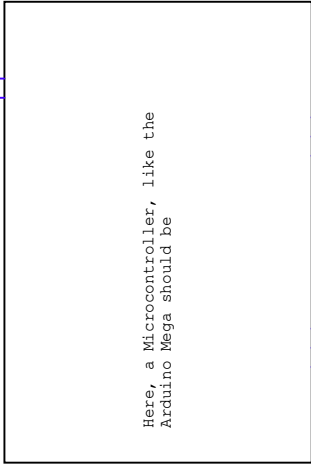


Main Control Board

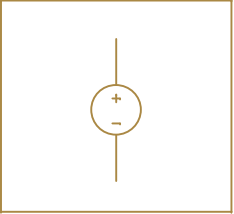
- Incorporates
- + 3 Solenoid Driver Cirucuits
 - + Current sensinc circuit for Solenoid Driver Circuit
 - + Input for two buttons
 - Temperature sensors for Solenoid Driver Circuit
 - Interface for up to 50 additional LDRs
 - Speaker
 - NeoPixel Interface



PWM_Solenoid3
PWM_Solenoid2
PWM_Solenoid1

Current_Sig3
Current_Sig2
Current_Sig1

P5



Power Supply

P1

PWM_Solenoid1
Shunt_Sig1

PWM_In
Shunt_Out

Solenoid Driver

P2

PWM_Solenoid2
Shunt_Sig2

PWM_In
Shunt_Out

Solenoid Driver

P3

PWM_Solenoid3
Shunt_Sig3

PWM_In
Shunt_Out

Solenoid Driver

P4

Shunt_Sig1
Shunt_Sig2
Shunt_Sig3

A_In1
A_In2
A_In3
A_In4

V_Out1
V_Out2
V_Out3
V_Out4

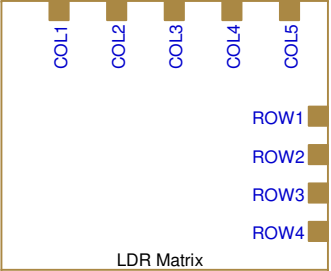
Current_Sig1
Current_Sig2
Current_Sig3

Current_Sensing

R1
10k

0

J14



LDR Matrix

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Juergen Markl
Postboks 235
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Norway



