

Wiring Diagrams



Generator Sets

Models:

200-400DSE

Controllers:

Digital 550

Digital

Microprocessor-Plus, 16-Light

Microprocessor-Plus, 7-Light

Engine Gauge Box for Paralleling Switchgear

Product Identification Information

Product identification numbers determine service parts. Record the product identification numbers in the spaces below immediately after unpacking the products so that the numbers are readily available for future reference. Record field-installed kit numbers after installing the kits.

Generator Set Identification Numbers

Record the product identification numbers from the generator set nameplate(s).

Model Designation _____

Specification Number _____

Serial Number _____

Accessory Number	Accessory Description
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

Controller Identification

Record the controller description from the generator set operation manual, spec sheet, or sales invoice.

Controller Description _____

Engine Identification

Record the product identification information from the engine nameplate.

Manufacturer _____

Model Designation _____

Serial Number _____

This manual provides wiring diagrams for the 200-400DSE Detroit Diesel-powered generator sets equipped with one of the following controllers:

- Digital 550
- Digital
- Microprocessor-Plus, 16-Light
- Microprocessor-Plus, 7-Light
- Engine Gauge Box for Paralleling Switchgear

At the time of print this manual applied to the model numbers and specification (spec) numbers shown in the Wiring Diagram Cross-Reference chart. On occasion this manual may apply to specs not listed in the Wiring Diagram Cross-Reference chart.

Information in this publication represents data available at the time of print. The manufacturer of DDC/MTU Power Generation products reserves the right to change this publication and the products represented without notice and without any obligation or liability whatsoever.

x:in:001:002:a

Service Assistance

For professional advice on generator power requirements and conscientious service, please contact your nearest DDC/MTU Power Generation distributor.

- Consult the Yellow Pages under the heading Generators—Electric
- Visit the DDC/MTU Power Generation website at ddcmtupowergeneration.com
- Look at the labels and stickers on your DDC/MTU Power Generation product or review the appropriate literature or documents included with the product

Wiring Diagrams

Use the Wiring Diagram Cross-Reference chart to determine the wiring diagram version number for a given model number and spec number. Then find that version number and the controller type on the Controller

Wiring Diagrams Reference chart to determine the wiring diagram numbers for your unit. Refer to the generator set operation manual for controller type identification, if necessary.

Wiring Diagram Cross-Reference

Generator Set Model No.	Hz	Generator Set Spec No.	Version No.
200DSE	50/60	PA-192927	1-1
200DSE	50/60	GM19608-GA1S	1-2
230DSE	50/60	PA-194324-331	2-1
230DSE	50/60	GM13659-GA7S, 8S	2-2
250DSE	50/60	PA-194340-347	2-1
250DSE	50/60	GM13659-GA5S, 6S	2-2
275DSE	50/60	PA-194356-363	2-1
275DSE	50/60	GM13659-GA3S, 4S	2-2
300DSE	50/60	PA-194369-373	2-1
300DSE	50/60	GM13659-GA1S, 2S	2-2
350DSE	50/60	PA-194382-402	3-1
350DSE	50/60	GM13280-GA3S, 4S, 5S	3-2 or 3-3
400DSE	50/60	PA-194406-408	3-1
400DSE	50/60	GM13280-GA1S, 2S	3-2 or 3-3

200DSE Controller Wiring Diagrams Reference

Controller Description	Version 1-1	Page	Version 1-2	Page
Digital 550				
Point-to-Point Wiring Diagram				
Sheet 1	—	—	GM16870A-	31
Sheet 2	—	—	GM16870B-	32
Schematic Diagram				
Sheet 1	—	—	ADV-6596A-A	21
Sheet 2	—	—	ADV-6596B-A	22
Accessory Connections				
Sheet 1	—	—	GM16088A-D	29
Sheet 2	—	—	GM16088B-D	30
Digital				
Point-to-Point Wiring Diagram				
Sheet 1	324950A-A	37	—	—
Sheet 2	324950B-A	38	—	—
Schematic Diagram				
Sheet 1	ADV-6510A-	11	—	—
Sheet 2	ADV-6510B-	12	—	—
Accessory Connections				
Sheet 1	354246A-D	54	—	—
Sheet 2	354246B-D	55	—	—
Microprocessor-Plus				
Point-to-Point Wiring Diagram				
Sheet 1	324958A-A	39	324958A-A	39
Sheet 2	324958B-A	40	324958B-A	40
Schematic Diagram				
Sheet 1	ADV-6509A-A	9	ADV-6509A-A	9
Sheet 2	ADV-6509B-A	10	ADV-6509B-A	10
Accessory Connections				
Sheet 1	328912A-F	41	328912A-F	41
Sheet 2	328912B-F	42	328912B-F	42
Engine Gauge Box for Paralleling Switchgear				
Point-to-Point Wiring Diagram				
Sheet 1	324949A-A	35	324949A-A	35
Sheet 2	324949B-A	36	324949B-A	36
Schematic Diagram				
Sheet 1	ADV-6511A-	13	ADV-6511A-	13
Sheet 2	ADV-6511B-	14	ADV-6511B-	14
Generator Reconnections	ADV-5875A-D	1	ADV-5875A-D	1

Note: Version 1-1 uses the Digital controller.

Version 1-2 uses the Digital 550 controller with integral voltage regulator.

230-300DSE Controller Wiring Diagrams Reference

Controller Description	Version 2-1	Page	Version 2-2	Page
Digital 550				
Point-to-Point Wiring Diagram				
Sheet 1	—	—	GM11502A-B	25
Sheet 2	—	—	GM11502B-B	26
Schematic Diagram				
Sheet 1	—	—	ADV-6533A-B	17
Sheet 2	—	—	ADV-6533B-B	18
Accessory Connections				
Sheet 1	—	—	GM16088A-D	29
Sheet 2	—	—	GM16088B-D	30
Digital				
Point-to-Point Wiring Diagram				
Sheet 1	343463A-B	46	—	—
Sheet 2	343463B-B	47	—	—
Schematic Diagram				
Sheet 1	ADV-6398A-B	4	—	—
Sheet 2	ADV-6398B-B	5	—	—
Accessory Connections				
Sheet 1	354246A-D	54	—	—
Sheet 2	354246B-D	55	—	—
Microprocessor-Plus				
Point-to-Point Wiring Diagram				
Sheet 1	343462A-B	44	343462A-B	44
Sheet 2	343462B-B	45	343462B-B	45
Schematic Diagram				
3 Phase/600 Volt	ADV-6396-B	3	ADV-6396-B	3
Accessory Connections				
Sheet 1	328912A-F	41	328912A-F	41
Sheet 2	328912B-F	42	328912B-F	42
Generator Reconnections	ADV-5875A-D	1	ADV-5875A-D	1

Note: Version 2-1 uses the Digital controller.

Version 2-2 uses the Digital 550 controller with integral voltage regulator.

350/400DSE Controller Wiring Diagrams Reference

Controller Description (350/400DSE)	Version 3-1	Page	Version 3-2	Page	Version 3-3	Page
Digital 550						
Point-to-Point Wiring Diagram						
Sheet 1	—	—	GM22221A-	33	GM11503A-B	27
Sheet 2	—	—	GM22221B-	34	GM11503B-B	28
Schematic Diagram						
Sheet 1	—	—	ADV-6688A-	23	ADV-6534A-B	19
Sheet 2	—	—	ADV-6688B-	24	ADV-6534B-B	20
Accessory Connections						
Sheet 1	—	—	GM16088A-D	29	GM16088A-D	29
Sheet 2	—	—	GM16088B-D	30	GM16088B-D	30
Digital						
Point-to-Point Wiring Diagram						
Sheet 1	343578A-E	50	—	—	—	—
Sheet 2	343578B-E	51	—	—	—	—
Schematic Diagram						
Sheet 1	ADV-6401A-E	7	—	—	—	—
Sheet 2	ADV-6401B-E	8	—	—	—	—
Accessory Connections						
Sheet 1	354246A-D	54	—	—	—	—
Sheet 2	354246B-D	55	—	—	—	—
Microprocessor-Plus						
Point-to-Point Wiring Diagram						
Sheet 1	343577A-E	48	343577A-E	48	343577A-E	48
Sheet 2	343577B-E	49	343577B-E	49	343577B-E	49
Schematic Diagram						
3 Phase/600 Volt	ADV-6399-F	6	ADV-6399-F	6	ADV-6399-F	6
Accessory Connections						
Sheet 1	328912A-F	41	328912A-F	41	328912A-F	41
Sheet 2	328912B-F	42	328912B-F	42	328912B-F	42
Sheet 3	328912C-F	43	328912C-F	43	328912C-F	43
Engine Gauge Box for Paralleling Switchgear						
Point-to-Point Wiring Diagram						
Sheet 1	343796A-B	52	343796A-B	52	343796A-B	52
Sheet 2	343796B-B	53	343796B-B	53	343796B-B	53
Schematic Diagram						
Sheet 1	ADV-6516A-B	15	ADV-6516A-B	15	ADV-6516A-B	15
Sheet 2	ADV-6516B-B	16	ADV-6516B-B	16	ADV-6516B-B	16
Generator Reconnections	ADV-5875B-D	2	ADV-5875B-D	2	ADV-5875B-D	2

Note: Version 3-1 uses the Digital controller.

Version 3-2 uses the Digital 550 controller and Marathon DVR2000 voltage regulator.

Version 3-3 uses the Digital 550 controller with integral voltage regulator.

Notes

REVISION

REV	DATE	BY	TITLE
B	11-4-98	[56797]	(B=1,2,3,4 C=1) OPTIONAL DROOP MOVED FROM L2 TO L3
C	6-2-99	[56797]	(C=3) MARINE ONLY: LO REMOVED. LO WAS L1, L1 WAS L2. TAPE TWO PLACES WAS ONE [58896]
D	6-17-99	[56797]	DIAGRAMS UPDATED: (B-2, C-4) NOTE & CT'S ADDED FOR 20-50 KW W/ DECISION-MAKER 340 & DIGITAL CONTROLLERS
		[59021]	KAR

