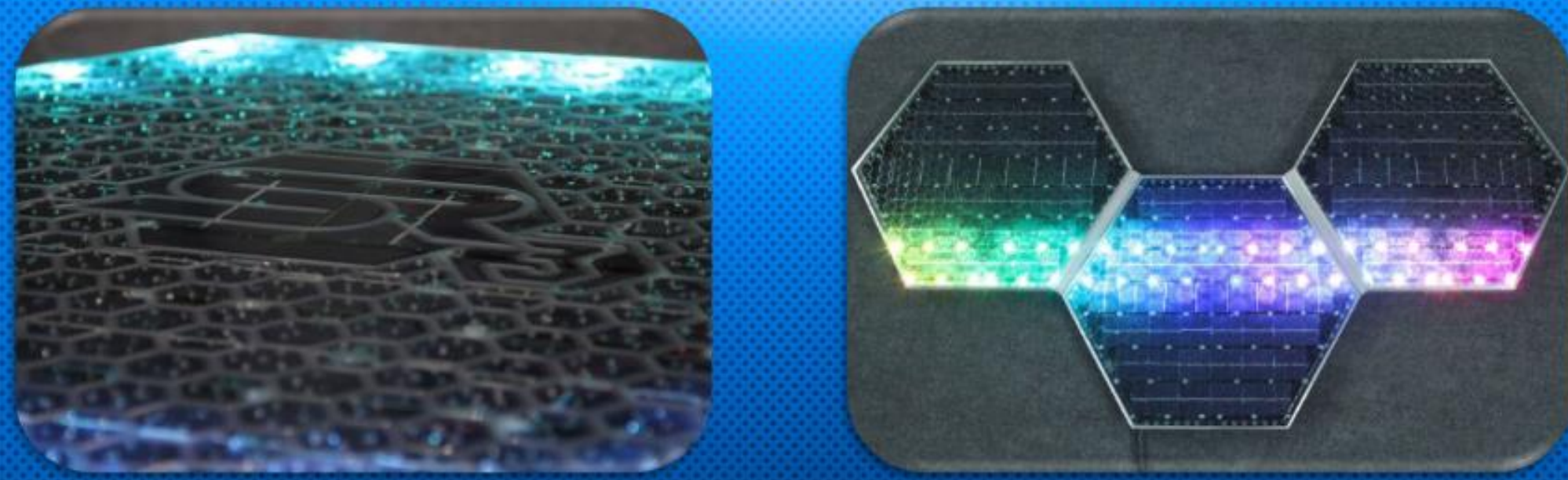


SOLAR ROADWAYS
 A REAL SOLUTION
SOLAR ROAD WARRIORS
 SILAS CONNOLLEY, ZIYANG