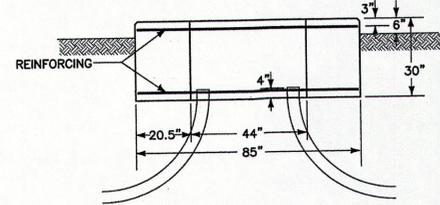
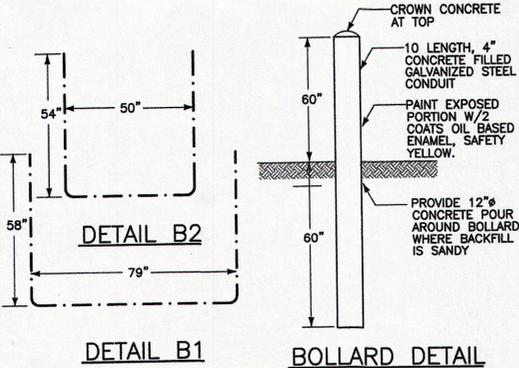


PLAN



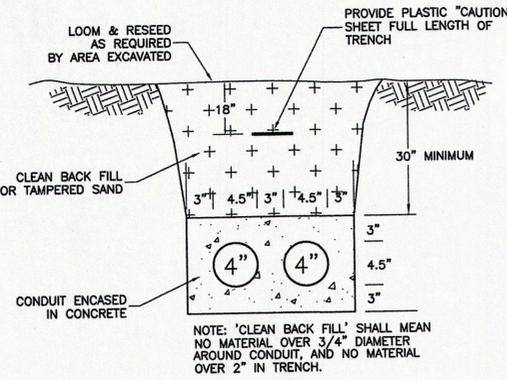
SECTION



| MK. # | QTY. | LENGTH | TOTAL |
|-------|------|--------|--------|
| S1 | 6 | 2'-11" | 17'-6" |
| S2 | 8 | 6'-9" | 54'-0" |
| S3 | 8 | 2'-0" | 16'-0" |
| S4 | 4 | 4'-9" | 19'-0" |
| B1 | 2 | 16'-3" | 32'-6" |
| B2 | 2 | 13'-2" | 26'-4" |

- FOUNDATION CONCRETE TO CONFORM TO NEES STD. 0211, MIX M-4. ALL EXPOSED EDGES OF FOUNDATION TO HAVE 3/4" CHAMFER.
- ALL REINFORCING TO BE #4, GRADE 60 BARS, CONFORMING TO ASTM STD. #A-615. KEEP REINFORCING MIN. 3" FROM FACE OF CONCRETE. EXTENDING 12" BEYOND ALL EDGES OF FOUNDATION.
- POUR FOUNDATION ON 12" DEEP BED OF WELL COMPACTED GRAVEL. GROUND RODS TO BE 3/4" X 8", GALVANIZED STEEL LEAVE 5" EXTRA GROUND CABLE AT (2) LOCATIONS IN CONDUIT OPENINGS. CONDUIT SWEEPS SHALL BE GALVANIZED RIGID STEEL 36" RADIUS.
- ALSO REFER TO NEES STANDARDS 0211 ISSUE H, 2579 ISSUE A, 2579 ISSUE A, 2582 ISSUE F AND 2584 ISSUE C.

TRANSFORMER FOUNDATION DETAIL
75 - 500 KVA
NO SCALE



PRIMARY FEEDER TRENCH DETAIL
NO SCALE

- NOTES:
- PROVIDE ALL APPURTENANCES REQUIRED BY THE LOCAL UTILITY.
 - RISER PIPES SHALL BE LOCATED ON A STREET QUARTER OF POLE & WHEN POSSIBLE ON THE QUARTER AWAY FROM APPROACHING TRAFFIC.
 - RISER PIPES SHOULD NOT BE PLACED ON SAME POLE W/ COMMUNICATION RISER IF AVAILABLE.
 - GROUND METAL RISER PIPE TO ARRESTER GROUND LEAD IF AVAILABLE. OTHERWISE, INSTALL A DRIVEN GROUND W/ GROUND WIRE AND MOLDING EXTENDING TO TOP OF STEEL PIPE.

