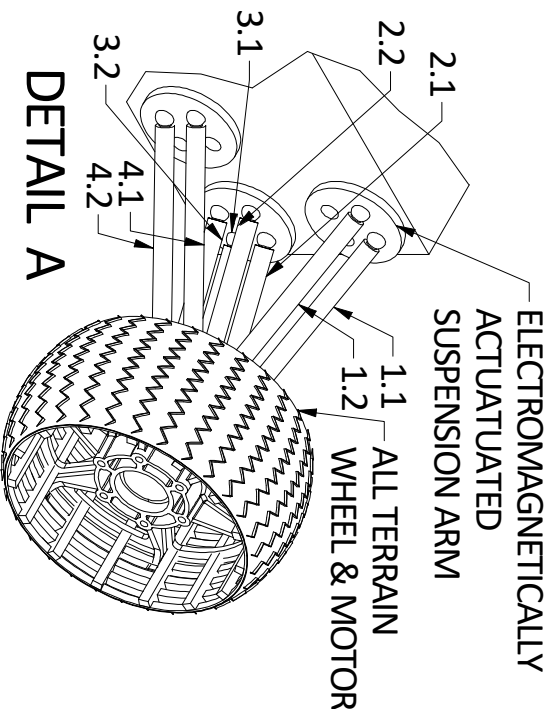
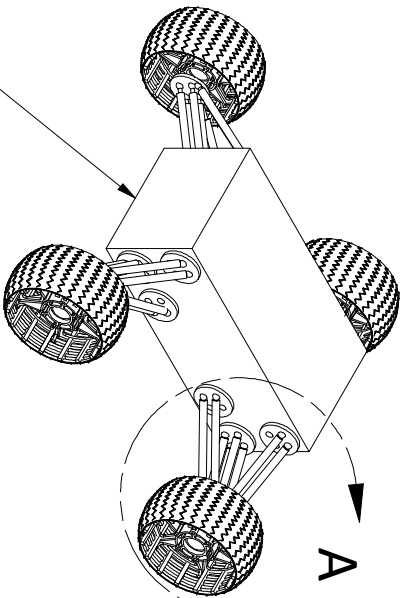
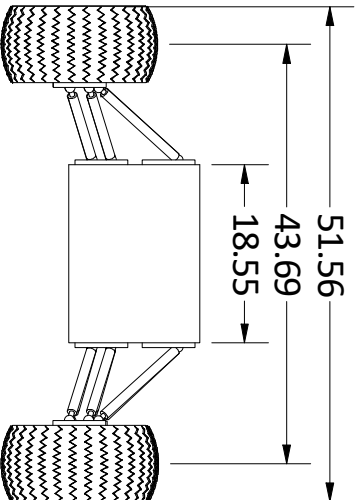


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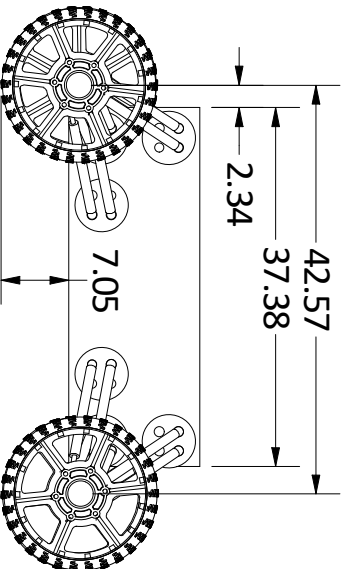


NOTES:
1. DIMENSIONS SHOWN ARE TO BE DETERMINED DURING PROTOTYPING.

