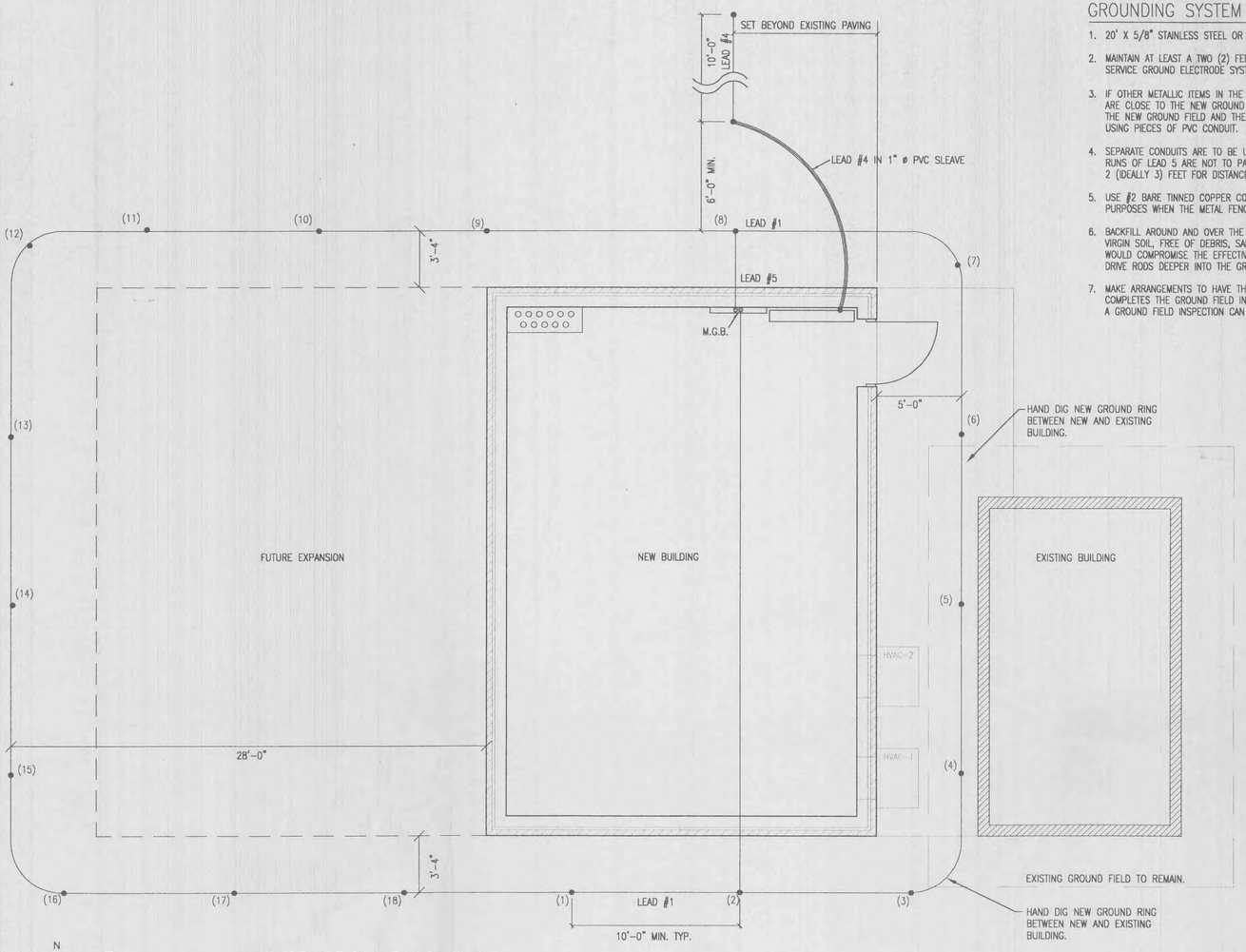
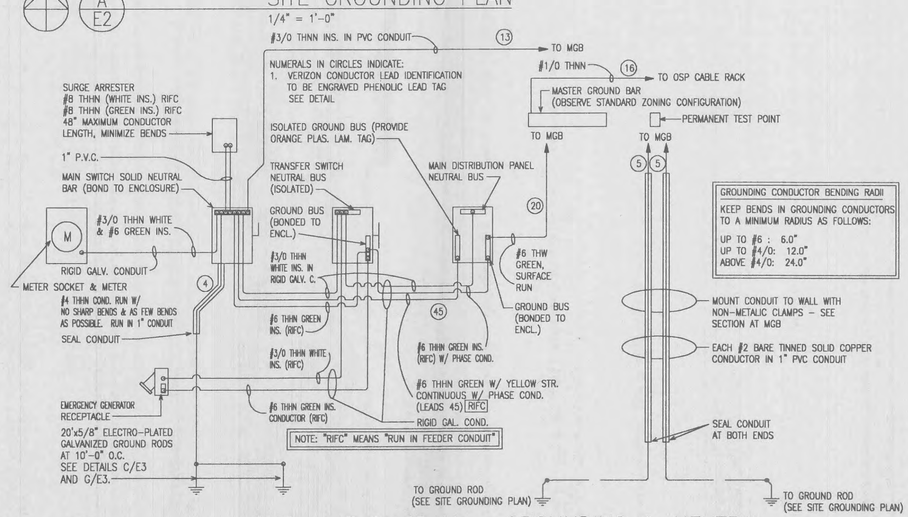


