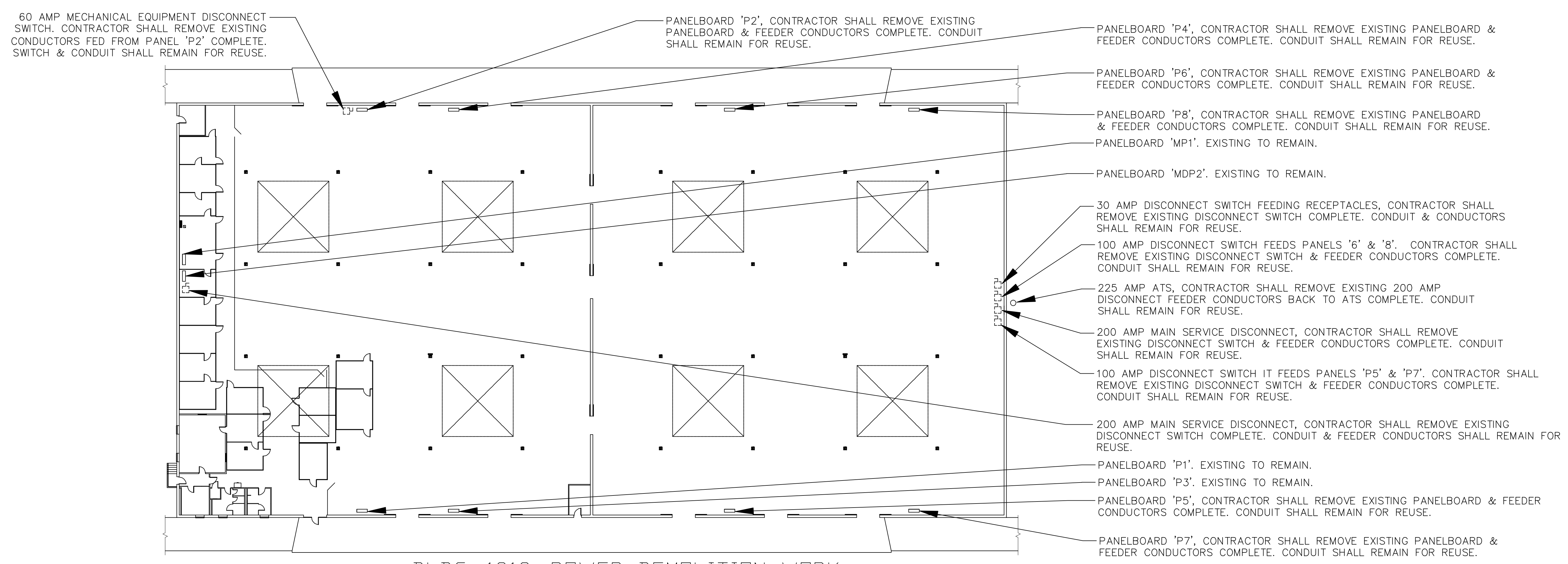


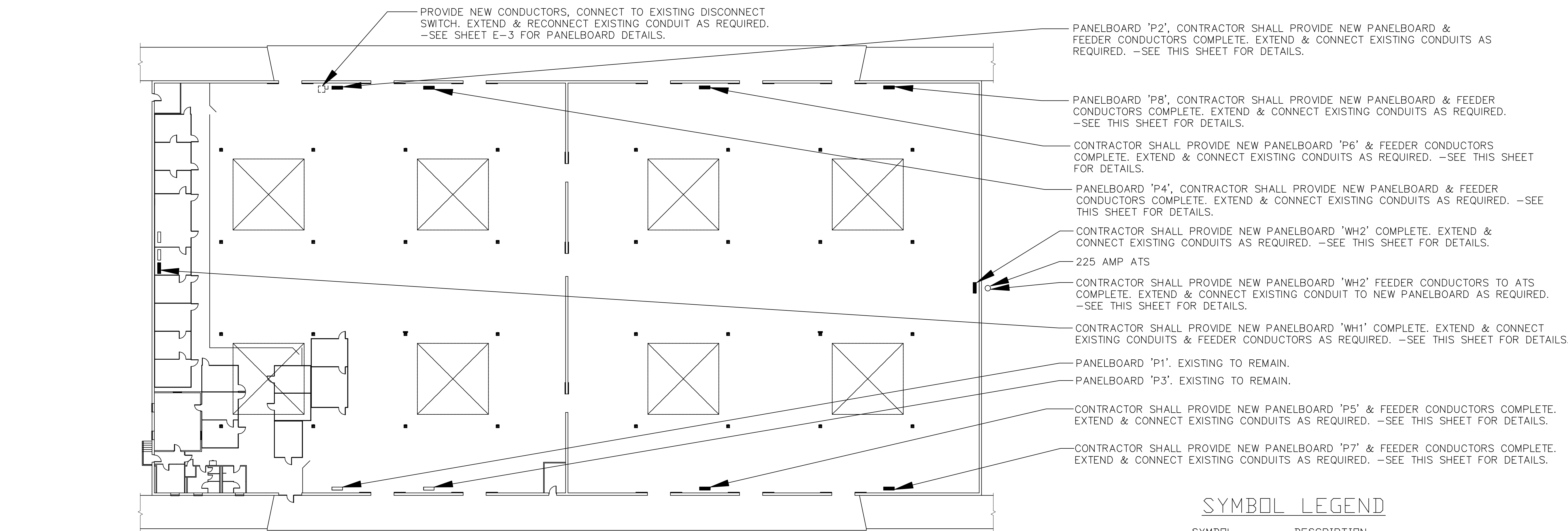
REVISIONS		
SYM	DATE	APPROVED

ELECTRICAL NOTES

- ALL WORK & MATERIALS, UNLESS NOTED OTHERWISE AS EXISTING, ARE NEW & SHALL BE PROVIDED BY THE CONTRACTOR.
- EXISTING EQUIPMENT IS TO REMAIN UNLESS NOTED OTHERWISE.
- ELECTRICAL PLANS ARE PARTIALLY DIAGRAMMATIC. REFER TO ARCHITECTURAL, CIVIL, & MECHANICAL DRAWINGS FOR GUIDANCE ON DIMENSIONS, CEILING HEIGHTS, DOOR SWINGS, ROOM FINISHES, & ARCHITECTURAL DETAILS. LOCATION OF DUCTS, PIPES, AND STRUCTURAL SUPPORTS & BUILDING ORIENTATION. INSTALL ELECTRICAL SYSTEMS WITHOUT INTERFERING WITH EXISTING DUCTS, PIPES, STRUCTURES, OTHER SYSTEMS. LOCATE LIGHTING FIXTURES SYMMETRICALLY IN PROPER RELATIONS TO FINISHED AREAS EXCEPT WHERE DIMENSIONED ON THE DRAWINGS OR LOCATED IN REFLECTED CEILING PLANS. LOCATE TELEPHONE FLOOR OUTLETS AS DIMENSIONED ON THE DRAWINGS.
- PROVIDE ADDITIONAL SUPPORTS FOR SWITCHES, RACEWAYS, & OTHER ELECTRICAL EQUIPMENT WHEREVER THE BUILDING STRUCTURE IS NOT SUITABLE FOR DIRECT MOUNTING. PROVIDE MINIMUM 1/4 INCH AIR SPACE BETWEEN CONCRETE/MASONRY SURFACE & ELECTRICAL DEVICES & OUTLETS. VERIFY ALL EQUIPMENT CHARACTERISTIC & MOUNTING REQUIREMENTS PRIOR TO ROUGH-IN. PROVIDE PROPER ACCESSORIES, TRIMS, ETC., TO SUIT THE MOUNTING SYSTEM.
- ALL WORK & MATERIALS, UNLESS NOTED OTHERWISE AS EXISTING, ARE NEW & SHALL BE PROVIDED BY THE CONTRACTOR. ELECTRICAL INSTALLATION SHALL CONFORM TO REQUIREMENTS OF NFPA 70, & REQUIREMENTS SPECIFIED HEREIN. WORK PLACE SHALL MEET REQUIREMENTS OF NFPA 70E.
- CUT EXISTING SURFACES AS REQUIRED TO INSTALL CONDUIT, RACEWAYS & OTHER ELECTRICAL WORK; REPAIR ALL DAMAGE CAUSED BY WORK CUTTING SHALL BE DONE BY SAWING ALONG STRAIGHT LINES. THE AMOUNT OF CUTTING SHALL BE THE MINIMUM NECESSARY TO ACCOMMODATE THE NEW WORK. NO FLAME CUTTING SHALL BE PERMIT WITHOUT THE WRITTEN PERMISSION OF THE CONTRACTING OFFICER. HOLES SHALL BE ROTARY DRILLED & THE SIZE SHALL BE THE MINIMUM NECESSARY TO ACCOMMODATE THE WORK.
- VERIFY CIRCUIT & DE-ENERGIZE CIRCUITS PRIOR TO BEGINNING DEMOLITION WORK; EXISTING WIRING TO BE REMOVED SHALL BE DISCONNECTED FROM ITS SOURCE & REMOVED. WIRING AND CONDUIT MAY VARY FROM THAT SHOWN.
- PROVIDE GROUNDING BUSHINGS & WEDGES AS REQUIRED TO BOND EXISTING METALLIC RACEWAYS.
