ELECTRICAL SPECIFICATIONS

1. THE GENERAL CONDITIONS AND SUPPLEMENTAL GENERAL CONDITIONS BY THE ARCHITECT SHALL GOVERN WHERE APPLICABLE.

2.THE CONTRACTOR SHALL THOROUGHLY FAMILIARIZE HIMSELF WITH THE PLANS AND SHALL VERIFY EXISTING SITE CONDITIONS AT THE JOB SITE BEFORE SUBMITTING BID. FAILURE TO RECOGNIZE WORK REQUIRED SHALL BE AT THE EXPENSE OF THIS CONTRACTOR. NO CONSIDERATION SHALL BE GIVEN FOR ADDITIONAL COMPENSATION AFTER THE LETTING OF BIDS.

3.ENTIRE INSTALLATION SHALL BE PERFORMED IN A FIRST—CLASS WORKMANLIKE MANNER AND SHALL CONFORM TO ALL APPLICABLE CODES AND ORDINANCES. THE COMPLETED SYSTEMS SHALL BE FULL OPERATIONAL; ACCEPTANCE BY THE OWNER SHALL BE A CONDITION OF THE CONTRACT. ALL INTERFERENCES PRESERVE MAXIMUM HEADROOM, AND AVOID OMISSIONS. ALL MATERIALS, WORKMANSHIP, AND EQUIPMENT SHALL BE GUARANTEED FOR ONE (1) YEAR AFTER SYSTEM ACCEPTANCE

4.RECEPTACLES AND SWITCHES SHALL BE THE TYPE AS SHOWN ON THE DRAWINGS AND SHALL BE SPECIFICATION GRADE.

5.MINIMUM BRANCH WIRE SIZE SHALL BE #12 AWG COPPER EXCEPT FOR CONTROL AND SIGNAL CIRCUITS. INSULATION (INTERIOR) SHALL BE SOLID TYPE THWN SIZES #12 THROUGH #10. SIZES #8 THROUGH 750 MCM SHALL BE STRANDED TYPE THHN OR THWN AT THE CONTRACTOR'S

6.MINIMUM OUTLET BOXES SHALL BE 4" SQUARE, UNLESS OTHERWISE SPECIFIED.

7.CONTRACTOR SHALL NOT SCALE DRAWINGS FOR DIMENSIONS BUT SHALL CONTACT THE PROJECT ARCHITECT FOR ALL DIMENSIONAL DATA AND SHALL VERIFY EXACT LOCATION AND MOUNTING

HEIGHTS OF ALL OUTLETS WITH ARCHITECT AND/OR OWNER PRIOR TO INSTALLATION.

8. GROUNDING SHALL COMPLY WITH REQUIREMENTS OF ALL APPLICABLE CODES.

9.ALL MATERIAL USED SHALL BE NEW AND BEAR THE U/L LABEL AND BE OF THE APPROPRIATE NEMA STANDARD.

10. THIS CONTRACTOR SHALL ALLOW IN HIS INITIAL BID THE COST OF SERVICES ON ALL EQUIPMENT INSTALLED UNDER HIS CONTRACT FOR A PERIOD OF ONE (1) YEAR FROM DATE OF FINAL ACCEPTANCE OF THE WORK.

11.LAYOUT IS DIAGRAMMATIC AND WORK SHALL BE INSTALLED TO MEET FIELD CONDITIONS AND EQUIPMENT SELECTED. PROVIDE SHOP DRAWINGS AS REQUIRED AND VERIFY ALL EQUIPMENT.

12.PANELBOARDS SHALL BE DEAD FRONT WITH BOLT—ON TYPE CIRCUIT BREAKERS W/CU BUS. A TYPED LEGEND, UNDER A CLEAR PLEXAN—GLASS SHALL BE PROVIDED FOR CIRCUIT

13. CONTRACTOR SHALL INCLUDE ALL MISCELLANEOUS ITEMS REQUIRED TO COMPLETE THE WORK.
14. CONTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMITS AND REQUIRED INSPECTION FEES.
15. IT SHALL BE THE RESPONSIBILITY OF THIS CONTRACTOR TO COORDINATE AND REVIEW THE ELECTRICAL CHARACTERISTICS, AMPACITY, AND OTHER REQUIREMENTS OF ALL EQUIPMENT PRIOR TO INSTALLATION.

