

ELECTRICAL LEGEND		
ALL SYMBOLS DO NOT NECESSARILY APPLY		
SYMBOL	DESCRIPTION	MOUNTING HGT. TO CENTERLINE UNLESS OTHERWISE NOTED
	WIRED JUNCTION BOX	SEE DRAWINGS
	CEILING MOUNTED EXIT LIGHT	—
	CEILING MOUNTED EXIT LIGHT OUTLET	—
	WALL MTD. EXIT LIGHT W/ DIRECTIONAL ARROWS	SEE DRAWINGS
	DUPLEX RECEPTACLE, 3 WIRE GRD. TYPE	18"
	FLOOR BOX WITH DUPLEX RECEPTACLE, CABLE, AND DATA OUTLETS. SEE E1 FOR MORE INFORMATION.	FLOOR
	FLOOR MOUNTED "DOGHOUSE" GFI RECEPT.	FLOOR
	DUPLEX RECEPTACLE, WEATHERPROOF	18"
	DUPLEX RECEPTACLE, GROUND FAULT PROTECTED	18"
	DUPLEX RECEPTACLE, QUADRAPLEX RECEPTACLE, ISOLATED GROUND	18"
	TOGGLE SWITCH, SINGLE POLE	48"
	TOGGLE SWITCH, DOUBLE POLE	48"
	TOGGLE SWITCH, 3-WAY, 4-WAY	48"
	OCCUPANCY SENSOR	CEILING MTD.
	SAFETY SWITCH	AS REQUIRED
	ELECTRIC PANEL	6'-0" TO TOP
	MOTOR OUTLET	—
	1 PHONE JACK	
	2 DATA OUTLETS, 1 PHONE JACK	
	COAXIAL KEYSTONE 1F-CONNECTOR COAX MODULE TO TV SIGNAL VIA COAXIAL CABLE	
	DATA RJ45 CONNECTOR FOR CONNECTION TO ETHERNET VIA CAT5 CABLE	
	FIRE ALARM BREAK STATION	48"
	FIRE ALARM AUDIO/VISUAL SIGNAL DEVICE	96"
	DUCT MTD. SYSTEM SMOKE DETECTOR W/ REMOTE INDICATORS	AS REQUIRED
	FIRE ALARM WATER FLOW SWITCH	AS REQUIRED
	FIRE ALARM TAMPER SWITCH	AS REQUIRED
	SYSTEM SMOKE DETECTOR, PHOTOELECTRIC	CEILING MTD.
	SYSTEM HEAT DETECTOR	CEILING MTD.
	SYSTEM HEAT DETECTOR (FIXED TEMP.)	CEILING MTD.
	FIRE ALARM PANEL	AS REQUIRED
	JUNCTION BOX	AS REQUIRED
	DUPLEX RECEPTACLE AT STOREFRONT	CEILING MTD.
	MULTI-OUTLET RACEWAY W/SEPARATION FOR POWER AND DATA	SEE SHEET E1
	TIME CLOCK	AS REQUIRED

