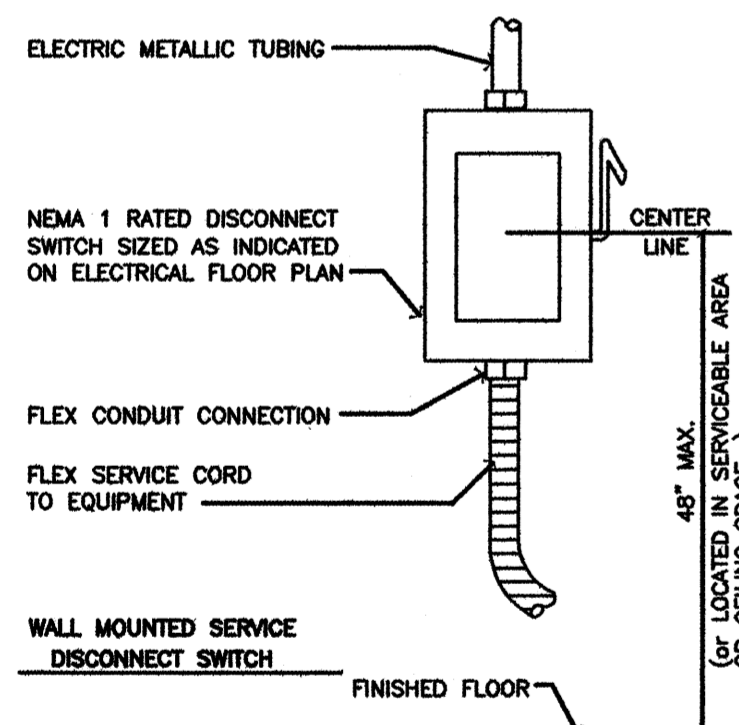
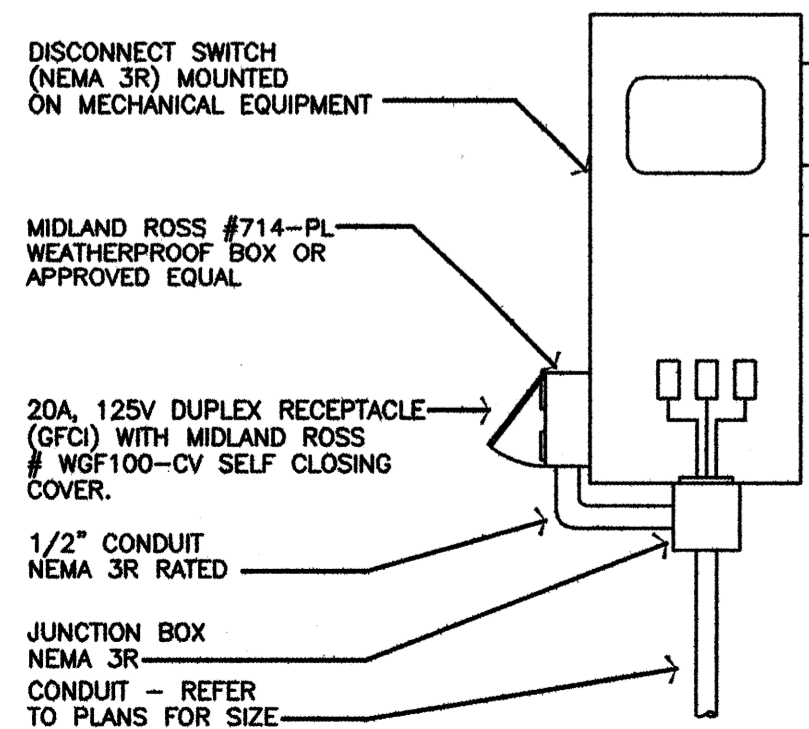


