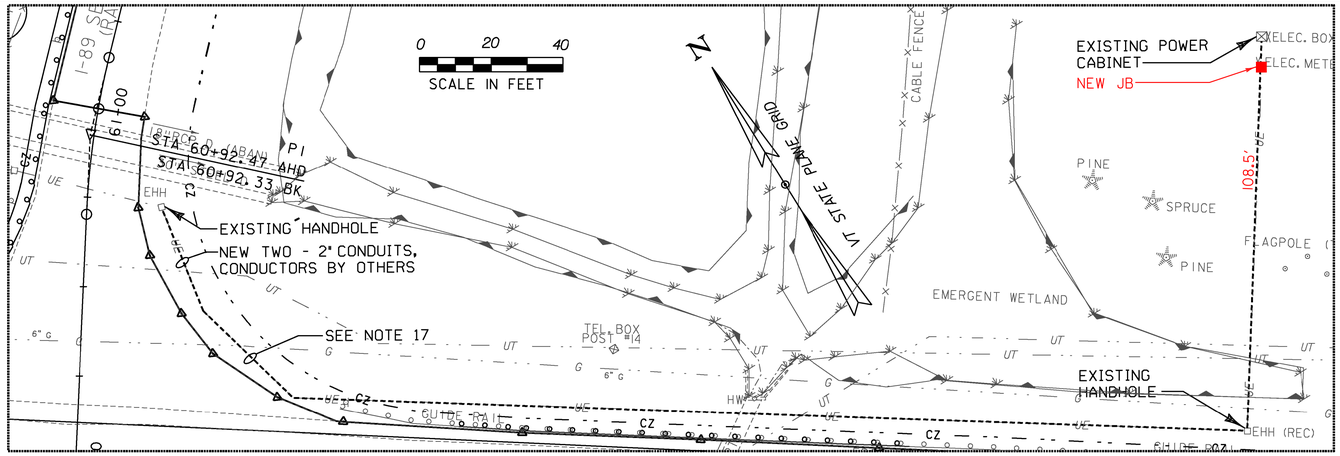
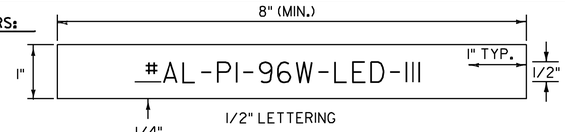


AREA LIGHTING DESIGN PARAMETERS:

THE AREA LIGHTING IS BASED ON THE TOWN OF RICHMOND VERMONT ZONING REGULATIONS. DATED 2010 - FEBRUARY (AMENDED). ZONED FOR AGRICULTURAL/RESIDENTIAL. MINIMUM ILLUMINATION LEVEL: NO LESS THAN 0.2 FC. UNIFORMITY RATIO: 4:1. MINIMUM CRI (COLOR RENDERING INDEX): 70.

LUMINAIRE L-1:

1. LIGHT DISTRIBUTION IS BASED ON VISIONAIRE LIGHTING PHOTOMETRIC DATA #EL2-1_T3_96L_350ma, FULL CUTOFF, TYPE R3 REFLECTOR, CATALOG #EL2-1-T3-96-350-55K
2. ALL NEW AREA LIGHT POLES AND LUMINAIRES FOR THIS PROJECT SHALL BE IN ACCORDANCE WITH SUBSECTION 753.01.
3. THE ABOVE PHOTOMETRIC DATA DRAWINGS WERE USED FOR DESIGN PURPOSES ON THIS PROJECT. OTHER MANUFACTURER'S PRODUCTS MAY BE SUBSTITUTED IF THE INSTALLED LUMINAIRE LIGHT UTILIZATION AND MINIMUM FC ON THE PARKING AREA ARE AT LEAST AS GREAT AS THAT INDICATED BY THE ABOVE PHOTOMETRICS.



LEGEND:
BLACK OR WHITE (NON-REFL.) - STAMPED PRIOR TO PRINTING/PAINTING.

BACKGROUND:
NATURAL ALUMINUM OR FLAT BLACK SURFACE, SAME AS POLE FINISH.