Title
Main Control Board

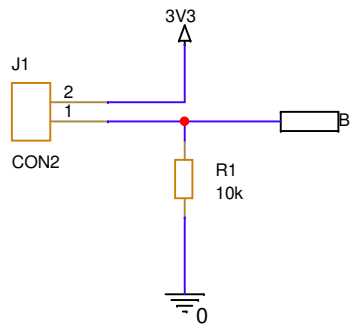
Size
A4

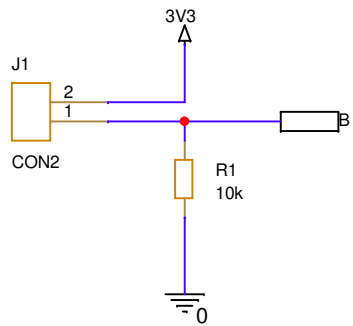
Document Number
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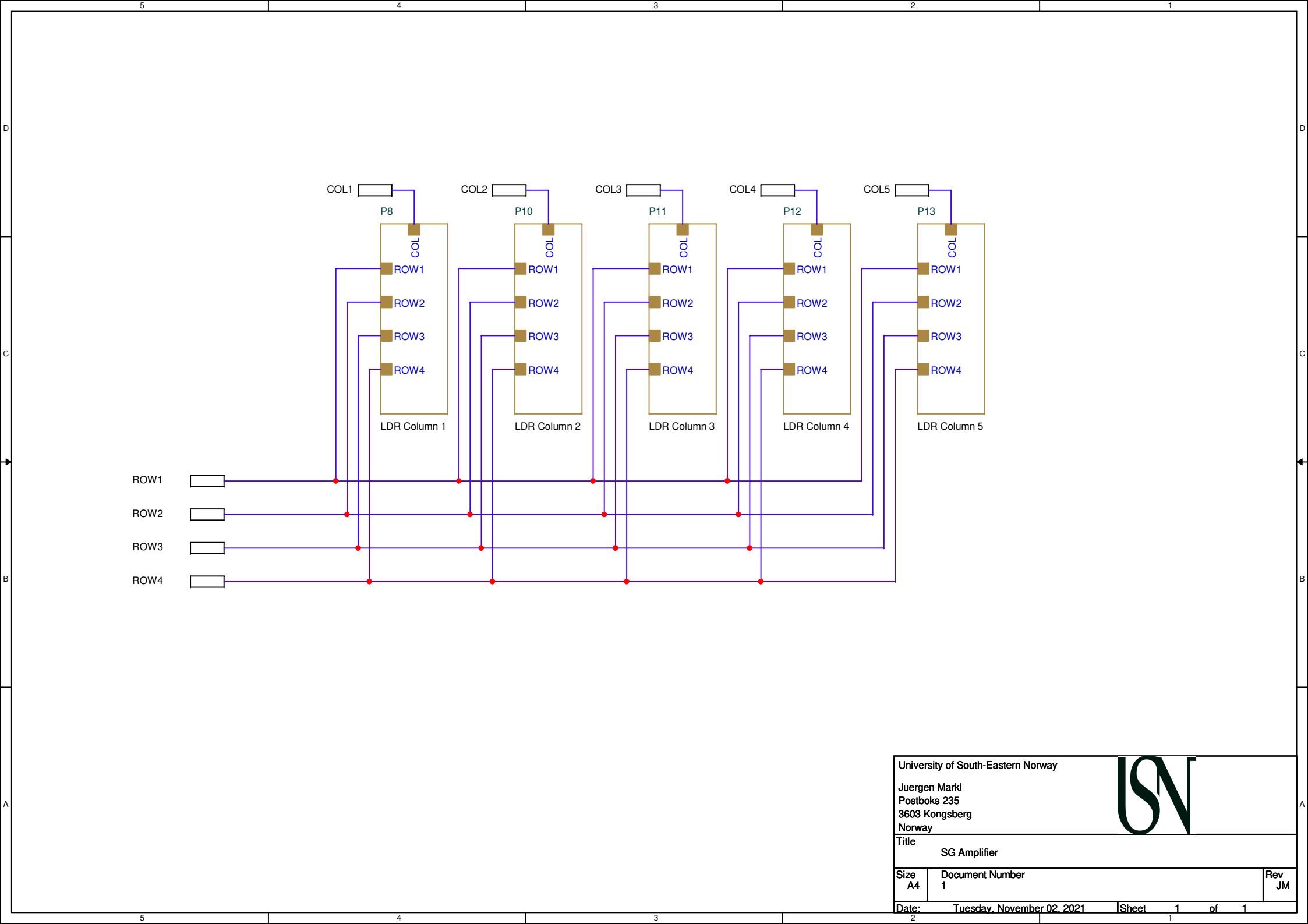
Rev
JM