- FLUORESCENT LIGHTING FIXTURE
- LIGHTING FIXTURE
- EXIT SIGNS
- TELEPHONE OUTLET: SINGLE GANG BOX W/ COVER PLATE IN WALL WITH 3/4" C ROUTED TO CEILING SPACE.
- PANEL BOARD
- NEW METER BY LIGHT COMPANY
- NEW TV OUTLET: SINGLE GANG BOX W/ COVER PLATE IN WALL WITH 3/4" C ROUTED TO CEILING SPACE
- JUNCTION BOX (HEIGHT NOTED ON PLAN)
- DUPLEX RECEPTACLE
- DOUBLE DUPLEX RECEPTACLE
- ISOLATED GROUND RECEPTACLE
- GROUND FAULT INTERRUPT RECEPTACLE (GFI)
- WALL SWITCH
- ELECTRICAL DISCONNECT. REFER TO RISER FOR SIZE
- THREE-WAY WALL SWITCH
- WALL BOX DIMMER, NUMBER = RATING IN WATTS
- FUSIBLE DISCONNECT
- MANUAL MOTOR STARTER
- GROUND
- DEVICE RATING/FUSE SIZE/NUMBER OF POLES
- NEMA STARTER SIZE
- PANELBOARD 1H, CIRCUIT NUMBERS 4,6,8
- BRANCH CIRCUIT HOMERUN WITH GROUND WIRE (GROUND WIRE TO BE ROUTED FROM PANELBOARD TO LAST WIRING DEVICE ON BRANCH CIRCUIT)
- REFER TO KEYED NOTE 4
- THERMOSTAT MOUNTED TO MEET A.D.A. REQ.
- INIZATION DETECTOR IN RETURN AND SUPPLY AIR DUCTS INTERLOCK WITH AIR HANDLER TO SHUT DOWN UNIT UPON DETECTION OF SMOKE INTERLOCK WITH EMERGENCY LIGHTING.
- WALL MOUNTED MOTION SWITCH RE: DETAIL
- CEILING MOUNTED MOTION SWITCH SENSOR PROVIDES 500-1,270 SQ. FT. OF COVERAGE RE: DETAIL
- CEILING MOUNTED MOTION SWITCH SENSOR PROVIDES 1,270-2,850 SQ. FT. OF COVERAGE RE: DETAIL