- 2. ALL WHEEL MOVEMENTS ARE ELECTROMAGNETICALLY ACTUATED IN PAIRS.
- 3. ACTUATORS 1.1 & 1.2 ACT AS SHOCK ABSORBERS WHILE DRIVING, AND RAISE THE WHEEL WHILE WALKING.
- 4. ACTUATORS 4.1 & 4.2 ARE LOCKED WHILE DRIVING, BUT PUSH AND PULL THE WHEEL WHILE WALKING.
- 5. WHEN ACTUATORS 2.1 & 2.2 ARE PUSHED OR PULLED SIMULTANEOUSLY WHILE ACTUATORS 3.1 & 3.2 ARE LOCKED, THEY ACTIVATE WHEEL CAMBER.
- 6. WHEN ACTUATORS 2.1 & 3.1 ARE PUSHED OR PULLED SIMULTANEOUSLY WHILE ACTUATORS 2.2 & 3.2 ARE LOCKED, THEY ACTIVATE WHEEL STEERING.
- 7. WHEN ACTUATORS 2.1 THRU 3.2 ARE PUSHED OR PULLED SIMULTANEOUSLY THEY ACTIVATE SUSPENSION ARM LENGTH.
- 8. THE COMBINED SEQUENCING OF EACH ACTUATOR AND DRIVE MOTOR PER WHEEL WILL ACTIVATE SUSPENSION, WALKING, STEERING, AND OR DRIVING FOR THE ENTIRE SYSTEM.




FRONT



SIDE

SBIR PHASE 1 | PROPOSAL S4.02-4511
ELECTROMAGNETICALLY ACTUATED
HYBRID WHEELED-LIMBED SUSPENSION SYSTEM

DRAWN: JF	APPROVED BY:	MATERIAL: NA	PROJECT#: 00012	RESOURCE#: 2200	TASK CODE: DT-LT	RELATIONSHIP CODE: rrc.a.d
DATE: 3/20/2019	APPROVED DATE:	VOLUME: N/A FLAT PATTERN: N/A X N/A	ID#: 00012-2200_DT-LT rrc.a.d			
UNLESS OTHERWISE SPECIFIED: DIMENSIONS IN INCHES. TOLERANCES: FRACTIONS ± 1/32 ANGLE: MACH ± 0.5° BEND ± 0.004 LINEAR FOOT ± 1/16" 2 DECIMALS ±0.010 3 DECIMALS ±0.050	WEIGHT: N/A LBS SRF AREA: N/A FINISH: NA VENDOR: 508 Industries LLC		TITLE: ELECTROMAGNETICALLY ACTUATED HYBRID WHEELED-LIMBED SUSPENSION SYSTEM			



508 INDUSTRIES LLC

PROPERTY AND CONFIDENTIAL

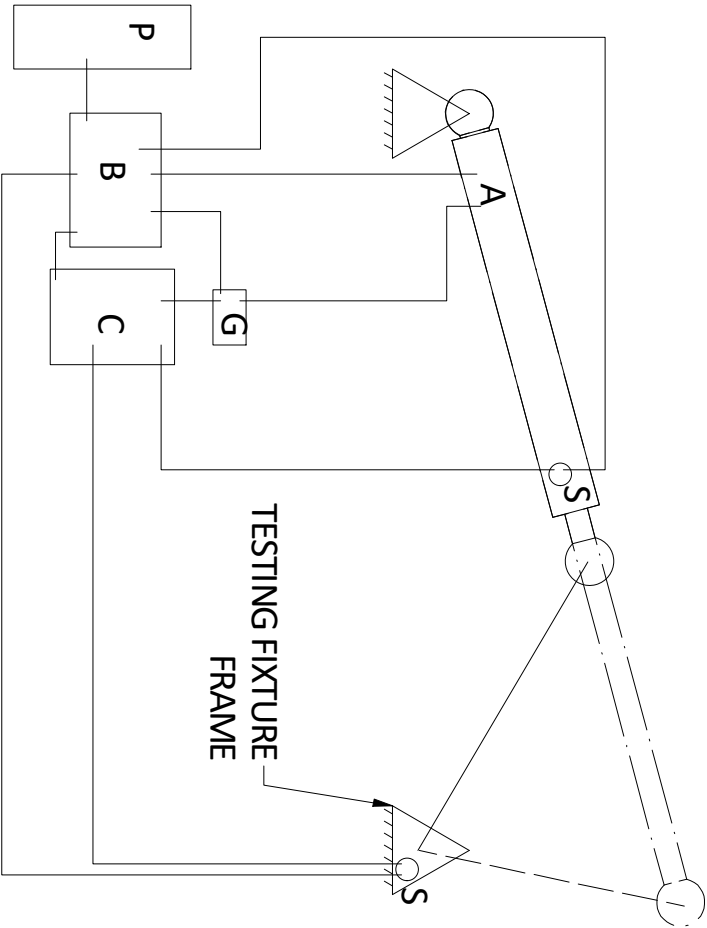
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF 508 INDUSTRIES LLC. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF 508 INDUSTRIES LLC IS PROHIBITED.

