

Docket No. SA-534

Exhibit No. 2-AL

NATIONAL TRANSPORTATION SAFETY BOARD

Washington, D.C.

NTSB_036-008
MILPITAS UPS UPGRADE
PROJECT AS-BUILTS

(18 Pages)

DATE: 8/4/2010 (Orig Issue) BY: A. Bahn

DRAWING LIST JOB ORDER NUMBER: 30772051

FACILITY LOCATION: MILPITAS

INSTALLATION TYPE: TERMINAL

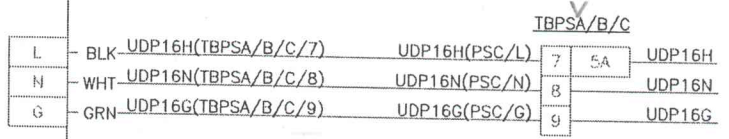
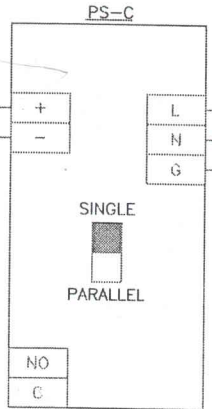
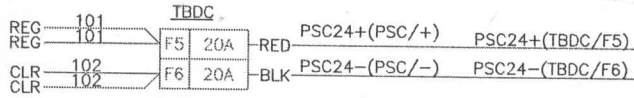
OBS, SUP, NEW	DRAWING NUMBER	SHT. NO.	REV. NO.	KEYWORD	DRAWING TYPE	DESCRIPTION - SUBLOCATION	COMMENTS	FILE NAME
	388103	1	3	INSTRUMENTATION	DIAGRAM	L100 FLOW		
	388121	1	2	INSTRUMENTATION	DIAGRAM	TREND RECORDERS		
	388125	1	3	INSTRUMENTATION	DIAGRAM	LT-3 & PT-3		
	388272	26	2	ELEMENTARY	ELECTRICAL	PLC I/O AND CONTROL SYSTEM		
	388272	33	6	ELEMENTARY	ELECTRICAL	PLC I/O AND CONTROL SYSTEM		
	388273	1	6	ELEMENTARY	ELECTRICAL	INSTRUMENT POWER DISTRIBUTION		
	388273	2	6	ELEMENTARY	ELECTRICAL	INSTRUMENT POWER DISTRIBUTION		
	388467	1	4	CONNECTION	DIAGRAM	INSTR/GRAPHIC PANEL TERMINATION		
	3800025	1	5	CONDUIT	ARRANGEMENT	CONTROL BLDG		
	3800221	1	5	ELECTRICAL	DIAGRAM	SINGLE LINE DIAGRAM		
	3800225	1	2	ELECTRICAL	ARRANGEMENT	PLAN, DIAGRAM, NOTES, CONTROL BLDG		
	3800230	1	3	PANEL	SCHEDULE	120/208 DISTRIBUTION, CONTROL BLDG		
	489893	1	3	CONNECTION	DIAGRAM	UPS SYSTEM, OPERATIONS BUILDING		
	489930	1	5	CONNECTION	DIAGRAM	UPS SYSTEM, CONTROL BUILDING		
	SK1			PS-C		MOP UDP BRK18	TO BE INCORPORATED IN ONE OF THE CONNECTION DIAGRAMS	
	SK2			CONNECTION	DIAGRAM	UDP BRK 12 & 14	NEW DRAWING TO BE CREATED	
	SK3			TBDC		MOP PSC BRK X	TO BE INCORPORATED IN ONE OF THE CONNECTION DIAGRAMS	

* Updated for as-built mark-up submittal information

1 2 3 4 5 6 7 8 9 10

E

TO MIMIC
PANEL
INSTRUMENTS
REF 388272



D

C

B

A

NO.	DATE	DESCRIPTION	GM/SPEC	DWN	CHKD	SUPV	APRD BY
REVISIONS							

APPROVED BY	DATE
DESIGN	SCALE
CHKD	
WRT	
DATE	
SCALE	

PS-C
MOP UDP BRK 18
STEP 133 & 134

GAS TRANSMISSION & DISTRIBUTION
PACIFIC GAS AND ELECTRIC COMPANY
SAN FRANCISCO, CALIFORNIA

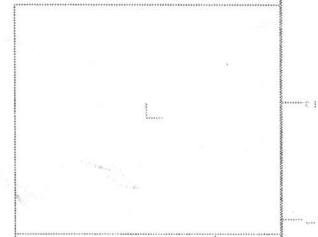
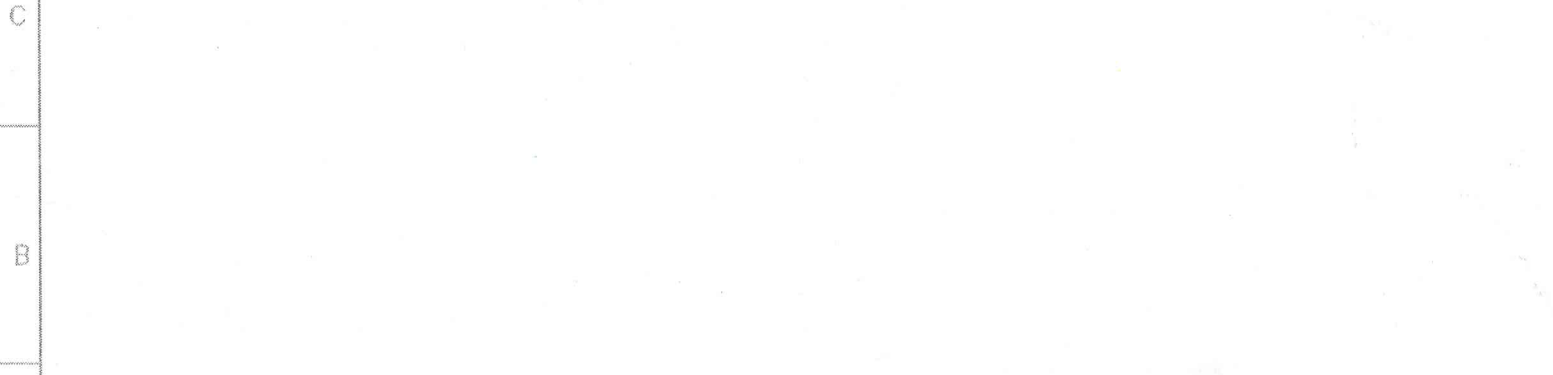
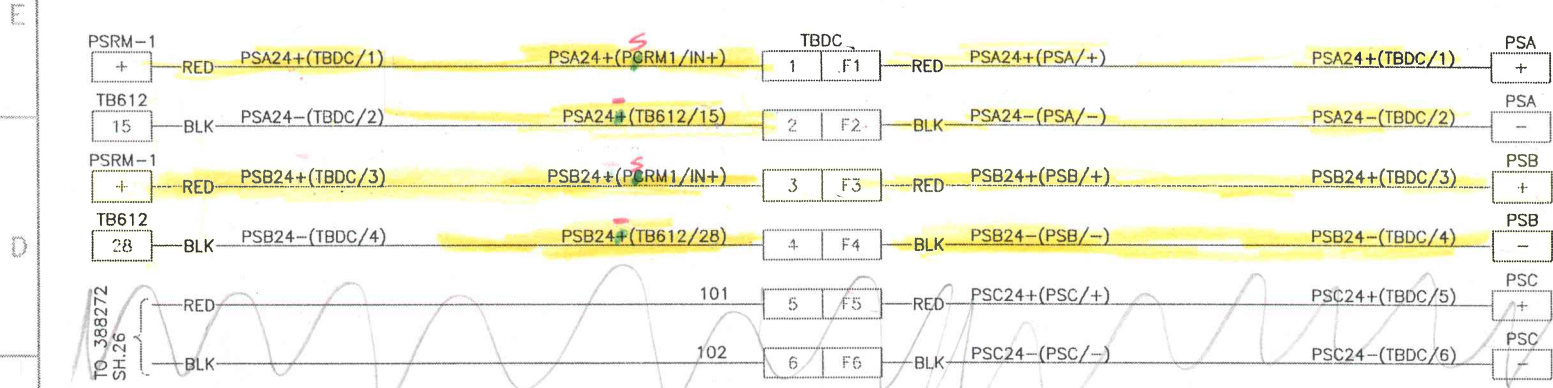
MATERIAL	
BILL OF MATERIAL	
DRAWING	
EDUCEDS	
SUPERVISOR	
SHEET NO	
SHEET	
SK 1	

HWB

5 4 3 2 1 0 INCH

RA-1/120AC

1 2 3 4 5 6 7 8 9 10



APPROVED BY	DATE
SCALE	
TBDC MOP PSC BRK X STEP XXX & XXX GAS TRANSMISSION & DISTRIBUTION PACIFIC GAS AND ELECTRIC COMPANY SAN FRANCISCO, CALIFORNIA	
MICROFILM FULL SIZE MAP PWS - ST PURPOSES SUPPLY BY SHEET NO.	SHEETS DIV.
SK 3	

NO.	DATE	DESCRIPTION	GM/SPEC	DWN	CHKD	SUPV	APRD BY

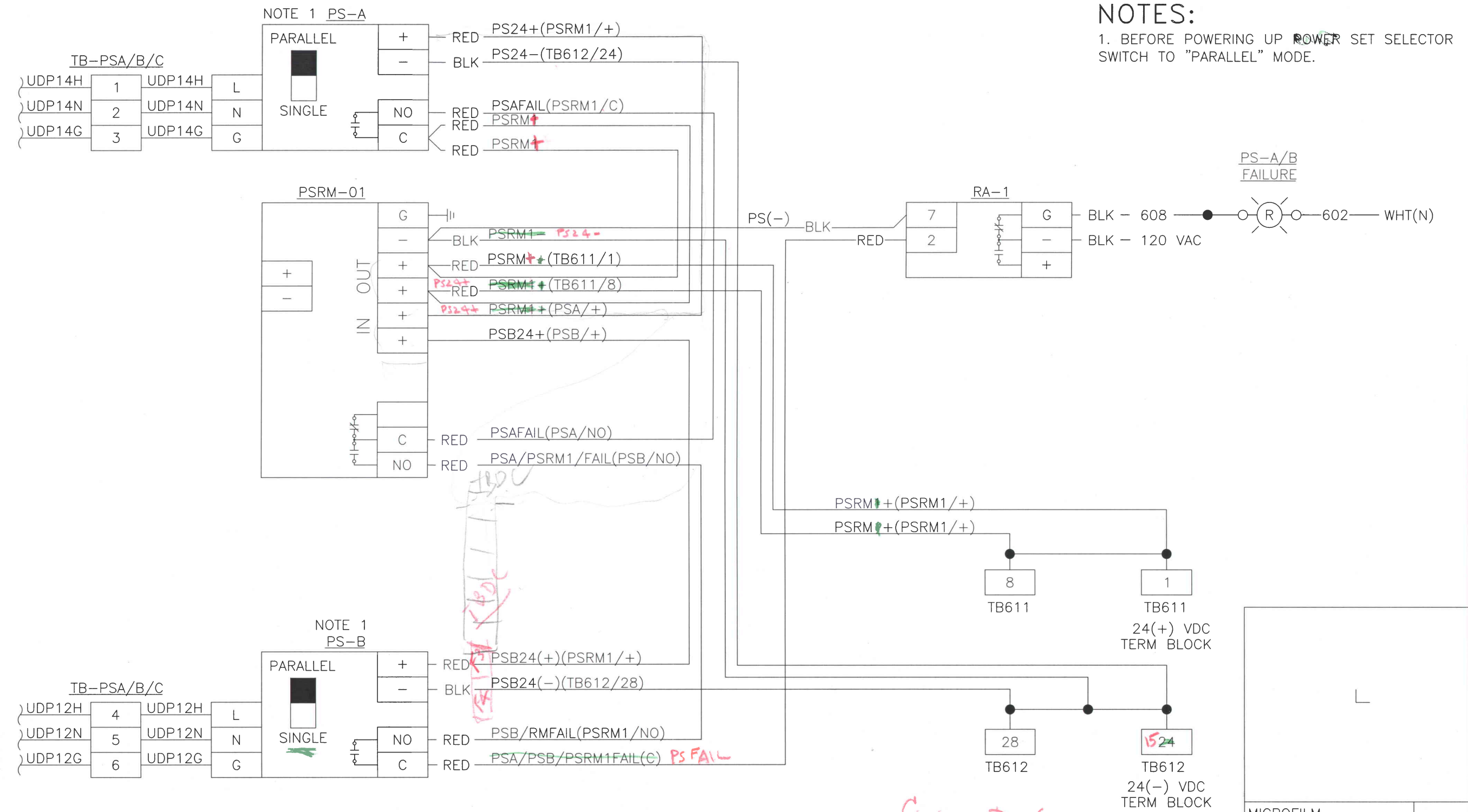
REVISIONS

HTBES

5 4 3 2 1 0 INCH

1 2 3 4 5 6 7 8 9 10

NOTES:
 1. BEFORE POWERING UP POWER SET SELECTOR SWITCH TO "PARALLEL" MODE.



E

D

C

B

A

5

4

3

2

1

0

INCH

NO.	DATE	DESCRIPTION	GM/SPEC	DWN	CHKD	SUPV	APVD BY
REVISIONS							

APPROVED BY	GM
	SUPV
	DSGN
	DWN
	CHKD
	OK
	DATE
	SCALES

Conn - DIAG

PS-A, B & PSRM-01

~~MOP UDP BRK 12 & 14~~

~~STEP XXX & XXX~~

MILPITAS

GAS TRANSMISSION & DISTRIBUTION

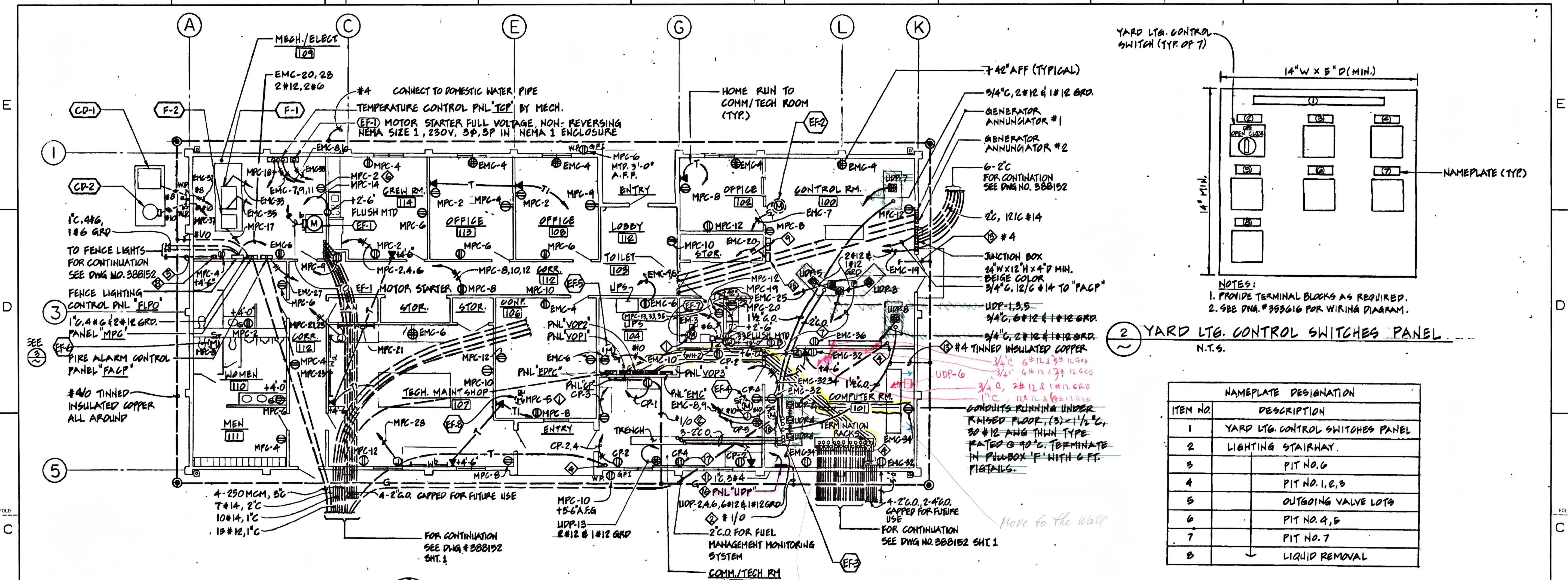
PACIFIC GAS AND ELECTRIC COMPANY

SAN FRANCISCO, CALIFORNIA

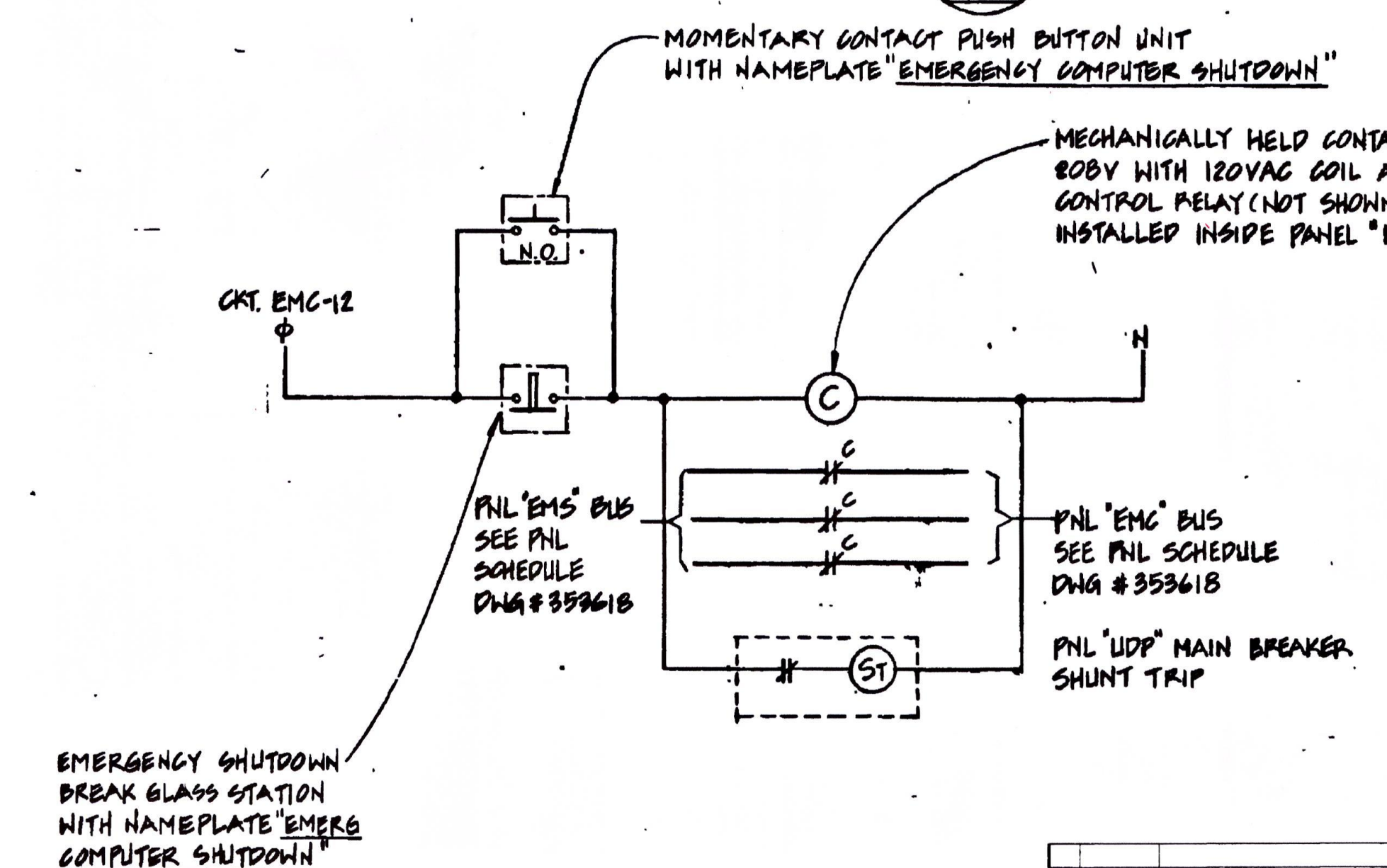
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BILL OF MATL	
DWG LIST	
SUPSDS	
SUPSD BY	
SHEET NO.	SHEETS
SK 2	REV

