



## Sentinel and Drago Main Controller Board

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### HISTORY :

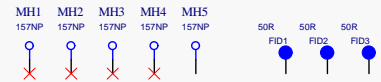
Rev	Date	Description
JUN 20th		Initial Signature
JUL 24 Rev A:		Replaced the PET with PROGRAMM - Replaced the Group with L6214
JUL 29 Rev B:		Added Telemetry and updated the LED
JUL 31 Rev C:		Added One for K10
JUL 16th Rev D:		CHANGED THE ARCHITECTURE FOR THE CONTROLLER CHANGED THE LED FOR 1A CURRENT LIMIT
JUL 16th Rev E:		ADD ONE MORE PLACE AND VERIFY CONNECTION AS ASSIGNED
JUL 16th Rev F:		UPDATED THE PROGRAMME FOR LED
JUL 16th Rev G:		CHANGED THE LED FOR LOW_RESUME_LED_RED UPDATE THE LED FOR 1A AND 0.1A Check up the changes impedance and updated other connector
JUL 16th Rev H:		UPDATE THE RESET ASSIGNMENT
AUG 25th Rev I:		UPDATE THE LED NUMBER UPDATE THE JERRY SET POINTS ON A WIRELESS IP UPDATE THE CONNECTION FOR THE FUEL
OCT 29th Rev J:		UPDATE THE ICE DOCUMENT NUMBER AND PRODUCT NAME REMOVED THE TELEMETRY
OCT 29th Rev K:		UPDATE THE PI WITH A PI CONNECTION CHANGED FROM A ALARM LED UPDATED THE FID NUMBER
2016 NOV 28th Rev L:		Updated the Hyd Temp. Update the Gas assignment. In Motor A.
2016 AUG 29th Rev M:		ADD JERRY REMOVED PET BY J (111) PLATED PET BY J (111)
2017 MAY 29th Rev N:		In support of Electrical Test 4 engine update: Changed a number of LED from 1A to 0A, 0.1A to 0.1A, and one from 0A to 0.1A. Updated the program. Updated Revision Note
2018 FEB 28th Rev O:		Change C280 to 0.01uF to measure the sentinel speed sensor
2018 OCT 26th Rev P:		Added C281, C282, C283, and R272
Q26049-001 Rev A		Added Circuitry to create: Snubbers for EMC concern. Increased Bulk Capacitance. More spare LED a few spare I/O Connectors are switched to Gold. New Layout

REFERENCE ONLY  
BOM ITEMS:

- PCB: Q2587-02
- SCHEMATIC: Q26049-01

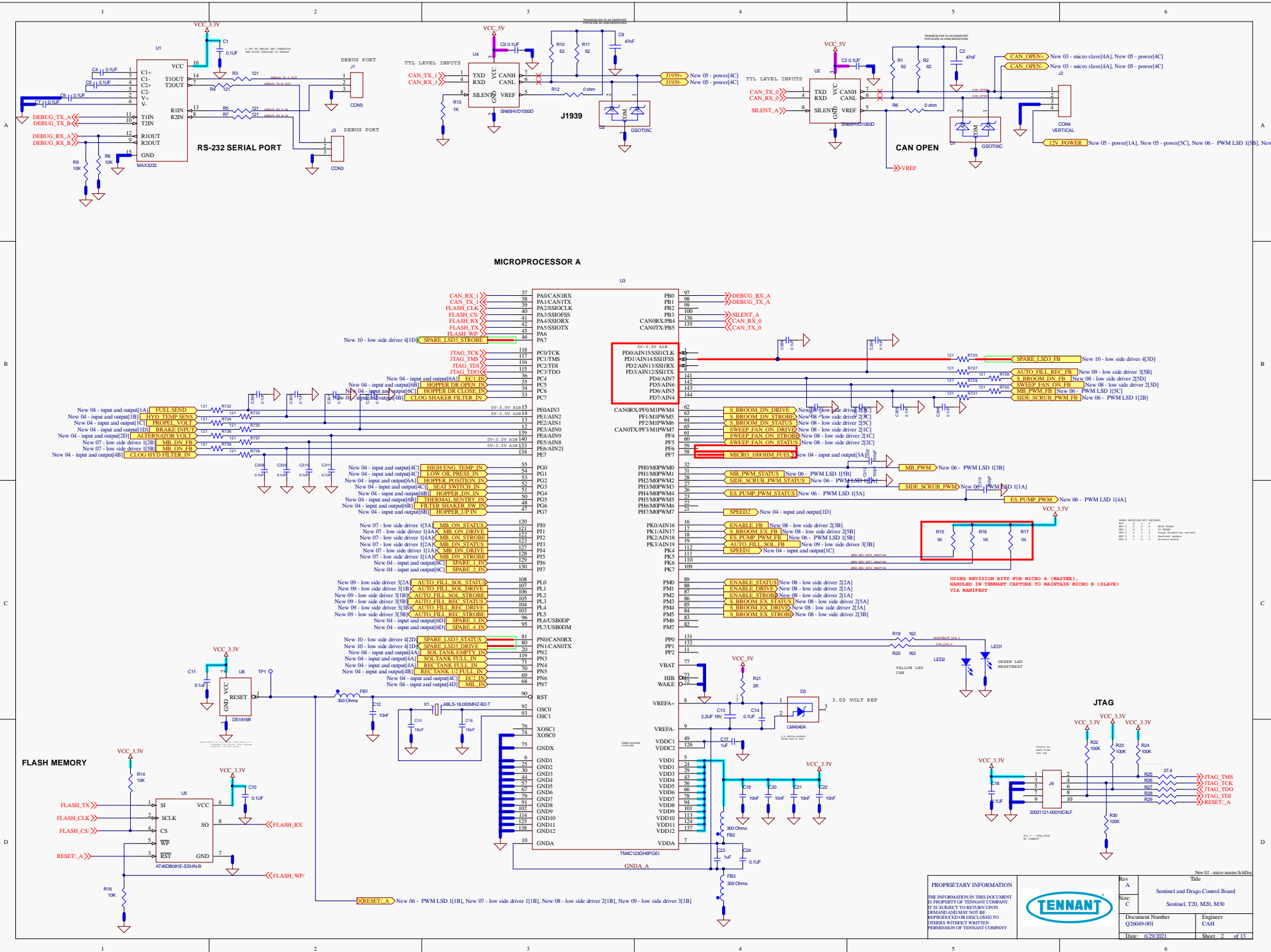
Basically the fuel sender circuit needs to work with both the Sentinel and M30 fuel senders, and the signal voltage needs to be 05V. Today it is only like 00.9V. When the different scrubbing functions run, there is a large voltage drop that skewes the measurement by 30% or so on Sentinel. M30 is also affected but not sure by how much. Give the Jira task a once over.