DO NOT SCALE DRAWING

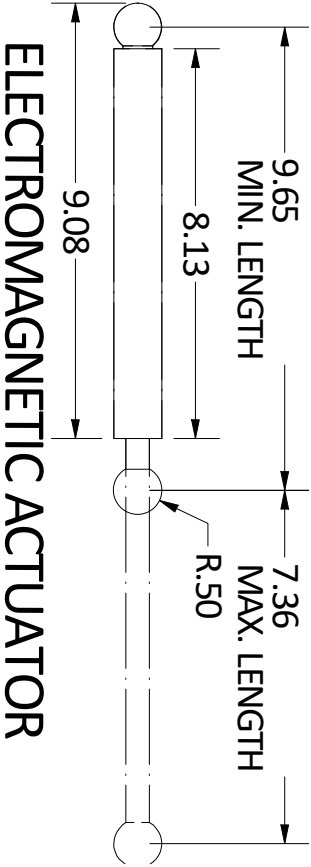
STATUS: 0
REVISION: 0
VERSION: 0
DIRECTOR:

MANUFACTURING CODE: NA

DRAWING #: 000122200
SCALE: 0.05 : 1
SHEET: 1 OF 2




PROTOTYPING SCHEMATIC



ELECTROMAGNETIC ACTUATOR

- NOTES:
1. THE PROPOSED DIMENSIONS ARE TO BE DETERMINED DURING PROTOTYPING.
2. IN THE SCHEMATIC VIEW:
• A - ACTUATOR
• S - SENSOR
• G - GALL CONTROLLER
• C - COMPUTER
• B - BREADBOARD
• P - POWER SOURCE
3. SOLID LINES CONNECTING INTO THE BREADBOARD REPRESENT POWER.
4. SOLID LINES CONNECTING INTO THE COMPUTER REPRESENT PROGRAMMED INSTRUCTIONS.
5. DURING PROTOTYPING THESE COMPONENTS WILL BE ARRANGED AND CONFIGURED SO AS TO IDENTIFY OPTIMAL PARAMETERS FOR SUSPENSION SYSTEM FUNCTIONS.

DRAWN: JF	APPROVED BY:	MATERIAL: NA	PROJECT #: 00012	RESOURCE#: 2200	TASK CODE: DT-LT	RELATIONSHIP CODE: rrc.a.a
DATE: 3/20/2019	APPROVED DATE:	VOLUME: N/A FLAT PATTERN: N/A X N/A	ID#: 00012-2200_DT-LT rrc.a.a			
UNLESS OTHERWISE SPECIFIED: DIMENSIONS IN INCHES. TOLERANCES: FRACTIONS ± 1/32 ANGLE: MACH ± 0.5° BEND ± 0.004 LINEAR FOOT ± 1/16" 2 DECIMALS ±0.010 3 DECIMALS ±0.050		WEIGHT: N/A LBS SRF. AREA: N/A FINISH: NA VENDOR: 508 Industries LLC	TITLE: ELECTROMAGNETIC ACTUATOR PROTOTYPING & ELECTRONIC SCHEMATIC			
508 INDUSTRIES LLC		PROPERTY AND CONFIDENTIAL THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF 508 INDUSTRIES LLC. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF 508 INDUSTRIES LLC IS PROHIBITED.	STATUS: 0	MANUFACTURING CODE: NA	DRAWING #: 000122200	SHEET: 2 OF 2
		DO NOT SCALE DRAWING	REVISION: 0		SCALE: 1/4	
			DIRECTORY:		SIZE: A	