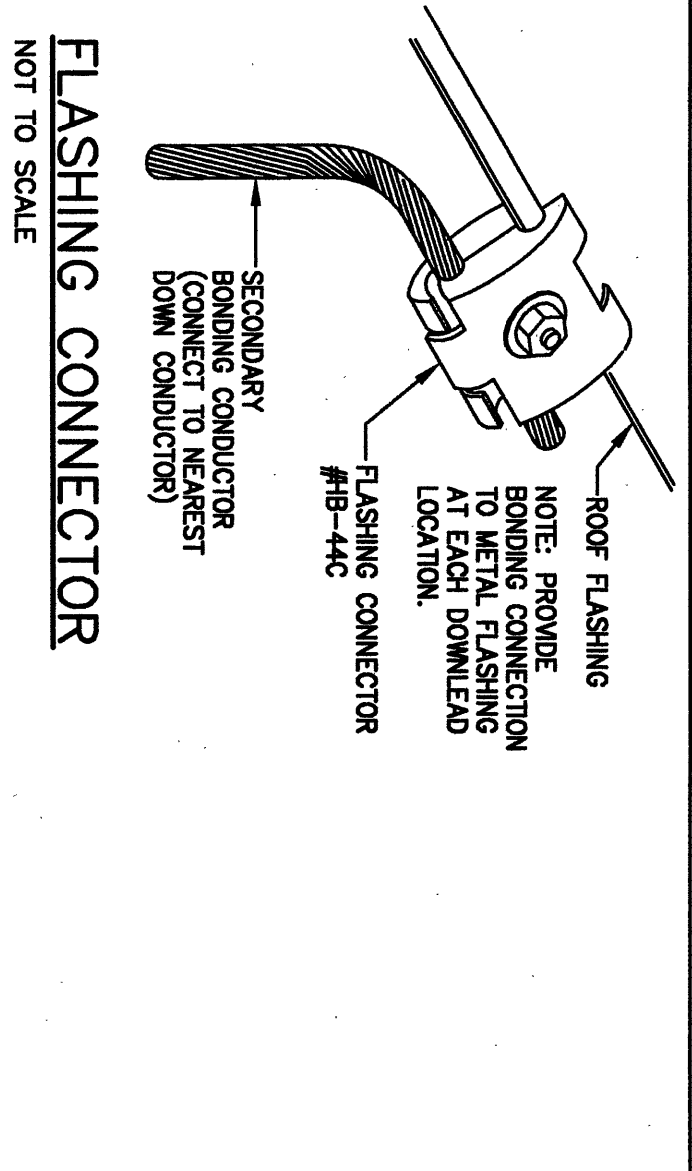
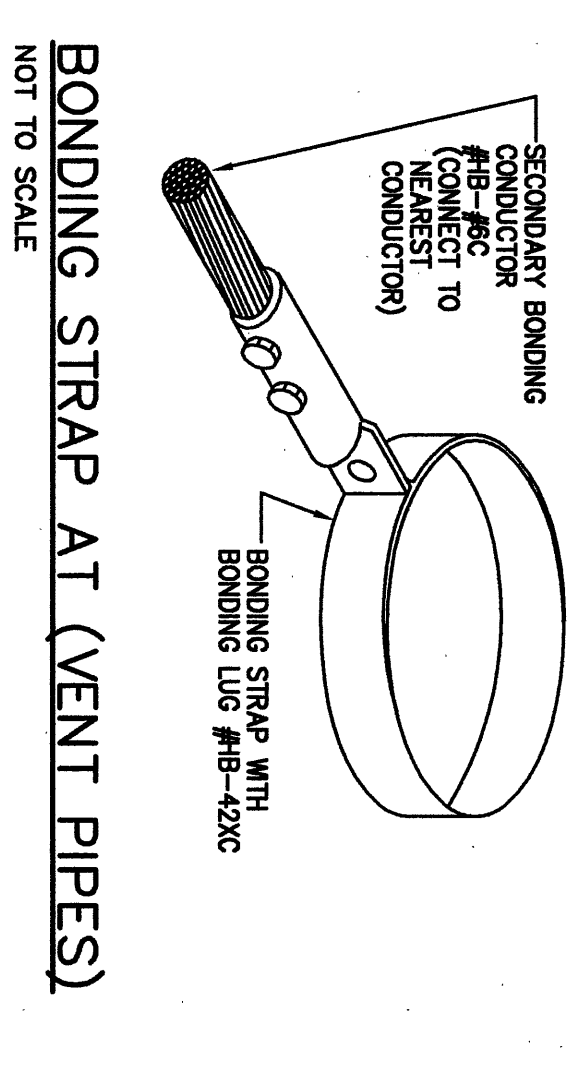
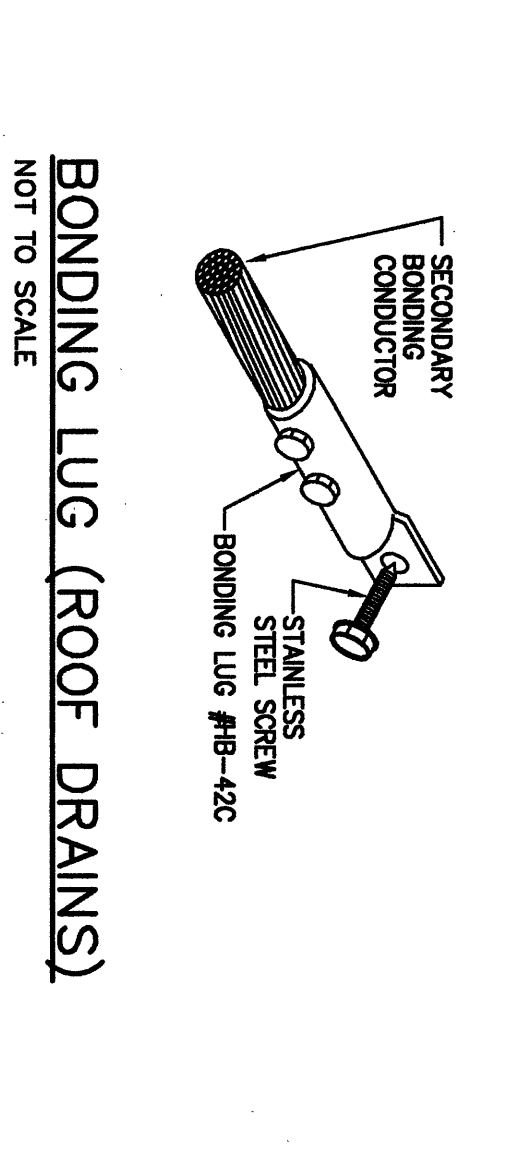


