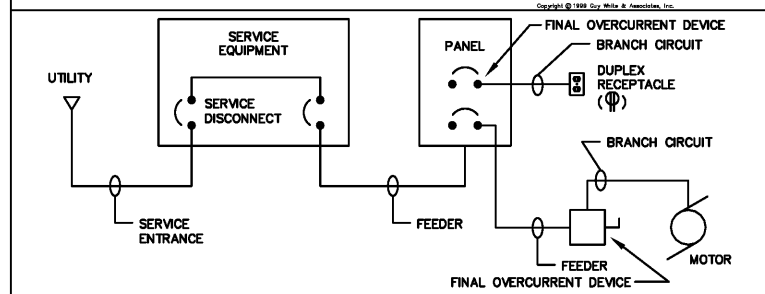


RACEWAY MATERIAL USE TABLE

APPLICATION	RACEWAY MATERIAL					
	EMT	IMC	GRS	40 PVC	ENT	AC/MC CABLE
CONTRACTOR MAY USE ANY MATERIAL MARKED (●) FOR APPLICATION LISTED. IF MATERIAL IS NOT MARKED FOR AN APPLICATION, IT SHALL NOT BE USED FOR THAT APPLICATION.						
CONCEALED ABOVE CEILING	●	●	●			
CONCEALED IN WALLS	●	●	●			
EXPOSED FROM FLOOR TO 7'-0" A.F.F. (INTERIOR)	●	●	●			
EXPOSED FROM 7'-0" A.F.F. AND ABOVE (INTERIOR)	●	●	●			
IN OR UNDER CONCRETE FLOORS		(1)	(1)		NOT PERMITTED	NOT PERMITTED
OUTDOORS - BELOW GRADE		(1)	(1)		NOT PERMITTED	NOT PERMITTED
OUTDOORS - EXPOSED		●	●			
STUB-UPS BELOW PANELS & ENCLOSURES			(2)			
FEEDER CONDUITS			(3)			
SERVICE ENTRANCE			(3)			



ABBREVIATIONS

THE FOLLOWING STANDARD ABBREVIATIONS ARE USED IN THESE PLANS AND SPECIFICATIONS. CONTRACTOR IS CAUTIONED THAT ABBREVIATIONS LISTED MAY NOT BE USED; CONSULT PLANS AND SPECIFICATIONS FOR ABBREVIATIONS APPLICABLE TO THIS PROJECT.

- A.F.F. ABOVE FINISHED FLOOR
- B.F.F. BELOW FINISHED FLOOR
- A.F.G. ABOVE FINISHED GRADE
- B.F.G. BELOW FINISHED GRADE
- U.N.D. UNLESS NOTED OTHERWISE
- CKT. CIRCUIT
- C. CONDUIT
- E.C. EMPTY CONDUIT
- FLX. FLEXIBLE CONDUIT
- WFLX. WEATHERPROOF FLEXIBLE CONDUIT
- EWC. ELECTRIC WATER COOLER
- EW. ELECTRIC WATER HEATER
- VF. VENTILATING FAN
- CE. VENTILATING FAN (CEILING EXHAUST FAN)
- AHU. AIR HANDLING UNIT
- FCU. FAN COIL UNIT
- CU. CONDENSING UNIT
- RTU. ROOF TOP HEATING/COOLING UNIT
- CT. COOLING TOWER
- P. PUMP
- EBH. ELECTRIC BASEBOARD HEATER
- EDH. ELECTRIC DUCT HEATER
- RAC. ROOM AIR CONDITIONING/HEATING UNIT
- FURN. FURNACE
- BLR. BOILER
- CHLR. CHILLER
- HUM. HUMIDIFIER
- INC. INCINERATOR
- HP. HEAT PUMP OR HORSEPOWER
- EHU. UNIT HEATER, ELECTRIC
- GJH. UNIT HEATER, GAS-FIRED
- OJH. UNIT HEATER, OIL-FIRED
- GIH. UNIT HEATER, GAS-FIRED INFRARED
- SIH. UNIT HEATER, STEAM
- EIH. UNIT HEATER, ELECTRIC INFRARED