RISER POLE DETAIL
N.T.S.

| LIGHTING FIXTURE SCHEDULE | | | | | | | |
|---------------------------|-----------------|----------------------------|----------------|--------------|-------------|---------|--|
| TYPE | MANUFACTURER | CATALOG NUMBER | LAMP TYPE | NO. OF LAMPS | INPUT VOLTS | REMARKS | |
| A | COLUMBIA | P424-332G-LD3X6S-EU | F32T8/735 | 3 | 120 | 96 | 2'X4' RECESSED BASKET INDIRECT FIXTURE PROVIDE BALLASTS FOR 3-LEVEL SWITCHING |
| A1 | COLUMBIA | P424-232G-LD3X6S-EU | F32T8/735 | 2 | 120 | 62 | 2'X4' RECESSED BASKET INDIRECT FIXTURE |
| B | COLUMBIA | P422-317G-LD3X3S-EU | F17T8/735 | 3 | 120 | 60 | 2'X2' RECESSED BASKET INDIRECT FIXTURE |
| C | SHAPER LIGHTING | 47430-CFL/4/40-(SBA) 1S24 | FT40W/2G11/835 | 4 | 120 | 176 | PENDANT FIXTURE ON 24" STEM, FINISH SBA |
| C1 | SHAPER LIGHTING | 47424-CFL/4/27-(SBA) 1S24 | FT27W/2G11/835 | 4 | 120 | 120 | PENDANT FIXTURE ON 24" STEM, FINISH SBA |
| C2 | SHAPER LIGHTING | 48212-CFL/4/40-(SBA) (SBA) | FT40W/2G11/835 | 4 | 120 | 176 | PENDANT FIXTURE, FINISH & HEIGHT SBA |
| D | PRESCOLITE | LF6CFV26EB 6CFV | CFTR26W/835 | 1 | 120 | 26 | 6" DOWNLIGHT |
| D1 | PRESCOLITE | LF6CFV26EB 6CFV CL | CFTR26W/835 | 1 | 120 | 26 | 6" LENSED DOWNLIGHT |
| D2 | PRESCOLITE | LF6CFV26EB 6CFV WW | CFTR26W/835 | 1 | 120 | 26 | 6" WALL WASH |
| F | COLUMBIA | CSR4-232-U-EU | F32T8/735 | 2 | 120 | 62 | 4' WRAPAROUND |
| F1 | COLUMBIA | LU4-232-EU-WL | F32T8/735 | 2 | 120 | 62 | 4' GASKETED VAPERPROOF INDUSTRIAL |
| G | SBA | | CFTR26W/835 | 2 | 120 | 52 | WALL SCENCE |
| H | SBA | | | 1 | 120 | 1 | FLOOD LIGHT |
| J | LPC | LP65978_232E | F32T8/735 | 2 | 120 | 62 | SURFACE MOUNTED FLUORESCENT |
| K | SBA | | | 1 | 120 | 75 | EXTERIOR WALL SCENCE |
| T | HI-LITE | H6225 B91 RIB 150HPS OBB | 150HPS | 1 | 120 | 188 | SURFACE MOUNTED HPS |
| U | COLUMBIA | UC48-132-EU | F32T8/735 | 1 | 120 | 34 | UNDERCABINET LIGHT |
| W | HUBBELL | LMC-100E-B_-LP | 100MH | 1 | 120 | 120 | WALL PACK, COLOR BY ARCHITECT |
| ⊕ | DUAL-LITE | LE_R_E-1 * | LED | - | 120 | 3.3 | EDGE-LIT EXIT SIGN WITH NICAD BATTERY BACK-UP, HOUSING FINISH SBA. |
| ⊕ | DUAL-LITE | LZ25N-12V-10W-1 | 12W HIT | 2 | 120 | 25 | NICAD EMERGENCY LIGHTING BATTERY UNIT WHERE INDICATED PROVIDE UNIT W/REMOTE HEADS SUITABLE FOR WET LOCATIONS |

NOTE - PROVIDE LAMPS AS SCHEDULED ABOVE FOR ALL FIXTURES.
* - PROVIDE FACES AND DIRECTIONAL INDICATORS AS INDICATED ON THE PLANS.