AIR TERMINAL AT LIGHT STANDARD
NOT TO SCALE
SYMBOL E-11

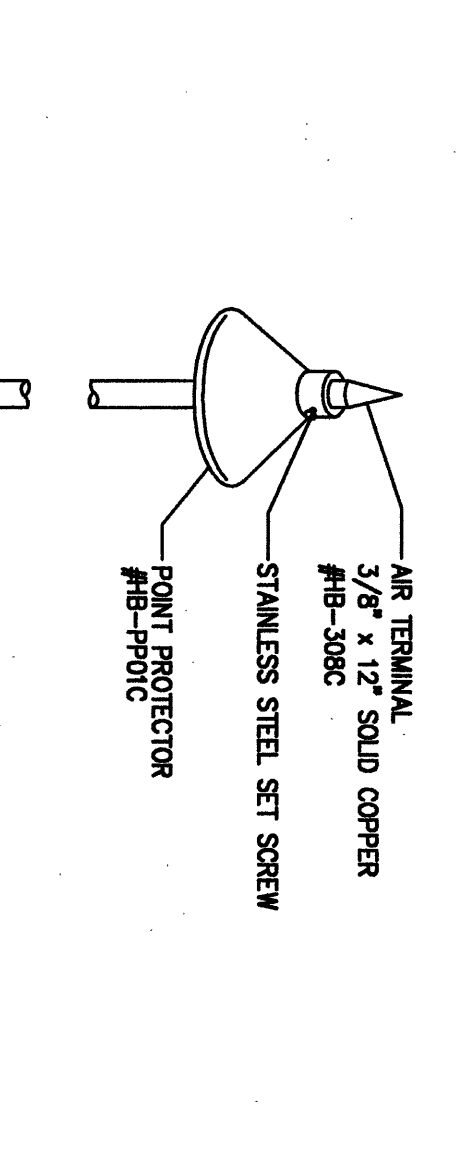
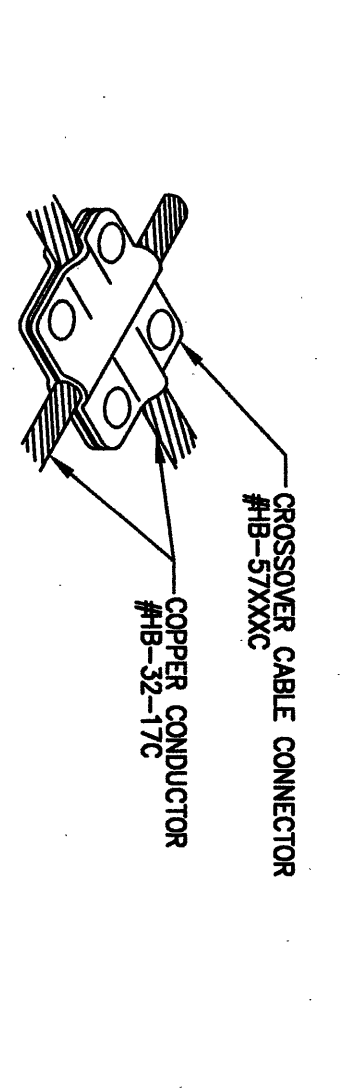
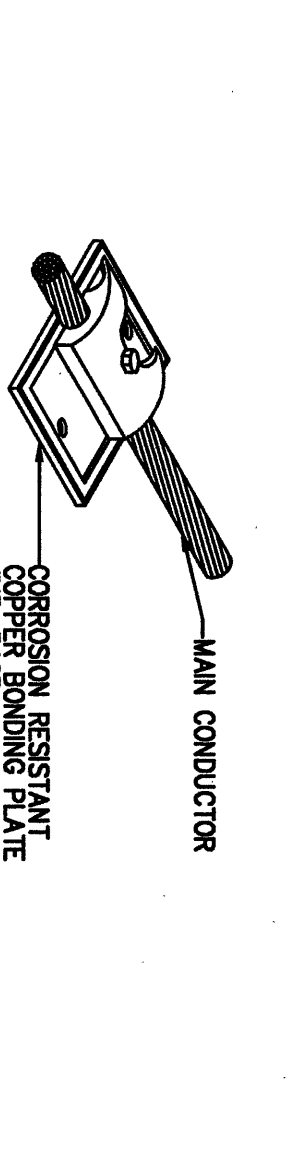
DOWNLEAD TO LOWER ROOF DETAIL
NOT TO SCALE
SYMBOL E-11

