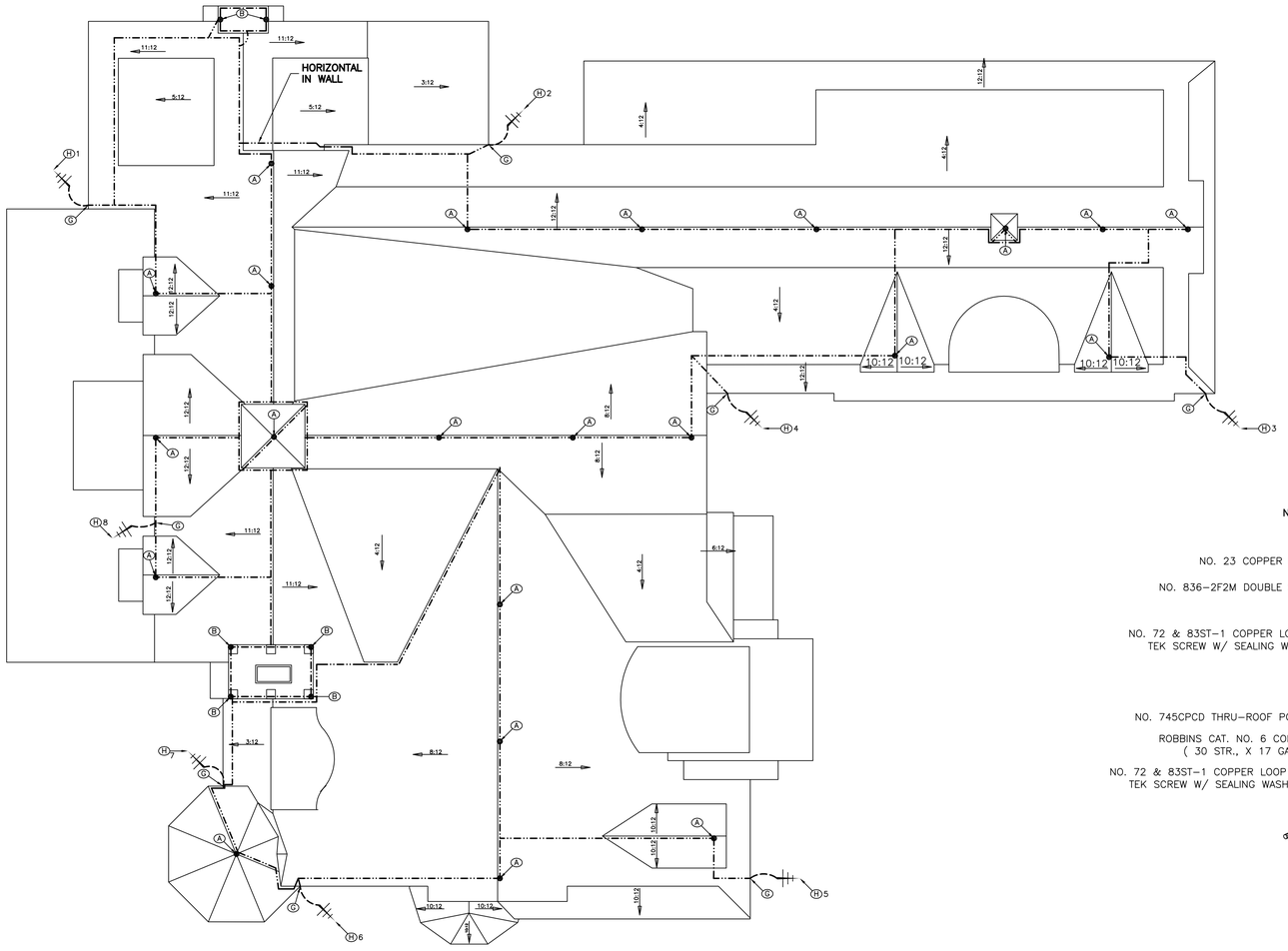
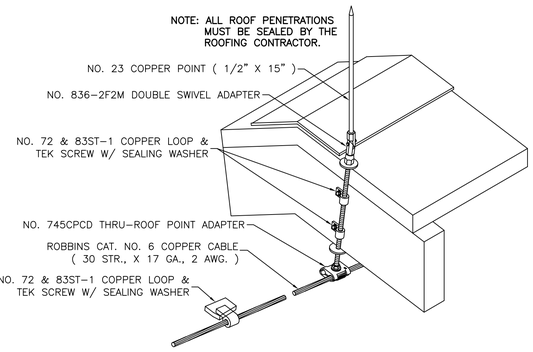