GENERAL NOTES	
CONTRACTOR SHALL VISIT THE SITE AND FAMILIARIZE HIMSELF WITH THE EXISTING CONDITIONS UNDER WHICH HE IS TO PERFORM HIS WORK. NO ALLOWANCE WILL BE MADE FOR FAILURE TO COMPLY.	
ALL ELECTRICAL WORK SHALL BE DONE IN ACCORDANCE WITH THE LATEST ADOPTED NATIONAL ELECTRICAL CODE AND ALL APPLICABLE FEDERAL, STATE AND LOCAL CODES AND ORDINANCES.	
VERIFY EXACT LOCATION, MOUNTING HEIGHT AND ELECTRICAL REQUIREMENTS OF ALL EQUIPMENT PROVIDED BY OTHERS (INCLUDING HVAC EQUIPMENT) PRIOR TO ROUGH-IN AND PROVIDE ALL REQUIRED FUSIBLE SWITCHES, TRANSFORMERS, STARTERS NECESSARY FOR PROPER OPERATION OF EQUIPMENT.	
DUPLEX RECEPTACLES MOUNTED WITHIN 6 FT. OF SINK TO BE A GFI RECEPTACLE.	
ALL WIRING SHALL BE COPPER, THHN/THWN OR XHHW INSULATED IN CONDUIT. MINIMUM CONDUIT SIZE TO BE 1/2". PROVIDE INSULATED COPPER BOND WIRE ON ALL CIRCUITS.	
REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATION OF LIGHTING FIXTURES. VERIFY CEILING TYPES AND PROVIDE NECESSARY MOUNTING HARDWARE TO ACCOMMODATE LIGHT FIXTURES USED. PROVIDE SLOPE CEILING ADAPTERS WHERE REQUIRED.	
ADDITIONAL EXIT SIGNS AND EMERGENCY LIGHTING MAY BE REQUIRED. ADDITIONAL FIXTURES SHALL BE LOCATED AS DIRECTED BY THE LOCAL BUILDING AUTHORITY.	
ACCESSIBLE NOTES	
LIGHT SWITCHES, ELECTRICAL OUTLETS, THERMOSTATS AND OTHER ENVIRONMENTAL CONTROLS SHALL HAVE OPERABLE PARTS OF THE CONTROLS LOCATED NO HIGHER THAN 48" AND NO LOWER THAN 15" ABOVE THE FLOOR. IF THE REACH IS OVER AN OBSTRUCTION BETWEEN 20" AND 25" IN DEPTH, THE MAXIMUM HEIGHT IS REDUCED TO 44" FOR FORWARD APPROACH OR 46" FOR SIDE APPROACH, PROVIDED THE OBSTRUCTION IS NO MORE THAN 24" IN DEPTH. OBSTRUCTIONS SHALL NOT EXTEND MORE THAN 25" FROM THE WALL BENEATH A CONTROL.	

ELECTRICAL LOAD SUMMARY PANEL P

LOAD TYPE	CONNECT. LOAD (KVA)	DEMAND FACTOR	DEMAND LOAD (KVA)
LIGHTING	5	1.25	7
RECEPTACLES	11	1.00	11
MOTORS & HVAC	9	1.00+	12
ELEC. HEAT	0.0	1.00	0.0
TOTAL	26		30

* 125% OF LARGEST MOTOR

SERVICE SIZING LOAD = 30.0 KVA

TOTAL DEMAND LOAD: 30 / 208V 1PH = 144 AMPS

200 AMP SERVICE IS ADEQUATE

ELECTRICAL LOAD SUMMARY PANEL P1

LOAD TYPE	CONNECT. LOAD (KVA)	DEMAND FACTOR	DEMAND LOAD (KVA)
LIGHTING	0	1.25	0
RECEPTACLES	18	1.00	18
MOTORS & HVAC	7	1.00+	8
ELEC. HEAT	0.0	1.00	0.0
TOTAL	25		26

