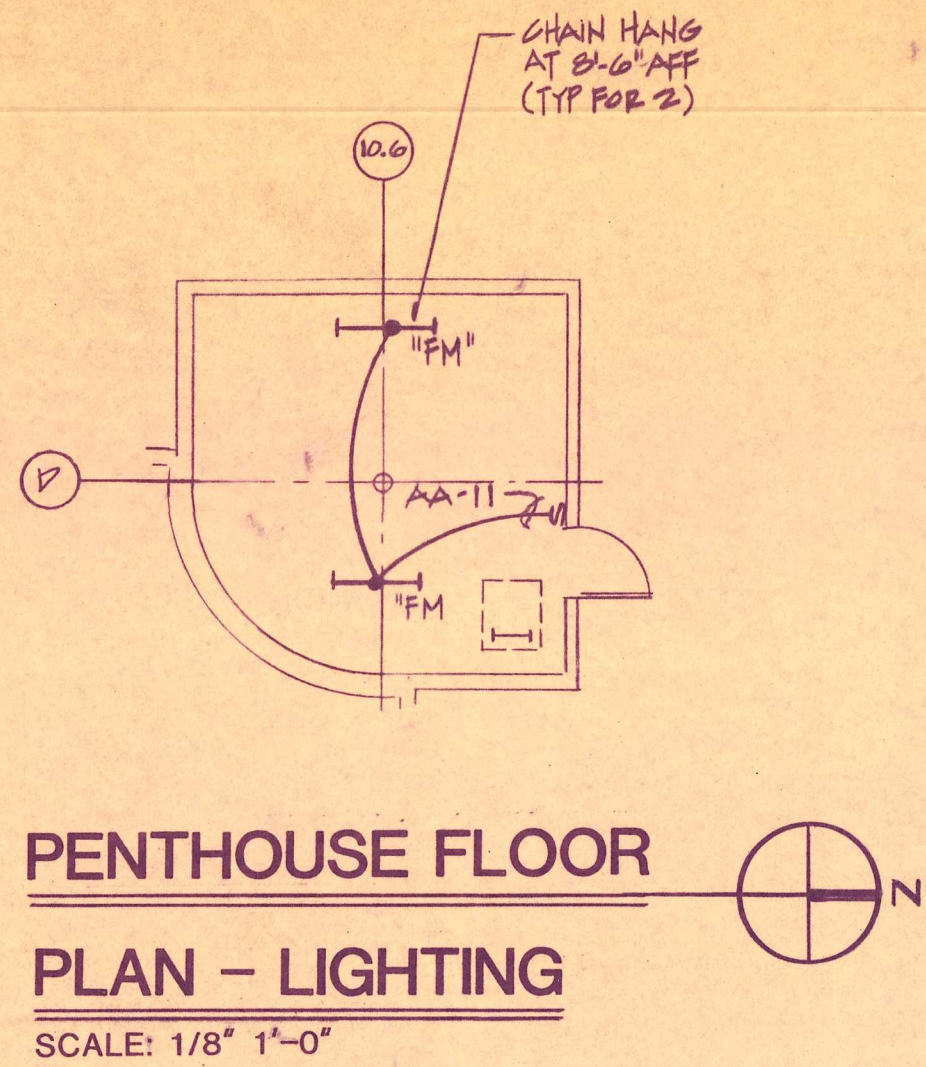
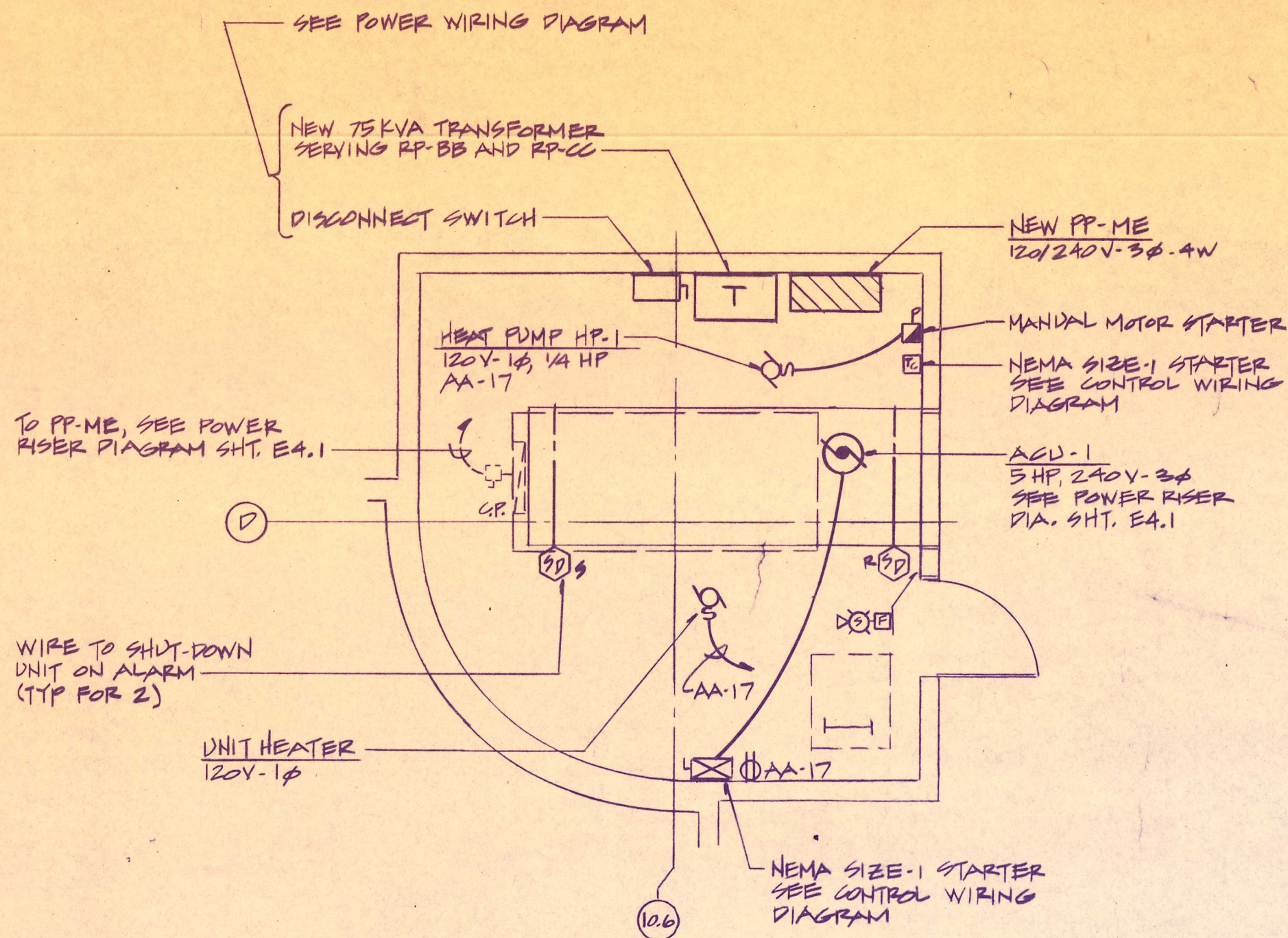
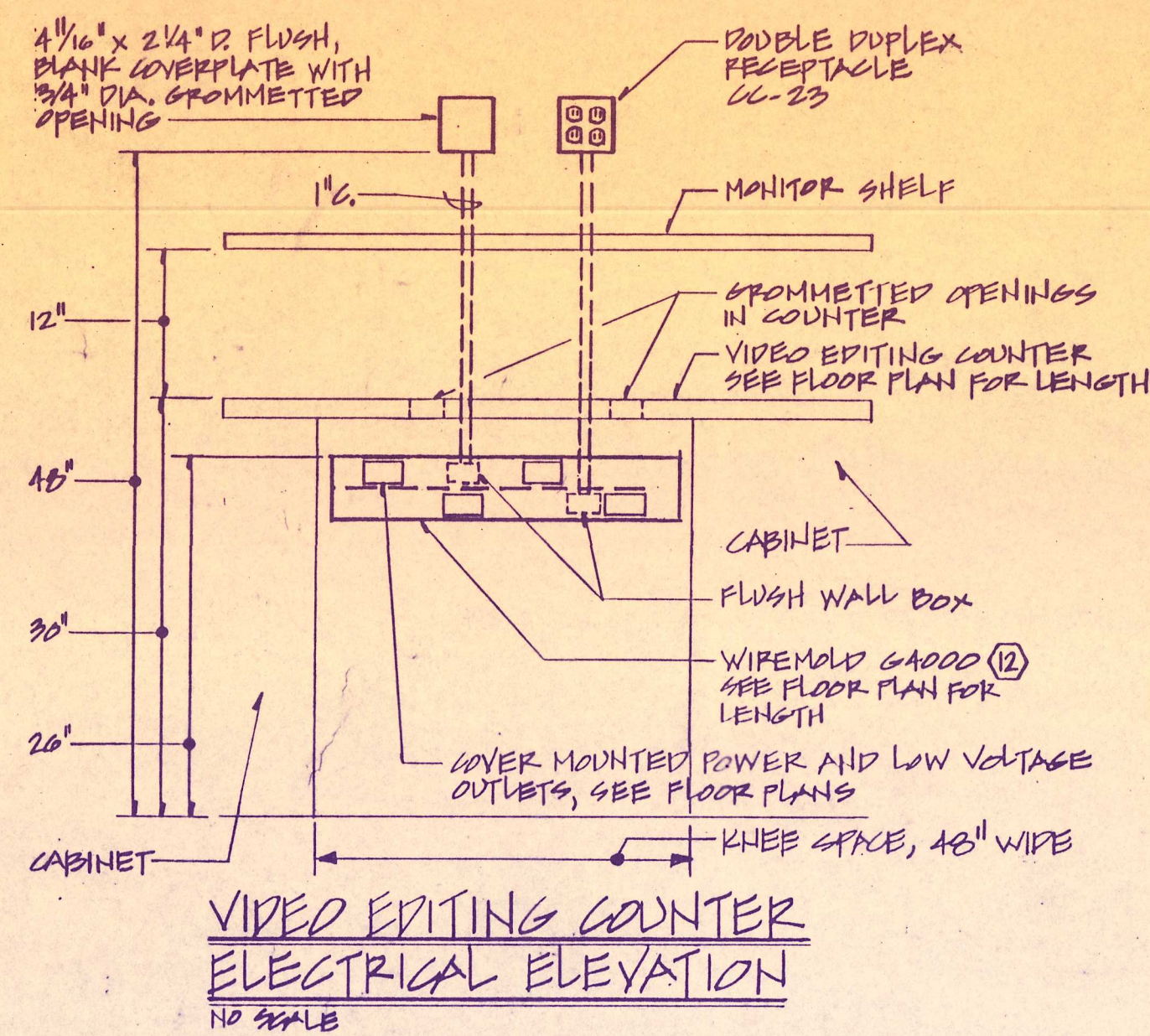
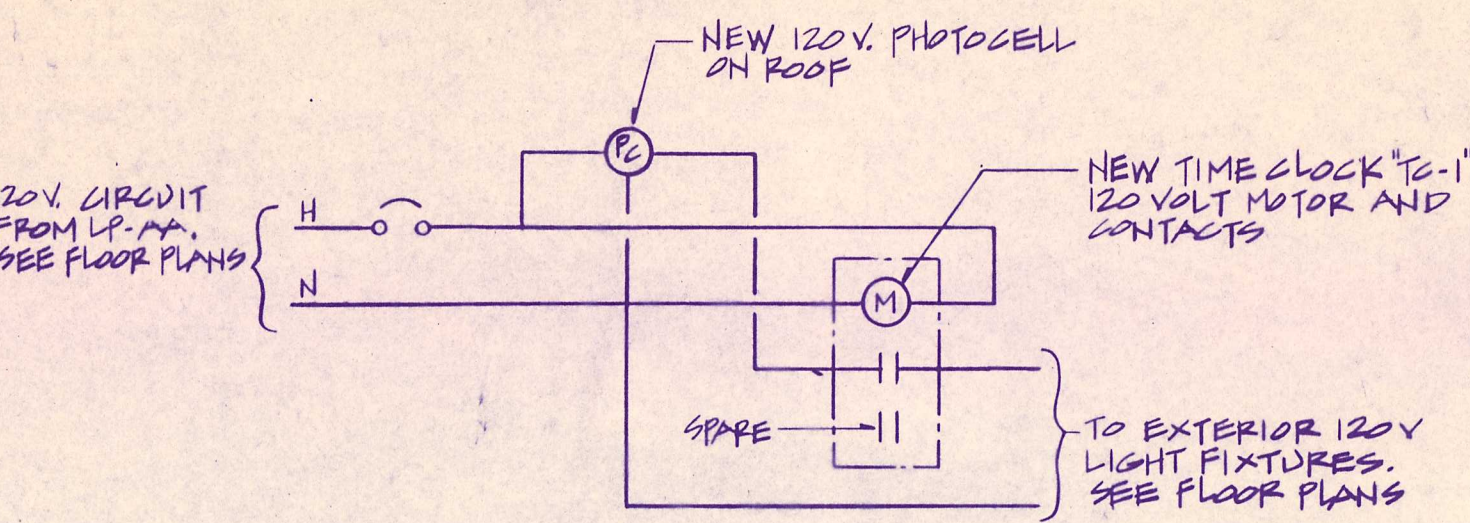