12 LEAD ALTERNATOR, 3 WIRE, SINGLE PHASE
 60 HZ: 100/200V
 60 HZ: 120/240V
 60 HZ: 100/200V
 50 HZ: 110/220V

SOME SETS NOT RATED FOR SINGLE PHASE - SEE MANUALS

CT3 - NOT USED

METER SCALE LAMP JUMPER

TB2

12 LEAD ALTERNATOR, 4 WIRE, HI WYE
 60 HZ: 220/380V
 50 HZ: 220/380V
 60 HZ: 240/416V
 50 HZ: 240/416V

METER SCALE LAMP JUMPER

TB2

12 LEAD ALTERNATOR, 4 WIRE, LOW WYE
 60 HZ: 120/208V
 50 HZ: 110/190V
 60 HZ: 127/220V
 50 HZ: 139/240V

METER SCALE LAMP JUMPER

TB2

12 LEAD ALTERNATOR, 4 WIRE, DELTA
 60 HZ: 120/240V
 50 HZ: 110/220V

METER SCALE LAMP JUMPER

TB2

6 LEAD ALTERNATOR, 4 WIRE, WYE
 60 HZ: 347/600V
 L1

* CT WIRING FOR 20-50 KW W/ DECISION-MAKER 340 CONTROLLER WHEN SPECIFIED

METER SCALE LAMP JUMPER

TB2

PHASE ROTATION

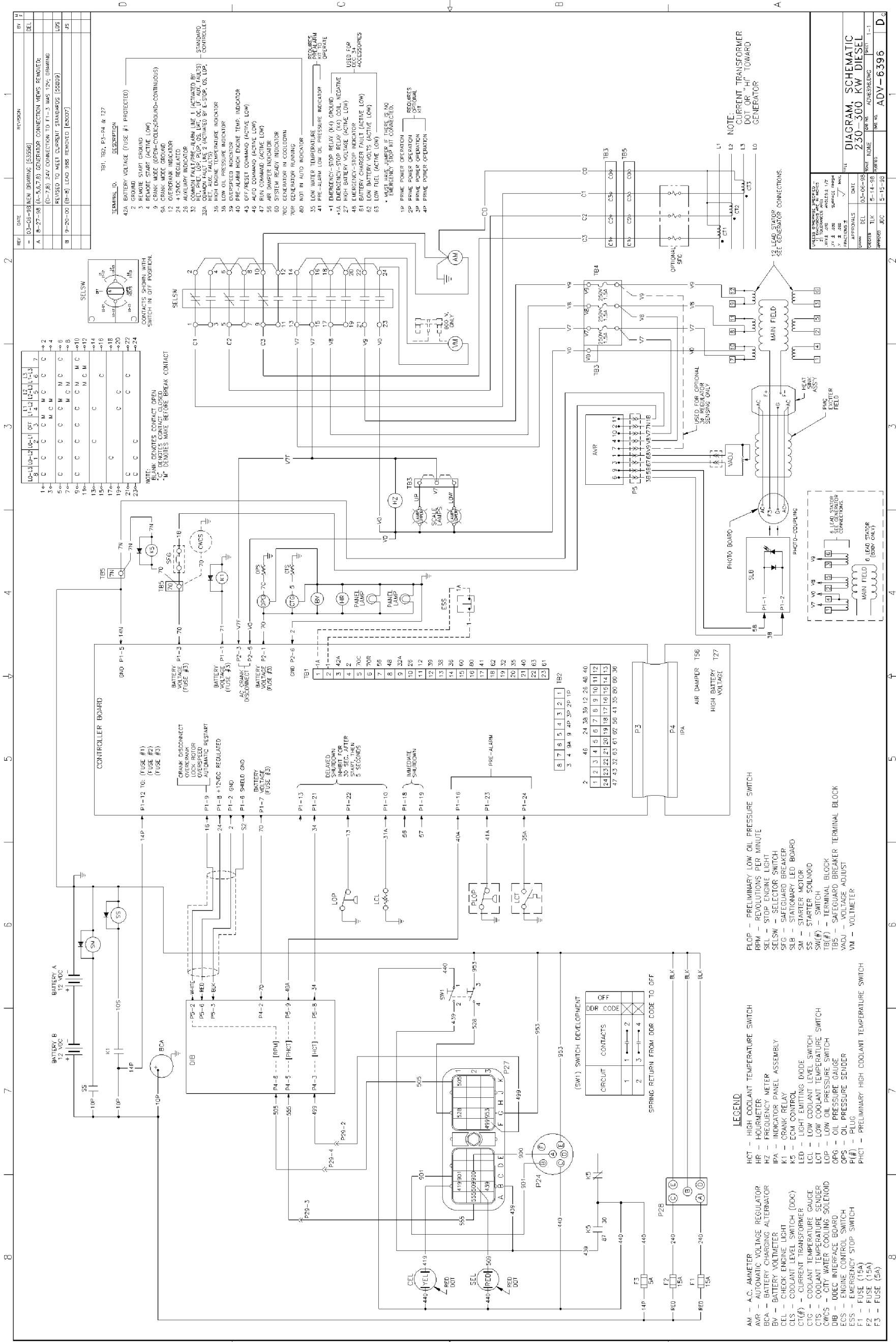
A	B	C
L1	L2	L3

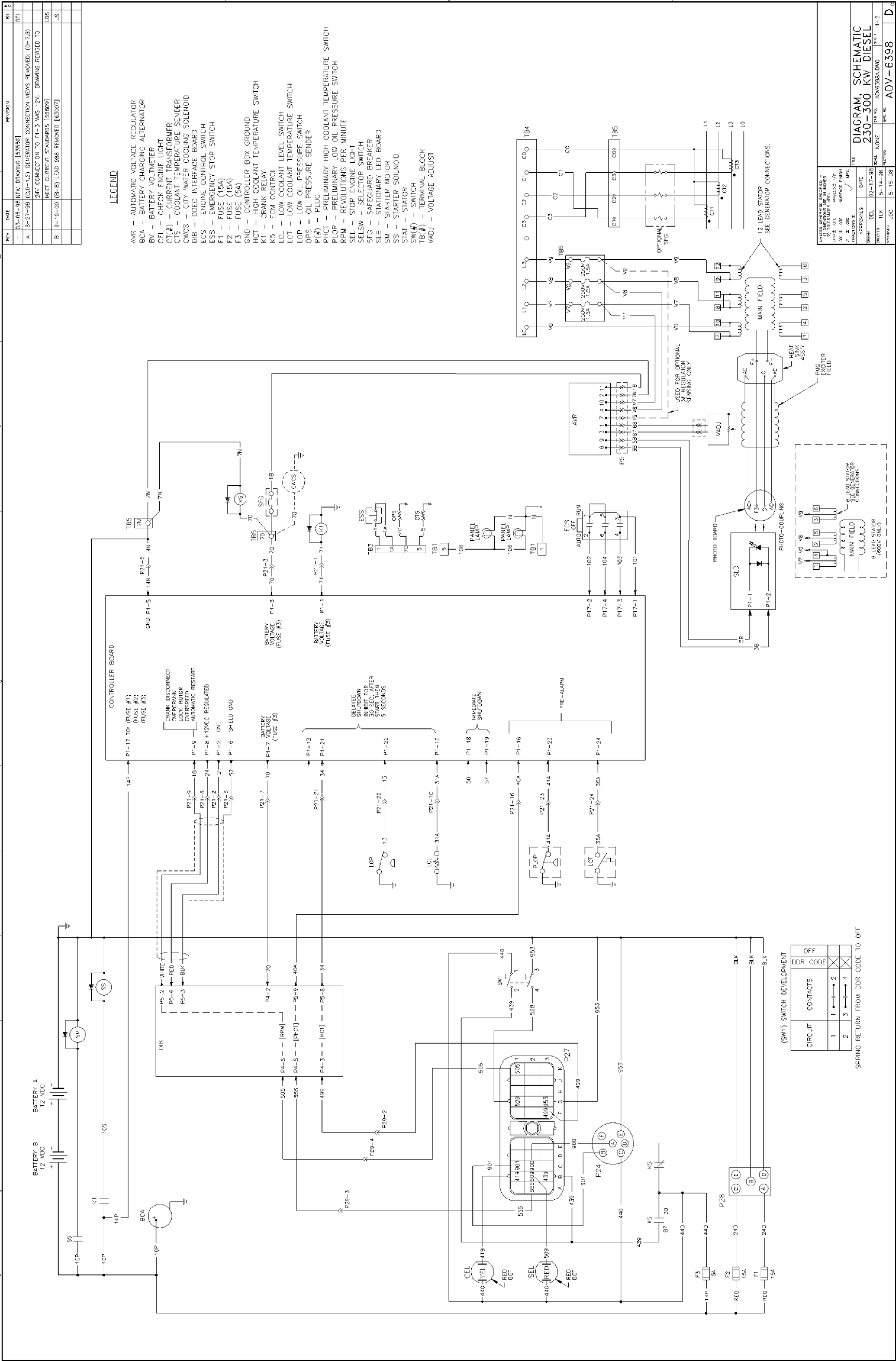
NOTES:
 CURRENT TRANSFORMER DOT OR "H1" TOWARD GENERATOR.
 CURRENT TRANSFORMERS NOT USED ON ALL SETS.

UNLESS OTHERWISE SPECIFIED - DIMENSIONS ARE IN INCHES

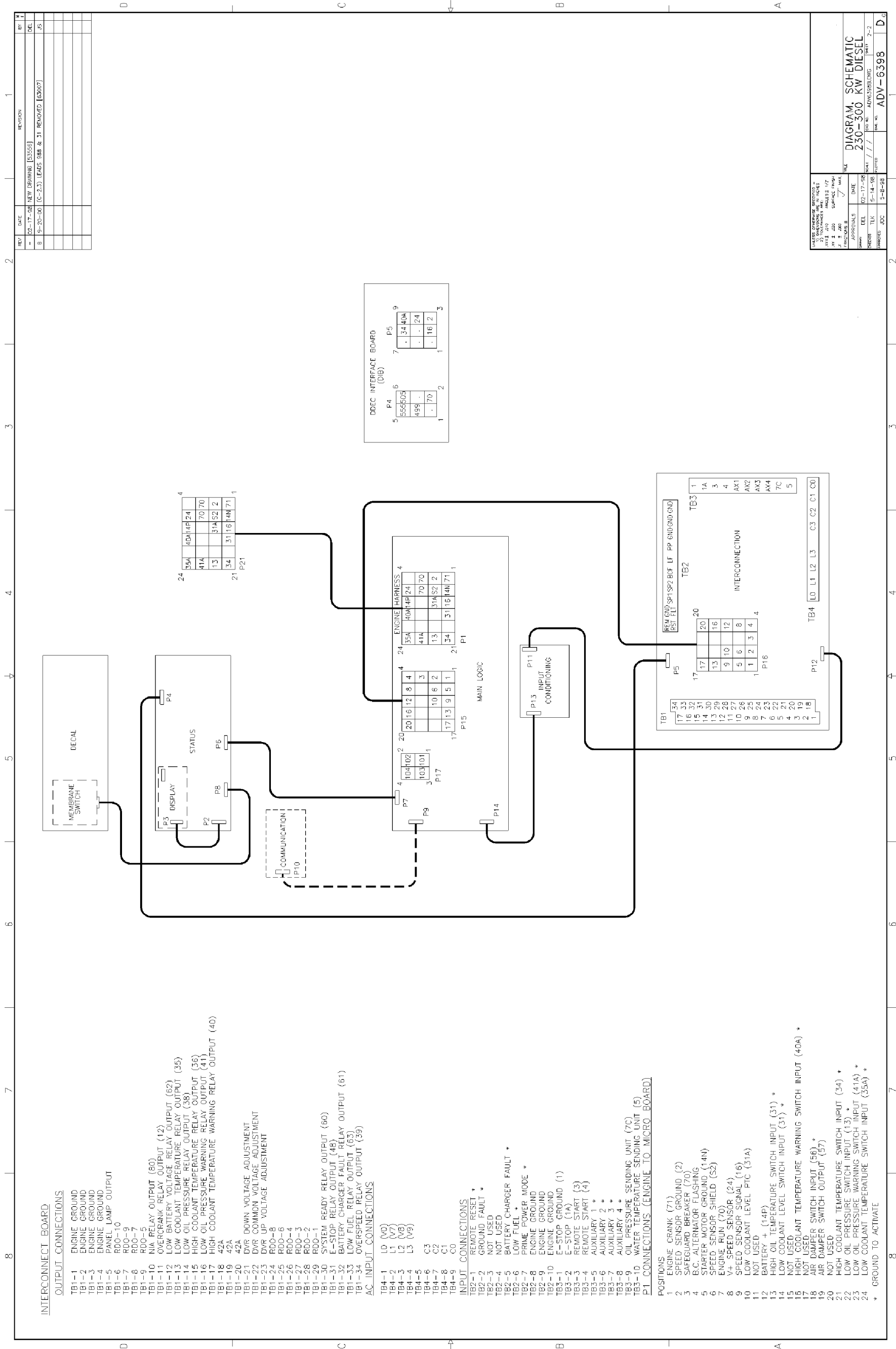
APPROVALS	DATE	TITLE
DESIGNED	7-28-92	3 Ø RECONNECTABLE
CHECKED	6-23-99	ADV5875A.DWG
APPROVED	6-25-99	ADV-5875

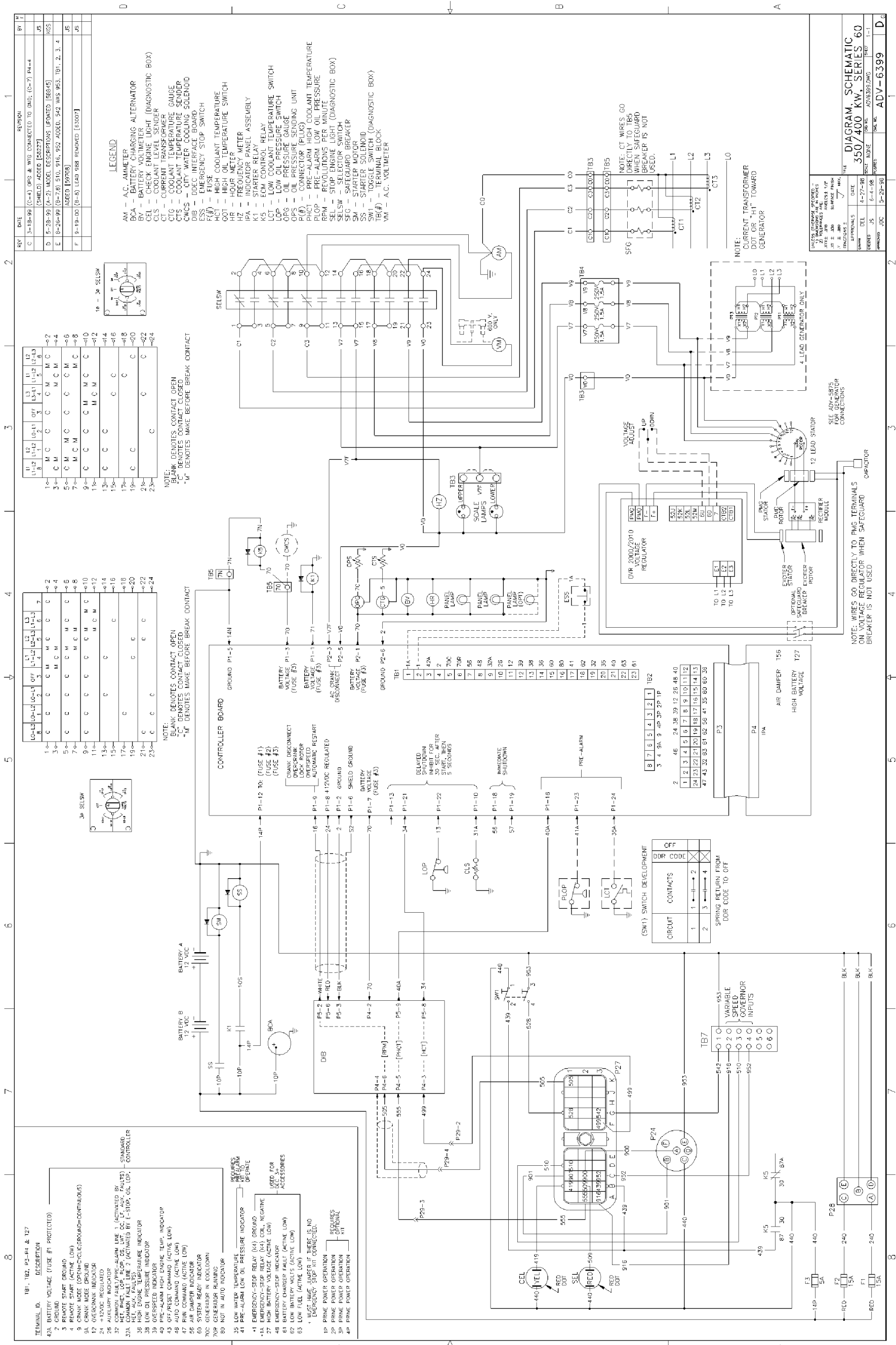
SCALE NONE ADV5875A.DWG SHEET 1-2 PLOTTED