- WHERE CONDUIT & WIRING HAS NOT BEEN SHOWN ON THE DRAWINGS, THE ARRANGEMENT & ROUTING OF THE BRANCH CIRCUITS WILL BE AT THE CONTRACTOR'S DISCRETION IN ACCORDANCE WITH GENERALLY ACCEPTED GOOD PRACTICE FOR COMMERCIAL WORK & N.E.C. CODE REQUIREMENTS.
- PROVIDE CONDUIT BODIES WITH NON-HARDENING CAULKING COMPOUND & SEAL CONDUITS THAT ENTER CONDITIONED AREAS FROM NON-CONDITIONED AREAS.
- FOR CLARITY, WIRING & CONDUITS ARE NOT SHOWN.
- ONLY EXISTING ELECTRICAL SYSTEM AFFECTING THIS CONTRACT IS SHOWN.
- PROVIDE UNGROUNDED & NEUTRAL (GROUNDED) CONDUCTORS FOR EACH BRANCH CIRCUIT; IDENTIFY OTHER NEUTRAL WITH COLORED STRIPE WHENEVER MORE THAN ONE NEUTRAL IS IN SAME RACEWAY.
- PROVIDE NEW PANELBOARD DIRECTORY IN EACH NEW & EXISTING PANELBOARD; ASCERTAIN & INDICATE NEW & EXISTING LOADS SERVED BY EACH NEW & EXISTING CIRCUIT OF PANELBOARD.
- PANELBOARD SHALL BE EQUIPPED WITH THERMAL MAGNETIC TYPE BOLT-IN BRANCH BREAKERS. PROVIDE PANELBOARD DIRECTORY IN PANELBOARD; INDICATE LOADS SERVED BY EACH CIRCUIT OF PANELBOARD.
- ALL CONDUCTORS SHALL BE COPPER. PROVIDE INSULATED CONDUCTORS WITH EQUIPMENT GROUNDING (E.G.) CONDUCTOR IN CONDUIT & RACEWAYS; WIRE & CONDUIT SIZES AS INDICATED. COLOR CODING OF 208Y/120 VOLT SYSTEM UNGROUNDED CONDUCTORS: PHASE A - BLACK; PHASE B - RED; PHASE C - BLUE. INSULATION SHALL BE 600- VOLT, TYPE THWN/THHN EXCEPT TYPE TW FOR GROUNDING CONDUCTOR.
- PROVIDE INSULATED CONDUCTORS INSTALLED IN RIGID STEEL OR INTERMEDIATE METAL CONDUIT, OR ELECTRICAL METAL TUBING (EMT) EXCEPT PROVIDE FLEXIBLE STEEL CONDUIT BETWEEN 3 & 6 FEET IN LENGTH FOR RECESSED & SEMI-RECESSED LIGHTING FIXTURES & FOR EQUIPMENT & MOTORS SUBJECT TO VIBRATION OR MOVEMENT. PROVIDE SEPARATE EQUIPMENT GROUNDING CONDUCTOR ACROSS FLEXIBLE CONNECTIONS. RESTRICTIONS APPLICABLE TO EMT - DO NOT USE EXPOSED UNLESS A MINIMUM OF 10- FEET ABOVE FLOOR. DO NOT INSTALL UNDERGROUND. DO NOT ENCASED IN CONCRETE OR OTHER CEMENTITIOUS MATERIALS, DO NOT USE IN AREAS SUBJECT TO SEVERE PHYSICAL DAMAGE, USE OUTDOORS.
- SEAL ALL CONDUIT & RACEWAY PENETRATIONS.
- CONTRACTOR SHALL CONNECT ALL EXTERIOR WALL MOUNT FLUORESCENT COMBINATION EMERGENCY LUMINAIRES TO AN UNSWITCHED LEG OF NEAREST AVAILABLE CIRCUIT.
- CONTRACTOR SHALL PROVIDE PANELBOARD NAMEPLATE FOR EACH NEW & EXISTING PANELBOARD REFERENCED BY THIS WORK.