DETAILS FOR TAGS ATTACHED TO AREA LIGHT POLES

1. THE TAG SHALL BE MOUNTED ON ALL AREA LIGHTING POLES IN SUCH A MANNER AS TO NOT BE EASILY REMOVED, SUCH AS WELDED, RIVETED, OR BOLTED WITH VANDAL PROOF BOLTS.
2. THE LETTERS SHALL BE PUNCHED, STAMPED, ENGRAVED, OR PHOTO-ETCHED. PUNCHING, STAMPING OR ENGRAVING SHALL PENETRATE AT LEAST 1/2 THE BASE MATERIAL THICKNESS.
3. THE BASE MATERIAL FOR THE TAG SHALL BE ALUMINUM WITH A MINIMUM THICKNESS OF 0.100 INCHES.
4. THE TAG SHALL BE ATTACHED TO THE POLE ABOVE THE HANDHOLE, 6 INCHES MAXIMUM. IF POLE AS TRANSFORMER BASE ATTACH TAG TO COVER.
5. FIXTURE TAG SHALL READ #AL-PI-96W-LED-III

LIGHTING NOTES:

1. AT EACH LUMINAIRE POLE LOCATION SPECIFIED, INSTALL A CONCRETE POLE BASE, STAINLESS STEEL ANCHOR BOLTS, NUTS AND WASHERS (FLAT AND LOCK), ALUMINUM POLE, LUMINAIRE, LUMINAIRE ARM, PHOTOCELL AND WIRING.
2. INSTALL CONDUIT, SIZE TYPE AND LOCATION AS NOTED ON PLANS.
3. CIRCUIT CONDUCTORS SHALL BE CLEARLY IDENTIFIED BY CORROSION RESISTANT TAGS INDICATING CIRCUIT NUMBER AND PANEL SOURCES AT EVERY POLE BASE AND HANDHOLE.
4. ALL CONNECTIONS IN HANDHOLES SHALL BE MADE WITH INSULATED WATERPROOF MECHANICAL SCREW-TYPE CONNECTOR SUITABLE FOR DIRECT BURIAL. NO BARE OR COMPRESSION TYPE CONNECTORS MAY BE USED.
5. UTILIZE APPROVED DUAL-RATED PARALLEL TAP CONNECTOR WITH INSULATING COVER TO TAPS AT POLE BASE.
6. INSTALL RIGID PLASTIC OR STEEL SLEEVES AS PER THE PLAN.
7. INSTALL CONCRETE POLE BASES PER THE VERMONT AGENCY OF TRANSPORTATION STANDARDS E-180A AND E-180B.
8. INSTALL PULLBOXES PER VERMONT AGENCY OF TRANSPORTATION STANDARD E-173.
9. THE OFFSET FOR CONCRETE BASES (FACE OF CURB OR EDGE OF PAVEMENT TO CENTER OF CONCRETE BASE) TO BE A MINIMUM OF 2'-6" OR AS OTHERWISE NOTED ON THE PLANS.
10. WHEN CONCRETE BASES ARE INSTALLED IN SLOPING GROUND, THE GREATEST EXPOSED HEIGHT TO KEEP ALL OF THE TOP ABOVE GROUND MUST BE DOUBLED AND THEN ADDED TO THE MINIMUM DEPTH FOR THE TOTAL BASE HEIGHT.

