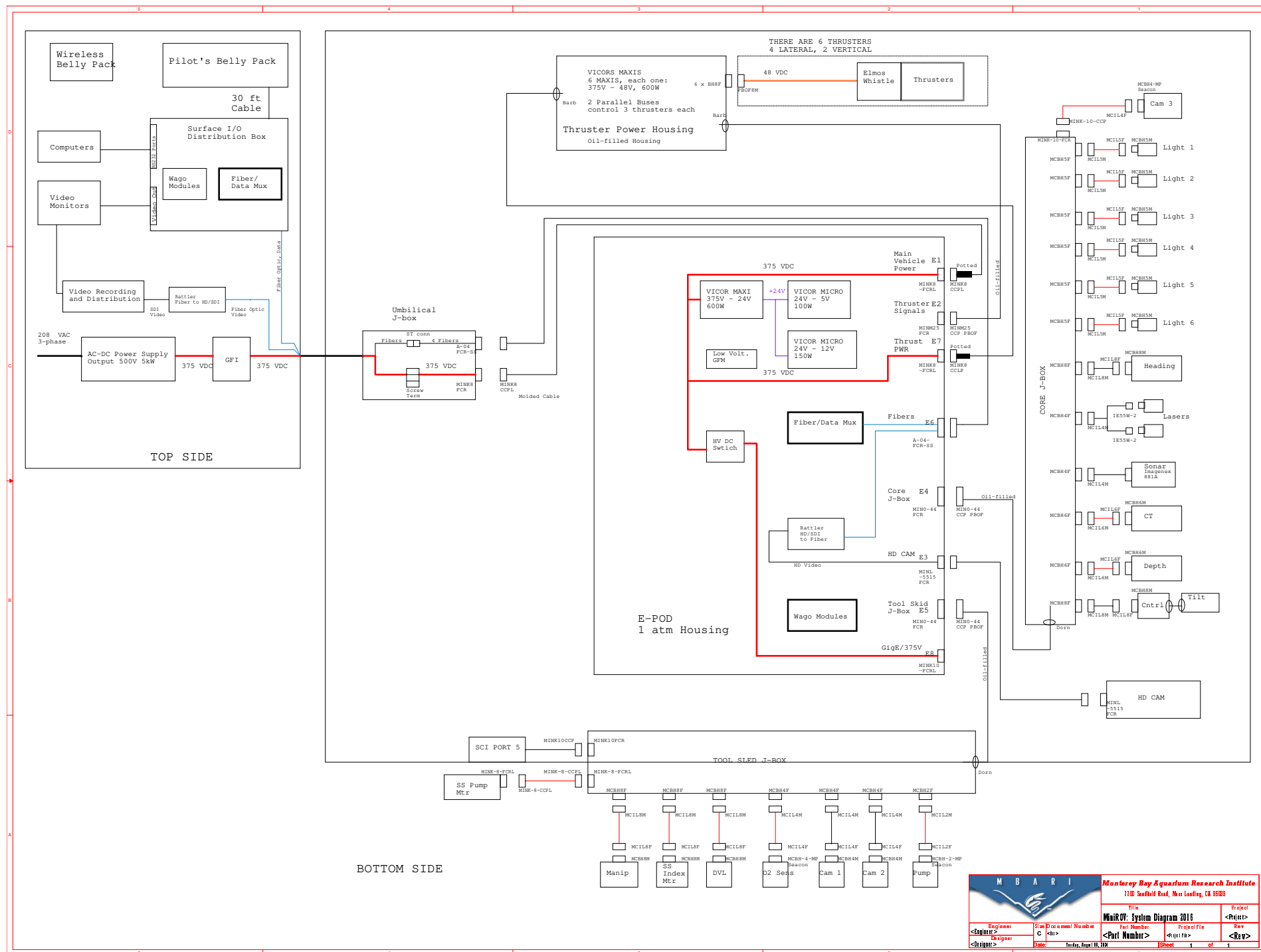
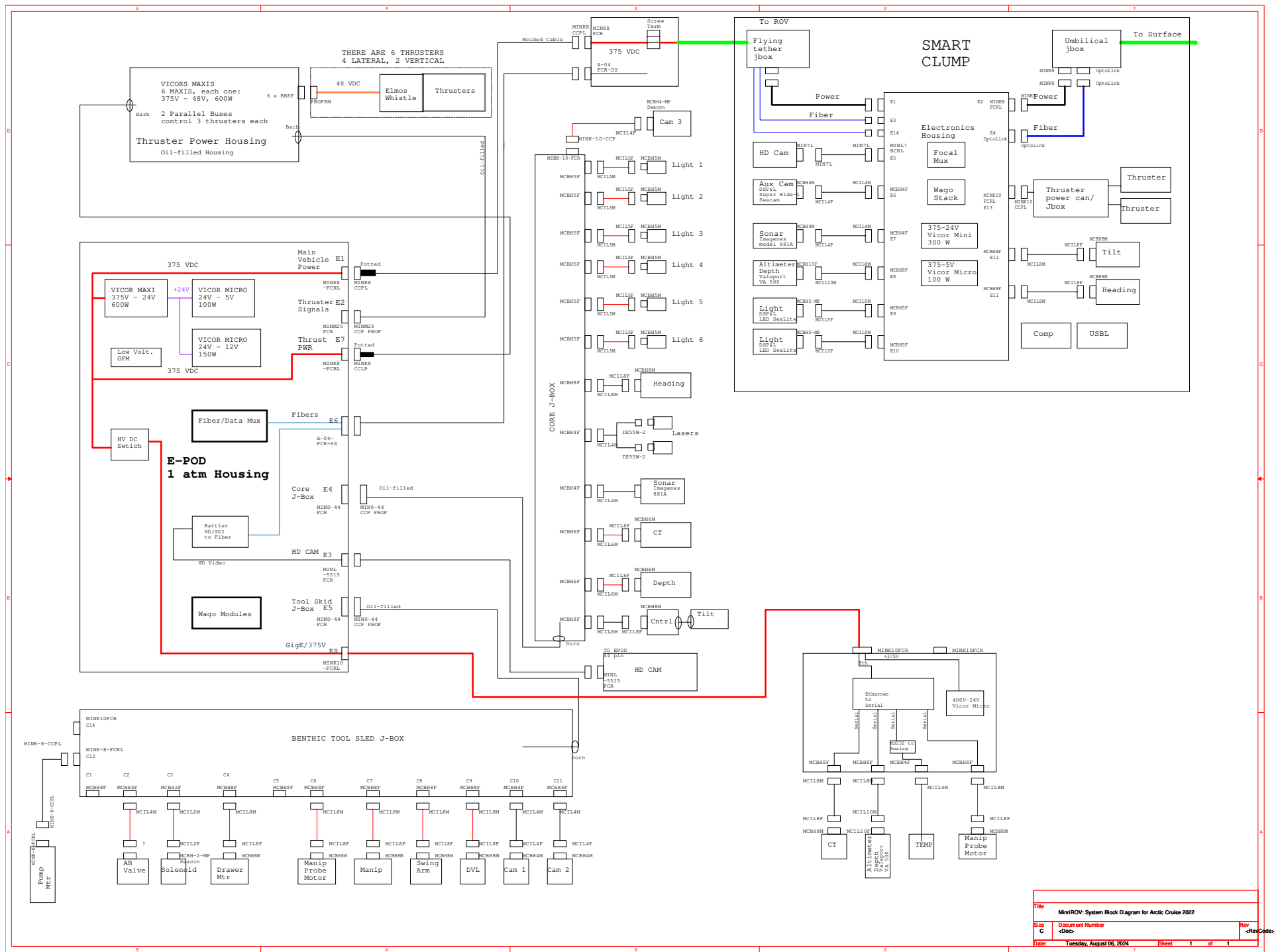
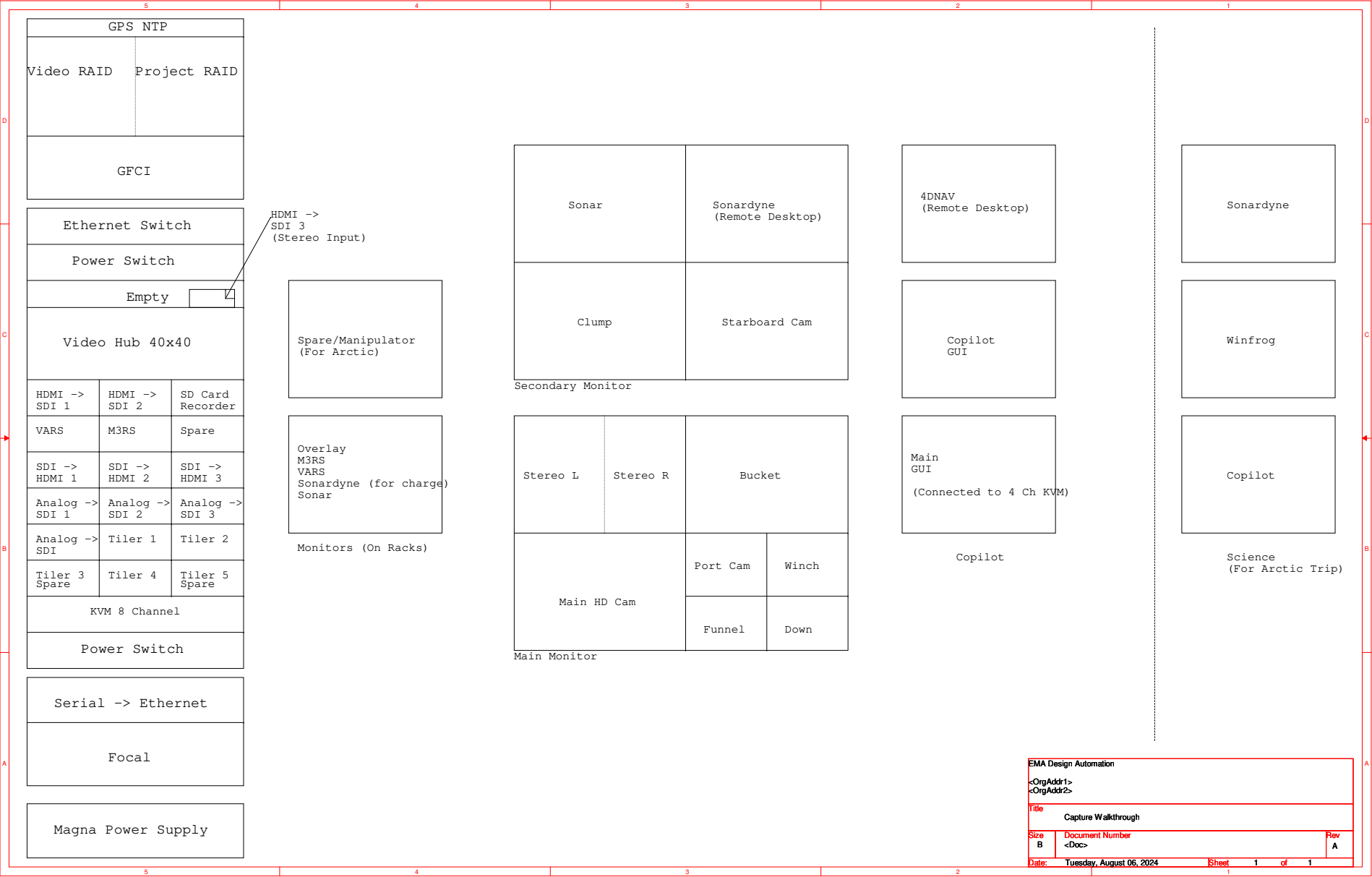
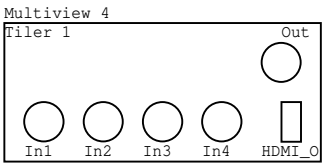






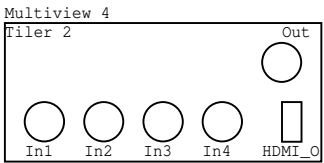




In1: Stereo video from HDMI -> SDI Converter  
In2: Main HD  
In3: Bucket Cam  
In4: Analog tiler connector

Out: NC

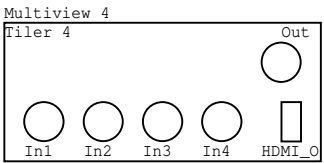
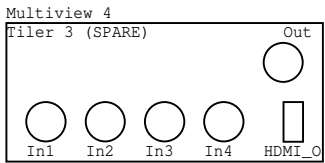
HDMI: Out to main monitor



In1: Down Cam Hub  
In2: Funnel Cam Hub  
In3: Winch Cam Hub  
In4: Clump Cam Hub

Out: Tiler 1, In4

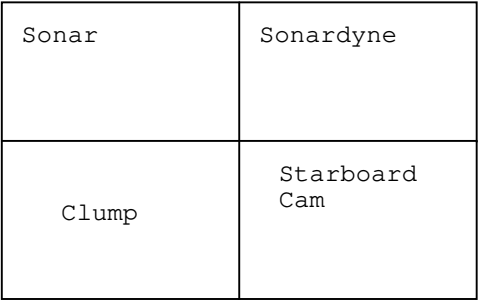
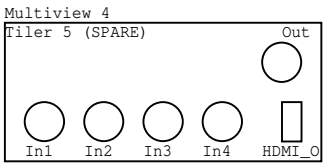
HDMI: NC



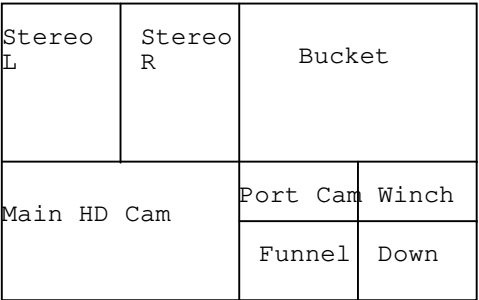
In1: Sonar from HDMI -> SDI Converter  
In2: Port Cam Hub  
In3: Sonardyne from HDMI -> SDI Converter  
In4: Starboard Cam Hub

Out: NC

HDMI: Out to secondary monitor



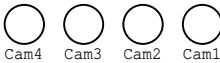
Secondary Monitor  
HDMI From Tiler 4



Main Monitor  
HDMI From Tiler 1

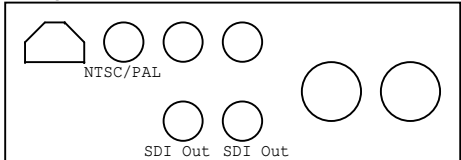
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| Size<br>A                      | Document Number<br><Doc> | Rev<br>A |
| Date: Tuesday, August 06, 2024 |                          |          |
| Sheet 1 of 1                   |                          |          |

Focal Box



Cam1: Bucket  
Cam2: Funnel  
Cam3: Down  
Cam4: Clump Analog

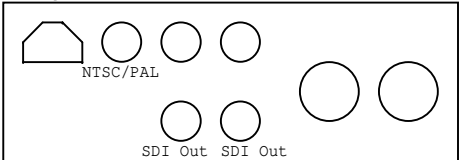
Analog -> SDI 1



NTSC/PAL: Bucket Cam from Focal Box

SDI Out 1: Video Hub In 7

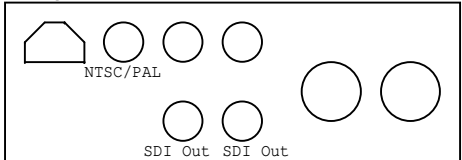
Analog -> SDI 2



NTSC/PAL: Funnel Cam? from Focal Box

SDI Out 1: Video Hub In 8

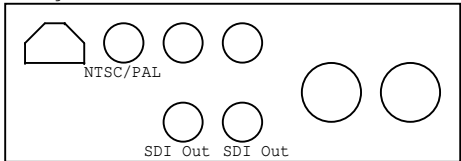
Analog -> SDI 3



NTSC/PAL: Down Cam? from Focal Box

SDI Out 1: Video Hub In 6

Analog -> SDI 4



NTSC/PAL: Clump Analog from Focal Box

SDI Out 1: Video Hub In 9

EMA Design Automation

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Title

Capture Walkthrough

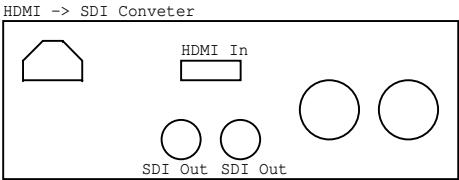
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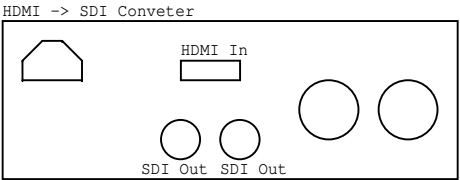
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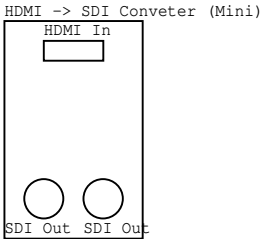
Sheet 1 of 1



HDMI In: To Sonar NUC PC  
SDI Out: To Video Hub Input 10

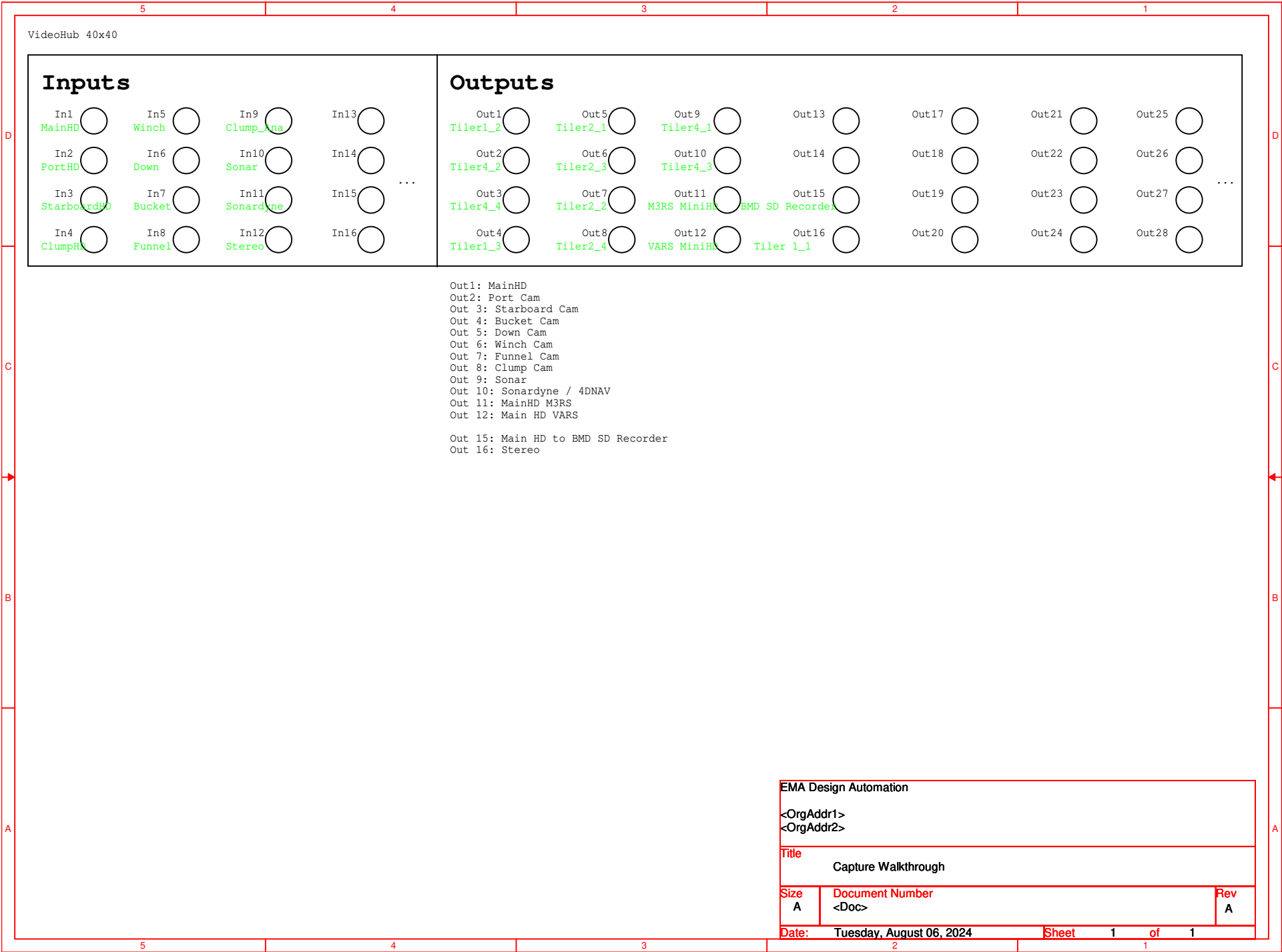


HDMI In: To Sonardyne /4D NAV NUC PC  
SDI Out: To Video Hub Input 11



HDMI In: To Paul Roberts Stereo PC  
SDI Out: To Video Hub Input 12

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| Date: Tuesday, August 06, 2024 |                          |          |
| Sheet 1 of 1                   |                          |          |



|                  |                 |                 |
|------------------|-----------------|-----------------|
| Ethernet Switch  |                 |                 |
| Power Switch     |                 |                 |
| Empty            |                 |                 |
| Video Hub 40x40  |                 |                 |
| SD Card Recorder | HDMI -> SDI 2   | HDMI -> SDI 1   |
| SDI>HDMI Spare   | SDI>HDMI M3RS   | SDI>HDMI VARS   |
| SDI -> HDMI 3    | SDI -> HDMI 2   | SDI -> HDMI 1   |
| Analog -> SDI 3  | Analog -> SDI 2 | Analog -> SDI 1 |
| Tiler 2          | Tiler 1         | Analog -> SDI   |
| Tiler 5 Spare    | Tiler 4         | Tiler 3 Spare   |
| KVM 8 Channel    |                 |                 |
| Power Switch     |                 |                 |

Rack view looking from back

EMA Design Automation

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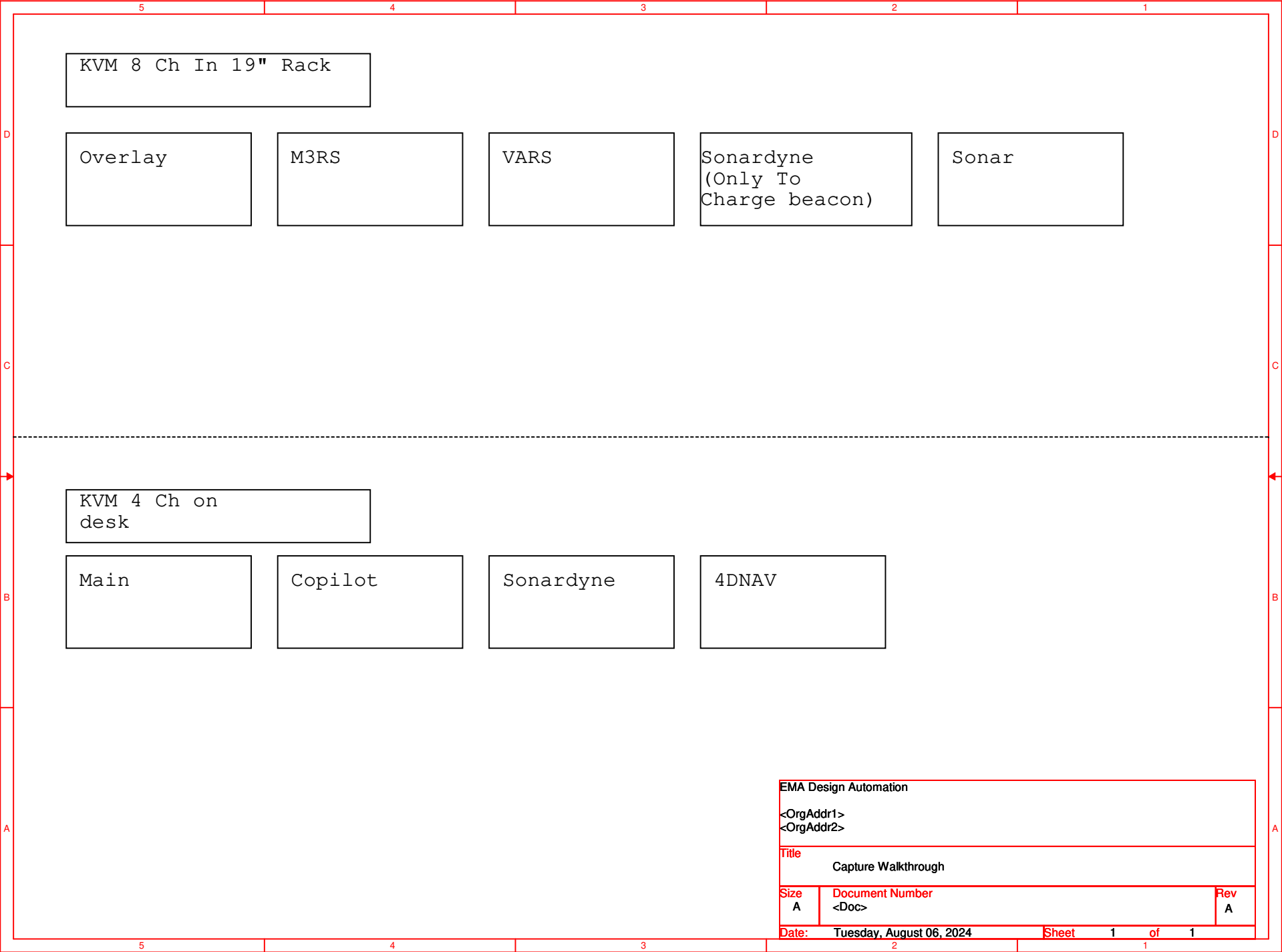
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Capture Walkthrough

