

| F.A.P. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|-------------|---------|-----------|--------------|-----------|
| 729 | * | VERMILION | 298 | 122 |

* 36(W,RS-1) & 34Z-(W,RS)
CONTRACT #90939

BILL OF MATERIALS

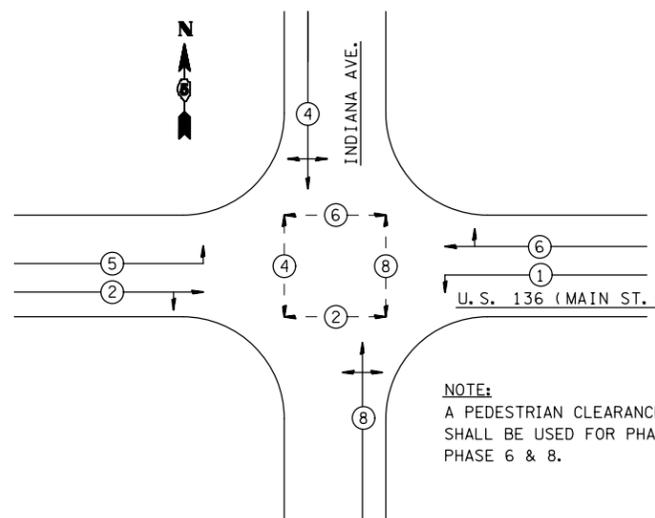
U.S. 136 (MAIN ST.) & INDIANA STREET

| ITEM | UNIT | QUANTITY |
|---|-------|----------|
| SERVICE INSTALLATION, TYPE A | EACH | 1.0 |
| HANDHOLE | EACH | 6.0 |
| DOUBLE HANDHOLE | EACH | 1.0 |
| GULFBOX JUNCTION | EACH | 1.0 |
| GULFBOX JUNCTION REMOVAL | EACH | 2.0 |
| LUMINAIRE, SODIUM VAPOR, HORIZONTAL MOUNT, PHOTO-CELL CONTROL, 250 WATT | EACH | 2.0 |
| FULL-ACTUATED CONTROLLER AND TYPE IV CABINET | EACH | 1.0 |
| UNINTERRUPTABLE POWER SUPPLY, STANDARD | EACH | 1.0 |
| TRANSCIEVER - FIBER OPTIC | EACH | 1.0 |
| PEDESTRIAN PUSH-BUTTON POST, GALVANIZED STEEL, TYPE II | EACH | 2.0 |
| SIGNAL HEAD, POLYCARBONATE, LED, 1-FACE, 3-SECTION, BRACKET MOUNTED | EACH | 2.0 |
| SIGNAL HEAD, POLYCARBONATE, LED, 1-FACE, 3-SECTION, MAST ARM MOUNTED | EACH | 9.0 |
| SIGNAL HEAD, POLYCARBONATE, LED, 1-FACE, 5-SECTION, MAST ARM MOUNTED | EACH | 2.0 |
| SIGNAL HEAD, POLYCARBONATE, LED, 2-FACE, 1-3-SECTION, 1-5-SECTION, BRACKET MOUNTED | EACH | 2.0 |
| PEDESTRIAN SIGNAL HEAD, POLYCARBONATE, LED, 1-FACE, BRACKET MOUNTED WITH COUNT DOWN TIMER | EACH | 8.0 |
| TRAFFIC SIGNAL BACKPLATE | EACH | 11.0 |
| INDUCTIVE LOOP DETECTOR | EACH | 7.0 |
| PEDESTRIAN PUSH-BUTTON | EACH | 8.0 |
| TEMPORARY TRAFFIC SIGNAL INSTALLATION | EACH | 1.0 |
| REMOVE EXISTING TRAFFIC SIGNAL EQUIPMENT | EACH | 1.0 |
| REMOVE EXISTING HANDHOLE | EACH | 6.0 |
| REMOVE EXISTING CONCRETE FOUNDATION | EACH | 7.0 |
| UNDERGROUND CONDUIT, PVC, 25MM DIA. | METER | 20.0 |
| UNDERGROUND CONDUIT, PVC, 40MM DIA. | METER | 5.0 |
| UNDERGROUND CONDUIT, PVC, 50MM DIA. | METER | 189.0 |
| UNDERGROUND CONDUIT, PVC, 65MM DIA. | METER | 23.0 |
| UNDERGROUND CONDUIT, PVC, 75MM DIA. | METER | 59.0 |
| UNDERGROUND CONDUIT, PVC, 100MM DIA. | METER | 21.0 |
| UNDERGROUND CONDUIT, PVC, 150MM DIA. | METER | 1.0 |
| CONDUIT ATTACHED TO STRUCTURE, 40MM DIA., GALVANIZED STEEL | METER | 2.0 |
| CONDUIT ATTACHED TO STRUCTURE, 50MM DIA., GALVANIZED STEEL | METER | 2.0 |
| ELECTRIC CABLE IN CONDUIT, 600V (XLP-TYPE USE) 1/C NO. 10 | METER | 234.0 |
| LIGHT POLE, WOOD, 10.67 METER, CLASS 3 | EACH | 1.0 |
| ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 3C | METER | 279.0 |
| ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 5C | METER | 364.0 |
| ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 7C | METER | 424.0 |
| ELECTRIC CABLE IN CONDUIT, LEAD-IN, NO. 18 3 PAIR | METER | 444.0 |
| ELECTRIC CABLE IN CONDUIT, SERVICE, NO. 6 2 C | METER | 8.0 |
| ELECTRIC CABLE IN CONDUIT, EQUIPMENT GROUNDING CONDUCTOR NO. 6 1 C | METER | 165.0 |
| TRAFFIC SIGNAL POST, ALUMINUM 3.65 METER | EACH | 1.0 |
| TRAFFIC SIGNAL POST, ALUMINUM 4.25 METER | EACH | 1.0 |
| TRAFFIC SIGNAL POST, ALUMINUM 4.85 METER | EACH | 2.0 |
| STEEL MAST ARM ASSEMBLY AND POLE, 7.31 METER | EACH | 1.0 |
| STEEL MAST ARM ASSEMBLY AND POLE, 8.53 METER | EACH | 1.0 |
| STEEL COMBINATION MAST ARM ASSEMBLY AND POLE 12.19 METER | EACH | 2.0 |
| CONCRETE FOUNDATION, TYPE A | METER | 3.7 |
| CONCRETE FOUNDATION, TYPE C | METER | 1.1 |
| CONCRETE FOUNDATION, TYPE E 750MM DIAMETER | METER | 6.0 |
| CONCRETE FOUNDATION, TYPE E 900MM DIAMETER | METER | 8.0 |
| DETECTOR LOOP, TYPE I | METER | 203.0 |