    CARE SHOULD BE TAKEN WHERE CONCRETE BASES, DRAINAGE STRUCTURES OR UTILITIES ARE CLOSE TOGETHER.
11. ALL NEW AREA LIGHT POLES AND LUMINAIRES FOR THIS PROJECT SHALL BE IN ACCORDANCE WITH SUBSECTION 753.01.
12. WIRE SIZING AND NUMBER OF WIRES IS BASED ON INFORMATION OBTAINED FROM THE UTILITY WHICH INDICATES 240V, 1PH, 60HZ. POWER IS AVAILABLE FROM POWER CABINET FOR POWERING THE AREA LIGHTING. CONTRACTOR TO CONFIRM POWER REQUIREMENTS PRIOR TO PURCHASE AND INSTALLATION OF CONDUIT, WIRE AND LUMINAIRES, IF INFORMATION OBTAINED FROM THE UTILITY IS DIFFERENT THAN WHAT IS INSTALLED IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE WITH THE UTILITY TO INSTALL WHAT IS NECESSARY TO MAKE A COMPLETE AND OPERATIONAL SYSTEM.
13. CONNECT NEW CONDUCTORS TO EXISTING CIRCUIT BREAKER LOCATED IN THE EXISTING POWER CABINET.
14. THE LAST CONCRETE POLE BASE AT THE END OF EACH CIRCUIT AND SOME JUNCTION BOXES SHALL HAVE A CONDUIT SWEEP WITH CAP INSTALLED FOR FUTURE USE.
15. INSTALL FOUR NEW LOCKABLE NEMA 3R DISCONNECT SWITCHES (THREE 30A, ONE FOR THE AREA LIGHTING, ONE FOR THE EXISTING SB ON-RAMP LIGHT POLE, ONE SPARE, ONE SIZED FOR THE LOAD FROM THE SIGNAL CONTROL CABINET) MOUNTED TO STAINLESS STEEL STRUT SUPPORT SECURED TO CONCRETE PAD. STUB OUT A 2" CONDUIT 12" FROM CONCRETE PAD FROM SPARE DISCONNECT SWITCH A CAP. CONCRETE PAD THICKNESS TO BE 6" IN. BELOW THE FROST LINE.
16. REMOVE EXISTING CONDUIT AND WIRING FROM EXISTING LIGHT POLE INDICATED (LEAVE A 12" PIECE OF THE EXISTING CONDUIT FOR CONNECTION TO NEW CONDUIT) BACK TO EXISTING HANDHOLE INDICATED, EXTEND EXISTING WIRING FROM EXISTING HANDHOLE TO NEW DISCONNECT SWITCH, INSTALL A NEW 2" CONDUIT FROM NEW DISCONNECT SWITCH TO EXISTING LIGHT POLE (NEW CONDUCTORS SIZE TO MATCH EXISTING CONDUCTORS REMOVED). REMOVE EXISTING LUMINAIRES ON EXISTING LIGHT POLE AND INSTALL TWO NEW L-1 LUMINAIRES IN THE SAME ORIENTATION AS THE EXISTING. PROVIDE ALL NECESSARY EQUIPMENT/ACCESSORIES TO COMPLETE LUMINAIRE REPLACEMENT. CONNECT NEW LUMINAIRES TO NEW CONDUCTORS INSTALLED.
17. REUSE THE EXISTING TWO 2" CONDUITS FROM EXISTING POWER CABINET TO EXISTING HANDHOLE INDICATED. RUN TWO NEW 2" CONDUITS ALONG SIDE OF EXISTING 2" CONDUITS TO EXISTING POWER CABINET. UTILIZE THE EXISTING HANDHOLES ALONG THE CONDUIT ROUTE TO THE EXISTING POWER CABINET, PROVIDE TWO NEW 6" CONDUIT SLEEVES UNDER THE SB ON-RAMP FOR THE TWO NEW 2" CONDUITS INSTALLED ALONG SIDE THE EXISTING CONDUITS (WIRING TO BE INSTALLED BY OTHERS).
18. ALL ALUMINUM USED IN HOUSINGS AND BRACKETS SHALL BE MARINE GRADE ALLOY. ALL EXPOSED ALUMINUM SHALL BE ANODIZED AND FINISHED WITH A THERMOSET POWDERED COAT FINISH.
19. THE LUMINAIRES ON-BOARD CIRCUITRY SHALL INCLUDE SURGE PROTECTION DEVICES (SPD) TO WITHSTAND HIGH REPETITION NOISE TRANSIENTS AS A RESULT OF UTILITY LINE SWITCHING, NEARBY LIGHTNING STRIKES, AND OTHER INTERFERENCE.
20. THE LUMINAIRES AND ASSOCIATED ON-BOARD CIRCUITRY SHALL MEET CLASS A EMISSION LIMITS UNDER THE FEDERAL COMMUNICATIONS COMMISSION REGULATIONS CONCERNING THE EMISSION OF ELECTRONIC NOISE.
21. THE LUMINAIRE'S TOTAL HARMONIC DISTORTION (CURRENT AND VOLTAGE) INDUCED INTO AN AC POWER LINE BY A LUMINAIRE SHALL NOT EXCEED 20 PERCENT.
22. EACH LUMINAIRE SHALL BE FURNISHED WITH BUTTON-TYPE PHOTOCELL OR A LOCKING TYPE PHOTO CONTROL RECEPTACLE.

CONDUIT SLEEVE:

ALL CONDUIT RUNS UNDER ROADWAY SHALL BE INSTALLED IN RIGID PLASTIC OR STEEL PIPE SLEEVES. MINIMUM WALL THICKNESS FOR RIGID PLASTIC PIPE SLEEVES SHALL BE 1/35TH THE DIAMETER. THE SLEEVES SHALL EXTEND TO WITHIN 2'-0" OF THE SIDE OF A CONCRETE BASE OR PULLBOX. WHERE NO PULLBOX OR CONCRETE BASE IS PRESENT, THE SLEEVE SHALL EXTEND 4'-0" BEYOND THE OUTSIDE EDGE OF SHOULDER OR FACE OF CURB. BACKFILLING AROUND A SLEEVE SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS. THE SLEEVE SHALL BE IN ACCORDANCE WITH SUBSECTION 678.06.

