RPUG
Road Profile Users' Group

CELEBRATING 250 YEARS OF PROGRESS

HONORING THE PAST. PAVING THE FUTURE.

2026 RPUG CONFERENCE ★ PITTSBURGH, PA ★ APRIL 28 - MAY 1

SKID RESISTANCE SYSTEM FOR THE 21ST CENTURY

JOHN ANDREWS – POWEL ENTERPRISES..... KONTUR
PRINCIPAL

EQUIPMENT OBJECTIVES

- Replicate the "*Typical Wet Road*" Tire-Pavement Interface Conditions
- Be Rugged and Maneuverable
- Relatively Economical to Produce and Operate
- Provide Objective and Accurate Data (Even on Curves)
- Collect Both SN (E-274 based) and TN (new antilock (30% thru 60%) Data Values
- Adaptive Sample Collection Spacing
- Serve as the Basis (Certification Platform) for Future, Pavement Texture Derived, Values

TIRE – PAVEMENT INTERFACE CONDITIONS

- Test Wheel Axel Perpendicular to Direction of Travel
- At least 100 SQ. CM. Contact Patch
- Measured and Controlled Relative Tire – Pavement Interface Speed
- Controlled Water Film Placed in Front of the Test Wheel

MANEUVERABLE

- Use a Tow Vehicle with Trailer Configuration
- Conventional Wheel Diameters (20 or 22 inch with low profile tires)
- Allow for Full "Jack-Knife" for Turning in Small Spaces
- Maximum Height <10 Ft. to Clear Under Older Infrastructure

RELATIVELY ECONOMICAL

- Majority of Functions in the Trailer …Pre Build, Fewer Truck Mods
  - Stepper Driven Water Pump (computer Controlled water film)
  - Electric over Hydraulic Brakes (no air compressor)
- Low Profile Tires …Less Waste, Faster Response
- Minimal Test/Skid Distance …less Tire Wear, Less Water
  - TN <12 ft
  - SN <20 ft

ACCURATE

- Force sensors in Three Directions
  - Drag
  - Down
  - Axial (new but required for accuracy on curves)
- Digital Water Calibration and Control
- Force Sensors Removed from the Axel for Less Dirt, Moisture and Damage
- > One KHZ Data Sample Rate for Optimum Response and Noise Management

SN AND TN CAPABILITY

- Two Hundred HZ Test Wheel Speed Update Rate (even at speeds down to 4 mph)
- Rapid Response Brake System

Yields

SN at Under 20 ft. Per Complete Test ..... Over 125 Tests Per Mile Capability

TN at Under 12 ft. Per Complete Test ..... Over 220 Tests Per Mile Capability

ADAPTIVE COLLECTION RATES

- Establish Desired Data Spacing for Pavement Section Groups
- Transfer Sample Spacing Requirement to Network Inventory
- Equipment Will Adjust Sample Spacing Based on Location in Network
- Spacing Range Conservatively .02 to 1.0 Mile…(0.01 mile for short distances)