From: Hawkins, Charles  
Sent: Wednesday, May 6, 2020 6:26 AM  
To: Paulsen, Brett <Brett.Paulsen@tennantco.com>; Kittilson, Aaron <Aaron.Kittilson@TENNANTCO.COM>  
Subject: RE: Sentinel ser#11012 CCPE-275  
I am working on the board now. please detail what you are wanting.



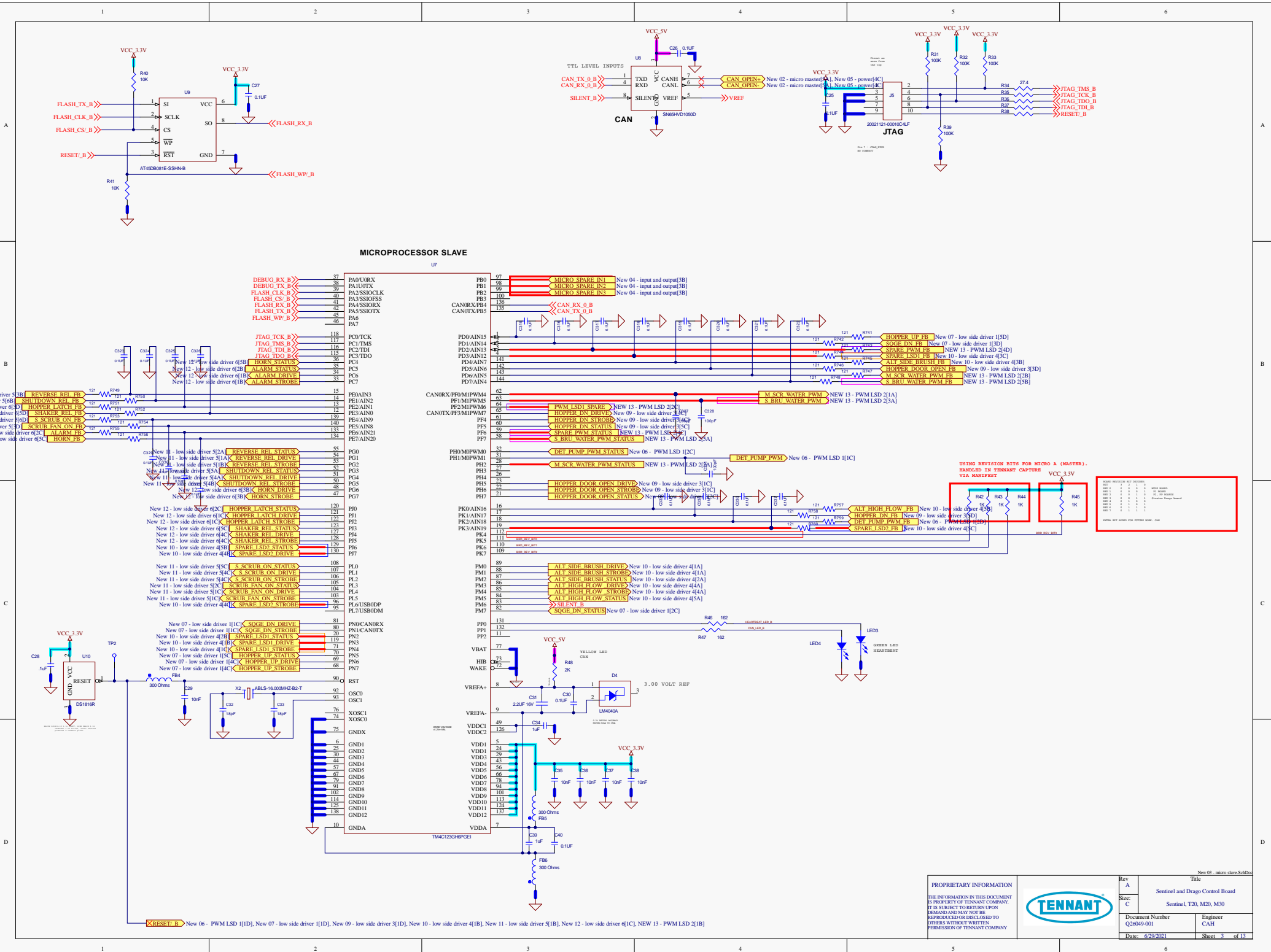
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		Size C	Sentinel, T20, M20, M30	
		Document Number Q26049-001	Engineer CAH	
		Date: 6/29/2021	Sheet 1 of 13	

