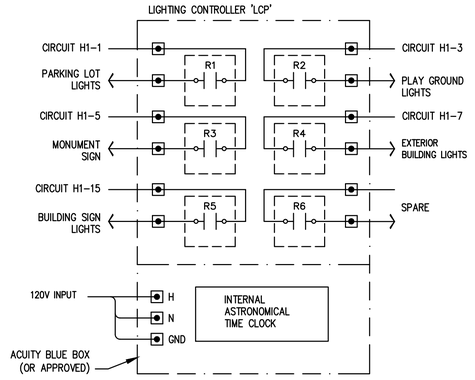
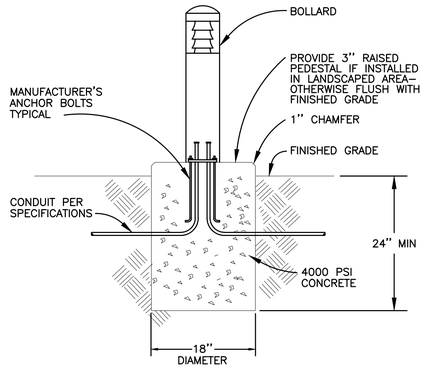
DRAWING TITLE:
LIGHT SCHEDULE & DETAILS
DRAWN BY: **DMT**
CHECKED BY: **RLC**

E1.21



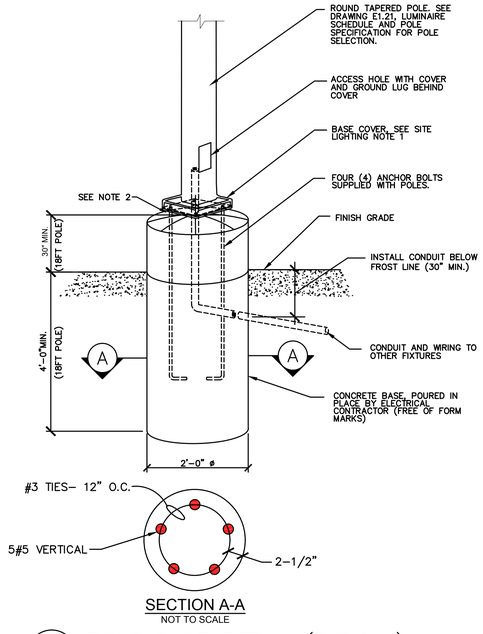
1 / E1.22 EXTERIOR LIGHTING CONTROL SYSTEM DIAGRAM – LCP

NO SCALE



2 / E1.22 BOLLARD LIGHT DETAIL

NO SCALE



SECTION A-A

NOT TO SCALE

3 / E1.22 POLE BASE DETAIL (TYPICAL)

NO SCALE

NOTES

1. PROVIDE CROWN ON TOP OF CONCRETE BASE TO COMPLETELY SHED WATER.
2. 1/2" (MIN) AIRGAP SPACE BETWEEN TOP OF CONCRETE CROWN AND BOTTOM OF POLE BASE PLATE FOR VENTILATION.
3. CONCRETE PROVIDER TO ENSURE PSI SUFFICIENT TO SUPPORT WIND RATING FOR POLE HEIGHT PER CODE REQUIREMENTS.

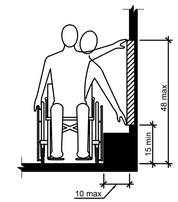


Figure 308.3.1
Unobstructed Side Reach

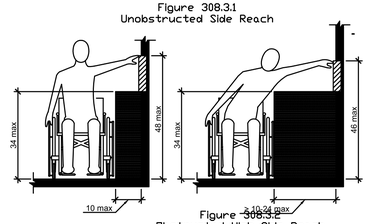


Figure 308.3.2
Obstructed High Side Reach

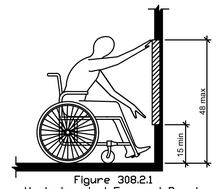


Figure 308.2.1
Unobstructed Forward Reach

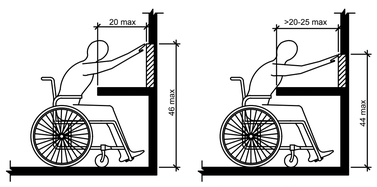


Figure 308.2.2
Obstructed High Forward Reach

4 / E1.22 ADA REACH REQUIREMENTS

N.T.S.

308.2 Forward Reach.

308.2.1 Unobstructed. Where a forward reach is unobstructed, the high forward reach shall be 48" maximum and the low forward reach shall be 15" minimum above the floor or ground.