LEGEND

- S₀ 20 AMPERE, 120/277 VOLT, SINGLE POLE SWITCH LETTER INDICATES FIXTURES CONTROLLED
- S₃ 20 AMPERE, 120/277 VOLT, THREE WAY SWITCH
- S₀ 20 AMPERE, 120/277 VOLT, OCCUPANCY SENSOR WALL SWITCH
- S_T 20 AMPERE, 120/277 VOLT, TIMER WALL SWITCH
- OC 20 AMPERE, 120/277 VOLT, CEILING MOUNTED DUAL TECHNOLOGY OCCUPANCY SENSOR. UNO. "U" DENOTES ULTRASONIC
- TC TIME CLOCK/CONTACTOR
- PHOTOCELL
- OVERIDE SWITCH
- LED EXIT SIGN
- EBU EMERGENCY BATTERY LIGHTING UNIT
- DUAL REMOTE HEADS, "WP" DENOTES SUITABLE FOR WET LOCATIONS
- FACP FIRE ALARM CONTROL PANEL
- FAA FIRE ALARM ANNUNCIATOR
- F FIRE ALARM RADIO MASTERBOX
- K KEY BOX
- SD SMOKE DETECTOR, PHOTO TYPE UNO "D" DENOTES DUCT TYPE DETECTOR
- HDT HEAT DETECTOR, 135" UNO
- F MANUAL PULL STATION
- CM CONTROL MODULE
- MM MONITOR MODULE
- AS AUDIO-STROBE UNIT
- STROBE UNIT
- RTS REMOTE TEST STATION
- LED REMOTE ALARM INDICATOR
- SPRINKLER TAMPER SWITCH
- SPRINKLER FLOW SWITCH
- SPRINKLER PRESSURE SWITCH
- EXTERIOR BEACON
- MAGNETIC DOOR HOLDER
- NEMA 5-20R DOUBLE DUPLEX RECEPTACLE
- NEMA 5-20R DUPLEX RECEPTACLE "GF" DENOTES GROUND FAULT INTERRUPTING
- NEMA 5-20R SINGLE RECEPTACLE

ABBREVIATIONS

- 3R - NEMA 3R RATED
- A - AMPERE
- A/C - AIR CONDITIONER
- AF - AMPERE FRAME
- AFF - ABOVE FINISH FLOOR
- AFG - ABOVE FINISH GRADE
- AHU - AIR HANDLING UNIT
- AT - AMPERE TRIP
- AWG - AMERICAN WIRE GAGE
- C - CONDUIT
- CB - CIRCUIT BREAKER
- COMM - COMMUNICATION
- CT - COOLING TOWER
- CU - CONDENSING UNIT
- CUH - CABINET UNIT HEATER
- ECH - ELECTRIC CABINET HEATER
- EF - EXHAUST FAN
- EMT - ELECTRIC METALLIC TUBING
- ETH - ELECTRIC WATER HEATER
- ETR - EXISTING TO REMAIN
- FA - FIRE ALARM
- FC - FAN COIL
- FP - FIRE PROTECTION
- GF - GROUND FAULT CIRCUIT INTERRUPTING
- G - GND - GROUND
- HP - HORSE POWER
- HVAC - HEATING VENTILATING AND AIR CONDITIONING
- HWB - HOT WATER BOILER
- KVA - KILOWATT-AMPERE
- KW - KIKOWATT
- LC - LOADCENTER
- MIN - MINIMUM
- MLO - MAIN LUG ONLY
- MSB - MAIN SWITCHBOARD
- OC - ON CENTER
- P - POLE, PUMP
- PH - PHASE
- PVC - POLYVINYL CHLORIDE CONDUIT
- RMC - RIGID METAL CONDUIT
- SBA - SELECTED BY ARCHITECT
- SP - SPRINKLER
- RTS - REMOTE TEST STATION
- TBR - TO BE REMOVED
- TC - TIME CLOCK
- TYP - TYPICAL
- UNO - UNLESS NOTED OTHERWISE
- V - VOLT
- VA - VOLT-AMPERE
- VAV - VARIABLE AIR VOLUME
- VFD - VARIABLE FREQUENCY DRIVE
- WP - WEATHERPROOF

