

TRAFFIC SIGNAL GENERAL NOTES

1. CONSTRUCTION SEQUENCES

- A. THE EXISTING TRAFFIC SIGNAL EQUIPMENT SHALL REMAIN IN OPERATION UNTIL THE NEW EQUIPMENT IS IN PLACE, EXCEPT IN THE CASE WHERE THE EXISTING EQUIPMENT MUST BE REMOVED PRIOR TO THE NEW EQUIPMENT BEING PLACED IN OPERATION. TRAFFIC CONTROL OFFICER(S) SHALL THEN BE USED TO DIRECT TRAFFIC AT EACH AFFECTED INTERSECTION. THE OFFICERS SHALL CONTROL THE INTERSECTION(S) FROM 7 AM TO 7 PM EACH DAY, INCLUDING WEEKENDS, THAT THE SIGNAL(S) IS NOT OPERATING. PAYMENT FOR THE U.T.O. SHALL BE AT THE UNIT PRICE FOR THAT ITEM.
- B. ALL NON-OPERATING SIGNAL HEADS SHALL BE REMOVED OR COMPLETELY COVERED.
- C. WORK SHALL NOT PROCEED ON THE TRAFFIC SIGNALS AT ANY INTERSECTION UNTIL ALL EQUIPMENT NECESSARY FOR THAT INTERSECTION IS ON PROJECT (EXCEPTION - CONDUITS, PULLBOXES, JUNCTION BOXES AND POLE BASES MAY BE INSTALLED PRIOR TO OTHER SIGNAL WORK BEING DONE).
- D. IF TRAFFIC CONTROL REQUIRES MODIFICATION OF THE EXISTING TRAFFIC CONTROL SYSTEM TO ACCOMMODATE THE DETOUR OF TRAFFIC, IT SHALL BE INCIDENTAL TO THE ITEM TRAFFIC CONTROL.

2. NEW EQUIPMENT

- A. ALL TRAFFIC SIGNAL HEADS SHALL HAVE 12" LENSES. PEDESTRIAN HEADS SHALL HAVE MINIMUM 9" SYMBOLS. ALL SIGNAL HEADS SHALL BE HEAVY DUTY ALUMINUM. ALL HOUSINGS SHALL BE PAINTED DARK GREEN WITH FLAT BLACK DOORS AND VISORS. SIGNAL VISORS WILL BE OF THE OPEN BOTTOM TUNNEL TYPE. PEDESTRIAN SIGNALS SHALL BE POLYCARBONATE WITH LED LAMPS, BLACK FACES AND "Z-CRATE" VISORS, USING CLAMHELL HARDWARE FOR MOUNTING TO POLES. SIGNAL POLES/POSTS SHALL BE GALVANIZED W/FLAT BLACK POWDER COATED FINISH.
- B. PULLBOXES AND JUNCTION BOXES
 - 1. SIGNAL PULLBOXES AND JUNCTION BOXES SHALL CONFORM TO THE GENERAL REQUIREMENTS OF STANDARD E-173 WITH DIMENSIONS OF 18"x12"x12" (AXBXC), PER CITY OF BURLINGTON STANDARDS.
 - 2. PULLBOXES PLACED IN THE ROADWAY OR SHOULDER SHALL HAVE STEEL COVERS OF A MINIMUM THICKNESS OF 1/2 INCH AND SHALL MEET ASTM A-36. THESE COVERS SHALL BE HELD IN PLACE WITH 3/8" DIA. STAINLESS STEEL PENTA-HEAD BOLTS. THE COVER SHALL BE APPROPRIATELY MACHINED SO THAT THE BOLT HEADS ARE FLUSH WITH COVER. TWO PENTA-HEAD SOCKETS TO REMOVE THE JUNCTION BOX COVERS SHALL BE SUPPLIED TO THE CITY OF BURLINGTON.
 - 3. ALL SPLICES IN PULLBOXES/JUNCTION BOXES SHALL BE SOLDERED AND SEALED IN A WATERPROOF EPOXY SPLICE KIT. PAYMENT INCIDENTAL TO OTHER ITEMS.
 - 4. THE JUNCTION BOX COVERS SHALL HAVE THE LOGO "TRAFFIC SIGNAL".
- C. TRAFFIC SIGNAL CONTROLLER AND CABINET
 - 1. EACH UNIT SHALL BE A VEHICLE AND, WHERE APPLICABLE, PEDESTRIAN ACTUATED SOLID STATE CONTROLLER CAPABLE OF PRODUCING THE TIMING, PHASING AND COORDINATION AS SHOWN ON THE PLANS. THE CONTROLLER SHALL BE OF THE "170" TYPE, WHICH MEETS THE LATEST VERSION OF THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION (CALTRANS) SPECIFICATIONS. THE 170 CONTROLLER WILL HAVE 32K OF ONBOARD RAM AND AT LEAST ONE ACIA (SERIAL PORT).

