



COLORS: BLACK TEXT & BORDER
WHITE REFL. BACKGROUND
MATERIALS: PER STD. E-142

LEGEND

- — TRAFFIC SIGNAL POLE WITH LUMINAIRE
- ⊗ — REFLECTORIZED PLASTIC DRUMS (SEE STANDARD E-106). DRUM SPACING (IN FEET) IS EQUAL TO DETOUR SPEED (IN MPH)
- — TYPE III BARRICADES SEE STANDARD E-107A
- ⊠ — TYPE III BARRICADES (MOD.) SEE STANDARD E-107A
- /// — PAVEMENT MARKING REMOVAL
- ▷⊗ — SIGNAL HEAD AND PHASE
- ⊕ — FLASHING BEACON

NOTES:

- ALL SIGNAL RELATED SIGNS SHALL BE REMOVED OR COVERED WHEN THE SIGNAL IS NOT OPERATING.
- ITEM LOCATIONS ARE APPROXIMATE.
- THE CONTRACTOR SHALL BE RESPONSIBLE TO CONFIRM ANY MEASUREMENTS IN THE FIELD.

PHASING DIAGRAM AND SPECIAL NOTES FOR EACH LOCATION

| PHASE | 2 | | 4 | | 6 | | 8 | | | | | |
|-----------|----|---|----|---|---|----|----|---|----|---|---|----|
| MINIMUM | 8 | 4 | 17 | 7 | 4 | 17 | 8 | 4 | 17 | 7 | 4 | 15 |
| EXTENSION | 1 | | | 1 | | | 1 | | | 1 | | |
| MAXIMUM | 12 | | | 8 | | | 12 | | | 8 | | |
| HEAD 2 | G | Y | R | R | R | R | R | R | R | R | R | R |
| HEAD 4 | R | R | R | G | Y | R | R | R | R | R | R | R |
| HEAD 6 | R | R | R | R | R | R | G | Y | R | R | R | R |
| HEAD 8 | R | R | R | R | R | R | R | R | R | G | Y | R |

SPECIAL REQUIREMENTS

| APPROACH | TEMPORARY VEHICLE DETECTOR | FLASHING BEACON ON ADVANCED WARNING SIGN |
|----------|----------------------------|--|
| PHASE 2 | 6 x 30 | |
| PHASE 4 | 6 x 30 | |
| PHASE 6 | 6 x 30 | |
| PHASE 8 | 6 x 30 | |

ENTER CHECK MARK IN APPROPRIATE BOX WHEN REQUIRED ON THIS PROJECT

TEMPORARY DETOUR NOTES

- USE SHEET 12 FOR PLACEMENT OF CONSTRUCTION SIGNS, TEMPORARY POLES, LIGHTS, VEHICLE LOOP DETECTORS, ETC.
- USE SHEET 12 AND 19 FOR LAYOUT OF TEMPORARY BRIDGE APPROACHES, TEMPORARY TRAFFIC BARRIER, GLARE BARRIER AND TEMPORARY PAVEMENT MARKINGS.
- SIDELINE 'A' SHALL BE CONSTRUCTED AS DETAILED ON SHEET 9 (EXCLUDING CURBWORK). THIS DETOUR WILL ONLY WORK IF THE ROADWAY IS REALIGNED PRIOR TO DETOURING TRAFFIC ONTO THE TEMPORARY BRIDGE.

ATTENUATOR NOTES

AN ENERGY ABSORPTION ATTENUATOR WILL BE PLACED AS SHOWN ON THE TRAFFIC CONTROL PLAN SHEET TO ALLOW THE CONTRACTOR ACCESS TO THE WORK AREA. THE ENERGY ABSORPTION ATTENUATORS FOR THIS PROJECT SHALL BE SUITABLE FOR A NARROW WIDTH APPLICATION AND SHALL BE INSTALLED AS SHOWN ON THE TRAFFIC CONTROL PLAN SHEET. THIS ATTENUATOR WILL BE PAID FOR UNDER ITEM 621.56 "ENERGY ABSORPTION ATTENUATOR (SAND FILLED BARRELS)."