DOWNLEAD TO GROUND DETAIL
NOT TO SCALE
SYMBOL E-11

CROSS-RUN CONNECTION TO DOWN CONDUCTOR
NOT TO SCALE
SYMBOL E-11



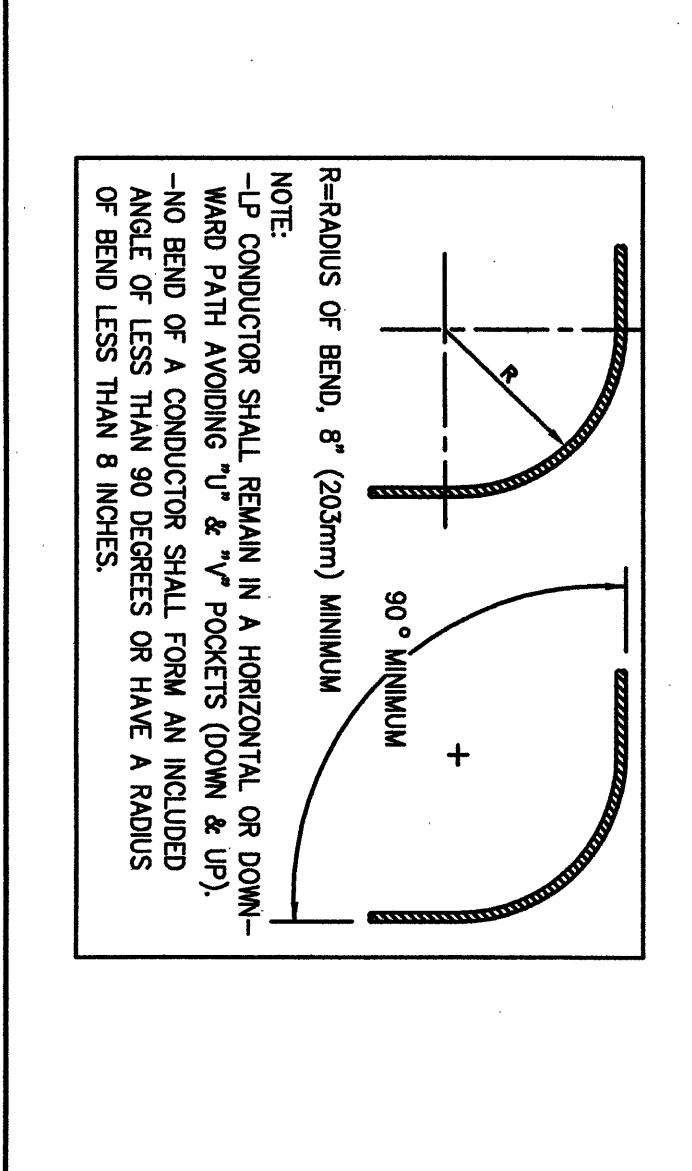
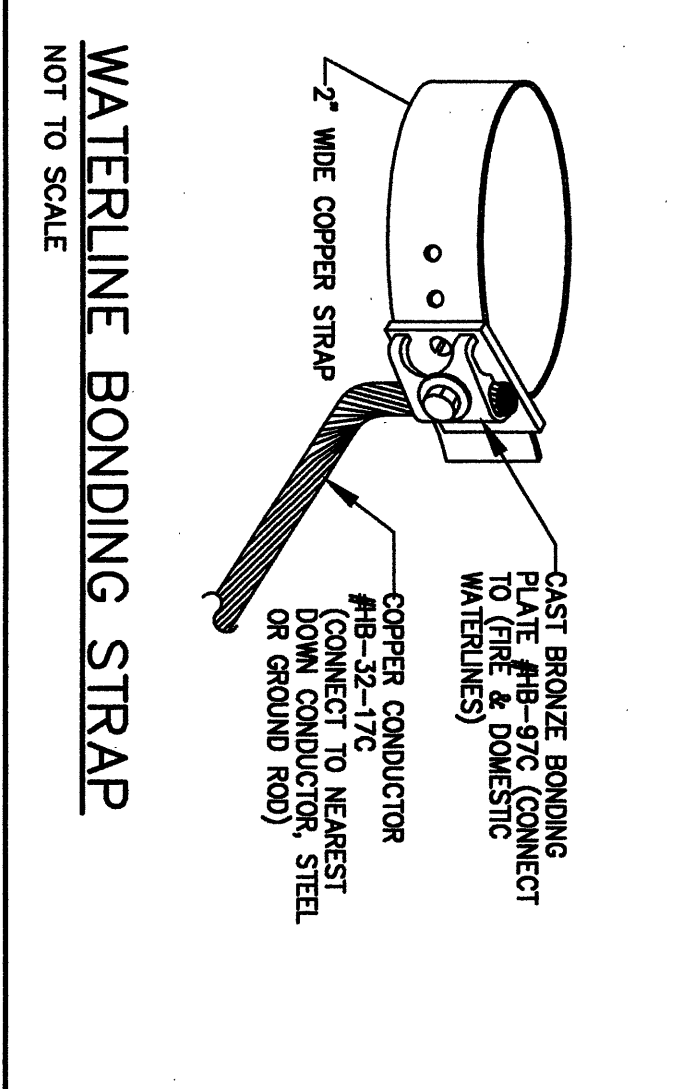
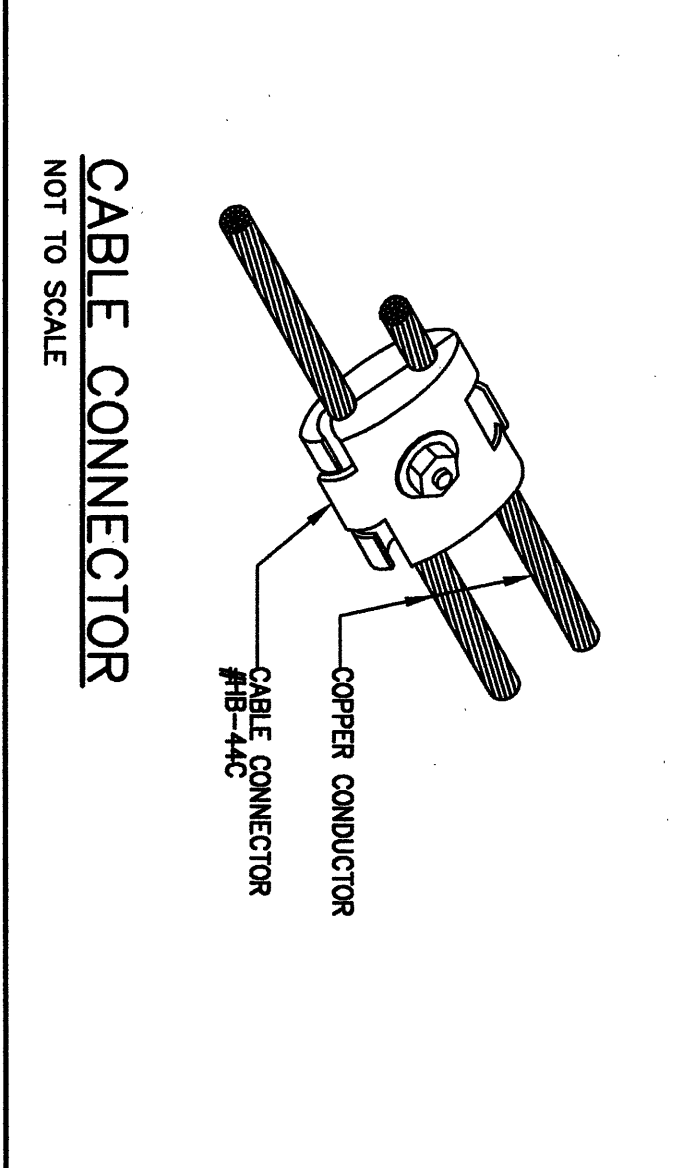
- LIGHTNING PROTECTION STANDARD NOTES:**
1. ALL MATERIALS SHOWN ARE MANUFACTURED BY HEAVY BROS. LIGHTNING PROTECTION CO., INC.
 2. THE LIGHTNING PROTECTION SYSTEM AS SHOWN ON DRAWING HAS BEEN DESIGNED IN ACCORDANCE WITH PRODUCT INFORMATION PROVIDED BY HEAVY BROS. LIGHTNING PROTECTION CO., INC. THE INSTALLATION SHALL COMPLY WITH THE SPECIFICATIONS AND CONDITIONS SET FORTH IN THE SYSTEM IN ACCORDANCE WITH NFPA 780 AND SUBMIT FOR REVIEW AS PART OF THE SHOP DRAWING PROCESS.
 3. CONDUCTORS SHALL MAINTAIN A HORIZONTAL OR DOWNWARD COURSE, FREE FROM "U" OR "V" (DOWN AND UP) CONNECTIONS TO GROUND ROD SHALL FORM AN ANGLE OF LESS THAN 90° NOR SHALL HAVE A RADIUS OF BEND LESS THAN 8 INCHES.
