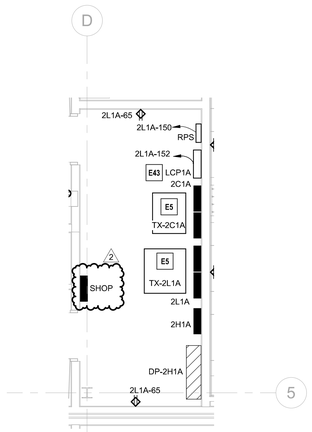
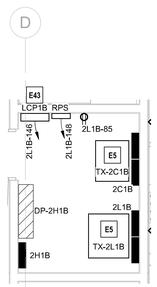


1 ENLARGED POWER PLAN - FIRST LEVEL - AREA A
1/4" = 1'-0"



2 ENLARGED POWER PLAN - FIRST LEVEL - AREA B
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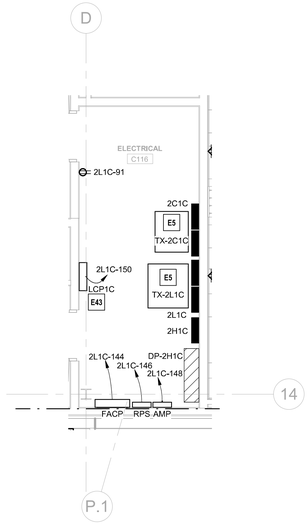
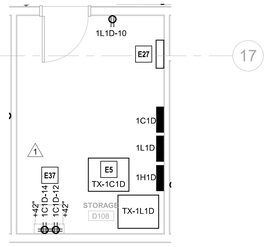


3 ENLARGED POWER PLAN - FIRST LEVEL - AREA C
1/4" = 1'-0"



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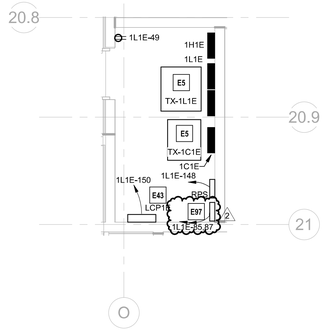

5 ENLARGED POWER PLAN - FIRST LEVEL - AREA E
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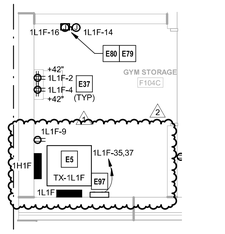

6 ENLARGED POWER PLAN - FIRST LEVEL - AREA F
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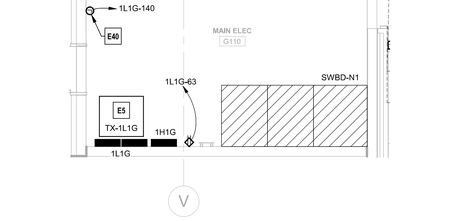
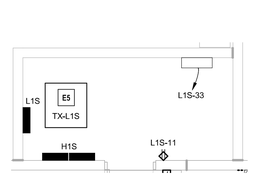
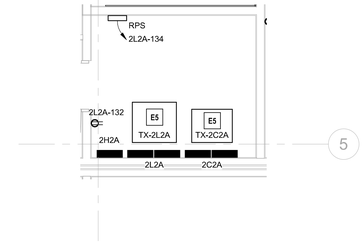


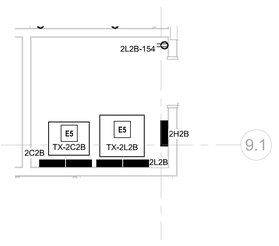
7 ENLARGED POWER PLAN - FIRST LEVEL - AREA G
1/4" = 1'-0"



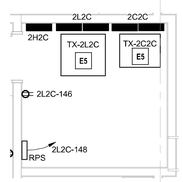
8 ENLARGED POWER PLAN - FIRST LEVEL - AREA S
1/4" = 1'-0"



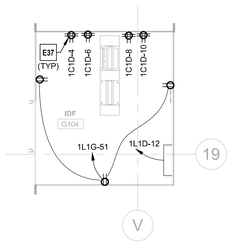
9 ENLARGED POWER PLAN - SECOND LEVEL - AREA A
1/4" = 1'-0"



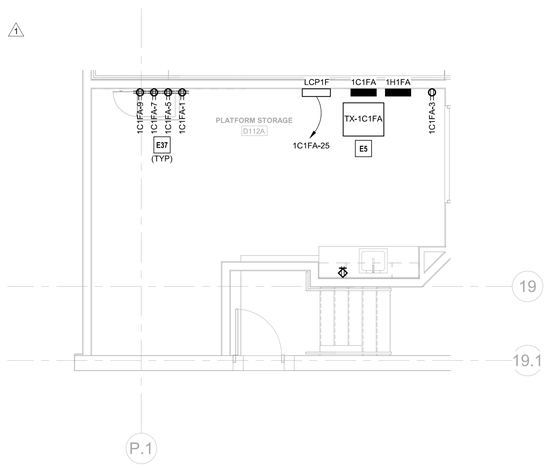
10 ENLARGED POWER PLAN - SECOND LEVEL - AREA B
1/4" = 1'-0"



11 ENLARGED POWER PLAN - SECOND LEVEL - AREA C
1/4" = 1'-0"



12 ENLARGED POWER PLAN - FIRST LEVEL - IDF AREA G
1/4" = 1'-0"



13 ENLARGED POWER PLAN - FIRST LEVEL - THEATRICAL
1/4" = 1'-0"

ELECTRICAL PLAN NOTES:

E5 TRANSFORMER TO BE SUSPENDED, RE: 2/E5.01 FOR SUSPENDED MOUNTING DETAIL. WHERE SHOWN ADJACENT TO TRANSFORMER, THIS TRANSFORMER SHALL BE SUSPENDED ABOVE.

E27 PROVIDE RELAY PANEL FOR CONTROL OF MOTORIZED SHADES IN ROOM D101, COORDINATE FINAL NUMBER OF RELAYS WITH MOTORIZED BLINDS MANUFACTURER.

E37 CONTRACTOR TO COORDINATE TECHNOLOGY EQUIPMENT LAYOUT IN THIS ROOM WITH SECURITY AND TECHNOLOGY PLANS PRIOR TO BEGINNING ANY WORK. ADJUST RECEPTACLE AND POWER ROUGH-IN LOCATIONS TO ACCOMMODATE EQUIPMENT LAYOUT.

E40 CONTRACTOR TO PROVIDE 120V POWER CONNECTION FOR MECHANICAL CONTROL PANEL. COORDINATE INSTALLATION REQUIREMENTS WITH EQUIPMENT MANUFACTURER'S SPECIFICATIONS.

E43 PROVIDE POWER CONNECTION FOR LIGHTING CONTROL PANEL. COORDINATE INSTALLATION REQUIREMENTS WITH EQUIPMENT MANUFACTURER'S SPECIFICATIONS.

E79 CONTRACTOR TO PROVIDE POWER CONNECTION FOR BATTERY BACK UP FOR ICC 500 MOTORIZED LOUVERS. COORDINATE EXACT LOCATION OF BATTERY BACK INSTALLATION REQUIREMENTS WITH MECHANICAL PLANS PRIOR TO BEGINNING ANY WORK.

E80 APPROXIMATE LOCATION OF LOW VOLTAGE ROUGH-IN FOR WALL MOUNTED ICC 500 SHELTER LOUVERS CONTRACTOR TO PROVIDE CONDUITS, AND JUNCTION BOXES FOR EQUIPMENT CONNECTIONS. COORDINATE QUANTITY OF CONDUITS AND JUNCTION BOXES, ROUGH-IN LOCATIONS AND INSTALLATION REQUIREMENTS WITH MECHANICAL PLANS AND EQUIPMENT MANUFACTURER'S SPECIFICATIONS PRIOR TO BEGINNING ANY WORK. CONDUITS TO BE INSTALLED IN PRECAST WALL AND BOX TO BE MOUNTED UNDER LOUVER.

2 E97 GYMNASIUM BASKETBALL HOOP RAISE LOWER AND CURTAIN EQUIPMENT CONTROL PANEL SERVING COMPETITION GYM (F101). COORDINATE ALL INSTALLATION REQUIREMENTS PRIOR TO INSTALLATION.

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CURTIS A. OLDS
NUMBER PE-2018036640
PROFESSIONAL ENGINEER

Oct 19 2020
CURTIS A. OLDS
LICENSE # PE-2018036640

HENDERSON ENGINEERS
8345 LENEXA DRIVE, SUITE 300
LENEXA, KS 66214
TEL 913.742.2800 FAX 913.742.3001
WWW.HENDERSONENGINEERS.COM
MO. CORPORATE NO. E-5060
EXPIRES 12/31/2020

LEE'S SUMMIT MIDDLE SCHOOL #4

LEE'S SUMMIT R-7 SCHOOL DISTRICT

1001 SE BAILEY ROAD
LEE'S SUMMIT, MO 64081

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10/08/20

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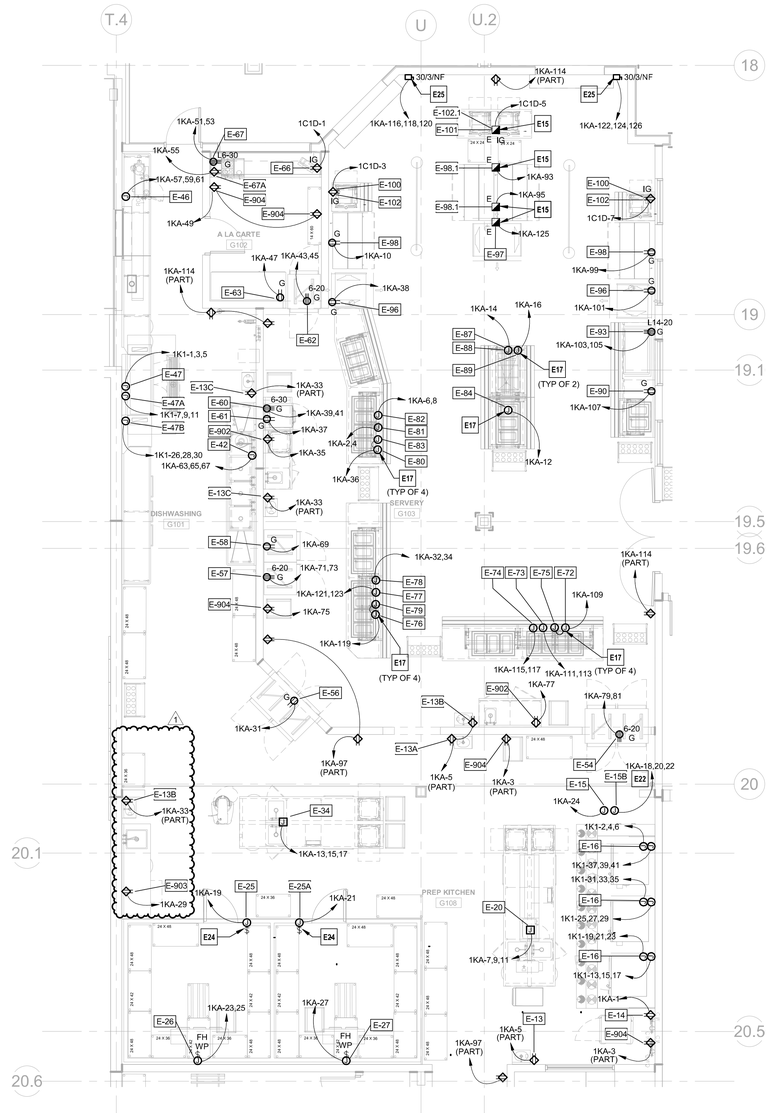
ADDENDUM 001	10/13/20
ADDENDUM 002	10/19/20

13-20102-00

ENLARGED PLANS - ELECTRICAL ROOMS

E4.0

CURTIS A. OLDS



1 KITCHEN ENLARGED PLAN
3/16" = 1'-0"

ELECTRICAL GENERAL NOTES:

1. ELECTRICAL CONTRACTOR SHALL OBTAIN KITCHEN EQUIPMENT VENDOR PLANS PRIOR TO BEGINNING ANY WORK.
2. REFER TO FOOD SERVICE EQUIPMENT PLANS FOR EXACT POWER ROUGH-IN LOCATIONS AND REQUIREMENTS. VERIFY ROUGH-IN REQUIREMENTS, LOCATIONS, MOUNTING HEIGHTS, VOLTAGE, PHASE, AMPS, HP, KW, OCPD, CIRCUIT BREAKER, DISCONNECT, FUSE, WIRING DEVICE, TERMINATION, NEMA RATINGS, ETC WITH FOOD SERVICE PLANS AND EQUIPMENT MANUFACTURER'S SPECIFICATIONS. FOR ALL FOOD SERVICE EQUIPMENT PRIOR TO ROUGH-IN. DEVICE LOCATIONS SHOWN ON ELECTRICAL PLANS ARE APPROXIMATE.
3. EQUIPMENT HIGHLIGHTED WITH RECTANGULAR NUMBERS CORRESPONDS TO EQUIPMENT SHOWN ON FOOD SERVICE DRAWINGS. REFER TO FOOD SERVICE PLANS FOR COMPLETE DESCRIPTION OF EQUIPMENT AND POWER REQUIREMENTS.
4. REFER TO ARCHITECTURAL AND FOOD SERVICE PLANS AND DETAILS FOR EXACT LOCATIONS, ALIGNMENT, AND MOUNTING OF ALL CEILING, WALL, AND FLOOR MOUNTED DEVICES.
5. COORDINATE THE EXACT ELECTRICAL REQUIREMENTS FOR ELECTRICALLY CONNECTED DEVICES AND EQUIPMENT WITH OTHER TRADES, INCLUDING OWNER FURNISHED EQUIPMENT, PRIOR TO ROUGH-IN AND ADJUST ELECTRICAL PROVISIONS AS NECESSARY INCLUDING, BUT NOT LIMITED TO: RACEWAY, CONDUCTOR(S), DISCONNECT, RECEPTACLE, CIRCUIT BREAKER AND TERMINATION. WHERE APPLICABLE, REFER TO MANUFACTURER/VENDOR INFORMATION FOR EXACT DEVICE LOCATIONS AND TYPE OF DEVICE REQUIRED, INCLUDING FOOD SERVICE AND REFRIGERATION VENDOR DRAWINGS.
6. VERIFY ROUGH-IN REQUIREMENTS, LOCATIONS, MOUNTING HEIGHTS, VOLTAGE, PHASE, AMPERAGE, ETC FOR ALL DRINK AND FOOD SERVICE, HVAC, AND PLUMBING EQUIPMENT BEFORE PROVIDING ROUGH-IN.
7. PROVIDE WEATHER PROOF BOXES, DEVICES AND COVERS AT FLOOR LEVEL EQUIPMENT CONNECTIONS IN WASH DOWN AREAS SUCH AS: KITCHEN, SERVING, AND SIMILAR FOOD PREP AND FOOD SERVICE AREAS. COORDINATE EXACT LOCATIONS AFFECTED WITH OWNER.
8. ALL 120V RECEPTACLES 50A OR LESS, 208V AND 240V RECEPTACLES 100A OR LESS, SHALL BE GFCI PROTECTED IN KITCHENS AND FOOD PREP AREAS. GFCI RECEPTACLES SHALL BE READILY ACCESSIBLE AND SHALL NOT BE LOCATED BEHIND STATIONARY EQUIPMENT.
9.
10. FOR FURNISHED EQUIPMENT AND APPLIANCES: CONFIRM THE ELECTRICAL REQUIREMENTS WITH MANUFACTURER INFORMATION AND OTHER TRADES PRIOR TO ROUGH-IN AND ADJUST ELECTRICAL PROVISIONS AS NECESSARY. THIS INCLUDES BUT IS NOT LIMITED TO: RACEWAY, CONDUCTOR(S), DISCONNECT, CIRCUIT BREAKER, FUSE, WIRING DEVICE AND TERMINATION. WHERE APPLICABLE, REFER TO VENDOR INFORMATION, SUCH AS FOOD SERVICE AND REFRIGERATION DRAWINGS, FOR DEVICE TYPE AND LOCATION.
11. ALL KITCHEN EQUIPMENT JUNCTION BOXES SHALL INCLUDE FINAL CONNECTION TO THEIR RESPECTIVE KITCHEN EQUIPMENT. VERIFY REQUIREMENTS WITH EQUIPMENT SUPPLIER AND PROVIDE ALL NECESSARY ITEMS TO MEET THE EQUIPMENT'S ELECTRICAL INSTALLATION REQUIREMENTS.
12. FURNISH AND INSTALL DISCONNECT SWITCHES, INTERLOCKS, CONDUIT AND WIRING, AND INSTALL AS SPECIFICALLY OUTLINED WITHIN THE FOOD SERVICE CONSULTANT DRAWINGS.
13. ALL EQUIPMENT LOCATED UNDERNEATH A TYPE 1 HOOD AND ASSOCIATED MAKE-UP AIR UNIT SHALL BE PROVIDED SHUNTRIP BREAKERS AND BE INTERCONNECTED TO HOOD ANSUL SYSTEM. ACTIVATION OF ANSUL SYSTEM SHALL DISCONNECT POWER TO EQUIPMENT. COORDINATE INSTALLATION REQUIREMENTS WITH EQUIPMENT MANUFACTURER'S SPECIFICATIONS, HOOD DRAWINGS, AND FIRE PROTECTION.
14. COORDINATE WALK-IN FRIDGE EQUIPMENT LOCATIONS AND INSTALLATION REQUIREMENTS WITH REFRIGERATION VENDOR AND KITCHEN EQUIPMENT VENDOR PLANS.
15. KEEP PENETRATIONS THROUGH INSULATED COOLER AND FREEZER BOXES TO A MINIMUM. AVOID ROUTING CONDUIT INSIDE OF THE BOX WHEREVER PRACTICABLE. SURFACE MOUNTED CONDUIT ON THE EXTERIOR OF THE COOLER OR FREEZER SHALL BE TIGHT TO THE BOX. UNLESS NOTED OTHERWISE, DO NOT ROUTE CONDUIT WHERE IT IS SUBJECT TO DAMAGE. AVOID ROUTING CONDUIT TO TOP SURFACE OF BOX IN AREAS USED FOR MEZZANINE STORAGE OR OTHER EQUIPMENT. SEAL ALL PENETRATIONS THROUGH BOX WITH EXPANDING FOAM OR SILICONE SEALANT AND FILL CONDUIT FITTINGS/SEAL OFFS WITH EXPANDING FOAM SEALANT.
16. DIVISION 26 CONTRACTOR IS RESPONSIBLE FOR ALL INTERCONNECTION OF FOODSERVICE EQUIPMENT AS REQUIRED FOR A FULLY FUNTIONAL SYSTEM. COORDINATE REQUIREMENTS WITH FOOD SERVICE CONSULTANT AND MANUFACTURER.
17. WHERE A DISCONNECT SWITCH IS NOT SHOWN A PADLOCK OFF BREAKER IS BEING USED TO PROVIDE DISCONNECTING MEANS. REFER TO PANEL SCHEDULES ON SHEET E6.10 FOR MORE INFORMATION.

☐ ELECTRICAL PLAN NOTES:

E15 PROVIDE HUBBELL B2436 FLOOR BOX WITH ONE 5-20R RECEPTACLE FOR FOOD SERVICE EQUIPMENT. COORDINATE COVER PLATE MATERIAL AND FINISH WITH ARCHITECT. GFCI PROTECTION PROVIDED BY BREAKER.

E17 CONTRACTOR TO STUB UP CONDUIT AT THIS LOCATION AND PROVIDE FINAL CONNECTION TO HARDWIRED FOOD SERVICE EQUIPMENT. COORDINATE EXACT LOCATION AND REQUIREMENTS WITH FOOD SERVICE CONSULTANT PRIOR TO ROUGH-IN. PROVIDE ALL DEVICES REQUIRED FOR A FULLY FUNCTIONAL PIECE OF FOOD SERVICE EQUIPMENT.

E22 CIRCUIT FOR MAKEUP AIR UNIT SUPPLY FAN TO BE CIRCUITED THROUGH HOOD CONTROL PANEL IN THIS LOCATION. REFER TO SHEET E3.3G FOR LOCATION OF MAKEUP AIR UNIT. COORDINATE FINAL REQUIREMENTS WITH MANUFACTURER.

E24 POWER CONNECTION LOCATED ON TOP OF WALK-IN FOR WALK-IN LIGHTING AND HEATER AS REQUIRED. DIVISION 26 CONTRACTOR RESPONSIBLE FOR ALL INTERCONNECTIONS. CONFIRM REQUIREMENTS WITH MANUFACTURER.

E25 POWER CONNECTION FOR OVERHEAD DOOR. COORDINATE FINAL LOCATION WITH ARCHITECT. COORDINATE REQUIREMENTS WITH SELECTED MANUFACTURER.

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STATE OF MISSOURI
CURTIS A. OLDS
NUMBER PE-2018036640
PROFESSIONAL ENGINEER

Oct 13 2020

CURTIS A. OLDS
LICENSE # PE-2018036640

HENDERSON ENGINEERS
8345 LENEXA DRIVE, SUITE 300
LENEXA, KS 66214
TEL 913.742.2800 FAX 913.742.5001
WWW.HENDERSONENGINEERS.COM
MO. CORPORATE NO. E-5060
EXPIRES 12/31/2020

LEE'S SUMMIT MIDDLE SCHOOL #4

LEE'S SUMMIT R-7 SCHOOL DISTRICT

1001 SE BAILEY ROAD
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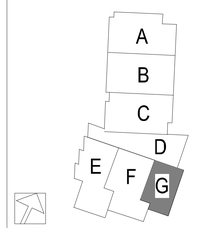
ADDENDUM 001 10/13/20

KEY PLAN



13-20102-00

KITCHEN ENLARGED POWER PLAN

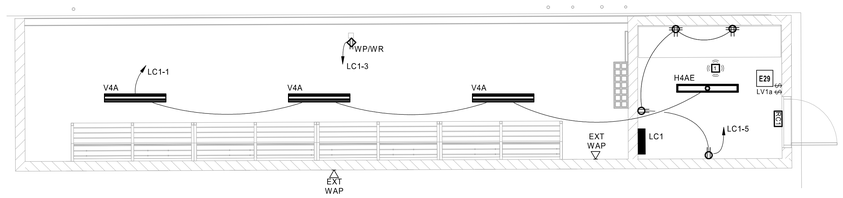
E4.1

CURTIS A. OLDS

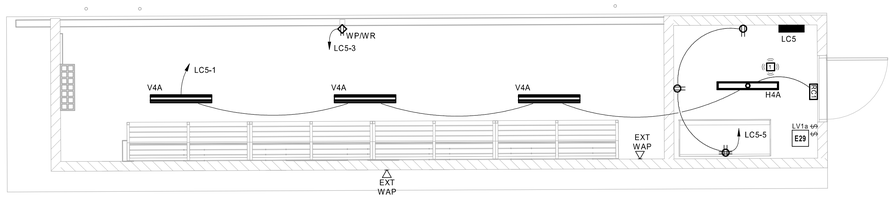
ELECTRICAL PLAN NOTES:

E9 PROVIDE 12"X12"6" NEMA 1 ENCLOSURE TO HOUSE FIBER CONVERTER. ROUTE 2 STRANDS SMF FROM COACHES S103 TO FIBER CONVERTER AS NOTED IN RISER DIAGRAM. SEE SHEET E1.01 FOR CONDUIT ROUTING INFORMATION. ROUTE (1) CATEGORY 6A CABLE TO EACH WAP AS NOTED IN RISER DIAGRAM AND ON SHEETS E1.01 AND E4.2. PROVIDE DUPLEX RECEPTACLE FOR POWER WITHIN 18" OF THE CEILING.

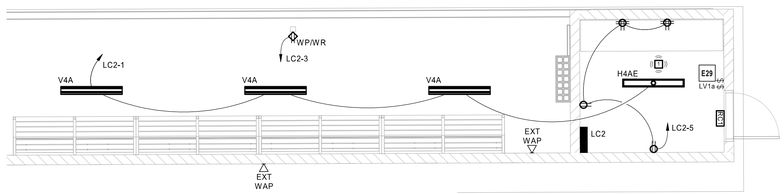
E29 LINE VOLTAGE SWITCH TO PROVIDE ON/OFF CONTROL OF ADJACENT DUGOUT LIGHT FIXTURES.



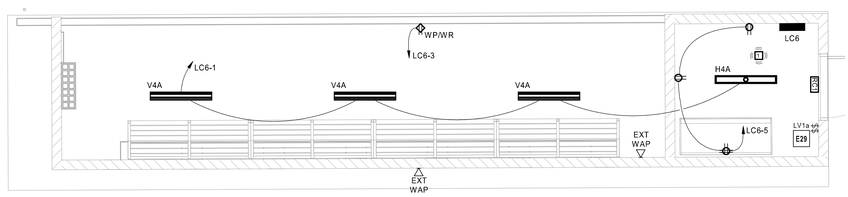
1 VARSITY SOFTBALL 3B DUGOUT ELECTRICAL PLAN
1/4" = 1'-0"



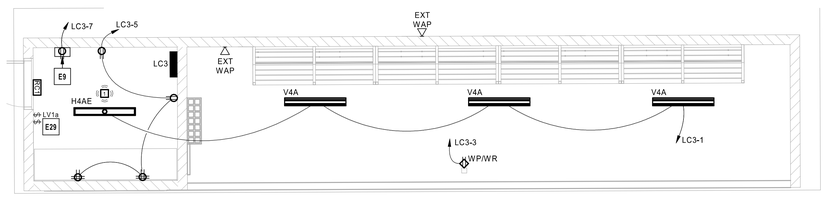
2 VARSITY SOFTBALL 1B DUGOUT ELECTRICAL PLAN
1/4" = 1'-0"



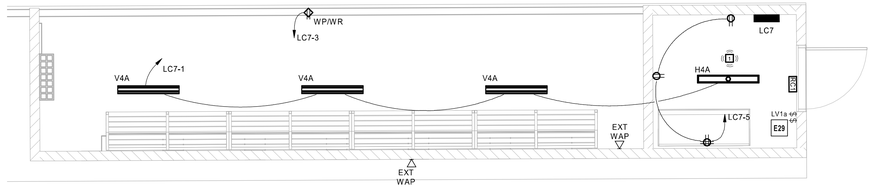
3 VARSITY BASEBALL 3B DUGOUT ELECTRICAL PLAN
1/4" = 1'-0"



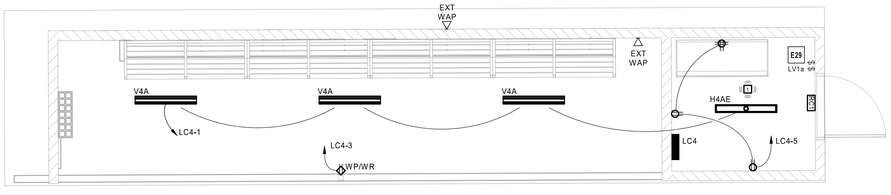
4 VARSITY BASEBALL 1B DUGOUT ELECTRICAL PLAN
1/4" = 1'-0"



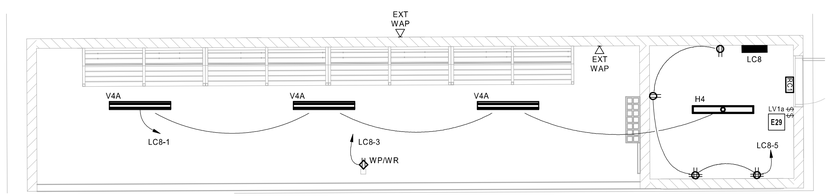
5 EAST JV FIELD 3B DUGOUT ELECTRICAL PLAN
1/4" = 1'-0"



6 EAST JV FIELD 1B DUGOUT ELECTRICAL PLAN
1/4" = 1'-0"



7 WEST JV FIELD 3B DUGOUT ELECTRICAL PLAN
1/4" = 1'-0"



8 WEST JV FIELD 1B DUGOUT ELECTRICAL PLAN
1/4" = 1'-0"

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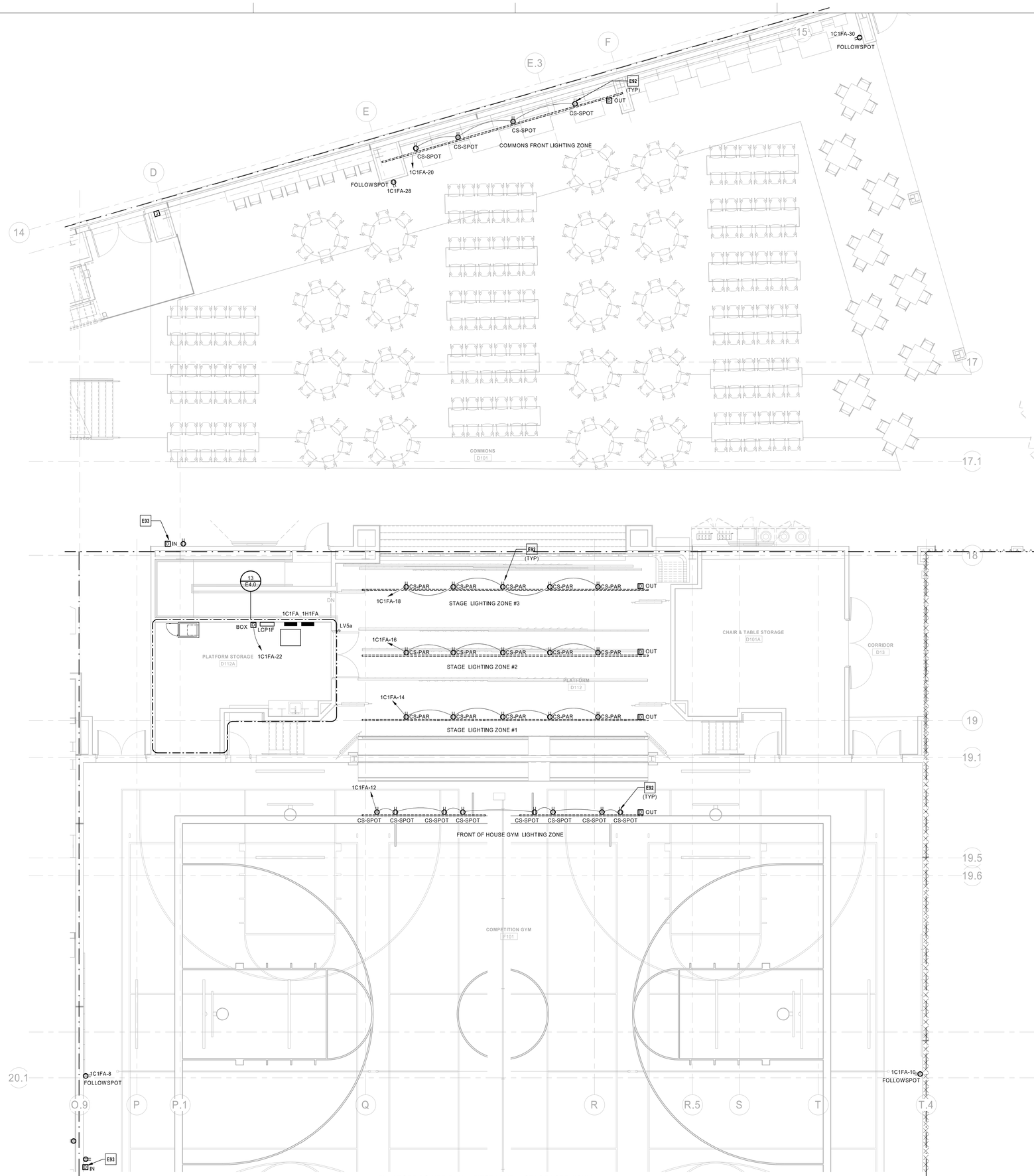
ELECTRICAL DUGOUT PLANS

E4.2

CURTIS A. OLDS



1 ENLARGED POWER PLAN - FIRST LEVEL - STAGE/LOBBY/GYM
3/16" = 1'-0"

2 ENLARGED POWER PLAN - SECOND LEVEL - BROADCAST STUDIO
1/4" = 1'-0"

THEATRICAL LEGEND SYMBOLS

RECEPTACLE LETTER DESIGNATIONS INDICATE DMX THEATRICAL FIXTURE OR THEATRICAL SPOT LIGHT TO BE PLUGGED INTO RECEPTACLE, AND ASSOCIATED FIXTURE TO BE CONNECTED DMX CABLES AND CONTROLS.

CS-PAR = ETC COLORSOURCE SPOT #CSSPORTDB-0
CS-SPOT = ETC COLORSOURCE PAR #CSPAR
FOLLOWSPOT = CANTO USA ASTRO #600

FOS4-8 = ETC FOS4PL8 #7471A1000
FOS4-16 = ETC FOS4PL16 #7471A1010
CONNECTIONS: AC: NEUTRIK TRUE1 TOP
DC: 4-PIN XLR

DMX INTERFACE

IN = ETC N31G-IN, INPUT GATEWAY
OUT = ETC N31G-OUT, OUTPUT GATEWAY
BOX = ETC SNB-8, 8 PORT NETWORK BOX W/ POE

NOTES:

1. RECEPTACLES AND DMX GATEWAYS TO BE MOUNTED ON SUSPENDED SCHEDULE 40 1-1-1/2" CONDUIT.
2. COORDINATE MOUNTING HEIGHT ANDLOCATION OF SUSPENDED CONDUIT FOR THE MOUNTING OF THEATRICAL LIGHTING AND EQUIPMENT WITH THEATRICAL SHOP DRAWINGS, GYMNASIUM EQUIPMENT, PLUMBING EQUIPMENT AND MECHANICAL EQUIPMENT PRIOR TO BEGINNING ANY WORK.
3. REFER TO AREA D AND AREA F LIGHTING PLANS FOR ADDITIONAL GENERAL LIGHT FIXTURES AND SWITCHES IN THIS AREA THAT INTERFACE WITH THEATRICAL LIGHTING CONTROL PANEL.
4. REFER TO E5.2 AND E7.3 FOR LIGHTING CONTROL DEVICES DETAIL, EQUIPMENT SPECIFICATIONS SPECIFICATION FOR LIGHTING CONTROL PANEL, CONTROL PANEL ACCESSORIES AND ASSOCIATED SWITCHES.
5. COORDINATE ALL FITTINGS, SUPPORTS, LENS, COLOR GEL OPTIONS AND MOUNTING OPTIONS WITH EQUIPMENT MANUFACTURER'S SPECIFICATIONS PRIOR TO BEGINNING ANY WORK.

☐ ELECTRICAL PLAN NOTES:

E82 CONTRACTOR TO PROVIDE SLEEVES FOR TELECOMMUNICATIONS AND AV CABLING BETWEEN CONTROL ROOM AND BROADCAST STUDIO. COORDINATE QUANTITY AND SLEEVE SIZE WITH ARCHITECTURAL PLANS AND EQUIPMENT MANUFACTURER'S SPECIFICATIONS. PROVIDE SOUND DAMPENING MATERIAL ON SLEEVES WHEN WORK IS COMPLETE.

E92 RECEPTACLES FOR THEATRICAL LIGHTING AND DMX CONTROLLER TO BE MOUNTED TO HUNG SCHEDULE 40 1-1/2" CONDUIT. COORDINATE INSTALLATION REQUIREMENTS AND MOUNTING HEIGHT WITH SHOP DRAWINGS AND EQUIPMENT MANUFACTURER'S SPECIFICATIONS.

E93 DMX INPUT FOR PORTABLE DMX LIGHTING CONTROL BOARD. COORDINATE EXACT LOCATION AND INSTALLATION REQUIREMENTS WITH ARCHITECT, EQUIPMENT MANUFACTURER AND THEATRICAL SHOP DRAWINGS PRIOR TO BEGINNING ANY WORK. PROVIDE RECEPTACLE NEAR DMX INPUT FOR LIGHTING CONTROL BOARD POWER AS SHOWN.

E101 RECEPTACLES FOR THEATRICAL LIGHTING IN VIDEO/AUDIO STUDIO C217 TO BE SURFACE MOUNTED TO SUSPENDED GRID WITH-IN THE ROOM. CIRCUITS TO BE ROUTED THROUGH LIGHTING CONTROL PANEL "LCP2C". COORDINATE EXACT LOCATIONS AND INSTALLATION REQUIREMENTS WITH THEATRICAL SHOP DRAWINGS PRIOR TO BEGINNING ANY WORK. GRID LAYOUT SHOWN FOR REFERENCE ONLY, REFER TO ARCHITECTURAL PLANS FOR MORE INFORMATION.

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CURTIS A. OLDS
NUMBER PE-2018036640
PROFESSIONAL ENGINEER

Oct 19 2020
CURTIS A. OLDS
LICENSE # PE-2018036640

HENDERSON ENGINEERS
8345 ENEXA DRIVE SUITE 300
LENEXA, KS 66214
TEL 913.742.2800 FAX 913.742.5001
WWW.HENDERSONENGINEERS.COM
MO. CORPORATE NO. E-5360
EXPIRES 12/31/2020

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LEE'S SUMMIT R-7 SCHOOL DISTRICT

1001 SE BAILEY ROAD
LEE'S SUMMIT, MO 64081

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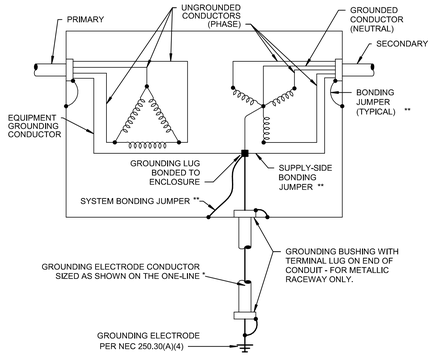
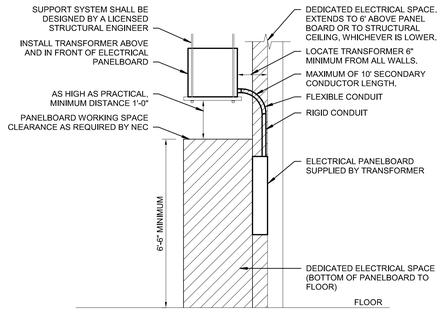
ENLARGED PLAN - STAGE THEATRICAL LIGHTING

E4.3

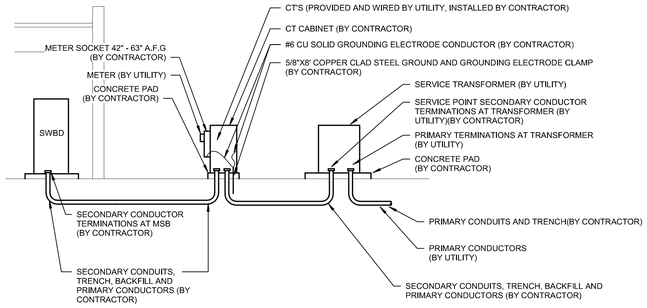
CURTIS A. OLDS



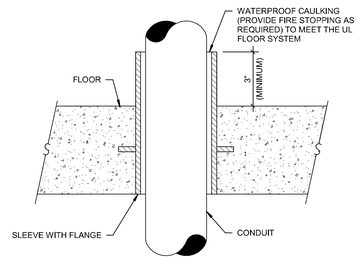
1 DRY TYPE TRANSFORMER GROUNDING
NTS



2 SUSPENDED TRANSFORMER MOUNTING DETAIL
NTS

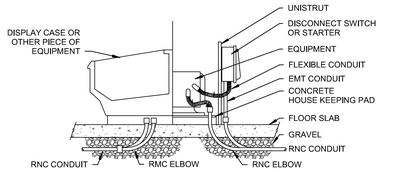


3 UTILITY COORDINATION DETAIL
NTS



TYPICAL FOR PENETRATIONS OF ABOVE GRADE FLOORS

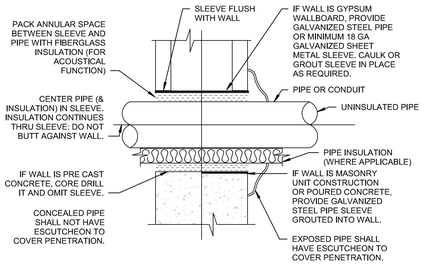
4 CONDUIT PENETRATION OF CONCRETE FLOOR
NTS



NOTES:

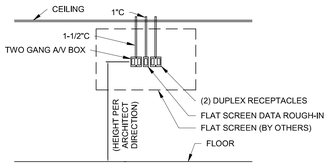
1. CONDUITS TURNED UP INTO OR WITHIN 6" OF HOUSE KEEPING PADS MAY USE RNC ELBOWS THRU THE SLAB. EXTENSIONS FROM THE ELBOW SHALL BE FLEXIBLE CONDUIT (NOT MORE THAN 36" LONG) OR THEY SHALL BE EMT.
2. CONDUITS TURNED UP UNDER EQUIPMENT OR DISPLAY CASES WHICH ARE SITTING DIRECTLY ON THE FLOOR SHALL HAVE A GALVANIZED RMC ELBOW THRU THE SLAB. THE ENTIRE ELBOW SHALL BE PROTECTED WITH TAR OR MASTIC UP TO THE TOP OF THE SLAB.

5 CONDUIT STUB-UP AT EQUIPMENT
NTS



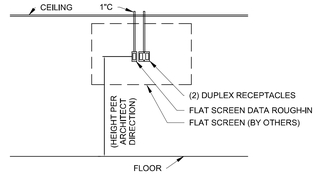
REFER TO ARCHITECTURAL DRAWINGS FOR WALL LOCATIONS.
REFER TO SPECIFICATIONS FOR ALTERNATIVE INSTALLATIONS.
COORDINATE REQUIREMENTS WITH GENERAL CONTRACTOR.

6 CONDUIT PENETRATION THRU NON-FIREWALL
NTS



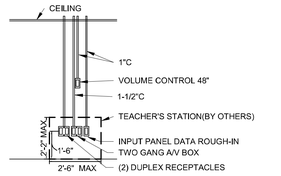
REFER TO ARCHITECTURAL DRAWINGS FOR FLAT SCREEN CONFIGURATIONS AND LOCATIONS.

7 DEVICES AT TYPICAL CLASSROOM FLAT SCREEN
NTS



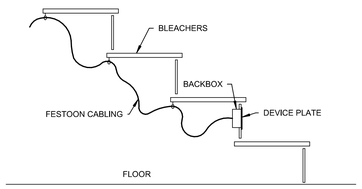
REFER TO ARCHITECTURAL DRAWINGS FOR FLAT SCREEN CONFIGURATIONS AND LOCATIONS. COORDINATE ROUGH-IN LOCATION WITH MOUNTING BRACKET

8 DEVICES AT TYPICAL COLLAB SCREEN
NTS

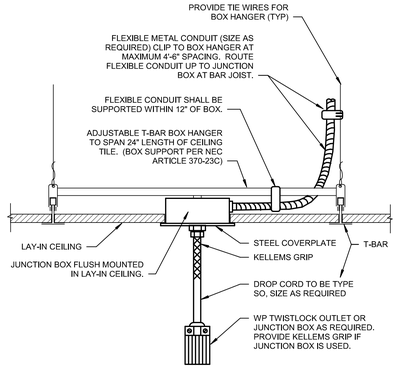


REFER TO ARCHITECTURAL DRAWINGS FOR TEACHER'S STATION CONFIGURATIONS AND LOCATIONS.

9 DEVICES AT TYPICAL TEACHING STATION
NTS



10 FESTOON CABLING AT BLEACHERS
NTS

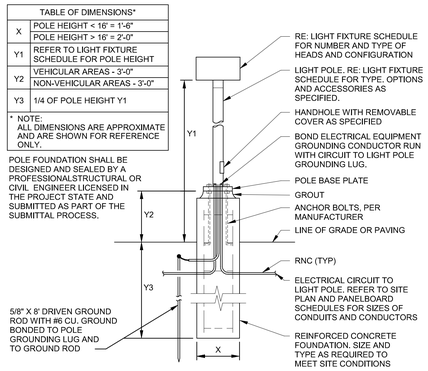


11 SUSPENDED DROP CORD (@ LAY-IN CEILING)
NTS

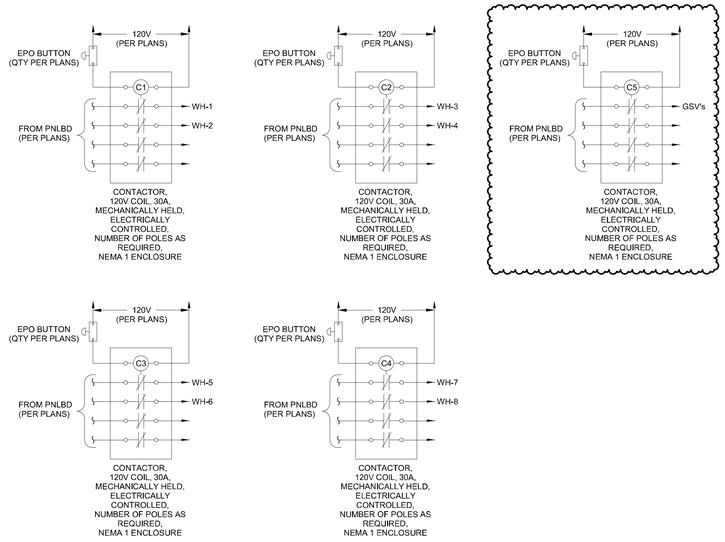
TABLE OF DIMENSIONS*	
X	POLE HEIGHT < 16' = 1'-6"
	POLE HEIGHT > 16' = 2'-0"
Y1	REFER TO LIGHT FIXTURE SCHEDULE FOR POLE HEIGHT
	VEHICULAR AREAS - 3'-0"
Y2	NON-VEHICULAR AREAS - 3'-0"
Y3	1/4 OF POLE HEIGHT Y1

* NOTE: ALL DIMENSIONS ARE APPROXIMATE AND ARE SHOWN FOR REFERENCE ONLY.

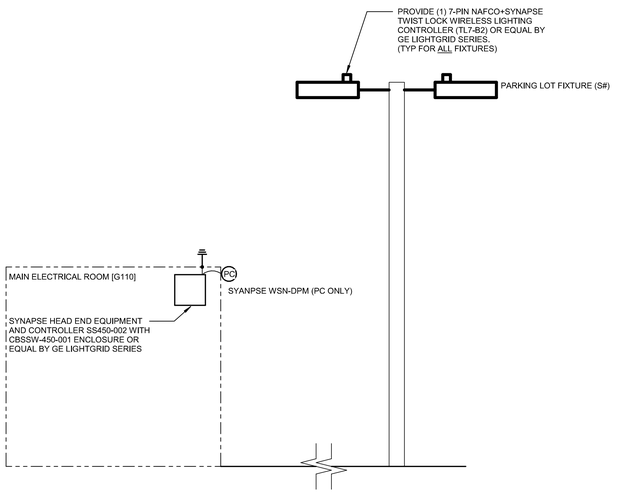
POLE FOUNDATION SHALL BE DESIGNED AND SEALED BY A PROFESSIONAL STRUCTURAL OR CIVIL ENGINEER LICENSED IN THE PROJECT STATE AND SUBMITTED AS PART OF THE SUBMITTAL PROCESS.



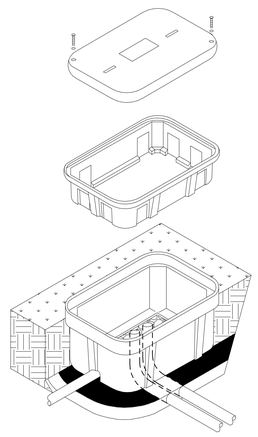
12 POLE BASE DETAIL
NTS



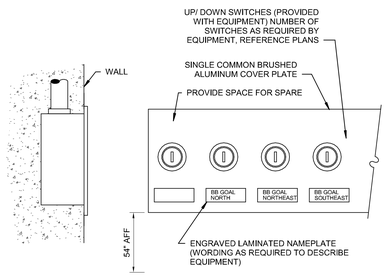
13 EPO WIRING DIAGRAM
NTS



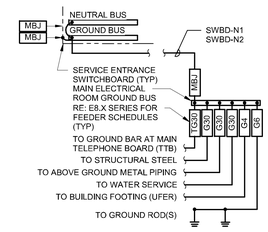
15 (LOADS CONTROLLED SEPARATELY) 0-10V AUTOMATIC LOAD CONTROL RELAY DETAIL
NTS



16 EXTERIOR HAND HOLE DETAIL
NTS



17 GYM EQUIPMENT CONTROLS
NTS



14 SERVICE GROUND DETAIL
NTS

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STATE OF MISSOURI
CURTIS A. OLDS
NUMBER PE-2018036640
PROFESSIONAL ENGINEER

Oct 19 2020
CURTIS A. OLDS
LICENSE # PE-2018036640

HENDERSON ENGINEERS
8345 ENTERPRISE CIRCLE, SUITE 300
LENEXA, KS 66214
TEL 913.742.2000 FAX 913.742.0001
WWW.HENDERSONENGINEERS.COM
MO. CORPORATE NO. E-5060
EXPIRES 12/31/2020

LEE'S SUMMIT MIDDLE SCHOOL #4

LEE'S SUMMIT R-7 SCHOOL DISTRICT

1001 SE BAILEY ROAD
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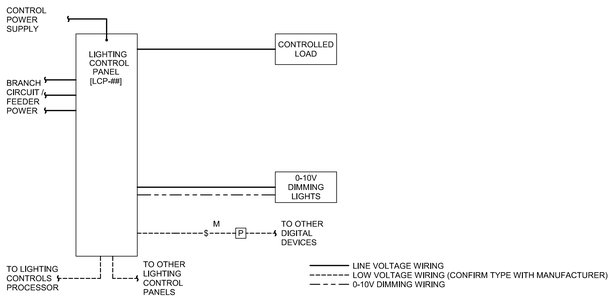
ELECTRICAL DETAILS

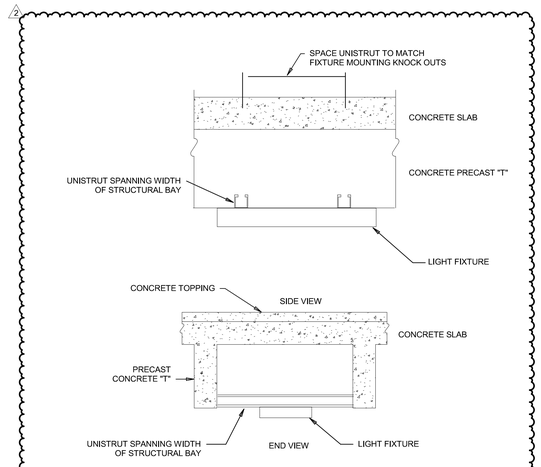
E5.1



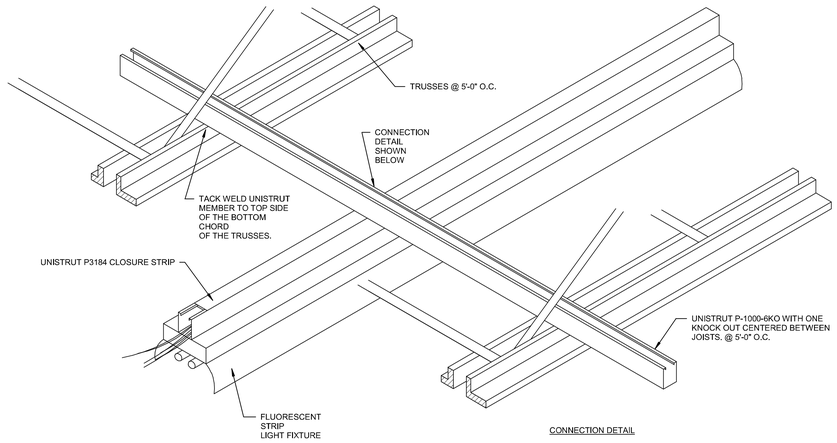
NOTES:

1. REFER TO LIGHTING CONTROL DEVICE SCHEDULE FOR DEVICE AND EQUIPMENT SPECIFICATIONS.
2. DETAIL IS DIAGRAMMATIC AND IS BASED ON LEGRAND. THIS REPRESENTS THE GENERAL SCOPE OF WORK AND LOCATION OF DEVICES IN RELATION TO EACH OTHER ALONG THE POWER CIRCUIT. DIAGRAMS MAY BE DIFFERENT FOR ALLOWED EQUIVALENT MANUFACTURERS. ELECTRICAL CONTRACTOR SHALL COORDINATE FULL SYSTEM REQUIREMENTS WITH SELECTED MANUFACTURER. PROVIDE ALL PARTS AND PIECES REQUIRED FOR A FULLY FUNCTIONAL SYSTEM. REFER TO FINAL APPROVED MANUFACTURER'S INSTALLATION INSTRUCTIONS AND WIRING DIAGRAMS FOR INSTALLATION.
3. CIRCUITING SHOWN ON PLAN(S) CORRESPONDS TO LIGHTING CONTROL INTENT. IF CIRCUITING IS FIELD-MODIFIED, ENSURE THAT SYSTEM PROGRAMMING WITH REVISED CIRCUITING MEETS ORIGINAL LIGHTING CONTROL INTENT. UPDATE LIGHTING CONTROL PANEL SCHEDULE(S) IN RECORD DRAWINGS.
4. LEAVE A TYPEWRITTEN SCHEDULE INCLUDING ANY FIELD-MODIFICATIONS IN EACH LIGHTING CONTROL PANEL DOOR.
5. PROVIDE SYSTEM COMMISSIONING AS REQUIRED PER ENERGY CODE.
6. REFER TO LIGHTING CONTROL PANEL SCHEDULE(S) FOR MORE INFORMATION.

1 LIGHTING CONTROL PANEL DETAIL
NTS

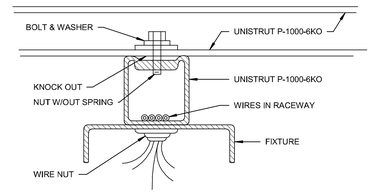


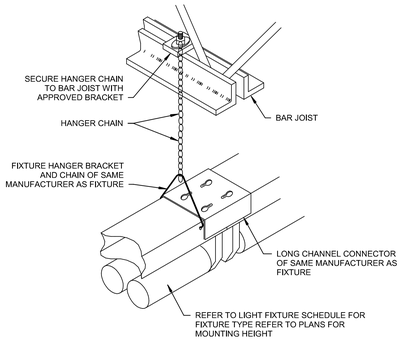
2 GYM LIGHT FIXTURE MOUNTING DETAIL
NTS



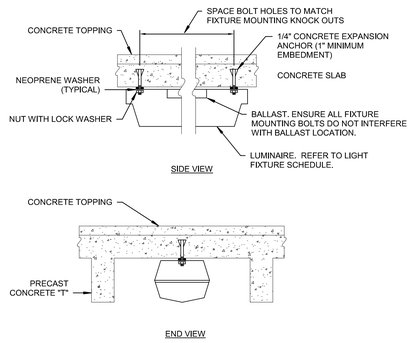
3 LIGHT FIXTURE MOUNTING DETAIL
NTS

CONNECTION DETAIL





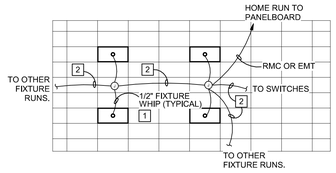
4 LIGHT FIXTURE MOUNTING DETAIL
NTS



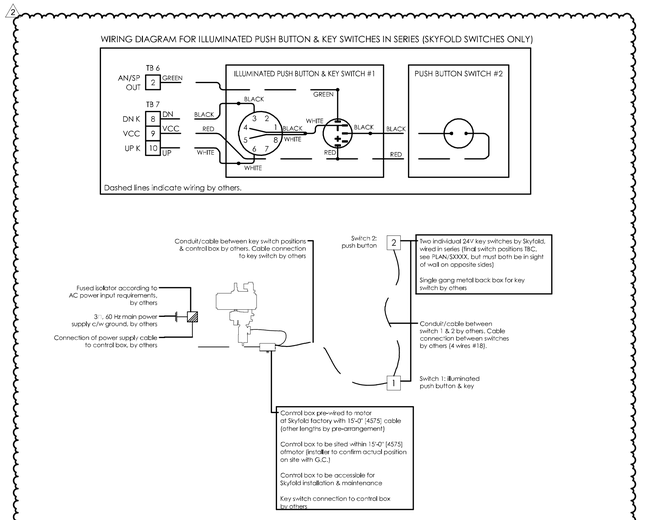
5 LIGHT FIXTURE MOUNTING DETAIL
NTS

ELECTRICAL NOTES:

1. PROVIDE SUFFICIENT LENGTH TO MOVE CENTER OF LUMINAIRE IN A 5'-0"
2. RADIUS OF THE LOCATION SHOWN ON THE PLANS. RMC OR EMT (UNLESS TYPE MC CABLE IS ALLOWED BY SPECIFICATIONS. IF MORE THAN 4 CURRENT CARRYING CONDUCTORS INCLUDING NEUTRALS, MC CABLE IS NOT ALLOWED).