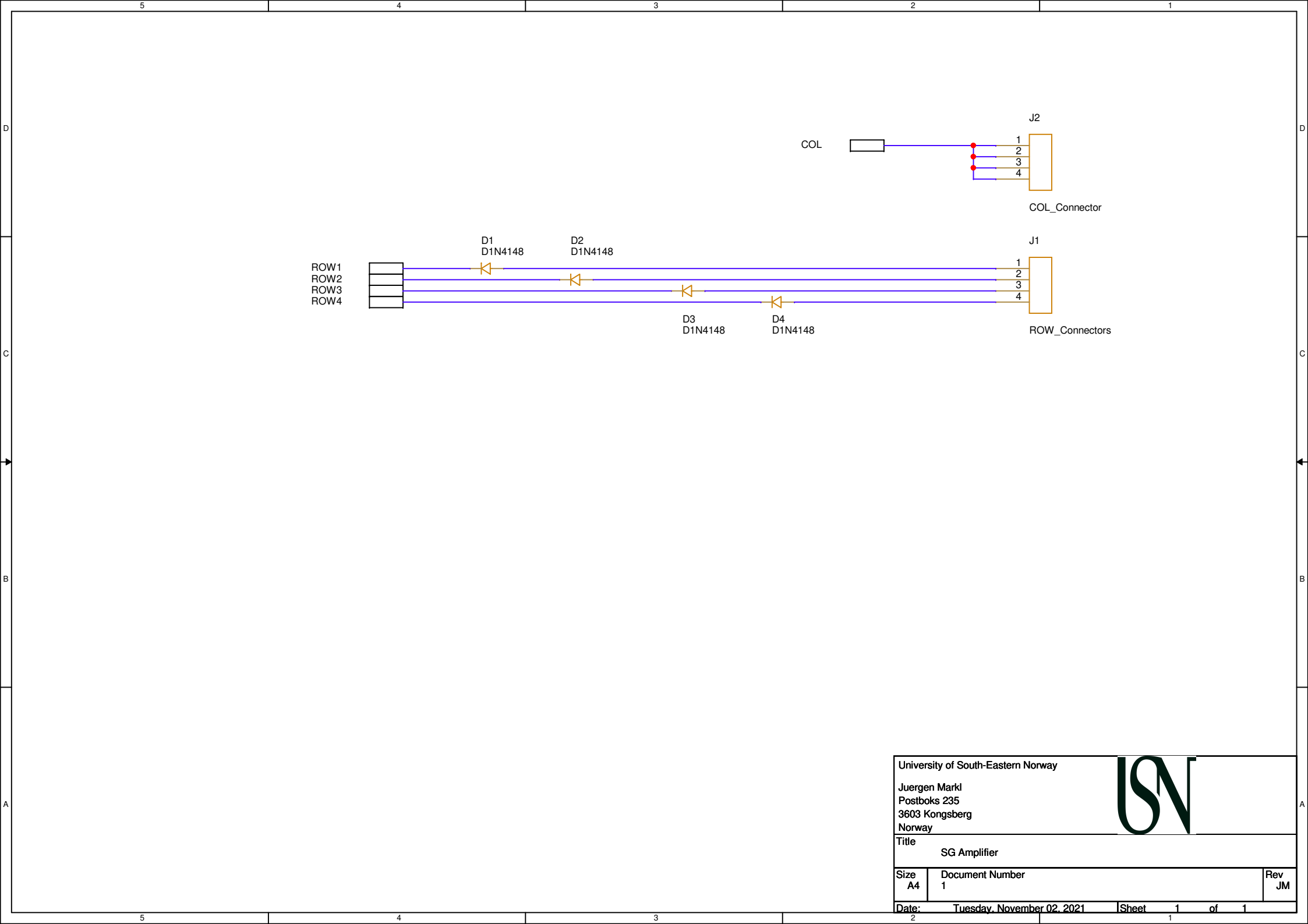
Date: Saturday, November 27, 2021

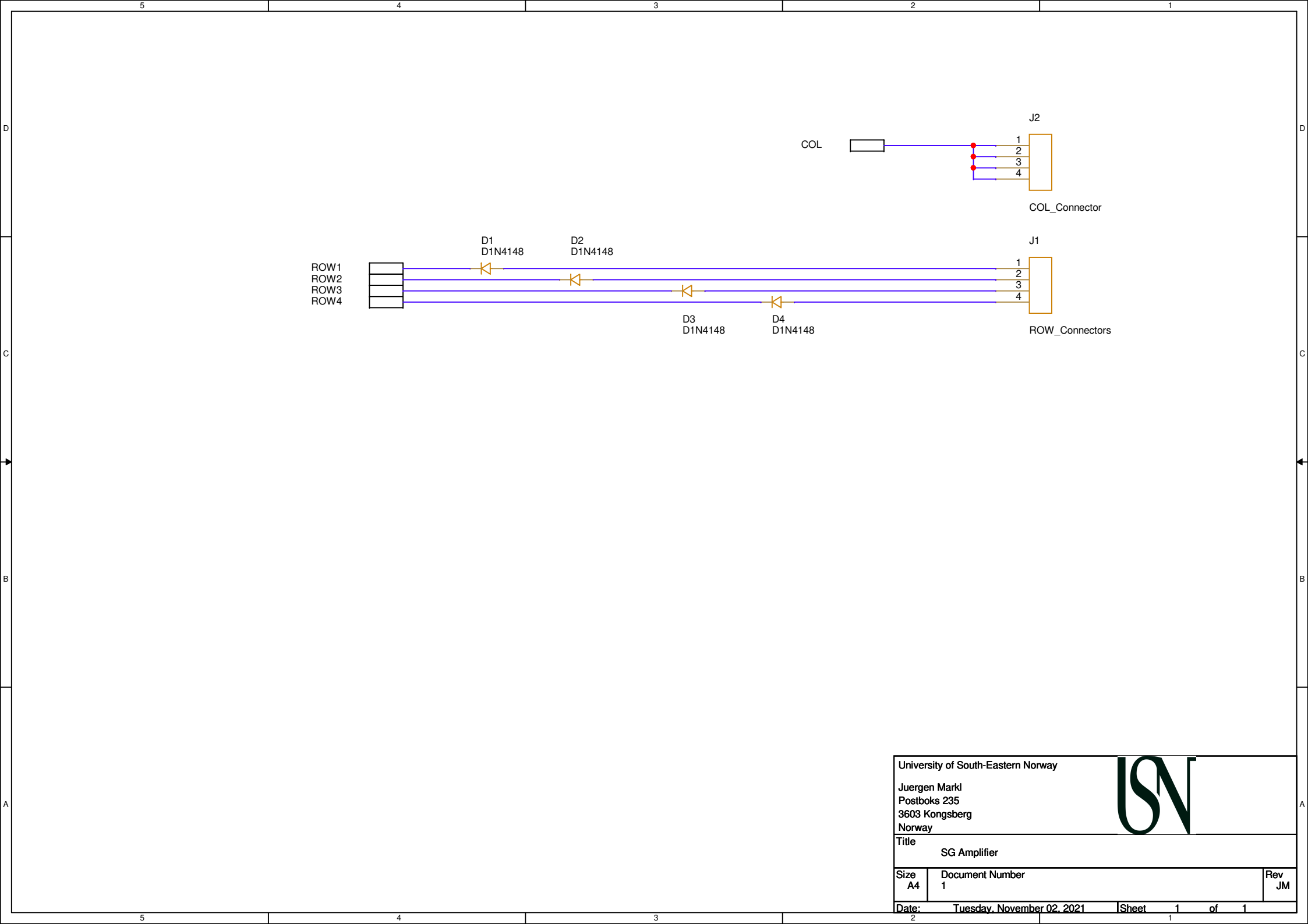