LIGHTNING PROTECTION ROOF PLAN
UNDERWOOD RESIDENCE
(1/8" = 1'-0)

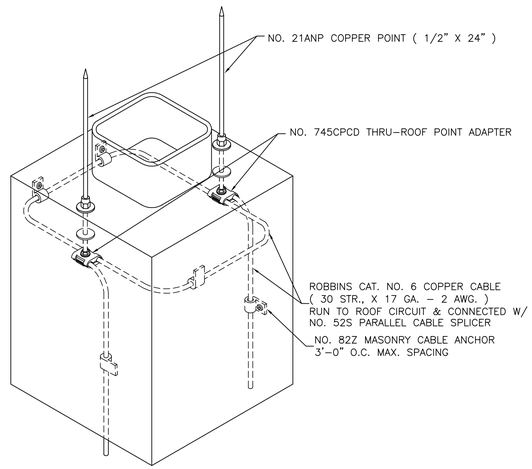
NORTH

0 4' 8' 16' 24'

XX'-X" = DENOTES RIDGE / EAVE / PARAPET HEIGHT FROM GRADE



A TYPICAL CONCEALED AIR TERMINAL
N.T.S.



B TYPICAL CHIMNEY AIR TERMINAL
N.T.S.

LEGEND

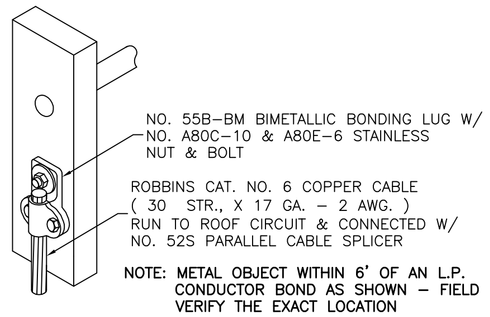
●	AIR TERMINAL	⟋	CAT. NO. 6 COPPER CABLE CONCEALED (30 STR., X 17 GA. - 2 AWG.)
		⟋	CAT. NO. 6 COPPER CABLE EXPOSED (30 STR., X 17 GA. - 2 AWG.)
		⟋	CAT. NO. 6 COPPER CABLE DOWNLEAD (30 STR., X 17 GA. - 2 AWG.)
		⏚	GROUND ROD LOCATION

GENERAL NOTES

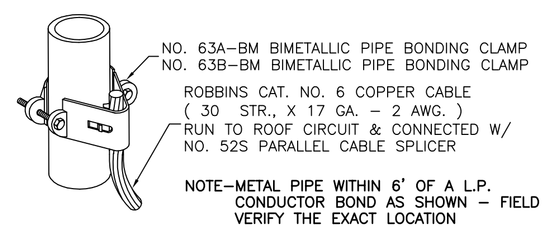
THE DESIGN & DETAILS SHOWN WILL MEET THE REQUIREMENTS OF UNDERWRITERS LABORATORY CODE 96/96A, NATIONAL FIRE PROTECTION ASSOCIATION CODE 780 & THE LIGHTNING PROTECTION INSTITUTE CODE 175 FOR LIGHTNING PROTECTION SYSTEMS