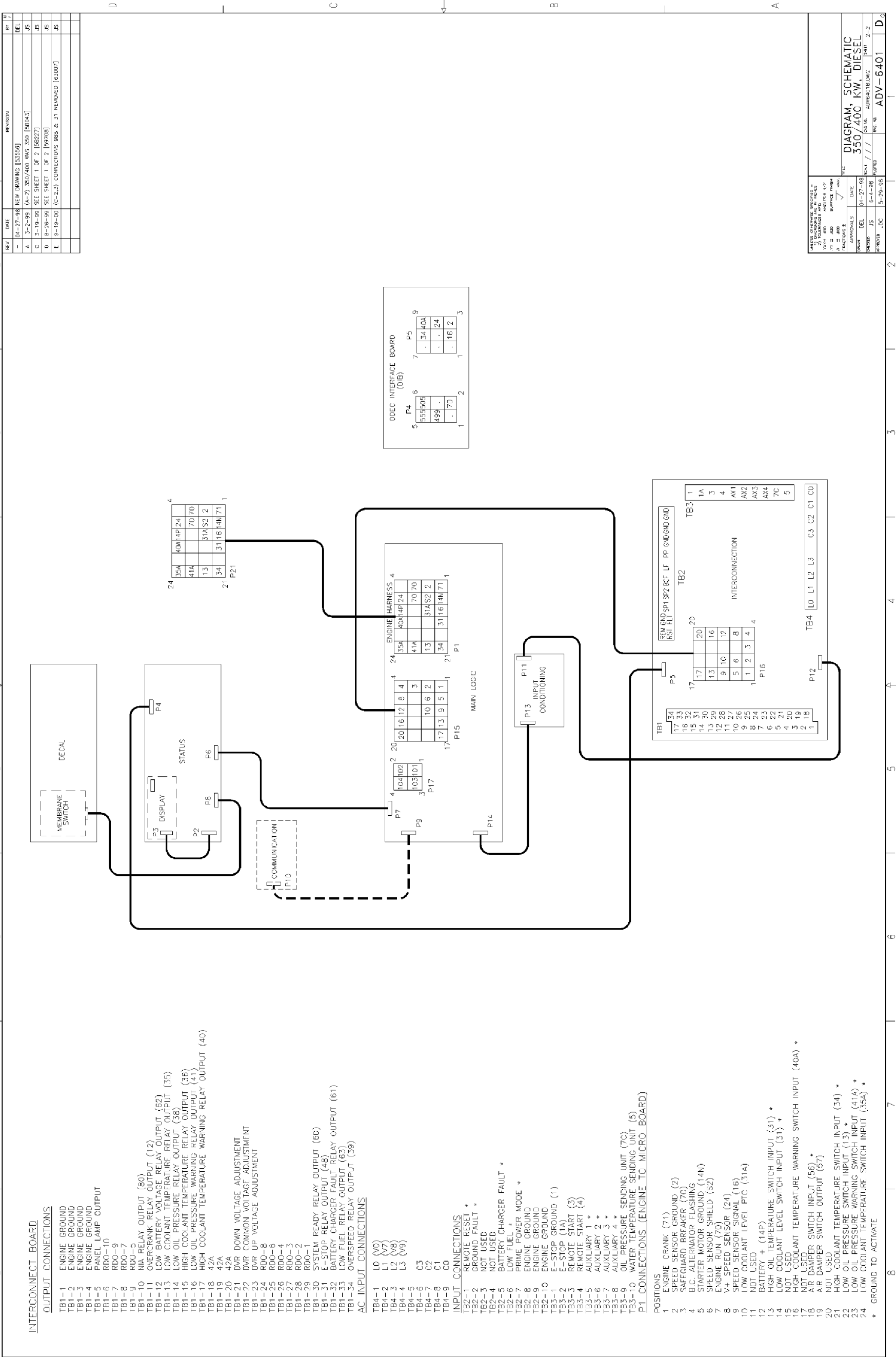


Digital Controller, Schematic Diagram, Sheet 1, ADV-6398A-B

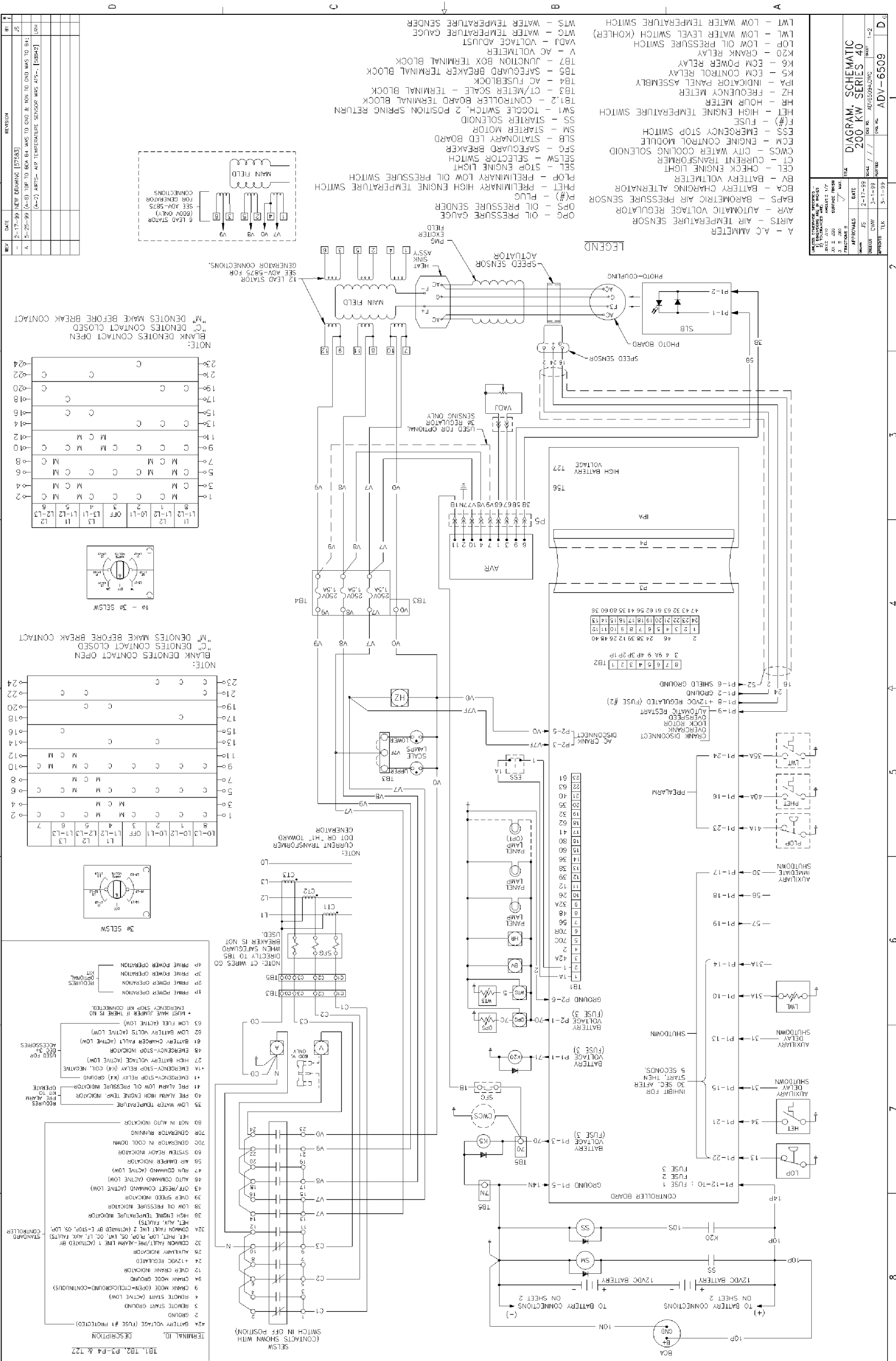




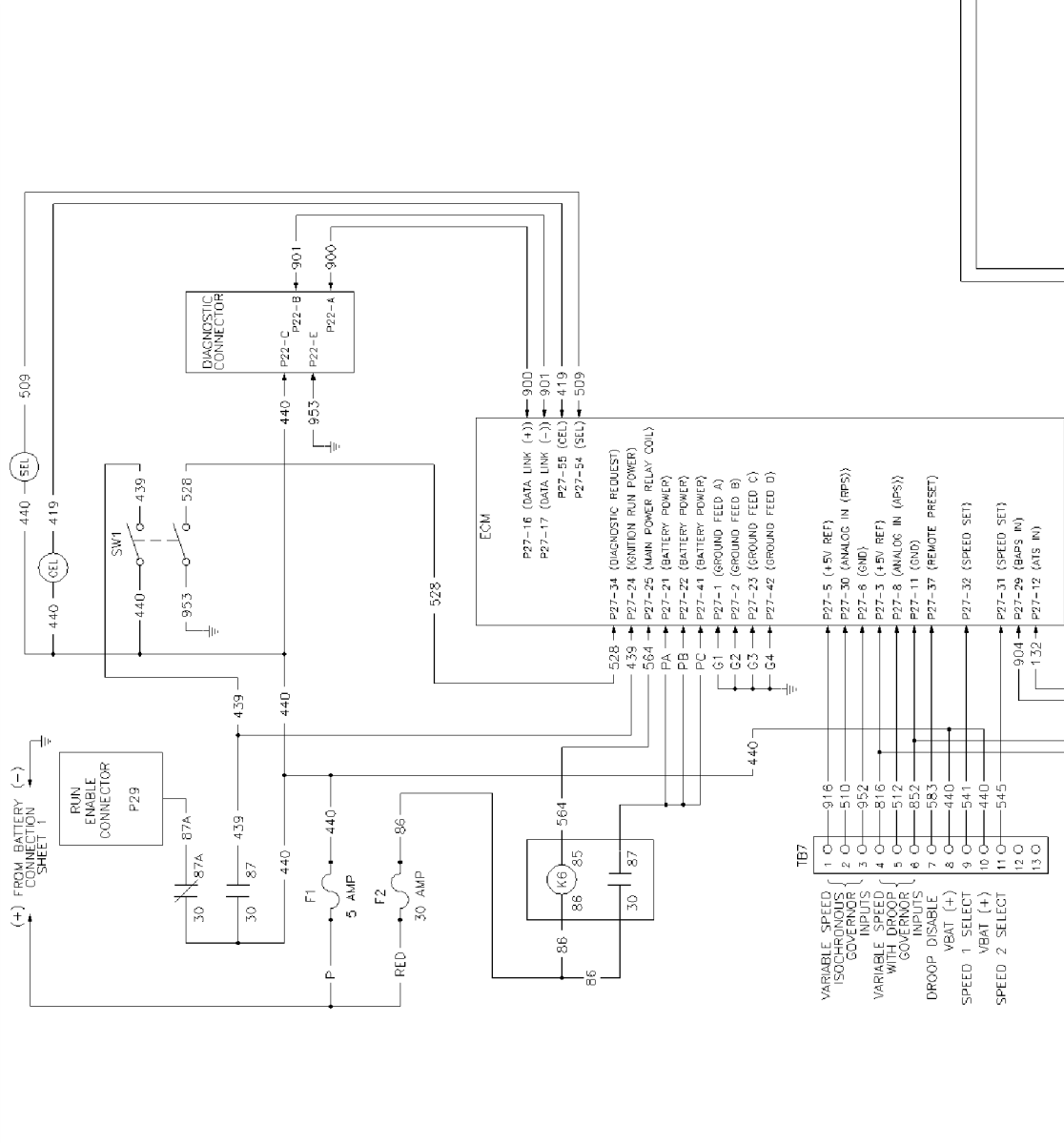
Microprocessor-Plus Controller, Schematic Diagram, 3 Phase/600 Volt, ADV-6399-F



Digital Controller, Schematic Diagram, Sheet 2, ADV-6401B-E



CONNECTION GUIDE			
	ECM #1	ECM #2	ECM #3
TB7 POSITION	1500 RPM 1800 RPM	1500 RPM 1800 RPM	1800 RPM 1800 RPM
1	1500 RPM	1500 RPM	1800 RPM
2	1500 RPM	1500 RPM	1800 RPM
3	1500 RPM	1500 RPM	1800 RPM
4	1500 RPM	1500 RPM	1800 RPM
5	1500 RPM	1500 RPM	1800 RPM
6	1500 RPM	1500 RPM	1800 RPM
7	1500 RPM	1500 RPM	1800 RPM
8	1500 RPM	1500 RPM	1800 RPM
9	1500 RPM	1500 RPM	1800 RPM
10	1500 RPM	1500 RPM	1800 RPM
11	1500 RPM	1500 RPM	1800 RPM
12	1500 RPM	1500 RPM	1800 RPM
13	1500 RPM	1500 RPM	1800 RPM

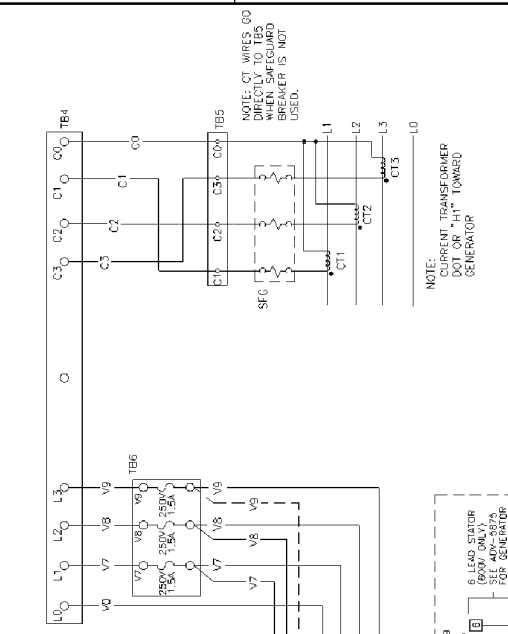


NOTE:
SEE TB7 CONNECTION GUIDE
FOR YOUR APPLICATION.

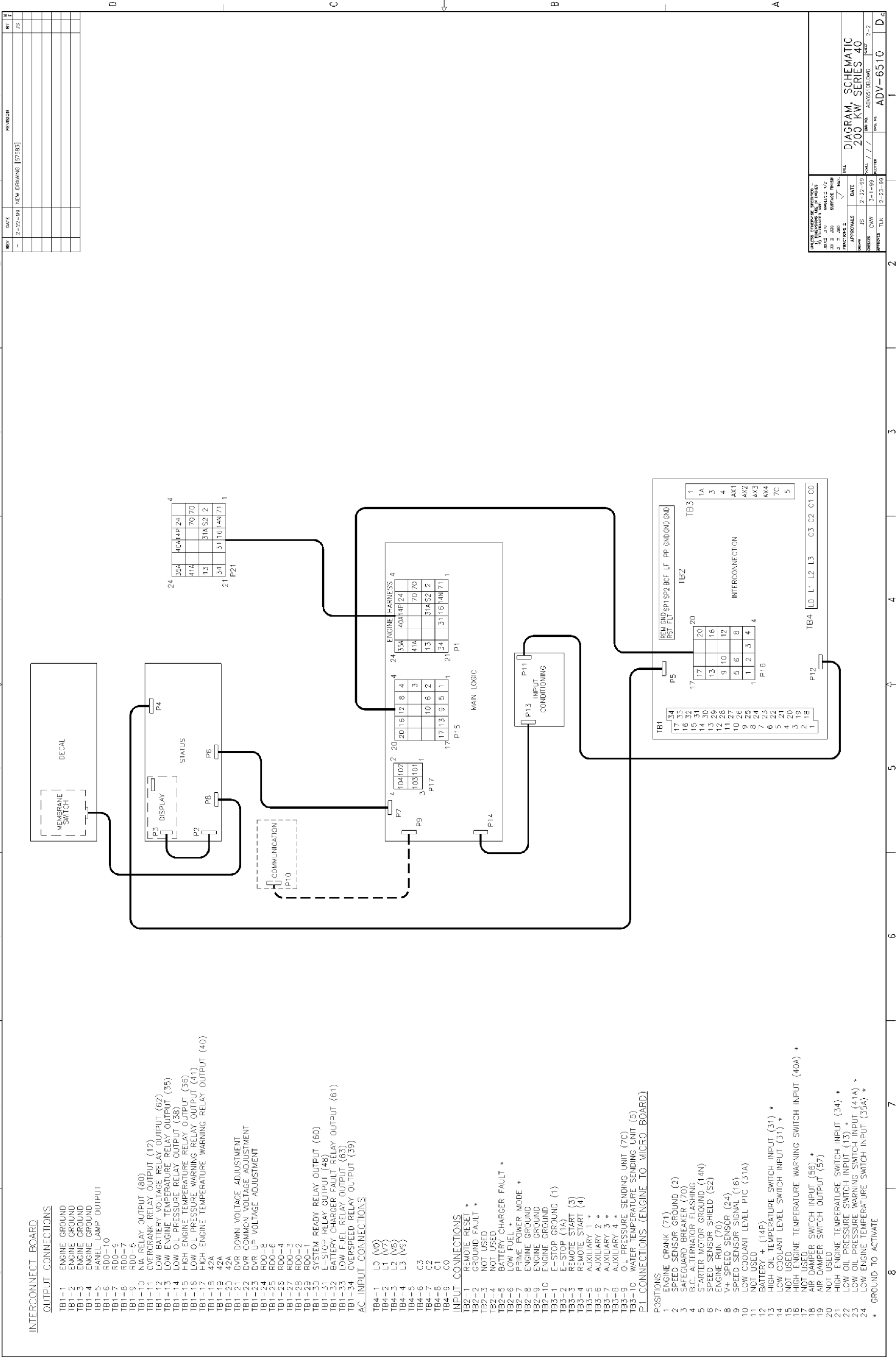
REV	DATE	REVISION	BY
1	2-22-99	NEW DRAWING (57583)	JS

LEGEND
ATS - AIR TEMPERATURE SENSOR
AVR - AUTOMATIC VOLTAGE REGULATOR
BAPS - BAROMETRIC AIR PRESSURE SENSOR
BCA - BATTERY CHARGING ALTERNATOR
CEL - CHECK ENGINE LIGHT
CT - CURRENT TRANSFORMER
CWCS - CITY WATER COOLING SOLENOID
ECM - ENGINE CONTROL MODULE
ECS - ENGINE CONTROL SWITCH
ESS - EMERGENCY STOP SWITCH
HF - HIGH ENGINE TEMPERATURE SWITCH
K5 - ECM CONTROL RELAY
K6 - ECM POWER RELAY
K20 - DRAIN RELAY
L0P - LOW OIL PRESSURE SWITCH
LWL - LOW WATER LEVEL SWITCH (KOHLE)
LWT - LOW WATER TEMPERATURE SWITCH
OPS - OIL PRESSURE SENDER
PI(7) - PLUG
PHET - PRELIMINARY HIGH ENGINE TEMPERATURE SWITCH
PLOP - PRELIMINARY LOW OIL PRESSURE SWITCH
SFL - STOP ENGINE LIGHT
SFG - SAFEGUARD BREAKER
SNB - STARTER MOTOR
SS - STARTER SOLENOID
SW1 - TOGGLE SWITCH, 2 POSITION, SPRING RETURN
TB1-4 - CONTROLLER BOARD TERMINAL BLOCK
TB5 - SAFEGUARD BREAKER TERMINAL BLOCK
TB6 - A.C. FUSE BLOCK
TB7 - JUNCTION BOX TERMINAL BLOCK
VADU - VOLTAGE ADJUST
WTS - WATER TEMPERATURE SENDER

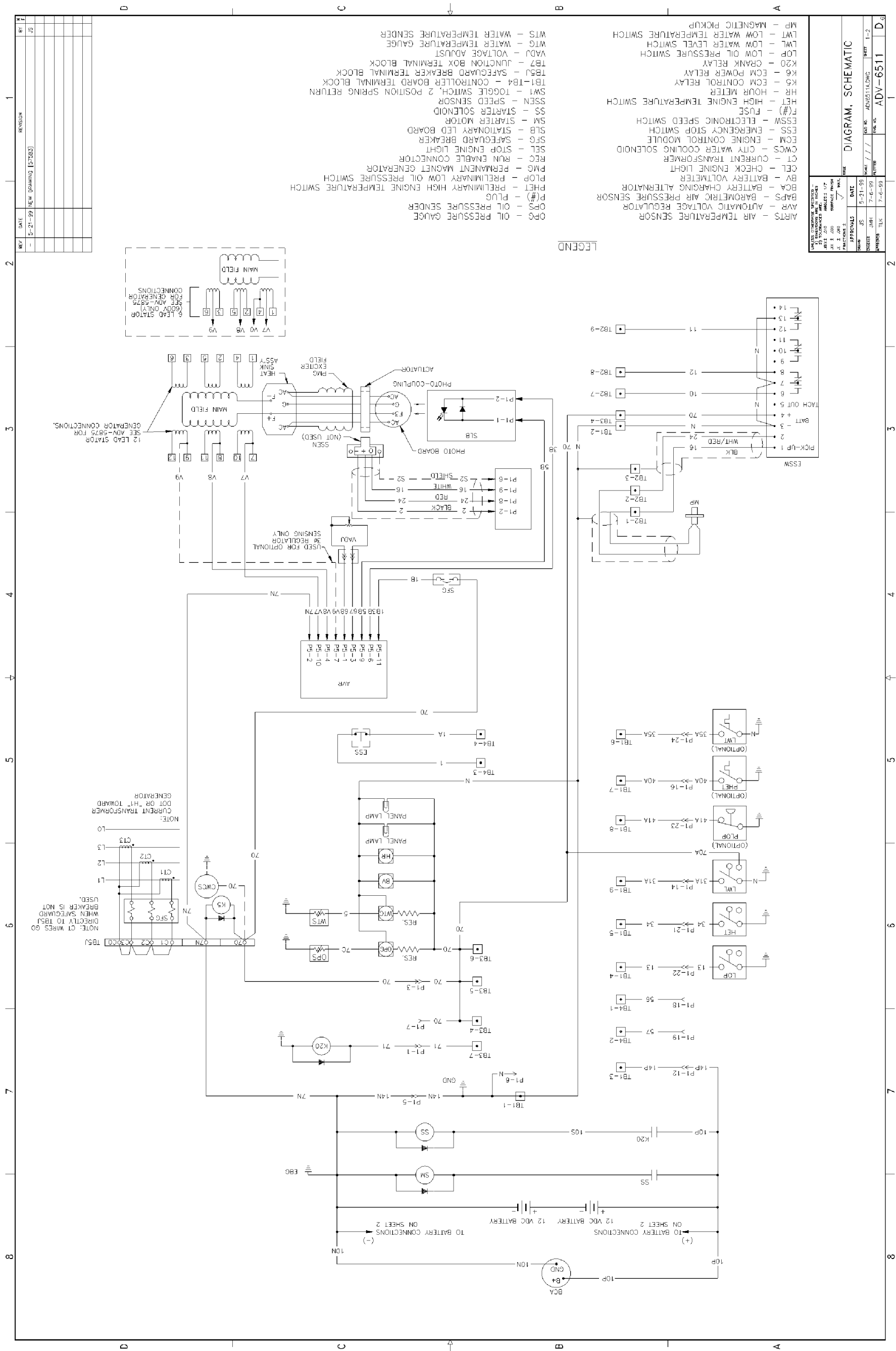
CONTACTS	1	2	3	4	5	6
1	1	2	3	4	5	6
2	1	2	3	4	5	6
3	1	2	3	4	5	6

