

TO SERVICE DISCONNECT ENCLOSURE GROUND BUS/LUG. CONFIRM GROUNDING REQUIREMENTS FOR METER BASE WITH SERVING ELECTRIC UTILITY. CONNECT #1/0 AWG CU GROUNDING ELECTRODE CONDUCTOR TO METER BASE IN ACCORDANCE WITH SERVING ELECTRIC UTILITY CO. REQUIREMENTS/STANDARDS.

HIGH VOLTAGE WIREWAY #2 LOW VOLTAGE WIREWAY #2

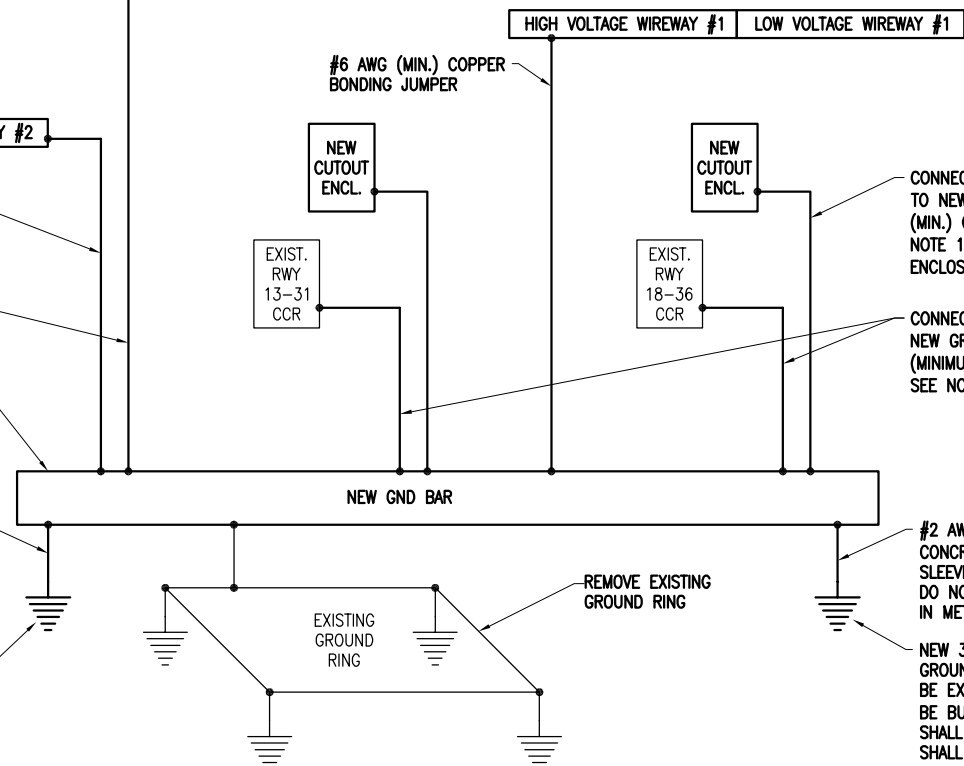
BOND HIGH VOLTAGE & LOW VOLTAGE WIREWAYS TO NEW GROUND BUS WITH A #6 AWG (MIN.) COPPER BONDING JUMPER. SEE NOTE 1.

#1/0 AWG COPPER IN 3/4" SCHEDULE 40 PVC

1/4" THICK x 2" HIGH x 20" LONG COPPER GROUND BUS WITH STANDOFF INSULATORS. GROUND BUS SHALL BE AS MANUFACTURED BY HARGER CAT. NO. GBI 14220N OR APPROVED EQUAL. FIELD VERIFY & COORDINATE LOCATION INSIDE EXISTING VAULT TRANSCLOSURE.

#2 AWG BARE COPPER. CORE DRILL THROUGH CONCRETE SLAB & INSTALL 3/4" SCHED 40 PVC SLEEVE FOR GROUNDING ELECTRODE CONDUCTOR. DO NOT INSTALL GROUNDING ELECTRODE CONDUCTOR IN METAL RACEWAY OR METAL CONDUIT.

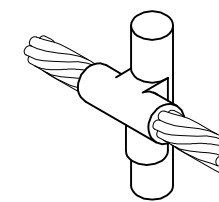
NEW 3/4" DIA x 20'L UL LISTED COPPERCLAD GROUND ROD. CONNECTION TO GROUND RODS SHALL BE EXOTHERMIC WELD. TOP OF GROUND ROD SHALL BE BURIED 30" MIN. BELOW GRADE. GROUND RODS SHALL BE ON OPPOSITE CORNERS OF THE VAULT AND SHALL BE SEPARATED BY A MINIMUM DISTANCE OF ONE ROD LENGTH (20 FT).