### 10 ELECTRICAL SYMBOLS



### 9 SERVICE DISCONNECT



### 8 SERVICE RECEPTACLE AT HVAC UNITS

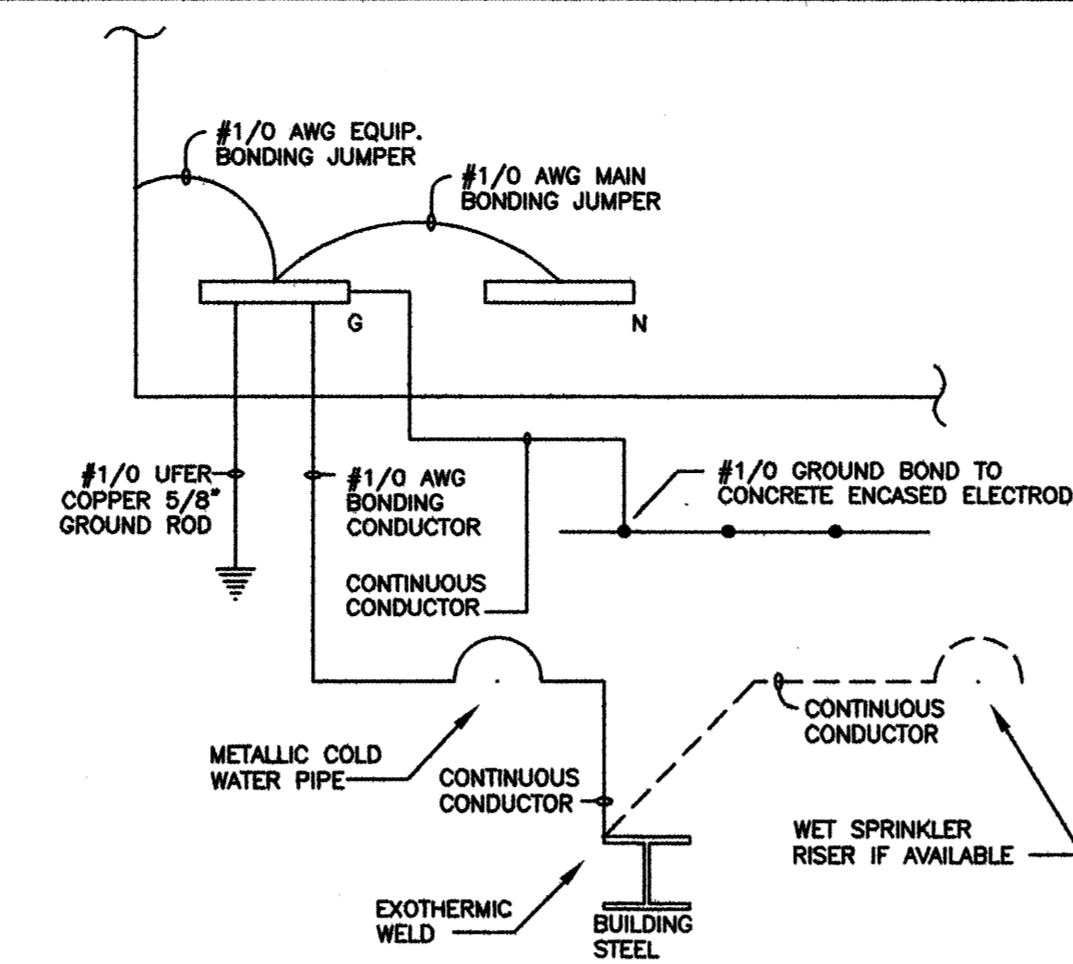
DEVICE	RATING	REFERENCE
DUPLEX CONVENIENCE RECEPTACLE	20A/120V	FMS 5302-W HUBBELL 5302-WH
SINGLE OUTLET RECEPTACLE	20A/120V	FMS 5301-W HUBBELL 5301-WH
GFI DUPLEX RECEPTACLE	20A/120V	FMS 5201-F-W HUBBELL 5201-F-WH
ISOLATED GROUND RECEPTACLE	20A/120V	FMS 65302 HUBBELL 65302
ISOLATED GROUND SINGLE RECEPTACLE	20A/120V	FMS 65301 HUBBELL 65301
WEATHERPROOF RECEPTACLE	20A/120V	FMS 5302 HUBBELL 5302
DUPLEX EQUIPMENT RECEPTACLE	30A/120V	FMS 9620 HUBBELL 9620
SWITCH, SPST	20A/120V	FMS 20A21-W HUBBELL 1221-WH
SWITCH, 3 WAY	20A/120V	FMS 20A23-W HUBBELL 1223-WH
SWITCH, DIMMER	SIZE ON PLAN	FMS 1P-1-W
SWITCH, MOTOR	30A/120V	FMS 30A22-HP HUBBELL 3031-1A

ALL SWITCHES, DIMMERS, GENERAL RECEPTACLES AND ALL RECEPTACLE COVER PLATES AS WELL AS SWITCH & DIMMER COVER PLATES TO BE WHITE.