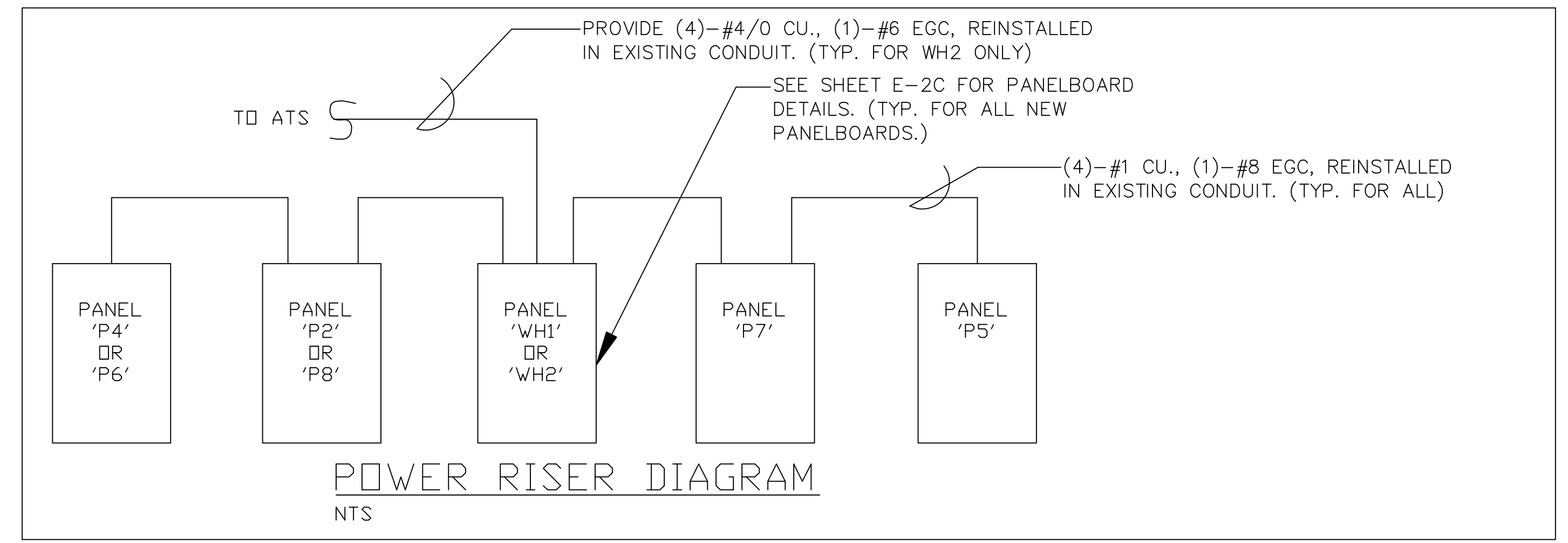
BLDG. 1212: POWER DEMOLITION WORK
SCALE 1" = 10'-0"



BLDG. 1212: POWER NEW WORK
SCALE 1" = 10'-0"

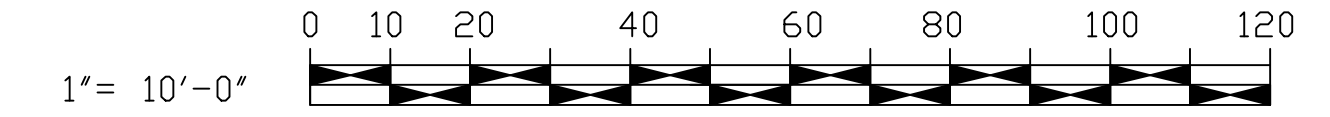
SYMBOL LEGEND

SYMBOL	DESCRIPTION
●	FLUORESCENT LIGHTING FIXTURE: EXISTING TO BE REMOVED.
○	FLUORESCENT LIGHTING FIXTURE: NEW. -SEE DETAIL SHEET E-2B FOR FIXTURE DETAILS.
□	DISCONNECT SWITCH: EXISTING. -SEE DEMOLITION PLAN THIS SHEET FOR WORK DETAILS.
□	PANELBOARD: EXISTING. -SEE DEMOLITION PLAN THIS SHEET FOR WORK DETAILS.
■	PANELBOARD: NEW. -SEE RISER DIAGRAM THIS SHEET FOR DETAILS.
○	ATS: EXISTING TO REMAIN.
—	BRANCH CIRCUIT CONDUIT & WIRE
→	HOMERUN TO PANEL: NEW, ALPHANUMERIC REPRESENTS PANELBOARD DESIGNATION, NUMERAL REPRESENTS CIRCUIT NUMBER CONNECTION.
⊗	WALL-MOUNTED LIGHTING FIXTURE. -SEE SHEET E-2B FOR DETAILS.