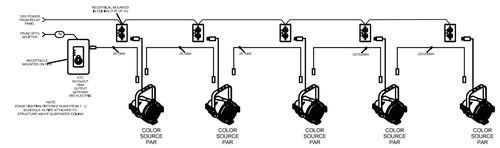


6 LIGHTING STANDARD LUMINAIRE WIRING
NTS

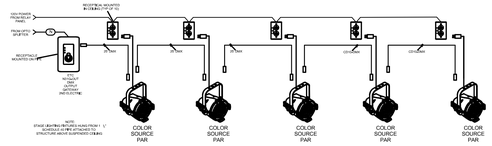


7 GYM LIGHT FIXTURE MOUNTING DETAIL
NTS

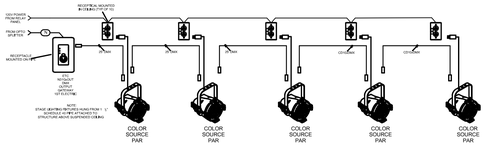
STAGE LIGHTING ZONE #3



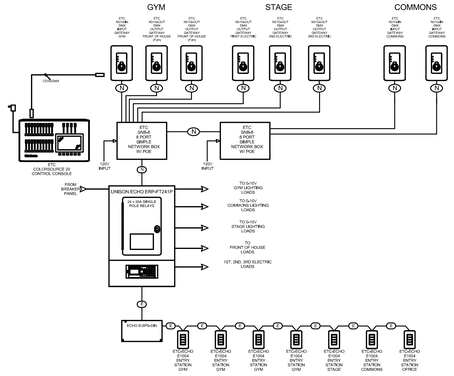
STAGE LIGHTING ZONE #2



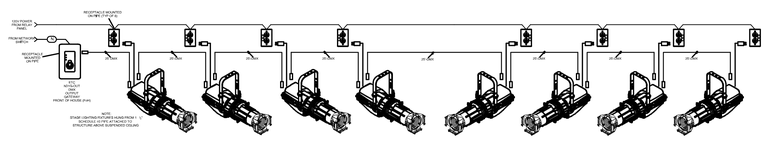
STAGE LIGHTING ZONE #1



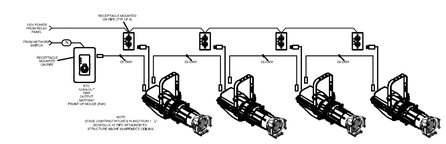
GYM STAGE COMMONS



FRONT OF HOUSE-GYM



FRONT OF HOUSE-COMMONS



8 e_THEATRICAL LIGHTING CONTROLS DETAILS
NTS

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ELECTRICAL DETAILS

E5.2

PANELBOARD: 2H1A (NEW)

BUS AMPS: 100A
MAIN SIZE/TYPE: 100A M.C.B.
VOLTS/PHASE: 480Y/277 V 3P/4W
SUPPLIED BY: DP-2H1A

FAULT CURRENT: RE: ONE-LINE DIAGRAM
AIC RATED: FULLY RATED
AIC RATING: FCA +10% MINIMUM
SERVES: FIRST FLOOR - AREA A
MOUNTING: SURFACE
LOCATION: ELECTRICAL A114

EQUIPMENT GROUND BUS

LINE-SIDE LUGS: MECHANICAL

CKT NO.	DESCRIPTION	LOAD TYPE	NOTES	WIRE SIZE	BKR AMP	P	PHASE A	PHASE B	PHASE C	P	BKR AMP	WIRE SIZE	NOTES	LOAD TYPE	DESCRIPTION	CKT NO.
1	LTS-B105,A108,A109,A110A&B,A114	L Z		12	20	1	1876 275			1	20	12	EM	L	LTS - NIGHT LIGHTS & EXIT SIGNS	2
3	LTS-A105, A106,A107	L Z		12	20	1		1303 1055		1	20	12	EM	L	LTS - CORRIDOR A10, A12 (z5)	4
5	LTS-A101,A102,A103,A104	L Z		12	20	1			1068 188	1	20	12		L	LTS - I COMMONS A100A (z6)(z7)	6
7	LTS-A111,A112,A113	L		12	20	1	270 2356			1	20	10	EM	L	LTS - AREA A EXTERIOR LEVEL 1&2	8
9	LTS-A115, A116, A117A&B, A118A,B&C	L Z		12	20	1		2754 570		1	20	SC		L	LTS - NORTH/EAST DRIVE	10
11	SPARE				20	1			0 0	1	20				SPARE	12
13	SPARE				20	1	0 0			1	20				SPARE	14
15	SPARE				20	1		0 0		1	20				SPARE	16
17	SPARE				20	1			0 0	1	20				SPARE	18
19	SPARE				20	1	0 1267			1	20				SPARE	20
21	SPARE				20	1		0 1267		3	15	12		Z M	RF-1 (3HP)	22
23	SPARE				20	1			0 1267	1	20				SPARE	24
25	SPARE				20	1	0 3717			1	20				SPARE	26
27	SPARE				20	1		0 3717		3	25	10		M Z	DC-1 (10HP)	28
29	EQUIPPED SPACE					1			0 3717	1	20				SPARE	30
31	EQUIPPED SPACE					1	0 3717			1	20				SPARE	32
33	EQUIPPED SPACE					1		0 3717		3	25	10		M Z	DC-2 (10HP)	34
35	EQUIPPED SPACE					1			0 3717	1	20				SPARE	36
37	EQUIPPED SPACE					1	0 5043			1	20				SPARE	38
39	EQUIPPED SPACE					1		0 5043		3	25	10		M	AHU-1 (SUPPLY)	40
41	EQUIPPED SPACE					1			0 5043	1	20				4 @ 3HP	42
				TOTAL LOAD (VA):			18520 VA	19425 VA	14999 VA							
				TOTAL AMPS:			69 A	72 A	54 A							

LOAD TYPE	CONNECTED LOAD	DEMAND FACTOR	NEC DEMAND
EXISTING LOAD (E)	0 VA	100%	0 VA
COOLING (C)	0 VA	0%	0 VA
HEATING (H)	0 VA	100%	0 VA
LIGHTING (L)	11655 VA	125%	14569 VA
RECEPTACLES (R)	0 VA	0%	0 VA
MOTORS (M)	26100 VA	100%	26100 VA
SUPPLEMENTAL HEAT (U)	0 VA	100%	0 VA
MISC EQUIP (Z)	60 VA	100%	60 VA
REFRIGERATION (F)	0 VA	100%	0 VA
SIGN/DISPLAY (D)	0 VA	125%	0 VA
KITCHEN (K)	0 VA	100%	0 VA
LARGEST MOTOR	15130 VA	125%	18913 VA
SHOW WINDOW (W)	0 VA	125%	0 VA
TRACK LIGHTING	0 VA	100%	0 VA

PANELBOARD NOTES

PANELBOARD TOTALS	
TOTAL CONNECTED LOAD	52945 VA
TOTAL NEC LOAD	59641 VA
TOTAL CONNECTED CURRENT	64 A
TOTAL NEC DEMAND CURRENT	72 A

PANELBOARD: 2L1A (NEW)

BUS AMPS: 225A
MAIN SIZE/TYPE: 200A M.C.B.
VOLTS/PHASE: 208Y/120 V 3P/4W
SUPPLIED BY: DP-2H1A VIA TX-2L1A

FAULT CURRENT: RE: ONE-LINE DIAGRAM
AIC RATED: FULLY RATED
AIC RATING: FCA +10% MINIMUM
SERVES: FIRST FLOOR - AREA A
MOUNTING: SURFACE
LOCATION: ELECTRICAL A114

EQUIPMENT GROUND BUS

LINE-SIDE LUGS: MECHANICAL

CKT NO.	DESCRIPTION	LOAD TYPE	NOTES	WIRE SIZE	BKR AMP	P	PHASE A	PHASE B	PHASE C	P	BKR AMP	WIRE SIZE	NOTES	LOAD TYPE	DESCRIPTION	CKT NO.
1	RCPT - A101 GENERAL A	R		12	20	1	720 400			1	20	12			PWR -A115 SECURITY PANEL	2
3	RCPT - A101 GENERAL B	R		12	20	1		720 360		1	20	12		R	RCPTS - A117A AC	4
5	RCPT - A106 GENERAL A	R		12	20	1			720 360	1	20	12		R	RCPT - A117A OVERHEAD A	6
7	RCPT - A106 GENERAL B	R		12	20	1	720 360			1	20	12		R	RCPT - A117A OVERHEAD B	8
9	RCPT - A102 GENERAL	R		12	20	1		180 360		1	20	12		R	RCPT - A117A OVERHEAD C	10
11	RCPT - A108 QUADS A	R		12	20	1			1080 360	1	20	12		R	RCPT - A117A OVERHEAD D	12
13	RCPT - A108 QUADS B	R		12	20	1	1080 360			1	20	12		R	RCPT - A117A OVERHEAD E	14
15	RCPT - A108 QUADS C	R		12	20	1		720 360		1	20	12		R	RCPT - A117A OVERHEAD F	16
17	RCPT - A100C, A108, A109 GENERAL	R		12	20	1			1260 900	1	20	12		R	RCPT - A117A GENERAL	18
19	RCPT - A110A GENERAL	R		12	20	1	900 1080			1	20	12		R	RCPT - A117,A118,A118B CONV.	20
21	RCPT - A109 QUADS A	R		12	20	1		1080 900		1	20	12		R	RCPT - CLOCKS LVL 1 A	22
23	RCPT - A109 QUADS B	R		12	20	1			1080 0	1	20				SPARE	24
25	RCPT - A109 QUADS C	R		12	20	1	1080 0			1	20				SPARE	26
27	RCPT - RESTROOMS	R		12	20	1		540 0		1	20				SPARE	28
29	RCPT - A104 GENERAL A	R		12	20	1			720 0	1	20				SPARE	30
31	RCPT - A104 GENERAL B	R		12	20	1	720 0			1	20				SPARE	32
33	RCPT - A105 GENERAL A	R		12	20	1		540 0		1	20				SPARE	34
35	RCPT - A105 GENERAL B	R			20	1			720 0	1	20				SPARE	36
37	RCPT - A103 GENERAL A	R		12	20	1	720 0			1	20				SPARE	38
39	RCPT - A103 GENERAL B	R		12	20	1		720 0		1	20				SPARE	40
41	RCPT - A118B OVERHEAD A	R		12	20	1			360 0	1	20				SPARE	42
43	RCPT - A118B OVERHEAD B	R		12	20	1	360 0			1	20				SPARE	44
45	RCPT - A118B OVERHEAD C	R		12	20	1		360 0		1	20				SPARE	46
47	RCPT - A118B OVERHEAD D	R		12	20	1			360 0	1	20				SPARE	48
49	RCPT - A118B OVERHEAD E	R		12	20	1	360 0			1	20				SPARE	50
51	RCPT - A118B OVERHEAD F	R		12	20	1		360 0		1	20				SPARE	52
53	RCPT - A118B AC	R		12	20	1			360 0	1	20				SPARE	54
55	RCPT - A110 QUADS A	R		12	20	1	1080 0			1	20				SPARE	56
57	RCPT - A110 QUADS B	R		12	20	1		1080 0		1	20				SPARE	58
59	RCPT - A110 QUADS C	R		12	20	1			1080 0	1	20				SPARE	60
61	RCPT - STORAGE A117B, A118C, A118A	R		12	20	1	900 0			1	20				SPARE	62
63	RCPT - A116 GENERAL	R		12	20	1		360 0		1	20				SPARE	64
65	RCPT - CORRIDOR A10	R		12	20	1			900 0	1	20				SPARE	66
67	RCPT - CORRIDOR A10, A13, G108I	R		12	20	1	900 0			1	20				SPARE	68
69	RCPT - A100B QUADS	R		12	20	1		1080 0		1	20				SPARE	70
71	RCPT - A100A CONV.	R		12	20	1			720 0	1	20				SPARE	72
73	RCPT - A107 MECH	R		12	20	1	180 0			1	20				SPARE	74
75	RCPT - A108A REFRIGERATOR	K	GF	12	20	1		900 0		1	20				SPARE	76
77	RCPT - A108A QUADS	R		12	20	1			1080 0	1	20				SPARE	78
79	RCPT - A108A GENERAL	R		12	20	1	540 0			1	20				SPARE	80
81	RCPT - EWC	Z	GF	12	20	1		600 0		1	20				SPARE	82
83	RCPT - A116 FLOOR CLEANER CHARGING	Z		12	20	1			1500 0	1	20				SPARE	84
85	RCPT - A108, A109, A110 GOGGLE	R			20	1	540 0			1	20				SPARE	86
87	RCPT - DOOR HARDWARE (A107.2)	Z		12	20	1		50 0		1	20				SPARE	88
89	SPARE				20	1			0 0	1	20				SPARE	90
91	SPARE				20	1	0 0			1	20				SPARE	92
93	SPARE				20	1		0 0		1	20				SPARE	94
95	SPARE				20	1			0 0	1	20				SPARE	96
97	SPARE				20	1	0 0			1	20				SPARE	98
99	SPARE				20	1		0 0		1	20				SPARE	100
101	SPARE				20	1			0 0	1	20				SPARE	102
103	SPARE				20	1	0 0			1	20				SPARE	104
105	SPARE				20	1		0 0		1	20				SPARE	106
107	SPARE				20	1			0 0	1	20				SPARE	108
109	SPARE				20	1	0 0			1	20				SPARE	110
111	SPARE				20	1		0 0		1	20				SPARE	112
113	SPARE				20	1			0 0	1	20				SPARE	114
115	SPARE				20	1	0 0			1	20				SPARE	116
117	SPARE				20	1		0 0		1	20				SPARE	118
119	SPARE				20	1			0 0	1	20				SPARE	120
121	SPARE				20	1	0 0			1	20				SPARE	122
123	SPARE				20	1		0 0		1	20				SPARE	124
125	SPARE				20	1			0 0	1	20				SPARE	126
127	SPARE				20	1	0 0			1	20				SPARE	128
129	SPARE				20	1		0 0		1	20				SPARE	130
131	SPARE				20	1			0 0	1	20				SPARE	132
133	SPARE				20	1	0 0			1	20				SPARE	134
135	SPARE				20	1		0 0		1	20				SPARE	136
137	SPARE				20	1			0 0	1	20				SPARE	138
139	EQUIPPED SPACE					1	0 0			1	20				SPARE	140
141	EQUIPPED SPACE					1		0 696		1	20	15		M	RHWP-1	142
143	EQUIPPED SPACE					1			0 200	1	20	12	FA	M	FIRE/SMOKE DAMPERS - LEVEL 1	144
145	EQUIPPED SPACE					1	0 100			1	20	12		Z	MAGNETIC DOOR HOLDS A11	146
147	EQUIPPED SPACE					1		0 100		1	20	12		Z	MAGNETIC DOOR HOLDS A14	148
149	EQUIPPED SPACE					1			0 360	1	20	12	FA	Z	FIRE ALARM PANEL	150
151	EQUIPPED SPACE					1	0 500			1	20	12		Z	PWR-I CP1A	152
153	EQUIPPED SPACE					1		0 500		1	20	12		Z	PWR - BAS MECH CONTROLS	154
155	EQUIPPED SPACE					1			0 100	1	20	12		Z	EPO/CONTACTOR	156
157	EQUIPPED SPACE					1	0 700			1	20	12		M	VAVs 101 thru 117	158
159	EQUIPPED SPACE					1		0 68		1	20	12		Z M	WH1, WH2, RP1, TIMER	160
161	EQUIPPED SPACE					1			0 1144	2	20	12		C	CU 1-1/CRU 1-1	162
163	EQUIPPED SPACE					1	0 1144			1	20	12				164
165	EQUIPPED SPACE					1		0 1144		2	20	12		C	CU 1-2/CRU 1-2	166
167	EQUIPPED SPACE					1			0 1144	1	20					168
				TOTAL LOAD (VA):			15444 VA	13777 VA	16508 VA							
				TOTAL AMPS:			131 A	115 A	140 A							

LOAD TYPE	CONNECTED LOAD	DEMAND FACTOR	NEC DEMAND
EXISTING LOAD (E)	0 VA	100%	0 VA
COOLING (C)	4576 VA	100%	4576 VA
HEATING (H)	0 VA	0%	0 VA
LIGHTING (L)	0 VA	125%	0 VA
RECEPTACLES (R)	34380 VA	65%	22190 VA
MOTORS (M)	958 VA	100%	958 VA
SUPPLEMENTAL HEAT (U)	0 VA	100%	0 VA
MISC EQUIP (Z)	3820 VA	100%	3820 VA
REFRIGERATION (F)	0 VA	100%	0 VA
SIGN/DISPLAY (D)	0 VA	125%	0 VA
KITCHEN (K)	900 VA	100%	900 VA
LARGEST MOTOR	696 VA	125%	870 VA
SHOW WINDOW (W)	0 VA	125%	0 VA
TRACK LIGHTING	0 VA	100%	0 VA

PANELBOARD NOTES

PANELBOARD TOTALS	
TOTAL CONNECTED LOAD	45330 VA
TOTAL NEC LOAD	33314 VA
TOTAL CONNECTED CURRENT	126 A
TOTAL NEC DEMAND CURRENT	92 A

PANELBOARD: 2C1A (NEW)

BUS AMPS: 150A
MAIN SIZE/TYPE: 150A M.C.B.
VOLTS/PHASE: 208Y/120 V 3P/4W
SUPPLIED BY: DP-2H1A VIA TX-2C1A

FAULT CURRENT: RE: ONE-LINE DIAGRAM
AIC RATED: FULLY RATED
AIC RATING: FCA +10% MINIMUM
SERVES: FIRST FLOOR - AREA A
MOUNTING: SURFACE
LOCATION: ELECTRICAL A114

EQUIPMENT GROUND BUS

200% NEUTRAL

LINE-SIDE LUGS: MECHANICAL

CKT NO.	DESCRIPTION	LOAD TYPE	NOTES	WIRE SIZE	BKR AMP	P	PHASE A	PHASE B	PHASE C	P	BKR AMP	WIRE SIZE	NOTES	LOAD TYPE	DESCRIPTION	CKT NO.
1	RCPT - A101 DESK/TV	R		12	20	1	1080 360			1	20	12		R	RCPT - A115 IT RACK 1	2
3	RCPT - A103 DESK/TV	R Z		12	20	1		1080 360		1	20	12		R	RCPT - A115 IT RACK 3	4
5	RCPT - A104 DESK/TV	R Z		12	20	1			1080 360	1	20	12		R	RCPT - A115 IT RACK 3	6
7	RCPT - A105 DESK/TV	R Z		12	20	1	1080 360			1	20	12		R	RCPT - A115 IT RACK 4	8
9	RCPT - A118B DESK/TV	R		12	20	1		720 720		1	20	12		R	RCPT - A100B TV	10
11	RCPT - A118B	R		12	20	1			180 1080	1	20	12		R Z	RCPT - A106 TV	12
13	RCPT - A118B	R		12	20	1	180 720			1	20	12		R	RCPT - A108 DESK/TV	14
15	RCPT - A118B	Z		12	20	1		1000 720		1	20	12		R	RCPT - A109 DESK/TV	16
17	RCPT - A118B	Z		12	20	1			1000 720	1	20	12		R	RECEPTACLES	18
19	RCPT - A118B	Z		12	20	1	1000 0			1	20				SPARE	20
21	RCPT - A118B	Z		12	20	1		1000 0		1	20				SPARE	22
23	RCPT - A118B	Z		12	20	1			1000 0	1	20				SPARE	24
25	RCPT - FLOOR BOX A118	R		12	20	1	360 0			1	20				SPARE	26
27	RCPT - FLOOR BOX A117	R		12	20	1		360 0		1	20				SPARE	28
29	RCPT - A117A 3D PRINTER 1	Z		12	20	1			1000 0	1	20				SPARE	30
31	RCPT - A117A 3D PRINTER 2	Z		12	20	1	1000 0			1	20				SPARE	32
33	RCPT - A117A 3D PRINTER 3	Z		12	20	1		1000 0		1	20				SPARE	34
35	RCPT - A117A 3D PRINTER 4	Z		12	20	1			1000 0	1	20				SPARE	36
37	RCPT - A117A TECH PRINTER 1	Z		12	20	1	1000 0			1	20				SPARE	38
39	RCPT - A117A FUTURE PRINTER	R		12	20	1		180 0		1	20				SPARE	40
41	RCPT - A117A DESK/TV	R		12	20	1			720 0	1	20				SPARE	42
43	SPARE				20	1	0 0			1	20				SPARE	44
45	SPARE				20	1		0 0		1	20				SPARE	46
47	SPARE				20	1			0 0	1	20				SPARE	48
49	SPARE				20	1	0 0			1	20				SPARE	50
51	SPARE				20	1		0 0		1	20				SPARE	52
53	SPARE				20	1			0 0	1	20				SPARE	54
55	SPARE				20	1	0 0			1					EQUIPPED SPACE	56
57	EQUIPPED SPACE					1		0 0		1					EQUIPPED SPACE	58
59	EQUIPPED SPACE					1			0 0	1					EQUIPPED SPACE	60
61	EQUIPPED SPACE					1	0 0			1					EQUIPPED SPACE	62
63	EQUIPPED SPACE					1		0 0		1					EQUIPPED SPACE	64
65	EQUIPPED SPACE					1			0 0	1					EQUIPPED SPACE	66
67	EQUIPPED SPACE					1	0 0			1					EQUIPPED SPACE	68
69	EQUIPPED SPACE					1		0 0		1					EQUIPPED SPACE	70
71	EQUIPPED SPACE					1			0 0	1					EQUIPPED SPACE	72
73	EQUIPPED SPACE					1	0 0			1					EQUIPPED SPACE	74
75	EQUIPPED SPACE					1		0 0		1					EQUIPPED SPACE	76
77	EQUIPPED SPACE					1			0 0	1					EQUIPPED SPACE	78
79	EQUIPPED SPACE					1	0 0			1					EQUIPPED SPACE	80
81	EQUIPPED SPACE					1		0 0		1					EQUIPPED SPACE	82
83	EQUIPPED SPACE					1			0 0	1					EQUIPPED SPACE	84
				TOTAL LOAD (VA):			7140 VA	7140 VA	8140 VA							
				TOTAL AMPS:			60 A	60 A	68 A							

LOAD TYPE	CONNECTED LOAD	DEMAND FACTOR	NEC DEMAND
EXISTING LOAD (E)	0 VA	100%	0 VA
COOLING (C)	0 VA	0%	0 VA
HEATING (H)	0 VA	100%	0 VA
LIGHTING (L)	0 VA	125%	0 VA
RECEPTACLES (R)	10980 VA	96%	10490 VA
MOTORS (M)	0 VA	100%	0 VA
SUPPLEMENTAL HEAT (U)	0 VA	100%	0 VA
MISC EQUIP (Z)	11440 VA	100%	11440 VA
REFRIGERATION (F)	0 VA	100%	0 VA
SIGN/DISPLAY (D)	0 VA	125%	0 VA
KITCHEN (K)	0 VA	100%	0 VA
LARGEST MOTOR	0 VA	125%	0 VA
SHOW WINDOW (W)	0 VA	125%	0 VA
TRACK LIGHTING	0 VA	100%	0 VA

PANELBOARD NOTES

PANELBOARD TOTALS	
TOTAL CONNECTED LOAD	22420 VA
TOTAL NEC LOAD	21930 VA
TOTAL CONNECTED CURRENT	62 A
TOTAL NEC DEMAND CURRENT	61 A

PANELBOARD: SHOP (NEW)

BUS AMPS: 225A
MAIN SIZE/TYPE: 200A M.C.B. (SHUNT TRIP MAIN)
VOLTS/PHASE: 208Y/120 V 3P/4W
SUPPLIED BY: DP-2H1A VIA TX-2L1A

FAULT CURRENT: RE: ONE-LINE DIAGRAM
AIC RATED: FULLY RATED
AIC RATING: FCA +10% MINIMUM
SERVES: SHOP
MOUNTING: SURFACE
LOCATION: ELECTRICAL A114

EQUIPMENT GROUND BUS

LINE-SIDE LUGS: MECHANICAL

CKT NO.	DESCRIPTION	LOAD TYPE	NOTES	WIRE SIZE	BKR AMP	P	PHASE A	PHASE B	PHASE C	P	BKR AMP	WIRE SIZE	NOTES	LOAD TYPE	DESCRIPTION	CKT NO.
1	RCPT - A118 SHOP EQUIP AC A	Z		12	20	1	500 500			1	20	12		Z	RCPT - A117A SHOP EQUIP AC A	2
3	RCPT - A118 SHOP EQUIP AC B	Z		12	20	1		500 500		1	20	12		Z	RCPT - A117A SHOP EQUIP AC B	4
5	RCPT - A118 SHOP EQUIP AC C	Z		12	20	1			500 500	1	20	12		Z	RCPT - A117A SHOP EQUIP AC C	6
7	RCPT - A118 SHOP EQUIP AC D	Z		12	20	1	500 500			1	20	12		Z	RCPT - A117A SHOP EQUIP AC D	8
9	RCPT - A118 SHOP EQUIP AC E	Z		12	20	1		500 500		1	20	12		Z	RCPT - A117A SHOP EQUIP AC E	10
11	RCPT - A118 SHOP EQUIP AC F	Z		12	20	1			500 500	1	20	12		Z	RCPT - A117A SHOP EQUIP AC F	12
13	RCPT - A118 SHOP EQUIP AC G	Z		12	20	1	500 500			1	20	12		Z	RCPT - A117A SHOP EQUIP AC G	14
15	RCPT - A118 SHOP EQUIP AC H	Z		12	20	1		500 500		1	20	12		Z	RCPT - A117A SHOP EQUIP AC H	16
17	RCPT - A118 SHOP EQUIP AC I	Z		12	20	1			500 500	1	20	12		Z	RCPT - A117A SHOP EQUIP AC I	18
19	RCPT - A118 SHOP EQUIP AC J	Z		12	20	1	500 500			1	20	12		Z	RCPT - A117A SHOP EQUIP AC J	20
21	RCPT - A118 OVERHEAD A	R		12	20	1		360 360		1	20	12		R	RCPT - A117 OVERHEAD A	22
23	RCPT - A118 OVERHEAD B	R		12	20	1			360 360	1	20	12		R	RCPT - A117 OVERHEAD B	24
25	RCPT - A118 OVERHEAD C	R		12	20	1	360 360			1	20	12		R	RCPT - A117 OVERHEAD C	26
27	RCPT - A118 OVERHEAD D	R		12	20	1		360 360		1	20	12		R	RCPT - A117 OVERHEAD D	28
29	RCPT - A118 OVERHEAD E	R		12	20	1			360 360	1	20	12		R	RCPT - A117 OVERHEAD E	30
31	RCPT - A118 OVERHEAD F	R		12	20	1		360 360		1	20	12		R	RCPT - A117 OVERHEAD F	32
33	RCPT - TABLE SAW (COORDINATE	Z		10	30	2		2000 360		1	20	12		R	RCPT - A117 OVERHEAD F	34
35	EQUIPMENT POWER REQ.)								2000 2000	2	30	10		Z	RCPT - TABLE SAW (COORDINATE EQUIPMENT POWER REQ.)	36
37	RCPT - BANDSAW (COORDINATE	Z		10	30	2	2000 2000			1	20	12		Z	RCPT - A117A SHOP EQUIP AC K	38
39	EQUIPMENT POWER REQ.)							2000 2000		2	30	10		Z	RCPT - BANDSAW (COORDINATE EQUIPMENT POWER REQ.)	40
41	RCPT - TABLE SANDER (COORDINATE	Z		10	30	2			2000 2000	2	30	10		Z	RCPT - TABLE SANDER (COORDINATE EQUIPMENT POWER REQ.)	42
43	EQUIPMENT POWER REQ.)						2000 2000			2	30	10		Z	RCPT - TABLE SANDER (COORDINATE EQUIPMENT POWER REQ.)	44
45	RCPT - FOOT SHEAR (COORDINATE	Z	GF	10	30	2		2000 2000		1	20	12		R	RCPT - A117 OVERHEAD A	46
47	EQUIPMENT POWER REQ.)								2000 2000	2	30	10	GF	Z	RCPT - FOOT SHEAR (COORDINATE EQUIPMENT POWER REQ.)	48
49	SPARE				20	1	0 2000			1	20				EQUIPPED SPACE	50
51	SPARE				20	1		0 0		1					EQUIPPED SPACE	52
53	SPARE				20	1			0 0	1					EQUIPPED SPACE	54
55	SPARE				20	1	0 0			1					EQUIPPED SPACE	56
57	SPARE				20	1		0 0		1					EQUIPPED SPACE	58
59	SPARE				20	1			0 0	1					EQUIPPED SPACE	60
61	SPARE				20	1	0 0			1					EQUIPPED SPACE	62
63	SPARE				20	1		0 0		1					EQUIPPED SPACE	64
65	SPARE				20	1			0 0	1					EQUIPPED SPACE	66
67	SPARE				20	1	0 0			1					EQUIPPED SPACE	68
69	SPARE				20	1		0 0		1					EQUIPPED SPACE	70
71	SPARE				20	1			0 0	1					EQUIPPED SPACE	72
73	SPARE				20	1	0 0			1					EQUIPPED SPACE	74
75	SPARE				20	1		0 0		1					EQUIPPED SPACE	76
77	SPARE				20	1			0 0	1					EQUIPP

PANELBOARD: 2H2A (NEW)

BUS AMPS: 100A
MAIN SIZE/TYPE: 100A M.C.B.
VOLTS/PHASE: 480Y/277 V 3P/4W
SUPPLIED BY: DP-2H1A

FAULT CURRENT: RE: ONE-LINE DIAGRAM
AIC RATED: FULLY RATED
AIC RATING: FCA +10% MINIMUM
SERVES: SECOND FLOOR - AREA A
MOUNTING: SURFACE
LOCATION: ELEC A216

EQUIPMENT GROUND BUS
LINE-SIDE LUGS: MECHANICAL

CKT NO.	DESCRIPTION	LOAD TYPE	NOTES	WIRE SIZE	BKR AMP	P	PHASE A	PHASE B	PHASE C	P	BKR AMP	WIRE SIZE	NOTES	LOAD TYPE	DESCRIPTION	CKT NO.
1	LTG-A217,A218,A219,A220	L		12	20	1	3011	250		1	20	12	EM	L	LTS - LEVEL 2 NL & EXIT SIGNS	2
3	LTG-A201,A202,A203,A210,A210	L		12	20	1		1363	723	1	20	12	EM	L	LTS - LEVEL 2 CORRIDORS	4
5	LTG-A204,A205,A206	L		12	20	1			1288 810	1	20	12	EM	L	LTS - LEVEL 2 LEARNING COMMONS	6
7	LTG-A207,A208,A209,A214,A215,A216	L		12	20	1	1353	1201		1	20	12	EM	L	LTS - LEVEL 2 LC CLERESTORY	8
9	SPARE				20	1		0	0	1	20				SPARE	10
11	SPARE				20	1			0 0	1	20				SPARE	12
13	SPARE				20	1	0	0		1	20				SPARE	14
15	SPARE				20	1		0	0	1	20				SPARE	16
17	SPARE				20	1			0 0	1	20				SPARE	18
19	SPARE				20	1	0	0		1	20				SPARE	20
21	SPARE				20	1		0	0	1	20				SPARE	22
23	SPARE				20	1			0 0	1	20				SPARE	24
25	SPARE				20	1	0	0		1	20				SPARE	26
27	SPARE				20	1		0	0	1	20				SPARE	28
29	SPARE				20	1			0 0	1	20				SPARE	30
31	EQUIPPED SPACE					1	0	1330								32
33	EQUIPPED SPACE					1		0	1330	3	15	12		Z M	RF4 (RETURN) (3HP)	34
35	EQUIPPED SPACE					1			0 1330							36
37	EQUIPPED SPACE					1	0	5100								38
39	EQUIPPED SPACE					1		0	5100	3	25	10		M	AHU-4 (SUPPLY)	40
41	EQUIPPED SPACE					1			0 5100						4 @ 3HP	42
			TOTAL LOAD (VA):				12245 VA	8516 VA	8528 VA							
			TOTAL AMPS:				44 A	31 A	31 A							

LOAD TYPE	CONNECTED LOAD	DEMAND FACTOR	NEC DEMAND
EXISTING LOAD (E)	0 VA	100%	0 VA
COOLING (C)	0 VA	0%	0 VA
HEATING (H)	0 VA	100%	0 VA
LIGHTING (L)	9999 VA	125%	12499 VA
RECEPTACLES (R)	0 VA	0%	0 VA
MOTORS (M)	3991 VA	100%	3991 VA
SUPPLEMENTAL HEAT (U)	0 VA	100%	0 VA
MISC EQUIP (Z)	0 VA	100%	0 VA
REFRIGERATION (F)	0 VA	100%	0 VA
SIGN/DISPLAY (D)	0 VA	125%	0 VA
KITCHEN (K)	0 VA	100%	0 VA
LARGEST MOTOR	15300 VA	125%	19125 VA
SHOW WINDOW (W)	0 VA	125%	0 VA
TRACK LIGHTING	0 VA	100%	0 VA

PANELBOARD NOTES

PANELBOARD TOTALS	
TOTAL CONNECTED LOAD	29290 VA
TOTAL NEC LOAD	35615 VA
TOTAL CONNECTED CURRENT	35 A
TOTAL NEC DEMAND CURRENT	43 A

PANELBOARD: 2L2A (NEW)

BUS AMPS: 225A
MAIN SIZE/TYPE: 225A M.C.B.
VOLTS/PHASE: 208Y/120 V 3P/4W
SUPPLIED BY: DP-2H1A VIA TX-2L2A

FAULT CURRENT: RE: ONE-LINE DIAGRAM
AIC RATED: FULLY RATED
AIC RATING: FCA +10% MINIMUM
SERVES: SECOND FLOOR - AREA A
MOUNTING: SURFACE
LOCATION: ELEC A216

EQUIPMENT GROUND BUS
LINE-SIDE LUGS: MECHANICAL

CKT NO.	DESCRIPTION	LOAD TYPE	NOTES	WIRE SIZE	BKR AMP	P	PHASE A	PHASE B	PHASE C	P	BKR AMP	WIRE SIZE	NOTES	LOAD TYPE	DESCRIPTION	CKT NO.
1	RCPT - A202 GENERAL A	R		12	20	1	720	3667		3	40	8	ST	U	A218A KILN A	2
3	RCPT - A202 GENERAL B	R		12	20	1		720	3667							4
5	RCPT - A203 GENERAL A	R		12	20	1			720 3667	3	40	8	ST	U	A218A KILN B	6
7	RCPT - A203 GENERAL B	R		12	20	1	720	0		1					SHUNT TRIP SPACE	8
9	RCPT - A204 GENERAL A	R		12	20	1		720	3667							10
11	RCPT - A204 GENERAL B	R		12	20	1			720 3667	3	40	8	ST	U	A218A KILN B	12
13	RCPT - A205 GENERAL A	R		12	20	1	720	3667								14
15	RCPT - A205 GENERAL B	R		12	20	1		720	0	1					SHUNT TRIP SPACE	16
17	RCPT - A207 GENERAL A	R		12	20	1			720 0	1	20				SPARE	18
19	RCPT - A207 GENERAL B	R		12	20	1	720	0		1	20				SPARE	20
21	RCPT - A208 GENERAL A	R		12	20	1		720	0	1	20				SPARE	22
23	RCPT - A208 GENERAL B	R		12	20	1			720 0	1	20				SPARE	24
25	RCPT - A209 GENERAL A	R		12	20	1	720	0		1	20				SPARE	26
27	RCPT - A209 GENERAL B	R		12	20	1		720	0	1	20				SPARE	28
29	RCPT - A210 GENERAL A	R		12	20	1			540 0	1	20				SPARE	30
31	RCPT - A210 GENERAL B	R		12	20	1	720	0		1	20				SPARE	32
33	RCPT - A217 GENERAL A	R		12	20	1		720	0	1	20				SPARE	34
35	RCPT - A217 GENERAL B	R		12	20	1			900 0	1	20				SPARE	36
37	RCPT - A217 GENERAL C	R		12	20	1	1260	0		1	20				SPARE	38
39	RCPT - A218 GENERAL A	R		12	20	1		540	0	1	20				SPARE	40
41	RCPT - A218 GENERAL B	R		12	20	1			720 0	1	20				SPARE	42
43	RCPT - A219 GENERAL A	R		12	20	1	540	0		1	20				SPARE	44
45	RCPT - A219 GENERAL B	R		12	20	1		720	0	1	20				SPARE	46
47	RCPT - A219 GENERAL C	R		12	20	1			540 0	1	20				SPARE	48
49	RCPT - A220A GENERAL	R		12	20	1	900	0		1	20				SPARE	50
51	RCPT - A220 GENERAL A	R		12	20	1		720	0	1	20				SPARE	52
53	RCPT - A220 GENERAL B	R		12	20	1			540 0	1	20				SPARE	54
55	RCPT - A220 GENERAL C	R		12	20	1	540	0		1	20				SPARE	56
57	RCPT - A220 GENERAL D	R		12	20	1		720	0	1	20				SPARE	58
59	RCPT - A201,A212,A213,A24 GENERAL	R		12	20	1			720 0	1	20				SPARE	60
61	RCPT - A200A GENERAL	R		12	20	1	540	0		1	20				SPARE	62
63	RCPT - A206,A22,A23 GENERAL	R		12	20	1		720	0	1	20				SPARE	64
65	RCPT - A24 DRINKING FOUNTAIN	K	GF	12	20	1			600 0	1	20				SPARE	66
67	RCPT - A20,A214 GENERAL	R		12	20	1	720	0		1	20				SPARE	68
69	RCPT - CLOCKS LVL 2 A	R		12	20	1		900	0	1	20				SPARE	70
71	A218A KILN VENT FAN	M		12	20	1			180 0	1	20				SPARE	72
73	SPARE				20	1	0	0		1	20				SPARE	74
75	SPARE				20	1		0	0	1	20				SPARE	76
77	SPARE				20	1			0 0	1	20				SPARE	78
79	SPARE				20	1	0	0		1	20				SPARE	80
81	SPARE				20	1		0	0	1	20				SPARE	82
83	SPARE				20	1			0 0	1	20				SPARE	84
85	SPARE				20	1	0	0		1	20				SPARE	86
87	SPARE				20	1		0	0	1	20				SPARE	88
89	SPARE				20	1			0 0	1	20				SPARE	90
91	SPARE				20	1	0	0		1	20				SPARE	92
93	SPARE				20	1		0	0	1	20				SPARE	94
95	SPARE				20	1			0 0	1	20				SPARE	96
97	SPARE				20	1	0	0		1	20				SPARE	98
99	SPARE				20	1		0	0	1	20				SPARE	100
101	SPARE				20	1			0 0	1	20				SPARE	102
103	SPARE				20	1	0	0		1	20				SPARE	104
105	SPARE				20	1		0	0	1	20				SPARE	106
107	EQUIPPED SPACE					1			0 0	1	20				SPARE	108
109	EQUIPPED SPACE					1	0	0		1	20				SPARE	110
111	EQUIPPED SPACE					1		0	0	1	20				SPARE	112
113	EQUIPPED SPACE					1			0 0	1	20				SPARE	114
115	EQUIPPED SPACE					1	0	0		1	20				SPARE	116
117	EQUIPPED SPACE					1		0	528	1	20	12		M	EF-5	118
119	EQUIPPED SPACE					1			0	1	20	12		Z	FIRE SMOKE DETECTOR	120
121	EQUIPPED SPACE					1	0	100		1	20	12		Z	PWR-MOTORIZED DAMPERS	122
123	EQUIPPED SPACE					1		0	696	1	15	12		M	RHWP-4	124
125	EQUIPPED SPACE					1			0 0	1	20	12			PWR-SECURITY PANEL A215	126
127	EQUIPPED SPACE					1	0	1500		1	20	12		Z	PWR-MAG DOOR HOLDER A25	128
129	EQUIPPED SPACE					1		0	1000	1	20	12		Z	PWR-MAG DOOR HOLDER A26	130
131	EQUIPPED SPACE					1			0 180	1	20	12		R	RCPT-ELEC 209A	132
133	EQUIPPED SPACE					1	0	360		1	20	12	FA	Z	RPS	134
135	EQUIPPED SPACE					1		0	500	1	20	12		Z	PWR - MECH CONTROL PANEL A206	136
137	EQUIPPED SPACE					1			0 900	1	20	10		R	RCPT - ROOF - AREA A	138
139	EQUIPPED SPACE					1	0	1500		1	20	12		M	EF-1	140
141	EQUIPPED SPACE					1		0	1500	1	20	12		M	EF-2	142
143	EQUIPPED SPACE					1			0 1500	1	20	12		M	EF-3	144
145	EQUIPPED SPACE					1	0	1500		1	20	12		M	EF-4	146
147	EQUIPPED SPACE					1		0	1500	1	20	12		M	EF-6	148
149	EQUIPPED SPACE					1			0 1500	1	20	12		M	EF-7	150
151	EQUIPPED SPACE					1	0	832		2	15	12		M	EF-8	152
153	EQUIPPED SPACE					1		0	832							154
155	EQUIPPED SPACE					1			0 700	1	20	12		M	VAVs 401 thru 416	156
157	EQUIPPED SPACE					1	0	1144		2	20	12		C	CU 13-1/CRU 13-1	158
159	EQUIPPED SPACE					1		0	1144							160
161	EQUIPPED SPACE					1			0 1144	2	20	12		C	CU 4-1/CRU 4-1	162
163	EQUIPPED SPACE					1	0	1144								164
165	EQUIPPED SPACE					1		0	1144	2	20	12		C	CU 4-2/CRU 4-2	166
167	EQUIPPED SPACE					1			0 1144							168
			TOTAL LOAD (VA):				24233 VA	24817 VA	22171 VA							
			TOTAL AMPS:				205 A	209 A	185 A							

LOAD TYPE	CONNECTED LOAD	DEMAND FACTOR	NEC DEMAND
EXISTING LOAD (E)	0 VA	100%	0 VA
COOLING (C)	6864 VA	100%	6864 VA
HEATING (H)	0 VA	0%	0 VA
LIGHTING (L)	0 VA	125%	0 VA
RECEPTACLES (R)	25380 VA	70%	17690 VA
MOTORS (M)	11104 VA	100%	11104 VA
SUPPLEMENTAL HEAT (U)	22000 VA	100%	22000 VA
MISC EQUIP (Z)	3610 VA	100%	3610 VA
REFRIGERATION (F)	0 VA	100%	0 VA
SIGN/DISPLAY (D)	0 VA	125%	0 VA
KITCHEN (K)	600 VA	100%	600 VA
LARGEST MOTOR	1664 VA	125%	2080 VA
SHOW WINDOW (W)	0 VA	125%	0 VA
TRACK LIGHTING	0 VA	100%	0 VA

PANELBOARD NOTES

PANELBOARD TOTALS	
TOTAL CONNECTED LOAD	71222 VA
TOTAL NEC LOAD	63948 VA
TOTAL CONNECTED CURRENT	198 A
TOTAL NEC DEMAND CURRENT	178 A

PANELBOARD: 2C2A (NEW)

BUS AMPS: 150A
MAIN SIZE/TYPE: 150A M.C.B.
VOLTS/PHASE: 208Y/120 V 3P/4W
SUPPLIED BY: DP-2H1A VIA TX-2C2A

FAULT CURRENT: RE: ONE-LINE DIAGRAM
AIC RATED: FULLY RATED
AIC RATING: FCA +10% MINIMUM
SERVES: SECOND FLOOR - AREA A
MOUNTING: SURFACE
LOCATION: ELEC A216

EQUIPMENT GROUND BUS
200% NEUTRAL
LINE-SIDE LUGS: MECHANICAL

CKT NO.	DESCRIPTION	LOAD TYPE	NOTES	WIRE SIZE	BKR AMP	P	PHASE A	PHASE B	PHASE C	P	BKR AMP	WIRE SIZE	NOTES	LOAD TYPE	DESCRIPTION	CKT NO.
1	RCPT - A202 DESK/TV	R		12	20	1	1080	360		1	20	12		R	RCPT - A215 IT 1	2
3	RCPT - A203 DESK/TV	R		12	20	1		1080	360							4
5	RCPT - A204 DESK/TV	R		12	20	1			1080 360	1	20	12		R	RCPT - A215 IT 3	6
7	RCPT - A205 DESK/TV	R		12	20	1	1080	360		1	20	12		R	RCPT - A215 IT 4	8
9	RCPT - A207 DESK/TV	R		12	20	1		1080	0	1	20				SPARE	10
11	RCPT - A208 DESK/TV	R		12	20	1			1080 0	1	20				SPARE	12
13	RCPT - A209 DESK/TV	R		12	20	1	1080	0		1	20				SPARE	14
15	RCPT - A210 DESK/TV	R		12	20	1		1080	0	1	20				SPARE	16
17	RCPT - A213 TV	R		12	20	1			360 0	1	20				SPARE	18
19	RCPT - A217 DESK/TV	R		12	20	1	1080	0		1	20				SPARE	20
21	RCPT - A219 DESK/TV	R		12	20	1		1080	0	1	20				SPARE	22
23	RCPT - A220 DESK/TV	R		12	20	1			720 0	1	20				SPARE	24
25	SPARE				20	1	0	0		1	20				SPARE	26
27	SPARE				20	1		0	0	1	20				SPARE	28
29	SPARE				20	1			0 0	1	20				SPARE	30
31	SPARE				20	1	0	0		1	20				SPARE	32
33	SPARE				20	1		0	0	1	20				SPARE	34
35	SPARE				20	1			0 0	1	20				SPARE	36
37	SPARE				20	1	0	0		1	20				SPARE	38
39	SPARE				20	1		0	0	1	20				SPARE	40
41	SPARE				20	1			0 0	1	20				SPARE	42
43	EQUIPPED SPACE					1	0	0		1					EQUIPPED SPACE	44
45	EQUIPPED SPACE					1		0	0	1					EQUIPPED SPACE	46
47	EQUIPPED SPACE					1			0 0	1					EQUIPPED SPACE	48
49	EQUIPPED SPACE					1	0	0		1					EQUIPPED SPACE	50
51	EQUIPPED SPACE					1		0	0	1					EQUIPPED SPACE	52
53	EQUIPPED SPACE					1			0 0	1					EQUIPPED SPACE	54
55	EQUIPPED SPACE					1	0	0		1					EQUIPPED SPACE	56
57	EQUIPPED SPACE					1		0	0	1					EQUIPPED SPACE	58
59	EQUIPPED SPACE					1			0 0	1					EQUIPPED SPACE	60
61	EQUIPPED SPACE					1	0	0		1					EQUIPPED SPACE	62
63	EQUIPPED SPACE					1		0	0	1					EQUIPPED SPACE	64
65	EQUIPPED SPACE					1			0 0	1					EQUIPPED SPACE	66
67	EQUIPPED SPACE					1	0	0		1					EQUIPPED SPACE	68
69	EQUIPPED SPACE					1		0	0	1					EQUIPPED SPACE	70
71	EQUIPPED SPACE					1			0 0	1					EQUIPPED SPACE	72
73	EQUIPPED SPACE					1	0	0		1					EQUIPPED SPACE	74
75	EQUIPPED SPACE					1		0	0	1					EQUIPPED SPACE	76
77	EQUIPPED SPACE					1			0 0	1					EQUIPPED SPACE	78
79	EQUIPPED SPACE					1	0	0		1					EQUIPPED SPACE	80
81	EQUIPPED SPACE					1		0	0	1					EQUIPPED SPACE	82
83	EQUIPPED SPACE					1			0 0	1					EQUIPPED SPACE	84
			TOTAL LOAD (VA):				5040 VA	4680 VA	3600 VA							
			TOTAL AMPS:				43 A	40 A	30 A							

LOAD TYPE	CONNECTED LOAD	DEMAND FACTOR	NEC DEMAND
EXISTING LOAD (E)	0 VA	100%	0 VA
COOLING (C)	0 VA	0%	0 VA
HEATING (H)	0 VA	100%	0 VA
LIGHTING (L)	0 VA	125%	0 VA
RECEPTACLES (R)	13320 VA	88%	11660 VA
MOTORS (M)	0 VA	100%	0 VA
SUPPLEMENTAL HEAT (U)	0 VA	100%	0 VA
MISC EQUIP (Z)	0 VA	100%	0 VA
REFRIGERATION (F)	0 VA	100%	0 VA
SIGN/DISPLAY (D)	0 VA	125%	0 VA
KITCHEN (K)	0 VA	100%	0 VA
LARGEST MOTOR	0 VA	125%	0 VA
SHOW WINDOW (W)	0 VA	125%	0 VA
TRACK LIGHTING	0 VA	100%	0 VA

PANELBOARD NOTES

PANELBOARD TOTALS	
TOTAL CONNECTED LOAD	13320 VA
TOTAL NEC LOAD	11660 VA
TOTAL CONNECTED CURRENT	37 A
TOTAL NEC DEMAND CURRENT	32 A

PANELBOARD SCHEDULE NOTES LEGEND:

AF = ARC FAULT CIRCUIT INTERRUPTER.
C# = CIRCUIT VIA LIGHTING CONTACTOR #.
CL = CIRCUIT VIA CURRENT LIMITING DEVICE.
EM = EMERGENCY LIGHTING HANDLE-ON CLAMP.
ETR = EXISTING TO REMAIN
FA = REDHANDLE-ON CLAMP.
GF = GROUND-FAULT CIRCUIT INTERRUPTER TYPE CIRCUIT BREAKER (5 mA).
GFEP = GROUND FAULT EQUIPMENT PROTECTION BREAKER (30 mA).
HT# = PROVIDE HANDLE-TIE FOR MULTI-WIRE BRANCH CIRCUIT PER CODE. # DENOTES PHASES TO BE TIED.
IG = ISOLATED GROUND CIRCUIT.
L# = LIGHTING CONTROL SCHEME NUMBER.
LCK = HANDLE PADLOCKABLE-OFF DEVICE.
LO = HANDLE-ON CLAMP.
N = PROVIDE NEUTRAL WITH 208V OR 480V, 1-PH OR 3-PH CIRCUIT.
NB = PROVIDE NEW CIRCUIT BREAKER.
O/OL = REFER TO ELECTRICAL ONE-LINE/RISER DIAGRAM.
PS = POWER-SWITCHING CIRCUIT BREAKER.
PSE = EMERGENCY POWER-SWITCHING CIRCUIT BREAKER.
RP = CIRCUIT VIA RELAY PANEL.
SC = REFER TO VOLTAGE DROP CALCULATION SCHEDULE FOR MINIMUM WIRE SIZE.
ST = SHUNT TRIP CIRCUIT BREAKER.
VD = BRANCH CIRCUITRY HAS BEEN UPSIZED TO REDUCE VOLTAGE DROP. ADJUST GROUND WIRE SIZE PER CODE. PROVIDE LUG ADAPTORS IF REQUIRED.

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STATE OF MISSOURI
CURTIS A. OLDS
NUMBER PE-2018036640
PROFESSIONAL ENGINEER

Oct 19 2020
CURTIS A. OLDS
LICENSE # PE-2018036640

HENDERSON ENGINEERS
8345 LENEXA DRIVE, SUITE 300
LENEXA, KS 66214
TEL 913.742.2800 FAX 913.742.0001
WWW.HENDERSONENGINEERS.COM
MO. CORPORATE NO. E-5060
EXPIRES 12/31/2020

LEE'S SUMMIT MIDDLE SCHOOL #4
LEE'S SUMMIT R-7 SCHOOL DISTRICT
1001 SE BAILEY ROAD
LEE'S SUMMIT, MO 64081

PACKAGE 3 - BUILDING & SITE
10/08/20
REVISIONS
ADDENDUM 002 10/19/20

13-20102-00

ELECTRICAL SCHEDULES

PANEL 2H2A	
PANEL 2L2A	PANEL 2C2A

E6.2

CURTIS A. OLDS

PANELBOARD: 2H1B (NEW)

BUS AMPS: 100A
MAIN SIZE/TYPE: 100A M.C.B.
VOLTS/PHASE: 480Y/277 V 3P/4W
SUPPLIED BY: DP-2H1B

FAULT CURRENT: RE: ONE-LINE DIAGRAM
AIC RATED: FULLY RATED
AIC RATING: FCA +10% MINIMUM
SERVES: FIRST FLOOR - AREA B
MOUNTING: SURFACE
LOCATION: ELEC B116

EQUIPMENT GROUND BUS

LINE-SIDE LUGS: MECHANICAL

CKT NO.	DESCRIPTION	LOAD TYPE	NOTES	WIRE SIZE	BKR AMP	P	PHASE A	PHASE B	PHASE C	P	BKR AMP	WIRE SIZE	NOTES	LOAD TYPE	DESCRIPTION	CKT NO.
1	LTS-B01,B101A,B102-B106	L Z		12	20	1	1567	245		1	20	12	EM	L	LTS - AREA B NL & EXIT SIGNS	2
3	LTS-B107,108,109	L Z		12	20	1		1303	1052	1	20	12	EM	L	LTS - COR. B10,B11,B12,B14	4
5	LTS-B110,B110A,B111,B112,B112A	L Z		12	20	1			1893 556	1	20	12	EM	L	LTS-LEARNING COMMONS B100A	6
7	LTS-B117-B120,B121,B121A,B121B	L Z		12	20	1	2262	1129		1	20	10	EM	L	LTS-EXTERIOR AREA B	8
9	LTS-B113, B114, B115	L Z		12	20	1		285	0	1	20				SPARE	10
11	SPARE				20	1			0 0	1	20				SPARE	12
13	SPARE				20	1	0	0		1	20				SPARE	14
15	SPARE				20	1		0	0	1	20				SPARE	16
17	SPARE				20	1			0 0	1	20				SPARE	18
19	SPARE				20	1	0	0		1	20				SPARE	20
21	SPARE				20	1		0	0	1	20				SPARE	22
23	SPARE				20	1			0 0	1	20				SPARE	24
25	SPARE				20	1	0	7167								26
27	SPARE				20	1		0	7167	3	60	4		Z	ELEVATOR (ESTIMATED)	28
29	EQUIPPED SPACE					1			0 7167							30
31	EQUIPPED SPACE					1	0	5100								32
33	EQUIPPED SPACE					1		0	5100	3	25	10		M	AHU-2 (SUPPLY) 4 @ 3HP	34
35	EQUIPPED SPACE					1			0 5100							36
37	EQUIPPED SPACE					1	0	2106								38
39	EQUIPPED SPACE					1		0	2106	3	15	12		Z M	RF-2 (RETURN) 1@5HP	40
41	EQUIPPED SPACE					1			0 2106							42

	PHASE A	PHASE B	PHASE C
TOTAL LOAD (VA):	19576 VA	17013 VA	16822 VA
TOTAL AMPS:	71 A	62 A	61 A

LOAD TYPE	CONNECTED LOAD	DEMAND FACTOR	NEC DEMAND
EXISTING LOAD (E)	0 VA	100%	0 VA
COOLING (C)	0 VA	0%	0 VA
HEATING (H)	0 VA	100%	0 VA
LIGHTING (L)	10182 VA	125%	12728 VA
RECEPTACLES (R)	0 VA	0%	0 VA
MOTORS (M)	6319 VA	100%	6319 VA
SUPPLEMENTAL HEAT (U)	0 VA	100%	0 VA
MISC EQUIP (Z)	21610 VA	100%	21610 VA
REFRIGERATION (F)	0 VA	100%	0 VA
SIGN/DISPLAY (D)	0 VA	125%	0 VA
KITCHEN (K)	0 VA	100%	0 VA
LARGEST MOTOR	15300 VA	125%	19125 VA
SHOW WINDOW (W)	0 VA	125%	0 VA
TRACK LIGHTING	0 VA	100%	0 VA

PANELBOARD NOTES

PANELBOARD TOTALS	
TOTAL CONNECTED LOAD	53411 VA
TOTAL NEC LOAD	59782 VA
TOTAL CONNECTED CURRENT	64 A
TOTAL NEC DEMAND CURRENT	72 A

PANELBOARD: 2L1B (NEW)

BUS AMPS: 225A
MAIN SIZE/TYPE: 225A M.C.B.
VOLTS/PHASE: 208Y/120 V 3P/4W
SUPPLIED BY: DP-2H1B VIA TX-2L1B

FAULT CURRENT: RE: ONE-LINE DIAGRAM
AIC RATED: FULLY RATED
AIC RATING: FCA +10% MINIMUM
SERVES: FIRST FLOOR - AREA B
MOUNTING: SURFACE
LOCATION: ELEC B116

EQUIPMENT GROUND BUS

LINE-SIDE LUGS: MECHANICAL

CKT NO.	DESCRIPTION	LOAD TYPE	NOTES	WIRE SIZE	BKR AMP	P	PHASE A	PHASE B	PHASE C	P	BKR AMP	WIRE SIZE	NOTES	LOAD TYPE	DESCRIPTION	CKT NO.
1	RCPT - B101 GENERAL	R		12	20	1	900	720		1	20	12		R	RCPT - B121 GENERAL A	2
3	RCPT - B102 GENERAL	R		12	20	1		900	360	1	20	12		R	RCPT - B121 GENERAL B	4
5	RCPT - B103 GENERAL A	R		12	20	1			720 360	1	20	12		R	RCPT - B121	6
7	RCPT - B103 GENERAL B	R		12	20	1	720	900		1	20	12	GF	K	RCPT - B121 REFRIGERATOR	8
9	RCPT - B105 GENERAL	R		12	20	1		1080	1500	1	20	12	GF	Z	RCPT - B121 DISHWASHER	10
11	RCPT - B106 GENERAL A	R		12	20	1			720 1200	1	20	12		K	RCPT - B121 MICROWAVE 1	12
13	RCPT - B106 GENERAL B	R		12	20	1	720	1200		1	20	12		K	RCPT - B121 MICROWAVE 2	14
15	RCPT - B107 GENERAL A	R		12	20	1		540	4250	2	50	6		K	RCPT-RANGE B121	16
17	RCPT - B107 GENERAL B	R		12	20	1			720 4250							18
19	RCPT - B108 GENERAL A	R		12	20	1	540	360		1	20	12		R	RCPT-B121 AC KITCHEN 1	20
21	RCPT - B108 GENERAL B	R		12	20	1		720	850	1	20	12		K Z	RCPT-B121 DISPOSAL	22
23	RCPT - B121C GENERAL	R		12	20	1			900 360	1	20	12		R	RCPT-B121 AC KITCHEN 2	24
25	RCPT - B122 GENERAL	R		12	20	1	720	288		1	20	12	GF	K	RCPT-B121 HOOD	26
27	RCPT - B102 GENERAL	R		12	20	1		900	1500	1	20	12	GF	Z	RCPT - B121B WASHER	28
29	RCPT - B102 QUADS	R		12	20	1			720 2700	2	30	10		Z	DRYER B121B	30
31	RCPT - B118 GENERAL	R		12	20	1	720	2700								32
33	RCPT - B118 QUADS	R		12	20	1		720	900	1	20	12		R	RCPT - CLOCKS LVL 1 B	34
35	RCPT - B119 GENERAL	R		12	20	1			900 540	1	20			R	RCPT - B110, B111, B112 GOGGLE	36
37	RCPT - B119 QUADS	R		12	20	1	720	50		1	20	12		Z	DAMPERS PWR-DOOR HARDWARE (B11.2)	38
39	RCPT - B117 GENERAL	R		12	20	1		540	50	1	20	12		Z	PWR - DOOR HARDWARE (B109.2)	40
41	RCPT - RESTROOMS	R		12	20	1			720 0	1	20				SPARE	42
43	RCPT - CORRIDORS B11, B12, B14	R		12	20	1	1080	0		1	20				SPARE	44
45	RCPT - EWC	K	GF	12	20	1		600	0	1	20				SPARE	46
47	RCPT - CORRIDOR B10	R		12	20	1			540 0	1	20				SPARE	48
49	RCPT - B100A QUADS	R		12	20	1	1080	0		1	20				SPARE	50
51	RCPT - B100A, B100C GENERAL	R		12	20	1		900	0	1	20				SPARE	52
53	RCPT - B101A, B104 GENERAL	R		12	20	1			360 0	1	20				SPARE	54
55	RCPT - B110 GENERAL A	R		12	20	1	1080	0		1	20				SPARE	56
57	RCPT - B110 GENERAL B	R		12	20	1		1080	0	1	20				SPARE	58
59	RCPT - B110 QUADS	R		12	20	1			1080 0	1	20				SPARE	60
61	RCPT - B111 GENERAL A	R		12	20	1	1080	0		1	20				SPARE	62
63	RCPT - B111 QUADS A	R		12	20	1		1080	0	1	20				SPARE	64
65	RCPT - B111 QUADS B	R		12	20	1			1080 0	1	20				SPARE	66
67	RCPT - B112 GENERAL A	R		12	20	1	1080	0		1	20				SPARE	68
69	RCPT - B112 QUADS A	R		12	20	1		1080	0	1	20				SPARE	70
71	RCPT - B112 QUADS B	R		12	20	1			1080 0	1	20				SPARE	72
73	RCPT - B110A REFRIGERATOR	K	GF	12	20	1	900	0		1	20				SPARE	74
75	RCPT - B110A QUADS	R		12	20	1		1080	0	1	20				SPARE	76
77	RCPT - B110A REFRIGERATOR 1	K	GF	12	20	1			900 0	1	20				SPARE	78
79	RCPT - B110A ICE MACHINE	K	GF	12	20	1	1860	0		1	20				SPARE	80
81	RCPT-B110A	R		12	20	1		540	0	1	20				SPARE	82
83	RCPT-B112A	R		12	20	1			720 0	1	20				SPARE	84
85	RCPT - B116 ELECTRICAL	R		12	20	1	180	0		1	20				SPARE	86
87	RCPT - B109 MECHANICAL	R		12	20	1		180	0	1	20				SPARE	88
89	PWR-MECH CONTROL PANEL	Z		12	20	1			100 0	1	20				SPARE	90
91	SPARE				20	1	0	0		1	20				SPARE	92
93	SPARE				20	1		0	0	1	20				SPARE	94
95	SPARE				20	1			0 0	1	20				SPARE	96
97	SPARE				20	1	0	0		1	20				SPARE	98
99	SPARE				20	1		0	0	1	20				SPARE	100
101	SPARE				20	1			0 0	1	20				SPARE	102
103	SPARE				20	1	0	0		1	20				SPARE	104
105	SPARE				20	1		0	0	1	20				SPARE	106
107	SPARE				20	1			0 0	1	20				SPARE	108
109	SPARE				20	1	0	0		1	20				SPARE	110
111	SPARE				20	1		0	0	1	20				SPARE	112
113	SPARE				20	1			0 0	1	20				SPARE	114
115	SPARE				20	1	0	0		1	20				SPARE	116
117	SPARE				20	1		0	0	1	20				SPARE	118
119	EQUIPPED SPACE					1			0 0	1	20				SPARE	120
121	EQUIPPED SPACE					1	0	0		1	20				SPARE	122
123	EQUIPPED SPACE					1		0	0	1	20				SPARE	124
125	EQUIPPED SPACE					1			0 0	1	20				SPARE	126
127	EQUIPPED SPACE					1	0	0		1	20				SPARE	128
129	EQUIPPED SPACE					1		0	0	1	20				SPARE	130
131	EQUIPPED SPACE					1			0 0	1	20				SPARE	132
133	EQUIPPED SPACE					1	0	0		1	20				SPARE	134
135	EQUIPPED SPACE					1		0	150	1	20	12		Z	PWR-MOTORIZED DAMPERS	136
137	EQUIPPED SPACE					1			0 696	1	15	12		M	RHWP-2	138
139	EQUIPPED SPACE					1	0	100		1	20	12		Z	PWR-MARNETIC DOOR HOLDERS B12	140
141	EQUIPPED SPACE					1		0	200	1	20	12		Z	PWR-MAGNETIC DOOR HOLDERS A11	142
143	EQUIPPED SPACE					1			0 200	1	20	12		Z	PWR-MAGNETIC DOOR HOLDERS A14	144
145	EQUIPPED SPACE					1	0	500		1	20	12		Z	PWR-LCP1B	146
147	EQUIPPED SPACE					1		0	360	1	20	12	FA	Z	FIRE ALARM PANEL - RPS	148
149	EQUIPPED SPACE					1			0 500	1	20	12		Z	PWR - ELEVATOR CONTROL POWER	150
151	EQUIPPED SPACE					1	0	1500		1	20	12		M	ESP-1 ELEV SUMP PUMP	152
153	EQUIPPED SPACE					1		0	392	1	20	12		L	LTS - ELEVATOR PIT	154
155	EQUIPPED SPACE					1			0 100	1	20	12		Z	EPO/CONTACTOR	156
157	EQUIPPED SPACE					1	0	500		1	15	12	L	Z	ELEV CAB LIGHTING	158
159	EQUIPPED SPACE					1		0	180	1	20	12		R	RCPT - ELEVATOR PIT SERVICE	160
161	EQUIPPED SPACE					1			0 68	1	20	12		Z M	WH3, WH4, RP2	162
163	EQUIPPED SPACE					1	0	900		1	20	12		M	VAVs 201 thru 221	164
165	EQUIPPED SPACE					1		0	1144	2	20	12		C	CU 2-1/CRU 2-1	166
167	EQUIPPED SPACE					1			0 1144							168

	PHASE A	PHASE B	PHASE C
TOTAL LOAD (VA):	23098 VA	23776 VA	23377 VA
TOTAL AMPS:	192 A	198 A	195 A

LOAD TYPE	CONNECTED LOAD	DEMAND FACTOR	NEC DEMAND
EXISTING LOAD (E)	0 VA	100%	0 VA
COOLING (C)	2288 VA	100%	2288 VA
HEATING (H)	0 VA	0%	0 VA
LIGHTING (L)	392 VA	125%	490 VA
RECEPTACLES (R)	36000 VA	64%	23000 VA
MOTORS (M)	1654 VA	100%	1654 VA
SUPPLEMENTAL HEAT (U)	0 VA	100%	0 VA
MISC EQUIP (Z)	11220 VA	100%	11220 VA
REFRIGERATION (F)	0 VA	100%	0 VA
SIGN/DISPLAY (D)	0 VA	125%	0 VA
KITCHEN (K)	17198 VA	65%	11179 VA
LARGEST MOTOR	1500 VA	125%	1875 VA
SHOW WINDOW (W)	0 VA	125%	0 VA
TRACK LIGHTING	0 VA	100%	0 VA

PANELBOARD NOTES

PANELBOARD TOTALS	
TOTAL CONNECTED LOAD	70252 VA
TOTAL NEC LOAD	51706 VA
TOTAL CONNECTED CURRENT	195 A
TOTAL NEC DEMAND CURRENT	144 A

PANELBOARD: 2C1B (NEW)

BUS AMPS: 150A
MAIN SIZE/TYPE: 150A M.C.B.
VOLTS/PHASE: 208Y/120 V 3P/4W
SUPPLIED BY: DP-2H1B VIA TX-2C1B

FAULT CURRENT: RE: ONE-LINE DIAGRAM
AIC RATED: FULLY RATED
AIC RATING: FCA +10% MINIMUM
SERVES: FIRST FLOOR - AREA B
MOUNTING: SURFACE
LOCATION: ELEC B116

EQUIPMENT GROUND BUS

200% NEUTRAL

LINE-SIDE LUGS: MECHANICAL

CKT NO.	DESCRIPTION	LOAD TYPE	NOTES	WIRE SIZE	BKR AMP	P	PHASE A	PHASE B	PHASE C	P	BKR AMP	WIRE SIZE	NOTES	LOAD TYPE	DESCRIPTION	CKT NO.
1	RCPT - B102 DESK/TV	R		12	20	1	540	0		1	20				SPARE	2
3	RCPT - B103 DESK/TV	R		12	20	1		1080	0	1	20				SPARE	4
5	RCPT - B105 DESK/TV	R		12	20	1			1080 0	1	20				SPARE	6
7	RCPT - B106 DESK/TV	R		12	20	1	1080	0		1	20				SPARE	8
9	RCPT - B106 PROJECTOR	R		12	20	1		350	0	1	20				SPARE	10
11	RCPT - B107 DESK/TV	R		12	20	1			1080 0	1	20				SPARE	12
13	RCPT - B108 DESK/TV	R		12	20	1	1080	0		1	20				SPARE	14
15	RCPT - B122 DESK/TV	R		12	20	1		540	0	1	20				SPARE	16
17	RCPT - B121 DESK/TV	R		12	20	1			900 0	1	20				SPARE	18
19	RCPT - B120 DESK/TV	R		12	20	1	540	0		1	20				SPARE	20
21	RCPT - B118, B119 DESK/TV	R		12	20	1		900	0	1	20				SPARE	22
23	RCPT - B112 DESK/TV	R		12	20	1			720 0	1	20				SPARE	24
25	RCPT - B111 DESK/TV	R		12	20	1	720	0		1	20				SPARE	26
27	RCPT - B110 DESK/TV	R		12	20	1		720	0	1	20				SPARE	28
29	RCPT - B100B TV	R		12	20	1			720 0	1	20				SPARE	30
31	SPARE				20	1	0	0		1	20				SPARE	32
33	SPARE				20	1		0	0	1	20				SPARE	34
35	SPARE				20	1			0 0	1	20				SPARE	36
37	SPARE				20	1	0	0		1	20				SPARE	38
39	SPARE				20	1		0	0	1						
41	SPARE				20	1			0 0	1						
43	SPARE				20	1	0	0		1						
45	SPARE				20	1		0	0	1						
47	SPARE				20	1			0 0	1						
49	SPARE				20	1	0	0		1						
51	SPARE				20	1		0	0	1						
53	SPARE				20	1			0 0	1						
55	SPARE				20	1	0	0		1						
57	SPARE				20	1		0	0	1						
59	SPARE				20	1			0 0	1						
61	SPARE				20	1	0	0		1						
63	SPARE				20	1		0	0	1						
65	SPARE				20	1			0 0	1						
67	EQUIPPED SPACE					1	0	0		1						
69	EQUIPPED SPACE					1		0	0	1						
71	EQUIPPED SPACE					1			0 0	1						
73	EQUIPPED SPACE					1	0	0		1						
75	EQUIPPED SPACE					1		0	0	1						
77	EQUIPPED SPACE					1			0 0	1						
79	EQUIPPED SPACE					1	0	0		1						
81	EQUIPPED SPACE					1		0	0	1						
83	EQUIPPED SPACE					1			0 0	1						

	PHASE A	PHASE B	PHASE C
TOTAL LOAD (VA):	3960 VA	3590 VA	4500 VA
TOTAL AMPS:	33 A	30 A	38 A

LOAD TYPE	CONNECTED LOAD	DEMAND FACTOR	NEC DEMAND
EXISTING LOAD (E)	0 VA	100%	0 VA
COOLING (C)	0 VA	0%	0 VA
HEATING (H)	0 VA	100%	0 VA
LIGHTING (L)	0 VA	125%	0 VA
RECEPTACLES (R)	12050 VA	91%	11025 VA
MOTORS (M)	0 VA	100%	0 VA
SUPPLEMENTAL HEAT (U)	0 VA	100%	0 VA
MISC EQUIP (Z)	0 VA	100%	0 VA
REFRIGERATION (F)	0 VA	100%	0 VA
SIGN/DISPLAY (D)	0 VA	125%	0 VA
KITCHEN (K)	0 VA	100%	0 VA
LARGEST MOTOR	0 VA	125%	0 VA
SHOW WINDOW (W)	0 VA	125%	0 VA
TRACK LIGHTING	0 VA	100%	0 VA

PANELBOARD TOTALS	
TOTAL CONNECTED LOAD	12050 VA
TOTAL NEC LOAD	11025 VA
TOTAL CONNECTED CURRENT	33 A
TOTAL NEC DEMAND CURRENT	31 A

PANELBOARD SCHEDULE NOTES LEGEND:

AF = ARC FAULT CIRCUIT INTERRUPTER.
C# = CIRCUIT VIA LIGHTING CONTACTOR #.
CL = CIRCUIT VIA CURRENT LIMITING DEVICE.
EM = EMERGENCY LIGHTING HANDLE-ON CLAMP.
ETR = EXISTING TO REMAIN
FA = REDHANDLE-ON CLAMP.
GF = GROUND-FAULT CIRCUIT INTERRUPTER TYPE CIRCUIT BREAKER (5 mA).
GFEP = GROUND FAULT EQUIPMENT PROTECTION BREAKER (30 mA).
HT# = PROVIDE HANDLE-TIE FOR MULTI-WIRE BRANCH CIRCUIT PER CODE.
# DENOTES PHASES TO BE TIED.
IG = ISOLATED GROUND CIRCUIT.
L# = LIGHTING CONTROL SCHEME NUMBER.
LCK = HANDLE PADLOCKABLE-OFF DEVICE.
LO = HANDLE-ON CLAMP.
N = PROVIDE NEUTRAL WITH 208V OR 480V, 1-PH OR 3-PH CIRCUIT.
NB = PROVIDE NEW CIRCUIT BREAKER.
O/OL = REFER TO ELECTRICAL ONE-LINE/RISER DIAGRAM.
PS = POWER-SWITCHING CIRCUIT BREAKER.
PSE = EMERGENCY POWER-SWITCHING CIRCUIT BREAKER.
RP = CIRCUIT VIA RELAY PANEL.
SC = REFER TO VOLTAGE DROP CALCULATION SCHEDULE FOR MINIMUM WIRE SIZE.
ST = SHUNT TRIP CIRCUIT BREAKER.
VD = BRANCH CIRCUITRY HAS BEEN UPSIZED TO REDUCE VOLTAGE DROP. ADJUST GROUND WIRE SIZE PER CODE. PROVIDE LUG ADAPTORS IF REQUIRED.