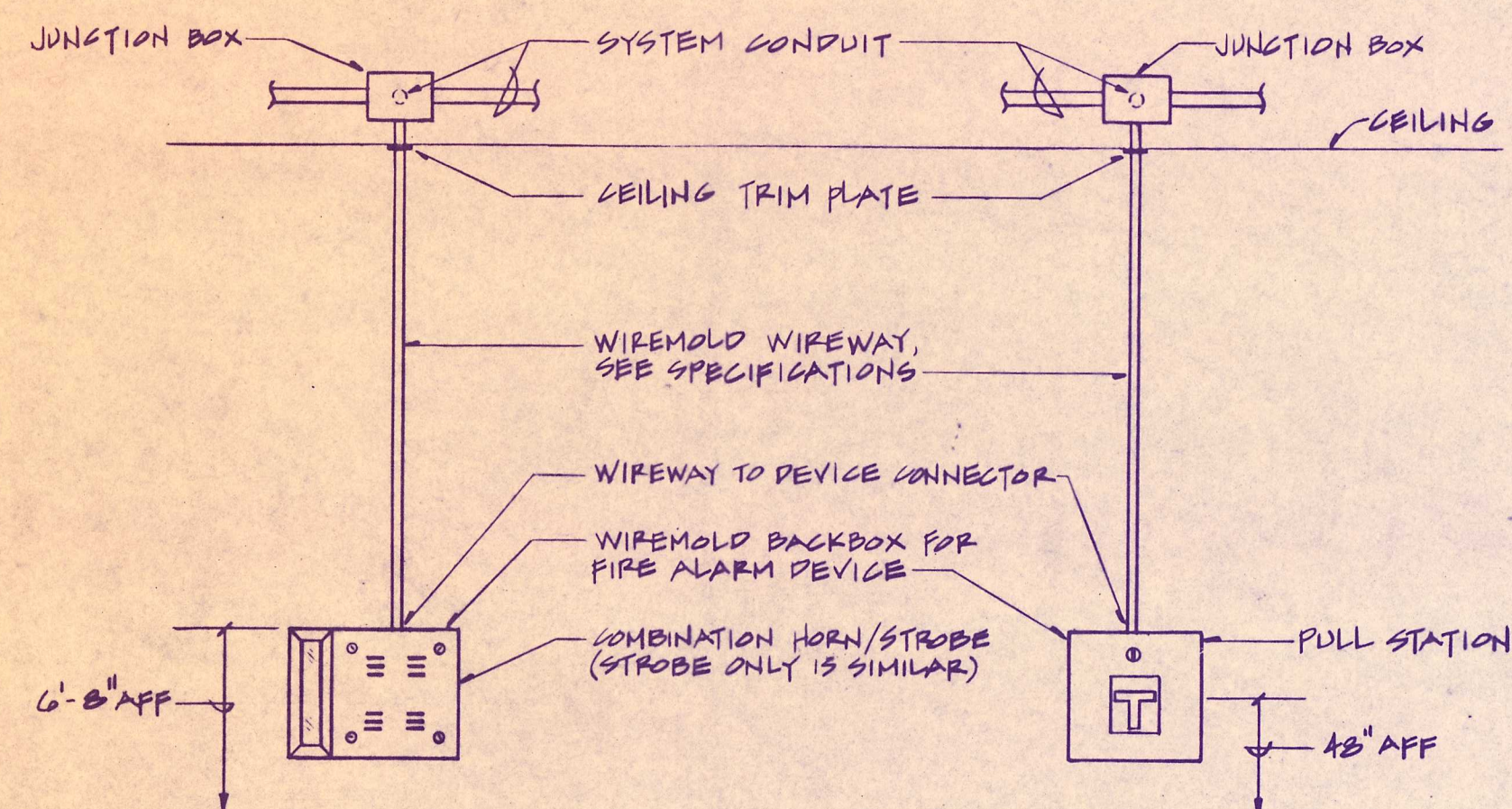
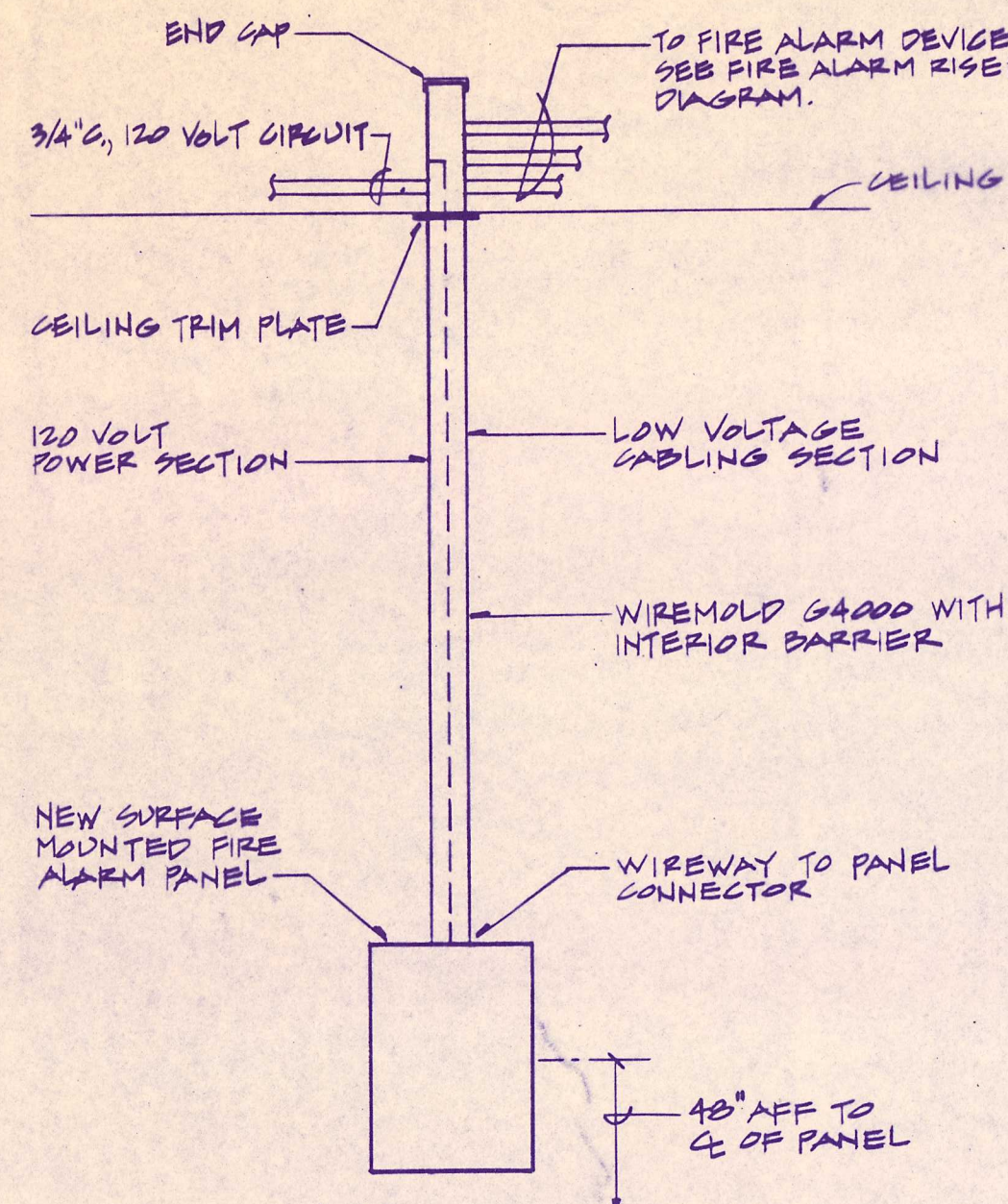
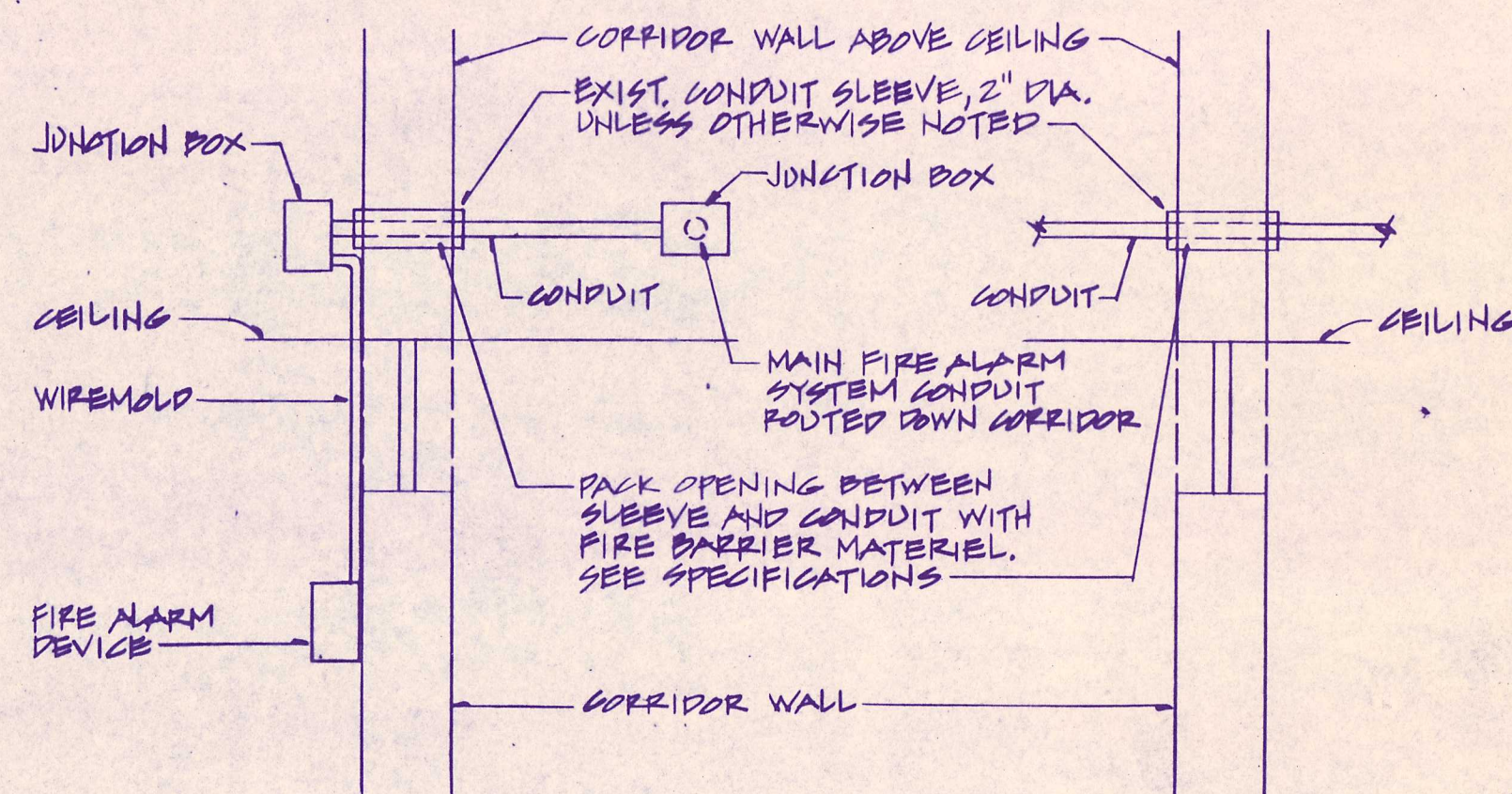