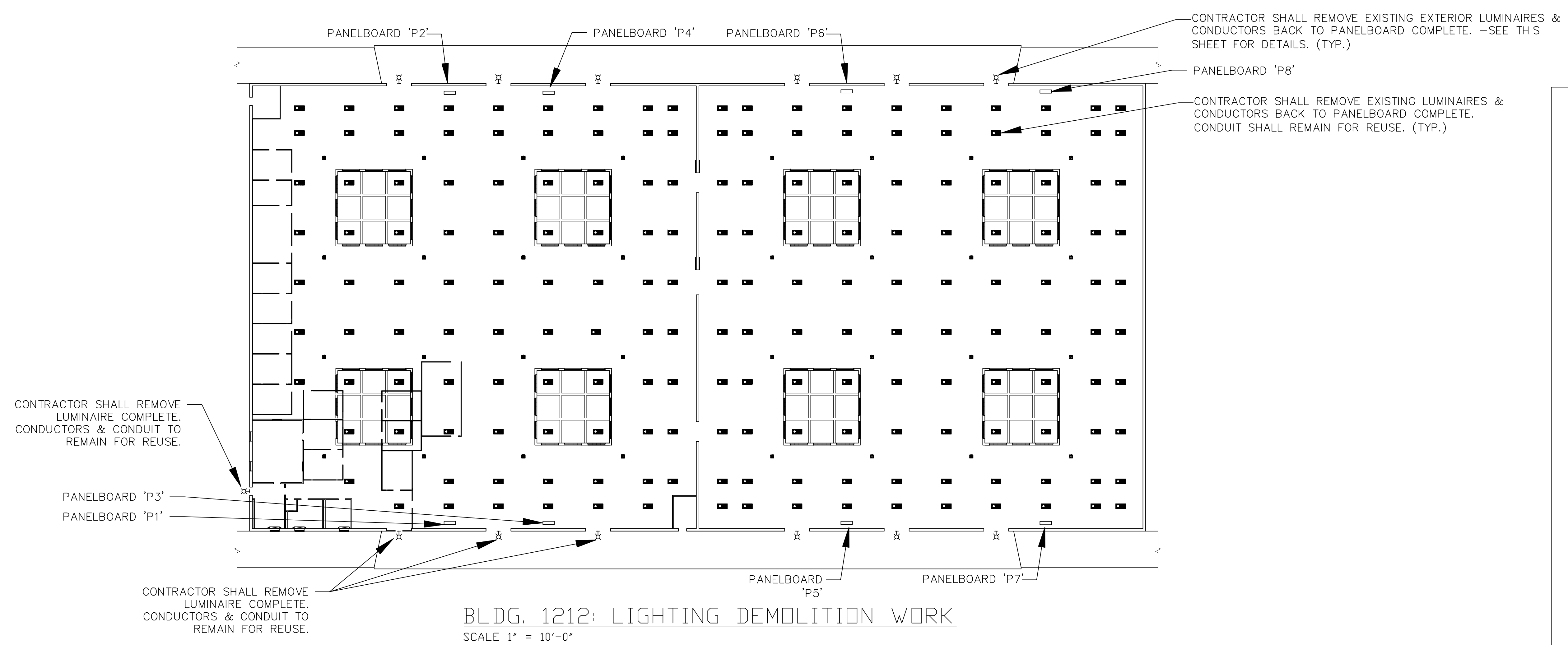
POWER RISER DIAGRAM
NTS

GRAPHIC SCALE

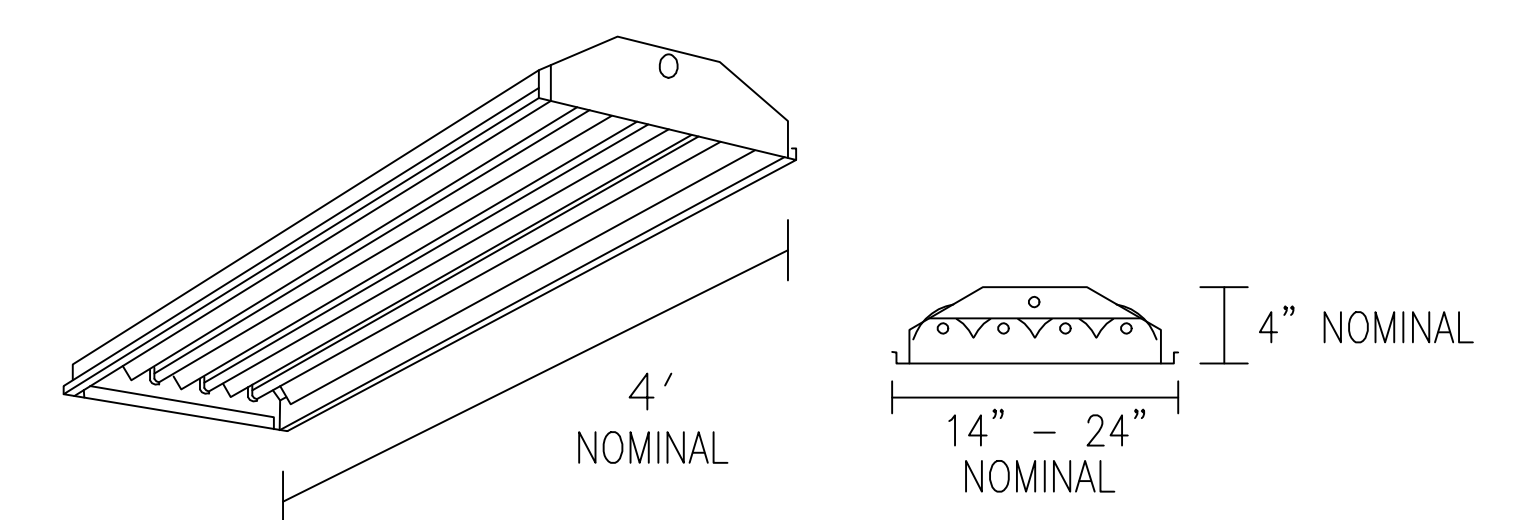


E-2A	
DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND MARINE CORPS BASE CAMP LEJUNE, NORTH CAROLINA	
DES. W JONES	REPLACE PLUMBING/MECHANICAL SYSTEM BLDG 1212
DR. W JONES	POWER DEMOLITION WORK, POWER NEW WORK, LEGEND, ELECTRICAL NOTES, & POWER RISER DIAGRAM
CHK. W JONES	
DESIGN DIR. B.R. MARSHBURN PE	
APPROVED: PWO OR OICC	DATE: 9-18-09
B.R. MARSHBURN PE	SIZE: F
SATISFACTORY TO:	CODE IDENT. NO: 80091
	NAVAC DRAWING NO. 4559586A
	CONST. CONTR. NO. N40085-00-B-4724
	SCALE: NOTED
	SPEC. 05-00-4724
	SHEET OF

