Title: **Three-Way Switched Two Duplex Circuit, Switch HR** Job: 21

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 that controls one half of two duplex receptacles.
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 | Two split duplex receptacles |
| Grounding Straps |  |
| Grounding Wire-nuts (Greenie) |  |
| Electrical Tape |  |

**Instructions**

Design a circuit that shall switch the top half of two duplex receptacles from two three-way switches. The bottom half of both duplexes shall be energized at all times. Power for the circuit shall enter at one of the switch boxes. The same switch box shall feed the duplex circuit. 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.



|  |  |
| --- | --- |
| 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. |  |

