

ELECTRICAL ONE-LINE KEYED NOTES

- NEW ISOLATION TRANSFORMER REFER TO DETAIL #2 THIS SHEET FOR ADDITIONAL INFORMATION
- PROVIDE NEW FEEDER AND CONNECT TO EXISTING PANELBOARD AS INDICATED

GENERAL ONE-LINE NOTES

- INFORMATION SHOWN ON DRAWINGS IS INTENDED TO INDICATE MINIMUM REQUIREMENTS TO MEET THE NEEDS OF THE OWNER. VERIFY EXISTING CONDITIONS, CAPACITIES, AND OTHER PROVISIONS BY OTHER PERMITS, BUILDING/TENANT LEASE AGREEMENT PRIOR TO BEGINNING CONSTRUCTION.
- IF APPLICABLE, OBTAIN A COPY AND REVIEW LANDLORD'S LATEST EDITION OF THEIR TENANT DESIGN AND CONSTRUCTION CRITERIA AND COMPLY WITH ALL REQUIREMENTS. WHERE CONFLICTS OCCUR BETWEEN THE CRITERIA DOCUMENTS AND THE CONSTRUCTION DOCUMENTS, THE MOST STRINGENT REQUIREMENT SHALL GOVERN.
- ALL CONDUCTOR LENGTHS PROVIDED IN THESE DESIGN DOCUMENTS ARE INTENDED SOLELY FOR USE IN THE DESIGN CALCULATIONS BY THE DESIGN PROFESSIONAL UNLESS SPECIFICALLY NOTED OTHERWISE IN THE DOCUMENTS. THEY SHALL NOT BE USED BY CONTRACTORS IN BIDDING OR CONSTRUCTION. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR THE MATERIAL QUANTITIES REQUIRED TO BID AND CONSTRUCT THE COMPLETE PROJECT.
- PROVIDE COMPLETE TYPEWRITTEN IDENTIFICATION DIRECTORY CARD FOR ALL MAIN AND BRANCH CIRCUITS IN THE PANELBOARD DOORS.
- ALL NEW WORK SHALL BE COORDINATED WITH LANDLORD AND SHALL BE IN ACCORDANCE WITH LANDLORD'S REQUIREMENTS.
- THE USE OF BX, RMXEM, OR AC IS NOT PERMITTED.
- *F* REPRESENTS FAULT POINT FAS AS CALCULATED IN TABLE BELOW
- *V* IN FEEDER TAG INDICATES FEEDER SIZES HAVE BEEN INCREASED FOR VOLTAGE DROP. REFER TO CIRCUIT SCHEDULE FOR FEEDER SIZES
- CONTRACTOR SHALL PROVIDE AND INSTALL A LABEL ON THE FIRST PIECE OF SERVICE EQUIPMENT INDICATING THE AVAILABLE FAULT CURRENT AT THE EQUIPMENT. LABEL SHALL BE CUSTOM DIGITALLY PRINTED AND HIGH-DURABILITY LAMINATED LABEL RATED FOR OUTDOOR APPLICATIONS. LETTERING SHALL BE A MINIMUM OF 1/4" HIGH YELLOW BACKGROUND WITH BLACK LETTERING, AND SHALL INCLUDE INFORMATION AS INDICATED IN LABEL #1 BELOW
- CONTRACTOR SHALL PROVIDE AND INSTALL A LABEL ON ALL SWITCHBOARDS AND PANELBOARDS INDICATING WHERE THE EQUIPMENT IS FED FROM. LABEL SHALL BE CUSTOM DIGITALLY PRINTED AND HIGH-DURABILITY LAMINATED LABEL RATED FOR OUTDOOR APPLICATIONS. LETTERING SHALL BE A MINIMUM OF 1/4" HIGH YELLOW BACKGROUND WITH BLACK LETTERING, AND SHALL INCLUDE INFORMATION AS INDICATED IN LABEL #2 BELOW
- CONTRACTOR SHALL PROVIDE AND INSTALL A LABEL ON ALL TRANSFORMERS INDICATING WHERE THE TRANSFORMER IS FED FROM AND THE LOCATION OF THE PRIMARY DISCONNECTING MEANS. LABEL SHALL BE CUSTOM DIGITALLY PRINTED AND HIGH-DURABILITY LAMINATED LABEL RATED FOR OUTDOOR APPLICATIONS. LETTERING SHALL BE A MINIMUM OF 1/4" HIGH YELLOW BACKGROUND WITH BLACK LETTERING, AND SHALL INCLUDE INFORMATION AS INDICATED IN LABEL #3 BELOW
- ELECTRICAL CONTRACTOR SHALL FIELD VERIFY FUSE SIZES IN EXISTING MAIN SWITCHBOARD AND DISTRIBUTION PANELS
- CONTRACTOR SHALL VERIFY THIS IS THE POINT OF SERVICE ENTRANCE AND NEUTRAL AND GROUND ARE BONDED TOGETHER AND TO THE GROUNDING ELECTRODE SYSTEM