N1805

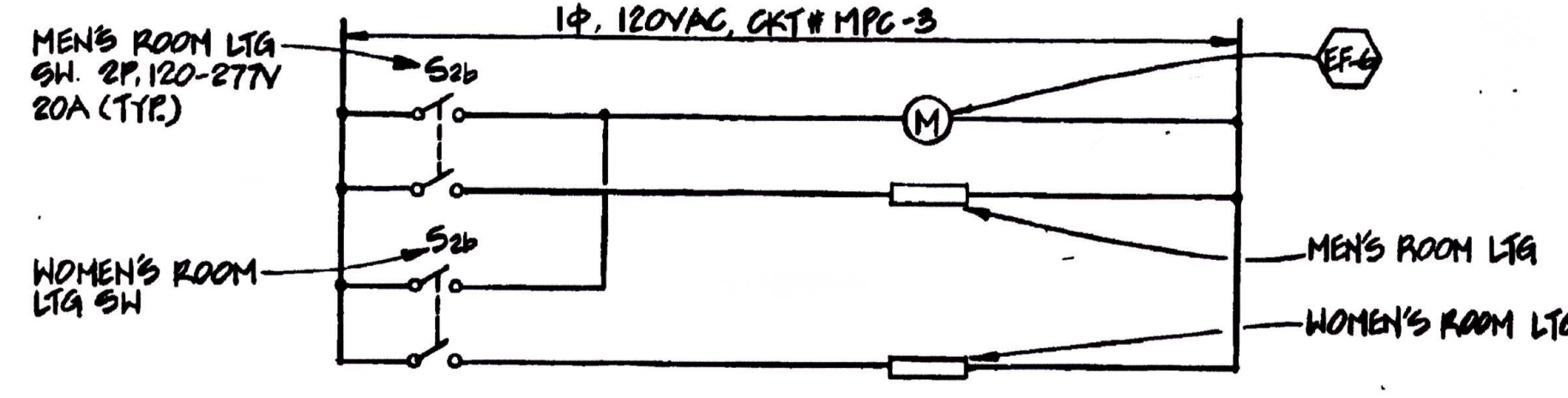
380 - 0 INCH



NAMEPLATE DESIGNATION	
ITEM NO.	DESCRIPTION
1	YARD Ltg. CONTROL SWITCHES PANEL
2	LIGHTING STAIRWAY
3	PIT NO. 6
4	PIT NO. 1, 2, 3
5	OUTGOING VALVE LOTS
6	PIT NO. 4, 5
7	PIT NO. 7
8	LIQUID REMOVAL



- SHEET NOTES:
- WIRE EXHAUST FAN SUCH THAT EXHAUST FAN IS CONTROLLED BY LIGHT SWITCH OF-BOXES.
 - CONNECT TO PANEL GROUND BUS.
 - CONDUIT ONLY RUNNING UNDER DEPRESSIONED FLOOR.
 - CONDUIT WITH BUSHING STUB-UP 2-1/2" ABOVE FINISHED FLOOR. VERIFY EXACT LOCATION IN THE FIELD.
 - CONDUIT STUB-OUT 5'-0" FROM EXTERIOR WALL AND CAPPED FOR IRRIGATION SYSTEM USE.
 - RECEPTACLE FOR WATER HEATER WH-1.
 - CONDUIT AND WIRES TO COMPUTER EMERGENCY SHUTDOWN CONTROL PANEL #1.
 - IRRIGATION SYSTEM CONTROL PANEL (SUPPLIED BY OTHER).
 - YARD LIGHTING CONTROL SWITCHES PANEL. SEE DETAIL 2 THIS DRAWING.
 - JUNCTION BOX 4" X 4" X 4" MOUNTED BELOW DEPRESSIONED FLOOR.
 - SEE EMERGENCY POWER SHUTDOWN CONTROL DIAGRAM - DETAIL 1 THIS DRAWING.
 - EMERGENCY COMPUTER SHUTDOWN CONTROL PANEL #1
 - GROUND DEPRESSIONED FLOOR PEDESTALS (9 MINIMUM).
 - EMERGENCY COMPUTER SHUTDOWN CONTROL PANEL #2
 - FIRE ALARM ANNUNCIATOR.



1 EMERGENCY POWER SHUTDOWN CONTROL DIAG. N.T.S.

3 EXHAUST FAN EF-6 CONTROL DIAG. N.T.S.

E-6

REVISIONS		REVISIONS	
NO.	DATE	DESCRIPTION	GM/SPEC
1	2-25-99	AS-BUILT (UPS REPLACEMENT)	3077209/
2		SUPERSDES 353614, TITLE CHG, ISSUE FOR USE	2009839 PTP

APPROVED BY	GM 2009839
DESIGN BY	SUPV (P. R. H. H.)
DATE	2-25-99
SCALE	AS-NOTED

ELECTRICAL - ARRANGEMENT
PLAN, DIAGRAM & NOTES, CONTROL BUILDING
MILPITAS TERMINAL

DEPARTMENT OF ENGINEERING
PACIFIC GAS AND ELECTRIC COMPANY
SAN FRANCISCO, CALIFORNIA

1987 REBUILT

MICROFILM

BILL OF MATL

DWG LIST

SUPSDS 353614

SUPSD BY

SHEET NO. 3800225

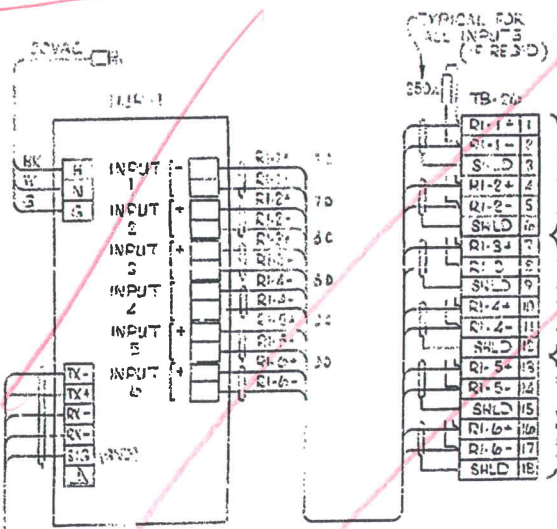
SHEETS 12

INSTRUMENT GRAPHIC PANEL (CONTROL ROOM)

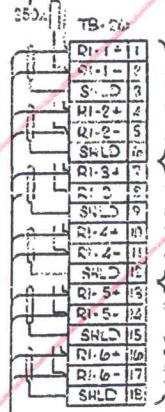
PLC I/O RACK (COMPUTER RM)

INSTRUMENT GRAPHIC PANEL (CONTROL ROOM)

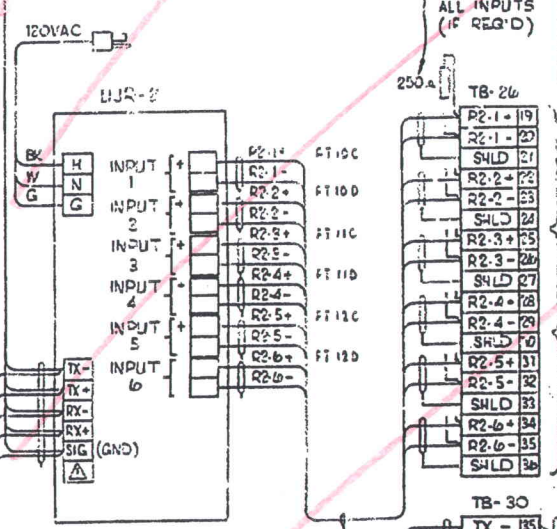
PLC I/O RACK (COMPUTER ROOM)



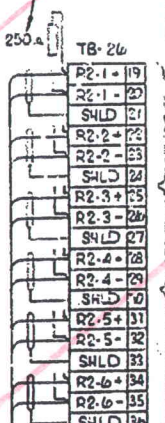
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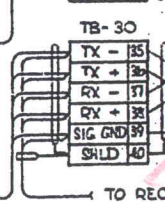
DWG. 355076
 DWG. 355073
 DWG. 355074



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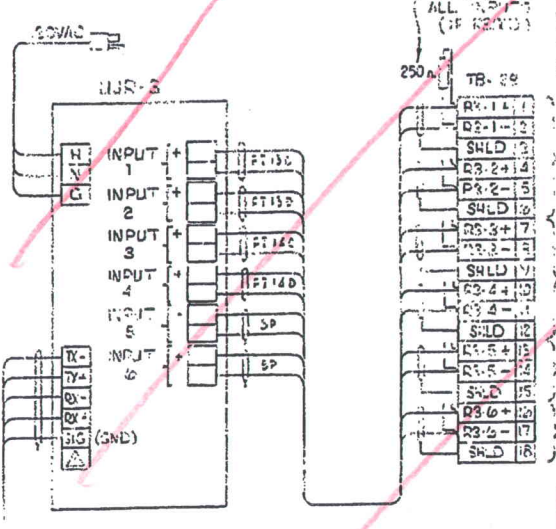


DWG. 355073
 DWG. 355073
 DWG. 355073
 DWG. 355080

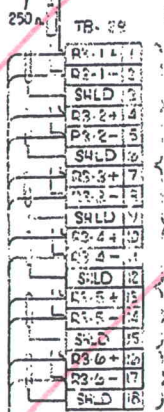


TO RECORDER UJR-4
 TO PLC (SEE DWG. NO. 355272, SHEET 1)

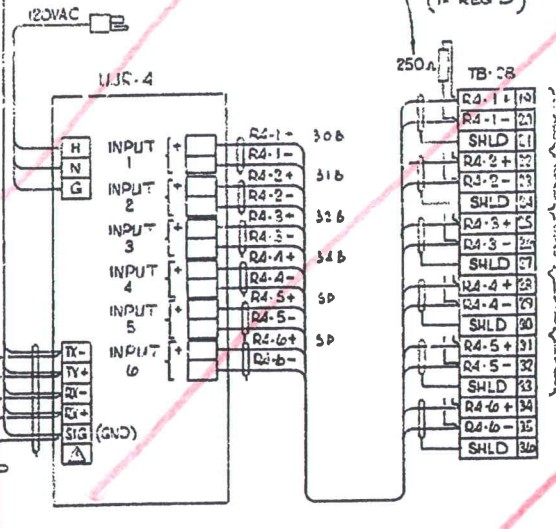
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 obsolete only*



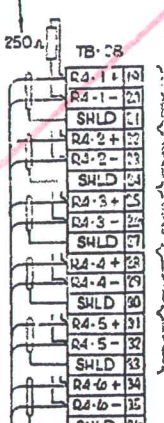
TYPICAL FOR ALL INPUTS (IF REQ'D)



DWG. 355077
 DWG. 355076



TYPICAL FOR ALL INPUTS (IF REQ'D)



DWG. 355103
 DWG. 355102
 DWG. 355101
 DWG. 355105
 DWG. 355104

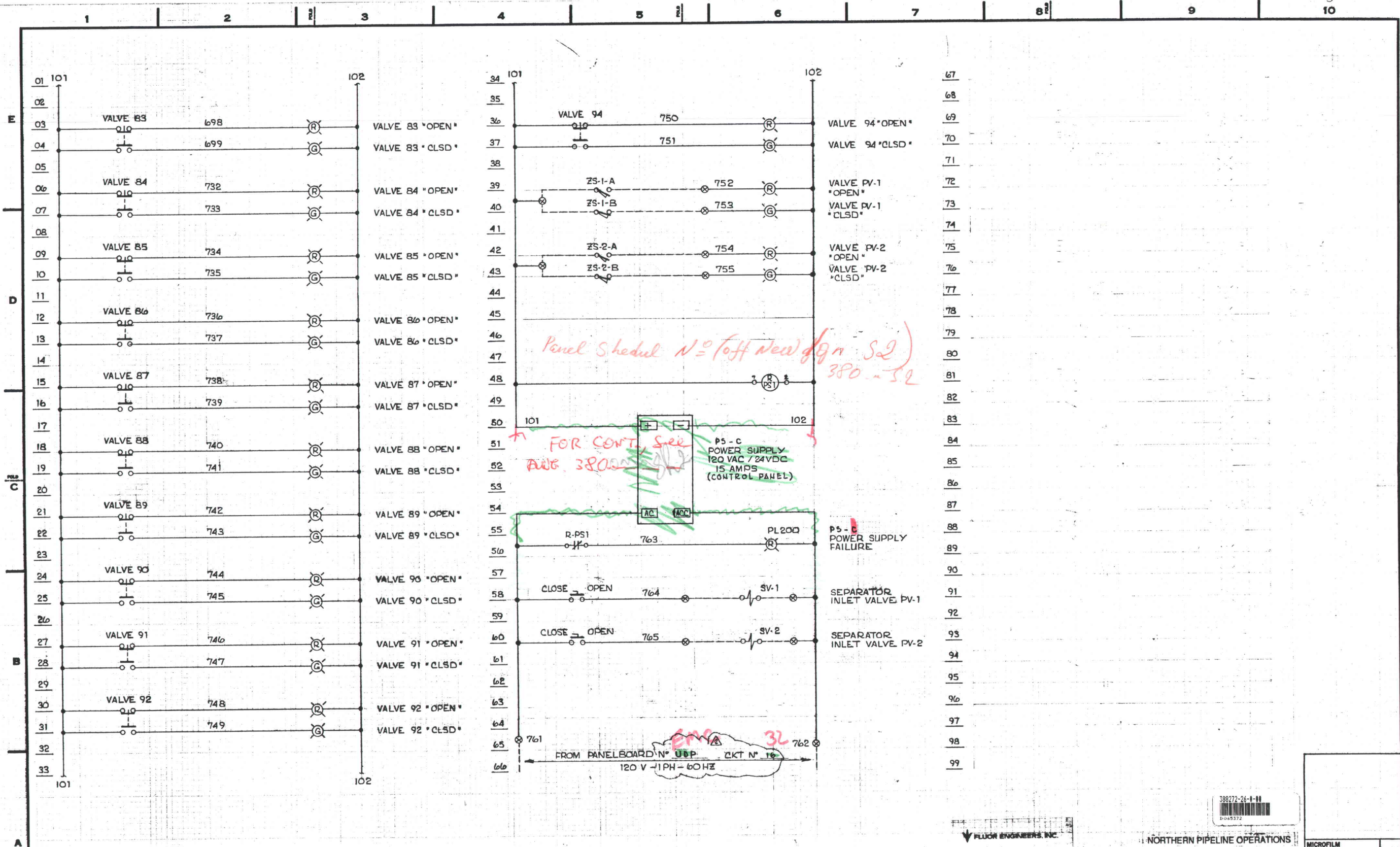
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NO.	DATE	DESCRIPTION	ENGR.	CHKD.	SUPV.	APVD. BY
1	07-17-89	ISSUED FOR CONSTRUCTION				
2	07-17-89	ISSUED FOR BID				

REVISED BY	DATE	DESCRIPTION
SMV	06-23-89	SCALE NONE

NORTHERN PIPELINE OPERATIONS
 INSTRUMENTATION — DIAGRAM
 TREND RECORDERS
 MILPITAS TERMINAL
 GAS OPERATIONS
 PACIFIC GAS AND ELECTRIC COMPANY
 SAN FRANCISCO, CALIFORNIA

BILL OF MATL	
DWG LIST	
SUPDS	
SUPSD BY	
SHEET NO.	388121
SHEETS	2



FLUOR ENGINEERS, INC.

NORTHERN PIPELINE OPERATIONS



REVISIONS						REVISIONS									
NO.	DATE	DESCRIPTION	GM/SPEC	DWNL	CHKD.	SUPV.	APVD. BY	NO.	DATE	DESCRIPTION	GM/SPEC	DWNL	CHKD.	SUPV.	APVD. BY
2	4-29-89	AS BUILT O.C. FLD CHG's						12	4-29-89	ISSUED FOR CONSTRUCTION					
1	4-29-89	ISSUED FOR CONSTRUCTION						12	4-29-89	ISSUED FOR BIDS					
02	5-10-89							12	5-10-89						

APPROVED BY	GM	12
	SUPV.	
	DSGN.	
	DWNL.	
	CHKD.	
	DATE	10-89
	SCALE	NONE

ELEMENTARY-ELECTRICAL
PLC I/O & CONTROL SYSTEM
MILPITAS TERMINAL
GAS OPERATIONS
PACIFIC GAS AND ELECTRIC COMPANY
SAN FRANCISCO, CALIFORNIA

BILL OF MATL	
DWG LIST	
SUPSDS	
SUPSD BY	
SHEET NO. 26 OF	SHEETS
388272	REV. 2

PANEL "LPM" SCHEDULE LOCATION MAINTENANCE BLDG. Table with columns for Type of Load, Voltage, Breaker, and Load Summary. Includes notes on service and mounting.

PANEL "MPC" SCHEDULE LOCATION ELECT/MECH RM & CONTROL BLDG. Table with columns for Type of Load, Voltage, Breaker, and Load Summary. Includes notes on service and mounting.

* PROVIDE MECHANICAL INERTIA FOR 2 20A/1P CIRCUIT BREAKERS. (TYP. FOR PANELS "MPC" & "LPO".)

PANEL "ELPM" SCHEDULE LOCATION ELECT. RM - MAINT. BLDG. Table with columns for Type of Load, Voltage, Breaker, and Load Summary. Includes notes on service and mounting.

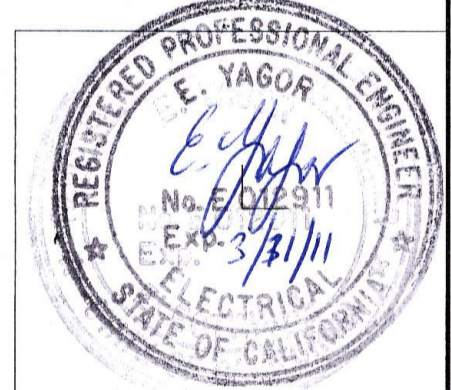
PANEL "LPO" SCHEDULE LOCATION ELECT. RM - MAINT. BLDG. Table with columns for Type of Load, Voltage, Breaker, and Load Summary. Includes notes on service and mounting.

PANEL "EMC" SCHEDULE LOCATION UPS ROOM - CONTROL BLDG. Table with columns for Type of Load, Voltage, Breaker, and Load Summary. Includes notes on service and mounting.

PANEL "UDP" SCHEDULE LOCATION COMPUTER RM - CONTROL BLDG. Table with columns for Type of Load, Voltage, Breaker, and Load Summary. Includes notes on service and mounting.

* TWO-SECTION PANELBOARD, INSERT CONTACTOR BETWEEN BUSES. SEE CONTROL DIAGRAM (614). PANELBOARD SHALL COMPLETE WITH CONTACTOR.