### 7 ELECTRICAL DEVICES

- Electrical contractor (E.C.) shall obtain and pay for all permits, certificates, etc., as required.
- E.C. shall deliver certificate of final inspection to Developer/Owner before applying for final payment.
- Consult with other contractors furnishing equipment to verify loads and secure location of outlets, junction boxes, etc.
- Furnish and install disconnect switches, starters, and associated wiring as required for exhaust fans and air conditioning equipment.
- Main power wiring and final connections to all new HVAC equipment (excluding thermostat and thermostat wiring) and smoke detector by E.C.
- Minimum wire size shall be #12 awg except control wiring as noted. All wire shall be copper type THWN or THHN.
- Do not make changes or substitutions without approval of Architect and/or engineer.
- All work shall be guaranteed for a period of (1) one year from date of final acceptance.
- All electrical systems shall be completely and effectively grounded as required in Article 250 of the National Electrical Code.
- When called for, service entrance shall be installed per the National Electrical Code and the local utility.
- Verify mechanical equipment locations prior to the routing of conduit and feeders.
- Verify ceiling construction and general contractor before installing light fixtures.
- Low voltage cable to run loose in joist space secured neatly to structure. E.C. shall provide 3/4" conduit stubs and junction boxes from point of use to roof joists.
- All 120 volt circuits over 75 feet in length shall be #10 awg.
- Floor box/receptacles to be GFI rated and Nema 3R rated.
- E.C. shall provide temporary lighting and power during the demolition and construction phases.
- See architectural plan(s) for additional notes.
- All electrical work shall be in accordance with the latest edition of the National Electrical Code and all codes having local jurisdiction.
- Verify mechanical equipment over current protection requirements with the equipment manufacturer prior to connection.
- E.C. shall verify all light fixture location dimensions with Architectural fixtures plans.
- See panel schedules for circuit breaker, wire, and conduit requirements.
- No Aluminium wiring/cable allowed in construction.
- All exit, emergency, and night lights shall be on a non-switched breaker or connected ahead of the switch as per plans.
- All switchgear and panels to have copper bus. Equipment by Square 'D' ITE, General Electric, Siemens or Westinghouse.
- All lighting fixtures shall be provided by the E.C. per the lighting fixture schedule.
- All NEW BX cable allowed in construction to be securely fasten to structure. NO BX PENETRATION THRU FLOORS MUST BE RIGID CONDUIT.
- All power panels must be labeled with engraved plastic name plates and to have type written directory after construction is complete.
- All circuit breakers to be SQUARE-D SIEMENS, GE, or CUTLER HAMMER (to match existing) and must be switch duty type. Use one manufacture only.
- Provide and install separate ground bus in existing panel for I.G. receptacles in new construction. NO EXCEPTIONS.
- ALL WORK TO MEET UNIFORM AND INTERNATIONAL BUILDING CODE REQUIREMENTS.
- ELECTRICAL CONTRACTOR TO MEET ALL REGULATIONS AND REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE 2008.
- REFER TO THIS SHEET FOR ELECTRICAL PANEL SCHEDULES AND LOAD ANALYSIS.
- ALL HANDICAP REQUIREMENTS TO MEET A.D.A. STATE OF TEXAS AND FEDERAL REQUIREMENTS.
- CONTRACTOR TO VERIFY ALL EXISTING CONDITIONS PRIOR TO CONSTRUCTION.
- VERIFY ALL EQUIPMENT DIMENSIONS AND LOCATIONS WITH ARCHITECTURAL AND FIXTURE PLANS.
- DO NOT SCALE THESE DRAWINGS FOR DIMENSIONAL INFORMATION. IF THERE IS A CONFLICT WITH THE PLAN DIMENSIONS OR AN EXISTING FIELD CONDITION CONTACT THE ARCHITECT.
- COORDINATE ALL WORK WITH EACH SUB CONTRACTOR AND GENERAL CONTRACTOR (STRUCTURAL, ELECTRICAL, MECHANICAL, AND PLUMBING) PRIOR TO INSTALLATION AND CONNECTION TO EQUIPMENT.
- ALL FIRE PROTECTION TO MEET NFPA REGULATIONS AS SPECIFIED BY LOCAL.

### 6 ELECTRICAL GENERAL NOTES



### 5 SERVICE CONDUCTOR GROUNDING DETAIL

- NOTE:**
- ELECTRICAL CONTRACTOR SHALL PROVIDE ALL STRUCTURAL SUPPORTS, BRACING AND UNISTRUT (NOT DIPPED GALVANIZED) NECESSARY TO ATTACH PANELS, METERS, WEATHERHEAD AND EQUIPMENT TO BUILDING WALL. ALL SUCH STRUCTURAL SHALL BE LOCATED AS REQUIRED ON BUILDING.
  - ALL ELECTRICAL EQUIPMENT CABINETS TO HAVE SAFETY EARTH ELECTRODE SYSTEM GROUND WITH 2AL-CU RATED CLAMPS OR CADWELDED CONNECTIONS. ALL ELECTRICAL EQUIPMENT CABINETS TO BE GROUND TOGETHER.
  - ELECTRICAL CONTRACTOR SHALL PAINT ALL STRUCTURAL SUPPORTS, BRACING AND UNISTRUT AND ALL ELECTRICAL DEVICES PANELS, METERS, WEATHERHEAD AND EQUIPMENT COLOR TO MATCH BUILDING COLOR. VERIFY WITH ARCHITECT.
  - ELECTRICAL CONTRACTOR COORDINATE ROUTING OF ELECTRICAL SERVICE WITH LOCAL POWER COMPANY PRIOR TO CONSTRUCTION.
  - CONTRACTOR SHALL USE FACTORY-PROVIDED ITEMS WHEREVER POSSIBLE. FABRICATED ITEMS SHALL NOT BE USED UNLESS APPROVED PRIOR TO INSTALLATION BY THE ENGINEER/ARCHITECT.