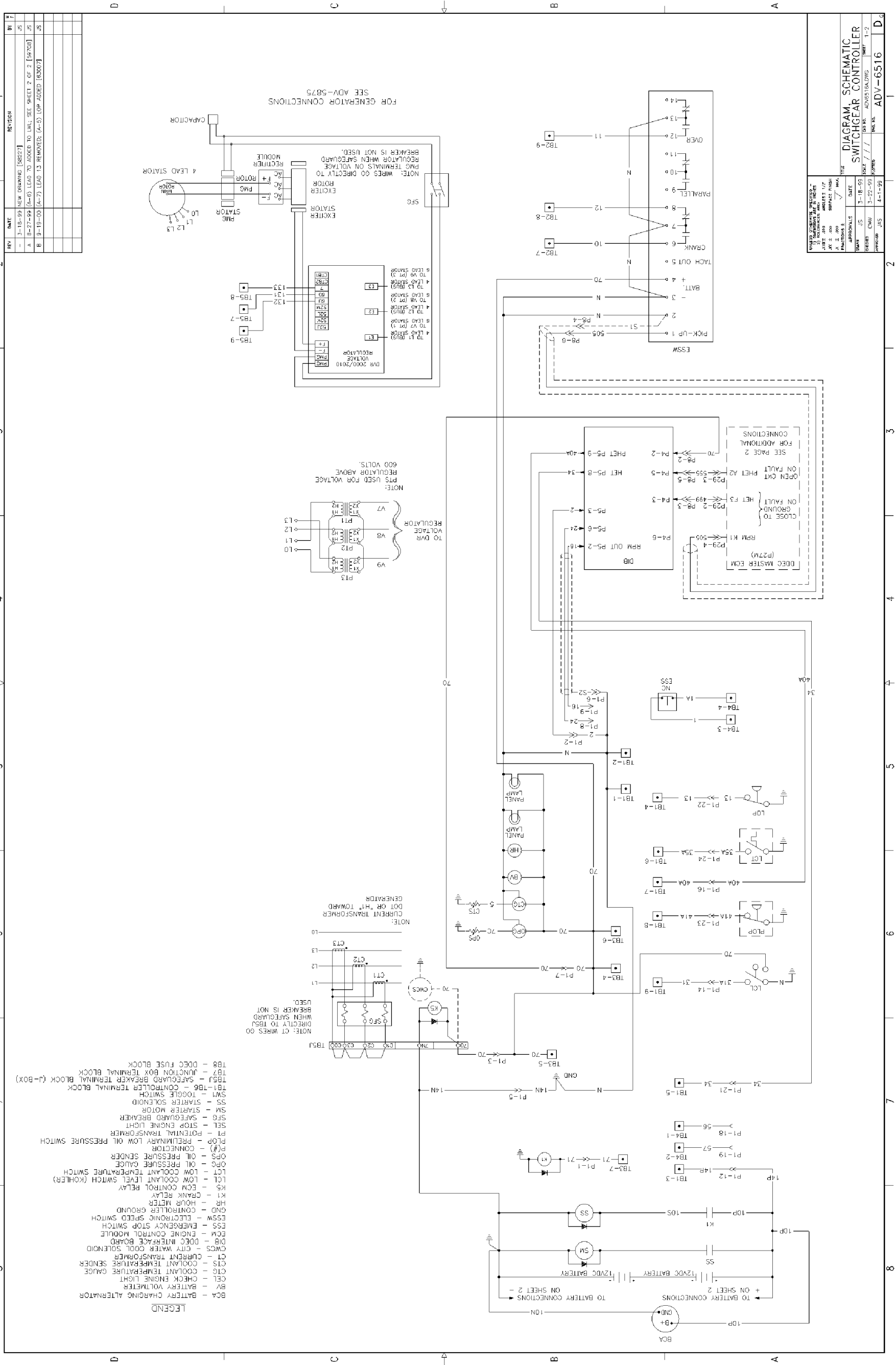


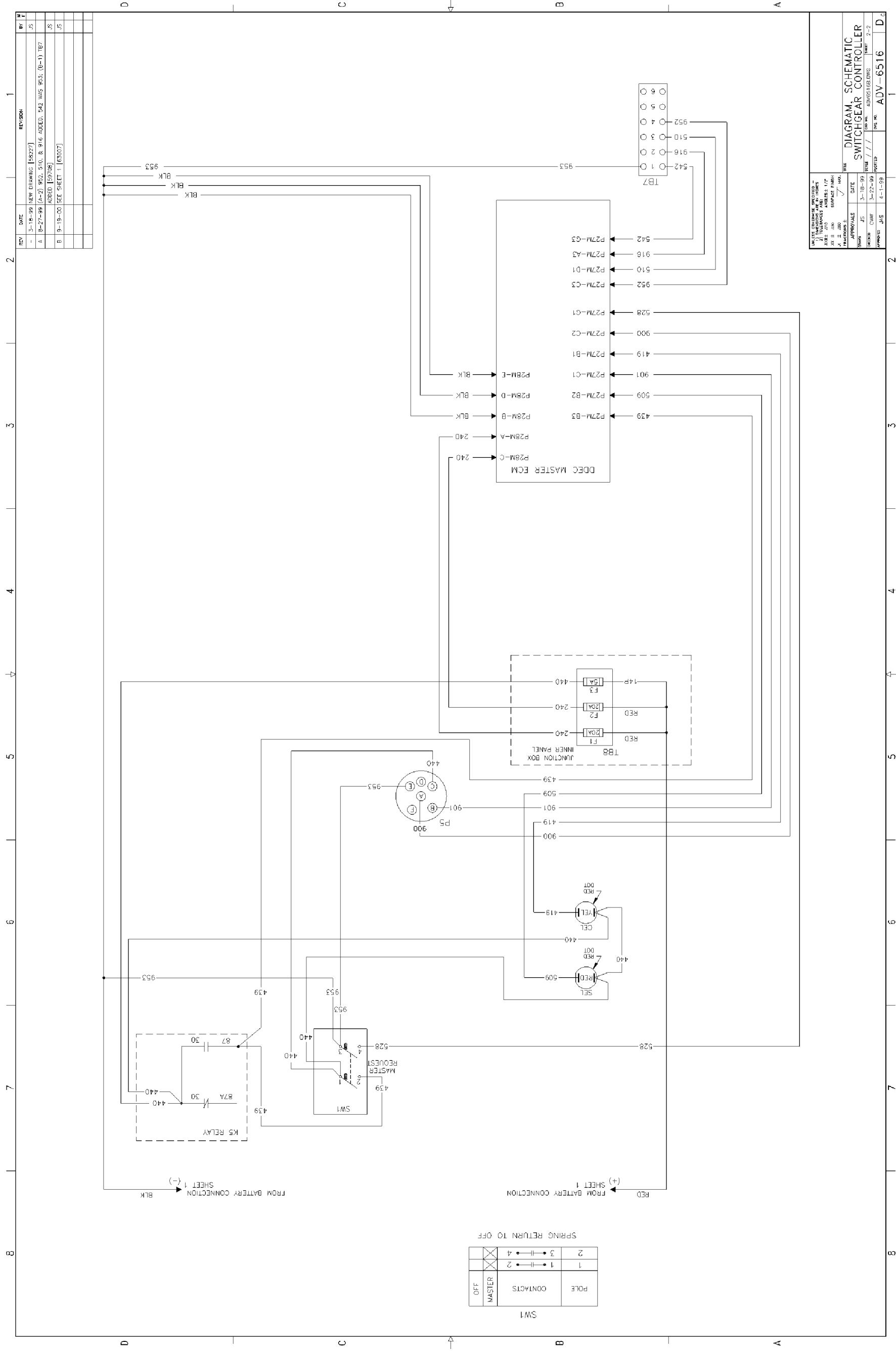
UNITS	DATE	REVISION	BY
1	2-22-99	NEW DRAWING (57583)	JS



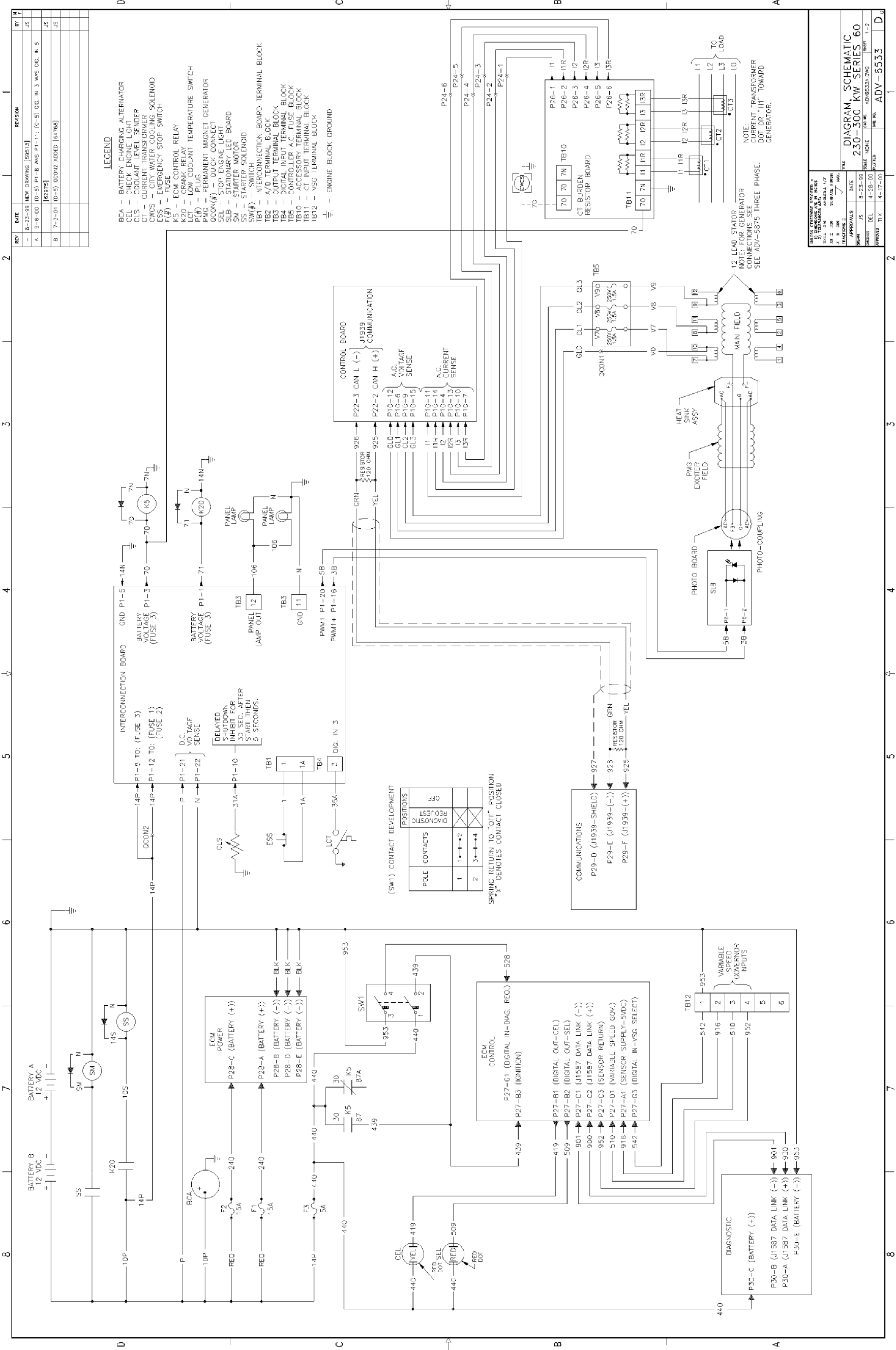
Digital Controller, Schematic Diagram, Sheet 2, ADV-6510B-