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STATE OF MISSOURI
CURTIS A. OLDS
NUMBER PE-2018036640
PROFESSIONAL ENGINEER

Oct 19 2020
CURTIS A. OLDS
LICENSE # PE-2018036640

HENDERSON ENGINEERS
8345 LENEXA DRIVE, SUITE 300
LENEXA, KS 66214
TEL 913.742.2800 FAX 913.742.0001
WWW.HENDERSONENGINEERS.COM
MO. CORPORATE NO. E-5060
EXPIRES 12/31/2020

LEE'S SUMMIT MIDDLE SCHOOL #4

LEE'S SUMMIT R-7 SCHOOL DISTRICT

1001 SE BAILEY ROAD
LEE'S SUMMIT, MO 64081

PACKAGE 3 - BUILDING & SITE
10/08/20
REVISIONS
ADDENDUM 001 10/13/20
ADDENDUM 002 10/19/20

13-20102-00

ELECTRICAL SCHEDULES

PANEL 2H1B	
PANEL 2L1B	PANEL 2C1B

E6.3

CURTIS A. OLDS

PANELBOARD: 2H2B (NEW)

BUS AMPS: 100A
MAIN SIZE/TYPE: 100A M.C.B.
VOLTS/PHASE: 480Y/277 V 3P/4W
SUPPLIED BY: DP-2H1B

FAULT CURRENT: RE: ONE-LINE DIAGRAM
AIC RATED: FULLY RATED
AIC RATING: FCA +10% MINIMUM
SERVES: SECOND FLOOR - AREA B
MOUNTING: SURFACE
LOCATION: ELEC B213

EQUIPMENT GROUND BUS

LINE-SIDE LUGS: MECHANICAL

CKT NO.	DESCRIPTION	LOAD TYPE	NOTES	WIRE SIZE	BKR AMP	P	PHASE A	PHASE B	PHASE C	P	BKR AMP	WIRE SIZE	NOTES	LOAD TYPE	DESCRIPTION	CKT NO.
1	LTG-B201,B202,B203,B204	L Z		12	20	1	1310	165		1	20	12	EM	L	LTS-NL, EXIT SIGNS B20 ,B21, B22	2
3	LTG-B205,B206,B207	L Z		12	20	1		1298	495	1	20	12	EM	L	LTS-CORRIDOR B20,B21,B22	4
5	LTG-B208,B209,B210,B211,B212,B213	L Z		12	20	1			1943 840	1	20	12	EM	L	LTS - LEVEL 2 LEARNING COMMONS B200	6
7	LTG-B214,B215,B216	L Z		12	20	1	2400	1198		1	20	12	EM	L	LTS - LEVEL 2 LC CLERESTORY B200	8
9	SPARE				20	1		0	568	1	20	12	EM	L	LTS -LEVEL 2 STAIR 2 B20	10
11	SPARE				20	1			0 0	1	20				SPARE	12
13	SPARE				20	1	0	0		1	20				SPARE	14
15	SPARE				20	1		0	0	1	20				SPARE	16
17	SPARE				20	1			0 0	1	20				SPARE	18
19	SPARE				20	1	0	0		1	20				SPARE	20
21	SPARE				20	1		0	0	1	20				SPARE	22
23	SPARE				20	1			0 0	1	20				SPARE	24
25	SPARE				20	1	0	0		1	20				SPARE	26
27	SPARE				20	1		0	0	1	20				SPARE	28
29	SPARE				20	1			0 0	1	20				SPARE	30
31	EQUIPPED SPACE					1	0	5100								32
33	EQUIPPED SPACE					1		0	5100	2	25	10	2	M	AHU-5 (SUPPLY)	34
35	EQUIPPED SPACE					1			0 5100						4 @ 3HP	36
37	EQUIPPED SPACE					1	0	2106								38
39	EQUIPPED SPACE					1		0	2106	3	15	12		Z M	RF-5 (RETURN) 1@ 5HP	40
41	EQUIPPED SPACE					1			0 2106							42

TOTAL LOAD (VA):	12279 VA	9567 VA	9989 VA
TOTAL AMPS:	45 A	35 A	36 A

LOAD TYPE	CONNECTED LOAD	DEMAND FACTOR	NEC DEMAND
EXISTING LOAD (E)	0 VA	100%	0 VA
COOLING (C)	0 VA	0%	0 VA
HEATING (H)	0 VA	100%	0 VA
LIGHTING (L)	10132 VA	125%	12665 VA
RECEPTACLES (R)	0 VA	0%	0 VA
MOTORS (M)	6319 VA	100%	6319 VA
SUPPLEMENTAL HEAT (U)	0 VA	100%	0 VA
MISC EQUIP (Z)	85 VA	100%	85 VA
REFRIGERATION (F)	0 VA	100%	0 VA
SIGN/DISPLAY (D)	0 VA	125%	0 VA
KITCHEN (K)	0 VA	100%	0 VA
LARGEST MOTOR	15300 VA	125%	19125 VA
SHOW WINDOW (W)	0 VA	125%	0 VA
TRACK LIGHTING	0 VA	100%	0 VA

PANELBOARD NOTES

PANELBOARD TOTALS	
TOTAL CONNECTED LOAD	31836 VA
TOTAL NEC LOAD	38194 VA
TOTAL CONNECTED CURRENT	38 A
TOTAL NEC DEMAND CURRENT	46 A

PANELBOARD: 2L2B (NEW)

BUS AMPS: 400A
MAIN SIZE/TYPE: 400A M.C.B.
VOLTS/PHASE: 208Y/120 V 3P/4W
SUPPLIED BY: DP-2H1B VIA TX-2L2B

FAULT CURRENT: RE: ONE-LINE DIAGRAM
AIC RATED: FULLY RATED
AIC RATING: FCA +10% MINIMUM
SERVES: SECOND FLOOR - AREA B
MOUNTING: SURFACE
LOCATION: ELEC B213

EQUIPMENT GROUND BUS

LINE-SIDE LUGS: MECHANICAL

CKT NO.	DESCRIPTION	LOAD TYPE	NOTES	WIRE SIZE	BKR AMP	P	PHASE A	PHASE B	PHASE C	P	BKR AMP	WIRE SIZE	NOTES	LOAD TYPE	DESCRIPTION	CKT NO.
1	RCPT - B201 GENERAL A	R		12	20	1	720	900		1	20	12		R	RCPT - B216 GENERAL	2
3	RCPT - B201 GENERAL B	R		12	20	1		540	1080	1	20	12		R	RCPT - B216 AC	4
5	RCPT - B203 GENERAL A	R		12	20	1			720 360	1	20	12		R	RCPT-B216 CORD REEL 1	6
7	RCPT - B203 GENERAL B	R		12	20	1	900	360		1	20	12		R	RCPT-B216 CORD REEL 2	8
9	RCPT - B204 GENERAL A	R		12	20	1		720	360	1	20	12		R	RCPT-B216 CORD REEL 3	10
11	RCPT - B204 GENERAL B	R		12	20	1			900 360	1	20	12		R	RCPT-B216 CORD REEL 4	12
13	RCPT - B205 GENERAL A	R		12	20	1	540	360		1	20	12		R	RCPT-B216 CORD REEL 5	14
15	RCPT - B205 GENERAL B	R		12	20	1		720	360	1	20	12		R	RCPT-B216 CORD REEL 6	16
17	RCPT - B206 GENERAL A	R		12	20	1			720 360	1	20	12		R	RCPT-B216 CORD REEL 7	18
19	RCPT - B206 GENERAL B	R		12	20	1	540	360		1	20	12		R	RCPT-B216 CORD REEL 8	20
21	RCPT - B208 GENERAL A	R		12	20	1		900	360	1	20	12		R	RCPT-B216 CORD REEL 9	22
23	RCPT - B208 GENERAL B	R		12	20	1			720 360	1	20	12		R	RCPT-B216 CORD REEL 10	24
25	RCPT - B209 GENERAL A	R		12	20	1	540	360		1	20	12		R	RCPT-B216 CORD REEL 11	26
27	RCPT - B209 GENERAL B	R		12	20	1		900	360	1	20	12		R	RCPT-B216 CORD REEL 12	28
29	RCPT - B210 GENERAL A	R		12	20	1			720 0	1	20	12		R	RCPT-216A,214A	30
31	RCPT - B210 GENERAL B	R		12	20	1	540	180		1	20	12		R	RCPT-214A	32
33	RCPT - B212 GENERAL A	R		12	20	1		540	1080	1	20	12		R	RCPT-215 GENERAL	34
35	RCPT - B212 GENERAL B	R		12	20	1			540 0	1	20				SPARE	36
37	RCPT- B211,B20 GENERAL	R		12	20	1	540	0		1	20				SPARE	38
39	RCPT - EWC B21	K	GF	12	20	1		600	0	1	20				SPARE	40
41	RCPT - B21,B22,B202 GENERAL	R		12	20	1			1080 0	1	20				SPARE	42
43	RCPT - B200 LEARNING COMMONS	R		12	20	1	540	900		1	20	12	GF	K	RCPT-B214 REFRIGERATOR 1	44
45	RCPT - CLOCKS LVL 2 B	R		12	20	1		900	900	1	20	12	GF	K	RCPT-B214 REFRIGERATOR 2	46
47	RCPT-B214 MICROWAVE STATION 1	K		12	20	1			1000 4250	2	50	6	GF	K	MICRO/COMBI OVEN - B214PROVIDE GFCI	48
49	RCPT-B214 HOOD STATION 1	K		12	20	1	300	4250							BREAKER IF CORD & PLUG	50
51	RCPT-B214 AC A STATION 1	R		12	20	1		540	720	1	20	12		R	RCPT-B214 GENERAL	52
53	RCPT-B214 AC B STATION 1	R		12	20	1			360 360	1	20	12		R	RCPT-B214 ISLAND	54
55	RCPT-B214 RANGE STATION 1	K	GF	6	50	2	4250	4250		2	50	6	GF	K	COOKTOP B214 ISLAND PROVIDE GFCI	56
57								4250	4250						BREAKER IF CORD & PLUG	58
59	RCPT-B214 DISPOSAL STATION 1	K Z	GF	12	20	1			850 1000	1	20	12	GF	K	RCPT-B214 DISHWASHER, ISLAND	60
61	RCPT-B214 AC A STATION 2	R		12	20	1	360	850		1	20	12	GF	K	RCPT-B214 DISPOSAL, ISLAND	62
63	RCPT-B214 AC B STATION 2	R		12	20	1		360	0	1	20				SPARE	64
65	RCPT-B214 HOOD STATION 2	K		12	20	1			300 850	1	20	12	GF	K	RCPT-B214 DISPOSAL STATION 3	66
67	RCPT-B214 MICROWAVE STATION 2	R		12	20	1	180	360		1	20	12		R	RCPT-B214 AC A STATION 3	68
69	RCPT-B214 DISPOSAL STATION 1	K Z	GF	12	20	1		850	4250	2	50	6	GF	K	RCPT-B214 RANGE STATION 3	70
71	RCPT-B214 RANGE STATION 2	K	GF	6	50	2			4250 4250							72
73							4250	1000		1	20	12		K	RCPT-B214 MICROWAVE STATION 3	74
75	RCPT-B214 WASHER	Z		12	20	1		1500	300	1	20	12		K	RCPT-B214 HOOD STATION 3	76
77	DRYER-B214 DRYER	Z		10	30	2			1500 0	1	20				SPARE	78
79							1500	1200		1	20	12	GF	K	RCPT-B214 DISHWASHER STATION 6	80
81	PWR - DOOR HARDWARE (B20,1/B21)	Z		12	20	1		100	850	1	20	12	GF	K	RCPT-B214 DISPOSAL STATION 6	82
83	SPARE				20	1			0 360	1	20	12		R	RCPT-B214 AC A STATION 6	84
85	RCPT-B214 DISPOSAL STATION 4	K Z	GF	12	20	1	850	1000		1	20	12		K	RCPT-B214 MICROWAVE STATION 6	86
87	RCPT-B214 AC A STATION 4	R		12	20	1		360	300	1	20	12		K	RCPT-B214 HOOD STATION 6	88
89	RCPT-B214 MICROWAVE STATION 4	K		12	20	1			1000 4250	2	50	6	GF	K	RCPT-B214 RANGE STATION 6	90
91	RCPT-B214 HOOD STATION 4	K		12	20	1	300	4250								92
93	RCPT-B214 RANGE STATION 4	K	GF	6	50	2		4250	0						SPARE	94
95									4250 0	1	20				SPARE	96
97	SPARE				20	1	0	0		1	20				SPARE	98
99	RCPT-B214 DISPOSAL STATION 5	K	GF	12	20	1		850	0	1	20				SPARE	100
101	RCPT-B214 AC A STATION 5	R		12	20	1			360 0	1	20				SPARE	102
103	RCPT-B214 MICROWAVE STATION 5	K		12	20	1	1000	0		1	20				SPARE	104
105	RCPT-B214 HOOD STATION 5	K		12	20	1		300	0	1	20				SPARE	106
107	RCPT-B214 RANGE STATION 5	K	GF	6	50	2			4250 0	1	20				SPARE	108
109							4250	0		1	20				SPARE	110
111	SPARE				20	1		0	0	1	20				SPARE	112
113	SPARE				20	1			0 0	1	20				SPARE	114
115	SPARE				20	1	0	0		1	20				SPARE	116
117	SPARE				20	1		0	0	1	20				SPARE	118
119	SPARE				20	1			0 0	1	20				SPARE	120
121	SPARE				20	1	0	0		1	20				SPARE	122
123	SPARE				20	1		0	0	1	20				SPARE	124
125	SPARE				20	1			0 0	1	20				SPARE	126
127	EQUIPPED SPACE					1	0	0		1	20				SPARE	128
129	EQUIPPED SPACE					1		0	0	1					EQUIPPED SPACE	130
131	EQUIPPED SPACE					1			0 0	1					EQUIPPED SPACE	132
133	EQUIPPED SPACE					1	0	0		1					EQUIPPED SPACE	134
135	EQUIPPED SPACE					1		0	0	1					EQUIPPED SPACE	136
137	EQUIPPED SPACE					1			0 0	1					EQUIPPED SPACE	138
139	EQUIPPED SPACE					1	0	0		1					EQUIPPED SPACE	140
141	EQUIPPED SPACE					1		0	50	1	20	12	FA	Z	FIRE/SMOKE DETECTOR	142
143	EQUIPPED SPACE					1			0 150	1	20	12		Z	PWR-MOTORIZED DAMPER	144
145	EQUIPPED SPACE					1	0	696		1	15	12		M	RHWP-5	146
147	EQUIPPED SPACE					1		0	1000	1	20	12		Z	PWR-MAG DOOR HOLDS B20	148
149	EQUIPPED SPACE					1			0 500	1	20	12		Z	PWR-MAG DOOR HOLDS B20	150
151	EQUIPPED SPACE					1	0	180		1	20	12		R	RCPT-MECH B207	152
153	EQUIPPED SPACE					1		0	180	1	20	12		R	RCPT-ELEC B213	154
155	EQUIPPED SPACE					1			0 500	1	20	12		Z	PWR-MECH CONTROLS B207	156
157	EQUIPPED SPACE					1	0	832		2	15	12		M	EF-9	158
159	EQUIPPED SPACE					1		0	832							160
161	EQUIPPED SPACE					1			0 180	1	20	12		R	RCPT - ROOF - AREA B	162
163	EQUIPPED SPACE					1	0	800		1	20	12		M	VAVs 501 thru 517	164
165	EQUIPPED SPACE					1		0	1144	2	20	12		C	CU 5-1/CRU 5-1	166
167	EQUIPPED SPACE					1			0 1144							168

TOTAL LOAD (VA):	45188 VA	37556 VA	42754 VA
TOTAL AMPS:	383 A	313 A	363 A

LOAD TYPE	CONNECTED LOAD	DEMAND FACTOR	NEC DEMAND
EXISTING LOAD (E)	0 VA	100%	0 VA
COOLING (C)	2288 VA	100%	2288 VA
HEATING (H)	0 VA	0%	0 VA
LIGHTING (L)	0 VA	125%	0 VA
RECEPTACLES (R)	27900 VA	68%	18950 VA
MOTORS (M)	1496 VA	100%	1496 VA
SUPPLEMENTAL HEAT (U)	0 VA	100%	0 VA
MISC EQUIP (Z)	6800 VA	100%	6800 VA
REFRIGERATION (F)	0 VA	100%	0 VA
SIGN/DISPLAY (D)	0 VA	125%	0 VA
KITCHEN (K)	85350 VA	65%	55477 VA
LARGEST MOTOR	1664 VA	125%	2080 VA
SHOW WINDOW (W)	0 VA	125%	0 VA
TRACK LIGHTING	0 VA	100%	0 VA

PANELBOARD NOTES

PANELBOARD TOTALS	
TOTAL CONNECTED LOAD	125498 VA
TOTAL NEC LOAD	87091 VA
TOTAL CONNECTED CURRENT	348 A
TOTAL NEC DEMAND CURRENT	242 A

PANELBOARD: 2C2B (NEW)

BUS AMPS: 150A
MAIN SIZE/TYPE: 150A M.C.B.
VOLTS/PHASE: 208Y/120 V 3P/4W
SUPPLIED BY: DP-2H1B VIA TX-2C2B

FAULT CURRENT: RE: ONE-LINE DIAGRAM
AIC RATED: FULLY RATED
AIC RATING: FCA +10% MINIMUM
SERVES: SECOND FLOOR - AREA B
MOUNTING: SURFACE
LOCATION: ELEC B213

EQUIPMENT GROUND BUS

200% NEUTRAL

LINE-SIDE LUGS: MECHANICAL

CKT NO.	DESCRIPTION	LOAD TYPE	NOTES	WIRE SIZE	BKR AMP	P	PHASE A	PHASE B	PHASE C	P	BKR AMP	WIRE SIZE	NOTES	LOAD TYPE	DESCRIPTION	CKT NO.
1	RCPT - B201 DESK/TV	R		12	20	1	1080	1080		1	20	12		R	RCPT - B212 DESK/TV	2
3	RCPT - B203 DESK/TV	R		12	20	1		1080	360	1	20	12		R	RCPT - B212 STUDENT TV A	4
5	RCPT - B204 DESK/TV	R		12	20	1			1080 360	1	20	12		R	RCPT - B212 STUDENT DESK A-A	6
7	RCPT - B205 DESK/TV	R		12	20	1	720	360		1	20	12		R	RCPT - B212 STUDENT DESK A-B	8
9	RCPT - B206 DESK/TV	R		12	20	1		1080	360	1	20	12		R	RCPT - B212 STUDENT DESK A-C	10
11	RCPT - B208 DESK/TV	R		12	20	1			1080 360	1	20	12		R	RCPT - B212 STUDENT TV B	12
13	RCPT - B209 DESK/TV	R		12	20	1	1080	360		1	20	12		R	RCPT - B212 STUDENT DESK B-A	14
15	RCPT - B210 DESK/TV	R		12	20	1		720	360	1	20	12		R	RCPT - B212 STUDENT DESK B-B	16
17	RCPT - B210 STUDENT TV A	R		12	20	1			360 360	1	20	12		R	RCPT - B212 STUDENT DESK B-C	18
19	RCPT - B210 STUDENT DESK A-A	R		12	20	1	360	360		1	20	12		R	RCPT - B212 STUDENT TV C	20
21	RCPT - B210 STUDENT DESK A-B	R		12	20	1		360	360	1	20	12		R	RCPT - B212 STUDENT DESK C-A	22
23	RCPT - B210 STUDENT DESK A-C	R		12	20	1			360 360	1	20	12		R	RCPT - B212 STUDENT DESK C-B	24
25	RCPT - B210 STUDENT TV B	R		12	20	1	360	360		1	20	12		R	RCPT - B212 STUDENT DESK C-C	26
27	RCPT - B210 STUDENT DESK B-A	R		12	20	1		360	360	1	20	12		R	RCPT - B212 STUDENT TV D	28
29	RCPT - B210 STUDENT DESK B-B	R		12	20	1			360 360	1	20	12		R	RCPT - B212 STUDENT DESK D-A	30
31	RCPT - B210 STUDENT DESK B-C	R		12	20	1	360	360		1	20	12		R	RCPT - B212 STUDENT DESK D-B	32
33	RCPT - B210 STUDENT TV C	R		12	20	1		360	360	1	20	12		R	RCPT - B212 STUDENT DESK D-C	34
35	RCPT - B210 STUDENT DESK C-A	R		12	20	1			360 360	1	20	12		R	RCPT - B212 STUDENT DESK E	36
37	RCPT - B210 STUDENT DESK C-B	R		12	20	1	360	1080		1	20	12		R	RCPT - B215 DESK/TV	38
39	RCPT - B210 STUDENT DESK C-C	R		12	20	1		360	720	1	20	12		R	RCPT - B216 DESK/TV	40
41	RCPT - B210 STUDENT TV D	R		12	20	1			360 720	1	20	12	GF	R	RCPT - B214 TV/ISLAND	42
43	RCPT - B210 STUDENT DESK D-A	R		12	20	1	360	180		1	20	12		R	RCPT - B214 DESK	44
45	RCPT - B210 STUDENT DESK D-B	R		12	20	1		360	0	1	20				SPARE	46
47	RCPT - B210 STUDENT DESK D-C	R		12	20	1			360 0	1	20				SPARE	48
49	RCPT - B210 STUDENT TV E	R		12	20	1	360	0		1	20				SPARE	50
51	RCPT - B210 STUDENT DESK E-A	R		12	20	1		360	0	1	20				SPARE	52
53	RCPT - B210 STUDENT DESK E-B	R		12	20	1			360 0	1	20				SPARE	54
55	RCPT - B210 STUDENT DESK E-C	R		12	20	1	360	0		1	20				SPARE	56
57	SPARE				20	1		0	0	1	20				SPARE	58
59	SPARE				20	1			0 0	1	20				SPARE	60
61	SPARE				20	1	0	0		1	20				SPARE	62
63	SPARE				20	1		0	0	1	20				SPARE	64
65	SPARE				20	1			0 0	1	20				SPARE	66
67	SPARE				20	1	0	0		1	20				SPARE	68
69	SPARE				20	1		0	0	1	20				SPARE	70
71	SPARE				20	1			0 0	1	20				SPARE	72
73	SPARE				20	1	0	0		1	20				SPARE	74
75	EQUIPPED SPACE					1		0	0	1					EQUIPPED SPACE	76
77	EQUIPPED SPACE					1			0 0	1					EQUIPPED SPACE	78
79	EQUIPPED SPACE					1	0	0		1					EQUIPPED SPACE	80
81	EQUIPPED SPACE					1		0	0	1					EQUIPPED SPACE	82
83	EQUIPPED SPACE					1			0 0	1					EQUIPPED SPACE	84

TOTAL LOAD (VA):	9540 VA	7920 VA	7560 VA
TOTAL AMPS:	80 A	66 A	63 A

LOAD TYPE	CONNECTED LOAD	DEMAND FACTOR	NEC DEMAND
EXISTING LOAD (E)	0 VA	100%	0 VA
COOLING (C)	0 VA	0%	0 VA
HEATING (H)	0 VA	100%	0 VA
LIGHTING (L)	0 VA	125%	0 VA
RECEPTACLES (R)	25020 VA	70%	17510 VA
MOTORS (M)	0 VA	100%	0 VA
SUPPLEMENTAL HEAT (U)	0 VA	100%	0 VA
MISC EQUIP (Z)	0 VA	100%	0 VA
REFRIGERATION (F)	0 VA	100%	0 VA
SIGN/DISPLAY (D)	0 VA	125%	0 VA
KITCHEN (K)	0 VA	100%	0 VA
LARGEST MOTOR	0 VA	125%	0 VA
SHOW WINDOW (W)	0 VA	125%	0 VA
TRACK LIGHTING	0 VA	100%	0 VA

PANELBOARD NOTES

PANELBOARD TOTALS	
TOTAL CONNECTED LOAD	25020 VA
TOTAL NEC LOAD	17510 VA
TOTAL CONNECTED CURRENT	69 A
TOTAL NEC DEMAND CURRENT	49 A

PANELBOARD SCHEDULE NOTES LEGEND:

AF = ARC FAULT CIRCUIT INTERRUPTER.
C# = CIRCUIT VIA LIGHTING CONTACTOR #.
CL = CIRCUIT VIA CURRENT LIMITING DEVICE.
EM = EMERGENCY LIGHTING HANDLE-ON CLAMP.
ETR = EXISTING TO REMAIN
FA = REDHANDLE-ON CLAMP.
GF = GROUND-FAULT CIRCUIT INTERRUPTER TYPE CIRCUIT BREAKER (5 mA).
GFEP = GROUND FAULT EQUIPMENT PROTECTION BREAKER (30 mA).
HT# = PROVIDE HANDLE-TIE FOR MULTI-WIRE BRANCH CIRCUIT PER CODE.
# DENOTES PHASES TO BE TIED.
IG = ISOLATED GROUND CIRCUIT.
L# = LIGHTING CONTROL SCHEME NUMBER.
LCK = HANDLE PADLOCKABLE-OFF DEVICE.
LO = HANDLE-ON CLAMP.
N = PROVIDE NEUTRAL WITH 208V OR 480V, 1-PH OR 3-PH CIRCUIT.
NB = PROVIDE NEW CIRCUIT BREAKER.
O/OL = REFER TO ELECTRICAL ONE-LINE/RISER DIAGRAM.
PS = POWER-SWITCHING CIRCUIT BREAKER.
PSE = EMERGENCY POWER-SWITCHING CIRCUIT BREAKER.
RP = CIRCUIT VIA RELAY PANEL.
SC = REFER TO VOLTAGE DROP CALCULATION SCHEDULE FOR MINIMUM WIRE SIZE.
ST = SHUNT TRIP CIRCUIT BREAKER.
VD = BRANCH CIRCUITRY HAS BEEN UPSIZED TO REDUCE VOLTAGE DROP. ADJUST GROUND WIRE SIZE PER CODE. PROVIDE LUG ADAPTORS IF REQUIRED.

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STATE OF MISSOURI
CURTIS A. OLDS
NUMBER PE-2018036640
PROFESSIONAL ENGINEER

Oct 19 2020
CURTIS A. OLDS
LICENSE # PE-2018036640

HENDERSON ENGINEERS
8345 LENEXA DRIVE, SUITE 300
LENEXA, KS 66214
TEL 913.742.2800 FAX 913.742.3091
WWW.HENDERSONENGINEERS.COM
MO. CORPORATE NO. E-5060
EXPIRES 12/31/2020

LEE'S SUMMIT MIDDLE SCHOOL #4

LEE'S SUMMIT R-7 SCHOOL DISTRICT

1001 SE BAILEY ROAD
LEE'S SUMMIT, MO 64081

PACKAGE 3 - BUILDING & SITE
10/08/20
REVISIONS

ADDENDUM 001	10/13/20
ADDENDUM 002	10/19/20

13-20102-00

ELECTRICAL SCHEDULES

E6.4

PANEL 2H2B	
PANEL 2L2B	PANEL 2C2B

CURTIS A. OLDS

PANELBOARD: 2H1C (NEW)

BUS AMPS: 100A
MAIN SIZE/TYPE: 100A M.C.B.
VOLTS/PHASE: 480Y/277 V 3P/4W
SUPPLIED BY: DP-2H1C

FAULT CURRENT: RE: ONE-LINE DIAGRAM
AIC RATED: FULLY RATED
AIC RATING: FCA +10% MINIMUM
SERVES: FIRST FLOOR - AREA C
MOUNTING: SURFACE
LOCATION: ELECTRICAL C116

EQUIPMENT GROUND BUS

LINE-SIDE LUGS: MECHANICAL

CKT NO.	DESCRIPTION	LOAD TYPE	NOTES	WIRE SIZE	BKR AMP	P	PHASE A	PHASE B	PHASE C	P	BKR AMP	WIRE SIZE	NOTES	LOAD TYPE	DESCRIPTION	CKT NO.
1	LTG-C101-C107	L Z		12	20	1	1178	448		1	20	12	EM	L	LTS-C10-C15 NL, EXIT SIGNS	2
3	LTG-C108, C109, C110	L Z		12	20	1		1303	1217	1	20	12	EM	L	LTS - CORR. C10-C15	4
5	LTG-C111,C11A,C112,C116,C113A	L Z		12	20	1			1963 556	1	20	12	EM	L	LTS-L COMMONS C100A	6
7	LTG-C114,C115,C115A-D	L		12	20	1	463	1263		1	20	10	EM	L	LTS - EXTERIOR BUILDING MOUNTED	8
9	LTG-C118,C120-C130(EVEN)	L		12	20	1		900	3944	1	20	10	EM	L	LTS - FRONT ENTRY CANOPY	10
11	LTG-C117,C118,C121-C129(ODD)	L		12	20	1			1478 2375	1	20	OL		L	LTS - WEST PARKING LOT (EAST)	12
13	SPARE				20	1	0	2565		1	20	OL		L	LTS - WEST PARKING LOT (WEST)	14
15	SPARE				20	1		0	950	1	20	OL	C#	L	LTS - WEST DRIVE (LCP1C)	16
17	SPARE				20	1			0 477	1	20	OL	C#	L	LTS - EAST PEDESTRIAN PATH (LCP1C)	18
19	SPARE				20	1	0	104		1	20	OL	C#	L	LTS - FLAGPOLES (LCP1C)	20
21	SPARE				20	1		0	0	1	20				SPARE	22
23	SPARE				20	1			0 0	1	20				SPARE	24
25	SPARE				20	1	0	0		1	20				SPARE	26
27	SPARE				20	1		0	0	1	20				SPARE	28
29	SPARE				20	1			0 0	1	20				SPARE	30
31	EQUIPPED SPACE					1	0	8073		2	35	2 8		M	AHU-3 (SUPPLY)	32
33	EQUIPPED SPACE					1		0	8073						4 @ 5HP	34
35	EQUIPPED SPACE					1			0 8073							36
37	EQUIPPED SPACE					1	0	2106								38
39	EQUIPPED SPACE					1		0	2106	3	15	12		Z M	FR-3 (RETURN) 1@5HP	40
41	EQUIPPED SPACE					1			0 2106							42
		TOTAL LOAD (VA):					16201 VA	18494 VA	17029 VA							
		TOTAL AMPS:					58 A	67 A	62 A							

LOAD TYPE	CONNECTED LOAD	DEMAND FACTOR	NEC DEMAND
EXISTING LOAD (E)	0 VA	100%	0 VA
COOLING (C)	0 VA	0%	0 VA
HEATING (H)	0 VA	100%	0 VA
LIGHTING (L)	21144 VA	125%	26430 VA
RECEPTACLES (R)	0 VA	0%	0 VA
MOTORS (M)	6319 VA	100%	6319 VA
SUPPLEMENTAL HEAT (U)	0 VA	100%	0 VA
MISC EQUIP (Z)	40 VA	100%	40 VA
REFRIGERATION (F)	0 VA	100%	0 VA
SIGN/DISPLAY (D)	0 VA	125%	0 VA
KITCHEN (K)	0 VA	100%	0 VA
LARGEST MOTOR	24220 VA	125%	30275 VA
SHOW WINDOW (W)	0 VA	125%	0 VA
TRACK LIGHTING	0 VA	100%	0 VA

PANELBOARD NOTES

PANELBOARD TOTALS	
TOTAL CONNECTED LOAD	51723 VA
TOTAL NEC LOAD	63064 VA
TOTAL CONNECTED CURRENT	62 A
TOTAL NEC DEMAND CURRENT	76 A

PANELBOARD: 2L1C (NEW)

BUS AMPS: 225A
MAIN SIZE/TYPE: 225A M.C.B.
VOLTS/PHASE: 208Y/120 V 3P/4W
SUPPLIED BY: DP-2H1C VIA TX-2L1C

FAULT CURRENT: RE: ONE-LINE DIAGRAM
AIC RATED: FULLY RATED
AIC RATING: FCA +10% MINIMUM
SERVES: FIRST FLOOR - AREA C
MOUNTING: SURFACE
LOCATION: ELECTRICAL C116

EQUIPMENT GROUND BUS

LINE-SIDE LUGS: MECHANICAL

CKT NO.	DESCRIPTION	LOAD TYPE	NOTES	WIRE SIZE	BKR AMP	P	PHASE A	PHASE B	PHASE C	P	BKR AMP	WIRE SIZE	NOTES	LOAD TYPE	DESCRIPTION	CKT NO.
1	RCPT - C101 GENERAL A	R		12	20	1	900	1200		1	20	12		K	RCPT - C123 MICRO, COUNTER	2
3	RCPT - C101 GENERAL B	R		12	20	1			720 900	1	20	12	GF	K	RCPT - C123 REFRIGERATOR A	4
5	RCPT - C106 GENERAL A	R		12	20	1			1080 900	1	20	12	GF	K	RCPT - C123 REFRIGERATOR B	6
7	RCPT - C107 GENERAL A	R		12	20	1	900	720		1	20	12		R	RCPT - C123 GENERAL	8
9	RCPT - C107 GENERAL B	R		12	20	1			540 720	1	20	12		R	RCPT - C123 AC	10
11	RCPT - C108 GENERAL A	R		12	20	1			540 900	1	20	12	GF	K,Z	RCPT - C123 DISPOSAL	12
13	RCPT - C108 GENERAL B	R		12	20	1	720	900		1	20	12	GF	K	RCPT - C123 MICRO, CABINET	14
15	RCPT - C109 GENERAL A	R		12	20	1			900 360	1	20	12		R	RCPT-C100C	16
17	RCPT - C190 GENERAL B	R		12	20	1			540 1260	1	20	12		R	RCPT - CLOCKS LVL 1 C	18
19	RCPT - OFFICE C128,C130, C131	R		12	20	1	1260	150		1	20	12		Z	PWR - DOOR HARDWARE (C10/C11)	20
21	RCPT - OFFICE C122, C126	R		12	20	1			1260 100	1	20	12		Z	PWR - DOOR HARDWARE (C12/C110,2)	22
23	RCPT - OFFICE C124	R		12	20	1			720 0	1	20				SPARE	24
25	RCPT - OFFICE C118, C120	R		12	20	1	1080	0		1	20				SPARE	26
27	RCPT - CONFRENCE C117	R		12	20	1			1080 0	1	20				SPARE	28
29	RCPT - C119 GENERAL B	R		12	20	1			360 0	1	20				SPARE	30
31	RCPT - C119 GENERAL	R		12	20	1	540	0		1	20				SPARE	32
33	RCPT - C119, C123 GENERAL	R		12	20	1			540 0	1	20				SPARE	34
35	RCPT - C119 COPIER	Z		12	20	1			1500 0	1	20				SPARE	36
37	RCPT - C129A GENERAL	R		12	20	1	1080	0		1	20				SPARE	38
39	RCPT - C125, C129 GENERAL	R		12	20	1			1080 0	1	20				SPARE	40
41	RCPT - C121, C127 CONV	R		12	20	1			360 0	1	20				SPARE	42
43	RCPT - CORRIDORS C10, C11, C12, C13	R		12	20	1	1080	0		1	20				SPARE	44
45	RCPT - C100A, C100B GENERAL	R		12	20	1			900 0	1	20				SPARE	46
47	RCPT - C100B QUADS	R		12	20	1			540 0	1	20				SPARE	48
49	RCPT - C115A GENERAL	R		12	20	1	720	0		1	20				SPARE	50
51	RCPT - C115B, C115C GENERAL	R		12	20	1			900 0	1	20				SPARE	52
53	RCPT - C115 GENERAL	R		12	20	1			540 0	1	20				SPARE	54
55	RCPT - C115 MICROWAVE	K	GF	12	20	1	1000	0		1	20				SPARE	56
57	RCPT - RESTROOMS/CUSTODIAL	R		12	20	1			1080 0	1	20				SPARE	58
59	RCPT - C113 GENERAL	R		12	20	1			1080 0	1	20				SPARE	60
61	RCPT - C113 QUADS A	R		12	20	1	1080	0		1	20				SPARE	62
63	RCPT - C113 QUADS B	R		12	20	1			1440 0	1	20				SPARE	64
65	RCPT - C112 GENERAL	R		12	20	1			1080 0	1	20				SPARE	66
67	RCPT - C112 QUADS A	R		12	20	1	720	0		1	20				SPARE	68
69	RCPT - C112 QUADS B	R		12	20	1			1080 0	1	20				SPARE	70
71	RCPT - C111 GENERAL	R		12	20	1			1080 0	1	20				SPARE	72
73	RCPT - C111 QUADS A	R		12	20	1	1440	0		1	20				SPARE	74
75	RCPT - C111 QUADS B	R		12	20	1			720 0	1	20				SPARE	76
77	RCPT - C111A REFRIGERATOR	K	GF	12	20	1			1000 0	1	20				SPARE	78
79	RCPT - C111A QUADS A	R		12	20	1	1080	0		1	20				SPARE	80
81	RCPT - C111A ICE MACHINE	Z	GF	12	20	1			1000 0	1	20				SPARE	82
83	RCPT-C111A	R		12	20	1			720 0	1	20				SPARE	84
85	FUME HOOD C111A	Z		12	20	1	500	0		1	20				SPARE	86
87	RCPT-EWC COR. C11	K	GF	12	20	1			600 0	1	20				SPARE	88
89	RCPT-TERSANO C105	R		12	20	1			180 0	1	20				SPARE	90
91	RCPT - C116 ELECTRICAL	R		12	20	1	180	0		1	20				SPARE	92
93	RECEPTACLES	R			20	1			360 0	1	20				SPARE	94
95	SPARE				20	1			0 0	1	20				SPARE	96
97	SPARE				20	1	0	0		1	20				SPARE	98
99	SPARE				20	1			0 0	1	20				SPARE	100
101	SPARE				20	1			0 0	1	20				SPARE	102
103	SPARE				20	1	0	0		1	20				SPARE	104
105	SPARE				20	1			0 0	1	20				SPARE	106
107	SPARE				20	1			0 0	1	20				SPARE	108
109	SPARE				20	1	0	0		1	20				SPARE	110
111	SPARE				20	1			0 0	1	20				SPARE	112
113	SPARE				20	1			0 0	1	20				SPARE	114
115	SPARE				20	1	0	0		1					EQUIPPED SPACE	116
117	EQUIPPED SPACE					1			0 0	1					EQUIPPED SPACE	118
119	EQUIPPED SPACE					1			0 0	1					EQUIPPED SPACE	120
121	EQUIPPED SPACE					1	0	0		1					EQUIPPED SPACE	122
123	EQUIPPED SPACE					1			0 0	1					EQUIPPED SPACE	124
125	EQUIPPED SPACE					1			0 0	1					EQUIPPED SPACE	126
127	EQUIPPED SPACE					1	0	0		1					EQUIPPED SPACE	128
129	EQUIPPED SPACE					1			0 0	1					EQUIPPED SPACE	130
131	EQUIPPED SPACE					1			0 0	1					EQUIPPED SPACE	132
133	EQUIPPED SPACE					1	0	150		1	20	12		Z	PWR-C110 MOTORIZED DAMPER	134
135	EQUIPPED SPACE					1			0 696	1	20	12		M	RHWP-3	136
137	EQUIPPED SPACE					1			0 400	1	20	12			PWR-SECURITY PANEL	138
139	EQUIPPED SPACE					1	0	100		1	20	12		Z	PWR-MAG DOOR HOLDS C19	140
141	EQUIPPED SPACE					1			0 100	1	20	12		Z	PWR-MAG DOOR HOLDS C18	142
143	EQUIPPED SPACE					1			0 360	1	20	12	FA	Z	FACP	144
145	EQUIPPED SPACE					1	0	360		1	20	12	FA	Z	FIRE ALARM PANEL - RPS	146
147	EQUIPPED SPACE					1			0 500	1	20	12	FA	Z	PWR - FIRE ALARM PANEL	148
149	EQUIPPED SPACE					1			0 500	1	20	12		Z	PWR-LCP1C	150
151	EQUIPPED SPACE					1	0	100		1	20	12		Z	PWR-MECH CONTROL PANEL	152
153	EQUIPPED SPACE					1			0 180	1	20	12		R	RCPT - C110 MECHANICAL	154
155	EQUIPPED SPACE					1			0 100	1	20	12		Z	EPO/CONTACTOR	156
157	EQUIPPED SPACE					1	0	68		1	20	12		Z M	WH5, WH6, RP3	158
159	EQUIPPED SPACE					1			0 900	1	20	12		M	VAVs 301 thru 323	160
161	EQUIPPED SPACE					1			0 1144	1	20	10		C	CU-7/CR-7	162
163	EQUIPPED SPACE					1	0	1144		1						164
165	EQUIPPED SPACE					1			0 1144	2	30	10		C	CU-8/CR-8	166
167	EQUIPPED SPACE					1			0 1144							168
		TOTAL LOAD (VA):					19171 VA	19800 VA	18028 VA							
		TOTAL AMPS:					161 A	166 A	150 A							

LOAD TYPE	CONNECTED LOAD	DEMAND FACTOR	NEC DEMAND
EXISTING LOAD (E)	0 VA	100%	0 VA
COOLING (C)	4576 VA	100%	4576 VA
HEATING (H)	0 VA	0%	0 VA
LIGHTING (L)	0 VA	125%	0 VA
RECEPTACLES (R)	37440 VA	63%	23720 VA
MOTORS (M)	958 VA	100%	958 VA
SUPPLEMENTAL HEAT (U)	0 VA	100%	0 VA
MISC EQUIP (Z)	5530 VA	100%	5530 VA
REFRIGERATION (F)	0 VA	100%	0 VA
SIGN/DISPLAY (D)	0 VA	125%	0 VA
KITCHEN (K)	7400 VA	65%	4810 VA
LARGEST MOTOR	696 VA	125%	870 VA
SHOW WINDOW (W)	0 VA	125%	0 VA
TRACK LIGHTING	0 VA	100%	0 VA

PANELBOARD NOTES

PANELBOARD TOTALS	
TOTAL CONNECTED LOAD	56600 VA
TOTAL NEC LOAD	40464 VA
TOTAL CONNECTED CURRENT	157 A
TOTAL NEC DEMAND CURRENT	112 A

PANELBOARD: 2C1C (NEW)

BUS AMPS: 150A
MAIN SIZE/TYPE: 150A M.C.B.
VOLTS/PHASE: 208Y/120 V 3P/4W
SUPPLIED BY: DP-2H1C VIA TX-2C1C

FAULT CURRENT: RE: ONE-LINE DIAGRAM
AIC RATED: FULLY RATED
AIC RATING: FCA +10% MINIMUM
SERVES: FIRST FLOOR - AREA C
MOUNTING: SURFACE
LOCATION: ELECTRICAL C116

EQUIPMENT GROUND BUS

200% NEUTRAL

LINE-SIDE LUGS: MECHANICAL

CKT NO.	DESCRIPTION	LOAD TYPE	NOTES	WIRE SIZE	BKR AMP	P	PHASE A	PHASE B	PHASE C	P	BKR AMP	WIRE SIZE	NOTES	LOAD TYPE	DESCRIPTION	CKT NO.
1	RCPT - C101 DESK/TV	R		12	20	1	720	360		1	20	12		R	RCPT - C129A FLOOR BOX/TV	2
3	RCPT - C106 DESK/TV	R		12	20	1		720	720	1	20	12		R	RCPT-C118 DESK/TV	4
5	RCPT - C107 DESK/TV	R		12	20	1			1080 1080	1	20	12		R	RCPT-C117 FLOOR BOXES/TV	6
7	RCPT - C108 DESK/TV	R		12	20	1	1080	1080		1	20	12		R	RCPT - C125 DESKS	8
9	RCPT - C109 DESK/TV	R		12	20	1		1080	360	1	20	12		R	RCPT - C114 IT A	10
11	RCPT - C115, C115B DESKS	R	GF	12	20	1			720 360	1	20	12		R	RCPT - C114 IT B	12
13	RCPT - C100B TVS	R		12	20	1	720	360		1	20	12		R	RCPT - C114 IT C	14
15	SPARE				20	1		0	360	1	20	12		R	RCPT - C114 IT D	16
17	SPARE				20	1			0 0	1	20				SPARE	18
19	RCPT - C113 DESK/TV	R		12	20	1	720	0		1	20				SPARE	20
21	RCPT - C112 DESK/TV	R		12	20	1		720	0	1	20				SPARE	22
23	RCPT - C111 DESK/TV	R		12	20	1			720 0	1	20				SPARE	24
25	RCPT - C118, C120, C122, C124 CPU	R		12	20	1	1080	0		1	20				SPARE	26
27	RCPT - C129, C131 CPU	R		12	20	1		1080	0	1	20				SPARE	28
29	RCPT - C128, C130 CPU	R		12	20	1			1080 0	1	20				SPARE	30
31	RCPT - C125, C126 CPU	R		12	20	1	1080	0		1	20				SPARE	32
33	SPARE				20	1		0	0	1	20				SPARE	34
35	SPARE				20	1			0 0	1	20				SPARE	36
37	SPARE				20	1	0	0		1	20				SPARE	38
39	SPARE				20	1		0	0	1	20				SPARE	40
41	SPARE				20	1			0 0	1	20				SPARE	42
43	SPARE				20	1	0	0		1	20				SPARE	44
45	SPARE				20	1		0	0	1	20				SPARE	46
47	SPARE				20	1			0 0	1	20				SPARE	48
49	SPARE				20	1	0	0		1	20				SPARE	50
51	SPARE				20	1		0	0	1	20				SPARE	52
53	SPARE				20	1			0 0	1	20				SPARE	54
55	EQUIPPED SPACE					1	0	0		1					EQUIPPED SPACE	56
57	EQUIPPED SPACE					1		0	0	1					EQUIPPED SPACE	58
59	EQUIPPED SPACE					1			0 0	1					EQUIPPED SPACE	60
61	EQUIPPED SPACE					1	0	0		1					EQUIPPED SPACE	62
63	EQUIPPED SPACE					1		0	0	1					EQUIPPED SPACE	64
65	EQUIPPED SPACE					1			0 0	1					EQUIPPED SPACE	66
67	EQUIPPED SPACE					1	0	0		1					EQUIPPED SPACE	68
69	EQUIPPED SPACE					1		0	0	1					EQUIPPED SPACE	70
71	EQUIPPED SPACE					1			0 0	1					EQUIPPED SPACE	72
73	EQUIPPED SPACE					1	0	0		1					EQUIPPED SPACE	74
75	EQUIPPED SPACE					1		0	0	1					EQUIPPED SPACE	76
77	EQUIPPED SPACE					1			0 0	1					EQUIPPED SPACE	78
79	EQUIPPED SPACE					1	0	0		1					EQUIPPED SPACE	80
81	EQUIPPED SPACE					1		0	0	1					EQUIPPED SPACE	82
83	EQUIPPED SPACE					1			0 0	1					EQUIPPED SPACE	84
		TOTAL LOAD (VA):					7200 VA	5040 VA	5040 VA							
		TOTAL AMPS:					60 A	42 A	42 A							

LOAD TYPE	CONNECTED LOAD	DEMAND FACTOR	NEC DEMAND
EXISTING LOAD (E)	0 VA	100%	0 VA
COOLING (C)	0 VA	0%	0 VA
HEATING (H)	0 VA	100%	0 VA
LIGHTING (L)	0 VA	125%	0 VA
RECEPTACLES (R)	17280 VA	79%	13640 VA
MOTORS (M)	0 VA	100%	0 VA
SUPPLEMENTAL HEAT (U)	0 VA	100%	0 VA
MISC EQUIP (Z)	0 VA	100%	0 VA
REFRIGERATION (F)	0 VA	100%	0 VA
SIGN/DISPLAY (D)	0 VA	125%	0 VA
KITCHEN (K)	0 VA	100%	0 VA
LARGEST MOTOR	0 VA	125%	0 VA
SHOW WINDOW (W)	0 VA	125%	0 VA
TRACK LIGHTING	0 VA	100%	0 VA

PANELBOARD NOTES

PANELBOARD TOTALS	
TOTAL CONNECTED LOAD	17280 VA
TOTAL NEC LOAD	13640 VA
TOTAL CONNECTED CURRENT	48 A
TOTAL NEC DEMAND CURRENT	38 A

PANELBOARD SCHEDULE NOTES LEGEND:

AF = ARC FAULT CIRCUIT INTERRUPTER.
C# = CIRCUIT VIA LIGHTING CONTACTOR #.
CL = CIRCUIT VIA CURRENT LIMITING DEVICE.
EM = EMERGENCY LIGHTING HANDLE-ON CLAMP.
ETR = EXISTING TO REMAIN
FA = RED/HANDLE-ON CLAMP.
GF = GROUND-FAULT CIRCUIT INTERRUPTER TYPE CIRCUIT BREAKER (5 mA).
GFEP = GROUND FAULT EQUIPMENT PROTECTION BREAKER (30 mA).
HT# = PROVIDE HANDLE-TIE FOR MULTI-WIRE BRANCH CIRCUIT PER CODE.
# DENOTES PHASES TO BE TIED.
IG = ISOLATED GROUND CIRCUIT.
L# = LIGHTING CONTROL SCHEME NUMBER.
LCK = HANDLE PADLOCKABLE-OFF DEVICE.
LO = HANDLE-ON CLAMP.
N = PROVIDE NEUTRAL WITH 208V OR 480V, 1-PH OR 3-PH CIRCUIT.
NB = PROVIDE NEW CIRCUIT BREAKER.
O/OL = REFER TO ELECTRICAL ONE-LINE/RISER DIAGRAM.
PS = POWER-SWITCHING CIRCUIT BREAKER.
PSE = EMERGENCY POWER-SWITCHING CIRCUIT BREAKER.
RP = CIRCUIT VIA RELAY PANEL.
SC = REFER TO VOLTAGE DROP CALCULATION SCHEDULE FOR MINIMUM WIRE SIZE.
ST = SHUNT TRIP CIRCUIT BREAKER.
VD = BRANCH CIRCUITRY HAS BEEN UPSIZED TO REDUCE VOLTAGE DROP. ADJUST GROUND WIRE SIZE PER CODE. PROVIDE LUG ADAPTORS IF REQUIRED.

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STATE OF MISSOURI
CURTIS A. OLDS
NUMBER PE-2018036640
PROFESSIONAL ENGINEER

Oct 19 2020
CURTIS A. OLDS
LICENSE # PE-2018036640

HENDERSON ENGINEERS, INC.
8345 ENTERPRISE DRIVE, SUITE 300
LENEXA, KS 66214
TEL 913.742.2800 FAX 913.742.3001
WWW.HENDERSONENGINEERS.COM
MO. CORPORATE NO. E-5360
EXPIRES 12/31/2020

LEE'S SUMMIT MIDDLE SCHOOL #4

LEE'S SUMMIT R-7 SCHOOL DISTRICT

1001 SE BAILEY ROAD
LEE'S SUMMIT, MO 64081

PACKAGE 3 - BUILDING & SITE
10/08/20
REVISIONS
ADDENDUM 001 10/13/20
ADDENDUM 002 10/19/20

13-20102-00

ELECTRICAL SCHEDULES

E6.5

PANEL 2H1C	
PANEL 2L1C	PANEL 2C1C

CURTIS A. OLDS

PANELBOARD: 2H2C (NEW)

BUS AMPS: 100A
MAIN SIZE/TYPE: 100A M.C.B.
VOLTS/PHASE: 480Y/277 V 3P/4W
SUPPLIED BY: DP-2H1C

FAULT CURRENT: RE: ONE-LINE DIAGRAM
AIC RATED: FULLY RATED
AIC RATING: FCA +10% MINIMUM
SERVES: SECOND FLOOR - AREA C
MOUNTING: SURFACE
LOCATION: ELEC C215A

EQUIPMENT GROUND BUS

LINE-SIDE LUGS: MECHANICAL

CKT NO.	DESCRIPTION	LOAD TYPE	NOTES	WIRE SIZE	BKR AMP	P	PHASE A	PHASE B	PHASE C	P	BKR AMP	WIRE SIZE	NOTES	LOAD TYPE	DESCRIPTION	CKT NO.
1	LTG-C201,C202,C212,C213,C214	L		12	20	1	1255	143		1	20	12	EM	L	LTS - NL,EXIT SIGNS C20-C22	2
3	LTG-C203,C204,C205	L		12	20	1		1288	534	1	20	12	EM	L	LTS - CORR. C20-C22,C215	4
5	LTG-C216,C217,C218,C219	L		12	20	1			2356 840	1	20	12	EM	L	LTS-LEARNING COMMONS C200B	6
7	LTG-C206,C207,C208,C209,C215	L		12	20	1	1092	1198		1	20	12	EM	L	LTS-L COMMONS CLERESTORY C200B	8
9	LTG-C210,C211	L		12	20	1		774	669	1	20	12	EM	L	LTS-STAIR C20A	10
11	SPARE				20	1			0 0	1	20				SPARE	12
13	SPARE				20	1	0	0		1	20				SPARE	14
15	SPARE				20	1		0	0	1	20				SPARE	16
17	SPARE				20	1			0 0	1	20				SPARE	18
19	SPARE				20	1	0	0		1	20				SPARE	20
21	SPARE				20	1		0	0	1	20				SPARE	22
23	SPARE				20	1			0 0	1	20				SPARE	24
25	SPARE				20	1	0	300								26
27	SPARE				20	1		0	300	3	15	12		M	EF-22 (1/2HP)	28
29	SPARE				20	1			0 300							30
31	EQUIPPED SPACE					1	0	5100		2				2		32
33	EQUIPPED SPACE					1		0	5100	2	25	10		M	AHU-6 (SUPPLY)	34
35	EQUIPPED SPACE					1			0 5100	2					4 @ 3HP	36
37	EQUIPPED SPACE					1	0	2106								38
39	EQUIPPED SPACE					1		0	2106	3	15	12		Z M	RF-6 (RETURN) 1@5HP	40
41	EQUIPPED SPACE					1			0 2106							42
		TOTAL LOAD (VA):					11194 VA	10771 VA	10702 VA							
		TOTAL AMPS:					40 A	39 A	39 A							

LOAD TYPE	CONNECTED LOAD	DEMAND FACTOR	NEC DEMAND
EXISTING LOAD (E)	0 VA	100%	0 VA
COOLING (C)	0 VA	0%	0 VA
HEATING (H)	0 VA	100%	0 VA
LIGHTING (L)	10149 VA	125%	12686 VA
RECEPTACLES (R)	0 VA	0%	0 VA
MOTORS (M)	7219 VA	100%	7219 VA
SUPPLEMENTAL HEAT (U)	0 VA	100%	0 VA
MISC EQUIP (Z)	0 VA	100%	0 VA
REFRIGERATION (F)	0 VA	100%	0 VA
SIGN/DISPLAY (D)	0 VA	125%	0 VA
KITCHEN (K)	0 VA	100%	0 VA
LARGEST MOTOR	15300 VA	125%	19125 VA
SHOW WINDOW (W)	0 VA	125%	0 VA
TRACK LIGHTING	0 VA	100%	0 VA

PANELBOARD NOTES

PANELBOARD TOTALS	
TOTAL CONNECTED LOAD	32668 VA
TOTAL NEC LOAD	39030 VA
TOTAL CONNECTED CURRENT	39 A
TOTAL NEC DEMAND CURRENT	47 A

PANELBOARD: 2L2C (NEW)

BUS AMPS: 400A
MAIN SIZE/TYPE: 400A M.C.B.
VOLTS/PHASE: 208Y/120 V 3P/4W
SUPPLIED BY: DP-2H1C VIA TX-2L2C

FAULT CURRENT: RE: ONE-LINE DIAGRAM
AIC RATED: FULLY RATED
AIC RATING: FCA +10% MINIMUM
SERVES: SECOND FLOOR - AREA C
MOUNTING: SURFACE
LOCATION: ELEC C215A

EQUIPMENT GROUND BUS

LINE-SIDE LUGS: MECHANICAL

CKT NO.	DESCRIPTION	LOAD TYPE	NOTES	WIRE SIZE	BKR AMP	P	PHASE A	PHASE B	PHASE C	P	BKR AMP	WIRE SIZE	NOTES	LOAD TYPE	DESCRIPTION	CKT NO.
1	RCPT- C215,C215B GEN.	R		12	20	1	1080	900		1	20	12		R	RCPT-C211 AC,GEN	2
3	RCPT- C23,C22,C24,C208 GEN.	R		12	20	1		1260	720	1	20	12		R	RCPT-C211 GEN	4
5	RCPT-C23 EWC	K	GF	12	20	1			600 720	1	20	12		R	RCPT-C210 GEN	6
7	RCPT-C207 AC,GEN	R		12	20	1	720	720		1	20	12		R	RCPT-C210 AC,GEN	8
9	RCPT-C207 GEN	R		12	20	1		720	720	1	20	12		R	RCPT-C219 AC,GEN	10
11	RCPT-C206 AC,GEN	R		12	20	1			900 360	1	20	12		R	RCPT-C219 A	12
13	RCPT-C206 GEN	R		12	20	1	720	180		1	20	12		R	RCPT-C219 B	14
15	RCPT-C204 AC,GEN	R		12	20	1		720	180	1	20	12		R	RCPT-C219 C	16
17	RCPT-C204,GEN	R		12	20	1			720 180	1	20	12		R	RCPT-C219 D	18
19	RCPT-C203 GEN	R		12	20	1	720	360		1	20	12		R	RCPT-C219C GEN	20
21	RCPT-C203 AC,GEN	R		12	20	1		720	360	1	20	12		R	RCPT-C219B GEN	22
23	RCPT-C202 AC,GEN	R		12	20	1			720 360	1	20	12		R	RCPT-C219A GEN	24
25	RCPT-C202 GEN	R		12	20	1	720	900		1	20	12		R	RCPT- CLOCKS LVL 2 C	26
27	RCPT-C201 GEN	R		12	20	1		720	1260	1	20	12		R	RCPT-C216 AC,GEN	28
29	RCPT-C201 AC,GEN	R		12	20	1			900 900	1	20	12		R	RCPT-C216 GEN	30
31	RCPT-C212 AC,GEN	R		12	20	1	900	900		1	20	12		R	RCPT-C217C.C217B,C217A GEN	32
33	RCPT-C212 GEN	R		12	20	1		720	0	1	20				SPARE	34
35	RCPT-C20,C213,C214	R		12	20	1			720 0	1	20				SPARE	36
37	RCPT-C213 TERSANO	Z		12	20	1	500	0		1	20				SPARE	38
39	RCPT-C20 GEN	R		12	20	1		720	0	1	20				SPARE	40
41	RCPT-C22, GEN	R		12	20	1			720 0	1	20				SPARE	42
43	PWR - DOOR HARDWARE (C20.4/C21)	Z		12	20	1	100	720		1	20	12		R	RCPT-C217 GEN A	44
45	SPARE				20	1		0	720	1	20	12		R	RCPT-C217 GEN B	46
47	SPARE				20	1			0 720	1	20	12		R	RCPT-C217 GEN C	48
49	SPARE				20	1	0	500		1	20	12		Z	PWR - C217 LCP2C	50
51	SPARE				20	1		0	0	1	20				SPARE	52
53	SPARE				20	1			0 0	1	20				SPARE	54
55	SPARE				20	1	0	0		1	20				SPARE	56
57	SPARE				20	1		0	0	1	20				SPARE	58
59	SPARE				20	1			0 0	1	20				SPARE	60
61	SPARE				20	1	0	0		1	20				SPARE	62
63	SPARE				20	1		0	0	1	20				SPARE	64
65	SPARE				20	1			0 0	1	20				SPARE	66
67	SPARE				20	1	0	0		1	20				SPARE	68
69	SPARE				20	1		0	0	1	20				SPARE	70
71	SPARE				20	1			0 0	1	20				SPARE	72
73	SPARE				20	1	0	0		1	20				SPARE	74
75	SPARE				20	1		0	0	1	20				SPARE	76
77	SPARE				20	1			0 0	1	20				SPARE	78
79	SPARE				20	1	0	0		1	20				SPARE	80
81	SPARE				20	1		0	0	1	20				SPARE	82
83	SPARE				20	1			0 0	1	20				SPARE	84
85	SPARE				20	1	0	0		1	20				SPARE	86
87	SPARE				20	1		0	0	1	20				SPARE	88
89	SPARE				20	1			0 0	1	20				SPARE	90
91	SPARE				20	1	0	0		1	20				SPARE	92
93	EQUIPPED SPACE					1		0	0	1					EQUIPPED SPACE	94
95	EQUIPPED SPACE					1			0 0	1					EQUIPPED SPACE	96
97	EQUIPPED SPACE					1	0	0		1					EQUIPPED SPACE	98
99	EQUIPPED SPACE					1		0	0	1					EQUIPPED SPACE	100
101	EQUIPPED SPACE					1			0 0	1					EQUIPPED SPACE	102
103	EQUIPPED SPACE					1	0	0		1					EQUIPPED SPACE	104
105	EQUIPPED SPACE					1		0	0	1					EQUIPPED SPACE	106
107	EQUIPPED SPACE					1			0 0	1					EQUIPPED SPACE	108
109	EQUIPPED SPACE					1	0	0		1					EQUIPPED SPACE	110
111	EQUIPPED SPACE					1		0	0	1					EQUIPPED SPACE	112
113	EQUIPPED SPACE					1			0 0	1					EQUIPPED SPACE	114
115	EQUIPPED SPACE					1	0	0		1					EQUIPPED SPACE	116
117	EQUIPPED SPACE					1		0	0	1					EQUIPPED SPACE	118
119	EQUIPPED SPACE					1			0 0	1					EQUIPPED SPACE	120
121	EQUIPPED SPACE					1	0	0		1					EQUIPPED SPACE	122
123	EQUIPPED SPACE					1		0	0	1					EQUIPPED SPACE	124
125	EQUIPPED SPACE					1			0 0	1					EQUIPPED SPACE	126
127	EQUIPPED SPACE					1	0	0		1					EQUIPPED SPACE	128
129	EQUIPPED SPACE					1		0	0	1					EQUIPPED SPACE	130
131	EQUIPPED SPACE					1			0 0	1					EQUIPPED SPACE	132
133	EQUIPPED SPACE					1	0	790		2	20	12		M	EF-12	134
135	EQUIPPED SPACE					1		0	790							136
137	EQUIPPED SPACE					1			0 150	1	20	12		Z	PWR-C205 DAMPERS	138
139	EQUIPPED SPACE					1	0	696		1	15	12		M	RHWP-6	140
141	EQUIPPED SPACE					1		0	1000	1	20	12		Z	PWR-MAG DOOR HOLDERS	142
143	EQUIPPED SPACE					1			0 400	1	20	12			PWR-C218 SECURITY PANEL	144
145	EQUIPPED SPACE					1	0	180		1	20	12		R	RCPT- C215A ELEC RM	146
147	EQUIPPED SPACE					1		0	360	1	20	12	FA	Z	FIRE ALARM RELAY PANEL	148
149	EQUIPPED SPACE					1			0 180	1	20	12		R	RCPT-C205 MECH	150
151	EQUIPPED SPACE					1	0	500		1	20	12		Z	PWR - MECH CONTROL PANEL	152
153	EQUIPPED SPACE					1		0	540	1	20	10		R	RCPT - ROOF - AREA C	154
155	EQUIPPED SPACE					1			0 850	1	20	12		M	VAVs 601 thru 618	156
157	EQUIPPED SPACE					1	0	1500		1	20	12		M	EF-10	158
159	EQUIPPED SPACE					1		0	1500	1	20	12		M	EF-11	160
161	EQUIPPED SPACE					1			0 1144	2	30	10		C	CU-9/CR-9	162
163	EQUIPPED SPACE					1	0	1144								164
165	EQUIPPED SPACE					1		0	1144	2	30	10		C	CU-10/CR-10	166
167	EQUIPPED SPACE					1			0 1144							168
		TOTAL LOAD (VA):					15450 VA	14874 VA	12388 VA							
		TOTAL AMPS:					132 A	127 A	103 A							