BRANCH CIRCUIT WIRING - HASHMARK CODE

BRANCH CIRCUITS SHOWN ON THESE DRAWINGS MAY INCLUDE HASHMARKS WHICH INDICATE THE NUMBER OF WIRES TO BE PROVIDED IN A CONDUIT RUN BETWEEN OUTLETS OR JUNCTION BOXES. WIRE SIZES SHALL BE AS TABULATED IN PANELBOARD SCHEDULES UNLESS OTHERWISE INDICATED ON PLAN. SEE SYMBOL SCHEDULE FOR CONDUIT ROUTING NOTATION. HASHMARK CODE IS AS FOLLOWS:

- TWO WIRES (NO HASHMARKS)
- THREE WIRES (3 HASHMARKS)
- FOUR WIRES (4 HASHMARKS)
- FIVE WIRES (5 HASHMARKS)
- ... AND SO FORTH.

NOTE: GROUND WIRES ARE NOT GENERALLY SHOWN. EXAMINE SPECIFICATIONS AND GENERAL NOTES TO DETERMINE REQUIREMENTS FOR GROUND WIRES AND WHERE SPECIFIED, PROVIDE IN ADDITION TO THE NUMBER OF WIRES INDICATED BY HASHMARK CODE.

NOTE: CONTRACTOR IS CAUTIONED THAT MULTIWIRE (LINE-TO-NEUTRAL) BRANCH CIRCUITS DO NOT INDICATE ALL REQUIRED NEUTRAL CONDUCTORS. PROVIDE SEPARATE NEUTRAL CONDUCTORS (WITH COLORED STRIPE TO MATCH PHASE CONDUCTOR) FOR EACH PHASE CONDUCTOR.

EMPTY CONDUITS ARE NOTED BY "EC" WITH TRADE SIZE.

