

**GENERAL
TEMPORARY TRAFFIC SIGNAL NOTES**

1. DESIGN OF THE SIGNAL SUPPORT(S) AND ANY REQUIRED GUYING IS THE RESPONSIBILITY OF THE CONTRACTOR.
2. SIGNAL TIMING/TIMING ADJUSTMENTS REQUESTED BY THE RESIDENT ENGINEER SHALL BE ACCOMPLISHED WITHIN A 48 HOUR PERIOD AND PAYMENT SHALL BE INCIDENTAL TO THE ITEM #678.40, "TEMPORARY TRAFFIC SIGNAL SYSTEM". 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.
3. SIGNAL FACES SHALL CONSIST OF 12" LENSES. (RED, YELLOW, AND GREEN)
4. THE BOTTOM OF THE HOUSING OF A SIGNAL FACE SUSPENDED OVER A ROADWAY SHALL NOT BE LESS THAN 16 1/2 FEET NOR MORE THAN 19 FEET ABOVE THE PAVEMENT GRADE AT THE CENTER OF THE ROADWAY. THE BOTTOM OF A SIGNAL FACE NOT MOUNTED OVER A ROADWAY, SHALL NOT BE LESS THAN 8 FEET NOR MORE THAN 15 FEET ABOVE THE GROUND. CAUTION SHALL BE USED TO INSURE COMPLIANCE WITH THE HEIGHT REQUIREMENTS IN THE EVENT THE NEW APPROACH GRADES DIFFER SIGNIFICANTLY FROM THE OLD ROAD GRADE.
5. SIGNAL FACES FOR ANY ONE APPROACH SHALL NOT BE LESS THAN 8 FEET APART MEASURED HORIZONTALLY BETWEEN CENTER OF FACES.
6. SIGNAL HEADS MAY BE HUNG ON A SPAN WIRE OR ON A CANTILEVER MAST ARM. AT LEAST ONE SIGNAL HEAD SHALL BE UNMISTAKABLY 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 1/2 FEET FROM THE CENTER OF THE APPROACH LANE WHEN THE STOP BAR IS 40 FEET FROM THE SIGNAL HEAD. CONSULT THE M.U.T.C.D. FOR ADDITIONAL INFORMATION CONCERNING SIGNAL PLACEMENT.
7. SIGNAL HEAD PLACEMENT IS CRITICAL. HEADS SHALL BE ADJUSTED TO REFLECT LANE LOCATION CHANGES.
8. (NOT USED)
9. 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.
10. WHEN USED, VEHICLE DETECTOR LOOPS SHALL BE 4' X 40' FOR PRESENCE DETECTION AT THE STOP BAR WITH THE NEAR PORTION LOCATED 5 FEET BEYOND THE STOP BAR.
11. INTERVAL TIMING SHOWN IN SECONDS.
12. INTERCONNECT BETWEEN SIGNAL POLES BY WHATEVER MEANS POSSIBLE OR CONVENIENT TO PROVIDE FOR A SAFE INSTALLATION.
13. PLACE TEMPORARY POLES BEHIND GUARDRAIL WHERE POSSIBLE.
14. 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 TRAVELING PUBLIC.
15. 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.
16. 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.
17. STOP BARS SHALL BE LOCATED A MINIMUM OF 40' AND A MAXIMUM OF 120' FROM THE NEAREST SIGNAL HEAD.
18. PAYMENT FOR THE TEMPORARY VEHICLE DETECTORS SHALL BE UNDER CONTRACT ITEM #678.42, "TEMPORARY DETECTOR" FOR EACH UNIT INSTALLED.
19. SIGNS AND POSTS AS SHOWN ON THIS SHEET AND NOTED BELOW ARE INCIDENTAL TO THE TRAFFIC CONTROL SIGNAL ITEMS ("STOP HERE ON RED", "SIGNAL AHEAD", "NO PASSING ZONE", ETC.) THE TEMPORARY STOP BARS SHALL BE PAID UNDER ITEM #646.66, "TEMPORARY 24" STOP BAR".
20. SEE STD. 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.
21. A "SIGNAL AHEAD" SIGN SHALL BE PLACED AT LEAST 500' FROM THE SIGNAL OR AT A POSITION TO BE DETERMINED BY THE ENGINEER.
22. (NOT USED)
23. ALL ELECTRICAL WORK SHALL MEET THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE AND STATE INSPECTOR.
24. (NOT USED)
25. APPROACH WIDTHS SHALL BE AS DETAILED IN SUBSECTION 528.04(b)2 TO MINIMIZE VEHICLE DELAY.
26. 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, E-102 & E-102A OR AS SHOWN IN THE LATEST EDITION OF THE MUTCD. PAYMENT FOR THESE SIGNS, THE REFLECTORIZED PLASTIC DRUMS, ETC. SHALL BE PAID UNDER ITEM #641.10, "TRAFFIC CONTROL".
27. (NOT USED)
28. TEMPORARY TRAFFIC BARRIER SHOULD BE SUBSTITUTED FOR THE CHANNELIZING DEVICES SHOWN WHEN ANY OF THE FOLLOWING ARE MET:
A.) THE BRIDGE DECK IS REMOVED
B.) THE BRIDGE RAIL IS REMOVED, OR
C.) IN THE JUDGEMENT OF THE RESIDENT ENGINEER TEMPORARY BARRIER IS NEEDED.
29. 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 ROADWAY.
30. PAYMENT FOR TEMPORARY BARRIER USED SHALL BE PAID FOR UNDER THE ITEM #621.90, "TEMPORARY TRAFFIC BARRIER".
31. WHEN THE TEMPORARY TRAFFIC CONTROL SIGNAL IS CHANGED TO THE FLASHING MODE, EITHER MANUALLY OR AUTOMATICALLY, RED SIGNAL INDICATIONS SHALL BE FLASHED TO BOTH APPROACHES.

