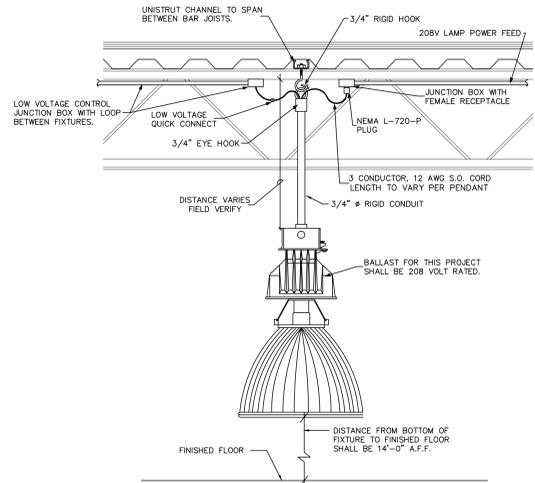


ELECTRICAL SYSTEM AND EQUIPMENT		
METHOD OF COMPLIANCE		
PREScriptive	<input checked="" type="checkbox"/>	PERFORMANCE <input type="checkbox"/> ENERGY COST BUDGET <input type="checkbox"/>
PROVIDE A STANDARD RISER DIAGRAM WHICH INDICATES DESIGNATED POINTS FOR CHECK METERING. PROVIDE A STANDARD PANEL SCHEDULE DESCRIPTION WHICH IDENTIFIES DIFFERENT ENDOUSE LOADS.		
<b>LIGHTING SCHEDULE</b> LAMP TYPE REQUIRED IN FIXTURE SEE SCHEDULE ON DRAWINGS NUMBER OF LAMPS IN FIXTURE SEE SCHEDULE ON DRAWINGS BALLAST TYPE USED IN FIXTURE SEE SCHEDULE ON DRAWINGS NUMBER OF BALLASTS IN FIXTURE SEE SCHEDULE ON DRAWINGS TOTAL WATTAGE PER FIXTURE SEE SCHEDULE ON DRAWINGS TOTAL INTERIOR WATTAGE SPECIFIED VS ALLOWED - 52785 VS 71964 TOTAL EXTERIOR WATTAGE SPECIFIED VS ALLOWED - N/A		
<b>EQUIPMENT SCHEDULES WITH MOTORS (NOT USED FOR MECHANICAL SYSTEMS)</b> MOTOR HORSEPOWER N/A NUMBER OF PHASES N/A MINIMUM EFFICIENCY N/A MOTOR TYPE N/A NUMBER OF POLES N/A		
<b>DESIGNER STATEMENT:</b> TO THE BEST OF MY KNOWLEDGE AND BELIEF, THE DESIGN OF THIS BUILDING COMPLIES WITH THE ELECTRICAL SYSTEM AND EQUIPMENT REQUIREMENTS OF THE NORTH CAROLINA ENERGY CODE 2012, CHAPTER 5.		
SIGNED: TODD W. CAREY, P.E. NAME: TODD W. CAREY, P.E. TITLE: NORTH CAROLINA PROFESSIONAL ENGINEER #9079		

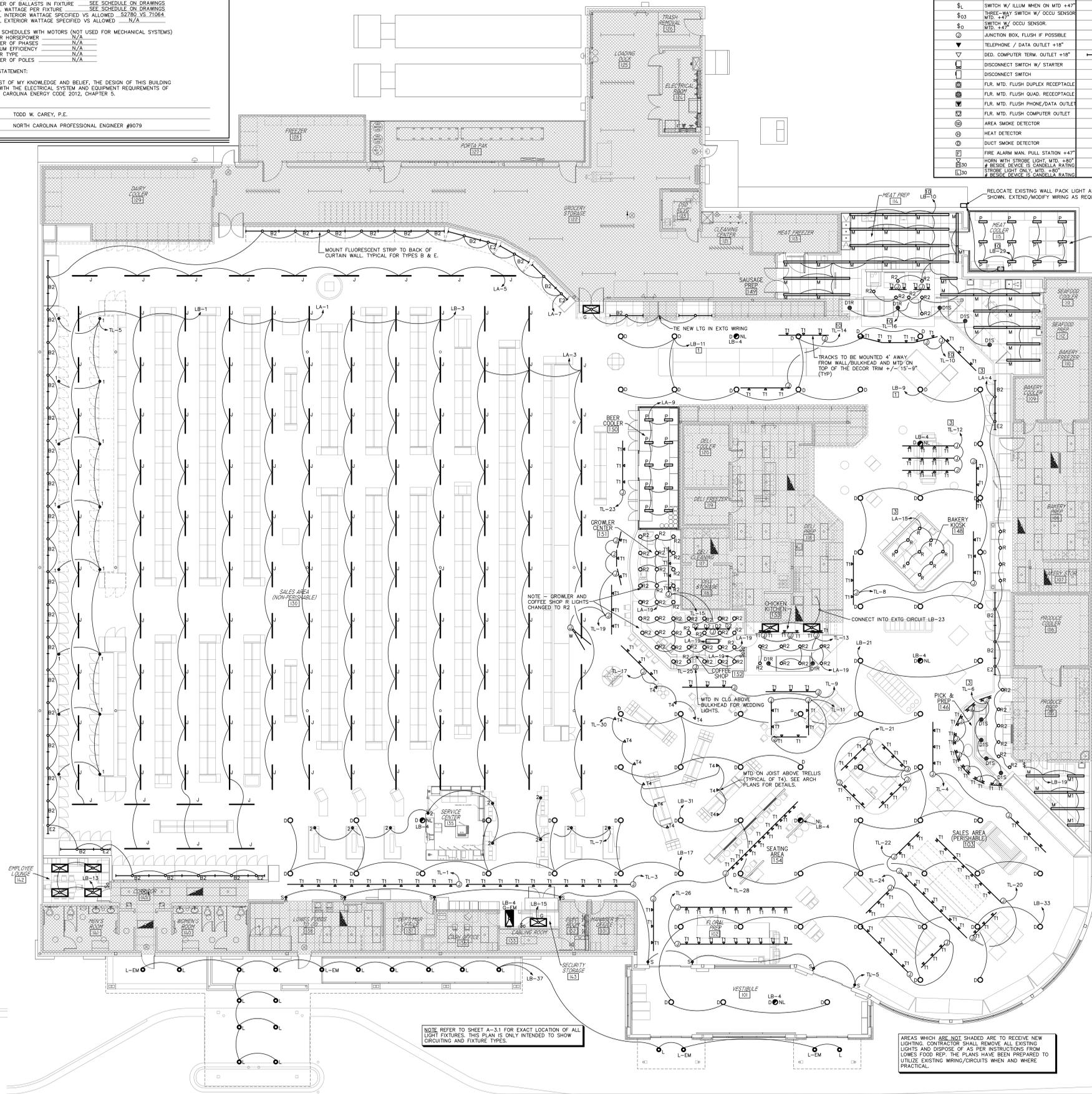
NOTE THIS IS AN REHAB OF AN EXISTING BUILDING WHICH HAS AN EXISTING SERVICE AND DISTRIBUTION EQUIPMENT. ALTERATIONS TO EXISTING BUILDING BEING OF SUCH NATURE THAT ALL FACETS OF THE WORK ARE IMPOSSIBLE TO DETAIL AND SPECIFY. IT IS THEREFORE SPECIFICALLY THE RESPONSIBILITY OF THE CONTRACTOR TO CAREFULLY EXAMINE THE EXISTING BUILDING AND FAMILIARIZE HIMSELF WITH THE CONDITIONS AND RELATE THESE CONDITIONS TO THE SCOPE OF THE PROPOSED NEW WORK. ALL BIDS ARE EXPECTED TO ENCOMPASS THE TOTAL WORK SCOPE NEEDED TO PLACE THE COMPLETED ELECTRICAL SYSTEMS IN WORKING CONDITION TO THE EXTENT OF THE PLANS.