 4. NO SERIES OF A CONDUCTOR SHALL FORM AN ANGLE OF LESS THAN 90° NOR SHALL HAVE A RADIUS OF BEND LESS THAN 8 INCHES.
 5. AIR TERMINALS SHALL BE PLACED 90°-0" MAXIMUM SPACING AROUND THE ROOF PERIMETER OR ALONG ROOF RIDGES AND WITHIN 2'-0" OF OUTSIDE CORNER EDGE.
 6. MID ROOF AIR TERMINALS SHALL BE PLACED 50'-0" MAXIMUM SPACING.
 7. ACTUAL JOBSITE CONDITIONS MAY REQUIRE SLIGHT ALTERATIONS IN AIR TERMINAL, DOWN CONDUCTOR AND GROUND ROD LOCATIONS.
 8. BARE COPPER MATERIALS SHALL NOT BE INSTALLED ON ALUMINUM SURFACES AND ALUMINUM MATERIALS SHALL NOT BE INSTALLED ON COPPER SURFACES.
 9. ALL LIGHTNING PROTECTION CONDUCTORS SHALL BE FASTENED HORIZONTALLY AND VERTICALLY NOT MORE THAN 3'-0" O.C. MAXIMUM SPACING.
 10. METALLIC BODIES OF INDUCTION, SITUATED WITHIN 6'-0" OF A LIGHTNING CONDUCTOR OR ANOTHER BONDED METAL BODY SHALL BE INTERCONNECTED TO THE LIGHTNING CONDUCTOR SYSTEM, UNLESS INHERENTLY GROUNDING.