LOAD TYPE	CONNECTED LOAD	DEMAND FACTOR	NEC DEMAND
EXISTING LOAD (E)	0 VA	100%	0 VA
COOLING (C)	4576 VA	100%	4576 VA
HEATING (H)	0 VA	0%	0 VA
LIGHTING (L)	0 VA	125%	0 VA
RECEPTACLES (R)	27900 VA	68%	18950 VA
MOTORS (M)	4546 VA	100%	4546 VA
SUPPLEMENTAL HEAT (U)	0 VA	100%	0 VA
MISC EQUIP (Z)	3110 VA	100%	3110 VA
REFRIGERATION (F)	0 VA	100%	0 VA
SIGN/DISPLAY (D)	0 VA	125%	0 VA
KITCHEN (K)	600 VA	100%	600 VA
LARGEST MOTOR	1580 VA	125%	1975 VA
SHOW WINDOW (W)	0 VA	125%	0 VA
TRACK LIGHTING	0 VA	100%	0 VA

PANELBOARD NOTES

PANELBOARD TOTALS	
TOTAL CONNECTED LOAD	42312 VA
TOTAL NEC LOAD	33757 VA
TOTAL CONNECTED CURRENT	117 A
TOTAL NEC DEMAND CURRENT	94 A

PANELBOARD: 2C2C (NEW)

BUS AMPS: 150A
MAIN SIZE/TYPE: 150A M.C.B.
VOLTS/PHASE: 208Y/120 V 3P/4W
SUPPLIED BY: DP-2H1C VIA TX-2C2C

FAULT CURRENT: RE: ONE-LINE DIAGRAM
AIC RATED: FULLY RATED
AIC RATING: FCA +10% MINIMUM
SERVES: SECOND FLOOR - AREA C
MOUNTING: SURFACE
LOCATION: ELEC C215A

EQUIPMENT GROUND BUS

200% NEUTRAL

LINE-SIDE LUGS: MECHANICAL

CKT NO.	DESCRIPTION	LOAD TYPE	NOTES	WIRE SIZE	BKR AMP	P	PHASE A	PHASE B	PHASE C	P	BKR AMP	WIRE SIZE	NOTES	LOAD TYPE	DESCRIPTION	CKT NO.
1	RCPT- C215 TV	R		12	20	1	360	360		1	20	12		R	RCPT-C218 IT 1	2
3	RCPT-C207 TV/DESK	R		12	20	1		1080	360	1	20	12		R	RCPT-C218 IT 2	4
5	RCPT-C206 TV/DESK	R		12	20	1			1080 360	1	20	12		R	RCPT-C218 IT 3	6
7	RCPT-C204 TV/DESK	R		12	20	1	1080	360		1	20	12		R	RCPT-C218 IT 4	8
9	RCPT-C203 TV/DESK	R		12	20	1		1080	360	1	20	12		R	RCPT-C219A EDIT A	10
11	RCPT-C202 TV/DESK	R		12	20	1			1080 360	1	20	12		R	RCPT-C219A EDIT B	12
13	RCPT-C201 TV/DESK	R		12	20	1	1080	360		1	20	12		R	RCPT-C219A EDIT C	14
15	RCPT-C212 TV/DESK	R		12	20	1		1080	360	1	20	12		R	RCPT-C219A EDIT D	16
17	RCPT- C20 TV	R		12	20	1			360 720	1	20	12		R	RCPT-C217 TV/DESK	18
19	RCPT-C211 TV/DESK	R		12	20	1	1080	360		1	20	12		R	RCPT-C217B CONTROL A	20
21	RCPT-C210 TV/DESK	R		12	20	1		1080	360	1	20	12		R	RCPT-C217B CONTROL B	22
23	RCPT-C219 TV/DESK	R		12	20	1			1080 360	1	20	12		R	RCPT-C217B CONTROL C	24
25	RCPT-C219C EDIT A	R		12	20	1	360	360		1	20	12		R	RCPT-C217B CONTROL D	26
27	RCPT-C219C EDIT B	R		12	20	1		360	360	1	20	12		R	RCPT-C217B CONTROL E	28
29	RCPT-C219C EDIT C	R		12	20	1			360 360	1	20	12		R	RCPT-C217B CONTROL F	30
31	RCPT-C219C EDIT D	R		12	20	1	360	360		1	20	12		R	RCPT-C217B CONTROL G	32
33	RCPT-C219B EDIT A	R		12	20	1		360	360	1	20	12		R	RCPT-C217B CONTROL H	34
35	RCPT-C219B EDITB	R		12	20	1			360 1080	1	20	12		R	RCPT-C216 TV/DESK	36
37	RCPT-C219B EDIT C	R		12	20	1	360	540		1	20	12	C#	R	RCPT-C217 PIPE MOUNTED 1	38
39	RCPT-C219B EDIT D	R		12	20	1		360	540	1	20	12	C#	R	RCPT-C217 PIPE MOUNTED 2	40
41	SPARE				20	1			0 540	1	20	12	C#	R	RCPT-C217 PIPE MOUNTED 3	42
43	SPARE				20	1	0	540		1	20	12	C#	R	RCPT-C217 PIPE MOUNTED 4	44
45	SPARE				20	1		0	540	1	20	12	C#	R	RCPT-C217 PIPE MOUNTED 5	46
47	SPARE				20	1			0 955	1	20	12	C#	L	PWR-C217 FOS/4-16 - 1	48
49	SPARE				20	1	0	955		1	20	12	C#	L	PWR-C217 FOS/4-16 - 2	50
51	SPARE				20	1		0	955	1	20	12	C#	L	PWR-C217 FOS/4-16 - 3	52
53	SPARE				20	1			0 955	1	20	12	C#	L	PWR-C217 FOS/4-16 - 4	54
55	SPARE				20	1	0	475		1	20	12	C#	L	PWR-C217 FOS/4-8 - 1	56
57	SPARE				20	1		0	475	1	20	12	C#	L	PWR-C217 FOS/4-8 - 2	58
59	SPARE				20	1			0 475	1	20	12	C#	L	PWR-C217 FOS/4-8 - 3	60
61	SPARE				20	1	0	475		1	20	12	C#	L	PWR-C217 FOS/4-8 - 4	62
63	SPARE				20	1		0	475	1	20	12	C#	L	PWR-C217 FOS/4-8 - 5	64
65	SPARE				20	1			0 475	1	20	12	C#	L	PWR-C217 FOS/4-8 - 6	66
67	EQUIPPED SPACE					1	0	0							SPARE	68
69	EQUIPPED SPACE					1		0	0						SPARE	70
71	EQUIPPED SPACE					1			0 0						SPARE	72
73	EQUIPPED SPACE					1	0	0							SPARE	74
75	EQUIPPED SPACE					1		0	0						SPARE	76
77	EQUIPPED SPACE					1			0 0						SPARE	78
79	EQUIPPED SPACE					1	0	0							SPARE	80
81	EQUIPPED SPACE					1		0	0						SPARE	82
83	EQUIPPED SPACE					1			0 0						SPARE	84
		TOTAL LOAD (VA):					9825 VA	10545 VA	10960 VA							
		TOTAL AMPS:					82 A	89 A	92 A							

LOAD TYPE	CONNECTED LOAD	DEMAND FACTOR	NEC DEMAND
EXISTING LOAD (E)	0 VA	100%	0 VA
COOLING (C)	0 VA	0%	0 VA
HEATING (H)	0 VA	100%	0 VA
LIGHTING (L)	6670 VA	125%	8338 VA
RECEPTACLES (R)	24660 VA	70%	17330 VA
MOTORS (M)	0 VA	100%	0 VA
SUPPLEMENTAL HEAT (U)	0 VA	100%	0 VA
MISC EQUIP (Z)	0 VA	100%	0 VA
REFRIGERATION (F)	0 VA	100%	0 VA
SIGN/DISPLAY (D)	0 VA	125%	0 VA
KITCHEN (K)	0 VA	100%	0 VA
LARGEST MOTOR	0 VA	125%	0 VA
SHOW WINDOW (W)	0 VA	125%	0 VA
TRACK LIGHTING	0 VA	100%	0 VA

PANELBOARD NOTES

PANELBOARD TOTALS	
TOTAL CONNECTED LOAD	31330 VA
TOTAL NEC LOAD	25868 VA
TOTAL CONNECTED CURRENT	87 A
TOTAL NEC DEMAND CURRENT	71 A

PANELBOARD SCHEDULE NOTES LEGEND:

AF = ARC FAULT CIRCUIT INTERRUPTER.
C# = CIRCUIT VIA LIGHTING CONTACTOR #.
CL = CIRCUIT VIA CURRENT LIMITING DEVICE.
EM = EMERGENCY LIGHTING HANDLE-ON CLAMP.
ETR = EXISTING TO REMAIN
FA = RED/HANDLE-ON CLAMP.
GF = GROUND-FAULT CIRCUIT INTERRUPTER TYPE CIRCUIT BREAKER (5 mA).
GFEP = GROUND FAULT EQUIPMENT PROTECTION BREAKER (30 mA).
HT# = PROVIDE HANDLE-TIE FOR MULTI-WIRE BRANCH CIRCUIT PER CODE.
# DENOTES PHASES TO BE TIED.
IG = ISOLATED GROUND CIRCUIT.
L# = LIGHTING CONTROL SCHEME NUMBER.
LCK = HANDLE PADLOCKABLE-OFF DEVICE.
LO = HANDLE-ON CLAMP.
N = PROVIDE NEUTRAL WITH 208V OR 480V, 1-PH OR 3-PH CIRCUIT.
NB = PROVIDE NEW CIRCUIT BREAKER.
O/OL = REFER TO ELECTRICAL ONE-LINE/RISER DIAGRAM.
PS = POWER-SWITCHING CIRCUIT BREAKER.
PSE = EMERGENCY POWER-SWITCHING CIRCUIT BREAKER.
RP = CIRCUIT VIA RELAY PANEL.
SC = REFER TO VOLTAGE DROP CALCULATION SCHEDULE FOR MINIMUM WIRE SIZE.
ST = SHUNT TRIP CIRCUIT BREAKER.
VD = BRANCH CIRCUITRY HAS BEEN UPSIZED TO REDUCE VOLTAGE DROP. ADJUST GROUND WIRE SIZE PER CODE. PROVIDE LUG ADAPTORS IF REQUIRED.

PANEL 2H2C	
PANEL 2L2C	PANEL 2C2C

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STATE OF MISSOURI
CURTIS A. OLDS
NUMBER PE-2018036640
PROFESSIONAL ENGINEER

Oct 19 2020

CURTIS A. OLDS
LICENSE # PE-2018036640

HENDERSON ENGINEERS
8345 LENEXA DRIVE, SUITE 300
LENEXA, KS 66214
TEL 913.742.2800 FAX 913.742.5001
WWW.HENDERSONENGINEERS.COM
MO. CORPORATE NO.: E-5360
EXPIRES 12/31/2020

LEE'S SUMMIT MIDDLE SCHOOL #4

LEE'S SUMMIT R-7 SCHOOL DISTRICT

1001 SE BAILEY ROAD
LEE'S SUMMIT, MO 64081

PACKAGE 3 - BUILDING & SITE
10/08/20
REVISIONS
ADDENDUM 001 10/13/20
ADDENDUM 002 10/19/20

13-20102-00

ELECTRICAL SCHEDULES

E6.6

CURTIS A. OLDS

PANELBOARD: 1H1D (NEW)

BUS AMPS: 225A
MAIN SIZE/TYPE: 200A M.C.B.
VOLTS/PHASE: 480Y/277 V 3P/4W
SUPPLIED BY: SWBD-N1

FAULT CURRENT: RE: ONE-LINE DIAGRAM
AIC RATED: FULLY RATED
AIC RATING: FCA +10% MINIMUM
SERVES: AREA D
MOUNTING: SURFACE
LOCATION: STORAGE D108

EQUIPMENT GROUND BUS

LINE-SIDE LUGS: MECHANICAL

CKT NO.	DESCRIPTION	LOAD TYPE	NOTES	WIRE SIZE	BKR AMP	P	PHASE A	PHASE B	PHASE C	P	BKR AMP	WIRE SIZE	NOTES	LOAD TYPE	DESCRIPTION	CKT NO.
1	LTS-D102,D104,D105	L		12	20	1	910	0		1	20				SPARE	2
3	LTS-MEDIA CENTER D103A	L	EM	12	20	1		1211	0	1	20				SPARE	4
5	LTS-NL EXIT SIGN CORRIDOR D12	L	EM	12	20	1			60 0	1	20				SPARE	6
7	EQUIPPED SPACE					1	0	0		1	20				SPARE	8
9	EQUIPPED SPACE					1		0	0	1	20				SPARE	10
11	EQUIPPED SPACE					1			0 0	1	20				SPARE	12
13	EQUIPPED SPACE					1	0	0		1	20				SPARE	14
15	EQUIPPED SPACE					1		0	0	1	20				SPARE	16
17	SPARE				20	1			0 0	1	20				SPARE	18
19	SPARE				20	1	0	0		1	20				SPARE	20
21	SPARE				20	1		0	0	1	20				SPARE	22
23	SPARE				20	1			0 0	1	20				SPARE	24
25	SPARE				20	1	0	0		1	20				SPARE	26
27	SPARE				20	1		0	0	1	20				SPARE	28
29	SPARE				20	1			0 0	1	20				SPARE	30
31	EQUIPPED SPACE					1	0	19470								32
33	EQUIPPED SPACE					1		0	19424	3	75	OL		--	TX-L1D	34
35	EQUIPPED SPACE					1			0 21484							36
37	EQUIPPED SPACE					1	0	4260								38
39	EQUIPPED SPACE					1		0	5260	3	75	OL		R Z	TX-C1D	40
41	EQUIPPED SPACE					1			0 4200							42
		TOTAL LOAD (VA):					24640 VA	25895 VA	25744 VA							
		TOTAL AMPS:					89 A	94 A	94 A							

LOAD TYPE	CONNECTED LOAD	DEMAND FACTOR	NEC DEMAND
EXISTING LOAD (E)	0 VA	100%	0 VA
COOLING (C)	2288 VA	100%	2288 VA
HEATING (H)	0 VA	0%	0 VA
LIGHTING (L)	2181 VA	125%	2726 VA
RECEPTACLES (R)	14760 VA	84%	12380 VA
MOTORS (M)	35900 VA	100%	35900 VA
SUPPLEMENTAL HEAT (U)	0 VA	100%	0 VA
MISC EQUIP (Z)	15450 VA	100%	15450 VA
REFRIGERATION (F)	0 VA	100%	0 VA
SIGN/DISPLAY (D)	0 VA	125%	0 VA
KITCHEN (K)	3000 VA	90%	2700 VA
LARGEST MOTOR	1200 VA	125%	1500 VA
SHOW WINDOW (W)	0 VA	125%	0 VA
TRACK LIGHTING	0 VA	100%	0 VA

PANELBOARD NOTES

PANELBOARD TOTALS	
TOTAL CONNECTED LOAD	74779 VA
TOTAL NEC LOAD	72944 VA
TOTAL CONNECTED CURRENT	90 A
TOTAL NEC DEMAND CURRENT	88 A

PANELBOARD: 1L1D (NEW)

BUS AMPS: 225A
MAIN SIZE/TYPE: 225A M.C.B.
VOLTS/PHASE: 208Y/120 V 3P/4W
SUPPLIED BY: 1H1D VIA TX-1L1D

FAULT CURRENT: RE: ONE-LINE DIAGRAM
AIC RATED: FULLY RATED
AIC RATING: FCA +10% MINIMUM
SERVES: AREA D
MOUNTING: SURFACE
LOCATION: STORAGE D108

EQUIPMENT GROUND BUS

LINE-SIDE LUGS: MECHANICAL

CKT NO.	DESCRIPTION	LOAD TYPE	NOTES	WIRE SIZE	BKR AMP	P	PHASE A	PHASE B	PHASE C	P	BKR AMP	WIRE SIZE	NOTES	LOAD TYPE	DESCRIPTION	CKT NO.
1	PWR - MTR BLINDS D101 CLERESTORY A	M	RP	10	20	1	1200	180		1	20	12		R	RCPT - D11 CORRIDOR	2
3	PWR - MTR BLINDS D101 CLERESTORY B	M	RP	10	20	1		1200	720	1	20	12		R	RCPT - D102 FLOOR BOXES A	4
5	PWR - MTR BLINDS D101 CLERESTORY C	M	RP	10	20	1			1200 720	1	20	12		R	RCPT - D102 FLOOR BOXES B	6
7	PWR - MTR BLINDS D101 CLERESTORY D	M	RP	10	20	1	1200	600		1	20	12	GF	K	RCPT - D11 EWC	8
9	PWR - MTR BLINDS D101 CLERESTORY E	M	RP	10	20	1		1200	180	1	20	12		R	RCPT - D108 ELECTRICAL	10
11	PWR - MTR BLINDS D101 CLERESTORY F	M	RP	10	20	1			1200 1500	1	20	12			PWR - G104 SECURITY PANEL	12
13	PWR - MTR BLINDS D101 CLERESTORY G	M	RP	10	20	1	1200	360		1	20	12		R	RCPT - CLOCKS LVL 1 D	14
15	PWR - MTR BLINDS D101 CLERESTORY H	M	RP	10	20	1		1200	180	1	20	12		R	RCPT - D103 CHARGING A	16
17	PWR - MTR BLINDS D101 CLERESTORY J	M	RP	10	20	1			1200 180	1	20	12		R	RCPT - D103 CHARGING B	18
19	PWR - MTR BLINDS D101 CLERESTORY K	M	RP	10	20	1	1200	360		1	20	12		R	RCPT - D103 USB A	20
21	PWR - MTR BLINDS D101 CLERESTORY M	M	RP	10	20	1		1200	360	1	20	12		R	RCPT - D103 USB B	22
23	PWR - MTR BLINDS D101 CLERESTORY N	M	RP	10	20	1			1200 360	1	20	12		R	RCPT - D103 USB C	24
25	PWR - MTR BLINDS D101 CLERESTORY O	M	RP	10	20	1	1200	600		1	20	12		M	PWR - D103 PROJECTOR SCREEN	26
27	PWR - MTR BLINDS D101 CLERESTORY P	M	RP	10	20	1		1200	1200	1	20	12	RP	M	PWR - MTR BLINDS D103 A	28
29	PWR - MTR BLINDS D101 CLERESTORY Q	M	RP	10	20	1			1200 1200	1	20	12	RP	M	PWR - MTR BLINDS D103 B	30
31	PWR - MTR BLINDS D101 CLERESTORY R	M	RP	10	20	1	1200	1200		1	20	12	RP	M	PWR - MTR BLINDS D103 C	32
33	PWR - MTR BLINDS D101 CLERESTORY S	M	RP	10	20	1		1200	1200	1	20	12	RP	M	PWR - MTR BLINDS D103 D	34
35	PWR - MTR BLINDS D101 CLERESTORY T	M	RP	10	20	1			1200 500	1	20	12		Z	PWR - D106 FUTURE A	36
37	PWR - MTR BLINDS D101 CLERESTORY U	M	RP	10	20	1	1200	500		1	20	12		Z	PWR - D106 FUTURE B	38
39	PWR - MTR BLINDS D101 CLERESTORY V	M	RP	10	20	1		1200	1000	1	20	12		Z	PWR - D12 DOOR OPERATORS	40
41	PWR - MTR BLINDS D101 CLERESTORY W	M	RP	10	20	1			1200 100	1	20	12		Z	PWR - DOOR HARDWARE (C10.1/C12.5)	42
43	PWR - MTR BLINDS D101 CLERESTORY X	M	RP	10	20	1	1200	50		1	20	12		Z	PWR - DOOR HARDWARE (D12.1)	44
45	PWR - MTR BLINDS D101 CLERESTORY Y	M	RP	10	20	1		1200	0	1	20				SPARE	46
47	PWR - MTR BLINDS D101 CLERESTORY Z	M	RP	10	20	1			1200 0	1	20				SPARE	48
49	PWR - MTR BLINDS D101 CLERESTORY	M	RP	10	20	1	1200	0		1	20				SPARE	50
51	PWR-D101 MAG DOOR HOLDERS	Z		12	20	1		100	0	1	20				SPARE	52
53	RCPT - D101 GENERAL A	R		12	20	1			720 0	1	20				SPARE	54
55	RCPT - D101 GENERAL B	R		12	20	1	720	0		1	20				SPARE	56
57	RCPT - D101 GENERAL C	R		12	20	1		720	0	1	20				SPARE	58
59	RCPT - D101 MICROWAVE A	K		12	20	1			1200 0	1	20				SPARE	60
61	RCPT - D101 MICROWAVE B	K		12	20	1	1200	0		1	20				SPARE	62
63	RCPT - D102 GENERAL	R		12	20	1		1080	0	1	20				SPARE	64
65	RCPT - D104, D105 GENERAL	R		12	20	1			1080 0	1	20				SPARE	66
67	RCPT - D103 COLUM	R		12	20	1	720	0		1	20				SPARE	68
69	RCPT - D103 GENERAL	R		12	20	1		540	0	1	20				SPARE	70
71	RCPT - D103 COPIER	Z		12	20	1			1000 500	1	20	12		M	UH-13	72
73	RCPT - D107 GENERAL	R		12	20	1	720	180		1	20	12		R	RCPT - ROOF	74
75	RCPT - D109, D110 GENERAL	R		12	20	1		720	1144	2	20	12		C	CU-15/CR-15	76
77	RCPT - D110 COPIER	Z		12	20	1			1000 1144							78
79	RCPT - D110 QUADS	R		12	20	1	1080	200		1	20	12		M	VAVs 801, 802, 803, 811	80
81	RCPT - D110A RESTROOM	R		12	20	1		180	500	1	20	12		M	UH-1	82
83	RCPT - D106 GENERAL	R		12	20	1			180 500	1	20	12		M	UH-2	84
		TOTAL LOAD (VA):					19470 VA	19424 VA	21484 VA							
		TOTAL AMPS:					162 A	162 A	179 A							

LOAD TYPE	CONNECTED LOAD	DEMAND FACTOR	NEC DEMAND
EXISTING LOAD (E)	0 VA	100%	0 VA
COOLING (C)	2288 VA	100%	2288 VA
HEATING (H)	0 VA	0%	0 VA
LIGHTING (L)	0 VA	125%	0 VA
RECEPTACLES (R)	12240 VA	91%	11120 VA
MOTORS (M)	35900 VA	100%	35900 VA
SUPPLEMENTAL HEAT (U)	0 VA	100%	0 VA
MISC EQUIP (Z)	4250 VA	100%	4250 VA
REFRIGERATION (F)	0 VA	100%	0 VA
SIGN/DISPLAY (D)	0 VA	125%	0 VA
KITCHEN (K)	3000 VA	90%	2700 VA
LARGEST MOTOR	1200 VA	125%	1500 VA
SHOW WINDOW (W)	0 VA	125%	0 VA
TRACK LIGHTING	0 VA	100%	0 VA

PANELBOARD NOTES

PANELBOARD TOTALS	
TOTAL CONNECTED LOAD	58878 VA
TOTAL NEC LOAD	57758 VA
TOTAL CONNECTED CURRENT	163 A
TOTAL NEC DEMAND CURRENT	160 A

PANELBOARD: 1C1D (NEW)

BUS AMPS: 150A
MAIN SIZE/TYPE: 150A M.C.B.
VOLTS/PHASE: 208Y/120 V 3P/4W
SUPPLIED BY: 1H1D VIA TX-1C1D

FAULT CURRENT: RE: ONE-LINE DIAGRAM
AIC RATED: FULLY RATED
AIC RATING: FCA +10% MINIMUM
SERVES: AREA D
MOUNTING: SURFACE
LOCATION: STORAGE D108

EQUIPMENT GROUND BUS

200% NEUTRAL

LINE-SIDE LUGS: MECHANICAL

CKT NO.	DESCRIPTION	LOAD TYPE	NOTES	WIRE SIZE	BKR AMP	P	PHASE A	PHASE B	PHASE C	P	BKR AMP	WIRE SIZE	NOTES	LOAD TYPE	DESCRIPTION	CKT NO.
1	POS (E-66)	Z		12	20	1	500	0		1	20	12			SPARE	2
3	POS (E-100/E-102) A	Z		12	20	1		500	1500	1	20	12		Z	RCPT - G104 IT RACK A	4
5	POS (E-101/E-102.1)	Z	GF	12	20	1			500 1500	1	20	12		Z	RCPT - G104 IT RACK B	6
7	POS (E-100/E-102) B	Z		12	20	1	500	1500		1	20	12		Z	RCPT - G104 IT RACK C	8
9	RCPT - G109 COMPUTER A	Z		12	20	1		400	1500	1	20	12		Z	RCPT - G104 IT RACK D	10
11	RCPT - G109 COMPUTER B	Z		12	20	1			400 360	1	20	12		R	RCPT - D108 IT RACK A	12
13	RCPT - G108B COMPUTER	Z		12	20	1	400	360		1	20	12		R	RCPT - D108 IT RACK B	14
15	RCPT - D105 TV	R		12	20	1		360	0	1	20				SPARE	16
17	RCPT - D103 DESK/TV	R		12	20	1			720 0	1	20				SPARE	18
19	RCPT - D103 PROJECTOR A	Z		12	20	1	1000	0		1	20				SPARE	20
21	RCPT - D103 PROJECTOR B	Z		12	20	1		1000	0	1	20				SPARE	22
23	RCPT - D107, D109 TV/DESK	R		12	20	1			720 0	1	20				SPARE	24
25	SPARE				20	1	0	0		1	20				SPARE	26
27	SPARE				20	1		0	0	1	20				SPARE	28
29	SPARE				20	1			0 0	1	20				SPARE	30
31	SPARE				20	1	0	0		1	20				SPARE	32
33	SPARE				20	1		0	0	1	20				SPARE	34
35	SPARE				20	1			0 0	1	20				SPARE	36
37	SPARE				20	1	0	0		1	20				SPARE	38
39	SPARE				20	1		0	0	1	20				SPARE	40
41	SPARE				20	1			0 0	1	20				SPARE	42
43	EQUIPPED SPACE					1	0	0		1					EQUIPPED SPACE	44
45	EQUIPPED SPACE					1		0	0	1					EQUIPPED SPACE	46
47	EQUIPPED SPACE					1			0 0	1					EQUIPPED SPACE	48
49	EQUIPPED SPACE					1	0	0		1					EQUIPPED SPACE	50
51	EQUIPPED SPACE					1		0	0	1					EQUIPPED SPACE	52
53	EQUIPPED SPACE					1			0 0	1					EQUIPPED SPACE	54
55	EQUIPPED SPACE					1	0	0		1					EQUIPPED SPACE	56
57	EQUIPPED SPACE					1		0	0	1					EQUIPPED SPACE	58
59	EQUIPPED SPACE					1			0 0	1					EQUIPPED SPACE	60
61	EQUIPPED SPACE					1	0	0		1					EQUIPPED SPACE	62
63	EQUIPPED SPACE					1		0	0	1					EQUIPPED SPACE	64
65	EQUIPPED SPACE					1			0 0	1					EQUIPPED SPACE	66
67	EQUIPPED SPACE					1	0	0		1					EQUIPPED SPACE	68
69	EQUIPPED SPACE					1		0	0	1					EQUIPPED SPACE	70
71	EQUIPPED SPACE					1			0 0	1					EQUIPPED SPACE	72
73	EQUIPPED SPACE					1	0	0		1					EQUIPPED SPACE	74
75	EQUIPPED SPACE					1		0	0	1					EQUIPPED SPACE	76
77	EQUIPPED SPACE					1			0 0	1					EQUIPPED SPACE	78
79	EQUIPPED SPACE					1	0	0		1					EQUIPPED SPACE	80
81	EQUIPPED SPACE					1		0	0	1					EQUIPPED SPACE	82
83	EQUIPPED SPACE					1			0 0	1					EQUIPPED SPACE	84
		TOTAL LOAD (VA):					4260 VA	5260 VA	4200 VA							
		TOTAL AMPS:					36 A	44 A	35 A							

LOAD TYPE	CONNECTED LOAD	DEMAND FACTOR	NEC DEMAND
EXISTING LOAD (E)	0 VA	100%	0 VA
COOLING (C)	0 VA	0%	0 VA
HEATING (H)	0 VA	100%	0 VA
LIGHTING (L)	0 VA	125%	0 VA
RECEPTACLES (R)	2520 VA	100%	2520 VA
MOTORS (M)	0 VA	100%	0 VA
SUPPLEMENTAL HEAT (U)	0 VA	100%	0 VA
MISC EQUIP (Z)	11200 VA	100%	11200 VA
REFRIGERATION (F)	0 VA	100%	0 VA
SIGN/DISPLAY (D)	0 VA	125%	0 VA
KITCHEN (K)	0 VA	100%	0 VA
LARGEST MOTOR	0 VA	125%	0 VA
SHOW WINDOW (W)	0 VA	125%	0 VA
TRACK LIGHTING	0 VA	100%	0 VA

PANELBOARD NOTES

PANELBOARD TOTALS	
TOTAL CONNECTED LOAD	13720 VA
TOTAL NEC LOAD	13720 VA
TOTAL CONNECTED CURRENT	38 A
TOTAL NEC DEMAND CURRENT	38 A

PANELBOARD SCHEDULE NOTES LEGEND:

AF = ARC FAULT CIRCUIT INTERRUPTER.
C# = CIRCUIT VIA LIGHTING CONTACTOR #.
CL = CIRCUIT VIA CURRENT LIMITING DEVICE.
EM = EMERGENCY LIGHTING HANDLE-ON CLAMP.
ETR = EXISTING TO REMAIN
FA = RED/HANDLE-ON CLAMP.
GF = GROUND-FAULT CIRCUIT INTERRUPTER TYPE CIRCUIT BREAKER (5 mA).
GFEP = GROUND FAULT EQUIPMENT PROTECTION BREAKER (30 mA).
HT# = PROVIDE HANDLE-TIE FOR MULTI-WIRE BRANCH CIRCUIT PER CODE.
# DENOTES PHASES TO BE TIED.
IG = ISOLATED GROUND CIRCUIT.
L# = LIGHTING CONTROL SCHEME NUMBER.
LCK = HANDLE PADLOCKABLE-OFF DEVICE.
LO = HANDLE-ON CLAMP.
N = PROVIDE NEUTRAL WITH 208V OR 480V, 1-PH OR 3-PH CIRCUIT.
NB = PROVIDE NEW CIRCUIT BREAKER.
O/OL = REFER TO ELECTRICAL ONE-LINE/RISER DIAGRAM.
PS = POWER-SWITCHING CIRCUIT BREAKER.
PSE = EMERGENCY POWER-SWITCHING CIRCUIT BREAKER.
RP = CIRCUIT VIA RELAY PANEL.
SC = REFER TO VOLTAGE DROP CALCULATION SCHEDULE FOR MINIMUM WIRE SIZE.
ST = SHUNT TRIP CIRCUIT BREAKER.
VD = BRANCH CIRCUITRY HAS BEEN UPSIZED TO REDUCE VOLTAGE DROP. ADJUST GROUND WIRE SIZE PER CODE. PROVIDE LUG ADAPTORS IF REQUIRED.

DLR Group
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6641 E. 163rd St.
Belton, MO 64012
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STATE OF MISSOURI
CURTIS A. OLDS
NUMBER PE-2018036640
PROFESSIONAL ENGINEER

Oct 19 2020
CURTIS A. OLDS
LICENSE # PE-2018036640

HENDERSON ENGINEERS
8345 LENEXA DRIVE, SUITE 300
LENEXA, KS 66214
TEL 913.742.2800 FAX 913.742.0001
WWW.HENDERSONENGINEERS.COM
MO. CORPORATE NO. E-5060
EXPIRES 12/31/2020

LEE'S SUMMIT MIDDLE SCHOOL #4

LEE'S SUMMIT R-7 SCHOOL DISTRICT

1001 SE BAILEY ROAD
LEE'S SUMMIT, MO 64081

PACKAGE 3 - BUILDING & SITE
10/08/20
REVISIONS
ADDENDUM 001 10/13/20
ADDENDUM 002 10/19/20

13-20102-00

ELECTRICAL SCHEDULES

E6.7

PANEL 1H1D	
PANEL 1L1D	PANEL 1C1D

CURTIS A. OLDS

PANELBOARD: 1L1E (NEW)

BUS AMPS: 225A
MAIN SIZE/TYPE: 225A M.C.B.
VOLTS/PHASE: 208Y/120 V 3P/4W
SUPPLIED BY: 1H1E VIA TX-1L1E

FAULT CURRENT: RE: ONE-LINE DIAGRAM
AIC RATED: FULLY RATED
AIC RATING: FCA +10% MINIMUM
SERVES: AREA E
MOUNTING: SURFACE
LOCATION: ELEC E119

EQUIPMENT GROUND BUS

LINE-SIDE LUGS: MECHANICAL

CKT NO.	DESCRIPTION	LOAD TYPE	NOTES	WIRE SIZE	BKR AMP	P	PHASE A	PHASE B	PHASE C	P	BKR AMP	WIRE SIZE	NOTES	LOAD TYPE	DESCRIPTION	CKT NO.
1	RCPT - E101 GENERAL A	R		12	20	1	720	540		1	20	12		R	RCPT - D100B, D100C GENERAL	2
3	RCPT - E101 GENERAL B	R		12	20	1			720 180	1	20	12		R	RCPT-D11GEN	4
5	RCPT - E101, E104 GENERAL	R		12	20	1			1440 1000	1	20	12		Z	PWR-D100 DOOR OPERATORS	6
7	RCPT - E102, E105 GENERAL	R		12	20	1	1080	100		1	20	12		Z	PWR-D101 MAG DOOR HOLDER	8
9	RCPT - E104 GENERAL A	R		12	20	1			720 500	1	20	12	FA	Z	PWR-FIRE ALARME FAA-D100A	10
11	RCPT - E104 GENERAL B	R		12	20	1			900 0	1	20				SPARE	12
13	RCPT - E107 GENERAL A	R		12	20	1	720	0		1	20				SPARE	14
15	RCPT - E107 GENERAL B	R		12	20	1			900 360	1	20	12		Z	RCPT - F101 PROJECTOR A	16
17	RCPT - E107 QUADS	R		12	20	1			720 360	1	20	12		Z	RCPT - F101 PROJECTOR B	18
19	RCPT - E108 GENERAL	R		12	20	1	540	1000		1	20	12		Z	PWR - F101 PROJECTOR SCREEN A	20
21	RCPT - E110 GENERAL A	R		12	20	1			720 1000	1	20	12		Z	PWR - F101 PROJECTOR SCREEN B	22
23	RCPT - E110 GENERAL B	R		12	20	1			720 1000	1	20	12		Z	RCPT - F101 SCOREBOARD A	24
25	RCPT - E111 GENERAL	R		12	20	1	900	1000		1	20	12		Z	RCPT - F101 SCOREBOARD B	26
27	RCPT - E112 GENERAL	R		12	20	1			900 800	1	20	12		Z	PWR - F101 TIMECLOCK A	28
29	RCPT - STORAGES	R		12	20	1			1080 800	1	20	12		Z	PWR - F101 TIMECLOCK B	30
31	RCPT - E114A, E117A COACH OFFICES	R		12	20	1	720	100		1	20	12		Z	PWR-E11A MAG DOOR HOLDER	32
33	RCPT - E113 GIRLS LOCKER	R		12	20	1			900 200	1	20	12		Z	PWR - DOOR HARDWARE (D11/D100)	34
35	RCPT - E116 BOYS LOCKER	R		12	20	1			900 150	1	20	12		Z	PWR - DOOR HARDWARE (E10/113/116)	36
37	RCPT - E122 GENERAL A	R		12	20	1	720	0		1	20				SPARE	38
39	RCPT - E122 GENERAL B	R		12	20	1			720 0	1	20				SPARE	40
41	RCPT - D12 EWC	K	GF	12	20	1			600 0	1	20				SPARE	42
43	RCPT - E10, E11A CORRIDOR	R		12	20	1	1080	0		1	20				SPARE	44
45	RCPT - E113 EWC	K	GF	12	20	1			600 0	1	20				SPARE	46
47	RCPT - E116 EWC	K	GF	12	20	1			600 0	1	20				SPARE	48
49	RCPT - E119 ELECTRICAL	R		12	20	1	180	0		1	20				SPARE	50
51	RCPT - E123, E124 RESTROOM	R		12	20	1			360 0	1	20				SPARE	52
53	RCPT - CLOCKS LVL 1 E	R		12	20	1			540 0	1	20				SPARE	54
55	RCPT - F101 GENERAL A	R		12	20	1	720	0		1	20				SPARE	56
57	RCPT - F101 GENERAL B	R		12	20	1			720 0	1	20				SPARE	58
59	RCPT - F102, F105	R		12	20	1			720 0	1	20				SPARE	60
61	RCPT - F102 EWC	K	GF	12	20	1	600	0		1	20				SPARE	62
63	SPARE				20	1			0 0	1	20				SPARE	64
65	SPARE				20	1			0 0	1	20				SPARE	66
67	SPARE				20	1	0	0		1	20				SPARE	68
69	SPARE				20	1			0 0	1	20				SPARE	70
71	SPARE				20	1			0 0	1	20				SPARE	72
73	SPARE				20	1	0	0		1	20				SPARE	74
75	SPARE				20	1			0 0	1	20				SPARE	76
77	SPARE				20	1			0 0	1	20				SPARE	78
79	SPARE				20	1	0	0		1	20				SPARE	80
81	SPARE				20	1			0 0	1	20				SPARE	82
83	SPARE				20	1			0 0	1	20				SPARE	84
85	GYM CONTROL PANEL POWER	Z		12	20	1	500	0		1	20				SPARE	86
87	GYM CONTROL PANEL POWER	Z		12	20	1			500 0	1	20				SPARE	88
89	PWR - F101 HOOP (NW)	R		10	30	1			1920 0	1	20				SPARE	90
91	PWR - F101 HOOP (NE)	R		10	30	1	1920	0		1	20				SPARE	92
93	PWR - F101 HOOP (E)	R		10	30	1			1920 0	1	20				SPARE	94
95	PWR - F101 HOOP (SE)	R		10	30	1			1920 0	1	20				SPARE	96
97	PWR - F101 HOOP (SW)	R		10	30	1	1920	0		1	20				SPARE	98
99	PWR - F101 HOOP (W)	R		10	30	1			1920 0	1	20				SPARE	100
101	PWR - F101 CURTAIN A	R		10	30	1			1920 0	1	20				SPARE	102
103	PWR - F101 CURTAIN B	R		10	30	1	1920	0		1	20				SPARE	104
105	SPARE				20	1			0 0	1	20				SPARE	106
107	SPARE				20	1			0 0	1	20				SPARE	108
109	SPARE				20	1	0	0		1	20				SPARE	110
111	SPARE				20	1			0 0	1	20				SPARE	112
113	SPARE				20	1			0 0	1	20				SPARE	114
115	SPARE				20	1	0	0		1	20				SPARE	116
117	SPARE				20	1			0 0	1	20				SPARE	118
119	SPARE				20	1			0 0	1	20				SPARE	120
121						3	497	0		1	20				SPARE	122
123	PWR - F101 BLEACHERS A	M		12	15	3			497 0	1	20				SPARE	124
125									497 0	1	20				SPARE	126
127						3	497	0		1	20				SPARE	128
129	PWR - F101 BLEACHERS B	M		12	15	3			497 0	1	20				SPARE	130
131									497 0	1	20				SPARE	132
133						3	497	0		1	20				SPARE	134
135	PWR - F101 BLEACHERS C	M		12	15	3			497 1144	2	20	12		C	CU-16/CR-16	136
137									497 1144							138
139						3	497	300		1	20	12		Z	PWR-F201 MOTORIZED DAMPERS	140
141	PWR - F101 BLEACHERS D	M		12	15	3			497 696	1	15	12		M	RHWP-7	142
143									497 696	1	15	12		M	RHWP-8	144
145						3	497	500		1	20	12		Z	PWR-MECH CONTROL PANEL	146
147	PWR - F102 BLEACHERS A	M		12	15	3			497 360	1	20	12	FA	Z	PWR-FIRE ALARM RPS	148
149									497 500	1	20	12		Z	PWR-LCP1E	150
151						3	497	0		1	20	12			PWR-E120 SECURITY PANEL	152
153	PWR - F102 BLEACHERS B	M		12	15	3			497 900	1	20	12		R	RCPT-F201 SERVICE	154
155									497 540	1	20	12		R	RCPT-ROOFTOP AREA E SERVICE	156
157						3	497	150		1	20	12		M	UHs 9, 10, 12	158
159	PWR - F102 BLEACHERS C	M		12	15	3			497 1000	1	20	12		M	EF-9	160
161									497 1000	1	20	12		M	EF-10	162
163						3	497	950		1	20	12		M	VAVs 701 thru 718	164
165	PWR - F102 BLEACHERS D	M		12	15	3			497 1144	2	30	10		C	CU-11/CR-11	166
167									497 1144							168
	TOTAL LOAD (VA):						22857 VA	23861 VA	26291 VA							
	TOTAL AMPS:						190 A	200 A	220 A							

LOAD TYPE	CONNECTED LOAD	DEMAND FACTOR	NEC DEMAND
EXISTING LOAD (E)	0 VA	100%	0 VA
COOLING (C)	4576 VA	100%	4576 VA
HEATING (H)	0 VA	0%	0 VA
LIGHTING (L)	0 VA	125%	0 VA
RECEPTACLES (R)	38580 VA	63%	24290 VA
MOTORS (M)	14929 VA	100%	14929 VA
SUPPLEMENTAL HEAT (U)	0 VA	100%	0 VA
MISC EQUIP (Z)	11030 VA	100%	11030 VA
REFRIGERATION (F)	0 VA	100%	0 VA
SIGN/DISPLAY (D)	0 VA	125%	0 VA
KITCHEN (K)	2400 VA	80%	1920 VA
LARGEST MOTOR	1491 VA	125%	1864 VA
SHOW WINDOW (W)	0 VA	125%	0 VA
TRACK LIGHTING	0 VA	100%	0 VA

PANELBOARD NOTES

PANELBOARD TOTALS	
TOTAL CONNECTED LOAD	73006 VA
TOTAL NEC LOAD	58609 VA
TOTAL CONNECTED CURRENT	203 A
TOTAL NEC DEMAND CURRENT	163 A

PANELBOARD: 1H1E (NEW)

BUS AMPS: 225A
MAIN SIZE/TYPE: 200A M.C.B.
VOLTS/PHASE: 480Y/277 V 3P/4W
SUPPLIED BY: SWBD-N1

FAULT CURRENT: RE: ONE-LINE DIAGRAM
AIC RATED: FULLY RATED
AIC RATING: FCA +10% MINIMUM
SERVES: AREA E
MOUNTING: SURFACE
LOCATION: ELEC E119

EQUIPMENT GROUND BUS

LINE-SIDE LUGS: MECHANICAL

CKT NO.	DESCRIPTION	LOAD TYPE	NOTES	WIRE SIZE	BKR AMP	P	PHASE A	PHASE B	PHASE C	P	BKR AMP	WIRE SIZE	NOTES	LOAD TYPE	DESCRIPTION	CKT NO.
1	LTG-E101,E102	L	Z	12	20	1	2811 0			1	20				SPARE	2
3	LTG-E119,E120,E121,E122,F101A	L	Z	12	20	1		1565 0		1	20				SPARE	4
5	LTG-E108,E109,E110,E111,E112	L	Z	12	20	1			2406 0	1	20				SPARE	6
7	LTG-E113,E114,E115,E116,E117,E118	L	Z	12	20	1	2346 0			1	20				SPARE	8
9	LTS-NL,EXIT SIGNS, E10,E11A	L	EM	12	20	1		200 0		1	20				SPARE	10
11	LTS-CORRIDOR E10	L	EM	12	20	1			1346 0	1	20				SPARE	12
13	LTS-E11A&B,F103A&B,D100A,D101A,D112A	L	Z EM	12	20	1	1004 0			1	20				SPARE	14
15	LTS-STAIR G06,VEST F102	L	Z EM	12	20	1		313 0		1	20				SPARE	16
17	LTS-MECH F201 ROOFTOP SERVICE	L		12	20	1			494 0	1	20				SPARE	18
19	LTS-EXT. SCHOOL LOGO ACCENT	L		10	20	1	780 0			1	20				SPARE	20
21	LTS-EXTERIOR EGRESS ACCENTS	L	EM	10	20	1		1856 0		1	20				SPARE	22
23	LTS-SOUTH EXTERIOR LIGHTS	L	EM	10	20	1			536 0	1	20				SPARE	24
25	LTS-ENTRY CORRIDOR D11	L		12	20	1	192 0			1	20				SPARE	26
27	EXT LTG - BUS LOOP	L		OL	20	1		1330 0		1	20				SPARE	28
29	EQUIPPED SPACE					1			0 0	1	20				SPARE	30
31	EQUIPPED SPACE					1	0 0			1	20				SPARE	32
33	EQUIPPED SPACE					1		0 0		1	20				SPARE	34
35	EQUIPPED SPACE					1			0 0	1	20				SPARE	36
37	SPARE				20	1	0 0									38
39	SPARE				20	1		0 0		3	15				SPARE	40
41	SPARE				20	1			0 0							42
43	EQUIPPED SPACE					1	0 0									44
45	EQUIPPED SPACE					1		0 0		3	30				SPARE	46
47	EQUIPPED SPACE					1			0 0							48
49	EQUIPPED SPACE					1	0 5100									50
51	EQUIPPED SPACE					1		0 5100		3	25	10		M	AHU-8 (SUPPLY)	52
53	EQUIPPED SPACE					1			0 5100						4 @ 3HP	54
55	EQUIPPED SPACE					1	0 2106									56
57	EQUIPPED SPACE					1		0 2106		3	20	12		Z M	RF-8 (AHU-8 RETURN)1@5HP	58
59	EQUIPPED SPACE					1			0 2106							60
61	EQUIPPED SPACE					1	0 5100									62
63	EQUIPPED SPACE					1		0 5100		3	25	10		M	AHU-7 (SUPPLY)	64
65	EQUIPPED SPACE					1			0 5100						4 @ 3HP	66
67	EQUIPPED SPACE					1	0 2106									68
69	EQUIPPED SPACE					1		0 2106		3	20	12		Z M	RF-7 (AHU-7 RETURN)1@5HP	70
71	EQUIPPED SPACE					1			0 2106							72
73	EQUIPPED SPACE					1	0 22857									74
75	EQUIPPED SPACE					1		0 23861		3	175	OL		--	TX-L1E	76
77	EQUIPPED SPACE					1			0 26291							78
79	EQUIPPED SPACE					1	0 4320									80
81	EQUIPPED SPACE					1		0 3960		3	70	OL		R	TX-C1E	82
83	EQUIPPED SPACE					1			0 3240							84
	TOTAL LOAD (VA):						48722 VA	47497 VA	48725 VA							
	TOTAL AMPS:						177 A	171 A	177 A							

LOAD TYPE	CONNECTED LOAD	DEMAND FACTOR	NEC DEMAND
EXISTING LOAD (E)	0 VA	100%	0 VA
COOLING (C)	4576 VA	100%	4576 VA
HEATING (H)	0 VA	0%	0 VA
LIGHTING (L)	17059 VA	125%	21324 VA
RECEPTACLES (R)	50100 VA	60%	30050 VA
MOTORS (M)	32430 VA	100%	32430 VA
SUPPLEMENTAL HEAT (U)	0 VA	100%	0 VA
MISC EQUIP (Z)	23078 VA	100%	23078 VA
REFRIGERATION (F)	0 VA	100%	0 VA
SIGN/DISPLAY (D)	0 VA	125%	0 VA
KITCHEN (K)	2400 VA	80%	1920 VA
LARGEST MOTOR	15300 VA	125%	19125 VA
SHOW WINDOW (W)	0 VA	125%	0 VA
TRACK LIGHTING	0 VA	100%	0 VA

PANELBOARD NOTES

PANELBOARD TOTALS	
TOTAL CONNECTED LOAD	144943 VA
TOTAL NEC LOAD	132503 VA
TOTAL CONNECTED CURRENT	174 A
TOTAL NEC DEMAND CURRENT	159 A

PANELBOARD: 1C1E (NEW)

BUS AMPS: 150A
MAIN SIZE/TYPE: 150A M.C.B.
VOLTS/PHASE: 208Y/120 V 3P/4W
SUPPLIED BY: 1H1E VIA TX-1C1E

FAULT CURRENT: RE: ONE-LINE DIAGRAM
AIC RATED: FULLY RATED
AIC RATING: FCA +10% MINIMUM
SERVES: AREA E
MOUNTING: SURFACE
LOCATION: ELEC E119

EQUIPMENT GROUND BUS

200% NEUTRAL

LINE-SIDE LUGS: MECHANICAL

CKT NO.	DESCRIPTION	LOAD TYPE	NOTES	WIRE SIZE	BKR AMP	P	PHASE A	PHASE B	PHASE C	P	BKR AMP	WIRE SIZE	NOTES	LOAD TYPE	DESCRIPTION	CKT NO.
1	RCPT - E101, E104, E107 TVS	R		12	20	1	1080 360			1	20	12		R	RCPT - E120 IT A	2
3	RCPT - E102, E105, E108 DESK	R		12	20	1		1080 360		1	20	12		R	RCPT - E120 IT B	4
5	RCPT - E110, E111, E112 TVS	R		12	20	1			1080 360	1	20	12		R	RCPT - E120 IT C	6
7	RCPT - E111, E112 DESK	R		12	20	1	720 360			1	20	12		R	RCPT - E120 IT D	8
9	RCPT - D12 TV	R		12	20	1		360 360		1	20	12		R	RCPT - E120 IT E	10
11	RCPT - E114A DESK	R		12	20	1			720 360	1	20	12		R	RCPT - E120 IT F	12
13	RCPT - E117A DESK	R		12	20	1	720 720			1	20	12		R	RCPT - D12 TVS	14
15	RCPT - E122 DESK/TV	R		12	20	1		720 720		1	20	12		R	RCPT - D100A COMPUTERS A	16
17	SPARE				20	1			0 720	1	20	12		R	RCPT - D100A COMPUTERS B	18
19	SPARE				20	1	0 360			1	20	12		R	RCPT - D100A COMPUTERS C	20
21	SPARE				20	1		0 360		1	20	12		R	RCPT - D100A TV	22
23	SPARE				20	1			0 0	1	20				SPARE	24
25	SPARE				20	1	0 0			1	20				SPARE	26
27	SPARE				20	1		0 0		1	20				SPARE	28
29	SPARE				20	1			0 0	1	20				SPARE	30
31	SPARE				20	1	0 0			1	20				SPARE	32
33	SPARE				20	1		0 0		1	20				SPARE	34
35	SPARE				20	1			0 0	1	20				SPARE	36
37	SPARE				20	1	0 0			1	20				SPARE	38
39	SPARE				20	1		0 0		1	20				SPARE	40
41	SPARE				20	1			0 0	1	20				SPARE	42
43	EQUIPPED SPACE					1	0 0			1					EQUIPPED SPACE	44
45	EQUIPPED SPACE					1		0 0		1					EQUIPPED SPACE	46
47	EQUIPPED SPACE					1			0 0	1					EQUIPPED SPACE	48
49	EQUIPPED SPACE					1	0 0			1					EQUIPPED SPACE	50
51	EQUIPPED SPACE					1		0 0		1					EQUIPPED SPACE	52
53	EQUIPPED SPACE					1			0 0	1					EQUIPPED SPACE	54
55	EQUIPPED SPACE					1	0 0			1					EQUIPPED SPACE	56
57	EQUIPPED SPACE					1		0 0		1					EQUIPPED SPACE	58
59	EQUIPPED SPACE					1			0 0	1					EQUIPPED SPACE	60
61	EQUIPPED SPACE					1	0 0			1					EQUIPPED SPACE	62
63	EQUIPPED SPACE					1		0 0		1					EQUIPPED SPACE	64
65	EQUIPPED SPACE					1			0 0	1					EQUIPPED SPACE	66
67	EQUIPPED SPACE					1	0 0			1					EQUIPPED SPACE	68
69	EQUIPPED SPACE					1		0 0		1					EQUIPPED SPACE	70
71	EQUIPPED SPACE					1			0 0	1					EQUIPPED SPACE	72
73	EQUIPPED SPACE					1	0 0			1					EQUIPPED SPACE	74
75	EQUIPPED SPACE					1		0 0		1					EQUIPPED SPACE	76
77	EQUIPPED SPACE					1			0 0	1					EQUIPPED SPACE	78
79	EQUIPPED SPACE					1	0 0			1					EQUIPPED SPACE	80
81	EQUIPPED SPACE					1		0 0		1					EQUIPPED SPACE	82
83	EQUIPPED SPACE					1			0 0	1					EQUIPPED SPACE	84
	TOTAL LOAD (VA):						4320 VA	3960 VA	3240 VA							
	TOTAL AMPS:						37 A	34 A	27 A							

LOAD TYPE	CONNECTED LOAD	DEMAND FACTOR	NEC DEMAND
EXISTING LOAD (E)	0 VA	100%	0 VA
COOLING (C)	0 VA	0%	0 VA
HEATING (H)	0 VA	100%	0 VA
LIGHTING (L)	0 VA	125%	0 VA
RECEPTACLES (R)	11520 VA	93%	10760 VA
MOTORS (M)	0 VA	100%	0 VA
SUPPLEMENTAL HEAT (U)	0 VA	100%	0 VA
MISC EQUIP (Z)	0 VA	100%	0 VA
REFRIGERATION (F)	0 VA	100%	0 VA
SIGN/DISPLAY (D)	0 VA	125%	0 VA
KITCHEN (K)	0 VA	100%	0 VA
LARGEST MOTOR	0 VA	125%	0 VA
SHOW WINDOW (W)	0 VA	125%	0 VA
TRACK LIGHTING	0 VA	100%	0 VA

PANELBOARD NOTES

PANELBOARD TOTALS	
TOTAL CONNECTED LOAD	11520 VA
TOTAL NEC LOAD	10760 VA
TOTAL CONNECTED CURRENT	32 A
TOTAL NEC DEMAND CURRENT	30 A

PANELBOARD SCHEDULE NOTES LEGEND:

AF = ARC FAULT CIRCUIT INTERRUPTER.
C# = CIRCUIT VIA LIGHTING CONTACTOR #.
CL = CIRCUIT VIA CURRENT LIMITING DEVICE.
EM = EMERGENCY LIGHTING HANDLE-ON CLAMP.
ETR = EXISTING TO REMAIN
FA = RED/HANDLE-ON CLAMP.
GF = GROUND-FAULT CIRCUIT INTERRUPTER TYPE CIRCUIT BREAKER (5 mA).
GFEP = GROUND FAULT EQUIPMENT PROTECTION BREAKER (30 mA).
HT# = PROVIDE HANDLE-TIE FOR MULTI-WIRE BRANCH CIRCUIT PER CODE.
# DENOTES PHASES TO BE TIED.
IG = ISOLATED GROUND CIRCUIT.
L# = LIGHTING CONTROL SCHEME NUMBER.
LCK = HANDLE PADLOCKABLE-OFF DEVICE.
LO = HANDLE-ON CLAMP.
N = PROVIDE NEUTRAL WITH 208V OR 480V, 1-PH OR 3-PH CIRCUIT.
NB = PROVIDE NEW CIRCUIT BREAKER.
O/OL = REFER TO ELECTRICAL ONE-LINE/RISER DIAGRAM.
PS = POWER-SWITCHING CIRCUIT BREAKER.
PSE = EMERGENCY POWER-SWITCHING CIRCUIT BREAKER.
RP = CIRCUIT VIA RELAY PANEL.
SC = REFER TO VOLTAGE DROP CALCULATION SCHEDULE FOR MINIMUM WIRE SIZE.
ST = SHUNT TRIP CIRCUIT BREAKER.
VD = BRANCH CIRCUITRY HAS BEEN UPSIZED TO REDUCE VOLTAGE DROP. ADJUST GROUND WIRE SIZE PER CODE. PROVIDE LUG ADAPTORS IF REQUIRED.