308.2.2 Obstructed High Reach. Where a high forward reach is over an obstruction, the clear floor or ground space shall extend beneath the element for a distance not less thank the required reach depth over the obstruction. The high forward reach shall be 48" maximum where the reach depth is 20" maximum. Where the reach depth exceeds 20", the high forward reach shall be 44" maximum and the reach depth shall be 25" maximum.

308.3 Side Reach.

308.3.1 Unobstructed. Where a clear floor or ground space allows a parallel approach to an element and the side reach is unobstructed, the high side reach shall be 48" maximum and the low side reach shall be 15" minimum above the floor or ground.

Exception: Existing elements shall be permitted at 54" maximum above the floor or ground.

308.3.2 Obstructed High Reach. Where a clear floor or ground space allows a parallel approach to an object and the high side reach is over an obstruction, the height of the obstruction shall be 34" maximum and the depth of the obstruction shall 24" maximum. The high side reach shall be 48" maximum for a reach depth of 10" maximum. Where the reach depth exceeds 10", the high side reach shall be 46" maximum for a reach depth of 24" maximum.

MFIA INC. Consulting Engineers
2007 S.E. Ash St.
Portland, OR 97214
PHN: (503) 234-0548
FAX: (503) 234-0677
WWW.MFIA-ENG.COM
CONTACT: .

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Portland, Oregon 97201
Phone: 503-892-3002
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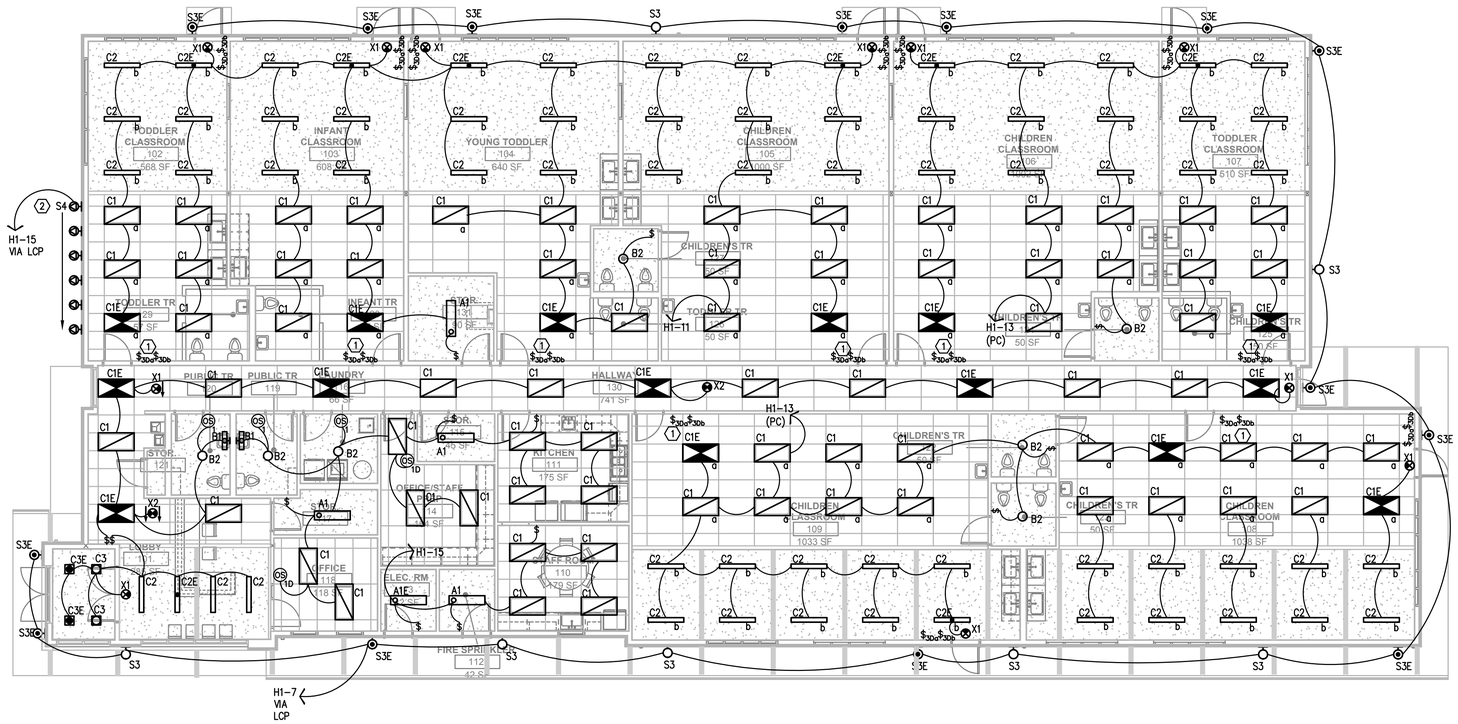
HILLSBORO, OREGON