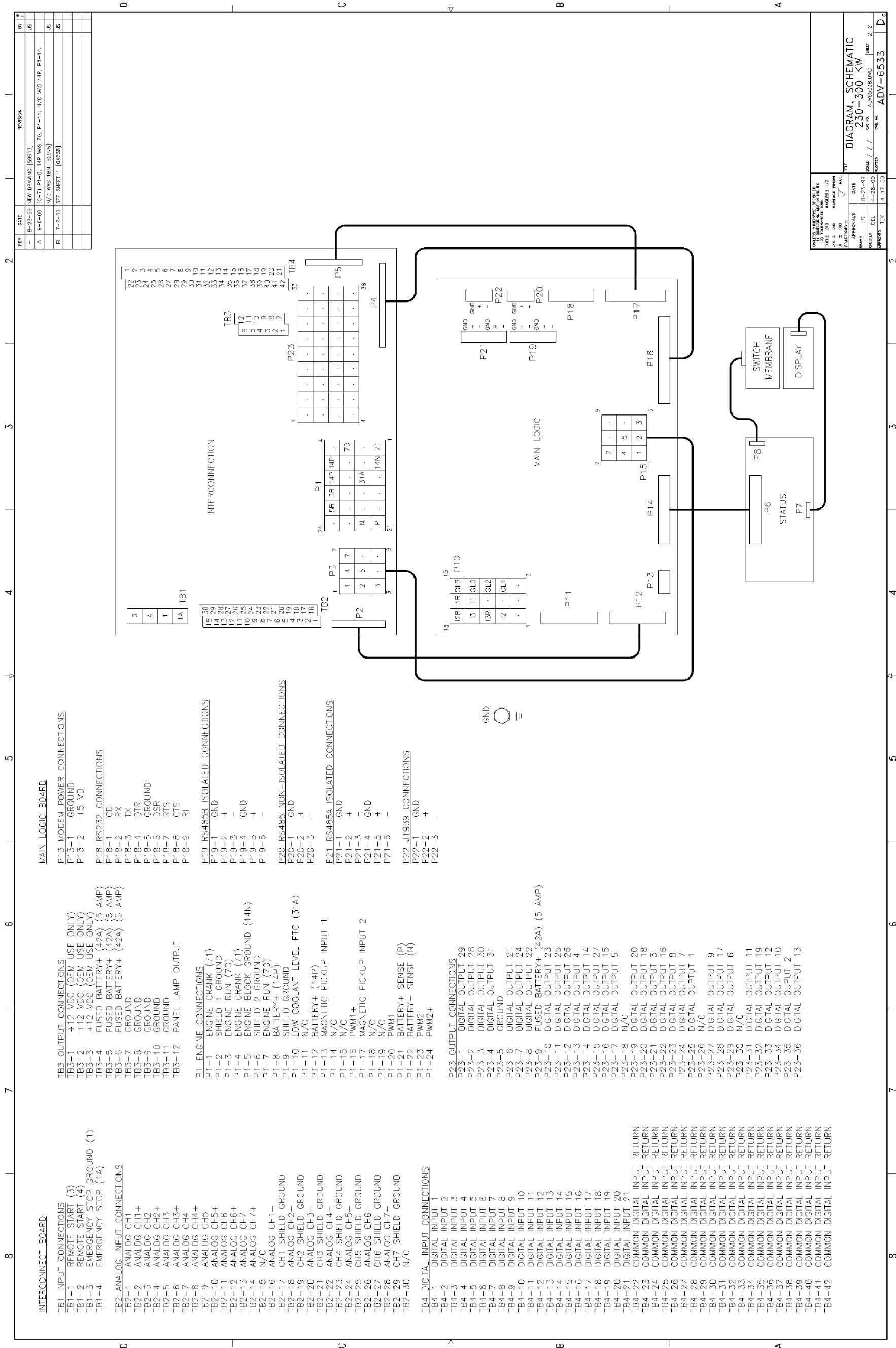


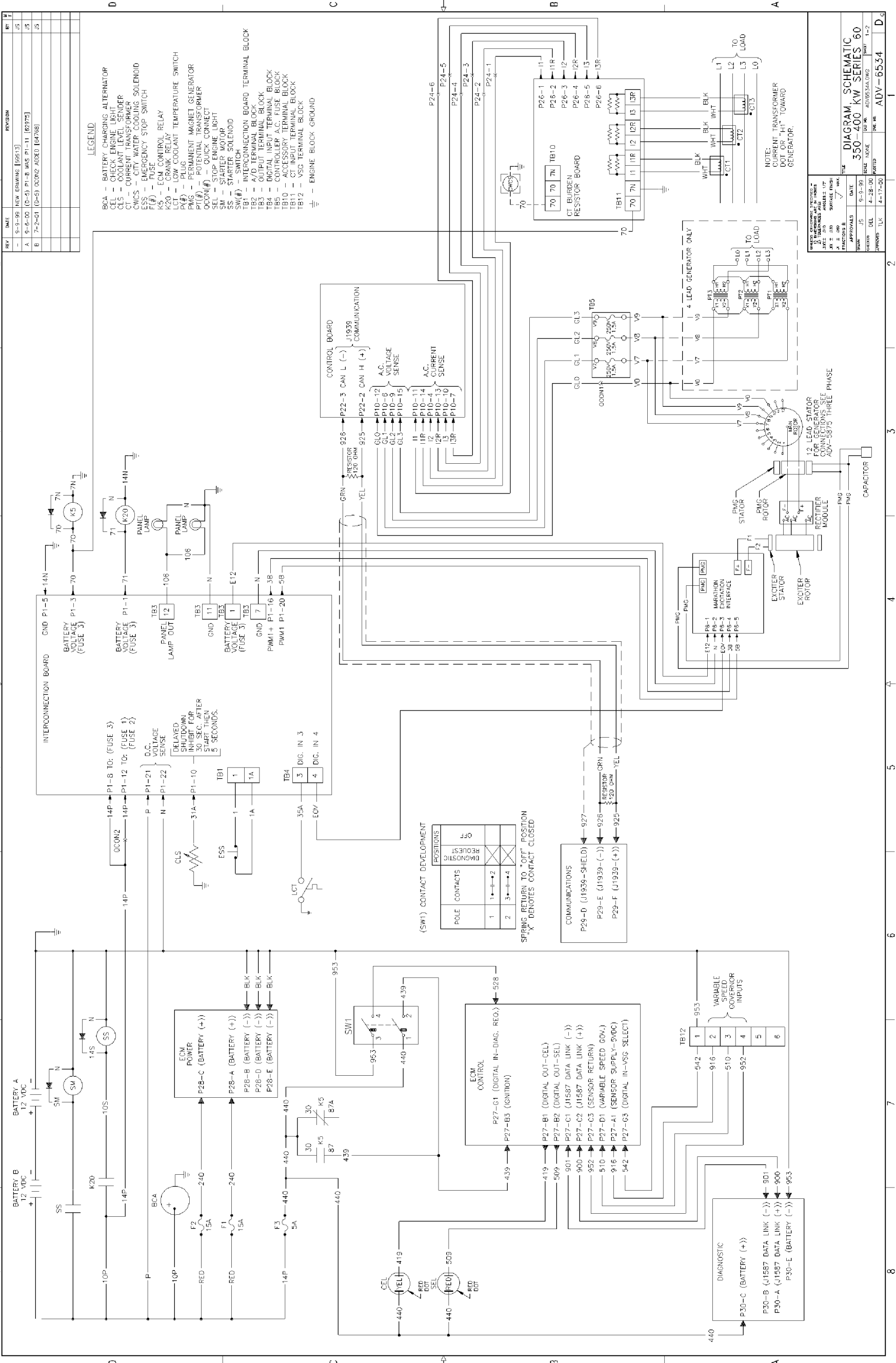


Engine Gauge Box for Paralleling Switchgear, Schematic Diagram, Sheet 2, ADV-6516B-B

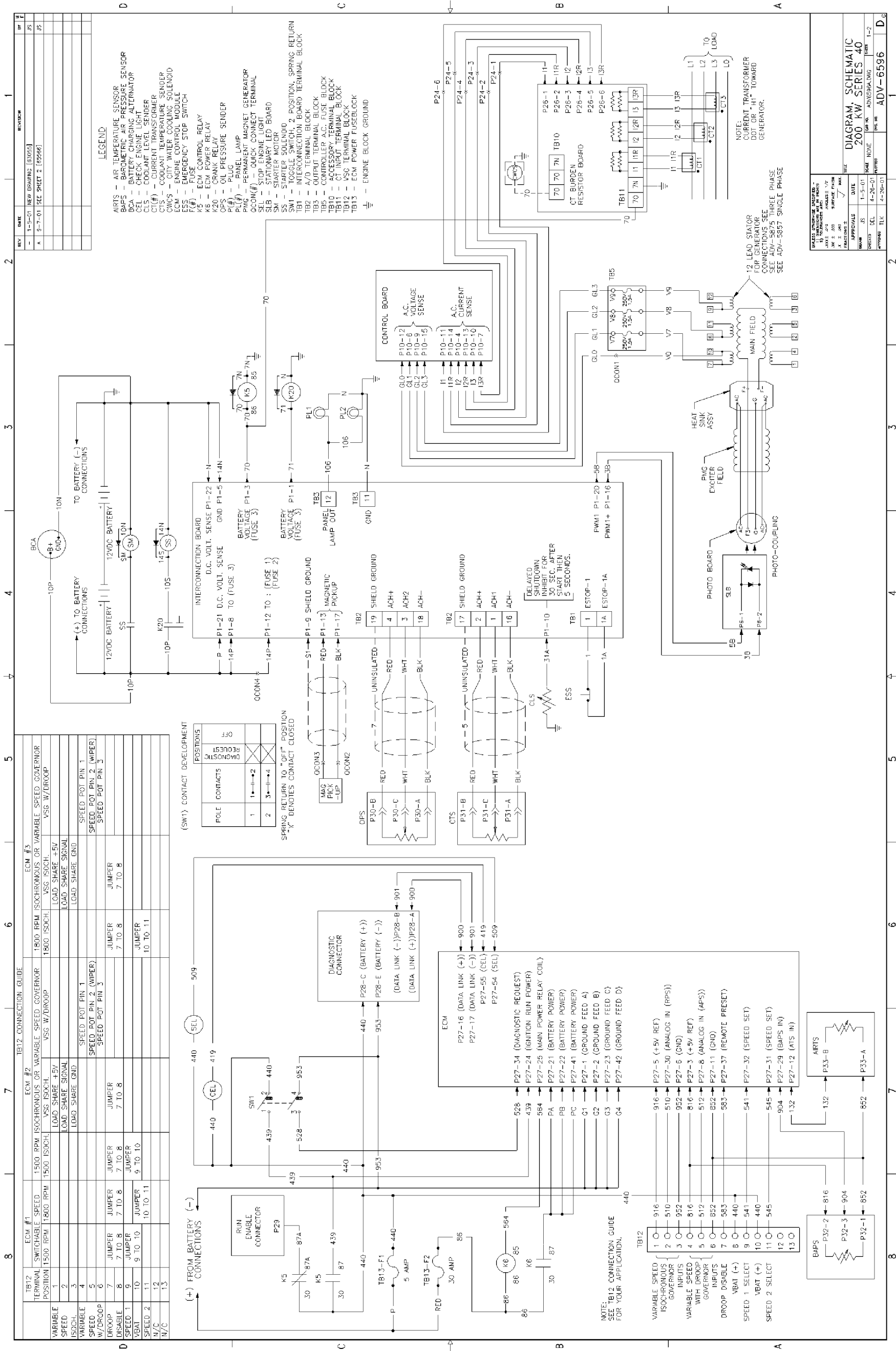


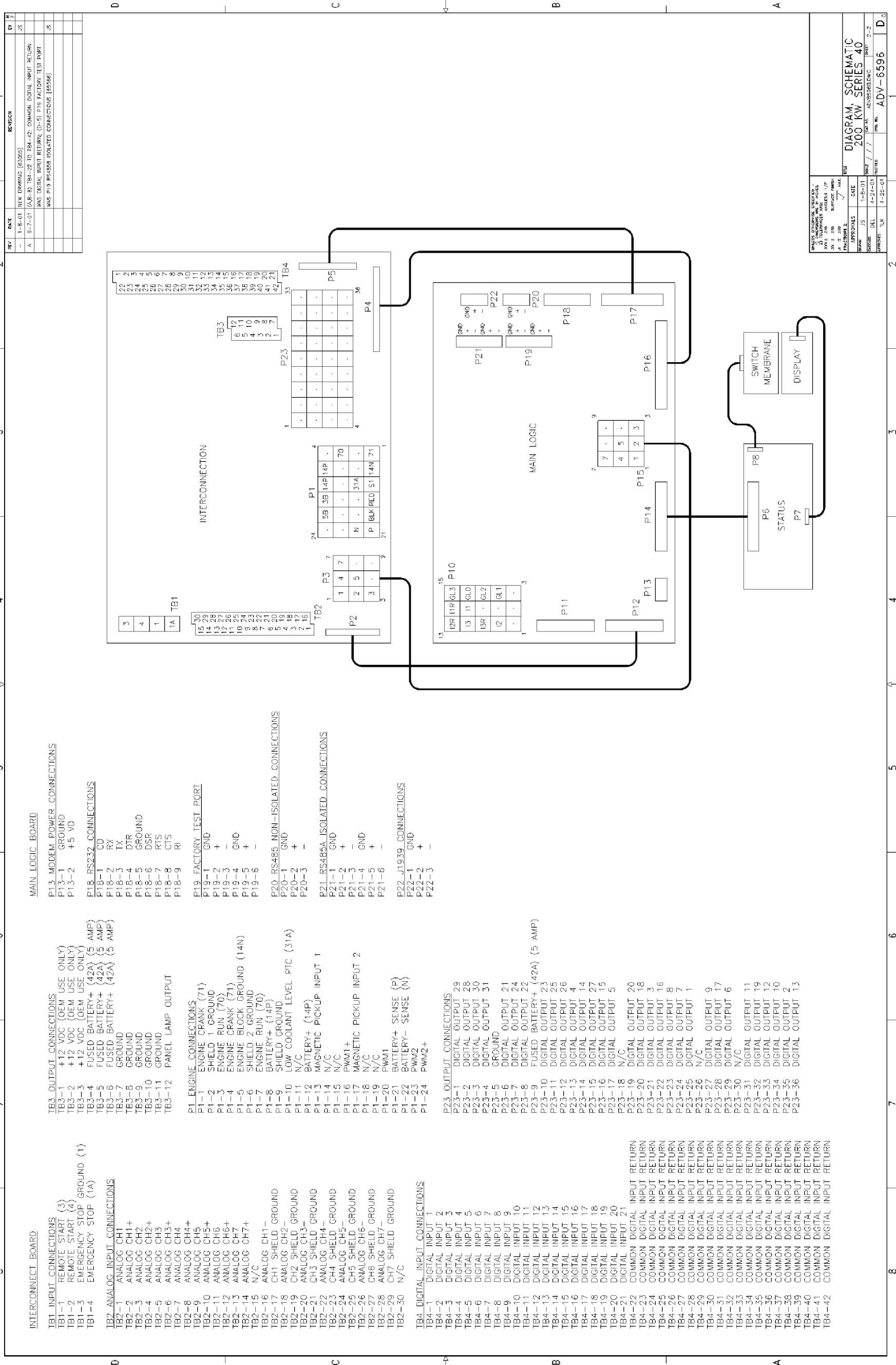
Digital 550 Controller, Schematic Diagram, Sheet 1, ADV-6533A-B