**2 LIGHT FIXTURE TYPE 'D'**  
**2 MOUNTING DETAIL**  
NO SCALE

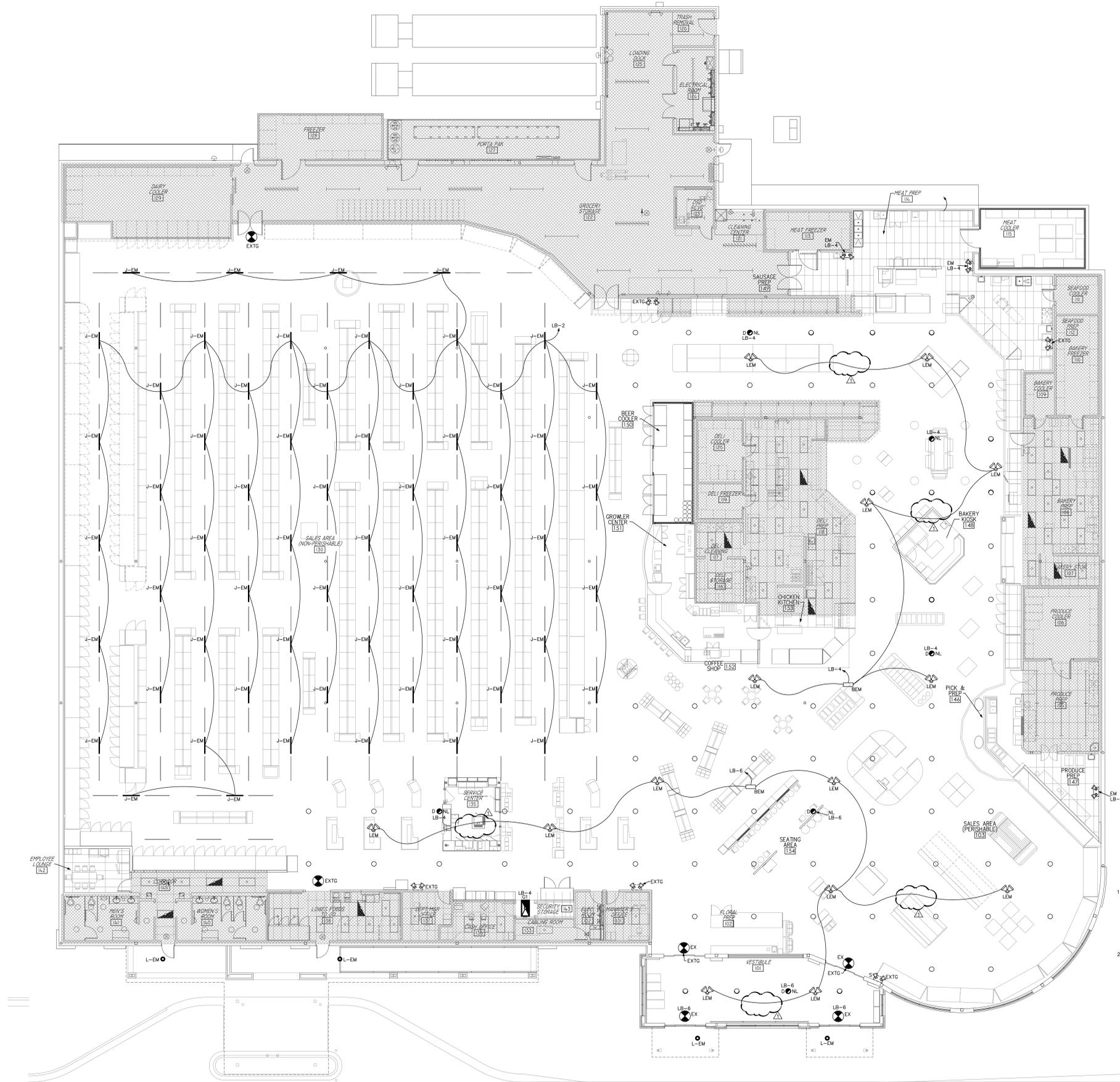
LIGHTING FIXTURE SCHEDULE											
SYMBOL	DESCRIPTION	LAMP NO.	WATT	TYPE	VOLT	MANUFACTURER	MODEL	MOUNTING	FINISH	REMARKS	
B	8' FLOOR STRIP	2	30	F	277	LIGHTOLIER	SN8132HPF UNVGH	VALANCE SURFACE	WHITE	-	
B1	8' FLOOR STRIP	2	30	F	277	LIGHTOLIER	SN8132HPF UNVGH	CABLE/CORD	WHITE	MATCH EXGT MTD HEIGHT	
B2	8' FLOOR STRIP	2	30	F	277	LIGHTOLIER	SN8132HPF UNVGH	TO OF CASE SURFACE	WHITE	FIXTURES SHINE UP	
C	LED FLOOD	-	175	LED	277	-	-	SURFACE	VERIFY	VERIFY MOUNTING HEIGHT, VERIFY MODEL WITH SUPPLIER	
D	PENDANT	1	210	MH	277	WDELITE	PPF-210-W016 HFC-15C-720P	CABLE/CORD	GRAY	SEE LFS NOTE 6	
DIR	PENDANT	-	17	LED	120	BOCK	RLM	RIGID STEM	RED	6\"-8\" MOUNTING HEIGHT TO BOTTOM OF SHADE	
D15	PENDANT	-	17	LED	120	BOCK	RLM	RIGID STEM	SILVER	6\"-8\" MOUNTING HEIGHT TO BOTTOM OF SHADE	
D2	PENDANT	1	60	I	120	HUBBELL	NVAT50HGA N0580/2269	CABLE/CORD	VERIFY	PROVIDE VOSICOLOR BULB, VERIFY TYPE W/ DECOR FABRICATOR	
E	4' FLUOR STRIP	1	30	F	277	LIGHTOLIER	SN4532HPF UNVGH	VALANCE SURFACE	WHITE	-	
F	VERTICAL CYLINDER	-	96	LED	277	LIGHTOLIER	LLAVRMMH12 H3/LAV1296	CEILING LAY-IN	WHITE	FIXTURES SHINE UP	
G	2'x4' TROFFER	3	30	F	277	LIGHTOLIER	X120VA332 100R	CEILING LAY-IN	WHITE	-	
G1	2'x4' TROFFER	3	17	F	277	LIGHTOLIER	X120VA317 1200R	CEILING LAY-IN	WHITE	-	
G-EM	2'x4' TROFFER	3	30	F	277	LIGHTOLIER	X120VA332 UNVGL-EM	CEILING LAY-IN	WHITE	SEE LFS NOTE 7	
H	FLOOD	-	30	LED	277	LUMARK	X120VA332 XTORFLD	GROUND	WHITE	COORDINATE W/ ARCHITECT FOR EXACT LOCATION AND AIMING	
J	6' BLADE	-	104	LED	277	GE	EL-06-01-A3 X-WHITE	SURFACE	WHITE	COORDINATE MOUNTING W/ SUPPLIER	
J-EM	4' LINEAR	-	40	LED	277	DAY-BRITE	DF493940 LAC	SURFACE	WHITE	PROVIDE INVERTER COORDINATE MOUNTING W/ SUPPLIER	
K	CAN	-	40	LED	277	LIGHTOLIER	06L1500L35K MCL/CBL20N2	CEILING RECESSED	WHITE	W/L WET LOCATION LISTED, PROVIDE FRAME KIT AND DRIVER	
K-EM	CAN	-	40	LED	277	LIGHTOLIER	06L1500L35K MCL/CBL20N2	CEILING RECESSED	WHITE	W/L WET LOCATION LISTED, PROVIDE FRAME KIT AND DRIVER	
L	CAN	-	40	LED	277	LIGHTOLIER	06L1500L35K MCL/CBL20N2	RECESSED	WHITE	W/L WET LOCATION LISTED, PROVIDE FRAME KIT AND DRIVER	
L-EM	CAN	-	40	LED	277	LIGHTOLIER	06L1500L35K MCL/CBL20N2	RECESSED	WHITE	W/L WET LOCATION LISTED, PROVIDE FRAME KIT AND DRIVER. SEE NOTE 7	
M	8' VAPORLIGHT FLUOR STRIP	4	30	F	277	LIGHTOLIER	STW4232UNVGL	CEILING SURFACE	GRAY	SEE LFS NOTES 2, 3 & 14, MOUNT TO CLG GRID, WET LOCATION LISTED	
M1	4' VAPORLIGHT FLUOR STRIP	2	30	F	277	LIGHTOLIER	STW4232UNVGL	SURFACE	GRAY	SEE LFS NOTES 2, 3 & 14, MOUNT TO CLG GRID, WET LOCATION LISTED	
P	2' LINEAR	-	28	LED	120	LIGHTOLIER	262-80M-120	SURFACE	WHITE	SEE LFS NOTE 14	
R	CAN	-	40	LED	120	LIGHTOLIER	06L1500L35K MCL/CBL20N2	RECESSED	WHITE	PROVIDE FRESNEL LENS FRAME KIT AND DRIVER	
R-EM	CAN	-	40	LED	120	LIGHTOLIER	06L1500L35K MCL/CBL20N2	RECESSED	WHITE	PROVIDE FRESNEL LENS FRAME KIT AND DRIVER	
R2	CAN	-	12	LED	120	LIGHTOLIER	LYTECASTER 1104EX	RECESSED	WHITE	VERIFY EXACT MODEL WITH SUPPLIER INSULATION CONTACT RATED	
R3	WALL WASH CAN	-	40	LED	120	LIGHTOLIER	06L1500W35K MCL/CBL20N2	RECESSED	WHITE	PROVIDE FRESNEL LENS FRAME KIT AND DRIVER	
S	SCONCE	-	11	LED	120	PROGRESS	PR003-20	SURFACE	WHITE	VERIFY MOUNTING HEIGHT	
S1	SCONCE	-	17	LED	120	BOCK	RLM	SURFACE	WHITE	VERIFY MOUNTING HEIGHT	
T2	TRACK HEAD SPOT/FLOOD	-	12	LED	120	LIGHTOLIER	8201	TRACK	WHITE	SEE LFS NOTE 11	
T3	TRACK HEAD 4' LINEAR	2	54	TH0	120	LIGHTOLIER	37254WH	TRACK	WHITE	SEE LFS NOTE 11	
T4	TRACK HEAD	-	34	LED	120	-	-	TRACK	WHITE	SEE LFS NOTE 11, VERIFY EXACT MANUF & MODEL W/ SUPPLIER	
V	TRACK HEAD	-	34	LED	120	-	-	MONOPOINT SURFACE	WHITE	SEE LFS NOTE 16, VERIFY EXACT MANUF & MODEL W/ SUPPLIER	
W	G0B0	1	150	MH	277	-	-	CABLE / CORD	WHITE	VERIFY EXACT MANUFACTURE & MODEL WITH SUPPLIER	
W	MONOPOINT	-	228	LED	120	LIGHTOLIER	6190 PI	SURFACE	WHITE	VERIFY COLOR & LOCATIONS, SEE LFS NOTE 16	
Y3	SCONCE	1	100	I	120	KICHLER	4525502	SURFACE	WHITE	VERIFY MOUNTING HEIGHT	
1	FROZEN FOODS	-	11	LED	120	BOCK	Y2275-01-0 BLUE GLASS L00E	SURFACE	WHITE	VERIFY MOUNTING HEIGHT	
2	CHECKOUT	-	11	LED	120	-	-	SURFACE POLE	WHITE	VERIFY MOUNTING HEIGHT & MANUF & MODEL WITH SUPPLIER	
TWO HEAD EMERGENCY LT W/ MTD BRACKET	2	35	MR16	LIGHTOLIER	20859/ L1E2R8K	SURFACE	VERIFY	SEE LFS NOTE 4			
LEM	REMOTE BATTERY SYSTEM WITH MOUNTING SHELF	-	-	LED	277	LIGHTOLIER	E52150LSD2 WTD/SMMPB	SURFACE	WHITE	SEE LFS NOTE 4	
EX	EXIT SIGN	-	11	LED	277	LIGHTOLIER	LLNURW	WALL OR CLG SURFACE	WHITE	PROVIDE BATTERY BACKUP SEE LFS NOTE 7	
EX1	EXIT SIGN	-	11	LED	277	LIGHTOLIER	LLNURW2	WALL OR CLG SURFACE	WHITE	PROVIDE BATTERY BACKUP AND REMOTE (2) HEAD EXTERIOR LIGHT	
EM	EMERG EGRESS	2	8	I	277	LIGHTOLIER	E112L6W	WALL @ 8\"/>			

