

















































GENERAL NOTES	
1.	ALL RACEWAY SHALL BE CONCEALED UNLESS OTHERWISE NOTED.
2.	THE SIZES OF ELECTRICAL RACEWAY SHALL BE AS INDICATED ON THE CONTRACT DRAWINGS AND SHALL MEET THE REQUIREMENTS OF THE LOCAL ELECTRIC CODE, 3/4" MINIMUM, OR AS SHOWN ELSEWHERE.
3.	ALL WIRE AND CABLE FOR POWER, LIGHTING, CONTROL INDICATION, ALARM, SIGNAL AND COMMUNICATION SYSTEM, UNLESS OTHERWISE NOTED, SHALL HAVE TYPE THHN INSULATION AND SHALL BE RATED FOR 600V MINIMUM.
4.	ARCHITECTURAL DRAWINGS, INDICATE REQUIRED LOCATION OF WIRING DEVICES.
5.	MINIMUM WIRE SHALL BE #12 FOR BRANCH CIRCUIT RUNS UP TO 100' TO THE LAST OUTLET, OVER 100'-#10, OVER 150'-#8 AND INCREASE CONDUIT SIZE AS REQUIRED BY LOCAL ELECTRICAL CODE.
6.	ALL WIRING INSTALLATION SHALL BE COLOR CODED AS PER CODE. CONDUCTORS SIZED #10 AND LOWER SHALL BE SOLID, #8 AND HIGHER STRANDED.
7.	PROVIDE EMPTY CONDUIT SYSTEM FOR TELEPHONE, COMPUTERS AND T.V. SYSTEMS. EQUIPMENT CABLING, TERMINATION DEVICES ETC. SHALL BE FURNISHED AND INSTALLED BY OTHERS. ALL CONDUITS SHALL BE 3/4" SIZE. PROVIDE #14 DRAG WIRE IN ALL EMPTY CONDUITS.
8.	ALL WIRING DEVICES, PANEL, BOARDS, DISTRIBUTION BOARDS, MOTORS, ETC., SHALL BE GROUNDED AS PER LOCAL ELECTRIC CODE.
9.	ALL WORK SHALL BE INSTALLED IN FULL ACCORDANCE WITH LOCAL CODES, STATE AND LOCAL AUTHORITIES, FILE ALL PLANS, OBTAIN ALL PERMITS, PAY ALL FEES, SCHEDULE ALL INSPECTIONS, MAKE ALL TESTS AND OBTAIN ALL APPROVALS REQUIRED. THE ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE LATEST EDITION OF NATIONAL ELECTRIC CODE AND LOCAL AUTHORITIES HAVING JURISDICTION. ALL COMPONENTS SHALL BE UL APPROVED AND LISTED.
10.	WHERE CONFLICTS ARE FOUND BETWEEN DRAWINGS, SPECIFICATIONS, & LAWS & ORDINANCES, THE MOST STRINGENT SHALL APPLY.
11.	SUBMIT FOR APPROVAL, COMPLETE SHOP DRAWINGS, LIST OF MATERIALS AND DETAILED DATA OF EQUIPMENT GIVING THE MANUFACTURERS NAME, CATALOG NUMBER, SIZE, CAPACITY AND DIMENSIONS. NO EQUIPMENT SHALL BE INSTALLED OR FABRICATED WITHOUT OBTAINING APPROVAL.
12.	ALL MOTORS SHALL BE SUPPLIED WITH MOTOR STARTERS BY OTHERS, UNLESS CLEARLY INDICATED OTHERWISE ON THE CONTRACT DOCUMENTS. THREE PHASE MOTORS SHALL BE PROVIDED WITH A COMBINATION MAGNETIC MOTOR STARTER WITH AMBIENT COMPENSATED OVERLOAD HEATERS IN EACH UNGROUNDED LEG. SHORT CIRCUIT PROTECTION SHALL BE BY MOP OR FUSED DISCONNECT SWITCH AS SHOWN OR SPECIFIED.
13.	MANUALLY CONTROLLED SINGLE PHASE MOTORS SHALL HAVE FULLY RATED MANUAL MOTOR STARTER SWITCHES WITH O.L. HEATERS IN EACH UNGROUNDED LEG.
14.	CIRCUIT RUNS ARE SHOWN DIAGRAMMATICALLY ONLY AND SHALL BE INSTALLED IN A MANNER TO PREVENT CONFLICTS WITH EQUIPMENT AND STRUCTURAL CONDITIONS. CONDUITS AND CABLES SHALL BE INSTALLED PARALLEL TO BEAMS AND WALLS.
15.	CONDUITS SHALL BE TERMINATED SO AS TO PERMIT NEAT CONNECTIONS TO MOTORS AND OTHER EQUIPMENT.
16.	THE QUANTITY AND SIZE OF WIRES AND CONDUIT SHOWN ON DRAWINGS AND WIRING DIAGRAMS REPRESENT A SUGGESTED ARRANGEMENT BASED UPON SELECTED STANDARD COMPONENTS OF ELECTRICAL EQUIPMENT. MODIFICATIONS ACCEPTABLE TO THE ENGINEER MAY BE MADE BY THE CONTRACTOR TO ACCOMMODATE EQUIPMENT ACTUALLY PURCHASED. THE BASIC SEQUENCE AND METHOD OF CONTROL MUST BE MAINTAINED AS INDICATED ON THE DRAWINGS.
17.	SWITCHES SHALL BE MOUNTED 4'-0" MAX ABOVE FINISHED FLOOR UNLESS OTHERWISE NOTED. RECEPTACLES SHALL BE MOUNTED 1'-6" ABOVE FINISHED FLOOR UNLESS OTHERWISE NOTED.
18.	ALL PANELBOARDS SHALL BE MOUNTED SO THAT THE DISTANCE FROM THE TOP CIRCUIT BREAKER OPERATING HANDLE TO THE FLOOR SHALL NOT EXCEED 6'-6".
19.	REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LIGHT FIXTURE LOCATIONS. LIGHTING FIXTURES SHALL BE MOUNTED ACCORDING TO THE MOUNTING HEIGHT GIVEN ON THE ARCHITECTURAL DRAWINGS. WITH THE DISTANCE BEING MEASURED FROM THE BOTTOM OF THE LIGHTING FIXTURE TO THE FINISHED FLOOR.
20.	CONDUIT AND WIRE (NOT SHOWN) FOR THE HVAC CONTROL EQUIPMENT AND MISCELLANEOUS DEVICES, OUTLET, SWITCHES, JUNCTION, PULL AND TERMINAL BOXES SHALL BE PROVIDED WITH NEMA ENCLOSURE SUITABLE TO THE ENVIRONMENT.
21.	ALL CONDUIT RUNS CROSSING EXPANSION JOINTS SHALL HAVE EXPANSION OR EXPANSION AND DETECTION TYPE FITTINGS.
22.	SWITCHGEAR DESIGNATIONS ARE INTENDED TO BE INTERPRETED AS INDICATED BELOW. BLANK: NOT INTENDED FOR USE. PLATE ONLY SPACE: CONTAINS NECESSARY BUS AND HARDWARE FOR FUTURE ADDITION OF BREAKERS OR STARTERS WITHIN SIZE RANGE SHOWN. SPARE: CONTAINS A COMPLETE BREAKER OR STARTER INSTALLED. SIZE AS INDICATED AVAILABLE FOR FUTURE USE.
23.	CONDUIT FOR WIRING CONCEALED IN FLOOR SLABS, OR BELOW GRADE SHALL BE 1" MINIMUM.
24.	CONFIRM EXACT POWER REQUIREMENTS AND CONNECTION LOCATIONS FOR ALL EQUIPMENT PROVIDED BY OTHERS WITH RESPECTIVE CONTRACTOR AND GENERAL CONTRACTOR PRIOR TO INSTALLATION.







