

GENERAL:

1. PROVIDE A COMPLETE LIGHTNING PROTECTION SYSTEM AS SHOWN ON THE DRAWINGS AND AS SPECIFIED HEREIN. THE SYSTEM SHALL BE INSTALLED BY A FIRM ACTIVELY ENGAGED IN THE INSTALLATION OF MASTER LABELED LIGHTNING PROTECTION SYSTEMS AND SHALL BE SO LISTED BY UNDERWRITERS LABORATORIES INC. THE COMPLETED SYSTEM SHALL COMPLY WITH THE LATEST EDITIONS OF THE INSTALLATION REQUIREMENTS FOR LIGHTNING PROTECTION SYSTEMS, UL96A AND THE NATIONAL FIRE PROTECTION ASSOCIATION'S LIGHTNING PROTECTION CODE, NFPA 780.
2. REFER TO E-702 FOR LIGHTING PROTECTION DETAILS.

MATERIALS:

1. ALL MATERIALS USED IN THE INSTALLATION SHALL BE LABELED OR LISTED BY UNDERWRITERS LABORATORIES INC. FOR USE IN MASTER LABELED LIGHTNING PROTECTION SYSTEMS.
2. GENERALLY, ALL MATERIALS SHALL BE OF COPPER AND/OR COPPER-BRONZE. IN LOCATIONS WHERE SYSTEM COMPONENTS ARE MOUNTED ON ALUMINUM SURFACES, ALUMINUM MATERIALS SHALL BE USED TO AVOID ELECTROLYTIC CORROSION OF THE DISSIMILAR METALS.
3. MATERIALS SHALL BE SIZED IN ACCORDANCE WITH THE MATERIAL REQUIREMENTS OF NFPA-780 AND UL96A. PROVIDE CLASS 1 MATERIALS.

AIR TERMINALS:

1. AIR TERMINALS SHALL PROJECT A MINIMUM OF TEN INCHES ABOVE THE AREA PROTECTED AND SHALL BE LOCATED AT INTERVALS NOT EXCEEDING 20'-0" ALONG RIDGES AND AROUND THE PERIMETER OF FLAT OR GENTLY SLOPING ROOFS.
2. FLAT OR GENTLY SLOPING ROOF SECTIONS EXCEEDING 50'-0" IN WIDTH SHALL BE PROTECTED WITH ADDITIONAL AIR TERMINALS LOCATED AT INTERVALS NOT EXCEEDING 50'-0" IN THE FLAT OR GENTLY SLOPING AREA.
3. AIR TERMINALS SHALL BE LOCATED WITHIN TWO FEET OF ROOF EDGES AND OUTSIDE CORNERS OF PROTECTED AREAS. AIR TERMINAL SPACINGS EXCEEDING THESE DIMENSIONS ARE PERMITTED SO LONG AS THE AREA PROTECTED LIES WITHIN A ZONE OF PROTECTION.
4. AIR TERMINALS SHALL BE INSTALLED FOR STACKS, FLUES, MECHANICAL EQUIPMENT, AND OTHER OBJECTS NOT LOCATED WITHIN A ZONE OF PROTECTION. NON-METALLIC OBJECTS OR METAL OBJECTS HAVING A METAL THICKNESS OF LESS THAN 3/16" REQUIRE THE INSTALLATION OF AIR TERMINALS AND REQUIRED CONDUCTORS. OBJECTS HAVING A METAL THICKNESS 3/16" OR GREATER SHALL BE CONNECTED TO THE LIGHTNING PROTECTION SYSTEM PER CODE REQUIREMENTS USING MAIN SIZE CONDUCTOR AND CONNECTOR FITTINGS HAVING 3 SQUARE INCHES OF SURFACE CONTACT AREA.
5. AIR TERMINAL MOUNTING BASES SHALL BE OF CAST CONSTRUCTION AND SECURELY FASTENED TO THE STRUCTURE IN ACCORDANCE WITH CODE REQUIREMENTS.

CONDUCTORS:

1. MAIN CONDUCTORS SHALL BE SIZED FOR CLASS 1 MATERIAL REQUIREMENTS ABOVE AND SHALL PROVIDE A TWO-WAY PATH FROM EACH AIR TERMINAL HORIZONTALLY OR DOWNWARD TO CONNECTIONS WITH GROUND TERMINALS.
2. CONDUCTORS SHALL BE FREE OF EXCESSIVE SPLICES AND SHARP BENDS. NO BEND OF A CONDUCTOR SHALL FORM AN INCLUDED ANGLE OF LESS THAN 90 DEGREES NOR HAVE A RADIUS OF BEND OF LESS THAN 8 INCHES. CONDUCTORS SHALL BE SECURED TO THE STRUCTURE AT INTERVALS NOT EXCEEDING 3'-0".
3. DOWN CONDUCTORS SHALL BE OF COPPER AND SHALL BE CONCEALED IN THE EXTERIOR WALL CONSTRUCTION.
4. DOWN CONDUCTORS SHALL BE SPACED AT INTERVALS AVERAGING NOT MORE THAN 100 FEET AROUND THE PERIMETER OF THE STRUCTURE. IN NO CASE SHALL A STRUCTURE HAVE FEWER THAN TWO DOWN CONDUCTORS.
5. IN THE CASE OF STRUCTURAL STEEL FRAME CONSTRUCTION, DOWN CONDUCTORS MAY BE OMITTED AND ROOF CONDUCTORS SHALL BE CONNECTED TO THE STRUCTURAL STEEL FRAME AT INTERVALS AVERAGING NOT MORE THAN 100 FEET AROUND THE PERIMETER OF THE STRUCTURE. CONNECTIONS TO THE STEEL FRAME SHALL BE MADE WITH EXOTHERMIC WELD CONNECTIONS.

ROOF PENETRATIONS:

1. ROOF PENETRATIONS REQUIRED FOR DOWN CONDUCTORS OR FOR CONNECTIONS TO STRUCTURAL STEEL FRAMEWORK SHALL BE MADE USING THRU-ROOF ASSEMBLIES WITH SOLID BARS AND APPROPRIATE ROOF FLASHING. CONDUCTORS SHALL NOT PASS DIRECTLY THROUGH THE ROOF. ROOF FLASHING COMPATIBLE WITH THE ROOFING SYSTEM SHALL BE FURNISHED AND INSTALLED BY THE ROOFING CONTRACTOR.

EQUIPOTENTIAL GROUNDING (COMMON GROUNDING):

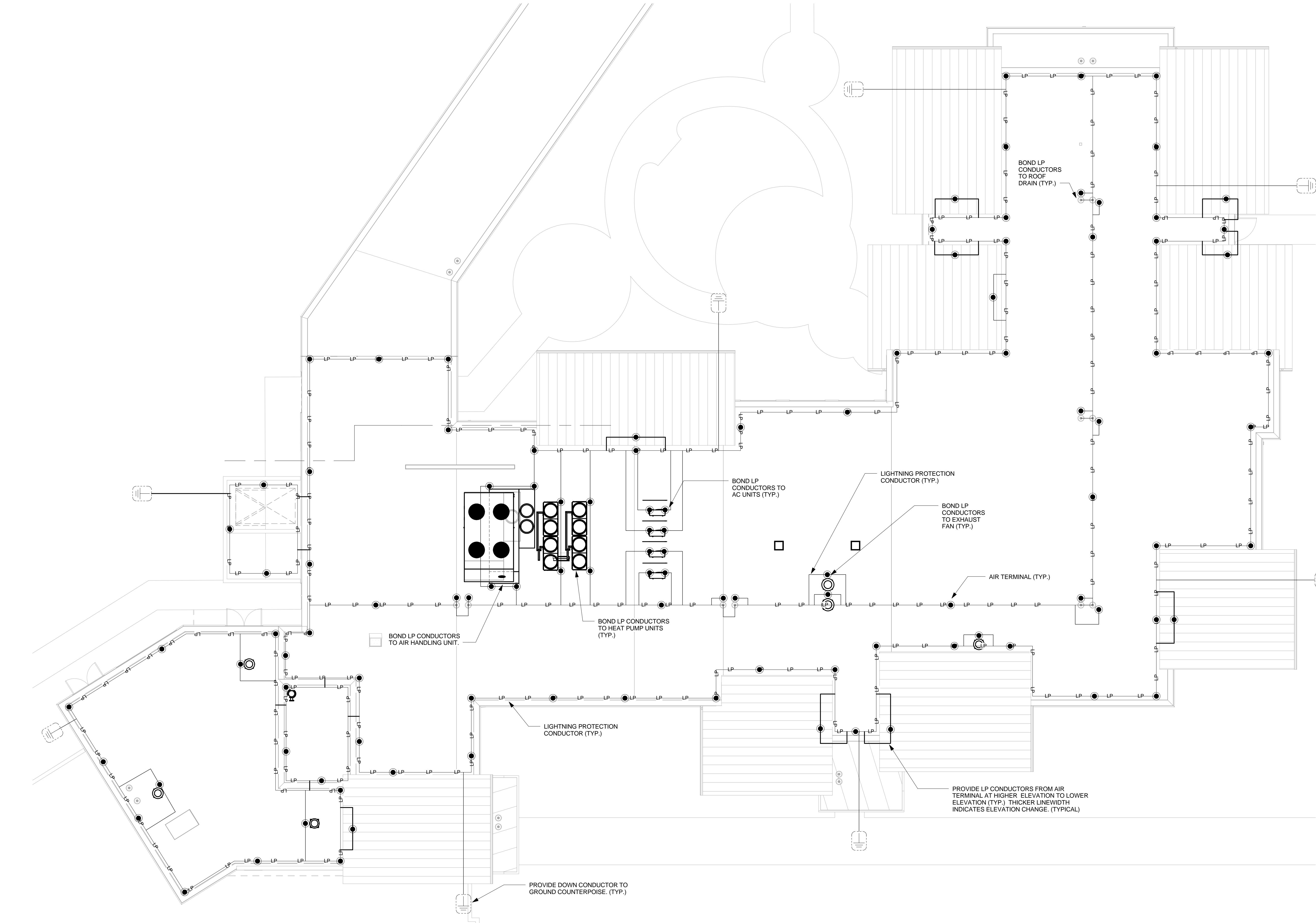
1. COMMON GROUNDING OF ALL GROUND MEDIUMS ENTERING THE BUILDING SHALL BE ENSURED BY INTERCONNECTING TO THE SYSTEM USING MAIN SIZE CONDUCTORS AND FITTINGS.
2. GROUNDED METAL BODIES LOCATED WITHIN 6'-0" OF LIGHTNING PROTECTION SYSTEM CONDUCTORS OR DOWNLEADS SHALL BE BONDED TO THE LIGHTNING PROTECTION SYSTEM USING BONDING CONNECTIONS AND FITTINGS AS REQUIRED BY NEC 250-46.