REVISIONS		
SYM	DATE	APPROVED



BLDG. 1212: LIGHTING DEMOLITION WORK
SCALE 1" = 10'-0"



LUMINAIRE REQUIREMENTS:

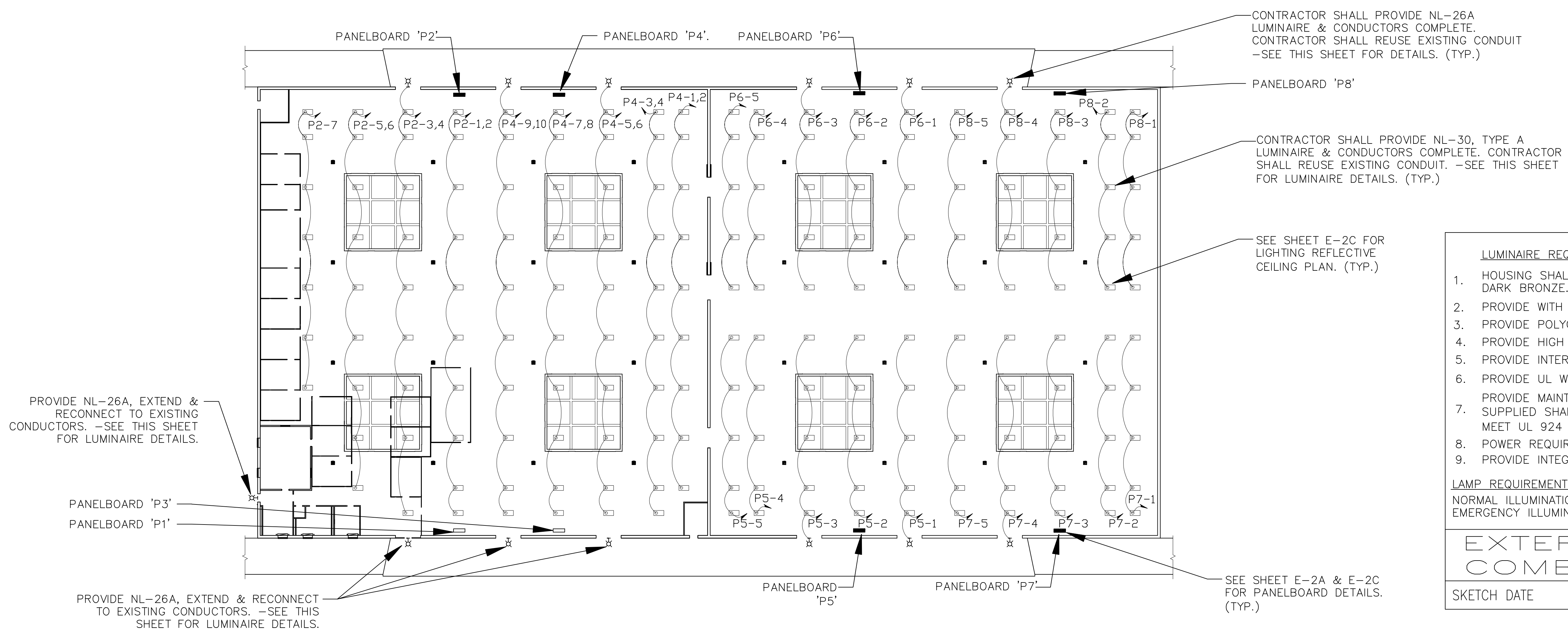
- HOUSING - DIE-FORMED, COLD-ROLLED STEEL, OR .05" DIE-FORMED ALUMINUM WITH REINFORCEMENT RIBS FOR RIGIDITY. ENDCAPS SECURED WITH TABS, SCREWS OR RIVETS. FIXTURE SHALL NOT PERMANENTLY DEFORM OUT OF "SQUARE" WHEN PICKED UP FROM ANY CORNER. HOUSING SHALL HAVE OPTION FOR SOLID TOP OR INTEGRATED UPLIGHT COMPONENT (APPROX. 15%). INDICATE IN LIGHTING FIXTURE SCHEDULE.
- FINISH - MULTI-STAGE PHOSPHATE BONDING TREATMENT FINISHED WITH HIGH REFLECTANCE (MINIMUM 85%), BAKED WHITE ENAMEL FINISH.
- REFLECTOR - HIGHLY SPECULAR ANODIZED ALUMINUM.
- LAMPS - LINEAR FLUORESCENT T5HO TYPICALLY, WITH WATTAGES AS INDICATED. SEE LIGHTING FIXTURE SCHEDULE.
- BALLAST - CLASS P, THERMALLY-PROTECTED, HIGH POWER FACTOR ($\geq .95$), ELECTRONIC TYPE WITH SOUND RATING A. SEE SPECIFICATION OR LIGHTING FIXTURE SCHEDULE FOR BALLAST OPTIONS AND SPECIFICS.
- CERTIFICATION - UL LISTED AND LABELED.
- MOUNTING - UNIVERSAL HANGER FOR CHAIN, TONG OR CRADLE SYSTEM.
- PHOTOMETRICS - MINIMUM VALUE OF COEFFICIENT OF UTILIZATION (CU) AND EFFICIENCY, GIVEN INTERIOR CAVITY REFLECTANCES OF 80-50-20:

TYPE A - 4 LAMP		TYPE B - 6 LAMP	
RCR	CU	RCR	CU
1	102	1	95
2	90	2	82
3	80	3	72
4	71	4	64

EFFICIENCY - 96% EFFICIENCY - 91%

ENCLOSED FLUORESCENT HIGH-BAY

REVISED: AUGUST 2004 LIGHTING PLATE: NL-30



BLDG. 1212: LIGHTING NEW WORK
SCALE 1" = 10'-0"

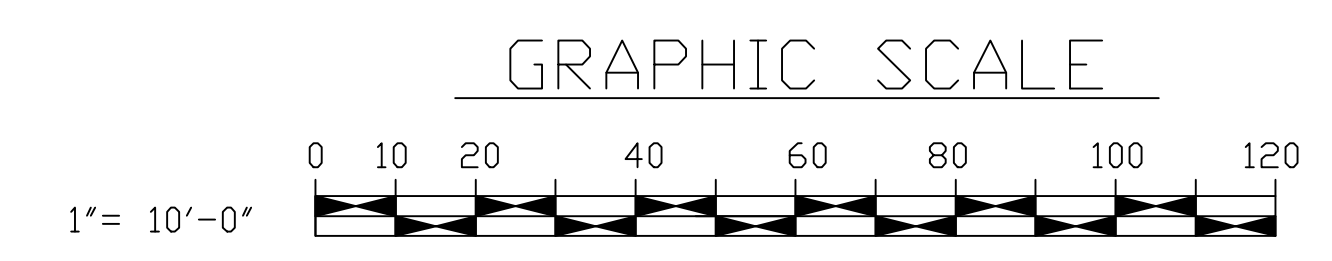
LUMINAIRE REQUIREMENTS

- HOUSING SHALL BE ULTRA-VIOLET & IMPACT RESISTANT POLYCARBONATE DARK BRONZE. APPROX. 10"H X 5"W X 5"
- PROVIDE WITH ALUMINUM OR POLYCARBONATE BACK PLATE.
- PROVIDE POLYCARBONATE ULTRA-VIOLET RESISTANT PRISMATIC LENS.
- PROVIDE HIGH POWER FACTOR ELECTRONIC BALLAST.
- PROVIDE INTERNAL GREEN GROUNDING SCREW.
- PROVIDE UL WET LABELED.
- PROVIDE MAINTENANCE FREE, SEALED NICKEL CADMIUM BATTERY. BATTERIES SUPPLIED SHALL HAVE A 5 YEAR FULL WARRANTY. BATTERY CHARGER SHALL MEET UL 924 STANDARD.
- POWER REQUIREMENTS: 120 VOLT, 0.15 AMPS, & 17 WATTS.
- PROVIDE INTEGRAL PHOTOCCELL

LAMP REQUIREMENTS
NORMAL ILLUMINATION: 1-13 WATT COMPACT FLUORESCENT,
EMERGENCY ILLUMINATION: 2-4 VOLT, 4 WATT DC INCANDESCENT