THE "W4IKS" SOFTWARE PACKAGE, AS PROVIDED BY WAPITI MICROSYSTEMS CORPORATION, SHALL BE USED FOR ALL INTERSECTIONS TO INSURE COMPATABILITY WITH OTHER EXISTING SIGNAL EQUIPMENT IN THE CITY OF BURLINGTON. THE PROM MODULE SUPPLIED WITH EACH 170 CONTROLLER SHALL BE THE "412C" TYPE, CONFIGURED TO RUN "W4IKS".

A TYPE 336 CABINET SHALL BE PROVIDED AT EACH INTERSECTION, AND SHALL BE PAINTED BLACK, FURNISHED WITH A STANDARD #2 CORBIN LOCK AND TWO KEYS. THE INTERSECTION OF RIVERSIDE/COLCHESTER SHALL HAVE A TYPE 332 CABINET. EACH CABINET SHALL HAVE A MINIMUM OF TWO SPARE LOAD SWITCH POSITIONS. A MAIN DISCONNECT BREAKER SHALL BE INSTALLED IN A RAIN-TIGHT LOCKED CABINET EXTERNAL TO EACH CONTROLLER, WITH POWER METER, CONFLICT MONITORS SUPPLIED WITH EACH CABINET SHALL BE OF THE "PLUS" TYPE WITH THE CABINET AND MONITOR BEING CONFIGURED FOR RED OUTPUT.
- D. TRAFFIC SIGNAL CONDUIT
 - 1. ALL TRAFFIC SIGNAL CONDUIT SHALL HAVE A MINIMUM DIAMETER OF 2 INCHES. THE ACTUAL SIZES ARE SHOWN ON THE PLANS FOR CONDUIT GREATER THAN 2 INCHES. PAYMENT FOR TRAFFIC SIGNAL CONDUIT SHALL BE UNDER ITEM 678.21 - ELECTRICAL CONDUIT WITH THE DIAMETER AND MATERIAL SPECIFIED FOR EACH APPLICATION.
 - 2. ALL UNDERGROUND TRAFFIC SIGNAL CONDUIT SHALL BE PVC. ALL ABOVE GROUND TRAFFIC SIGNAL CONDUIT SHALL BE GALVANIZED STEEL.
 - 3. THE MINIMUM DEPTH BELOW THE ROADWAY SURFACE FOR THE PLACEMENT OF CONDUIT SHALL BE 3 FEET. THE MINIMUM DEPTH BELOW SIDEWALK FOR THE PLACEMENT OF CONDUIT SHALL BE 2 FEET.
 - 4. SIX INCH WIDE YELLOW PLASTIC MARKING TAPE SHALL BE PLACED IN THE EXCAVATED TRENCH 6 TO 12 INCHES BELOW THE FINISHED GRADE FOR ALL CONDUIT RUNS. PAYMENT INCIDENTAL TO THE CONDUIT.

- E. ALL NEW EQUIPMENT SHALL MEET OR EXCEED NEMA STANDARDS AND IMSA OR ITE SPECIFICATIONS, WHERE APPLICABLE.
- F. ALL TRAFFIC SIGNAL POLES SHALL BE NEW, AND SHALL BE DESIGNED USING THE LATEST REVISION OF AASHTO'S "STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS". SEE SHEETS 161 AND OTHER STANDARDS FOR MORE DETAIL. POLE DIAMETER, HEIGHT, YIELD STRENGTH AND GAGE SHALL BE STAMPED ON THE POLE BASE PLATE OR ON AN ATTACHED METAL TAG.
- G. SIGNAL HARDWARE (ENTRANCE FITTINGS, 2-WAY BRACKETS, TOP-OF-POST MOUNTS, SIDE-OF-POST MOUNTS, ETC.) SHALL BE OF THE "TRI-STUD" TYPE. NO RUNNING THREADS OR CHASE NIPPLES WILL BE ALLOWED, AS THEY HAVE A TENDENCY TO RUST IN PLACE. TRI-STUD HARDWARE WILL BE ALUMINUM, PAINTED DARK GREEN, WITH THE STUDS BEING STAINLESS STEEL.
- H. SADDLE CLAMPS AND ENTRANCE FITTINGS WILL BE ALUMINUM WITH STAINLESS STEEL HARDWARE.