BRANCH CIRCUIT AND FEEDER SCHEDULE

| NOM. AMPACITY | QTY. OF COND. | PHASE AND/OR NEUTRAL CONDUCTORS AND GROUND | RACEWAY SIZE | |
|---------------|---------------|--|--------------|-----------|
| | | | EMT | RMC |
| 30 | 2 | (2)#10 & 1#10 GND. | 3/4" | 3/4" |
| | 3 | (3)#10 & 1#10 GND. | 3/4" | 3/4" |
| | 4 | (4)#10 & 1#10 GND. | 3/4" | 3/4" |
| | 2 | (2)#8 & 1#10 GND. | 3/4" | 3/4" |
| 40 | 3 | (3)#8 & 1#10 GND. | 3/4" | 3/4" |
| | 4 | (4)#8 & 1#10 GND. | 3/4" | 3/4" |
| | 2 | (2)#8 & 1#10 GND. | 3/4" | 3/4" |
| | 3 | (3)#8 & 1#10 GND. | 3/4" | 3/4" |
| 50 | 4 | (4)#8 & 1#10 GND. | 3/4" | 3/4" |
| | 2 | (2)#6 & 1#10 GND. | 3/4" | 3/4" |
| | 3 | (3)#6 & 1#10 GND. | 3/4" | 3/4" |
| | 4 | (4)#6 & 1#10 GND. | 3/4" | 3/4" |
| 60 | 2 | (2)#4 & 1#8 GND. | 1" | 1" |
| | 3 | (3)#4 & 1#8 GND. | 1" | 1" |
| | 4 | (4)#4 & 1#8 GND. | 1 1/4" | 1 1/4" |
| | 2 | (2)#3 & 1#8 GND. | 1" | 1" |
| 100 | 3 | (3)#3 & 1#8 GND. | 1 1/4" | 1 1/4" |
| | 4 | (4)#3 & 1#8 GND. | 1 1/4" | 1 1/4" |
| | 3 | (3)#1 & 1#6 GND. | 1 1/2" | 1 1/2" |
| | 4 | (4)#1 & 1#6 GND. | 1 1/2" | 1 1/2" |
| 150 | 3 | (3)#1/0 & 1#6 GND. | 1 1/2" | 1 1/2" |
| | 4 | (4)#1/0 & 1#6 GND. | 1 1/2" | 1 1/2" |
| | 3 | (3)#2/0 & 1#6 GND. | 1 1/2" | 1 1/2" |
| | 4 | (4)#2/0 & 1#6 GND. | 2" | 2" |
| 175 | 3 | (3)#3/0 & 1#6 GND. | 2" | 2" |
| | 4 | (4)#3/0 & 1#6 GND. | 2" | 2" |
| | 3 | (3)#4/0 & 1#4 GND. | 2" | 2" |
| | 4 | (4)#4/0 & 1#4 GND. | 2 1/2" | 2 1/2" |
| 250 | 3 | (3)-250 KCMIL & 1#4 GND. | 2" | 2" |
| | 4 | (4)-250 KCMIL & 1#4 GND. | 2 1/2" | 2 1/2" |
| | 3 | (3)-350 KCMIL & 1#4 GND. | 2 1/2" | 2 1/2" |
| | 4 | (4)-350 KCMIL & 1#4 GND. | 2 1/2" | 3" |
| 300 | 3 | (3)-500 KCMIL & 1#3 GND. | 2 1/2" | 3" |
| | 4 | (4)-500 KCMIL & 1#3 GND. | 2 1/2" | 3" |
| | 3 | (3)-500 KCMIL & 1#3 GND. | 2 1/2" | 3" |
| | 4 | (4)-500 KCMIL & 1#3 GND. | 3" | 3" |
| 350 | 3 | (3)-250 KCMIL & 2#2 GND. | (2)2 1/2" | (2)2 1/2" |
| | 4 | (4)-250 KCMIL & 2#2 GND. | (2)2 1/2" | (2)2 1/2" |
| | 3 | (3)-350 KCMIL & 2#1 GND. | (2)2 1/2" | (2)2 1/2" |
| | 4 | (4)-350 KCMIL & 2#1 GND. | (2)2 1/2" | (2)3" |
| 400 | 3 | (3)-500 KCMIL & 2#1/0 GND. | (2)2 1/2" | (2)3" |
| | 4 | (4)-500 KCMIL & 2#1/0 GND. | (2)3" | (2)3" |
| | 3 | (3)-400 KCMIL & 3#2/0 GND. | (3)2 1/2" | (3)3" |
| | 4 | (4)-400 KCMIL & 3#2/0 GND. | (3)3" | (3)3" |
| 1000 | 3 | (3)-600 KCMIL & 3#3/0 GND. | (3)3 1/2" | (3)3 1/2" |
| | 4 | (4)-600 KCMIL & 3#3/0 GND. | (3)3 1/2" | (3)3 1/2" |
| | 3 | (3)-600 KCMIL & 4#4/0 GND. | (4)3" | (4)3" |
| | 4 | (4)-600 KCMIL & 4#4/0 GND. | (4)3 1/2" | (4)3 1/2" |
| 1600 | 3 | (3)-600 KCMIL & 4#4/0 GND. | (4)3 1/2" | (4)3 1/2" |
| | 4 | (4)-600 KCMIL & 4#4/0 GND. | (4)3 1/2" | (4)3 1/2" |
| | 3 | (3)-600 KCMIL & 4#4/0 GND. | (4)3 1/2" | (4)3 1/2" |
| | 4 | (4)-600 KCMIL & 4#4/0 GND. | (4)3 1/2" | (4)3 1/2" |