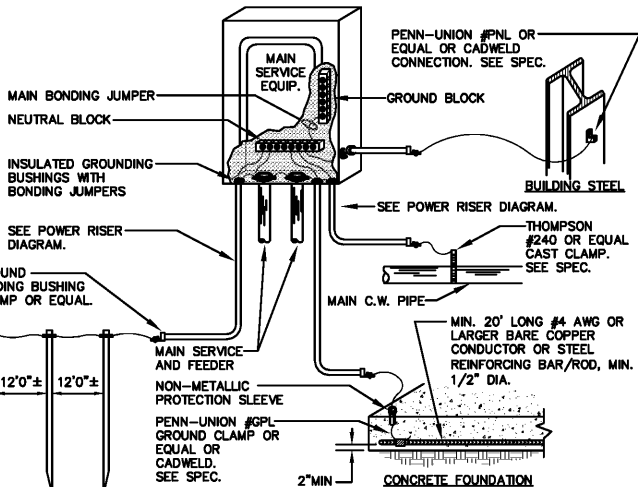
GENERAL NOTES

- DO NOT SCALE DRAWINGS UNLESS DIMENSIONS ARE SHOWN. LOCATE OUTLETS AND EQUIPMENT AS OBVIOUSLY INDICATED AND COORDINATE WITH OTHER TRADES TO AVOID CONFLICTS.
- MINIMUM SIZE CONDUCTOR FOR POWER SHALL BE NO. 12 AWG.
- ALL FUSES SHALL BE DUAL-ELEMENT TYPE, "FUSETRON" BY BUSSMAN, OR "ECON" BY ECONOMY.
- BRANCH CIRCUIT SIZES ARE AWG 12-1/2" C. UNLESS OTHERWISE NOTED IN PANELBOARD SCHEDULES.
- ALL BRANCH CIRCUIT LOADS SHALL BE BALANCED ACROSS PANELBOARD BUSES TO OBTAIN MINIMUM NEUTRAL CURRENT.
- ALL FLEXIBLE CONDUIT SHALL CONTAIN A GREEN WIRE BONDED TO RIGID RACEWAY, BOX OR FIXTURE AT EACH END OF FLEX. SIZE GROUND WIRE PER N.E.C. TABLE 250-122.
- PROVIDE PULL CORD IN ALL EMPTY RACEWAYS.
- ALL ELECTRICAL WORK ABOVE CEILINGS UTILIZED AS RETURN AIR PLENUMS SHALL COMPLY WITH N.E.C. AND LOCAL CODES FOR WIRING USED IN ENVIRONMENTAL AIR.
- DO NOT MOUNT FLUSH JUNCTION BOXES BACK TO BACK. STAGGER JUNCTION BOXES TO REDUCE SOUND TRANSMISSION BETWEEN ROOMS.
- CONTRACTOR SHALL MINIMIZE REMOVAL OF STRUCTURAL STEEL FIREPROOFING FOR INSTALLATION OF CONDUIT AND EQUIPMENT HANGERS. OBTAIN APPROVAL OF GENERAL CONTRACTOR PRIOR TO REMOVAL.
- COORDINATE WITH OTHER TRADES TO CONCEAL ELECTRICAL WORK AND PROVIDE OUTLETS IN CORRECT LOCATIONS FOR EACH PIECE OF MECHANICAL OR ELECTRICAL EQUIPMENT CONNECTED.
- COORDINATE DEVICE REQUIREMENTS AND MOUNTING HEIGHTS FOR ELECTRIC WATER COOLERS, HAND DRYERS, SINKS, THRU-WALL UNITS AND THE LIKE WITH EQUIPMENT FURNISHED.
- CONCEAL OUTLETS FOR ALL EQUIPMENT IN FINISHED AREAS. OBTAIN ROUGHING DIAGRAMS FOR ALL EQUIPMENT AND INSTALL ELECTRICAL WORK IN LOCATIONS AND HEIGHTS ACCORDING TO DIAGRAMS.