Sheet 1 of 6

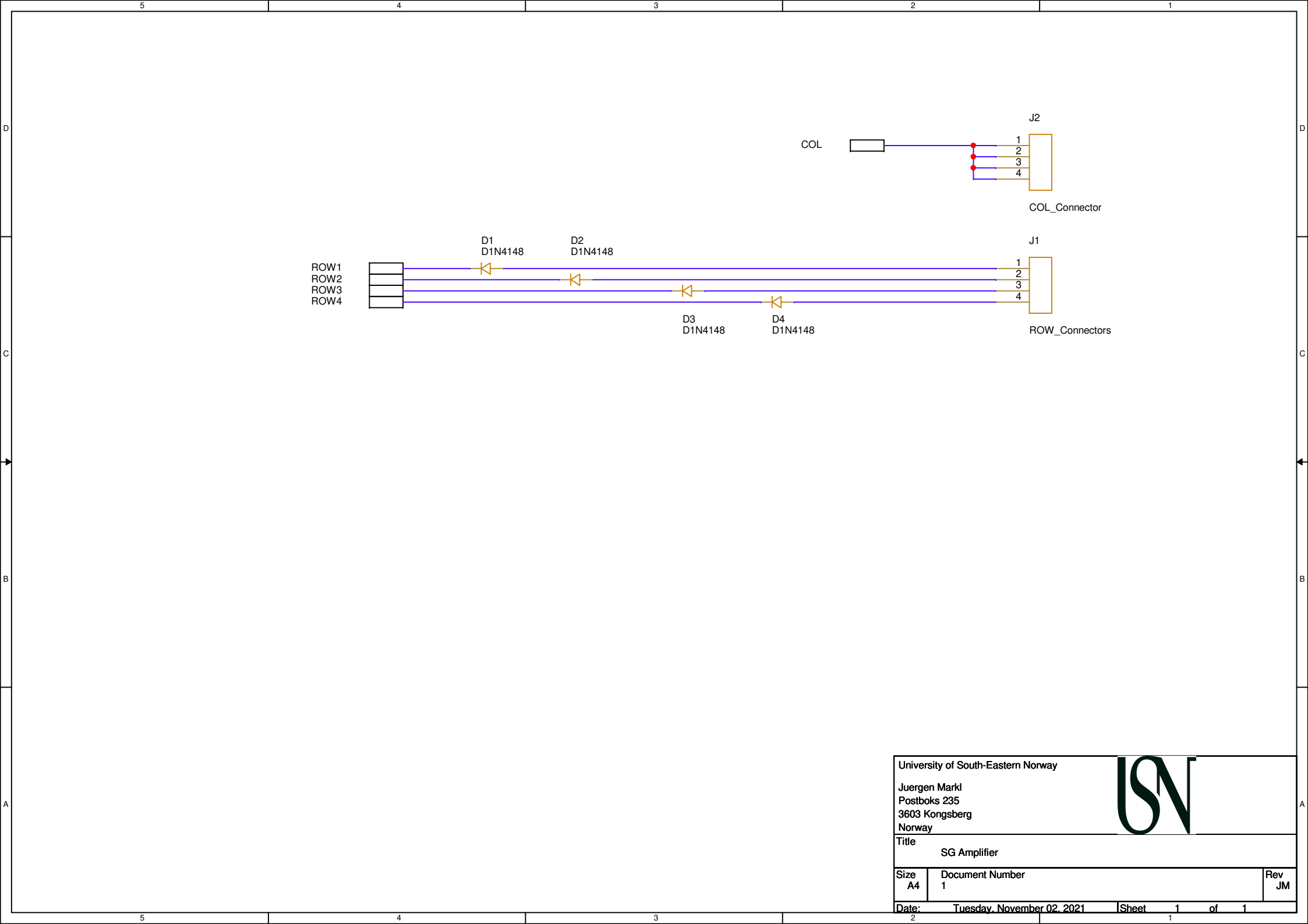


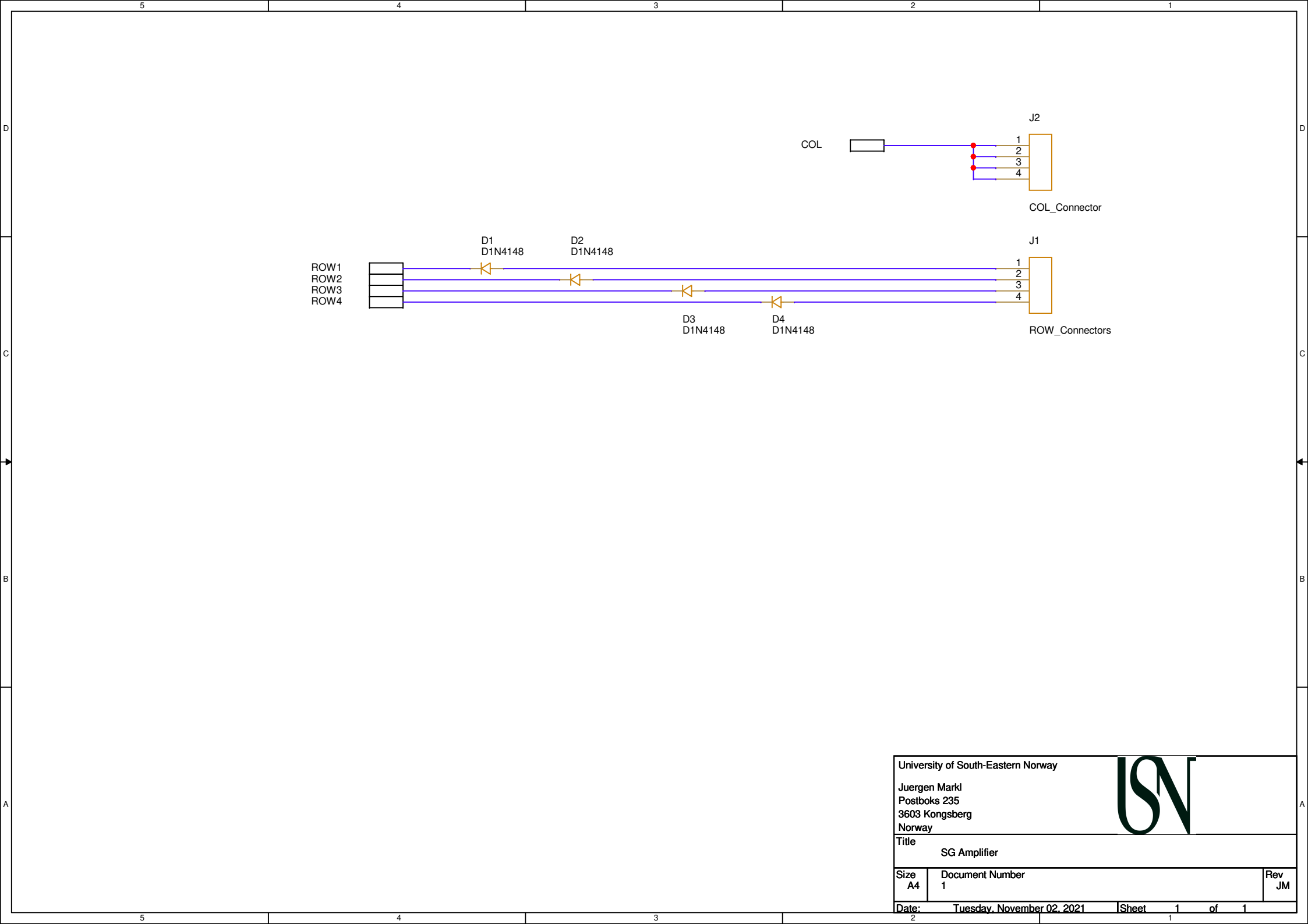