- LFS NOTES**
- NOT USED.
  - ALL FLUORESCENT FIXTURES MOUNTED ON CEILING SHALL BE INSTALLED USING AIRCRAFT CABLE
  - BALLAST SHALL BE RATED FOR 'F' OPERATION
  - PROVIDE FOUR HEADS PER BATTERY
  - NOT USED.
  - FIXTURES SHALL BE MOUNTED AT 1'-0" AFF TO BOTTOM OF FIXTURE. STEM SHALL BE MOUNTED AND PAINTED. PROVIDE AEC-0P-277-COMP CONTROLS AS NEEDED. WHERE PAINTING OCCURS, CONTRACTOR SHALL PRESERVE ULL LABEL TO BE LEGIBLE.
  - PROVIDE BATTERY OR INVERTER FOR ALL TYPE-NL FIXTURES THROUGHOUT THE STORE (EXCEPT FOR FIXTURES TYPE D AND M) AND PROVIDE BATTERY BACK-UP FOR ALL EXIT SIGNS AND EMERGENCY EGRESS LIGHTS. BATTERY SHALL OPERATE TWO HEADS MINIMUM.
  - ALL FLUORESCENT LAMPS SHALL BE GE SPEC-35.
  - NOT USED.
  - NOT USED.
  - VERIFY TRACK MOUNTING HEIGHTS WITH LOWES FOODS PROJECT MANAGER. PROVIDE ALL REQUIRED TRACK, FEEDS, COUPLINGS, 10' POWER/CABLE KITS AND 10' CABLE KITS. ALL SHALL BE LIGHTOLIER AND WHITE. 4' TRACK - 37004, 8' TRACK - 37008, 12' TRACK - 37012 FEED - 37046, COUPLING - 37049, 10' POWER/CABLE KIT - 37021WH AND 10' CABLE KIT - 37010WH. CUT TRACK TO LENGTH WHERE FIELD CONDITIONS REQUIRE.
  - NO SUBSTITUTIONS SHALL BE MADE. THE ENTIRE LIGHT FIXTURE PACKAGE SHALL BE PURCHASED BY THE ELECTRICAL CONTRACTOR FROM: ILLUMINATING TECHNOLOGIES INC. ATTN: GORDON HUNT 6386 BURNETT FORK ROAD GREENSBORO, NC 27409 OFFICE: (336) 230-1490 FAX: (336) 230-1410
  - NOT USED.
  - ALL PREP ROOM, COOLER, AND FREEZER LIGHTING SHALL BE HUNG AFTER THE REFRIGERATION UNITS ARE HUNG AND NOT BEFORE.
  - FIXTURE SHALL HAVE TWO POWER FEEDS, ONE SHALL BE ALWAYS HOT AND CONNECT TO THE BATTERY/INVERTER AND THE OTHER SHALL BE CONTROLLED BY THE ENERGY MANAGEMENT SYSTEM.
  - FIXTURES SHALL BE MONOPOINT STEM MOUNTED TO JUNCTION BOX. CONTRACTOR SHALL COORDINATE EXACT LOCATION OF FIXTURES AND AIMING WITH LOWES FOODS ENGINEER AND LIGHTING SUPPLIER. FIXTURE SHALL BE MOUNTED TO THE CLOSEST JOIST AND NOT DIRECTLY ABOVE THE TRELLIS TO ALLOW SERVICING. DO NOT INSTALL UNTIL AFTER THE LF OVERHEAD BECOMES INSTALLED.



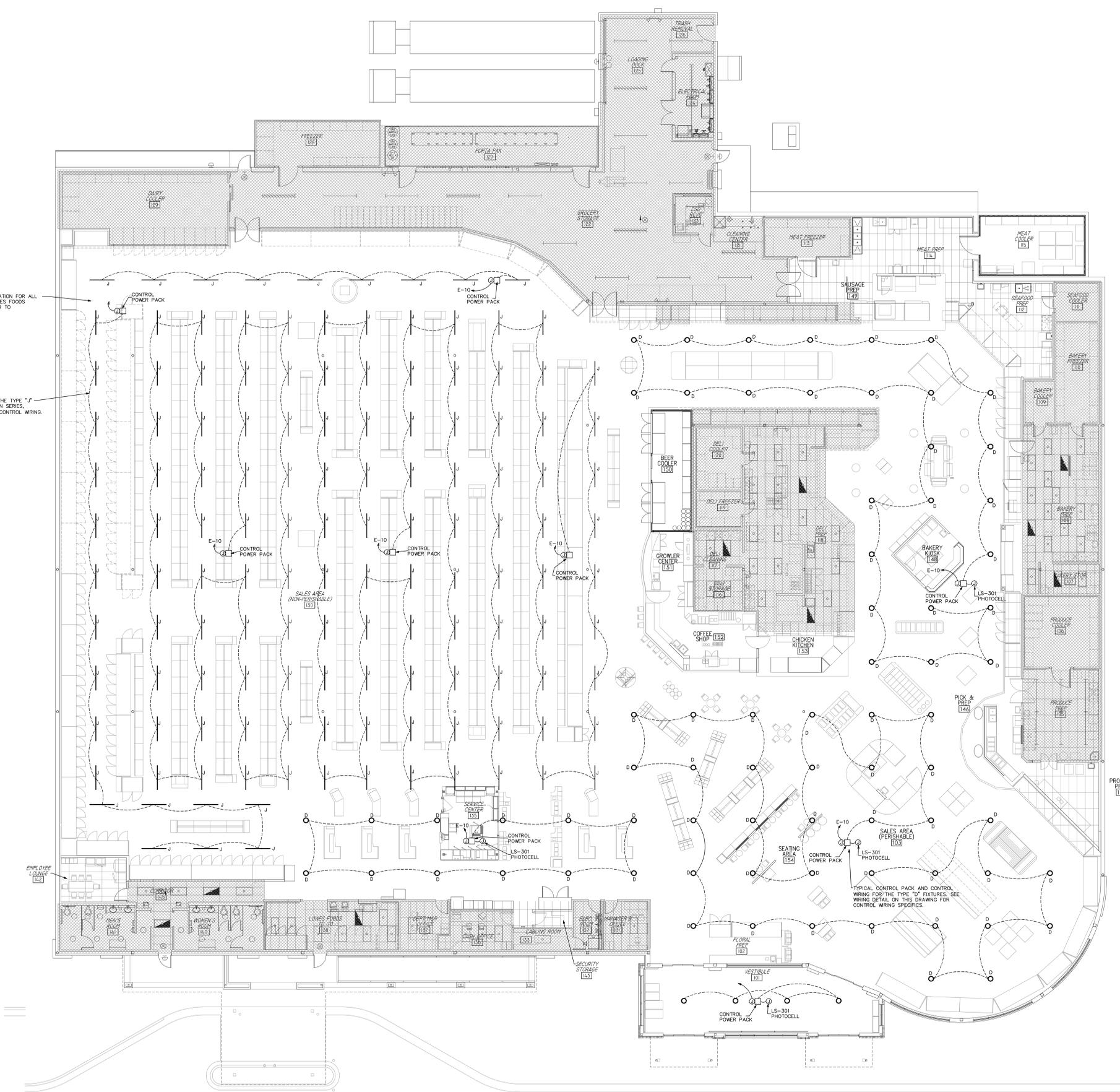
ELECTRICAL SYMBOLS LEGEND			
SYMBOLS	DESCRIPTION	SYMBOLS	DESCRIPTION
⊕	DUPLEX RECEPTACLE, MTD. +18" AFF	⊕	TRANSFORMER - SIZE AS NOTED
⊕	240 VOLT RECEPTACLE (MT. AS REQ.)	⊕	PANEL - SIZE AS NOTED
⊕	QUADRUPLER RECEPTACLE, MTD. +18"	⊕	MOMENTARY CONTACT PUSH BUTTON
⊕	COUNTERTOP HT. RECEPTACLE +42"	⊕	F-FAN, M-MOTOR, P-PUMP
⊕	SINGLE POLE SWITCH, MTD +47"	⊕	SPECIAL OUTLET - AS REQUIRED
⊕	THREE-WAY SWITCH, MTD +47"	⊕	⊕1- PROMINENT (8 INDICATES PANEL)
⊕	HANDW. STARTER SWITCH	⊕	⊕2- DESIGNATES CIRCUIT NUMBER
⊕	SWITCH W/ ILLUM WHEN ON MTD +47"	⊕	EXIT SIGN: ONE SIDED, OR TWO SIDED
⊕	THREE-WAY SWITCH W/ OCCU SENSOR, MTD. +47"	⊕	EMERGENCY LIGHTING
⊕	SWITCH W/ OCCU SENSOR	⊕	RECESSED MOUNTED LIGHTING FIXTURE
⊕	JUNCTION BOX, FLUSH IF POSSIBLE	⊕	B DESIGNATES FIXTURE TYPE
⊕	TELEPHONE / DATA OUTLET +18"	⊕	OVERHEAD OCCUPANCY SENSOR
⊕	DED. COMPUTER TERM. OUTLET +18"	⊕	HIGHWAY HID LIGHTING FIXTURE
⊕	DISCONNECT SWITCH W/ STARTER	⊕	FLUORESCENT LIGHTING FIXTURE
⊕	DISCONNECT SWITCH	⊕	FLUORESCENT STRIP LIGHTING FIXTURE
⊕	FLR. MTD. FLUSH DUPLEX RECEPTACLE	⊕	B DESIGNATES FIXTURE TYPE
⊕	FLR. MTD. FLUSH QUAD. RECEPTACLE	⊕	ISOLATED GROUND
⊕	FLR. MTD. FLUSH PHONE/DATA OUTLET	⊕	IC
⊕	FLR. MTD. FLUSH COMPUTER OUTLET	⊕	WEATHER-PROOF
⊕	AREA SMOKE DETECTOR	⊕	BC
⊕	HEAT DETECTOR	⊕	BELOW COUNTER
⊕	DUCT SMOKE DETECTOR	⊕	TC
⊕	FIRE ALARM MAN. PULL STATION +47"	⊕	TIME CLOCK - 24 HOUR
⊕	FIRE ALARM ANNUNCIATOR PANEL	⊕	GF1
⊕		⊕	GROUND FAULT INTERRUPTER
⊕		⊕	AF
⊕		⊕	ABOVE FINISHED FLOOR
⊕		⊕	EW
⊕		⊕	ELECTRIC WATER COOLER
⊕		⊕	ASW
⊕		⊕	ABOVE SHOW WINDOW
⊕		⊕	BSW
⊕		⊕	BELOW SHOW WINDOW
⊕		⊕	FAFP
⊕		⊕	FIRE ALARM CONTROL PANEL
⊕		⊕	FAAP
⊕		⊕	FIRE ALARM ANNUNCIATOR PANEL

**1 FLOOR PLAN - LIGHTING**  
SCALE: 3/32"=1'-0"



- PLAN NOTES
- 1.) PROVIDE INVERTER(S) FOR ALL TYPE J-EM LIGHTS. COORDINATE WITH LIGHTING SUPPLIER FOR EXACT REQUIREMENTS. FIXTURE TYPE J-EM SHALL OPERATE AS FOLLOWS:
    - a.) FIXTURES SHALL COME ON WHEN ALL OTHER FIXTURES ARE CUT OFF TO ACT AS A NIGHT LIGHT.
    - b.) FIXTURE SHALL COME ON WHEN THERE IS A LOSS OF POWER DURING STORE OPERATION TIMES TO ACT AS AN EMERGENCY EGRESS LIGHT.
  - 2.) ALL EXIT LIGHTS AND TYPE BEM/LEM ARE EMERGENCY LIGHTS ONLY AND SHALL BE CONNECTED TO AN ALWAYS HOT LEG OF THE CIRCUIT SHOWN.