BRANCH CIRCUIT WIRING	
1.	WIRING SHOWN ON DRAWINGS IS FOR SPECIFIC ROUTES OR SPECIAL CONDITIONS.
2.	WIRING AND CONDUIT SHALL BE REQUIRED BETWEEN ALL OUTLETS INDICATED WITH CIRCUIT NUMBERS AND PANEL DESIGNATIONS.
3.	ALL SWITCH CONTROLS SHALL BE PROVIDED WITH WIRING AND CONDUIT AS REQUIRED.
4.	FOR CLARITY, ALL BRANCH CIRCUIT WIRE AND CONDUIT IS NOT SHOWN. HOWEVER, A COMPLETE BRANCH CIRCUIT WIRING SYSTEM IS TO BE INSTALLED IN ACCORD WITH THE DEVICES AND CIRCUIT NUMBERS SHOWN.
5.	ALL BRANCH CIRCUITS SHALL HAVE DEDICATED NEUTRALS. NO SHARED NEUTRALS WILL BE ALLOWED. A GREEN GROUNDING CONDUCTOR SHALL BE RUN WITH ALL CIRCUITS. VERIFY CONDUIT SIZE TO ENSURE IT CAN ACCOMMODATE ALL PHASE, NEUTRAL AND GROUND CONDUCTORS.