1.) A CONDUCTOR BEND SHALL NOT FORM A SHARPER ANGLE THAN 90 DEGREES OR HAVE A RADIUS LESS THAN 8 INCHES.
2.) METAL BODIES OF INDUCTANCE LOCATED WITHIN 6' OF A MAIN LIGHTNING COMPONENT SHALL BE BONDED TO THE LIGHTNING PROTECTION SYSTEM. (INCLUDING BUT NOT LIMITED TO METAL VENTS, FLASHING, LOUVERS & ROOF DRAINS)
3.) CONNECTIONS TO GROUND AND/OR COUNTERPOISE SHALL BE MADE AT A POINT NOT LESS THAN 2'-0 BELOW GRADE, AND 3'-0 TO 8'-0 AWAY FROM FOUNDATION WALL.
4.) AIR TERMINAL SHALL BE PLACED AT THE LOCATIONS INDICATED, NOT MORE THAN 2'-0 FROM THE ENDS OF RIDGES, OUTSIDE CORNERS, OR OUTSIDE EDGES OF MAIN ROOFS, AND MUST EXTEND A MINIMUM OF 10" ABOVE THE OBJECT TO BE PROTECTED.
5.) MID-ROOF AIR TERMINALS SHALL BE SPACED AT 50'-0" O.C. MAX. SPACING.
6.) PERIMETER AIR TERMINALS THAT ARE LESS THAN 24" IN HEIGHT SHALL BE SPACED AT 20'-0" O.C. MAX. PERIMETER AIR TERMINALS THAT ARE 24" IN HEIGHT OR GREATER SHALL BE SPACED AT 25'-0" O.C. MAX.
7.) JOB CONDITIONS MAY DICTATE SLIGHT VARIATIONS IN AIR TERMINAL AND GROUND ROD LOCATIONS, BUT IN NO INSTANCE SHALL A VARIATION BREAK COMPLIANCE WITH THESE NOTES AND REQUIREMENTS.
8.) CONDUCTORS SHALL MAINTAIN A HORIZONTAL OR DOWNWARD PATH FREE FROM "U" AND "V" POCKETS. ANY RISE IN CONDUCTOR SHALL BE NO STEEPER THAN 3" OF RISE PER 12" OF RUN.
9.) COPPER LIGHTNING PROTECTION MATERIALS SHALL NOT BE PLACED ON ALUMINUM, GALVALUM, OR BARE GALVANIZED STEEL SURFACES. ALUMINUM MATERIALS SHALL NOT BE PLACED ON COPPER SURFACES.
10.) FOR THE SAKE OF CLARITY WE HAVE NOT CALLED OUT EACH INDIVIDUAL ITEM OF LIGHTNING PROTECTION MATERIALS ON THE ROOF PLAN. WE HAVE SHOWN TYPICAL DETAILS AND HAVE CALLED OUT EACH OF THESE DETAILS ON THE ROOF PLAN, ONLY IN SCATTERED LOCATIONS.
11.) ALL MISCELLANEOUS STEEL INCLUDING BUT NOT LIMITED TO STRUCTURAL STEEL, REBAR, FRAMING & RAILINGS, SHALL BE MADE ELECTRICALLY CONTINUOUS THROUGH CONSTRUCTION (NOT THE RESPONSIBILITY OF THE LIGHTNING PROTECTION CONTRACTOR.)
12.) ELECTRIC, TELEPHONE, ANTENNA SYSTEM, AND OTHER MISCELLANEOUS GROUNDS SHALL BE CONNECTED WITH MAIN SIZED CONDUCTOR TO ANY LIGHTNING PROTECTION GROUND.
13.) A LIGHTNING ARRESTOR, PROTECTOR, OR ANTENNA-DISCHARGE UNIT MUST BE INSTALLED ON EACH ELECTRIC AND TELEPHONE SERVICE ENTRANCE AND RADIO AND TELEVISION ANTENNA LEAD IN. (TO BE PROVIDED AND INSTALLED BY THE ELECTRICAL CONTRACTOR.)
14.) ALL ADHESIVE FIXTURES SHALL BE SET WITH AN ADHESIVE COMPOUND COMPATIBLE WITH THE ROOFING MATERIAL. ADHESIVES SHALL BE APPROVED IN ADVANCE BY THE ROOFING CONTRACTOR.
15.) BOND ALL METAL PIPES SUCH AS WATER, GAS, FIRE, STORM, SEWER WHICH ENTER THE STRUCTURE TO THE NEAREST DOWNLEAD, GROUND ROD OR COUNTERPOISE.
16.) SEAL THE ENDS OF CONDUIT MOISTURE TIGHT WITH DUCT SEAL, SILICONE OR LEAD WEDGES (NOT THE RESPONSIBILITY OF THE LIGHTNING PROTECTION CONTRACTOR).
17.) CABLE MUST BE FASTENED EVERY 3'-0" O.C. MAXIMUM.
18.) THE LIGHTNING PROTECTION INSTALLER IS TO CHECK AND VERIFY ALL DIMENSIONS AND CONDITIONS BEFORE THE WORK IS STARTED. INSTALLERS WHO FAIL TO VERIFY, REVIEW, AND COORDINATE THE WORK SHALL TAKE FULL RESPONSIBILITY FOR THE WORK AND ANY PORTION OF THE WORK THAT IS IMPROPERLY INSTALLED OR LOCATED. THE INSTALLER SHALL NOTIFY THE DESIGNER IF DIMENSIONAL ERRORS OR DESIGN CONFLICTS OCCUR, AND SHALL PROCEED ONLY UPON CLARIFICATION OR REVISION AS ISSUED BY ROBBINS LIGHTNING, INC.
19.) ALL LIGHTNING PROTECTION SYSTEMS REQUIRE PROPERLY INSTALLED SURGE PROTECTIVE DEVICES AS OUTLINED IN PARAGRAPH 13 OF UL 96A.
20.) WHERE POSSIBLE, SECURELY INSERT CABLE INTO EXISTING SPLICER OR POINT BASE TO CONSERVE SPLICERS
21.) PICTURES NEED TO BE TAKEN WHERE BONDS ARE GOING TO BE CONCEALED OR BURIED SUCH AS WATER, GAS, & ELECTRIC BONDS; GROUND RODS; THRU WALLS & THRU ROOFS, (INTERIOR PICTURES)
22.) THIS SYSTEM INCLUDES BONDING TO GAS PIPING PER CURRENT CODES. IF "CSST" GAS PIPING IS PRESENT, CURRENT PRACTICE MAY BE INADEQUATE TO PREVENT FLASHOVER FROM THE LIGHTNING PROTECTION SYSTEM. BONDING METHODS ARE UNDER CODE REVIEW. THE LIGHTNING PROTECTION MANUFACTURER, INSTALLER, LPI AND LPI-IP ACCEPT NO LIABILITY DUE TO LACK OF CONSENSUS ON MEASURES REQUIRED TO PREVENT DAMAGE, INJURY, OR LOSS DUE TO "CSST" FAILURES.