New 01 - COVER SchDoc



**MICROPROCESSOR A**

CAN_RX_1	37	PA0/CAN1RX
CAN_TX_1	38	PA1/CAN1TX
FLASH_CLK	39	PA2/SSIOCLK
FLASH_CS	40	PA3/SSIOCS
FLASH_RX	41	PA4/SSIORX
FLASH_TX	42	PA5/SSIOTX
FLASH_WP	43	PA6
SPARE_LSD3_STROBE	46	PA7
JTAG_TCK	118	PC0/TCK
JTAG_TMS	117	PC1/TMS
JTAG_TDI	116	PC2/TDI
JTAG_TDO	115	PC3/TDO
ECL1_IN	36	PC4
HOPPER_DR_OPEN_IN	35	PC5
HOPPER_DR_CLOSE_IN	34	PC6
CLOG_SHAKER_FILTER_IN	33	PC7
FUEL_SEND	121	PE0/AIN15
HYD_TEMP_SENS	121	PE1/AIN2
PROPEL_VOLT	121	PE2/AIN1
BRAKE_INP1	121	PE3/AIN0
ALTERNATOR_VOLT	121	PE4
MB_DS_FB	121	PE5
MB_ON_FB	121	PE6/AIN9
CLOG_HYD_FILTER_IN	121	PE7/AIN21
HIGH_ENG_TEMP_IN	55	PG0
LOW_OIL_PRESS_IN	53	PG1
HOPPER_POSITION	52	PG2
SEAT_SWITCH_IN	51	PG3
HOPPER_DN_IN	50	PG4
THERMAL_SNTY_IN	49	PG5
FILTER_SHAKER_SW_IN	48	PG6
HOPPER_UP_IN	47	PG7
MB_ON_STATUS	120	PK0/AIN16
MB_ON_DRIVE	121	PK1/AIN17
MB_ON_STROBE	121	PK2/AIN18
MB_DS_STATUS	122	PK3/AIN19
MB_DS_DRIVE	122	PK4
MB_DS_STROBE	122	PK5
SPARE_1_IN	120	PK6
SPARE_2_IN	120	PK7
AUTO_FILL_SOL_STATUS	107	PL0
AUTO_FILL_SOL_DRIVE	107	PL1
AUTO_FILL_SOL_STROBE	106	PL2
AUTO_FILL_REC_STATUS	105	PL3
AUTO_FILL_REC_DRIVE	104	PL4
AUTO_FILL_REC_STROBE	103	PL5
SPARE_3_IN	95	PL6/USBDDP
SPARE_4_IN	95	PL7/USBDDM
SPARE_LSD3_STATUS	81	PN0/CAN1RX
SPARE_LSD3_DRIVE	80	PN1/CAN1TX
SOL_TANK_EMPTY_IN	20	PN2
SOL_TANK_FULL_IN	19	PN3
REC_TANK_FULL_IN	71	PN4
REC_TANK_12_FULL_IN	70	PN5
MB_DS_DRIVE	69	PN6
MB_DS_IN	68	PN7
MB_DS_STATUS	68	PN8
MB_DS_STROBE	68	PN9
RESET_A	92	OSC1
RESET_B	93	OSC2
RESET_C	76	XOSC1
RESET_D	74	XOSC2
RESET_E	75	GNDX
RESET_F	6	GND1
RESET_G	25	GND2
RESET_H	30	GND3
RESET_I	44	GND4
RESET_J	37	GND5
RESET_K	67	GND6
RESET_L	56	GND7
RESET_M	91	GND8
RESET_N	102	GND9
RESET_O	114	GND10
RESET_P	125	GND11
RESET_Q	138	GND12
RESET_R	10	GND13
RESET_S	7	GND14



MICROPROCESSOR SLAVE

U7

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Rev A  
Title  
Sentinel and Drago Control Board