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STATE OF MISSOURI
CURTIS A. OLDS
NUMBER PE-2018036640
PROFESSIONAL ENGINEER

Dec 2 2020
CURTIS A. OLDS
LICENSE # PE-2018036640

HENDERSON ENGINEERS
8345 ENEXA DRIVE, SUITE 300
LENEXA, KS 66214
TEL 913.742.2800 FAX 913.742.5001
WWW.HENDERSONENGINEERS.COM
CONSULTANT PROJECT NO. E-5360
MO. CORPORATE NO. E-5360
EXPIRES 12/31/2021

LEE'S SUMMIT MIDDLE SCHOOL #4

LEE'S SUMMIT R-7 SCHOOL DISTRICT

1001 SE BAILEY ROAD
LEE'S SUMMIT, MO 64081

PACKAGE 3 - BUILDING & SITE
10/08/20

REVISIONS

1	ADDENDUM 001	10/13/20
2	ADDENDUM 002	10/19/20
3	ASI 003	12/02/20

13-20102-00

ELECTRICAL SCHEDULES

	PANEL 1H1E
PANEL 1L1E	PANEL 1C1E

E6.8

CURTIS A. OLDS

PANELBOARD: 1H1F (NEW)

BUS AMPS: 225A
MAIN SIZE/TYPE: 200A M.C.B.
VOLTS/PHASE: 480Y/277 V 3P/4W
SUPPLIED BY: SWBD-N1

FAULT CURRENT: RE: ONE-LINE DIAGRAM
AIC RATED: FULLY RATED
AIC RATING: FCA +10% MINIMUM
SERVES: AREA F
MOUNTING: SURFACE
LOCATION: GYM STORAGE F104C

EQUIPMENT GROUND BUS

LINE-SIDE LUGS: MECHANICAL

CKT NO.	DESCRIPTION	LOAD TYPE	NOTES	WIRE SIZE	BKR AMP	P	PHASE A		PHASE B		PHASE C		P	BKR AMP	WIRE SIZE	NOTES	LOAD TYPE	DESCRIPTION	CKT NO.
1	LTS-EXIT SIGNS,F104A,B&C	L Z	EM	12	20	1	212	0					1	20				SPARE	2
3	LTS-GYMNASIUM ZONE a	L Z	EM	12	20	1			1174	0			1	20				SPARE	4
5	LTS-GYMNASIUM ZONE b	L Z	EM	12	20	1					676	0	1	20				SPARE	6
7	LTS-GYMNASIUM ZONE c	L Z	EM	12	20	1	1376	0					1	20				SPARE	8
9	LTS-GYMNASIUM ZONE d	L Z	EM	12	20	1			967	0			1	20				SPARE	10
11	SPARE				20	1					0	0	1	20				SPARE	12
13	SPARE				20	1	0	0					1	20				SPARE	14
15	SPARE				20	1			0	0			1	20				SPARE	16
17	SPARE				20	1					0	0	1	20				SPARE	18
19	SPARE				20	1	0	0					1	20				SPARE	20
21	SPARE				20	1			0	0			1	20				SPARE	22
23	SPARE				20	1					0	0	1	20				SPARE	24
25	SPARE				20	1	0	0					1	20				SPARE	26
27	SPARE				20	1			0	0			1	20				SPARE	28
29	SPARE				20	1					0	0	1	20				SPARE	30
31	SPARE				20	1	0	0					1	20				SPARE	32
33	SPARE				20	1			0	0			1	20				SPARE	34
35	SPARE				20	1					0	0	1	20				SPARE	36
37	SPARE				20	1	0	11048											38
39	SPARE				20	1			0	10176			3	125	OL		--	TX-L1F	40
41	SPARE				20	1					0	12448							42
	TOTAL LOAD (VA):						12636 VA		12317 VA		13124 VA								
	TOTAL AMPS:						46 A		44 A		48 A								

LOAD TYPE	CONNECTED LOAD	DEMAND FACTOR	NEC DEMAND
EXISTING LOAD (E)	0 VA	100%	0 VA
COOLING (C)	0 VA	0%	0 VA
HEATING (H)	0 VA	100%	0 VA
LIGHTING (L)	4375 VA	125%	5469 VA
RECEPTACLES (R)	18960 VA	76%	14480 VA
MOTORS (M)	48 VA	100%	48 VA
SUPPLEMENTAL HEAT (U)	3000 VA	100%	3000 VA
MISC EQUIP (Z)	11594 VA	100%	11594 VA
REFRIGERATION (F)	0 VA	100%	0 VA
SIGN/DISPLAY (D)	0 VA	125%	0 VA
KITCHEN (K)	0 VA	100%	0 VA
LARGEST MOTOR	100 VA	125%	125 VA
SHOW WINDOW (W)	0 VA	125%	0 VA
TRACK LIGHTING	0 VA	100%	0 VA

PANELBOARD NOTES

PANELBOARD TOTALS	
TOTAL CONNECTED LOAD	38077 VA
TOTAL NEC LOAD	34716 VA
TOTAL CONNECTED CURRENT	46 A
TOTAL NEC DEMAND CURRENT	42 A

PANELBOARD: 1H1FA (NEW)

BUS AMPS: 225A
MAIN SIZE/TYPE: MLO
VOLTS/PHASE: 480Y/277 V 3P/4W
SUPPLIED BY: SWBD-N1

FAULT CURRENT: REFER TO ONE-LINE
AIC RATED: FULLY RATED
AIC RATING: FCA +10% MINIMUM
SERVES: STAGE AREA f
MOUNTING: SURFACE
LOCATION: PLATFORM STORAGE D112A

EQUIPMENT GROUND BUS

LINE-SIDE LUGS: MECHANICAL

CKT NO.	DESCRIPTION	LOAD TYPE	NOTES	WIRE SIZE	BKR AMP	P	PHASE A		PHASE B		PHASE C		P	BKR AMP	WIRE SIZE	NOTES	LOAD TYPE	DESCRIPTION	CKT NO.
1	LTS - CORRIDOR D12	L	EM	10	20	1	546	0					1	20				SPARE	2
3	LTS - COMMONS D101 CYLINDERS N,E	L	EM	10	20	1			782	0			1	20				SPARE	4
5	LTS - COMMONS D101 CYLINDERS S,W	L	EM	10	20	1					642	0	1	20				SPARE	6
7	LTS - COMMONS D101 LINEARS WEST	L	EM	10	20	1	1734	0					1	20				SPARE	8
9	LTS - COMMONS D101 LINEARS EAST	L	EM	10	20	1			1790	0			1	20				SPARE	10
11	LTS-COMP GYM F101 (z15)	L	EM	10	20	1					2147	0	1	20				SPARE	12
13	LTS-COMP GYM F101 (z16)	L	EM	10	20	1	1872	0					1	20				SPARE	14
15	LTS-COMP GYM F101 (z17)	L	EM	10	20	1			1872	0			1	20				SPARE	16
17	LTS-COMPETITION GYM STAGE	L		12	20	1					494	0	1	20				SPARE	18
19	LIGHTING	L Z			20	1	526	0					1					EQUIPPED SPACE	20
21	EQUIPPED SPACE					1			0	0			1					EQUIPPED SPACE	22
23	EQUIPPED SPACE					1					0	0	1					EQUIPPED SPACE	24
25	EQUIPPED SPACE					1	0	0					1					EQUIPPED SPACE	26
27	EQUIPPED SPACE					1			0	0			1					EQUIPPED SPACE	28
29	EQUIPPED SPACE					1					0	0	1					EQUIPPED SPACE	30
31	EQUIPPED SPACE					1	0	0					1					EQUIPPED SPACE	32
33	EQUIPPED SPACE					1			0	0			1					EQUIPPED SPACE	34
35	EQUIPPED SPACE					1					0	0	1					EQUIPPED SPACE	36
37							6745	0											38
39	TX-1C1FA AND PANEL 1C1FA	L R Z			OL	70	3		6777	0			1					EQUIPPED SPACE	40
41											6893	0	1					EQUIPPED SPACE	42
	TOTAL LOAD (VA):						11423 VA		11221 VA		10176 VA								
	TOTAL AMPS:						42 A		41 A		37 A								

LOAD TYPE	CONNECTED LOAD	DEMAND FACTOR	NEC DEMAND
EXISTING LOAD (E)	0 VA	100%	0 VA
COOLING (C)	0 VA	0%	0 VA
HEATING (H)	0 VA	100%	0 VA
LIGHTING (L)	18769 VA	125%	23461 VA
RECEPTACLES (R)	5040 VA	100%	5040 VA
MOTORS (M)	0 VA	100%	0 VA
SUPPLEMENTAL HEAT (U)	0 VA	100%	0 VA
MISC EQUIP (Z)	9010 VA	100%	9010 VA
REFRIGERATION (F)	0 VA	100%	0 VA
SIGN/DISPLAY (D)	0 VA	125%	0 VA
KITCHEN (K)	0 VA	100%	0 VA
LARGEST MOTOR	0 VA	125%	0 VA
SHOW WINDOW (W)	0 VA	125%	0 VA
TRACK LIGHTING	0 VA	100%	0 VA

PANELBOARD NOTES

PANELBOARD TOTALS	
TOTAL CONNECTED LOAD	32819 VA
TOTAL NEC LOAD	37511 VA
TOTAL CONNECTED CURRENT	39 A
TOTAL NEC DEMAND CURRENT	45 A

PANELBOARD: 1L1F (NEW)

BUS AMPS: 225A
MAIN SIZE/TYPE: 225A M.C.B.
VOLTS/PHASE: 208Y/120 V 3P/4W
SUPPLIED BY: 1H1F VIA TX-1L1F

FAULT CURRENT: RE: ONE-LINE DIAGRAM
AIC RATED: FULLY RATED
AIC RATING: FCA +10% MINIMUM
SERVES: AREA F
MOUNTING: SURFACE
LOCATION: GYM STORAGE F104C

EQUIPMENT GROUND BUS

LINE-SIDE LUGS: MECHANICAL

CKT NO.	DESCRIPTION	LOAD TYPE	NOTES	WIRE SIZE	BKR AMP	P	PHASE A		PHASE B		PHASE C		P	BKR AMP	WIRE SIZE	NOTES	LOAD TYPE	DESCRIPTION	CKT NO.
1	RCPT - F104 EWC	R	GF	12	20	1	180	360					1	20	12		R	RCPT-F104 DATA A	2
3	RCPT - F104A/B RESTROOMS	R		12	20	1			540	360			1	20	12		R	RCPT-F104 DATA B	4
5	RCPT - F104 GENERAL A	R		12	20	1					900	1000	1	20	12		Z	RCPT - F104 SCOREBOARD A	6
7	RCPT - F104 GENERAL B	R		12	20	1	1080	1000					1	20	12		Z	RCPT - F104 SCOREBOARD B	8
9	RCPT - F104C ELECTRICAL	R		12	20	1			180	800			1	20	12		Z	PWR - F104 TIMECLOCK A	10
11	SPARE				20	1					0	800	1	20	12		Z	PWR - F104 TIMECLOCK B	12
13	SPARE				20	1	0	500					1	20	12	LCK	Z	PWR-LOUVER BATTERY BACKUP	14
15	SPARE				20	1			0	500			1	20	12		Z	PWR-LOUVER CONTROLS	16
17	SPARE				20	1					0	1500	2	20	12		Z U	WH-10	18
19	SPARE				20	1	0	1500											20
21	SPARE				20	1			0	48			1	15	12		M	RP-4	22
23	SPARE				20	1					0	0	1	20	12		Z	PWR-MECHANICAL CTRL PNL	24
25	SPARE				20	1	0	0					1	20				SPARE	26
27	SPARE				20	1			0	0			1	20				SPARE	28
29	SPARE				20	1					0	0	1	20				SPARE	30
31	SPARE				20	1	0	0					1	20				SPARE	32
33	SPARE				20	1			0	0			1	20				SPARE	34
35	GYM CONTROL PANEL POWER	Z		12	20	1					500	0	1	20				SPARE	36
37	GYM CONTROL PANEL POWER	Z		12	20	1	500	0					1	20				SPARE	38
39	PWR - F104 HOOP (NW)	R		10	30	1			1920	0			1	20				SPARE	40
41	PWR - F104 HOOP (NE)	R		10	30	1					1920	0	1	20				SPARE	42
43	PWR - F104 HOOP (E)	R		10	30	1	1920	0					1					EQUIPPED SPACE	44
45	PWR - F104 HOOP (SE)	R		10	30	1			1920	0			1					EQUIPPED SPACE	46
47	PWR - F104 HOOP (SW)	R		10	30	1					1920	0	1					EQUIPPED SPACE	48
49	PWR - F104 HOOP (W)	R		10	30	1	1920	0					1					EQUIPPED SPACE	50
51	PWR - F104 CURTAIN A	R		10	30	1			1920	0			1					EQUIPPED SPACE	52
53	PWR - F104 CURTAIN B	R		10	30	1					1920	0	1					EQUIPPED SPACE	54
55	TF-3	M		12	15	1	100	0					1					EQUIPPED SPACE	56
57	SPARE				20	1			0	0			1					EQUIPPED SPACE	58
59	SPARE				20	1					0	0	1					EQUIPPED SPACE	60
61	SPARE				20	1	0	0					1					EQUIPPED SPACE	62
63	SPARE				20	1			0	0			1					EQUIPPED SPACE	64
65	SPARE				20	1					0	0	1					EQUIPPED SPACE	66
67	SPARE				20	1	0	0					1					EQUIPPED SPACE	68
69	EQUIPPED SPACE					1			0	0			1					EQUIPPED SPACE	70
71	EQUIPPED SPACE					1					0	0	1					EQUIPPED SPACE	72
73	EQUIPPED SPACE					1	0	0					1					EQUIPPED SPACE	74
75	EQUIPPED SPACE					1			0	0			1					EQUIPPED SPACE	76
77	EQUIPPED SPACE					1					0	0	1					EQUIPPED SPACE	78
79	EQUIPPED SPACE					1	0	0					1					EQUIPPED SPACE	80
81	EQUIPPED SPACE					1			0	0			1					EQUIPPED SPACE	82
83	EQUIPPED SPACE					1					0	0	1					EQUIPPED SPACE	84
	TOTAL LOAD (VA):						9060 VA		8188 VA		10460 VA								
	TOTAL AMPS:						77 A		68 A		88 A								

LOAD TYPE	CONNECTED LOAD	DEMAND FACTOR	NEC DEMAND
EXISTING LOAD (E)	0 VA	100%	0 VA
COOLING (C)	0 VA	0%	0 VA
HEATING (H)	0 VA	100%	0 VA
LIGHTING (L)	0 VA	125%	0 VA
RECEPTACLES (R)	18960 VA	76%	14480 VA
MOTORS (M)	48 VA	100%	48 VA
SUPPLEMENTAL HEAT (U)	3000 VA	100%	3000 VA
MISC EQUIP (Z)	5600 VA	100%	5600 VA
REFRIGERATION (F)	0 VA	100%	0 VA
SIGN/DISPLAY (D)	0 VA	125%	0 VA
KITCHEN (K)	0 VA	100%	0 VA
LARGEST MOTOR	100 VA	125%	125 VA
SHOW WINDOW (W)	0 VA	125%	0 VA
TRACK LIGHTING	0 VA	100%	0 VA

PANELBOARD NOTES

PANELBOARD TOTALS	
TOTAL CONNECTED LOAD	27708 VA
TOTAL NEC LOAD	23253 VA
TOTAL CONNECTED CURRENT	77 A
TOTAL NEC DEMAND CURRENT	65 A

PANELBOARD: 1C1FA (NEW)

BUS AMPS: 225A
MAIN SIZE/TYPE: 150A M.C.B.
VOLTS/PHASE: 208Y/120 V 3P/4W
SUPPLIED BY: 1H1FA VIA TX-1C1FA

FAULT CURRENT: REFER TO ONE-LINE
AIC RATED: FULLY RATED
AIC RATING: FCA +10% MINIMUM
SERVES: AREA F
MOUNTING: SURFACE
LOCATION: PLATFORM STORAGE D112A

EQUIPMENT GROUND BUS

200% NEUTRAL

LINE-SIDE LUGS: MECHANICAL

CKT NO.	DESCRIPTION	LOAD TYPE	NOTES	WIRE SIZE	BKR AMP	P	PHASE A		PHASE B		PHASE C		P	BKR AMP	WIRE SIZE	NOTES	LOAD TYPE	DESCRIPTION	CKT NO.
1	RCPT-D112A IT A	R		12	20	1	360	2667											
3	RCPT-D112,D14	R		12	20	1			720	2667			3	30	10		Z	PWR-SKYFOLD DOOR GYM	4
5	RCPT-D112A IT B	R		12	20	1					360	2667							6
7	RCPT-D112A IT C	R		12	20	1	360	500					1	20	10		L	RCPT-FOLLOWSPOT F101	8
9	RCPT-D112A IT D	R		12	20	1			360	500			1	20	10		L	RCPT-FOLLOWSPOT F101	10
11	RCPT-D112 A	R		12	20	1					360	1296	1	20	10		L	RCPTS-FOH GYM LIGHTING	12
13	RCPT-D112 B	R		12	20	1	360	810					1	20	10		L	RCPTS-STAGE LTS ZONE 1	14
15	RCPT-D112C	R		12	20	1			360	810			1	20	10		L	RCPTS-STAGE LTS ZONE 2	16
17	RCPT - D112 D	R		12	20	1					360	810	1	20	10		L	RCPTS-STAGE LTS ZONE 3	18
19	RCPT - D112 E	R		12	20	1	360	648					1	20	10		L	RCPTS-FOH COMMONS LIGHTING	20
21	RCPT - D112 F	R		12	20	1			360	500			1	20	12		Z	PWR-8-PORT NETWORK BOX	22
23	RCPT - D112 G	R		12	20	1					360	180	1	20	12		R	RCPT-D101 LGT CONTROL BOARD	24
25	PWR - LCP1F	Z		12	20	1	500	180					1	20	12		R	RCPT-F101 LGT CONTROL BOARD	26
27	SPARE				20	1			0	500			1	20	10		L	RCPT-FOLLOWSPOT D101	28
29	SPARE				20	1					0	500	1	20	10		L	RCPT-FOLLOWSPOT D101	30
31	SPARE				20	1	0	0					1	20				SPARE	32
33	SPARE				20	1			0	0			1	20				SPARE	34
35	SPARE				20	1					0	0	1	20				SPARE	36
37	SPARE				20	1	0	0					1	20				SPARE	38
39	SPARE				20	1			0	0			1	20				SPARE	40
41	SPARE				20	1					0	0	1	20				SPARE	42
43	SPARE				20	1	0	0					1	20				SPARE	44
45	SPARE				20	1			0	0			1	20				SPARE	46
47	SPARE				20	1					0	0	1	20				SPARE	48
49	SPARE				20	1	0	0					1	20				SPARE	50
51	SPARE				20	1			0	0			1	20				SPARE	52
53	SPARE				20	1					0	0	1	20				SPARE	54
55	SPARE				20	1	0	0					1	20				SPARE	56
57	EQUIPPED SPACE					1			0	0			1					EQUIPPED SPACE	58
59	EQUIPPED SPACE					1					0	0	1					EQUIPPED SPACE	60
61	EQUIPPED SPACE					1	0	0					1					EQUIPPED SPACE	62
63	EQUIPPED SPACE					1			0	0			1					EQUIPPED SPACE	64
65	EQUIPPED SPACE					1					0	0	1					EQUIPPED SPACE	66
67	EQUIPPED SPACE					1	0	0					1					EQUIPPED SPACE	68
69	EQUIPPED SPACE					1			0	0			1					EQUIPPED SPACE	70
71	EQUIPPED SPACE					1					0	0	1					EQUIPPED SPACE	72
73	EQUIPPED SPACE					1	0	0					1					EQUIPPED SPACE	74
75	EQUIPPED SPACE					1			0	0			1					EQUIPPED SPACE	76
77	EQUIPPED SPACE					1					0	0	1					EQUIPPED SPACE	78
79	EQUIPPED SPACE					1	0	0					1					EQUIPPED SPACE	80
81	EQUIPPED SPACE					1			0	0			1					EQUIPPED SPACE	82
83	EQUIPPED SPACE					1					0	0	1					EQUIPPED SPACE	84
	TOTAL LOAD (VA):						6745 VA		6777 VA		6893 VA								
	TOTAL AMPS:						56 A		57 A		57 A								

LOAD TYPE	CONNECTED LOAD	DEMAND FACTOR	NEC DEMAND
EXISTING LOAD (E)	0 VA	100%	0 VA
COOLING (C)	0 VA	0%	0 VA
HEATING (H)	0 VA	100%	0 VA
LIGHTING (L)	6374 VA	125%	7968 VA
RECEPTACLES (R)	5040 VA	100%	5040 VA
MOTORS (M)	0 VA	100%	0 VA
SUPPLEMENTAL HEAT (U)	0 VA	100%	0 VA
MISC EQUIP (Z)	9000 VA	100%	9000 VA
REFRIGERATION (F)	0 VA	100%	0 VA
SIGN/DISPLAY (D)	0 VA	125%	0 VA
KITCHEN (K)	0 VA	100%	0 VA
LARGEST MOTOR	0 VA	125%	0 VA
SHOW WINDOW (W)	0 VA	125%	0 VA
TRACK LIGHTING	0 VA	100%	0 VA

PANELBOARD NOTES

PANELBOARD TOTALS	
TOTAL CONNECTED LOAD	20414 VA
TOTAL NEC LOAD	22008 VA
TOTAL CONNECTED CURRENT	57 A
TOTAL NEC DEMAND CURRENT	61 A

PANELBOARD SCHEDULE NOTES LEGEND:

AF = ARC FAULT CIRCUIT INTERRUPTER.
C# = CIRCUIT VIA LIGHTING CONTACTOR #.
CL = CIRCUIT VIA CURRENT LIMITING DEVICE.
EM = EMERGENCY LIGHTING HANDLE-ON CLAMP.
ETR = EXISTING TO REMAIN
FA = RED/HANDLE-ON CLAMP.
GF = GROUND-FAULT CIRCUIT INTERRUPTER TYPE CIRCUIT BREAKER (5 mA).
GFEP = GROUND FAULT EQUIPMENT PROTECTION BREAKER (30 mA).
HT# = PROVIDE HANDLE-TIE FOR MULTI-WIRE BRANCH CIRCUIT PER CODE.
# DENOTES PHASES TO BE TIED.
IG = ISOLATED GROUND CIRCUIT.
L# = LIGHTING CONTROL SCHEME NUMBER.
LCK = HANDLE PADLOCKABLE-OFF DEVICE.
LO = HANDLE-ON CLAMP.
N = PROVIDE NEUTRAL WITH 208V OR 480V, 1-PH OR 3-PH CIRCUIT.
NB = PROVIDE NEW CIRCUIT BREAKER.
O/OL = REFER TO ELECTRICAL ONE-LINE/RISER DIAGRAM.
PS = POWER-SWITCHING CIRCUIT BREAKER.
PSE = EMERGENCY POWER-SWITCHING CIRCUIT BREAKER.
RP = CIRCUIT VIA RELAY PANEL.
SC = REFER TO VOLTAGE DROP CALCULATION SCHEDULE FOR MINIMUM WIRE SIZE.
ST = SHUNT TRIP CIRCUIT BREAKER.
VD = BRANCH CIRCUITRY HAS BEEN UPSIZED TO REDUCE VOLTAGE DROP. ADJUST GROUND WIRE SIZE PER CODE. PROVIDE LUG ADAPTORS IF REQUIRED.

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STATE OF MISSOURI
CURTIS A. OLDS
NUMBER PE-2010036640
PROFESSIONAL ENGINEER

Dec 2 2020
CURTIS A. OLDS
LICENSE # PE-2010036640

HENDERSON ENGINEERS
8345 ENEXA DRIVE, SUITE 300
LENEXA, KS 66214
TEL 913.742.2800 FAX 913.742.5001
WWW.HENDERSONENGINEERS.COM
STATE OF MISSOURI
MO. CORPORATE NO. E-5360
EXPIRES 12/31/2021

LEE'S SUMMIT MIDDLE SCHOOL #4

LEE'S SUMMIT R-7 SCHOOL DISTRICT

1001 SE BAILEY ROAD
LEE'S SUMMIT, MO 64081

PACKAGE 3 - BUILDING & SITE
10/08/20

REVISIONS

1	ADDENDUM 002	10/19/20
2	ASI 003	12/02/20

13-20102-00

ELECTRICAL SCHEDULES

PANEL 1H1F	PANEL 1H1FA
PANEL 1L1F	PANEL 1C1FA

E6.9

CURTIS A. OLDS

PANELBOARD: 1H1G (NEW)

BUS AMPS: 225A
MAIN SIZE/TYPE: 200A M.C.B.
VOLTS/PHASE: 480Y/277 V 3P/4W
SUPPLIED BY: SWBD-N1

FAULT CURRENT: RE: ONE-LINE DIAGRAM
AIC RATED: FULLY RATED
AIC RATING: FCA +10% MINIMUM
SERVES: AREA G
MOUNTING: SURFACE
LOCATION: MAIN ELEC G110

EQUIPMENT GROUND BUS

LINE-SIDE LUGS: MECHANICAL

CKT NO.	DESCRIPTION	LOAD TYPE	NOTES	WIRE SIZE	BKR AMP	P	PHASE A		PHASE B		PHASE C		P	BKR AMP	WIRE SIZE	NOTES	LOAD TYPE	DESCRIPTION	CKT NO.
1	LTS-G104,G05,G106,G113,G107	L Z		12	20	1	1010	0					1	20				SPARE	2
3	LTS-CHILLER YARD SERVICE G202	L		12	20	1			216	0			1	20				SPARE	4
5	LTS-G108B,E,D,O, G109,G112	L Z		12	20	1					745	0	1	20				SPARE	6
7	LTS-KITCHEN G108,B101	L Z	EM	12	20	1	2133	0					1	20				SPARE	8
9	LTS- SERVERY G103,G102	L Z	EM	12	20	1			911	0			1	20				SPARE	10
11	LTS MECHANICAL G201, ROOF SERVICE	L		12	20	1					750	0	1	20				SPARE	12
13	LTS-NL EXIT SIGNS, G11,G10A&B,G108	L	EM	12	20	1	193	0					1	20				SPARE	14
15	LTS- G11,G10A&B,G108G	L		12	20	1			1207	0			1	20				SPARE	16
17	LTS-EXTERIOR BUILDING MOUNTED	L	EM	10	20	1					268	0	1	20				SPARE	18
19	LTS- G116,G121	L		12	20	1	465	0					1	20				SPARE	20
21	SPARE				20	1			0	0			1	20				SPARE	22
23	SPARE				20	1					0	0	1	20				SPARE	24
25	SPARE				20	1	0	0					1	20				SPARE	26
27	SPARE				20	1			0	0			1	20				SPARE	28
29	EQUIPPED SPACE					1					0	0	1	20				SPARE	30
31	EQUIPPED SPACE					1	0	6057					3	30	10		M	BOOSTER PUMP (3 @ 5HP)	32
33	EQUIPPED SPACE					1			0	6057									34
35	EQUIPPED SPACE					1					0	6057							36
37	EQUIPPED SPACE					1	0	12410											38
39	EQUIPPED SPACE					1			0	16283			3	125	OL		--	TX-1L1G	40
41	EQUIPPED SPACE					1					0	12751							42
							TOTAL LOAD (VA):		22267 VA		24673 VA		20570 VA						
							TOTAL AMPS:		81 A		90 A		74 A						

2

LOAD TYPE	CONNECTED LOAD	DEMAND FACTOR	NEC DEMAND
EXISTING LOAD (E)	0 VA	100%	0 VA
COOLING (C)	2288 VA	100%	2288 VA
HEATING (H)	0 VA	0%	0 VA
LIGHTING (L)	7848 VA	125%	9810 VA
RECEPTACLES (R)	8820 VA	100%	8820 VA
MOTORS (M)	9958 VA	100%	9958 VA
SUPPLEMENTAL HEAT (U)	0 VA	100%	0 VA
MISC EQUIP (Z)	14917 VA	100%	14917 VA
REFRIGERATION (F)	0 VA	100%	0 VA
SIGN/DISPLAY (D)	0 VA	125%	0 VA
KITCHEN (K)	5360 VA	80%	4288 VA
LARGEST MOTOR	18170 VA	125%	22713 VA
SHOW WINDOW (W)	0 VA	125%	0 VA
TRACK LIGHTING	0 VA	100%	0 VA

PANELBOARD NOTES

PANELBOARD TOTALS	
TOTAL CONNECTED LOAD	67361 VA
TOTAL NEC LOAD	72794 VA
TOTAL CONNECTED CURRENT	81 A
TOTAL NEC DEMAND CURRENT	88 A

PANELBOARD: 1L1G (NEW)

BUS AMPS: 225A
MAIN SIZE/TYPE: 225A M.C.B.
VOLTS/PHASE: 208Y/120 V 3P/4W
SUPPLIED BY: 1H1G VIA TX-1L1G

FAULT CURRENT: RE: ONE-LINE DIAGRAM
AIC RATED: FULLY RATED
AIC RATING: FCA +10% MINIMUM
SERVES: AREA G
MOUNTING: SURFACE
LOCATION: MAIN ELEC G110

EQUIPMENT GROUND BUS

LINE-SIDE LUGS: MECHANICAL

CKT NO.	DESCRIPTION	LOAD TYPE	NOTES	WIRE SIZE	BKR AMP	P	PHASE A		PHASE B		PHASE C		P	BKR AMP	WIRE SIZE	NOTES	LOAD TYPE	DESCRIPTION	CKT NO.
1	RCPTS - G108B, G109	R		12	20	1	720	0					1	20				SPARE	2
3	RCPTS - G108B, G109	R		12	20	1			720	0			1	20				SPARE	4
5	RCPTS - G108C&D, G111,G112,G10B	R		12	20	1					900	0	1	20				SPARE	6
7	DRYER (E-1A)	Z	GF	10	30	2	2496	0					1	20				SPARE	8
9									2496	0			1	20				SPARE	10
11	WASHER (E-1)	Z	GF	12	20	1					1500	0	1	20				SPARE	12
13	SYNAPSE WIRELESS CONTROLLER	Z		12	20	1	500	0					1	20				SPARE	14
15	RCPT - CLOCKS LVL 1 G	R		12	20	1			540	0			1	20				SPARE	16
17	FA - RPS	Z	FA	12	20	1					360	0	1	20				SPARE	18
19	LCP1G	Z		12	20	1	100	0					1	20				SPARE	20
21	RCPT - G11 ICE MACHINE	K	GF	12	20	1			1860	0			1	20				SPARE	22
23											667	0	1	20				SPARE	24
25	PWR - G111 OVERHEAD DOOR	M		12	20	3	667	0					1	20				SPARE	26
27									667	0			1	20				SPARE	28
29	RCPT - G220 GENERAL	R		12	20	1					540	0	1	20				SPARE	30
31	RCPT - G202 GENERAL	R		12	20	1	360	0					1	20				SPARE	32
33	RCPT - G107 GENERAL	R		12	20	1			900	0			1	20				SPARE	34
35	RCPT - G113 CHARGING A	Z		12	20	1					1500	0	1	20				SPARE	36
37	RCPT - G113 CHARGING B	Z		12	20	1	1500	0					1	20				SPARE	38
39	RCPT - G113 CHARGING C	Z		12	20	1			1500	0			1	20				SPARE	40
41	RCPT - G05 GENERAL	R Z		12	20	1					680	0	1	20				SPARE	42
43	RCPT - G106 GENERAL	R		12	20	1	540	0					1	20				SPARE	44
45	RCPT - G106 FRIDGE	K	GF	12	20	1			1000	0			1	20				SPARE	46
47	RCPT - G106 ICE MAKER	K	GF	12	20	1					1500	0	1	20				SPARE	48
49	RCPT - G106 DISPOSAL	M	GF	12	20	1	1000	0					1	20				SPARE	50
51	RCPT - G104 GENERAL	R		12	20	1			540	0			1	20				SPARE	52
53	RCPT - G106 ABOVE COUNTER A	R		12	20	1					180	0	1	20				SPARE	54
55	RCPT - G106 ABOVE COUNTER B	R		12	20	1	180	0					1	20				SPARE	56
57	RCPT - G106 ABOVE COUNTER C	R		12	20	1			180	0			1	20				SPARE	58
59	RCPT - G106 MICROWAVE	K	GF	12	20	1					1000	0	1	20				SPARE	60
61	RCPT- G10B GENERAL	R		12	20	1	720	0					1	20				SPARE	62
63	RCPT - G10 GENERAL	R		12	20	1			180	0			1	20				SPARE	64
65	SPARE				20	1					0	0	1	20				SPARE	66
67	PWR - DOOR HARDWARE (G112&114&2)	Z		12	20	1	100	0					1	20				SPARE	68
69	SPARE				20	1			0	0			1	20				SPARE	70
71	SPARE				20	1					0	0	1	20				SPARE	72
73	SPARE				20	1	0	0					1	20				SPARE	74
75	SPARE				20	1			0	0			1	20				SPARE	76
77	SPARE				20	1					0	0	1	20				SPARE	78
79	SPARE				20	1	0	0					1	20				SPARE	80
81	SPARE				20	1			0	0			1	20				SPARE	82
83	SPARE				20	1					0	0	1	20				SPARE	84
85	SPARE				20	1	0	0					1	20				SPARE	86
87	SPARE				20	1			0	0			1	20				SPARE	88
89	SPARE				20	1					0	0	1	20				SPARE	90
91	SPARE				20	1	0	0					1	20				SPARE	92
93	SPARE				20	1			0	0			1	20				SPARE	94
95	SPARE				20	1					0	0	1	20				SPARE	96
97	SPARE				20	1	0	0					1	20				SPARE	98
99	SPARE				20	1			0	0			1	20				SPARE	100
101	EQUIPPED SPACE					1					0	0	1	20				SPARE	102
103	EQUIPPED SPACE					1	0	0					1	20				SPARE	104
105	EQUIPPED SPACE					1			0	0			1	20				SPARE	106
107	EQUIPPED SPACE					1					0	0	1	20				SPARE	108
109	EQUIPPED SPACE					1	0	0					1	20				SPARE	110
111	EQUIPPED SPACE					1			0	0			1	20				SPARE	112
113	EQUIPPED SPACE					1					0	150	1	20	12			GSV's (BOILERS)	114
115	EQUIPPED SPACE					1	0	360					1	20	12		R	RCPT-ROOFTOP SERVICE	116
117	EQUIPPED SPACE					1			0	696			1	15	12		M	RHWP-9	118
119	EQUIPPED SPACE					1					0	696	1	15	12		M	RHWP-10	120
121	EQUIPPED SPACE					1	0	696					1	15	12		M	RHWP-11	122
123	EQUIPPED SPACE					1			0	696			1	15	12		M	RHWP-12	124
125	EQUIPPED SPACE					1					0	10	1	20	12		Z	WH7, WH8	126
127	EQUIPPED SPACE					1	0	5					1	20	12		Z	WH-9	128
129	EQUIPPED SPACE					1			0	528			1	15	12		M	EF-5	130
131	EQUIPPED SPACE					1					0	96	1	15	12		Z M	RP-1	132
133	EQUIPPED SPACE					1	0	696					1	15	12		M	EF-19	134
135	EQUIPPED SPACE					1			0	500			1	15	12		M	EF-20	136
137	EQUIPPED SPACE					1					0	528	1	15	12		M	EF-21	138
139	EQUIPPED SPACE					1	0	500					1	20	12		Z	PWR-G101 MECH CONTROL PANEL	140
141	EQUIPPED SPACE					1			0	500			1	20	12		Z	PWR-G201 MECH CONTROL PANEL	142
143	EQUIPPED SPACE					1					0	500	1	20	12		Z	PWR - G107 REFRIGERANT ALARM PANEL	144
145	EQUIPPED SPACE					1	0	100					1	20	12		M	PWR - G107 MOTORIZED DAMPER	146
147	EQUIPPED SPACE					1			0	1176			1	20	12		M	PWR - G110 TF-1	148
149	EQUIPPED SPACE					1					0	600	1	20	12		Z	PWR - DAMPERS	150
151	EQUIPPED SPACE					1	0	720					1	20	12		R	RCPT - G201 GENERAL	152
153	EQUIPPED SPACE					1			0	360			1	20	12		R	RCPT - ROOFTOP SERVICE	154
155	EQUIPPED SPACE					1					0	100	1	20	12		Z	EPO/CONTACTOR	156
157	EQUIPPED SPACE					1	0	250					1	20	12		M	UHs 5,6,7,8,11	158
159	EQUIPPED SPACE					1			0	100			1	20	12		Z	EPO/CONTACTOR (2ND LVL)	160
161	EQUIPPED SPACE					1					0	100	1	20	12		M	UH-3, UH-4	162
163	EQUIPPED SPACE					1	0	200					1	20	12		M	VAVs 804 thru 809	164
165	EQUIPPED SPACE					1			0	1144			2	15	12		C	CU 12/CR 12	166
167	EQUIPPED SPACE					1					0	1144							168
							TOTAL LOAD (VA):		12410 VA		16283 VA		12751 VA						
							TOTAL AMPS:		103 A		136 A		107 A						

2
1

LOAD TYPE	CONNECTED LOAD	DEMAND FACTOR	NEC DEMAND
EXISTING LOAD (E)	0 VA	100%	0 VA
COOLING (C)	2288 VA	100%	2288 VA
HEATING (H)	0 VA	0%	0 VA
LIGHTING (L)	0 VA	125%	0 VA
RECEPTACLES (R)	8820 VA	100%	8820 VA
MOTORS (M)	7958 VA	100%	7958 VA
SUPPLEMENTAL HEAT (U)	0 VA	100%	0 VA
MISC EQUIP (Z)	14867 VA	100%	14867 VA
REFRIGERATION (F)	0 VA	100%	0 VA
SIGN/DISPLAY (D)	0 VA	125%	0 VA
KITCHEN (K)	5360 VA	80%	4288 VA
LARGEST MOTOR	2000 VA	125%	2500 VA
SHOW WINDOW (W)	0 VA	125%	0 VA
TRACK LIGHTING	0 VA	100%	0 VA

PANELBOARD NOTES

PANELBOARD TOTALS	
TOTAL CONNECTED LOAD	41293 VA
TOTAL NEC LOAD	40721 VA
TOTAL CONNECTED CURRENT	115 A
TOTAL NEC DEMAND CURRENT	113 A

PANELBOARD SCHEDULE NOTES LEGEND:

AF = ARC FAULT CIRCUIT INTERRUPTER.
C# = CIRCUIT VIA LIGHTING CONTACTOR #.
CL = CIRCUIT VIA CURRENT LIMITING DEVICE.
EM = EMERGENCY LIGHTING HANDLE-ON CLAMP.
ETR = EXISTING TO REMAIN
FA = RED/HANDLE-ON CLAMP.
GF = GROUND-FAULT CIRCUIT INTERRUPTER TYPE CIRCUIT BREAKER (5 mA).
GFEP = GROUND FAULT EQUIPMENT PROTECTION BREAKER (30 mA).
HT# = PROVIDE HANDLE-TIE FOR MULTI-WIRE BRANCH CIRCUIT PER CODE.
# DENOTES PHASES TO BE TIED.
IG = ISOLATED GROUND CIRCUIT.
L# = LIGHTING CONTROL SCHEME NUMBER.
LCK = HANDLE PADLOCKABLE-OFF DEVICE.
LO = HANDLE-ON CLAMP.
N = PROVIDE NEUTRAL WITH 208V OR 480V, 1-PH OR 3-PH CIRCUIT.
NB = PROVIDE NEW CIRCUIT BREAKER.
O/OL = REFER TO ELECTRICAL ONE-LINE/RISER DIAGRAM.
PS = POWER-SWITCHING CIRCUIT BREAKER.
PSE = EMERGENCY POWER-SWITCHING CIRCUIT BREAKER.
RP = CIRCUIT VIA RELAY PANEL.
SC = REFER TO VOLTAGE DROP CALCULATION SCHEDULE FOR MINIMUM WIRE SIZE.
ST = SHUNT TRIP CIRCUIT BREAKER.
VD = BRANCH CIRCUITRY HAS BEEN UPSIZED TO REDUCE VOLTAGE DROP. ADJUST GROUND WIRE SIZE PER CODE. PROVIDE LUG ADAPTORS IF REQUIRED.

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STATE OF MISSOURI
CURTIS A. OLDS
NUMBER PE-2018036640
PROFESSIONAL ENGINEER

Oct 19 2020
CURTIS A. OLDS
LICENSE # PE-2018036640

HENDERSON ENGINEERS
8345 LENEXA DRIVE, SUITE 300
LENEXA, KS 66214
TEL 913.742.2800 FAX 913.742.0001
WWW.HENDERSONENGINEERS.COM
MO. CORPORATE NO. E-5060
EXPIRES 12/31/2020

LEE'S SUMMIT MIDDLE SCHOOL #4

LEE'S SUMMIT R-7 SCHOOL DISTRICT

1001 SE BAILEY ROAD
LEE'S SUMMIT, MO 64081

PACKAGE 3 - BUILDING & SITE
10/08/20
REVISIONS
ADDENDUM 001 10/13/20
ADDENDUM 002 10/19/20

13-20102-00

ELECTRICAL SCHEDULES

E6.10

	PANEL 1H1G
	PANEL 1L1G

CURTIS A. OLDS

PANELBOARD: 1K1 (NEW)

BUS AMPS: 400A
MAIN SIZE/TYPE: MLO
VOLTS/PHASE: 480Y/277 V 3P/4W
SUPPLIED BY: SWBD-N1

FAULT CURRENT: RE: ONE-LINE DIAGRAM
AIC RATED: FULLY RATED
AIC RATING: FCA +10% MINIMUM
SERVES: KITCHEN
MOUNTING: SURFACE
LOCATION: MECHANICAL G107

EQUIPMENT GROUND BUS

LINE-SIDE LUGS: MECHANICAL

CKT NO.	DESCRIPTION	LOAD TYPE	NOTES	WIRE SIZE	BKR AMP	P	PHASE A	PHASE B	PHASE C	P	BKR AMP	WIRE SIZE	NOTES	LOAD TYPE	DESCRIPTION	CKT NO.
1							10880	8000								2
3	DISHWASHER (E-47)	Z	LCK	8	50	3		10880	8000	3	40	8	LCK	K	COMBI OVEN (E-16) F	4
5									10880 8000							6
7							10076	0								8
9	BOOSTER HEATER (E-47A)	U	LCK	8	50	3		10076	0	3	50				SPARE	10
11									10076 0							12
13							8000	0								14
15	COMBI OVEN (E-16) A	K	LCK	8	40	3		8000	0	3	40				SPARE	16
17									8000 0							18
19							8000	0								20
21	COMBI OVEN (E-16) B	K	LCK	8	40	3		8000	0	3	20				SPARE	22
23									8000 0							24
25							8000	4107								26
27	COMBI OVEN (E-16) C	K	LCK	8	40	3		8000	4107	3	20	12	LCK	M	BLOWER (E-47B)	28
29									8000 4107							30
31							8000	0		1	20				SPARE	32
33	COMBI OVEN (E-16) D	K	LCK	8	40	3		8000	0	1	20				SPARE	34
35									8000 0	1	20				SPARE	36
37							8000	39210								38
39	COMBI OVEN (E-16) E	K	LCK	8	40	3		8000	41048	3	175	OL		--	TX-K1	40
41									8000 37558							42

	PHASE A	PHASE B	PHASE C
TOTAL LOAD (VA):	112272 VA	114110 VA	110620 VA
TOTAL AMPS:	406 A	413 A	399 A

LOAD TYPE	CONNECTED LOAD	DEMAND FACTOR	NEC DEMAND
EXISTING LOAD (E)	0 VA	100%	0 VA
COOLING (C)	12 VA	0%	0 VA
HEATING (H)	13 VA	100%	13 VA
LIGHTING (L)	3000 VA	125%	3750 VA
RECEPTACLES (R)	5940 VA	100%	5940 VA
MOTORS (M)	20992 VA	100%	20992 VA
SUPPLEMENTAL HEAT (U)	30227 VA	100%	30227 VA
MISC EQUIP (Z)	44861 VA	100%	44861 VA
REFRIGERATION (F)	17024 VA	100%	17024 VA
SIGN/DISPLAY (D)	0 VA	125%	0 VA
KITCHEN (K)	202649 VA	65%	131722 VA
LARGEST MOTOR	12322 VA	125%	15403 VA
SHOW WINDOW (W)	0 VA	125%	0 VA
TRACK LIGHTING	0 VA	100%	0 VA

PANELBOARD NOTES

PANELBOARD TOTALS	
TOTAL CONNECTED LOAD	337040 VA
TOTAL NEC LOAD	269931 VA
TOTAL CONNECTED CURRENT	405 A
TOTAL NEC DEMAND CURRENT	325 A

PANELBOARD: 1KA (NEW)

BUS AMPS: 400A
MAIN SIZE/TYPE: 400A M.C.B.
VOLTS/PHASE: 208Y/120 V 3P/4W
SUPPLIED BY: 1K1 VIA TX-1KA

FAULT CURRENT: RE: ONE-LINE DIAGRAM
AIC RATED: FULLY RATED
AIC RATING: FCA +10% MINIMUM
SERVES: KITCHEN
MOUNTING: SURFACE
LOCATION: MECHANICAL G107

EQUIPMENT GROUND BUS

LINE-SIDE LUGS: MECHANICAL

CKT NO.	DESCRIPTION	LOAD TYPE	NOTES	WIRE SIZE	BKR AMP	P	PHASE A	PHASE B	PHASE C	P	BKR AMP	WIRE SIZE	NOTES	LOAD TYPE	DESCRIPTION	CKT NO.
1	HEATED CABINET (E-14)	K		12	20	1	1920	1037		2	20	12	LCK	Z	COLD FOOD WELL (E-81)	2
3	GENERAL (E-904)	R		12	20	1		360	1037							4
5	HAND SINK (E-13)	R		12	20	1			720 2080	2	30	10	LCK	Z	HOT FOOD WELL (E-82)	6
7							1920	2080								8
9	LOAD CENTER (E-20)	K		10	30	3		2496	1440	1	20	12	GF	K	MILK COOLER (E-88)	10
11									2496 462	1	20	12	GF	Z	COLD WELL (E-84)	12
13							853	1190		1	20	12	LCK	Z	COLD WELL (E-87/E-88)	14
15	LOAD CENTER (E-34)	K		12	20	3		853	2400	1	25	10	LCK	Z	HOT FOOD WELL (E-89)	16
17									853 456							18
19	WALK-IN LIGHTS/HEAT (E-25)	L	GFEP	12	20	1	1500	456		3	15	12		M	MAKE-UP AIR (E-15B)	20
21	WALK-IN LIGHTS/HEAT (E-25A)	L	GFEP	12	20	1		1500	456							22
23	FREEZER-EVAP (E-26)	F		12	20	2			1643 1440	1	15	12		Z	HOOD CONTROL PANEL (E-15)	24
25							1643	0		1	20				SPARE	26
27	COOLER-EVAP (E-27)	F		12	20	1		192	0	1	20				SPARE	28
29	GENERAL (E-903)	R		12	20	1			180 0	1	20				SPARE	30
31	ROLL THROUGH FRIDGE (E-56)	K	GF	12	20	1	780	2080		2	30	10	LCK	K	HOT FOOD WELL (E-78)	32
33	HAND SINK (E-13) B	R		12	20	1		720	2080							34
35	GENERAL (E-902)	R		12	20	1			180 494	1	20	12	GF	Z	COLD WELL (E-80/E-83)	36
37	UNDER COUNTER FRIDGE (E-61)	K	GF	12	20	1	480	1872		1	20	12	GF	K	REFRIGERATED CASE (E-96) B	38
39	OVEN (E-60)	K	GF	10	30	2		3100	1717							40
41									3100 1717	3	20	12		F	CONDENSING UNIT (E-26A)	42
43	ROLL THROUGH HEAT CAB (E-62)	K	GF	12	20	2	624	1717								44
45								624	709							46
47	REFRIGERATED CASE (E-63)	K	GF	12	20	1			1116 709	3	20	12		F	CONDENSING UNIT (E-27A)	48
49	GENERAL (E-904) B	R		12	20	1	360	709								50
51	COFFEE MAKER (E-67)	K	GF	10	30	2		2496	2089							52
53									2496 2089	3	30	10		--	MAKE UP AIR COOLING (E-15C)	54
55	MILK COOLER (E-67A)	R		12	20	1	1440	2089								56
57								1525	0							58
59	DISPOSAL (E-46)	M		12	20	3			1525 0	3	30				SPARE	60
61							1525	0								62
63								793	0							64
65	DISPOSAL (E-42)	M	LCK	12	20	3			793 0	3	20				SPARE	66
67							793	0								68
69	REFRIGERATOR (E-58)	K	GF	12	20	1		780	0							70
71	HEATED CABINET (E-57)	K	GF	12	20	2			624 0	3	45				SPARE	72
73							624	0								74
75	GENERAL (E-904) C	R		12	20	1		180	0							76
77	GENERAL (E-902) B	R		12	20	1			180 0	3	15				SPARE	78
79	HEATED CABINET (E-54)	K	GF	12	20	2	1092	0								80
81								1092	0	2	15				SPARE	82
83	EF-16	M		12	15	1			500 0							84
85	EF-17	M		12	15	2	540	0		2	20				SPARE	86
87								540	0							88
89	EF-18	M		12	15	2			540 0	2	30				SPARE	90
91							540	0								92
93	MILK COOLER (E-98.1) A	K	GF	12	20	1		1440	0	2	20				SPARE	94
95	MILK COOLER (E-98.1) B	K	GF	12	20	1			1440 0							96
97	RCPT - G108 GENERAL A	R		12	20	1	540	0								98
99	MILK COOLER (E-98)	K	GF	12	20	1		1440	0	3	20				SPARE	100
101	REFRIGERATED CASE (E-96)	K	GF	12	20	1			1920 0							102
103	HEATED DISPLAY (E-93)	K	GF	12	20	2	1500	0		1	15				SPARE	104
105								1500	0	1	20				SPARE	106
107	COLD FOOD WELL (E-90)	K	GF	12	20	1			300 0	1	20				SPARE	108
109	COLD WELL (E-72/E-75)	K	GF	12	20	1	494	0		1	20				SPARE	110
111	COLD FOOD WELL (E-73)	K	LCK	12	20	2		1037	0	1	20				SPARE	112
113									1037 720	1	20	12		R	RCPT - G108 GENERAL B	114
115	HOT FOOD WELL (E-74)	K	LCK	10	30	2	2080	1667								116
117								2080	1667	3	20	12		M	PWR - G103 OVERHEAD DOOR A	118
119	COLD WELL (E-76/E-79)	K	GF	12	20	1			494 1667							120
121	COLD FOOD WELL (E-77)	K	LCK	12	20	2	1037	1667								122
123								1037	1667	3	20	12		M	PWR - G103 OVERHEAD DOOR B	124
125	REFRIGERATED CASE (E-97)	K	GF	12	20	1			1920 1667							126
127	EQUIPPED SPACE					1	0	360		1	20	12		R	RCPT-ROOFTOP SERVICE	128
129	EQUIPPED SPACE					1		0	0	1	20				SPARE	130
131	EQUIPPED SPACE					1			0 0	1					EQUIPPED SPACE	132
133	EQUIPPED SPACE					1	0	0		1					EQUIPPED SPACE	134
135	EQUIPPED SPACE					1		0	0	1					EQUIPPED SPACE	136
137	EQUIPPED SPACE					1			0 0	1					EQUIPPED SPACE	138
139	EQUIPPED SPACE					1	0	0		1					EQUIPPED SPACE	140
141	EQUIPPED SPACE					1		0	0	1					EQUIPPED SPACE	142
143	EQUIPPED SPACE					1			0 0	1					EQUIPPED SPACE	144
145	EQUIPPED SPACE					1	0	0		1					EQUIPPED SPACE	146
147	EQUIPPED SPACE					1		0	0	1					EQUIPPED SPACE	148
149	EQUIPPED SPACE					1			0 0	1					EQUIPPED SPACE	150
151	EQUIPPED SPACE					1	0	0		1					EQUIPPED SPACE	152
153	EQUIPPED SPACE					1		0	0	1					EQUIPPED SPACE	154
155	EQUIPPED SPACE					1			0 0	1					EQUIPPED SPACE	156
157	EQUIPPED SPACE					1	0	0		1					EQUIPPED SPACE	158
159	EQUIPPED SPACE					1		0	0	1					EQUIPPED SPACE	160
161	EQUIPPED SPACE					1			0 0	1					EQUIPPED SPACE	162
163	EQUIPPED SPACE					1	0	0		1					EQUIPPED SPACE	164
165	EQUIPPED SPACE					1		0	0	1					EQUIPPED SPACE	166
167	EQUIPPED SPACE					1			0 0	1					EQUIPPED SPACE	168

	PHASE A	PHASE B	PHASE C
TOTAL LOAD (VA):	39210 VA	41048 VA	37558 VA
TOTAL AMPS:	329 A	344 A	313 A

LOAD TYPE	CONNECTED LOAD	DEMAND FACTOR	NEC DEMAND
EXISTING LOAD (E)	0 VA	100%	0 VA
COOLING (C)	12 VA	0%	0 VA
HEATING (H)	13 VA	100%	13 VA
LIGHTING (L)	3000 VA	125%	3750 VA
RECEPTACLES (R)	5940 VA	100%	5940 VA
MOTORS (M)	15992 VA	100%	15992 VA
SUPPLEMENTAL HEAT (U)	0 VA	100%	0 VA
MISC EQUIP (Z)	12221 VA	100%	12221 VA
REFRIGERATION (F)	17024 VA	100%	17024 VA
SIGN/DISPLAY (D)	0 VA	125%	0 VA
KITCHEN (K)	58649 VA	65%	38122 VA
LARGEST MOTOR	5000 VA	125%	6250 VA
SHOW WINDOW (W)	0 VA	125%	0 VA
TRACK LIGHTING	0 VA	100%	0 VA

PANELBOARD NOTES

PANELBOARD TOTALS	
TOTAL CONNECTED LOAD	117851 VA
TOTAL NEC LOAD	99312 VA
TOTAL CONNECTED CURRENT	327 A
TOTAL NEC DEMAND CURRENT	276 A

PANELBOARD: 1M2G (NEW)

BUS AMPS: 400A
MAIN SIZE/TYPE: 400A M.C.B.
VOLTS/PHASE: 480Y/277 V 3P/4W
SUPPLIED BY: SWBD-N1

FAULT CURRENT: RE: ONE-LINE DIAGRAM
AIC RATED: FULLY RATED
AIC RATING: FCA +10% MINIMUM
SERVES: SECOND FLOOR - AREA G
MOUNTING: SURFACE
LOCATION: MECHANICAL G201

EQUIPMENT GROUND BUS

LINE-SIDE LUGS: MECHANICAL

CKT NO.	DESCRIPTION	LOAD TYPE	NOTES	WIRE SIZE	BKR AMP	P	PHASE A	PHASE B	PHASE C	P	BKR AMP	WIRE SIZE	NOTES	LOAD TYPE	DESCRIPTION	CKT NO.
1	EQUIPPED SPACE					1	0	0		1					EQUIPPED SPACE	2
3	EQUIPPED SPACE					1		0	0	1					EQUIPPED SPACE	4
5	EQUIPPED SPACE					1			0 0	1					EQUIPPED SPACE	6
7	EQUIPPED SPACE					1	0	0		1					EQUIPPED SPACE	8
9	EQUIPPED SPACE					1		0	0	1					EQUIPPED SPACE	10
11	EQUIPPED SPACE					1			0 0	1					EQUIPPED SPACE	12
13							0	0		1					EQUIPPED SPACE	14
15	SPARE				20	3		0	0	1					EQUIPPED SPACE	16
17									0 0	1					EQUIPPED SPACE	18
19							0	0								20
21	SPARE				20	3		0	0	3	20				SPARE	22
23									0 0							24
25							5567	0								26
27	SHWP-1 (15HP)	Z	M	8	40	3		5567	0	3	25				SPARE	28
29									5567 0							30
31							5567	0								32
33	SHWP-2 (15HP)	Z	M	8	40	3		5567	0	3	25				SPARE	34
35									5567 0							36
37							1267	2550								38
39	PHWP-1 (3 HP)	M	LCK	12	15	3		1267	2550	3	15	12		M	AHU-11 (SUPPLY)	40
41									1267 2550						2 @ 3HP	42
43							1267	942								44
45	PHWP-2 (3 HP)	M	LCK	12	15	3		1267	942	3	15	12		Z M	RF-11 (RETURN FOR AHU-11) 2HP	46
47									1267 942							48
49							1267	4037								50
51	PHWP-3 (3 HP)	M	LCK	12	15	3		1267	4037	3	25	10		M	AHU-12 (SUPPLY)	52
53									1267 4037						2 @ 5HP	54
55							0	942								56
57	SPARE				15	3		0	942	3	15	12		Z M	RF-12 (RETURN FOR AHU-12) 2HP	58
59									0 942							60
61							3050	4037								62
63	B-1 (7.5HP)	M	LCK	10	30	3		3050	4037	3	25	10		M	AHU-9 (SUPPLY)	64
65									3050 4037						2 @ 5HP	66
67							3050	832								68
69	B-2 (7.5HP)	M	LCK	10	30	3		3050	832	3	15	12		Z M	RF-9 (RETURN FOR AHU-9) 1.5HP	70
71									3050 832							72
73							3050	4037								74
75	B-3 (7.5HP)	M	LCK	10	30	3		3050	4037	3	25	10		M	AHU-10 (SUPPLY)	76
77									3050 4037						2 @ 5HP	78
79							0	832								80
81	SPARE				30	3		0	832	3	15	12		Z M	RF-10 (RETURN FOR AHU-10) 1.5HP	82
83									0 832							84

	PHASE A	PHASE B	PHASE C
TOTAL LOAD (VA):	42291 VA	42291 VA	42291 VA
TOTAL AMPS:	153 A	153 A	153 A

LOAD TYPE	CONNECTED LOAD	DEMAND FACTOR	NEC DEMAND
EXISTING LOAD (E)	0 VA	100%	0 VA
COOLING (C)	0 VA	0%	0 VA
HEATING (H)	0 VA	100%	0 VA
LIGHTING (L)	0 VA	125%	0 VA
RECEPTACLES (R)	0 VA	0%	0 VA
MOTORS (M)	110174 VA	100%	110174 VA
SUPPLEMENTAL HEAT (U)	0 VA	100%	0 VA
MISC EQUIP (Z)	0 VA	100%	0 VA
REFRIGERATION (F)	0 VA	100%	0 VA
SIGN/DISPLAY (D)	0 VA	125%	0 VA
KITCHEN (K)	0 VA	100%	0 VA
LARGEST MOTOR	16700 VA	125%	20875 VA
SHOW WINDOW (W)	0 VA	125%	0 VA
TRACK LIGHTING	0 VA	100%	0 VA

PANELBOARD NOTES

PANELBOARD TOTALS	
TOTAL CONNECTED LOAD	126874 VA
TOTAL NEC LOAD	131049 VA
TOTAL CONNECTED CURRENT	153 A
TOTAL NEC DEMAND CURRENT	158 A

PANELBOARD SCHEDULE NOTES LEGEND:

AF = ARC FAULT CIRCUIT INTERRUPTER.
C# = CIRCUIT VIA LIGHTING CONTACTOR #.
CL = CIRCUIT VIA CURRENT LIMITING DEVICE.
EM = EMERGENCY LIGHTING HANDLE-ON CLAMP.
ETR = EXISTING TO REMAIN
FA = RED/HANDLE-ON CLAMP.
GF = GROUND-FAULT CIRCUIT INTERRUPTER TYPE CIRCUIT BREAKER (5 mA).
GFEP = GROUND FAULT EQUIPMENT PROTECTION BREAKER (30 mA).
HT# = PROVIDE HANDLE-TIE FOR MULTI-WIRE BRANCH CIRCUIT PER CODE. # DENOTES PHASES TO BE TIED.
IG = ISOLATED GROUND CIRCUIT.
L# = LIGHTING CONTROL SCHEME NUMBER.
LCK = HANDLE PADLOCKABLE-OFF DEVICE.
LO = HANDLE-ON CLAMP.
N = PROVIDE NEUTRAL WITH 208V OR 480V, 1-PH OR 3-PH CIRCUIT.
NB = PROVIDE NEW CIRCUIT BREAKER.
O/OL = REFER TO ELECTRICAL ONE-LINE/RISER DIAGRAM.
PS = POWER-SWITCHING CIRCUIT BREAKER.
PSE = EMERGENCY POWER-SWITCHING CIRCUIT BREAKER.
RP = CIRCUIT VIA RELAY PANEL.
SC = REFER TO VOLTAGE DROP CALCULATION SCHEDULE FOR MINIMUM WIRE SIZE.
ST = SHUNT TRIP CIRCUIT BREAKER.
VD = BRANCH CIRCUITRY HAS BEEN UPSIZED TO REDUCE VOLTAGE DROP. ADJUST GROUND WIRE SIZE PER CODE. PROVIDE LUG ADAPTORS IF REQUIRED.

PANEL 1K1	PANEL 1M2G
PANEL 1KA	

DLR Group

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STATE OF MISSOURI
CURTIS A. OLDS
NUMBER PE-2018036640
PROFESSIONAL ENGINEER

Oct 19 2020
CURTIS A. OLDS
LICENSE # PE-2018036640

HENDERSON ENGINEERS
8345 LENEXA DRIVE, SUITE 300
LENEXA, KS 66214
TEL 913.742.2800 FAX 913.742.3091
WWW.HENDERSONENGINEERS.COM
MO. CORPORATE NO. E-5060
EXPIRES 12/31/2020

LEE'S SUMMIT MIDDLE SCHOOL #4

LEE'S SUMMIT R-7 SCHOOL DISTRICT

1001 SE BAILEY ROAD
LEE'S SUMMIT, MO 64081

PACKAGE 3 - BUILDING & SITE
10/08/20

REVISIONS

ADDENDUM 002	10/19/20

13-20102-00

ELECTRICAL SCHEDULES

E6.11

CURTIS A. OLDS

PANELBOARD: H1S (NEW)

BUS AMPS: 600A
MAIN SIZE/TYPE: 600A M.C.B.
VOLTS/PHASE: 480Y/277 V 3P/4W
SUPPLIED BY: UTILITY

WAREHOUSE
SERVICE SQUARE FOOTAGE: 1

FAULT CURRENT: RE: ONE-LINE DIAGRAM
AIC RATED: FULLY RATED
AIC RATING: FCA +10% MINIMUM
SERVES: CONCESSIONS/ATHLETICS
MOUNTING: SURFACE
LOCATION: ELECTRICAL S101

EQUIPMENT GROUND BUS

SERVICE ENTRANCE RATED

LINE-SIDE LUGS: MECHANICAL

CKT NO.	DESCRIPTION	LOAD TYPE	NOTES	WIRE SIZE	BKR AMP	P	PHASE A	PHASE B	PHASE C	P	BKR AMP	WIRE SIZE	NOTES	LOAD TYPE	DESCRIPTION	CKT NO.
1							1295 1930									2
3	POLE SA1	L		SC	20	3		1295 1930		3	20	SC		L	POLE SA5	4
5									1295 1930							6
7							1295 1930									8
9	POLE SA2	L		SC	20	3		1295 1930		3	20	SC		L	POLE SA6	10
11									1295 1930							12
13							2358 3358									14
15	POLE SB1	L		SC	20	3		2358 3358		3	25	SC		L	POLE SB5	16
17									2358 3358							18
19							2358 3358									20
21	POLE SB2	L		SC	20	3		2358 3358		3	25	SC		L	POLE SB6	22
23									2358 3358							24
25							1930 2520									26
27	POLE SA3	L		SC	20	3		1930 2520		3	20	SC		L	POLE SC3	28
29									1930 2520							30
31							1930 2520									32
33	POLE SA4	L		SC	20	3		1930 2520		3	20	SC		L	POLE SC4	34
35									1930 2520							36
37							3883 1930									38
39	POLE SB3	L		SC	25	3		3883 1930		3	20	SC		L	POLE SA7	40
41									3883 1930							42
43							4407 1930									44
45	POLE SB4	L		SC	30	3		4407 1930		3	20	SC		L	POLE SA8	46
47									4407 1930							48
49							3568 3358									50
51	POLE SC1	L		SC	25	3		3568 3358		3	25	SC		L	POLE SB7	52
53									3568 3358							54
55							3568 3358									56
57	POLE SC2	L		SC	25	3		3568 3358		3	25	SC		L	POLE SB8	58
59									3568 3358							60
61							0 2520									62
63	SPARE				20	3		0 2520		3	20	SC		L	POLE SC5	64
65									0 2520							66
67							0 2520									68
69	SPARE				25	3		0 2520		3	20	SC		L	POLE SC6	70
71									0 2520							72
73							0 607									74
75	SPARE				30	3		0 607		3	20	8		Z	Z1 SECURITY FIXTURES	76
77									0 607						POLES: SA1 thru SA8, SB3 thru SB8	78
79	EQUIPPED SPACE				1		0 0			1					EQUIPPED SPACE	80
81	EQUIPPED SPACE				1			0 0		1					EQUIPPED SPACE	82
83	EQUIPPED SPACE				1				0 0	1					EQUIPPED SPACE	84
85	LTS - CONCESSIONS	L Z		12	20	1	1830 0			1	20				SPARE	86
87	LTS - CONCESSION EXTERIOR	L		12	20	1		489 0		1	20				SPARE	88
89									1667 0	1	20				SPARE	90
91	EUH-1	H		12	15	3	1667 0			1	20				SPARE	92
93								1667 0		1	20				SPARE	94
95	EUH-2	H		12	15	1			3000 0	1	20				SPARE	96
97	EUH-3A	H		12	15	1	3000 0			1	20				SPARE	98
99	EUH-3B	H		12	15	1		3000 0		1	20				SPARE	100
101	EUH-4	H		12	15	1			3000 0	1	20				SPARE	102
103							2333 0			1	20				SPARE	104
105	EUH-5	H		12	15	3		2333 0		1	20				SPARE	106
107									2333 0	1	20				SPARE	108
109	EUH-6	H		12	15	1	3000 0			1	20				SPARE	110
111								2333 0		1	20				SPARE	112
113	EUH-7	H		12	15	3			2333 0	1	20				SPARE	114
115							2333 0			1	20				SPARE	116
117	EUH-8	H		12	15	1		3000 0		1	20				SPARE	118
119									2333 0	1	20				SPARE	120
121	EUH-9	H		12	15	3	2333 0			1	20				SPARE	122
123								2333 0		1	20				SPARE	124
125	EUH-10	H	3	12	15	1			3000 0	1	20				SPARE	126
127							6000 0			1	20				SPARE	128
129	WH11	U	3	10	30	3		6000 0		1	20				SPARE	130
131									6000 0	1	20				SPARE	132
133	SPARE				20	1	0 0			1	20				SPARE	134
135	SPARE				20	1		0 0		1	20				SPARE	136
137	SPARE				20	1			0 0	1	20				SPARE	138
139	SPARE				20	1	0 0			1	20				SPARE	140
141	SPARE				20	1		0 0		1	20				SPARE	142
143	SPARE				20	1			0 0	1	20				SPARE	144
145	SPARE				20	1	0 0			1	20				SPARE	146
147	SPARE				20	1		0 0		1	20				SPARE	148
149	EQUIPPED SPACE				1				0 0	1	20				SPARE	150
151	EQUIPPED SPACE				1		0 0			1	20				SPARE	152
153	EQUIPPED SPACE				1			0 0		1	20				SPARE	154
155	EQUIPPED SPACE				1				0 0	1	20				SPARE	156
157	EQUIPPED SPACE				1		0 2933									158
159	EQUIPPED SPACE				1			0 2933		3	20	10		Z	IRRIGATION PUMP (7.5HP, 600')	160
161	EQUIPPED SPACE				1				0 2933							162
163	EQUIPPED SPACE				1		0 9834									164
165	EQUIPPED SPACE				1			0 8674		3	125	OL		--	TX-L1S	166
167	EQUIPPED SPACE				1				0 14007							168

	PHASE A	PHASE B	PHASE C
TOTAL LOAD (VA):	93697 VA	91196 VA	99041 VA
TOTAL AMPS:	340 A	329 A	359 A

LOAD TYPE	CONNECTED LOAD	DEMAND FACTOR	NEC DEMAND
EXISTING LOAD (E)	0 VA	100%	0 VA
COOLING (C)	2288 VA	0%	0 VA
HEATING (H)	47000 VA	100%	47000 VA
LIGHTING (L) (PER NEC-220)	176836 VA	125%	221045 VA
RECEPTACLES (R)	22560 VA	72%	16280 VA
MOTORS (M)	258 VA	100%	258 VA
SUPPLEMENTAL HEAT (U)	18000 VA	100%	18000 VA
MISC EQUIP (Z)	12365 VA	100%	12365 VA
REFRIGERATION (F)	0 VA	100%	0 VA
SIGN/DISPLAY (D)	2400 VA	125%	3000 VA
KITCHEN (K)	1000 VA	100%	1000 VA
LARGEST MOTOR	830 VA	125%	1038 VA
SHOW WINDOW (W)	0 VA	125%	0 VA
TRACK LIGHTING	0 VA	100%	0 VA

PANELBOARD NOTES

PANELBOARD TOTALS	
TOTAL CONNECTED LOAD	283537 VA
TOTAL NEC LOAD	319986 VA
TOTAL CONNECTED CURRENT	341 A
TOTAL NEC DEMAND CURRENT	385 A

PANELBOARD: L1S (NEW)

BUS AMPS: 225A
MAIN SIZE/TYPE: 225A M.C.B.
VOLTS/PHASE: 208Y/120 V 3P/4W
SUPPLIED BY: H1S VIA TX-L1S

FAULT CURRENT: RE: ONE-LINE DIAGRAM
AIC RATED: FULLY RATED
AIC RATING: FCA +10% MINIMUM
SERVES: CONCESSIONS/DUGOUTS
MOUNTING: SURFACE
LOCATION: ELECTRICAL S101