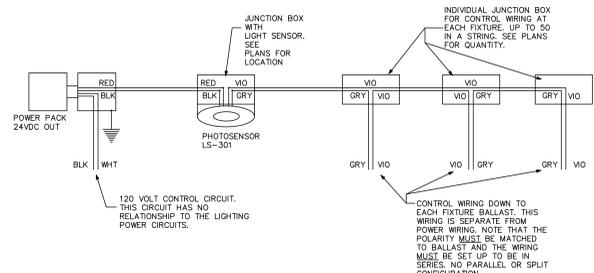
**1 FLOOR PLAN - NIGHT / EMERGENCY LIGHTS**  
 SCALE: 3/32"=1'-0"



COORDINATE EXACT LOCATION FOR ALL POWER PACKS WITH LOWES FOODS ENGINEER IN FIELD PRIOR TO CONSTRUCTION.

ALL CONTROL WIRING FOR THE TYPE "J" BLADE LIGHTS ARE TO BE IN SERIES, TYPICAL TO THE TYPE "D" CONTROL WIRING.

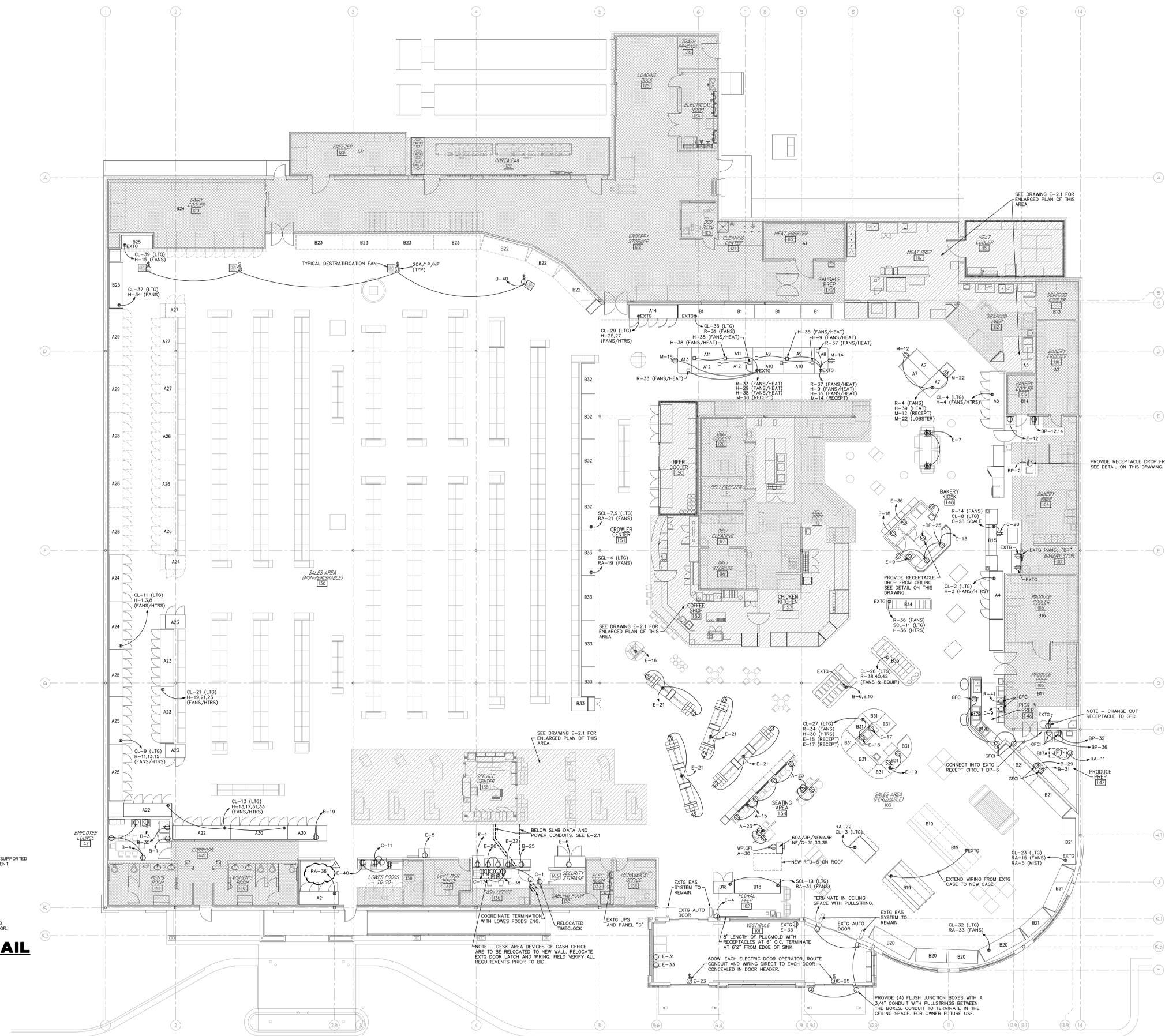
TYPICAL CONTROL PACK AND CONTROL WIRING FOR THE TYPE "D" FIXTURES. SEE WIRING DETAIL ON THIS DRAWING FOR CONTROL WIRING SPECIFICS.



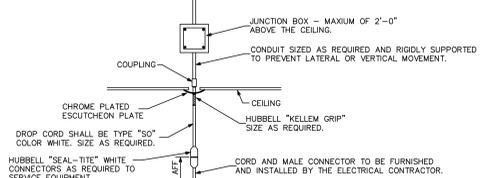
**2 LIGHT FIXTURE TYPE 'D' CONTROL WIRING DETAIL**  
 NO SCALE

NOTE - THIS CONTROL WIRING IS SEPARATE FROM THE 208 VOLT POWER WIRING TO THE BALLAST. IT CAN AND WILL SPAN BETWEEN VARIOUS CIRCUITS AND FEEDERS.

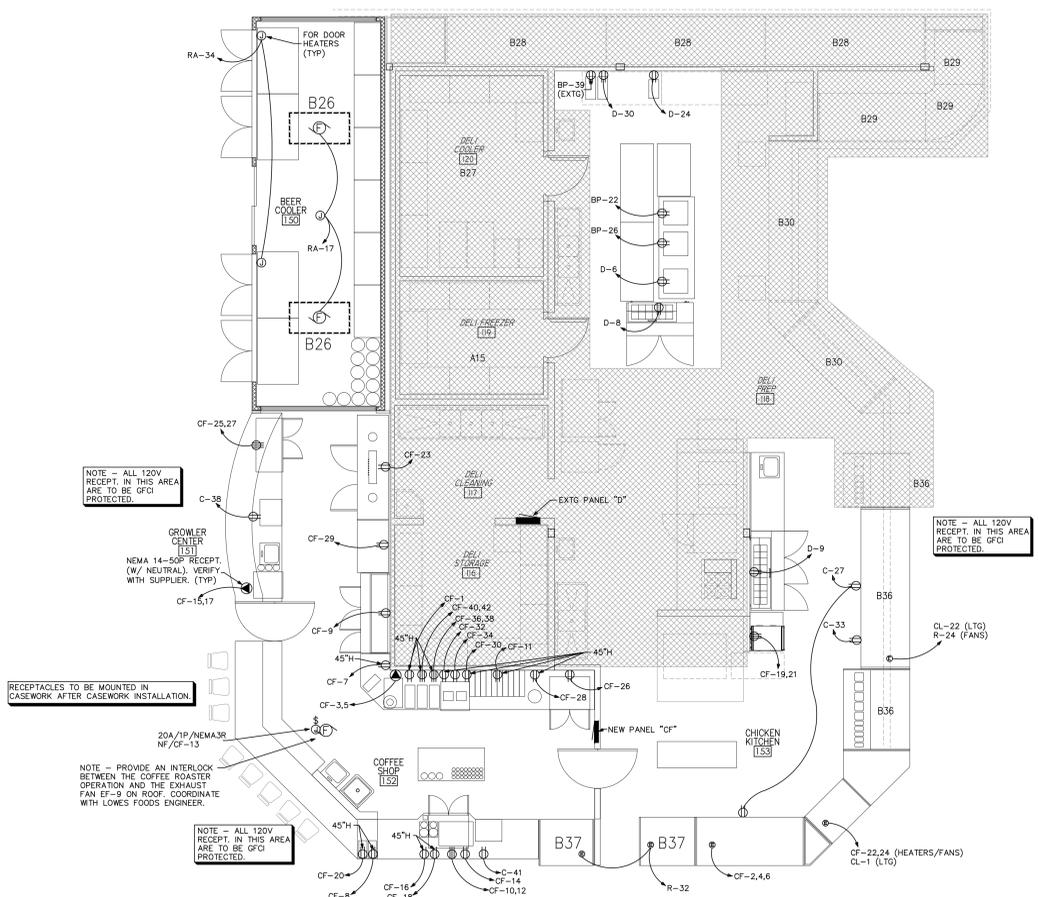
**1 FLOOR PLAN - LIGHT FIXTURE DIMMING CONTROL WIRING**  
 SCALE: 3/32"=1'-0"



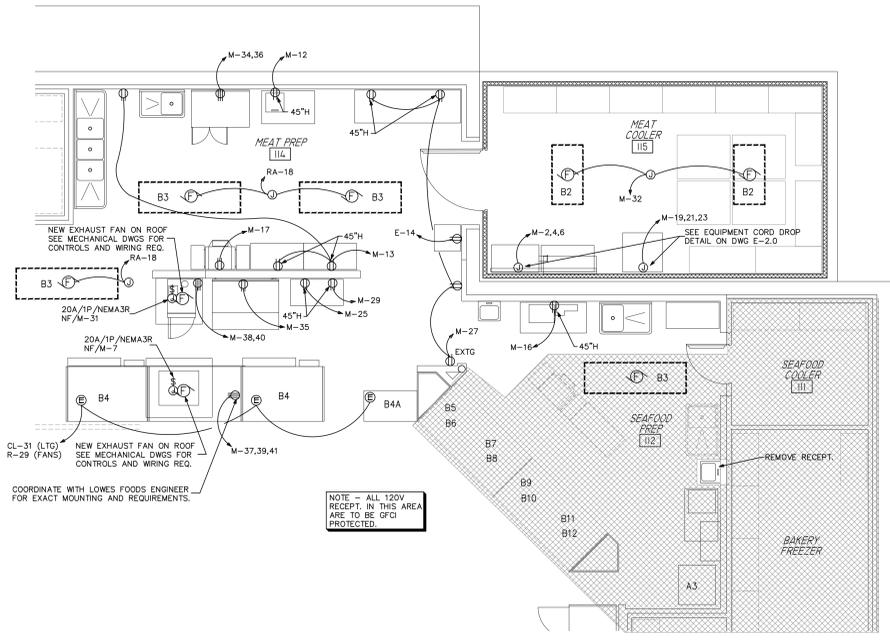
**3 EQUIP. DROP CORD DETAIL**  
NO SCALE