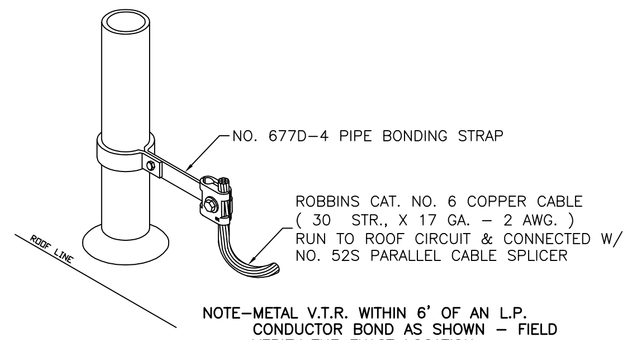
DWG. NO. P-175	LIGHTNING PROTECTION
DRAWN BY: PWN	FOR UNDERWOOD RESIDENCE PETOSKEY, MICHIGAN
CHECKED BY: JP	INSTALLATION BY: SLEEPING BEAR LIGHTNING PROTECTION MAPLE CITY, MICHIGAN
REVISED DATE:	
DATE: 01/16/2016	MATERIALS AND LAYOUT BY
SCALE: AS SHOWN	ROBBINS LIGHTNING, INC.
SHEET: ONE OF TWO	MARYVILLE, MO 64468 PHONE (660) 582-3156 FAX: (660) 582-3039 WEBSITE www.robbinslightning.com E-MAIL ADDRESS www.robbinsltng7@gmail.com