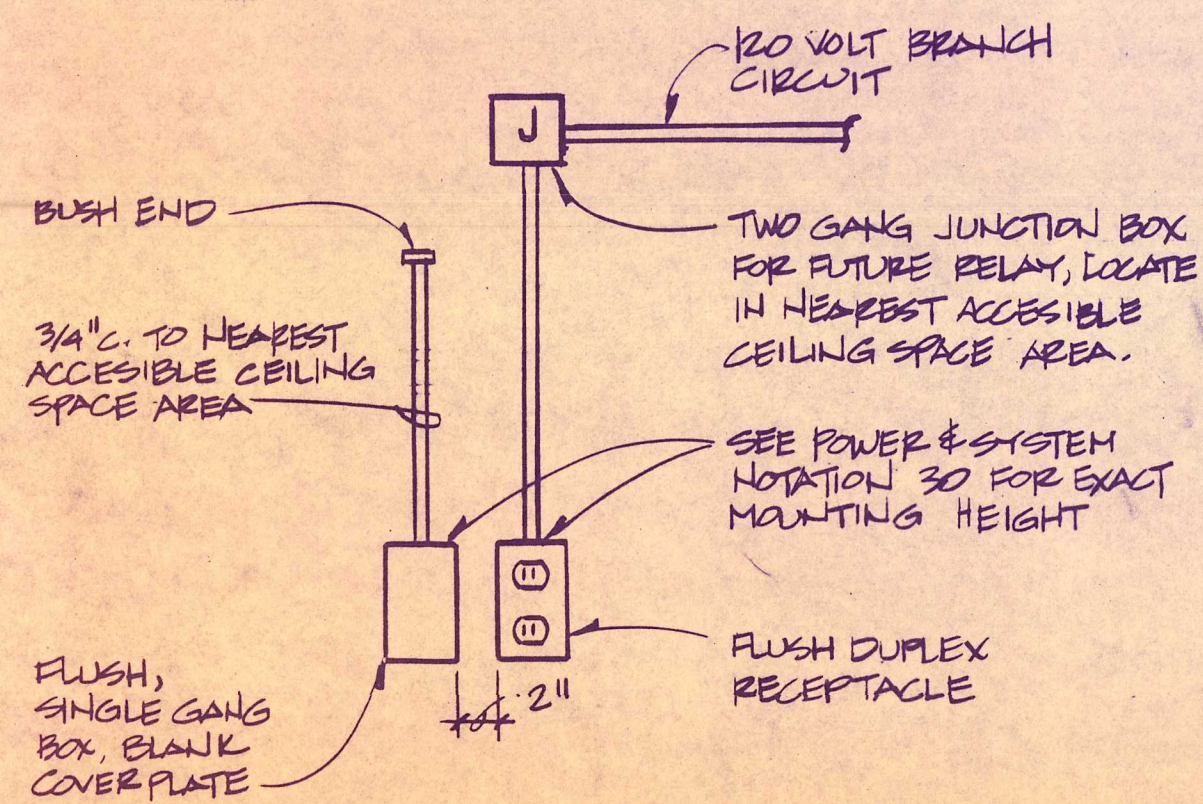
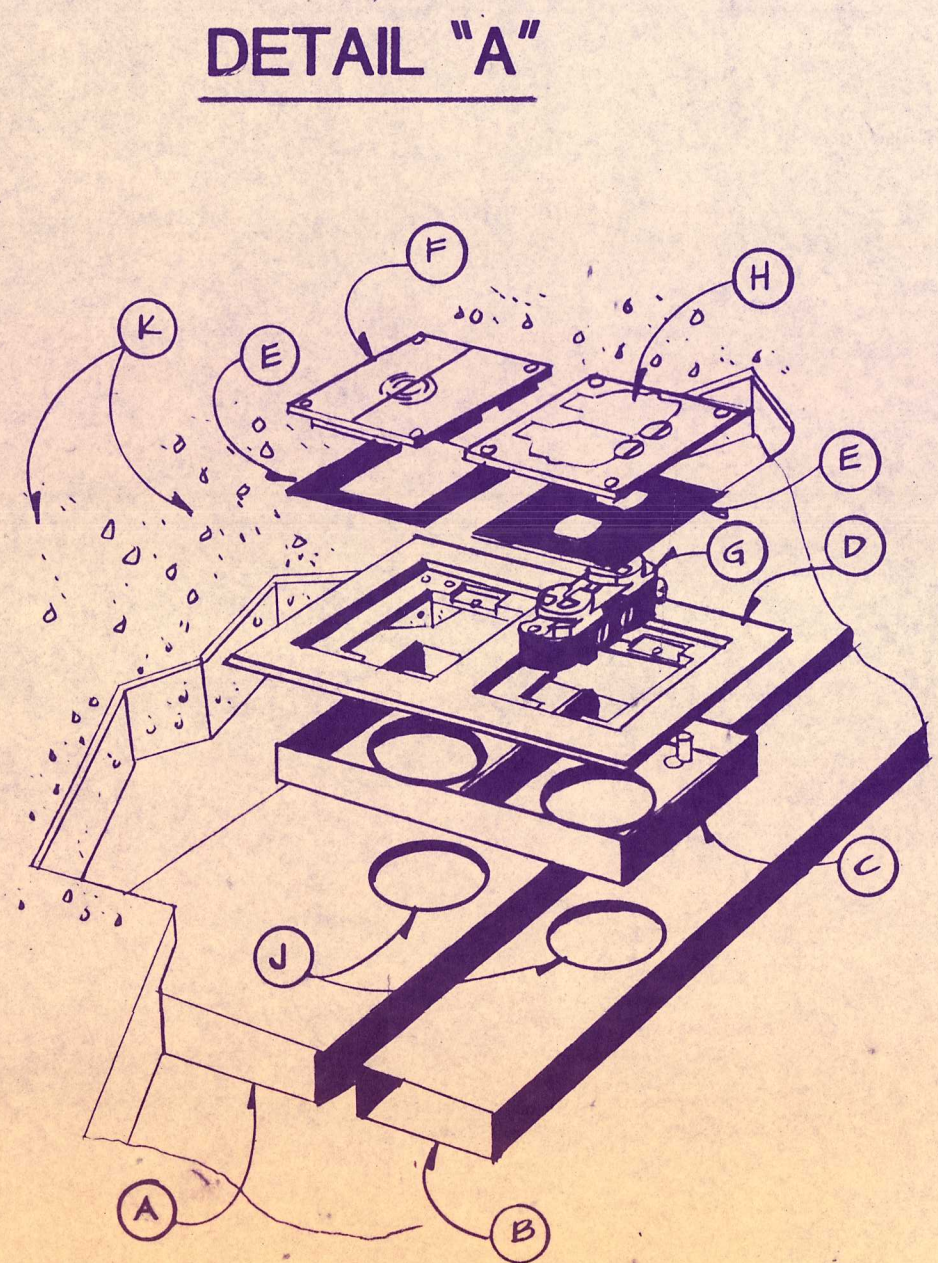
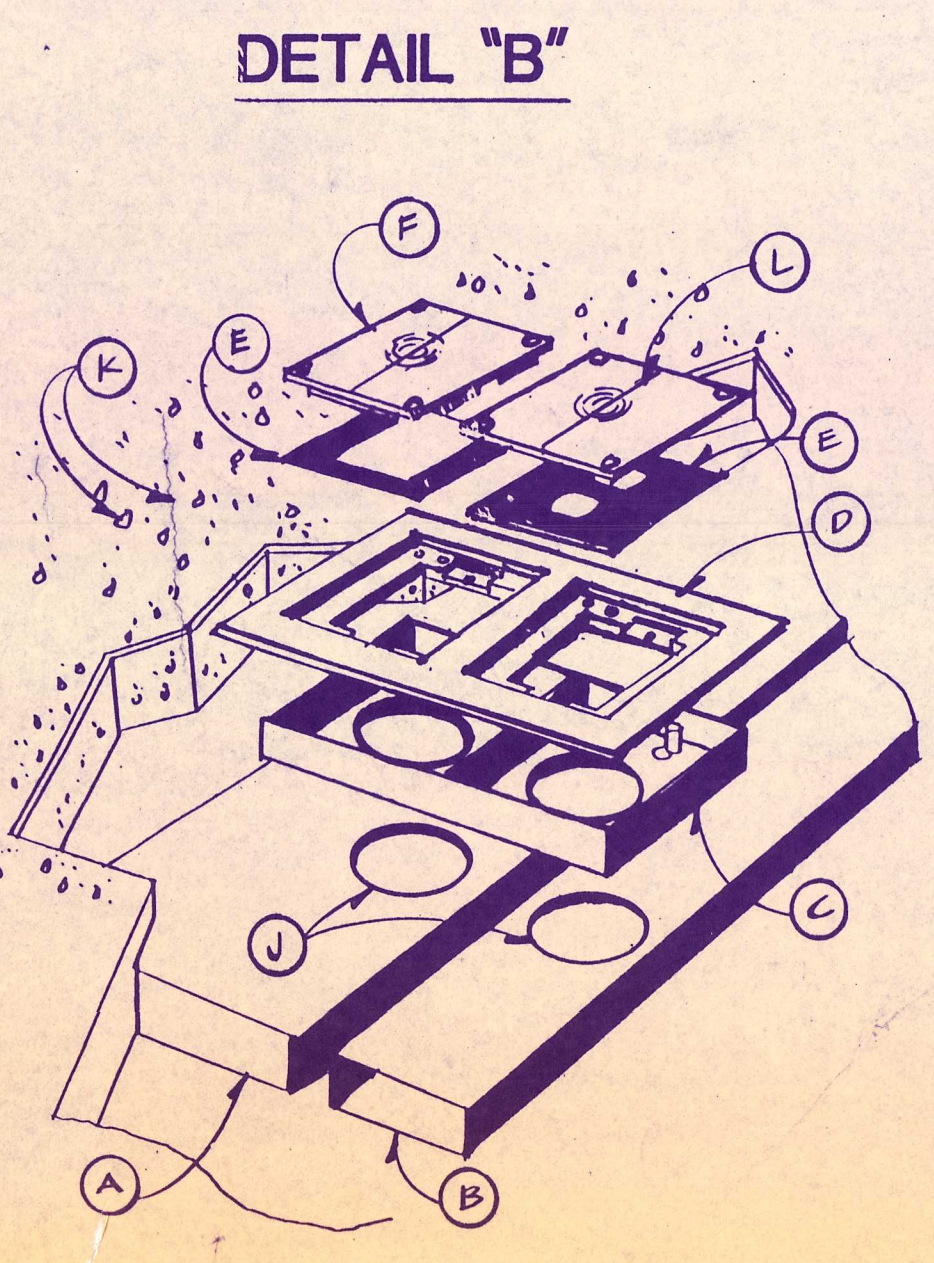
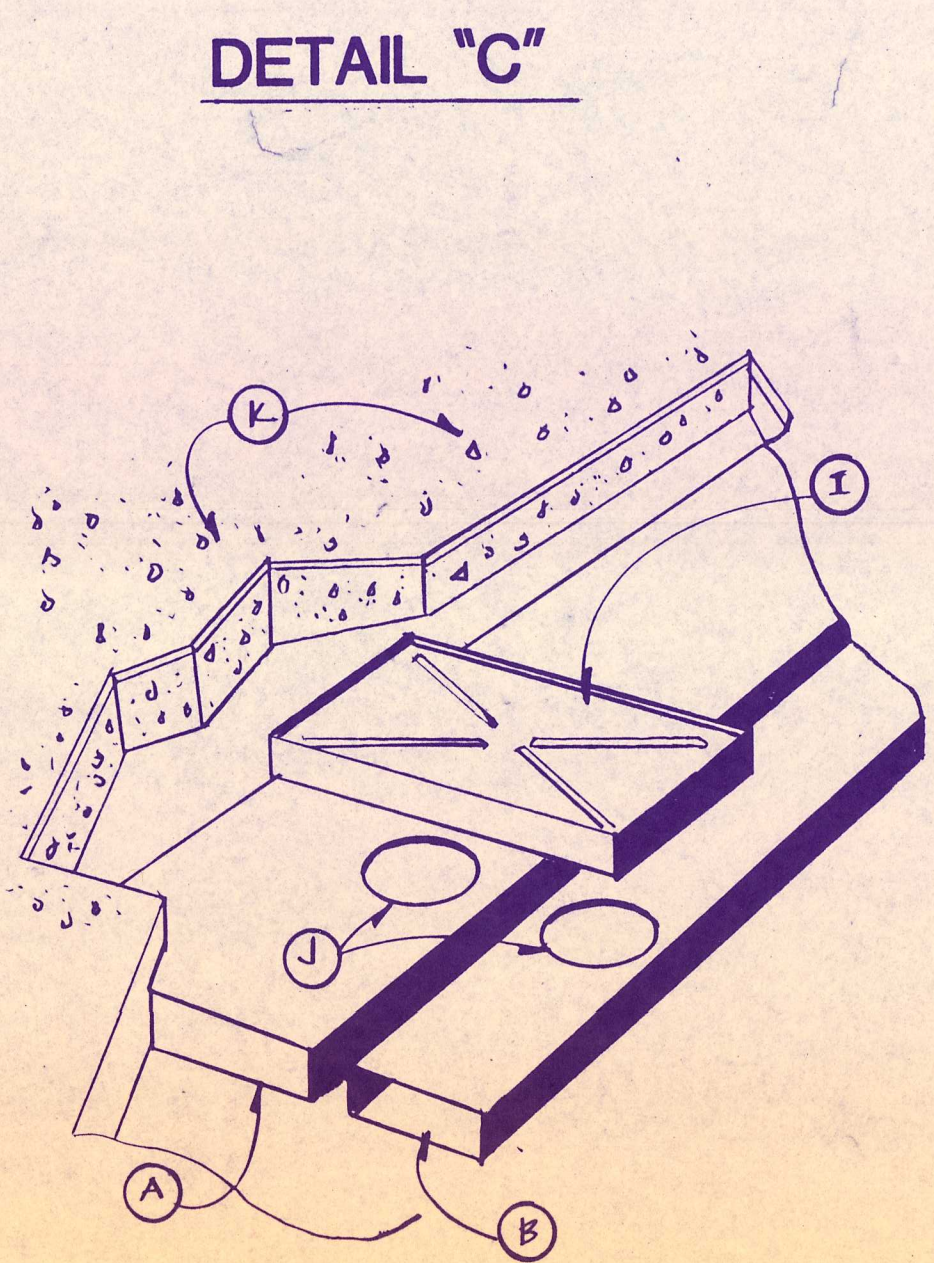