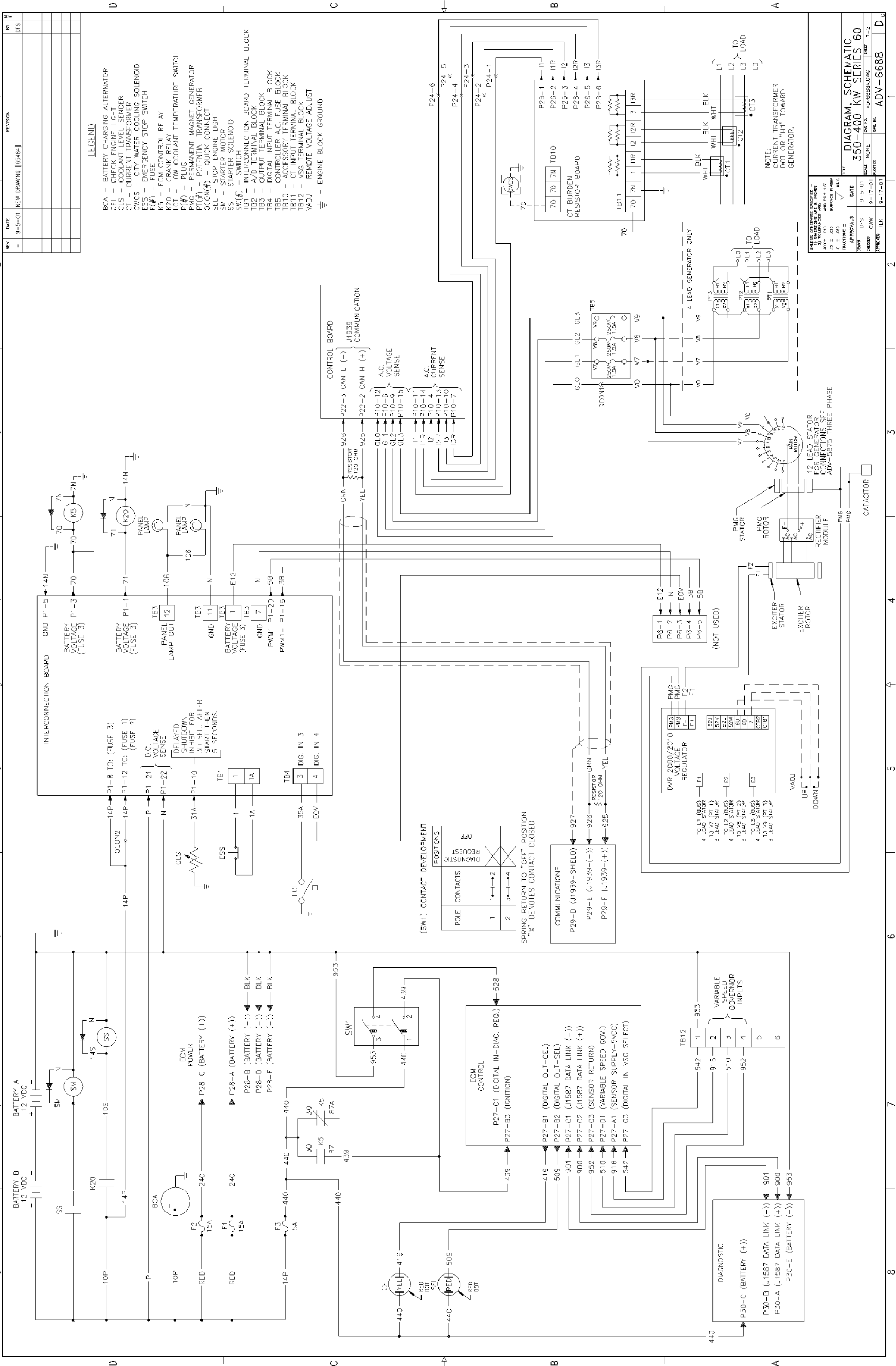


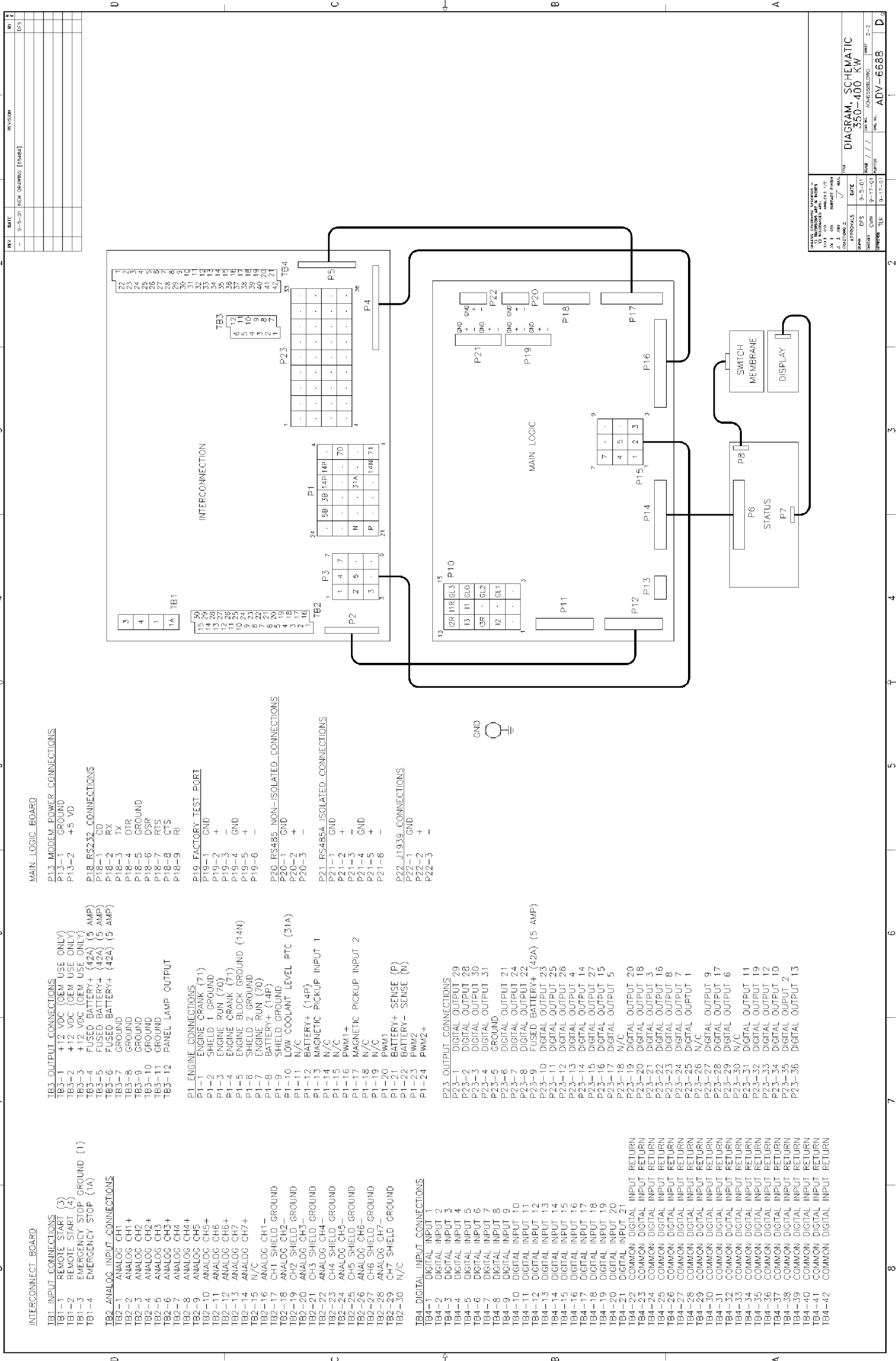


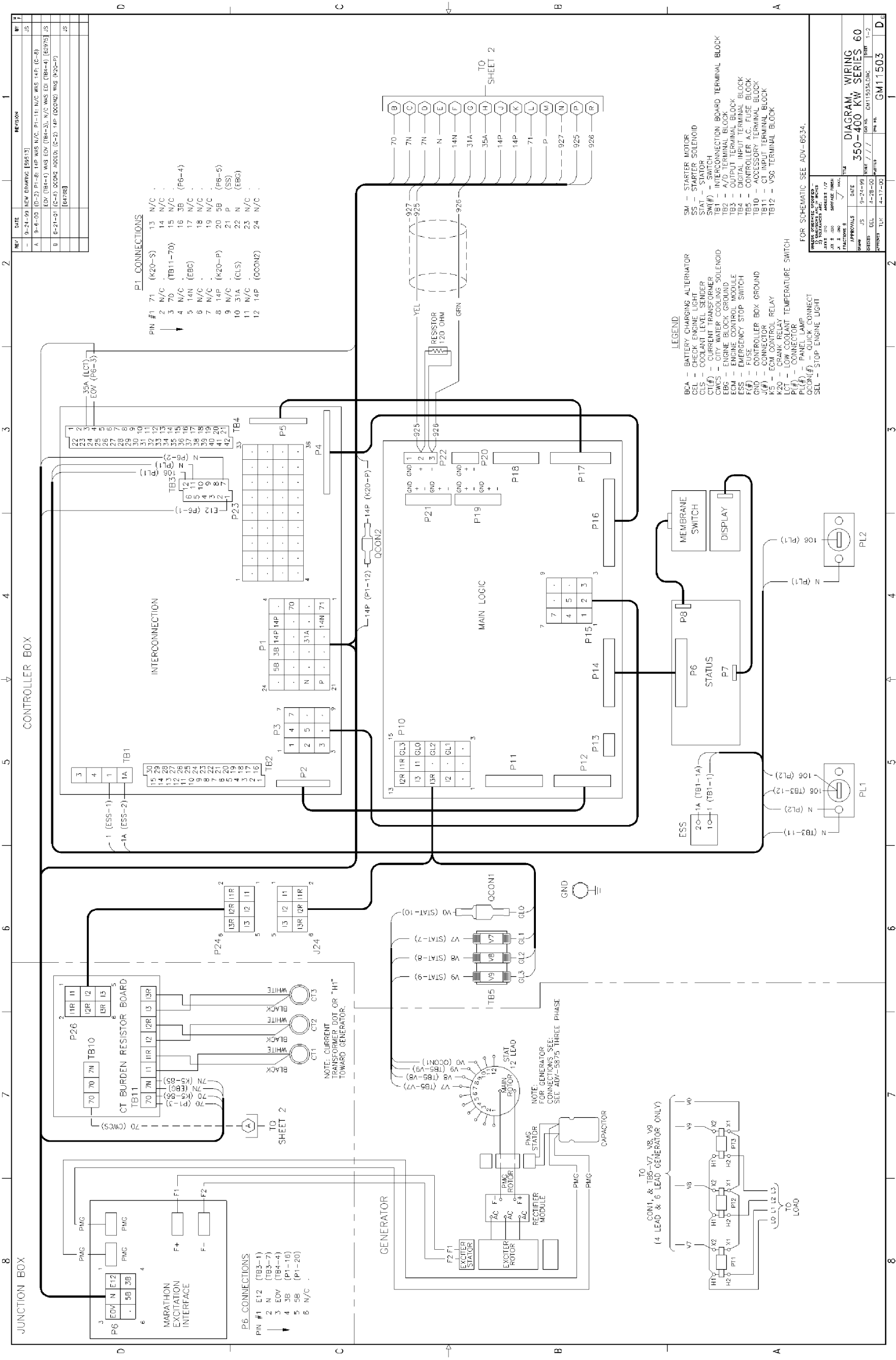
Digital 550 Controller, Schematic Diagram, Sheet 1, ADV-6534A-B