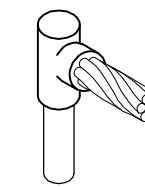
VAULT GROUND BUS RISER

NOTES

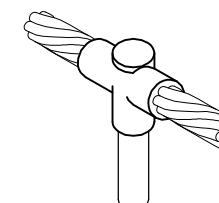
1. CONNECTIONS TO GROUND BUS BAR SHALL BE WITH 2-HOLE TONGUE LONG BARREL COMPRESSION LUGS BOLTED TO THE BUS BAR WITH 3/8" STAINLESS STEEL BOLTS, NUTS, AND WASHERS.
2. ALL INSULATED GROUND WIRES SHALL HAVE GREEN COLORED INSULATION FOR ALL CONDUCTOR AWG AND KCMIL.
3. CONSTANT CURRENT REGULATORS SHALL BE SHUT OFF PRIOR TO DISCONNECTING EXISTING FRAME GROUNDS AND SHALL REMAIN OFF UNTIL GROUNDING UPGRADES AND NEW GROUND CONNECTIONS ARE COMPLETED.
4. ALL WORK SHOWN ON THIS SHEET SHALL BE PAID FOR UNDER ITEM AR109200 "INSTALL ELECTRICAL EQUIPMENT" PER LUMP SUM.
5. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS. REPORT ANY VARIATIONS TO THE RESIDENT ENGINEER. EXISTING EQUIPMENT CONNECTED TO THE EXISTING GROUND SYSTEM SHALL BE RECONNECTED TO THE NEW GROUND BAR.



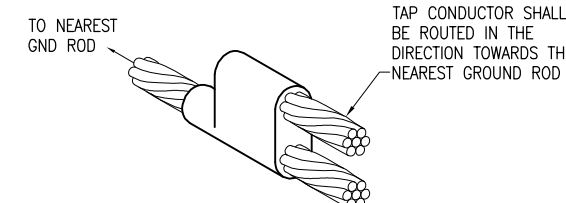
CABLE TO GROUND ROD



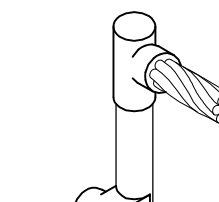
CABLE TO GROUND ROD



CABLE TO GROUND ROD



CABLE TO CABLE HORIZONTAL PARALLEL TAP



CABLES TO GROUND ROD

2 HOLE LONG BARREL COMPRESSION LUG TABLE			
WIRE SIZE	BURNDY CAT. NO.	THOMAS & BETTS CAT. NO.	PENN-UNION CAT. NO.
#8 AWG STRANDED	YA8C-2TC38	256-30695-1157	BBLU-8D-2TC38
#6 AWG SOLID	YA8C-2TC38 OR YA6C-2TC38E2G1		
#6 AWG STRANDED	YA6C-2TC38	256-30695-1158	BBLU-6D-2TC38
#4 AWG STRANDED	YA4C-2TC38	256-30695-1159	BBLU-4D-2TC38
#2 AWG STRANDED	YA2C-2TC38	256-30695-1160	BBLU-2D-2TC38
#2 AWG SOLID	YA3C-2TC38	256-30695-1160	BBLU-3D-2TC38
#1/0 AWG STRANDED	YA25-2TC38	256-30695-1162	BBLU-1/0D-2TC38
#2/0 AWG STRANDED	YA26-2TC38	256-30695-1116	BBLU-2/0D-2TC38
#3/0 AWG STRANDED	YA27-2TC38	54816BE	BBLU-3/0D-2TC38
#4/0 AWG STRANDED	YA28-2TC38	256-30695-1117	BBLU-4/0D-2TC38

NOTES

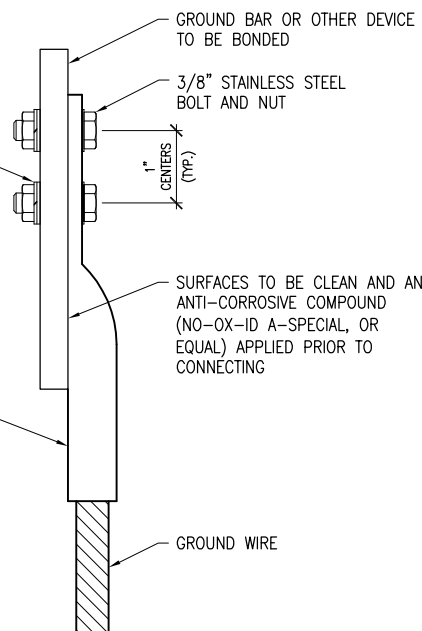
1. ALL CONNECTIONS TO GROUND BUS BAR SHALL BE WITH 2 HOLE TONGUE LONG BARREL COMPRESSION LUGS BOLTED TO THE BUS BAR.
2. GROUND WIRE CONNECTIONS TO EQUIPMENT SHALL BE WITH 2 HOLE TONGUE LONG BARREL COMPRESSION LUGS BOLTED TO THE DEVICE OR WITH THE RESPECTIVE EQUIP MANUFACTURER'S LUG OR TERMINAL WHERE APPLICABLE.
3. GROUNDING ELECTRODE CONDUCTORS, BONDING JUMPERS, & INDIVIDUAL GROUND WIRES SHALL NOT BE INSTALLED IN METAL CONDUIT. WHERE PLASTIC CONDUIT IS USED FOR INDIVIDUAL GROUND WIRES, DO NOT COMPLETELY ENCIRCLE THE CONDUIT WITH FERROUS AND/OR MAGNETIC MATERIALS. WHERE METAL CLAMPS ARE INSTALLED USE NYLON BOLTS, NUTS, WASHERS, & SPACERS TO INTERRUPT A COMPLETE METALLIC PATH FROM ENCIRCLING THE CONDUIT.
4. ALL CONNECTIONS SHALL BE COATED WITH A CORROSION PREVENTATIVE COMPOUND (SANCHEM INC. NO-OX-ID "A-SPECIAL", OR BURNDY PENETROX E, OR APPROVED EQUAL) BEFORE JOINING. ALL COPPER BUS BARS SHALL BE CLEANED PRIOR TO MAKING CONNECTIONS TO REMOVE SURFACE OXIDATION. CLEAN SURFACES, OF RESPECTIVE DEVICES TO BE BONDED, TO BARE METAL, PER NEC 250-12.