NOTE: PEDESTRIAN PUSH-BUTTON SIGNS SHALL BE MOUNTED ABOVE THE PEDESTRIAN PUSH-BUTTONS. THE SIGNS SHALL BE BOLTED TO THE POSTS. THE SIGNS SHALL BE CONSIDERED AS INCLUDED IN THE COST OF PEDESTRIAN PUSH-BUTTONS IN ACCORDANCE WITH SECTION 888 OF THE STANDARD SPECIFICATIONS.

PEDESTRIAN PUSH-BUTTON SIGN DETAIL



NOTE:
A PEDESTRIAN CLEARANCE INTERVAL OF 24 SECONDS SHALL BE USED FOR PHASE 2 & 4, 20 SECONDS FOR PHASE 6 & 8.

PHASE DESIGNATION DIAGRAM

| LOOP INDUCTANCE DATA | | | | |
|----------------------|--------|-------|-----------------------|--------------|
| U.S. 136 & Indiana | | | | |
| Loop | Length | Width | Required No. of Turns | Delay (sec.) |
| A1-2 | 6 | 6 | 3 | 10 |
| B1-2 | 6 | 6 | 3 | |
| B3-4 | 6 | 6 | 3 | 10 |
| C1-3 | 6 | 6 | 3 | |
| C4-5 | 6 | 6 | 4 | |
| D1-3 | 6 | 6 | 4 | |
| D4-5 | 6 | 6 | 5 | |

THE FOLLOWING LOOPS SHALL BE WIRED TO COMMON AMPLIFIERS: (A1-2), (B1-2), (B3-4), (C1-3), (C4-5), (D1-3), (D4-5)

THE CONTROLLER SHALL BE SET TO MINIMUM RECALL U.S. 136 (MAIN ST.)

GENERAL NOTES

1. THE FOLLOWING SIGNAL HEADS SHALL BE WIRED IN PARALLEL AT THE MAST POLE HANDHOLE: (A2, A3), (B2, B3), (C2, C3), (C4, C5), (D2, D3) - EACH MAST ARM MOUNTED SIGNAL HEAD SHALL HAVE IT'S OWN INDIVIDUAL CABLE FROM THE ACCESS HOLE AT BASE OF MAST POLE TO THE SIGNAL HEAD.
2. THE ACTUAL LOCATION OF ALL SIGNAL FOUNDATIONS, HANDHOLES, AND TRAFFIC CONTROLLER WILL BE DETERMINED IN THE FIELD BY THE ENGINEER.
3. POST MOUNTED SIGNALS SHALL BE INSTALLED SO THAT NO PART OF THE SIGNAL HEAD IS WITHIN 600 mm OF THE FACE OF CURB.
4. ALL MAST ARM POLES SHALL BE A MINIMUM OF 1.8 m FROM THE CENTER OF THE POLE TO THE FACE OF CURB (ON THE MAST ARM SIDE) OR AS SHOWN ON THE PLANS.
5. ALIGN ADJACENT RED INDICATIONS TO SAME HEIGHT ABOVE PAVEMENT.
6. THE BASE FOR A TRAFFIC SIGNAL POST SHALL BE SITUATED SUCH THAT THE HANDHOLE IS LOCATED ON A SIDE AWAY FROM A TRAVELED LANE.
7. PEDESTRIAN PUSHBUTTON SIGNAL SIGNS SHALL BE MOUNTED ABOVE THE APPROPRIATE PEDESTRIAN PUSHBUTTON.
8. THE ANTI-BACKUP FEATURE SHALL BE HARDWIRED ON THE BACKPANEL OF THE CONTROLLER CABINET.