EQUIPMENT GROUND BUS

LINE-SIDE LUGS: MECHANICAL

CKT NO.	DESCRIPTION	LOAD TYPE	NOTES	WIRE SIZE	BKR AMP	P	PHASE A	PHASE B	PHASE C	P	BKR AMP	WIRE SIZE	NOTES	LOAD TYPE	DESCRIPTION	CKT NO.
1	RCPT - RESTROOMS	R		12	20	1	540 0			1	20				SPARE	2
3	RCPT - LOCKER ROOMS	R		12	20	1		540 0		1	20				SPARE	4
5	RCPT - LOCKER RESTROOMS	R		12	20	1			720 0	1	20				SPARE	6
7	RCPT - CONV. OFFICE	R		12	20	1	540 0			1	20				SPARE	8
9	RCPT - ICE MAKER	K		12	20	1		1000 0		1	20				SPARE	10
11	RCPT - CONV. ELECTRICAL	R		12	20	1			180 0	1	20				SPARE	12
13	RCPT - CONV. MECHANICAL	R		12	20	1	180 0			1	20				SPARE	14
15	RCPT - OFFICE	R		12	20	1		720 0		1	20				SPARE	16
17	RCPT CONV. CONCESSIONS	R		12	20	1			720 0	1	20				SPARE	18
19	RCPT - EXTERIOR	R		12	20	1	360 0			1	20				SPARE	20
21	RCPT - STORAGE	R		12	20	1		360 0		1	20				SPARE	22
23	RCPT - CONCESSIONS	R		12	20	1			360 0	1	20				SPARE	24
25	RCPT - CONCESSIONS	R		12	20	1	360 0			1	20				SPARE	26
27	RCPT - CONCESSIONS	R		12	20	1		360 0		1	20				SPARE	28
29	RCPT - CONCESSIONS	R		12	20	1			360 0	1	20				SPARE	30
31	RCPT - CONCESSIONS	R		12	20	1	360 0			1	20				SPARE	32
33	PWR-SECURITY PANEL			12	20	1		400 0		1	20				SPARE	34
35	MISC EQUIP	Z			20	1			100 0	1	20				SPARE	36
37	PWR - DOOR HARDWARE (S101/102/108)	Z		12	20	1	150 0			1	20				SPARE	38
39	PWR - DOOR HARDWARE (S102A/S108A)	Z		12	20	1		100 0		1	20				SPARE	40
41	PWR - DOOR HARDWARE (S111A/S112)	Z		12	20	1			100 0	1	20				SPARE	42
43	RCPT - EXT EWC	R		12	20	1	360 0			1	20				SPARE	44
45	RCPT - CHARGERS (N)	R		12	20	1		360 0		1	20				SPARE	46
47	RCPT - CHARGERS (S)	R		12	20	1			360 0	1	20				SPARE	48
49	CU-14/CR-14	C		12	20	2	1144 0			1	20				SPARE	50
51								1144 0		1	20				SPARE	52
53	EF-23	M		12	15	1			830 0	1	20				SPARE	54
55	EF-24	M		12	15	1	100 0			1	20				SPARE	56
57	TF-2	M		12	15	1		100 0		1	20				SPARE	58
59	RP6/TS1	M		12	15	1			58 0	1	20				SPARE	60
61	RCPT - IRRIGATION CONTROLLER	R		12	20	1	180 254									62
63	PWR-MOTORIZED DAMPER	Z		12	20	1		50 360		3	60	OL		L R	LC1	64
65	SPARE				20	1			0 1800							66
67	SPARE				20	1	0 3286									68
69	SPARE				20	1		0 1860		3	60	OL		L R	LC2	70
71	SPARE				20	1			0 3300							72
73	MONUMENT SIGNAGE (WEST)	D		6	20	1	1200 466									74
75	FIBER CONVERTER (SIGN WEST)	Z		10	20	1		100 360		3	60	OL		L R	LC3	76
77	MONUMENT SIGNAGE (EAST)	D		6	20	1			1200 1620							78
79	FIBER CONVERTER (SIGN EAST)	Z		10	20	1	100 254									80
81	MUSCO LIGHTING - CONTROL POWER	Z		12	20	1		500 360		3	60	OL		L R	LC4	82
83	MUSCO LIGHTING - COMMUNICATIONS	Z		12	20	1			500 1800							84

	PHASE A	PHASE B	PHASE C
TOTAL LOAD (VA):	9834 VA	8674 VA	14007 VA
TOTAL AMPS:	83 A	72 A	118 A

LOAD TYPE	CONNECTED LOAD	DEMAND FACTOR	NEC DEMAND
EXISTING LOAD (E)	0 VA	100%	0 VA
COOLING (C)	2288 VA	100%	2288 VA
HEATING (H)	0 VA	0%	0 VA
LIGHTING (L)	1080 VA	125%	1350 VA
RECEPTACLES (R)	22560 VA	72%	16280 VA
MOTORS (M)	258 VA	100%	258 VA
SUPPLEMENTAL HEAT (U)	0 VA	100%	0 VA
MISC EQUIP (Z)	1700 VA	100%	1700 VA
REFRIGERATION (F)	0 VA	100%	0 VA
SIGN/DISPLAY (D)	2400 VA	125%	3000 VA
KITCHEN (K)	1000 VA	100%	1000 VA
LARGEST MOTOR	830 VA	125%	1038 VA
SHOW WINDOW (W)	0 VA	125%	0 VA
TRACK LIGHTING	0 VA	100%	0 VA

PANELBOARD NOTES

PANELBOARD TOTALS	
TOTAL CONNECTED LOAD	32116 VA
TOTAL NEC LOAD	26914 VA
TOTAL CONNECTED CURRENT	89 A
TOTAL NEC DEMAND CURRENT	75 A

PANELBOARD: 1L1T (NEW)

BUS AMPS: 100A
MAIN SIZE/TYPE: 100A M.C.B.
VOLTS/PHASE: 208Y/120 V 3P/4W
SUPPLIED BY: SWBD-N1 VIA TX-1L1T

FAULT CURRENT: RE: ONE-LINE DIAGRAM
AIC RATED: FULLY RATED
AIC RATING: FCA +10% MINIMUM
SERVES: STORAGE BUILDING
MOUNTING: SURFACE
LOCATION:

EQUIPMENT GROUND BUS

LINE-SIDE LUGS: MECHANICAL

CKT NO.	DESCRIPTION	LOAD TYPE	NOTES	WIRE SIZE	BKR AMP	P	PHASE A	PHASE B	PHASE C	P	BKR AMP	WIRE SIZE	NOTES	LOAD TYPE	DESCRIPTION	CKT NO.
1	LTG - STORAGE BUILDING	L		12	20	1	323 360			1	20	6		R	RCPT - SCOREBOARD CONTRLLR	2
3	RCPT - STORAGE AREA T	R		12	20	1		360 1000		1	20	10		Z	SCOREBOARD	4
5	SPARE				20	1			0 0	1	20				SPARE	6
7	SPARE				20	1	0 0			1	20				SPARE	8
9	SPARE				20	1		0 0		1	20				SPARE	10
11	SPARE				20	1			0 0	1	20				SPARE	12
13	SPARE				20	1	0 0			1	20				SPARE	14
15	SPARE				20	1		0 0		1	20				SPARE	16
17	SPARE				20	1			0 0	1	20				SPARE	18
19	SPARE				20	1	0 0			1	20				SPARE	20
21	SPARE				20	1		0 0		1	20				SPARE	22
23	SPARE				20	1			0 0	1	20				SPARE	24
25	SPARE				20	1	0 0			1	20				SPARE	26
27	SPARE				20	1		0 0		1	20				SPARE	28
29	SPARE				20	1			0 0	1	20				SPARE	30
31	SPARE				20	1	0 0			1	20				SPARE	32
33	SPARE				20	1		0 0		1	20				SPARE	34
35	SPARE				20	1			0 0	1	20				SPARE	36
37	SPARE				20	1	0 0			1	20				SPARE	38
39	SPARE				20	1		0 0		1	20				SPARE	40
41	SPARE				20	1			0 0	1	20				SPARE	42

	PHASE A	PHASE B	PHASE C
TOTAL LOAD (VA):	683 VA	1360 VA	0 VA
TOTAL AMPS:	7 A	12 A	0 A

LOAD TYPE	CONNECTED LOAD	DEMAND FACTOR	NEC DEMAND
EXISTING LOAD (E)	0 VA	100%	0 VA
COOLING (C)	0 VA	0%	0 VA
HEATING (H)	0 VA	100%	0 VA
LIGHTING (L)	323 VA	125%	404 VA
RECEPTACLES (R)	720 VA	100%	720 VA
MOTORS (M)	0 VA	100%	0 VA
SUPPLEMENTAL HEAT (U)	0 VA	100%	0 VA
MISC EQUIP (Z)	1000 VA	100%	1060 VA
REFRIGERATION (F)	0 VA	100%	0 VA
SIGN/DISPLAY (D)	0 VA	125%	0 VA
KITCHEN (K)	0 VA	100%	0 VA
LARGEST MOTOR	0 VA	125%	0 VA
SHOW WINDOW (W)	0 VA	125%	0 VA
TRACK LIGHTING	0 VA	100%	0 VA

PANELBOARD NOTES

PANELBOARD TOTALS	
TOTAL CONNECTED LOAD	2043 VA
TOTAL NEC LOAD	2124 VA
TOTAL CONNECTED CURRENT	6 A
TOTAL NEC DEMAND CURRENT	6 A

PANELBOARD SCHEDULE NOTES LEGEND:

AF = ARC FAULT CIRCUIT INTERRUPTER.
C# = CIRCUIT VIA LIGHTING CONTACTOR #.
CL = CIRCUIT VIA CURRENT LIMITING DEVICE.
EM = EMERGENCY LIGHTING HANDLE-ON CLAMP.
ETR = EXISTING TO REMAIN
FA = RED/HANDLE-ON CLAMP.
GF = GROUND-FAULT CIRCUIT INTERRUPTER TYPE CIRCUIT BREAKER (5 mA).
GFEP = GROUND FAULT EQUIPMENT PROTECTION BREAKER (30 mA).
HT# = PROVIDE HANDLE-TIE FOR MULTI-WIRE BRANCH CIRCUIT PER CODE. # DENOTES PHASES TO BE TIED.
IG = ISOLATED GROUND CIRCUIT.
L# = LIGHTING CONTROL SCHEME NUMBER.
LCK = HANDLE PADLOCKABLE-OFF DEVICE.
LO = HANDLE-ON CLAMP.
N = PROVIDE NEUTRAL WITH 208V OR 480V, 1-PH OR 3-PH CIRCUIT.
NB = PROVIDE NEW CIRCUIT BREAKER.
O/OL = REFER TO ELECTRICAL ONE-LINE/RISER DIAGRAM.
PS = POWER-SWITCHING CIRCUIT BREAKER.
PSE = EMERGENCY POWER-SWITCHING CIRCUIT BREAKER.
RP = CIRCUIT VIA RELAY PANEL.
SC = REFER TO VOLTAGE DROP CALCULATION SCHEDULE FOR MINIMUM WIRE SIZE.
ST = SHUNT TRIP CIRCUIT BREAKER.
VD = BRANCH CIRCUITRY HAS BEEN UPSIZED TO REDUCE VOLTAGE DROP. ADJUST GROUND WIRE SIZE PER CODE. PROVIDE LUG ADAPTORS IF REQUIRED.

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Missouri State Certificate of Authority #2002939

CURTIS A. OLDS
NUMBER PE-2010036640
PROFESSIONAL ENGINEER
STATE OF MISSOURI

Nov 11 2020
CURTIS A. OLDS
LICENSE # PE-2010036640

HENDERSON ENGINEERS
8345 ENEXA DRIVE, SUITE 300
LENEXA, KS 66214
TEL 913.742.2800 FAX 913.742.0501
WWW.HENDERSONENGINEERS.COM
MO. CORPORATE NO. E-5360
EXPIRES 12/31/2020

LEE'S SUMMIT MIDDLE SCHOOL #4

LEE'S SUMMIT R-7 SCHOOL DISTRICT

1001 SE BAILEY ROAD
LEE'S SUMMIT, MO 64081

PACKAGE 3 - BUILDING & SITE
10/08/20

REVISIONS

ADDENDUM 001	10/13/20
ADDENDUM 002	10/19/20
PR 001	11/11/20

13-20102-00

ELECTRICAL SCHEDULES

E6.12

PANEL H1S	PANEL L1S
	PANEL 1L1T

CURTIS A. OLDS

PANELBOARD: LC1 (NEW)

BUS AMPS: 100A
MAIN SIZE/TYPE: 60A M.C.B.
VOLTS/PHASE: 208Y/120 V 3P/4W
SUPPLIED BY: L1S

FAULT CURRENT: RE: ONE-LINE DIAGRAM
AIC RATED: FULLY RATED
AIC RATING: FCA +10% MINIMUM
SERVES: VARSITY SOFTBALL
MOUNTING: SURFACE
LOCATION: 3B DUGOUT

EQUIPMENT GROUND BUS

LINE-SIDE LUGS: MECHANICAL

CKT NO.	DESCRIPTION	LOAD TYPE	NOTES	WIRE SIZE	BKR AMP	P	PHASE A	PHASE B	PHASE C	P	BKR AMP	WIRE SIZE	NOTES	LOAD TYPE	DESCRIPTION	CKT NO.
1	LTG - 3B DUGOUT	L		12	20	1	111	143								2
3	RCPT - 3B DUGOUT	R		12	20	1		180	180	3	60	OL		L R	PANEL LC5	4
5	RCPT - 3B STORAGE	R		12	20	1			1080 720							6
7	SPARE				20	1	0	0		1	20				SPARE	8
9	SPARE				20	1		0	0	1	20				SPARE	10
11	SPARE				20	1			0 0	1	20				SPARE	12
13	SPARE				20	1	0	0		1	20				SPARE	14
15	SPARE				20	1		0	0	1	20				SPARE	16
17	SPARE				20	1			0 0	1	20				SPARE	18
19	SPARE				20	1	0	0		1	20				SPARE	20
21	SPARE				20	1		0	0	1	20				SPARE	22
23	SPARE				20	1			0 0	1	20				SPARE	24
	TOTAL LOAD (VA):						254 VA	360 VA	1800 VA							
	TOTAL AMPS:						2 A	3 A	15 A							

LOAD TYPE	CONNECTED LOAD	DEMAND FACTOR	NEC DEMAND
EXISTING LOAD (E)	0 VA	100%	0 VA
COOLING (C)	0 VA	0%	0 VA
HEATING (H)	0 VA	100%	0 VA
LIGHTING (L)	254 VA	125%	318 VA
RECEPTACLES (R)	2160 VA	100%	2160 VA
MOTORS (M)	0 VA	100%	0 VA
SUPPLEMENTAL HEAT (U)	0 VA	100%	0 VA
MISC EQUIP (Z)	0 VA	100%	0 VA
REFRIGERATION (F)	0 VA	100%	0 VA
SIGN/DISPLAY (D)	0 VA	125%	0 VA
KITCHEN (K)	0 VA	100%	0 VA
LARGEST MOTOR	0 VA	125%	0 VA
SHOW WINDOW (W)	0 VA	125%	0 VA
TRACK LIGHTING	0 VA	100%	0 VA

PANELBOARD NOTES

PANELBOARD TOTALS	
TOTAL CONNECTED LOAD	2414 VA
TOTAL NEC LOAD	2478 VA
TOTAL CONNECTED CURRENT	7 A
TOTAL NEC DEMAND CURRENT	7 A

PANELBOARD: LC2 (NEW)

BUS AMPS: 100A
MAIN SIZE/TYPE: 60A M.C.B.
VOLTS/PHASE: 208Y/120 V 3P/4W
SUPPLIED BY: L1S

FAULT CURRENT: RE: ONE-LINE DIAGRAM
AIC RATED: FULLY RATED
AIC RATING: FCA +10% MINIMUM
SERVES: VARSITY BASEBALL
MOUNTING: SURFACE
LOCATION: 3B DUGOUT

EQUIPMENT GROUND BUS

LINE-SIDE LUGS: MECHANICAL

CKT NO.	DESCRIPTION	LOAD TYPE	NOTES	WIRE SIZE	BKR AMP	P	PHASE A	PHASE B	PHASE C	P	BKR AMP	WIRE SIZE	NOTES	LOAD TYPE	DESCRIPTION	CKT NO.
1	LTG - 3B DUGOUT	L		12	20	1	143	143								2
3	RCPT - 3B DUGOUT	R		12	20	1		180	180	3	60	OL		L R	PANEL LC6	4
5	RCPT - 3B STORAGE	R		12	20	1			1080 720							6
7	RCPT - BATTING CAGES A	R		12	20	1	1500	0		1	20				SPARE	8
9	RCPT - BATTING CAGES B	R		12	20	1		1500	0	1	20				SPARE	10
11	RCPT - BATTING CAGES C	R		12	20	1			1500 0	1	20				SPARE	12
13	RCPT - BATTING CAGES D	R		12	20	1	1500	0		1	20				SPARE	14
15	SPARE				20	1		0	0	1	20				SPARE	16
17	SPARE				20	1			0 0	1	20				SPARE	18
19	SPARE				20	1	0	0		1	20				SPARE	20
21	SPARE				20	1		0	0	1	20				SPARE	22
23	SPARE				20	1			0 0	1	20				SPARE	24
	TOTAL LOAD (VA):						3286 VA	1860 VA	3300 VA							
	TOTAL AMPS:						29 A	16 A	29 A							

LOAD TYPE	CONNECTED LOAD	DEMAND FACTOR	NEC DEMAND
EXISTING LOAD (E)	0 VA	100%	0 VA
COOLING (C)	0 VA	0%	0 VA
HEATING (H)	0 VA	100%	0 VA
LIGHTING (L)	286 VA	125%	358 VA
RECEPTACLES (R)	8160 VA	100%	8160 VA
MOTORS (M)	0 VA	100%	0 VA
SUPPLEMENTAL HEAT (U)	0 VA	100%	0 VA
MISC EQUIP (Z)	0 VA	100%	0 VA
REFRIGERATION (F)	0 VA	100%	0 VA
SIGN/DISPLAY (D)	0 VA	125%	0 VA
KITCHEN (K)	0 VA	100%	0 VA
LARGEST MOTOR	0 VA	125%	0 VA
SHOW WINDOW (W)	0 VA	125%	0 VA
TRACK LIGHTING	0 VA	100%	0 VA

PANELBOARD NOTES

PANELBOARD TOTALS	
TOTAL CONNECTED LOAD	8446 VA
TOTAL NEC LOAD	8518 VA
TOTAL CONNECTED CURRENT	23 A
TOTAL NEC DEMAND CURRENT	24 A

PANELBOARD: LC3 (NEW)

BUS AMPS: 100A
MAIN SIZE/TYPE: 60A M.C.B.
VOLTS/PHASE: 208Y/120 V 3P/4W
SUPPLIED BY: L1S

FAULT CURRENT: RE: ONE-LINE DIAGRAM
AIC RATED: FULLY RATED
AIC RATING: FCA +10% MINIMUM
SERVES: EAST JV BASEBALL
MOUNTING: SURFACE
LOCATION: 3B DUGOUT

EQUIPMENT GROUND BUS

LINE-SIDE LUGS: MECHANICAL

CKT NO.	DESCRIPTION	LOAD TYPE	NOTES	WIRE SIZE	BKR AMP	P	PHASE A	PHASE B	PHASE C	P	BKR AMP	WIRE SIZE	NOTES	LOAD TYPE	DESCRIPTION	CKT NO.
1	LTG - 3B DUGOUT	L		12	20	1	143	143								2
3	RCPT - 3B DUGOUT	R		12	20	1		180	180	3	60	OL		L R	PANEL LC7	4
5	RCPT - 3B STORAGE	R		12	20	1			1080 540							6
7	RCPT - FIBER CONVERTER	R		12	20	1	180	0		1	20				SPARE	8
9	SPARE				20	1		0	0	1	20				SPARE	10
11	SPARE				20	1			0 0	1	20				SPARE	12
13	SPARE				20	1	0	0		1	20				SPARE	14
15	SPARE				20	1		0	0	1	20				SPARE	16
17	SPARE				20	1			0 0	1	20				SPARE	18
19	SPARE				20	1	0	0		1	20				SPARE	20
21	SPARE				20	1		0	0	1	20				SPARE	22
23	SPARE				20	1			0 0	1	20				SPARE	24
	TOTAL LOAD (VA):						466 VA	360 VA	1620 VA							
	TOTAL AMPS:						4 A	3 A	14 A							

LOAD TYPE	CONNECTED LOAD	DEMAND FACTOR	NEC DEMAND
EXISTING LOAD (E)	0 VA	100%	0 VA
COOLING (C)	0 VA	0%	0 VA
HEATING (H)	0 VA	100%	0 VA
LIGHTING (L)	286 VA	125%	358 VA
RECEPTACLES (R)	2160 VA	100%	2160 VA
MOTORS (M)	0 VA	100%	0 VA
SUPPLEMENTAL HEAT (U)	0 VA	100%	0 VA
MISC EQUIP (Z)	0 VA	100%	0 VA
REFRIGERATION (F)	0 VA	100%	0 VA
SIGN/DISPLAY (D)	0 VA	125%	0 VA
KITCHEN (K)	0 VA	100%	0 VA
LARGEST MOTOR	0 VA	125%	0 VA
SHOW WINDOW (W)	0 VA	125%	0 VA
TRACK LIGHTING	0 VA	100%	0 VA

PANELBOARD NOTES

PANELBOARD TOTALS	
TOTAL CONNECTED LOAD	2446 VA
TOTAL NEC LOAD	2518 VA
TOTAL CONNECTED CURRENT	7 A
TOTAL NEC DEMAND CURRENT	7 A

PANELBOARD: LC4 (NEW)

BUS AMPS: 100A
MAIN SIZE/TYPE: 60A M.C.B.
VOLTS/PHASE: 208Y/120 V 3P/4W
SUPPLIED BY: L1S

FAULT CURRENT: RE: ONE-LINE DIAGRAM
AIC RATED: FULLY RATED
AIC RATING: FCA +10% MINIMUM
SERVES: WEST JV BASEBALL
MOUNTING: SURFACE
LOCATION: 3B DUGOUT

EQUIPMENT GROUND BUS

LINE-SIDE LUGS: MECHANICAL

CKT NO.	DESCRIPTION	LOAD TYPE	NOTES	WIRE SIZE	BKR AMP	P	PHASE A	PHASE B	PHASE C	P	BKR AMP	WIRE SIZE	NOTES	LOAD TYPE	DESCRIPTION	CKT NO.
1	LTG - 3B DUGOUT	L		12	20	1	143	111								2
3	RCPT - 3B DUGOUT	R		12	20	1		180	180	3	60	OL		L R	PANEL LC8	4
5	RCPT - 3B STORAGE	R		12	20	1			720 1080							6
7	SPARE				20	1	0	0		1	20				SPARE	8
9	SPARE				20	1		0	0	1	20				SPARE	10
11	SPARE				20	1			0 0	1	20				SPARE	12
13	SPARE				20	1	0	0		1	20				SPARE	14
15	SPARE				20	1		0	0	1	20				SPARE	16
17	SPARE				20	1			0 0	1	20				SPARE	18
19	SPARE				20	1	0	0		1	20				SPARE	20
21	SPARE				20	1		0	0	1	20				SPARE	22
23	SPARE				20	1			0 0	1	20				SPARE	24
	TOTAL LOAD (VA):						254 VA	360 VA	1800 VA							
	TOTAL AMPS:						2 A	3 A	15 A							

LOAD TYPE	CONNECTED LOAD	DEMAND FACTOR	NEC DEMAND
EXISTING LOAD (E)	0 VA	100%	0 VA
COOLING (C)	0 VA	0%	0 VA
HEATING (H)	0 VA	100%	0 VA
LIGHTING (L)	254 VA	125%	318 VA
RECEPTACLES (R)	2160 VA	100%	2160 VA
MOTORS (M)	0 VA	100%	0 VA
SUPPLEMENTAL HEAT (U)	0 VA	100%	0 VA
MISC EQUIP (Z)	0 VA	100%	0 VA
REFRIGERATION (F)	0 VA	100%	0 VA
SIGN/DISPLAY (D)	0 VA	125%	0 VA
KITCHEN (K)	0 VA	100%	0 VA
LARGEST MOTOR	0 VA	125%	0 VA
SHOW WINDOW (W)	0 VA	125%	0 VA
TRACK LIGHTING	0 VA	100%	0 VA

PANELBOARD NOTES

PANELBOARD TOTALS	
TOTAL CONNECTED LOAD	2414 VA
TOTAL NEC LOAD	2478 VA
TOTAL CONNECTED CURRENT	7 A
TOTAL NEC DEMAND CURRENT	7 A

PANELBOARD: LC5 (NEW)

BUS AMPS: 100A
MAIN SIZE/TYPE: 60A M.C.B.
VOLTS/PHASE: 208Y/120 V 3P/4W
SUPPLIED BY: LC1

FAULT CURRENT: RE: ONE-LINE DIAGRAM
AIC RATED: FULLY RATED
AIC RATING: FCA +10% MINIMUM
SERVES: VARSITY SOFTBALL
MOUNTING: SURFACE
LOCATION: 1B DUGOUT

EQUIPMENT GROUND BUS

LINE-SIDE LUGS: MECHANICAL

CKT NO.	DESCRIPTION	LOAD TYPE	NOTES	WIRE SIZE	BKR AMP	P	PHASE A	PHASE B	PHASE C	P	BKR AMP	WIRE SIZE	NOTES	LOAD TYPE	DESCRIPTION	CKT NO.
1	LTG - 1B DUGOUT	L		12	20	1	143	0		1	20				SPARE	2
3	RCPT - 1B DUGOUT	R		12	20	1		180	0	1	20				SPARE	4
5	RCPT - 1B STORAGE	R		12	20	1			720 0	1	20				SPARE	6
7	SPARE				20	1	0	0		1	20				SPARE	8
9	SPARE				20	1		0	0	1	20				SPARE	10
11	SPARE				20	1			0 0	1	20				SPARE	12
13	SPARE				20	1	0	0		1	20				SPARE	14
15	SPARE				20	1		0	0	1	20				SPARE	16
17	SPARE				20	1			0 0	1	20				SPARE	18
19	SPARE				20	1	0	0		1	20				SPARE	20
21	SPARE				20	1		0	0	1	20				SPARE	22
23	SPARE				20	1			0 0	1	20				SPARE	24
	TOTAL LOAD (VA):						143 VA	180 VA	720 VA							
	TOTAL AMPS:						1 A	2 A	6 A							

LOAD TYPE	CONNECTED LOAD	DEMAND FACTOR	NEC DEMAND
EXISTING LOAD (E)	0 VA	100%	0 VA
COOLING (C)	0 VA	0%	0 VA
HEATING (H)	0 VA	100%	0 VA
LIGHTING (L)	143 VA	125%	179 VA
RECEPTACLES (R)	900 VA	100%	900 VA
MOTORS (M)	0 VA	100%	0 VA
SUPPLEMENTAL HEAT (U)	0 VA	100%	0 VA
MISC EQUIP (Z)	0 VA	100%	0 VA
REFRIGERATION (F)	0 VA	100%	0 VA
SIGN/DISPLAY (D)	0 VA	125%	0 VA
KITCHEN (K)	0 VA	100%	0 VA
LARGEST MOTOR	0 VA	125%	0 VA
SHOW WINDOW (W)	0 VA	125%	0 VA
TRACK LIGHTING	0 VA	100%	0 VA

PANELBOARD NOTES

PANELBOARD TOTALS	
TOTAL CONNECTED LOAD	1043 VA
TOTAL NEC LOAD	1079 VA
TOTAL CONNECTED CURRENT	3 A
TOTAL NEC DEMAND CURRENT	3 A

PANELBOARD: LC6 (NEW)

BUS AMPS: 100A
MAIN SIZE/TYPE: 60A M.C.B.
VOLTS/PHASE: 208Y/120 V 3P/4W
SUPPLIED BY: LC2

FAULT CURRENT: RE: ONE-LINE DIAGRAM
AIC RATED: FULLY RATED
AIC RATING: FCA +10% MINIMUM
SERVES: VARSITY BASEBALL
MOUNTING: SURFACE
LOCATION: 1B DUGOUT

EQUIPMENT GROUND BUS

LINE-SIDE LUGS: MECHANICAL

CKT NO.	DESCRIPTION	LOAD TYPE	NOTES	WIRE SIZE	BKR AMP	P	PHASE A	PHASE B	PHASE C	P	BKR AMP	WIRE SIZE	NOTES	LOAD TYPE	DESCRIPTION	CKT NO.
1	LTG - 1B DUGOUT	L		12	20	1	143	0		1	20				SPARE	2
3	RCPT - 1B DUGOUT	R		12	20	1		180	0	1	20				SPARE	4
5	RCPT - 1B STORAGE	R		12	20	1			720 0	1	20				SPARE	6
7	SPARE				20	1	0	0		1	20				SPARE	8
9	SPARE				20	1		0	0	1	20				SPARE	10
11	SPARE				20	1			0 0	1	20				SPARE	12
13	SPARE				20	1	0	0		1	20				SPARE	14
15	SPARE				20	1		0	0	1	20				SPARE	16
17	SPARE				20	1			0 0	1	20				SPARE	18
19	SPARE				20	1	0	0		1	20				SPARE	20
21	SPARE				20	1		0	0	1	20				SPARE	22
23	SPARE				20	1			0 0	1	20				SPARE	24
	TOTAL LOAD (VA):						143 VA	180 VA	720 VA							
	TOTAL AMPS:						1 A	2 A	6 A							

LOAD TYPE	CONNECTED LOAD	DEMAND FACTOR	NEC DEMAND
EXISTING LOAD (E)	0 VA	100%	0 VA
COOLING (C)	0 VA	0%	0 VA
HEATING (H)	0 VA	100%	0 VA
LIGHTING (L)	143 VA	125%	179 VA
RECEPTACLES (R)	900 VA	100%	900 VA
MOTORS (M)	0 VA	100%	0 VA
SUPPLEMENTAL HEAT (U)	0 VA	100%	0 VA
MISC EQUIP (Z)	0 VA	100%	0 VA
REFRIGERATION (F)	0 VA	100%	0 VA
SIGN/DISPLAY (D)	0 VA	125%	0 VA
KITCHEN (K)	0 VA	100%	0 VA
LARGEST MOTOR	0 VA	125%	0 VA
SHOW WINDOW (W)	0 VA	125%	0 VA
TRACK LIGHTING	0 VA	100%	0 VA

PANELBOARD NOTES

PANELBOARD TOTALS	
TOTAL CONNECTED LOAD	1043 VA
TOTAL NEC LOAD	1079 VA
TOTAL CONNECTED CURRENT	3 A
TOTAL NEC DEMAND CURRENT	3 A

PANELBOARD: LC7 (NEW)

BUS AMPS: 100A
MAIN SIZE/TYPE: 60A M.C.B.
VOLTS/PHASE: 208Y/120 V 3P/4W
SUPPLIED BY: LC3

FAULT CURRENT: RE: ONE-LINE DIAGRAM
AIC RATED: FULLY RATED
AIC RATING: FCA +10% MINIMUM
SERVES: EAST JV BASEBALL
MOUNTING: SURFACE
LOCATION: 1B DUGOUT

EQUIPMENT GROUND BUS

LINE-SIDE LUGS: MECHANICAL

CKT NO.	DESCRIPTION	LOAD TYPE	NOTES	WIRE SIZE	BKR AMP	P	PHASE A	PHASE B	PHASE C	P	BKR AMP	WIRE SIZE	NOTES	LOAD TYPE	DESCRIPTION	CKT NO.
1	LTG - 1B DUGOUT	L		12	20	1	143	0		1	20				SPARE	2
3	RCPT - 3B DUGOUT	R		12	20	1		180	0	1	20				SPARE	4
5	RCPT - 3B STORAGE	R		12	20	1			540 0	1	20				SPARE	6
7	SPARE				20	1	0	0		1	20				SPARE	8
9	SPARE				20	1		0	0	1	20				SPARE	10
11	SPARE				20	1			0 0	1	20				SPARE	12
13	SPARE				20	1	0	0		1	20				SPARE	14
15	SPARE				20	1		0	0	1	20				SPARE	16
17	SPARE				20	1			0 0	1	20				SPARE	18
19	SPARE				20	1	0	0		1	20				SPARE	20
21	SPARE				20	1		0	0	1	20				SPARE	22
23	SPARE				20	1			0 0	1	20				SPARE	24
	TOTAL LOAD (VA):						143 VA	180 VA	540 VA							
	TOTAL AMPS:						1 A	2 A	5 A							

LOAD TYPE	CONNECTED LOAD	DEMAND FACTOR	NEC DEMAND
EXISTING LOAD (E)	0 VA	100%	0 VA
COOLING (C)	0 VA	0%	0 VA
HEATING (H)	0 VA	100%	0 VA
LIGHTING (L)	143 VA	125%	179 VA
RECEPTACLES (R)	720 VA	100%	720 VA
MOTORS (M)	0 VA	100%	0 VA
SUPPLEMENTAL HEAT (U)	0 VA	100%	0 VA
MISC EQUIP (Z)	0 VA	100%	0 VA
REFRIGERATION (F)	0 VA	100%	0 VA
SIGN/DISPLAY (D)	0 VA	125%	0 VA
KITCHEN (K)	0 VA	100%	0 VA
LARGEST MOTOR	0 VA	125%	0 VA
SHOW WINDOW (W)	0 VA	125%	0 VA
TRACK LIGHTING	0 VA	100%	0 VA

PANELBOARD NOTES

PANELBOARD TOTALS	
TOTAL CONNECTED LOAD	863 VA
TOTAL NEC LOAD	899 VA
TOTAL CONNECTED CURRENT	2 A
TOTAL NEC DEMAND CURRENT	2 A

PANELBOARD: LC8 (NEW)

BUS AMPS: 100A
MAIN SIZE/TYPE: 60A M.C.B.
VOLTS/PHASE: 208Y/120 V 3P/4W
SUPPLIED BY: LC4

FAULT CURRENT: RE: ONE-LINE DIAGRAM
AIC RATED: FULLY RATED
AIC RATING: FCA +10% MINIMUM
SERVES: WEST JV BASEBALL
MOUNTING: SURFACE
LOCATION: 1B DUGOUT

EQUIPMENT GROUND BUS

LINE-SIDE LUGS: MECHANICAL

CKT NO.	DESCRIPTION	LOAD TYPE	NOTES	WIRE SIZE	BKR AMP	P	PHASE A	PHASE B	PHASE C	P	BKR AMP	WIRE SIZE	NOTES	LOAD TYPE	DESCRIPTION	CKT NO.
1	LTG - 1B DUGOUT	L		12	20	1	111	0		1	20				SPARE	2
3	RCPT - 1B DUGOUT	R		12	20	1		180	0	1	20				SPARE	4
5	RCPT - 1B STORAGE	R		12	20	1			1080 0	1	20				SPARE	6
7	SPARE				20	1	0	0		1	20				SPARE	8
9	SPARE				20	1		0	0	1	20				SPARE	10
11	SPARE				20	1			0 0	1	20				SPARE	12
13	SPARE				20	1	0	0		1	20				SPARE	14
15	SPARE				20	1		0	0	1	20				SPARE	16
17	SPARE				20	1			0 0	1	20				SPARE	18
19	SPARE				20	1	0	0		1	20				SPARE	20
21	SPARE				20	1		0	0	1	20				SPARE	22
23	SPARE				20	1			0 0	1	20				SPARE	24
	TOTAL LOAD (VA):						111 VA	180 VA	1080 VA							
	TOTAL AMPS:						1 A	2 A	9 A							

LOAD TYPE	CONNECTED LOAD	DEMAND FACTOR	NEC DEMAND
EXISTING LOAD (E)	0 VA	100%	0 VA
COOLING (C)	0 VA	0%	0 VA
HEATING (H)	0 VA	100%	0 VA
LIGHTING (L)	111 VA	125%	139 VA
RECEPTACLES (R)	1260 VA	100%	1260 VA
MOTORS (M)	0 VA	100%	0 VA
SUPPLEMENTAL HEAT (U)	0 VA	100%	0 VA
MISC EQUIP (Z)	0 VA	100%	0 VA
REFRIGERATION (F)	0 VA	100%	0 VA
SIGN/DISPLAY (D)	0 VA	125%	0 VA
KITCHEN (K)	0 VA	100%	0 VA
LARGEST MOTOR	0 VA	125%	0 VA
SHOW WINDOW (W)	0 VA	125%	0 VA
TRACK LIGHTING	0 VA	100%	0 VA

PANELBOARD NOTES

PANELBOARD TOTALS	
TOTAL CONNECTED LOAD	1371 VA
TOTAL NEC LOAD	1399 VA
TOTAL CONNECTED CURRENT	4 A
TOTAL NEC DEMAND CURRENT	4 A

PANELBOARD SCHEDULE NOTES LEGEND:

AF = ARC FAULT CIRCUIT INTERRUPTER.
C# = CIRCUIT VIA LIGHTING CONTACTOR #.
CL = CIRCUIT VIA CURRENT LIMITING DEVICE.
EM = EMERGENCY LIGHTING HANDLE-ON CLAMP.
ETR = EXISTING TO REMAIN
FA = RED/HANDLE-ON CLAMP.
GF = GROUND-FAULT CIRCUIT INTERRUPTER TYPE CIRCUIT BREAKER (5 mA).
GFEP = GROUND FAULT EQUIPMENT PROTECTION BREAKER (30 mA).
HT# = PROVIDE HANDLE-TIE FOR MULTI-WIRE BRANCH CIRCUIT PER CODE. # DENOTES PHASES TO BE TIED.
IG = ISOLATED GROUND CIRCUIT.
L# = LIGHTING CONTROL SCHEME NUMBER.
LCK = HANDLE PADLOCKABLE-OFF DEVICE.
LO = HANDLE-ON CLAMP.
N = PROVIDE NEUTRAL WITH 208V OR 480V, 1-PH OR 3-PH CIRCUIT.
NB = PROVIDE NEW CIRCUIT BREAKER.
O/OL = REFER TO ELECTRICAL ONE-LINE/RISER DIAGRAM.
PS = POWER-SWITCHING CIRCUIT BREAKER.
PSE = EMERGENCY POWER-SWITCHING CIRCUIT BREAKER.
RP = CIRCUIT VIA RELAY PANEL.
SC = REFER TO VOLTAGE DROP CALCULATION SCHEDULE FOR MINIMUM WIRE SIZE.
ST = SHUNT TRIP CIRCUIT BREAKER.
VD = BRANCH CIRCUITRY HAS BEEN UPSIZED TO REDUCE VOLTAGE DROP. ADJUST GROUND WIRE SIZE PER CODE. PROVIDE LUG ADAPTORS IF REQUIRED.

PANEL LC1	PANEL LC5
PANEL LC2	PANEL LC6
PANEL LC3	PANEL LC7
PANEL LC4	PANEL LC8

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STATE OF MISSOURI
CURTIS A. OLDS
NUMBER PE-2018036640
PROFESSIONAL ENGINEER

Oct 19 2020

CURTIS A. OLDS
LICENSE # PE-2018036640

HENDERSON ENGINEERS
8345 LENEXA DRIVE, SUITE 300
LENEXA, KS 66214
TEL 913.742.2800 FAX 913.742.3091
WWW.HENDERSONENGINEERS.COM
MO. CORPORATE NO. E-5060
EXPIRES 12/31/2020

LEE'S SUMMIT MIDDLE SCHOOL #4

LEE'S SUMMIT R-7 SCHOOL DISTRICT

1001 SE BAILEY ROAD
LEE'S SUMMIT, MO 64081

PACKAGE 3 - BUILDING & SITE

10/08/20

REVISIONS

ADDENDUM 001	10/13/20
ADDENDUM 002	10/19/20

13-20102-00

ELECTRICAL SCHEDULES

E6.13

CURTIS A. OLDS

LIGHT FIXTURE SCHEDULE

TYPE	MANUFACTURER	MODEL	APPROVED EQUIVALENTS	NO.	LAMPS TYPE	LAMPS VOLT	BALLAST TYPE	BALLAST INPUT WATTS	BALLAST INPUT VA	DESCRIPTION	NOTES
A1	LITHONIA	2ALL4 CTRF-48L-GZ10-LP840	METALUX CRAZE ST 24CZ2 COLUMBIA LIGHTING LCAT24 SERIES MARK ARCHITECTURAL LIGHTING WHSPR SERIES Columbia Lighting LCAT24 Series	1	INTEGRAL LED 4,800 LUMENS 4,000K 80 CRI 60,000 HRS	277	0-10V, 10%	39	43	NOMINAL 2' X 4' X 4" DEEP RECESSED LED VOLUMETRIC, PRE-PAINTED ONE-PIECE COLD-ROLLED STEEL HOUSING AND REFLECTOR SUITABLE FOR ACOUSTIC TILE LAY-IN CEILING OR OTHER CEILING BY ARCHITECT AND CONFIRMED PRIOR TO ORDER WITH HIGH PERFORMANCE TRANSMITTANCE DIFFUSER REFRACTOR, UNIVERSAL VOLTAGE DRIVER. UL LISTED FOR DAMP LOCATIONS.	
A1E	-	-	-	1	-	277	-	39	43	SIMILAR TO A1 EXCEPT PROVIDE WITH 700-LUMEN BATTERY PACK	
A1S	-	-	-	1	-	277	-	39	43	SIMILAR TO A1 EXCEPT WITH DRYWALL CEILING ADAPTER KIT FOR NON-LAY-IN CEILING APPLICATIONS.	
A2	LITHONIA	2ALL2 CTRF-40L-GZ10-LP840	METALUX CRAZE ST 24CZ2 COLUMBIA LIGHTING LCAT24 SERIES MARK ARCHITECTURAL LIGHTING WHSPR SERIES	1	INTEGRAL LED 4,000 LUMENS 80 CRI 60,000 HRS	277	0-10V, 10%	37	41	NOMINAL 2' X 2' X 4" DEEP RECESSED LED VOLUMETRIC, PRE-PAINTED ONE-PIECE COLD-ROLLED STEEL HOUSING AND REFLECTOR SUITABLE FOR ACOUSTIC TILE LAY-IN CEILING OR OTHER CEILING BY ARCHITECT AND CONFIRMED PRIOR TO ORDER WITH HIGH PERFORMANCE TRANSMITTANCE DIFFUSER REFRACTOR, UNIVERSAL VOLTAGE DRIVER. UL LISTED FOR DAMP LOCATIONS.	
A2E	-	-	-	1	-	277	-	37	41	SIMILAR TO A2 EXCEPT WITH 700-LUMEN BATTERY BACK	
A3	HE WILLIAMS	50-G-S-2-4-L69-8-4@-S-AF12125-DIM-UNV	COLUMBIA LIGHTING LCAT24 SERIES LITHONIA 2GTL SERIES	1	INTEGRAL LED 5,900 LUMENS 4,000K 80 CRI 50,000 HRS	277	0-10V, 10%	48	53	NOMINAL 2' X 4' X 4" DEEP RECESSED LED STATIC TROFFER, 22-GAUGE DIE-FORMED HOUSING, 20-GAUGE DOOR FRAME, WITH WHITE POLYESTER POWDER COAT FINISH, SUITABLE FOR ACOUSTIC LAY-IN TILE CEILING OR OTHER CEILING BY ARCHITECT AND CONFIRMED PRIOR TO ORDER, WITH FROSTED ACRYLIC LENSING. UNIVERSAL VOLTAGE DRIVER. UL LISTED FOR DAMP LOCATIONS.	
A3E	-	-	-	1	-	277	-	48	53	SIMILAR TO A3 EXCEPT WITH 10-WATT BATTERY OPTION	
A4	LITHONIA	2BLT4-TUWH-RHYR-48L-SDSM	COLUMBIA LIGHTING LCAT24 SERIES	1	INTEGRAL LED 4,800 LUMENS 2,700K - 6,500K 60,000 HRS	277	0-10V, 10%	33	36	NOMINAL 2' X 2' X 4" DEEP RECESSED TUNABLE WHITE LED VOLUMETRIC, PRE-PAINTED HOUSING AND REFLECTOR SUITABLE FOR ACOUSTIC TILE LAY-IN CEILING OR OTHER CEILING BY ARCHITECT AND CONFIRMED PRIOR TO ORDER WITH HIGH PERFORMANCE TRANSMITTANCE DIFFUSER REFRACTOR WITH ACRYLIC LENSING, UNIVERSAL VOLTAGE DRIVER, UL LISTED FOR DAMP LOCATIONS.	
A4E	-	-	-	1	-	277	-	33	36	SIMILAR TO A4 EXCEPT WITH 700-LUMEN BATTERY PACK	
A5	COOPER	24FCZ2-30-UNV-L82765-CP250-W2A-1	NEW STAR LIGHTING AUREAMED CLASSIC SERIES	1	INTEGRAL LED 3,000 LUMENS 2,700K - 6,500K 60,000 HRS	277	-	24	27	NOMINAL 2' X 2' X 4" DEEP RECESSED TUNABLE WHITE LED TROFFER, ONE-PIECE STEEL HOUSING, PRE-PAINTED HOUSING, HIGH GLOSS WHITE FINISH, AND REFLECTOR SUITABLE FOR ACOUSTIC TILE LAY-IN CEILING OR OTHER CEILING BY ARCHITECT AND CONFIRMED PRIOR TO ORDER WITH FROSTED ACRYLIC DIFFUSER. UNIVERSAL VOLTAGE DRIVER. UL LISTED FOR WET LOCATIONS.	
D1	EATON	LDA4A-18-8-40-D010TE-LAR35FL-4LA0-H	HALO COMMERCIAL GOTHAM EVO SERIES LITHONIA LDN4 SERIES ACUITY BRANDS INDY LIGHTING	1	INTEGRAL LED 1,800 LUMENS 4,000K 80 CRI 50,000 HRS	277	0-10V, 1%	29	32	NOMINAL 4" DIAMETER, 8" TALL LED DOWNLIGHT, ONE PIECE DIE CAST 18-GAUGE HOUSING, PAINTED MATTE BLACK, SELF FLANGED WITH TORSION SPRING RETENTION, SERVICE OF LED ENGINE FROM ABOVE OR THROUGH APERTURE, UNIVERSAL VOLTAGE DRIVER, UL LISTED FOR DAMP LOCATIONS.	
D1E	-	-	-	1	-	277	-	29	32	SIMILAR TO D1 EXCEPT WITH 7-WATT EMERGENCY BATTERY MODULE WITH REMOTE TEST SWITCH, COORDINATE FOR SWITCH AND ACCESSORY AND POWER PRIOR TO INSTALLATION.	
DS4	I2SYSTEMS	GEN4	-	1	INTEGRAL LED 900 LUMENS 4,000K	277	0-10V, 1%	20	23	4" NOMINAL DISPLAY CASE LIGHT FIXTURE, COORDINATE MOUNTING WITH ARCHITECT. PROVIDE E05P POWER SUPPLY AND LL-205 0-10V CONTROLLER AS REQUIRED TO PROVIDE A FULLY FUNCTIONING AND DIMMING LIGHT FIXTURE.	
DS5	I2SYSTEMS	GEN4	-	1	INTEGRAL LED 1,125 LUMENS 4,000K	277	0-10V, 1%	25	28	5" NOMINAL DISPLAY CASE LIGHT FIXTURE, COORDINATE MOUNTING WITH ARCHITECT. PROVIDE E05P POWER SUPPLY AND LL-205 0-10V CONTROLLER AS REQUIRED TO PROVIDE A FULLY FUNCTIONING AND DIMMING LIGHT FIXTURE.	
DW1	LITHONIA	LDN6-40-20-L06-AR-LSS-MVOLT-GZ10	HALO COMMERCIAL GOTHAM EVO SERIES LITHONIA LDN4 SERIES ACUITY BRANDS INDY LIGHTING	1	INTEGRAL LED 2,000 LUMENS 4,000K 80 CRI 60,000 HRS	277	0-10V, 10%	23	25	NOMINAL 6" DIAMETER, 5-1/2" TALL LED DOWNLIGHT, GALVANIZED STEEL CONSTRUCTION, SELF FLANGED WITH TORSION SPRING RETENTION, SERVICE OF LED ENGINE FROM ABOVE OR THROUGH APERTURE, UNIVERSAL VOLTAGE DRIVER. UL LISTED FOR WET LOCATIONS.	
DW1E	-	-	-	1	-	277	-	23	25	SIMILAR TO DW1 EXCEPT WITH 10-WATT EMERGENCY BATTERY	
G1	HE WILLIAMS	GP4-L150/840-M-WGC11-GS/Y2B-10-DIM-UNV	HE WILLIAMS GH SERIES LITHONIA IBG SERIES	1	INTERAL LED 15,000 LUMENS 4000K 80CRI >54,000 HOURS	277	0-10V, 10%	107	118	NOMINAL 28" X 24" X 4-1/2" SUSPENDED LED LIGHT FIXTURE. ALUMINUM HOUSING, PAINTED AFTER FABRICATION, POWDER COAT FINISH, DIFFUSE POLYCARBONATE LENSING, 11-GAUGE WIRE GUARD, FIXTURE SHALL BE SUPPORT FROM EACH CORNER. UNIVERSAL VOLTAGE DRIVER. UL LISTED FOR DAMP LOCATIONS.	
G1AE	-	-	-	1	-	277	-	107	118	SIMILAR TO G1 EXCEPT WITH ASSURANCE SI-36W 36-WATT EMERGENCY BATTERY, BATTERY TO BE PROGRAMMED TO 20W OUTPUT MAX FOR 2-HR RUN TIME, BATTERY TO BE WIRING TO ONLY (1) OF THE (2) TOTAL FIXTURE DRIVERS TO ENSURE LESS THAN 120W CONNECTED TO EMERGENCY BATTERY PER MFR REQUIREMENTS.	
G1E	-	-	-	1	-	277	-	107	118	SIMILAR TO G1 EXCEPT WITH 12-WATT EMERGENCY BATTERY	
G2	HE WILLIAMS	GP4-L200/840-M-WGC11-GS/Y2B-10-DIM-UNV	SAME AS G1	1	INTERAL LED 20,000 LUMENS 4000K 80CRI >54,000 HOURS	277	0-10V, 10%	157	173	SAME AS G1 EXCEPT FOR 20,000 LUMEN PACKAGE	
G2AE	-	-	-	1	-	277	-	157	173	SIMILAR TO G2 EXCEPT WITH ASSURANCE SI-36W 36-WATT EMERGENCY BATTERY, BATTERY TO BE PROGRAMMED TO 20W OUTPUT MAX FOR 2-HR RUN TIME, BATTERY TO BE WIRING TO ONLY (1) OF THE (2) TOTAL FIXTURE DRIVERS TO ENSURE LESS THAN 120W CONNECTED TO EMERGENCY BATTERY PER MFR REQUIREMENTS.	
G2E	-	-	-	1	-	277	-	157	173	SIMILAR TO G2 EXCEPT WITH 12-WATT EMERGENCY BATTERY	
G3	HE WILLIAMS	GP4-L230/840-M-WGC11-GS/Y2B-10-DIM-UNV	SAME AS G1	1	INTERAL LED 23,000 LUMENS 4000K 80CRI >54,000 HOURS	277	0-10V, 10%	187	207	SAME AS G1 EXCEPT FOR 23,000 LUMEN PACKAGE	
G3AE	-	-	-	1	-	277	-	187	207	SIMILAR TO G3 EXCEPT WITH ASSURANCE SI-36W 36-WATT EMERGENCY BATTERY, BATTERY TO BE PROGRAMMED TO 20W OUTPUT MAX FOR 2-HR RUN TIME, BATTERY TO BE WIRING TO ONLY (1) OF THE (2) TOTAL FIXTURE DRIVERS TO ENSURE LESS THAN 120W CONNECTED TO EMERGENCY BATTERY PER MFR REQUIREMENTS.	
H4	HE WILLIAMS	75R-4-L50-8-40-DIM-UNV	LITHONIA ZLD1 SERIES COLUMBIA LIGHTING MPS SERIES	1	INTEGRAL LED 5,000 LUMENS 4,000K 80 CRI 50,000 HRS	277	0-10V, 10%	32	32	NOMINAL 4'L X 2-3/4"W X 2"D NARROW STRIP, LED FIXTURE, 22-GAUGE DIE-FORMED CRS, PAINTED AFTER FABRICATION, POLYESTER POWDER COAT FINISH, ROUNDED DIFFUSE LENSING, UNIVERSAL VOLTAGE DRIVER. UL LISTED FOR DAMP LOCATIONS.	
H4A	-	-	-	1	-	120	-	32	32	SIMILAR TO H4 EXCEPT CONNECTED TO 120V CIRCUIT.	
H4AE	-	-	-	1	-	120	-	32	32	SIMILAR TO H4A EXCEPT WITH 10-WATT EMERGENCY BATTERY	
H4BE	-	-	-	1	-	277	-	32	32	SIMILAR TO H4 EXCEPT WITH ASSURANCE L25-C 25-WATT EMERGENCY BATTERY, BATTERY TO BE PROGRAMMED TO 16W OUTPUT MAX FOR 2-HR RUN TIME.	
H4E	-	-	-	1	-	277	-	32	32	SIMILAR TO H4 EXCEPT WITH 10-WATT EMERGENCY BATTERY	
H8	-	-	SAME AS H4	1	6,000 LUMENS	277	-	36	36	SIMILAR TO H4 EXCEPT HIGHER LUMEN OUTPUT AND 6' IN LENGTH.	
H8E	-	-	-	1	-	277	-	36	36	SIMILAR TO H8 EXCEPT WITH 10-WATT EMERGENCY BATTERY	
N1E	FOCAL POINT	HP-4-P-D-TL-840-F-96LG-277-SC-FC-10%-FA##-CI#-FE##	PINNACLE LIGHTING EDGE EX4D SERIES MARK ARCHITECTURAL LIGHTING SLOT 4 S4LD 3GLIGHTING - 3G-4PLI-D SERIES FINELITE HP-4 PENDANT SERIES	1	INTEGRAL LED 926 LUMENS/FT 4,000K 80 CRI 100,000 HRS	277	0-10V, 10%	9	10	NOMINAL 4"W X 4-3/4"D LINEAR LED PENDANT OF VARIABLE LENGTH, DOWNLIGHT ONLY, ALUMINUM BODY CONSTRUCTION WITH INTERNAL JOINER SYSTEM FOR RUNS LONGER THAN 12'. DIE-FORMED 20-GAUGE COLD-ROLLED STEEL REFLECTOR FINISH WITH WHITE POWDER COAT PAINT. CONFIRM FIXTURE LENGTH WITH ARCHITECTURAL PLANS. MOUNT BOTTOM OF FIXTURE FLUSH WITH BOTTOM OF ARCHITECTURAL CEILING. 277 VAC OPERATION. FIXTURE LOAD INFORMATION IN FORM OF PER FOOT. CONFIRM FIXTURE FINISH WITH ARCHITECT PRIOR TO ORDER. UL LISTED.	
N2	-	-	SAME AS N1E	1	720 LUMENS/FT	277	-	7	8	SIMILAR TO N1E EXCEPT WITH LOWER LUMEN OUTPUT AND WITHOUT EMERGENCY BATTERY OPTION	
N2E	-	-	SAME AS N1E	1	-	277	-	7	8	SIMILAR TO N2 EXCEPT WITH EMERGENCY BATTERY OPTION.	
N3E	-	-	SAME AS N1E	1	356 LUMENS/FT	277	-	4	5	SIMILAR TO N1E EXCEPT WITH LOWER LUMEN OUTPUT	
N4E	-	-	SAME AS N1E	1	300 LUMENS/FT	277	-	4	5	SIMILAR TO N1E EXCEPT WITH LOWER LUMEN OUTPUT	
P1-8	FOCAL POINT	FSM4BS-FLFL-75DN-275UP-40K-1C-UNV-LD1-C##-WH-##	AXIS LIGHTING SCULPT PENDANT 3GLIGHTING - 3G-PLI SERIES PINNACLE LIGHTING EDGE EX4DI SERIES MARK ARCHITECTURAL LIGHTING - SLOT4 SL4I SERIES FINELITE HP-4 PENDANT SERIES	1	INTEGRAL LED 275 LUMENS UP 375 LUMENS DN 4,000K 80 CRI 61,000 HRS	277	0-10V, 10%	56	60	SIMILAR TO R1 FIXTURE SERIES EXCEPT PENDANT MOUNT WITH UP/DOWN LIGHT.	
P1-10	-	-	-	1	-	277	-	70	74	SIMILAR TO P1-8 EXCEPT 10' IN LENGTH	
P1A-8	-	FSM4LS-FL-375LF-40K-1C-UNV-LD1-C##-WH-##	-	1	INTEGRAL LED 375 LUMENS 4,000K 80 CRI 61,000 HRS	277	0-10V, 10%	32	36	SIMILAR TO P1-8 EXCEPT WITHOUT UPLIGHT	
P1A-10	-	-	-	1	-	277	-	40	44	SIMILAR TO P1A-8 EXCEPT 10' IN LENGTH	
P1A-10E	-	-	-	1	-	277	-	40	44	SIMILAR TO P1A-8 EXCEPT 10' IN LENGTH AND WITH10-WATT EMERGENCY BATTERY	
P2	LUMEN PULSE	LACYN-A-PMD-##-CA##-D-277-9-TG-dL13-40K-CR80-M-DA1	GOTHAM EVO SERIES	1	INTEGRAL LED 1,300 LUMENS 4,000K 80 CRI	277	0-10V, 1%	15	17	NOMINAL 3" DIAMETER X 9" TALL HIGH-PERFORMANCE LED CYLINDRICAL DOWNLIGHT, ALUMINUM HOUSING, CLEAR POLYCARBONATE OPTICS, 40-DEGREE MEDIUM DISTRIBUTION, UNIVERSAL VOLTAGE DRIVER, UL DAMP LOCATION LISTED.	
P2A	LUMEN PULSE	LACYM-B-PMD-##-ACC##-D-120-277-18-DL07-40K-CR80-W-DA1-A-##-B-##	GOTHAM EVO SERIES	1	INTEGRAL LED 700 LUMENS 4,000K 80 CRI	277	0-10V, 1%	7	9	SIMILAR TO P2 EXCEPT 6" DIAMETER, 40-DEGREE DISTRIBUTION, AND DIFFERENT LUMEN PACKAGE	
P2B	-	-	-	1	4,000 LUMENS	277	-	42	46	SIMILAR TO P2A EXCEPT HIGHER LUMEN OUTPUT.	
P3-4E	HE WILLIAMS	39-4-L30-8-A-EM/10WLP-DIM-UNV	-	1	INTEGRAL LED 3,000 LUMENS 4,000K 80 CRI	277	0-10V	23	25		
P3-8	-	-	-	1	6,000 LUMENS	277	-	46	50	SIMILAR TO P3-4E EXCEPT 8' IN LENGTH AND WITHOUT EMERGENCY BATTERY. PROVIDE AS A SINGLE 8' AND NOT (2) 4' FIXTURES.	
P3-8E	-	-	-	1	-	277	-	46	50	SIMILAR TO P3-4E EXCEPT 8' IN LENGTH.	
P3-12	-	-	-	1	-	277	-	69	75	SIMILAR TO P3-4E EXCEPT 12' IN LENGTH AND WITHOUT EMERGENCY BATTERY, PROVIDE (3) "P3-4" FIXTURES CONTINUOUSLY MOUNTED ON UNI-STRUT.	
P3-12E	-	-	-	1	-	277	-	69	75	SIMILAR TO P3-4E EXCEPT 12' IN LENGTH, PROVIDE (3) P3-4E FIXTURES CONTINUOUSLY MOUNTED ON UNI-STRUT.	
P4	-	-	GOTHAM EVO SERIES	1	INTEGRAL LED 2,000 LUMENS 4,000K 80 CRI	277	0-10V, 1%	23	26	SIMILAR TO P2 EXCEPT 6" DIAMETER, 40-DEGREE DISTRIBUTION, BLACK HOUSING AND DIFFERENT LUMEN PACKAGE	
P4E	-	-	-	1	-	277	0-10V, 1%	23	26	SIMILAR TO P4 EXCEPT BATTERY BACK-UP	
R1-4	FOCAL POINT	FSM4L-FL-625LF-40K-1C-UNV-LD1-XX	AXIS LIGHTING SCULPT RECESSED FINELITE HPR SERIES PINNACLE LIGHTING EDGE EV4D SERIES	1	INTEGRAL LED 625 LUMENS/FT 4,000K 80 CRI 61,000 HRS	277	0-10V, 10%	23	25	NOMINAL 4"W x 4"H RECESSED LINEAR LED LIGHT WITH FLUSH LENSING IN LAY-IN CEILING APPLICATIONS. ONE PIECE EXTRUDED ALUMINUM HOUSING WITH POWDER COAT FINISH, 20 GA. STEEL END CAPS, STEEL DRIVER COMPARTMENT, EXTRUDED ACRYLIC LENSING, 0.085" THICK. UNIVERSAL VOLTAGE DRIVER, UL LISTED DRY AND DAMP LOCATIONS.	
R1-4E	-	-	-	1	-	277	-	23	25	SIMILAR TO R1-4 EXCEPT WITH 10-WATT EMERGENCY BATTERY	
R1-8	-	-	-	1	-	277	-	46	52	SIMILAR TO R1-4 EXCEPT 8' IN LENGTH	
R1-8E	-	-	-	1	-	277	-	46	52	SIMILAR TO R1-4 EXCEPT 8' IN LENGTH AND 10-WATT EMERGENCY BATTERY	
R1-12	-	-	-	1	-	277	-	69	78	SIMILAR TO R1-4 EXCEPT 12' IN LENGTH	
R1A-4	-	-	-	1	375 LUMENS/FT	277	-	14	15	SIMILAR TO R1A-4 EXCEPT LOWER LUMEN OUTPUT	
R1A-4E	-	-	-	1	-	277	-	14	15	SIMILAR TO R1A-4 EXCEPT WITH 10-WATT EMERGENCY BATTERY	
R1A-6	-	-	-	1	-	277	-	21	23	SIMILAR TO R1A-4 EXCEPT 6' IN LENGTH	
R1A-6E	-	-	-	1	-	277	-	21	23	SIMILAR TO R1A-4 EXCEPT 6' IN LENGTH AND 10-WATT EMERGENCY BATTERY	
R1A-8	-	-	-	1	-	277	-	28	30	SIMILAR TO R1A-4 EXCEPT 8' IN LENGTH	
R1A-8E	-	-	-	1	-	277	-	28	30	SIMILAR TO R1A-4 EXCEPT 8' IN LENGTH AND 10-WATT EMERGENCY BATTERY	
R1A-10	-	-	-	1	-	277	-	35	38	SIMILAR TO R1A-4 EXCEPT 10' IN LENGTH	
R1A-10E	-	-	-	1	-	277	-	35	38	SIMILAR TO R1A-4 EXCEPT 10' IN LENGTH AND 10-WATT EMERGENCY BATTERY	
R1A-12	-	-	-	1	-	277	-	42	45	SIMILAR TO R1A-4 EXCEPT 12' IN LENGTH	
R1A-14E	-	-	-	1	-	277	-	42	45	SIMILAR TO R1-4 EXCEPT LOWER LUMEN OUTPUT, 14' IN LENGTH, AND 10-WATT EMERGENCY BATTERY	
R1B-4E	-	-	-	1	-	277	-	14	15	SIMILAR TO R1-4 EXCEPT WITH ASSURANCE L25-C 25-WATT EMERGENCY BATTERY. BATTERY TO BE PROGRAMMED TO 16W OUTPUT MAX FOR 2-HR RUN TIME.	