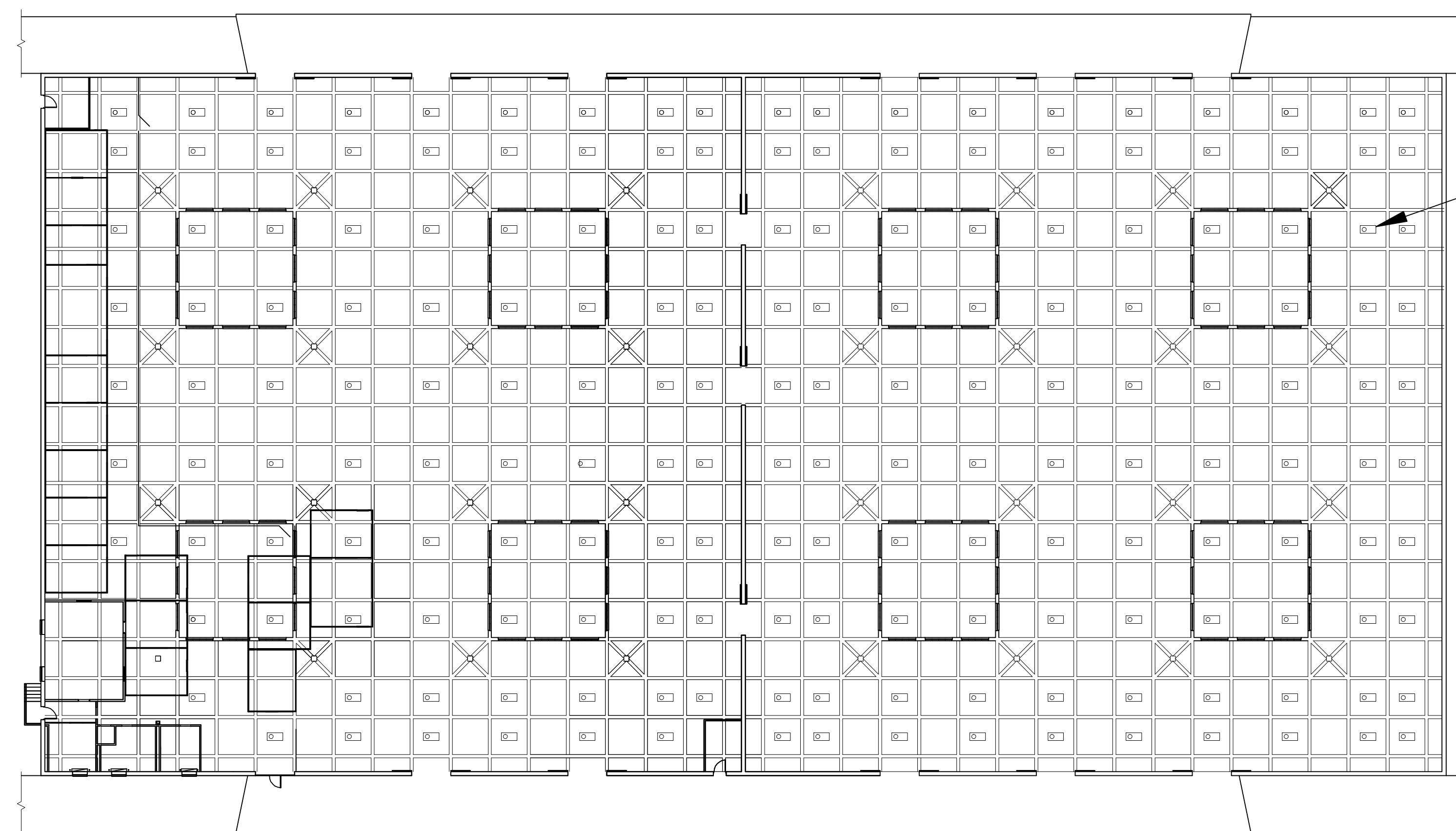
EXTERIOR WALL MOUNT FLUORESCENT COMBINATION EMERGENCY LUMINAIRE

SKETCH DATE STYLE NL-26A



E-2B					
DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND					
MARINE CORPS BASE					
CAMP LEJUNE, NORTH CAROLINA					
DES. W JONES	REPLACE PLUMBING/MECHANICAL SYSTEM BLDG 1212				
DR. W JONES					
CHK. W JONES					
SUBMITTED BY:					
DESIGN DIR. B.R. MARSHBURN PE	LIGHTING DEMOLITION WORK, LIGHTING NEW WORK & LUMINAIRE DETAIL				
APPROVED: PWO OR OICC	DATE	SIZE	CODE	IDENT. NO.	NAVFAC DRAWING NO.
B.R. MARSHBURN PE	9-18-09	F	80091	459586B	459586B
SATISFACTORY TO:	DATE	CONST. CONTR. NO. N40085-00-B-4724		SCALE: NOTED SPEC. 05-00-4724 SHEET _ OF _	

REVISIONS		
SYM	DATE	APPROVED



LIGHTING REFLECTIVE CEILING PLAN
SCALE 1" = 10'-0"

PANEL BOARD 'WH1' SCHEDULE

LOAD SERVED	WIRE SIZE	TRIP POLE	CKT NO.	A	VOLT - AMP/PHASE	B	C	CKT NO.	TRIP POLE	WIRE SIZE	LOAD SERVED
PANEL 1 & 3	-	100/3	1					2		#1	PANEL 2 & 4
			3					4		#1	
			5					6		#1	
SPACE			7					8			SPACE
SPACE			9					10			SPACE
SPACE			11					12			SPACE
SPACE			13					14			SPACE
SPACE			15					16			SPACE
SPACE			17					18			SPACE

208Y/120V, 225 AMP, W/200 AMP MAIN, 3Ø, 10K AIC, NEMA 1, SURFACE MOUNTED
PANEL 'WH1'
NEW
 - EXTEND & RECONNECT EXISTING CONDUCTORS

PANEL BOARD 'P2' SCHEDULE

LOAD SERVED	WIRE SIZE	TRIP POLE	CKT NO.	A	VOLT - AMP/PHASE	B	C	CKT NO.	TRIP POLE	WIRE SIZE	LOAD SERVED
ROW 6	#12	20/1	1					2	20/1	#12	ROW 6
ROW 7	#12	20/1	3					4	20/1	#12	ROW 7
ROW 8	#12	20/1	5					6	20/1	#12	ROW 8
ROW 9	#12	20/1	7					8	20/1	-	TIMECLOCK
MECH DISCONNECT	#4		9					10	20/1	-	EXHAUST FAN
	#4	60/3	11					12			SPACE
	#4		13					14			SPACE
SPACE			15					16			SPACE
SPACE			17					18			SPACE

208Y/120V, 125 AMP, W/100 AMP MAIN, 3Ø, 10K AIC, NEMA 1, SURFACE MOUNTED
PANEL 'P2'
NEW
 - EXTEND & RECONNECT EXISTING CONDUCTORS

PANEL BOARD 'WH2' SCHEDULE

LOAD SERVED	WIRE SIZE	TRIP POLE	CKT NO.	A	VOLT - AMP/PHASE	B	C	CKT NO.	TRIP POLE	WIRE SIZE	LOAD SERVED
PANEL 5 & 7	#1	100/3	1					2		#1	PANEL 6 & 8
	#1		3					4	100/3	#1	
	#1		5					6		#1	
RECEPTACLE	-	30/1	7					8	30/1	-	RECEPTACLE
			9					10			SPACE
SPACE			11					12			SPACE
SPACE			13					14			SPACE
SPACE			15					16			SPACE
SPACE			17					18			SPACE

208Y/120V, 225 AMP, W/200 AMP MAIN, 3Ø, 10K AIC, NEMA 1, SURFACE MOUNTED
PANEL 'WH2'
NEW
 - EXTEND & RECONNECT EXISTING CONDUCTORS

PANEL BOARD 'P5' SCHEDULE

LOAD SERVED	WIRE SIZE	TRIP POLE	CKT NO.	A	VOLT - AMP/PHASE	B	C	CKT NO.	TRIP POLE	WIRE SIZE	LOAD SERVED
ROW 6	#12	20/1	1					2	20/1	#12	ROW 7
ROW 8	#12	20/1	3					4	20/1	#12	ROW 9
ROW 10	#12	20/1	5					6	20/1	-	RECEPTACLE
T/C	-	20/1	7					8	20/1	-	SPACE
SPACE			9					10			SPACE
SPACE			11					12			SPACE
SPACE			13					14			SPACE
SPACE			15					16			SPACE
SPACE			17					18			SPACE

208Y/120V, 125 AMP, W/100 AMP MAIN, 3Ø, 10K AIC, NEMA 1, SURFACE MOUNTED
PANEL 'P5'
NEW
 - EXTEND & RECONNECT EXISTING CONDUCTORS