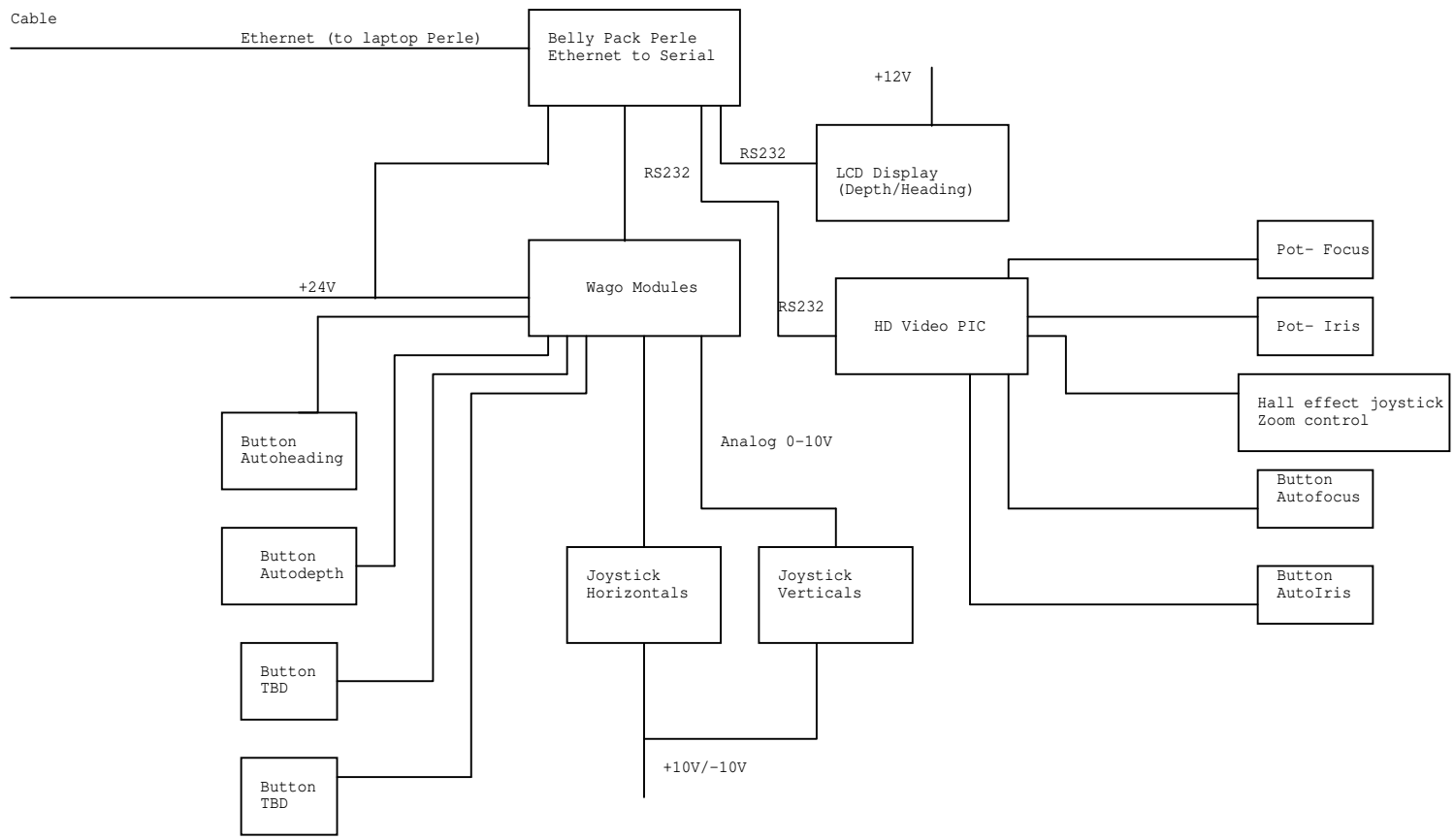
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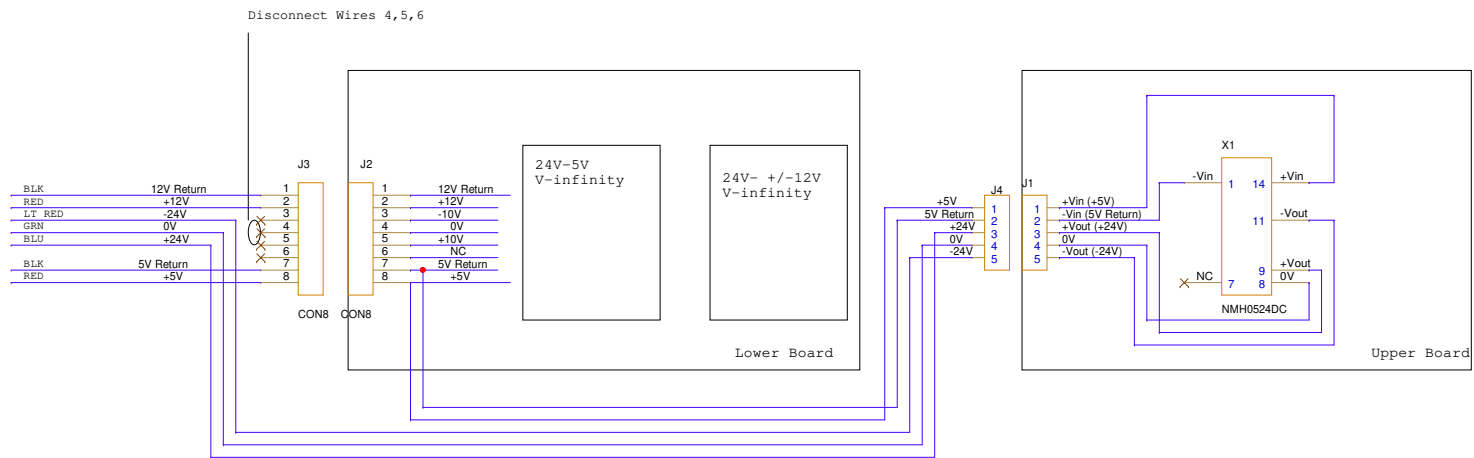
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Date: Tuesday, August 06, 2024Sheet 1 of 1

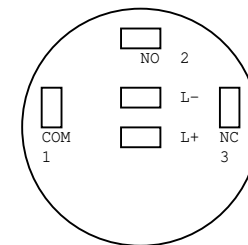
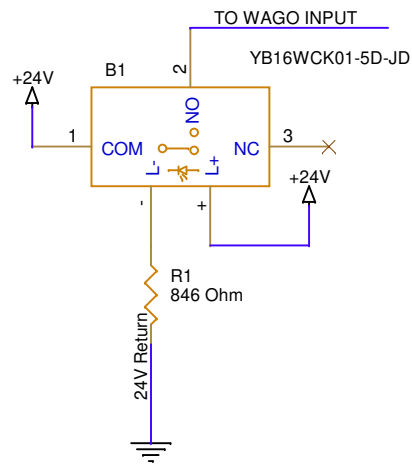




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| Date: Tuesday, August 06, 2024 |                 |        |
| Sheet 1 of 1                   |                 |        |



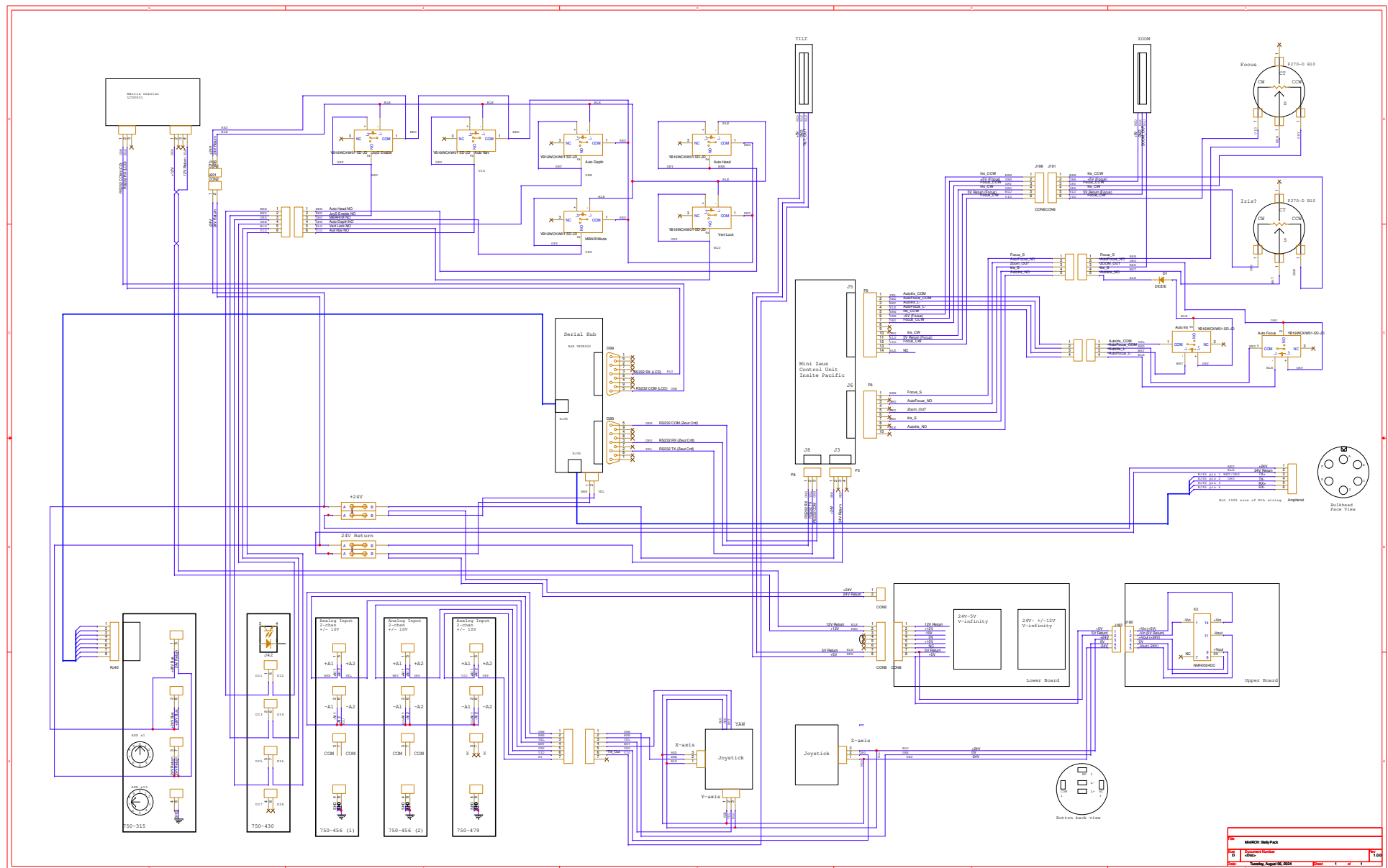
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|  |           | <b>Monterey Bay Aquarium Research Institute</b><br>7700 Sandhold Road, Moss Landing, CA 95033 |                              |              |
|                                                                                       |           | Title<br><b>Mini ROV: Bully Pack</b>                                                          |                              |              |
| Engineer<br>Alana Sherman                                                             | Size<br>B | Document Number<br><ID>                                                                       | Layout File<br><Layout File> | Rev<br><Rev> |
| Date<br>Tuesday, August 06, 2024                                                      |           | Sheet 1 of 1                                                                                  |                              |              |



**Monterey Bay Aquarium Research Institute**  
7700 Sandhold Road, Moss Landing, CA 95039

**Title**  
Alana Sherman

| Engineer   | Size | Document Number                | Layout File   | Rev   |
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CON7

7 RED  
6 BLU  
5  
4 VIO  
3 BLK  
2 YEL  
1 ORG

Joystick

Z-axis

3 BLK  
2 BLU  
1 RED

X-axis

3 RED  
2 ORG  
1 BLK

RED BLU WHT YAW

Joystick

Y-axis

1 RED  
2 YEL  
3 BLK



**Monterey Bay Aquarium Research Institute**

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Title

**Wireless Belly Pack Joysticks**

Project

<Project>

Engineer

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Designer

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Size

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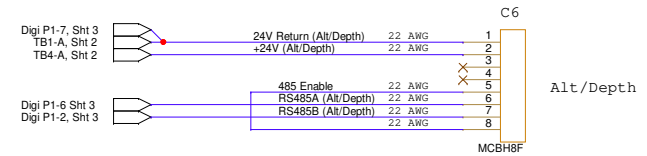
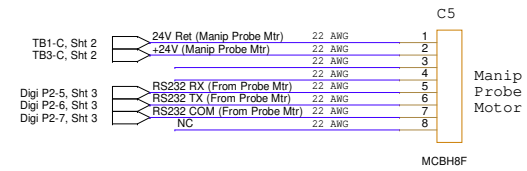
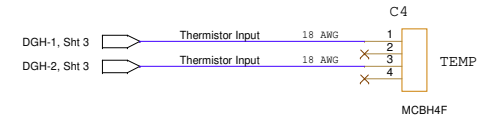
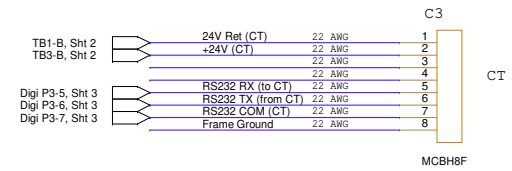
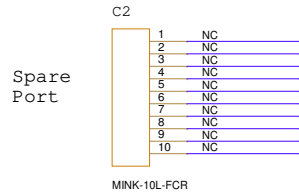
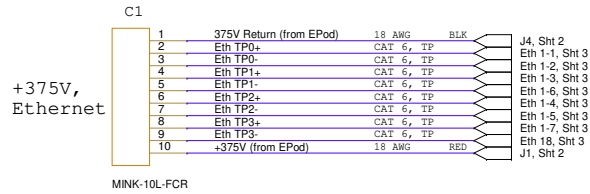
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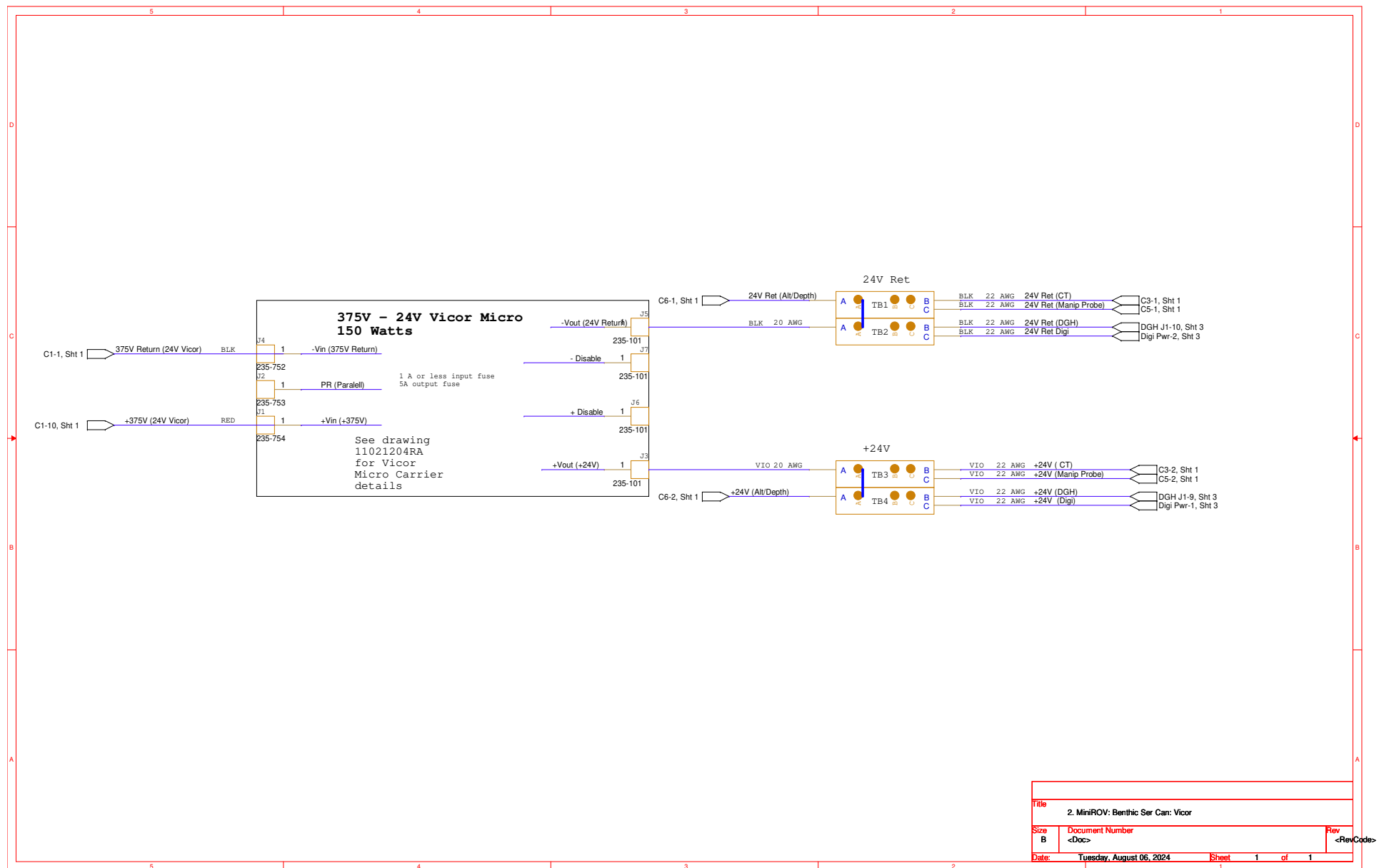
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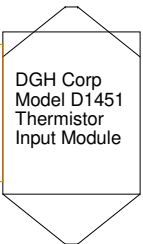
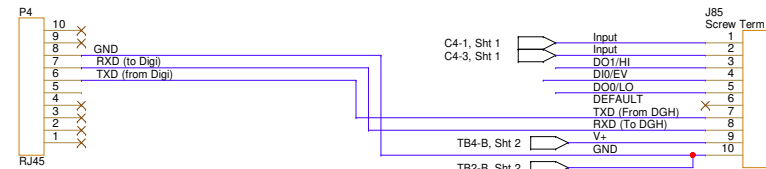
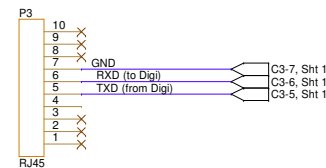
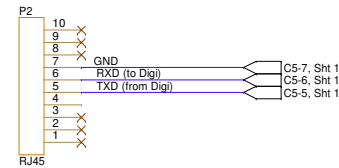
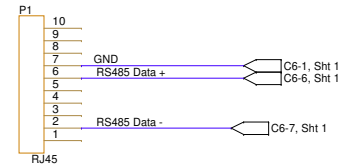
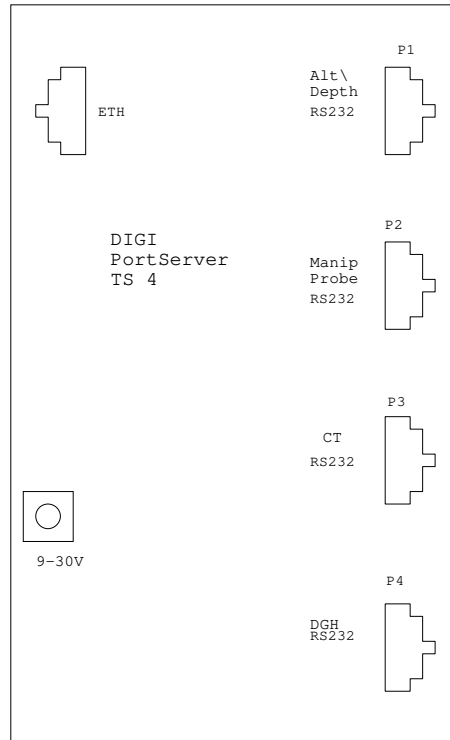
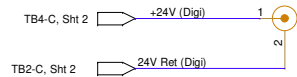
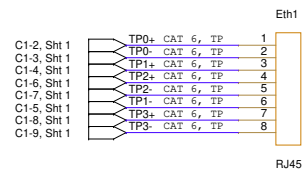
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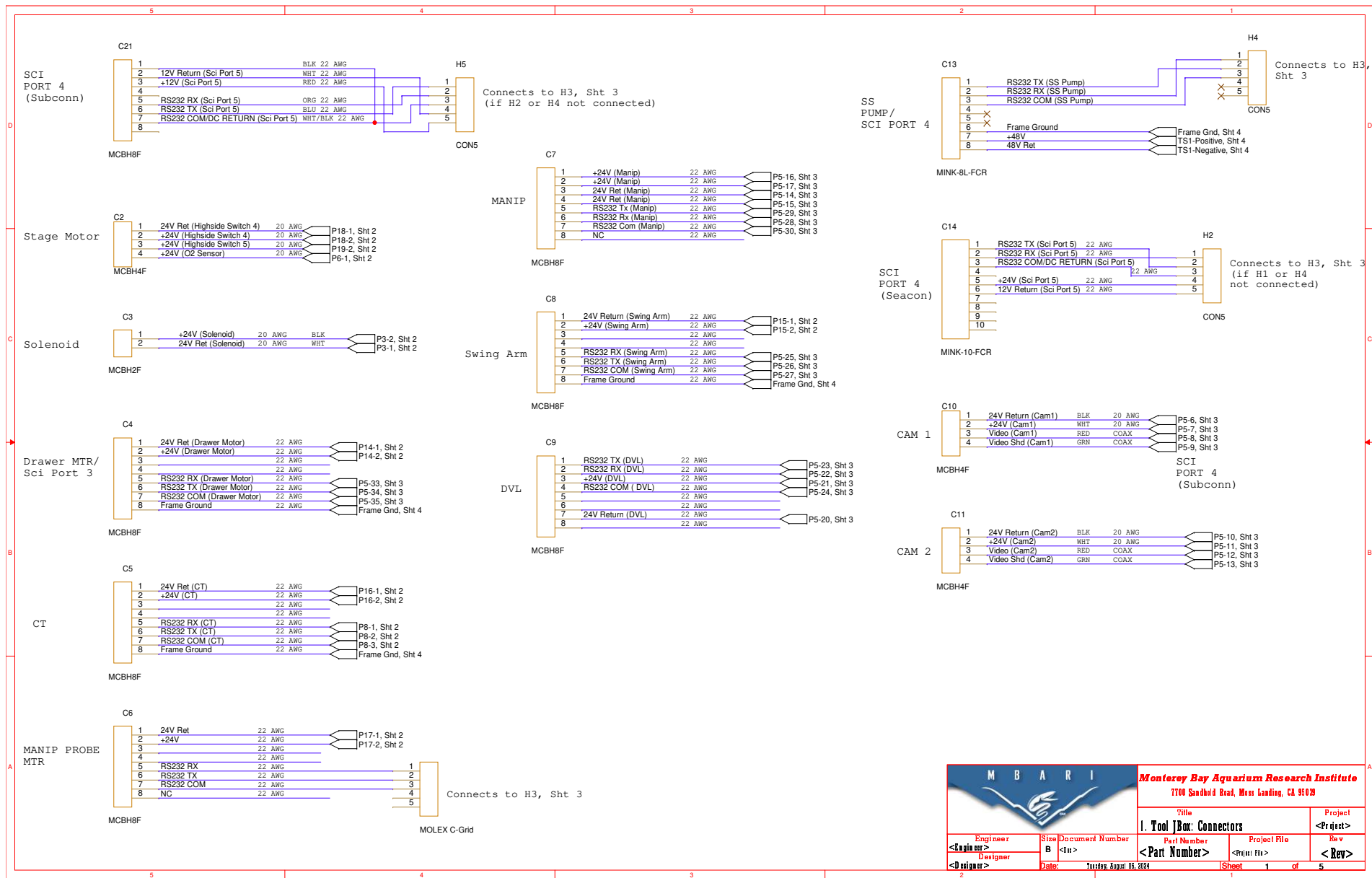


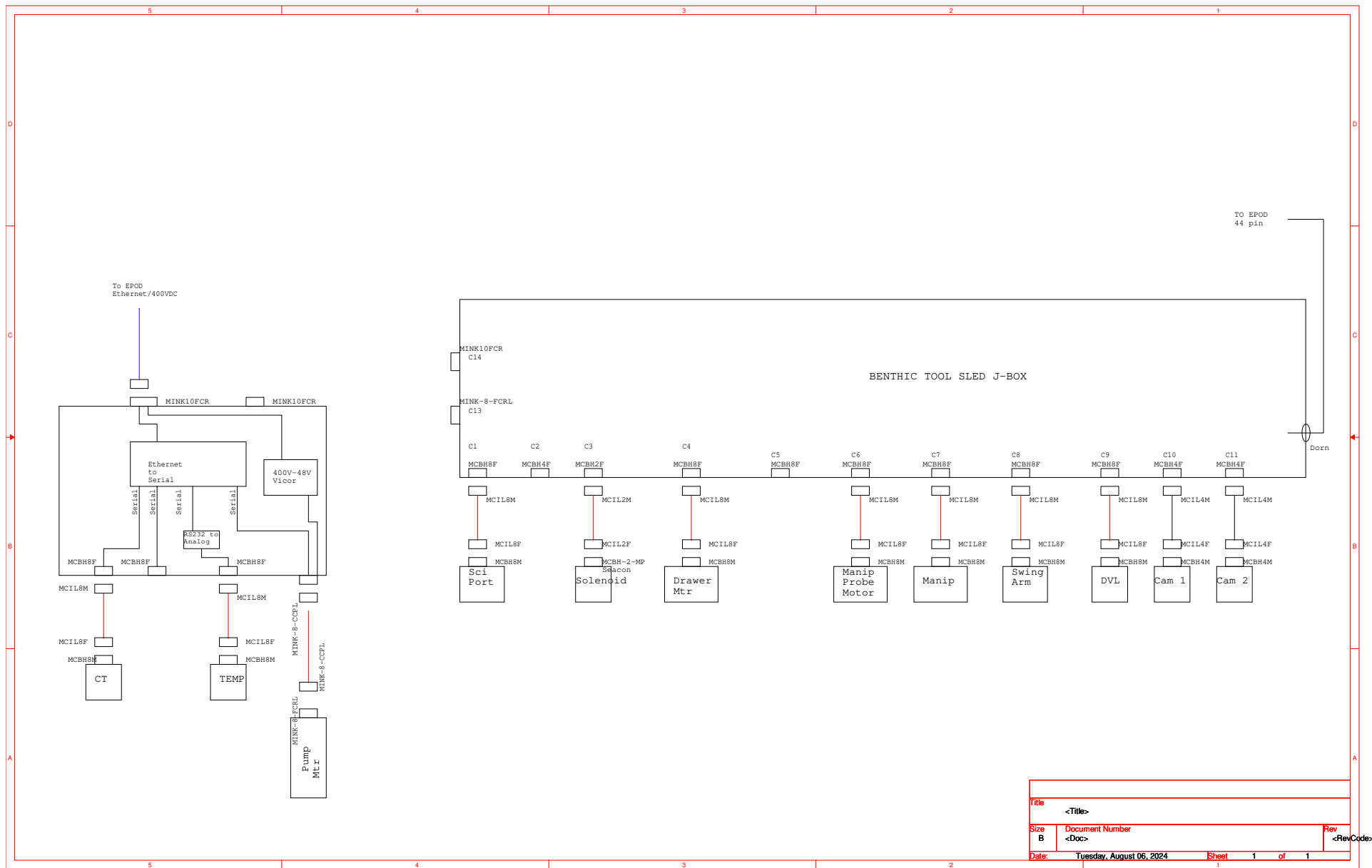
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| Size                                   | Document Number          | Rev       |        |
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| Date:                                  | Tuesday, August 06, 2024 | Sheet     | 1 of 1 |