16.IT SHALL BE THE RESPONSIBILITY OF THIS CONTRACTOR TO COORDINATE THE LOCATIONS OF CONDUIT ROUTING, EQUIPMENT, LIGHTING, ETC. WITH ALL OTHER TRADES IN THE FIELD PRIOR TO

17. THE ENTIRE INSTALLATION OF ALL COMPONENTS OF THIS PROJECT SHALL COMPLY WITH ALL FEDERAL ADA REQUIREMENTS. VERIFY EXACT LOCATIONS AND HEIGHTS OF ALL FIXTURES AND OUTLETS BEFORE INSTALLATION TO INSURE COMPLIANCE WITH FEDERAL REGULATIONS.

18. FOR CLARITY OF ALL PLANS, SOME CONDUIT AND WIRE HAS NOT BEEN SHOWN. IT IS THE RESPONSIBILITY OF THIS CONTRACTOR TO FURNISH AND INSTALL COMPLETE AND OPERATING

SYSTEMS INCLUDING ALL CONDUIT AND WIRING.

19.FOR ALL NIGHT LIGHTING, EXIT SIGNS, AND BATTERY POWERED EMERGENCY LIGHTING CIRCUITS,
THIS CONTRACTOR SHALL USE #10 AWG FOR THE ENTIRE CIRCUIT LENGTH UNLESS INDICATED

20.THIS CONTRACTOR SHALL MAINTAIN THE FIRE RATED INTEGRITY OF ALL FLOORS, CEILINGS, AND WALLS. ALL PENETRATIONS THROUGH FIRE RATED BUILDING ELEMENTS SHALL BE EFFECTIVELY SEALED USING APPROVED MATERIALS AND METHODS. ALL LIGHTING FIXTURES MOUNTED IN FIRE RATED CEILINGS SHALL MAINTAIN THE INTEGRITY OF THE FIRE RATED CEILINGS USING APPROVED MATERIALS AND METHODS. REFER TO ARCHITECTURAL DRAWINGS FOR FIRE RATINGS.

21.THIS CONTRACTOR SHALL INSPECT THE COMPLETE SET OF DRAWINGS AND SPECIFICATION TO DETERMINE HIS ENTIRE SCOPE OF WORK. THIS CONTRACTOR SHALL VISIT THE SITE AND BECOME FAMILIAR WITH EXISTING CONDITIONS AND EXTENT OF DEMOLITION AND NEW WORK FOR THIS PROJECT PRIOR TO SUBMITTING HIS BID.

22.THE ELECTRICAL INSTALLATION IS TO BE IN STRICT ACCORDANCE WITH THE APPLICABLE RULES AND REGULATIONS OF ALL LOCAL, STATE, AND FEDERAL ELECTRICAL CODES AND THE LOCAL UTILITY COMPANY REQUIREMENTS OR ANY OTHER AUTHORITIES HAVING LAWFUL JURISDICTION.

23.ALL SITE UNDERGROUND BRANCH CIRCUIT WIRING IN CONDUCT SHALL BE TYPE THWN OR XHWN.

24.ALL UNDERFLOOR, UNDERGROUND, OR EXPOSED TO THE WEATHER CONDUIT SHALL BE HEAVYWALL, GALVANIZED RIGID STEEL, MINIMUM SIZE 3/4".

25.PROVIDE BARRIERS TO SEPARATE DIFFERENCE PHASES IN 277 VOLT GANGED SWITCH BOXES.