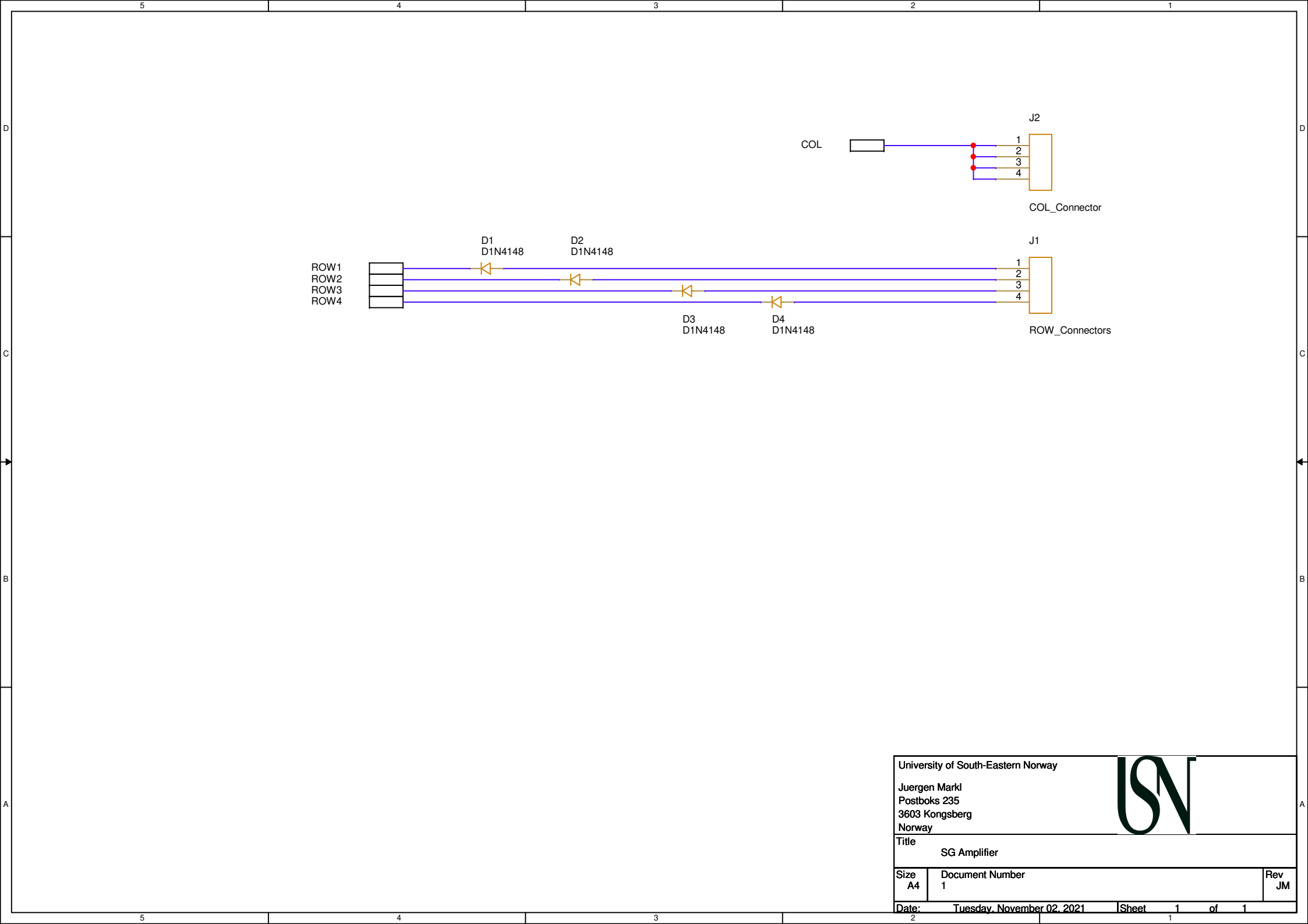


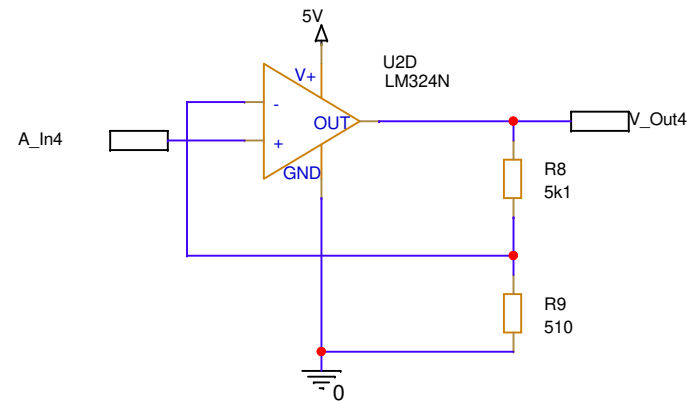
