

**TRAFFIC SIGNAL NOTES**

**A. NEW TRAFFIC SIGNAL EQUIPMENT**

1. ALL SIGNAL HEADS SHALL BE RIGIDLY MOUNTED. ALL LENSES SHALL BE LED UNLESS SPECIFIED ON THE PLANS TO BE OPTICALLY PROGRAMMED. ALL SIGNAL HEADS SHALL INCLUDE DISCONNECT HANGERS (WHERE NEEDED), AND BACKPLATES SHALL BE INCLUDED AS SPECIFIED ON THE PLANS.
2. ALL CONTROLLERS SHALL BE ECONOLITE BRAND, MODEL ASC/3-2100 OR NAZTEC BRAND MODEL 980 (TS-2 TYPE 2). ALL CABINETS TO BE GROUND MOUNTED AND SHALL BE TYPE P.
3. A DISCONNECT BREAKER FOR EACH CIRCUIT SHALL BE INSTALLED IN A RAINPROOF (NEMA 3R), LOCKED CABINET ON A STANCHION OR ON THE SIDE OF THE STRAIN POLE NEXT TO OR BELOW THE METER SOCKET (SEE STD E-175), A SEPARATE CIRCUIT BREAKER SHALL BE INSTALLED FOR ROADWAY LIGHTING, IF APPLICABLE.
4. PUSHBUTTONS AND PEDESTRIAN SIGNS SHALL BE PROVIDED WITH ALL PROPOSED PEDESTRIAN SIGNALS.
5. PEDESTRIAN PEDESTAL POSTS SHALL BE LOCATED 1.0' BEHIND SIDEWALK UNLESS OTHERWISE SPECIFIED ON THE PLANS.
6. ALL PEDESTRIAN PUSHBUTTONS AND PEDESTRIAN SIGNALS SHALL COMPLY WITH ADA STANDARDS AND THE FOLLOWING SPECIFICATIONS, 725.J3 AND 725.J4.

**B. SIGNAL OPERATION**

1. SWITCH-OVER FROM EXISTING TO REPLACEMENT SIGNALS SHALL NOT BE DONE DURING PEAK TRAFFIC PERIODS. UNIFORMED TRAFFIC OFFICERS SHALL CONTROL TRAFFIC DURING SWITCH-OVER.

**C. PULLBOXES AND JUNCTION BOXES FOR TRAFFIC SIGNALS**

1. PULLBOXES/JUNCTION BOXES ARE DETAILED ON STD E-173.
2. THE LOGO ON THE PULLBOXES/JUNCTION BOXES SHALL BE "SIGNAL".

**D. TRAFFIC SIGNAL CONDUIT**

1. ALL TRAFFIC SIGNAL CONDUIT SHALL BE PVC UNLESS OTHERWISE SPECIFIED.
2. MINIMUM CONDUIT SIZES SHALL BE:
  - 2" FOR SHIELDED LEAD-IN CABLE, SIGNAL CABLE, POWER CABLE AND ALL OTHERS, UNLESS SPECIFIED OTHERWISE ON THE PLANS. SEE CHART ON STD E-172 FOR DESIGN VALUES.
3. WHEN CONDUIT IS PLACED BELOW THE ROADWAY OR ACROSS SIDE ROADS, IT SHALL BE PLACED IN AN ELECTRICAL CONDUIT SLEEVE (8") (PVC).