### 4 ELECTRICAL RISER GENERAL NOTES

PANEL/EQUIPMENT	LOAD (VA)
400/277 VOLT 3 PHASE 4 WIRE	
EXISTING ELECTRICAL SERVICE LOAD AND NEW LOAD	
EXISTING SERVICE X 125% =	534.0 AMPS
EXISTING SERVICE -- NEW LOAD (22/50) =	82.8 AMPS
TOTAL WIREWAY AMPS =	616.8 AMPS
SPARE CAPACITY -- FIELD VERIFY	183.2 AMPS
EXISTING SERVICE SIZE =	800 AMPS
BASE ON LARGER LOAD -- PHASE A	

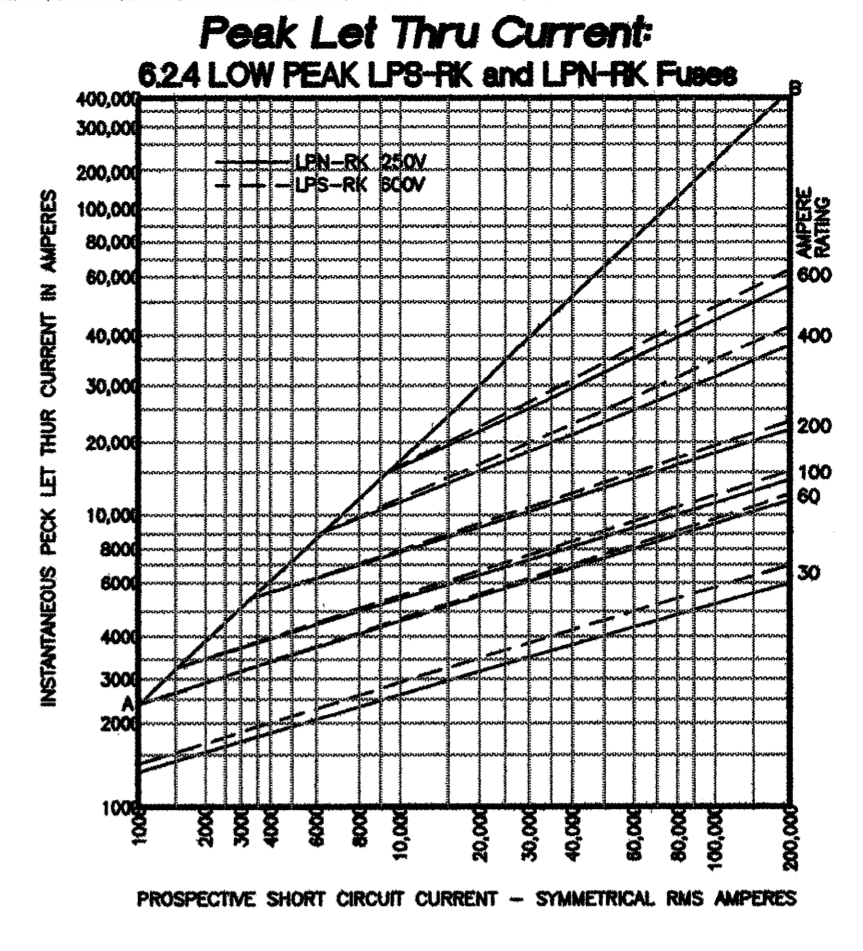
### 3 ELECTRICAL SERVICE RISER

#### Short Circuit Notes:

- MAIN FUSED DISCONNECTS TO BE SYMMETRICAL RMS AMPERES RATED AT NO LESS THAN 65,000.
- ALL ELECTRICAL PANELS AND PROTECTION DEVICES DOWN STREAM OF MAIN FUSED DISCONNECT TO BE NOT LESS THAN 22,000 AC SYMMETRICAL RATED.
- EXISTING 480/277 VOLT 3 PHASE TRANSFORMER AVAILABLE FAULT (SHORT CIRCUIT) CURRENT AS PER THE LIGHT COMPANY CALCULATIONS TO BE 28,840 AMPS.