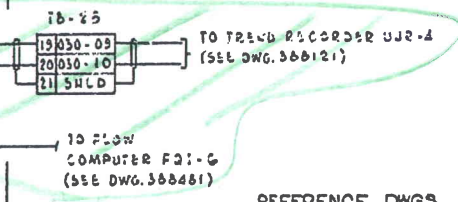
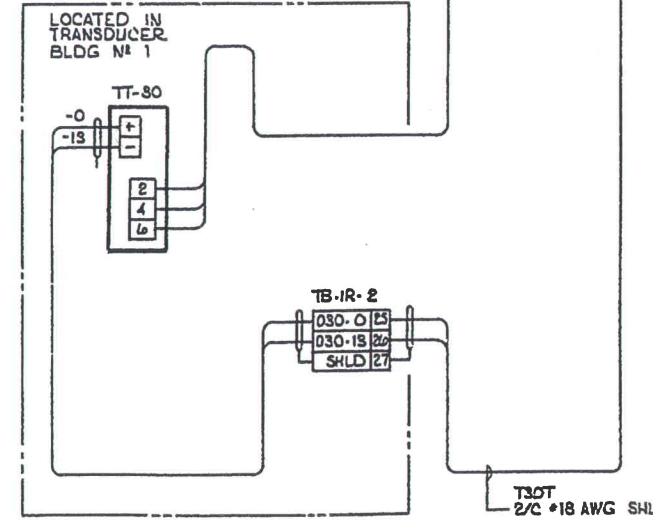
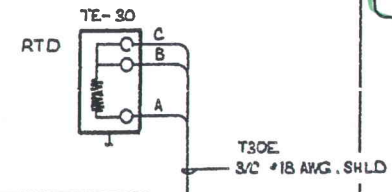
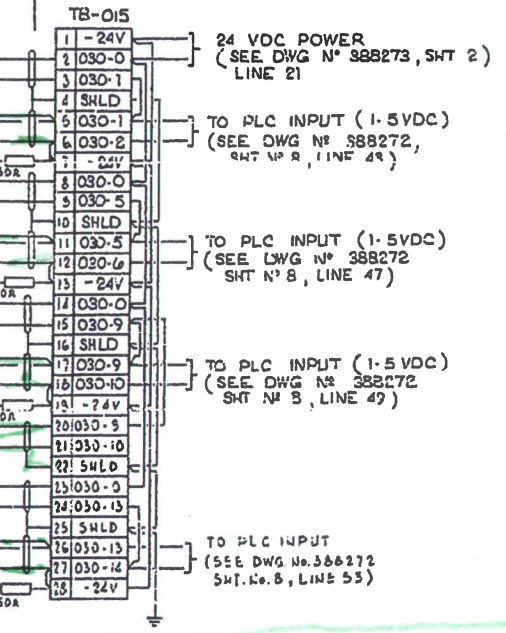
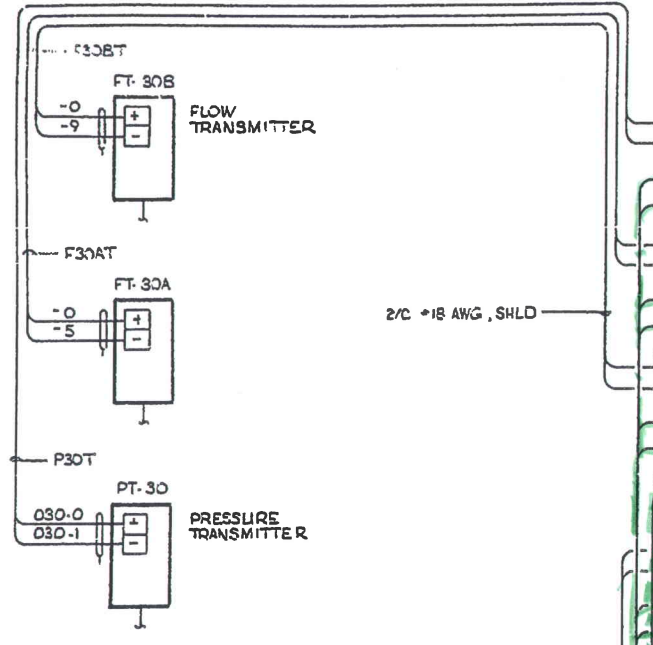
* PANEL SHALL BE COMPLETELY ISOLATED AND EQUIPPED WITH ISOLATED GROUND BAR.



APPROVED BY: [Signature] 1004564. BILL OF MATL: SUPV, DSGN, DWN, CHKD, OK. SHEETS: 3800230.3. SHEET NO. 3. REV. 3. SCALES: NONE.

REVISIONS table with columns for NO., DATE, DESCRIPTION, GM/SPEC, DWN, CHKD, SUPV, APVD BY.

FIELD PLC I/O RACK (COMPUTER ROOM) INSTRUMENT & GRAPHIC PANEL (CONTROL ROOM)



- REFERENCE DWGS
- P I D , METERING & REGULATION ----- 488228
 - INSTRUMENTATION PLAN ----- 488241
 - CONNECTION DIAGRAM , TRANSDUCER BLDG #1 ----- 388466
 - ELEM. ELECTRICAL , PLC I/O & CONTROL SYSTEM ----- 388272
 - ELEM. ELECTRICAL INSTR PWR ----- 388273

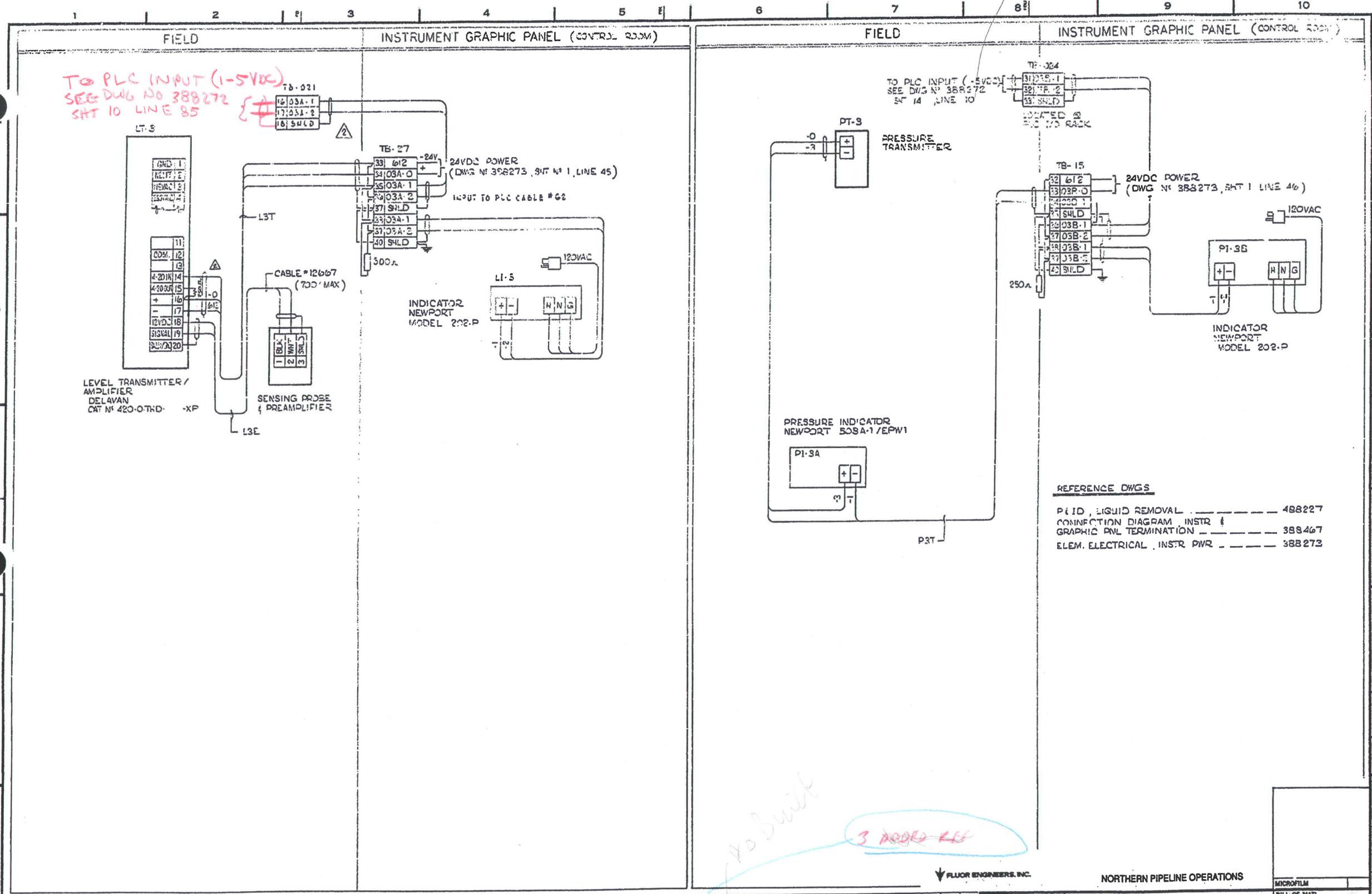
3 AS FOUND
 BROUGHT TO DATE "AS BUILT"

FLUOR ENGINEERS, INC. NORTHERN PIPELINE OPERATIONS

INSTRUMENTATION - DIAGRAM
 LINE 100 FLOW
 MILPITAS TERMINAL
 GAS OPERATIONS
 PACIFIC GAS AND ELECTRIC COMPANY
 SAN FRANCISCO, CALIFORNIA

NO.	DATE	DESCRIPTION	ENGR	SPEC	CHK	CRD	SUPV	APVD	BY	NO.	DATE	DESCRIPTION	ENGR	SPEC	CHK	CRD	SUPV	APVD	BY
1	11-28-89	AS BUILT G.C. FLD CHG'S								12	11-28-89	ISSUED FOR CONSTRUCTION							
2	12-28-89	ISSUED FOR BID								12	12-28-89								

MICROFILM	
BILL OF MATL	
DWG LIST	
SUPDS	
SUPD BY	
SHEET NO.	388103
SHEETS	2



As Built

3 ADDS - LEE

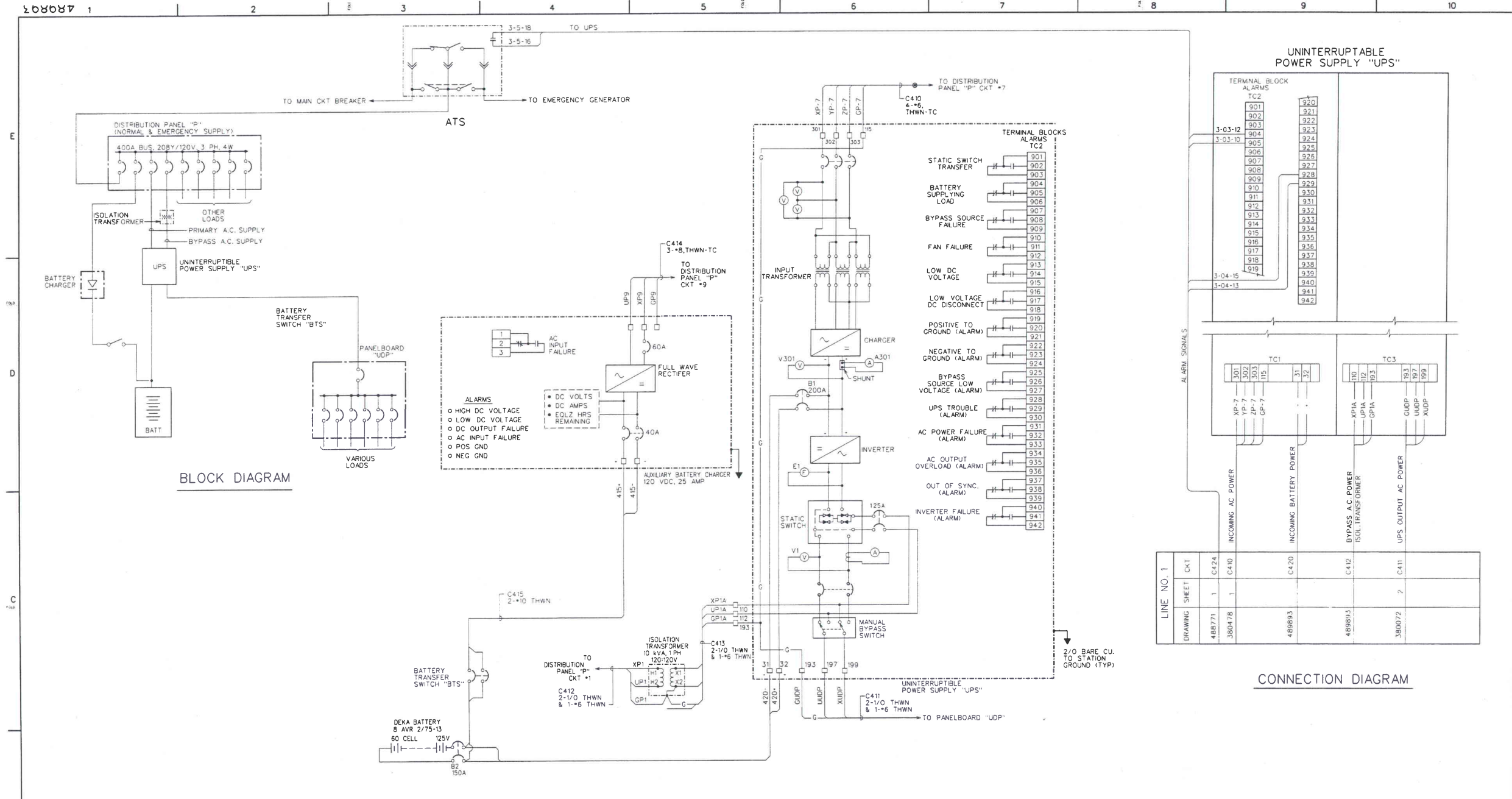
REVISIONS				REVISIONS				APPROVED BY		INSTRUMENTATION - DIAGRAM		BILL OF MATL	
NO.	DATE	DESCRIPTION	CHKD.	NO.	DATE	DESCRIPTION	CHKD.	DATE	SCALE	NO.	DATE	NO.	DATE
1	12-28-89	ISSUED FOR CONSTRUCTION		12	12-28-89	ISSUED FOR CONSTRUCTION		12/28/89		INSTRUMENTATION - DIAGRAM	1	12/28/89	
2	1-26-91	AS BUILT G.C. FLD CHG'S		12	1-26-91	AS BUILT G.C. FLD CHG'S		1/26/91		LT-3 & PT-3	2	1/26/91	
3	2-23-91	ISSUED FOR BID		12	2-23-91	ISSUED FOR BID		2/23/91		MILPITAS TERMINAL	3	2/23/91	

NORTHERN PIPELINE OPERATIONS

PACIFIC GAS AND ELECTRIC COMPANY
SAN FRANCISCO, CALIFORNIA

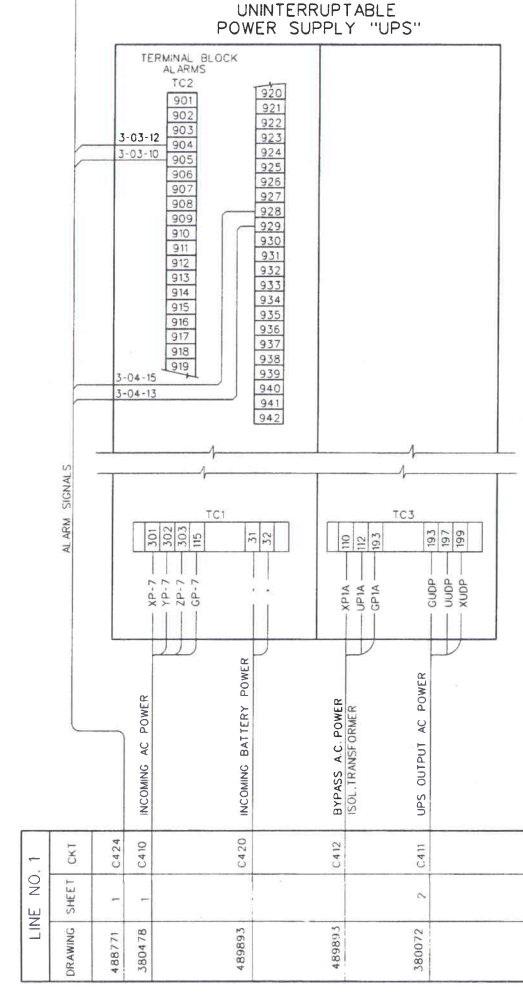
SHEET NO. 388125

REV. 2



BLOCK DIAGRAM

WIRING DIAGRAM



CONNECTION DIAGRAM

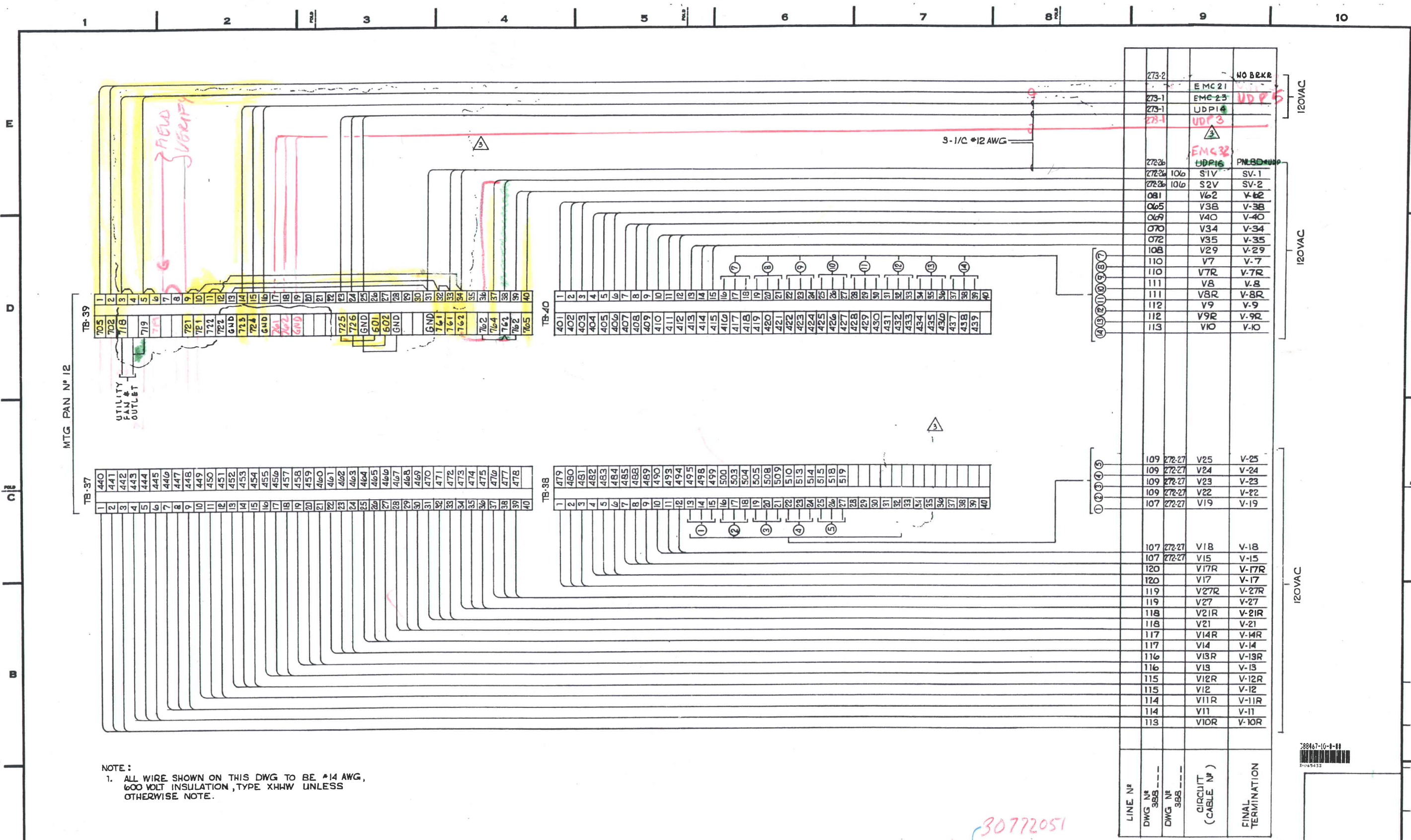
~~OBSCLETE~~
 For Sup. by
 489930

NO.	DATE	DESCRIPTION	BY	CHKD.	DATE	NO.	DATE	DESCRIPTION	BY	CHKD.	DATE	NO.	DATE	DESCRIPTION	BY	CHKD.	DATE
1		REVISIONS				2		REVISIONS				3		REVISIONS			

DESIGNED BY	DATE	SCALE	PROJECT	NO.
DRAWN BY	DATE	SCALE	PROJECT	NO.
CHECKED BY	DATE	SCALE	PROJECT	NO.
APPROVED BY	DATE	SCALE	PROJECT	NO.