* 125% OF LARGEST MOTOR

SERVICE SIZING LOAD = 26 KVA

TOTAL DEMAND LOAD: 26 / 208V 1PH = 125 AMPS

200 AMP SERVICE IS ADEQUATE

ELECTRICAL LOAD SUMMARY PANEL P2

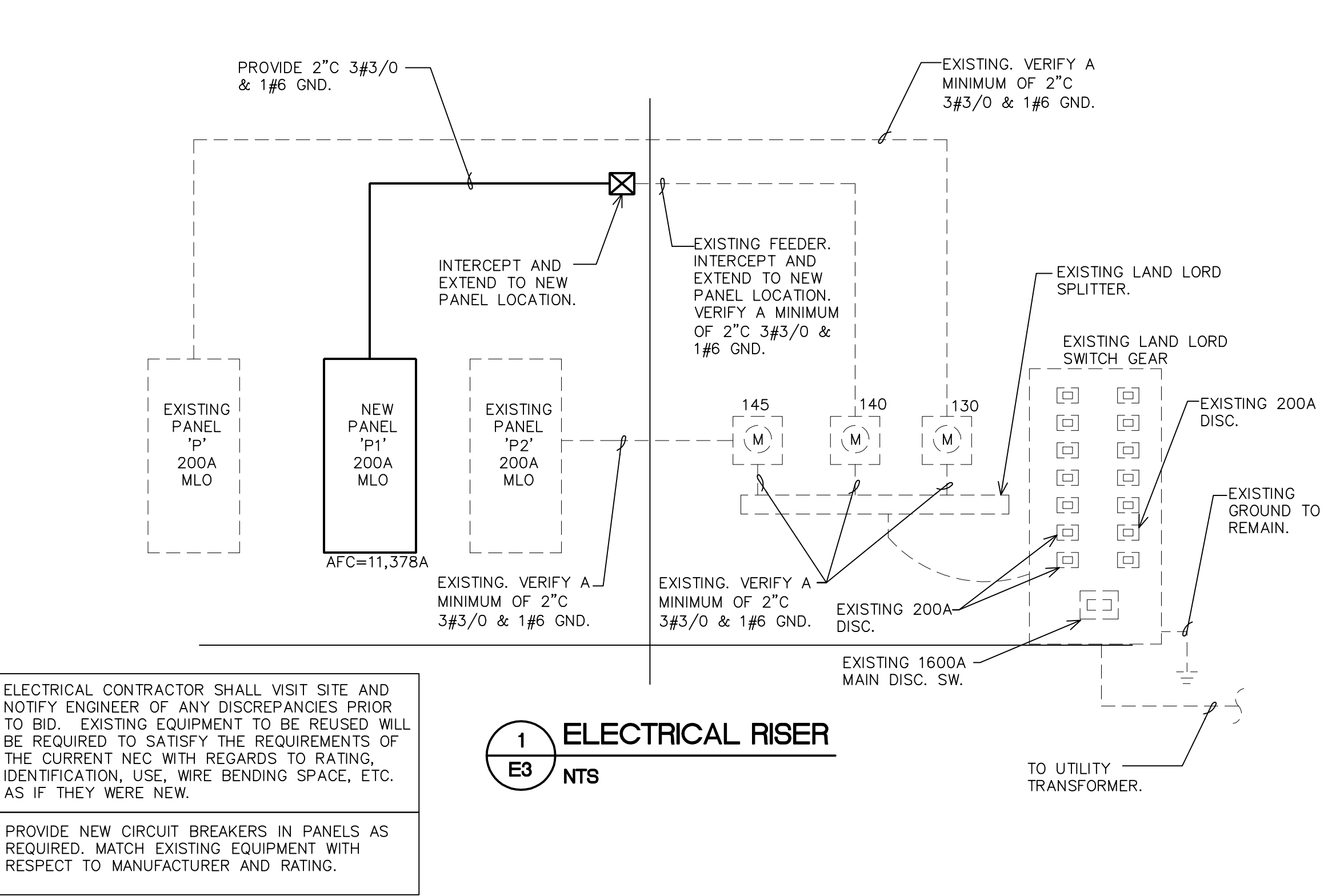
LOAD TYPE	CONNECT. LOAD (KVA)	DEMAND FACTOR	DEMAND LOAD (KVA)
LIGHTING	0	1.25	0
RECEPTACLES	14	1.00	14
MOTORS & HVAC	9	1.00+	11
ELEC. HEAT	0.0	1.00	0.0
TOTAL	22		25