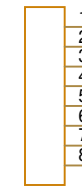
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| Size                                    | Document Number          |       | Rev       |
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| Date:                                   | Tuesday, August 06, 2024 | Sheet | 1 of 1    |





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| Date: | Tuesday, August 06, 2024 | Sheet     | 1 of 1  |

TO J-Box



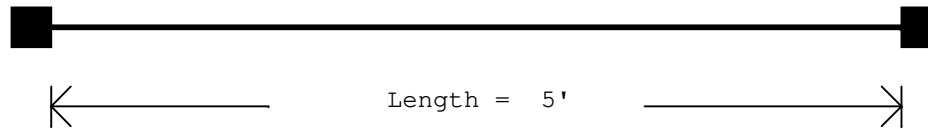
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2 +5V  
3 RS232 RX  
4 RS232 TX  
5 RS232 COM  
6  
7  
8



MCIL8F

TO HEADING  
SENSOR



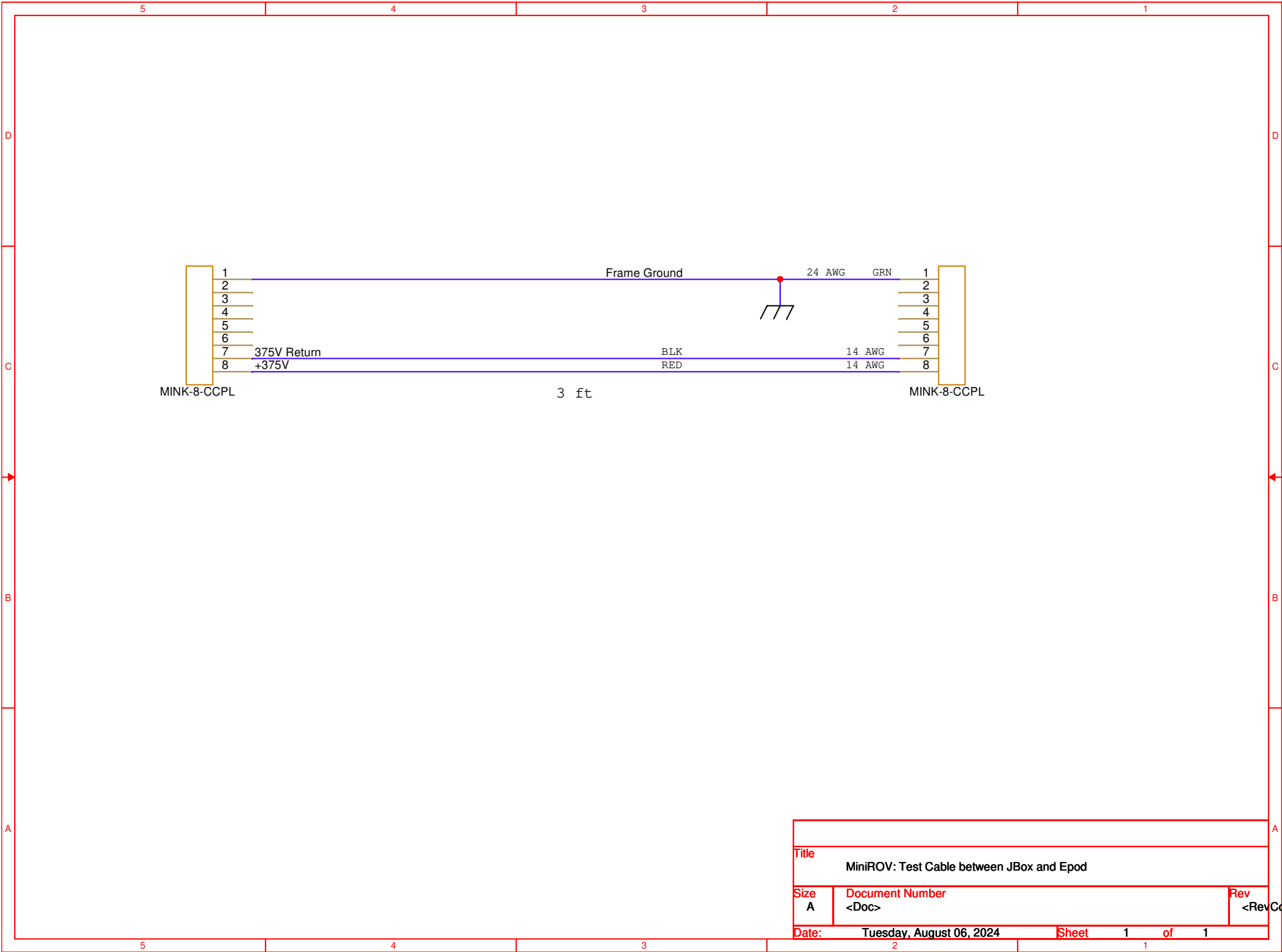
**Monterey Bay Aquarium Research Institute**

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Title

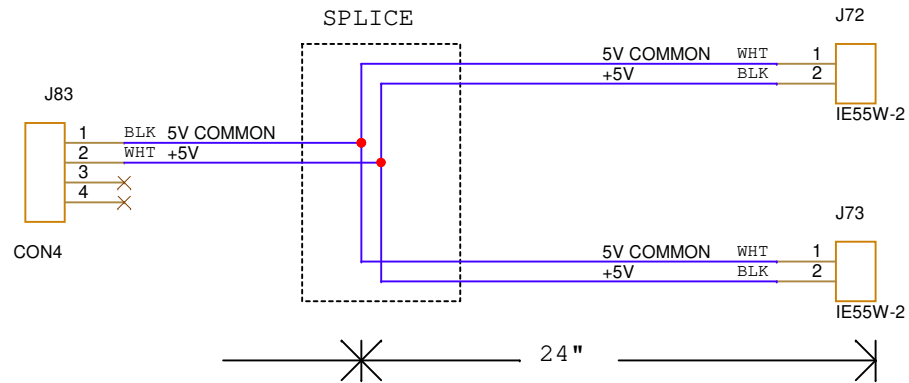
MiniROV: Heading Cable

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| Layout<br><Layout>     | Date: Tuesday, August 06, 2024 | Sheet 1 of 1             |                              |              |

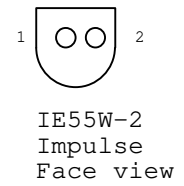


|                                           |                          |              |
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| Title                                     |                          |              |
| MiniROV: Test Cable between JBox and Epod |                          |              |
| Size                                      | Document Number          | Rev          |
| A                                         | <Doc>                    | <RevC>       |
| Date:                                     | Tuesday, August 06, 2024 | Sheet 1 of 1 |

TO Jbox



TO LASERS



TO LASERS

|                     |                          |              |
|---------------------|--------------------------|--------------|
| Title               |                          |              |
| BIAUV: Lasers Cable |                          |              |
| Size                | Document Number          | Rev          |
| A                   | <Doc>                    | 1.0.0        |
| Date:               | Tuesday, August 06, 2024 | Sheet 1 of 1 |

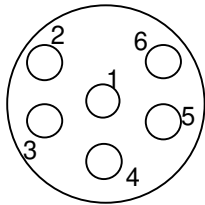


P12  
MCIL6M

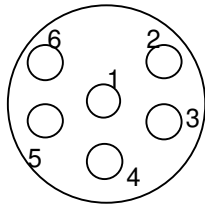
|   |                   |        |        |
|---|-------------------|--------|--------|
| 1 | 24V RET (LIGHT 3) | BLACK  | 20 AWG |
| 2 | 24V (LIGHT 3)     | WHITE  | 20 AWG |
| 3 | 24V (LIGHT 4)     | RED    | 20 AWG |
| 4 | 24V RET (LIGHT 4) | GREEN  | 20 AWG |
| 5 | N/C               | ORANGE | 20 AWG |
| 6 | N/C               | BLUE   | 20 AWG |

Mates with MCBH6F  
[Core J-Box C5]

Female Locking  
Sleeve  
MC-DLS-F



MCIL6FS  
Female Face View



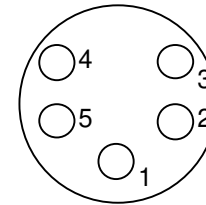
MCBH6MP  
Male Face View

|        |        |             |   |
|--------|--------|-------------|---|
| 20 AWG | BLACK  | +24 V       | 1 |
| 20 AWG | WHITE  | 24 V Return | 2 |
| 20 AWG | RED    | Frame       | 3 |
| 20 AWG | GREEN  | N/C         | 4 |
| 20 AWG | ORANGE | Dimmer      | 5 |

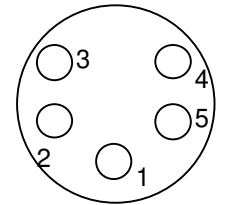
P2  
MCIL5F

Mates with MCBH5M  
[SeaLite Sphere NIR]

Female Locking  
Sleeve  
MC-DLS-F



MCIL5F  
Female Face View

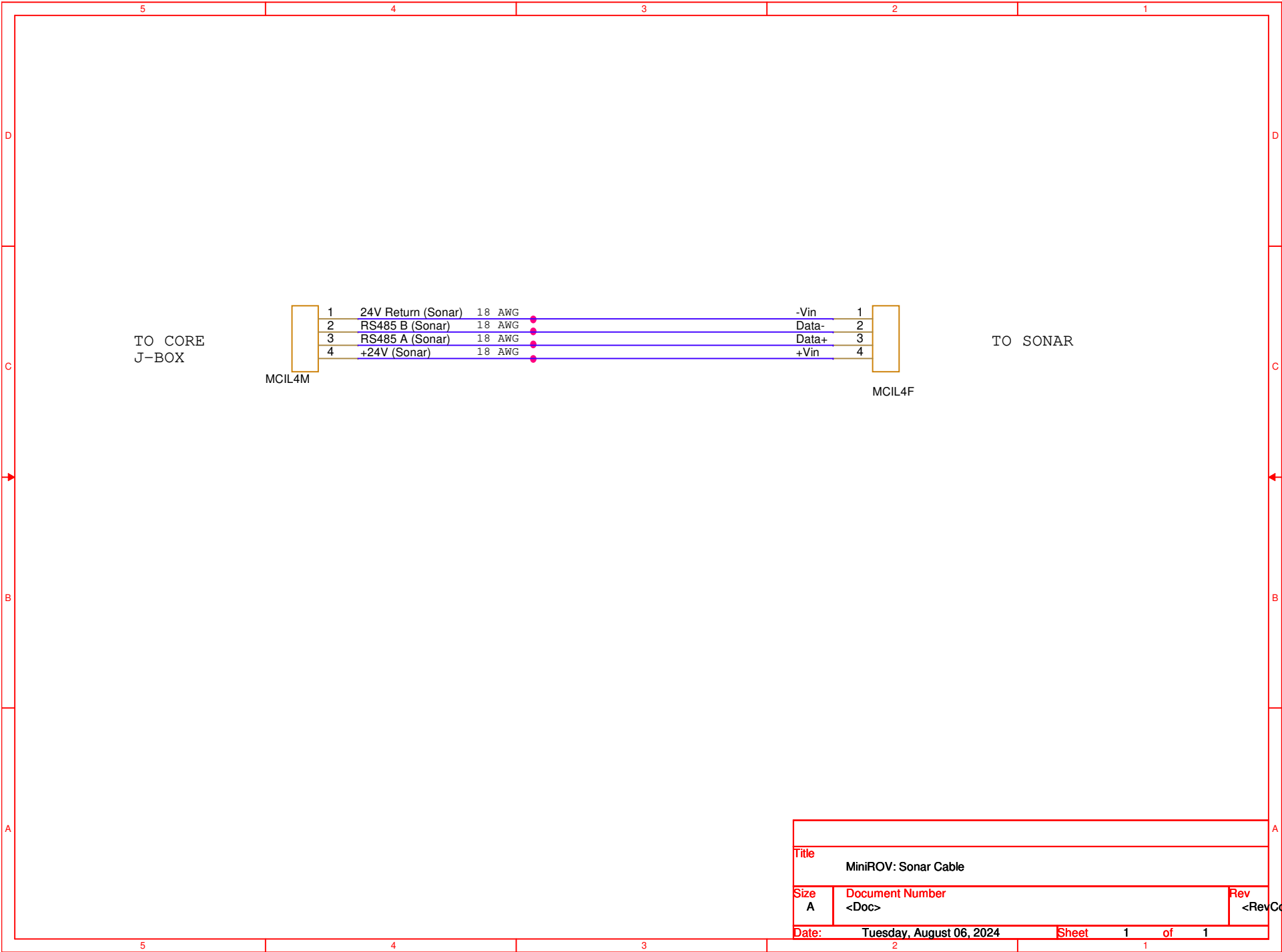


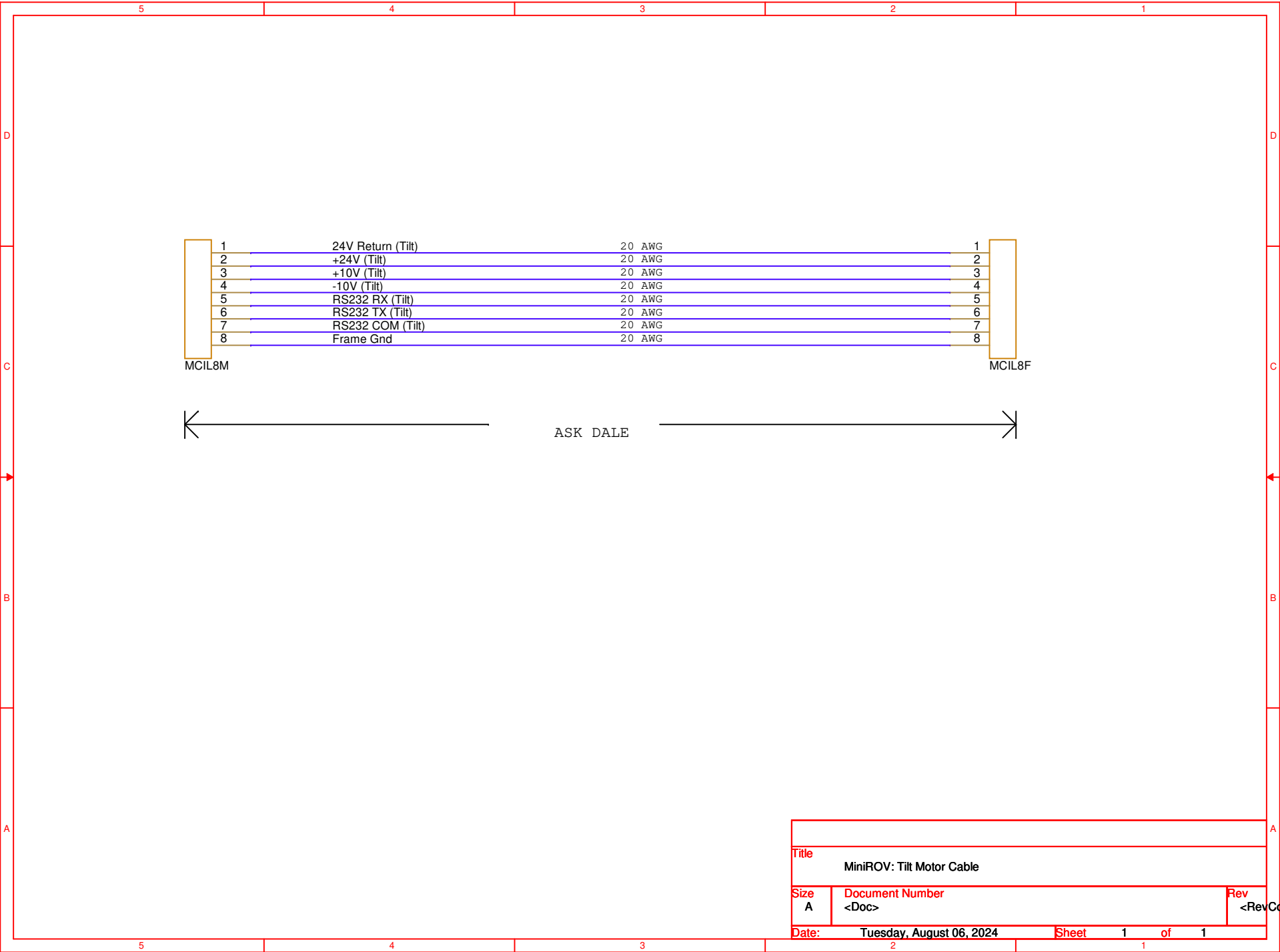
MCBH5MP  
Male Face View



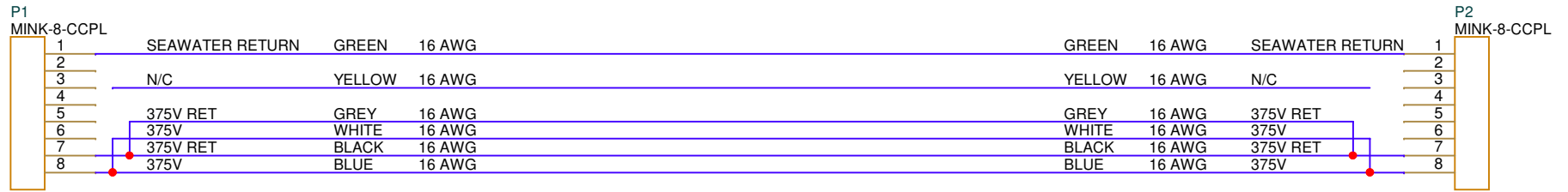
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|                        |                                   |                              |                                           |                      |
|------------------------|-----------------------------------|------------------------------|-------------------------------------------|----------------------|
| Engineer<br><Engineer> | Size<br>A                         | Document Number<br><Doc>     | Title<br><b>Mini-ROV: NIR light cable</b> | Project<br><Project> |
| Designer<br><Designer> | Date:<br>Tuesday, August 06, 2024 | Part Number<br><Part Number> | Project File<br><Project File>            | Rev<br><Rev>         |
|                        |                                   | Sheet<br>1                   | of<br>1                                   |                      |





Length = \_\_"  
13A Per Wire Max



Mates with MINK8-FCRL  
[Umbilical J-Box]

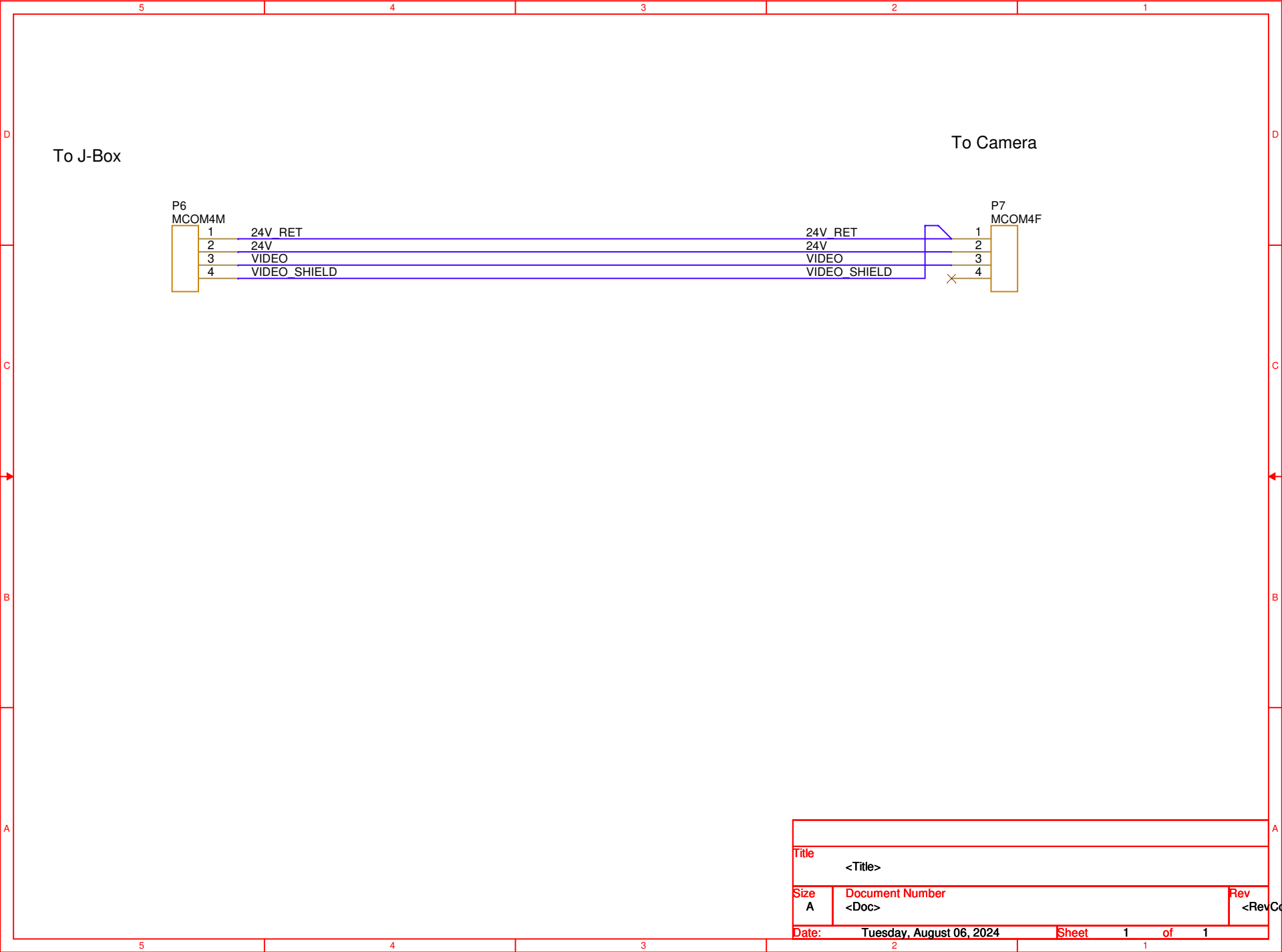
Mates with MINK8-FCRL  
[E-Pod E1]