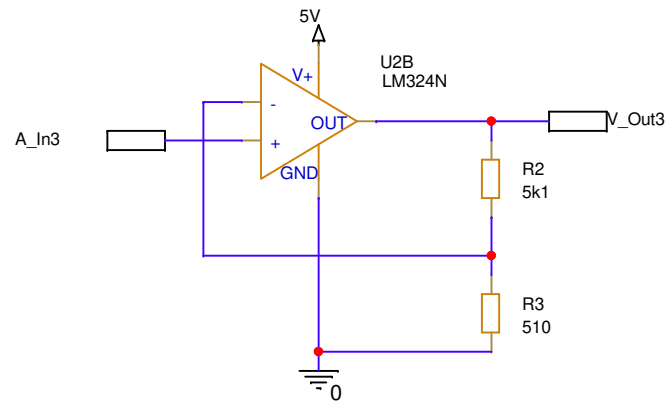
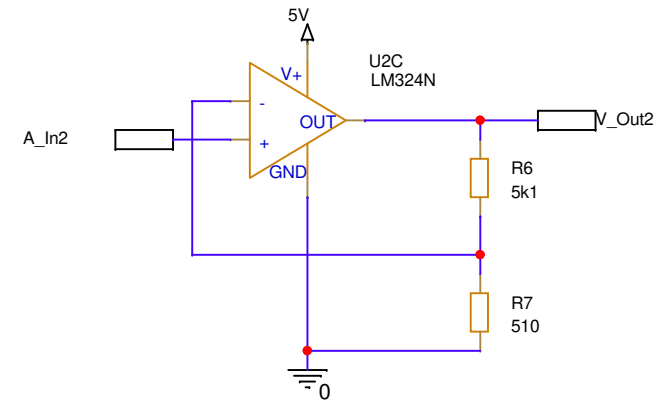
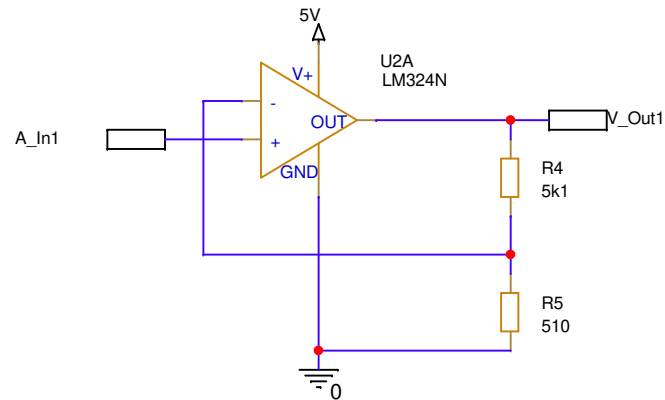












gain calculation:

at 2.5A, 0.10hm Resisotr == 0.25 V @ 2.5A

gain of 11 is desirable:

$a = 1 + R2/R1$

picking R2 = 10k

$R1 = R2 / (a - 1) = 1k$

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Title
SG Amplifier

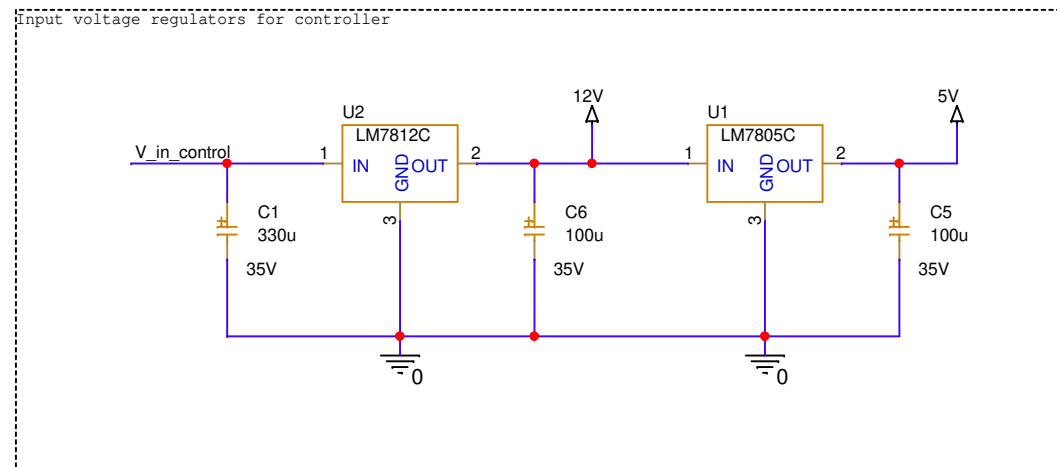
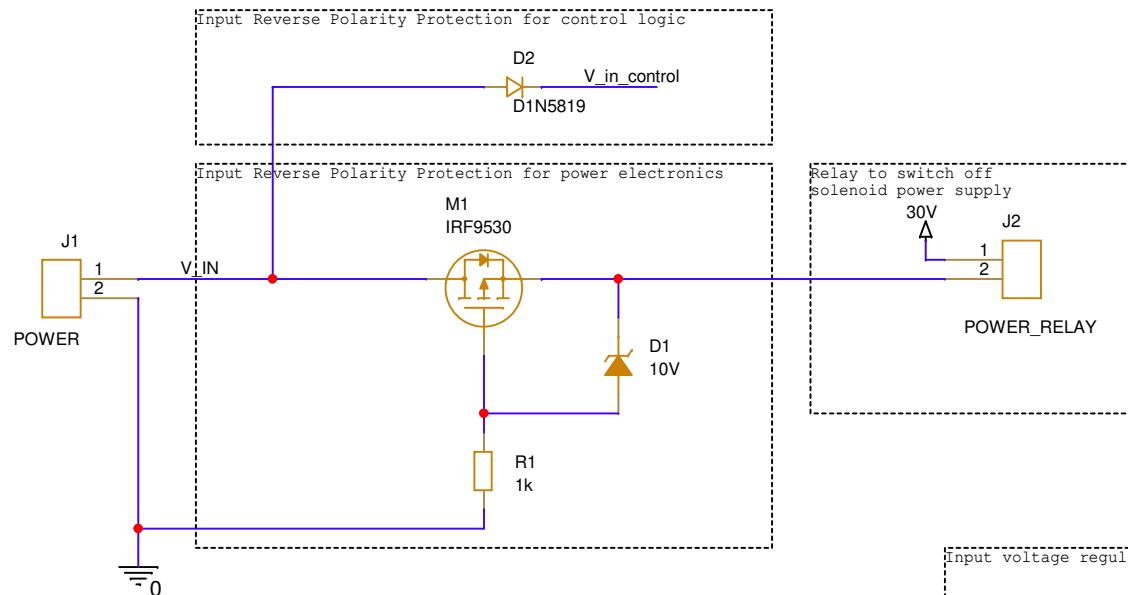
Size
A4

Document Number
1

Rev
JM

Date: Tuesday, November 09, 2021

Sheet 2 of 6



V1 = 0
 V2 = 3
 TD = 10u
 TR = 1u
 TF = 1u
 PW = 50u
 PER = 100u

5V
 12V
 12V
 30V

R11 10k
 R12 4k7
 R13 1k
 R14 33
 R15 0.1
 R16 12
 L1 33u

Q1 Q2N3904
 Q2 Q2N3904
 Q3 Q2N3906
 M1 IRF520

D1 D1N5819

J1 CON2

Shunt_Out

0