CONNECTION DIAGRAM
 UPS SYSTEM
 OPERATIONS BUILDING
 ANTIOCH TERMINAL
 SUPERVISOR
 GAS SYSTEM TECHNICAL SUPPORT
 PACIFIC GAS AND ELECTRIC COMPANY
 SAN FRANCISCO, CALIFORNIA

489893
 SHEET NO. 2



LINE NO	DWG NO	CIRCUIT (CABLE NO)	FINAL TERMINATION
273-2		EMC 21	NO BKBR
273-1		EMC 23	UD P 5
273-1		UD P 4	
273-1		UD P 3	
272-26		EMC 32	
272-26	106	UD P 16	PNL BDD #106
272-26	106	S1V	SV-1
272-26	106	S2V	SV-2
061		V62	V-62
065		V38	V-38
069		V40	V-40
070		V34	V-34
072		V35	V-35
108		V29	V-29
110		V7	V-7
110		V7R	V-7R
111		V8	V-8
111		V8R	V-8R
112		V9	V-9
112		V9R	V-9R
113		V10	V-10
109	272-27	V25	V-25
109	272-27	V24	V-24
109	272-27	V23	V-23
109	272-27	V22	V-22
107	272-27	V19	V-19
107	272-27	V18	V-18
107	272-27	V15	V-15
120		V17R	V-17R
120		V17	V-17
119		V27R	V-27R
119		V27	V-27
118		V21R	V-21R
118		V21	V-21
117		V14R	V-14R
117		V14	V-14
116		V13R	V-13R
116		V13	V-13
115		V12R	V-12R
115		V12	V-12
114		V11R	V-11R
114		V11	V-11
113		V10R	V-10R

NOTE:
 1. ALL WIRE SHOWN ON THIS DWG TO BE #14 AWG, 600 VOLT INSULATION, TYPE XHHW UNLESS OTHERWISE NOTE.

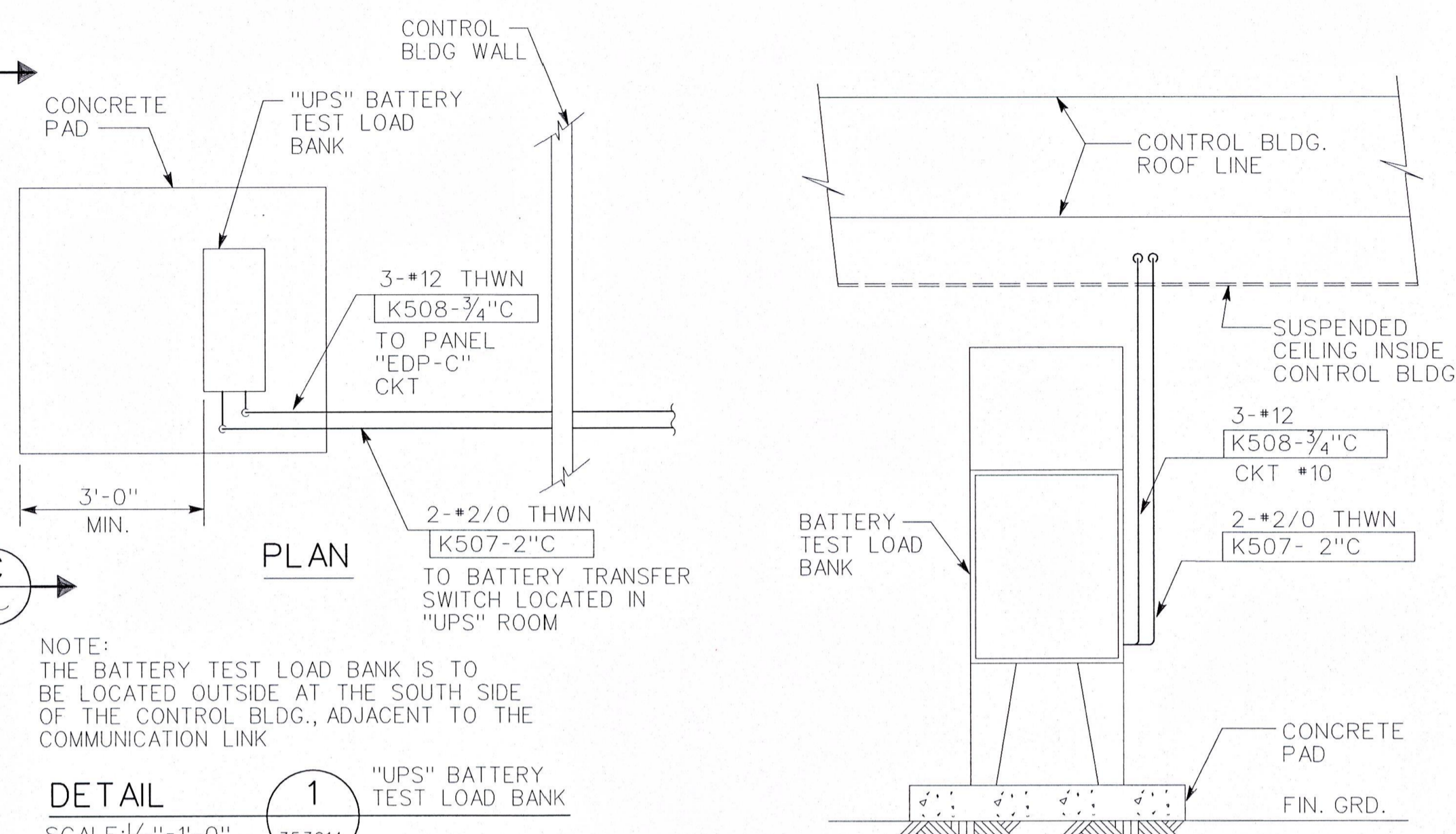
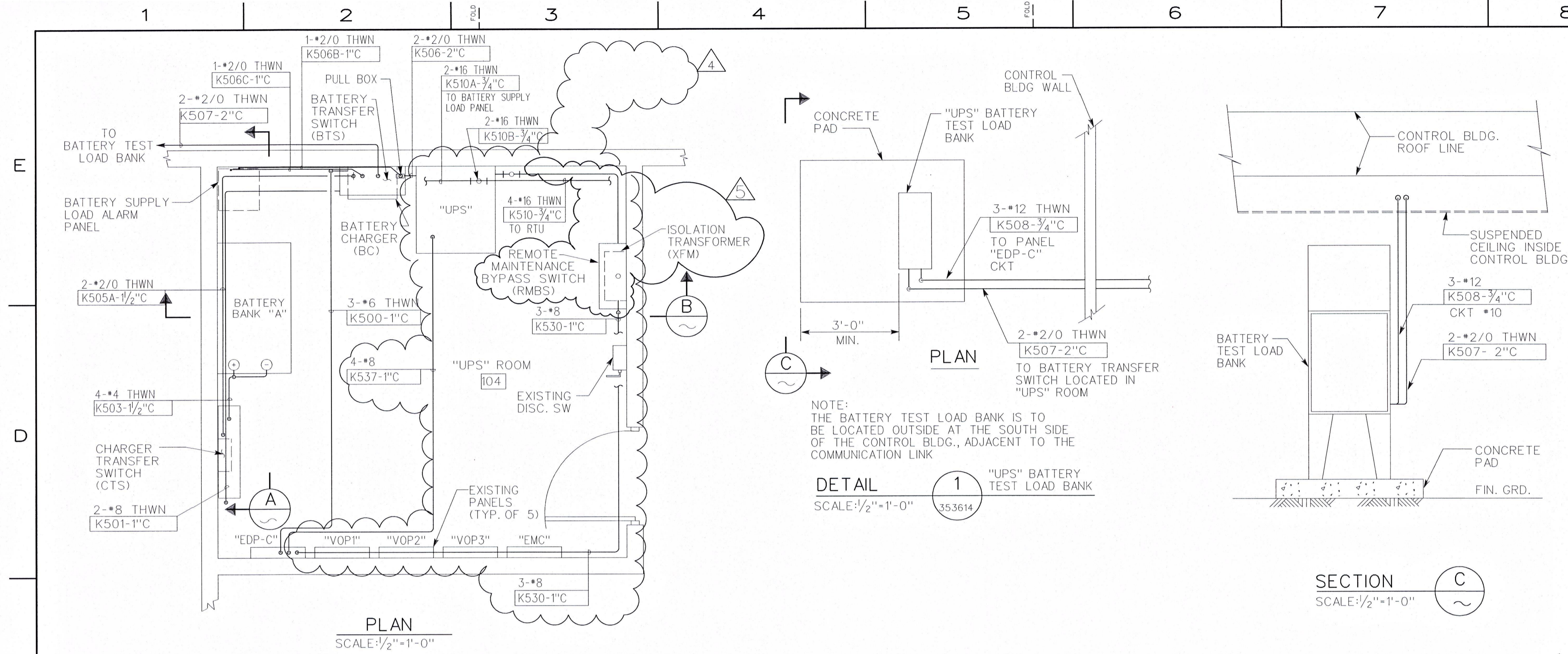
NO.	DATE	DESCRIPTION	GM/SPEC	DWNL	CHKD.	SUPV.	APVD. BY
1	7-14-78	AS BUILT					
2	4-29-89	AS BUILT G.C. FLD CHG'S					
3	2-14-89	ISSUED FOR CONSTRUCTION					
4	2-14-89	ISSUED FOR BID					

NO.	DATE	DESCRIPTION	GM/SPEC	DWNL	CHKD.	SUPV.	APVD. BY
1	7-14-78	AS BUILT					
2	4-29-89	AS BUILT G.C. FLD CHG'S					
3	2-14-89	ISSUED FOR CONSTRUCTION					
4	2-14-89	ISSUED FOR BID					

APPROVED BY: [Signature]
 DATE: 6-23-89
 SCALES: NONE

NORTHERN PIPELINE OPERATIONS
 CONNECTION-DIAGRAM
 INSTR/GRAPHIC PNL TERMINATION
 MILPITAS TERMINAL
 GAS OPERATIONS
 PACIFIC GAS AND ELECTRIC COMPANY
 SAN FRANCISCO, CALIFORNIA

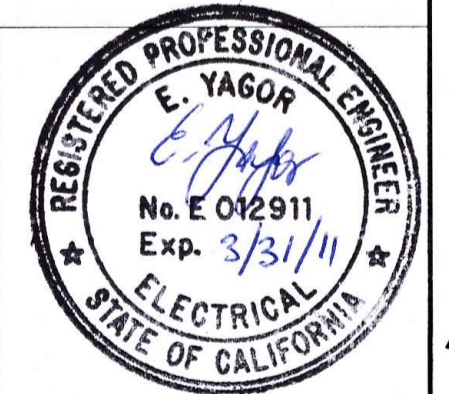
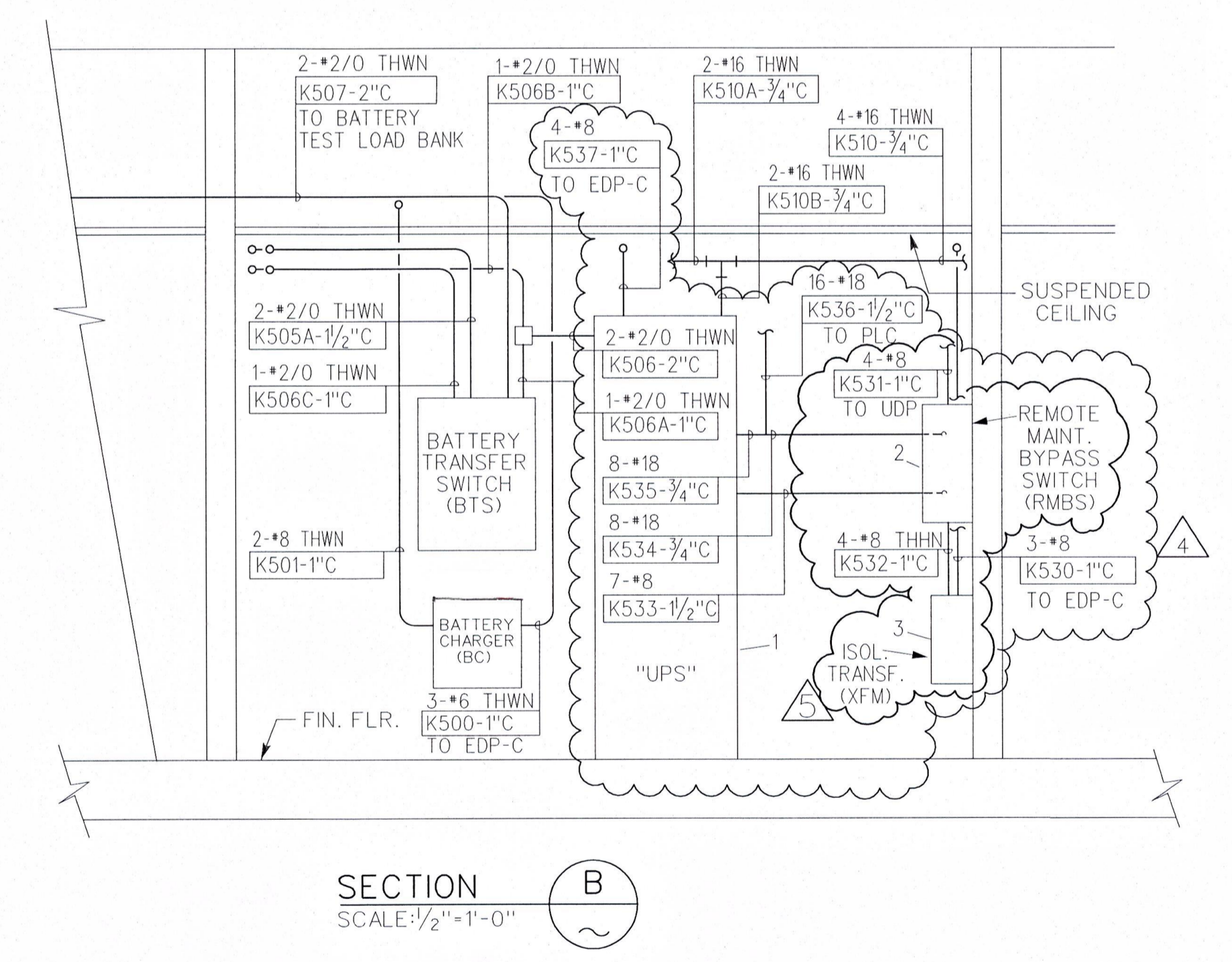
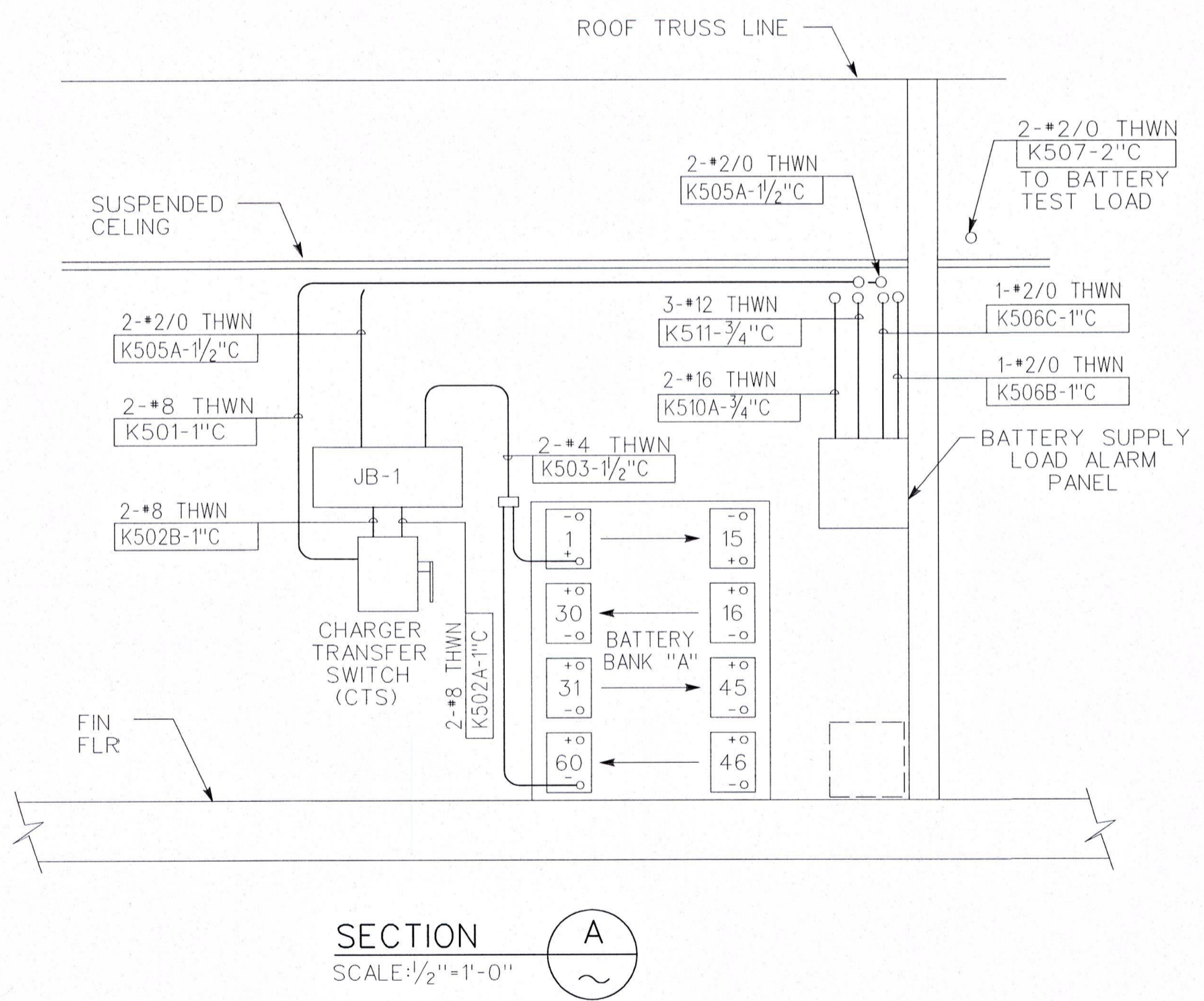
388467-10-1-11
 MICROFILM
 BILL OF MATL
 DWG LIST
 SUPS/DIS
 SHEET NO. 10 OF 11 SHEETS
 388467
 REVISIONS