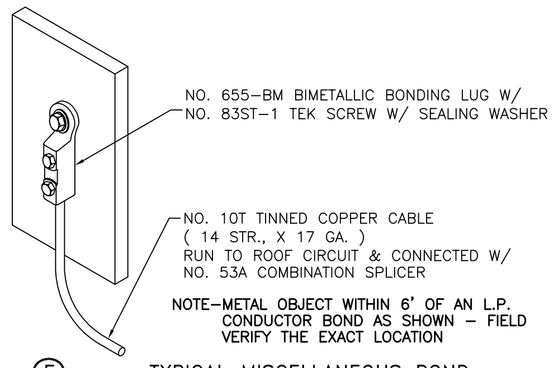
Ⓒ TYPICAL MISCELLANEOUS BOND
N.T.S.



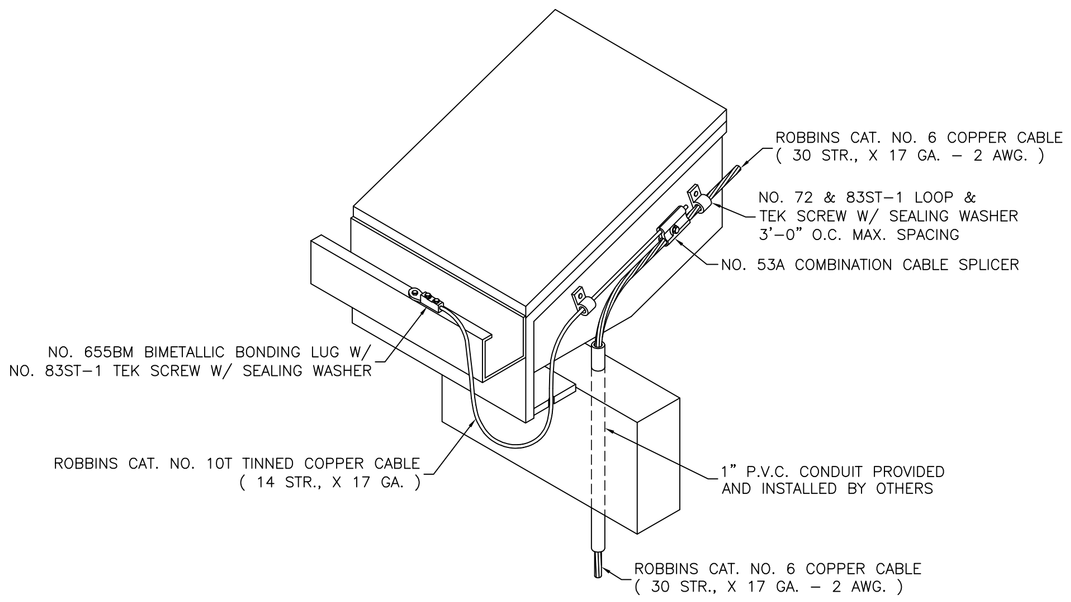
Ⓓ TYPICAL PIPE BOND
N.T.S.