- IN GENERAL, REFER TO DETAILS AND SYMBOL SCHEDULE FOR STANDARD DEVICE MOUNTING HEIGHTS. STUDY ARCHITECTURAL ELEVATIONS, SECTIONS AND CASEWORK DETAILS PRIOR TO ROUGHING AND ADJUST MOUNTING TO AVOID CONFLICTS, INCLUDING BACKSPASHES. ALL DEVICE MOUNTING SHALL BE IN ACCORDANCE WITH ADA/ANSI A117.1.
- CONTRACTOR SHALL VERIFY ALL DOOR SWINGS PRIOR TO ROUGHING. LOCATE SWITCHES AND OTHER DEVICES ACCORDINGLY.
- MOUNT BRACKET TYPE LIGHTING FIXTURES AT HEIGHTS SHOWN OR SCHEDULED ON DRAWINGS OR AS DIRECTED ON JOB BY ARCHITECT, U.N.O.
- ALL PENETRATIONS THRU WALLS, FLOORS, BARRIERS, PARTITIONS AND THE LIKE SHALL BE SEALED TIGHT. SEAL ALL PENETRATIONS THRU SMOKE TIGHT PARTITIONS WITH U.L. LISTED ASSEMBLY METHODS. SEE ARCHITECTURAL DRAWINGS FOR LOCATIONS OF SMOKE PARTITIONS.
- FIRESTOP ALL RACEWAYS PASSING THRU FIRE-RATED WALLS, FLOORS OR PARTITIONS. USE U.L. LISTED THROUGH-PENETRATING FIRESTOP SYSTEMS APPROPRIATE FOR CONSTRUCTION AND RATING EQUAL TO THAT BEING PENETRATED. SUBMIT SHOP DRAWINGS (WITH RATING) PROPOSED. SEE ARCHITECTURAL DRAWINGS FOR LOCATIONS AND RATINGS.
- OPENINGS GREATER THAN SIXTEEN (16) SQUARE INCHES IN FIRE-RATED WALLS AND PARTITIONS SHALL BE PROTECTED WITH U.L. LISTED SYSTEMS, COMPONENTS AND METHODS AS REQUIRED TO MAINTAIN RATING. PROVIDE PUDDY PADS, LIGHT COVER, RISERS, WRAP COLLARS AND THE LIKE AS REQUIRED.
- ALL TYPING ON PANELBOARD DIRECTORIES, FIRE ALARM PROGRAMMING, LIGHTING CONTROL PROGRAMMING, LABELING AND THE LIKE SHALL UTILIZE FINAL OPERATIONAL ROOM NAMING SYSTEM AND SHALL REFLECT FINAL ROOM DESIGNATIONS. COORDINATE WITH ARCHITECT AND OWNER FOR FINAL NAMING. HANGER WIRES SHALL NOT CONFLICT/TOUCH OTHER TRADES/EQUIPMENT.