THE ATTENUATOR SHALL MEET THE REQUIREMENTS OF THE LATEST VERSION OF THE AASHTO "ROADSIDE DESIGN GUIDE," AND SHALL BE DESIGNED FOR A 4500 LB VEHICLE TRAVELING AT 35 MPH.

IF THE ATTENUATOR IS DAMAGED BY AN ERRANT VEHICLE, ANY COST TO THE CONTRACTOR FOR REPLACEMENT OF ANY PART OR ALL OF THE ATTENUATOR SHALL BE PAID AS "EXTRA WORK" PER SECTION 109.06.

THE CONTRACTOR SHALL PROVIDE A SPARE ATTENUATOR ON THIS PROJECT, FOR THE PURPOSE OF IMMEDIATE REPLACEMENT OF A DAMAGED ATTENUATOR. THE COST OF ON-SITE STORAGE OF AN EXTRA ATTENUATOR SHALL BE PAID AS SPECIFIED IN THE SPECIAL PROVISIONS.

GENERAL TEMPORARY TRAFFIC SIGNAL NOTES

- DESIGN OF THE SIGNAL SUPPORT(S) AND ANY REQUIRED GUYING IS THE RESPONSIBILITY OF THE CONTRACTOR.
- SIGNAL TIMING/TIMING ADJUSTMENTS REQUESTED BY THE RESIDENT ENGINEER SHALL BE ACCOMPLISHED WITHIN A 48 HOUR PERIOD AND PAYMENT SHALL BE INCIDENTAL TO THE TRAFFIC SIGNAL ITEM. THE ALL-RED CLEARANCE INTERVAL IS BASED ON AN ASSUMED SPEED OF 10-20 MPH, THE RESIDENT ENGINEER SHALL MAKE SEVERAL TRIAL RUNS TO DETERMINE THE PROPER ALL-RED CLEARANCE INTERVAL.
- SIGNAL FACES SHALL CONSIST OF 12" LENSES. (RED, YELLOW AND GREEN.)
- THE BOTTOM OF THE HOUSING OF A SIGNAL FACE SUSPENDED OVER A ROADWAY SHALL NOT BE LESS THAN 16.5' NOR MORE THAN 19' ABOVE THE PAVEMENT GRADE AT THE CENTER OF THE OF THE ROADWAY. THE BOTTOM OF A SIGNAL FACE NOT MOUNTED OVER A ROADWAY, SHALL NOT BE LESS THAN 8' NOR MORE THAN 15' ABOVE THE GROUND. CAUTION SHOULD BE USED TO INSURE COMPLIANCE WITH THE HEIGHT REQUIREMENTS IN THE EVENT THE NEW APPROACH GRADES DIFFER SIGNIFICANTLY FROM THE OLD ROAD GRADES.
- SIGNAL FACES FOR ANY ONE APPROACH SHALL NOT BE LESS THAN 8' APART MEASURED HORIZONTALLY BETWEEN CENTER OF FACES.
- SIGNAL HEADS MAY BE HUNG ON A SPAN WIRE OR ON A CANTILEVER MAST ARM. AT LEAST ONE SIGNAL HEAD SHALL BE UNMISTAKABLE IN LINE WITH THE CENTER OF APPROACHING TRAFFIC AT ALL TIMES. THE SECOND SIGNAL HEAD MAY BE POST MOUNTED, LOCATED AT A DISTANCE NO GREATER THAN 14.5' FROM THE CENTER OF THE APPROACH LANE WHEN THE STOP BAR IS 40' FROM THE SIGNAL HEAD. CONSULT THE M.U.T.C.D. FOR ADDITIONAL INFORMATION CONCERNING SIGNAL PLACEMENT.
- SIGNAL HEAD PLACEMENT IS CRITICAL. HEADS SHALL BE ADJUSTED TO REFLECT LANE LOCATION CHANGES.
- THE SIGNAL SYSTEM SHALL CONSIST OF POLES, SIGNS AND POSTS, WARNING SIGN, LUMINAIRES, FLASHING BEACONS, AND SIGNAL EQUIPMENT TO PROVIDE FOR AN ADEQUATE DESIGN. IT ALSO INCLUDES PERMITS AND COST ASSOCIATED WITH PROVIDING ELECTRICAL POWER.