 11. BOND TO ALL METAL BODIES OF CONDUCTANCE WITHIN 6'-0" OF THE MAIN LIGHTNING CONDUCTOR SUCH AS EXHAUST METAL STACKS AND ANY OTHER LARGE METAL BODY WHOSE HEIGHT EXCEEDS THAT OF THE AIR TERMINALS IN USE, UNLESS PROTECTED BY HIGHER ROOF ELEVATIONS.
 12. CONNECTIONS TO GROUND ROD SHALL BE MADE AT A POINT NOT LESS THAN 1'-0" BELOW FINISHED GRADE AND 2'-0" AWAY FROM FOUNDATION WALL.
 13. BOND TO WATERLINES (DOMESTIC & FIRE).
 14. A LIGHTNING ARRESTOR, PROTECTOR OR ANTENNA DISCHARGE LIMIT SHALL BE INSTALLED ON EACH ELECTRICAL AND TELEPHONE SERVICE AND RADIO AND TELEVISION ANTENNA LEAD-IN BY THE ELECTRICAL CONTRACTOR, OR OTHERS, PER NFPA-70.
 15. SURGE TRANSPARENT PROTECTION OF SERVICES IS THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR OR THE SUPPLIER OF SENSITIVE EQUIPMENT. (I.E. COMPUTERS, COPIERS, TELEPHONE, ETC.)