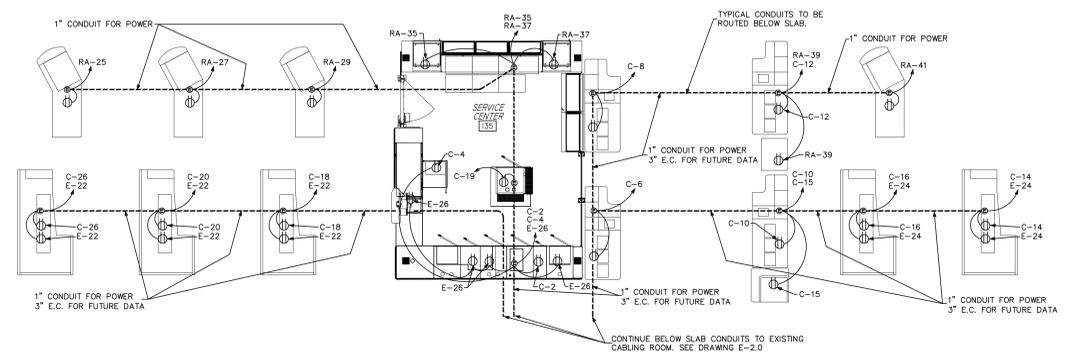
**1 FLOOR PLAN - POWER**  
SCALE: 3/32"=1'-0"



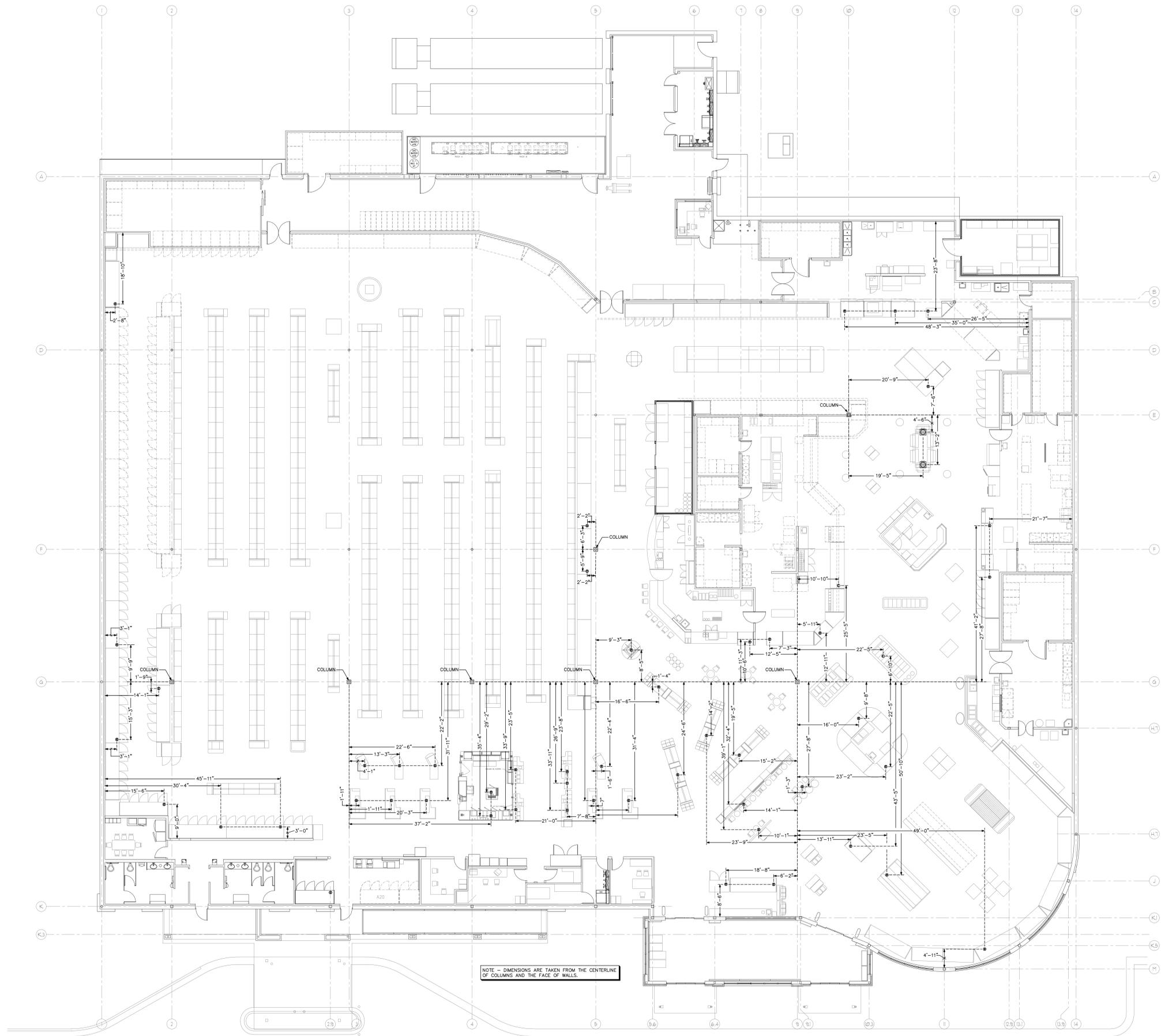
**3 DELI/COFFEE SHOP/GROWLER FLOOR PLAN - POWER**  
SCALE: 3/16"=1'-0"



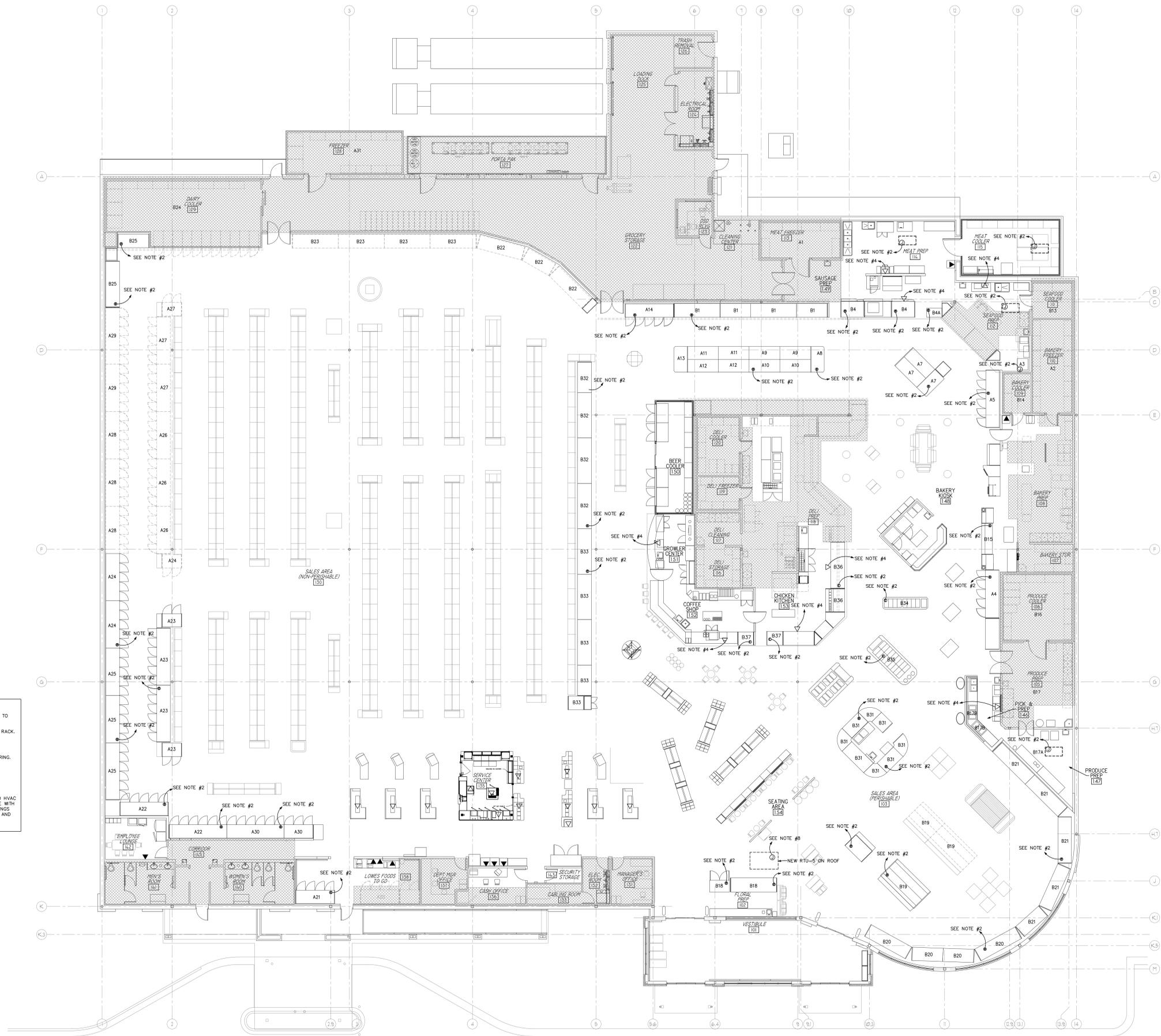
**2 SEAFOOD/MEAT PREP FLOOR PLAN - POWER**  
SCALE: 3/16"=1'-0"