MEP COORDINATION	
1.	ALL ELECTRICALLY POWERED HVAC, PLUMBING AND FIRE PROTECTION EQUIPMENT TO BE PROVIDED WITH LOCAL DISCONNECT SWITCHES. THE SWITCHES SHALL BE PROVIDED BY THE E.C. UNLESS NOTED OTHERWISE.
2.	DUCT MOUNTED SMOKE DETECTORS: ARE TO BE SUPPLIED BY THE E.C. (FIRE ALARM EQUIPMENT SUPPLIER). INSTALLED IN THE DUCTWORK BY THE HVAC SUBCONTRACTOR. WIRED BY THE E.C.
3.	ALL MOTOR STARTERS ARE TO BE FURNISHED BY THE HVAC, PLUMBING OR FIRE PROTECTION SUBCONTRACTOR (TO DIVISION 16 SPECIFICATION REQUIREMENTS). INSTALLED AND WIRED BY THE E.C. STARTERS WILL BE MAGNETIC ACROSS THE LINE (AMBIENT COMPENSATED MOTOR OVERLOAD HEATERS IN ALL CURRENT CARRYING CONDUCTORS) WITH HOA SWITCH, MANUAL TOGGLE TYPE FOR SINGLE PHASE MOTORS WHICH DO NOT REQUIRE AUTOMATIC CONTROL.
4.	SPEED CONTROL: FOR FRACTIONAL HORSEPOWER MOTORS THAT REQUIRE SPEED CONTROL, THE HVAC CONTRACTOR SHALL PROVIDE A LINE VOLTAGE SPEED CONTROL SWITCH.
5.	SPEED CONTROL: VARIABLE SPEED DRIVES (VSD) ARE SUPPLIED BY THE DRIVEN EQUIPMENT'S SUPPLIER, INSTALLED AND WIRED BY THE E.C.

FIRE ALARM LEGEND	
SYMBOLS	DESCRIPTION
	MASTER BOX
	FIRE ALARM CONTROL PANEL
	FIRE ALARM REMOTE ANNUNCIATOR
	PULL STATION
	SMOKE DETECTOR
	SMOKE DETECTOR 115V AC LOCAL DEVICE WITH SOUNDER BASE
	HEAT DETECTOR, FIXED
	HEAT DETECTOR, FIXED 135 DEGREES TEMPERATURE
	STROBE 15 DENOTES CANDELA RATING
	COMBINATION HORN-STROBE 15 DENOTES CANDELA RATING
	MINI HORN
	REMOTE TEST SWITCH WITH LED INDICATOR
	REMOTE ALARM INDICATOR LED
	FLOW SWITCH
	TAMPER SWITCH
	CONTROL MODULE
	MONITOR MODULE

POWER LEGEND	
SYMBOLS	DESCRIPTION
	RECEPTACLE, DUPLEX
	MICROWAVE OUTLET, COORDINATE EXACT LOCATION WITH ARCHITECTURAL DETAILS
	RECEPTACLE, DOUBLE DUPLEX
	DUPLEX RECEPTACLE ARC FAULT
	RECEPTACLE, DUPLEX GFCI
	DUPLEX GFCI RECEPTACLE MOUNTED 6" ABOVE COUNTER
	DUPLEX GFCI RECEPTACLE WITH WEATHER PROOF COVER/BOX
	SPECIALTY OUTLET, SEE SCHEDULE
	SURFACE PANEL, NORMAL POWER
	FLUSH PANEL, NORMAL POWER
	HOMERUN TO PANEL
	FUSED DISCONNECT SWITCH, FUSE SIZE TO MATCH MFR. RECOMMENDATIONS
	SAFETY SWITCH, HORSEPOWER RATED
	JUNCTION BOX
	FAN
	MOTOR
	PUMP
	CONNECTION TO GROUND
	METER, UTILITY
	CARBON MONOXIDE DETECTOR