Doc Number  
Q2049-001

Date: 6/29/2011

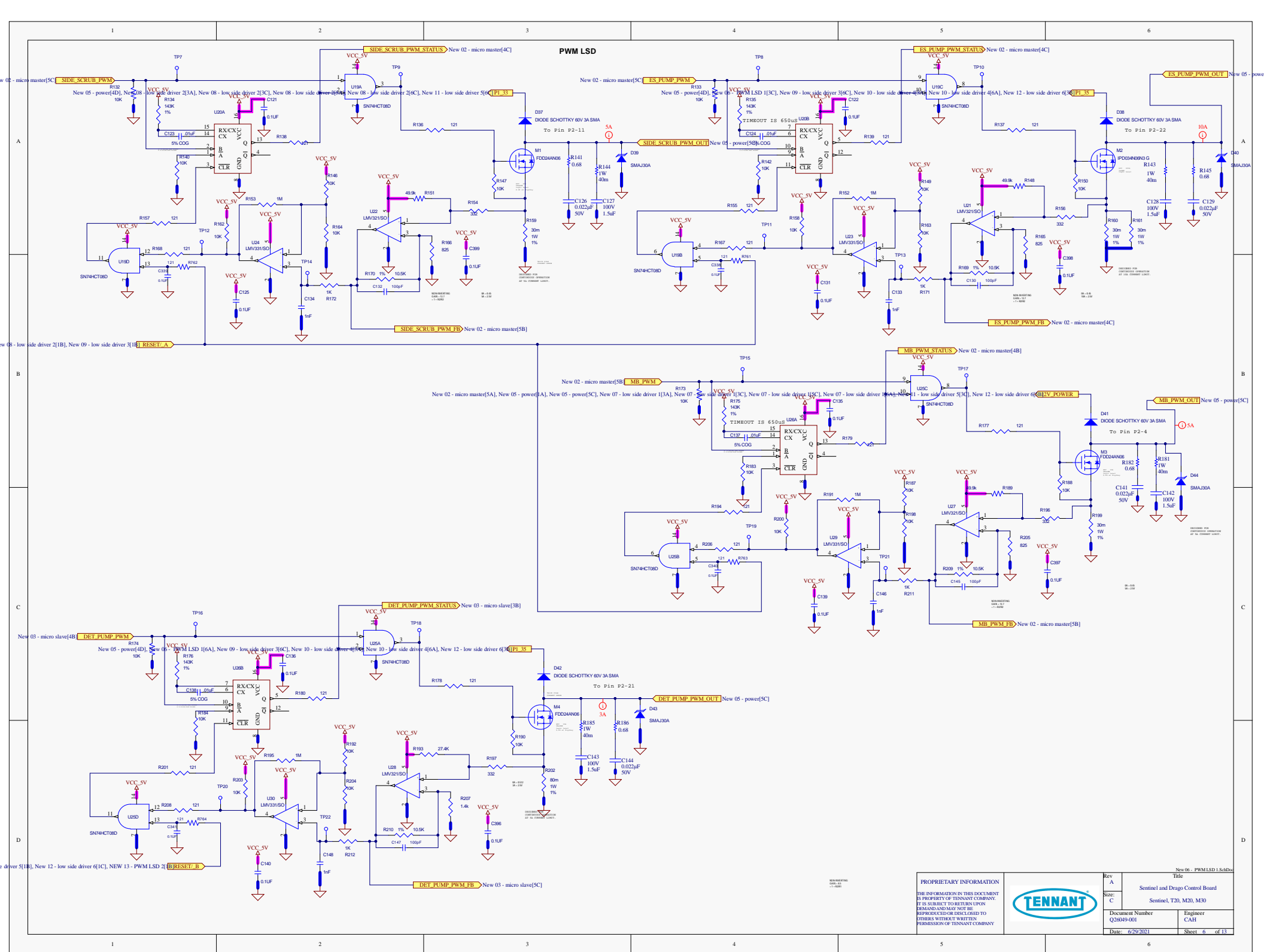
Engineer  
CAH

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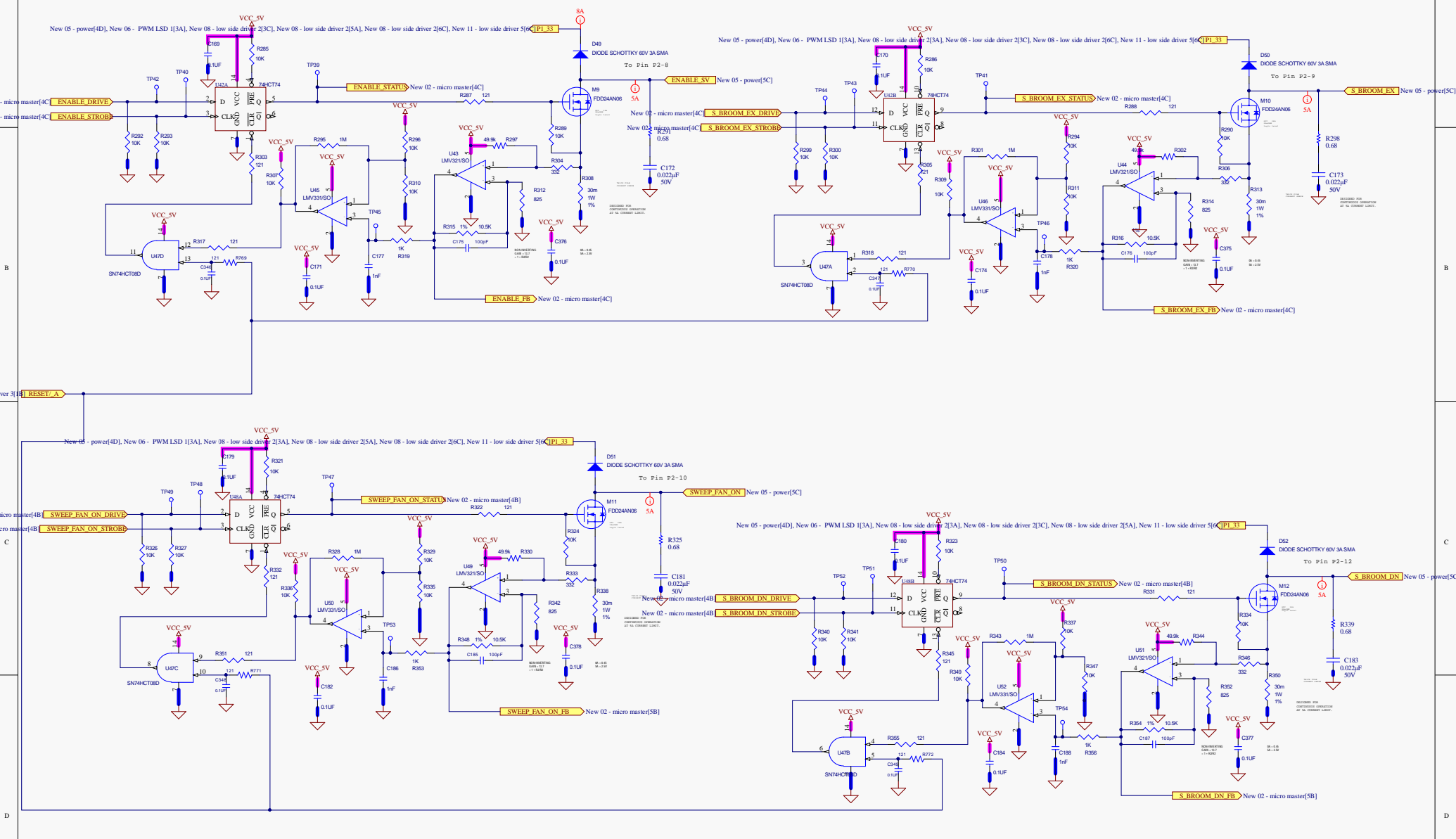
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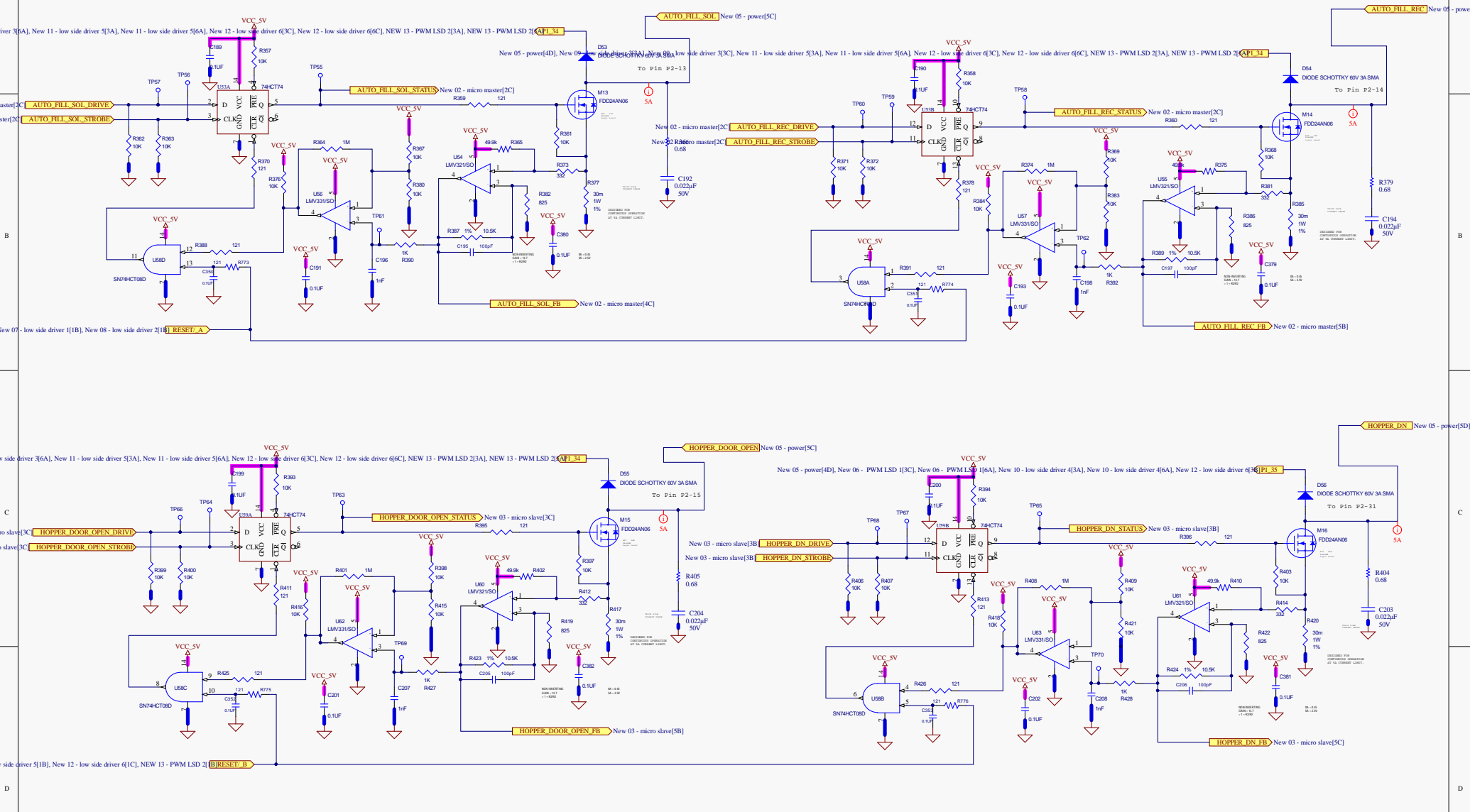