- THE CONTRACTOR SHALL PROVIDE AN ACTUATED CONTROLLER. THE APPROACHES NOTED SHALL HAVE A TEMPORARY VEHICLE DETECTOR. THE TYPE OF DETECTION SHALL BE AT THE OPTION OF THE CONTRACTOR. LOOPS ARE SHOWN FOR PLACEMENT PURPOSES ONLY. THE CONTROLLER, DETECTOR AND ALL OTHER SIGNAL EQUIPMENT SHALL MEET OR EXCEED ALL NEMA STANDARDS.
- WHEN USED, VEHICLE DETECTOR LOOPS SHALL BE 6' X 30' FOR PRESENCE DETECTION AT THE STOP BAR WITH THE NEAR PORTION LOCATED 5' BEYOND THE STOP BAR.
- ON SEMI-ACTUATED SIGNAL, PARTICULARLY WITH LONG BRIDGES, THE CONTROLLER SHOULD BE LOCATED ON THE SAME SIDE OF THE BRIDGE AS THE DETECTOR.
- INTERVAL TIMING SHOWN IN SECONDS.
- INTERCONNECT BETWEEN SIGNAL POLES BY WHATEVER MEANS POSSIBLE OR CONVENIENT TO PROVIDE FOR A SAFE INSTALLATION.
- PLACE TEMPORARY POLES BEHIND GUARDRAIL WHERE POSSIBLE.
- POLES SUPPORTING SPAN WIRES AND/OR MAST ARMS SHALL BE ADEQUATELY BRACED OR GUYED AND SHALL NOT BE PLACED SO AS TO CREATE A HAZARD TO THE TRAVELLNG PUBLIC.
- ALL TEMPORARY SIGNAL EQUIPMENT, SIGNS, ETC., SHALL BELONG TO THE CONTRACTOR AT THE END OF THE PROJECT AND THE CONTRACTOR SHALL BE RESPONSIBLE FOR ITS REMOVAL, INCLUDING ANY TEMPORARY PAVEMENT MARKINGS, UTILITY POLES, WIRES, ETC.
- A 250 WATT MER/150 WATT HPS LUMINAIRE AND MAST ARM SHALL BE PROVIDED ON A POLE ON EACH APPROACH AT A MOUNTING HEIGHT OF 30' ABOVE ROADWAY CENTERLINE. THE INTENT IS TO LIGHT UP THE AREA AROUND THE SIGNAL HEADS AND STOP BAR FOR INCREASED VISIBILITY. THE RESIDENT ENGINEER SHALL DETERMINE THE ADEQUACY OF THE LIGHTING AND DIRECT CHANGES IF THE LIGHTING IS INSUFFICIENT.
- STOP BARS SHALL BE LOCATED A MINIMUM OF 40' AND A MAXIMUM OF 120' FROM THE NEAREST SIGNAL HEAD.
- PAYMENT FOR THE VEHICLE DETECTORS SHALL BE FOR EACH UNIT INSTALLED.
- SIGNS AND POSTS AS SHOWN ON THIS SHEET (AND SHEET 12) AND NOTED BELOW ARE INCIDENTAL TO THE TRAFFIC CONTROL SIGNAL ITEMS ("STOP HERE ON RED," "SIGNAL AHEAD," "NO PASSING ZONE," AND "TO GET GREEN LIGHT," ETC).
- SEE STANDARD E-140 FOR "STOP HERE ON RED" SIGN DETAIL AND E-101 FOR "SIGNAL AHEAD" SYMBOL SIGN. SEE STANDARD E-121 FOR SIGN PLACEMENT. SEE STANDARD E-171A AND E-172 FOR ADDITIONAL INFORMATION ON SIGNALS AND DETECTORS.
- A "SIGNAL AHEAD" SIGN SHALL BE PLACED AT LEAST 750' FROM THE SIGNAL OR AT A POSITION TO BE DETERMINED BY THE ENGINEER.