CIRCUIT SCHEDULE

ALL CONDUCTORS ARE BASED ON 75 DEG C RATED TERMINATIONS. COPPER CONDUCTORS ARE BASED ON THW/THWN-2 INSULATION. ALUMINUM CONDUCTORS (PREFIX "AL") ARE BASED ON XHHW-2 INSULATION. FOR ANY OTHER CONDITIONS ALLOWED PER SPECIFICATIONS, OR FOR TERMINATIONS OR INSULATION TYPES RATED LESS THAN 75 DEG C, MODIFY SIZES ACCORDING TO NFPA 70.

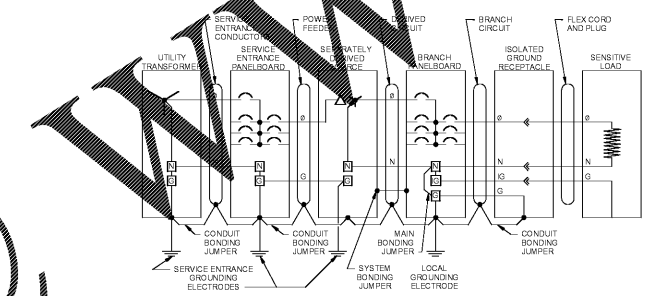
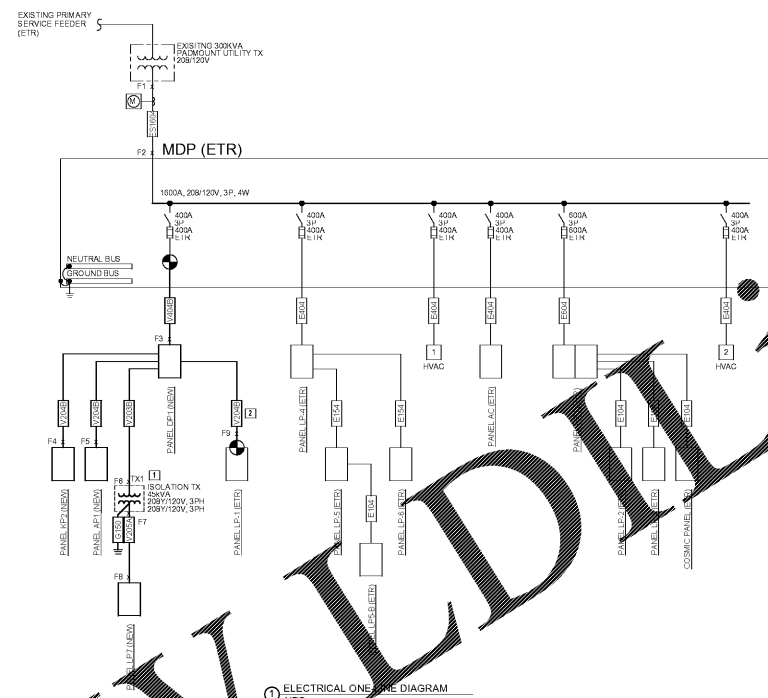
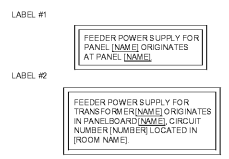
FEEDER TAG	FEEDER DESCRIPTION
E154	EXISTING 600V (1) 100' 1-1/2" C
E154	EXISTING 600V (1) 100' 1-1/2" C
E401	EXISTING 21/2" C EACH W/ (4) 500M (1) 500M
E504	EXISTING 21/2" C EACH W/ (4) 500M (1) 500M
E1504	EXISTING 61/2" C EACH W/ (4) 500M (1) 500M
G150	EXISTING #6 COPPER GROUND, 3/4" C
V235	(3) 200M (1) 60' 2-1/2" C
V245	(4) 200M (1) 60' 2-1/2" C
V255	(4) 200M (1) 60' 2-1/2" C
V445	(2) 2-1/2" C EACH W/ (4) 250M (1) 1/1" G