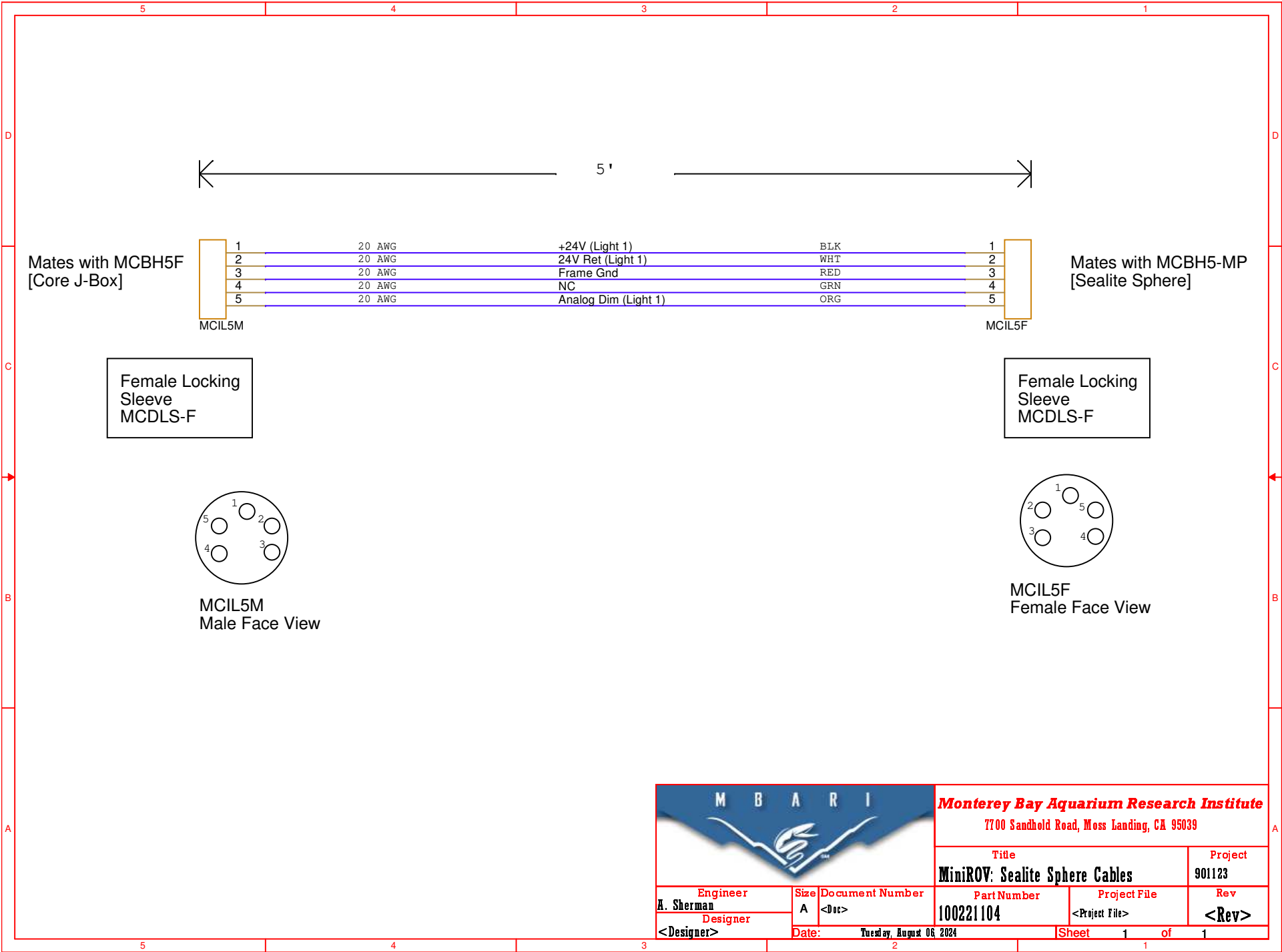


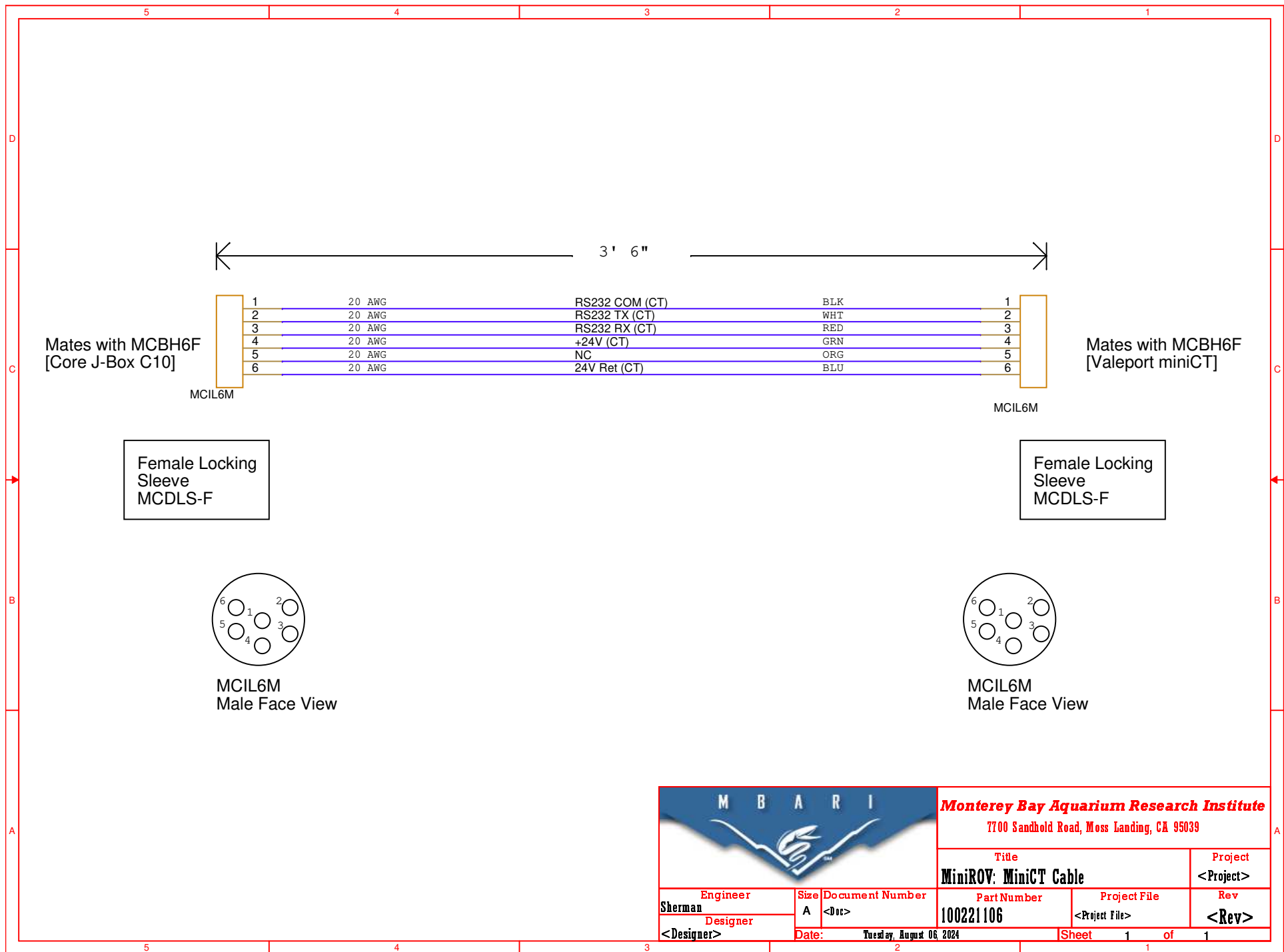
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**Title**  
MiniROV: Umb J-Box to E-Pod Cable

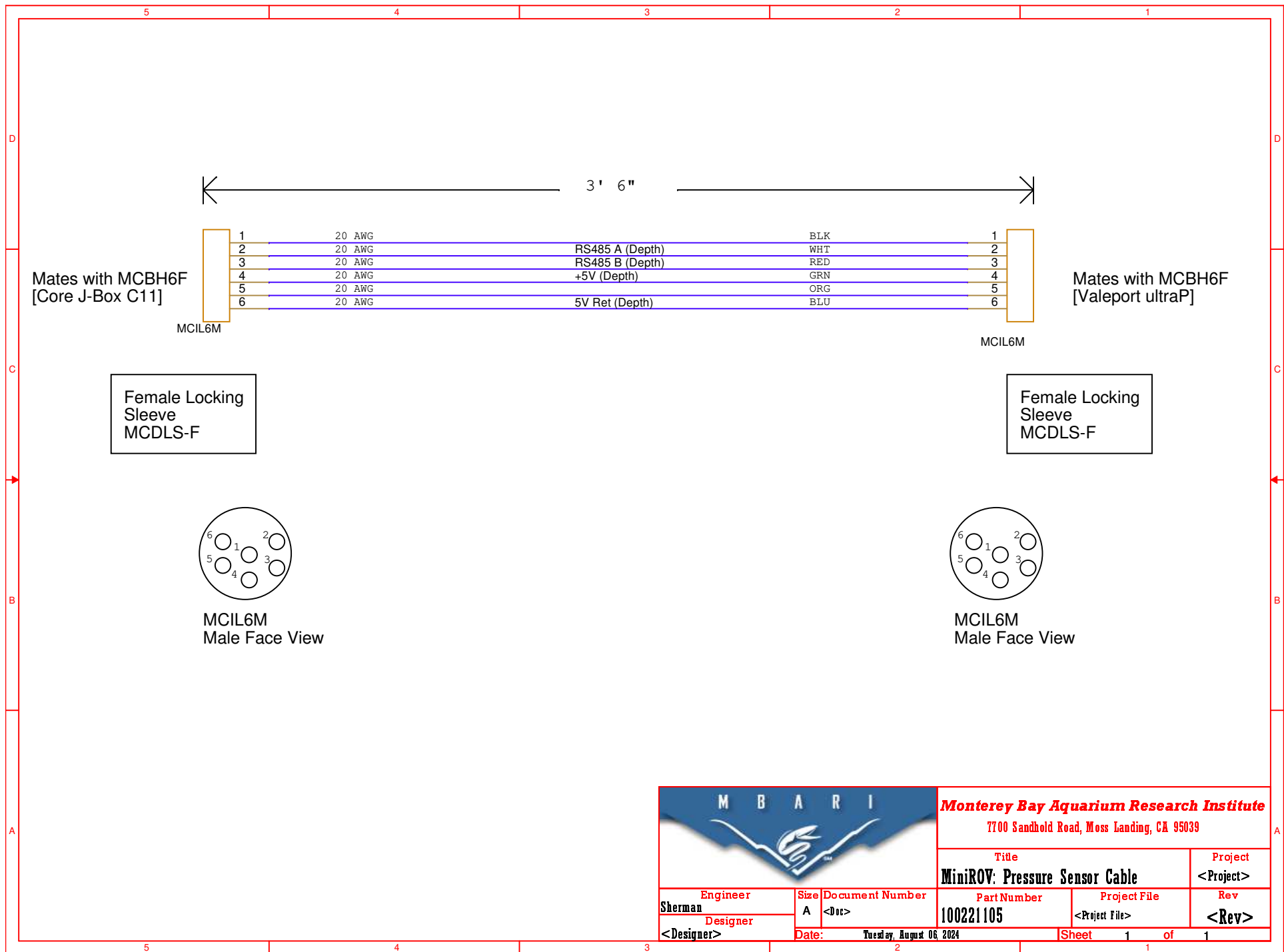
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| Chad Key | A     | <Doc>                    | <Layout File> | <Rev> |
| Layout   |       |                          |               |       |
| <Layout> | Date: | Tuesday, August 06, 2024 | Sheet 1 of 1  |       |





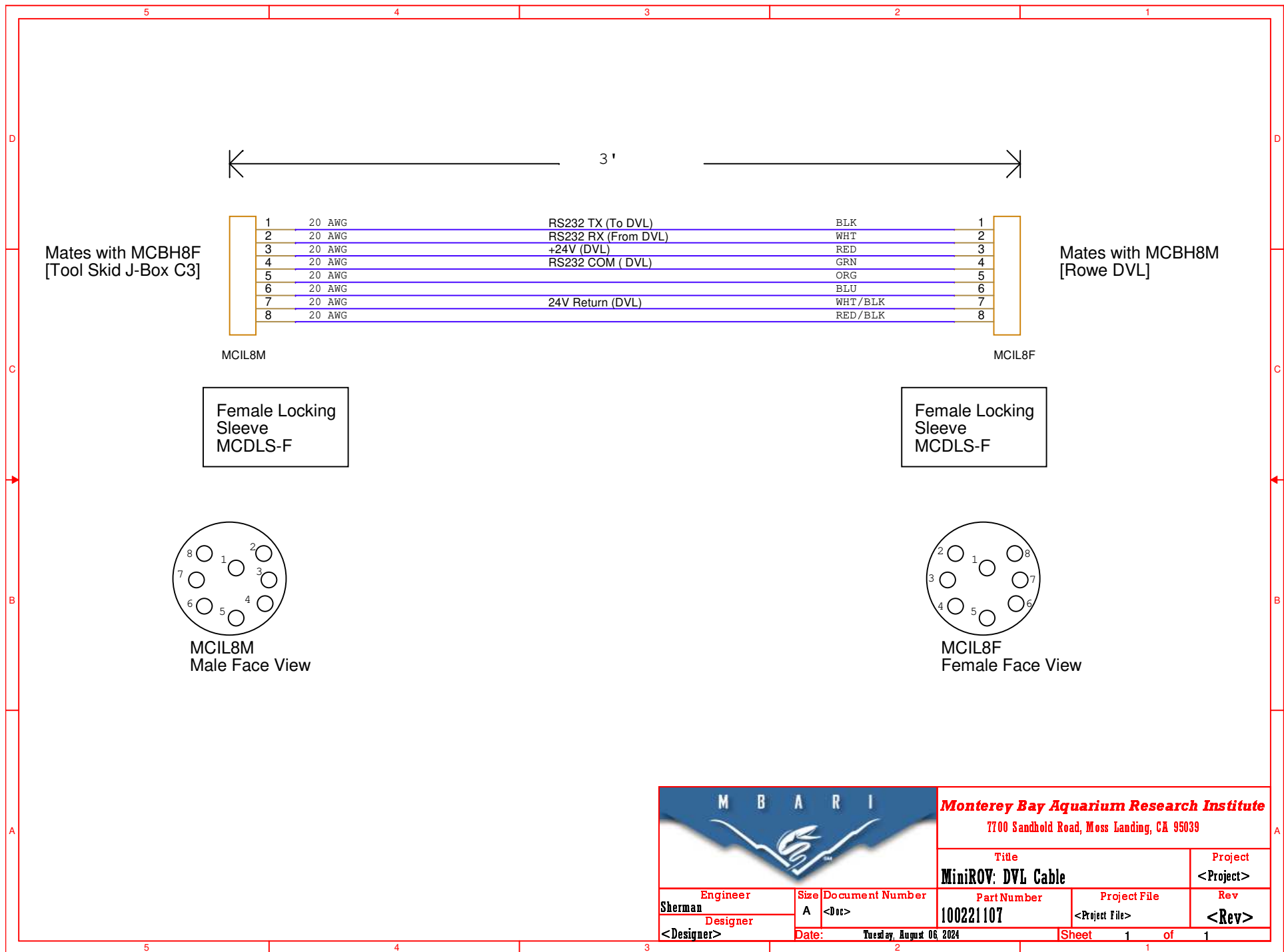


|                                                                                       |                                   |                                                                                               |                                 |                                |
|---------------------------------------------------------------------------------------|-----------------------------------|-----------------------------------------------------------------------------------------------|---------------------------------|--------------------------------|
|  |                                   | <b>Monterey Bay Aquarium Research Institute</b><br>7700 Sandhold Road, Moss Landing, CA 95039 |                                 |                                |
|                                                                                       |                                   | Title<br><b>MiniROV: MiniCT Cable</b>                                                         |                                 | Project<br><Project>           |
| Engineer<br><b>Sherman</b>                                                            | Size<br><b>A</b>                  | Document Number<br><Doc>                                                                      | Part Number<br><b>100221106</b> | Project File<br><Project File> |
| Designer<br><Designer>                                                                | Date:<br>Tuesday, August 06, 2024 |                                                                                               | Rev<br><Rev>                    | Sheet 1 of 1                   |

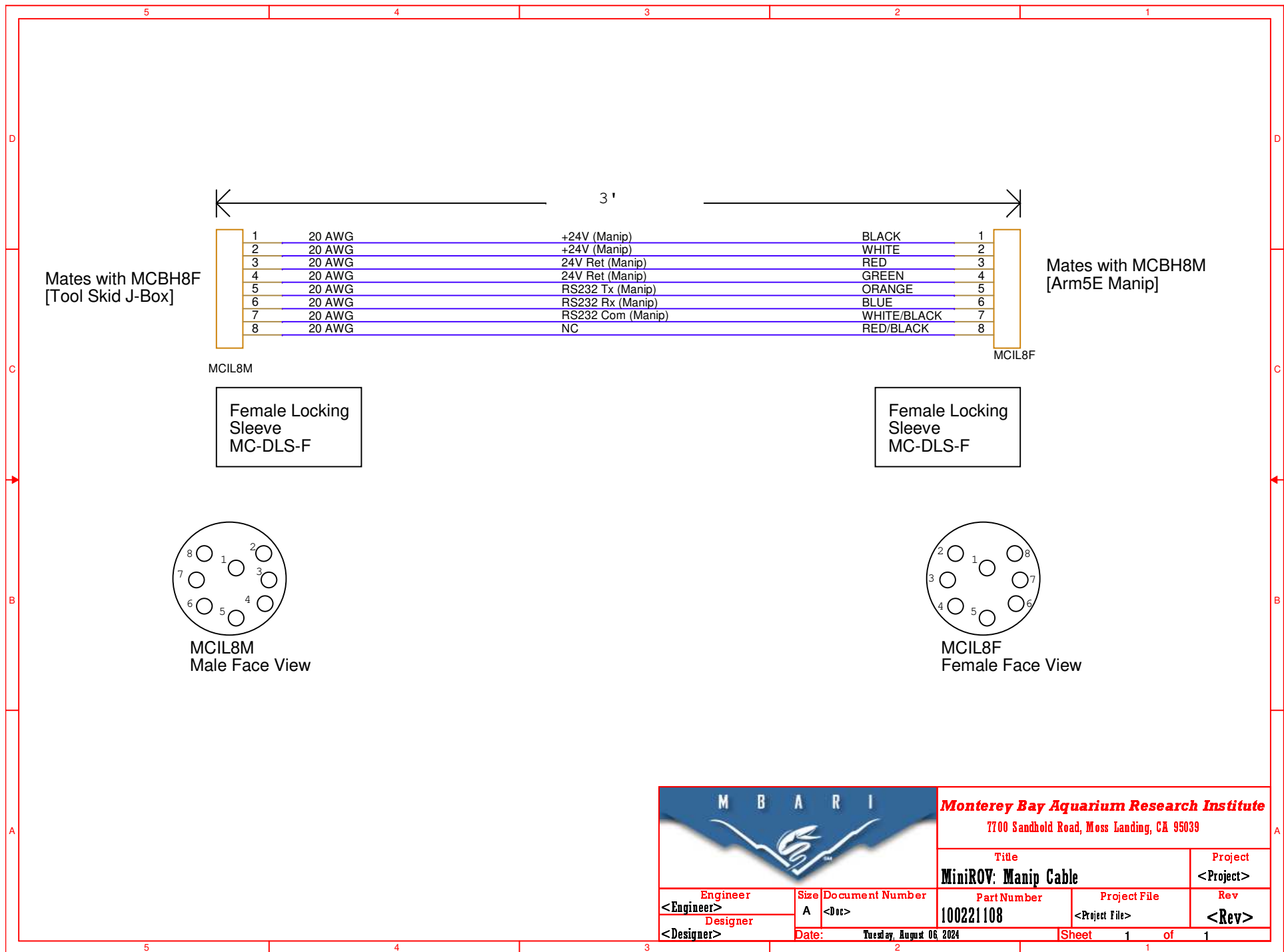


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|            |                                |                 |             |                |       |
|------------|--------------------------------|-----------------|-------------|----------------|-------|
| Engineer   | Size                           | Document Number | Part Number | Project File   | Rev   |
| Sherman    | A                              | <Doc>           | 100221105   | <Project File> | <Rev> |
| Designer   | Date: Tuesday, August 06, 2024 |                 |             | Sheet 1 of 1   |       |
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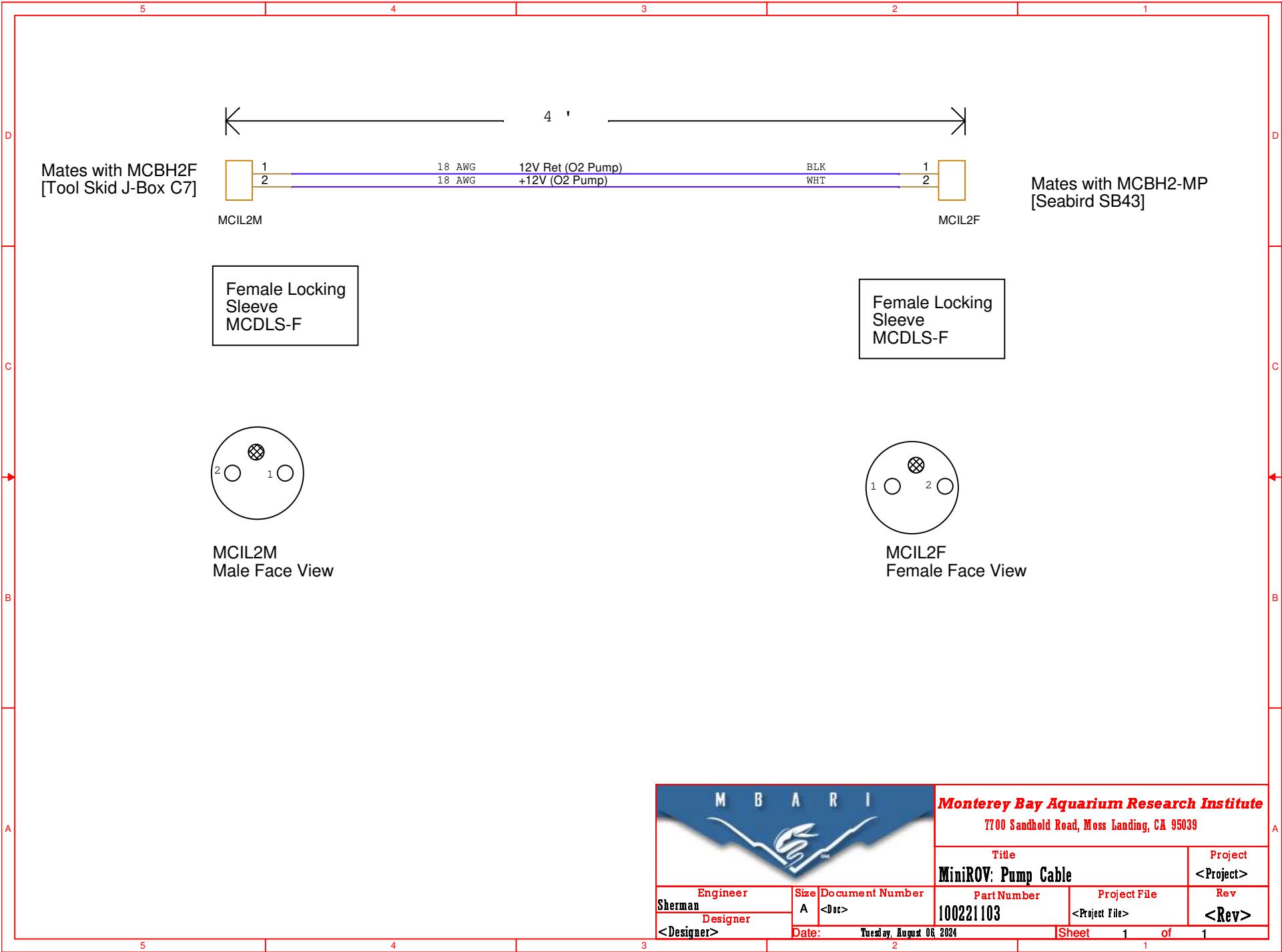


|                                                                                       |                                       |                                                                                               |                                 |                                       |
|---------------------------------------------------------------------------------------|---------------------------------------|-----------------------------------------------------------------------------------------------|---------------------------------|---------------------------------------|
|  |                                       | <b>Monterey Bay Aquarium Research Institute</b><br>7700 Sandhold Road, Moss Landing, CA 95039 |                                 |                                       |
|                                                                                       |                                       | <b>Title</b><br>MiniROV: DVL Cable                                                            |                                 | <b>Project</b><br><Project>           |
| <b>Engineer</b><br>Sherman                                                            | <b>Size</b><br>A                      | <b>Document Number</b><br><Doc>                                                               | <b>Part Number</b><br>100221107 | <b>Project File</b><br><Project File> |
| <b>Designer</b><br><Designer>                                                         | <b>Date:</b> Tuesday, August 06, 2024 | <b>Rev</b><br><Rev>                                                                           | <b>Sheet</b> 1 of 1             |                                       |



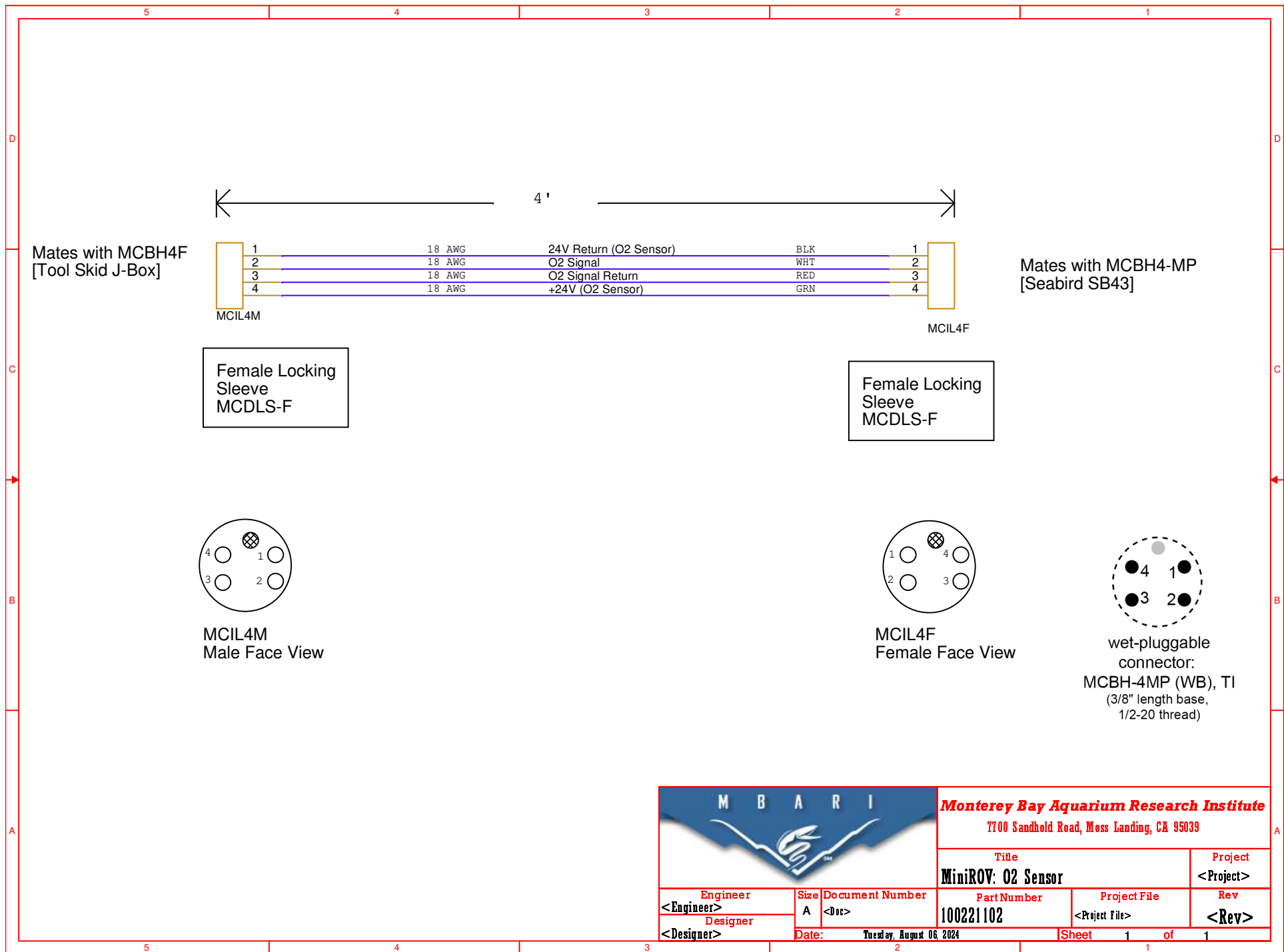
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|                        |                                |                          |                          |                                |              |
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| Engineer<br><Engineer> | Size<br>A                      | Document Number<br><Doc> | Part Number<br>100221108 | Project File<br><Project File> | Rev<br><Rev> |
| Designer<br><Designer> | Date: Tuesday, August 06, 2024 | Sheet 1 of 1             |                          |                                |              |

