Title: **Four-Way Switched Circuit, Switch & Light HR** Job: 23

Course: Electrical Applications Unit: Electrical Shop CLO: 1, 5, 7

Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Grade \_\_\_\_\_\_\_ Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Objectives**

1. Student shall create an electrical circuit design consisting of two three-way switches and a four-way switch that controls a luminaire.
2. Student shall apply the National Electrical Code articles during construction.
3. Student shall relate all Lock-Out and Tag-Out requirements to safety standards.

**Assessment**

Students shall demonstrate a comprehension of the objectives listed above by scoring a minimum of 75% on this Job. Grading shall be based on the Electrical Applications Shop Job Rubric.

**Materials**

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| Student Provided Materials | **Department Provided** |
| MC Cable | 4”x4”x1½” Metal Electrical Boxes |
| Two three-way switches | Metal-Clad (MC) Cable Clamps |
| Wire Nuts | One four-way switch |
| Grounding Straps |  |
| Grounding Wire-nuts (Greenie) |  |
| Electrical Tape |  |

**Instructions**

Design a circuit that shall switch a luminaire from three separate devices. The circuit shall also power two duplex receptacles. Power to the both duplex receptacles shall be on at all times. Power for the circuit shall enter at the luminaire box. Box 1 shall be connected to the luminaire and feed power to the duplex duo. Each device is to be house in separate boxes. Draw “one-line” schematic below and wiring diagram on the opposite side of this page. Use the space on the opposite side of this page to draw the design. Have the instructor review the design before wiring. Below is an example of a blueprint electrical schematic of the circuit.

|  |  |
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| Instructor reviews wiring diagram. After approval, lock-out the station and begin wiring. | Initials \_\_\_\_\_\_\_\_ |
| After completing the wiring but **before** energizing the circuit, have the instructor check all wiring. | Initials \_\_\_\_\_\_\_\_ |
| After wiring check is complete and approved by the instructor, remove lock and test circuit **with** the instructor. | Initials \_\_\_\_\_\_\_\_ |
| Render your wiring diagram in a CAD based computer program. |  |