LOW SIDE DRIVER 2



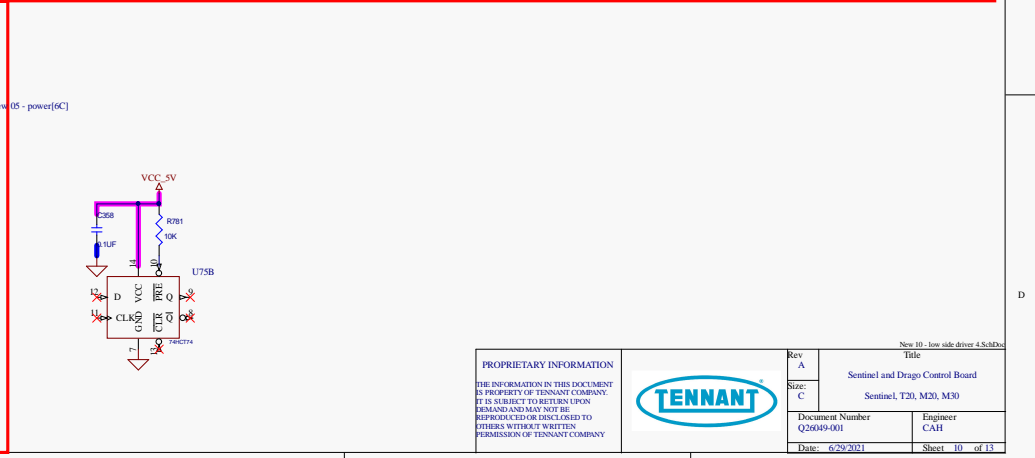
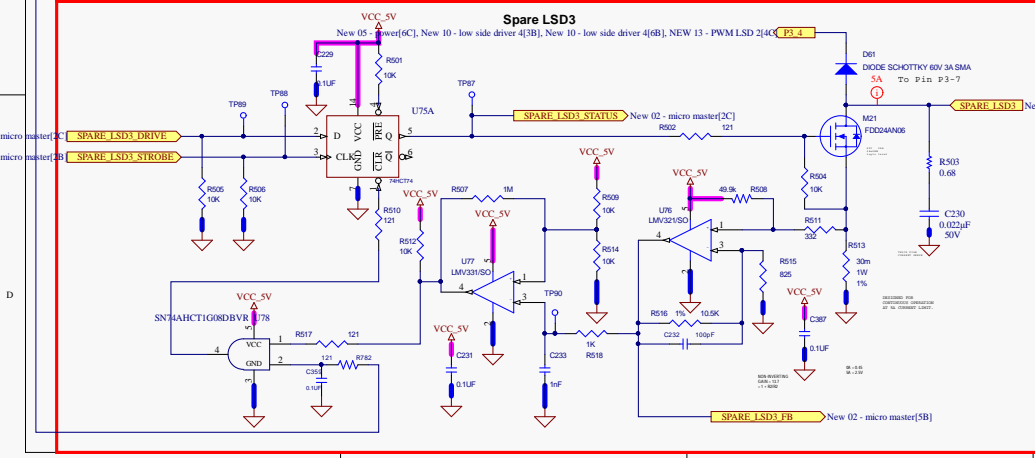
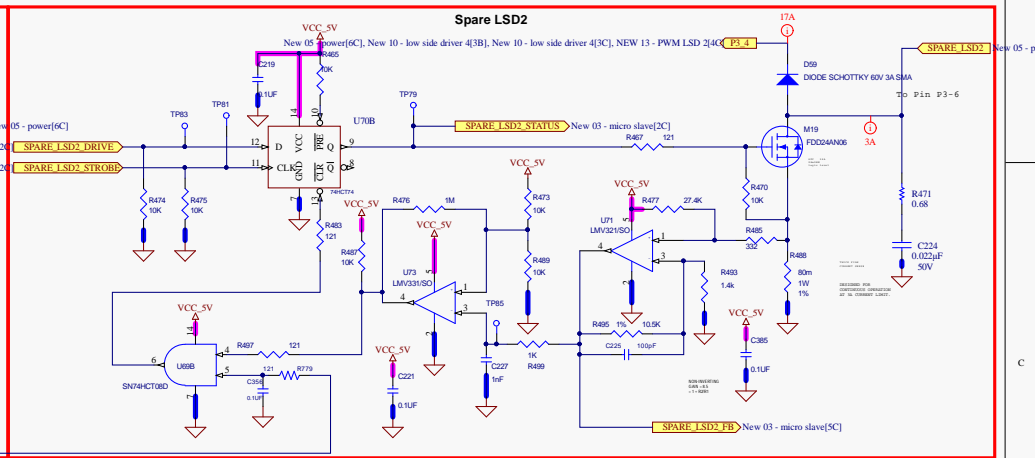
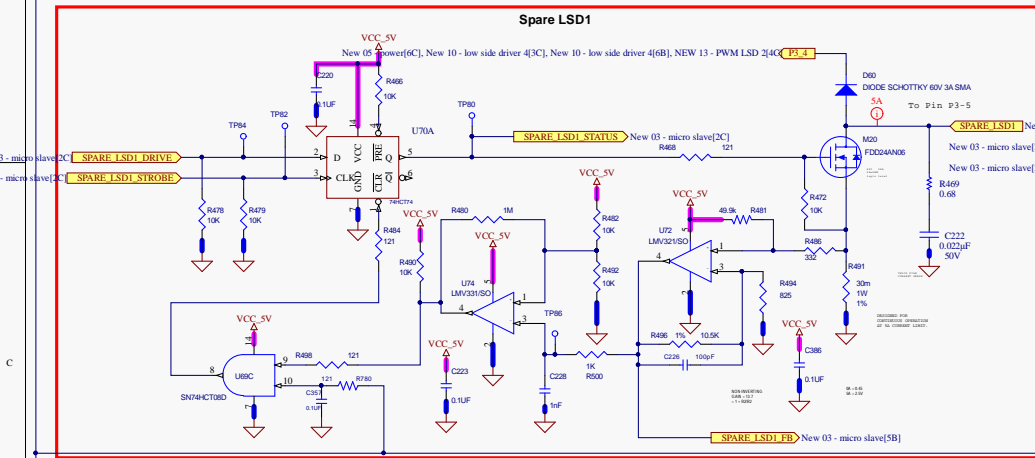
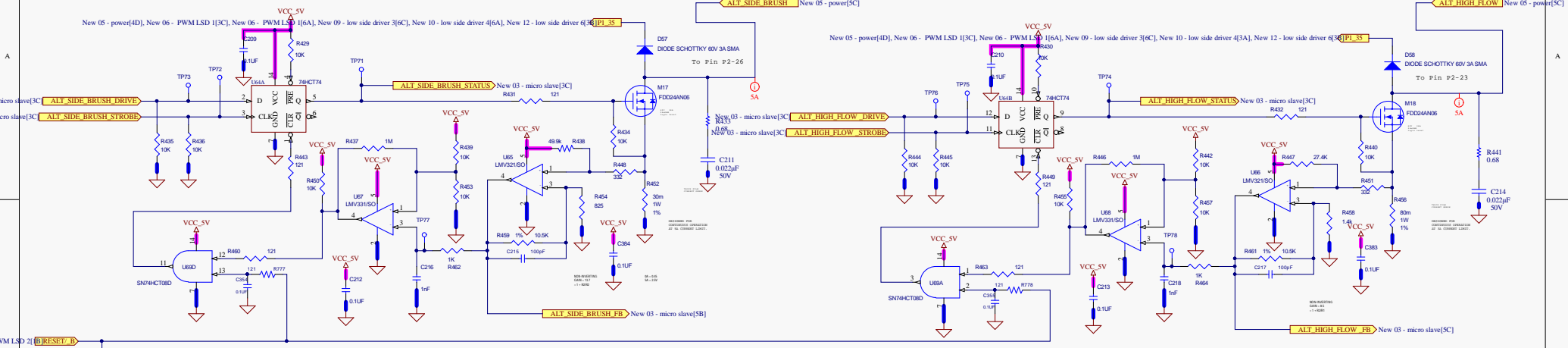
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<p>Document Number</p> <p>Q20049-001</p> <p>Date: 6/29/2011</p>			<p>Engineer</p> <p>CAH</p> <p>Sheet 8 of 13</p>