26.ALL WIRE SHALL BE INSTALLED IN THINWALL, ELECTRICAL METALLIC TUBING (EMT) CONDUIT UNLESS OTHERWISE NOTED. MINIMUM SIZE SHALL BE 3/4 FOR BRANCH CIRCUIT WIRING, DROPS TO SWITCHES, AND BRANCH DEVISES MAY BE 1/2" UNLESS OTHERWISE NOTED ON DRAWINGS. ALL THINWALL FITTING SHALL BE OF THE STEEL COMPRESSION GLAND TYPE PER ALL APPLICABLE CODE REQUIREMENTS. ALL CONDUITS SHALL BE CONCEALED WHERE POSSIBLE, WHERE EXPOSED, THIS CONTRACTOR SHALL RUN CONDUITS IN STRAIGHT LINES PARALLEL AND/OR PERPENDICULAR TO THE BUILDING CONSTRUCTION. CONDUITS INSTALLED IN AREAS SUBJECT TO MECHANICAL DAMAGE SHALL BE RIGID GALVANIZED, OR INTERMEDIATE METAL TYPE.

27.THIS CONTRACTOR SHALL PROVIDE ALL TEMPORARY WIRING FOR ALL TRADES FOR CONSTRUCTION EQUIPMENT (I.E. HANDTOOLS, WELDERS, PIPE BENDERS, ETC) AND CONSTRUCTION LIGHTING PER THE LATEST OSHA STANDARDS. INCLUDE ALL COSTS IN THE BASE BID. THIS CONTRACTOR SHALL ESTABLISH SAFE WORKING PROCEDURES FOR THE PROTECTION OF THE WORKMEN IN ALL PHASES OF WORK, COMPLYING WITH THE APPLICABLE PROVISIONS OF ALL CITY, STATE, AND FEDERAL SAFETY LAWS (OSHA).

GENERAL POWER NOTES

1.FULL COORDINATE THE INSTALLATION OF ALL ELECTRICAL DEVICES WITH THE WORK OF OTHER TRADES.

2.COORDINATE THE LOCATION OF ALL HVAC EQUIPMENT WITH THE MECHANICAL AND CONTROLS CONTRACTORS. PROVIDE ALL DEVICES (I.E. STARTERS, SWITCHES, CONTACTS, ETC.) REQUIRED TO ENSURE SATISFACTORY OPERATION OF ALL SYSTEMS AND EQUIPMENT. (CONTROL WIRING TO BE PROVIDED BY MECHANICAL CONTRACTOR.) COORDINATE DEVICE REQUIREMENTS WITH ACTUAL EQUIPMENT.

3.FOR ALL HVAC CONTROL DEVICES PROVIDED BY THE ELECTRICAL CONTRACTOR, PROVIDE ALL NECESSARY AUXILIARY COMPONENTS AND CONTACTS TO ENSURE PROPER SYSTEM CONTROL FUNCTIONS.

GENERAL LIGHTING NOTES

1.REFER TO ARCHITECTURAL REFLECTED CEILING PLAN FOR EXACT LOCATION OF AL CEILING MOUNTED DEVICES. COORDINATE INSTALLATION WITH ALL OTHER TRADES.

2.SUPPORT ALL RECESSED AND PENDANT MOUNTED FIXTURES FROM STRUCTURE IN ACCORDANCE WITH APPLICABLE BUILDING CODE REQUIREMENTS. SUSPENDED CEILING MOUNTING SYSTEMS SHALL NOT BE TO SUPPORT FIXTURES OR RACEWAYS.

3.THE MAXIMUM FLEXIBLE CONDUCTOR LENGTH SHALL BE 6 FT.

GENERAL AUXILIARY SYSTEMS NOTES

1. DATA AND TELEPHONE CABLE ARE INCLUDED IN THIS CONTRACT. STUB EMPTY 1" CONDUIT ABOVE NEAREST ACCESSIBLE CEILING. BUSH CONDUIT END. SEE SPECIFICATIONS FOR CABLING INFORMATION.

2. ROUTE ALL LOW VOLTAGE CABLING IN ACCESSIBLE CEILING SPACE IN J-HOOKS. WHERE NO ACCESSIBLE CEILING EXISTS, ROUTE IN CONDUIT AS SHOWN ON POWER PLANS.