GROUNDING LUG CONNECTION DETAIL

DETAIL NOTES

1. ALL BELOW GRADE CONNECTIONS TO GROUND RODS & GROUND RING CONDUCTORS SHALL BE EXOTHERMIC WELD TYPE CONNECTIONS. EXOTHERMIC WELDS SHALL BE CADWELDED AS MANUFACTURED BY ERICO PRODUCTS, SOLON, OHIO, ULTRAWELD AS MANUFACTURED BY HARGER LIGHTNING PROTECTION & GROUNDING EQUIPMENT, GRAYSLAKE, IL, THERMOWELD AS MANUFACTURED BY CONTINENTAL INDUSTRIES, TULSA, OKLAHOMA, OR APPROVED EQUAL. VERIFY PROPER SIZES, MOLDS, TYPES, AND REQUIREMENTS FOR THE RESPECTIVE APPLICATION WITH THE MANUFACTURER, AND INSTALL PER THEIR DIRECTIONS.
2. FOR APPLICATIONS TO GALVANIZED STEEL OR PAINTED STEEL, REMOVE GALVANIZING AND/OR PAINT & CLEAN THE SURFACE TO EXPOSE BARE STEEL BEFORE MAKING EXOTHERMIC WELD CONNECTION.
3. INDIVIDUAL GROUNDING ELECTRODE CONDUCTORS SHALL NOT BE INSTALLED IN METAL CONDUIT. INSTALL GROUNDING ELECTRODE CONDUCTORS IN SCHED 40 PVC CONDUIT AS REQUIRED IN FOUNDATIONS, FOR PROTECTION, WHERE ENTERING ENCLOSURES, ETC. WHERE PLASTIC CONDUIT IS USED FOR INDIVIDUAL GROUND WIRES, DO NOT COMPLETELY ENCIRCLE THE CONDUIT WITH FERROUS AND/OR MAGNETIC MATERIALS. WHERE METAL CLAMPS ARE INSTALLED USE NYLON BOLTS, NUTS, WASHERS, & SPACERS TO INTERRUPT A COMPLETE METALLIC PATH FROM ENCIRCLING THE CONDUIT.

EXOTHERMIC WELD DETAILS



STAINLESS STEEL FLAT WASHER AND LOCK WASHER EACH CONNECTION, OR STAINLESS STEEL 2-HOLE GROUND LUG WASHER; SITE PRO PART NO. GW381, OR EQUAL, EACH CONNECTION

TWO BOLT TONGUE, LONG BARREL, COPPER, DOUBLE COMPRESSION CRIMP CONNECTOR

GROUND WIRE

SURFACES TO BE CLEAN AND AN ANTI-CORROSIVE COMPOUND (NO-OX-ID A-SPECIAL, OR EQUAL) APPLIED PRIOR TO CONNECTING

1" CENTERS (TYP.)

REVISION	DATE

MARSHALL COUNTY AIRPORT
LACON, ILLINOIS

BLOCK GRANT PROJ.: 3-17-0059-B15
IL PROJ.: C75-4223

Hanson Proj. No. 10A0051	FILENAME E-606.DWG	Scale NONE	Date 12/14/12
LAYOUT	KNL	08/26/10	
DRAWN	MLH	09/01/10	
REVIEWED	KNL/CAH	03/30/11	

HANSON
Professional Services Inc. 2013
1525 South Sixth Street
Springfield, Illinois 62703-2986
Ph: (217) 788-2450 Fax: (217) 788-2503
www.hanson-inc.com
Offices Nationwide

PAVE, LIGHT AND MARK
805' EXTENSION

VAULT GROUND BUS RISER
AND GROUNDING DETAILS