LOW SIDE DRIVER 3



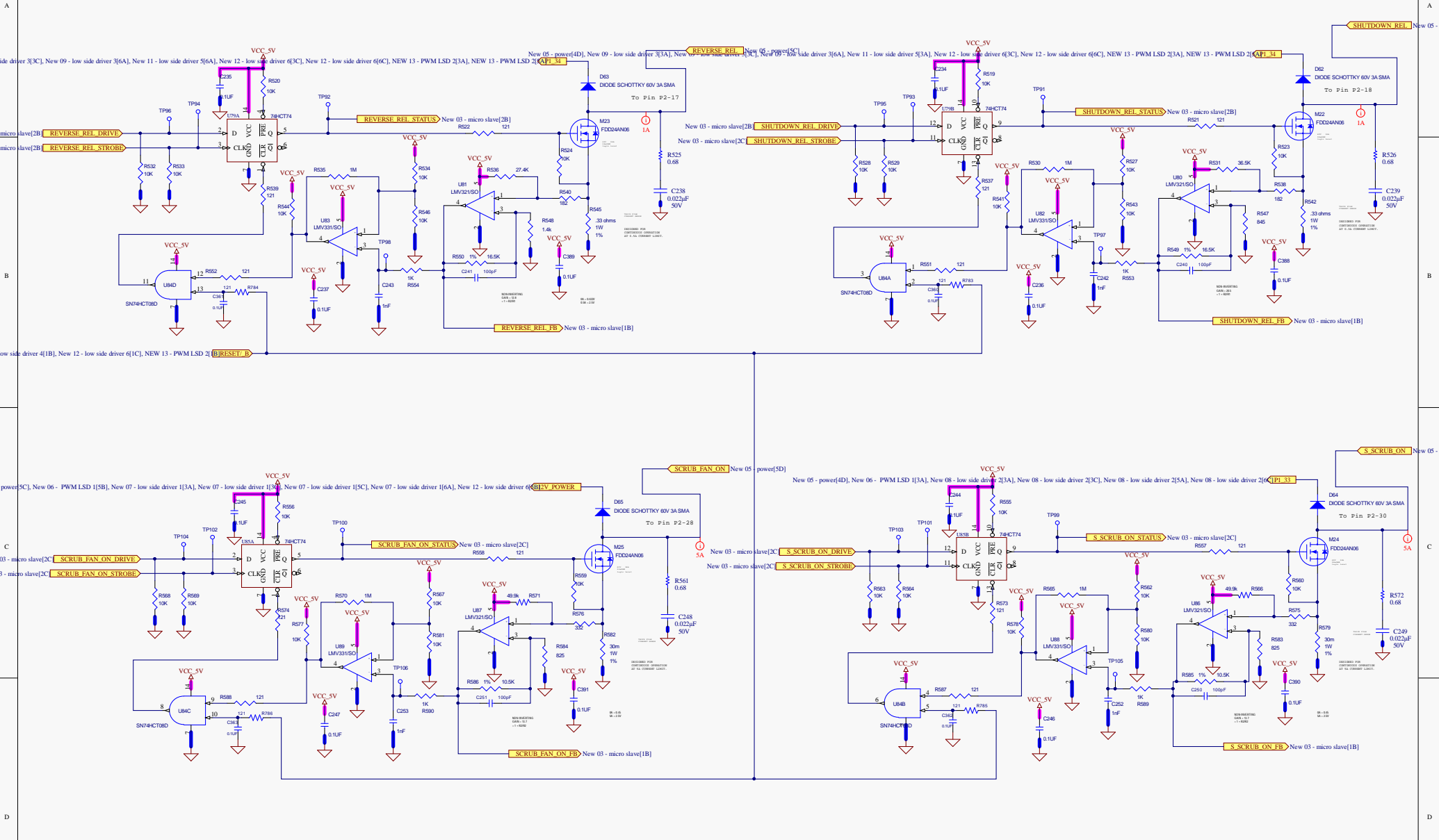
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LOW SIDE DRIVER 4