PERMIT NOTE:

AUXILIARY GUTTERS UTILIZING MORE THAN 30 CURRENT CARRYING CONDUCTORS SHALL BE DERATED ACCORDING TO THE ADJUSTMENT FACTORS IN ARTICLE 310.15(B)(2)(a).
 ALL RECESSED "DROP-IN" CEILING LIGHT FIXTURES SHALL BE SECURED TO BAR JOISTS OR THE DECK ABOVE BY A MINIMUM OF TWO (2) SUSPENSION WIRES AT OPPOSITE ENDS OF EACH FIXTURE. ( SECTION 107.2.1 AND MANUFACTURE'S RECOMMENDATIONS)

APPLICABLE BUILDING CODE

2014 ILLINOIS PLUMBING CODE (IPC)

ELECTRICAL SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH THE FOLLOWING APPLICABLE CODE WITH LOCAL AMENDMENTS AND THE DIRECTION OF AUTHORITY HAVING JURISDICTION OF DUPAGE COUNTY, IL. FOLLOWING CODES, REGULATIONS AND RECORDS ARE HEREBY EXPRESSLY INCORPORATED INTO THE DUPAGE COUNTY BUILDING CODE BY THIS REFERENCE. AND ARE ADOPTED AS THE DUPAGE COUNTY BUILDING CODE.

EFFECTIVE DECEMBER 1, 2016 THE DUPAGE COUNTY BUILDING CODE HAS BEEN REVISED INCLUDING THE FOLLOWING CODES:
2015 INTERNATIONAL CODE COUNCIL (INTERNATIONAL BUILDING CODE (IBC) W/AMENDMENTS.
2014 NATIONAL ELECTRIC CODE (NEC) W/AMENDMENTS.
2015 ILLINOIS ENERGY EFFICIENT BUILDING CODE. (IECC)
2015 INTERNATIONAL MECHANICAL CODE.(IMC) W/AMENDMENTS.
2015 INTERNATIONAL FUEL GAS CODE W/AMENDMENTS.(IFGC)
1997 ILLINOIS PLUMBING CODE (IPC)

208/120V

**600A BUS** 

SL.NO.

TOTAL CONNECTED VA

TOTAL AMPS

DESCRIPTION

A B

8,190

127,242

100/3 50/3 4,659 8 7 SPARE 10 200/3 30/3 2,162 2,162 16 18 19 EXISITNG PP 19,214 19,214 27,403 27,403 27,403 15,011 | 15,011 | 15,011 TOTAL-VA 42,414 PHASE-A 42,414 PHASE-B 42,414 PHASE-C

PANEL-MDP

(EXISTING)

65KAIC

BRK BRK

80/3 80/3 8,190

NOTE:

\*\* IGHTING CIRCUITS SERVING EMERGENCY AND EXIT SIGNS &
FIRE ALARM TO HAVE HANDLE LOCKED.

159,053.02

BOTTOM FEED

LOCATION:

A | B | C

8.190

DEMAND LOAD

DEMAND AMPS

SURFACE MOUNT

DESCRIPTION

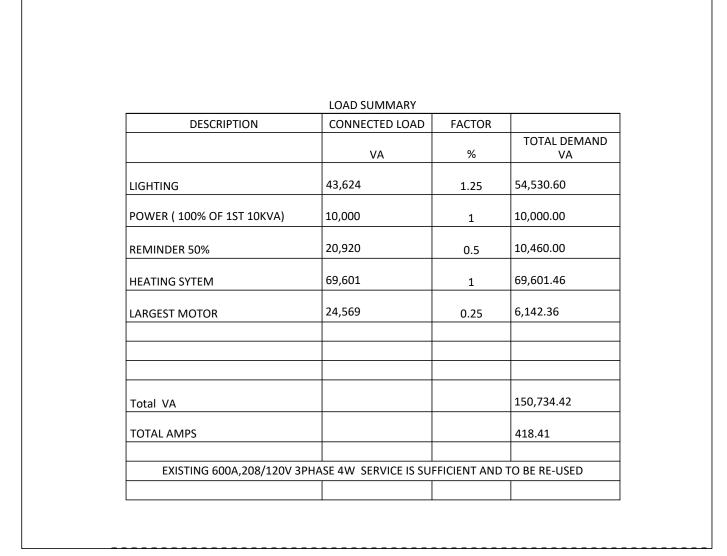
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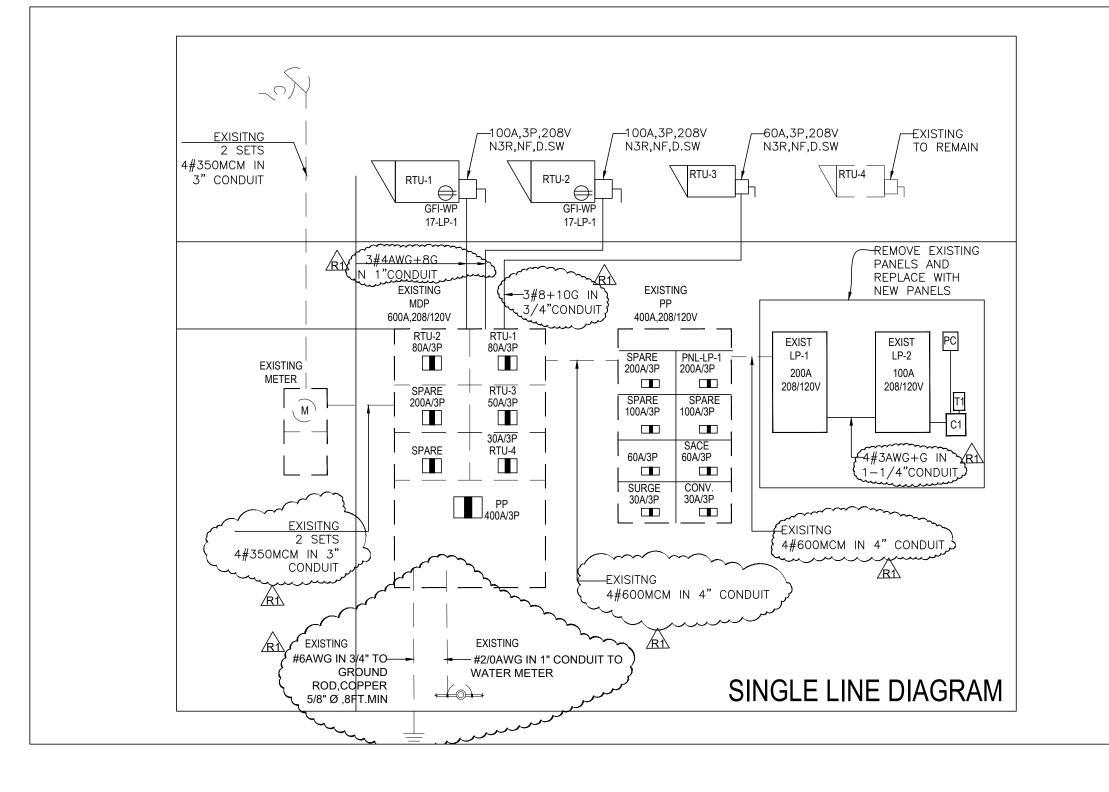
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3PH,4W					PANE	L-LP2				BOTTOM FEED	
208/120V					(EXIS	ITNG)				SURFACE MOUNT	
125 BUS					22k	(AIC				LOCATION:	
SL.NO.	DESCRIPTION		LOAD	•	BRK	BRK				DESCRIPTION	SL.NO.
		Α	В	С			Α	В	С		
1	RECEPTACLES-ROCKIN Rm # 110	1,440			20/1	20/1	1,440			RECEPTACLE-PRE-K Rm # 107	2
3	RECEPTACLES- MOTOR Rm # 105		1,440		20/1	20/1		1,260		RECEPTACLES-RM # 113	4
5	RECEPTACLES- MOTOR Rm # 105			1,440	20/1	20/1			900	RECEPTACLES-BEEHIVE RM # 118	6
7	RECEPTACLES-KITCHEN COUNTR	540			20/1	20/1	1,100			RECEPTACLES-KITCHEN COUNTER	8
9	RECEPTACLES-WASHER		1,500		20/1	20/1		900		REFRIGERATOR	10
11	RECEPTACLES-PRIVATE OFFICE			900	20/1	20/1			1,260	FREEZER	12
13	DRYER	2,500			30/2	20/1	900			RECEPTACLES-CORRIDOR	14
15	DRYER		2,500		-	20/1		900		RECEPTACLES-PRIVATE OFFICE	16
17	SHOW WINDOW RECEPTACLE			1,400	20/1	20/1			1,400	SHOW WINDOW RECEPTACLE	18
19	SHOW WINDOW RECEPTACLE	1,400			20/1	20/1	1,400			SHOW WINDOW RECEPTACLE	20
21	SHOW WINDOW RECEPTACLE		1,400		20/1	20/1				SPARE	22
23	Pop Corn Oven			1,500	20/2	20/1				SPARE	24
25	-	1,500			-	20/1				SPARE	26
27	SPARE				20/1	20/1				SPARE	28
29	SPARE				20/1	20/1				SPARE	30
31	SPARE				20/1	20/1				SPARE	32
33	SPARE				20/1	20/1				SPARE	34
35	SPARE				20/1	20/1				SPARE	36
37	SPARE				20/1	20/1				SPARE	38
39	SPARE				20/1	20/1				SPARE	40
41	SPARE				20/1	20/1				SPARE	42
	TOTAL-VA	7,380	6,840	5,240			4,840	3,060	3,560		
PHASE-A			12,220								
PHASE-B			9,900								
PHASE-C			8,800								
TOTAL CON	NNECTED VA		30,920				TOTAL DEN	/AND VA		20098	
TOTAL AM	PS		85.83				TOTAL DEN	AND AMPS		55.79	