TYPE	DESCRIPTION
"OA"	1-100 Watt metal halide medium base lamp, in a 13" diameter round wall mounting fixture. Die cast aluminum half lid, die cast aluminum housing and frame, 0.250 thick borosilicate glass diffuser with opal white finish, -20 degree, F-40, T-12, cool white energy saving lamps, top aperture to be approximately 60 degree, bottom aperture to be approximately 110 degree. Fixture to utilize die cast end plates with no visible fasteners, die formed steel reflector with white finish. Top aperture to be with acrylic diffuser, bottom aperture to be with blade baffle flush with enclosure, fixture to be supported with pendant rods, support rods to be equally spaced and symmetrically located, support rods for all rows to be clearly indicated in fixture shop drawings, support rod locations to be approved by Architect/Engineer, all support rods to terminate in a finished canopy and to utilize all swivel fitting. Ballasts to be fused, 120 volt, H.P.F., energy saving, ballasts to accommodate multi-level switching indicated on plan. Fixture housing, blade baffle, pendant rods and canopy to be in baked white enamel finish. Integralite, Peerless, PAL, Linear Lighting or Ledalite.
"OB"	Not used.
"OC"	Not used.
"OD"	Not used.
"OE"	Not used.
"A"	Not used.
"B"	Not used.
"C"	Not used.
"FA"	Pendant mounted fluorescent fixture, 6" diameter, length as indicated on plan, 0.125" thick extruded aluminum housing, two (2) continuous rows of 4' lamps for down lighting and one (1) continuous row of 4' lamps for uplighting. All lamps to be 34 Watt, F-40, T-12, cool white energy saving lamps, top aperture to be approximately 60 degree, bottom aperture to be approximately 110 degree. Fixture to utilize die cast end plates with no visible fasteners, die formed steel reflector with white finish. Top aperture to be with acrylic diffuser, bottom aperture to be with blade baffle flush with enclosure, fixture to be supported with pendant rods, support rods to be equally spaced and symmetrically located, support rods for all rows to be clearly indicated in fixture shop drawings, support rod locations to be approved by Architect/Engineer, all support rods to terminate in a finished canopy and to utilize all swivel fitting. Ballasts to be fused, 120 volt, H.P.F., energy saving, ballasts to accommodate multi-level switching indicated on plan. Fixture housing, blade baffle, pendant rods and canopy to be in baked white enamel finish. Integralite, Peerless, PAL, Linear Lighting or Ledalite.
"FB"	NOT USED
"FAA"	Pendant mounted fluorescent fixture, approximately 9" high x 6" wide rectangular steel housing, length as indicated on plan, two (2) continuous rows of 4' lamps for down lighting and one (1) continuous row of 4' lamps for uplighting. All lamps to be 34 Watt, F-40, T-12, cool white energy saving lamps, fixture top to be with acrylic diffuser, fixture bottom to be with blade baffle, steel reflector with white finish, fixture to be supported with pendant rods, support rods to be equally spaced and symmetrically located, support rods for all rows to be clearly indicated in fixture shop drawings, support rod locations to be approved by Architect/Engineer, all support rods to terminate in a finished canopy and to utilize a swivel fitting. Ballasts to be fused, 120 volt, H.P.F., energy saving, ballasts to accommodate multi-level switching indicated on plan. Fixture housing, blade baffle, pendant rods and canopy to be in baked white enamel finish. Litecontrol MOD-66 series, Columbia or Neo-Ray. Refer to description of alternates for use of this fixture.
"FBA"	NOT USED
"FC"	2-34 Watt, T-8, rapid start, cool white energy saving lamps vertically positioned, in a 9" wide x 4' long recessed lay-in type fluorescent fixture with an iridescent suppressive high specular anodized aluminum louvers and upper reflector, symmetric distribution, steel housing, baked white enamel finish, 120 volt H.P.F., energy saving ballast, fused. Columbia "VHC" Series.
"FD"	Similar to fixture type "FC" except with asymmetric distribution for use adjacent to walls. Columbia "VHC" Series.
"FE"	2-F40BX cool white energy saving lamps, in an 8" wide x 4' long recessed fixture suitable for installation in a drywall ceiling, iridescent suppressive high specular anodized aluminum reflector for wall washing, steel housing, baked white enamel finish, cross baffle on fixture opening, 120 volt H.P.F., energy saving ballast, fused. Columbia "Parawash" Series 40BX-LWN-4-F-49-2-1-120-FU.
"FF"	Recessed fluorescent downlighting fixture, with open aluminum reflector and top heat vents, clear alkali reflector, 2-26 watt quad lamps, 7/16" diameter opening, white aluminum trim, encapsulated H.P.F. 120 volt ballast, Lithonia Gotham AF 2/26QT-7AR, Indycor Prescolite.
"FG"	2-9 Watt PL fluorescent lamps in a surface mounting round 11" diameter drum fixture, opal glass diffuser, aluminum housing, white finish, 120 volt, N.P.F. ballast. Staff #1401, or equal Teron, Lithonia Gotham.
"FH"	3-34 Watt, F-40, T-12, rapid start, cool white energy saving lamps in a 2'x 4' recessed lay-in type fluorescent fixture with a 0.125" thick, K-12 pattern acrylic prismatic diffuser (see specifications for fire drop out requirements), flat hinged and latched steel door, steel housing, baked white enamel finish, 120 volt H.P.F., energy saving ballast, fused. Lithonia #2SP-G-340-0.125-120-GLR-FU or equal Metalux, Daybrite, Columbia.
"FI"	Similar to fixture type "FH" except with four (4) lamps. Lithonia #2SP-G-440-0.125-120-GLR-FU or equal Metalux, Daybrite, Columbia.
"FJ"	NOT USED
"FK"	NOT USED
"FL"	NOT USED
"FM"	2-34 Watt, F-40, rapid start cool white fluorescent lamps in a strip fixture, baked white enamel finish, steel housing, symmetric steel reflector, wire lamp guard, chain hanging assembly, 120 volt, low temperature energy savings ballast, fused. Lithonia #UN-248-120-EUR48-WG9-GLR-FU-LTB-CH, Metalux, Daybrite, Columbia.
"FN"	Not used.
"FP"	Not used.
"FS"	Not used.
"FT"	Not used.
"FU"	Not used.
"FW"	Similar to fixture type "FC" except for surface mounting. Columbia "VHC" Series.
"FX"	Similar to fixture type "FD" except for surface mounting. Columbia "VHC" Series.
"XA"	Universal mounting "Exit" light fixture, high brightness LED's, 30 year life, acrylic diffusing lens, single face, arrows as indicated on plan, stencil face, 6" red letters, die cast frame, all white finish including face, maintenance free ni-cad battery pack, electronic transfer and charger circuits, LED power supply circuit, 120 volt. Lightguard Miser #M-SP-L-W-D-1-ARD, Prescolite, Lightalarms, Sure-Lites, Silttron.
"XB"	Similar to fixture type "XA" except double faced.
EBU-A	Self contained emergency lighting unit, for ceiling mounting in a lay-in ceiling, two (2) head, with 20 watt halogen lamps, automatic charger circuit, a.c. "On" indicator, push to test light, transfer circuit, ni-cad battery capable of providing minimum 50 watt capacity for 1-1/2 hours. 120 volt operation, 6 volt output. White mounting pan, black heads, Yorklite #AR2-2E2-HA20.
EBU-B	Similar to "EBU-A", except for wall mounting. White housing, black heads, Yorklite #A-2E2-2-0-WH-HA20.