**1 CASH REGISTERS FLOOR PLAN - POWER**  
SCALE: 3/16"=1'-0"

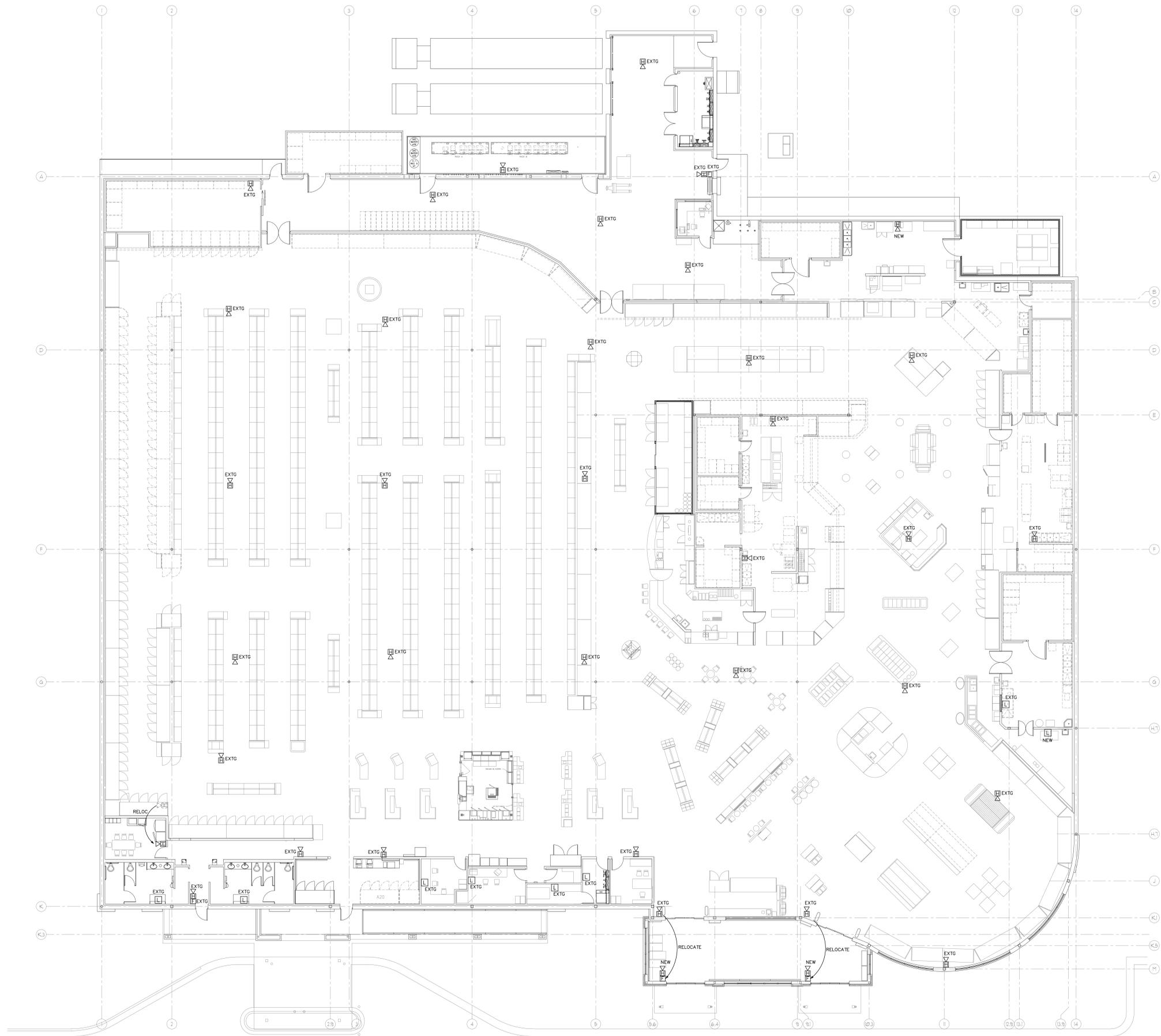


**1 FLOOR PLAN - DIMENSIONED STUB UPS**  
 SCALE: 3/32"=1'-0"



- NOTES:
1. TELEPHONE/DATA OUTLET, CONDUIT SHALL BE ROUTED BACK TO CABLING ROOM AND FULL STRING INSTALLED FOR FUTURE USE.
  2. TWO PAIR SHIELDED CABLES IN A 3/4" O.D. TO REFRIGERATION RACK.
  3. NOT USED
  4. 3/4" E.C. TO CABLING ROOM FOR SCALE COMMUNICATION WIRING.
  5. NOT USED
  6. NOT USED
  7. NOT USED
  8. E.C. SHALL PROVIDE A MIN 3/4" E.C. CONDUIT AND J-BOX TO HVAC CONTROL PANEL FOR CONTROL COMPONENT WIRING. COORDINATE WITH LOWES FOODS/SESCO REP. COORDINATE WITH MECHANICAL DRAWINGS AND SCHEMATICS. ALL WIRING TO BE BY M.C. - SENSOR WIRING AND 120V WIRING SHALL NOT BE ROUTED IN SAME CONDUIT.

**1 FLOOR PLAN - LOW VOLTAGE / COMMUNICATIONS**  
 SCALE: 3/32"=1'-0"



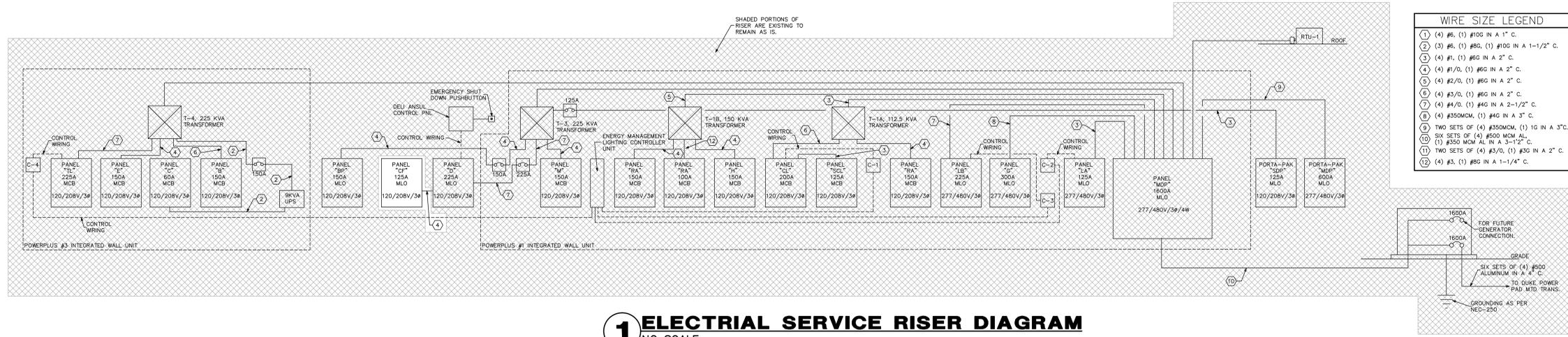
NOTE: THIS IS A REHAB OF AN EXISTING BUILDING WHICH HAS AN EXISTING FIRE ALARM SERVICE AND DEVICES. THE EXISTING PANEL IS TO BE CAREFULLY INSPECTED TO INSURE PROPER OPERATION AND CAPABILITY TO BE MODIFIED AND EXPANDED TO COVER THE NEW LAYOUT REQUIREMENTS. IT IS SPECIFICALLY THE RESPONSIBILITY OF THE CONTRACTOR TO CAREFULLY EXAMINE THE EXISTING ALARM SYSTEM AND FAMILIARIZE HIMSELF WITH THE CONDITIONS AND RELATE THESE CONDITIONS TO THE SCOPE OF THE NECESSARY WORK. ALL BIDS ARE EXPECTED TO ENCOMPASS THE TOTAL WORK SCOPE NEEDED TO PLACE THE COMPLETED ELECTRICAL SYSTEMS IN WORKING CONDITION AND TO SATISFY ALL REQUIREMENTS OF THE LOCAL AUTHORITIES.

**1 FLOOR PLAN - FIRE ALARM**  
SCALE: 3/32"=1'-0"

NOTE - THERE IS AN EXISTING FIRE ALARM SYSTEM IN THIS FACILITY. IT IS TO BE MODIFIED AND EXPANDED TO PROVIDE FULL COVERAGE AS PER THESE PLANS, AND THE REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION. CONTRACTOR TO COORDINATE ALL REQUIREMENTS WITH THE LOCAL AUTHORITY. ALL DUCT DETECTORS SHALL BE TIED TO THE FIRE ALARM SYSTEM AND SOUND A GENERAL ALARM AS WELL AS ALL FIRE SUPPRESSION SYSTEMS WHICH SHALL ALSO SOUND A GENERAL ALARM.