3PH,4W		PANEL-LP-1							BOTTOM FEED			
480/277V			(EXISITNG)							SURFACE MOUNT		
225 BUS, 200A				221	(AIC				LOCATION:			
SL.NO.	DESCRIPTION		LOAD	•	BRK	BRK				DESCRIPTION	SL.NO.	
		Α	В	С			Α	В	С			
1	LIGHTING-ROOM # 106	330			20/1 **	** 20/1	472			LIGHTING-ROOM # 105	2	
3	LIGHITNG-CORR. #115		388		20/1**	** 20/1		456		LIGHTING - KITCHEN-121	4	
5	LIGHTNG-OFFICE # 123			210	20/1**	** 20/1			1,500	BATHROOM LTG & POW-127 &128	6	
7	LIGHTING- PRE-K RM # 107	484			20/1**	** 20/1	1,500			BATHROOM LTG/POWER	8	
9	LIGHTING- SUNSET # 106		352		20/1 **	** 20/1		352		LIGHTING-ROCK-IN ROBBIN #111	10	
11	LIGHITNG-GROWING GROUP # 113			440	20/1 **	20/1			1,500	EXTERIOR WALL PACK	12	
13	CANOPY LIGHT ( EXISTING)	640			20/1	** 20/1	200			FACP	14	
15	FUTURE SITE LIGHITNG		1,000		20/1	20/1		360		OUTSIDE RECEPTACLE	16	
17	RTU-GFI			360	20/1	20/1			50	TIME CLOCK/CONTACTOR	18	
19	UNIT HEATER	1,500			25/2	20/1	850			UTILITY ROOM	20	
21	-		1,500		-	** 20/1		360		TELEPHONE BOARD	22	
23	SPARE				30/2	20/1				SPARE	24	
25	SPARE				20/1	20/1				SPARE	26	
27	SPARE				20/1	20/1				SPARE	28	
29	SPARE				20/1	20/1				SPARE	30	
31	SPARE				20/1	20/1				SPARE	32	
33	SPARE				20/1	20/1				SPARE	34	
35	SPARE				20/1	20/1				SPARE	36	
37	SUB PANEL-LP2	9,607			20/1	20/1				SPARE	38	
39	SUB PANEL-LP2		9,607		20/1	20/1				SPARE	40	
41	SUB PANEL-LP2			9,607	20/1	20/1				SPARE	42	
	TOTAL-VA	12,561	12,847	10,617			3,022	1,528	3,050			
PHASE-A			15,583									
PHASE-B			14,375									
PHASE-C			13,667				1					
TOTAL CO	NNECTED VA	1	43,624				TOTAL DEN	IAND VA		54530.60		
TOTAL AN	1PS		121.09				TOTAL DEM	MAND AMPS		151.37		