**E. ALL DETECTION SHALL BE NON-INSTRUSIVE - VIDEO DETECTION SHALL BE UTILIZED AT ALL LOCATIONS.**

**F. REMOVAL OF EXISTING OR REUSE OF SALVAGED TRAFFIC SIGNAL EQUIPMENT**

1. AT THE DISCRETION OF THE TOWN OF BRATTLEBORO, REMOVED AND NOT REUSED TRAFFIC SIGNAL EQUIPMENT SHALL BE DELIVERED TO THE TOWN OF BRATTLEBORO GARAGE. UNWANTED TRAFFIC SIGNAL EQUIPMENT MUST BE DISPOSED OF BY THE CONTRACTOR. REMOVAL OF TRAFFIC SIGNAL EQUIPMENT SHALL INCLUDE REMOVAL OF CONCRETE BASES OR CUTTING BASES ONE FOOT BELOW GRADE, AND BACKFILLING OF THE HOLES. ANY TRAFFIC SIGNAL EQUIPMENT THAT IS DAMAGED OR LOST BY THE CONTRACTOR DURING REMOVAL SHALL BE REPAIRED OR REPLACED, TO THE SATISFACTION OF VTRANS AT THE CONTRACTOR'S EXPENSE. THE CONTACT PERSON FOR THE TOWN OF BRATTLEBORO SHALL BE DALE SHIPP, BRATTLEBORO FIRE DEPARTMENT, (802) 257-7646.
2. ALL SALVAGED OR REUSED TRAFFIC SIGNAL EQUIPMENT SHALL BE THOROUGHLY CLEANED AND PAINTED AS REQUIRED, BEFORE REUSE. PAYMENT WILL BE MADE UNDER THE APPROPRIATE 900.620 SPECIAL PROVISION (REMOVAL OF EXISTING TRAFFIC CONTROL SIGNAL SYSTEM) ITEM IN THE CONTRACT.

**G. GENERAL**

1. THE CONTRACTOR SHALL ACQUIRE ALL NECESSARY LOCAL PERMITS AND MAKE ALL NECESSARY ARRANGEMENTS WITH THE UTILITY COMPANY TO PROVIDE A PERMANENT POWER SUPPLY TO THE SIGNAL AND STREET LIGHTING EQUIPMENT, IF APPLICABLE. THE ROUTING OF POWER TO THE INTERSECTION SHALL BE SUCH THAT VTRANS HAS FULL RESPONSIBILITY FROM THE TRANSFORMER THROUGH THE SIGNAL. NO INTERVENING OWNERSHIP/RESPONSIBILITY SHALL BE ALLOWED.
2. A METAL PLAQUE LISTING OWNERSHIP AND EMERGENCY PHONE NUMBERS SHALL BE ATTACHED TO THE OUTSIDE OF THE CONTROLLER CABINET. CONTACT THE VTRANS DISTRICT OFFICE TO VERIFY APPROPRIATE PHONE NUMBERS.

**H. COORDINATION, ETC.**

1. SPREAD SPECTRUM RADIO SHALL BE USED AS THE METHOD OF COORDINATION FOR THE MAIN STREET SIGNALS.
2. THE EQUIPMENT UTILIZED FOR THIS COORDINATION APPLICATION SHALL CONSIST OF ANTENNAS AND REMOTE RADIOS FOR THE LOCATIONS AT FLAT ST., VT RTES. 119 AND 142 AND HIGH STREET. ELLIOT STREET SHALL RECEIVE A MASTER RADIO AND A TWO-WAY ANTENNA.
3. THE CONTRACTOR SHALL COORDINATE WITH THE TOWN OF BRATTLEBORO BEFORE THE START OF WORK ON THE MAIN STREET SIGNALS.
4. THE MASTER LOCATION AND MASTER EQUIPMENT SHALL BE LOCATED AT ELLIOT STREET.