CHEN, YU HAN, & BAILEY POITRA

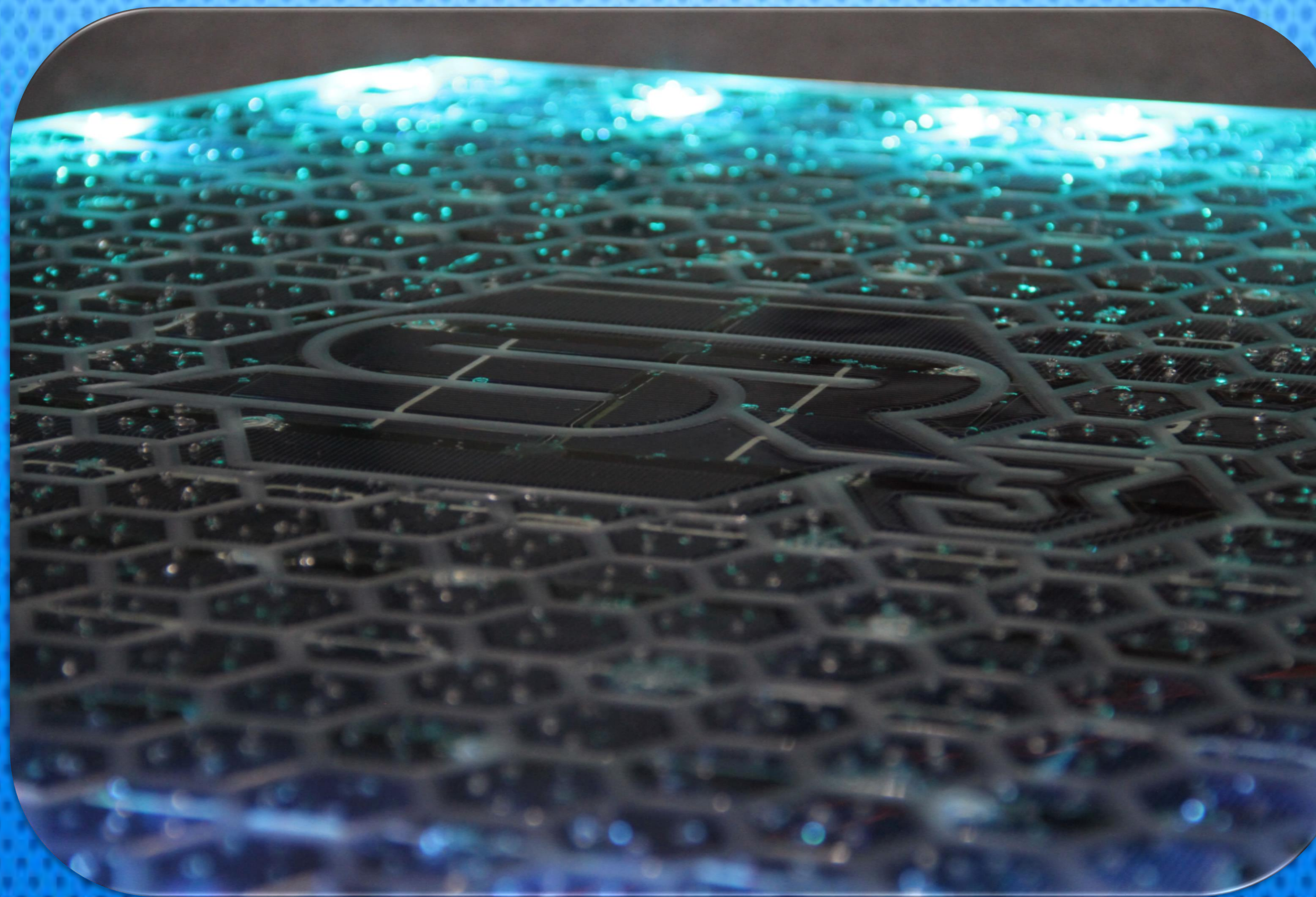
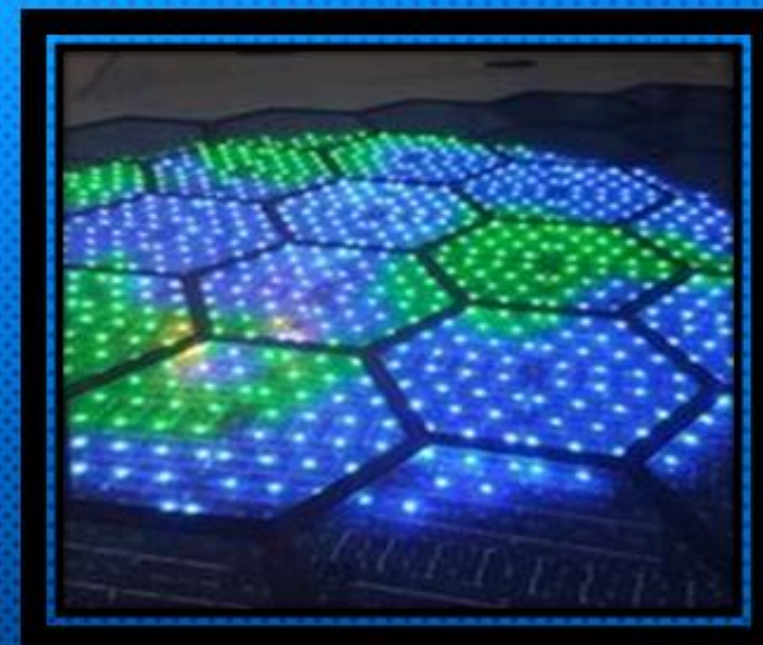
OBJECTIVES