* 125% OF LARGEST MOTOR

SERVICE SIZING LOAD = 25 KVA

TOTAL DEMAND LOAD: 25 / 208V 1PH = 118 AMPS

200 AMP SERVICE IS ADEQUATE



ELECTRICAL RISER

Fault current calculations and AIC design are based on the following assumptions.									
65,000		Short Circuit Amps Available at Service Entrance							
4 Set 4" C Metal, 4#600	Conduit and Wire	50'	Distance From	XFMR	To	LL DIST			
1 Set 2" C Metal, 4#3/0	Conduit and Wire	3'	Distance From	LL Dist	To	METER			
1 Set 2" C Metal, 4#3/0	Conduit and Wire	3'	Distance From	METER	To	DISC SWITCH			
1 Set 2" C Metal, 4#3/0	Conduit and Wire	40'	Distance From	DISC SWITCH	To	Pnl P1			
All conductors based on copper unless noted otherwise									
NOTES TO ELECTRICAL CONTRACTOR									
- Electrical Contractor upon being awarded contract, shall contact the utility to obtain the actual available fault current and verify all above information upon arrival on site, prior to ordering or approving release of equipment and report updated information to contact below. Engineer will recalculate available fault currents and relay results to the Electrical Contractor for compliance with 2011 NEC 110.24(A), (B) field marking requirements. This procedure shall be done for all new and/or relocated switchgear and/or panels regardless of current code adoption.									
- Electrical Contractor to provide arc-flash hazard warning field marking per NEC 110.16.									
- Electrical Contractor to provide series rated labeling per NEC 110-22(B) where there is an applied series rating as shown on the drawings.									
- Any additional costs for failure to comply with the above requirements will be strictly at contractors expense.									
Engineering Contact		Cullen Murtaugh Dunham Associates cullen.murtaugh@dunhameng.com 612-465-7681							

Panel: P2 Voltage: 120/208v, 1ph, 3w									
No.	Amps/Note	Description	Ph	Code L VA	Code C VA	Code R VA	Code M VA	Code E VA	Code A VA
1	20/1	TOILET ROOM RECEPTALCE	-A-	180					
3	20/1	TOILET ROOM RECEPTALCE	-B-	180					
5	20/1	TOILET ROOM RECEPTALCE	-A-	180					
7	20/1	VENDING MACHINE	-B-		840				
9	20/1	TROPOSAIR FAN	-A-			33			
11	20/1	TVS	-B-		600				
13	20/1	GENERAL RECEPTACLES	-B-	1260					
15	20/1	SPARE	-B-						
17	20/1	RTU RECEPTACLE (E)	-A-		400				
19	20/1	SHOW WINDOW RECEPTACLE	-B-	900					
21	-	SPACE	-A-						
23	-	SPACE	-B-						
25	-	SPACE	-A-						
27	-	SPACE	-B-						
29	-	SPACE	-A-						
31	-	SPACE	-B-						
33	-	SPACE	-A-						
35	-	SPACE	-B-						
37	-	SPACE	-A-						
39	-	SPACE	-B-						
2	70/ 3	WH-1	-A-		6000				
4	2 3	"	-B-		6000				
6	20/1	VENDING MACHINE	-A-		840				
8	20/1	SPARE	-B-						
10	20/1	SPARE	-A-						
12	20/1	SPARE	-B-						
14	60/ 2	RTU-2 (E)	-A-		3360				
16	2 2	SPARE	-B-		3360				
18	20/1	SPARE	-A-						
20	20/1	SPARE	-B-						
22	-	SPACE	-A-						
24	-	SPACE	-B-						
26	-	SPACE	-A-						
28	-	SPACE	-B-						
30	-	SPACE	-A-						
32	-	SPACE	-B-						
34	-	SPACE	-A-						
36	-	SPACE	-B-						
38	-	SPACE	-A-						
40	-	SPACE	-B-						
Through		None	-A-						
Feed Lug		None	-B-						
Main	200/		-A-	0	1620	7240	3393	0	0
BREAKER	2		-B-	0	1080	7440	3360	0	0
Panel - Bus KVA loads									
Overcurrent Device Notes:									
1	-	EXISTING BREAKER TO REMAIN		0	0	Code L * Lighting			
2	-			0	0	Code C * Convenience Receptacles (180 W)			
3	-			14	14	Code R * Receptacles (Non Convenience)			
4	-			11	9	Code M * Motors - Largest Mtr VA = 6032			
Panelboard Notes:									
1	-	PROVIDE SERIES RATED PANEL		0	0	Code E * Electric Heat			
2	-			0	0	Code K * Kitchen Equip	Dmd = 100%		
3	-			25	23	Total KVA			
4	-			0	0	Spare KVA		Spare =	0%
5	-			25	25	Adjusted KVA (Demand + Spare KVA)			
200	-	Amps Bus Rating		120	Adjusted Amps (Demand + Spare KVA)				
EXISTING	-	Amps AIC Rating		121	High Phase Amps (Demand + Spare KVA)				
EXISTING	-	Mounting		File Name:	Project Number:	Project Name:			
208	-	Phase to Phase Voltage		PANEL "P2"	0416740-036	ANYTIME FITNESS			