**I. RAILROAD PREEMPTION**

1. THE INTERSECTION OF VT ROUTES 119 AND 142 WITH US 5 (MAIN STREET) AND THE PRIVATE DRIVE SHALL INCLUDE RAILROAD PREEMPTION DUE TO THE CLOSE PROXIMITY OF THE RAIL CROSSING GATES AT VT ROUTE 119.
2. CONTRACTOR TO INSTALL A JUNCTION BOX AT APPROX. STATION 42+63 33 LT AS SHOWN ON THE PLANS. NECR WILL UTILIZE JUNCTION BOX TO CONNECT THE RAIL EQUIPMENT WITH THE SIGNAL EQUIPMENT. CONTRACTOR TO COORDINATE THIS CONSTRUCTION WITH NECR PRIOR TO THE START OF WORK. THE CONTROLLER SHALL BE HARDWIRED TO THE RAILROAD EQUIPMENT. ALL WORK WITHIN THE R.R. R.O.W. SHALL BE PERFORMED BY NECR.
3. THE CONTROLLER AT THE INTERSECTION OF VT RTES. 119 AND 142 AT US 5 (MAIN STREET) AND THE PRIVATE DRIVE SHALL INCLUDE A CONTACT CLOSURE DIO MASTER RADIO INTUI-COM OR EQUAL TO SEND A SIGNAL TO ALL LOCATIONS INCLUDED IN THIS SYSTEM - FLAT ST., ELLIOT ST. AND HIGH STREET. ALL OTHER LOCATIONS TO INCLUDE A CONTACT CLOSURE DIO RADIO INTUI-COM OR EQUAL.
4. FIRST PRIORITY SHALL BE RAILROAD PREEMPTION.
5. INSTALL BATTERY BACK-UP FOR THE CONTROLLER AT THE INTERSECTION OF VT RTES. 119 AND 142 WITH U.S. 5 (MAIN STREET) AND PRIVATE DRIVEWAY.
6. CONTACT CLOSURE RADIOS FOR RAILROAD PREEMPTION ARE SEPARATE ITEMS AND NOT THE SAME AS AS COORDINATION RADIOS.

**J. FIRE PREEMPTION**

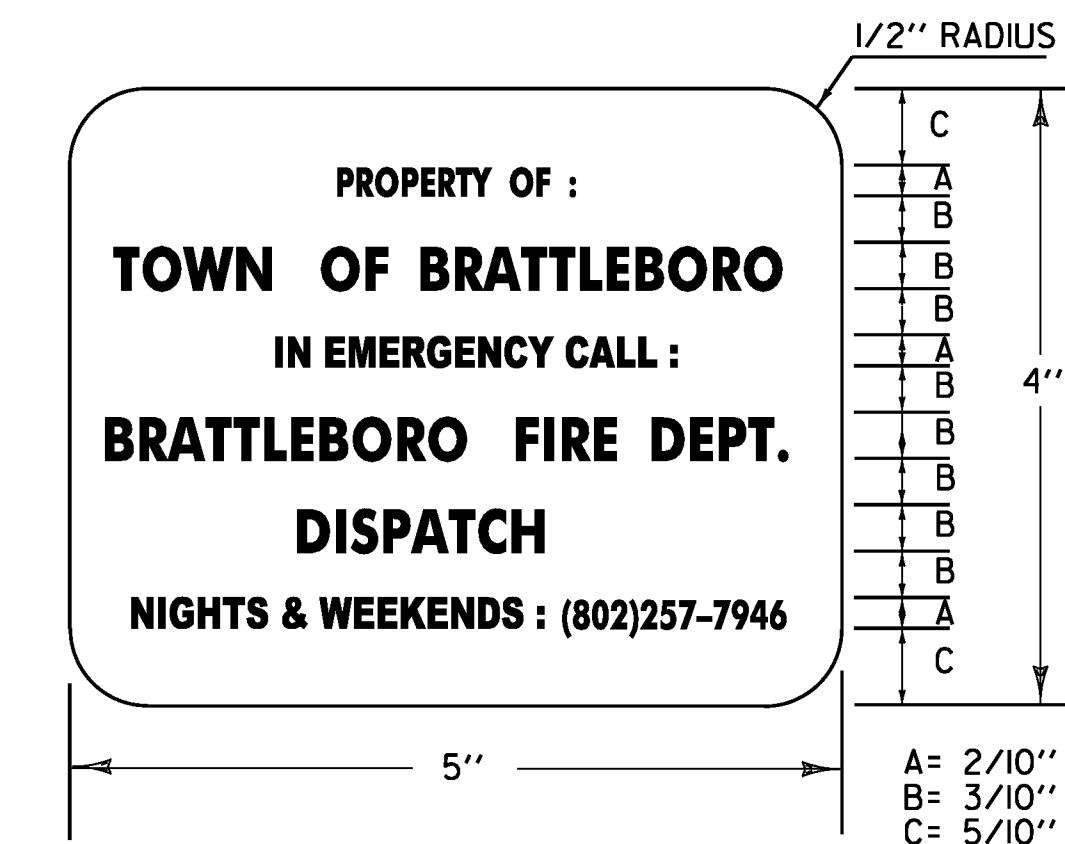
1. ALL SIGNALS TO INCLUDE A VEHICLE IDENTIFYING OPTICAL PREEMPTION AND COMMUNICATION SYSTEM. THE SYSTEM WILL INCLUDE OPTICAL SIGNAL PROCESSORS, AN OPTICAL DETECTOR FOR EACH LEG REQUIRED AS INDICATED ON THE PLAN, STROBE LIGHT(S) AND THE REQUIRED AMOUNT OF DETECTOR CABLE FOR EACH INTERSECTION.
2. RAILROAD PREEMPTION TO BE FIRST PRIORITY.