WHEN JACKING A SLEEVE UNDER A ROADWAY IT SHALL BE STEEL WITH MINIMUM DIAMETER OF 8 INCHES AND MINIMUM WALL THICKNESS OF 3/8 INCH. ACTUAL LENGTH TO BE DETERMINED IN THE FIELD BY THE RESIDENT ENGINEER.

WIRE:

ALL WIRING SHALL BE IN ACCORDANCE WITH SUBSECTION 753.04.

CONDUIT:

A 2 INCH (I.D.) MINIMUM CONDUIT SHALL BE USED AT ALL LOCATIONS UNLESS OTHERWISE NOTED ON THE DRAWINGS. ALL CONDUIT SHALL BE AT LEAST SCHEDULE 40 PVC AND EXPOSED CONDUIT SHALL BE SCHEDULE 80 PVC.

EXISTING AREA LIGHTING SYSTEM REMOVAL:

AT THE DISCRETION OF VERMONT AGENCY OF TRANSPORTATION (VTRANS), REMOVED EXISTING LIGHT POLE BASES, LIGHT POLES, LUMINAIRES, PULL BOXES AND WIRING SHALL BE DELIVERED TO THE VTRANS DISTRICT 5 FACILITY AT 5 BARNES AVENUE COLCHESTER. EXISTING BURIED CONDUIT TO BE ABANDONED IN PLACE. UNWANTED LIGHT POLE BASES, LIGHT POLES, LUMINAIRES, PULL BOXES AND WIRING MUST BE DISPOSED OF BY THE CONTRACTOR. REMOVAL OF THE EXISTING AREA LIGHTING SHALL INCLUDE BACKFILLING OF HOLES AND TRENCHES AS A RESULT OF REMOVING THE ABOVE MENTIONED EQUIPMENT. ANY LIGHTING EQUIPMENT MENTIONED ABOVE 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 REMOVAL, TRANSPORTING, SALVAGING AND DISPOSAL OF EXISTING LIGHTING EQUIPMENT SHALL BE PAID FOR UNDER ITEM 900.620 SPECIAL PROVISION (REMOVAL OF EXISTING AREA LIGHTING SYSTEM).

EXISTING LIGHTING SYSTEM SHALL BE REMOVED UP TO THE EXISTING PULLBOX INDICATED ON THE PLAN. ALL EXISTING WIRING SHALL BE REMOVED TO THE EXISTING POWER CABINET. EXISTING CONDUIT FROM THE EXISTING PULLBOX INDICATED TO THE EXISTING POWER CABINET SHALL REMAIN AND BE REUSED.

GROUNDING:

ALL CONDUIT MUST INCLUDE A GROUNDING CONDUCTOR, AND RIGID STEEL CONDUIT SHALL BE PROPERLY CONNECTED AT THE JOINT SO AS TO BE WATERTIGHT AND MAINTAIN ELECTRICAL CONTINUITY AND HAVE GROUNDING BUSHINGS SO AS TO ACT AS A GROUND CONDUCTOR.

THE GROUNDING CONDUCTOR SHALL BE CONTINUOUS.

ALUMINUM WIRE SHALL NOT BE USED FOR GROUND WIRE.

NOTES:

1. DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE GENERAL ARRANGEMENT OF WORK. BASIC DESIGN CONCEPTS INDICATED ARE TO BE EITHER FOLLOWED OR BETTERED. WORK IS INTENDED TO INCLUDE ITEMS NECESSARY FOR PROPER OPERATION AND COMPLETION. FIELD VERIFY ALL LOCATIONS, ELEVATIONS, AND DIMENSIONS.
2. MATERIALS AND EQUIPMENT SHALL BE LISTED BY UNDERWRITERS' LABORATORIES AND SHALL BE INSTALLED IN ACCORDANCE WITH SUCH LISTINGS.
3. INSTALLATION SHALL BE MADE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
4. ALL MATERIALS AND INSTALLATION SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE, AND ALL CODES, REGULATIONS AND REQUIREMENTS OF ALL MUNICIPAL, STATE, FEDERAL AND OTHER PUBLIC OR PRIVATE AUTHORITIES WHICH HAVE JURISDICTION. IN EACH CASE, CODES ARE MINIMUM REQUIREMENTS.
5. ALL LUMINAIRES SHALL HAVE BIRD SPIKES.

PROJECT NAME: RICHMOND	
PROJECT NUMBER: CMG PARK (31)	
FILE NAME: z97c186e104.dgn	PLOT DATE: 5/1/2013
PROJECT LEADER: YASSER RIZK	DRAWN BY: M. STEWART
DESIGNED BY: M. STEWART	CHECKED BY: Y. RIZK
LIGHTING GENERAL NOTES	SHEET 114 OF 133