DRAWING TITLE:
ELECTRICAL DETAILS

DRAWN BY: DMT
CHECKED BY: RLC

E1.22



1 E2.01 LIGHTING PLAN
SCALE: 1/8" = 1'-0"

GENERAL LIGHTING NOTES:

A. ELECTRICAL DRAWINGS ARE DIAGRAMMATICAL AND MAY NOT ACCURATELY REFLECT ACTUAL CONSTRUCTION CONDITIONS. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE INSTALLATION OF ALL ELECTRICAL EQUIPMENT, WITH ALL TRADES PRIOR TO AND DURING CONSTRUCTION.

B. WORK SHALL BE IN ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE AND NATIONAL CODES.

C. THE ELECTRICAL CONTRACTOR SHALL REFER TO THE ARCHITECTURAL DRAWINGS FOR ALL MOUNTING HEIGHTS AND FINISHES OF DEVICES AND FIXTURES.

D. REFER TO SHEET E1.21 FOR LIGHT FIXTURE SCHEDULE.

E. ALL LIGHT SWITCHES SHALL BE ROCKER STYLE, SUCH AS LEVITON DECORA, OR APPROVED EQUAL.

F. BUILDING MOUNTED EXTERIOR LIGHTS SHALL BE CIRCUITED FROM THE "HOUSE" BRANCH PANEL, VIA TIME CLOCK UNLESS OTHERWISE NOTED. REFER TO DETAIL 1, SHEET E1.22.

G. BUILDING MOUNTED EXTERIOR LIGHTS DESIGNATED AS EGRESS SHALL BE CIRCUITED VIA REMOTE BATTERY BACK-UP. REFER TO DETAIL 2, SHEET E1.21.

H. THE ELECTRICAL CONTRACTOR SHALL REFER TO THE MECHANICAL PLAN SHEETS AND COORDINATE WITH THE MECHANICAL INSTALLER TO AVOID CONFLICTS BETWEEN HVAC EQUIPMENT AND LIGHT.

⬡KEYED NOTES:

1. EACH LIGHT FIXTURE IN THIS SPACE, WITH A LOWER CASE LETTER DESIGNATION, TO BE CONTROLLED VIA THE CORRESPONDING LIGHT SWITCH.

2. SIGN LIGHTING FIXTURES TO BE MOUNTED ABOVE SIGN AT 33" APART, CENTERED ON THE WALL. CONSULT WITH THE ARCHITECT AND ARCHITECTURAL ELEVATIONS FOR EXACT MOUNTING HEIGHT AND LOCATIONS, PRIOR TO ROUGH-IN. COORDINATE WORK WITH THE SIGN INSTALLER.