**TRAFFIC CONTROL NOTES FOR TRAFFIC SIGNAL WORK**

1. THE FOLLOWING NOTES APPLY TO TRAFFIC CONTROL NECESSARY FOR THE INSTALLATION OR MODIFICATION OF THE TRAFFIC SIGNALS ONLY. FOR OVERALL PROJECT TRAFFIC CONTROL MANAGEMENT REQUIREMENTS REFER TO SHEETS 160-162 AND SECTION 641.
2. DURING CONSTRUCTION, A MINIMUM OF ONE-WAY TRAFFIC SHALL BE MAINTAINED AT ALL TIMES. TWO-WAY TRAFFIC SHALL BE MAINTAINED AT NIGHT, ON WEEKENDS AND HOLIDAYS, DURING PEAK TRAFFIC AND WHENEVER POSSIBLE DURING CONSTRUCTION. AT THE DISCRETION OF THE RESIDENT ENGINEER (OR OTHER DESIGNATED AGENCY REPRESENTATIVE), UNIFORMED TRAFFIC CONTROL OFFICERS OR TRAINED FLAG PERSONS SHALL DIRECT TRAFFIC, WHENEVER REQUIRED.
3. TRAFFIC CONTROL SIGNING AND CHANNELIZING DEVICES SHALL BE IN ACCORDANCE WITH THE APPROPRIATE STANDARD DRAWINGS AND THE MUTCD (E-101, E-102, E-106, E-107, E-110, E-111).
4. AFTER SIGNAL INSTALLATION, ALL HEADS MUST BE COVERED (TURNING SHALL NOT BE ALLOWED) UNTIL TURN ON. THE METHOD OF COVERING SHALL BE AS FOLLOWS:
  - ALL NEW TRAFFIC AND PEDESTRIAN SIGNAL HEADS WHICH HAVE BEEN INSTALLED BUT NOT PLACED IN EITHER FLASHING OR FULL OPERATION SHALL BE COVERED. EXISTING SIGNAL HEADS WHICH ARE PLACED OUT OF SERVICE IN ORDER TO PERFORM WORK ON THE SIGNAL SYSTEM SHALL ALSO BE COVERED, EXCEPT WHEN SUCH WORK CAN BE COMPLETED IN A RELATIVELY SHORT PERIOD OF TIME (SEVERAL HOURS) AND TRAFFIC CONTROL HAS BEEN PROVIDED FOR.
  - THE SIGNAL COVERS SHALL CONSIST OF A ONE PIECE PLASTIC BAG HAVING A MINIMUM THICKNESS OF 4 MIL. THE BAG SHALL BE OPAQUE. THE COVER SHALL SLIP OVER THE ENTIRE SIGNAL HEAD AND SHALL BE SECURELY TIED AT THE OPENING WITH A ROPE OF SUFFICIENT SIZE AND STRENGTH TO SECURE THE COVER. AN INTERMEDIATE ROPE OF THE SAME MATERIAL SHALL BE DRAWN AROUND THE CENTER OF THE COVER TO PREVENT EXCESS FLAPPING IN THE WIND.
  - A DRAIN HOLE SHALL BE MADE AT THE BOTTOM OF THE BAG TO ALLOW THE ESCAPE OF MOISTURE. NO TAPE OR ADHESIVE WILL BE ALLOWED TO BE ATTACHED TO ANY SURFACE OF THE SIGNAL HOUSING OR LENSES. ALL COVERS SHALL BE PLACED IN A NEAT WORKMANLIKE MANNER. ANY COVER WHICH IS TORN OR MISSING SHALL BE IMMEDIATELY REPLACED. PAYMENT FOR THE COVERS, THEIR PLACEMENT, AND REMOVAL AND ALL INCIDENTALS FOR COMPLETION OF THE WORK SHALL BE CONSIDERED INCIDENTAL TO THE INSTALLATION OF THE TRAFFIC SIGNAL.