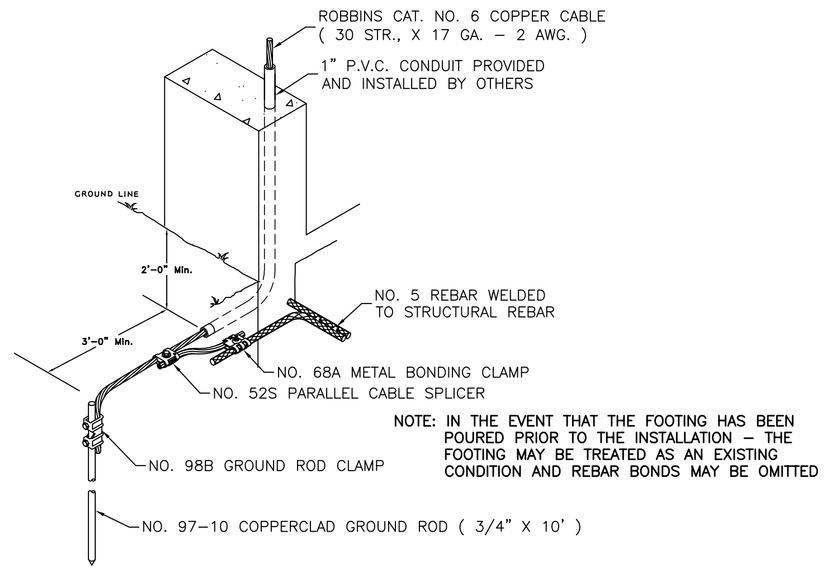
Ⓔ TYPICAL ROOF VENT BOND
N.T.S.



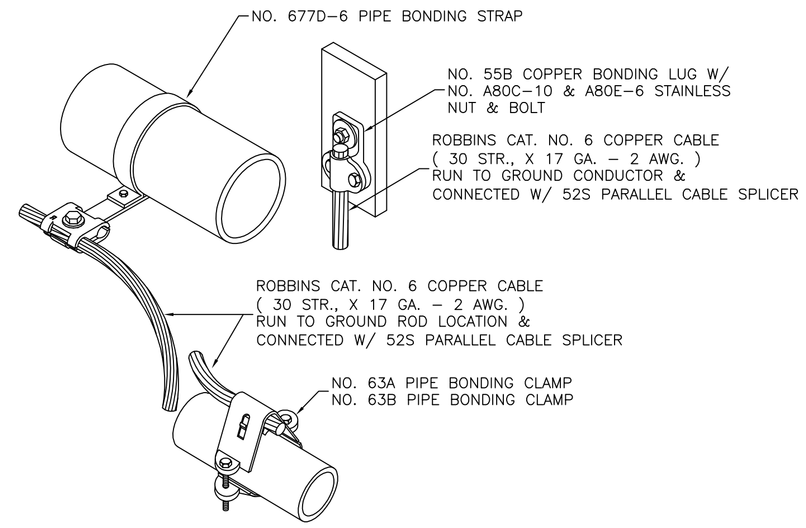
Ⓕ TYPICAL MISCELLANEOUS BOND
N.T.S.



Ⓖ TYPICAL GUTTER BOND & DOWNLEAD DETAIL
N.T.S.

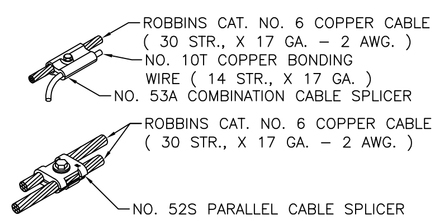


Ⓗ TYPICAL DOWNLEAD, REBAR BOND & GROUND
N.T.S.

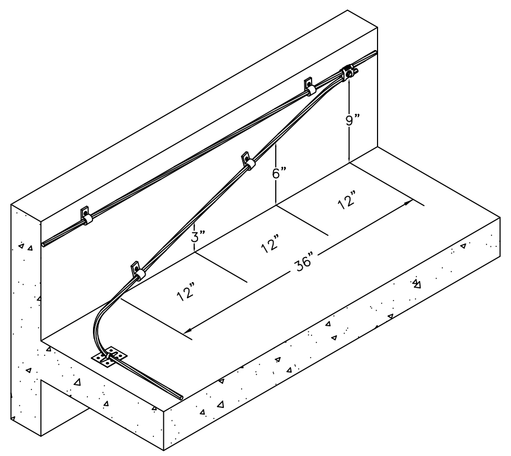


REFER TO GENERAL NOTE NO. 15

Ⓝ TYPICAL BELOW GRADE PIPE BOND & ELECTRICAL BOND
N.T.S.

