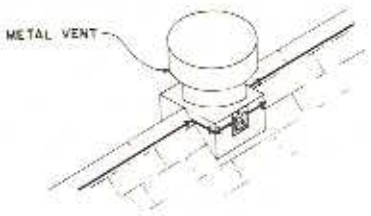
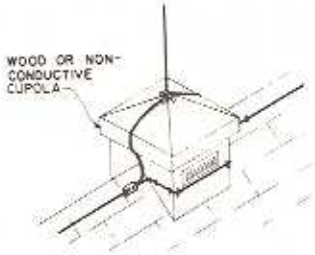
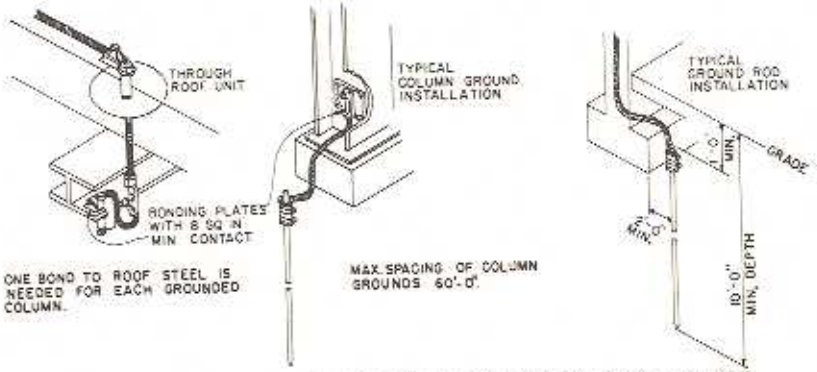
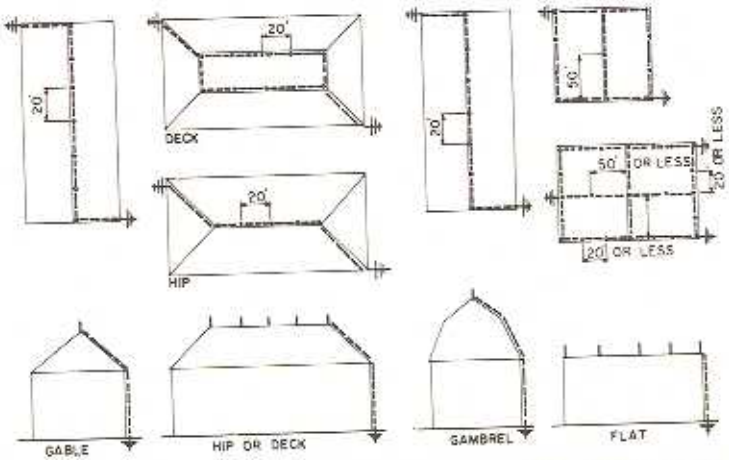




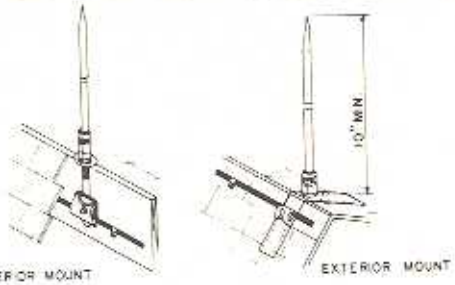
BONDING - METAL BODIES ON THE ROOF MUST BE BONDED TO FULL SIZE CONDUCTORS TO PREVENT SIDEFLASH. ANY OTHER LARGE METAL BODY, EXTERIOR OR INTERIOR, WITHIN 6 FEET OF A CONDUCTOR MUST ALSO BE BONDED TO THE PROTECTION SYSTEM.



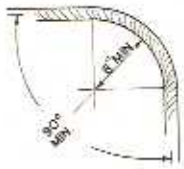
GROUNDS - SYSTEMS MUST HAVE AT LEAST TWO 1/2 INCH DIAMETER COPPER-CLAD RODS TO MOIST SOIL 10 FEET DEEP. WHERE SOIL CONDUCTIVITY IS POOR USE ALTERNATE GROUNDING METHODS SUCH AS BURIED COPPER PLATES OR MULTIPLE RODS THAT ADD GROUND CONTACT.



ROOF TYPES - DETERMINE AIR TERMINAL, CONDUCTOR AND GROUND TERMINAL LOCATIONS. EVERY DOWN CONDUCTOR MUST CONNECT TO GROUND. PROVIDE TWO HORIZONTAL OR DOWNWARD PATHS TO GROUND FROM EACH AIR TERMINAL. MORE THAN ONE TERMINAL CAN BE CONNECTED TO THE SAME PAIR OF GROUNDS.