5. WHERE TWO-WAY TRAFFIC IS MAINTAINED DURING CONSTRUCTION, THE SIGN PACKAGE SHOWN ON STD E-110 SHOULD BE USED. FOR ONE-WAY TRAFFIC, E-110 APPLIES. APPROACH CONSTRUCTION SIGNING SHALL REMAIN IN PLACE DURING THE ENTIRE CONSTRUCTION PERIOD. OTHER SIGNING SHALL BE REMOVED OR COVERED WHEN NOT APPLICABLE.
6. VARIATIONS IN THE SIGNING PACKAGES MAY BE DICTATED BY UNIQUE GEOMETRY AND/OR TRAFFIC CONDITIONS.
7. THE CONTRACTOR SHALL NOT WORK WITHIN THE HIGHWAY ROW WITHOUT THE APPROPRIATE CONSTRUCTION SIGNING IN PLACE AS SHOWN ON STD E-100.
8. AT LOCATIONS WHERE SIGNALS CURRENTLY EXIST, A WORKING SIGNAL SYSTEM SHALL BE IN PLACE AT THE END OF EACH DAY. IF THE SIGNAL SYSTEM IS NOT WORKING AT THE END OF THE DAY, THE CONTRACTOR SHALL PROVIDE UNIFORMED TRAFFIC OFFICERS TO CONTROL TRAFFIC UNTIL SUCH TIME THAT THE EXISTING OR NEW SIGNAL IS IN OPERATION AT NO COST TO THE STATE.
9. SIGNAL UNDER CONSTRUCTION SIGN PANELS SHALL BE MOUNTED UNDER "ROAD CONSTRUCTION AHEAD" SIGNS ANYTIME SIGNAL SYSTEM WORK IS BEING PERFORMED (SEE SIGN DETAIL THIS SHEET).