LIGHT FIXTURE SCHEDULE

TYPE	MANUFACTURER	MODEL	APPROVED EQUIVALENTS	NO.	LAMPS TYPE	LAMPS VOLT	BALLAST TYPE	BALLAST INPUT WATTS	BALLAST INPUT VA	DESCRIPTION	NOTES
R1B-8E	-	-	-	1	-	277	-	28	30	SIMILAR TO R1-4 EXCEPT WITH ASSURANCE L25-C 25-WATT EMERGENCY BATTERY, BATTERY TO BE PROGRAMMED TO 16W OUTPUT MAX FOR 2-HR RUN TIME.	
S2	CREE	OSQ-A-NM-2ME-B-40K-UL-BZ-R	LITHONIA DSX SERIES BEACON VIPER SERIES MCGRAW EDISON GALLEON SERIES COOPER.PREVAIL SERIES	1	INTEGRAL LED 11,424 LUMENS 4,000K 70 CRI	277	0-10V	86	95	SINGLE HEAD SITE LIGHT FIXTURE, TYPE II WITH SPILL CONTROL DISTRIBUTION, EXTRUDED ALUMINUM DRIVER ENCLOSURE THERMALLY ISOLATED. HIGH-EFFICIENCY LED OPTICS. STANARD ARM MOUNT WITH EXTRUDED ALUMINUM ARM WITH INTERNAL BOLT GUIDES. POWDER COATED HEAT SINK, BRONZE FINISH. PROVIDE WITH ANSI C136.41 7-PN RECEPTACLE FOR WIRELESS CONTROL CAPABILITIES. LIGHTING OPTION. FIXTURE SHALL BE MOUNTED AT +20' AFG, UNLESS OTHERWISE NOTED, [RE: DIMENSION 'Y1' IN POLE BASE DETAIL.] UL WET LOCATION LISTED. 4" ROUND STEEL POLE. DARK BRONZE FINISH WITH 2' ARM LENGTH AND VIBRATION DAMPENER.	
S3	-	-	SAME AS S2	1	-	277	-	86	95	SIMILAR TO S2 EXCEPT WITH TYPE III DISTRIBUTION.	
S4	-	-	SAME AS S2	1	-	277	-	86	95	SIMILAR TO S2 EXCEPT WITH TYPE IV DISTRIBUTION.	
S4-2	-	-	SAME AS S2	2	-	277	-	172	190	SIMILAR TO S4 EXCEPT WITH (2) HEADS AT 180-DEGREES.	
S5	-	-	SAME AS S2	1	-	277	-	86	95	SIMILAR TO S2 EXCEPT WITH TYPE V DISTRIBUTION.	
SA1/SA2	MUSCO	-	EPHESUS LUMA SPORT 8 SERIES	1	-	480	-	3530	3885	60' POLE WITH (1) Z1, (1) Z2, (2) Z3, AND (1) Z4 FIXTURES. COORDINATE POLE TYPE AND FIXTURE MOUNTING WITH POLE MANUFACTURER. POLE LOCATION IS APPROXIMATE, COORDINATE EXACT LOCATION WITH MFR AND ARCHITECT.	
SA3/SA4	MUSCO	-	EPHESUS LUMA SPORT 8 SERIES	1	-	480	-	5260	5790	70' POLE WITH (1) Z1, (1) Z2, AND (4) Z4 FIXTURES. COORDINATE POLE TYPE AND FIXTURE MOUNTING WITH POLE MANUFACTURER. POLE LOCATION IS APPROXIMATE, COORDINATE EXACT LOCATION WITH MFR AND ARCHITECT.	
SA5/SA6	MUSCO	-	EPHESUS LUMA SPORT 8 SERIES	1	-	480	-	5260	5790	70' POLE WITH (1) Z1, (1) Z2, AND (4) Z4 FIXTURES. POLE LOCATION IS APPROXIMATE, COORDINATE EXACT LOCATION WITH MFR AND ARCHITECT.	
SA7/SA8	MUSCO	-	EPHESUS LUMA SPORT 8 SERIES	1	-	480	-	5260	5790	70' POLE WITH (1) Z1, (1) Z2, AND (4) Z4 FIXTURES. COORDINATE POLE TYPE AND FIXTURE MOUNTING WITH POLE MANUFACTURER. POLE LOCATION IS APPROXIMATE, COORDINATE EXACT LOCATION WITH MFR AND ARCHITECT.	
SB1/SB2	MUSCO	-	EPHESUS LUMA SPORT 8 SERIES	1	-	480	-	6430	7075	60' POLE WITH (1) Z2 AND (7) Z4 FIXTURES. COORDINATE POLE TYPE AND FIXTURE MOUNTING WITH POLE MANUFACTURER. POLE LOCATION IS APPROXIMATE, COORDINATE EXACT LOCATION WITH MFR AND ARCHITECT.	
SB3	MUSCO	-	EPHESUS LUMA SPORT 8 SERIES	1	-	480	-	10590	11650	70' POLE WITH (1) Z1, (1) Z2, AND (7) Z5 FIXTURES. COORDINATE POLE TYPE AND FIXTURE MOUNTING WITH POLE MANUFACTURER. POLE LOCATION IS APPROXIMATE, COORDINATE EXACT LOCATION WITH MFR AND ARCHITECT.	
SB4	MUSCO	-	EPHESUS LUMA SPORT 8 SERIES	1	-	480	-	12020	13222	70' POLE WITH (1) Z1, (1) Z2, AND (8) Z5 FIXTURES. COORDINATE POLE TYPE AND FIXTURE MOUNTING WITH POLE MANUFACTURER. POLE LOCATION IS APPROXIMATE, COORDINATE EXACT LOCATION WITH MFR AND ARCHITECT.	
SB5/SB6	MUSCO	-	EPHESUS LUMA SPORT 8 SERIES	1	-	480	-	9160	10075	70' POLE WITH (1) Z1, (1) Z2, AND (6) Z5 FIXTURES. COORDINATE POLE TYPE AND FIXTURE MOUNTING WITH POLE MANUFACTURER. POLE LOCATION IS APPROXIMATE, COORDINATE EXACT LOCATION WITH MFR AND ARCHITECT.	
SB7/SB8	MUSCO	-	EPHESUS LUMA SPORT 8 SERIES	1	-	480	-	9160	10075	70' POLE WITH (1) Z1, (1) Z2, AND (6) Z5 FIXTURES. COORDINATE POLE TYPE AND FIXTURE MOUNTING WITH POLE MANUFACTURER. POLE LOCATION IS APPROXIMATE, COORDINATE EXACT LOCATION WITH MFR AND ARCHITECT.	
SC1/SC2	MUSCO	-	EPHESUS LUMA SPORT 8 SERIES	1	-	480	-	9730	10705	70' POLE WITH (2) Z2 AND (6) Z5 FIXTURES. COORDINATE POLE TYPE AND FIXTURE MOUNTING WITH POLE MANUFACTURER. POLE LOCATION IS APPROXIMATE, COORDINATE EXACT LOCATION WITH MFR AND ARCHITECT.	
SC3/SC4	MUSCO	-	EPHESUS LUMA SPORT 8 SERIES	1	-	480	-	6870	7560	70' POLE WITH (2) Z2 AND (4) Z5 FIXTURES. COORDINATE POLE TYPE AND FIXTURE MOUNTING WITH POLE MANUFACTURER. POLE LOCATION IS APPROXIMATE, COORDINATE EXACT LOCATION WITH MFR AND ARCHITECT.	
SC5/SC6	MUSCO	-	EPHESUS LUMA SPORT 8 SERIES	1	-	480	-	6870	7560	70' POLE WITH (2) Z2 AND (4) Z5 FIXTURES. COORDINATE POLE TYPE AND FIXTURE MOUNTING WITH POLE MANUFACTURER. POLE LOCATION IS APPROXIMATE, COORDINATE EXACT LOCATION WITH MFR AND ARCHITECT.	
SF	ECOSENSE LIGHTING	F080-2H-HO-40-9-05-K-E	RAB	1	INTEGRAL LED 4000K 90CRI 1,488 LUMENS	277	-	23	26	WET LOCATION RATED ADJUSTABLE ANGLE FLAGPOLE SPOT LIGHT SURFACE MOUNTED TO IN-GRADE LANDSCAPE ELECTRICAL BOX. FIXTURE TO BE BLACK WITH (2) HORIZONTALLY MOUNTED HIGH OUTPUT HEADS, 90 CRI, AND 5 DEGREE BEAM ANGLE	
SP	-	-	SAME AS S2	1	-	277	-	53	53	SIMILAR TO S2 EXCEPT WITH 53W (2) POWER DESIGNATOR.	
U1	HE WILLIAMS	1SF	-	1	INTEGRAL LED 2,400 LUMENS 4,000K 80 CRI	277	NON - DIMMING	21	24	4' UNDER CABINET LIGHT MOUNTED TO UNDERSIDE OF CABINET.	
V4A	COOPER	2VRVT3-LD5-4-W-UNV-L840-CD1	LITHONIA VAP LED SERIES	1	INTEGRAL LED 4,000 LUMENS 4,000K 80 CRI	120	0-10V	34	37	NOMINAL 4'L x 4" DEEP ENCLOSED LED STRIP, DURABLE POLYCARBONATE HOUSING, HIGH IMPACT, LATCHING, POLYCARBONATE LENSING, UNIVERSAL VOLTAGE DRIVER. UL LISTED FOR WET LOCATIONS, IP65 RATED.	
V4B	-	-	-	1	9,000 LUMENS	120	-	44	49	SIMILAR TO V4A EXCEPT HIGHER LUMEN OUTPUT AND 10-WATT EMERGENCY BATTERY	
W1	BEGA	33 419	LITHONIA HDWE2 LED SERIES WE-EF PIA-240 LED LIGMAN LIGHTING UMN-361 PERFORMANCE IN LIGHTING SHIELD SERIES	1	INTEGRAL LED 6,674 LUMENS 4,000K 80 CRI	277	0-10V	61	67	LED-Outline/line wall sconce/step light/underpass light. Die-cast aluminum housing. Universal voltage driver, UL wet location listed.	
W1A	-	-	-	1	-	120	-	61	67	SIMILAR TO W1 EXCEPT CONNECTED TO 120V SOURCE.	
W1E	-	-	-	1	-	277		61	67	SIMILAR TO W1 EXCEPT PROVIDED WITH IOTA ILB CP10 10-WATT REMOTE EMERGENCY BATTERY DRIVER. LOCATE IN NEAREST ACCESSIBLE CEILING LOCATION TO FIXTURE.	
W2	WE-EF LIGHTING	OLV344 LED-R65-RAL9004	LITHONIA WDGE2 LED SERIES	1	INTEGRAL LED 5,903 LUMENS 4,000K 80 CRI 60,000 HRS	277	NON-DIMMING	48	55	SURFACE MOUNTED WALL SECURITY LUMINAIRE, ALUMINUM FIXTURE BODY AND LENS FRAME, SILICONE RUBBER GASKETED, POLYMER COATED STAINLESS STEEL FASTENERS, TYPE IV DISTRIBUTION, UNIVERSAL VOLTAGE DRIVER, CONFIRM FINISH WITH ARCHITECT PRIOR TO ORDERING, IP65 RATED, UL WET LOCATION LISTED.	
W2E	-	-	-	1	-	277	-	48	51	SIMILAR TO W2 EXCEPT WITH 622-7402 EMERGENCY BATTERY.	
W8	FOCAL POINT	FSM4LWL-FL-625LF-40K-1C-UNV-LD1-XFW-WH-##	AXIS LIGHTING WET-BEAM 4 LED PINNACLE LIGHTING EDGE EV3WET MARK ARCHITECTURAL LIGHTING SLOT 4	1	INTEGRAL LED 625 LUMENS/FT 4,000K 80 CRI 61,000 HRS	277	0-10V, 10%	26	29	NOMINAL 4"W X 4"H RECESSED LINEAR LED LIGHT WITH FLUSH LENSING IN ARCHITECTURAL CEILING, COORDINATE CEILING TYPE WITH ARCHITECTURAL PLANS. ONE PIECE

EXTERIOR LIGHT FIXTURE SCHEDULE

TYPE	MANUFACTURER / MODEL #	ALTERNATES	LAMPING / LIGHT SOURCE	DIMMING TYPE	VOLTAGE	INPUT VA	DESCRIPTION	NOTES
SP	CREE LIGHTING OSQ-DA-BZ + OSQ-A-NM-2ME-Z-40K-UH-BZ	LITHONIA LIGHTING - DSX0 LED SERIES	LED 4000K 70CRI 6,896 LUMENS	0-10V	480V	53	SINGLE-HEAD, DARK-SKY-FRIENDLY PEDESTRIAN POLE LIGHT WITH TYPE 2 DISTRIBUTION, MOUNTED AT 12.5'.	
S2	CREE LIGHTING OSQ-DA-BZ + OSQ-A-NM-2ME-B-40K-UH-BZ	LITHONIA LIGHTING - DSX0 LED SERIES McGRAW EDISON GALLEON SERIES	LED 4000K 70CRI 11,424 LUMENS	0-10V	480V	83	SINGLE-HEAD, DARK-SKY-FRIENDLY PARKING LOT POLE LIGHT WITH TYPE 2 DISTRIBUTION, MOUNTED AT 15' OR 20'	
S3	CREE LIGHTING OSQ-DA-BZ + OSQ-A-NM-3ME-B-40K-UH-BZ	LITHONIA LIGHTING - DSX0 LED SERIES McGRAW EDISON GALLEON SERIES	LED 4000K 70CRI 11,424 LUMENS	0-10V	480V	83	SINGLE-HEAD, DARK-SKY-FRIENDLY PARKING LOT POLE LIGHT WITH TYPE 3 DISTRIBUTION, MOUNTED AT 15' OR 20'	
S4	CREE LIGHTING OSQ-DA-BZ + OSQ-A-NM-4ME-B-40K-UH-BZ	LITHONIA LIGHTING - DSX0 LED SERIES McGRAW EDISON GALLEON SERIES	LED 4000K 70CRI 11,424 LUMENS	0-10V	480V	83	SINGLE-HEAD, DARK-SKY-FRIENDLY PARKING LOT POLE LIGHT WITH TYPE 4 DISTRIBUTION, MOUNTED AT 15' OR 20'	
S4-2	CREE LIGHTING OSQ-DA-BZ + OSQ-A-NM-4ME-B-40K-UH-BZ	LITHONIA LIGHTING - DSX0 LED SERIES McGRAW EDISON GALLEON SERIES	LED 4000K 70CRI 11,424 LUMENS (PER HEAD)	0-10V	480V	83	TWO-HEAD, DARK-SKY-FRIENDLY PARKING LOT POLE LIGHT WITH TYPE 4 DISTRIBUTION, MOUNTED AT 15' OR 20'	
S5	CREE LIGHTING OSQ-DA-BZ + OSQ-A-NM-5ME-B-40K-UH-BZ	LITHONIA LIGHTING - DSX0 LED SERIES McGRAW EDISON GALLEON SERIES	LED 4000K 70CRI 11,424 LUMENS	0-10V	480V	83	SINGLE-HEAD, DARK-SKY-FRIENDLY PARKING LOT POLE LIGHT WITH TYPE 5 DISTRIBUTION, MOUNTED AT 15' OR 20'	
WW	BEGA 44 419-K4-BRZ	LITON - WLP32 DEXTERO SERIES VISIONARE LIGHTING - VSC-II SERIES	LED 4000K 70CRI 1,399 LUMENS	0-10V	120-277V	36	LED WALL MOUNTED LINEAR GRAZER LUMINAIRE, WET LOCATION RATED FOR PROTECTION CLASS IP 65.	
W1 W1E	BEGA 24 816-K4-BRZ		LED 4000K 70CRI 6,674 LUMENS	0-10V	120-277V	61	LED WALL LUMINARE WITH ASYMETRICAL LIGHT DISTRIBUTION, WET LOCATION RATED FOR PROTECTION CLASS IP 65. WITH BATTERY BACK-UP	
W2 W2E	WE-EF OLV344 LED-{R65}(622-7723)-5903LM-48W-4000K-RAL9004 OLV344 LED-{R65}(622-7723)-5903LM-48W-4000K-RAL9004-EM622-7402	LITHONIA LIGHTING	LED 4000K 80CRI 5903LUMENS		120-277V	55	BLACK WALL MOUNTED WET LOCATION RATED TYPE 4 DISTRIBUTION LED BACK OF HOUSE LUMINAIRE WITH BATTERY BACK-UP	
W8 W8E	FOCAL POINT SEEM 4 FSM4LWL-FL-625LF-40K-1C-UNV-LD1-*CEILING*-WH-8 FSM4LWL-FL-625LF-40K-1C-UNV-LD1-*CEILING*-EM-WH-8	MARK ARCHITECTURAL LIGHTING	LED 4000K 80CRI 625 LUMENS/FT	0-10V	120-277V	7 VA/FT	4" X8' LINEAR RECESSED LED CEILING MOUNTED LUMINARE WITH SYMMETRIC LIGHT DISTRIBUTION, WET LOCATION RATED WITH BATTERY BACK UP	
W16 CHANNEL: CH-013C-16FT-FR-RC-EC TAPE: DK41K-WR-24V W16E REMOTE DRIVER: 277 TO 24V	KELVIX		LED 4000K 80CRI 440 LUMENS/FT		24V/ 277V LED DRIVER	5 VA/FT	LED TAPE LIGHT WITH 2" BY 16' LED CHANNEL WITH BATTERY REMOTE BATTERY BACK-UP	

GENERAL NOTES:

A. REFER TO LIGHT FIXTURE SCHEDULE GENERAL NOTES AND SPECIFICATIONS FOR ADDITIONAL INFORMATION.

SPORTS LIGHTING FIXTURE SCHEDULE

POLE GROUP FIXTURE TAG	INDIVIDUAL FIXTURES	QUANTITY	MANUFACTURER / MODEL #	APPROVED ALTERNATES	LAMPING / LIGHT SOURCE	VOLTAGE	INPUT VA	TOTAL VA	DESCRIPTION	NOTES
Z1	S2	1	MUSCO TLC-LED-1200 - MH: 60'		LED 5700K 75 CRI 136,000 LUMENS	480V 3-PHASE	1170	3655	SPORTS LIGHTING	MUSCO TAGS A1, A2
	S4	2	MUSCO TLC-LED-900 - MH: 60'		LED 5700K 75 CRI 89,600 LUMENS	480V 3-PHASE	890		SPORTS LIGHTING	
	S3	1	MUSCO TLC-BT-575 - MH: 16'		LED 5700K 75 CRI 52,000 LUMENS	480V 3-PHASE	575		SPORTS LIGHTING	
	S5	1	CREE OSQ - MH: 30'		LED 5700K 70 CRI 16,599 LUMENS	480V 1-PHASE	130		PUBLIC LIGHTING	
Z2	S2	4	MUSCO TLC-LED-1200 - MH: 70'		LED 5700K 75 CRI 136,000 LUMENS	480V 3-PHASE	1170	5385	SPORTS LIGHTING	MUSCO TAGS A3, A4, A5, A6, A7, A8
	S3	1	MUSCO TLC-BT-575 - MH: 16'		LED 5700K 75 CRI 52,000 LUMENS	480V 3-PHASE	575		SPORTS LIGHTING	
	S5	1	CREE OSQ - MH: 30'		LED 5700K 70 CRI 16,599 LUMENS	480V 1-PHASE	130		PUBLIC LIGHTING	
Z3	S2	5	MUSCO TLC-LED-1200 - MH: 60'		LED 5700K 75 CRI 136,000 LUMENS	480V 3-PHASE	1170	6425	SPORTS LIGHTING	MUSCO TAG B1, B2
	S3	1	MUSCO TLC-BT-575 - MH: 16'		LED 5700K 75 CRI 52,000 LUMENS	480V 3-PHASE	575		SPORTS LIGHTING	
Z4	S1	7	MUSCO TLC-LED-1500 - MH: 70'		LED 5700K 75 CRI 160,000 LUMENS	480V 3-PHASE	1430	10715	SPORTS LIGHTING	MUSCO TAG B3
	S3	1	MUSCO TLC-BT-575 - MH: 16'		LED 5700K 75 CRI 52,000 LUMENS	480V 3-PHASE	575		SPORTS LIGHTING	
	S5	1	CREE OSQ - MH: 30'		LED 5700K 70 CRI 16,599 LUMENS	480V 1-PHASE	130		PUBLIC LIGHTING	
Z5	S1	8	MUSCO TLC-LED-1500 - MH: 70'		LED 5700K 75 CRI 160,000 LUMENS	480V 3-PHASE	1430	12145	SPORTS LIGHTING	MUSCO TAG B4
	S3	1	MUSCO TLC-BT-575 - MH: 16'		LED 5700K 75 CRI 52,000 LUMENS	480V 3-PHASE	575		SPORTS LIGHTING	
	S5	1	CREE OSQ - MH: 30'		LED 5700K 70 CRI 16,599 LUMENS	480V 1-PHASE	130		PUBLIC LIGHTING	
Z6	S1	6	MUSCO TLC-LED-1500 - MH: 70'		LED 5700K 75 CRI 160,000 LUMENS	480V 3-PHASE	1430	9285	SPORTS LIGHTING	MUSCO TAGS B5,B6,B7,B8
	S3	1	MUSCO TLC-BT-575 - MH: 16'		LED 5700K 75 CRI 52,000 LUMENS	480V 3-PHASE	575		SPORTS LIGHTING	
	S5	1	CREE OSQ - MH: 30'		LED 5700K 70 CRI 16,599 LUMENS	480V 1-PHASE	130		PUBLIC LIGHTING	
Z7	S1	6	MUSCO TLC-LED-1500 - MH: 70'		LED 5700K 75 CRI 160,000 LUMENS	480V 3-PHASE	1430	9730	SPORTS LIGHTING	MUSCO TAGS C1,C2
	S3	2	MUSCO TLC-BT-575 - MH: 16'		LED 5700K 75 CRI 52,000 LUMENS	480V 3-PHASE	575		SPORTS LIGHTING	
Z8	S1	4	MUSCO TLC-LED-1500 - MH: 70'		LED 5700K 75 CRI 160,000 LUMENS	480V 3-PHASE	1430	6870	SPORTS LIGHTING	MUSCO TAGS C3,C4,C5,C6
	S3	2	MUSCO TLC-BT-575 - MH: 16'		LED 5700K 75 CRI 52,000 LUMENS	480V 3-PHASE	575		SPORTS LIGHTING	

GENERAL...

A. REFER TO LIGHT FIXTURE SCHEDULE GENERAL NOTES AND SPECIFICATIONS FOR ADDITIONAL INFORMATION.

MUSCO LIGHTING REP:
TODD STYCH
MOBILE: 563-260-0994
PHONE: 844-232-6157
EMAIL: TODD.STYCH@MUSCO.COM

MULTI-BUTTON SWITCH SCHEDULE

**NOTE: PROVIDE FACTORY BUTTON ENGRAVING FOR ALL MULTI-BUTTON SWITCHES WITH MORE THAN ONE BUTTON UNLESS NOTED OTHERWISE. REFER TO BUTTON LABEL COLUMN FOR TEXT.

SWITCH	BUTTON	BUTTON LABEL	CONTROLLED LOAD (ZONE)	BUTTON OPERATION
LV1a	1A	ON/RAISE	a - GENERAL	50%, RAISE
	1B	OFF/LOWER	a - GENERAL	0%, LOWER
LV1b	1A	ON/RAISE	a - GENERAL	80%, RAISE
	1B	OFF/LOWER	a - GENERAL	0%, LOWER
LV	1A	ON	GENERAL ON	ON
	1B	OFF	GENERAL OFF	OFF
LV3a	1	RAISE	CURRENT ZONE	RAISE
	2	LOWER	CURRENT ZONE	LOWER
	3	ON/OFF	GENERAL	80%, 0% TOGGLE
LV4a	1	ON/RAISE	a - GENERAL	80%, RAISE
	2	OFF/LOWER	a - GENERAL	0%, LOWER
	3	ON/RAISE	b - GENERAL	80%, RAISE
	4	OFF/LOWER	b - GENERAL	0%, LOWER
LV4b	1	ON	a - ON	ON
	2	OFF	a - OFF	OFF
	3	ON	b - ON	ON
	4	OFF	b - OFF	OFF
LV5a	1A	RAISE	ALL ZONES	RAISE
	1B	LOWER	ALL ZONES	LOWER
	2	ALL ON/OFF	ALL ZONES	100%, 0% TOGGLE
	3	z15-ON/OFF	z15 - GENERAL	100%, 0% TOGGLE
	4	z16-ON/OFF	z16 - GENERAL	100%, 0% TOGGLE
	5	z17-ON/OFF	z17 - GENERAL	100%, 0% TOGGLE
LV5b	1A	RAISE	ALL ZONES	RAISE
	1B	LOWER	ALL ZONES	LOWER
	2	a-ON/OFF	a - GENERAL	100%, 0% TOGGLE
	3	b-ON/OFF	b - GENERAL	100%, 0% TOGGLE
	4	c-ON/OFF	c - GENERAL	100%, 0% TOGGLE
	5	d-ON/OFF	d - GENERAL	100%, 0% TOGGLE
LV5c	1A	RAISE	CURRENT ZONE	RAISE
	1B	LOWER	CURRENT ZONE	LOWER
	2	ALL ON/OFF	a - GEN., b - GEN., c - DAYLIGHTING	100%, 0% TOGGLE
	3	a-ON/FFF	a - GENERAL	100%, 0% TOGGLE
	4	b-ON/OFF	b - GENERAL	100%, 0% TOGGLE
	5	c-ON/OFF	c - GENERAL	100%, 0% TOGGLE
			NOTE: ZONE c DIMMING CONTROLLED BY PHOTOCELL	
LV8a	1	ALL ON	a - GENERAL, b - GENERAL-1, c - AV	80%
	2	ALL OFF	a - GENERAL, b - GENERAL-1, c - AV	0%
	3	GENERAL RAISE	a - GENERAL	RAISE
	4	GENERAL LOWER	a - GENERAL	LOWER
	5	GENERAL RAISE	b - GENERAL	RAISE
	6	GENERAL LOWER	b - GENERAL	LOWER
	7	AV RAISE	c - AV	RAISE
	8	AV LOWER	c - AV	LOWER
LV8b	1	ALL ON	a - BOH, b - GENERAL-1, c - GENERAL	50%
	2	ALL OFF	a - BOH, b - GENERAL-1, c - GENERAL	0%
	3	GENERAL RAISE	a - BOH	RAISE
	4	GENERAL LOWER	a - BOH	LOWER
	5	GENERAL RAISE	b - GENERAL	RAISE
	6	GENERAL LOWER	b - GENERAL	LOWER
	7	AV RAISE	c - GENERAL	RAISE
	8	AV LOWER	c - GENERAL	LOWER

LIGHTING CONTROL SEQUENCE OF OPERATIONS

LIGHTING CONTROL SEQUENCE OF OPERATIONS

General Note: Confirm all sensor time delays with owner and local codes prior to final programming.

A. GENERAL REQUIREMENTS
1. Emergency Lighting: Emergency egress lighting is powered from emergency battery ballasts and drivers integral to fixtures designated as emergency. Upon loss of power, all lights designated as emergency shall turn on at full emergency battery back-up output. ICC-500 shelter emergency fixtures to be equipped with a battery back-up that provides 2-hours of operation. All other emergency light fixtures shall have a battery back-up capable of 90 minutes of operation.
2. Security Lighting: Night lights, labeled "NL" in building corridors for security purposes:
3. Lighting control types: A combination of Occupancy Sensors for smaller rooms and public spaces and Networked Lighting Control Panels for general circulation and larger public spaces.
4. Networked Lighting Control Panels to be controlled via a combination of Time Switched and manual control via Interfaces provided in Reception D100A and Vestibule G11. Time Switch controls to be set to automatically switch the general circulation and public spaces on during building hours of operation and off after hours. Preliminary suggested hours of operation are 6:00 AM to 9:00 PM.
5. Occupancy sensors in front of house and back of house rooms to be set to time out as noted.
6. Electrical rooms, Mechanical rooms, Technology rooms and Janitor Rooms to be provided with line voltage switches for manual control.

B. ROOM CONTROLLER RC1
1. Manual Control: Occupant can manually control lights via local switch(es).
2. Occupancy: Occupant must manually turn on lights via low voltage.
3. Vacancy: After 20 minutes, all controlled loads shall turn off.

C. ROOM CONTROLLER RCR
1. Manual Control: Building facilities personnel can manually override lights via local keyed switch. Switched conductors from room controller to be routed through keyed switch.
2. Occupancy: Lights are auto on by occupancy sensor with a line voltage keyed switch acting as a master override for lights.
3. Vacancy: After 20 minutes, all controlled loads shall turn off.

D. ROOM CONTROLLER RC2
1. Manual Control: Occupant must manually control lights via local switch(es).
2. Occupancy: Occupant must manually turn on lights.
3. Vacancy: Occupant must manually turn off lights.

E. ROOM CONTROLLER TW1
1. Manual Control: Occupant can manually control lights and dimming via local switch(es).
2. Color Tuning: Fixtures can be color tuned via manual controller
3. Occupancy: Occupant must manually turn on lights.
4. Vacancy: After 30 minutes, all controlled loads shall turn off.

F. ROOM CONTROLLER TW2
1. Manual Control: Occupant must manually control lights and dimming via local switch(es) from outside the room.
2. Color Tuning: Fixtures can be color tuned via manual controller
3. Occupancy: Occupant must manually turn on lights from outside the room.
4. Vacancy: Occupant must manually turn off lights from outside the room.

G. ROOM CONTROLLER D1A
1. Manual Control: Occupant can manually control lights and dimming via local switch(es).
2. Occupancy: Occupant must manually turn on lights.
3. Vacancy: After 30 minutes, all controlled loads shall turn off.

H. ROOM CONTROLLER D1B
1. Manual Control: Occupant can manually control lights and dimming via local switch(es).
2. Occupancy: Occupant must manually turn on lights.
3. Vacancy: After 20 minutes, all controlled loads shall turn off.

I. ROOM CONTROLLER D1D
1. Manual Control: Occupant must manually control lights and dimming via local switch(es).
2. Occupancy: Occupant must manually turn on lights.
3. Vacancy: Occupant must manually turn off lights.
4. (4) local room controllers to be networked together for control of gym lights.

J. ROOM CONTROLLER D1E
1. Manual Control: Occupant must manually control lights and dimming via local switch(es).
2. Occupancy: Occupant must manually turn on lights.
3. Vacancy: Occupant must manually turn off lights.

K. ROOM CONTROLLER D2A
1. Manual Control: Occupant can manually control lights and dimming via local switch(es).
2. Occupancy: Occupant must manually turn on lights.
3. Vacancy: After 30 minutes, all controlled loads shall turn off.

L. ROOM CONTROLLER D2B
1. Manual Control: Occupant can manually control lights and dimming via local switch(es).
2. Occupancy: Occupant must manually turn on lights.
3. Vacancy: After 30 minutes, all controlled loads shall turn off.

M. ROOM CONTROLLER D3A
1. Manual Control: Occupant must manually control lights and dimming via local switch(es).
2. Occupancy: Occupant must manually turn on lights.
3. Vacancy: Occupant must manually turn off lights.

N. ROOM CONTROLLER D3B
1. Manual Control: Occupant must manually control lights and dimming via local switch(es).
2. Occupancy: Occupant must manually turn on lights.
3. Vacancy: Occupant must manually turn off lights.

O. EXTERIOR LIGHTING
1. Driveway, Pedestrian and Building Mounted Light Fixtures Automatic Control: Fixtures shall be controlled with astronomical time switch control in conjunction with a single photocell via lighting control panels.
A. Fixtures to operate from dusk until dawn.
B. Coordinate additional programing requirements with owner.
C. Refer to lighting controls panel schedules and lighting control panel portion of sequence of operations for more information.

2. **Parking Lot Pole Mounted Fixture Automatic Controls:**
A. Fixtures to operate from dusk until dawn, on/off functionality controlled by Synapse Wireless (mesh type) system photocell, located in main electrical room.
B. Parking lots to have a 50% reduction in light output 1-hour after close of business per city of Lee's Summit requirements. Coordinate close of business/district schedule with district and programming. Dimming to be provided by wireless system via twist-lock lighting controller (7-pin receptacle) located on each fixture.
C. Coordinate additional programing requirements with owner.

P. LIGHTING CONTROL PANELS LCP1A, LCP1B, LCP1C, LCP1D, LCP1E, LCP1G, LCP1S
1. New Lighting Control Panels to be networked together and interface with exterior photocell and astronomical time clock. Lighting Control Panels to be programmed to turn interior lighting on automatically during building hours of operation (6:00AM to 9:00PM) and accept on/off and dimming input from master controller/local switches. Exterior lighting to operate dusk to dawn. All programming and hours of operation to be coordinated with school district personnel.
2. Master Control Switches to provide 2-hour override of time clock during scheduled building vacancy hours. Individual on/off and dimming of select zones to be controlled by Master Control Switches during non-standard building events.
3. Control zones:

Zone z1: spare

Zone z2: Pedestrian and Driveway Site Light Fixtures (does not include parking lot poles) controlled by astronomical time clock and photocell via lighting control panels. Fixtures to operate from dusk to dawn

Zone z3: Exterior Building Mounted Light Fixtures (does not include parking lot poles) controlled by astronomical time clock and photocell via lighting control panels. Fixtures to operate from dusk to dawn

Zone z4: spare

Zone z5: General Circulation Corridors Levels 1&2 – automatically operated during hours of operation by time clock and manually controlled by master control switch(es) via lighting control panels

Zone z6: Learning Commons Corridors Levels 1&2– automatically operated during hours of operation by time clock and manually controlled by master control switch(es) via lighting control panels

Zone z7: Learning Commons Accent Lighting Level 1– automatically operated during hours of operation by time clock and manually controlled by master control switch(es) via lighting control panels

Zone z8: Learning Commons Clerestory Lighting Level 1– automatically operated during hours of operation by time clock and manually controlled and dimmed by master control switch(es) via lighting control panels

Zone z9 Medium Group Areas – automatically operated during hours of operation by time clock and manually controlled and dimmed by master control switch(es) via lighting control panels

Zone z10 Large Stair Lighting Areas – automatically operated during hours of operation by time clock and manually controlled and dimmed by master control switch(es) via lighting control panels

Zone z11 Spare

Zone z12 Spare

2 Zone z13 Theatrical lighting - controlled locally via DMX lighting controls board.

Zone z14 Platform General Lighting - routed through lighting control panel. Manually operated on/off and dimming controls via local switch.

Zone z15 Competition Gym North Lighting Zone – Manually operated on/off and dimming controls by lighting control switches via lighting control panel.

Zone z16 Competition Gym Central Lighting Zone – Manually operated on/off and dimming controls by lighting control switches via lighting control panel.

Zone z17 Competition Gym South Lighting Zone – Manually operated on/off and dimming controls by lighting control switches via lighting control panel.

Zone z18 Commons North Cylindrical - automatically operated during hours of operation by time clock and manually controlled and dimmed by master control switch(es) via lighting control panels

Zone z19 Commons East Cylindrical Fixtures - automatically operated during hours of operation by time clock and manually controlled and dimmed by master control switch(es) via lighting control panels

Zone z20 Commons South Cylindrical Fixtures - automatically operated during hours of operation by time clock and manually controlled and dimmed by master control switch(es) via lighting control panels

Zone z21 Commons West Cylindrical Fixtures - automatically operated during hours of operation by time clock and manually controlled and dimmed by master control switch(es) via lighting control panels

Zone z22 Commons West Linear Fixtures - automatically operated during hours of operation by time clock and manually controlled and dimmed by master control switch(es) via lighting control panels

Zone z23 Commons East Linear Fixtures - automatically operated during hours of operation by time clock and manually controlled and dimmed by master control switch(es) via lighting control panels

Zone z24 Spare

Zone z25 Spare

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STATE OF MISSOURI
CURTIS A. OLDS
NUMBER PE-2018036640
PROFESSIONAL ENGINEER

Oct 19 2020
CURTIS A. OLDS
LICENSE # PE-2018036640

HENDERSON ENGINEERS
8345 ENTERPRISE CIRCLE, SUITE 300
LENEXA, KS 66214
TEL 913.742.2000 FAX 913.742.0001
WWW.HENDERSONENGINEERS.COM
MO. CORPORATE NO. E-5060
EXPIRES 12/31/2020

LEE'S SUMMIT MIDDLE SCHOOL #4
LEE'S SUMMIT R-7 SCHOOL DISTRICT
1001 SE BAILEY ROAD
LEE'S SUMMIT, MO 64081

PACKAGE 3 - BUILDING & SITE
10/08/20
REVISIONS
ADDENDUM 002 10/19/20

13-20102-00

LIGHT FIXTURE SCHEDULES

E7.2

LCP1A - AREA A LIGHTING CONTROL PANEL

PANEL NAME: **LCP1A** MOUNTING: SURFACE
LOCATION: ELECTRICAL A114 VOLTAGE: AS SHOWN 6

RELAY	CIRCUIT	LOAD CONTROLLED	MODULE TYPE	VOLTAGE	LOAD (WATTS)	ZONE	CONTROL TYPE
1	2H1A-4	CORRIDORS A10,A12,G108,A13 LEVEL 1	0-10V	277		z5	TS/MC
2	2H1A-6	LEARNING COMMONS A100A LEVEL 1	0-10V	277		z6	TS/MC
3	2H1A-8	LEARNING COMMONS B100A ACCENT LTS LEVEL 1	0-10V	277		z7	TS/MC
4	2H1A-4	DISPLAY CASE LIGHTING LEVEL 1	0-10V	277		z8	TS/MC
5	2H2A-4	CORRIDORS A20,A22,A23 LEVEL 2	0-10V	277		z9	TS/MC
6	2H2A-4	MEDIUM GROUP A213 LEVEL 2	0-10V	277		z9	TS/MC
7	2H2A-6	LEARNING COMMONS CORRIDOR A21,A22 LEVEL 2	0-10V	277		z6	TS/MC
8	2H2A-8	LEARNING COMMONS CLERESTORY LEVEL 2	0-10V	277		z8	TS/MC
9	2H2A-4	DISPLAY CASE LIGHTING LEVEL 2	0-10V	277		z8	TS/MC
10		SPARE					TS/MC
11		SPARE					TS/MC
12	1H1A-8	AREA A EXTERIOR LIGHTS LEVELS 1 & 2	ND	277	820	z3	TS/PC
13		DRIVE LIGHTS					TS/DL
14		DRIVE LIGHTS					TS/DL
15		SPARE					TS
16		SPARE					TS
17		SPARE					TS/MC
18		SPARE					TS/MC

MODULE TYPE LEGEND:
ELV = ELECTRONIC LOW VOLTAGE DIMMING
MLV = MAGNETIC LOW VOLTAGE DIMMING
ND = SWITCHING ONLY LOAD (NO DIMMING)
FAN = FAN SPEED CONTROL
MOTOR = MOTOR CONTROL
0-10V = 0-10V DIMMING
2-WIRE = 2-WIRE DIMMING
3-WIRE = 3-WIRE DIMMING
DMX = COLOR CHANGING DIMMING
LV = LINE...

CONTROL TYPE LEGEND:
TS = TIME SWITCHED
MC = MANUAL CONTROL
DL = AUTOMATIC DIMMING BY DAY LIGHT SENSOR
PC = EXTERIOR PHOTOCELL CONTROLLED

NOTE:
RELAY NUMBERING ON SCHEDULE IS INTENDED TO COMMUNICATE DESIGN INTENT AND IS FOR INFORMATIONAL PURPOSES ONLY. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING FINAL RELAY CONFIGURATION WITH LIGHTING CONTROL VENDOR AND FIELD CONDITIONS.

LCP1B - AREA B LIGHTING CONTROL PANEL

PANEL NAME: **LCP1B** MOUNTING: SURFACE
LOCATION: ELECTRICAL B116 VOLTAGE: AS SHOWN

RELAY	CIRCUIT	LOAD CONTROLLED	MODULE TYPE	VOLTAGE	LOAD (WATTS)	ZONE	CONTROL TYPE
1	2H1B-4	CORRIDORS B10, B11, B12, B14 LEVEL 1	0-10V	277		z5	TS/MC
2	2H1B-6	LEARNING COMMONS B100A LEVEL 1	0-10V	277		z6	TS/MC
3	2H1B-6	LEARNING COMMONS B100A ACCENT LTS LEVEL 1	0-10V	277		z7	TS/MC
4	2H1B-4	STAIR 2 B104 LEVEL 1	0-10V	277		z10	TS/MC
5	2H1B-4	DISPLAY CASE LIGHTING LEVEL 1	0-10V	277		z8	TS/MC
6	2H2B-4	CORRIDORS B20,21,22 LEVEL 1	0-10V	277		z5	TS/MC
7	2H2B-6	LEARNING COMMONS CORRIDOR B200 LEVEL 2	0-10V	277		z6	TS/MC
8	2H2B-8	LEARNING COMMONS CLERESTORY B200A LEVEL 2	0-10V	277		z8	TS/MC
9	2H2B-10	STAIR 2 B20A LEVEL 2	0-10V	277		z10	TS/MC
10		SPARE					TS/MC
11		SPARE					TS/MC
12	2H1B-8	EXTERIOR LIGHTS AREA B LEVELS 1 & 2	ND	277		z3	TS/PC

MODULE TYPE LEGEND:
ELV = ELECTRONIC LOW VOLTAGE DIMMING
MLV = MAGNETIC LOW VOLTAGE DIMMING
ND = SWITCHING ONLY LOAD (NO DIMMING)
FAN = FAN SPEED CONTROL
MOTOR = MOTOR CONTROL
0-10V = 0-10V DIMMING
2-WIRE = 2-WIRE DIMMING
3-WIRE = 3-WIRE DIMMING
DMX = COLOR CHANGING DIMMING

CONTROL TYPE LEGEND:
TS = TIME SWITCHED
MC = MANUAL CONTROL
DL = AUTOMATIC DIMMING BY DAY LIGHT SENSOR
PC = EXTERIOR PHOTOCELL CONTROLLED

NOTE:
RELAY NUMBERING ON SCHEDULE IS INTENDED TO COMMUNICATE DESIGN INTENT AND IS FOR INFORMATIONAL PURPOSES ONLY. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING FINAL RELAY CONFIGURATION WITH LIGHTING CONTROL VENDOR AND FIELD CONDITIONS.

LCP1C - AREA C LIGHTING CONTROL PANEL

PANEL NAME: MOUNTING: SURFACE
LOCATION: ELECTRICAL A113 VOLTAGE: AS SHOWN

RELAY	CIRCUIT	LOAD CONTROLLED	MODULE TYPE	VOLTAGE	LOAD (WATTS)	ZONE	CONTROL TYPE
1	2H1C-4	CORRIDORS C10-C15 LEVEL 1	0-10V	277		z5	TS/MC
2	2H1C-6	LEARNING COMMONS C100A LEVEL 1	0-10V	277		z6	TS/MC
3	2H1C-8	LEARNING COMMONS B100A ACCENT LTS LEVEL 1	0-10V	277		z7	TS/MC
4	2H1C-4	STAIR 4 C10A LEVEL 1	0-10V	277		z10	TS/MC
5	2H1C-4	CORRIDOR ADMINISTRATION OFFICE	0-10V	277		z5	TS/MC
6	2H1C-4	MEDIUM GROUP C215 - LEVEL 1	0-10V	277		z9	TS/MC
7	2H1C-4	CORRIDORS C20,C21,C22 LEVEL 2	0-10V	277		z5	TS/MC
8	2H2C-6	LEARNING COMMONS CORRIDOR C200B LEVEL 2	0-10V	277		z6	TS/MC
9	2H2C-8	LEARNING COMMONS CLERESTORY B200A LEVEL 2	0-10V	277		z8	TS/MC
10	2H2C-10	STAIR 2 B20A LEVEL 2	0-10V	277		z10	TS/MC
11		SPARE					
12	2H1C-8	EXTERIOR LIGHTS AREA B LEVELS 1 & 2	ND	277		z3	TS/PC
13	2H1C-10	EXTERIOR FRONT ENTRY CANOPY	ND	277		z3	TS/PC
14	2H1C-10	EXTERIOR FRONT ENTRY VERTICAL ACCENT LTS	ND	277		z3	TS/PC
15	2H1C-16	EXTERIOR WEST DRIVE	ND	277		z2	TS/PC
16	2H1C-18	EXTERIOR SOUTH BUILDING MOUNTED LIGHTS	ND	277		z3	TS/PC
17	2H1C-20	EXTERIOR FLAGPOLE LIGHTS	ND	277		z3	TS/PC
18		SPARE					TS/MC

MODULE TYPE LEGEND:
ELV = ELECTRONIC LOW VOLTAGE DIMMING
MLV = MAGNETIC LOW VOLTAGE DIMMING
ND = SWITCHING ONLY LOAD (NO DIMMING)
FAN = FAN SPEED CONTROL
MOTOR = MOTOR CONTROL
0-10V = 0-10V DIMMING
2-WIRE = 2-WIRE DIMMING
3-WIRE = 3-WIRE DIMMING
DMX = COLOR CHANGING DIMMING

CONTROL TYPE LEGEND:
TS = TIME SWITCHED
MC = MANUAL CONTROL
DL = AUTOMATIC DIMMING BY DAY LIGHT SENSOR
PC = EXTERIOR PHOTOCELL CONTROLLED

NOTE:
RELAY NUMBERING ON SCHEDULE IS INTENDED TO COMMUNICATE DESIGN INTENT AND IS FOR INFORMATIONAL PURPOSES ONLY. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING FINAL RELAY CONFIGURATION WITH LIGHTING CONTROL VENDOR AND FIELD CONDITIONS.

LCP1G - AREA G LIGHTING CONTROL PANEL

PANEL NAME: **LCP1G** MOUNTING: SURFACE
LOCATION: ELECTRICAL A113 VOLTAGE: AS SHOWN

RELAY	CIRCUIT	LOAD CONTROLLED	MODULE TYPE	VOLTAGE	LOAD (WATTS)	ZONE	CONTROL TYPE
1	1H1G-15	CORRIDOR G10B,G10C,G10A, G10D	0-10V	277		z5	TS/MC
2		SPARE					
3		SPARE					
4		SPARE					
5		SPARE					
6		SPARE					
7		SPARE					
8		SPARE					
9		SPARE					
10		SPARE					
11		SPARE					
12	1H1G-19	EXTERIOR BUILDING MOUNTED LIGHTS	ND	277		z3	TS/PC

MODULE TYPE LEGEND:
ELV = ELECTRONIC LOW VOLTAGE DIMMING
MLV = MAGNETIC LOW VOLTAGE DIMMING
ND = SWITCHING ONLY LOAD (NO DIMMING)
FAN = FAN SPEED CONTROL
MOTOR = MOTOR CONTROL
0-10V = 0-10V DIMMING
2-WIRE = 2-WIRE DIMMING
3-WIRE = 3-WIRE DIMMING
DMX = COLOR CHANGING DIMMING

CONTROL TYPE LEGEND:
TS = TIME SWITCHED
MC = MANUAL CONTROL
DL = AUTOMATIC DIMMING BY DAY LIGHT SENSOR
PC = EXTERIOR PHOTOCELL CONTROLLED

NOTE:
RELAY NUMBERING ON SCHEDULE IS INTENDED TO COMMUNICATE DESIGN INTENT AND IS FOR INFORMATIONAL PURPOSES ONLY. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING FINAL RELAY CONFIGURATION WITH LIGHTING CONTROL VENDOR AND FIELD CONDITIONS.

LCP1F - AREA F LIGHTING CONTROL PANEL

PANEL NAME: **LCP1F** MOUNTING: SURFACE
LOCATION: STORAGE D112A VOLTAGE: AS SHOWN

RELAY	CIRCUIT	LOAD CONTROLLED	MODULE TYPE	VOLTAGE	LOAD (WATTS)	ZONE	CONTROL TYPE
1	1H1FA-17	STAGE PLATFORM LIGHTS	0-10V	277		z14	MC
2		SPARE	0-10V	277			TS/MC
3	1H1FA-3	COMMONS CYLINDRICAL FIXTURES NORTH	0-10V	277		z18	TS/MC
4	1H1FA-3	COMMONS CYLINDRICAL FIXTURES EAST	0-10V	277		z19	TS/MC
5	1H1FA-5	COMMONS CYLINDRICAL FIXTURES SOUTH	0-10V	277		z20	TS/MC
6	1H1FA-5	COMMONS CYLINDRICAL FIXTURES WEST	0-10V	277		z21	TS/MC
7	1H1FA-7	COMMONS LINEARS WEST	0-10V	277	1613	z22	TS/MC
8	1H1FA-9	COMMONS LINEARS EAST	0-10V	277	1665	z23	TS/MC
9	1H1FA-11	GYM LIGHTING ZONE NORTH	0-10V	277	3120	z15	MC
10	1H1FA-13	GYM LIGHTING ZONE CENTRAL	0-10V	277	3120	z16	MC
11	1H1FA-15	GYM LIGHTING ZONE SOUTH	0-10V	277	3120	z17	MC
12	1C1FA-12	GYM FRONT OF HOUSE THEATRICAL LIGHTING	DMX	120		z13	MC
13	1C1FA-14	STAGE LIGHTING ZONE #1	DMX	120		z13	MC
14	1C1FA-16	STAGE LIGHTING ZONE #2	DMX	120		z13	MC
15	1C1FA-18	STAGE LIGHTING ZONE #3	DMX	120		z13	MC
16	1C1FA-20	COMMONS FRONT OF HOUSE THEATRICAL LIGHTING	DMX	120		z13	MC
17		SPARE					
18		SPARE					
19		SPARE					
20		SPARE					
21		SPARE					
22		SPARE					
23		SPARE					
24		SPARE					

MODULE TYPE LEGEND:
ELV = ELECTRONIC LOW VOLTAGE DIMMING
MLV = MAGNETIC LOW VOLTAGE DIMMING
ND = SWITCHING ONLY LOAD (NO DIMMING)
FAN = FAN SPEED CONTROL
MOTOR = MOTOR CONTROL
0-10V = 0-10V DIMMING
2-WIRE = 2-WIRE DIMMING
3-WIRE = 3-WIRE DIMMING
DMX = COLOR CHANGING DIMMING

CONTROL TYPE LEGEND:
TS = TIME SWITCHED
MC = MANUAL CONTROL
DL = AUTOMATIC DIMMING BY DAY LIGHT SENSOR
PC = EXTERIOR PHOTOCELL CONTROLLED

NOTE:
RELAY NUMBERING ON SCHEDULE IS INTENDED TO COMMUNICATE DESIGN INTENT AND IS FOR INFORMATIONAL PURPOSES ONLY. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING FINAL RELAY CONFIGURATION WITH LIGHTING CONTROL VENDOR AND FIELD CONDITIONS.

LCP1E - AREA E LIGHTING CONTROL PANEL

PANEL NAME: **LCP1E** MOUNTING: SURFACE
LOCATION: ELECTRICAL E119 VOLTAGE: AS SHOWN

RELAY	CIRCUIT	LOAD CONTROLLED	MODULE TYPE	VOLTAGE	LOAD (WATTS)	ZONE	CONTROL TYPE
1	1H1E-11	CORRIDOR E10	0-10V	277		z5	TS/MC
2	1H1E-13	CORRIDOR E11A, E11B, D13,D14	0-10V	277		z5	TS/MC
3	1H1E-33	ENTRY CORRIDOR D11,D12	0-10V	277		z5	TS/MC
4		SPARE					TS/MC
5		SPARE					
6		SPARE					
7		SPARE					
8		SPARE					
9		SPARE					
10		SPARE					
11		SPARE					
12	1H1E-19	EXTERIOR FRONT ENTRY LETTER LIGHTS	ND	277		z3	TS/PC
13	1H1E-21	EXTERIOR ACCENT/EGRESS LIGHTS	ND	277		z3	TS/PC
14	1H1E-23	EXTERIOR SOUTH BUILDING MOUNTED LIGHTING	ND	277		z3	TS/PC
15		SPARE					
16		SPARE					
17		SPARE					
18		SPARE					

MODULE TYPE LEGEND:
ELV = ELECTRONIC LOW VOLTAGE DIMMING
MLV = MAGNETIC LOW VOLTAGE DIMMING
ND = SWITCHING ONLY LOAD (NO DIMMING)
FAN = FAN SPEED CONTROL
MOTOR = MOTOR CONTROL
0-10V = 0-10V DIMMING
2-WIRE = 2-WIRE DIMMING
3-WIRE = 3-WIRE DIMMING
DMX = COLOR CHANGING DIMMING

CONTROL TYPE LEGEND:
TS = TIME SWITCHED
MC = MANUAL CONTROL
DL = AUTOMATIC DIMMING BY DAY LIGHT SENSOR
PC = EXTERIOR PHOTOCELL CONTROLLED

NOTE:
RELAY NUMBERING ON SCHEDULE IS INTENDED TO COMMUNICATE DESIGN INTENT AND IS FOR INFORMATIONAL PURPOSES ONLY. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING FINAL RELAY CONFIGURATION WITH LIGHTING CONTROL VENDOR AND FIELD CONDITIONS.

LCP2C - AREA C LIGHTING CONTROL PANEL

PANEL NAME: **LCP2C** MOUNTING: SURFACE
LOCATION: C217B VOLTAGE: AS SHOWN

RELAY	CIRCUIT	LOAD CONTROLLED	MODULE TYPE	VOLTAGE	LOAD (WATTS)	ZONE	CONTROL TYPE
1	2C2C-38	RCPT- PIPE MOUNTED 1	DMX	120			MC
2	2C2C-40	RCPT- PIPE MOUNTED 2	DMX	120			MC
3	2C2C-42	RCPT- PIPE MOUNTED 3	DMX	120			MC
4	2C2C-44	RCPT- PIPE MOUNTED 4	DMX	120			MC
5	2C2C-46	RCPT- PIPE MOUNTED 5	DMX	120			MC
6	2C2C-48	FOS/4-16 - 1	DMX	120			MC
7	2C2C-50	FOS/4-16 - 2	DMX	120			MC
8	2C2C-52	FOS/4-16 - 3	DMX	120			MC
9	2C2C-54	FOS/4-16 - 4	DMX	120			MC
10	2C2C-56	FOS/4-8 - 1	DMX	120			MC
11	2C2C-58	FOS/4-8 - 2	DMX	120			MC
12	2C2C-60	FOS/4-8 - 3	DMX	120			MC
13	2C2C-62	FOS/4-8 - 4	DMX	120			MC
14	2C2C-64	FOS/4-8 - 5	DMX	120			MC
15	2C2C-66	FOS/4-8 - 6	DMX	120			MC
16		SPARE	DMX	120			MC
17		SPARE	DMX	120			MC
18		SPARE	DMX	120			MC
19		SPARE	DMX	120			MC
20		SPARE	DMX	120			MC
21		SPARE	DMX	120			MC
22		SPARE	DMX	120			MC
23		SPARE	DMX	120			MC
24		SPARE	DMX	120			MC

MODULE TYPE LEGEND:
ELV = ELECTRONIC LOW VOLTAGE DIMMING
MLV = MAGNETIC LOW VOLTAGE DIMMING
ND = SWITCHING ONLY LOAD (NO DIMMING)
FAN = FAN SPEED CONTROL
MOTOR = MOTOR CONTROL
0-10V = 0-10V DIMMING
2-WIRE = 2-WIRE DIMMING
3-WIRE = 3-WIRE DIMMING
DMX = COLOR CHANGING DIMMING

CONTROL TYPE LEGEND:
TS = TIME SWITCHED
MC = MANUAL CONTROL
DL = AUTOMATIC DIMMING BY DAY LIGHT SENSOR
PC = EXTERIOR PHOTOCELL CONTROLLED

NOTE:
RELAY NUMBERING ON SCHEDULE IS INTENDED TO COMMUNICATE DESIGN INTENT AND IS FOR INFORMATIONAL PURPOSES ONLY. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING FINAL RELAY CONFIGURATION WITH LIGHTING CONTROL VENDOR AND FIELD CONDITIONS.

LIGHTING CONTROL DEVICE SCHEDULE

NETWORK LIGHTING CONTROL SYSTEMS

NETWORK OCCUPANCY SENSORS

SYMBOL TAG	MANUFACTURER MODEL/SERIES	ALTERNATE MANUFACTURER	DEVICE DESCRIPTION	COVERAGE (W X D)	VOLTAGE	NOTES
2	LEGRAND LMPC-100-S	ACUITY, ETC	CEILING MOUNT PASSIVE INFRARED OCCUPANCY SENSOR. 360 DEGREE COVERAGE. DIGITAL. (2) RJ45 PORTS. IR TRANSCEIVER FOR WIRELESS SETUP. UP TO 40' MOUNTING HEIGHT.	MAJOR 70' Ø MINOR 40' Ø	24	
1	LEGRAND LMDC-100	ACUITY, CRESTRON ETC, HUBBELL	CEILING MOUNT DUAL TECHNOLOGY OCCUPANCY SENSOR. 360 DEGREE COVERAGE. DIGITAL. (2) RJ45 PORTS. IR TRANSCEIVER FOR WIRELESS SETUP.	PIR MAJOR 32' Ø PIR MINOR 15' Ø ULT MAJOR 25' x 25'	24	
T	FINELITE FFTCS-SR-OCC-CDT		CEILING MOUNT DUAL TECHNOLOGY OCCUPANCY SENSOR FOR TUNABLE WHITE FIXTURES. 360 DEGREE COVERAGE.			

NETWORK ROOM CONTROLLERS (POWER PACK)

SYMBOL TAG	MANUFACTURER MODEL/SERIES	ALTERNATE MANUFACTURER	DEVICE DESCRIPTION	VOLTAGE	NOTES
RC1 RCR	LEGRAND LMRC-101 (NON-DIM)	ACUITY, CRESTRON ETC, HUBBELL	DIGITAL ROOM CONTROLLER FOR ON/OFF CONTROL OF LIGHTING LOADS. (1) 20A LOAD INPUT, (1) RELAY OUTPUT. MANUAL- AND AUTO-ON MODES.	120/ 277	
RC2	LEGRAND LMRC-102 (NON-DIM)	ACUITY, CRESTRON ETC, HUBBELL	DIGITAL ROOM CONTROLLER FOR ON/OFF CONTROL OF LIGHTING LOADS. (1) 20A LOAD INPUT, (2) RELAY OUTPUTS. MANUAL-, PARTIAL-, AND AUTO-ON MODES.	120/ 277	
D1A D1B D1C D1D D1E	LEGRAND LMRC-211 (0-10V)	ACUITY, CRESTRON ETC, HUBBELL	DIGITAL ROOM CONTROLLER FOR ON/OFF/0-10V DIMMING CONTROL OF LIGHTING LOADS. (1) 20A LOAD INPUT, (1) RELAY OUTPUT. 100mA SINK PER RELAY. MANUAL-, PARTIAL-, AND AUTO-ON MODES.	120/ 277	
D2A D2B	LEGRAND LMRC-212 (0-10V)	ACUITY, CRESTRON ETC, HUBBELL	DIGITAL ROOM CONTROLLER FOR ON/OFF/0-10V DIMMING CONTROL OF LIGHTING LOADS. (1) 20A LOAD INPUT, (2) RELAY OUTPUTS. 100mA SINK PER RELAY. MANUAL-, PARTIAL-, AND AUTO-ON MODES.	120/ 277	
D3A	LEGRAND LMRC-213 (0-10V)	ACUITY, CRESTRON ETC, HUBBELL	DIGITAL ROOM CONTROLLER FOR ON/OFF/0-10V DIMMING CONTROL OF LIGHTING LOADS. (1) 20A LOAD INPUT, (3) RELAY OUTPUTS. 100mA SINK PER RELAY. MANUAL-, PARTIAL-, AND AUTO-ON MODES.	120/ 277	
TW1 TW2	FINELITE 0-10V LAYER PACK FTCS-LP-10V		DIGITAL ROOM CONTROLLER FOR ON/OFF PHASE DIMMING CONTROL OF LIGHTING AND COLOR TUNING CAPABILITY, (1) 20A LOAD INPUT, (1) 8A RELAY OUTPUTS	120/ 277	

NETWORK LIGHTING SWITCHES

SYMBOL TAG	MANUFACTURER MODEL/SERIES	ALTERNATE MANUFACTURER	DEVICE DESCRIPTION	VOLTAGE	NOTES
LV LV3a LV4a LV4b LV8a LV8b	LEGRAND LMSW-100 SERIES	ACUITY, CRESTRON ETC, HUBBELL	DIGITAL MULTI-BUTTON SWITCH FOR MANUAL ON/OFF AND SCENE CONTROL. EACH BUTTON CAN ALSO DIM LOAD UP/ DOWN AND HAS INTEGRAL LED THAT ILLUMINATES WHEN LOAD IS ON. (2) RJ45 PORTS. IR TRANSCEIVER FOR WIRELESS SETUP. SWITCH DESIGNATIONS VARY PER PROJECT; REFER TO LIGHTING PLANS AND/OR SWITCH SCHEDULE FOR...	24	
LV1b	LEGRAND LMDM-101	ACUITY, CRESTRON ETC, HUBBELL	DIGITAL SWITCH FOR MANUAL ON/OFF/DIMMING CONTROL. INTEGRAL LED ILLUMINATES WHEN LOAD IS ON. (2) RJ45 PORTS. IR TRANSCEIVER FOR WIRELESS SETUP.	24	
LV5b	LEGRAND LMSW-105	ACUITY, CRESTRON ETC, HUBBELL	DIGITAL 4-BUTTON SWITCH FOR MANUAL ON/OFF AND SCENE CONTROL WITH RAISE/LOWER. INTEGRAL LED AT EACH BUTTON ILLUMINATES WHEN LOAD IS ON. (2) RJ45 PORTS. IR TRANSCEIVER FOR WIRELESS SETUP. REFER TO SWITCH SCHEDULE FOR PROGRAMMING.	24	
TW	FINELITE FTCS-CS-TW-SO2-LXX-CBA		DIGITAL MULTI-BUTTON SWITCH FOR ON-OFF, DIMMING, COLOR TUNING, SCENE CONTROL COLOR BY ARCHITECT.	24	
LV5a	ETC ECHO-E1004		4- BUTTON CONTROL STATION FOR INTERFACE WITH THEATRICAL LIGHTING...	24	

ADDITIONAL NETWORK CONTROLS EQUIPMENT

SYMBOL TAG	MANUFACTURER MODEL/SERIES	ALTERNATE MANUFACTURER	DEVICE DESCRIPTION	VOLTAGE	NOTES
NONE	LEGRAND LMCT-100	ACUITY, CRESTRON ETC, HUBBELL DOUGLAS LIGHTING CONTROLS	WIRELESS CONFIGURATION TOOL WITH USB. 2-WAY IR COMMUNICATION FOR DATA UPLOAD, DOWNLOAD, CONFIRMATION, AND STORAGE. OLED SCREEN. PROVIDE ONE TOOL PER SYSTEM AND LEAVE WITH OWNER. (3) AAA BATTERIES INCLUDED.	BATTERY	
NONE	LEGRAND INTERFACE	ACUITY, CRESTRON ETC, HUBBELL	INPUT/OUTPUT (I/O) DEVICE FOR INTERFACE WITH SECURITY, FIRE ALARM, OR OTHER THIRD PARTY DEVICE/SYSTEM. (2) RJ45 PORTS. MANUFACTURER SHALL PROVIDE DEVICE AS REQUIRED TO CONNECT TO SYSTEM(S) AS SPECIFIED ON LIGHTING CONTROL DIAGRAM.	24	
NONE	LEGRAND LMIO-301	ACUITY, CRESTRON HUBBELL DOUGLAS LIGHTING CONTROLS	DIGITAL INPUT MODULE FOR LOW VOLT SENSORS/PHOTOCELLS. (2) RJ45 PORTS. CONVERTS CHANNELS TO DIGITAL. COMMUNICATES SINGLE STATE OF OCCUPANCY BUT MAY BE DRIVEN BY MULTIPLE SENSORS WIRED TOGETHER. PROVIDE QUANTITY AS REQUIRED TO MEET DESIGN SHOWN. LOW-VOLTAGE SENSOR(S) WILL STILL REQUIRE LOW-VOLTAGE POWER PACK(S).	24	
LCP1A LCP1B LCP1C LCP1E LCP1G	LEGRAND LMCP	ACUITY, CRESTRON ETC, HUBBELL DOUGLAS LIGHTING CONTROLS	FEED THROUGH RELAY PANEL. ASTRONOMIC TIMECLOCK. 99 LIGHTING GROUPS. BACNET MS/TP COMPATIBLE.(4) RJ45 PORTS. MOUNTING AS INDICATED ON RELAY PANEL SCHEDULE(S). REFER TO RELAY PANEL SCHEDULE(S) FOR MORE INFORMATION.	120/ 277	
LCP1F	ETC UNISON ECHO PANEL FEED THROUGH ERP24-FT24		FEED THROUGH RELAY PANEL WITH 0-10V DIMMING, TIMECLOCK AND DMX CONTROL. BACNET MS/TP COMPATIBLE. (4) RJ45 PORTS. SURFACE MOUNTED, AS INDICATED ON RELAY PANEL SCHEDULE(S). REFER TO RELAY PANEL SCHEDULE(S) FOR MORE INFORMATION.	120/ 277	
NONE	ETC DMX CONTROL ACCESSORIES		8-PORT SIMPLE NETWORK BOX WITH POE. ETC SNB-8 SWITCH INTERFACE: ETC ECHO E-WPW-DIN DMX CONTROL BOARD: ETC COLORSOURCE 20 CONTROL CONSOLE	120	
NONE	LEGRAND PROCESSOR	ACUITY, CRESTRON ETC, HUBBELL	CENTRAL LIGHTING CONTROL PROCESSOR. ASTRONOMIC TIMECLOCK. 99 LIGHTING GROUPS. BACNET/IP. SURFACE MOUNTED. PARTS AND PIECES PER MANUFACTURER. REFER TO LIGHTING CONTROL DIAGRAM FOR MORE INFORMATION.	120/ 277	
NONE	LEGRAND LMPO-200	ACUITY, CRESTRON ETC, HUBBELL DOUGLAS LIGHTING CONTROLS	EXTERIOR ANALOG PHOTOELECTRIC SWITCH. FACE SENSOR NORTH AND ORIENT VERTICALLY. 0-15 FC. 30 SECOND DELAY.	24	

GENERAL NOTES:
A. OCCUPANCY SENSOR LAYOUT DESIGNED FROM BASIS-OF-DESIGN COVERAGE PATTERNS. IF SUBMITTING ALTERNATE PER 'EQUIVALENT MANUFACTURER' COLUMN, ADJUST SENSOR QUANTITIES AND LOCATIONS PER MANUFACTURER-SPECIFIC SPACING CRITERIA.
B. PROVIDE SHOP DRAWINGS FOR ENGINEER AND ARCHITECT REVIEW THAT INCLUDE PRODUCT CUTSHEETS AND PROJECT-SPECIFIC LAYOUTS. LAYOUTS MUST INCLUDE SENSOR LOCATIONS, HEIGHTS, ORIENTATION, AND COVERAGE AREAS. SHOW COORDINATION WITH ALL OTHER CEILING DEVICES INCLUDING BUT NOT LIMITED TO HVAC SUPPLY AND RETURN GRILLES, SPRINKLERS, LIGHT FIXTURES, AND OTHER OWNER-PROVIDED CEILING MOUNTED DEVICES SUCH AS SPEAKERS, SECURITY CAMERAS, PROJECTORS, ETC. (SENSORS MAY BE ADVERSELY AFFECTED IF LOCATED TOO CLOSE TO OTHER CEILING MOUNTED DEVICES). ALSO PROVIDE SCHEMATICS AND SCHEDULES WHEN APPLICABLE.
C. LIGHTING CONTROLS PRICING SHALL BE COMPLETELY SEPARATE OF ANY LIGHT FIXTURE PRICING.
D. VERIFY COLOR(S) FOR ALL WALL AND CEILING MOUNTED DEVICES WITH THE ARCHITECT.
E. ALL WALL SWITCH AND CEILING SENSORS SHALL HAVE AN ADJUSTABLE TIME DELAY RANGE OF 0-30 MIN, UNO. CONFIRM SENSOR SETTINGS WITH SEQUENCE OF OPERATIONS AND OWNER PRIOR TO SYSTEM COMMISSIONING.
F. PROVIDE COPIES OF OPERATION AND MAINTENANCE INSTRUCTIONS FOR ALL DEVICES TO OWNER.
G. PROVIDE A NEUTRAL CONDUCTOR TO ALL WALL SWITCH LOCATIONS PER NEC REQUIREMENTS.
H. DO NOT SHARE NEUTRAL CONDUCTOR ON LOAD SIDE OF DIMMERS.