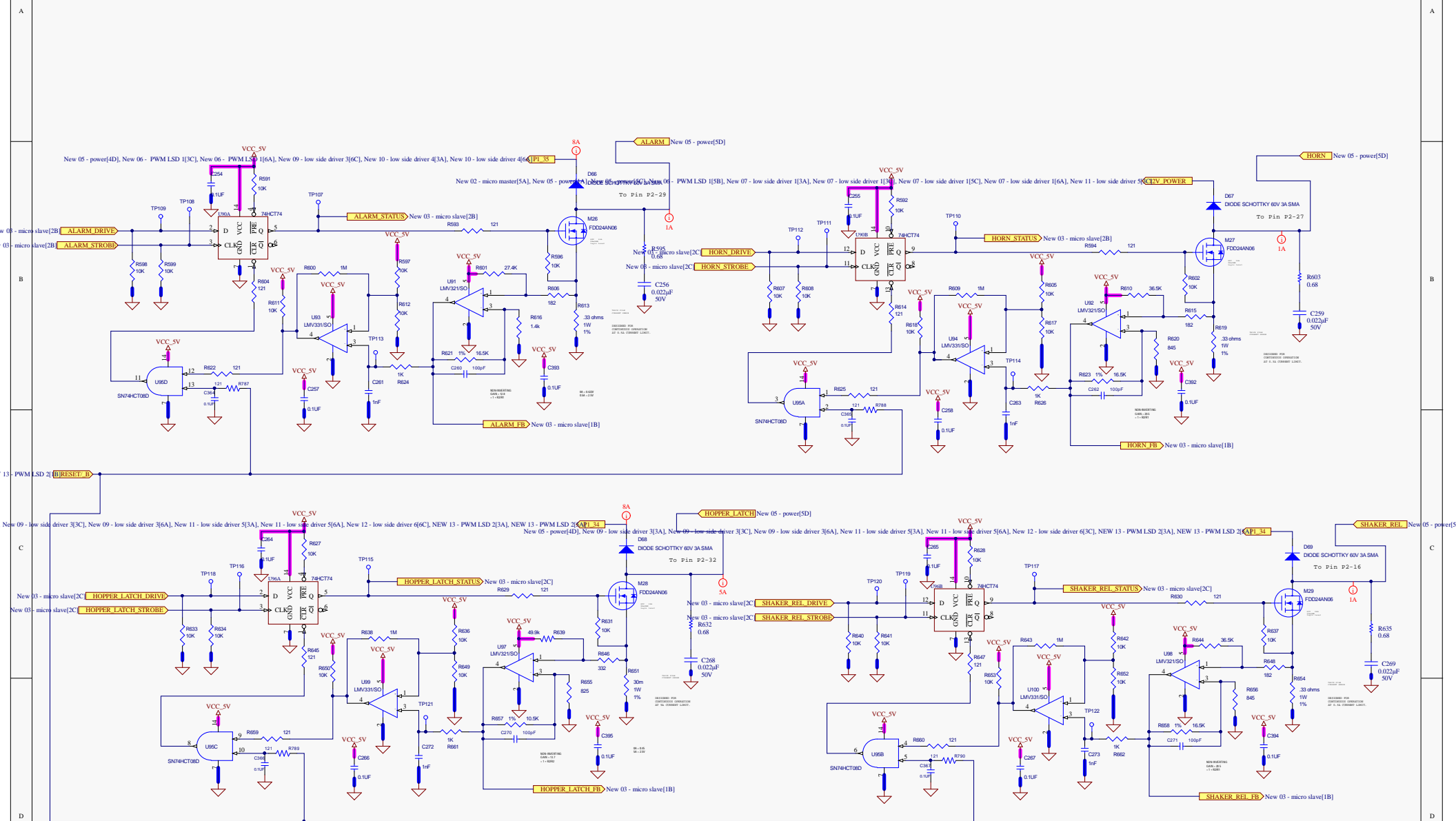
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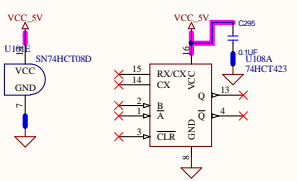
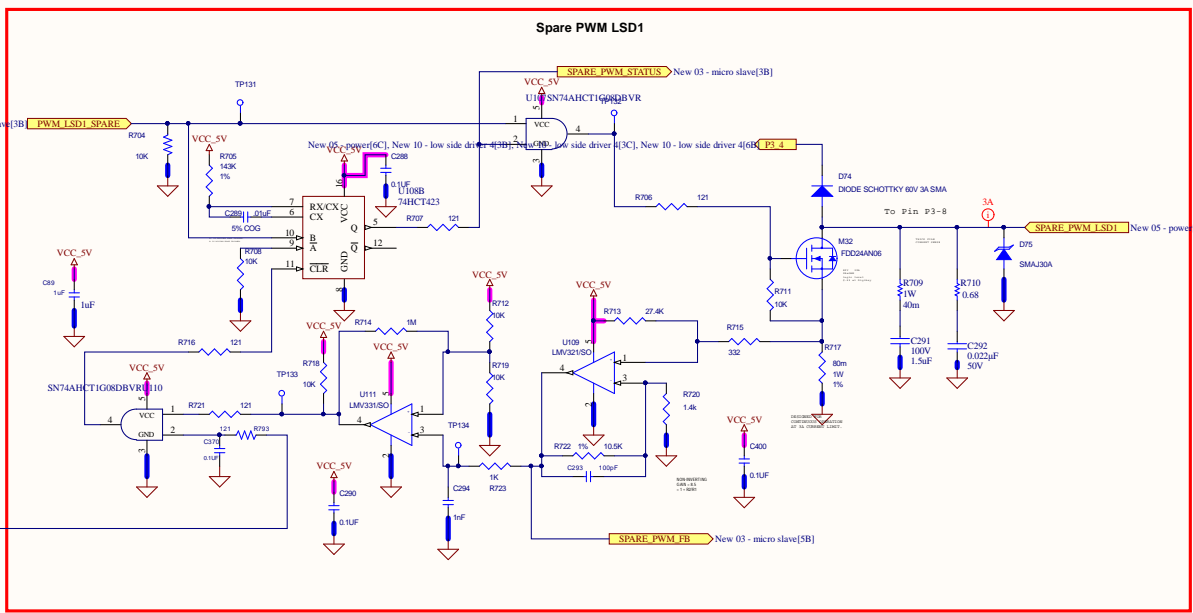
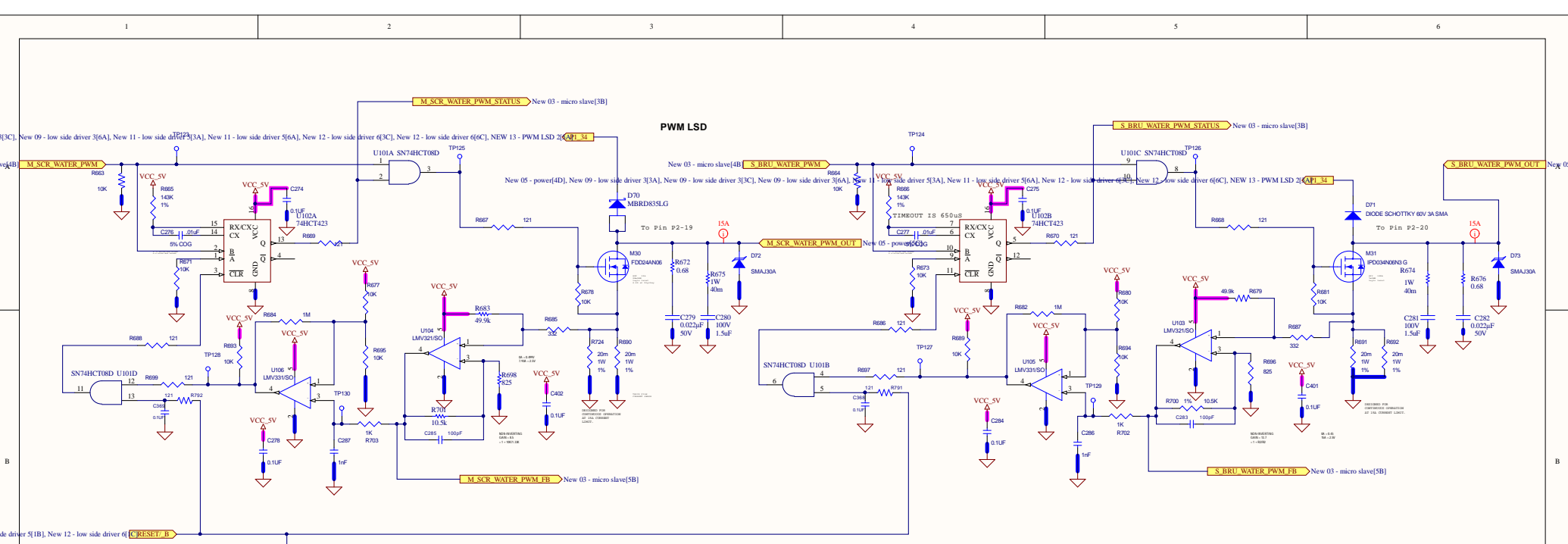
LOW SIDE DRIVER 5