ELECTRICAL SYMBOLS

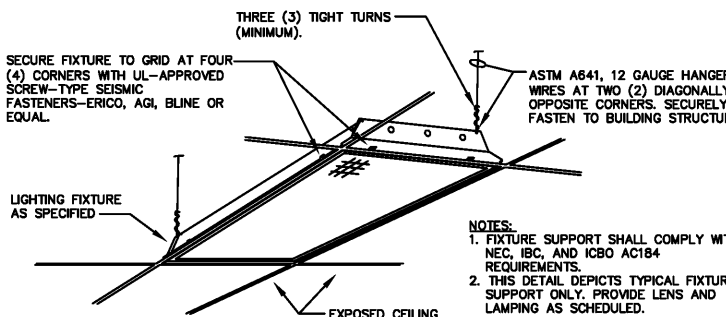
○ LIGHTING FIXTURE, CEILING (○-WALL MOUNT)	⌘ TOGGLE SWITCH
○ LIGHTING FIXTURE, CONNECTED TO EMERGENCY POWER SOURCE	⌘ THREE WAY TOGGLE SWITCH
○ LIGHTING FIXTURE, WALL WASHER	⌘ FOUR WAY TOGGLE SWITCH
○ LIGHTING FIXTURE	⌘ WEATHERPROOF TOGGLE SWITCH
○ LIGHTING FIXTURE, CONNECTED TO EMERGENCY POWER SOURCE	⌘ LIGHTED TOGGLE SWITCH
○ PORCELAIN LAMPHOLDER	⌘ 30A MOTOR RATED SWITCH
○ EXIT LIGHT	⌘ LOCK TOGGLE SWITCH (KEYED)
○ EMERGENCY LIGHT UNIT	⌘ WALL SWITCH - OCCUPANCY SENSOR 48" UP
○ FLOODLIGHT	⌘ PROGRAMMABLE MASTER SWITCH (ENTIRE)
○ OUTDOOR LIGHTING STANDARD & FIXTURE	⌘ PROGRAMMABLE SWITCH (SCENE)
○ OUTDOOR LIGHTING STANDARD & FIXTURE	⌘ DIMMING CONTROL FOR LIGHTING
○ TRANSFORMER	⌘ FIRE ALARM PULL STATION
○ PANELBOARD	⌘ FIRE ALARM HORN/SPEAKER/STROBE (HC DENOTES HIGH CANDELLA)
○ SAFETY SWITCH	⌘ FIRE ALARM STROBE (LOW CANDELLA)
○ ENCLOSED, MOLDED CASE CIRCUIT BREAKER	⌘ (HC DENOTES HIGH CANDELLA)
○ MOTOR CONTROLLER OR CONTACTOR	⌘ SMOKE DETECTOR
○ FLUSH JUNCTION BOX CEILING (○-WALL)	⌘ HEAT DETECTOR
○ PULL BOX OR JUNCTION BOX IN FLOOR	⌘ PHOTOCELL, 1800VA U.N.O., AIM NORTH
○ PHOTOCELL, 1800VA U.N.O., AIM NORTH	⌘ TIME SWITCH
○ TIME SWITCH	⌘ TRANSIENT VOLTAGE SURGE SUPPRESSOR (TVSS)
○ TRANSIENT VOLTAGE SURGE SUPPRESSOR (TVSS)	⌘ ELECTRIC MOTOR
○ ELECTRIC MOTOR	⌘ CONDUIT RUN
○ CONDUIT RUN	⌘ FLEXIBLE RECEPTACLE (HIGH MOUNT)
○ FLEXIBLE RECEPTACLE (HIGH MOUNT)	⌘ WEATHERPROOF DUPLEX RECEPTACLE, 16" UP
○ WEATHERPROOF DUPLEX RECEPTACLE, 16" UP	⌘ GROUND FAULT INTERRUPTER RECEPTACLE
○ GROUND FAULT INTERRUPTER RECEPTACLE	⌘ AFCI - FAULT INTERRUPTER RECEPTACLE
○ AFCI - FAULT INTERRUPTER RECEPTACLE	⌘ SPECIAL PURPOSE RECEPTACLE
○ SPECIAL PURPOSE RECEPTACLE	⌘ DUPLEX FLOOR RECEPTACLE FOR POWER
○ DUPLEX FLOOR RECEPTACLE FOR POWER	⌘ FLOOR OUTLET FOR TELEPHONE AND POWER
○ FLOOR OUTLET FOR TELEPHONE AND POWER	⌘ FLOOR OUTLET FOR COMMUNICATIONS (TELE/DATA)
○ FLOOR OUTLET FOR COMMUNICATIONS (TELE/DATA)	⌘ CLOCK HANGER OUTLET (○-WALL MOUNT)
○ CLOCK HANGER OUTLET (○-WALL MOUNT)	⌘ SPEAKER (○-WALL MOUNT)
○ SPEAKER (○-WALL MOUNT)	⌘ EXISTING; TO REMAIN
⌘ EXISTING; TO REMAIN	⌘ EXISTING; BEING RELOCATED
⌘ EXISTING; BEING RELOCATED	⌘ EXISTING; NEW LOCATION
⌘ EXISTING; NEW LOCATION	