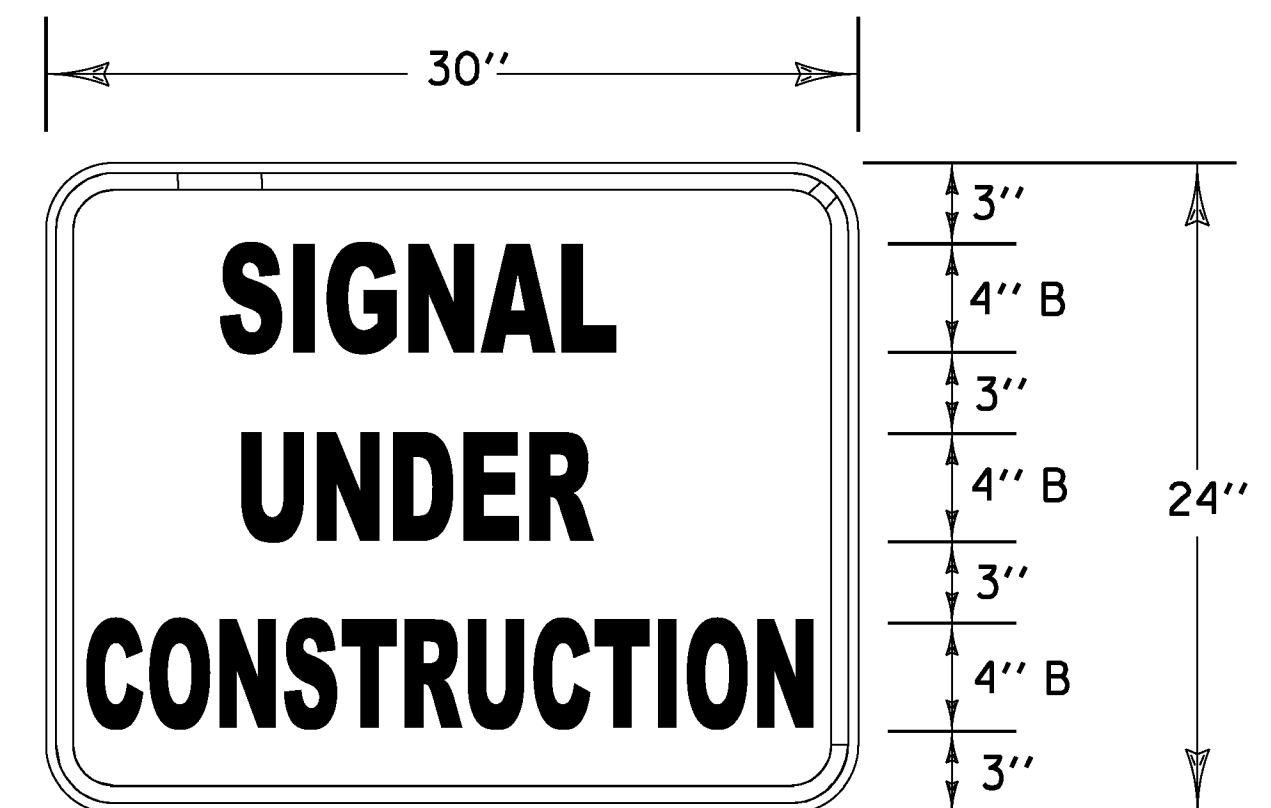
**CONTROLLER IDENTification PLAQUE**



LEGEND: - BLACK (NON-REFL.) - STAMPED PRIOR TO PAINTING BACKGROUND: NATURAL ALUMINUM OR BRASS SURFACE

**NOTES:**

- 1.) THE PLAQUE SHALL BE MOUNTED ON ALL TRAFFIC SIGNAL CONTROLLER CABINETS. IT SHALL BE FASTENED TO THE CONTROLLER CABINET IN SUCH A MANNER AS TO BE NOT EASILY REMOVED, SUCH AS WELDED, RIVETED OR BOLTED WITH VANDAL PROOF BOLTS.
- 2.) THE LETTERS SHALL BE PUNCHED OR STAMPED, SUCH STAMPING SHALL PENETRATE AT LEAST 1/2 THE BASE MATERIAL THICKNESS.
- 3.) THE BASE MATERIAL FOR THE PLAQUE SHALL BE BRASS OR ALUMINUM WITH A MINIMUM THICKNESS OF 0.100 INCHES.



MATERIALS: SEE STD. E-144  
 COLORS: TEXT & BORDER - BLACK  
 BACKGROUND - ORANGE (RETROREFLECTIVE SHEETING)

**CONSTRUCTION SIGN DETAIL**

NOT TO SCALE

PROJECT NAME:	BRATTLEBORO
PROJECT NUMBER:	STP 2000(24)
FILE NAME: z08d044tr fbdr.dgn	PLOT DATE: 4/8/2010
PROJECT LEADER: KEN UPMAL	DRAWN BY: V. KACOYANNAKIS
DESIGNED BY: V. KACOYANNAKIS	CHECKED BY: J. SOBEL
TRAFFIC SIGNAL SHEET 6	SHEET 155 OF 163