- IMPLEMENT SOLAR ROADWAY PANELS AT THE UNIVERSITY OF IDAHO
- OPTIMIZE HEATING ELEMENT FOR SR4 PANELS



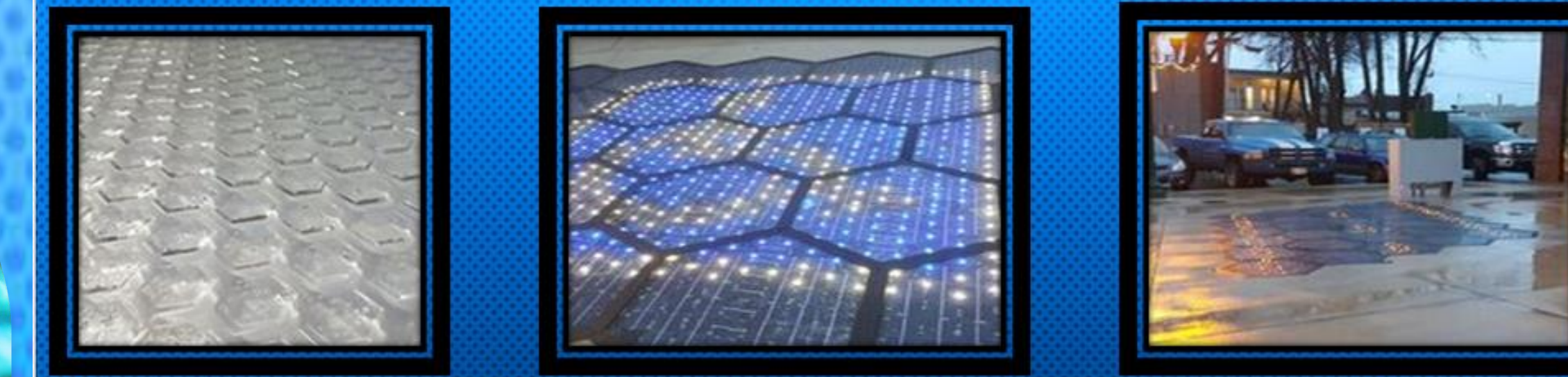
SR PANEL COMPONENTS

- MICROPROCESSOR
 - COMMUNICATION BETWEEN MULTIPLE BOARDS FOR EACH SR PANEL
- LEDs
 - 16 MILLION DIFFERENT COLOR COMBINATIONS
- HEATING ELEMENT
 - MAINTAINS PANEL TEMPERATURE ABOVE FREEZING
- SOLAR PANEL ARRAY
- TEMPERED GLASS
- HEXAGONAL DESIGN



OPTIMIZATION OF HEATING ELEMENT

- CURRENTLY SR PANELS HEATING ELEMENT TURNS ON AT 37 DEGREES FAHRENHEIT OR LOWER
- AFTER IMPLEMENTED DESIGN SR PANELS HEATING ELEMENT WILL TURN ON WHEN SNOW OR ICE IS ON PANELS



BENEFITS FOR U OF I

- SAFETY
 - HEATING ELEMENT WITHIN SR PANELS WILL REMOVE ICE OR SNOW ACCUMULATION
- NATURAL RESOURCES
 - SR PANEL CORRIDORS LINED WITH STORM WATER SYSTEMS HELP DIVERT AND RETAIN GROUNDWATER
 - PANELS MADE WITH RECYCLED MATERIALS
- MARKETING
 - PROGRAMMABLE CAPABILITIES AND LEDs OF SR PANELS ALLOW THEM TO DISPLAY ANY MESSAGE
- POWER GENERATION
 - PROVIDE CLEAN, RENEWABLE ENERGY TO BE USED AROUND THE U OF I CAMPUS
- EDUCATION
 - ENGINEERING DISCIPLINES CAN STUDY SR PANELS

ENGINEERING TESTS FOR SR PANELS

- UNIVERSITY OF TOLEDO DEPARTMENT OF ENGINEERING TECHNOLOGY
 - TRACTION TESTING WITH BRITISH PENDULUM TESTER
- NORWICH UNIVERSITY DEPARTMENT OF CIVIL AND ENVIRONMENTAL ENGINEERING
 - LOAD TESTING
 - IMPACT RESISTANCE TESTING
- SAVANNAH STATE UNIVERSITY CIVIL ENGINEERING TECHNOLOGY
 - CREATED 3D MODEL SIMULATION FOR MAXIMUM STRESS AND TENSILE STRENGTH
- MARGUERITE UNIVERSITY'S OPUS COLLEGE OF ENGINEERING
 - MOISTURE CONDITIONING TEST
 - FREEZE/THAW CYCLING TEST
 - PANELS PLACED IN ENVIRONMENTAL CHAMBER AND EXPOSED TO EXTREME TEMPERATURES TO MAKE SURE ELECTRICAL/MECHANICAL SYSTEMS HOLD
 - SHEAR TESTING
 - PANELS SUBJECTED TO HIGH SHEAR FORCES TO SIMULATE HEAVY VEHICLES BRAKING
 - ADVANCED LOADING
 - SIMULATED YEARS OF TRUCK ABUSE IN MATTER OF MONTHS

LOOK AHEAD

- SOLAR ROADWAYS IS IN THE PROCESS OF CREATING A PROPOSAL FOR THE UNIVERSITY OF IDAHO
- HOPING TO PARTNER WITH UNIVERSITY OF IDAHO TO HELP PROVIDE INSTALLATION AND PURCHASING COSTS FOR SR PANELS FOR FUTURE PROJECTS



ECONOMIC ANALYSIS

- SPECIFICATIONS FOR ONE HUNDRED PANEL PARKING LOT FOR TWENTY YEAR PERIOD
 - GENERATED SOLAR POWER – 338556.440 KWH
 - NET GENERATED POWER FOR UI – 265871.2253 KWH
 - COSTS FOR ASPHALT REPAIR - \$290,015
 - COST FOR SR PANEL INSTALLATION - \$201,400