PANEL BOARD 'P6' SCHEDULE

LOAD SERVED	WIRE SIZE	TRIP POLE	CKT NO.	A	VOLT - AMP/PHASE	B	C	CKT NO.	TRIP POLE	WIRE SIZE	LOAD SERVED
ROW 6	#12	20/1	1					2	20/1	#12	ROW 7
ROW 8	#12	20/1	3					4	20/1	#12	ROW 9
ROW 10	#12	20/1	5					6	20/1	-	EXHAUST FAN
SPACE			7					8	20/1	-	SPACE
SPACE			9					10			SPACE
SPACE			11					12			SPACE
SPACE			13					14			SPACE
SPACE			15					16			SPACE
SPACE			17					18			SPACE

208Y/120V, 125 AMP, W/100 AMP MAIN, 3Ø, 10K AIC, NEMA 1, SURFACE MOUNTED
PANEL 'P6'
NEW
 - EXTEND & RECONNECT EXISTING CONDUCTORS

PANEL BOARD 'P4' SCHEDULE

LOAD SERVED	WIRE SIZE	TRIP POLE	CKT NO.	A	VOLT - AMP/PHASE	B	C	CKT NO.	TRIP POLE	WIRE SIZE	LOAD SERVED
ROW 1	#12	20/1	1					2	20/1	#12	ROW 1
ROW 2	#12	20/1	3					4	20/1	#12	ROW 2
ROW 3	#12	20/1	5					6	20/1	#12	ROW 3
ROW 4	#12	20/1	7					8	20/1	#12	ROW 4
ROW 5	#12	20/1	9					10	20/1	#12	ROW 5
EXHAUST FAN	-	20/1	11					12	20/1	-	TIMECLOCK
RECEPTACLE	-	20/1	13					14	20/1	-	SPACE
SPACE			15					16			SPACE
SPACE			17					18			SPACE

208Y/120V, 125 AMP, W/100 AMP MAIN, 3Ø, 10K AIC, NEMA 1, SURFACE MOUNTED
PANEL 'P4'
NEW
 - EXTEND & RECONNECT EXISTING CONDUCTORS

PANEL BOARD 'P7' SCHEDULE

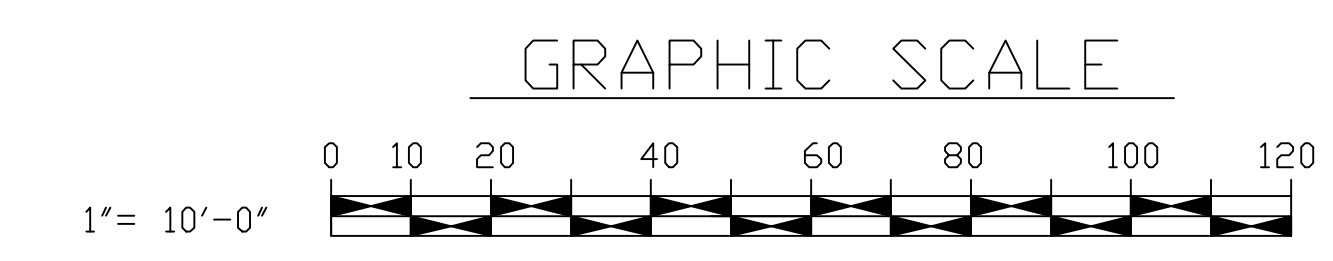
LOAD SERVED	WIRE SIZE	TRIP POLE	CKT NO.	A	VOLT - AMP/PHASE	B	C	CKT NO.	TRIP POLE	WIRE SIZE	LOAD SERVED
ROW 1	#12	20/1	1					2	20/1	#12	ROW 2
ROW 3	#12	20/1	3					4	20/1	#12	ROW 4
ROW 5	#12	20/1	5					6	20/1	-	GENERATOR
T/C	-	20/1	7					8	20/1	-	GENERATOR
RECEPTACLES	-	20/1	9					10	20/1	-	GENERATOR
SPACE			11					12	20/1	-	SPACE
SPACE			13					14			SPACE
SPACE			15					16			SPACE
SPACE			17					18			SPACE

208Y/120V, 125 AMP, W/100 AMP MAIN, 3Ø, 10K AIC, NEMA 1, SURFACE MOUNTED
PANEL 'P7'
NEW
 - EXTEND & RECONNECT EXISTING CONDUCTORS

PANEL BOARD 'P8' SCHEDULE

LOAD SERVED	WIRE SIZE	TRIP POLE	CKT NO.	A	VOLT - AMP/PHASE	B	C	CKT NO.	TRIP POLE	WIRE SIZE	LOAD SERVED
ROW 1	#12	20/1	1					2	20/1	#12	ROW 2
ROW 3	#12	20/1	3					4	20/1	#12	ROW 4
ROW 5	#12	20/1	5					6	20/1	-	RECEPTACLES
EXHAUST FAN	-	20/1	7					8	20/1	-	RECEPTACLES
RECEPTACLES	-	20/1	9					10	20/1	-	SPACE
SPACE			11					12			SPACE
SPACE			13					14			SPACE
SPACE			15					16			SPACE
SPACE			17					18			SPACE

208Y/120V, 125 AMP, W/100 AMP MAIN, 3Ø, 10K AIC, NEMA 1, SURFACE MOUNTED
PANEL 'P8'
NEW
 - EXTEND & RECONNECT EXISTING CONDUCTORS



E-2C

DEPARTMENT OF THE NAVY
 NAVAL FACILITIES ENGINEERING COMMAND
MARINE CORPS BASE
 CAMP LEJUNE, NORTH CAROLINA

DES. W JONES
 DR. W JONES
 CHK. W JONES
 SUBMITTED BY:
 DESIGN DIR. B.R. MARSHBURN PE
 APPROVED: P.W.G. OR O.I.C. DATE 9-18-09
 B.R. MARSHBURN PE

REPLACE PLUMBING/MECHANICAL
 SYSTEM BLDG 1212
 LIGHTING REFLECTIVE CEILING PLAN
 & PANELBOARD SCHEDULES
 NAVFAC DRAWING NO. 4559586C
 CONST. CONTR. NO. N40085-00-B-4724

SATISFACTORY TO: DATE SCALE: NOTED SPEC. 05-00-4724 SHEET OF