- THE "NO PASSING" SIGN SHALL BE USED TO PREVENT PASSING FOR 750' IN ADVANCE OF THE STOP BAR. THE SIGN SHALL BE PER STANDARD E-102.
- ALL ELECTRICAL WORK SHALL MEET THE REQUIREMENTS OF THE N.E.C. AND STATE INSPECTOR.
- TRAFFIC CONTROL WARNING SIGNS SHALL BE PROVIDED ON EACH APPROACH PER STANDARD E-107. ADDITIONAL PROJECT CONSTRUCTION SIGNS SHALL BE INSTALLED AS REQUIRED BY THE RESIDENT ENGINEER PER STANDARD E-100, E-101 AND E-102A. PAYMENT FOR THESE SIGNS, THE REFLECTORIZED PLASTIC DRUMS, ETC., SHALL BE PAID AS PART OF THE "ONE-WAY TEMPORARY BRIDGE (MOD.)*" ITEM.
- THE "TO GET GREEN LIGHT" SIGN IS TO BE USED ONLY ON APPROACHES WITH VEHICLE DETECTORS.
- PAYMENT FOR TEMPORARY BARRIER USED SHALL BE MADE UNDER THE ITEM 621.90, "TEMPORARY TRAFFIC BARRIER."
- THE CONTRACTOR SHALL INSURE THAT THE SIGNAL INSTALLATION CONFORMS TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES WITH THE SUPPORTING STRUCTURES AS PER AASHTO'S STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORT FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS. CERTIFICATION SHALL NOT BE NECESSARY FOR TEMPORARY TRAFFIC SIGNAL EQUIPMENT.
- REMOVE EXISTING CENTERLINE PAVEMENT MARKINGS FROM THE STOP BAR TO THE BRIDGE DECK ON THE APPROACHES. THIS SHALL BE PAID AS "REMOVAL OF EXISTING PAVEMENT MARKINGS." REPLACEMENT OF THE LINE WILL BE PAID UNDER THE "TEMPORARY 4" YELLOW LINE" ITEM.
- THE PAVEMENT MARKING REMOVALS AND TEMPORARY EDGELINES AS NOTED ABOVE SHALL BE PAID SEPARATELY UNDER THE APPROPRIATE BID ITEMS.
- WHEN TEMPORARY BARRIER IS USED, BARRIER ENDS FACING ONCOMING TRAFFIC SHALL BE TAPERED BEYOND THE CLEAR ZONE, OR PROTECTED WITH AN APPROVED END TREATMENT DESIGNED FOR THE 85TH PERCENTILE SPEED OR THE POSTED SPEED LIMIT OF THE ROAD.

| STANDARDS REQUIRED | |
|--------------------|--------|
| E-100 | E-121 |
| E-101 | E-140 |
| E-102 | E-170 |
| E-102A | E-171A |
| E-106 | E-171B |
| E-107 | E-172 |
| E-107A | E-175 |
| E-110 | |

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| SHEET NAME: ONE-WAY DETOUR WITH TEMPORARY TRAFFIC SIGNAL | | |
| PROJECT NAME: JOHNSON | HIGHWAY NO.: TH 2 | |
| PROJECT NUMBER: BHO 1448(18) | BRIDGE NO.: 6 | |
| | OVER: LAMOILLE RIVER | |
| FILE NAME: /s+ri/90j067/sj067+cs.dgn | PLOT DATE: 02-SEP-2005 | |
| PROJECT MANAGER: R. WHITCOMB | DRAWN BY: J.GILMORE | |
| DESIGNED BY: C. MEUNIER | IPARM NAME: sj067+cl.i | |
| BRIDGE SHEET NUMBER: | SHEET 13 OF 73 | |