NOTE: ALL DEVICES SHOWN ON THIS SCHEDULE ARE SYMBOLIC ONLY. SEE ELECTRICAL SPECIFICATIONS FOR EXACT DEVICE REQUIREMENTS AND PERFORMANCE CHARACTERISTICS.



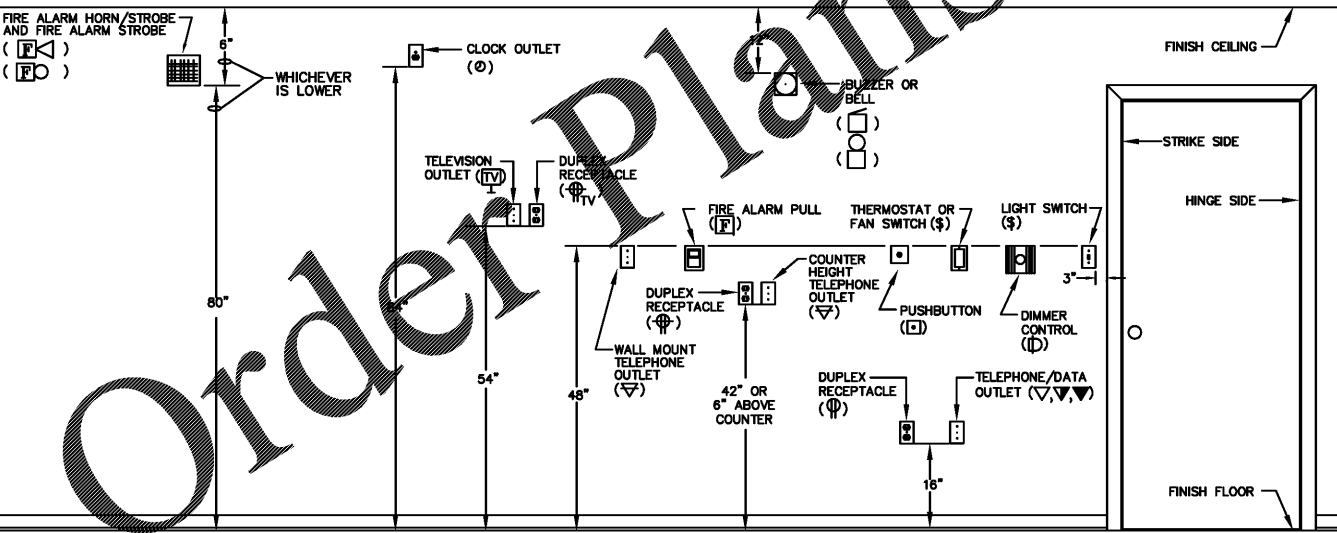
GROUNDING OF MAIN SERVICE

NO SCALE



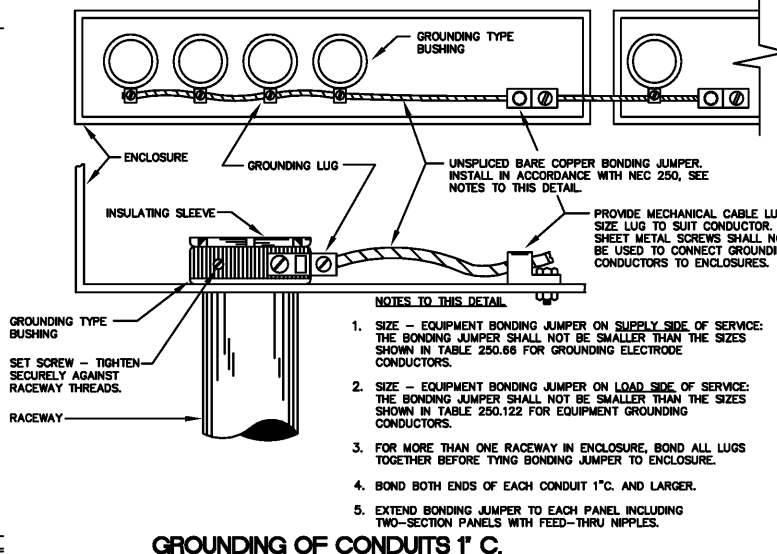
RECESSED FIXTURE - TYPICAL HANGER SUPPORT

NO SCALE



MOUNTING HEIGHTS

NO SCALE



GROUNDING OF CONDUITS 1" C. AND LARGER

NO SCALE

- SIZE - EQUIPMENT BONDING JUMPER ON SUPPLY SIDE OF SERVICE: THE BONDING JUMPER SHALL NOT BE SMALLER THAN THE SIZES SHOWN IN TABLE 250.66 FOR GROUNDING ELECTRODE CONDUCTORS.
- SIZE - EQUIPMENT BONDING JUMPER ON LOAD SIDE OF SERVICE: THE BONDING JUMPER SHALL NOT BE SMALLER THAN THE SIZES SHOWN IN TABLE 250.122 FOR EQUIPMENT GROUNDING CONDUCTORS.
- FOR MORE THAN ONE RACEWAY IN ENCLOSURE, BOND ALL LUGS TOGETHER BEFORE TYING BONDING JUMPER TO ENCLOSURE.
- BOND BOTH ENDS OF EACH CONDUIT 1" C. AND LARGER.
- EXTEND BONDING JUMPER TO EACH PANEL INCLUDING TWO-SECTION PANELS WITH FEED-THRU NIPPLES.

Pricing set only - NOT FOR CONSTRUCTION



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