DLR Group

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STATE OF MISSOURI
CURTIS A. OLDS
NUMBER PE-2018036640
PROFESSIONAL ENGINEER

Oct 19 2020
CURTIS A. OLDS
LICENSE # PE-2018036640

HENDERSON ENGINEERS
8345 LENEXA DRIVE, SUITE 300
LENEXA, KS 66214
TEL 913.742.2800 FAX 913.742.0001
WWW.HENDERSONENGINEERS.COM
MO. CERTIFICATE NO.: E-5360
EXPIRES 12/31/2020

LEE'S SUMMIT MIDDLE SCHOOL #4
LEE'S SUMMIT R-7 SCHOOL DISTRICT
1001 SE BAILEY ROAD
LEE'S SUMMIT, MO 64081

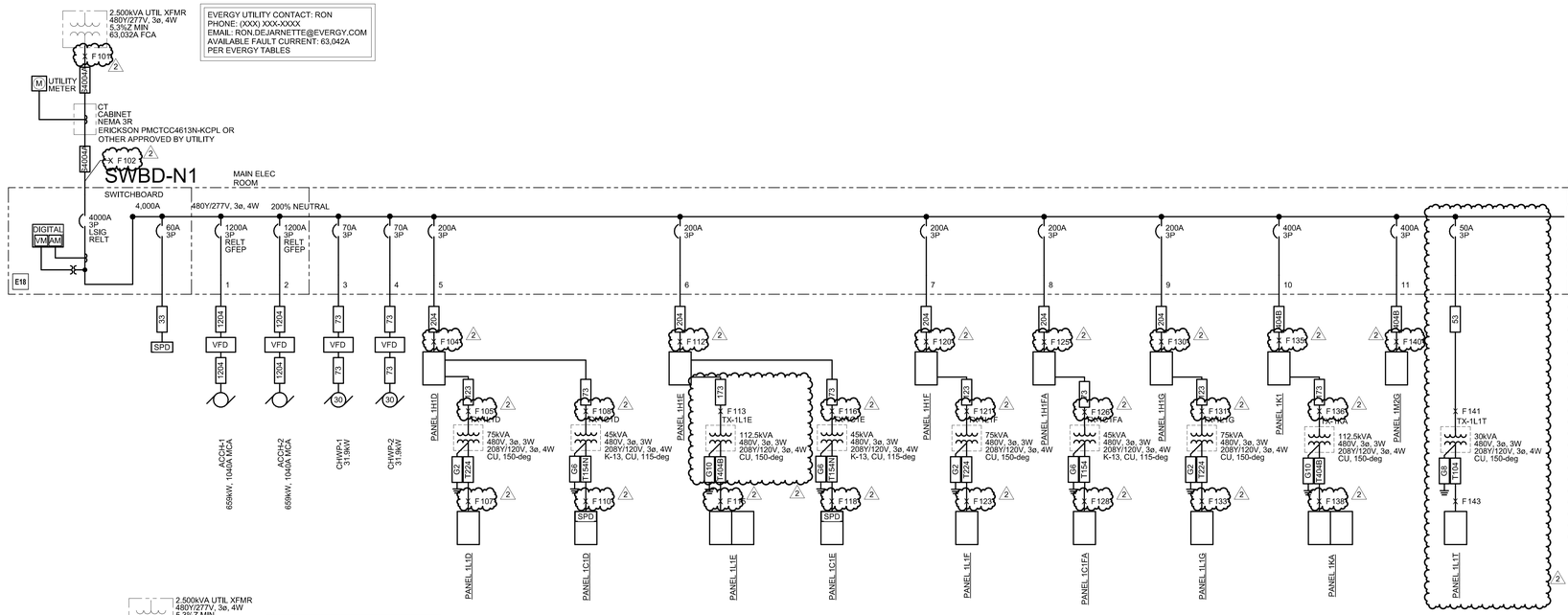
PACKAGE 3 - BUILDING & SITE
10/08/20
REVISIONS
ADDENDUM 002 10/19/20

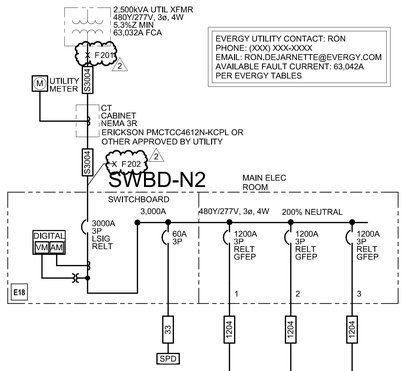
13-20102-00

LIGHTING CONTROL SCHEDULES

E7.3

CURTIS A. OLDS





SERVICE LOAD SUMMARY (SWBD-N1)

SERVICE OCCUPANCY TYPE: SCHOOL	SERVICE DESCRIPTION:
SERVICE SQUARE FOOTAGE: 70000	480Y/277 V

LOAD TYPE	CONNECTED LOAD	DEMAND FACTOR	NEC DEMAND
EXISTING LOAD (E)	0 VA	100%	0 VA
COOLING (C)	1327154 VA	100%	1327154 VA
HEATING (H)	13 VA	0%	0 VA
LIGHTING (L) (PER NEC-220)	210000 VA	125%	262500 VA
RECEPTACLES (R)	104340 VA	55%	57170 VA
MOTORS (M)	305164 VA	100%	305164 VA
SUPPLEMENTAL HEAT (U)	33227 VA	100%	33227 VA
MISC EQUIP (Z)	119910 VA	100%	119910 VA
REFRIGERATION (F)	17024 VA	100%	17024 VA
SIGN/DISPLAY (D)	0 VA	125%	0 VA
KITCHEN (K)	213409 VA	65%	138716 VA
LARGEST MOTOR	31870 VA	125%	39838 VA
SHOW WINDOW (W)	0 VA	125%	0 VA
TRACK LIGHTING	0 VA	100%	0 VA
TOTAL LOAD	2362111	VA	2300702
TOTAL AMPACITY	2841	AMPS	2767
SERVICE AMPACITY		AMPS	4000
SPARE CAPACITY		AMPS	1233

SERVICE LOAD SUMMARY (SWBD-N2)

SERVICE OCCUPANCY TYPE: SCHOOL	SERVICE DESCRIPTION:
SERVICE SQUARE FOOTAGE: 125000	480Y/277 V

LOAD TYPE	CONNECTED LOAD	DEMAND FACTOR	NEC DEMAND
EXISTING LOAD (E)	0 VA	100%	0 VA
COOLING (C)	25168 VA	100%	25168 VA
HEATING (H)	0 VA	0%	0 VA
LIGHTING (L) (PER NEC-220)	375000 VA	125%	468750 VA
RECEPTACLES (R)	293570 VA	52%	151785 VA
MOTORS (M)	161113 VA	100%	161113 VA
SUPPLEMENTAL HEAT (U)	22000 VA	100%	22000 VA
MISC EQUIP (Z)	109325 VA	100%	109325 VA
REFRIGERATION (F)	0 VA	100%	0 VA
SIGN/DISPLAY (D)	0 VA	125%	0 VA
KITCHEN (K)	112048 VA	65%	72831 VA
LARGEST MOTOR	24220 VA	125%	30275 VA
SHOW WINDOW (W)	0 VA	125%	0 VA
TRACK LIGHTING	0 VA	100%	0 VA
TOTAL LOAD	1122444	VA	1041247
TOTAL AMPACITY	1350	AMPS	1252
SERVICE AMPACITY		AMPS	3000
SPARE CAPACITY		AMPS	1748

LOAD SUMMARY: DP-2H1A

PANEL DESCRIPTION:	
480Y/277 V	

LOAD TYPE	CONNECTED LOAD	DEMAND FACTOR	NEC DEMAND
EXISTING LOAD (E)	0 VA	100%	0 VA
COOLING (C)	11440 VA	100%	11440 VA
HEATING (H)	0 VA	0%	0 VA
LIGHTING (L)	21654 VA	125%	27068 VA
RECEPTACLES (R)	88380 VA	56%	49190 VA
MOTORS (M)	59643 VA	100%	59643 VA
SUPPLEMENTAL HEAT (U)	22000 VA	100%	22000 VA
MISC EQUIP (Z)	61430 VA	100%	61430 VA
REFRIGERATION (F)	0 VA	100%	0 VA
SIGN/DISPLAY (D)	0 VA	125%	0 VA
KITCHEN (K)	1500 VA	100%	1500 VA
LARGEST MOTOR	15300 VA	125%	19125 VA
SHOW WINDOW (W)	0 VA	125%	0 VA
TRACK LIGHTING	0 VA	100%	0 VA
TOTAL LOAD	281347	VA	251396
TOTAL AMPACITY	338	AMPS	302
PANEL AMPACITY		AMPS	1200
SPARE CAPACITY		AMPS	898

LOAD SUMMARY: DP-2H1B

PANEL DESCRIPTION:	
480Y/277 V	

LOAD TYPE	CONNECTED LOAD	DEMAND FACTOR	NEC DEMAND
EXISTING LOAD (E)	0 VA	100%	0 VA
COOLING (C)	4576 VA	100%	4576 VA
HEATING (H)	0 VA	0%	0 VA
LIGHTING (L)	20706 VA	125%	25883 VA
RECEPTACLES (R)	100970 VA	55%	55485 VA
MOTORS (M)	34252 VA	100%	34252 VA
SUPPLEMENTAL HEAT (U)	0 VA	100%	0 VA
MISC EQUIP (Z)	39715 VA	100%	39715 VA
REFRIGERATION (F)	0 VA	100%	0 VA
SIGN/DISPLAY (D)	0 VA	125%	0 VA
KITCHEN (K)	102548 VA	65%	66656 VA
LARGEST MOTOR	15300 VA	125%	19125 VA
SHOW WINDOW (W)	0 VA	125%	0 VA
TRACK LIGHTING	0 VA	100%	0 VA
TOTAL LOAD	318067	VA	245692
TOTAL AMPACITY	383	AMPS	296
PANEL AMPACITY		AMPS	1200
SPARE CAPACITY		AMPS	904

LOAD SUMMARY: DP-2H1C

PANEL DESCRIPTION:	
480Y/277 V	

LOAD TYPE	CONNECTED LOAD	DEMAND FACTOR	NEC DEMAND
EXISTING LOAD (E)	0 VA	100%	0 VA
COOLING (C)	9152 VA	100%	9152 VA
HEATING (H)	0 VA	0%	0 VA
LIGHTING (L)	31189 VA	125%	38986 VA
RECEPTACLES (R)	104220 VA	55%	57110 VA
MOTORS (M)	36618 VA	100%	36618 VA
SUPPLEMENTAL HEAT (U)	0 VA	100%	0 VA
MISC EQUIP (Z)	8180 VA	100%	8180 VA
REFRIGERATION (F)	0 VA	100%	0 VA
SIGN/DISPLAY (D)	0 VA	125%	0 VA
KITCHEN (K)	8000 VA	65%	5200 VA
LARGEST MOTOR	24220 VA	125%	30275 VA
SHOW WINDOW (W)	0 VA	125%	0 VA
TRACK LIGHTING	0 VA	100%	0 VA
TOTAL LOAD	221579	VA	185521
TOTAL AMPACITY	267	AMPS	223
PANEL AMPACITY		AMPS	1200
SPARE CAPACITY		AMPS	977

1 ELECTRICAL ONE-LINE DIAGRAM - SCHOOL BUILDING
NTS

ELECTRICAL EQUIPMENT NAMING CONVENTION

TYPE
SWGR = SWITCHGEAR
SWBD = SWITCHBOARD
DP = DISTRIBUTION PANEL
PNL/(BLANK) = BRANCH PANEL

SERVICE IDENTIFICATION
1 = SERVICE #1
2 = SERVICE #2

VOLTAGE
H = 480Y/277V, GENERAL LOADS
M = 480Y/277V, MECHANICAL LOADS
L = 208Y/120V, GENERAL LOADS
C = 208Y/120V, COMPUTER TYPE LOADS
K1 = 480Y/277V, KITCHEN
KA = 208Y/120V, KITCHEN

FLOOR
1 = FIRST FLOOR
2 = SECOND FLOOR

AREA
A = AREA A
B = AREA B
..
G = AREA G

FEEDER SCHEDULE:

SIZES ARE BASED ON COPPER (CU) THHN/THWN-2 INSULATION, UNO. ALL CONDUCTOR SIZES ARE BASED ON 75 DEG C RATED TERMINATIONS, UNO. CONDUIT SIZES SHOWN ARE APPROPRIATE FOR SCHEDULE 40 PVC, EMT, GRS, IMC AND RMC; ADJUST SIZE AS NEEDED FOR OTHER RACEWAY TYPES. FOR ANY OTHER CONDITIONS MODIFY SIZES PER CODE. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.

- "A" PREFIX INDICATES ALUMINUM CONDUCTORS AND ARE BASED ON XHHW-2 INSULATION.
- "S" PREFIX INDICATES SERVICE ENTRANCE LATERALS.
- "T" PREFIX INDICATES TRANSFORMER SECONDARY;
- "V" PREFIX INDICATES UPSIZED FOR VOLTAGE DROP. PROVIDE LUG ADAPTERS AS REQUIRED FOR EQUIPMENT TERMINATION.

LETTERED SUFFIX INDICATES ALTERNATE FEEDER CONFIGURATIONS.
"N" SUFFIX INDIATES 200% NEUTRAL CONDUCTORS

FEEDER TAG	FEEDER DESCRIPTION
33	(3)#10, (1)#10 G, 1/2" C
53	(3)#6, (1)#10 G, 1" C
63E	(3)#4, (1)#4 G, 1-1/2" C
73	(3)#4, (1)#8 G, 1" C
104	(4)#3, (1)#8 G, 1-1/4" C
123	(3)#1, (1)#6G, 1-1/2" C
173	(3)#2/0, (1)#6 G, 1-1/2" C
204	(4)#3/0, (1)#6 G, 2" C
404B	(4)-600 kcmil, (1)#3 G, 3-1/2" C
1204	(4) 3" C, EACH W/ (4)-350 kcmil, (1)#3/0 G
G2	#2 COPPER GROUND, 3/4" C
G4	#4 COPPER GROUND, 3/4" C
G6	#6 COPPER GROUND, 3/4" C
G8	#8 COPPER GROUND, 3/4" C
G10	#1/0 COPPER GROUND, 3/4" C
G20	#2/0 COPPER GROUND, 3/4" C
G30	#3/0 COPPER GROUND, 1" C
MBJ	#750 CU
S604	(2) 3" C, EACH W/ (4)-350 kcmil
S3004	(8) 3" C, EACH W/ (4)-500 kcmil
S4004A	(11) 4" C, EACH W/ (4)-500 kcmil
T104	(4)#3, (1)#8 SSBJ, 1-1/4" C
T154	(4)#1/0, (1)#6 SSBJ, 1-1/2" C
T154N	(5)#1/0, (1)#6 SSBJ, 1-1/2" C
T204	(4)#3/0, (1)#4 SSBJ, 2" C
T224	(4)#4/0, (1)#2 SSBJ, 2-1/2" C
T404B	(4)-600 kcmil, (1)#1/0 SSBJ, 4" C
TG30	#3/0 cu
V064C	(4)#2, (1)#4 G, 1-1/4" C
V064G	(4)#1, (1)#4 G, 1-1/2" C

☐ ELECTRICAL PLAN NOTES:

E18 NEUTRAL-GROUND BOND PROVIDED IN THIS SECTION. RE: E4.0 AND E5.1.

E66 PROVIDE LOCKABLE OVER CURRENT PROTECTION DEVICE TO FEED TRANSFORMER AND PROVIDE SIGNAGE AT TRANSFORMER TO DESCRIBE THE LOCATION OF TRANSFORMER PRIMARY OVER CURRENT DEVICE TO COMPLY WITH NEC 450.14 DISCONNECTING MEANS REQUIREMENTS.

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STATE OF MISSOURI
CURTIS A. OLDS
NUMBER PE-2018036640
PROFESSIONAL ENGINEER
Oct 19 2020
CURTIS A. OLDS
LICENSE # PE-2018036640

HENDERSON ENGINEERS
8345 LENEXA DRIVE, SUITE 300
LENEXA, KS 66214
TEL 913.742.2800 FAX 913.742.0001
WWW.HENDERSONENGINEERS.COM
COA #E-2008
MO. CORPORATE NO. E-5060
EXPIRES 12/31/2020

LEE'S SUMMIT MIDDLE SCHOOL #4

LEE'S SUMMIT R-7 SCHOOL DISTRICT

1001 SE BAILEY ROAD
LEE'S SUMMIT, MO 64081

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ADDENDUM 002 10/19/20

13-20102-00

ELECTRICAL ONE-LINE DIAGRAM

E8.1

CURTIS A. OLDS

Short-Circuit and Voltage Drop Calculations

Distances are for calculation purposes only and shall not be used for contractor takeoffs nor bidding - Contractor shall notify Engineer of any field condition that results in a change of 10% or greater circuit distance

The following calculations are based on the "Point-by-Point" method where:
ISC (2) = ISC(1) x M(1) M= 1/(1+f)
ISC (1) = short circuit current at fault point 1
ISC (2) = short circuit current at fault point 2

Feeder: f (3Ø) = 1.732 x L x Isc / C x E
XFMR: f (3Ø) = IP(sca)x Vp x 1.73 x %Z / 100,000 x KVA
IS(sca)= Vp x M x IP(sca) / Vs

Feeder: f (1Ø)= 2 x L x Isc / C x E
XFMR: f (1Ø)= IP(sca)x Vp x %Z / 100,000 x KVA

VOLTAGE DROP (3Ø):
%VD= ((R x cos(arccos(pf)) + X x sin (arccos(pf))) x L/# x I x 1.73) / E
VOLTAGE DROP (1Ø):
%VD= ((R x cos(arccos(pf)) + X x sin(arccos(pf))) x 2 x L/# x I) / E

IP = Primary short circuit current
Vp = Primary voltage
IS= Secondary short circuit current
Vs= Secondary voltage
L = Length of circuit E = Line to line volts
C = "C" Factor from Bussman table where "C" = 1 / impedance per linear foot

%VD CUM= Cumulative Voltage Drop from Fault Point 1 to Fault Point #
R= resistance in ohms per LF
X= reactances in ohms per LF

Feeder Types =
NM - Non Magnetic Conduit, M - Magnetic Conduit, FB - Feeder Busway, PB - Plug-in Busway, TX - Transformer

Fault Point (F#)	Bus/Feeder Description	Source (Fault Point)	Phase	Source Isc (amps)	Feeder: Conduit Type/ TX	Feeder: Material	Feeder: Quantity of Parallel Sets and Bus/ Phase & Neutral Size			Conductor 'C' Value	Busway 'C' Value	L-L Voltage (E)	Circuit Length (L)	Load Power Factor (pf)	Circuit Load (Amperage)	Conductor: Resistance (R)	Conductor: Reactance (X)	Conductor: Arccos (pf) (Radians)	Transformer: Type	Transformer: Degree Rise	Transformer: kVA	Transformer: New Xfmr Z	Transformer: Existing Xfmr Z	Transformer: Secondary Voltage	Transformer: Tap Setting	f	M	Fault Current (amps)	Voltage Drop (%VD)	Cumulative Voltage Drop (%VD)	Fault Point (F#)
2 101	Utility Service Point			63,042 at the secondary of the utility transformer																							Source Isc = 6X Motor Contribution =		63042			101
	Motor Contribution			The connected full load motor amps (includes compressors) on the system																												
102	To SWBD-N1	101	3	63042	NM	CU	11	Set(s) of	500		26706	--	480	40	0.9	3200	0.000027	0.000039	0.451027								0.031	0.97	61148	-0.17%	-0.17%	102
103																																103
104	To Pnl 1H1D	102	3	61148	M	CU	1	Set(s) of	3/0	AWG	12844	--	480	190	0.9	160	0.000079	0.000052	0.451027								3.264	0.23	14340	-1.03%	-1.20%	104
105	To TX-1L1D	104	3	14340	M	CU	1	Set(s) of	1	AWG	7293	--	480	10	0.9	100	0.000160	0.000057	0.451027								0.071	0.93	13390	-0.06%	-1.26%	105
106	TX-1L1D	105	3	13390	TX								480							DOE	150	75	3.61		208						5.358	0.16	4860		-1.26%	106
107	To Pnl 1L1D	106	3	4860	M	CU	1	Set(s) of	4/0	AWG	15082	--	208	10	0.9	180	0.000063	0.000051	0.451027								0.027	0.97	4733	-0.12%	-1.38%	107
108	To TX-1C1D	104	3	14340	M	CU	1	Set(s) of	4	AWG	3806	--	480	10	0.9	56	0.000310	0.000060	0.451027								0.136	0.88	12624	-0.06%	-1.26%	108
109	TX-1C1D	108	3	12624	TX								480							K-13	115	45	2.67		208						6.227	0.14	4031		-1.26%	109
110	To Pnl 1C1D	109	3	4031	M	CU	1	Set(s) of	1/0	AWG	8925	--	208	10	0.9	120	0.000120	0.000055	0.451027								0.038	0.96	3885	-0.13%	-1.40%	110
111																																111
112	To Pnl 1H1E	102	3	61148	M	CU	1	Set(s) of	3/0	AWG	12844	--	480	275	0.9	160	0.000079	0.000052	0.451027								4.724	0.17	10682	-1.49%	-1.66%	112
113	To TX-1L1E	112	3	10682	M	CU	1	Set(s) of	1	AWG	7293	--	480	10	0.9	100	0.000160	0.000057	0.451027								0.053	0.95	10146	-0.06%	-1.72%	113
114	TX-1L1E	113	3	10146	TX								480							DOE	150	75	3.61		208						4.060	0.20	4627		-1.72%	114
115	To Pnl 1L1E	114	3	4627	M	CU	1	Set(s) of	4/0	AWG	15082	--	208	10	0.9	180	0.000063	0.000051	0.451027								0.026	0.98	4512	-0.12%	-1.84%	115
116	To TX-1C1E	112	3	10682	M	CU	1	Set(s) of	4	AWG	3806	--	480	10	0.9	56	0.000310	0.000060	0.451027								0.101	0.91	9700	-0.06%	-1.72%	116
117	TX-1C1E	116	3	9700	TX								480							K-13	115	45	2.67		208						4.785	0.17	3870		-1.72%	117
118	To Pnl 1C1E	117	3	3870	M	CU	1	Set(s) of	1/0	AWG	8925	--	208	10	0.9	120	0.000120	0.000055	0.451027								0.036	0.97	3735	-0.13%	-1.86%	118
119																																119
120	To Pnl 1H1F	102	3	61148	M	CU	1	Set(s) of	3/0	AWG	12844	--	480	210	0.9	160	0.000079	0.000052	0.451027								3.608	0.22	13271	-1.14%	-1.31%	120
121	To TX-1L1F	120	3	13271	M	CU	1	Set(s) of	1	AWG	7293	--	480	10	0.9	100	0.000160	0.000057	0.451027								0.066	0.94	12453	-0.06%	-1.37%	121
122	TX-1L1F	121	3	12453	TX								480							DOE	150	75	3.61		208						4.983	0.17	4803		-1.37%	122
123	To Pnl 1L1F	122	3	4803	M	CU	1	Set(s) of	4/0	AWG	15082	--	208	10	0.9	180	0.000063	0.000051	0.451027								0.027	0.97	4679	-0.12%	-1.49%	123
124																																124
125	To Pnl 1H1FA	102	3	61148	M	CU	1	Set(s) of	3/0	AWG	12844	--	480	210	0.9	160	0.000079	0.000052	0.451027								3.608	0.22	13271	-1.14%	-1.31%	125
126	To TX-1C1FA	125	3	13271	M	CU	1	Set(s) of	4	AWG	3806	--	480	10	0.9	56	0.000310	0.000060	0.451027								0.126	0.89	11788	-0.06%	-1.37%	126
127	TX-1C1FA	126	3	11788	TX								480							K-13	115	45	2.67		208						5.815	0.15	3992		-1.37%	127
128	To Pnl 1C1FA	127	3	3992	M	CU	1	Set(s) of	1/0	AWG	8925	--	208	10	0.9	120	0.000120	0.000055	0.451027								0.037	0.96	3848	-0.13%	-1.50%	128
129																																129
130	To Pnl 1H1G	102	3	61148	M	CU	1	Set(s) of	3/0	AWG	12844	--	480	40	0.9	160	0.000079	0.000052	0.451027								0.687	0.59	36243	-0.22%	-0.39%	130
131	To TX-1L1G	130	3	36243	M	CU	1	Set(s) of	1	AWG	7293	--	480	10	0.9	100	0.000160	0.000057	0.451027								0.179	0.85	30732	-0.06%	-0.45%	131
132	TX-1L1G	131	3	30732	TX								480							DOE	150	75	3.61		208						12.298	0.08	5333		-0.45%	132
133	To Pnl 1L1G	132	3	5333	M	CU	1	Set(s) of	4/0	AWG	15082	--	208	10	0.9	180	0.000063	0.000051	0.451027								0.029	0.97	5181	-0.12%	-0.57%	133
134																																134
135	To 1K1	102	3	61148	M	CU	1	Set(s) of	600	kcmil	22965	--	480	125	0.9	320	0.000025	0.000048	0.451027								1.201	0.45	27782	-0.63%	-0.80%	135
136	To TX-1KA	135	3	27782	M	CU	1	Set(s) of	2/0	AWG	10755	--	480	10	0.9	140	0.000100	0.000054	0.451027								0.093	0.91	25413	-0.06%	-0.86%	136
137	TX-1KA	136	3	25413	TX								480							DOE	150	112.5	4.37		208						8.207	0.11	6370		-0.86%	137
138	To Pnl 1KA	137	3	6370	M	CU	1	Set(s) of	600	kcmil	22965	--	208	10	0.9	320	0.000025	0.000048	0.451027								0.023	0.98	6226	-0.12%	-0.97%	138
139																																139
140	To Pnl 1M2G	102	3	61148	M	CU	1	Set(s) of	600	kcmil	22965	--	480	100	0.9	320	0.000025	0.000048	0.451027								0.961	0.51	31185	-0.50%	-0.67%	140
141																																141
142	To TX-1L1T	102	3	61148	NM	CU	1	Set(s) of	9	AWG	2430	--	480	300	0.9	40	0.00048	0.000051	0.451027								27.241	0.04	2165	-2.01%	-2.18%	142
143	TX-1L1T	142	3	2165	TX								480							DOE	150	30	2.44		208						1.464	0.41	2028		-2.18%	143
144	To Pnl 1L1T	143	3	2028	M	CU	1	Set(s) of	9	AWG	4774	--	208	10	0.9	80	0.000250	0.000059	0.451027								0.035	0.97	1958	-0.17%	-2.35%	144

Short-Circuit and Voltage Drop Calculations

Distances are for calculation purposes only and shall not be used for contractor takeoffs nor bidding - Contractor shall notify Engineer of any field condition that results in a change of 10% or greater circuit distance

The following calculations are based on the "Point-by-Point" method where:
ISC (2) = ISC(1) x M(1) M= 1/(1+f)
ISC (1) = short circuit current at fault point 1
ISC (2) = short circuit current at fault point 2

Feeder: f (3Ø) = 1.732 x L x Isc / C x E
XFMR: f (3Ø) = IP(sca)x Vp x 1.73 x %Z / 100,000 x KVA
IS(sca)= Vp x M x IP(sca) / Vs

Feeder: f (1Ø)= 2 x L x Isc / C x E
XFMR: f (1Ø)= IP(sca)x Vp x %Z / 100,000 x KVA

VOLTAGE DROP (3Ø):
%VD= ((R x cos(arccos(pf)) + X x sin (arccos(pf))) x L/# x I x 1.73) / E
VOLTAGE DROP (1Ø):
%VD= ((R x cos(arccos(pf)) + X x sin(arccos(pf))) x 2 x L/# x I) / E

IP = Primary short circuit current
Vp = Primary voltage
IS= Secondary short circuit current
Vs= Secondary voltage
L = Length of circuit E = Line to line volts
C = "C" Factor from Bussman table where "C" = 1 / impedance per linear foot

%VD CUM= Cumulative Voltage Drop from Fault Point 1 to Fault Point #
R= resistance in ohms per LF
X= reactances in ohms per LF

Feeder Types =
NM - Non Magnetic Conduit, M - Magnetic Conduit, FB - Feeder Busway, PB - Plug-in Busway, TX - Transformer

Fault Point (F#)	Bus/Feeder Description	Source (Fault Point)	Phase	Source Isc (amps)	Feeder: Conduit Type/ TX	Feeder: Material	Feeder: Quantity of Parallel Sets and Bus/ Phase & Neutral Size			Conductor 'C' Value	Busway 'C' Value	L-L Voltage (E)	Circuit Length (L)	Load Power Factor (pf)	Circuit Load (Amperage)	Conductor: Resistance (R)	Conductor: Reactance (X)	Conductor: Arccos (pf) (Radians)	Transformer: Type	Transformer: Degree Rise	Transformer: kVA	Transformer: New Xfmr Z	Transformer: Existing Xfmr Z	Transformer: Secondary Voltage	Transformer: Tap Setting	f	M	Fault Current (amps)	Voltage Drop (%VD)	Cumulative Voltage Drop (%VD)	Fault Point (F#)
2 201	Utility Service Point			63,042 at the secondary of the utility transformer																							Source Isc = 6X Motor Contribution =		63042			201
	Motor Contribution			The connected full load motor amps (includes compressors) on the system																												
202	To SWBD-N2	201	3	63042	NM	CU	8	Set(s) of	500		26706	--	480	40	0.9	1500	0.000027	0.000039	0.451027								0.043	0.96	60467	-0.11%	-0.11%	202
203																																203
204	To DP-2H1A	202	3	60467	M	CU	3	Set(s) of	600	kcmil	22965	--	480	575	0.9	900	0.000025	0.000048	0.451027								1.821	0.35	21434	-2.70%	-2.81%	204
205																																205
206	To Pnl 2H1A	204	3	21434	M	CU	1	Set(s) of	3	AWG	4774	--	480	10	0.9	80	0.000250	0.000059	0.451027								0.162	0.86	18446	-0.07%	-2.89%	206
207	To TX-2L1A	204	3	21434	M	CU	1	Set(s) of	2/0	AWG	10755	--	480	10	0.9	140	0.000100	0.000054	0.451027								0.072	0.93	19996	-0.06%	-2.87%	207
208	TX-2L1A	207	3	19996	TX								480							DOE	150	112.5	4.37		208						8.438	0.12	6196		-2.87%	208
209	To Pnl 2L1A	208	3	6188	M	CU	1	Set(s) of	3/0	AWG	12844	--	208	10	0.9	160	0.000079	0.000052	0.451027								0.040	0.96	5949	-0.12%	-3.00%	209
210	To TX-2C1A	204	3	21434	M	CU	1	Set(s) of	1	AWG	7293	--	480	20	0.9	56	0.000310	0.000060	0.451027								0.426	0.71	15240	-0.12%	-2.94%	210
211	TX-2C1A	210	3	15240	TX								480							K-13	115	45	2.67		208						7.518	0.12	4129		-2.94%	211
212	To Pnl 2C1A	211	3	4129	M	CU	1	Set(s) of	4/0	AWG	15082	--	208	10	0.9	180	0.000063	0.000051	0.451027								0.027	0.97	4025	-0.12%	-3.06%	212
213	To Pnl Shop	208	3	6188	M	CU	1	Set(s) of	3/0	AWG	12844	--	208	10	0.9	160	0.000079	0.000052	0.451027								0.040	0.96	5949	-0.12%	-3.00%	213
214	To Pnl 2H2A	204	3	21434	M	CU	1	Set(s) of	3	AWG	4774	--	480	35	0.9	80	0.000250	0.000059	0.451027								0.287	0.74	15632	-0.21%	-3.07%	214
215	To TX-2L2A	204	3	21434	M	CU	1	Set(s) of	1	AWG	7293	--	480	35	0.9	100	0.000160	0.000057	0.451027								0.371	0.73	15632	-0.21%	-3.03%	215
216	TX-2L2A	215	3	15632	TX								480							DOE	150	75	3.61		208						6.255	0.14	4972		-3.03%	216
217	To Pnl 2L2A	216	3	4972	M	CU	1	Set(s) of	4/0	AWG	15082	--	208	10	0.9	180	0.000063	0.000051	0.451027								0.027	0.97	4839	-0.12%	-3.15%	217
218	To TX-2C2A	204	3	21434	M	CU	1	Set(s) of	4	AWG	3806	--	480	35	0.9	56	0.000310	0.000060	0.451027								0.711	0.58	12525	-0.22%	-3.03%	218
219	TX-2C2A	218	3	12525	TX								480							K-13	115	45	2.67		208						6.178	0.14	4027		-3.03%	219
220	To Pnl 2C2A	219	3	4027	M	CU	1	Set(s) of	1/0	AWG	8925	--	208	10	0.9	120	0.000120	0.000055	0.451027								0.038	0.96	3881	-0.13%	-3.16%	220
221																																221
222	To DP-2H1B	202	3	60467	M	CU	3	Set(s) of	600	kcmil	22965	--	480	480	0.9	900	0.000025	0.000048	0.451027								1.520	0.40	23993	-2.26%	-2.37%	222
223																																223
224	To Pnl 2H1B	222	3	23993	M	CU	1	Set(s) of	3	AWG	4774	--	480	10	0.9	80	0.000250	0.000059	0.451027								0.181	0.85	20310	-0.07%	-2.44%	224
225	To TX-2L1B	222	3	23993	M	CU	1	Set(s) of	1	AWG	7293	--	480	10	0.9	100	0.000160	0.000057	0.451027								0.119	0.89	21447	-0.06%	-2.43%	225
226	TX-2L1B	225	3	21447	TX								480							DOE	150	75	3.61		208						8.582	0.10	5165		-2.43%	226
227	To Pnl 2L1B	226	3	5165	M	CU	1	Set(s) of	4/0	AWG	15082	--	208	10	0.9	180	0.000063	0.000051	0.451027								0.029	0.97	5022	-0.12%	-2.55%	227
228	To TX-2C1B	222	3	23993	M	CU	1	Set(s) of	4	AWG	3806	--	480	20	0.9	56	0.000310	0.000060	0.451027								0.455	0.69	16491	-0.12%	-2.49%	228
229	X-2C1B	228	3	16491	TX								480							K-13	115	45	2.67		208						8.134	0.11	4166		-2.49%	229
230	To Pnl 2C1B	229	3	4166	M	CU	1	Set(s) of	4/0	AWG	15082	--	208	10	0.9	180	0.000063	0.000051	0.451027								0.023	0.98	4072	-0.12%	-2.61%	230
231																																231
232	To Pnl 2H2B	222	3	23993	M	CU	1	Set(s) of	3	AWG	4774	--	480	35	0.9	80	0.000250	0.000059	0.451027								0.635	0.61	14677	-0.25%	-2.62%	232
233	To TX-2L2B	222	3	23993	M	CU	1	Set(s) of	2/0	AWG	10755	--	480	35	0.9	140	0.000100	0.000054	0.451027								0.282	0.78	18719	-0.20%	-2.57%	233
234	TX-2L2B	233	3	18719	TX								480							DOE	150	112.5	4.37		208						6.045	0.14	6132		-2.57%	234
235	To Pnl 2L2B	234	3	6132	M	CU	1	Set(s) of	600	kcmil	22965	--	208	10	0.9	320	0.000025	0.000048	0.451027								0.022	0.98	5998	-0.12%	-2.68%	235
236	To TX-2C2B	222	3	23993	M	CU	1	Set(s) of	4	AWG	3806	--	480	35	0.9	56	0.000310	0.000060	0.451027								0.796	0.56	13358	-0.22%	-2.58%	236
237	X-2C2B	236	3	13358	TX								480							K-13	115	45	2.67		208						6.589	0.13	4062		-2.58%	237
238	To Pnl 2C2B	237	3	4062	M	CU	1	Set(s) of	4/0	AWG	15082	--	208	10	0.9	180	0.000063	0.000051	0.451027								0.022	0.98	3973	-0.12%	-2.70%	238
239	Elevator	224	3	20310	M	CU	1	Set(s) of	6	AWG	2425	--	480	40	0.9	48	0.000490	0.000064	0.451027								1.209	0.45	9195	-0.32%	-2.77%	239
240																																240
241	DP-2H1C	202	3	60467	M	CU	3	Set(s) of	600	kcmil	22965	--	480	345	0.9	900	0.000025	0.000048	0.451027								1.093	0.48	28895	-1.82%	-1.73%	241
242																																242
243	To Pnl 2H1C	241	3	28895	M	CU	1	Set(s) of	3	AWG	4774	--	480	10	0.9	80	0.000250	0.000059	0.451027								0.218	0.82	23716	-0.07%	-1.81%	243
244	To TX-2L1C	241	3	28895	M	CU	1	Set(s) of	1	AWG	7293	--	480	10	0.9	100	0.000160	0.000057	0.451027								0.143	0.87	25281	-0.06%	-1.79%	244
245	X-2L1C	244	3	25281	TX								480							DOE	150	75	3.61		208						10.116	0.09	5248		-1.79%	245
246	To Pnl 2L1C	245	3	5248	M	CU	1	Set(s) of	4/0	AWG	15082	--	208	10	0.9	180	0.000063	0.000051	0.451027								0.029	0.97	5100	-0.12%	-1.91%	246
247	To TX-2C1C	241	3	28895	M	CU	1	Set(s) of	4	AWG	3806	--	480	20	0.9	56	0.000310	0.000060	0.451027								0.548	0.65	18667	-0.12%	-1.86%	247
248	X-2C1C	247	3	18667	TX								480							K-13	115	45	2.67		208						9.208	0.10	4220		-1.86%	248
249	To Pnl 2C1C	248	3	4220	M	CU	1	Set(s) of	1/0	AWG	8925	--	208	10	0.9	120	0.000120	0.000055	0.451027								0.039	0.96	4060	-0.13%	-1.99%	249
250																																250
251	To Pnl 2H2C	241	3	28895	M	CU	1	Set(s) of	3	AWG	4774	--	480	50	0.9	80	0.000250	0.000059	0.451027								1.092	0.48	13812	-0.36%	-2.10%	251
252	To TX-2L2C	241	3	28895	M	CU	1	Set(s) of	2/0	AWG	10755	--	480	50	0.9	140	0.000100	0.000054	0.451027								0.485	0.67	19462	-0.29%	-2.02%	252
253	X-2L2C	252	3	19462	TX								480							DOE	150	112.5	4.37		208						6.285	0.14	6165		-2.02%	253
254	To Pnl 2L2C	253	3	6165	M	CU	1	Set(s) of	600	kcmil	22965	--	208	10	0.9	320	0.000025	0.000048	0.451027								0.022	0.98	6030	-0.12%	-2.14%	254
255	To TX-2C2C	241	3	28895	M	CU	1	Set(s) of	4	AWG	3806	--	480	55	0.9	56	0.000310	0.000060	0.451027								1.507	0.40	11527	-0.34%	-2.07%	255
256	X-2C2C	255	3	11527	TX								480							K-13	115	45	2.67		208						5.686	0.15	3979		-2.07%	256
257	To Pnl 2C2C	256	3	3979	M	CU	1	Set(s) of	1/0	AWG	8925	--	208	10	0.9	120	0.000120	0.000055	0.451027								0.037	0.96	3836	-0.13%	-2.20%	257

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DLR Group

STATE OF MISSOURI
CURTIS A. OLDS
NUMBER PE-2018036640
PROFESSIONAL ENGINEER

Oct 19 2020
CURTIS A. OLDS
LICENSE # PE-2018036640

HENDERSON ENGINEERS, INC.
8345 LENEXA DRIVE, SUITE 300
LENEXA, KS 66214
TEL 913.742.2800 FAX 913.742.0001
WWW.HENDERSONENGINEERS.COM
M/D CORPORATE NO. E-0060
EXPIRES 12/31/2020

LEE'S SUMMIT MIDDLE SCHOOL #4

LEE'S SUMMIT R-7 SCHOOL DISTRICT

1001 SE BAILEY ROAD
LEE'S SUMMIT, MO 64081

PACKAGE 3 - BUILDING & SITE
10/08/20
REVISIONS
ADDENDUM 002 10/19/20

13-20102-00

ELECTRICAL ONE-LINE DIAGRAM

E8.1C

CURTIS A. OLDS

SERVICE LOAD SUMMARY (H1S)

SERVICE OCCUPANCY TYPE: WAREHOUSE		SERVICE DESCRIPTION:	
SERVICE SQUARE FOOTAGE: 1		480Y/277 V	
LOAD TYPE	CONNECTED LOAD	DEMAND FACTOR	NEC DEMAND
EXISTING LOAD (E)	0 VA	100%	0 VA
COOLING (C)	0 VA	0%	0 VA
HEATING (H)	0 VA	100%	0 VA
LIGHTING (L) (PER NEC-220)	176647 VA	125%	220809 VA
RECEPTACLES (R)	21300 VA	73%	15650 VA
MOTORS (M)	0 VA	100%	0 VA
SUPPLEMENTAL HEAT (U)	0 VA	100%	0 VA
MISC EQUIP (Z)	3030 VA	100%	3030 VA
REFRIGERATION (F)	0 VA	100%	0 VA
SIGN/DISPLAY (D)	2400 VA	125%	3000 VA
KITCHEN (K)	1000 VA	100%	1000 VA
LARGEST MOTOR	0 VA	125%	0 VA
SHOW WINDOW (W)	0 VA	125%	0 VA
TRACK LIGHTING	0 VA	100%	0 VA
TOTAL LOAD	204377	VA	243489
TOTAL AMPACITY	246	AMPS	293
SERVICE AMPACITY		AMPS	600
SPARE CAPACITY		AMPS	307

FEEDER SCHEDULE:

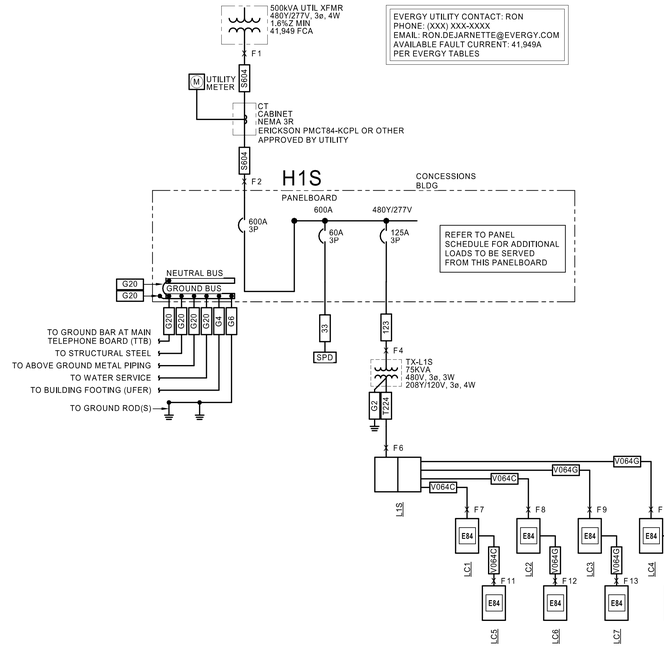
SIZES ARE BASED ON COPPER (CU) THHN/THWN-2 INSULATION, UNO. ALL CONDUCTOR SIZES ARE BASED ON 75 DEG C RATED TERMINATIONS, UNO. CONDUIT SIZES SHOWN ARE APPROPRIATE FOR SCHEDULE 40 PVC, EMT, GRS, IMC AND RMC; ADJUST SIZE AS NEEDED FOR OTHER RACEWAY TYPES. FOR ANY OTHER CONDITIONS MODIFY SIZES PER CODE. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.

- "A" PREFIX INDICATES ALUMINUM CONDUCTORS AND ARE BASED ON XHHW-2 INSULATION.
- "S" PREFIX INDICATES SERVICE ENTRANCE LATERALS.
- "T" PREFIX INDICATES TRANSFORMER SECONDARY.
- "V" PREFIX INDICATES UPSIZED FOR VOLTAGE DROP. PROVIDE LUG ADAPTERS AS REQURIED FOR EQUIPMENT TERMINATION.

LETTERED SUFFIX INDICATES ALTERNATE FEEDER CONFIGURATIONS.

- "N" SUFFIX INDIATES 200% NEUTRAL CONDUCTORS

FEEDER TAG	FEEDER DESCRIPTION
2-2C	(2) 2" C EMPTY CONDUITS
33	(3)#10, (1)#10 G, 1/2" C
63E	(3)#4, (1)#4 G, 1-1/2" C
73	(3)#4, (1)#8 G, 1" C
104	(4)#3, (1)#8 G, 1-1/4" C
123	(3)#1, (1)#6G, 1-1/2" C
173	(3)#2/0, (1)#6 G, 1-1/2" C
204	(4)#3/0, (1)#6 G, 2" C
404B	(4)-600 kcmil, (1)#3 G, 3-1/2" C
1204	(4) 3" C, EACH W/ (4)-350 kcmil, (1)#3/0 G
G2	#2 COPPER GROUND, 3/4" C
G4	#4 COPPER GROUND, 3/4" C
G6	#6 COPPER GROUND, 3/4" C
G10	#1/0 COPPER GROUND, 3/4" C
G20	#2/0 COPPER GROUND, 3/4" C
G30	#3/0 COPPER GROUND, 1" C
MBJ	#750 CU
S604	(2) 3" C, EACH W/ (4)-350 kcmil
S3004	(6) 3" C, EACH W/ (4)-500 kcmil
S4004A	(11) 4" C, EACH W/ (4)-500 kcmil
T154	(4)#1/0, (1)#6 SSBJ, 1-1/2" C
T154N	(5)#1/0, (1)#6 SSBJ, 1-1/2" C
T224	(4)#4/0, (1)#2 SSBJ, 2-1/2" C
T404B	(4)-600 kcmil, (1)#1/0 SSBJ, 4" C
TG30	#3/0 cu
V064C	(4)#2, (1)#4 G, 1-1/4" C
V064G	(4)#1, (1)#4 G, 1-1/2" C



1 ELECTRICAL ONE-LINE DIAGRAM - CONCESSIONS
NTS

FAULT CURRENT GENERAL NOTE (ESTIMATED VALUE):

THE MAXIMUM AVAILABLE 3-PHASE SYMMETRICAL FAULT CURRENT VALUE AT THE UTILITY TRANSFORMER SECONDARY/POINT OF SERVICE COULD NOT BE DETERMINED AT THE TIME OF THIS SUBMITTAL. THE ESTIMATED WORST CASE VALUE OF **FAULT CURRENTS** ARE BASED ON UTILITY TRANSFORMER TABLES AND ESTIMATED TRANSFORMER SIZES. CONTRACTOR SHALL VERIFY ACTUAL AVAILABLE FAULT CURRENT VALUE WITH UTILITY. NOTIFY ENGINEER IF ACTUAL VALUES EXCEEDS ESTIMATED CALCULATED VALUE. ESTIMATED DESIGN VALUE IS BASED ON THE FOLLOWING:

CONCESSIONS SERVICE
UTILITY TRANSFORMER SECONDARY VOLTAGE: **480Y/277V, 3Ø, 4W**
UTILITY TRANSFORMER SIZE: **500KVA, Z=1.6%**
FAULT VALUE: AS SHOWN IN UTILITY COORDINATION NOTE.

SCHOOL SERVICE #1 SWBD-N1
UTILITY TRANSFORMER SECONDARY VOLTAGE: **480Y/277V, 3Ø, 4W**
UTILITY TRANSFORMER SIZE: **2500KVA, Z=5.3%**
FAULT VALUE: AS SHOWN IN UTILITY COORDINATION NOTE.

SCHOOL SERVICE #2 SWBD-N2
UTILITY TRANSFORMER SECONDARY VOLTAGE: **480Y/277V, 3Ø, 4W**
UTILITY TRANSFORMER SIZE: **2500KVA, Z=5.3%**
FAULT VALUE: AS SHOWN IN UTILITY COORDINATION NOTE.

ONE-LINE DIAGRAM SUPPLEMENTAL SPECIFICATIONS:

1. GROUNDING ELECTRODE SYSTEM SHALL BE PER LOCAL REQUIREMENTS AND SHALL NOT BE LESS STRINGENT THAN THAT SPECIFIED IN THE CONSTRUCTION DOCUMENTS.
2. PROVIDE PROPERLY SIZED LUGS FOR ALL EQUIPMENT. CIRCUIT BREAKERS, AND OTHER ELECTRICAL DEVICES TO ACCOMMODATE INSTALLED CONDUCTORS. A LARGER FRAME, OVERSIZED LUGS OR NON-STANDARD PRODUCT MAY BE REQUIRED IN SOME INSTANCES. UTILIZE PIN ADAPTERS ONLY IF NECESSARY AND ONLY AS ALLOWED BY MANUFACTURER AND AHJ.
3. PROVIDE ANY AVAILABLE SPACE IN SWITCHBOARDS/PANELBOARDS WITH BUSSING.
4. PROVIDE (4) EMPTY 1" CONDUITS WITH PULL STRINGS FROM EACH RECESSED PANELBOARD UP TO ACCESSIBLE CEILING SPACE. CAP AND LABEL CONDUITS FOR FUTURE USE.
5. PROVIDE TYPED FINAL CIRCUIT DIRECTORY FOR ALL PANELBOARDS TO REFLECT ACTUAL AS-BUILT CONDITIONS. COORDINATE FINAL ROOM NAMES, NUMBERS AND DESCRIPTIONS WITH OWNER PRIOR TO COMPLETION. CIRCUIT DESCRIPTIONS SHALL BE PER CODE AND SHALL BE DISTINGUISHABLE FROM ALL OTHERS.

ONE-LINE DIAGRAM GENERAL NOTES:

1. THE INFORMATION SHOWN IN THE SHORT-CIRCUIT AND VOLTAGE DROP CALCULATIONS SCHEDULE IS SHOWN FOR CALCULATION PURPOSES ONLY. CONTRACTOR SHALL NOT USE THE CONDUIT TYPES, CONDUCTOR TYPES, SIZES, QUANTITIES OR LENGTHS FOR TAKEOFFS OR BIDDING PURPOSES. CONTRACTOR SHALL NOTIFY ENGINEER OF ANY CONFLICTS BETWEEN THIS SCHEDULE AND OTHER PORTIONS OF THE CONSTRUCTION DOCUMENTS. CONTRACTOR SHALL NOTIFY ENGINEER OF AS-BUILT CONDITIONS THAT CONSTITUTE A CHANGE FROM WHAT IS SHOWN BELOW; THIS INCLUDES CONDUCTOR LENGTHS DIFFERING BY MORE THAN 10%.
2. REFER TO THE SHORT-CIRCUIT AND VOLTAGE DROP CALCULATIONS TABLES ON THIS SHEET AND E8.1C. AVAILABLE FAULT CURRENT INFORMATION IS LISTED UNDER THE "FAULT CURRENT" COLUMN. VOLTAGE DROP VALUES ARE LISTED UNDER THE "CUMULATIVE VOLTAGE DROP" COLUMN. THE AIC/SCCR RATING OF THE EQUIPMENT SHALL NOT BE LESS THAN THE AVAILABLE 3-PHASE SYMMETRICAL FAULT CURRENT. ALL SERIES RATED EQUIPMENT SHALL BE PROPERLY LISTED AND LABELED PER CODE.
3. FEEDER NUMBER DESIGNATIONS PRECEDED BY "V" INDICATE THAT THE CONDUCTORS ARE UP-SIZED DUE TO VOLT-DROP CONSIDERATIONS. PROVIDE LUG ADAPTERS AS NEEDED IN ORDER TO PROPERLY LAND CONDUCTORS AT TERMINATION(S).
4. FEEDER SIZES ARE BASED ON COPPER (CU) THHN/THWN-2 INSULATION, UNLESS NOTED OTHERWISE. CONDUIT SIZES SHOWN ARE APPROPRIATE FOR SCHEDULE 40 PVC, EMT, GRS, IMC AND RMC; ADJUST SIZE AS NEEDED FOR OTHER RACEWAY TYPES. NUMBER DESIGNATIONS PRECEDED BY "A" INDICATE THAT THE SIZE IS BASED ON ALUMINUM (AL) WIRE. AL CONDUCTOR SIZES ARE BASED ON XHHW-2 INSULATION, UNLESS NOTED OTHERWISE. AL WIRE MAY BE SUBSTITUTED FOR CU FEEDERS AS ALLOWED BY CODE, SPECIFICATIONS AND OWNER, UNLESS NOTED OTHERWISE. AT CONTRACTOR'S OPTION, CU WIRE MAY BE SUBSTITUTED FOR AL, UNLESS NOTED OTHERWISE. ALL CONDUCTOR SIZES ARE BASED ON 75 DEG C RATED TERMINATIONS, UNLESS NOTED OTHERWISE. FOR ANY OTHER CONDITIONS MODIFY SIZES PER CODE. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.
5. BRANCH CIRCUIT SIZES ARE BASED ON COPPER (CU) THHN/THWN-2 INSULATION, UNLESS NOTED OTHERWISE. CONDUIT SIZES SHOWN ARE APPROPRIATE FOR SCHEDULE 40 PVC, EMT, GRS, IMC AND RMC; ADJUST SIZE AS NEEDED FOR OTHER RACEWAY TYPES. ALL CONDUCTOR SIZES ARE BASED ON 60 DEG C RATED TERMINATIONS, UNLESS NOTED OTHERWISE. FOR ANY OTHER CONDITIONS MODIFY SIZES PER CODE. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.
6. INSTALL FEEDERS OVERHEAD AS HIGH AS PRACTICABLE AND ORTHOGONALLY ALONG BUILDING STRUCTURE, UNLESS NOTED OTHERWISE. COORDINATE FINAL ROUTING WITH OTHER TRADES.
7. CIRCUIT BREAKERS RATED 1200A OR HIGHER SHALL HAVE APPROPRIATE DOCUMENTATION AND METHOD TO REDUCE CLEARING TIME IN ORDER TO REDUCE ARC FLASH ENERGY PER CODE. PROVIDE ELECTRONIC TRIP UNIT WITH INSTANTANEOUS TRIP AND ENERGY-REDUCING MAINTENANCE SWITCH WITH LOCAL STATUS INDICATOR FOR COMPLIANCE. PROVIDE PROVISIONS TO INTERFACE WITH OWNER ALARM/MONITORING SYSTEM TO INDICATE MAINTENANCE SWITCH STATUS.
8. PROVIDE A PERMANENT LABEL ON FRONT OF EQUIPMENT ENCLOSURE; REFER TO SPECIFICATIONS FOR LABEL REQUIREMENTS. LABEL SHALL READ AS FOLLOWS (INCLUDE RESPECTIVE NAMES IN BLANKS):

SERVICE EQUIPMENT LABEL:

EXAMPLE:
208Y/120V, 60HZ
800A
SCCR = 65,000A
MAX AVAILABLE FAULT CURRENT = 58,815A
CALCULATED: 01/01/2018

PANELBOARD/SWITCHBOARD LABEL:
LINE 1: PANELBOARD "_____" SUPPLIED BY UPSTREAM
LINE 2: PANELBOARD/SWITCHBOARD "_____"
LINE 3: LOCATED IN "_____"
LINE 4: PANELBOARD "_____" SUPPLIES DOWNSTREAM
LINE 5: PANELBOARD(S) "_____"

TRANSFORMERS LABEL:
LINE 1: TRANSFORMER "_____" SUPPLIED BY UPSTREAM
LINE 2: PANELBOARD/SWITCHBOARD "_____"
LINE 3: LOCATED IN "_____"
LINE 4: TRANSFORMER "_____" SUPPLIES DOWNSTREAM
LINE 5: PANELBOARD(S) "_____"

Short-Circuit and Voltage Drop Calculations

Distances are for calculation purposes only and shall not be used for contractor takeoffs nor bidding - Contractor shall notify Engineer of any field condition that results in a change of 10% or greater circuit distance

The following calculations are based on the "Point-by-Point" method where:
ISC (2) = ISC(1) x M(1) M= 1/(1+f)
ISC (1) = short circuit current at fault point 1
ISC (2) = short circuit current at fault point 2

Feeder: f (3Ø) = 1.732 x L x Isc / C x E
XFMR: f (3Ø) = IP(sca)x Vp x 1.73 x %Z / 100,000 x KVA
IS(sca)= Vp x M x IP(sca) / Vs
Feeder: f (1Ø)= 2 x L x Isc / C x E
XFMR: f (1Ø)= IP(sca)x Vp x %Z / 100,000 x KVA

VOLTAGE DROP (3Ø):
%VD= ((R x cos(arccos(pf)) + X x sin (arccos(pf))) x L/# x I x 1.73) / E
VOLTAGE DROP (1Ø):
%VD= ((R x cos(arccos(pf)) + X x sin(arccos(pf))) x 2 x L/# x I) / E

IP = Primary short circuit current
Vp = Primary voltage
IS= Secondary short circuit current
Vs= Secondary voltage
L = Length of circuit
C = "C" Factor from Bussman table where "C" = 1 / impedance per linear foot
E = Line to line volts

%VD CUM= Cumulative Voltage Drop from Fault Point 1 to Fault Point #
R= resistance in ohms per LF
X= reactances in ohms per LF

Feeder Types =
NM - Non Magnetic Conduit, M - Magnetic Conduit, FB - Feeder Busway, PB - Plug-in Busway, TX - Transformer

Fault Point (F#)	Bus/Feeder Description	Source (Fault Point)	Phase	Source Isc (amps)	Feeder: Conduit Type/ TX	Feeder: Material	Feeder: Quantity of Parallel Sets and Bus/ Phase & Neutral Size			Conductor 'C' Value	Busway 'C' Value	L-L Voltage (E)	Circuit Length (L)	Load Power Factor (pf)	Circuit Load (Amperage)	Conductor: Resistance (R)	Conductor: Reactance (X)	Conductor: Arccos (pf) (Radians)	Transformer: Type	Transformer: Degree Rise	Transformer: kVA	Transformer: New Xfmr Z	Transformer: Existing Xfmr Z	Transformer: Secondary Voltage	Transformer: Tap Setting	f	M	Fault Current (amps)	Voltage Drop (%VD)	Cumulative Voltage Drop (%VD)	Fault Point (F#)
1	Utility Service Point	41,949 at the secondary of the utility transformer																														1
	Motor Contribution	The connected full load motor amps (includes compressors) on the system																														
2	To H1S	1	3	41949	NM	CU	2	Set(s) of	300	kcmil	20868	--	480	100	0.9	480	0.000044	0.000041	0.451027								0.363	0.73	30784	-0.50%	-0.50%	2
4	To TX-L1S	2	3	30784	M	CU	1	Set(s) of	1	AWG	7293	--	480	10	0.9	100	0.000160	0.000057	0.451027								0.152	0.87	26715	-0.06%	-0.56%	4
5	TX-L1S	4	3	26715	TX								480							DOE	150	75	3.61		208			10.690	0.09	5274		-0.56%	5
6	To Pnl L1S	5	3	5274	M	CU	1	Set(s) of	4/0	AWG	15082	--	208	10	0.9	180	0.000063	0.000051	0.451027								0.029	0.97	5124	-0.12%	-0.68%	6
7	To Pnl LC1	6	3	5124	NM	CU	1	Set(s) of	2	AWG	6044	--	208	215	0.9	40	0.000190	0.000045	0.451027								1.518	0.40	2035	-1.37%	-2.04%	7
8	To Pnl LC2	6	3	5124	NM	CU	1	Set(s) of	2	AWG	6044	--	208	280	0.9	40	0.000190	0.000045	0.451027								1.977	0.34	1721	-1.78%	-2.45%	8
9	To Pnl LC3	6	3	5124	NM	CU	1	Set(s) of	1	AWG	7493	--	208	375	0.9	40	0.000150	0.000046	0.451027								2.136	0.32	1634	-1.94%	-2.61%	9
10	To Pnl LC4	6	3	5124	NM	CU	1	Set(s) of	1	AWG	7493	--	208	355	0.9	40	0.000150	0.000046	0.451027								2.022	0.33	1696	-1.83%	-2.51%	10
11	To Pnl LC5	7	3	2035	NM	CU	1	Set(s) of	2	AWG	6044	--	208	125	0.9	30	0.000190	0.000045	0.451027								0.350	0.74	1507	-0.60%	-2.64%	11
12	To Pnl LC6	8	3	1721	NM	CU	1	Set(s) of	1	AWG	7493	--	208	200	0.9	30	0.000150	0.000046	0.451027								0.383	0.72	1245	-0.77%	-3.23%	12
13	To Pnl LC7	9	3	1634	NM	CU	1	Set(s) of	1	AWG	7493	--	208	175	0.9	30	0.000150	0.000046	0.451027								0.318	0.76	1240	-0.68%	-3.29%	13
14	To Pnl LC8	10	3	1696	NM	CU	1	Set(s) of	1	AWG	7493	--	208	175	0.9	30	0.000150	0.000046	0.451027								0.330	0.75	1275	-0.68%	-3.19%	14

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STATE OF MISSOURI
CURTIS A. OLDS
NUMBER PE-2018036640
PROFESSIONAL ENGINEER

Oct 8 2020
CURTIS A. OLDS
LICENSE # PE-2018036640

HENDERSON ENGINEERS
8345 ENEXA DRIVE, SUITE 300
LENEXA, KS 66214
TEL 913.742.2800 FAX 913.742.0001
WWW.HENDERSONENGINEERS.COM
MO. CORPORATE NO. E-5360
EXPIRES 12/31/2020

LEE'S SUMMIT MIDDLE SCHOOL #4

LEE'S SUMMIT R-7 SCHOOL DISTRICT

1001 SE BAILEY ROAD
LEE'S SUMMIT, MO 64081

PACKAGE 3 - BUILDING & SITE
10/08/20
REVISIONS

13-20102-00

ELECTRICAL ONE-LINE DIAGRAM

E8.2

CURTIS A. OLDS