NOTE:
THE BATTERY TEST LOAD BANK IS TO BE LOCATED OUTSIDE AT THE SOUTH SIDE OF THE CONTROL BLDG., ADJACENT TO THE COMMUNICATION LINK

BILL OF MATERIALS									
PG&E CODE	ITEM NO.	QTY	UNIT	DESCRIPTION	CAT. OR DWG REF	OTHER DATA			
				2010 CONSTRUCTION JOB - 30772051					
	1	1	EA	UPS, 5 KVA, 208 VAC - 3 PH INPUT, 120/240 VAC 1 PH OUTPUT	AMETEK 2SE3005U-20-13-24	ON HAND			
	2	1	EA	MAINTENANCE BYPASS SWITCH - 5 KVA, 240 VAC	AMETEK 2RS050MB-24	ON HAND			
	3	1	EA	TRANSFORMER, 7.5 KVA, 208 VAC - 1 PH INPUT, 240/120 VAC - 1 PH OUTPUT	JEFFERSON ELECTRIC 411-0131-208 OR EQUAL				
	4	1	EA	PANEL BOARD, 100A, 30 SPACES, 240/120V 1 PH, 30A MAIN BREAKER	SQUARE D NO30L1				
	5	2	EA	CIRCUIT BREAKER, BOLT ON, 30A 2P	SQUARE D Q0B230				
	6	2	EA	CIRCUIT BREAKER, CLAMP ON, 15A 1P	SQUARE D Q0115				
	7	1	EA	CIRCUIT BREAKER, BOLT ON, 40A 3P	SQUARE D Q0B340				
	8	60	FT	CONDUIT, EMT, 1/2"					
	9	60	FT	CONDUIT, EMT, 1"					
	10	10	FT	CONDUIT, EMT, 3/4"					
	11	AS REQ'D		FITTINGS, EMT, (COUPLINGS, ELBOWS, TEES) FOR SIZES: 1/2", 1" & 1 1/2"					
	12	1000	FT	CABLE, #8, THHN					
	13	200	FT	MULTICABLE, 8 CONDUCTOR, #18					

- REFERENCES:**
- 089001 CONDUIT SCHEDULE
 - 087842 CIRCUIT SCHEDULE
 - 489930 CONNECTION-DIAGRAM "UPS" SYSTEM



REVISIONS					REVISIONS										
NO.	DATE	DESCRIPTION	GM/SPEC	DWN	CHKD	SUPV	APVD BY	NO.	DATE	DESCRIPTION	GM/SPEC	DWN	CHKD	SUPV	APVD BY
5	10-10-10	ISSUED FOR CONSTRUCTION						30772051	LIT						
4	8-20-10	ISSUED FOR CONSTRUCTION						30772051	AB						
3	6-14-02	AS-BUILT PER FIELD CONSTRUCTION						7035526	PIP	RL	BD				
2	7-14-98	AS-BUILT PER AES ENGINEERING INFORMATION						4224176	JPC						
1	10-6-95	ISSUED FOR CONSTRUCTION						4224176	GLN	GS	WRM				

APPROVED BY: GM 4224176
SUPV. WILLIAMS-LEE

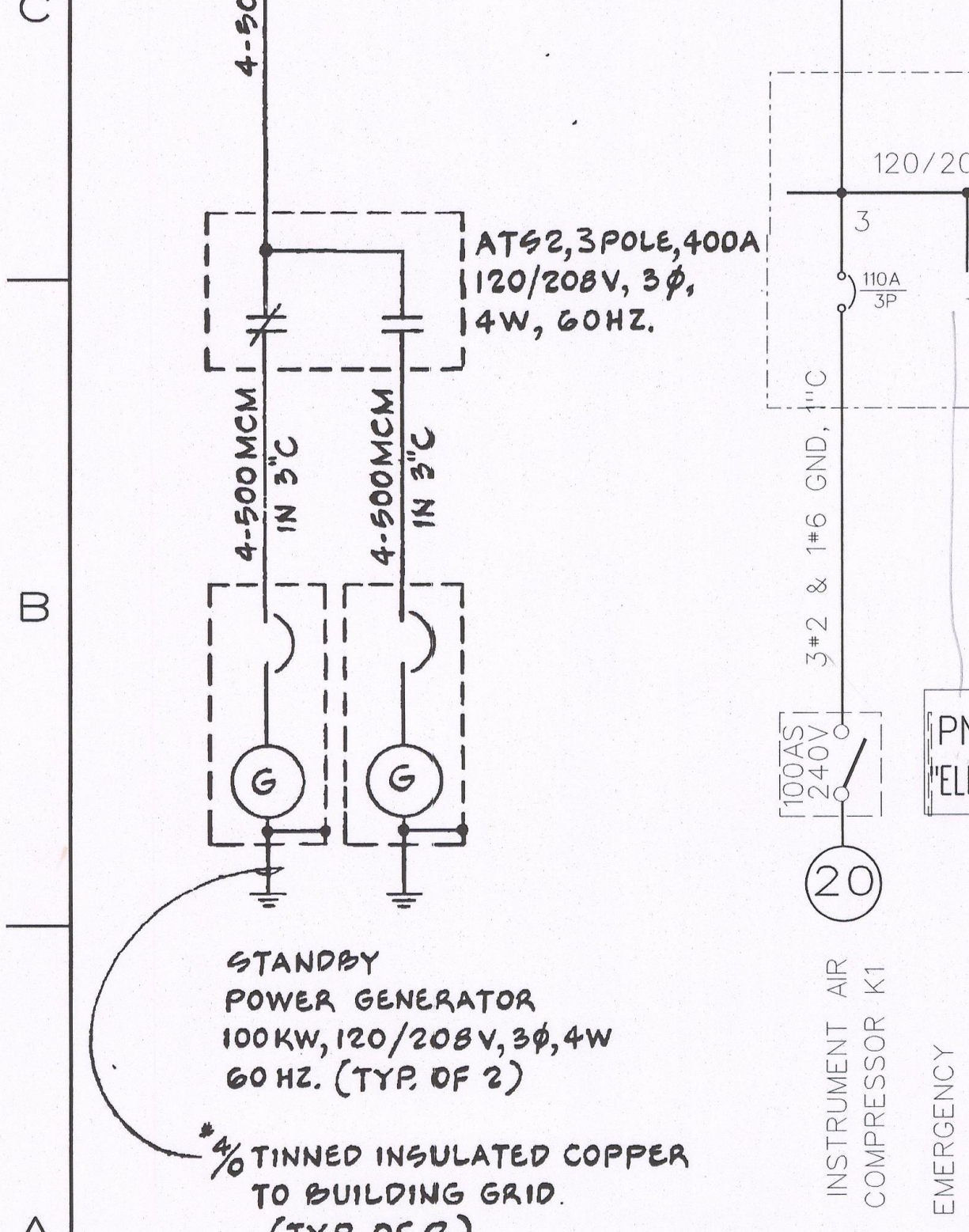
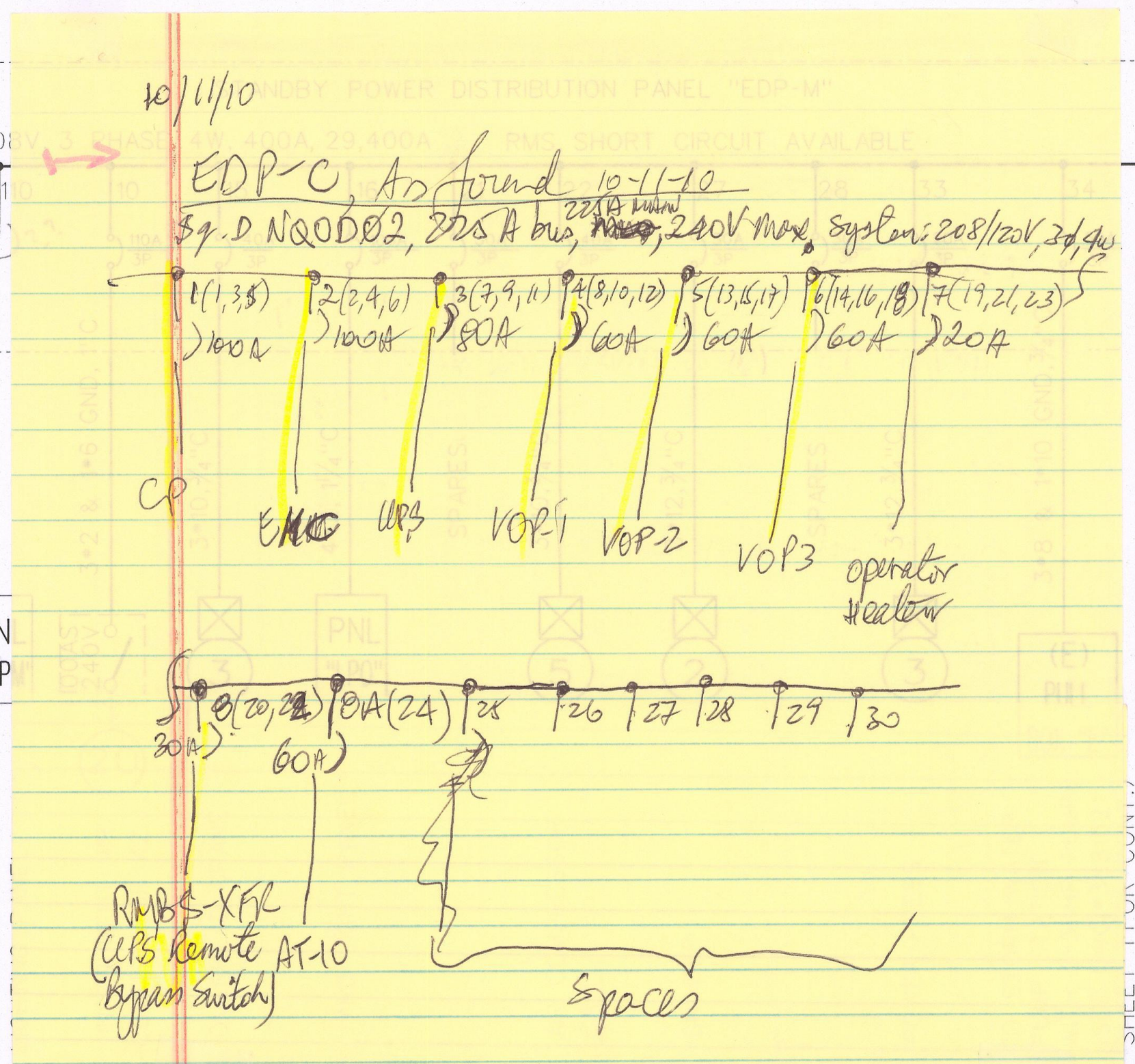
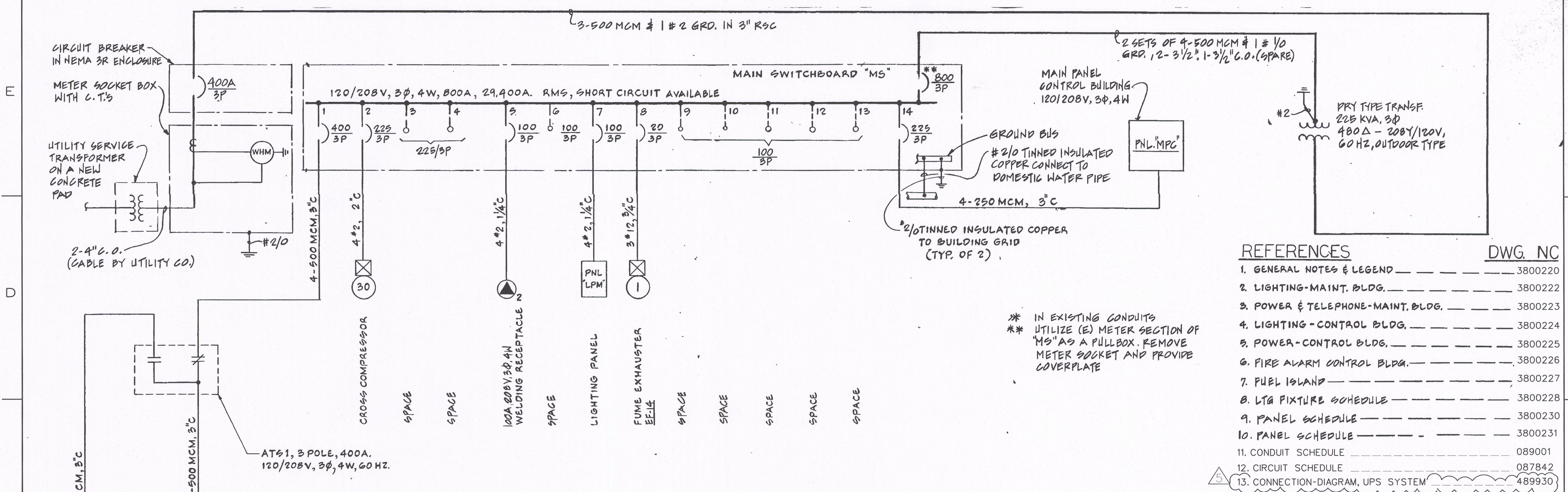
CONDUIT - ARRANGEMENT
"UPS" ROOM
CONTROL BUILDING
MILPITAS TERMINAL

GAS SYSTEM TECHNICAL SUPPORT
PACIFIC GAS AND ELECTRIC COMPANY
SAN FRANCISCO, CALIFORNIA

DATE: 10-6-95
SCALE: AS SHOWN

MICROFILM

BILL OF MATL
DWG LIST
SUPSDS
SUPSD BY
SHEET NO. 3800025
SHEETS 5



INITIAL "ISSUED FOR CONSTRUCTION" REVISION OF THIS DRAWING STAMPED AND SIGNED BY A REGISTERED PROFESSIONAL ENGINEER

EDMS] 3800221.dgn
 EDMS] 3800221.tif

REVISIONS					REVISIONS												
NO.	DATE	DESCRIPTION	GM/SPEC	DWN	CHKD	SUPV	APVD	BY	NO.	DATE	DESCRIPTION	GM/SPEC	DWN	CHKD	SUPV	APVD	BY
5	10-11-10	ISSUED FOR CONSTRUCTION							1	6-20-99	SUPERSEDES 353610, TITLE CHG, ISSUE FOR USE	2009839	PIP				
4	8-20-10	ISSUED FOR CONSTRUCTION							2	6-14-02	AS-BUILT PER FIELD CONSTRUCTION	7035526	PIP	RL	BD		
3	1-15-08	AS-BUILT							3	1-15-08	AS-BUILT	7055361	PIP	SL	JS	JKG	
2	6-14-02	AS-BUILT PER FIELD CONSTRUCTION							4	8-20-10	ISSUED FOR CONSTRUCTION	30772051	AB		LM		
1	6-20-99	SUPERSEDES 353610, TITLE CHG, ISSUE FOR USE							5	10-11-10	ISSUED FOR CONSTRUCTION	30772051	LIT				