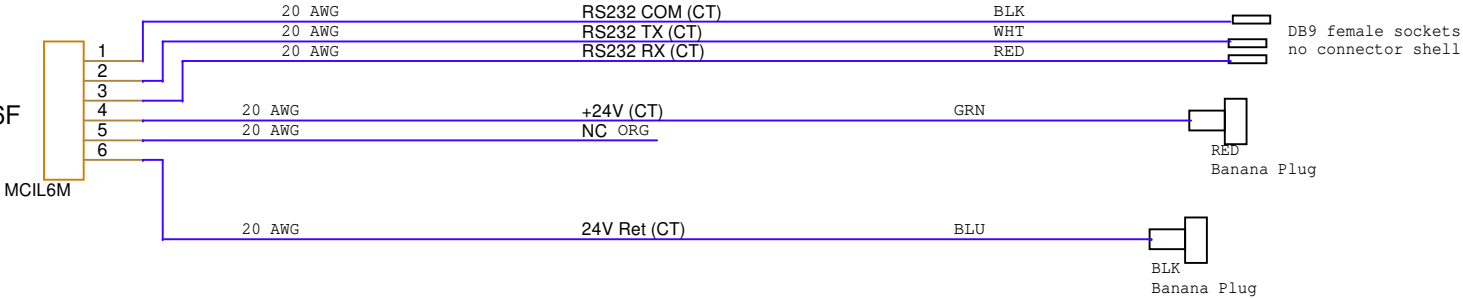


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|                            |  |                                   |                                 |                                     |                      |
|----------------------------|--|-----------------------------------|---------------------------------|-------------------------------------|----------------------|
| Engineer<br><b>Sherman</b> |  | Size<br><b>A</b>                  | Document Number<br><Doc>        | Title<br><b>MiniROV: Pump Cable</b> | Project<br><Project> |
| Designer<br><Designer>     |  | Date:<br>Tuesday, August 06, 2024 | Part Number<br><b>100221103</b> | Project File<br><Project File>      | Rev<br><Rev>         |
| Sheet                      |  |                                   | 1                               | of                                  | 1                    |



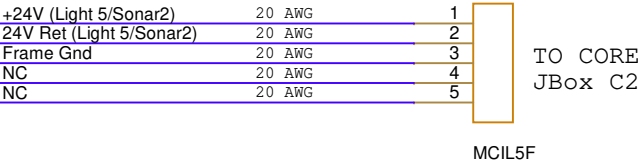
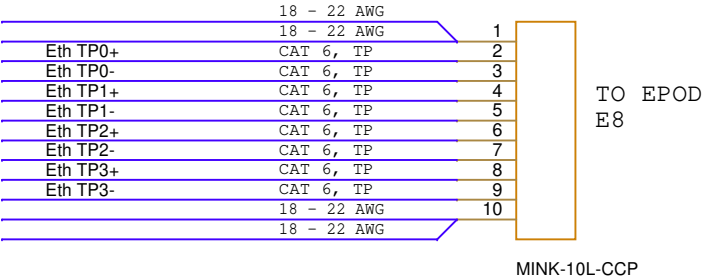
Mates with MCBH6F  
[Core J-Box C10]



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|                                |  |           |                          |                              |                                |                      |   |
|--------------------------------|--|-----------|--------------------------|------------------------------|--------------------------------|----------------------|---|
| Engineer<br><Engineer>         |  | Size<br>A | Document Number<br><Doc> | Title<br><Title>             |                                | Project<br><Project> |   |
| Designer<br><Designer>         |  |           |                          | Part Number<br><Part Number> | Project File<br><Project File> | Rev<br><Rev>         |   |
| Date: Tuesday, August 06, 2024 |  |           |                          | Sheet                        | 1                              | of                   | 1 |

Connect conductors to large pins for future use



|                                                                                       |      |                                                 |               |                |
|---------------------------------------------------------------------------------------|------|-------------------------------------------------|---------------|----------------|
|  |      | <b>Monterey Bay Aquarium Research Institute</b> |               |                |
|                                                                                       |      | 7700 Sandhold Road, Moss Landing, CA 95039      |               |                |
| Title                                                                                 |      | Project                                         |               |                |
| MiniROV: Sonar 2 Y-cable                                                              |      | <Project>                                       |               |                |
| Engineer                                                                              | Size | Document Number                                 | Part Number   | Project File   |
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| Designer                                                                              |      |                                                 |               | Rev            |
| <Designer>                                                                            |      |                                                 |               | <Rev>          |
| Date:                                                                                 |      | Tuesday, August 06, 2024                        |               | Sheet 1 of 1   |

To J-Box

To Camera

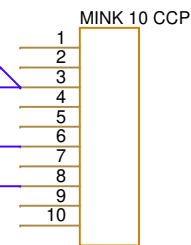
MCIL4M



|   |              |        |     |
|---|--------------|--------|-----|
| 1 | 24V RET      | 18 AWG | BLK |
| 2 | 24V          | 18 AWG | WHT |
| 3 | VIDEO        | 18 AWG | RED |
| 4 | VIDEO SHIELD | 18 AWG | GRN |

Female Locking Sleeve

|                    |        |      |
|--------------------|--------|------|
| 24V Return (Cam 3) | 16 AWG | BLK  |
| Video Shd (Cam 3)  |        |      |
| +24V (Cam 3)       | 16 AWG | RED  |
| Video (Cam 3)      | 75 Ohm | COAX |



MacArtney MiniRV Cable  
p.n. 6011  
Orange



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|            |                                |                 |               |                |       |
|------------|--------------------------------|-----------------|---------------|----------------|-------|
| Engineer   | Size                           | Document Number | Part Number   | Project File   | Rev   |
| A. Sherman | A                              | <Doc>           | <Part Number> | <Project File> | <Rev> |
| Designer   | Date: Tuesday, August 06, 2024 |                 |               | Sheet 1 of 1   |       |
| <Designer> |                                |                 |               |                |       |

To J-Box

To Camera

MCIL4F

|   |              |        |     |
|---|--------------|--------|-----|
| 1 | 24V RET      | 18 AWG | BLK |
| 2 | 24V          | 18 AWG | WHT |
| 3 | VIDEO        | 18 AWG | RED |
| 4 | VIDEO SHIELD | 18 AWG | GRN |

Female Locking  
Sleeve

|                    |        |     |
|--------------------|--------|-----|
| 24V Return (Cam 3) | 16 AWG | BLK |
| Video Shd (Cam 3)  |        |     |

|              |        |     |
|--------------|--------|-----|
| +24V (Cam 3) | 16 AWG | RED |
|--------------|--------|-----|

|               |        |      |
|---------------|--------|------|
| Video (Cam 3) | 75 Ohm | COAX |
|---------------|--------|------|

MINK 10 CCP

|    |
|----|
| 1  |
| 2  |
| 3  |
| 4  |
| 5  |
| 6  |
| 7  |
| 8  |
| 9  |
| 10 |

MacArtney MiniRV Cable  
p.n. 6011  
Orange

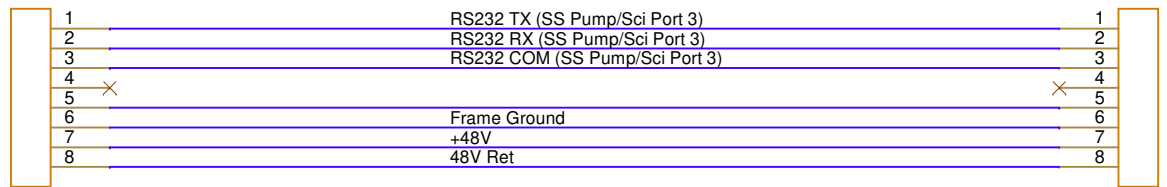
8 ft



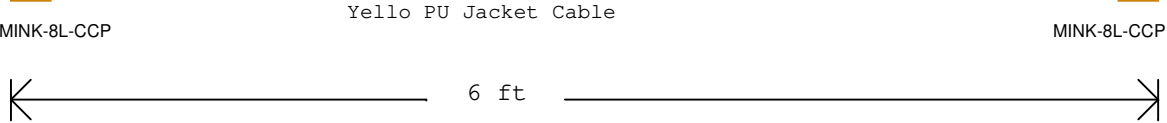
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| Engineer<br><Engineer><br>Designer<br><Designer> |  | Size<br>A                      | Document Number<br><Doc> | Title<br><b>MINIROV: Camera Cable 4 Female</b> |  | Project<br><Project> |
| Part Number<br><Part Number>                     |  | Project File<br><Project File> |                          | Rev<br><Rev>                                   |  |                      |
| Date: Tuesday, August 06, 2024                   |  | Sheet 1 of 1                   |                          |                                                |  |                      |

J BOX



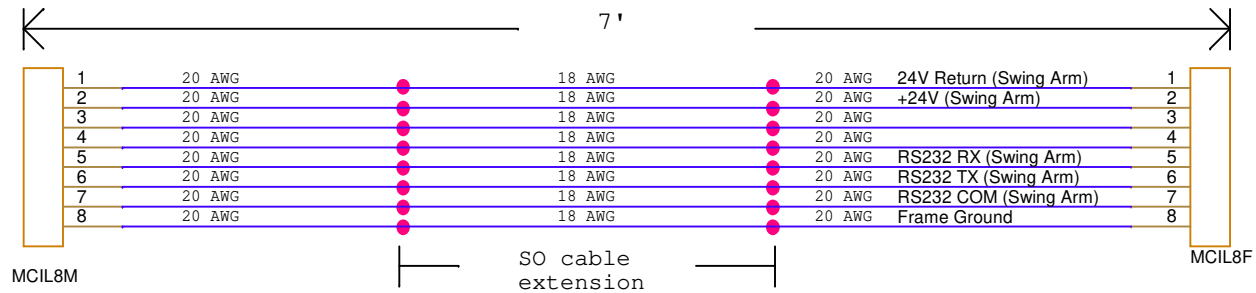
SS  
PUMP



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|                                                  |  |           |                          |                                                |                                |                      |
|--------------------------------------------------|--|-----------|--------------------------|------------------------------------------------|--------------------------------|----------------------|
| Engineer<br><Engineer><br>Designer<br><Designer> |  | Size<br>A | Document Number<br><Doc> | Title<br><b>MINIROV: Suction Sampler Cable</b> |                                | Project<br><Project> |
|                                                  |  |           |                          | Part Number<br><Part Number>                   | Project File<br><Project File> | Rev<br><Rev>         |
| Date: Tuesday, August 06, 2024                   |  |           |                          | Sheet 1                                        | of 1                           | 1                    |

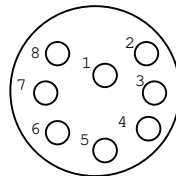
Mates with MCBH8F  
[Tool Skid J-Box]



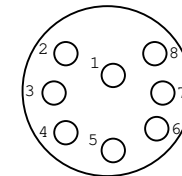
Mates with MCBH8M  
[Swing Arm]

Female Locking  
Sleeve  
MC-DLS-F

Female Locking  
Sleeve  
MC-DLS-F



MCIL8M  
Male Face View

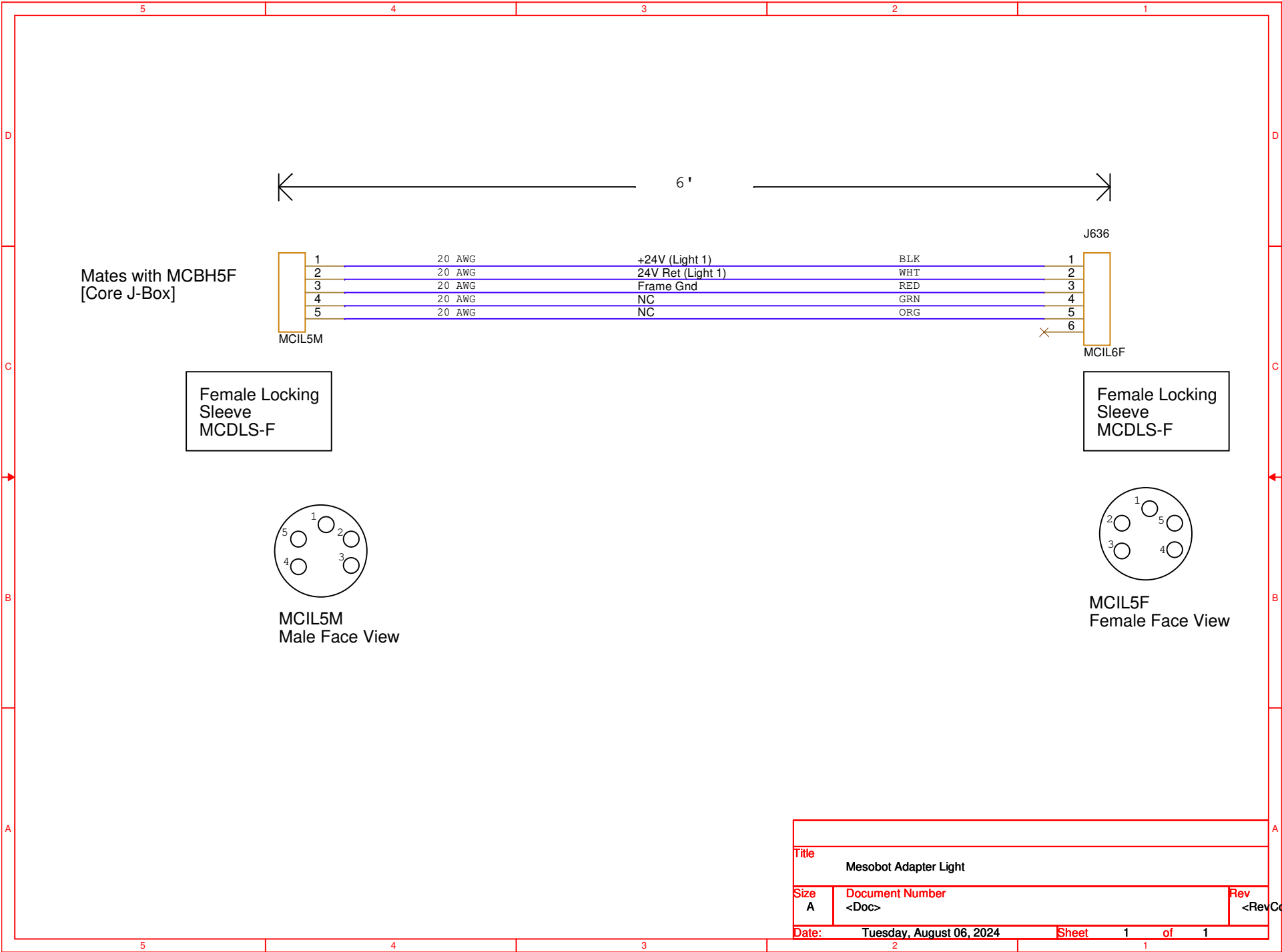


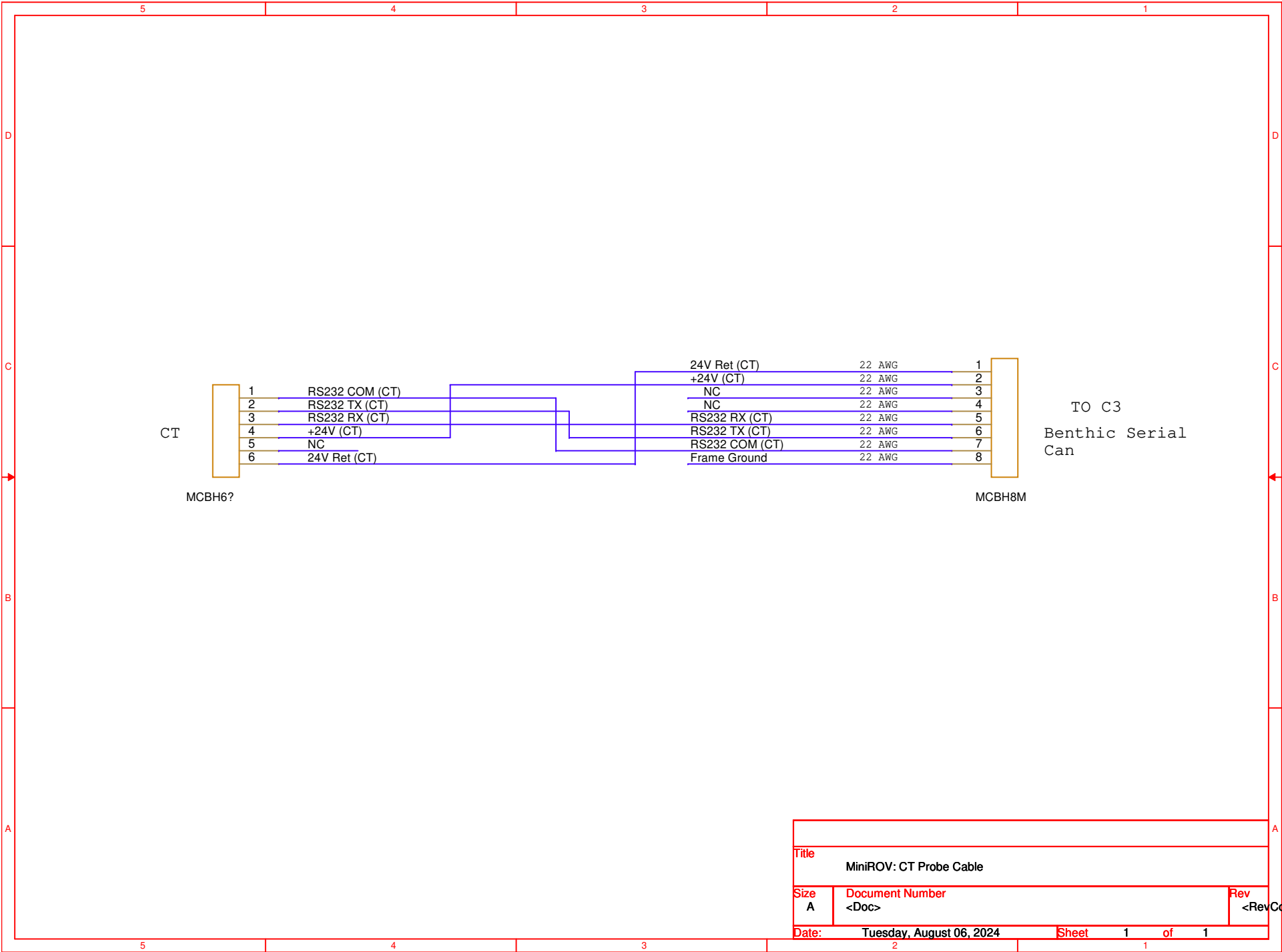
MCIL8F  
Female Face View

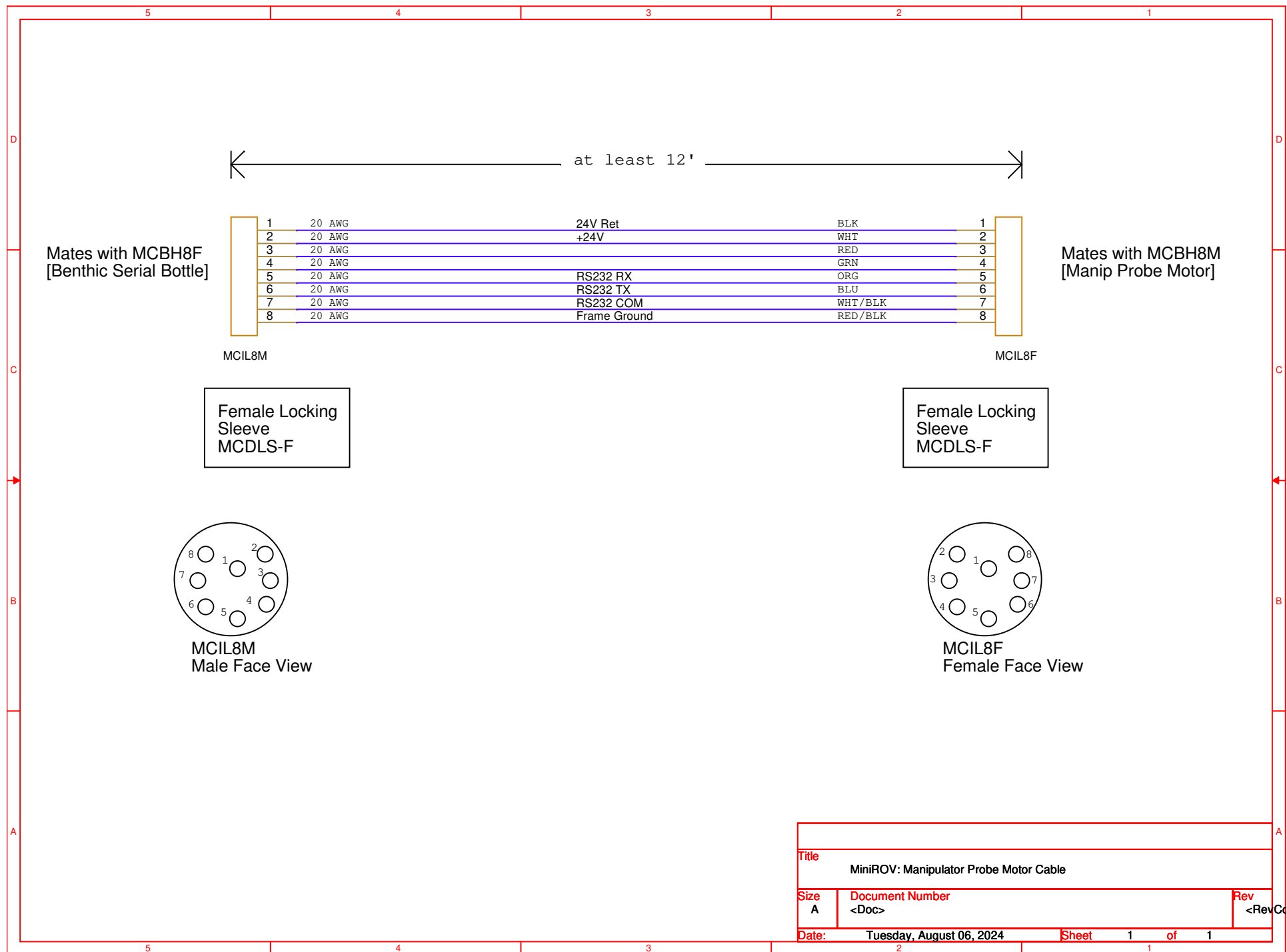


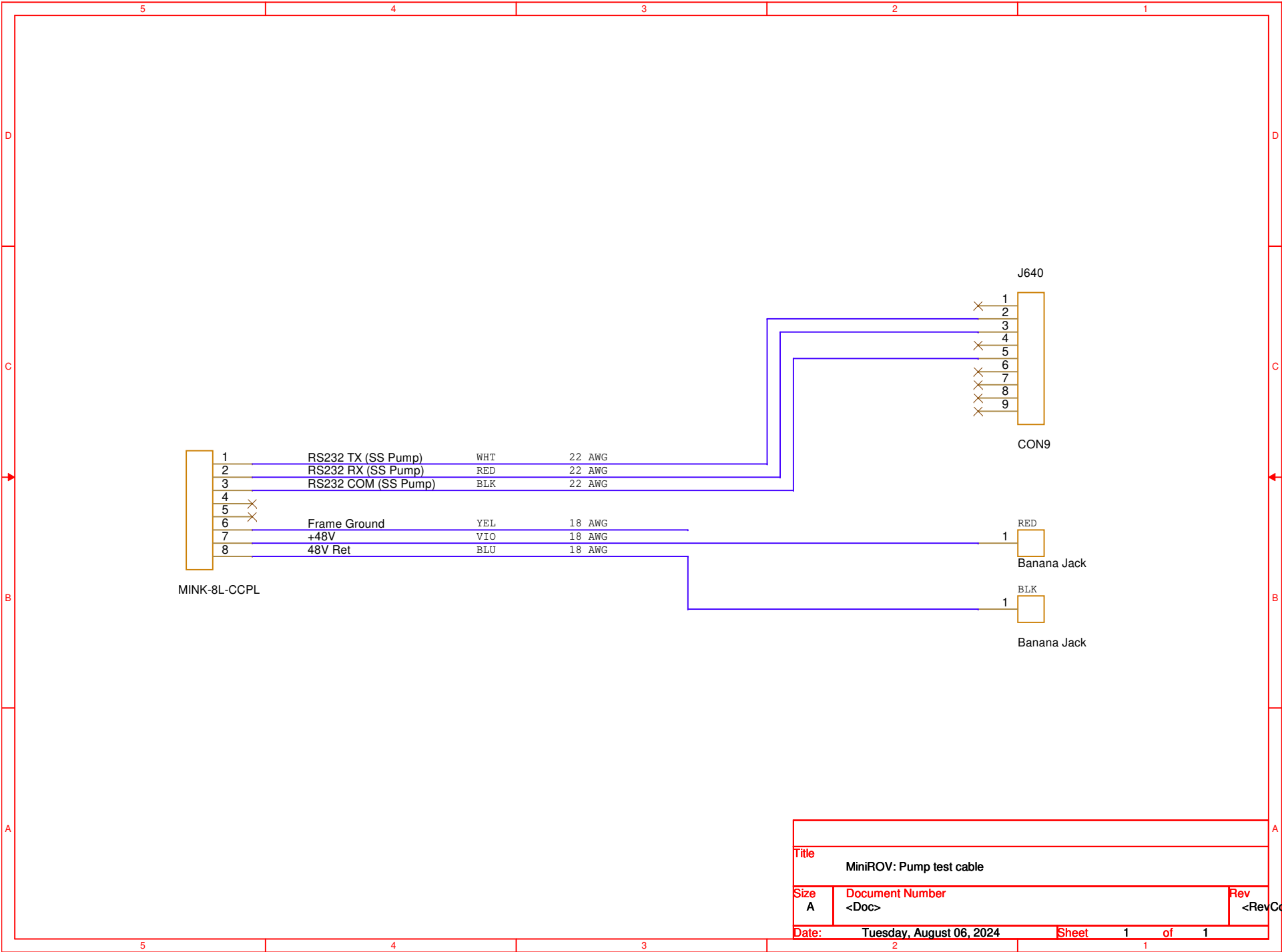
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|                        |  |                                   |                          |                                         |                                |                      |
|------------------------|--|-----------------------------------|--------------------------|-----------------------------------------|--------------------------------|----------------------|
| Engineer<br><Engineer> |  | Size<br>A                         | Document Number<br><Doc> | Title<br><b>MINROV: Swing Arm Cable</b> |                                | Project<br><Project> |
| Designer<br><Designer> |  | Date:<br>Tuesday, August 06, 2024 |                          | Part Number<br><Part Number>            | Project File<br><Project File> | Rev<br><Rev>         |
|                        |  |                                   |                          | Sheet<br>1                              | of<br>1                        |                      |