NOTE:
Wiremold raceway and surface backbox to be used in areas of the existing building only. In areas of new construction, use concealed conduit and a flush backbox.



- LEGEND
- (A) #4 UNDERFLOOR DUCT FOR LOW VOLTAGE CABLING
 - (B) #2 UNDERFLOOR DUCT FOR 120 VOLT BRANCH CIRCUIT WIRING
 - (C) PRESET FITTING
 - (D) POLYCARBONATE CARPET FLANGE
 - (E) PLATE GASKET
 - (F) POLYCARBONATE TELE/DATA COVERPLATE WITH (KNOCKOUTS)
 - (G) DUPLEX RECEPTACLE, 20A. 125 VOLT
 - (H) POLYCARBONATE DUPLEX RECEPTACLE COVERPLATE WITH DUAL (FLIP LIDS)
 - (I) MUD CAP
 - (J) DUCT OPENING
 - (K) CONCRETE FLOOR SLAB
 - (L) POLYCARBONATE BLANK COVERPLATE (2-PIECE)

UNDERFLOOR DUCT ACTIVATION DETAILS
NO SCALE



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B.A.I. No. 92-1601

project title **Marshall Elementry Renovation**

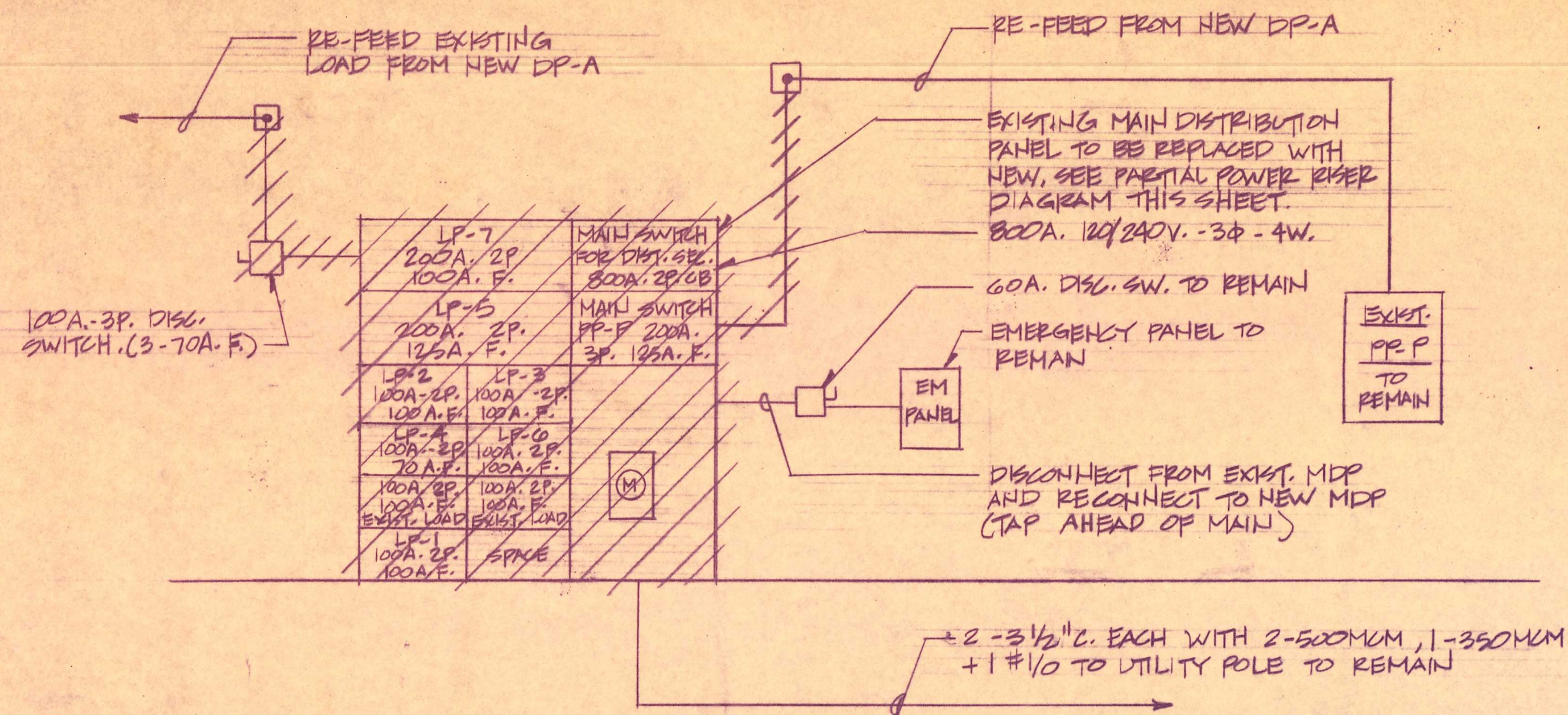
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8-24-92 B.D.S.
8-17-92 35% OWNER REV.
date issued for
drawn TJW/BLS
checked JA
approved JA
job. no.