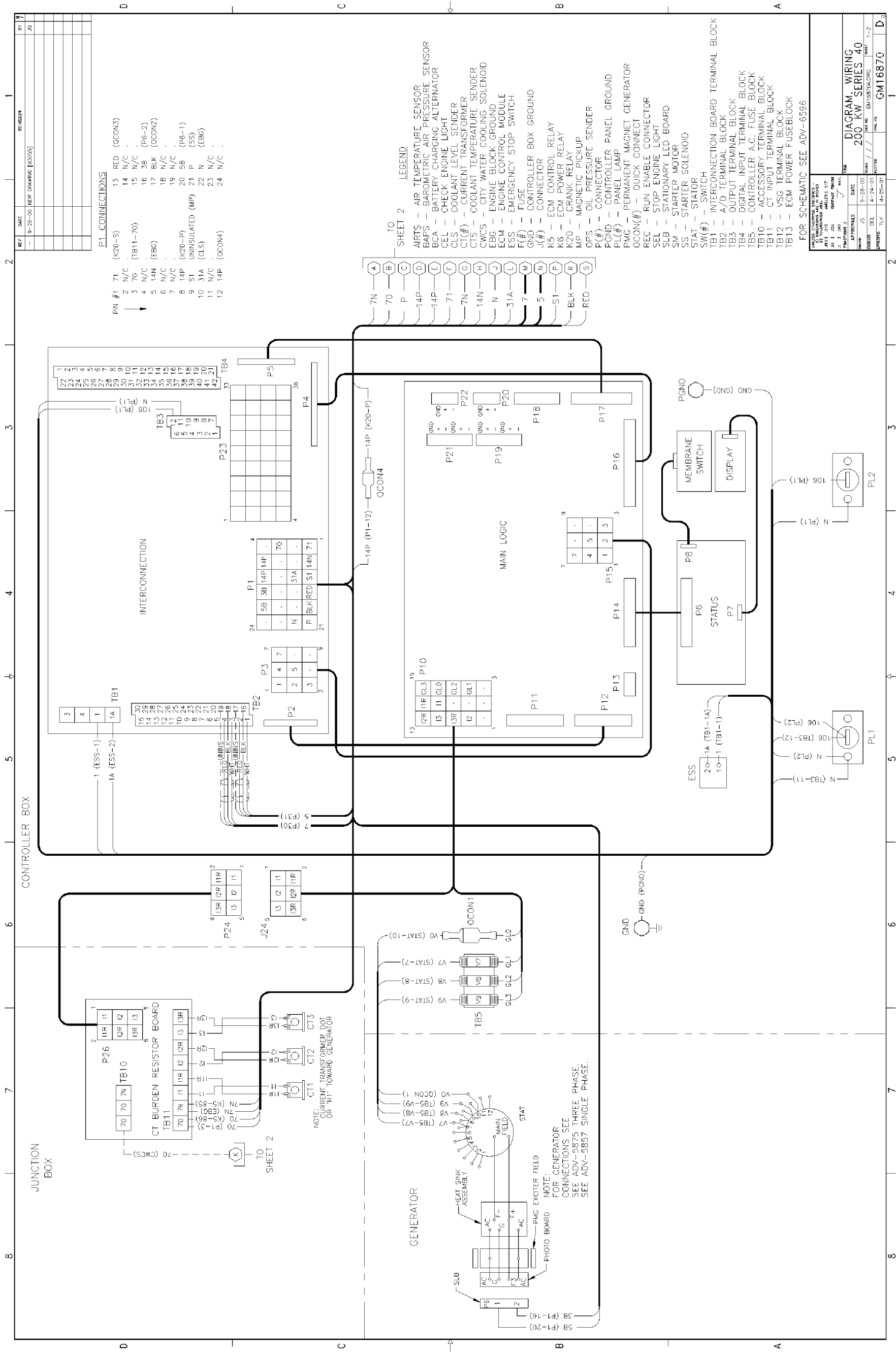


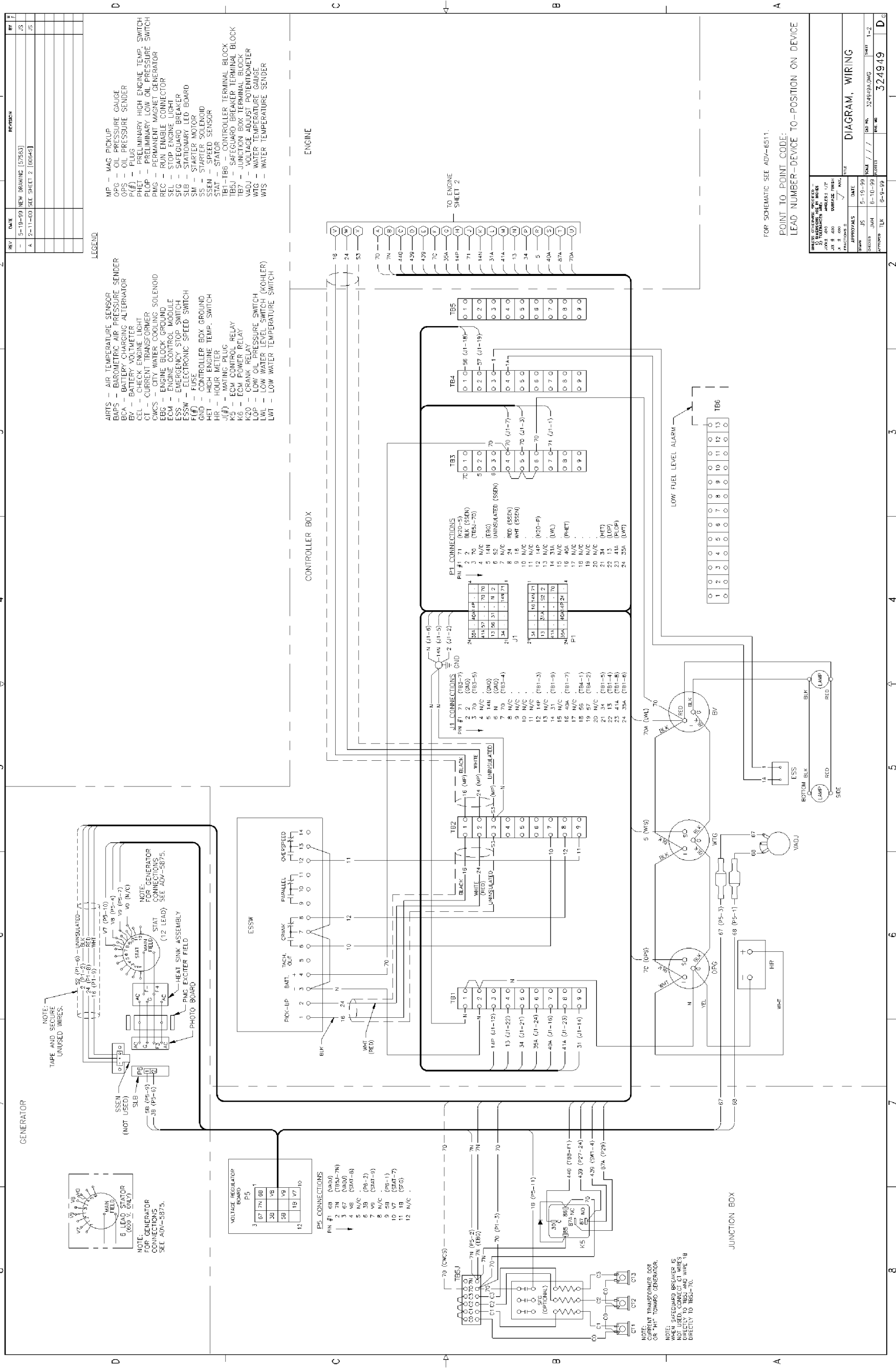


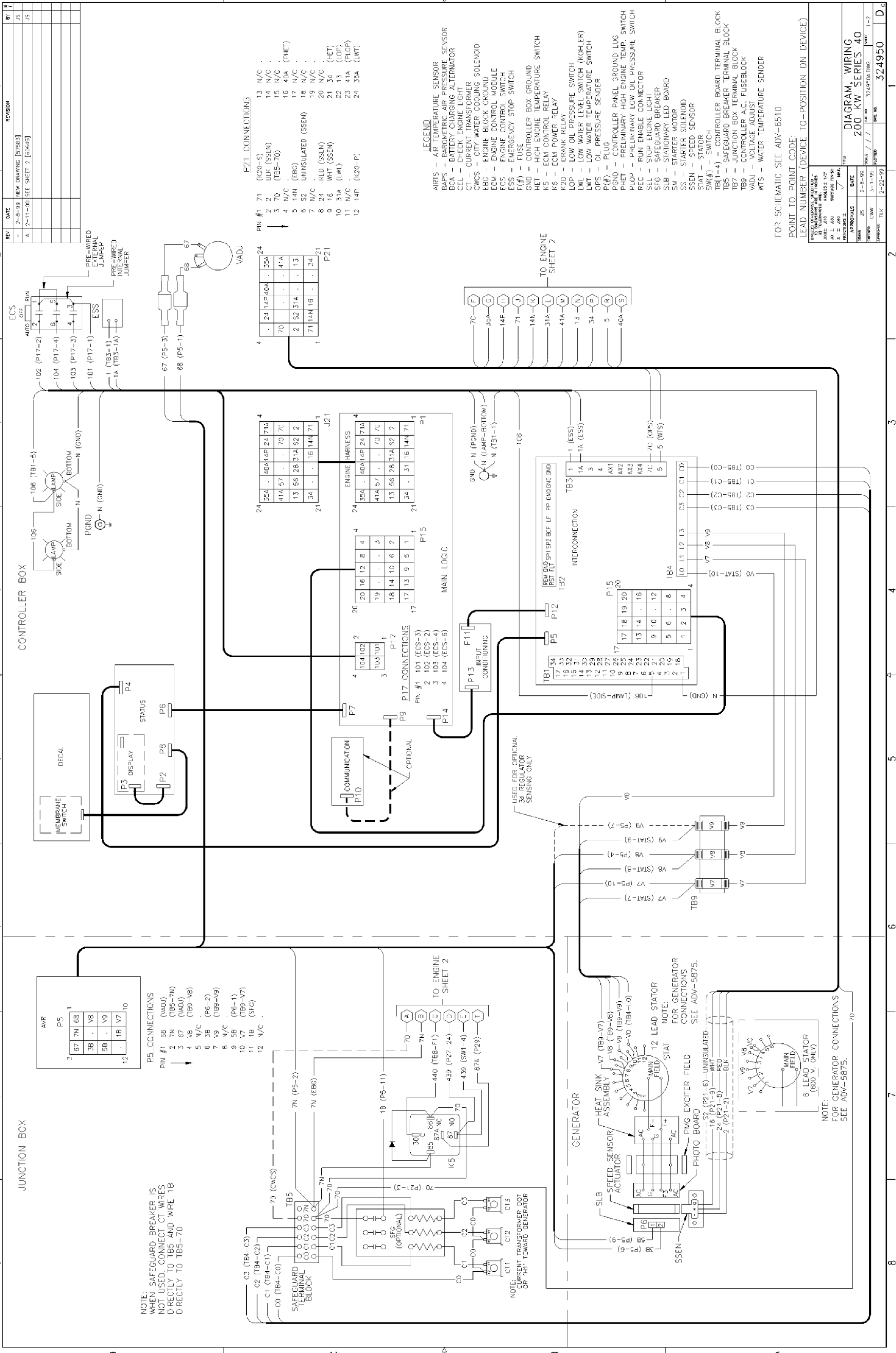


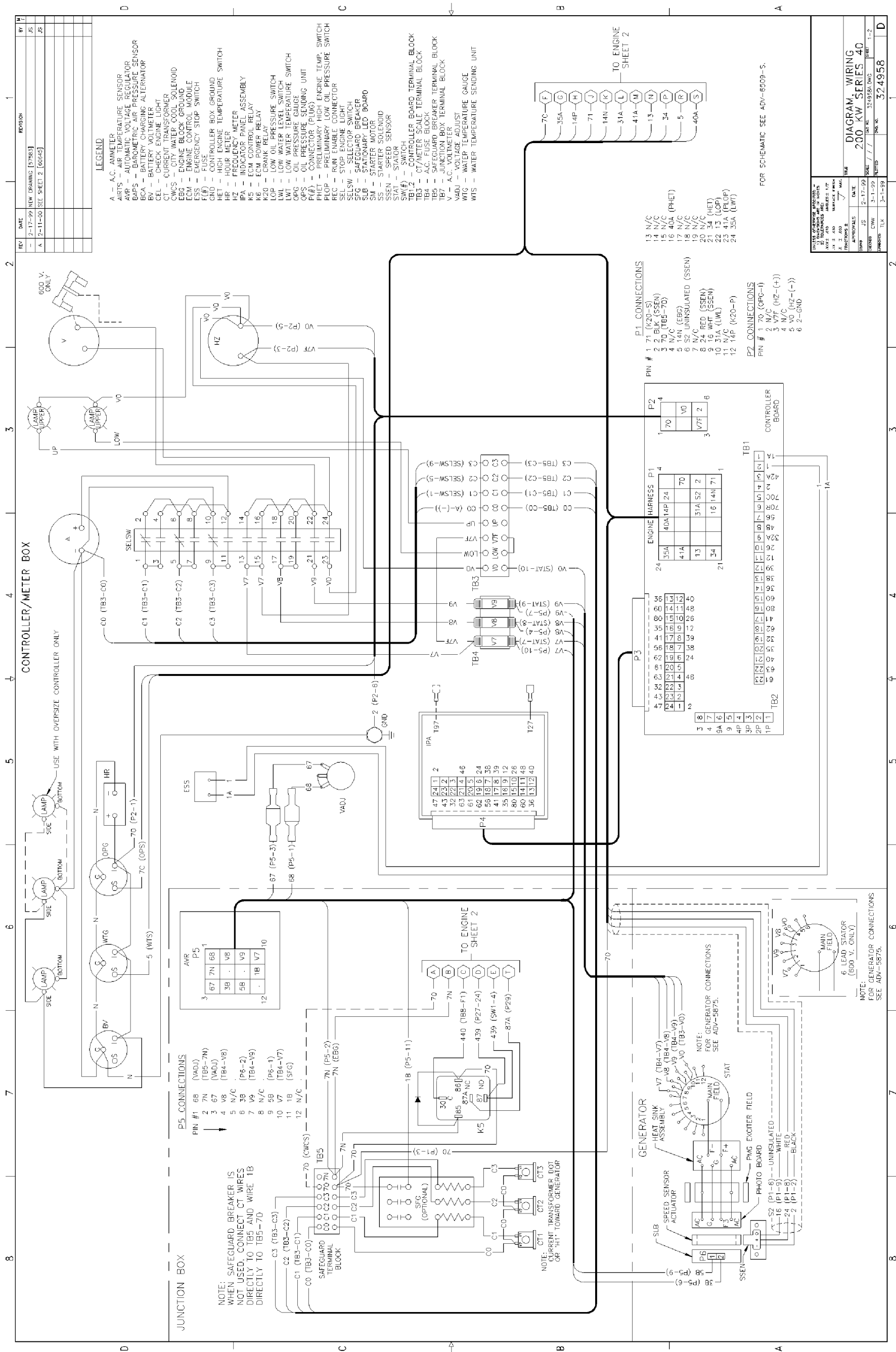


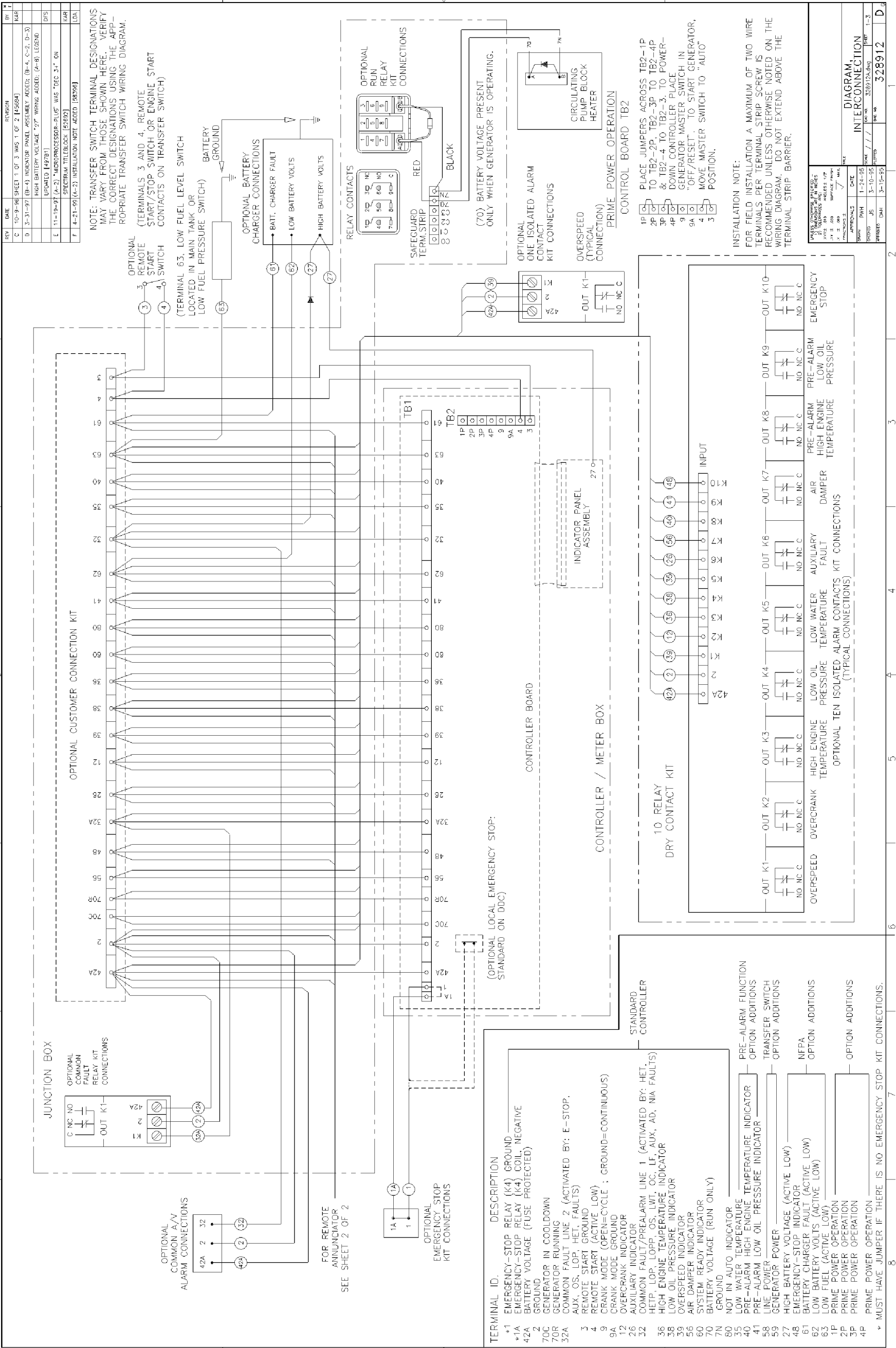
Digital 550 Controller, Point-to-Point Wiring Diagram, Sheet 1, GM11503A-B