Panel: P1			Voltage: 120/208v, 1ph, 3w							
No.	Amps/Note	Description	Ph	Code L VA	Code C VA	Code R VA	Code M VA	Code E VA	Code A VA	Code D VA
1	20/1	TOILET ROOM RECEPTALCE	-A-		180					
3	20/1	TOILET ROOM RECEPTALCE	-B-		180					
5	20/1	TOILET ROOM RECEPTALCE	-A-		180					
7	20/1 1,2	VENDING MACHINE	-B-			840				
9	20/1 2	TROFOSAIR FAN	-A-				33			
11	20/1 2	TVS	-B-			600				
13	20/1 2	GENERAL RECEPTACLES	-A-		1260					
15	20/1 2	SPARE	-B-							
17	20/1 2	RTU RECEPTACLE (E)	-A-			400				
19	20/1 2	SHOW WINDOW RECEPTACLE	-B-		900					
21	-	SPACE	-A-							
23	-	SPACE	-B-							
25	-	SPACE	-A-							
27	-	SPACE	-B-							
29	-	SPACE	-A-							
31	-	SPACE	-B-							
33	-	SPACE	-A-							
35	-	SPACE	-B-							
37	-	SPACE	-A-							
39	-	SPACE	-B-							
2	70/ 3	WH-1	-A-			6000				
4	2 3	"	-B-			6000				
6	20/1 1,2	VENDING MACHINE	-A-			840				
8	20/1 2	SPARE	-B-							
10	20/1 2	SPARE	-A-							
12	20/1 2	SPARE	-B-							
14	60/ 2	RTU-2 (E)	-A-				3360			
16	2 2	SPARE	-B-				3360			
18	20/1 2	SPARE	-A-							
20	20/1 2	SPARE	-B-							
22	-	SPACE	-A-							
24	-	SPACE	-B-							
26	-	SPACE	-A-							
28	-	SPACE	-B-							
30	-	SPACE	-A-							
32	-	SPACE	-B-							
34	-	SPACE	-A-							
36	-	SPACE	-B-							
38	-	SPACE	-A-							
40	-	SPACE	-B-							
Through -		None	-A-							
Feed Lug		None	-B-							
Main Breaker	200/ 2		-A-	0	1620	7240	3393	0	0	0
			-B-	0	1620	7440	3360	0	0	0
Overcurrent Device Notes:				Dmd	Conn	Panel - Bus KVA loads				
1 -	PROVIDE	GFCI CIRCUIT BREAKER		0	0	Code L =	Lighting			
2 -	EXISTING BREAKER	TO REMAIN		3	3	Code C =	Convenience Receptacles (180 W)			
3 -	PROVIDE NEW BREAKER	AS INDICATED		15	15	Code R =	Receptacles (Non Convenience)			
4 -				8	7	Code M =	Motors - Largest Mtr VA =		4056	
				0	0	Code E =	Electric Heat			
1 -	PROVIDE	SERIES RATED PANEL NOTES:		0	0	Code K =	Kitchen Equip	Dmd =	100%	
2 -				0	0	Code D =	Dwelling Units (Hotel/Motel Rooms)			
4 -				26	24	Total KVA				
5 -				0		Spare KVA		Spare =	0%	
200				26		Adjusted KVA (Demand + Spare KVA)				
22,00	Amp Bus Rating			124		Adjusted Amps (Demand + Spare KVA)				
EXISTING	Amps AIC Rating			126		High Phase Amps (Demand + Spare KVA)				3/9/2016
208	Phase to Phase Voltage			File Name:		Project Number :		Project Name :		
				PANEL "P1"		0416740-036		ANYTIME FITNESS		