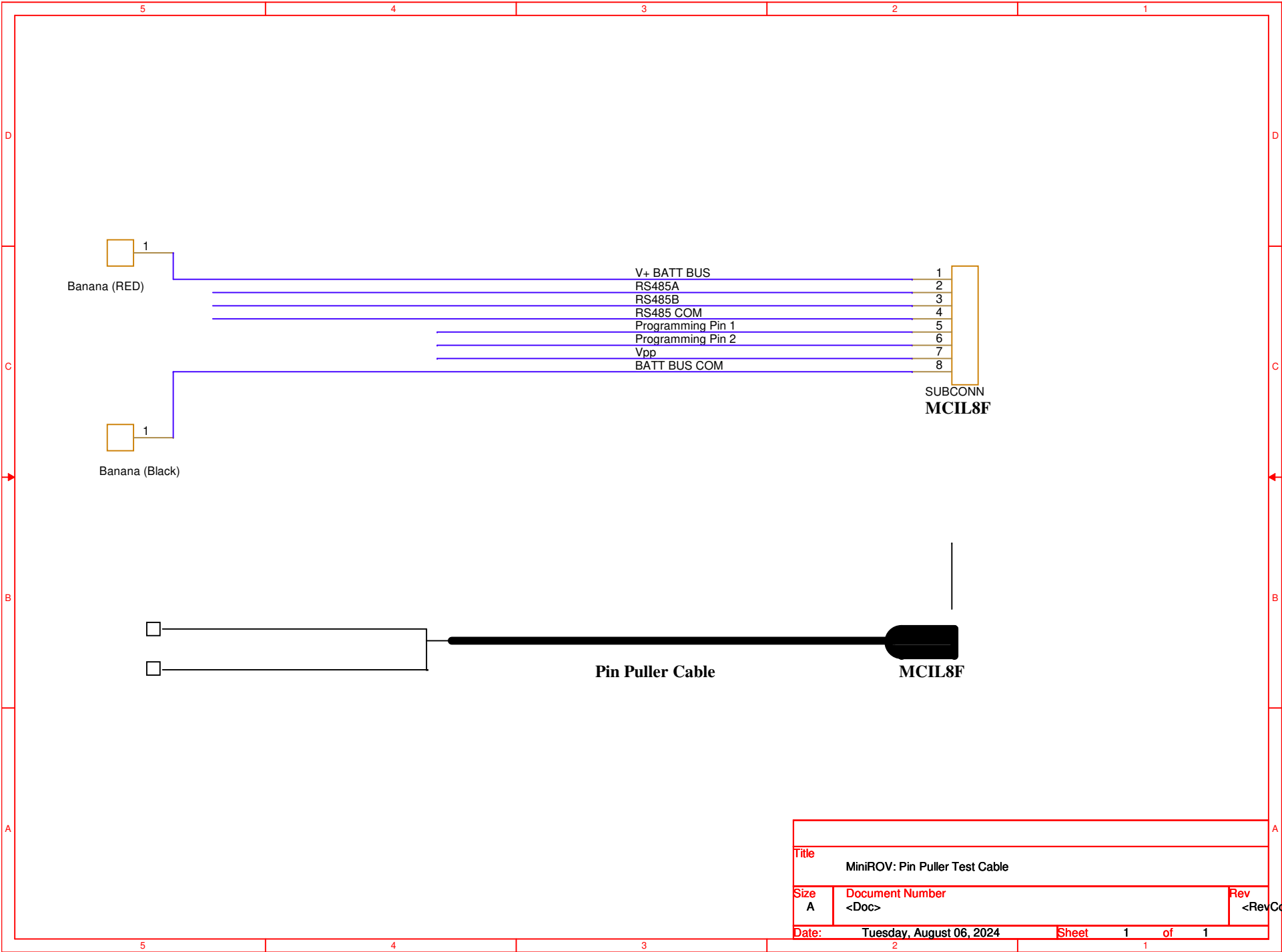




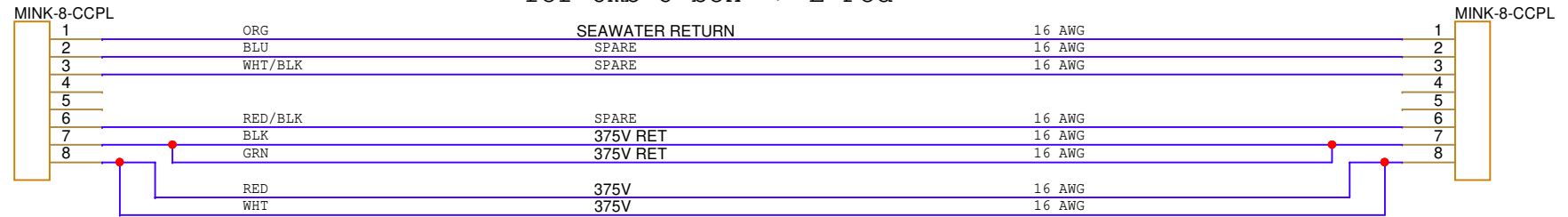




|                          |                          |              |
|--------------------------|--------------------------|--------------|
| Title                    |                          |              |
| MiniROV: Pump test cable |                          |              |
| Size                     | Document Number          | Rev          |
| A                        | <Doc>                    | <RevC>       |
| Date:                    | Tuesday, August 06, 2024 | Sheet 1 of 1 |



Pin Assignments  
for Umb J-box -> E-Pod

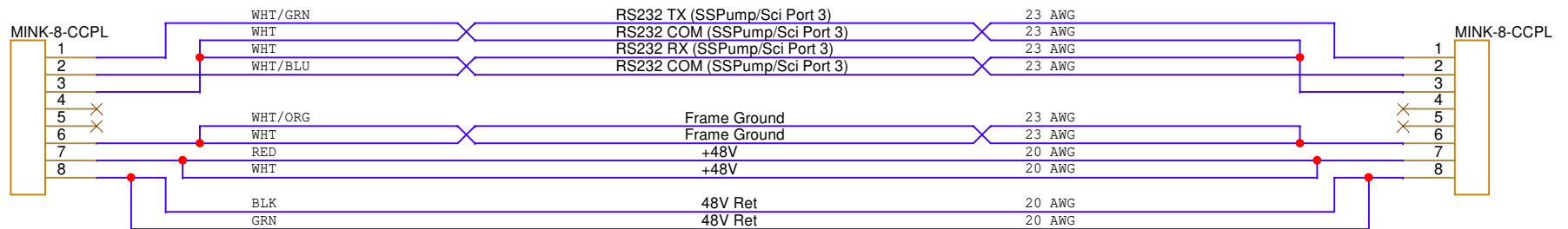


Length = 6 ft  
Subconn PC816#

Mates with MINK8-FCRL  
[E-Pod E1]

Mates with MINK8-FCRL  
[Umbilical J-Box]

Pin Assignments  
for Toolsled J-box -> Pump



Falmat FM022208-10  
Length = 6 ft  
10 A Per Wire Max on Power lines

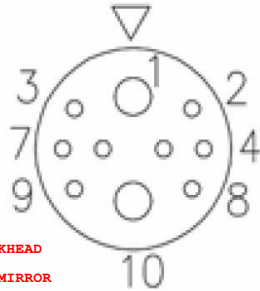
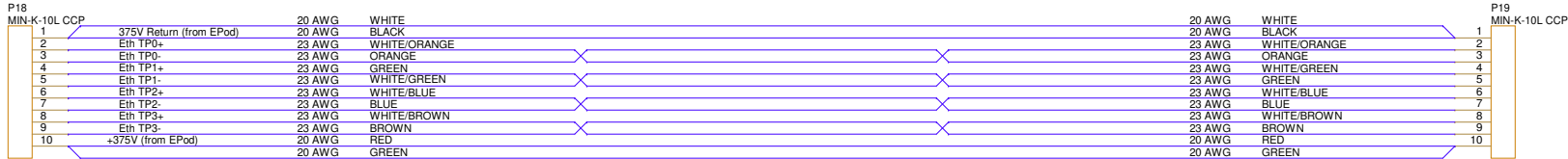
Mates with MINK8-FCRL  
[Suction Sampler Pump]

Mates with MINK8-FCRL  
ToolSled J-Box]

Works as spare for Umb J-box->E-Pod  
OR Pump

|                                                                                       |           |                                                 |                              |
|---------------------------------------------------------------------------------------|-----------|-------------------------------------------------|------------------------------|
|  |           | <b>Monterey Bay Aquarium Research Institute</b> |                              |
|                                                                                       |           | 7700 Sandhold Road, Moss Landing, CA 95039      |                              |
| Title                                                                                 |           | MiniROV: Spare Umb J-Box to E-Pod Cable         |                              |
| Engineer<br>Alana Sherman                                                             | Size<br>A | Document Number<br><Doc>                        | Layout File<br><Layout File> |
| Layout                                                                                | Date:     | Tuesday, August 06, 2024                        | Sheet 1 of 1                 |
| <Layout>                                                                              |           |                                                 | Rev<br><Rev>                 |

Cable PN# FM022208-10  
Length = 6 ft



MALE FACE VIEW  
THIS IS THE BULKHEAD  
NOT CCP LAYOUT  
THE CCP IS THE MIRROR

2#14/8#20  
(10 LONG)

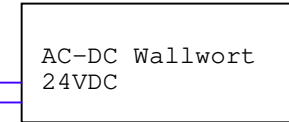
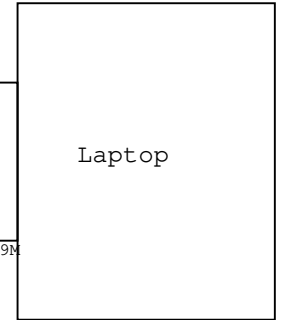
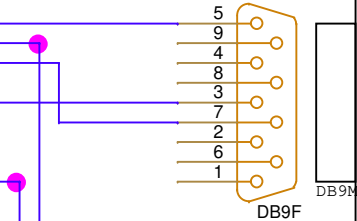
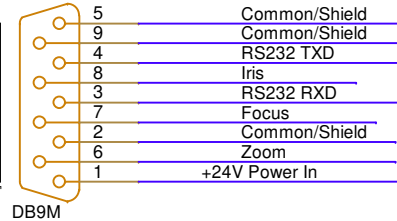
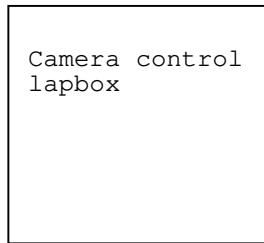
- 01: 14AWG
- 02: 20AWG
- 03: 20AWG
- 04: 20AWG
- 05: 20AWG
- 06: 20AWG
- 07: 20AWG
- 08: 20AWG
- 09: 20AWG
- 10: 14AWG

SeaConn Pin Ratings:  
14 AWG: 16A  
20 AWG: 4A

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MOSS LANDING, CA 95039  
(831) 775-1700 [www.mbari.org](http://www.mbari.org)

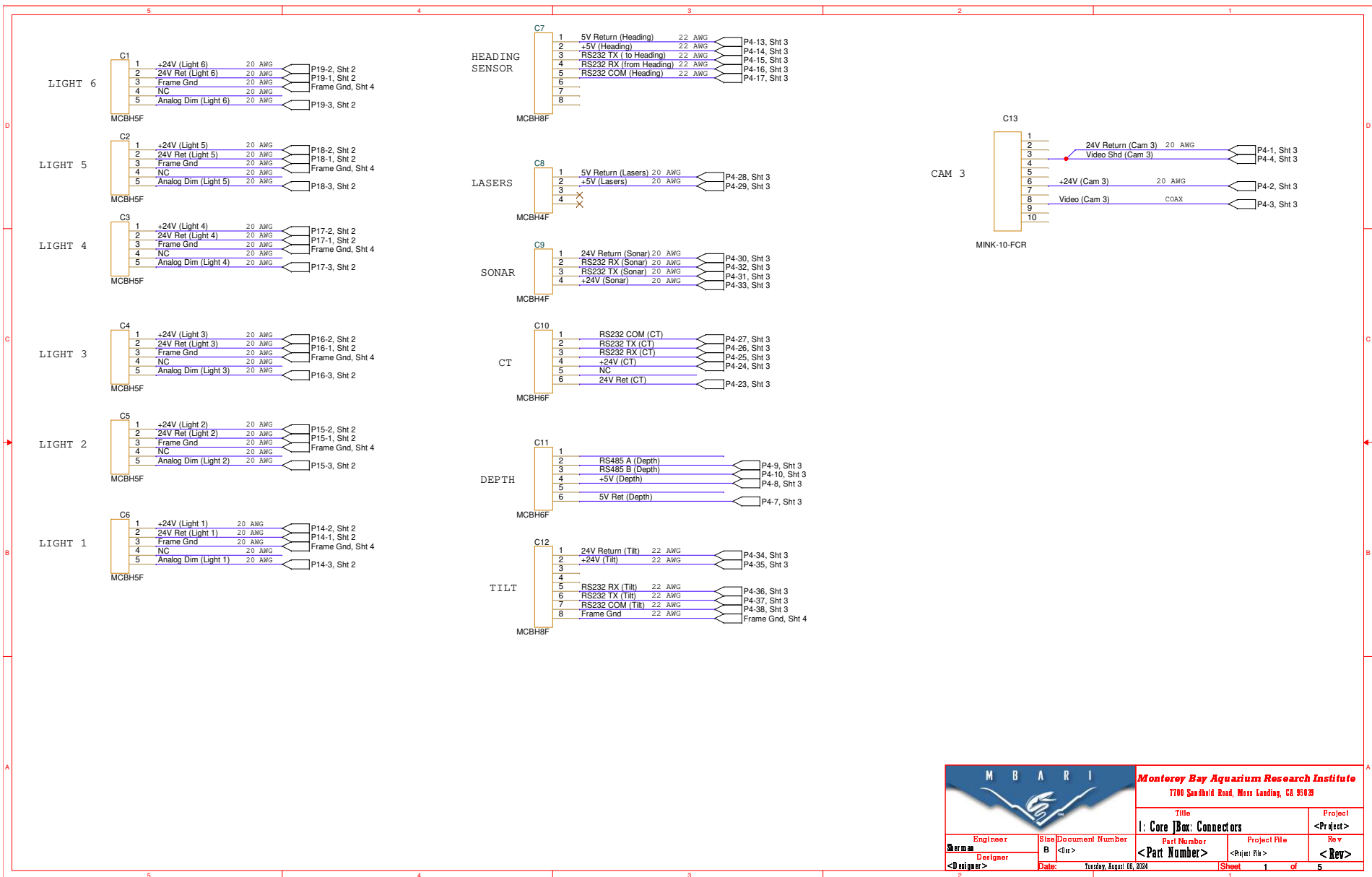


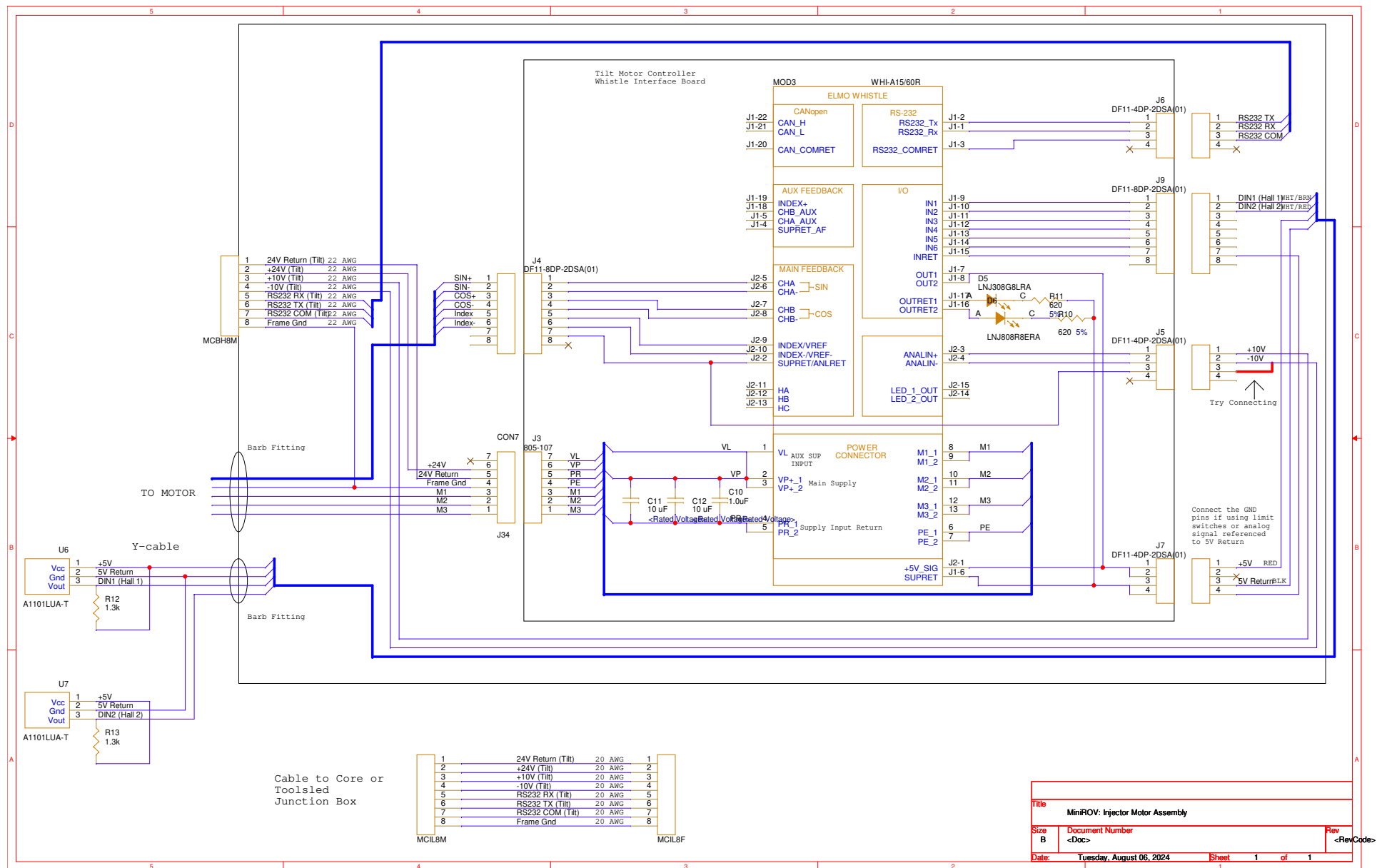
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| Copyright MBARI 2000                  |                        |                      |                    |
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| Size B                                | Engineer Alana Sherman | Layout <Layout Eng.> | Filename 100221360 |
| Date: Tuesday, August 06, 2024        |                        | Sheet 1 of 1         | Rev B              |

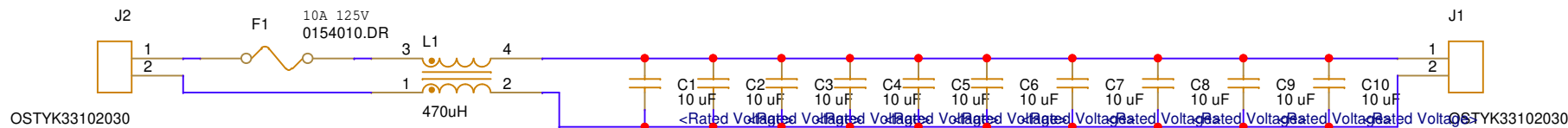


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|                                |           |                          |                                       |                      |
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| Designer<br><Designer>         |           |                          | Part Number<br><Part Number>          | Rev<br><Rev>         |
| Date: Tuesday, August 06, 2024 |           |                          | Project File<br><Project File>        | Rev<br><Rev>         |
| Sheet 1 of 1                   |           |                          |                                       |                      |







"10A, 100V MAX"

60V, 15 A Input  
60V, 15 A Output



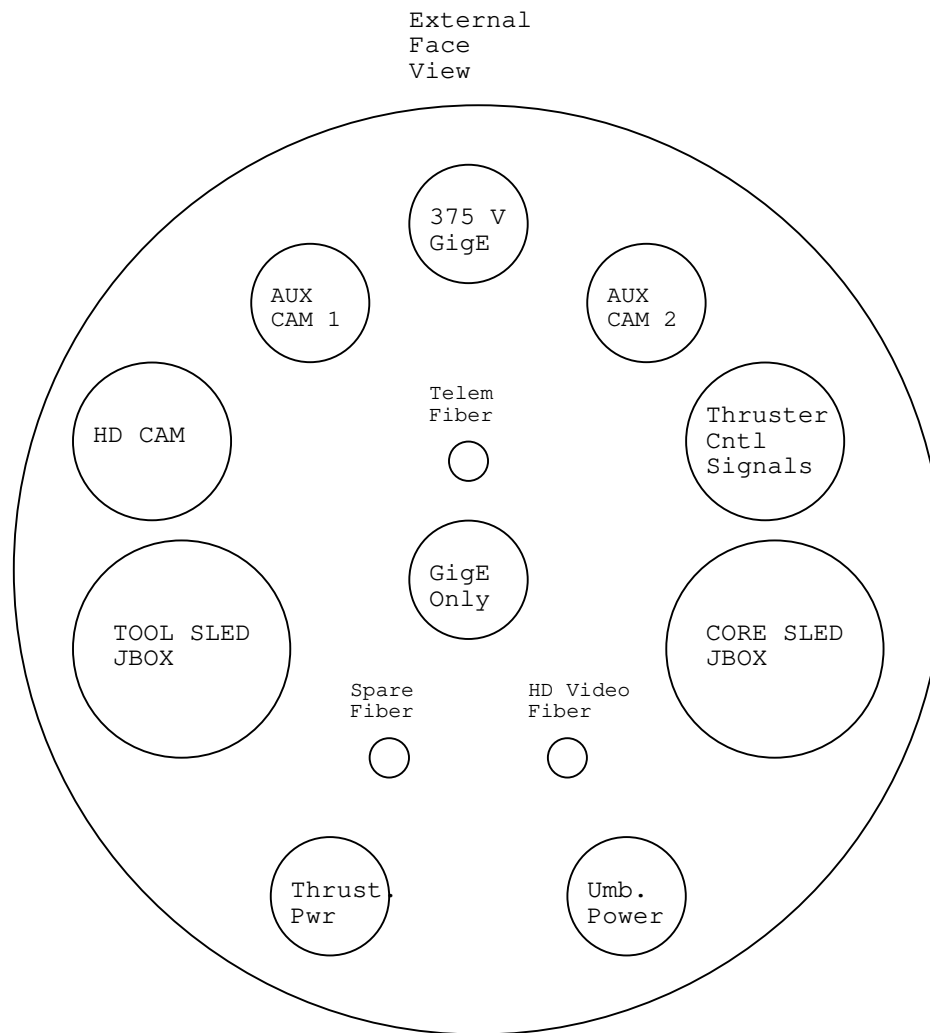
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Title

**MiniROV: Thruster EMI filter**

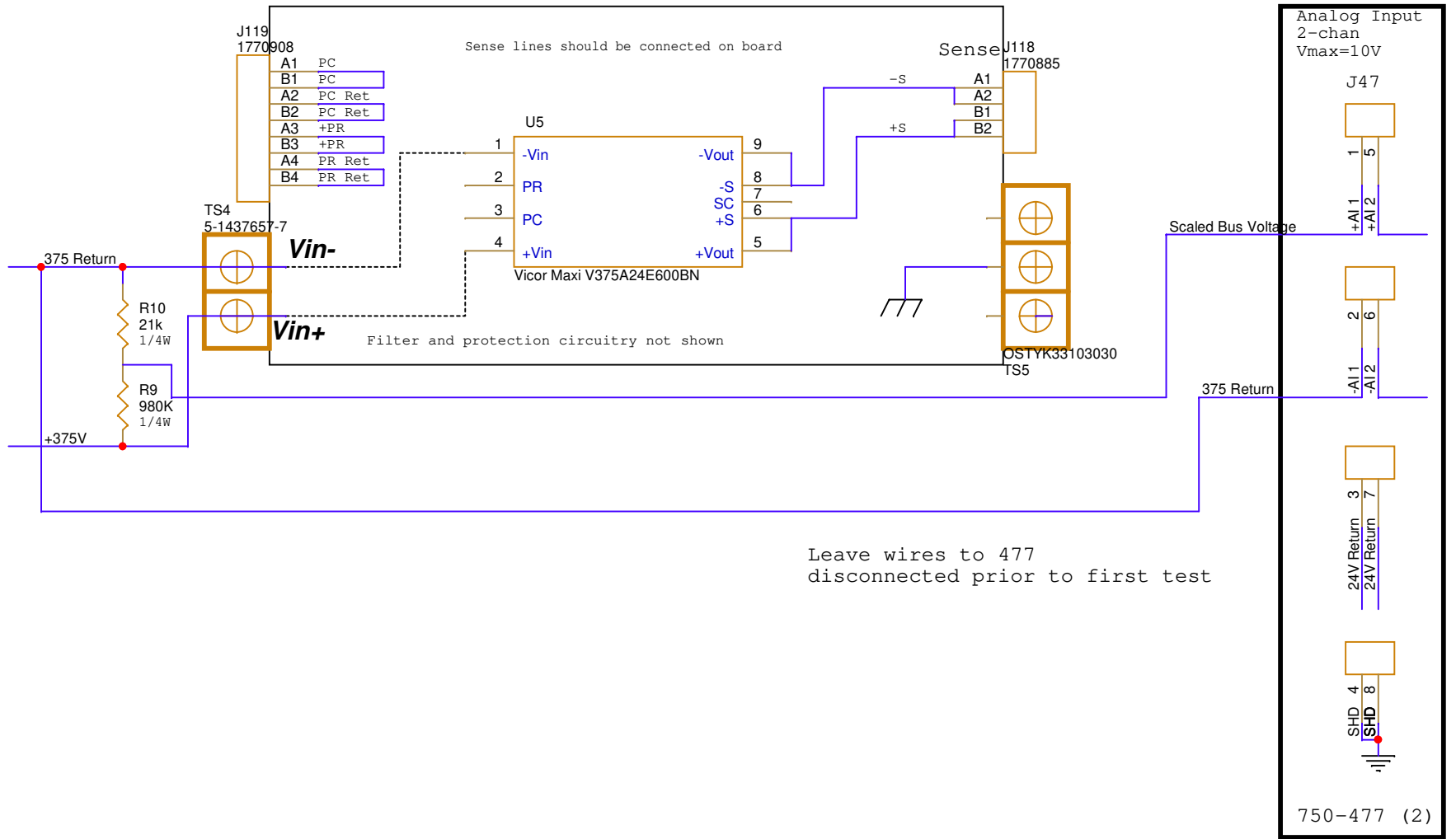
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| Layout<br><Layout>     | Date:<br>Tuesday, August 06, 2024 | Sheet<br>1               | of<br>1                      |              |