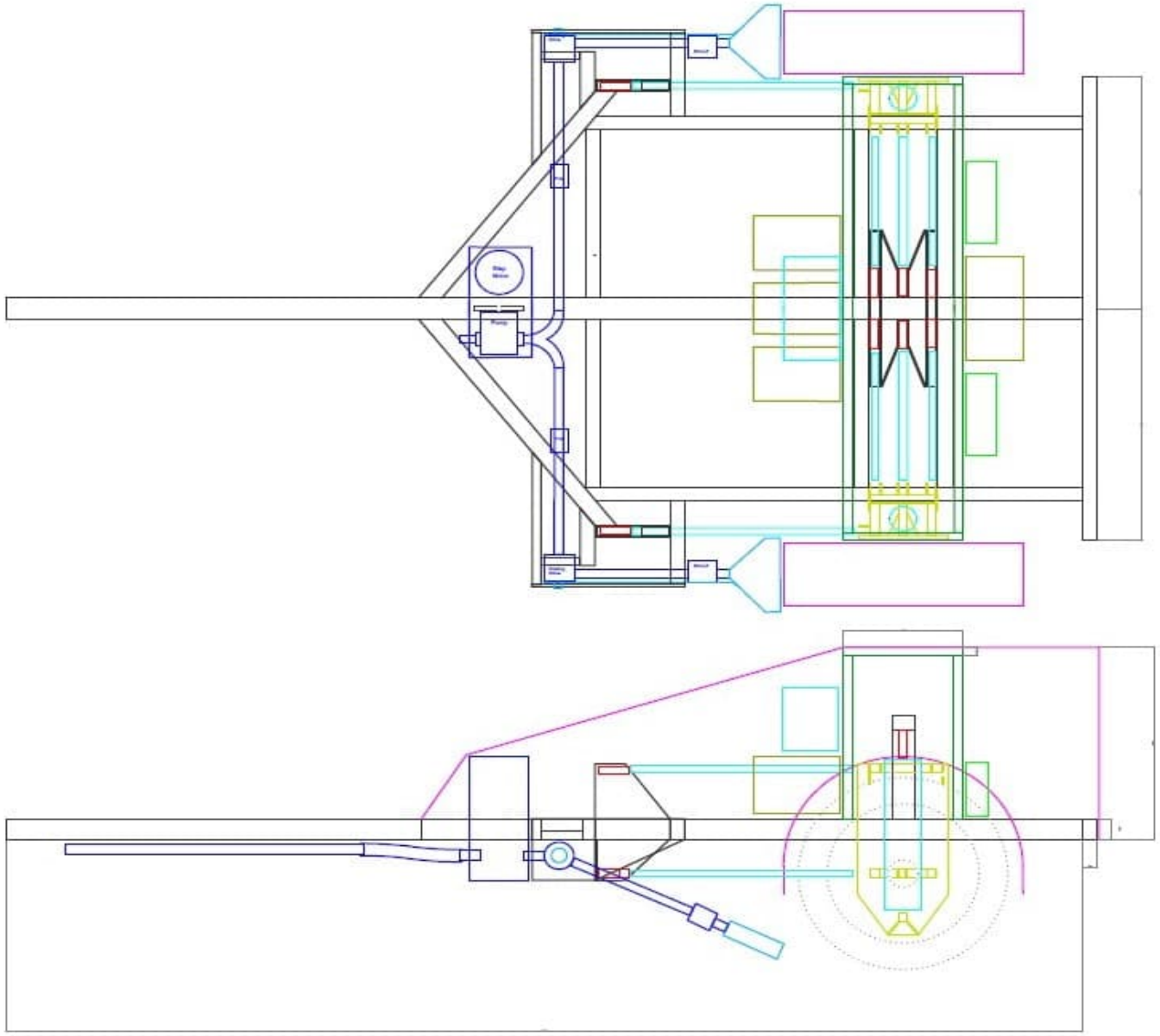
BASE FOR NON-CONTACT DERIVED VALUES

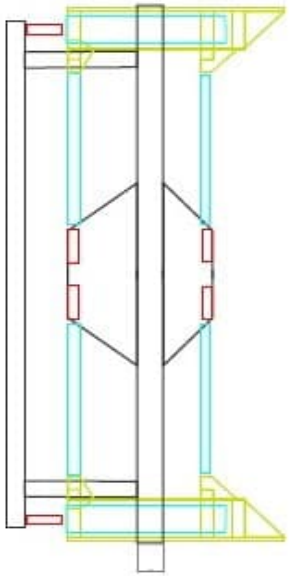
- Pavement's Contribution to Traction will Eventually be Measured Non-Contact
- The Non-Contact Method(s) will Need Extensive Verification
- This Proposed Equipment Can Provide the Objective and Accurate Data Required

I HAVE A DREAM ABOUT TRACTION

- Practitioners Will See the Need to Proactively Manage Network Safety
- Practitioners will also See the Value of this System and Will Apply It
- A Provider or Providers will Seize the Opportunity and take the Risk to detail Design and Build the System

- *I am here to help as I am able*





THANK-YOU

QUESTIONS

AND

COMMENTS

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