**ELECTRICAL NOTES:**

- GENERAL: ALL WORK SHALL CONFORM TO THE LATEST APPROVED EDITION OF THE NATIONAL ELECTRICAL CODE (NEC) AND ALL LOCAL JURISDICTIONAL CODES. THE CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE DRAWINGS AND ANY APPLICABLE SPECIFICATIONS. IF A PROBLEM IS ENCOUNTERED IN COMPLYING WITH THIS REQUIREMENT, THE CONTRACTOR SHALL NOTIFY THE OWNER OR HIS REPRESENTATIVE AS SOON AS POSSIBLE AFTER DISCOVERY OF THE PROBLEM, AND SHALL NOT PROCEED WITH THAT PORTION OF THE WORK UNTIL THE OWNER HAS DIRECTED THE CORRECTIVE ACTION TO BE TAKEN. THE CONTRACTOR SHALL COORDINATE THE PROPOSED LOCATIONS OF ALL ELECTRICAL MATERIALS AND EQUIPMENT WITH THE REPRESENTATIVES OF THE OTHER TRADES INVOLVED BEFORE STARTING INSTALLATION OF THOSE ITEMS. COORDINATE THE INSTALLATION OF REQUIRED SUPPORTING DEVICES, CONDUIT, AND SLEEVES TO BE SET IN CAST-IN-PLACE CONCRETE AND OTHER STRUCTURAL COMPONENTS, AS THEY ARE CONSTRUCTED. UNLESS OTHERWISE SPECIFIED ON THE PLANS, ALL SPECS ARE NOT INTENDED TO BE PROPRIETARY. SUBSTITUTIONS WILL BE ACCEPTABLE FOR EQUAL RATED AND LISTED UNITS.
- SCOPE: EXCEPT WHERE OTHERWISE SPECIFICALLY INDICATED ON THE DRAWINGS BY "FUTURE," "BY OTHERS," OR BY A SIMILAR NOTATION, IT IS THE INTENT THAT THE CONTRACTOR FURNISH ALL LABOR, MATERIALS, EQUIPMENT AND TOOLS NECESSARY TO PROVIDE ALL SYSTEMS IN COMPLETE AND OPERATING CONDITION.
- EXCAVATE AS NECESSARY FOR THE INSTALLATION OF ELECTRICAL MATERIALS AND EQUIPMENT. VERIFY THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES OR STRUCTURES BEFORE EXCAVATING AND EXERCISE CARE TO AVOID DAMAGE TO SUCH ITEMS DURING EXCAVATION. BACKFILL WITH EARTH FREE OF LARGE CLODS, LARGE STONES AND FOREIGN DEBRIS, DEPOSITED IN 6" LAYERS AND COMPACTED TO A DENSITY OF NOT LESS THAN THAT OF THE SURROUNDING UNDISTURBED MATERIAL.
- MATERIALS: THE MATERIALS AND EQUIPMENT FURNISHED SHALL BE AS INDICATED ON THE DRAWINGS. SUBSTITUTIONS SHALL NOT BE MADE EXCEPT WHERE EXPRESSLY APPROVED BY THE OWNER OR HIS REPRESENTATIVE PRIOR TO STARTING INSTALLATION OF THE ITEMS. THE ELECTRICAL MATERIALS AND EQUIPMENT FURNISHED SHALL BE LISTED OR LABELED BY UNDERWRITERS LABORATORIES OR OTHER RECOGNIZED TESTING ORGANIZATION, AND SHALL BE ACCEPTABLE TO THE LOCAL BUILDING AUTHORITY.
- GROUNDING: GROUNDING SHALL BE IN ACCORDANCE WITH ARTICLE 250, NEC.
- SHARED NEUTRAL CONDUCTORS SHALL NOT BE ALLOWED UNLESS INSTALLED IN ACCORDANCE WITH NEC-210.4
- CONDUITS: PROVIDE CONDUITS WHERE CALLED FOR ON PANEL SCHEDULES. ELECTRICAL METALLIC TUBING (EMT) SHALL BE INSTALLED ONLY IN DRY LOCATIONS, IN CONCRETE ABOVE GRADE, AND WHERE NOT SUBJECT TO PHYSICAL DAMAGE. CONDUITS INSTALLED UNDERGROUND SHALL BE POLYVINYLCHLORIDE (PVC) AND SHALL NOT BE SMALLER THAN 3/4" TRADE SIZE. WHERE PVC CONDUIT IS INSTALLED UNDERGROUND, ELBOWS TURNING UP AND CONDUIT EMERGING ABOVE GRADE SHALL BE RSC. THE TOPS OF CONDUITS SHALL NOT BE LESS THAN 24" BELOW FINISHED GRADE. PVC CONDUIT INSTALLED ABOVE GRADE OR DIRECT-BURIED IN EARTH SHALL BE NEMA TC2 TYPE EPC-40-PVC (SCHEDULE 40) EXCEPT THAT WHERE UNDER AREAS SUBJECT TO HEAVY VEHICULAR TRAFFIC, IT SHALL BE NEMA TC2 TYPE EPC-80-PVC (SCHEDULE 80). ALL ARMOR CLAD CABLE (AC CABLE) WIRING SHALL MEET OR EXCEED ALL NEC, OSHA AND HUD STANDARDS.
- CONDUCTORS: CONDUCTORS SHALL BE AS SCHEDULED ON PANEL SCHEDULES. ALL POWER CONDUCTORS SHALL NOT BE SMALLER THAN #4 AWG (CU), OR #12 AWG (AL). CONTROL CIRCUIT CONDUCTORS SHALL NOT BE SMALLER THAN #16 AWG (CU). CONDUCTORS SHALL BE CONTINUOUS FROM OUTLET TO OUTLET WITHOUT SPLICES EXCEPT WITHIN WIREWAY OR JUNCTION BOXES. MARK CONDUCTORS IN PANELS, PULL BOXES OR WIREWAYS AND TERMINAL STRIP TERMINALS FOR IDENTIFICATION OF CIRCUITS. CONDUCTORS SHALL BE JOINED USING COMPRESSION SPLICES, EXCEPT THAT CONDUCTORS #10 AND SMALLER MAY BE JOINED USING WIRE NUT TYPE CONNECTORS. CONDUCTORS SHALL BE TERMINATED USING COMPRESSION OR PRESSURE-TYPE TERMINAL LUGS, OR IN PRESSURE TERMINALS. COMPRESSION SPLICES USED ON CONDUCTORS #10 AWG AND SMALLER SHALL BE THE SELF-INSULATED TYPE; OTHER SPLICES SHALL BE INSULATED USING 3M #3+ OR #65 PLASTIC TAPE. SPLICES IN NET LOCATIONS SHALL BE INSULATED WITH ELECTRICAL TAPE AND ENCAPSULATED WITH SCOTCHCAST OR EQUAL POTTING COMPOUND.
- PROVIDE AND INSTALL JUNCTION AND PULL BOXES WHERE INDICATED AND WHERE NECESSARY TO TERMINATE, TAP OFF, OR REDIRECT MULTIPLE CONDUIT RUNS, OF SIZE INDICATED OR AS REQUIRED BY NEC. WHERE FEEDER SPLICES ARE TO BE MADE, INSTALL BOXES LARGE ENOUGH TO PROVIDE AMPLE WORK SPACE.
- LIGHTING FIXTURES: LIGHTING FIXTURES SHALL BE AS INDICATED ON THE DRAWINGS, AND SHALL BE INSTALLED COMPLETE WITH LAMPS. FIXTURES WITH ADJUSTMENTS AFFECTING LIGHT DISTRIBUTION SHALL BE SET TO PROVIDE THE REQUIRED LIGHT PATTERNS PRIOR TO THE FINAL DEMONSTRATION TEST.
- TESTS: AFTER EACH SYSTEM HAS BEEN COMPLETED, A FUNCTIONAL TEST SHALL BE PERFORMED TO DEMONSTRATE THAT THE SYSTEM OPERATES IN ACCORDANCE WITH THE REQUIREMENTS OF THE DRAWINGS. THE TEST SHALL BE PERFORMED BY THE CONTRACTOR IN THE PRESENCE OF THE OWNER OR HIS REPRESENTATIVE.
- TERMINALS: ALL ELECTRICAL EQUIPMENT FURNISHED ON THIS PROJECT IS TO HAVE TERMINALS RATED FOR 75° C. OPERATION.



**1 ELECTRICAL SERVICE RISER DIAGRAM**  
NO SCALE

**PANEL A DIVERSIFICATION CALCULATIONS**

RECEPTACLES (36) - 6480 VA TOTAL	6480
FIRST 10 KVA AT 100% -	1500
LIGHTING -	1200 X 125% = 1500
HVAC LOAD AT 100% -	3000
MOTOR LOADS AT 100% -	3120
PLUS 25% OF THE LARGEST MOTOR -	300
MISC NON-CONTINUOUS LOADS AT 100% -	10776
TOTAL DIVERSIFIED PANEL LOAD	30976
LOAD AT 120/208V/3-PHASE/4-WIRE -	91.6A

**PANEL B DIVERSIFICATION CALCULATIONS**

RECEPTACLES (23) - 5760 VA TOTAL	5760
FIRST 10 KVA AT 100% -	4830
MOTOR LOADS AT 100% -	428
PLUS 25% OF THE LARGEST MOTOR -	728
MISC NON-CONTINUOUS LOADS AT 100% -	19780
KITCHEN EQUIPMENT (3) -	15840
TWO LARGEST LOADS 14400 14400 -	46944
TOTAL DIVERSIFIED PANEL LOAD	46944
LOAD AT 120/208V/3-PHASE/4-WIRE -	130.4A

**PANEL BP DIVERSIFICATION CALCULATIONS**

RECEPTACLES (23) - 6300 VA TOTAL	6300
FIRST 10 KVA AT 100% -	3000
MOTOR LOADS AT 100% -	3000
PLUS 25% OF THE LARGEST MOTOR -	450
MISC NON-CONTINUOUS LOADS AT 100% -	3480
KITCHEN EQUIPMENT (18) -	25944 X 0.45 = 11675.1
TOTAL DIVERSIFIED PANEL LOAD	29931
LOAD AT 120/208V/3-PHASE/4-WIRE -	83.1A

**PANEL C DIVERSIFICATION CALCULATIONS**

RECEPTACLES (25) - 4500 VA TOTAL	4500
FIRST 10 KVA AT 100% -	4500
MISC NON-CONTINUOUS LOADS AT 100% -	6660
LIGHTING -	1200 X 125% = 1500
HVAC LOAD AT 100% -	11160
MOTOR LOADS AT 100% -	11160
PLUS 25% OF THE LARGEST MOTOR -	11160
TOTAL DIVERSIFIED PANEL LOAD	40884
LOAD AT 120/208V/3-PHASE/4-WIRE -	113.6A

**PANEL CF DIVERSIFICATION CALCULATIONS**

RECEPTACLES (23) - 540 VA TOTAL	540
FIRST 10 KVA AT 100% -	540
MOTOR LOADS AT 100% -	666
PLUS 25% OF THE LARGEST MOTOR -	167
MISC NON-CONTINUOUS LOADS AT 100% -	3951.1
KITCHEN EQUIPMENT (25) -	60786 X 0.45 = 27353.7
TOTAL DIVERSIFIED PANEL LOAD	40884
LOAD AT 120/208V/3-PHASE/4-WIRE -	113.6A

**PANEL CL DIVERSIFICATION CALCULATIONS**

RECEPTACLES (23) - 540 VA TOTAL	540
FIRST 10 KVA AT 100% -	540
MOTOR LOADS AT 100% -	666
PLUS 25% OF THE LARGEST MOTOR -	167
MISC NON-CONTINUOUS LOADS AT 100% -	3951.1
KITCHEN EQUIPMENT (25) -	60786 X 0.45 = 27353.7
TOTAL DIVERSIFIED PANEL LOAD	40884
LOAD AT 120/208V/3-PHASE/4-WIRE -	113.6A

**PANEL D DIVERSIFICATION CALCULATIONS**

RECEPTACLES (17) - 3060 VA TOTAL	3060
FIRST 10 KVA AT 100% -	2250
LIGHTING -	1800 X 125% = 2250
MOTOR LOADS AT 100% -	6720
PLUS 25% OF THE LARGEST MOTOR -	450
MISC NON-CONTINUOUS LOADS AT 100% -	720
KITCHEN EQUIPMENT (24) -	23760 X 0.45 = 10692
TOTAL DIVERSIFIED PANEL LOAD	41120
LOAD AT 120/208V/3-PHASE/4-WIRE -	114.2A

**PANEL E DIVERSIFICATION CALCULATIONS**

RECEPTACLES (23) - 11680 VA TOTAL	11680
FIRST 10 KVA AT 100% -	10000
REMAINDER AT 50% -	840
MISC NON-CONTINUOUS LOADS AT 100% -	15940
KITCHEN EQUIPMENT (4) -	3260 X 0.45 = 1467
TOTAL DIVERSIFIED PANEL LOAD	29467
LOAD AT 120/208V/3-PHASE/4-WIRE -	81.9A