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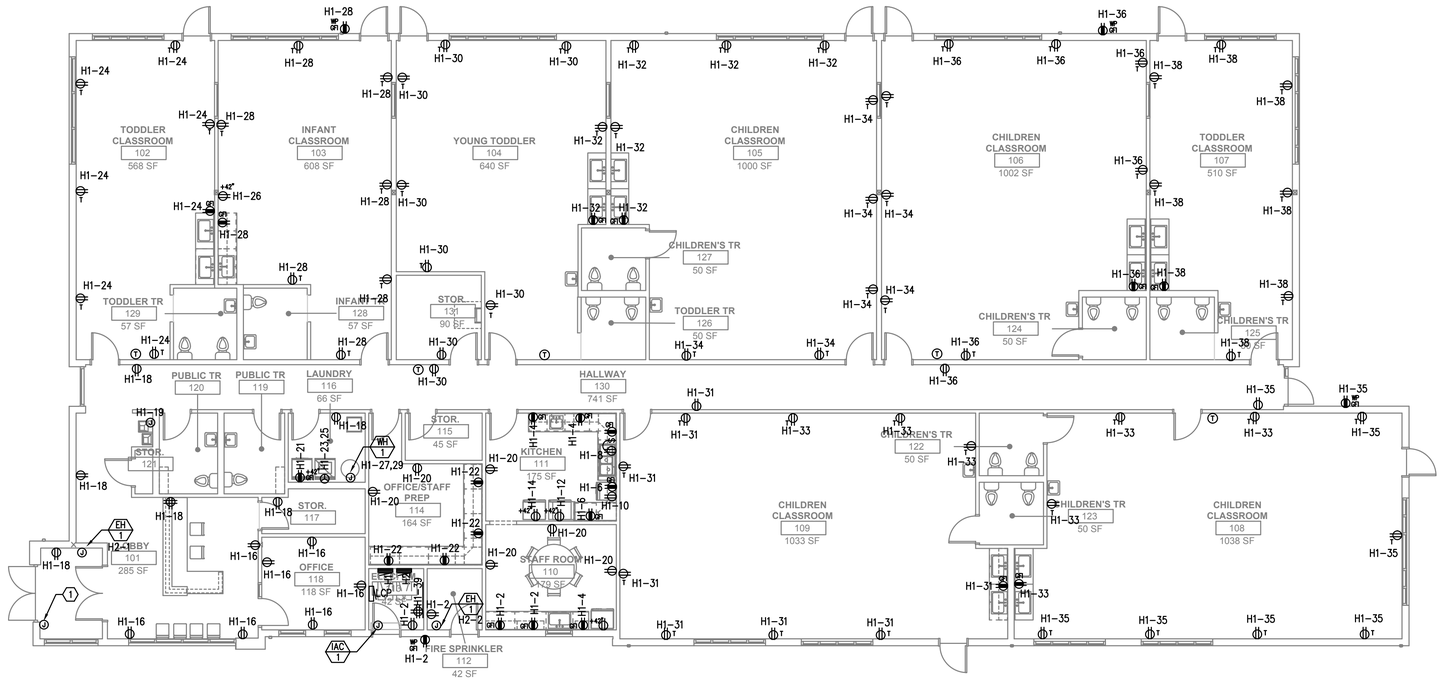
DRAWING TITLE:
ELECTRICAL
POWER PLAN

DRAWN BY: DMT
CHECKED BY: RLC

E3.01

MFIA INC. Consulting Engineers
2007 S.E. Ash St.
Portland, OR 97214
PHN: (503) 234-0548
FAX: (503) 234-0677
WWW.MFIA-ENG.COM
CONTACT: .



1 E3.01 POWER PLAN
SCALE: 1/8" = 1'-0"

GENERAL NOTES:

A. ELECTRICAL DRAWINGS ARE DIAGRAMMATICAL AND MAY NOT ACCURATELY REFLECT ACTUAL CONSTRUCTION CONDITIONS. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE INSTALLATION OF ALL ELECTRICAL EQUIPMENT, WITH ALL TRADES PRIOR TO AND DURING CONSTRUCTION.

B. WORK SHALL BE IN ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE AND NATIONAL CODES.

C. THE ELECTRICAL CONTRACTOR SHALL REFER TO THE ARCHITECTURAL DRAWINGS FOR ALL MOUNTING HEIGHTS AND FINISHES OF DEVICES AND FIXTURES.

D. ELECTRICAL PANELS LOCATED IN PUBLIC OR UNSECURED SPACES SHALL BE PROVIDED WITH A LOCKABLE DOOR PANEL.

E. SERVICE ENTRANCE AND METERING EQUIPMENT SHOWN TO APPROXIMATE SCALE. CONTRACTOR SHALL BE RESPONSIBLE FOR ENDURING THAT INSTALLED EQUIPMENT FITS THE SPACE PROVIDED AND THAT ALL REQUIRED WORKING CLEARANCES ARE PROVIDED.

F. COORDINATE WITH DIVISION 23 FOR EXACT LOCATION AND POWER REQUIREMENTS OF ALL MECHANICAL EQUIPMENT PRIOR TO ROUGH IN. REFER TO SHEET E1.11 FOR MECHANICAL EQUIPMENT SCHEDULE.

G. ELECTRICAL CONTRACTOR SHALL PROVIDE INSTALLATION AND FINAL CONNECTION OF THERMOSTATS AS REQUIRED. CONSULT MECHANICAL CONTRACTOR FOR EXACT REQUIREMENTS PRIOR TO ROUGH IN. VERIFY THAT THE MECHANICAL CONTRACTOR PROVIDES THE THERMOSTAT THEY SPECIFY IN THEIR PROJECT DOCUMENTS.