LIGHTING LEGEND	
SYMBOLS	DESCRIPTION
\$	SINGLE POLE SWITCH
\$0	DIMMER SWITCH, WATTAGE TO MATCH RESPECTIVE CIRCUIT
\$3	3-WAY SWITCH
\$4	4-WAY SWITCH
	BATHROOM FAN LIGHT
	RECESSED DOWN LIGHT
	WALL MOUNTED LIGHT
	2" STRIP CEILING MOUNTED LIGHT
	WALL WASHER
	EMERGENCY FIXTURE, DENOTED BY SHADING
	WALL SCONCE
	EMERGENCY LIGHTING BATTERY WITH 2 LAMP HEADS
	CEILING MOUNTED EXIT ARROW INDICATES DIRECTION
	WALL-MOUNTED EXIT ARROW INDICATES DIRECTION
	REMOTE EMERGENCY ADJUSTABLE WALL FIXTURE WITH 2 LAMP HEADS PHOTOCELL

COMMUNICATION LEGEND	
SYMBOLS	DESCRIPTION
	TELEPHONE OUTLET WITH 3/4" C. AND DRAG LINE RUN TO ACCESSIBLE LOCATION FOR FUTURE CABLING
	WALL TELEPHONE OUTLET WITH 3/4" C. AND DRAG LINE RUN TO ACCESSIBLE LOCATION FOR FUTURE CABLING
	DATA OUTLET WITH 3/4" C. AND DRAG LINE RUN TO ACCESSIBLE LOCATION FOR FUTURE CABLING
	TELEPHONE/DATA OUTLET WITH 3/4" C. AND DRAG LINE RUN TO ACCESSIBLE LOCATION FOR FUTURE CABLING
	CATV OUTLET WITH 3/4" C. AND DRAG LINE RUN TO ACCESSIBLE LOCATION FOR FUTURE CABLING
	MEDIA ACCESS PANEL (FLUSH MOUNTED)

SUBSCRIPTS & ABBREVIATIONS	
AF	ARC FAULT
AF	ABOVE FINISHED FLOOR
AG	AMPERES INTERRUPTING CAPACITY
ATS	AUTOMATIC TRANSFER SWITCH
C	CONDUIT
CB	CIRCUIT BREAKER
CP	CONTROL PANEL
EC	ELECTRICAL CONTRACTOR
EMR	ELEVATOR MACHINE ROOM
EP	EMERGENCY POWER
ER	EXISTING DEVICE TO BE REMOVED
EX	EXISTING DEVICE TO BE RELOCATED
EXR	EXISTING DEVICE TO REMAIN
FBO	FURNISHED BY OTHERS
FAOP	FIRE ALARM CONTROL PANEL
GC	GENERAL CONTRACTOR
GCP	GENERATOR CONTROL PANEL
GEC	GROUNDING ELECTRIC CONDUCTOR
GFI	GROUND FAULT INTERRUPTER (GFI)
HOA	HANDS OFF AUTO SWITCH
LV	LOW VOLTAGE
LCP	LIGHTING CONTROL PANEL
M	MICROWAVE
MCB	MAIN CIRCUIT BREAKER
MOP	MAIN DISTRIBUTION PANEL
MLO	MAIN LUGS ONLY
MSB	MAIN SWITCH BOARD
NP	NORMAL POWER
NTS	NOT TO SCALE
TBD	TO BE DETERMINED
TC	TIME CLOCK
TP	TAMPER PROOF
TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSION
U	UNDER COUNTER
VFD	VARIABLE FREQUENCY DRIVE
VSD	VARIABLE SPEED DRIVE
W	WALL MOUNTED
WP	WEATHER PROOF
X	ABOVE COUNTER TOP

DRAWING INDEX	
DWG NO.	DESCRIPTION
E0	ELECTRICAL LEGEND & NOTES
E1	ELECTRICAL BASEMENT PLAN
E2	ELECTRICAL FIRST FLOOR PLAN
E3	ELECTRICAL SECOND FLOOR PLAN
E4	ELECTRICAL THIRD FLOOR PLAN
E5	ELECTRICAL FOURTH FLOOR PLAN
E6	LIGHTING BASEMENT PLAN
E7	LIGHTING FIRST FLOOR PLAN

DRAWING INDEX	
DWG NO.	DESCRIPTION
E8	LIGHTING SECOND FLOOR PLAN
E9	LIGHTING THIRD FLOOR PLAN
E10	LIGHTING FOURTH FLOOR PLAN
E11	ELECTRICAL ONE-LINE RISER DIAGRAM
E12	ELECTRICAL DETAILS
-	-

ALLIED CONSULTING

Engineering Services, Inc.

215 Boston Post Road, Sudbury, MA

Tel: (978) 443-7888

Fax: (978) 443-4636

RUSSELL TREMAINE

ARCHITECT

MAY 16, 2008

5 & 6 BRIGHAM STREET

EAST BOSTON, MA

ELECTRICAL

LEGEND & NOTES

NTS