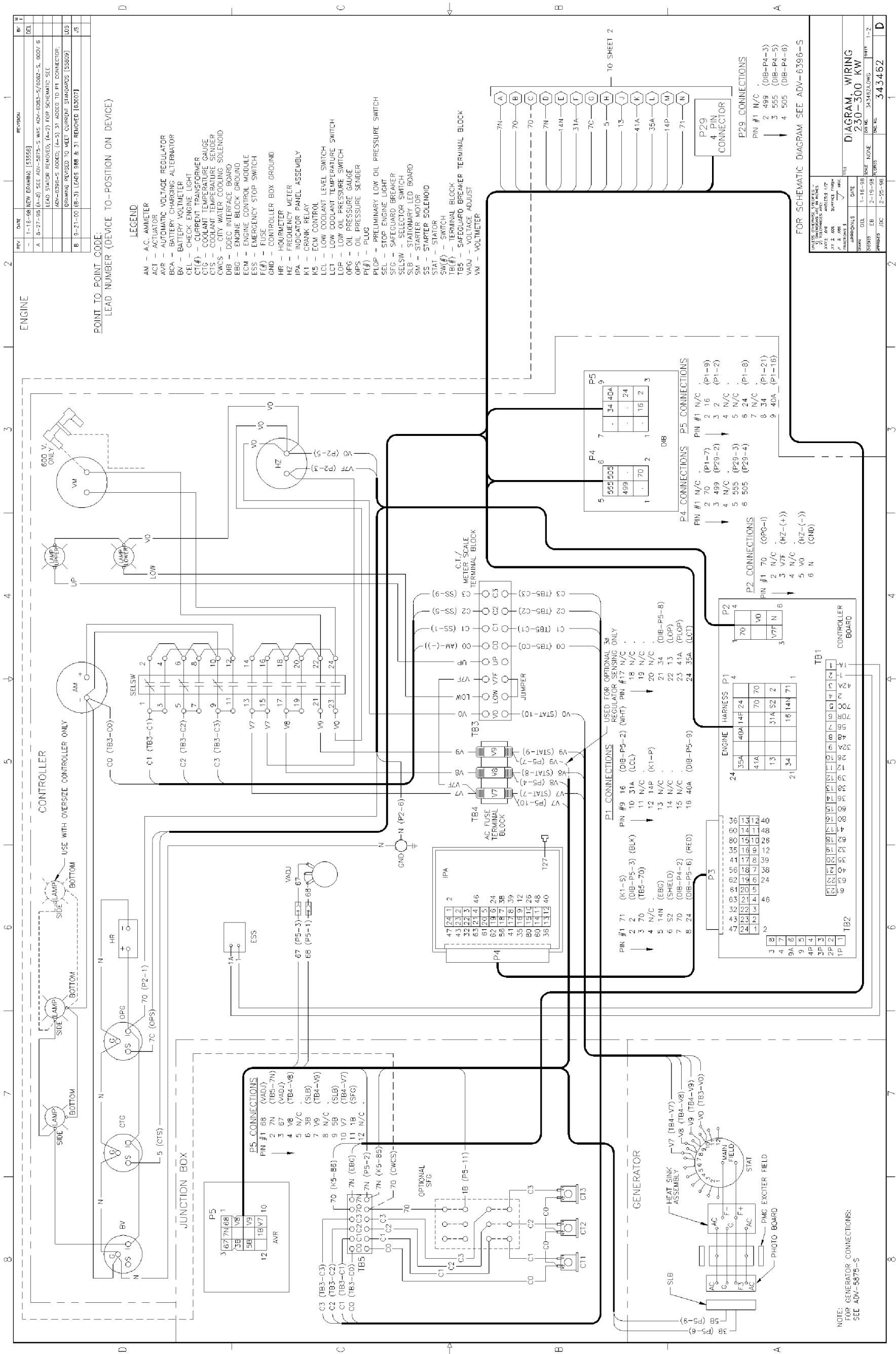


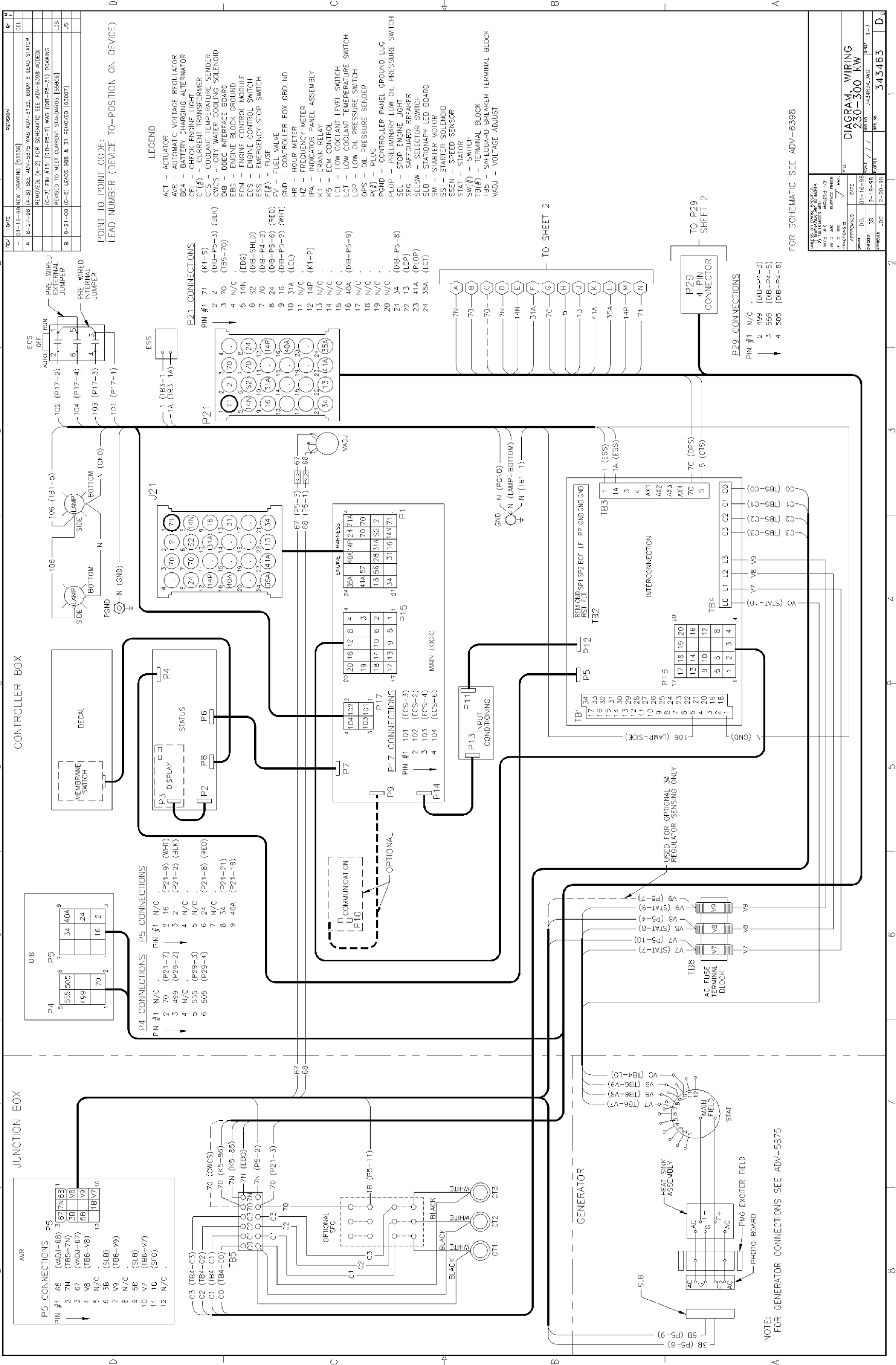


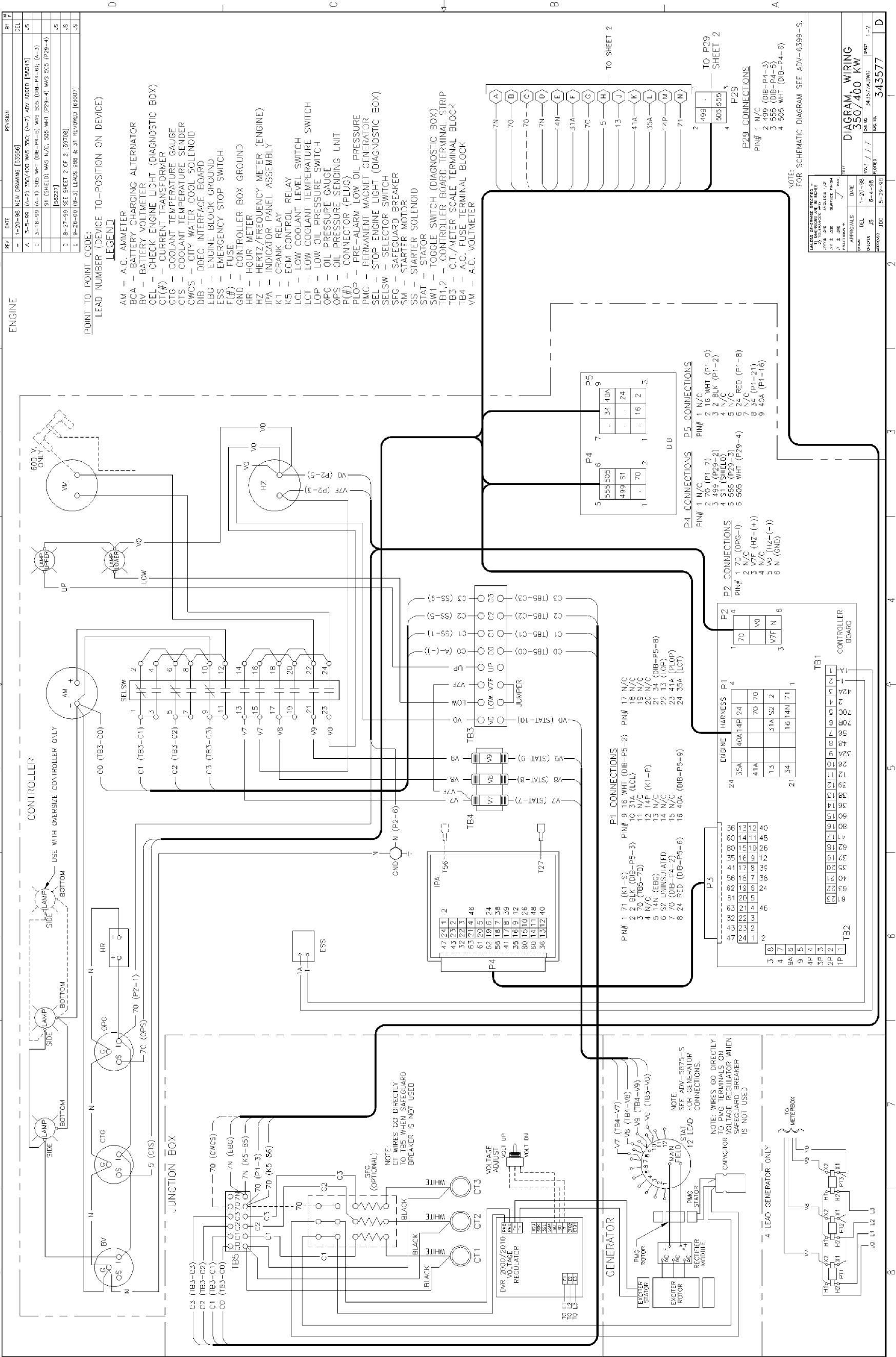


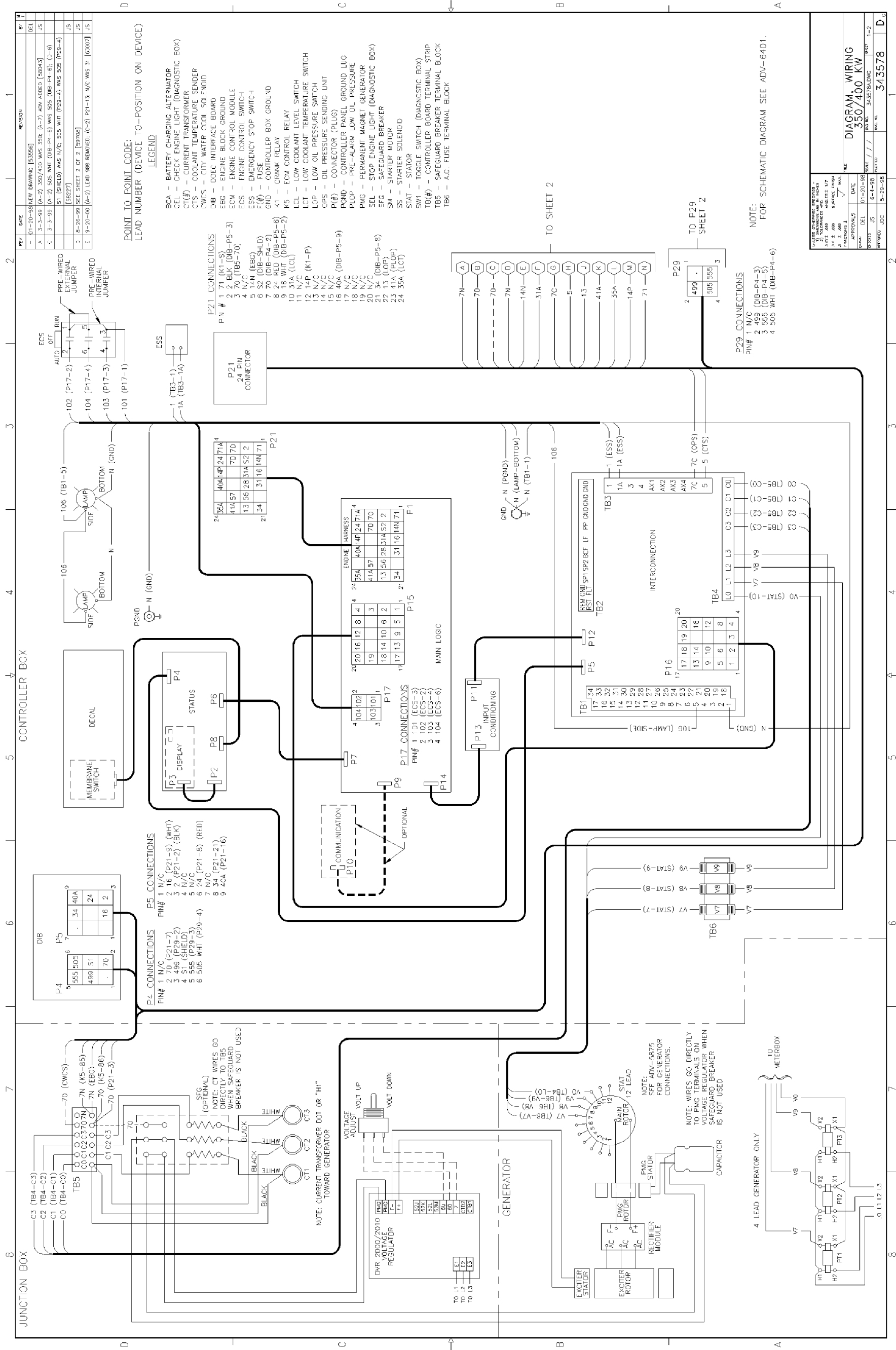


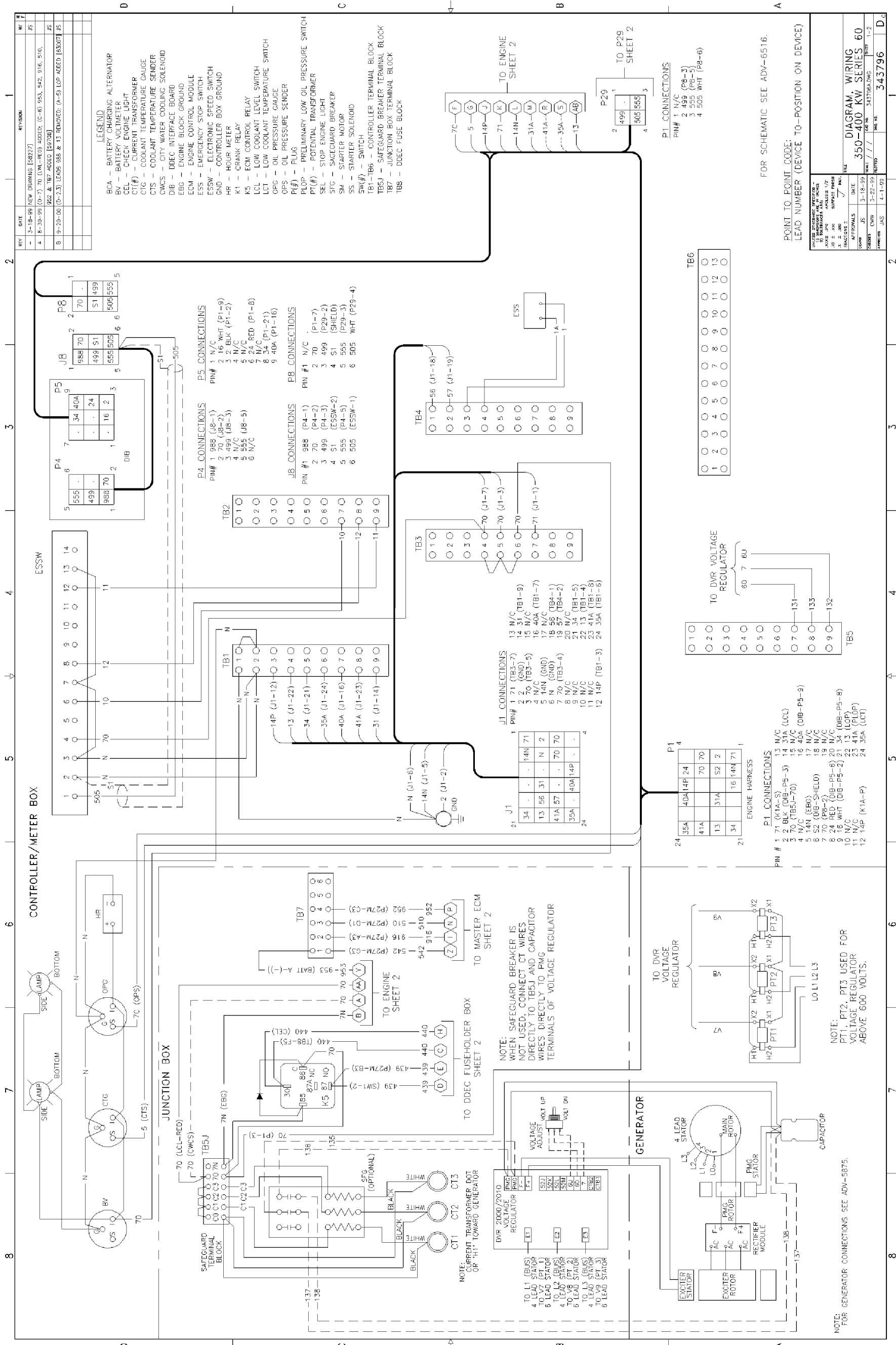


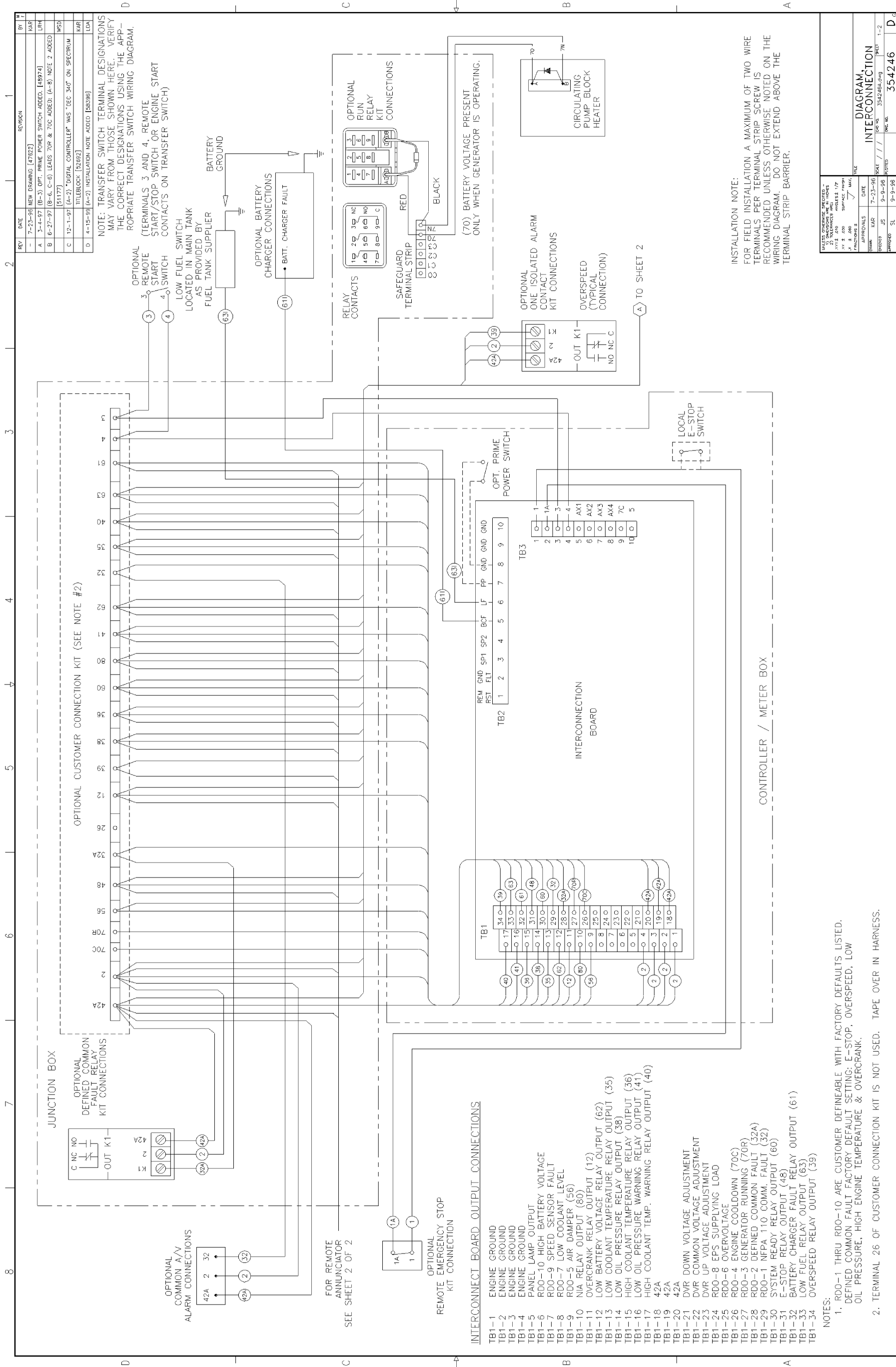












Notes



DDC/MTU Power Generation
605 North 8th Street, Suite 501
Sheboygan, Wisconsin 53081 USA
Phone 920-451-0846, Fax 920-451-0843
ddcmtupowergeneration.com