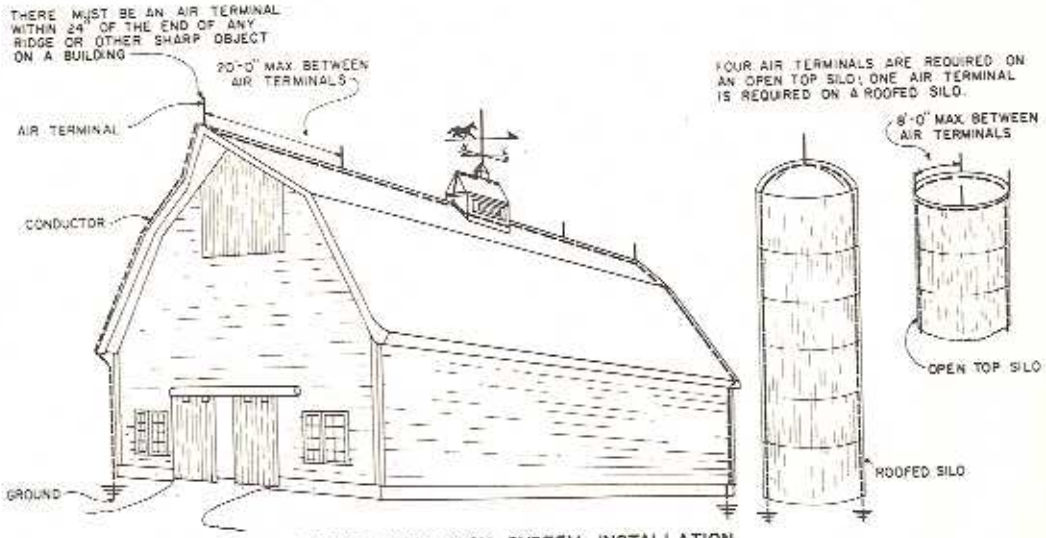


AIR TERMINALS - MUST BE AT LEAST 10 INCHES HIGH AND ARE NEEDED ON ALL HIGH POINTS OF ROOF AND PROJECTIONS. SPACE TERMINALS NO MORE THAN 20 FEET APART NOR FURTHER THAN 24 INCHES FROM ANY CORNER.



CONDUCTORS - USE HEAVY (187.5 LBS PER 1,000 FT. FOR COPPER; 95 LBS PER 1,000 FT. FOR ALUMINUM) CABLE CONNECTING AIR TERMINALS TO GROUNDS. SECURE CONDUCTORS EVERY 3 FT. FOR NEAT AND DURABLE INSTALLATION. THE RADIUS OF BEND 8 INCHES MIN., THE ANGLE OF BEND 90° MIN.

METAL BUILDINGS - THE STEEL FRAMEWORK OF A METAL BUILDING CAN BE USED AS THE CONDUCTOR, WITH AIR TERMINALS AND GROUNDS IN THE LIGHTNING PROTECTION SYSTEM. METAL ROOFED OR SIDED, WOOD FRAMED STRUCTURES REQUIRE THE SAME PROTECTION AS NON-METAL CLAD BUILDINGS.



TYPICAL LIGHTNING-PROTECTION SYSTEM INSTALLATION

NO SCALE

NOTES -
1. LIGHTNING ARRESTERS SHOULD BE INSTALLED BETWEEN POWER CIRCUIT AND GROUND WHERE CIRCUIT ENTERS THE BUILDING, ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
2. INCOMING WATER AND GAS PIPES, AND TELEPHONE AND INTERCOM LINES SHOULD ALSO BE BONDED TO THE SYSTEM.
3. THE USE OF CERTIFIED INSTALLERS AND CERTIFIED EQUIPMENT IS RECOMMENDED.*
4. GALVANIC ACTION WILL OCCUR BETWEEN ALUMINUM AND COPPER, HENCE DIRECT CONTACT SHOULD BE AVOIDED.

* "CERTIFIED MASTER INSTALLERS" ARE THOSE WHO MEET LPI CRITERIA AS QUALIFIED INSTALLERS. GIVEN DETAILS COMPLY WITH 1984 LPI (LIGHTNING PROTECTION INSTITUTE) RECOMMENDATIONS.

COOPERATIVE EXTENSION SERVICE
AGRICULTURE AND HOME ECONOMICS

AND
UNITED STATES DEPARTMENT OF AGRICULTURE COOPERATING

BUILDING LIGHTNING PROTECTION

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