92014

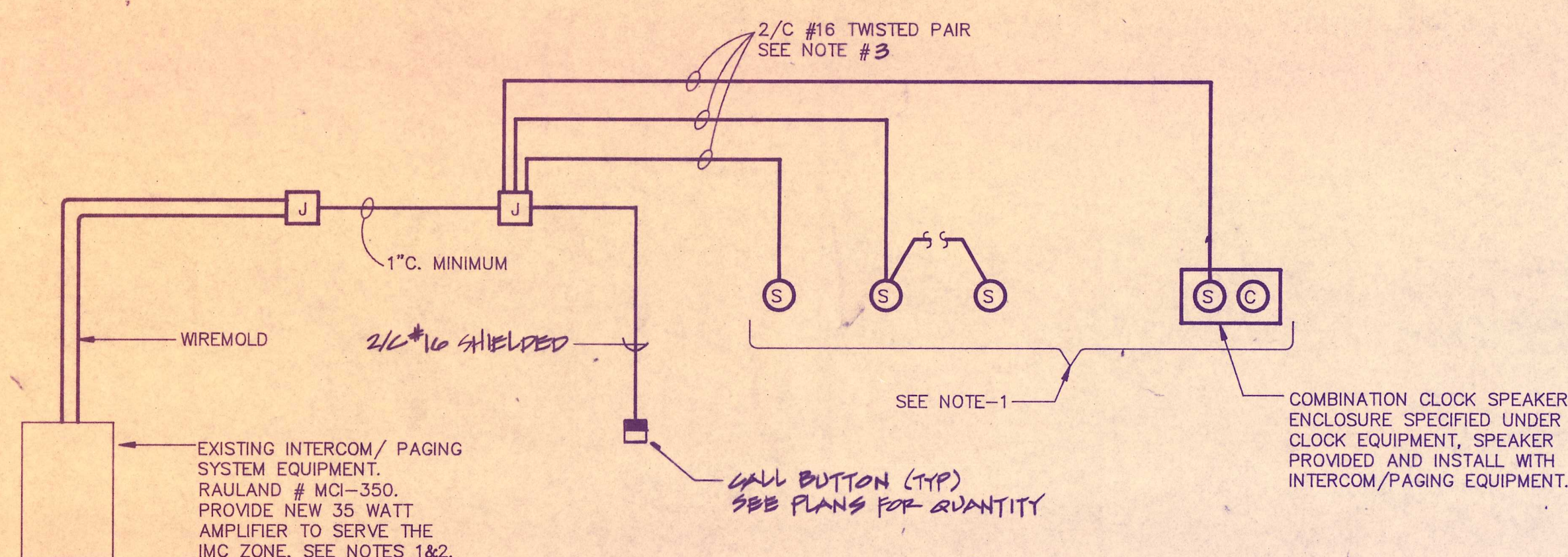
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PARTIAL POWER RISER DIAGRAM - DEMOLITION

NO SCALE

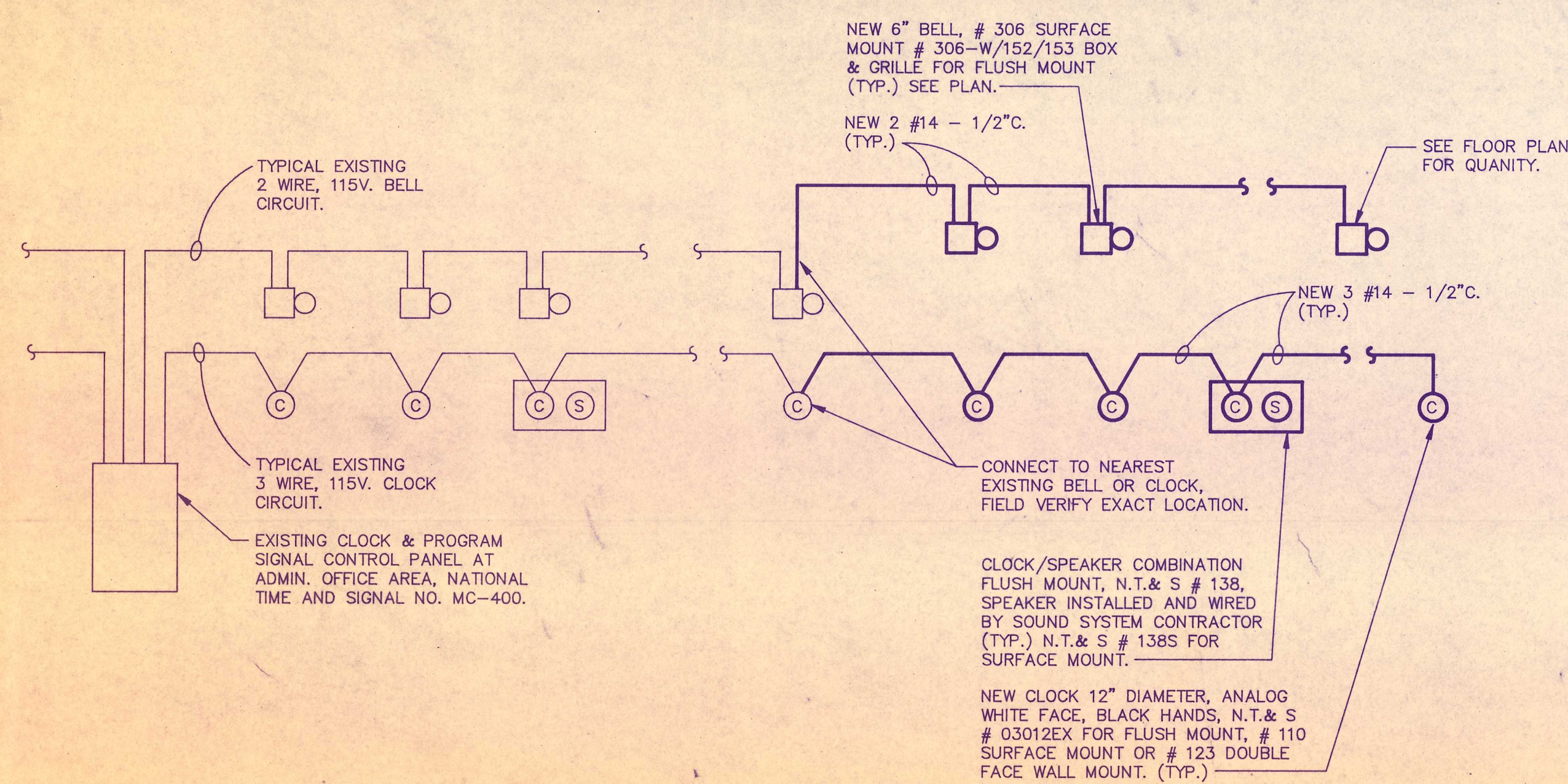


INTERCOM/ PAGING WIRING DIAGRAM

NO SCALE

NOTES:

1. EACH ROOM OR AREA SHALL BE SERVED FROM A SEPERATE ZONE SWITCH, SEE PLAN.
2. ALL CENTRAL EQUIPMENT MODIFICATIONS, TERMINATIONS, BALANCING AND ADJUSTMENTS ARE TO BE MADE BY THE INDUSTRIAL COMMUNICATION COMPANY AND ALL COSTS FOR SAME ARE TO BE INCLUDED.
3. ALL WIRING SHALL BE INSTALLED IN CONDUIT 1/2" MINIMUM SIZE. ZONE WIRING SHALL BE COMBINED IN ONE CONDUIT HOMERUN TO THE CENTRAL EQUIPMENT, 1" MINIMUM CONDUIT SIZE.