NOTE - RACEWAY SIZE BASED ON EMT/RMC TYPE THWN COPPER CONDUCTORS. ADJUST AS REQUIRED FOR OTHER RACEWAY OR CONDUCTOR TYPES.

KANG ASSOCIATES, INC
339 BOSTON POST ROAD
SUDBURY, MA

WESTFORD TOWN HALL
ADDITION & RENOVATIONS
55 MAIN STREET, WESTFORD, MA

DATE: 09/02/09
SCALE: NONE

LEGEND AND GENERAL NOTES

E1

GENERAL NOTES

- ALL WORK SHALL COMPLY COMPLETELY WITH THE MASSACHUSETTS ELECTRICAL CODE, AND ALL LOCAL ORDINANCES AND REQUIREMENTS.
- THE DRAWINGS ARE GENERALLY DIAGRAMMATIC. PROVIDE ALL MATERIAL, LABOR AND EQUIPMENT FOR COMPLETE AND OPERATIONAL SYSTEMS.
- APPLY FOR, OBTAIN AND PAY FOR ALL REQUIRED PERMITS. REQUEST, SCHEDULE, JURISDICTION.
- PROVIDE A ONE YEAR MATERIAL AND LABOR GUARNTY AGAINST DEFECTS IN MATERIAL AND WORKMANSHIP.
- ALL MATERIAL INCORPORATED IN THE WORK SHALL BE UL LISTED FOR THE INTENDED USE.
- VISIT THE SITE PRIOR TO SUBMITTING BID TO NOTE SCOPE OF DEMOLITION WORK, AND CONDITIONS UNDER WHICH NEW WORK MUST BE INSTALLED.
- CONDUCT ALL WORK IN ACCORDANCE WITH THE OWNERS PHASING REQUIREMENTS. MAINTAIN COMPLETE OPERATION OF THE EXISTING SYSTEMS, UNTIL SUCH TIME AS THE SYSTEM IS SHUT DOWN FOR OVER TO NEW SYSTEMS. PROVIDE ALL TEMPORARY WORK, INCLUDING BUT NOT LIMITED TO CABLING AND CONNECTIONS AS REQUIRED.
- PROVIDE ALL GROUNDING AS REQUIRED BY THE MASSACHUSETTS ELECTRICAL CODE.