1987 REBUILT

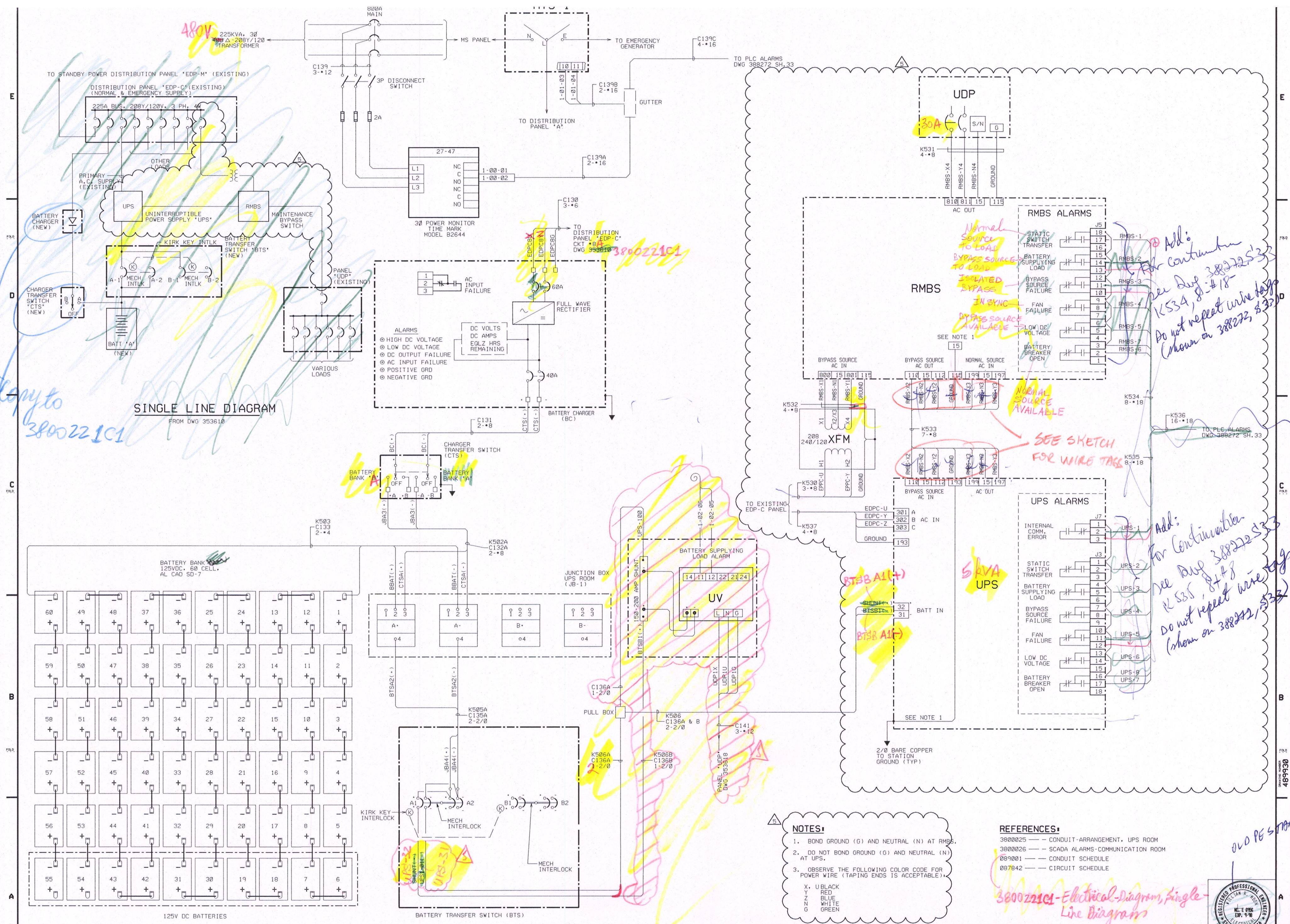
ELECTRICAL - DIAGRAM
 SINGLE LINE DIAGRAM
 MILPITAS TERMINAL

GAS TRANSMISSION & DISTRIBUTION
 PACIFIC GAS AND ELECTRIC COMPANY
 SAN FRANCISCO, CALIFORNIA

REGISTERED PROFESSIONAL ENGINEER
 E. YAGOR
 No. E1012911
 Exp. 3/31/11
 ELECTRICAL
 STATE OF CALIFORNIA

BILL OF MATL
 DWG LIST
 SUPSDS 353610
 SUPSD BY
 SHEET NO. C1 OF 5 SHEETS
 REV 5

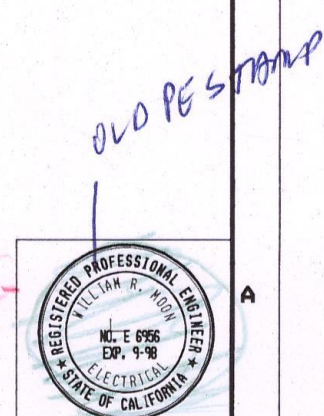
3800221



Copy to 3800221C1

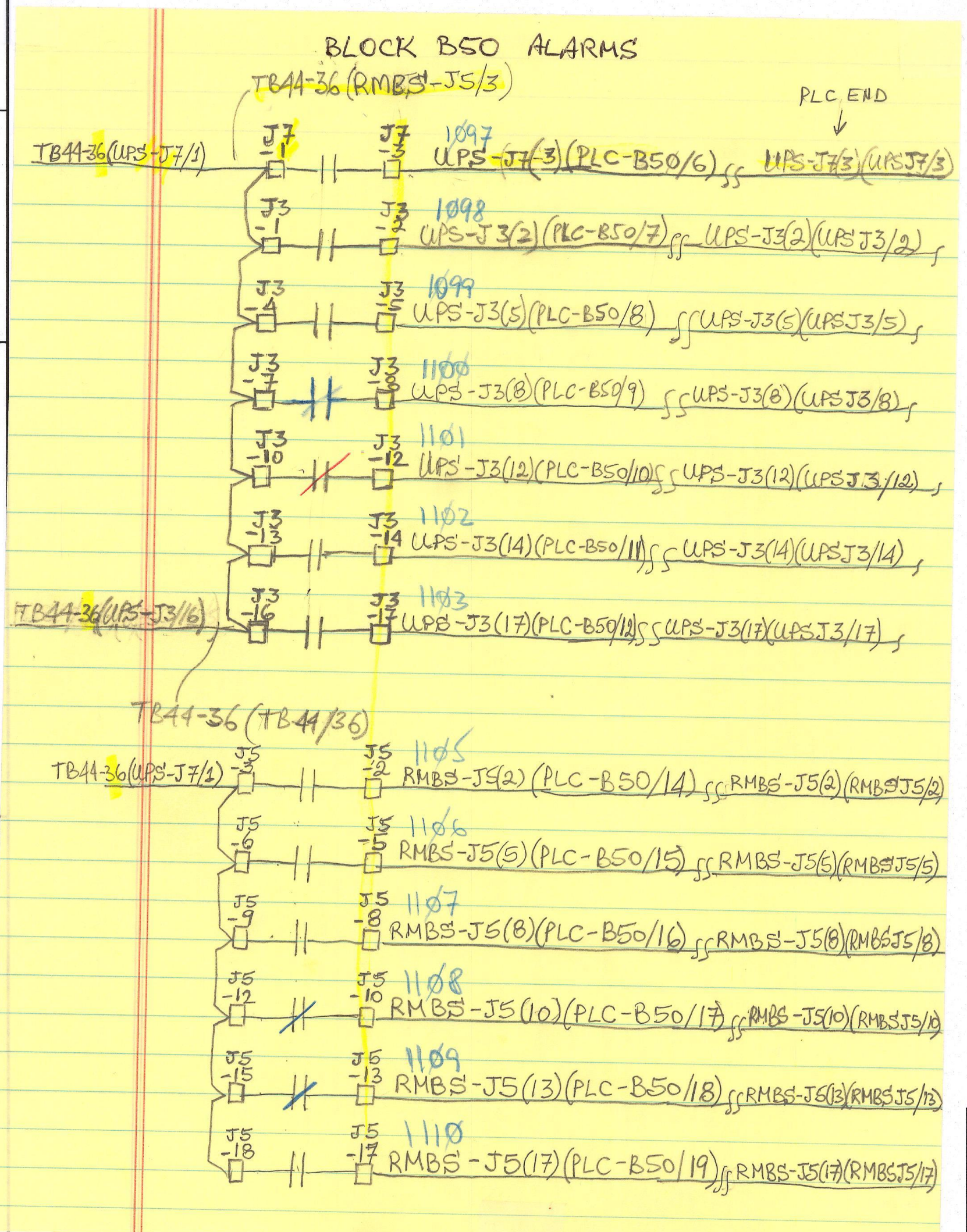
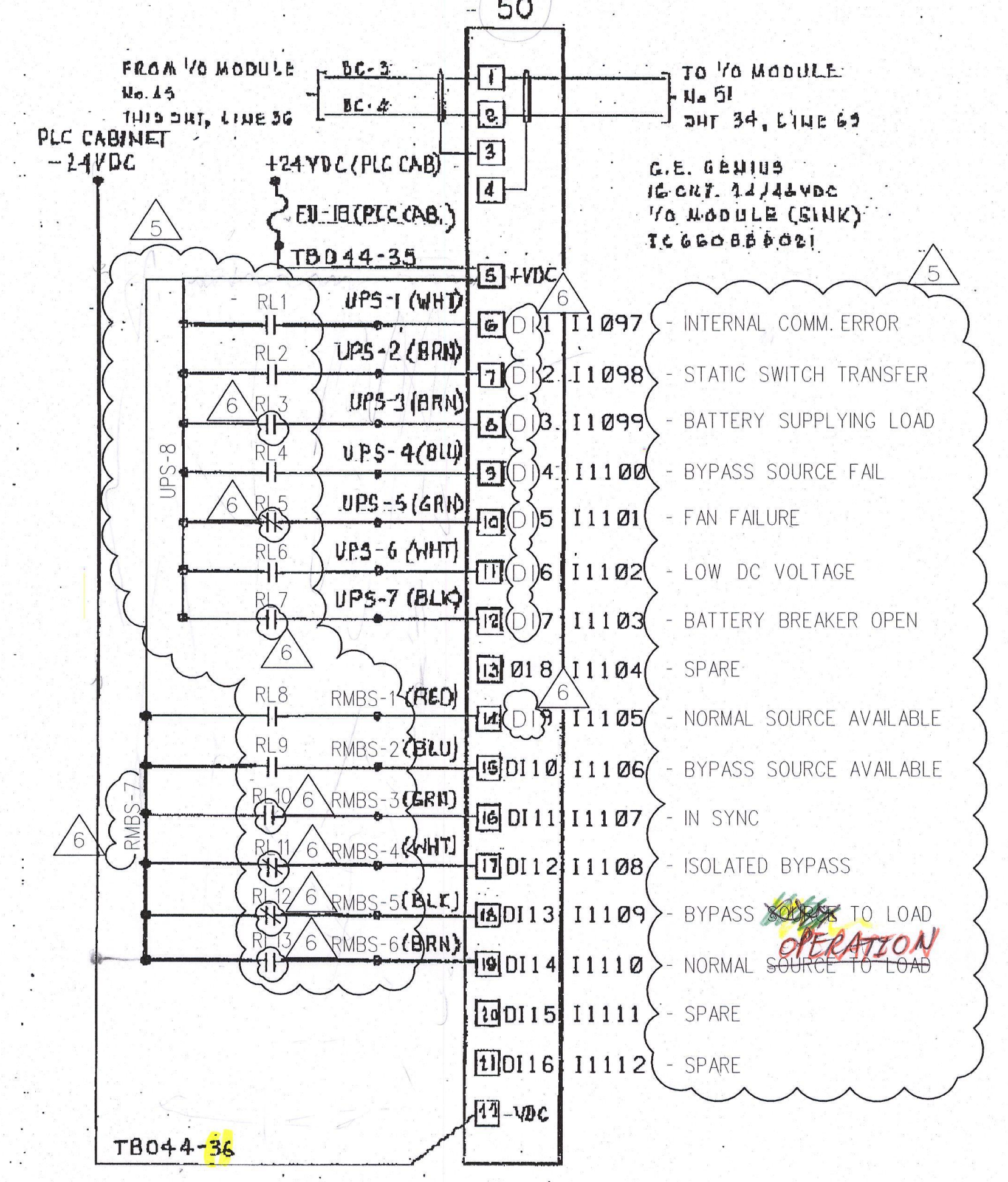
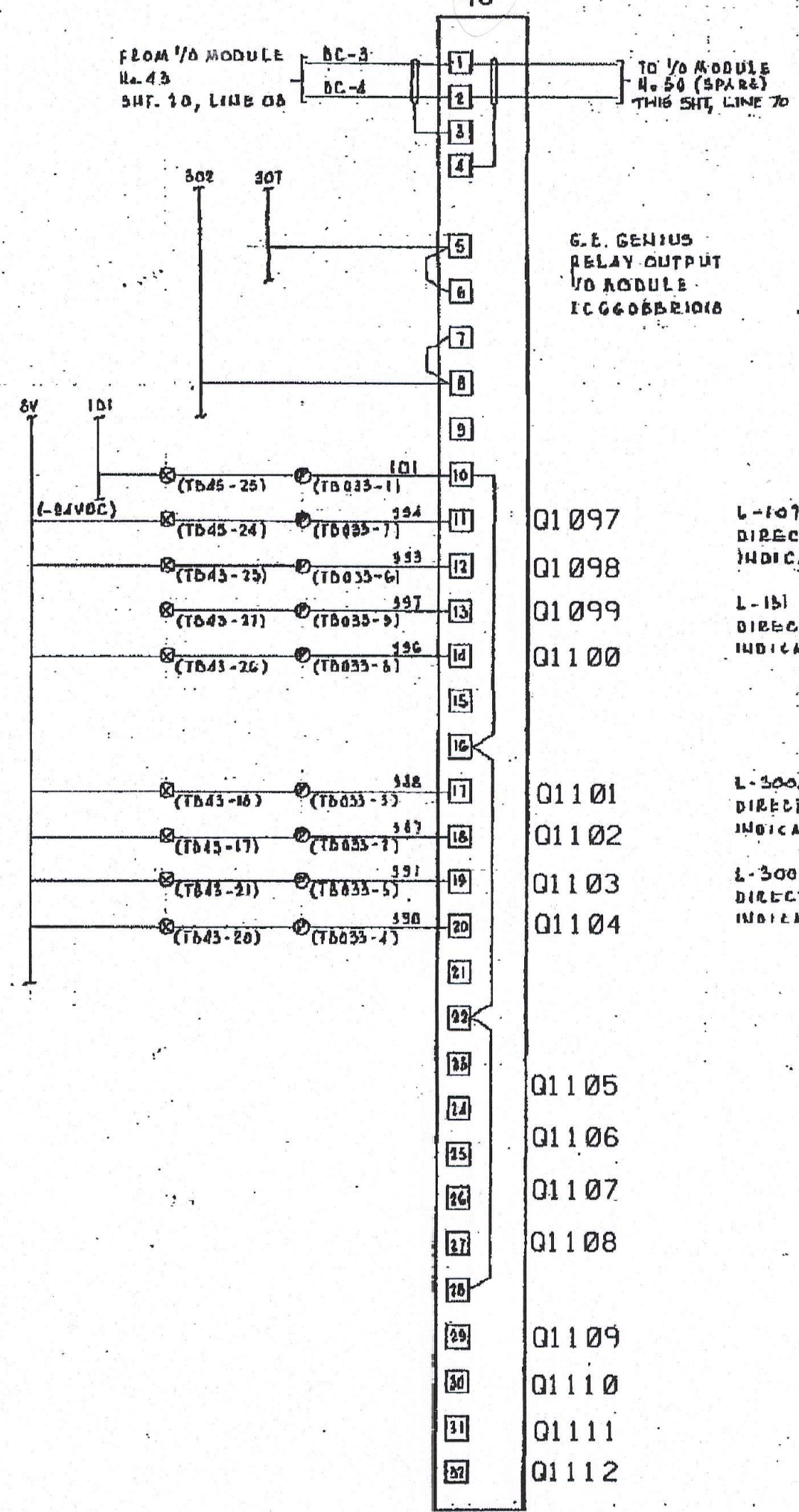
Add: For Continuation see DWG 3800221C2, K534, 8-18. Do not repeat wire tag (show on 3800221, 332)

Add: For Continuation see DWG 3800221C2, K535, 8-18. Do not repeat wire tag (show on 3800221, 332)



NO.	DATE	DESCRIPTION	DR/SPEC	DWN	CHKD	SUPV	APVD BY	NO.	DATE	DESCRIPTION	DR/SPEC	DWN	CHKD	SUPV	APVD BY	NO.	DATE	DESCRIPTION	DR/SPEC	DWN	CHKD	SUPV	APVD BY	
5	10-20-10	ISSUED FOR CONSTRUCTION																						
4	8-14-10	BUILT PER FIELD CONSTRUCTION																						
3	7-11-10	AS BUILT																						
2	12-11-08	BUILT PER A&E ENGINEERING INFORMATION																						
1	10-6-09	ISSUED FOR CONSTRUCTION																						

E
D
C
B
A



16 CIRCUIT RELAY OUTPUT BLOCK Configuration Worksheet

Block Name 45
Configuration Protected (Y/N)
Block Number (1-29) 22
Reference Numbers Q-1097 through Q-1112
Pulse Test (Enabled/Disabled) Input Filter Time (10-100) ms
Redundancy Mode (None/Standby/Duplex) Duplex Default (on/off)
BSM Present (Y/N) N BSM Controller (Y/N) N Outputs Default (2.5/10 sec)
Baud Rate (153.6 Kb Std/153.6 Kb Ext/76.8 Kb/38.4 Kb) 153.6Kb Std.

Ckt #	Reference Number	(output) Hold Lost State (yes/no)	(output) Default State (ON/OFF)
1	1097	N	OFF
2	1098	N	OFF
3	1099	N	OFF
4	1100	N	OFF
5	1101	N	OFF
6	1102	N	OFF
7	1103	N	OFF
8	1104	N	OFF
9	1105	N	OFF
10	1106	N	OFF
11	1107	N	OFF
12	1108	N	OFF
13	1109	N	OFF
14	1110	N	OFF
15	1111	N	OFF
16	1112	N	OFF

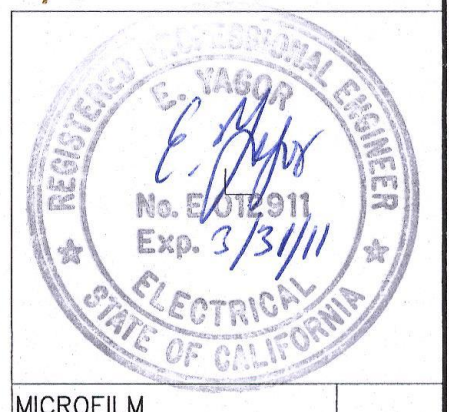
*k(Tristate Input) must have 5.1K Ohm resistor across dry contacts of input device.

16 CIRCUIT DC SOURCE/SINK BLOCK Configuration Worksheet

Block Name 50
Configuration Protected (Y/N)
Block Number (1-29) 26 Block Type (Input/Output/Combination) INPUT
Reference Numbers I-1097 through I-1112
Pulse Test (Enabled/Disabled) DISABLED Input Filter Time (10-100) 20 ms
Redundancy Mode (None/Standby/Duplex) STANDBY Duplex Default (on/off)
BSM Present (Y/N) N BSM Controller (Y/N) N Outputs Default (2.5/10 sec)
Baud Rate (153.6 Kb Std/153.6 Kb Ext/76.8 Kb/38.4 Kb) 153.6Kb Std.

Ckt #	Reference Number	I/O Type (I/O/S)	Report Faults (yes/no)	(output) Hold Lost State (yes/no)	(output) Default State (ON/OFF)	(output) Report No Load (yes/no)	(output) Overload Shutdown (yes/no)
1	1097	I	N				
2	1098	I	N				
3	1099	I	N				
4	1100	I	N				
5	1101	I	N				
6	1102	I	N				
7	1103	I	N				
8	1104	I	N				
9	1105	I	N				
10	1106	I	N				
11	1107	I	N				
12	1108	I	N				
13	1109	I	N				
14	1110	I	N				
15	1111	I	N				
16	1112	I	N				

*k(Tristate Input) must have 5.1K Ohm resistor across dry contacts of input device.