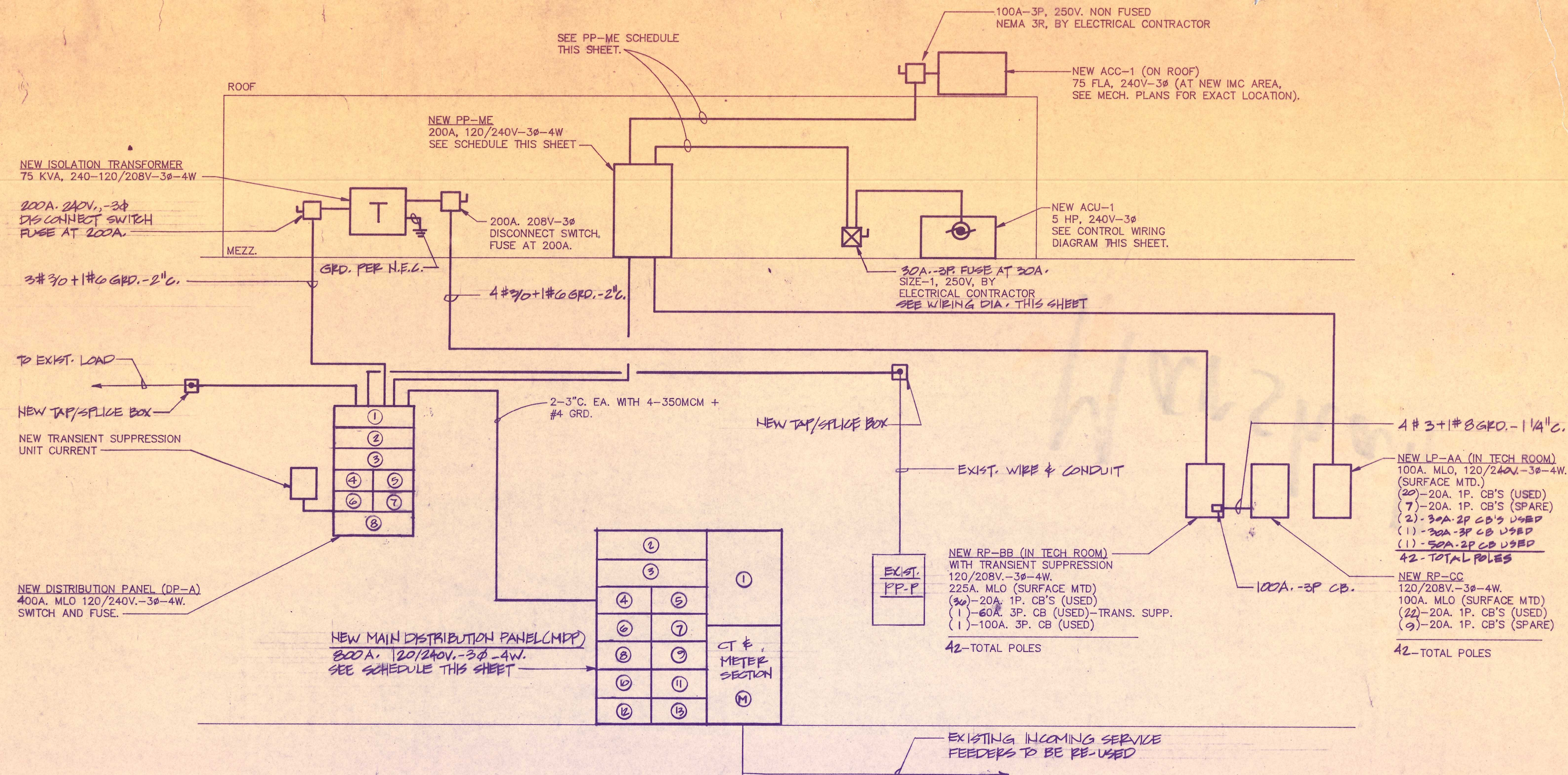


CLOCK AND PROGRAM SIGNAL WIRING DIAGRAM

NO SCALE

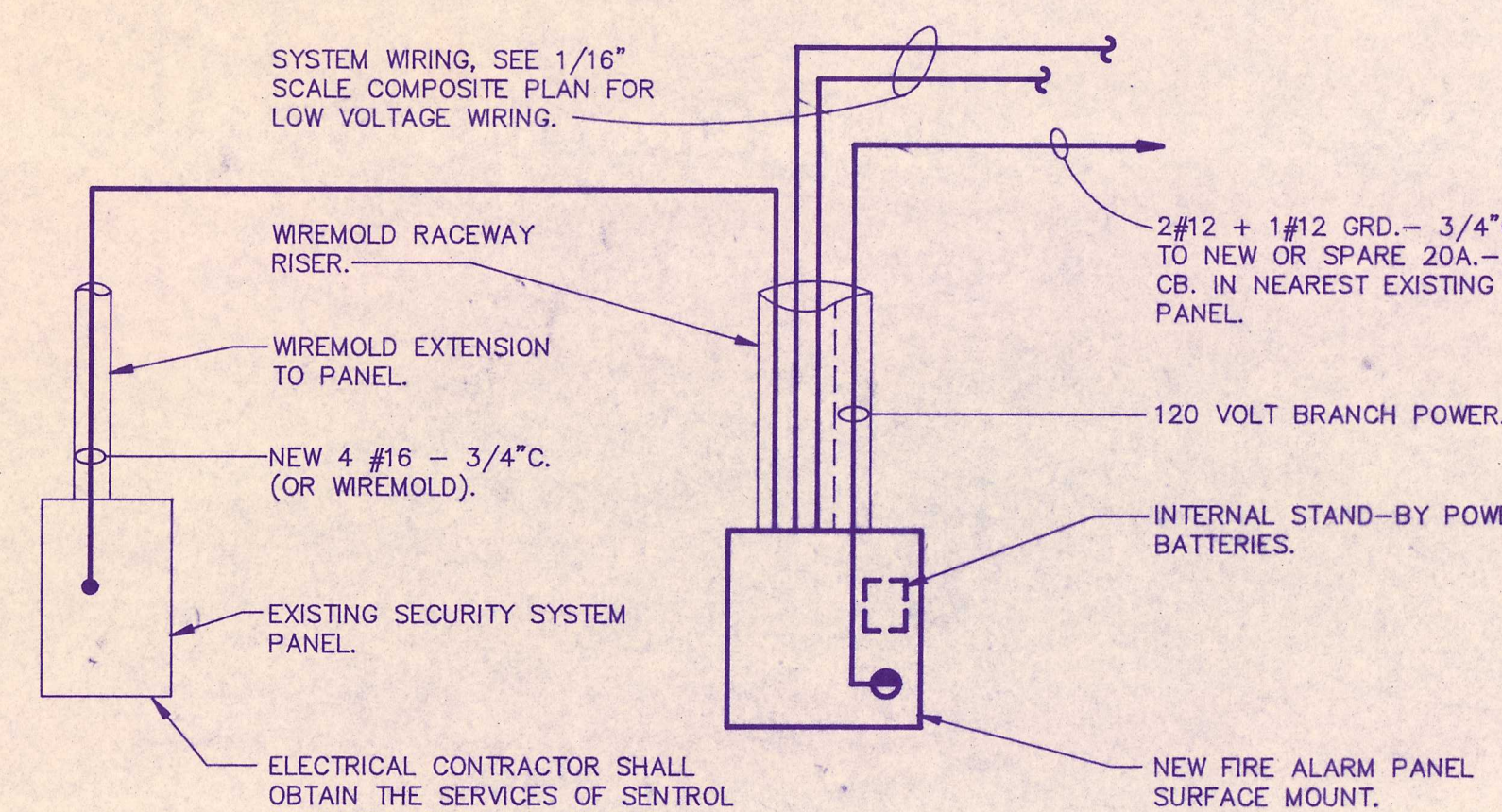
NOTES:

1. ALL NEW CLOCKS AND BELLS TO BE FLUSH MOUNTED UNLESS OTHERWISE INDICATED ON PLAN.
2. COORDINATE EXACT MOUNTING HEIGHTS WITH ARCHITECTURAL ELEVATIONS.
3. WHERE CONCEALING OF CONDUIT IS NOT POSSIBLE IN EXISTING AREAS USE WIREMOLD RACEWAY.



PARTIAL POWER RISER DIAGRAM - NEW WORK

NO SCALE

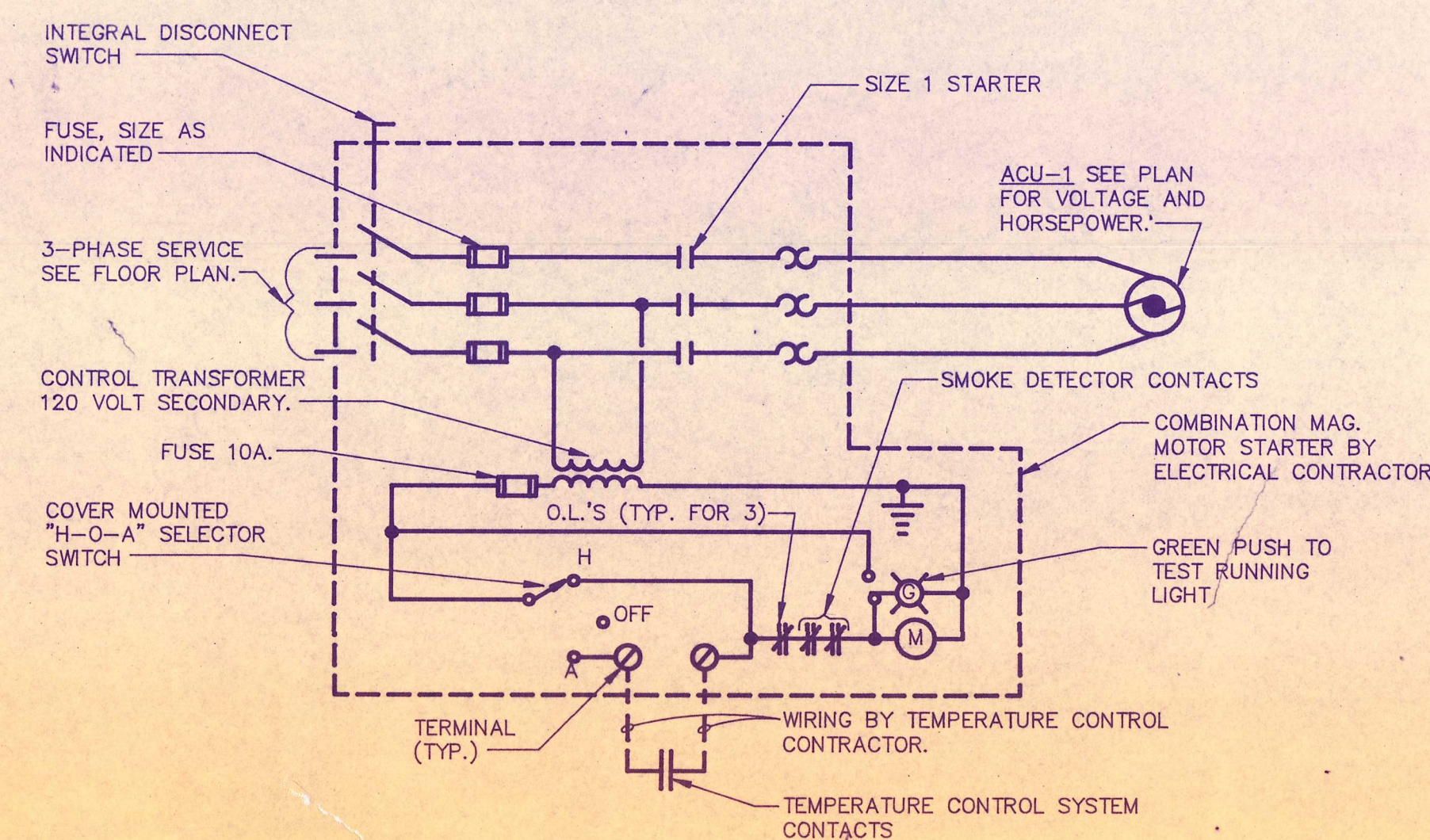


FIRE ALARM WIRING DIAGRAM

NO SCALE

NOTES:

1. NEW FIRE ALARM SYSTEM SHALL BE INSTALLED, TESTED AND ADJUSTED PRIOR TO DEMOLITION OR DEACTIVATION OF EXISTING SYSTEM. SEE DEMOLITION PLANS.
2. SEE COMPOSITE ELECTRICAL PLAN FOR DEVICES, WIRING AND BRANCHES. ALL WIRING SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE SPECIFIC MANUFACTURER SELECTED.
3. STROBES SHALL BE MINIMUM 75 CANDELA IN ACCORDANCE WITH A.D.A. REQUIREMENTS.



ACU-1 (AIR HANDLING UNIT) CONTROL WIRING DIAGRAM

NO SCALE

SWITCH MARK	ITEM SERVED	O.C. PROTECTION SIZE IN AMPS			CONNECTED LOAD			FEEDER & CONDUIT SIZE	REMARKS
		SWITCH	FUSE	POLES	KW	HP	FLA		
①	MAIN SWITCH	800	800	3	400	—	982	EXIST., SEE RISER DIA.	
②	EXIST. LP-5	100	100	2	18	—	75	RE-USE EXISTING	
③	NEW DP-A	400	400	3	177	—	427	4-600MM+1#8GRD.-3/4"	
④	EXIST. LP-7	100	100	2	14.4	—	60	RE-USE EXISTING	
⑤	EXIST. LP-2	100	100	2	14.4	—	60		
⑥	EXIST. LP-3	100	100	2	14.4	—	60		
⑦	EXIST. LP-4	100	100	2	14.4	—	60		
⑧	EXIST. LP-6	100	100	2	14.4	—	60		
⑨	EXIST. LOAD	100	100	2	14.4	—	60		
⑩	EXIST. LOAD	100	100	2	14.4	—	60		
⑪	EXIST. LP-1	100	100	2	14.4	—	60		
⑫	100A. SPACE	—	—	3	—	—	—		
⑬	100A. SPACE	—	—	3	—	—	—		

SWITCH MARK	ITEM SERVED	O.C. PROTECTION SIZE IN AMPS			CONNECTED LOAD			FEEDER & CONDUIT SIZE	REMARKS
		SWITCH	FUSE	POLES	KW	HP	FLA		
①	ACC-1	100	100	3	31	—	75	3 #3 + 1 #8 GRD.-1 1/4"	
②	ACU-1	30	30	3	6.3	5	15.2	3 #2 + 1 #8 GRD.-3/4"	
③	LP-AA	100	100	3	19.6	—	120	4 #3 + 1 #8 GRD.-2"	
④	SPACE	30	—	3	—	—	—		

SWITCH MARK	ITEM SERVED	O.C. PROTECTION SIZE IN AMPS			CONNECTED LOAD			FEEDER & CONDUIT SIZE	REMARKS
		SWITCH	FUSE	POLES	KW	HP	FLA		
①	RP-BB	200	200	3	30	—	100	SEE RISER DIAGRAM	VIA TRANSFORMER
②	PP-ME	200	200	3	87	—	210	4 #3 + 1 #8 GRD.-2"	
③	EXIST. PP-P	200	125	3	31	—	75	SEE RISER DIAGRAM	
④	EXIST. LOAD	100	10	3	17.4	—	42	3 #6 + 1 #8 GRD.-3/4"	
⑤	TRANSIENT SUPPRESS.	100	60	3	—	—	—	3 #6 - 3/4"	
⑥	SPACE	100	—	3	—	—	—		FOR FUTURE COMP. RM. PANEL
⑦	SPACE	100	—	3	—	—	—		FOR FUTURE COMP. RM. PANEL
⑧	200A. SPACE	—	—	—	—	—	—		

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project title

**Marshall
Elementry
Renovation**

Livonia
Public Schools

sheet title

**Miscellaneous
Riser Diagrams
And Schedules**

8-24-92 BIDS
8-17-92 95% OWNER REV.

date issued for

drawn B.B./J.G.

checked J.B.

approved J.B.

job. no.

92014

sheet no.

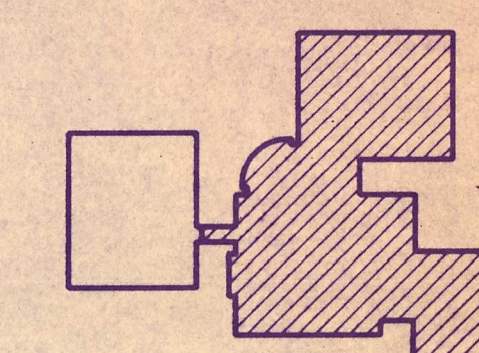
E4.2



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project title
**Marshall
Elementary
Renovation**

sheet title
**Plumbing Plan
Zone "A"**



KEY PLAN

8/24/92 B.D.S.
date issued for

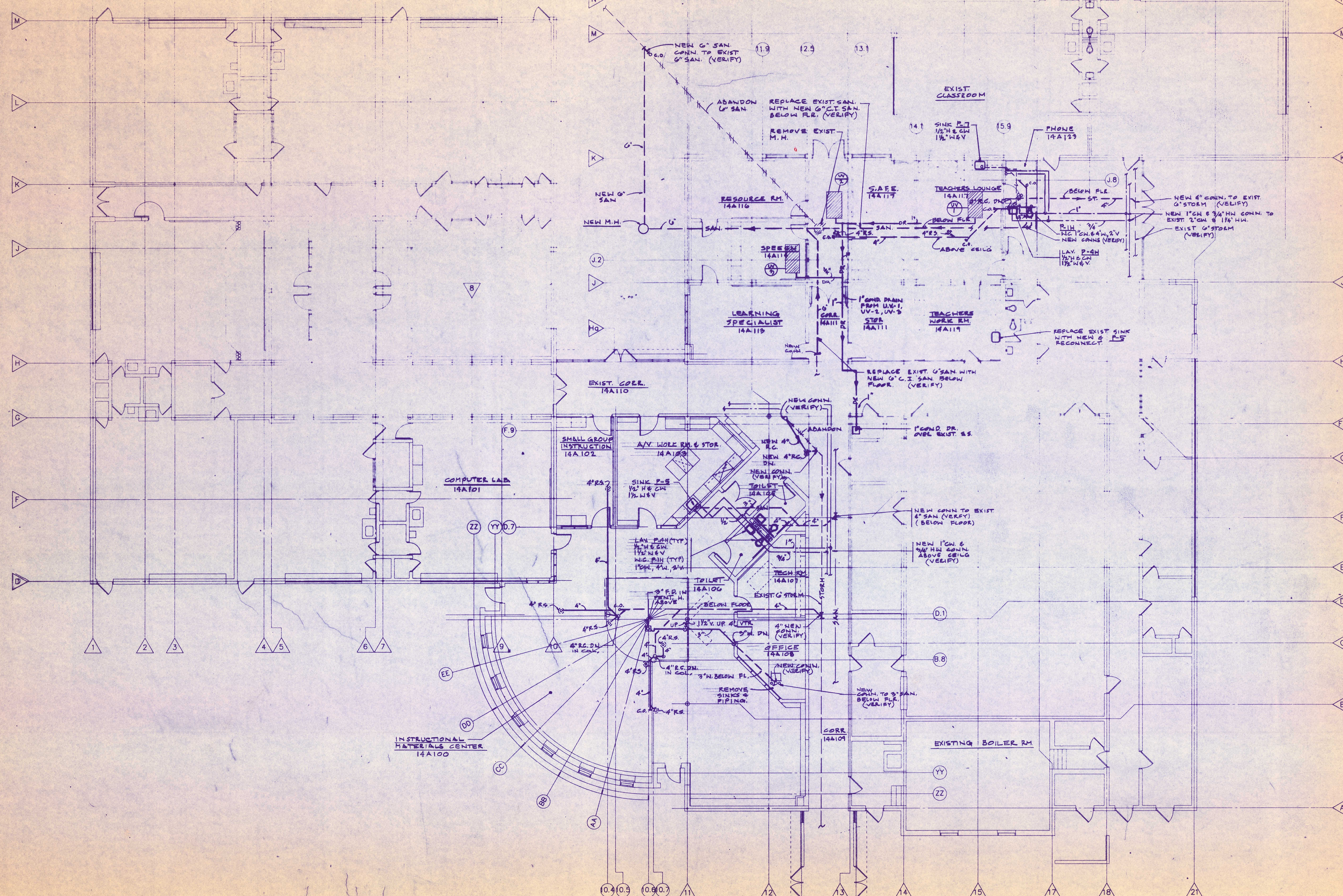
drawn R.B.
checked F.B.
approved K.J.

job no.

92014

sheet no.

M1.1



FLOOR PLAN - PLUMBING
ZONE - "A"
SCALE: 1/8" = 1'-0"