3. REMOVAL OF EXISTING OR REUSE OF SALVAGED EQUIPMENT

- A. ALL REMOVED AND NOT REUSED EQUIPMENT (HEADS, CONTROLLERS, CABINETS, POLES, ETC.) SHALL BE RETURNED TO THE CITY OF BURLINGTON. REMOVAL OF EQUIPMENT SHALL INCLUDE REMOVAL OF CONCRETE BASES AND BACKFILL OF THE HOLES, WHERE APPLICABLE. ANY EQUIPMENT THAT IS DAMAGED BY THE CONTRACTOR DURING REMOVAL SHALL BE REPAIRED OR REPLACED, TO THE SATISFACTION OF THE CITY AT THE CONTRACTOR'S EXPENSE. ANY EQUIPMENT NOT WANTED BY THE CITY SHALL BE MADE AVAILABLE TO VTRANS DISTRICT 5. ANY EQUIPMENT NOT WANTED BY EITHER THE CITY OR THE STATE SHALL BE DISPOSED OF BY THE CONTRACTOR (SEE SPECIAL PROVISIONS FOR DELIVERY DATES).
- B. ALL SALVAGED OR REUSED EQUIPMENT SHALL BE THOROUGHLY CLEANED AND PAINTED.

4. SIGNAL OPERATION

- A. SIGNAL TIMING SHOWN ON THE PLANS MAY REQUIRE FINE-TUNING IN THE FIELD BASED ON TRAFFIC OBSERVATION (COST OF ADJUSTMENTS SHALL BE INCIDENTAL TO OTHER ITEMS).
- B. THE TRAFFIC SIGNALS SHALL NOT OPERATE WITHOUT THE PAVEMENT MARKINGS AND SIGNAL RELATED SIGNING IN PLACE.

5. VEHICLE LOOP DETECTORS

- A. ALL LOOP DETECTORS SHALL BE LABELED WITH PHASE NUMBER, APPROACH DIRECTION AND MOVEMENT CONTROLLED BY THE UNIT (I.E. PHASE I, NB LT). SEE SHEETS 156, 157, 158, & 162 & E-172 FOR LOOP DETAILS.

6. EQUIPMENT MANUALS

- A. COPIES OF ALL EQUIPMENT MANUALS AS WELL AS COMPLETED PROGRAM LISTINGS FOR THE CONTROLLER SHALL BE DISTRIBUTED AS FOLLOWS:
 - 1. CITY OF BURLINGTON
 - 2. CONTROLLER CABINET (1)
 - 3. METROPOLITAN PLANNING ORGANIZATION (1)
 - 4. CHITTENDEN COUNTY REGIONAL PLANNING (1)
 - 5. DISTRICT TRANSPORTATION ENGINEERS (1)
 - 6. ROADWAY AND TRAFFIC DESIGN (1)

7. STREET LIGHTING - SEE SHEETS 102-118 FOR LIGHTING NOTES FOR SPECIFIC INTERSECTIONS. THE SIGNAL POLE MANUFACTURER SHALL PROVIDE A 3-INCH DIAMETER STRIP FIT TO ACCEPT THE PROPOSED LIGHT FIXTURE AT THE TOP OF THE SIGNAL POLES.

8. GENERAL

- A. ALL ELECTRICAL WORK AND MATERIALS SHALL BE SUBJECT TO INSPECTION AND APPROVAL OF THE STATE ELECTRICAL INSPECTOR. ALL WORK MUST MEET THE REQUIREMENTS OF THE NATIONAL ELECTRIC CODE.
- B. AFTER PROJECT ACCEPTANCE, THE TRAFFIC SIGNAL INSTALLATIONS SHALL BECOME THE PROPERTY AND RESPONSIBILITY OF THE CITY OF BURLINGTON.
- C. THE CONTRACTOR SHALL ACQUIRE ALL NECESSARY PERMITS AND MAKE ALL NECESSARY ARRANGEMENTS WITH THE UTILITY COMPANY TO PROVIDE A PERMANENT POWER SUPPLY TO EACH SIGNAL. THE METER SOCKETS SHALL BE INSTALLED ON THE SIDE OF THE CONTROLLER CABINETS. ALL INTERSECTIONS SHALL USE EXISTING POWER, EXTENDED AS NECESSARY.

DATUM
VERTICAL _____
HORIZONTAL _____

SURVEYED BY _____	DATE _____
DRAWN BY _____	DATE _____
SQUAD LEADER <u>JAW</u>	
DESIGN FILE NO. _____	89108
PRF FILE <u>89108</u>	DATE PLOTTED _____
PROJ. NAME	BURLINGTON
PROJ. NO.	MEGC 5000 (15)
SHEET 150 OF	252 SHEETS