BONDING LUG (ROOF DRAINS)
NOT TO SCALE

BONDING STRAP AT (VENT PIPES)
NOT TO SCALE

FLASHING CONNECTOR
NOT TO SCALE



AIR TERMINAL POINT PROTECTOR
NOT TO SCALE
SYMBOL E-11

LIGHTNING PROTECTION MATERIALS LIST

COPPER LIGHTNING PROTECTION MAIN CONDUCTOR	#B-32-17C
COPPER LIGHTNING PROTECTION SECONDARY CABLE	#B-32C
CABLE FASTENERS (ASTM A575) (E.V. 3/8")	#B-72C, 86C, 64C/85SS
3/8" x 1/2" COPPER AIR TERMINAL AND ADHESIVE BASE	#B-308C, 32C
3/8" x 1/2" COPPER AIR TERMINAL AND PARAPET BASE	#B-308C, 32C
SWIVEL ADAPTERS (AT LIGHT STANDARDS)	#B-350C
1/2" x 24" ALUMINUM AIR TERMINAL AND TOP MOUNT BASE	#B-304A, 23VA
SECONDARY BONDING:	
FLASHING CONNECTOR	#B-44C
METAL ROOF DRAIN / GUTTER CONNECTOR	#B-42C
METAL VENT PIPE CONNECTOR	#B-42XC
BONDING STRAP (AT BASE OF LIGHT STANDARDS)	#B-570R
COPPER BONDING PLATE (TO BASE OF STEEL AT EACH DOWNLEAD)	#B-54CR
CABLE CONNECTOR	#B-44C
STRAIGHT SPLICE	#B-26C
CROSSOVER CABLE CONNECTOR	#B-570XC
WATERLINE CONNECTOR (FIRE & DOMESTIC)	#B-57C
5/8" x 1/2" COPPER WEDGED GROUND ROD AND CONNECTOR	#B-108CR, 111

CONFORMED SET FOR FIELD USE

CITY OF PORTLAND, PORTLAND, MAINE

DEPARTMENT OF WATERFRONT AND TRANSPORTATION

PORTLAND INTERNATIONAL JETPORT

PHASE II PARKING GARAGE

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LEVEL 5 LIGHTNING PROTECTION DETAILS

E3-1

If this sheet is less than 30"x42" in size, it has been reduced. Graphic scales must be adjusted accordingly.