3PH,4W		PANEL-PP							BOTTOM FEED			
208/120V			(EXISITNG)							SURFACE MOUNT		
400A BUS			22KAIC							LOCATION:		
SL.NO.	DESCRIPTION		LOAD		BRK	BRK				DESCRIPTION	SL.NO	
		А	В	С			Α	В	С			
1	SPARE	-			200/3	200/3	9,607			PANEL-LP1	2	
3	-		-		-	-		9,607		-	4	
5	-			-	-	-			9,607	-	6	
7	SPARE				100/3	100/3	-			-	8	
9	-		-		-	-		-		-	10	
11	-			-	-	-			-	SPARE	12	
13	Convention Oven	-			60/3	60/3	-			-	14	
15	-		-		-	-		-		-	16	
17	-				-	-			-	SPACE	18	
19	SURGE	1,441			30/3	30/3	-			-	20	
21	-		1,441		-	-		-		-	22	
23	-			1,441	-	-			-	SPARE	24	
25											26	
27											28	
29											30	
31											32	
33											34	
35											36	
37											38	
39											40	
41											42	
		•			•		•	•				
	TOTAL-VA	1,441	1,441	1,441			9,607	9,607	9,607			
PHASE-A			11,048									
PHASE-B			11,048									
PHASE-C			11,048									
TOTAL CO	NNECTED VA		33,144				TOTAL DEN	IAND VA		21543.3088		
TOTAL AM	1PS		92.00				TOTAL DEN	IAND AMPS		59.80		



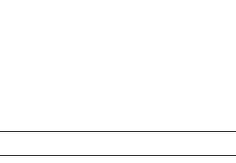


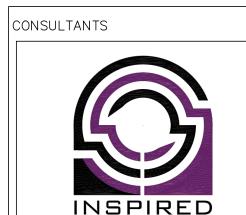
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A+M ARCHITECTS, LLC

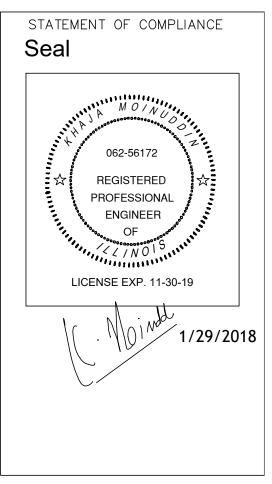
40 Landover Parkway, Suite 3
Hawthorn Woods, Illinois 60047
TEL: 847.726.9517

430 East IL Route 22 / Half Day Road Lake Zurich, Illinois 60047
847.307.4400 Fax 847.307.4410





MEP DESIGN
INSPIRED TECHNOLOGY CONCEPTS
142 CROSSEN AVE.
ELK GROVE,IL
TEL#847-258-5552



ISSUE FOR	DATE
REVIEW	10/16
REVIEW	10/25
REVIEW	11/14
REVIEW	11/20
REVIEW	11/29
PERMIT REVIEW	1/29

DRAWN BY:

APPROVED:

PROJECT NO.

DATE

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TENANT IMPROVEMENTS FOR:

PIONEER

CHILD CARE

SERVICES, INC.

18W375 E. ROOSEVELT RD.

DUPAGE CTY., ILLINOIS

SHEET DESCRIPTION

SINGLE LINE DIAGRAM

SPECIFICTION

SHEET NUMBER