- CALCULATIONS HAVE BEEN DETERMINED WITH OUT IMPEDENCE OF EXISTING AND NEW CONDUCTORS. PROSPECTIVE SHORT CIRCUIT DIAGRAM ILLUSTRATES NOT MORE THAN 10,000 AMPS WILL BE FEED THRU MAIN FUSED DISCONNECT UPON SHORT CIRCUIT.
- ALL FUSES TO BE CURRENT LIMITING - LOW PEAK FUSES. TYPE AS SCHEDULED ON THIS SHEET. NO TIMED DELAY FUSES ARE ACCEPTABLE.
- ALL ELECTRICAL SERVICE CONNECTIONS TO MEET HOUSTON LIGHTING AND POWER MIN. SERVICE STANDARDS. NO EXCEPTIONS.

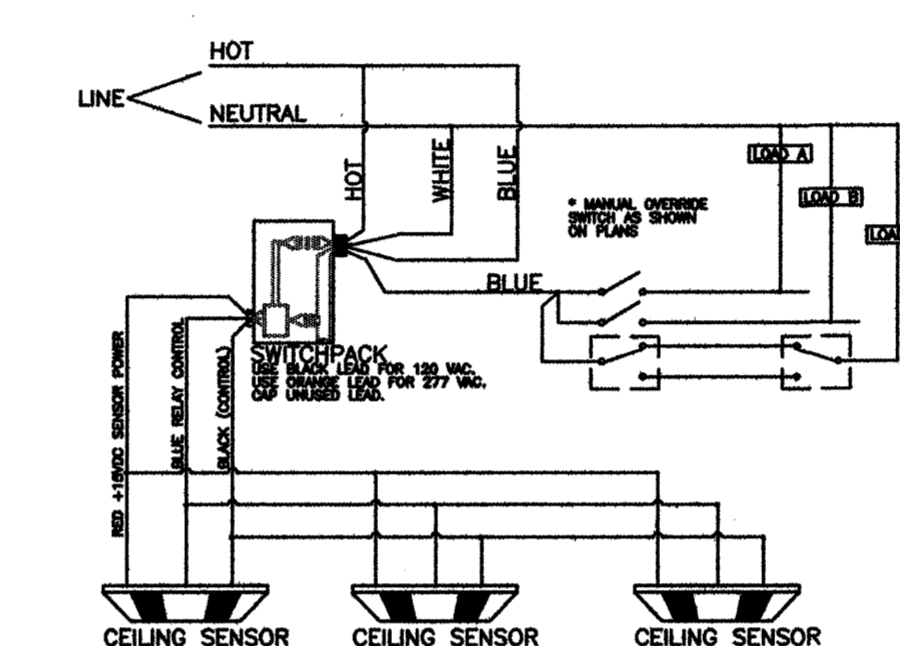
#### Current Limiting Effects:

Pros. S.C.C.	LPS-RK (600V) Fuse Ratings	LPN-RK (250V) Fuse Ratings
500	500	500
1000	1000	1000
1500	1500	1500
2000	2000	2000
2500	2500	2500
3000	3000	3000
3500	3500	3500
4000	4000	4000
4500	4500	4500
5000	5000	5000
6000	6000	6000
7000	7000	7000
8000	8000	8000
9000	9000	9000
10000	10000	10000