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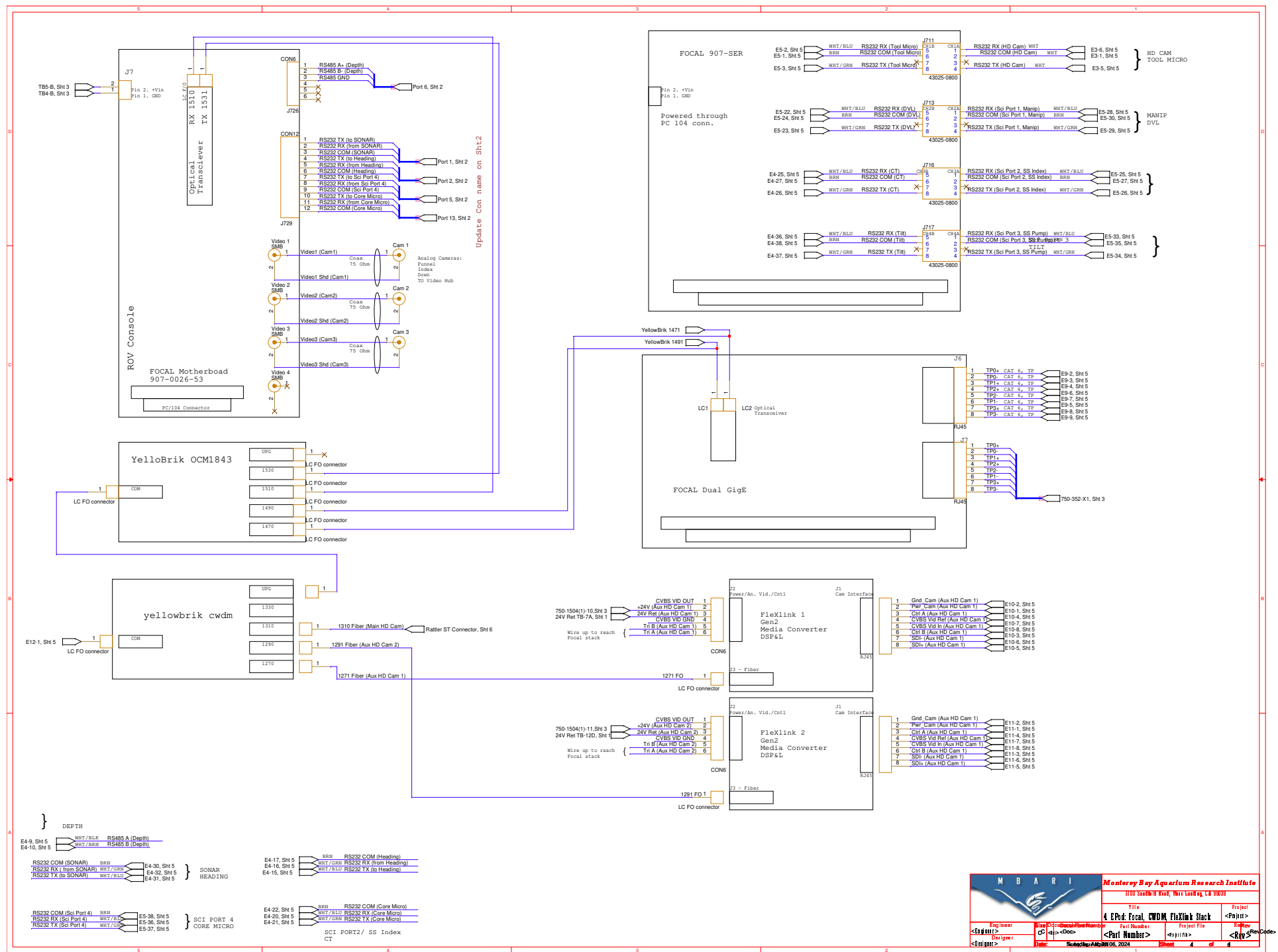
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| Designer<br><Designer>         |  |           |                          | Part Number<br><Part Number>          | Project File<br><Project File> | Rev<br><Rev>         |
| Date: Tuesday, August 06, 2024 |  |           |                          | Sheet                                 | 1 of 1                         |                      |

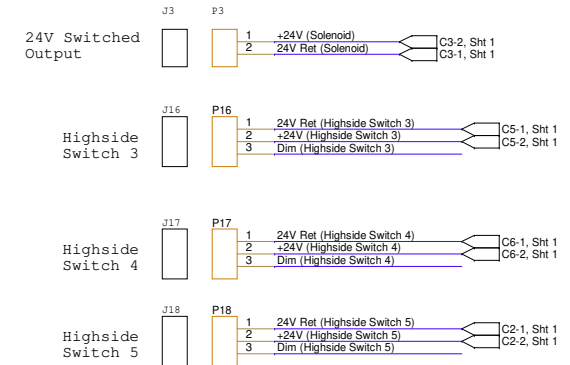
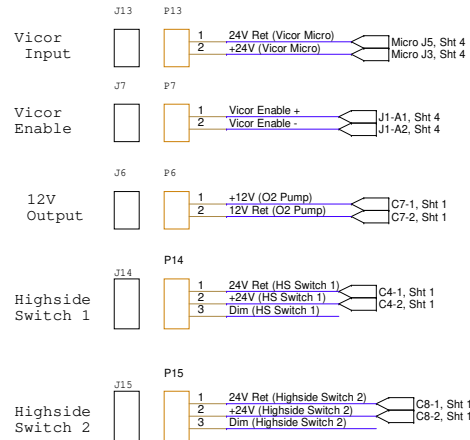
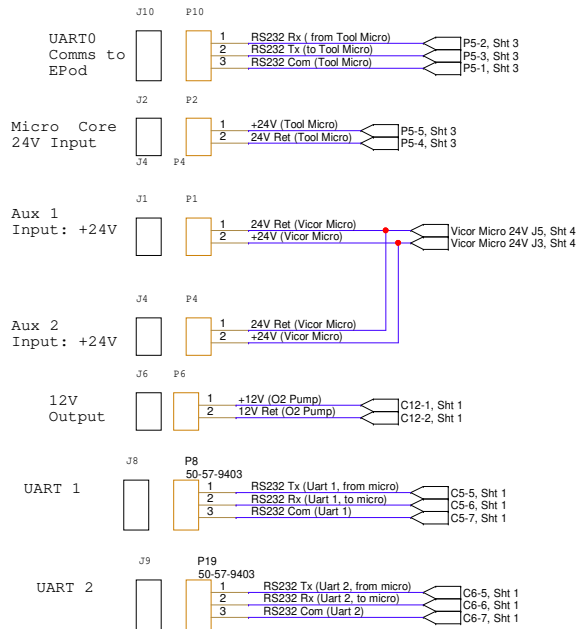
+375V - +24V, 600W VICOR MAXI



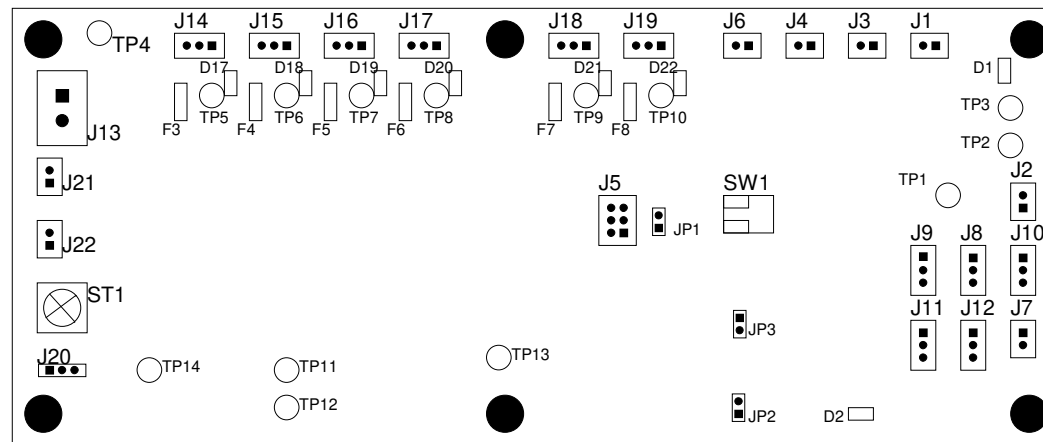
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| Size                                   | Document Number          | Rev          |
| A                                      | <Doc>                    | <RevC>       |
| Date:                                  | Tuesday, August 06, 2024 | Sheet 1 of 1 |





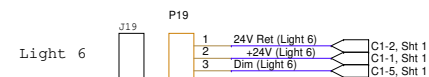
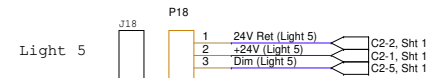
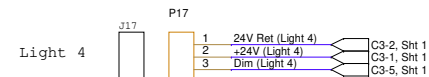
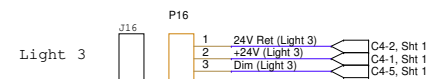
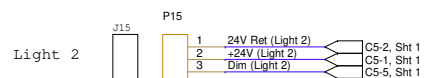
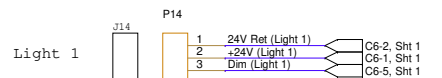
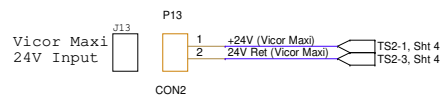
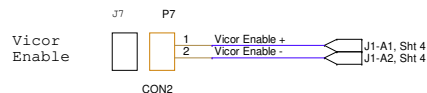
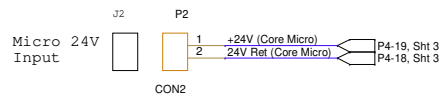
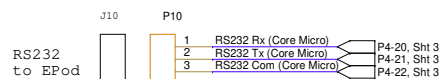


Micro Board Connector Placement

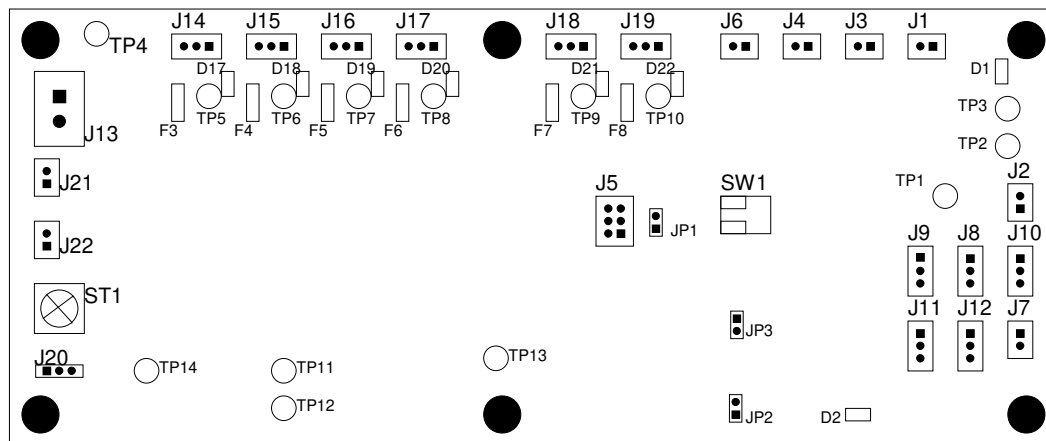


- J1: Ext Aux #1 Input Voltage
- J2: Vehicle 24Vdc Input
- J3: Aux Power #1
- J4: Ext Aux #2 Input Voltage
- J5: PIC Programming Input
- J6: Aux Power #2
- J7: Vicor Power Control
- J8: Aux RS-232 #1
- J9: Aux RS-232 #2
- J10: Vehicle RS-232
- J11: Vehicle RS-485 #1
- J12: Vehicle RS-485 #2
- J13: 24Vdc Vicor Input
- J14: Highside Switch #1 Output
- J15: Highside Switch #2 Output
- J16: Highside Switch #3 Output
- J17: Highside Switch #4 Output
- J18: Highside Switch #5 Output
- J19: Highside Switch #6 Output
- J20: Jumper for GF Calibration
- J21: Water Sensor #1
- J22: Water Sensor #2
- ST1: Seawater Reference Connection

|                                     |                                         |                                                                                               |                                           |
|-------------------------------------|-----------------------------------------|-----------------------------------------------------------------------------------------------|-------------------------------------------|
|                                     |                                         | <b>Monterey Bay Aquarium Research Institute</b><br>7700 Sandhold Road, Moss Landing, CA 95033 |                                           |
|                                     |                                         | Title<br><b>2. Tool Shed [Box: Micro]</b>                                                     | Project<br><b>&lt;Project&gt;</b>         |
| Engineer<br><b>&lt;Engineer&gt;</b> | Size<br><b>B</b>                        | Document Number<br><b>&lt;ID&gt;</b>                                                          | Part Number<br><b>&lt;Part Number&gt;</b> |
| Designer<br><b>&lt;Designer&gt;</b> | Date<br><b>Tuesday, August 06, 2024</b> | Project File<br><b>&lt;Project File&gt;</b>                                                   | Rev<br><b>&lt;Rev&gt;</b>                 |
| Sheet 2 of 5                        |                                         | 1                                                                                             |                                           |

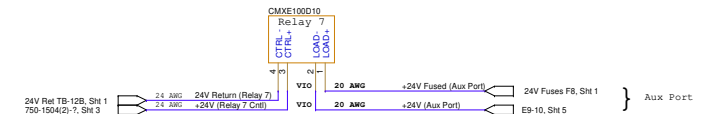
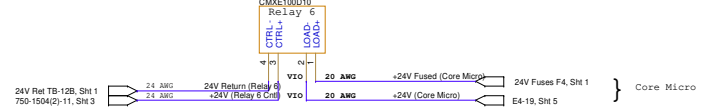
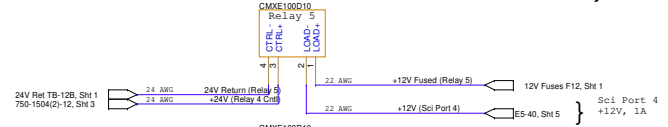
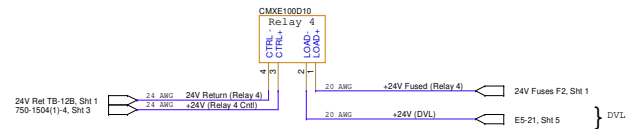
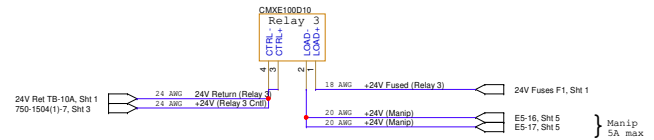
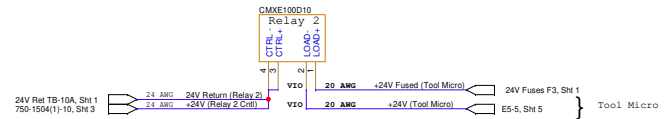
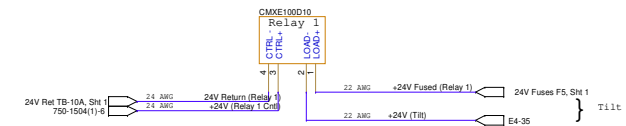
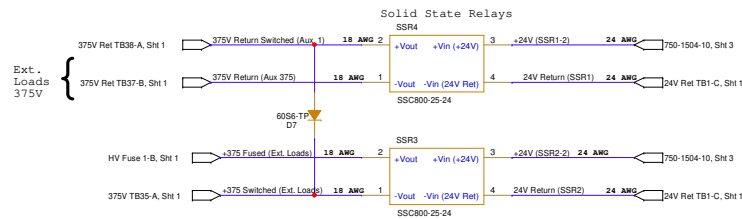
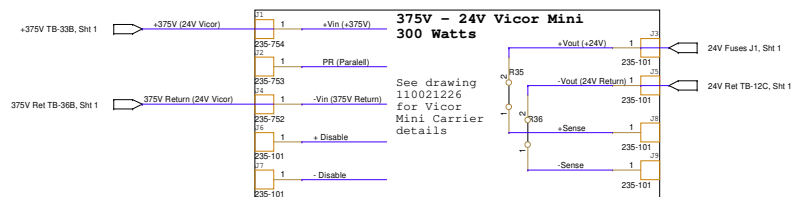
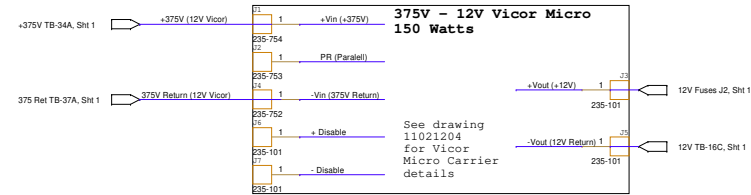
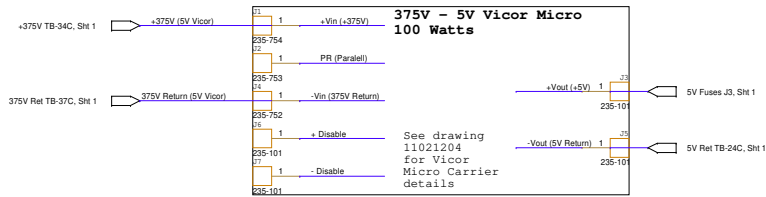


Micro Board Connector Placement



- J1: Ext Aux #1 Input Voltage
- J2: Vehicle 24Vdc Input
- J3: Aux Power #1
- J4: Ext Aux #2 Input Voltage
- J5: PIC Programming Input
- J6: Aux Power #2
- J7: Vicor Power Control
- J8: Aux RS-232 #1
- J9: Aux RS-232 #2
- J10: Vehicle RS-232
- J11: Vehicle RS-485 #1
- J12: Vehicle RS-485 #2
- J13: 24Vdc Vicor Input
- J14: Light #1 Output
- J15: Light #2 Output
- J16: Light #3 Output
- J17: Light #4 Output
- J18: Light #5 Output
- J19: Light #6 Output
- J20: Jumper for GF Calibration
- J21: Water Sensor #1
- J22: Water Sensor #2
- ST1: Seawater Reference

|                        |                                  |                                                                                               |                              |
|------------------------|----------------------------------|-----------------------------------------------------------------------------------------------|------------------------------|
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|                        |                                  | Title<br><b>2. Core JBox: Micro Board</b>                                                     | Project<br><Project>         |
| Engineer<br><Engineer> | Size<br>B                        | Document Number<br><Doc>                                                                      | Part Number<br><Part Number> |
| Designer<br><Designer> | Date<br>Tuesday, August 06, 2004 | Project File<br><Project File>                                                                | Rev<br><Rev>                 |
| Sheet 2 of 5           |                                  | 1                                                                                             |                              |



# TO TOOL SLED J-BOX

P5

|                    |                                         |         |        |    |
|--------------------|-----------------------------------------|---------|--------|----|
| Micro P10-3, Sht 2 | RS232 COM (Tool Micro)                  | BRN     | 24 AWG | 1  |
| Micro P10-1, Sht 2 | RS232 RX (Tool Micro)                   | WHT/BLU | 24 AWG | 2  |
| Micro P10-2, Sht 2 | RS232 TX (Tool Micro)                   | WHT/GRN | 24 AWG | 3  |
| Micro P2-2, Sht 2  | 24V Return (Tool Micro)                 | BLK     | 20 AWG | 4  |
| Micro P2-1, Sht 2  | +24V (Tool Micro)                       | VIO     | 20 AWG | 5  |
| C10-1, Sht 1       | 24V Return (Cam 1)                      | BLK     | 20 AWG | 6  |
| C10-2, Sht 1       | +24V (Cam 1)                            | VIO     | 20 AWG | 7  |
| C10-3, Sht 1       | Video (Cam 1)                           | COAX    |        | 8  |
| C10-4, Sht 1       | Video Shd (Cam 1)                       | COAX    |        | 9  |
| C11-1, Sht 1       | 24V Return (Cam 2)                      | BLK     | 20 AWG | 10 |
| C11-2, Sht 1       | +24V (Cam 2)                            | VIO     | 20 AWG | 11 |
| C11-3, Sht 1       | Video (Cam 2)                           | COAX    |        | 12 |
| C11-4, Sht 1       | Video Shd (Cam 2)                       | COAX    |        | 13 |
| C7-3, Sht 1        | 24V Return (Sci Port 1, Manip)          | BLK     | 20 AWG | 14 |
| C7-4, Sht 1        | 24V Return (Sci Port 1, Manip)          | BLK     | 20 AWG | 15 |
| C7-1, Sht 1        | +24V (Sci Port 1, Manip)                | VIO     | 20 AWG | 16 |
| C1-2, Sht 1        | +24V (Sci Port 1, Manip)                | VIO     | 20 AWG | 17 |
| P4-1, Sht 2        | +12V (O2 Pump)                          | ORG     | 20 AWG | 18 |
| P4-2, Sht 2        | 12V Ret (O2 Pump)                       | BLK     | 20 AWG | 19 |
| C9-7, Sht 1        | 24V Return (DVL)                        | BLK     | 20 AWG | 20 |
| C9-3, Sht 1        | +24V (DVL)                              | VIO     | 20 AWG | 21 |
| C9-2, Sht 1        | RS232 RX (DVL)                          | WHT/BLU | 24 AWG | 22 |
| C9-1, Sht 1        | RS232 TX (DVL)                          | WHT/GRN | 24 AWG | 23 |
| C9-4, Sht 1        | RS232 COM (DVL)                         | BRN     | 24 AWG | 24 |
| C8-5, Sht 1        | RS232 RX (Sci Port 2, SS Mtr)           | WHT/BLU | 24 AWG | 25 |
| C8-6, Sht 1        | RS232 TX (Sci Port 2, SS Mtr)           | WHT/GRN | 24 AWG | 26 |
| C8-7, Sht 1        | RS232 COM (Sci Port 2, SS Mtr)          | BRN     | 24 AWG | 27 |
| C7-6, Sht 1        | RS232 RX (Sci Port 1, Manip)            | WHT/BLU | 24 AWG | 28 |
| C7-5, Sht 1        | RS232 TX (Sci Port 1, Manip)            | WHT/GRN | 24 AWG | 29 |
| C7-7, Sht 1        | RS232 COM (SCI PORT 1, Manip)           | BRN     | 24 AWG | 30 |
|                    |                                         | WHT     | 20 AWG | 31 |
|                    |                                         | WHT     | 20 AWG | 32 |
|                    | RS232 RX (Sci Port 3, SS Pump/Drw Mtr)  | WHT/BLU | 24 AWG | 33 |
|                    | RS232 TX (Sci Port 3, SS Pump/Drw Mtr)  | WHT/GRN | 24 AWG | 34 |
|                    | RS232 COM (SCI PORT 3, SS Pump/Drw Mtr) | BRN     | 24 AWG | 35 |
|                    | RS232 RX (Sci Port 5)                   | WHT/BLU | 24 AWG | 36 |
|                    | RS232 TX (Sci Port 5)                   | WHT/GRN | 24 AWG | 37 |
|                    | RS232 COM/DC RETURN (Sci Port 5)        | BRN     | 20 AWG | 38 |
|                    | 12V Return (Sci Port 5)                 | VIO     | 20 AWG | 39 |
|                    | +12V (Sci Port 5)                       | ORG     | 20 AWG | 40 |
|                    | Frame Gnd                               | GRN     | 24 AWG | 41 |
|                    | 375V Return (Tool)                      | BLK     | 20 AWG | 42 |
|                    | +375V (Tool)                            | RED/YEL | 20 AWG | 43 |
|                    |                                         |         |        | 44 |