PHASE I CONSTRUCTION

**PHASING DIAGRAM AND SPECIAL NOTES
FOR EACH LOCATION**

PHASE	2			6			4		
MINIMUM	12	4	30	12	4	30	12	8	30
EXTENSION	2			2			2		
MAXIMUM	40		40			14			
HEAD 2	G	Y	R	R	R	R	R	R	R
HEAD 6	R	R	R	G	Y	R	R	R	R
HEAD 4	R	R	R	R	R	R	G	Y	R

SPECIAL REQUIREMENTS

APPROACH	TEMPORARY VEHICLE DETECTOR	FLASHING BEACON ON ADVANCED WARNING SIGN
2	X	X
6	X	X
4	X	X

ENTER CHECK MARK IN APPROPRIATE BOX WHEN REQUIRED ON THIS PROJECT

PHASE II CONSTRUCTION

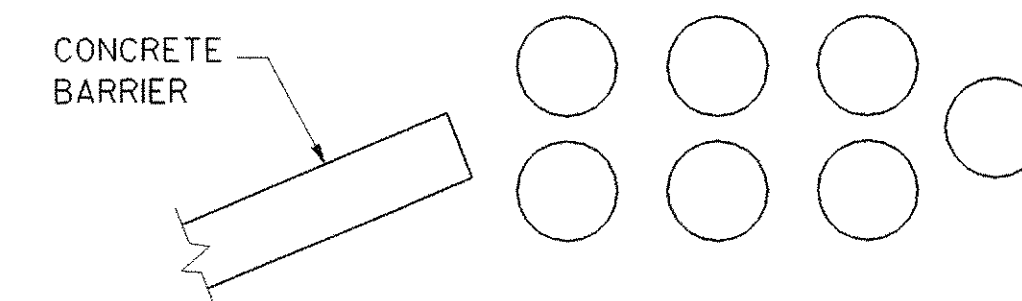
**PHASING DIAGRAM AND SPECIAL NOTES
FOR EACH LOCATION**

PHASE	2			6			4		
MINIMUM	12	4	32	12	4	32	12	8	32
EXTENSION	2			2			2		
MAXIMUM	40		40			14			
HEAD 2	G	Y	R	R	R	R	R	R	R
HEAD 6	R	R	R	G	Y	R	R	R	R
HEAD 4	R	R	R	R	R	R	G	Y	R

SPECIAL REQUIREMENTS

APPROACH	TEMPORARY VEHICLE DETECTOR	FLASHING BEACON ON ADVANCED WARNING SIGN
2	X	X
6	X	X
4	X	X

ENTER CHECK MARK IN APPROPRIATE BOX WHEN REQUIRED ON THIS PROJECT



**ENERGY ABSORPTION ATTENUATOR
(SAND - FILLED PLASTIC BARREL)**

NOT TO SCALE

NOTE:

SAND BARREL LAYOUT SHALL BE DESIGNED BASED ON AN APPROVED MANUFACTURER'S RECOMMENDATIONS. SEE SPECIAL PROVISIONS FOR ADDITIONAL INFORMATION AND REQUIREMENTS.

zb308mp13.dgn

DATE	REVISIONS	BY

STDS. : E-100, E-101, E-102, E-102A, E-106, E-107, E-107A, E-110, E-121, E-140
REQUIRED E-170, E-171A, E-171B, E-171C, E-172, E-175

**TRAFFIC CONTROL
(SHEET 3)**

DESIGNED BY B. ERNST DATE _____
DRAWN BY A. N. BEY DATE _____
CHECKED BY K. HINSCH DATE _____
DESIGN SUPERVISOR M. CHEVALIER DATE _____
PROJ. CAMBRIDGE BHF 030-2(19)S

TRAFFIC SHEET NO. 3 OF 3
SHEET 18 OF 68 SHEETS

BRIDGE NO. 20