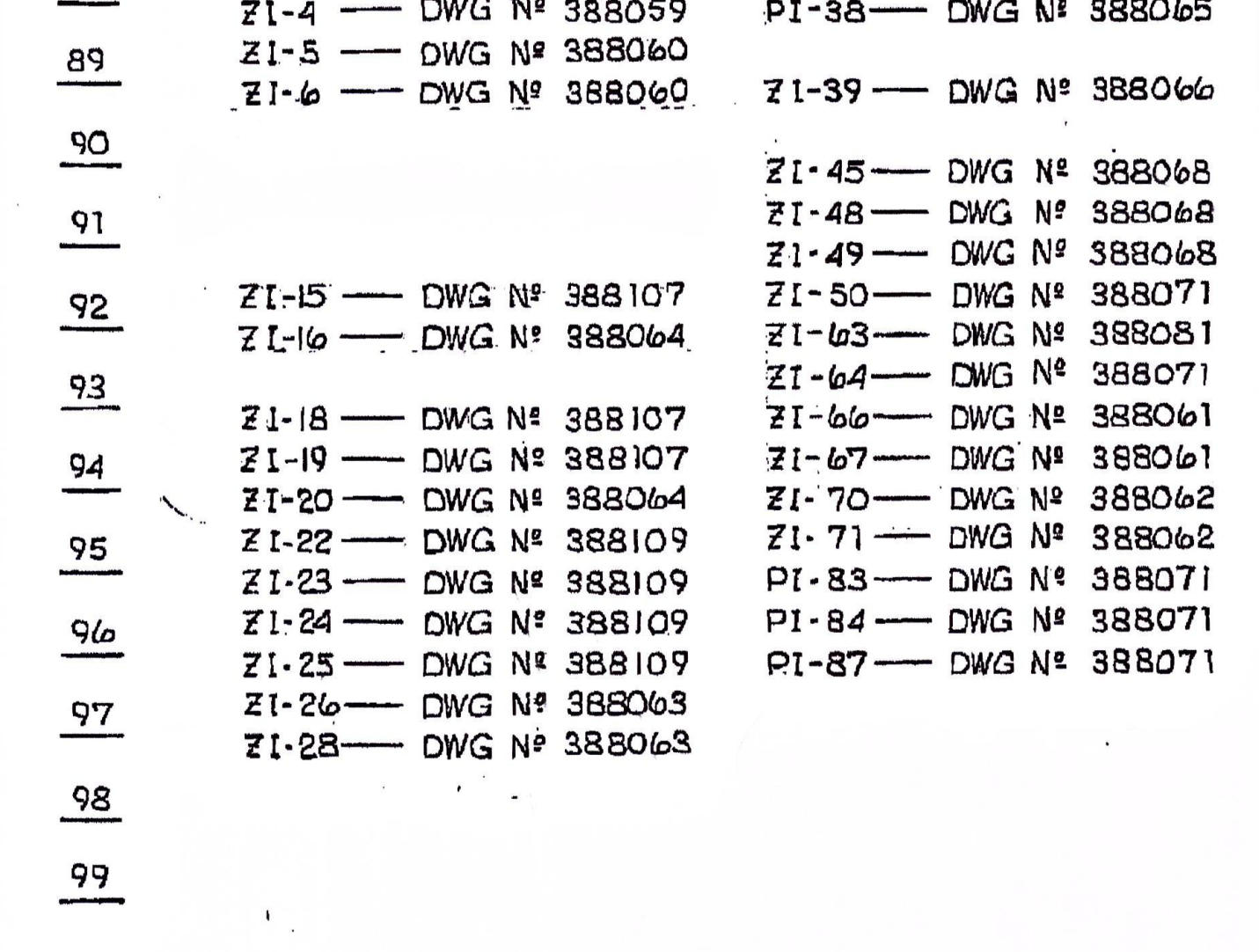
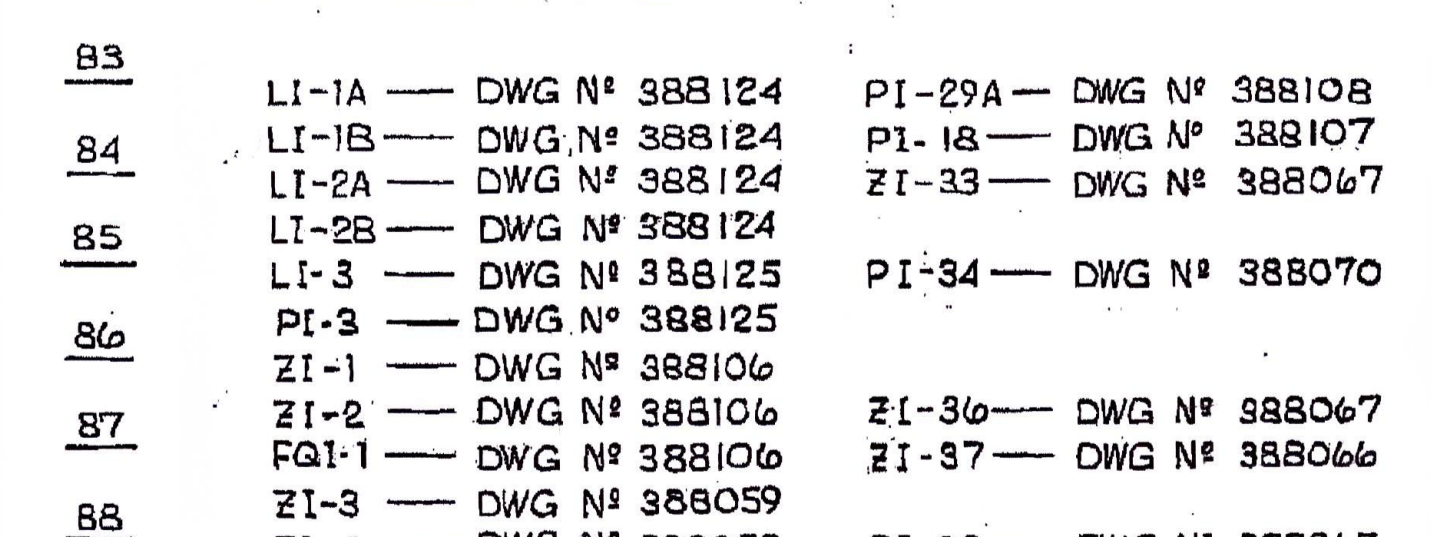
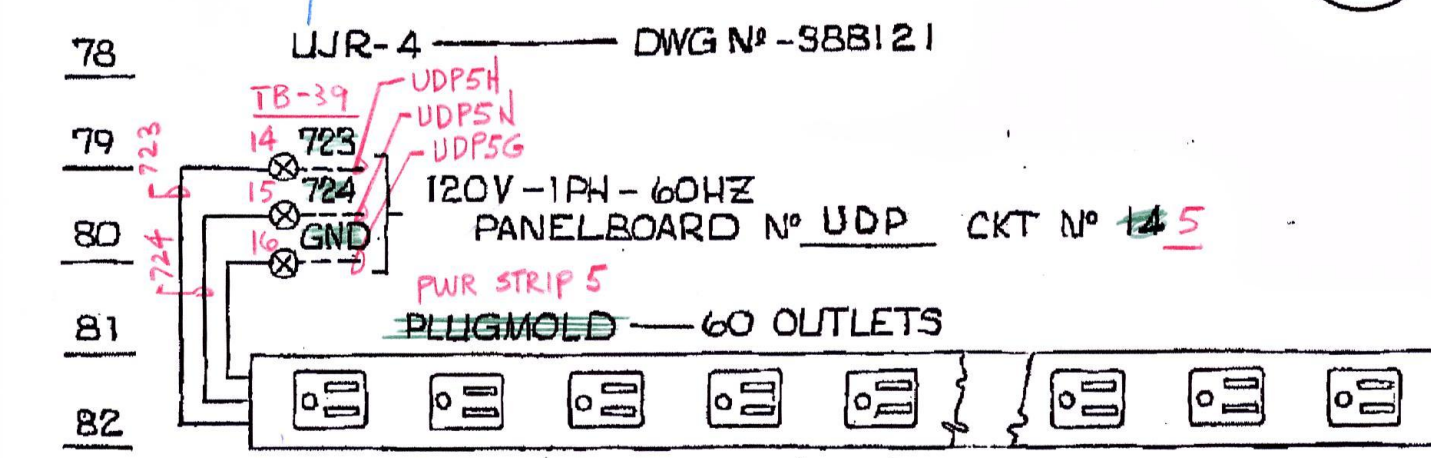
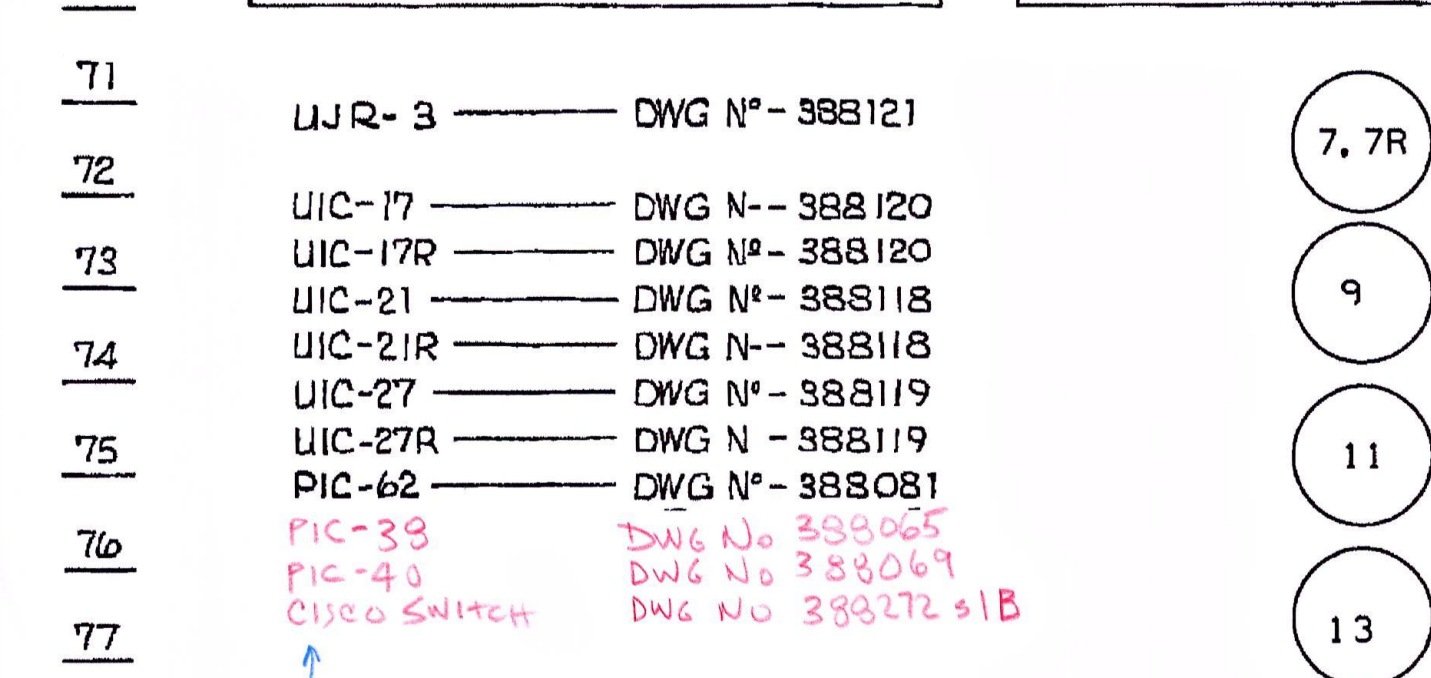
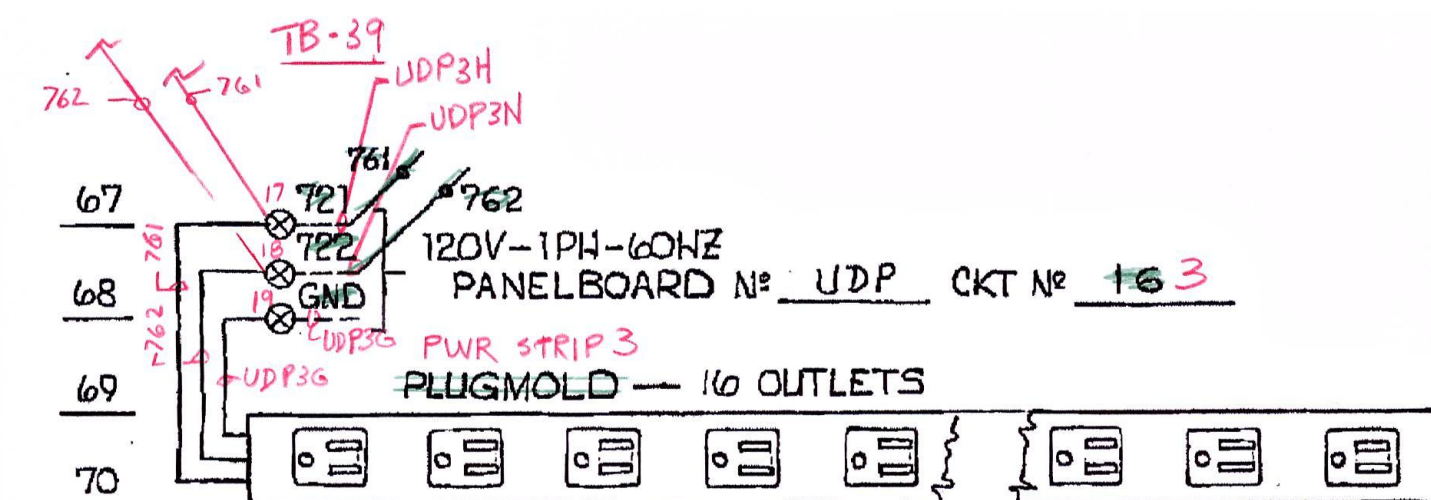
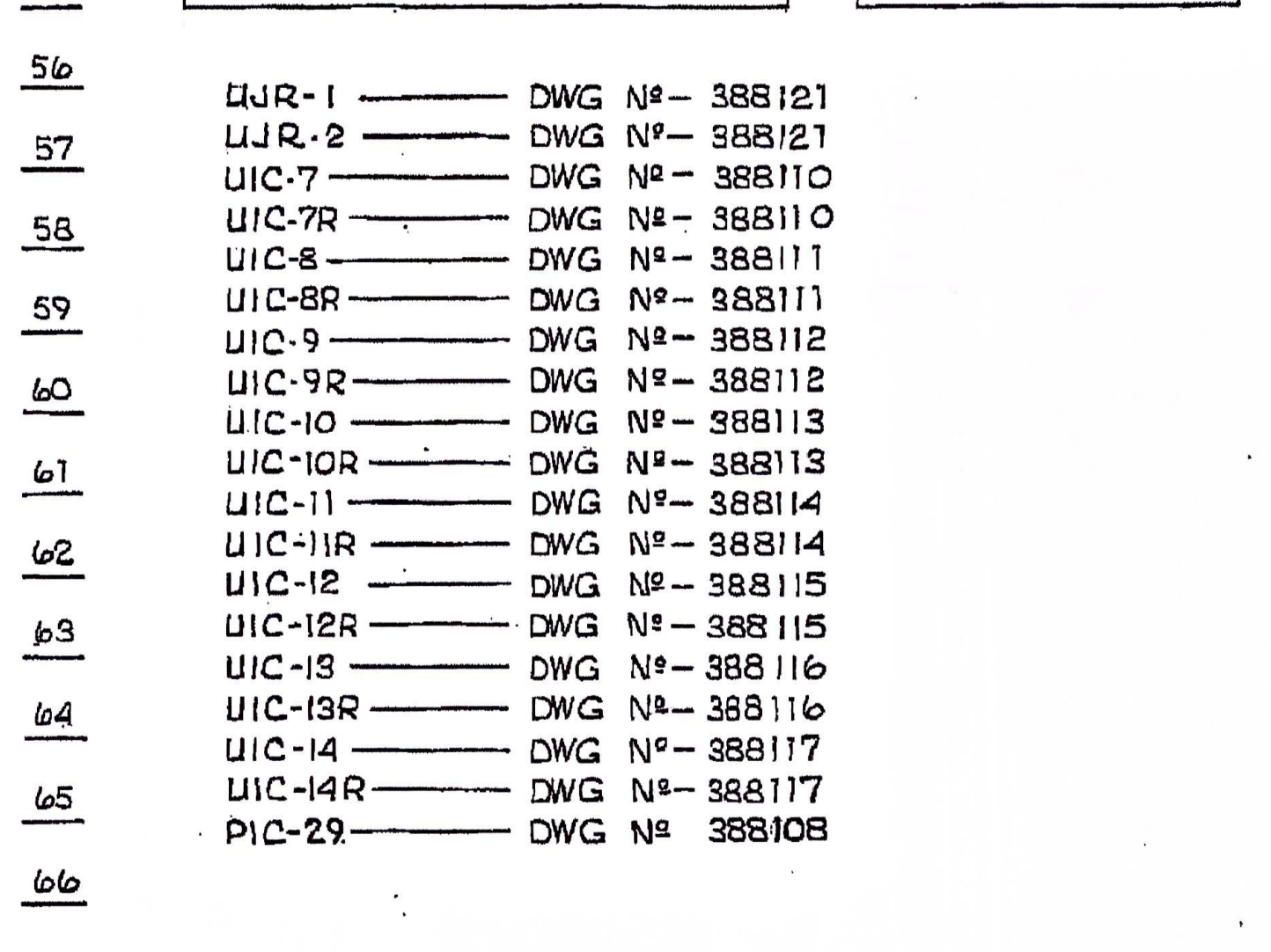
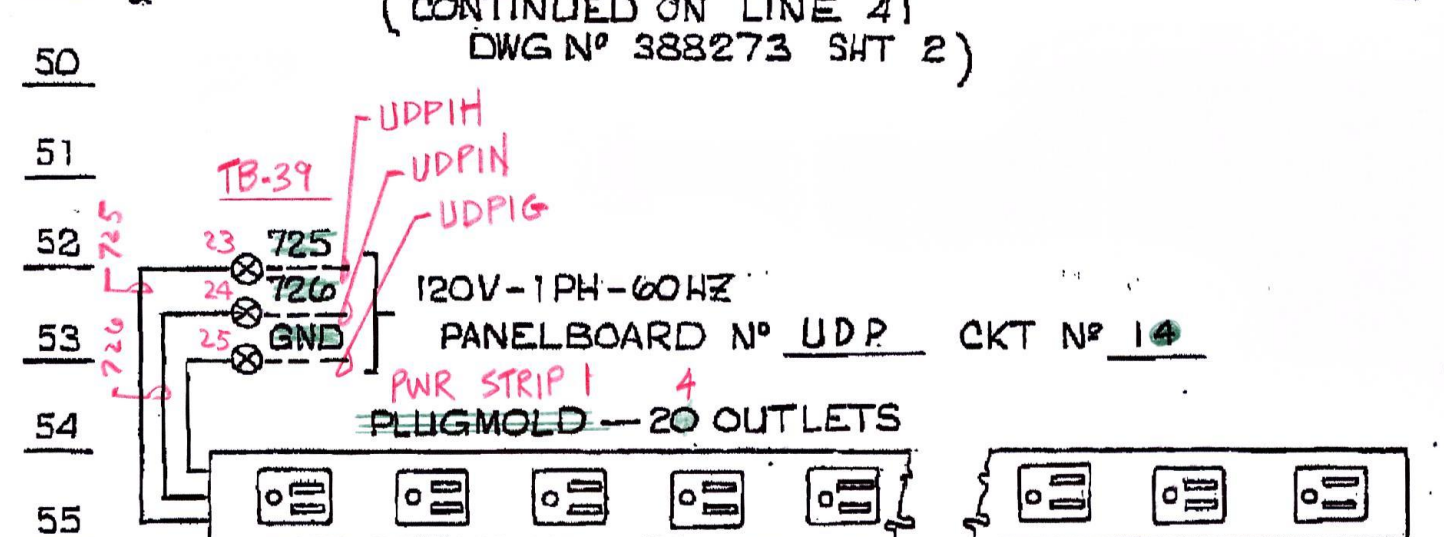
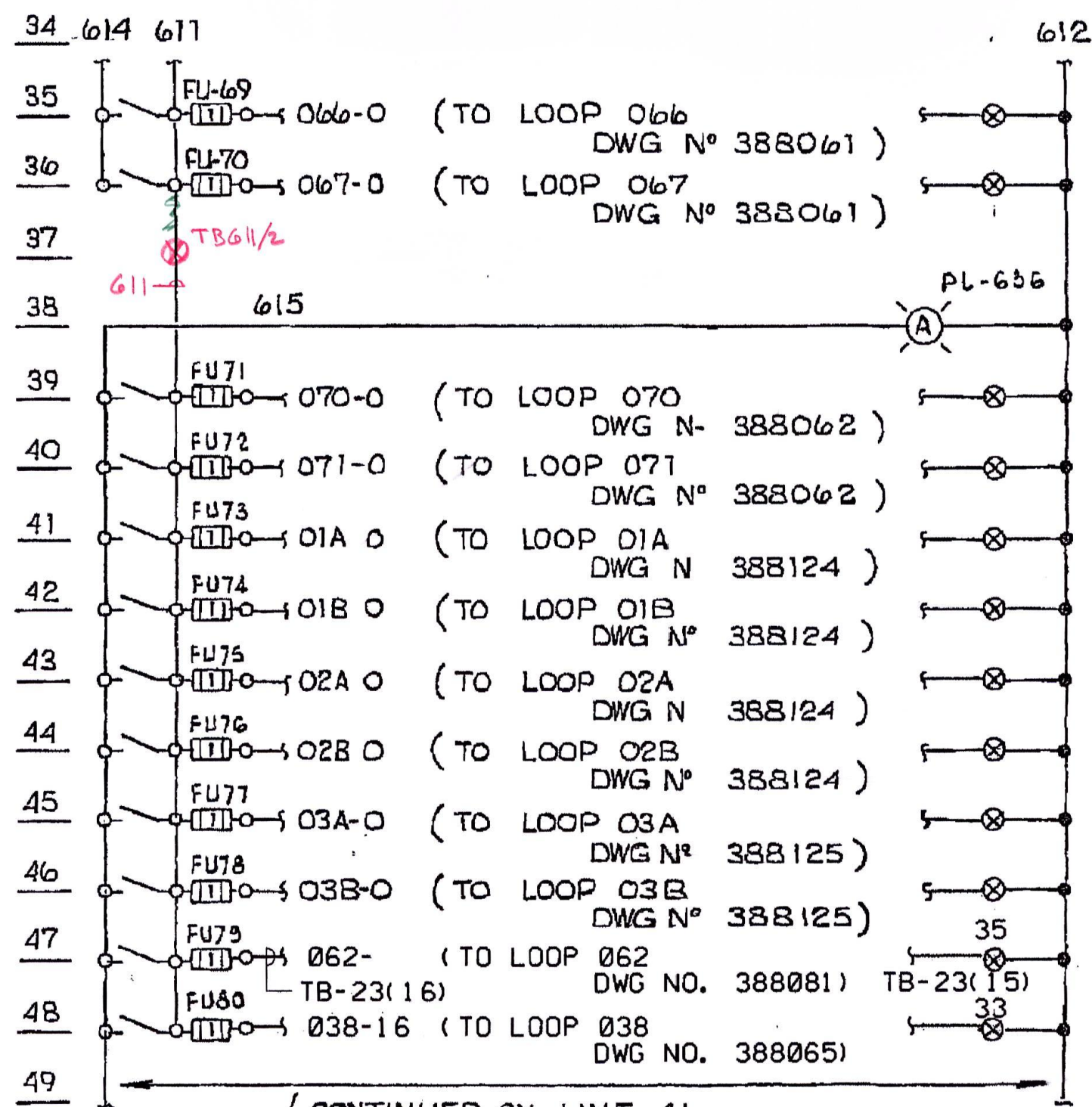
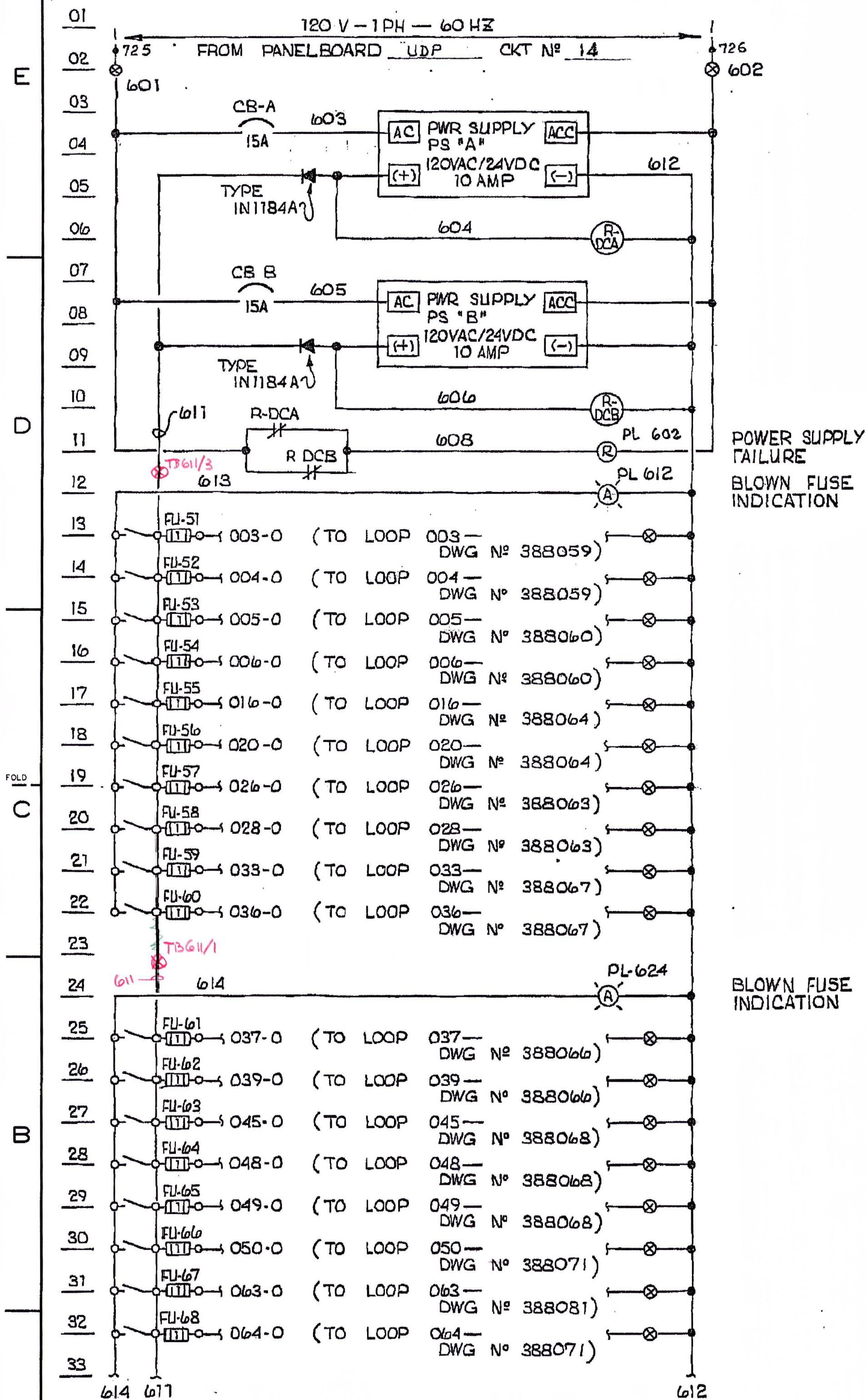
NO.	DATE	DESCRIPTION	GM/SPEC	DWN	CHKD	SUPV	APVD BY	NO.	DATE	DESCRIPTION	GM/SPEC	DWN	CHKD	SUPV	APVD BY
6	8-20-10	REISSUED FOR CONSTRUCTION						30772051	LIT						
5	8-20-10	ISSUED FOR CONSTRUCTION						30772051	AB						
4	7-30-03	AS-BUILT						7040485	PIP						
3	7-14-98	AS-BUILT						7003338	TBK						
2	8-9-97	AS-BUILT						7003838	PIP						
1	4-29-91	AS-BUILT GC FIELD CHG'S						12	BWP	WKL					