MINO-44-FCR-PBOF

Connects to H4,  
Sheet 1

H3

1  
2  
3  
4  
5

Frame Gnd, Sht 4  
TS1-Vin-, Sht 4  
Molex  
TS1-Vin+, Sht 4



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|                        |                                |                          |                              |                                |              |
|------------------------|--------------------------------|--------------------------|------------------------------|--------------------------------|--------------|
| Engineer<br><Engineer> | Size<br>A                      | Document Number<br><Doc> | Part Number<br><Part Number> | Project File<br><Project File> | Rev<br><Rev> |
| Designer<br><Designer> | Date: Tuesday, August 06, 2024 | Sheet 3 of 5             |                              |                                |              |

|                       |                              |         |        |    |
|-----------------------|------------------------------|---------|--------|----|
| C13-3, Sht 1          | 24V Return (Cam 3)           | BLK     | 22 AWG | 1  |
| C13-6, Sht 1          | +24V (Cam 3)                 | VIO     | 22 AWG | 2  |
| C13-8, Sht 1          | Video (Cam 3)                | COAX    |        | 3  |
| C13-3, Sht 1          | Videa Shd (Cam 3)            | COAX    |        | 4  |
|                       |                              | 20 AWG  |        | 5  |
|                       |                              | 20 AWG  |        | 6  |
| C11-6, Sht 1          | 5V Return (Depth)            | BLK     | 22 AWG | 7  |
| C11-4, Sht 1          | +5V (Depth)                  | RED     | 22 AWG | 8  |
| C11-2, Sht 1          | RS485 A (Depth)              | WHT/BLK | 24 AWG | 9  |
| C11-3, Sht 1          | RS485 B (Depth)              | WHT/BRN | 24 AWG | 10 |
|                       |                              | 20 AWG  |        | 11 |
|                       |                              | 20 AWG  |        | 12 |
| C7-1, Sht 1           | 5V Return (Heading)          | BLK     | 22 AWG | 13 |
| C7-2, Sht 1           | +5V (Heading)                | RED     | 22 AWG | 14 |
| C7-3, Sht 1           | RS232 TX (to Heading)        | WHT/BLU | 24 AWG | 15 |
| C7-4, Sht 1           | RS232 RX (from Heading)      | WHT/GRN | 24 AWG | 16 |
| C7-5, Sht 1           | RS232 COM (Heading)          | BRN     | 24 AWG | 17 |
| P2-2, Sht 2           | 24V Return (Core Micro)      | BLK     | 22 AWG | 18 |
| P2-1, Sht 2           | +24V (Core Micro)            | VIO     | 22 AWG | 19 |
| P10-2, Sht 2          | RS232 RX (Core Micro)        | WHT/BLU | 24 AWG | 20 |
| P10-1, Sht 2          | RS232 TX (Core Micro)        | WHT/GRN | 24 AWG | 21 |
| P10-3, Sht 2          | RS232 COM (Core Micro)       | BRN     | 24 AWG | 22 |
| C10-6, Sht 1          | 24V Return (CT)              | BLK     | 20 AWG | 23 |
| C10-4, Sht 1          | +24V (CT)                    | VIO     | 20 AWG | 24 |
| C10-3, Sht 1          | RS232 RX (CT)                | WHT/BLU | 24 AWG | 25 |
| C10-2, Sht 1          | RS232 TX (CT)                | WHT/GRN | 24 AWG | 26 |
| C10-1, Sht 1          | RS232 COM (CT)               | BRN     | 24 AWG | 27 |
| C8-1, Sht 1           | 5V Return (Lasers)           | BLK     | 22 AWG | 28 |
| C8-2, Sht 1           | +5V (Lasers)                 | RED     | 22 AWG | 29 |
| C9-1, Sht 1           | 24V Return/RS232 COM (Sonar) | BRN     | 22 AWG | 30 |
| C9-3, Sht 1           | RS232 TX (to Sonar)          | WHT/BLU | 24 AWG | 31 |
| C9-2, Sht 1           | RS232 RX (from Sonar)        | WHT/GRN | 24 AWG | 32 |
| C9-4, Sht 1           | +24V (Sonar)                 | VIO     | 22 AWG | 33 |
| C12-1, Sht 1          | 24V Return (Tilt)            |         | 20 AWG | 34 |
| C12-2, Sht 1          | +24V (Tilt)                  | VIO     | 20 AWG | 35 |
| C12-5, Sht 1          | RS232 RX (Tilt)              | WHT/BLU | 24 AWG | 36 |
| C12-6, Sht 1          | RS232 TX (Tilt)              | WHT/GRN | 24 AWG | 37 |
| C12-7, Sht 1          | RS232 COM (Tilt)             | BRN     | 24 AWG | 38 |
|                       |                              | 20 AWG  |        | 39 |
|                       |                              | 20 AWG  |        | 40 |
| Frame Gnd, Sht 4      | Frame Gnd                    | GRN     | 24 AWG | 41 |
| Vicor TS1-Vin-, Sht 4 | 375V Return (Core)           | BLK     | 20 AWG | 42 |
|                       |                              | 22 AWG  |        | 43 |
| Vicor TS1-Vin+, Sht 4 | +375V (Core)                 | RED/YEL | 20 AWG | 44 |

TO EPOD

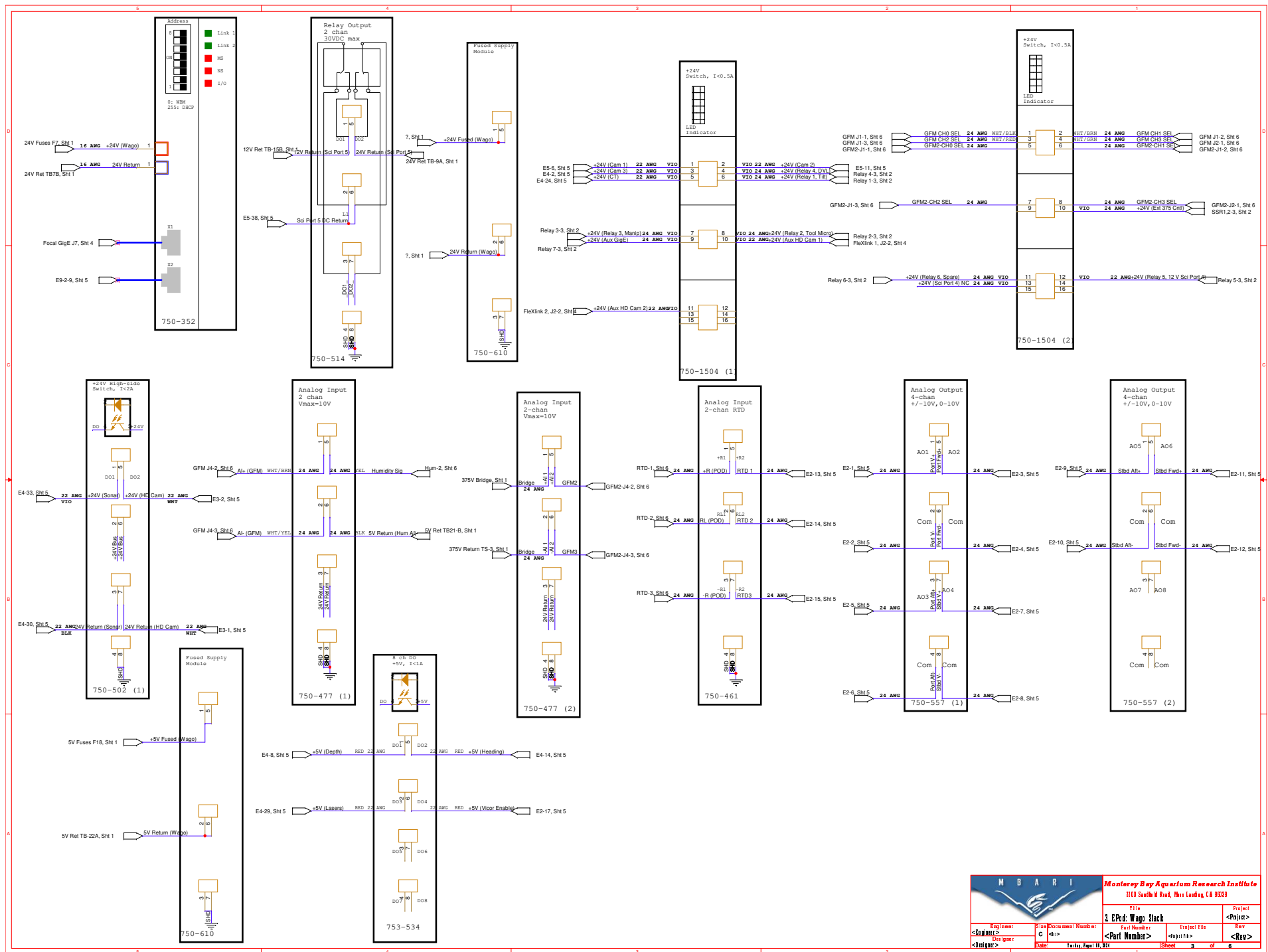
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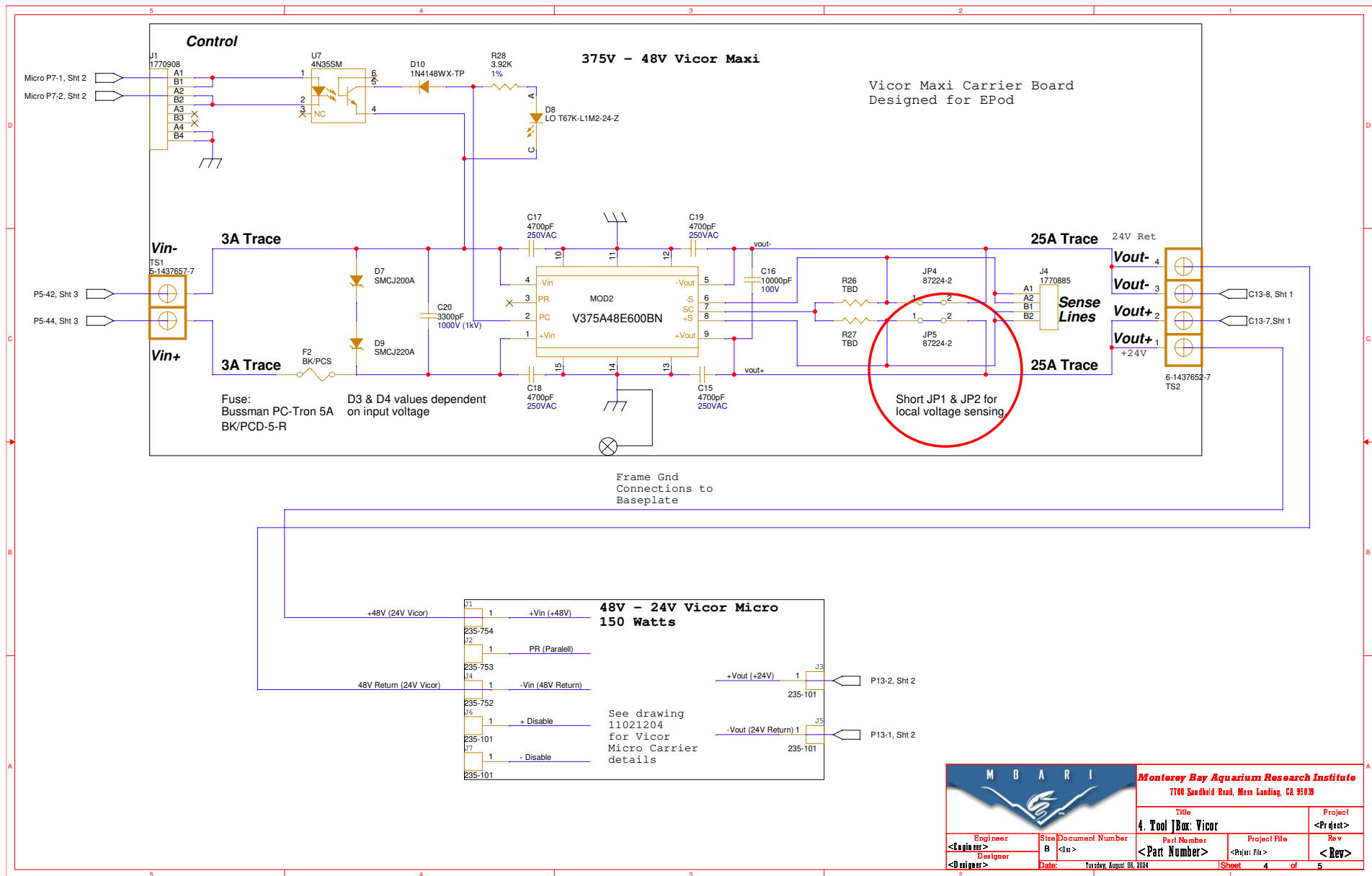


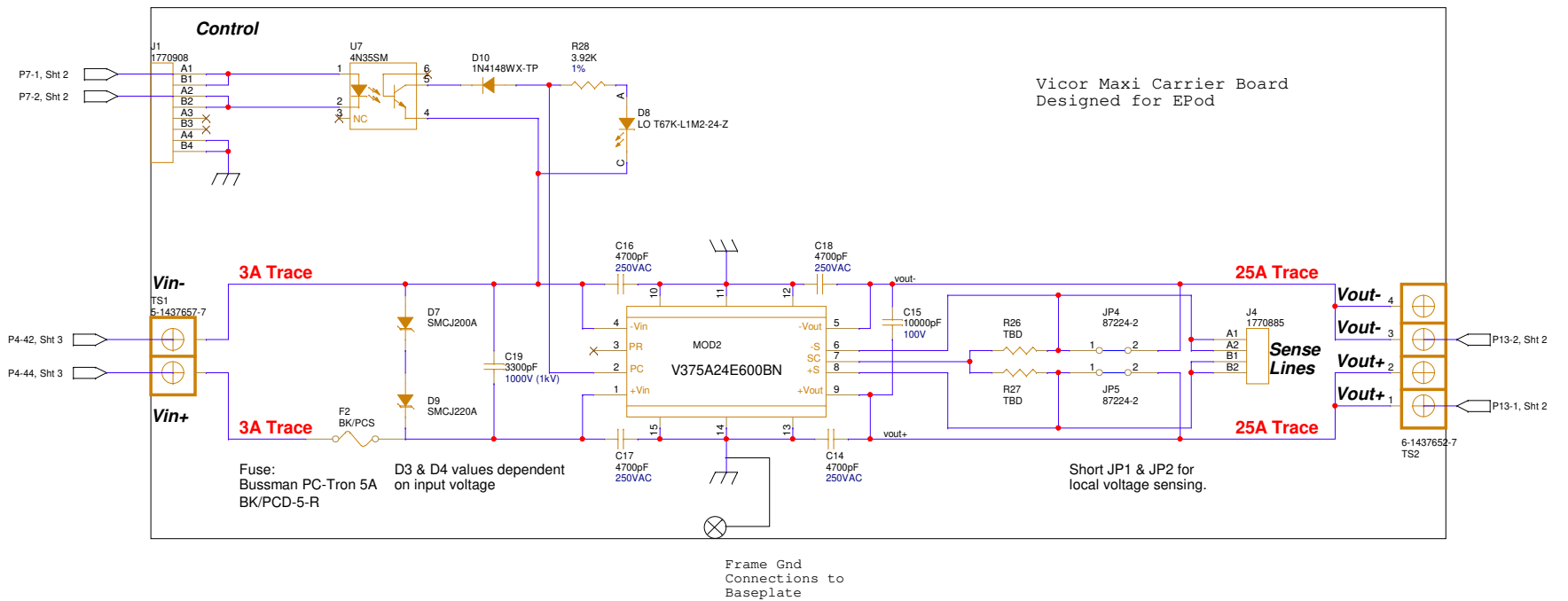
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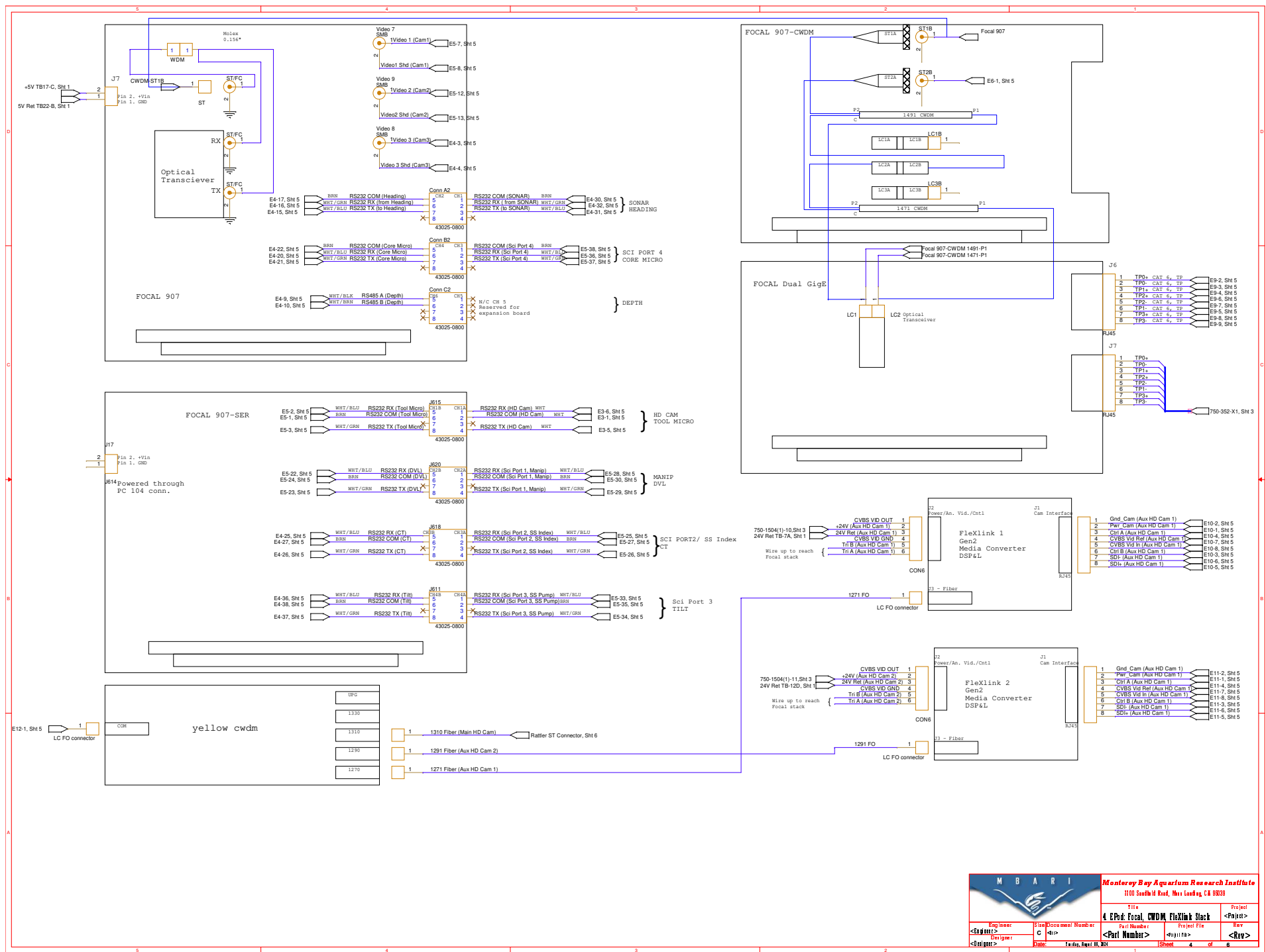
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| Engineer<br>A. Sherman |  | Size<br>A | Document Number<br><Doc> | Part Number<br>100221095 | Project File<br><Project File> | Project<br>901123 | Rev<br>1 |
| Designer<br><Designer> |  | Date:     | Tuesday, August 06, 2024 | Sheet                    | 3                              | of                | 5        |



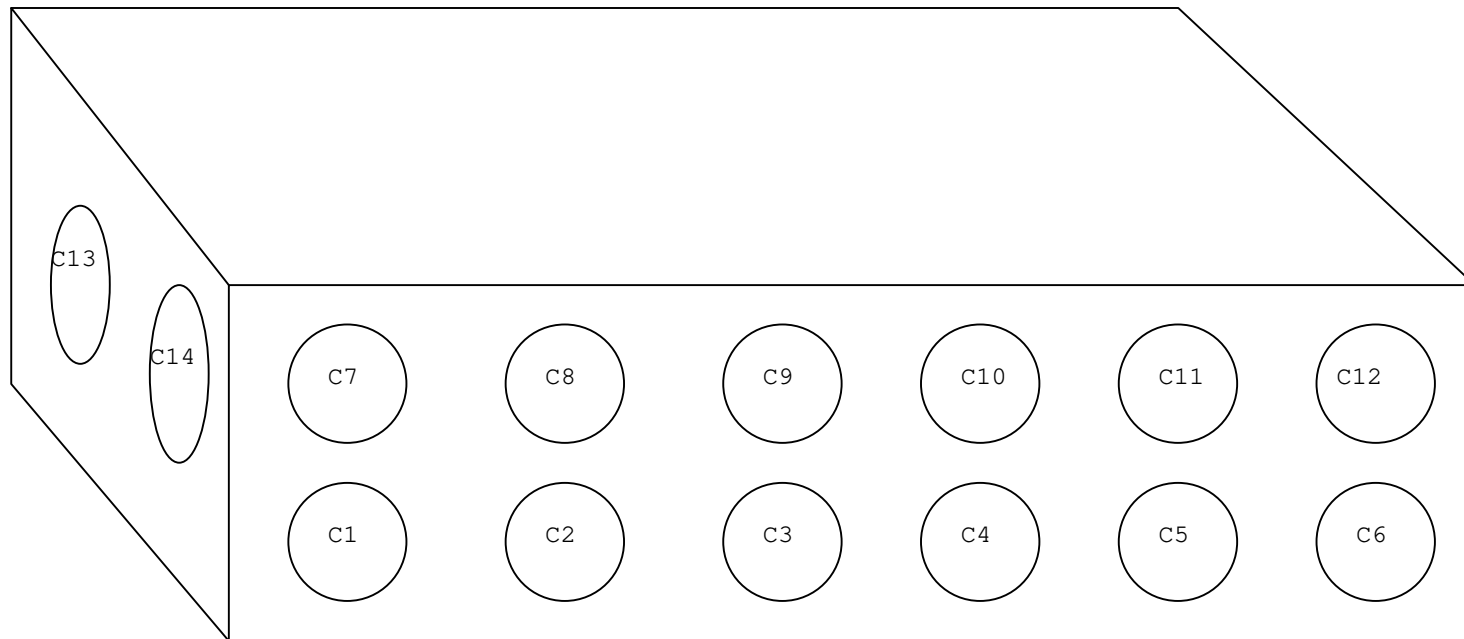




|                                     |                                  |                                                                                               |                                           |
|-------------------------------------|----------------------------------|-----------------------------------------------------------------------------------------------|-------------------------------------------|
|                                     |                                  | <b>Monterey Bay Aquarium Research Institute</b><br>7700 Sandhold Road, Moss Landing, CA 95038 |                                           |
|                                     |                                  | Title<br><b>4: Core Box: Vicor</b>                                                            | Project<br><b>&lt;Project&gt;</b>         |
| Engineer<br><b>Shawn</b>            | Size<br><b>B</b>                 | Document Number<br><b>&lt;ID&gt;</b>                                                          | Part Number<br><b>&lt;Part Number&gt;</b> |
| Designer<br><b>&lt;Designer&gt;</b> | Date<br>Tuesday, August 06, 2024 | Project File<br><b>&lt;Project File&gt;</b>                                                   | Rev<br><b>1</b>                           |
|                                     |                                  | Sheet<br><b>4</b>                                                                             | of<br><b>6</b>                            |

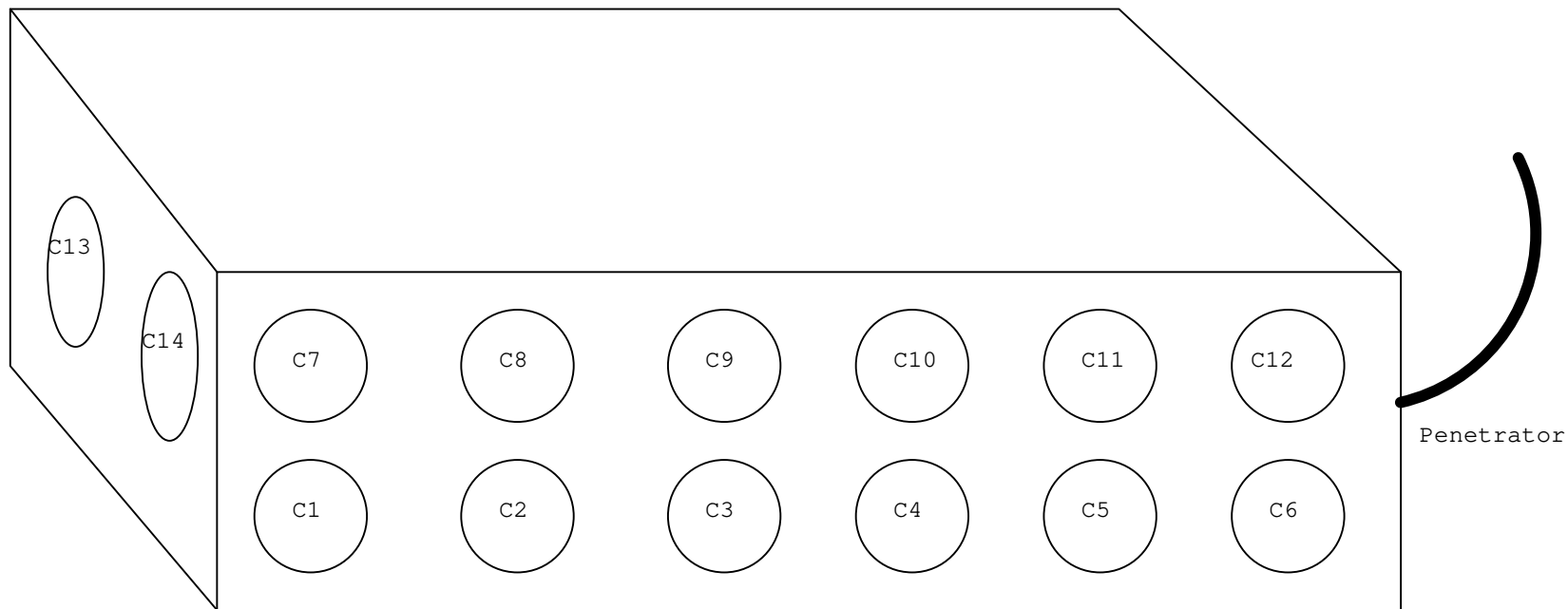






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|--------------------------------|--|-----------|--------------------------|------------------------------|--------------------------------|----------------------|
| Engineer<br><Engineer>         |  | Size<br>A | Document Number<br><Doc> | Title<br><Title>             |                                | Project<br><Project> |
| Designer<br><Designer>         |  |           |                          | Part Number<br><Part Number> | Project File<br><Project File> | Rev<br><Rev>         |
| Date: Tuesday, August 06, 2024 |  |           |                          | Sheet                        | 5 of                           | 5                    |



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|--------------------------------|--|-----------|--------------------------|------------------------------------------------|--------------------------------|----------------------|
| Engineer<br><Engineer>         |  | Size<br>A | Document Number<br><Doc> | Title<br><b>Core J-box Connector Placement</b> |                                | Project<br><Project> |
| Designer<br><Designer>         |  |           |                          | Part Number<br><Part Number>                   | Project File<br><Project File> | Rev<br><Rev>         |
| Date: Tuesday, August 06, 2024 |  |           |                          | Sheet                                          | 5 of                           | 5                    |