H. FIRE ALARM & DETECTION SYSTEMS ARE TO BE DESIGNED AND INSTALLED BY OTHERS. THE ELECTRICAL CONTRACTOR SHALL COORDINATE WITH THE FIRE ALARM SYSTEM DESIGNER FOR EXACT LOCATIONS AND PROVIDE ROUGH IN ONLY.

I. LOW VOLTAGE SYSTEMS ARE TO BE DESIGNED AND INSTALLED BY OTHERS. THE ELECTRICAL CONTRACTOR SHALL COORDINATE WITH THE SERVICE PROVIDER AND/OR SYSTEMS DESIGNER FOR EXACT LOCATIONS AND PROVIDE ROUGH IN ONLY.

J. THE ELECTRICAL CONTRACTOR SHALL REFER TO THE MECHANICAL PLAN SHEETS AND COORDINATE WITH THE MECHANICAL INSTALLER TO AVOID CONFLICTS BETWEEN HVAC EQUIPMENT AND LIGHT FIXTURES WITHIN THE APARTMENT UNITS.

K. RESTROOM EXHAUST FANS TO BE CONTINUOUS OPERATION AND TIED INTO THE LIGHTING CIRCUIT FOR THAT AREA.

⬡ KEYED NOTES:

1. PROVIDE ONE 20A, 120V, 1P CIRCUIT FROM PANEL H1 FOR OWNER PROVIDED AND INSTALLED ENTRY ACCESS SYSTEM WITH CAMERA. CONSULT ARCHITECT FOR EXACT POWER REQUIREMENTS AND DEVICE LOCATION(S) PRIOR TO ROUGH IN.

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DRAWING TITLE:
ELECTRICAL
POWER PLAN

DRAWN BY: DMT
CHECKED BY: RLC

E3.01

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Portland, OR 97214
PHN: (503) 234-0548
FAX: (503) 234-0677
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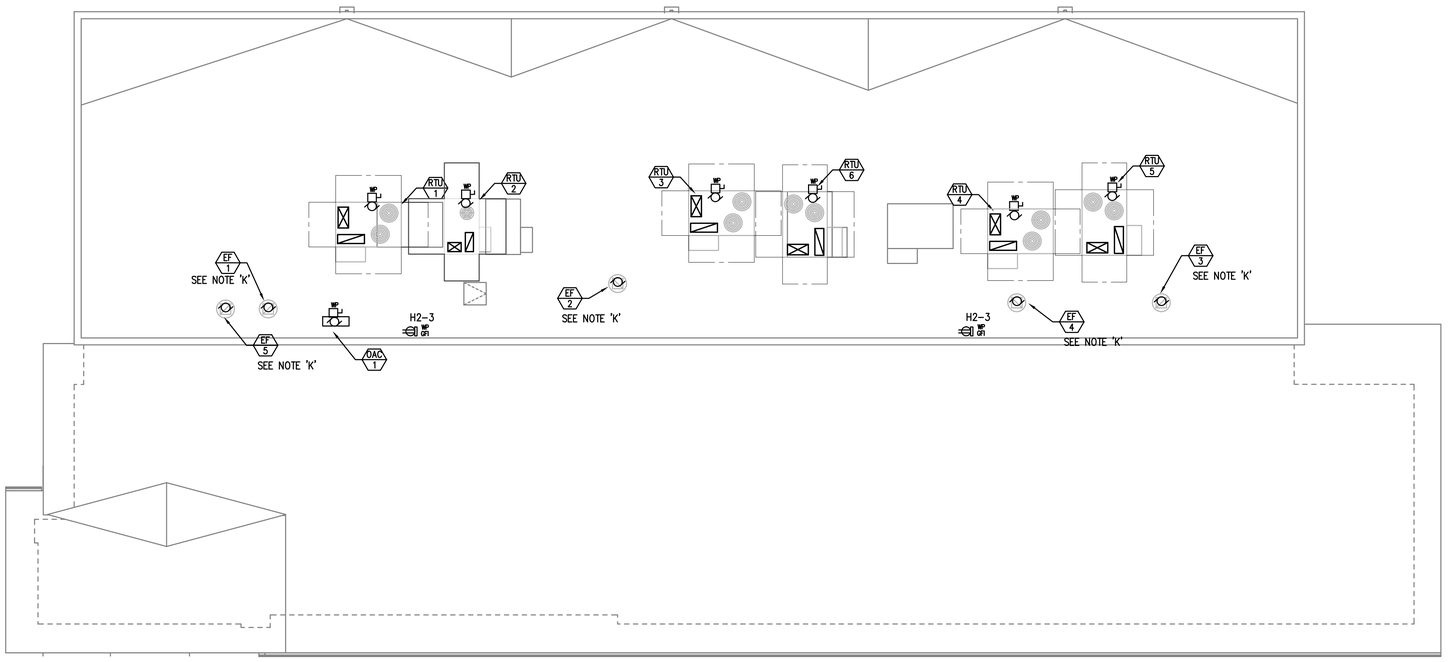