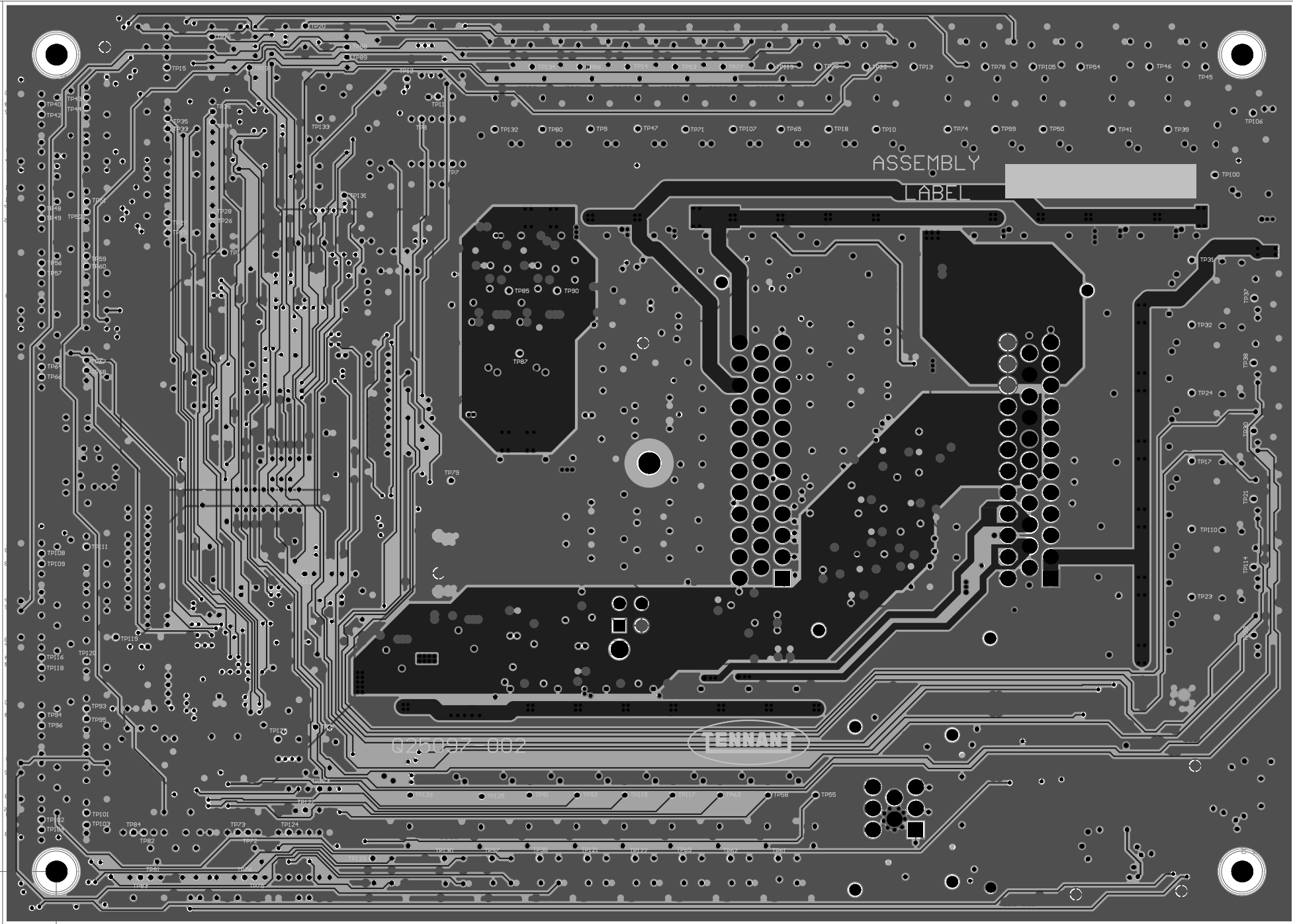




LOW SIDE DRIVER 6







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0.394

Sentinel and Drago Control Board

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