GROUND TERMINATIONS:

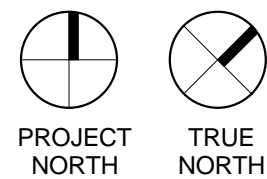
1. GROUND ELECTRODES SHALL BE PROVIDED FOR EACH DOWN CONDUCTOR AND SHALL CONSIST OF 3/4" X 10'-0" COPPER-CLAD GROUND ROD. THE DOWN CONDUCTOR SHALL BE CONNECTED TO THE GROUND ROD USING AN EXOTHERMIC WELDED CONNECTION. GROUND RODS SHALL BE LOCATED 2 FEET BELOW GRADE, PREFERABLY 2 FEET FROM THE FOUNDATION WALL AND SHALL EXTEND A MINIMUM OF 10' VERTICALLY INTO THE EARTH.
2. WHERE THE STRUCTURAL STEEL FRAMEWORK IS UTILIZED AS MAIN CONDUCTORS FOR THE SYSTEM, PERIMETER COLUMNS SHALL BE GROUNDED AT INTERVALS AVERAGING NOT MORE THAN 80 FEET APART. COLUMNS SHALL BE GROUNDED USING EXOTHERMIC WELDED CONNECTIONS.
3. CONDUCTORS FROM THE GROUND CONNECTIONS TO THE GROUND TERMINATION SHALL BE CLASS II COPPER LIGHTNING CONDUCTORS.

INSPECTION:

1. UPON COMPLETION OF THE INSTALLATION THE CONTRACTOR SHALL FURNISH THE MASTER LABEL ISSUED BY UNDERWRITERS LABORATORIES INC. FOR THIS SYSTEM.

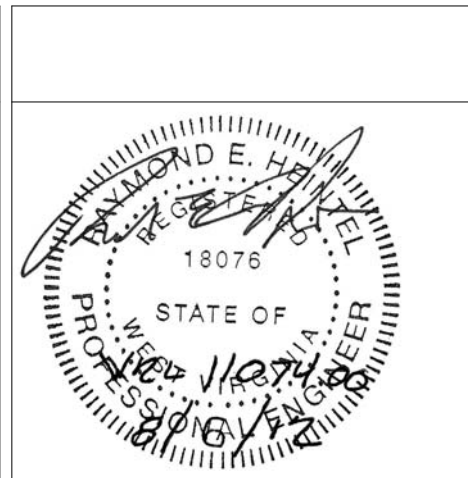


1 MAIN BUILDING LIGHTNING PROTECTION ROOF PLAN
1/8" = 1'-0"



Revisions:	Date

ARCHITECT:
C.C. HODGSON ARCHITECTURAL GROUP



ENGINEERS:
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Drawing Title
ELECTRICAL MAIN STRUCTURE LIGHTNING PROTECTION PLAN
Approved: Project Director

Project Title
RELOCATE DEMENTIA UNIT
Location
VAMC MARTINSBURG
Date
08/06/2012
Checked
GSL
Drawn
DRW
Project Number
VA PN 613-207
Building Number
513
Drawing Number
E-701
Dwg. of
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Office of Construction and Facilities Management
Department of Veterans Affairs