1 E3.02 ROOF POWER PLAN
SCALE: 1/8" = 1'-0"

GENERAL NOTES:

A. ELECTRICAL DRAWINGS ARE DIAGRAMMATICAL AND MAY NOT ACCURATELY REFLECT ACTUAL CONSTRUCTION CONDITIONS. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE INSTALLATION OF ALL ELECTRICAL EQUIPMENT, WITH ALL TRADES PRIOR TO AND DURING CONSTRUCTION.

B. WORK SHALL BE IN ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE AND NATIONAL CODES.

C. THE ELECTRICAL CONTRACTOR SHALL REFER TO THE ARCHITECTURAL DRAWINGS FOR ALL MOUNTING HEIGHTS AND FINISHES OF DEVICES AND FIXTURES.

D. ELECTRICAL PANELS LOCATED IN PUBLIC OR UNSECURED SPACES SHALL BE PROVIDED WITH A LOCKABLE DOOR PANEL.

E. SERVICE ENTRANCE AND METERING EQUIPMENT SHOWN TO APPROXIMATE SCALE. CONTRACTOR SHALL BE RESPONSIBLE FOR ENDURING THAT INSTALLED EQUIPMENT FITS THE SPACE PROVIDED AND THAT ALL REQUIRED WORKING CLEARANCES ARE PROVIDED.

F. COORDINATE WITH DIVISION 23 FOR EXACT LOCATION AND POWER REQUIREMENTS OF ALL MECHANICAL EQUIPMENT PRIOR TO ROUGH IN. REFER TO SHEET E1.11 FOR MECHANICAL EQUIPMENT SCHEDULE.

G. ELECTRICAL CONTRACTOR SHALL PROVIDE INSTALLATION AND FINAL CONNECTION OF THERMOSTATS AS REQUIRED. CONSULT MECHANICAL CONTRACTOR FOR EXACT REQUIREMENTS PRIOR TO ROUGH IN. VERIFY THAT THE MECHANICAL CONTRACTOR PROVIDES THE THERMOSTAT THEY SPECIFY IN THEIR PROJECT DOCUMENTS.

H. FIRE ALARM & DETECTION SYSTEMS ARE TO BE DESIGNED AND INSTALLED BY OTHERS. THE ELECTRICAL CONTRACTOR SHALL COORDINATE WITH THE FIRE ALARM SYSTEM DESIGNER FOR EXACT LOCATIONS AND PROVIDE ROUGH IN ONLY.

I. LOW VOLTAGE SYSTEMS ARE TO BE DESIGNED AND INSTALLED BY OTHERS. THE ELECTRICAL CONTRACTOR SHALL COORDINATE WITH THE SERVICE PROVIDER AND/OR SYSTEMS DESIGNER FOR EXACT LOCATIONS AND PROVIDE ROUGH IN ONLY.

J. THE ELECTRICAL CONTRACTOR SHALL REFER TO THE MECHANICAL PLAN SHEETS AND COORDINATE WITH THE MECHANICAL INSTALLER TO AVOID CONFLICTS BETWEEN HVAC EQUIPMENT AND LIGHT FIXTURES WITHIN THE APARTMENT UNITS.

K. RESTROOM EXHAUST FANS TO BE CONTINUOUS OPERATION AND TIED INTO THE LIGHTING CIRCUIT FOR THAT AREA.

⬡ KEYED NOTES:

1. PROVIDE ONE 20A, 120V, 1P CIRCUIT FROM PANEL H1 FOR OWNER PROVIDED AND INSTALLED ENTRY ACCESS SYSTEM WITH CAMERA. CONSULT ARCHITECT FOR EXACT POWER REQUIREMENTS AND DEVICE LOCATION(S) PRIOR TO ROUGH IN.

MFIA INC. Consulting Engineers
2007 S.E. Ash St.
Portland, OR 97214
PHN: (503) 234-0548
FAX: (503) 234-0677
WWW.MFIA-ENG.COM
CONTACT: .

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DRAWING TITLE:
ELECTRICAL
ROOF PLAN

DRAWN BY: DMT
CHECKED BY: RLC

E3.02