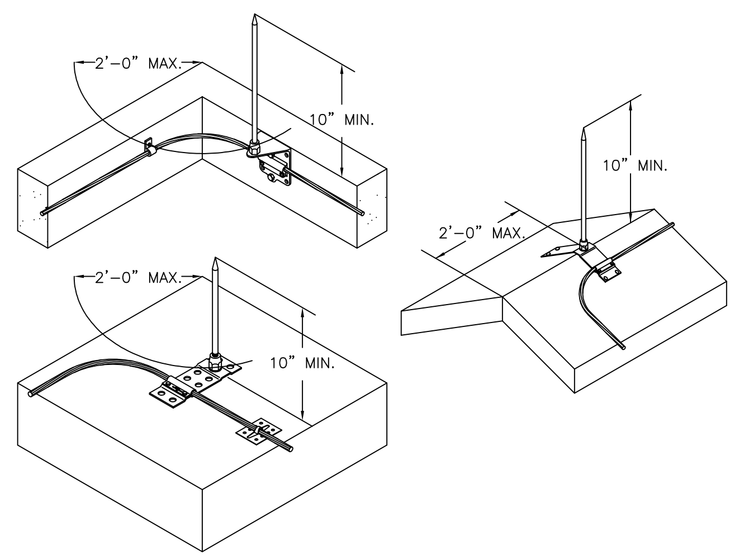


Ⓙ TYPICAL SPLICER DETAIL
N.T.S.



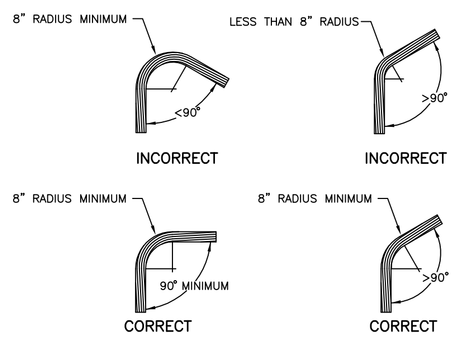
CABLE MAY RUN UPHILL FROM BONDING OR AIR TERMINAL
LOCATIONS NOT TO EXCEED A RATE OF 3" OF RISE PER
12" OF RUN. FASTEN CABLE EVERY 3'–0" O.C. MAXIMUM.

Ⓚ TYPICAL 3 TO 12 CABLE RISE ELEVATION
N.T.S.



NOTE: AIR TERMINALS MUST BE WITHIN 2'
FROM AN OUTSIDE CORNER AS INDICATED,
THIS WOULD APPLY TO ALL SITUATIONS.
PARAPETS, FLAT ROOFS, METAL UNITS, ETC.

Ⓛ TYPICAL PLACEMENT OF AIR TERMINALS AT OUTSIDE CORNERS
N.T.S.



REFER TO GENERAL NOTE
NO. 1 SHEET ONE

Ⓜ TYPICAL ACCEPTABLE CABLE BEND
N.T.S.

DWG. NO. P–175	*LIGHTNING PROTECTION*
DRAWN BY: PWN	FOR UNDERWOOD RESIDENCE
CHECKED BY: JP	PETOSKEY, MICHIGAN
REVISED DATE:	INSTALLATION BY: SLEEPING BEAR LIGHTNING PROTECTION
	MAPLE CITY, MICHIGAN
DATE: 01/16/2016	MATERIALS AND LAYOUT BY: ROBBINS LIGHTNING, INC.
SCALE: AS SHOWN	MARYVILLE, MO 64468 PHONE (660) 582–3156 FAX. (660) 582–3039
SHEET: TWO OF TWO	WEBSITE www.robbinslightning.com E–MAIL ADDRESS www.robbinsltng7@gmail.com