#### Low Peak LPS-RK + LPN-RK Fuses:

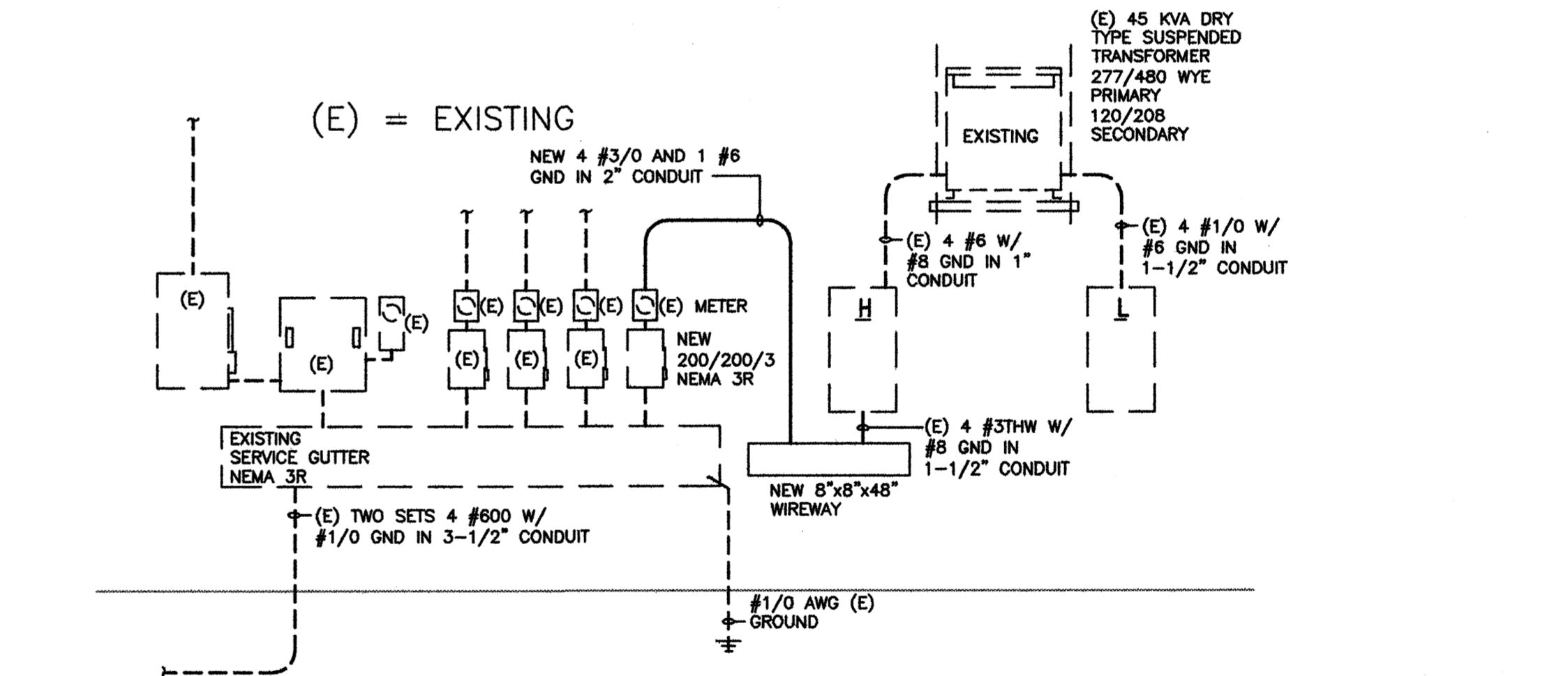
### 2 ELECTRICAL FUSES



#### CEILING SENSOR(S) WITH MANUAL OVERRIDE SWITCHES

### 1 CEILING MOTION SENSOR(S)

- VERIFY WITH LANDLORD TYPE OF OCCUPANCY SENSOR TO BE UTILIZED
- OCCUPANCY SENSOR LEGEND**
- D DIMMER PRESET SWITCH. COLOR TO MATCH.
  - M# NOVTAS SUPER SWITCH MINI WALL SENSOR SWITCH. MODEL #01-250. OCCUPANCY SENSOR SWITCH PROVIDES UP TO 300 SQ. FT. OF COVERAGE.
  - M# 3-WIRE DEVICE. BLACK (HOT), WHITE (NEUTRAL) AND RED (LOAD) MAXIMUM LOAD 800W @ 120V, 1200V @ 277V
  - M# NOVTAS DESIGNER CEILING SENSOR. MODEL #01-100. PROVIDE APPROPRIATE SWITCH PACK FROM NOVTAS. OCCUPANCY SENSOR PROVIDES 500-1,270 SQ. FT. OF COVERAGE. SWITCH PACK AS REQUIRED.
  - M# NOVTAS DESIGNER CEILING SENSOR. MODEL #01-110. PROVIDE APPROPRIATE SWITCH PACK FROM NOVTAS. OCCUPANCY SENSOR PROVIDES 1,270-2,850 SQ. FT. OF COVERAGE. SWITCH PACK AS REQUIRED.



DESCRIPTION	LOAD (KVA)	NEC (KVA)	PHASE A (AMPS)	PHASE B (AMPS)	PHASE C (AMPS)	NEUTRAL (AMPS)	REMARKS ON NEC CALCULATION
ELECTRIC HEAT	0.0	0.0	0.0	0.0	0.0	0.0	LESS THAN A/C
A/C REFRIGERATION	32.5	32.5	39.0	39.0	0.0	0.0	100% OF CONNECTED
MISCELLANEOUS MOTORS	0.0	0.0	0.0	0.0	0.0	0.0	100% OF CONNECTED
WATER HEATING	2.3	2.3	2.7	2.7	2.7	2.7	100% OF CONNECTED
INDOOR LIGHTING	1.5	1.9	2.3	2.3	2.3	2.3	125% OF CONNECTED