**PANEL G DIVERSIFICATION CALCULATIONS**

HVAC LOAD AT 100% -	16665
MOTOR LOADS AT 100% -	2388
PLUS 25% OF THE LARGEST MOTOR -	4986
TOTAL DIVERSIFIED PANEL LOAD	19519
LOAD AT 277/480V/3-PHASE/4-WIRE -	234.8A

**PANEL SCHEDULE B**

#	BR.	WIRE AND CONDUIT				LOAD DESCRIPTION	WIRE AND CONDUIT				BR.
		COND.	NEUTRAL	GND	C. KEYS		COND.	NEUTRAL	GND	C. KEYS	
1	20/1	#12	#12	#12	1/2	CHAL	MIXER	960	960	-----	2
2	20/1	#12	#12	#12	1/2	CHAL	RECEPTACLES	1440	1440	-----	4
3	20/1	#12	#12	#12	1/2	CHAL	RECEPTACLES	540	540	-----	4
4	20/1	#12	#12	#12	1/2	CHAL	RECEPTACLES	540	540	-----	4
5	20/1	#12	#12	#12	1/2	CHAL	RECEPTACLES	540	540	-----	4
6	20/1	#12	#12	#12	1/2	CHAL	RECEPTACLES	540	540	-----	4
7	20/1	#12	#12	#12	1/2	CHAL	RECEPTACLES	540	540	-----	4
8	20/1	#12	#12	#12	1/2	CHAL	RECEPTACLES	540	540	-----	4
9	20/1	#12	#12	#12	1/2	CHAL	RECEPTACLES	540	540	-----	4
10	20/1	#12	#12	#12	1/2	CHAL	RECEPTACLES	540	540	-----	4
11	20/1	#12	#12	#12	1/2	CHAL	RECEPTACLES	540	540	-----	4
12	20/1	#12	#12	#12	1/2	CHAL	RECEPTACLES	540	540	-----	4
13	20/1	#12	#12	#12	1/2	CHAL	RECEPTACLES	540	540	-----	4
14	20/1	#12	#12	#12	1/2	CHAL	RECEPTACLES	540	540	-----	4
15	20/1	#12	#12	#12	1/2	CHAL	RECEPTACLES	540	540	-----	4
16	20/1	#12	#12	#12	1/2	CHAL	RECEPTACLES	540	540	-----	4
17	20/1	#12	#12	#12	1/2	CHAL	RECEPTACLES	540	540	-----	4
18	20/1	#12	#12	#12	1/2	CHAL	RECEPTACLES	540	540	-----	4
19	20/1	#12	#12	#12	1/2	CHAL	RECEPTACLES	540	540	-----	4
20	20/1	#12	#12	#12	1/2	CHAL	RECEPTACLES	540	540	-----	4
21	20/1	#12	#12	#12	1/2	CHAL	RECEPTACLES	540	540	-----	4
22	20/1	#12	#12	#12	1/2	CHAL	RECEPTACLES	540	540	-----	4
23	20/1	#12	#12	#12	1/2	CHAL	RECEPTACLES	540	540	-----	4
24	20/1	#12	#12	#12	1/2	CHAL	RECEPTACLES	540	540	-----	4
25	20/1	#12	#12	#12	1/2	CHAL	RECEPTACLES	540	540	-----	4
26	20/1	#12	#12	#12	1/2	CHAL	RECEPTACLES	540	540	-----	4
27	20/1	#12	#12	#12	1/2	CHAL	RECEPTACLES	540	540	-----	4
28	20/1	#12	#12	#12	1/2	CHAL	RECEPTACLES	540	540	-----	4
29	20/1	#12	#12	#12	1/2	CHAL	RECEPTACLES	540	540	-----	4
30	20/1	#12	#12	#12	1/2	CHAL	RECEPTACLES	540	540	-----	4
31	20/1	#12	#12	#12	1/2	CHAL	RECEPTACLES	540	540	-----	4
32	20/1	#12	#12	#12	1/2	CHAL	RECEPTACLES	540	540	-----	4
33	20/1	#12	#12	#12	1/2	CHAL	RECEPTACLES	540	540	-----	4
34	20/1	#12	#12	#12	1/2	CHAL	RECEPTACLES	540	540	-----	4
35	20/1	#12	#12	#12	1/2	CHAL	RECEPTACLES	540	540	-----	4
36	20/1	#12	#12	#12	1/2	CHAL	RECEPTACLES	540	540	-----	4
37	20/1	#12	#12	#12	1/2	CHAL	RECEPTACLES	540	540	-----	4
38	20/1	#12	#12	#12	1/2	CHAL	RECEPTACLES	540	540	-----	4
39	20/1	#12	#12	#12	1/2	CHAL	RECEPTACLES	540	540	-----	4
40	20/1	#12	#12	#12	1/2	CHAL	RECEPTACLES	540	540	-----	4
41	20/1	#12	#12	#12	1/2	CHAL	RECEPTACLES	540	540	-----	4
42	20/1	#12	#12	#12	1/2	CHAL	RECEPTACLES	540	540	-----	4

WIRE/CONDUIT KEY WIRING TYPE INSULATION CONDUIT TYPE TEMP RATING  
 1234 C-CU WIRE H-TWAIN A-EMT L-78-86 Deg. F.  
 1234 C-CU WIRE H-TWAIN A-EMT L-78-86 Deg. F.

**PANEL SCHEDULE CL**

#	BR.	WIRE AND CONDUIT				LOAD DESCRIPTION	WIRE AND CONDUIT				BR.
		COND.	NEUTRAL	GND	C. KEYS		COND.	NEUTRAL	GND	C. KEYS	
1	20/1	#12	#12	#12	1/2	CHAL	4" HOT FOOD CASE ***	480	480	-----	2
2	20/1	#12	#12	#12	1/2	CHAL	5 DOOR FRZN CASK CASE *	360	360	-----	4
3	20/1	#12	#12	#12	1/2	CHAL	10 DOOR FRZN CASK CASE *	1200	1200	-----	4
4	20/1	#12	#12	#12	1/2	CHAL	10 DOOR FRZN CASK CASE *	1200	1200	-----	4
5	20/1	#12	#12	#12	1/2	CHAL	17 DOOR FRZN CASK CASE *	2400	2400	-----	6
6	20/1	#12	#12	#12	1/2	CHAL	15 DOOR FRZN CASK CASE *	1800	1800	-----	6
7	20/1	#12	#12	#12	1/2	CHAL	15 DOOR FRZN CASK CASE *	1800	1800	-----	6
8	20/1	#12	#12	#12	1/2	CHAL	15 DOOR FRZN CASK CASE *	1800	1800	-----	6
9	20/1	#12	#12	#12	1/2	CHAL	15 DOOR FRZN CASK CASE *	1800	1800	-----	6
10	20/1	#12	#12	#12	1/2	CHAL	15 DOOR FRZN CASK CASE *	1800	1800	-----	6
11	20/1	#12	#12	#12	1/2	CHAL	15 DOOR FRZN CASK CASE *	1800	1800	-----	6
12	20/1	#12	#12	#12	1/2	CHAL	15 DOOR FRZN CASK CASE *	1800	1800	-----	6
13	20/1	#12	#12	#12	1/2	CHAL	15 DOOR FRZN CASK CASE *	1800	1800	-----	6
14	20/1	#12	#12	#12	1/2	CHAL	15 DOOR FRZN CASK CASE *	1800	1800	-----	6
15	20/1	#12	#12	#12	1/2	CHAL	15 DOOR FRZN CASK CASE *	1800	1800	-----	6
16	20/1	#12	#12	#12	1/2	CHAL	15 DOOR FRZN CASK CASE *	1800	1800	-----	6
17	20/1	#12	#12	#12	1/2	CHAL	15 DOOR FRZN CASK CASE *	1800	1800	-----	6
18	20/1	#12	#12	#12	1/2	CHAL	15 DOOR FRZN CASK CASE *	1800	1800	-----	6
19	20/1	#12	#12	#12	1/2	CHAL	15 DOOR FRZN CASK CASE *	1800	1800	-----	6
20	20/1	#12	#12	#12	1/2	CHAL	15 DOOR FRZN CASK CASE *	1800	1800	-----	6
21	20/1	#12	#12	#12	1/2	CHAL	15 DOOR FRZN CASK CASE *	1800	1800	-----	6
22	20/1	#12	#12	#12	1/2	CHAL	15 DOOR FRZN CASK CASE *	1800	1800	-----	6
23	20/1	#12	#12	#12	1/2	CHAL	15 DOOR FRZN CASK CASE *	1800	1800	-----	6
24	20/1	#12	#12	#12	1/2	CHAL	15 DOOR FRZN CASK CASE *	1800	1800	-----	6
25	20/1	#12	#12	#12	1/2	CHAL	15 DOOR FRZN CASK CASE *	1800	1800	-----	6
26	20/1	#12	#12	#12	1/2	CHAL	15 DOOR FRZN CASK CASE *	1800	1800	-----	6
27	20/1	#12	#12	#12	1/2	CHAL	15 DOOR FRZN CASK CASE *	1800	1800	-----	6
28	20/1	#12	#12	#12	1/2	CHAL	15 DOOR FRZN CASK CASE *	1800	1800	-----	6
29	20/1	#12	#12	#12	1/2	CHAL	15 DOOR FRZN CASK CASE *	1800	1800	-----	6
30	20/1	#12	#12	#12	1/2	CHAL	15 DOOR FRZN CASK CASE *	1800	1800	-----	6
31	20/1	#12	#12	#12	1/2	CHAL	15 DOOR FRZN CASK CASE *	1800	1800	-----	6
32	20/1	#12	#12	#12	1/2	CHAL	15 DOOR FRZN CASK CASE *	1800	1800	-----	6
33	20/1	#12	#12	#12	1/2	CHAL	15 DOOR FRZN CASK CASE *	1800	1800	-----	6
34	20/1	#12	#12	#12	1/2	CHAL	15 DOOR FRZN CASK CASE *	1800	1800	-----	6
35	20/1	#12	#12	#12	1/2	CHAL	15 DOOR FRZN CASK CASE *	1800	1800	-----	6
36	20/1	#12	#12	#12	1/2	CHAL	15 DOOR FRZN CASK CASE *	1800	1800	-----	6
37	20/1	#12	#12	#12	1/2	CHAL	15 DOOR FRZN CASK CASE *	1800	1800	-----	6
38	20/1	#12	#12	#12	1/2	CHAL	15 DOOR FRZN CASK CASE *	1800	1800	-----	6
39	20/1	#12	#12								