NOTE: CALCULATION BASED ON A 300 KVA UTILITY TRANSFORMER WITH AN IMPEDANCE OF 1%, SECONDARY 208/120V

AVAILABLE FAULT CURRENT OF 75,108 AMPS ASSUMING INFINITE PRIMARY UTILITY COMPANY - GEORGIA POWER

PHONE NUMBER: 888-991-0998

ELECTRICAL CONTRACTOR SHALL FIELD VERIFY EXISTING AVAILABLE FAULT CURRENT AT THE UTILITY TRANSFORMER AND NOTIFY THE ENGINEER OF THEIR FINDINGS.



BUILDING LOAD SUMMARY

SERVICE DESCRIPTION			
208Y/120 V			
LOAD TYPE	CONNECTED LOAD KVA	DEMAND FACTOR	NEC DEMAND KVA
EXISTING PEAK UTILITY (@ 0.9 pf)	NA	100%	280.56
COOLING (CL)	6.75	0%	0.00
HEATING (HS)	7.20	100%	7.20
LIGHTING (L) (PER NEC-220)	21.03	125%	26.29
RECEPTACLES (R)	14.76	84%	12.38
MOTORS (M)	3.55	100%	3.55
MISC EQUIP (Z)	49.80	100%	49.80
SIGN/DISPLAY (D)	3.70	125%	4.63
KITCHEN (K)	11.88	100%	11.88
LARGEST MOTOR	3.91	125%	3.51
EXISTING LOAD TO BE DELETED	86.00	100%	86.00
TOTAL LOAD	55.47	KVA	330.81
TOTAL AMPACITY	153.96	AMPS	326.56
SERVICE AMPACITY		AMPS	2280.00
SPARE CAPACITY		AMPS	1353.44
*PER UTILITY COMPANY BILLING PEAK DEMAND D.F.	202.00 KW		Aug 2017

Short-Circuit and Voltage Drop Calculations

Discontinue for calculation purposes if not to be used. Contractor shall verify condition of any feed condition that results in a change of 10% or greater circuit distance.

$I_{SC} = \frac{V}{Z}$
 $Z = \sqrt{R^2 + X^2}$
 $R = \sum \left(\frac{\rho \cdot L}{A} \right)$
 $X = \sum \left(\frac{\rho \cdot L}{A} \right)$
 $\rho = \text{Resistivity of conductor}$
 $L = \text{Length of circuit}$
 $A = \text{Cross-sectional area}$
 $\rho = 1.724 \times 10^{-8} \text{ } \Omega \cdot \text{ft}$ (Copper)
 $\rho = 2.826 \times 10^{-8} \text{ } \Omega \cdot \text{ft}$ (Aluminum)