APPROVED BY: SO 12
BY: SUPV
DSGN: BWB
DWN: CDC
CHKD: GBG
OK RSR:
DATE: 4-29-91
SCALE: NONE

ELEMENTARY - ELECTRICAL
PLC I/O & CONTROL SYSTEM
MILPITAS TERMINAL

GAS TRANSMISSION & DISTRIBUTION
PACIFIC GAS AND ELECTRIC COMPANY
SAN FRANCISCO, CALIFORNIA

BILL OF MATL
DWG LIST
SUPSDS
SUPSD BY
SHEET NO. 33 OF SHEETS
388272 6



⊗ - INDICATES TERMINAL IN CONTROL PANEL.
 ● - INDICATES TERMINAL IN PLC CABINET.

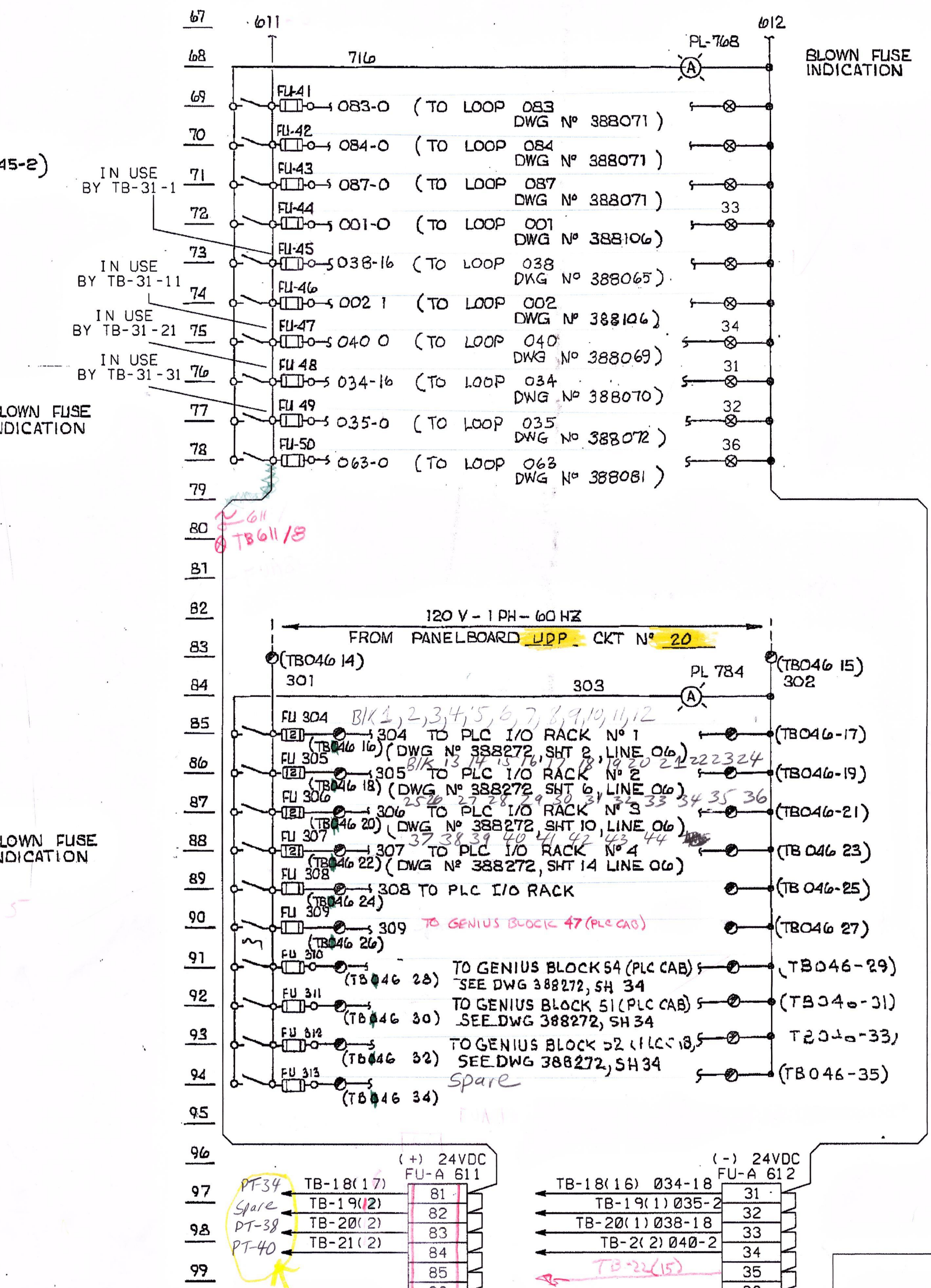
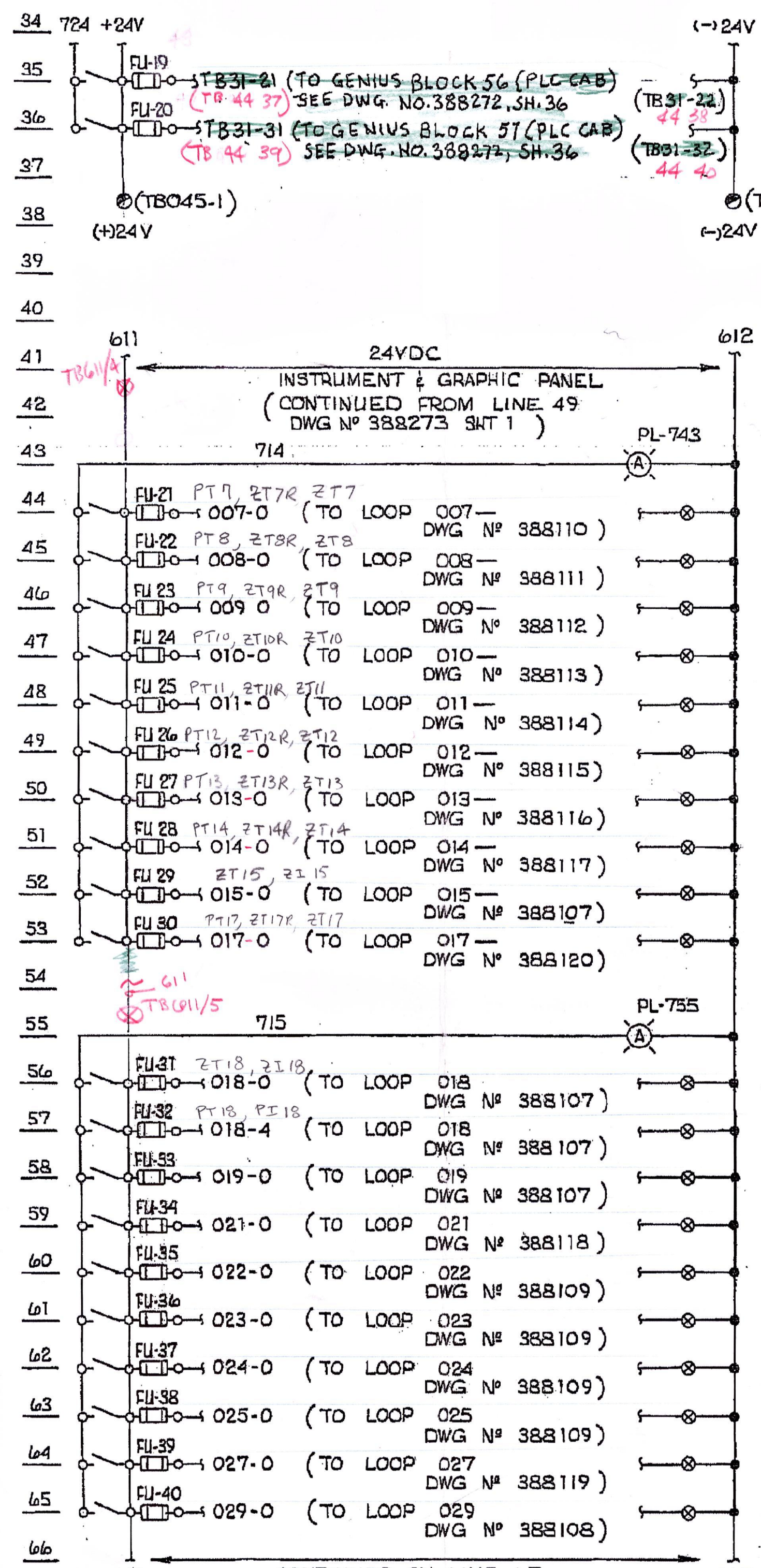
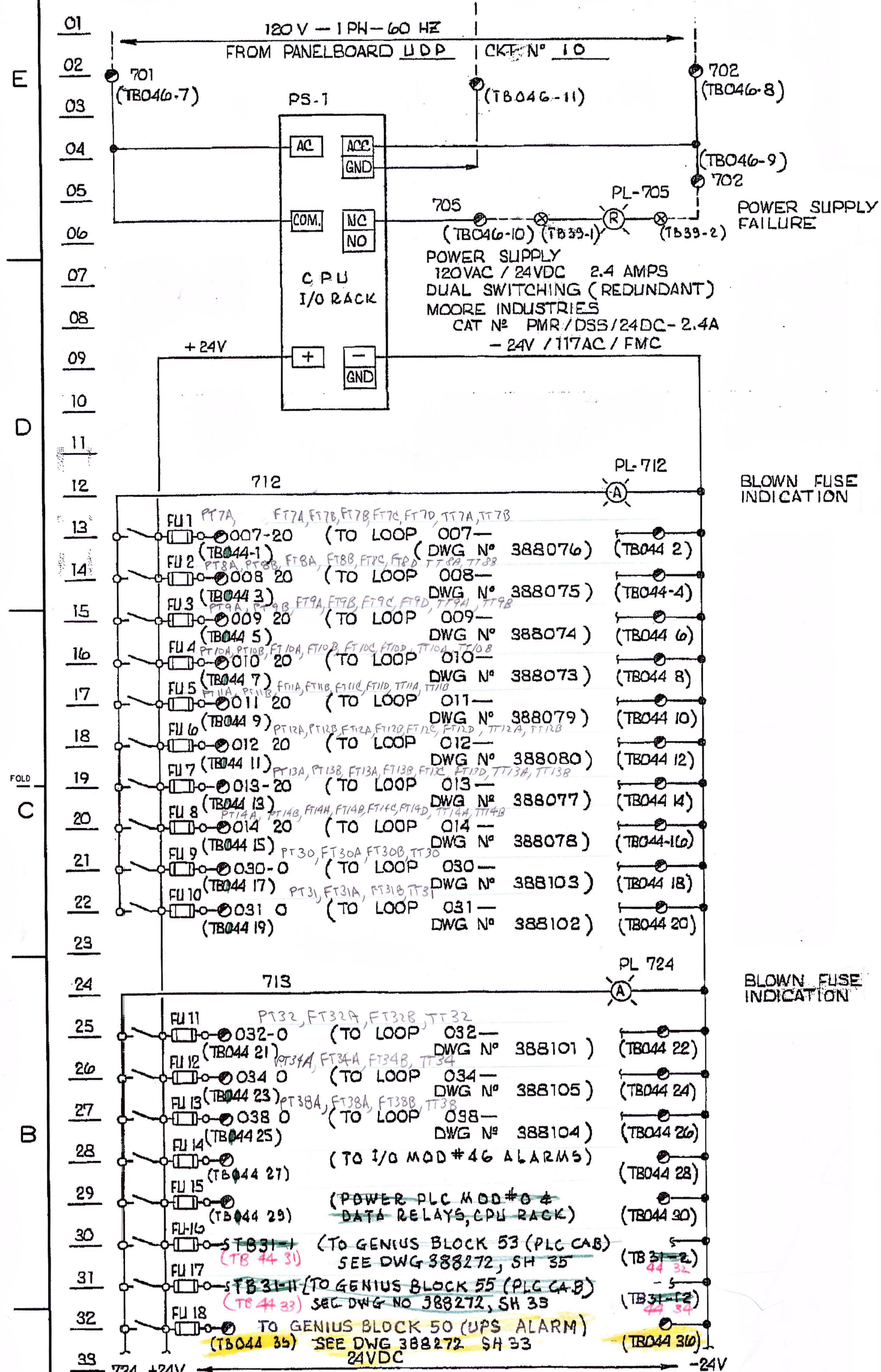
REVISIONS		REVISIONS	
NO.	DATE	DESCRIPTION	GM/SPEC DWN CHKD SUPV APVD BY
6	7-2-89	AS-BUILT (W/REPLACEMENT)	3071209
5	7-2-89	AS-BUILT	7040485 PIP RL MMW 2/27
4	11-5-82	ISSUED FOR USE	7040485 MB BD DEB
1	6-30-89	ISSUED FOR CONSTRUCTION	12 JP WKL GK DKM RCB

NORTHERN PIPELINE OPERATIONS

ELEMENTARY - ELECTRICAL INSTRUMENT POWER DISTR. MILPITAS TERMINAL

GAS OPERATIONS PACIFIC GAS AND ELECTRIC COMPANY SAN FRANCISCO, CALIFORNIA

388273 5



43/FU-45 TB-31
 46 11
 47 21
 48 31
 49
 TB-32
 50 1

Red - make-ups only

REVISIONS				REVISIONS				REVISIONS									
NO.	DATE	DESCRIPTION	GM/SPEC	DWN	CHKD	SUPV	APVD BY	NO.	DATE	DESCRIPTION	GM/SPEC	DWN	CHKD	SUPV	APVD BY		
5	7-2-83	AS-BUILT (UPS REPLACEMENT)	7040485	PIP	R	AL	WKL	4	11-5-82	ISSUED FOR USE	7040485	MB	MB	BD	DEB		
1	6-30-89	ISSUED FOR CONSTRUCTION	12	JP	WKL	GK	DKM	RCB	1	6-10-89	ISSUED FOR CONSTRUCTION	12	JP	WKL	GK	DKM	RCB

NORTHERN PIPELINE OPERATIONS

ELEMENTARY - ELECTRICAL
INSTRUMENT POWER DISTR.
MILPITAS TERMINAL

GAS OPERATIONS
PACIFIC GAS AND ELECTRIC COMPANY
SAN FRANCISCO, CALIFORNIA

388273 56

4-5-83 PIP