RECEPTACLES	10.3	12.9	15.5	15.5	15.5	15.5	125% OF THE LARGER OF CONNECTED OR TABLE 220-3(b)
EXISTING DEMAND - PANEL A & B	15.1	12.5	15.1	15.1	15.1	15.1	NEC TABLE 220-13
MISCELLANEOUS NON-CONTINUOUS	0.0	0.0	0.0	0.0	0.0	0.0	NOT APPLICABLE
EXISTING 480V P-P	1.9	2.4	2.9	2.9	2.9	2.9	125% OF CONNECTED
MISCELLANEOUS CONTINUOUS	0.0	0.0	0.0	0.0	0.0	0.0	100% OF CONNECTED
MISCELLANEOUS NON-CONTINUOUS	0.0	0.0	0.0	0.0	0.0	0.0	NO COMMERCIAL KITCHEN
KITCHEN EQUIPMENT	0.0	0.0	0.0	0.0	0.0	0.0	25% OF LARGEST MOTOR ADDED
25% LARGEST MOTOR	4.4	4.4	5.3	5.3	5.3	0.0	25% OF LARGEST MOTOR ADDED
*** TOTALS ***	67.9	68.8	82.8	82.8	82.8	38.5	
*** CAPACITY ***			200.0	200.0	200.0	200.0	
*** SPARE CAPACITY ***			117.2	117.2	117.2	161.5	

JOB NUMBER: 1130  
 DATE: 09/08/11  
 REVISIONS:

**TWENTY - TWO FIFTY INTERIORS**  
 A New Expansion for:  
 Buddy O - Sugar Land Town Square  
 2250 Lone Star Drive  
 Sugar Land, Texas

JM LAWLESS AIA  
 Architects & Planners  
 4610 Shearwater Blvd.  
 Suite 200-C  
 Sugar Land, Texas  
 (281) 240-6101

STATE OF TEXAS  
 H.M. McLEOD, P.E.  
 PROFESSIONAL ENGINEER  
 THIS SEAL WAS AUTHORIZED THIS DATE 11/11/11  
 PROJECT #11-210  
 H.M. McLEOD, P.E.  
 4727 MERRITT ST. SUITE B  
 HOUSTON, TEXAS 77057  
 OFFICE: (713) 961-8898  
 FAX: (713) 961-8898  
 CELL: (713) 808-1646

DRAWING: ELECTRICAL DETAILS AND SCHEDULES  
**E-3**