$V_{DROP} = I \cdot Z$
 $V_{DROP} = I \cdot \sqrt{R^2 + X^2}$
 $V_{DROP} = I \cdot \left(\sum \left(\frac{\rho \cdot L}{A} \right)^2 \right)^{0.5}$
 $V_{DROP} = I \cdot \left(\sum \left(\frac{\rho \cdot L}{A} \right)^2 \right)^{0.5}$

Fault Point (F#)	Bus/Feeder Description	Source Phase	Source Vol (V)	Conduit Size (in)	Material	Feeder Qty (Per Size and Bus Phase & Neutral Size)	Conductor Qty	Busbar Value	Source Value	L-L Volts (V)	Circuit Amps (A)	Load Power Factor (pf)	Circuit Load (Amps)	Resistance (R)	Conductor Reactance (X)	Amps (A)	Type	Degree (Deg)	LVA	Existing Amps (A)	Secondary Voltage	Tp Rating	I	M	Fault Current (amps)	Voltage Drop (VDC)	Cumulative Voltage Drop (VDC)	Fault Point (F#)		
1	Utility Service Point		75,108		M	at the secondary of the utility transformer																								
2	TO MDP	1	3	77988	M	CJ 1 Set(s) of 300	22186		208	20	0.9	1280	0.00029	0.00048	0.451027										0.098	0.91	71055	-0.17%	-0.17%	2
3	TO DP1	2	3	71955	M	CJ 2 Set(s) of 250	16483		208	180	0.9	303	0.00054	0.00052	0.451027										3.413	0.23	18113	-1.80%	-1.97%	3
4	TO DP2	3	3	16112	M	CJ 1 Set(s) of 250	16483		208	20	0.9	160	0.00054	0.00052	0.451027										0.143	0.06	13963	-0.15%	-2.12%	4
5	TO AP1	3	3	16112	M	CJ 1 Set(s) of 250	16483		208	85	0.9	83	0.00054	0.00052	0.451027										0.773	0.16	8086	-0.48%	-2.42%	5
6	TO T1	3	3	16112	M	CJ 1 Set(s) of 250	16483		208	80	0.9	120	0.00054	0.00052	0.451027										0.681	0.01	3768	-0.97%	-2.54%	6
7	TO T	3	3	2598	TX				208	8	0.9	2598													2.829	0.25	2483	-2.54%		7
8	TO LP7	7	3	2483	M	CJ 1 Set(s) of 250	16483		208	10	0.9	120	0.00054	0.00052	0.451027										0.013	0.09	2483	-0.07%	-2.81%	8
9	TO LP1	3	3	16112	M	CJ 1 Set(s) of 250	16483		208	10	0.9	160	0.00054	0.00052	0.451027										0.281	0.02	1468	-0.34%	-3.23%	9
10	TO LP4	2	3	71955	M	CJ 2 Set(s) of 30	12844		208	20	0.9	303	0.00079	0.00052	0.451027										0.461	0.08	4804	-0.25%	-2.42%	10

NOTE: EXISTING CONDITIONS WERE TAKEN FROM ORIGINAL DRAWINGS & SITE VISITS AND MAY NOT REFLECT EXACT "AS-BUILT" CONDITIONS. FIELD VERIFY ALL EXISTING CONDITIONS PRIOR TO SUBMITTING FINAL BIDS. CAREFULLY COORDINATE NEW WORK AND DEMOLITION WITH ALL OTHER DISCIPLINES AND EXISTING CONDITIONS.

Client/Owner/Project Address
Bowlero | AMP
Client Address
222 W 44th Street
New York, NY 10036
Project Address
507 Washington Rd
Augusta, GA 30907



Issue Drawing Log

Date	Description
2018 05 29	ISSUE FOR PERMIT
2018 05 28	ISSUE FOR BID

THIS DOCUMENT IS RELEASED FOR THE PROJECT AND THE PROJECT ONLY. IT IS NOT TO BE USED FOR ANY OTHER PROJECTS.

Sheet Identification
ELECTRICAL ONE-LINE DIAGRAM