N

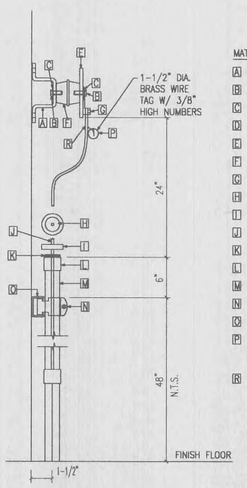
A / E2 SITE GROUNDING PLAN

1/4" = 1'-0"



B / E2 ONE-LINE DIAGRAM - GROUNDING & NEUTRAL

NTS



MATERIAL LIST:

- [A] STAND-OFF MTG. BRACKET
- [B] HEX HD. CADMIUM PLATED BOLT
- [C] LOCK WASHER CADMIUM PLATED 5/8"
- [D] NOT USED
- [E] COPPER GRD. BAR MGB/FGB/CVGB
- [F] STAND-OFF INSULATOR
- [G] 2 HOLE LUG
- [H] PVC INSERT IN BUSHING TO CENTER GRD. WIRE
- [I] PVC BUSHING
- [J] COPPER GRD. CONDUCTOR
- [K] CUT THREADS ON PVC TERMINAL ADAPTER TO LENGTH OF BUSHING
- [L] PVC TERMINAL ADAPTER
- [M] 1" PVC CONDUIT SCH-40
- [N] PVC NON-METALLIC PIPE CLAMP
- [O] #12 GAUGE STRUT 1" LG.
- [P] LEAD NUMBER TAGS USED AT EACH TERMINATION AT MGB-FGB-CVGB WATER LINE AND MAIN AC SERVICE - 3" FROM LUG
- [R] NYLON TY-RAP

C / E2 SECTION AT MGB

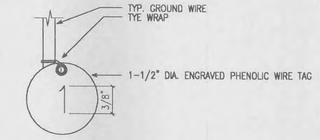
NTS

GROUNDING SYSTEM NOTES

1. 20' X 5/8" STAINLESS STEEL OR GALVANIZED GROUND RODS.
2. MAINTAIN AT LEAST A TWO (2) FEET SEPARATION BETWEEN THE NEW GROUND FIELD AND THE AC SERVICE GROUND ELECTRODE SYSTEM (LEAD4).
3. IF OTHER METALLIC ITEMS IN THE GROUND SUCH AS GAS LINES, OLD POWER GROUNDS, OR WATER LINES ARE CLOSE TO THE NEW GROUND FIELD, MAINTAIN AT LEAST A TWO (2) FOOT SEPARATION BETWEEN THE NEW GROUND FIELD AND THESE ITEMS OR INSULATE THE GROUND FIELD LEAD NEAR THESE ITEMS USING PIECES OF PVC CONDUIT.
4. SEPARATE CONDUITS ARE TO BE USED FOR EACH LEAD 5 RUN TO EXIT THROUGH THE BUILDING. RUNS OF LEAD 5 ARE NOT TO PARALLEL THE LEAD 1 GROUND SYSTEM LEAD CLOSER THAN 2 (IDEALLY 3) FEET FOR DISTANCES GREATER THAN 5 TO 10 FEET.
5. USE #2 BARE TINNED COPPER CONDUCTOR TO BOND METALLIC FENCING TO THE GROUND FIELD FOR SAFETY PURPOSES WHEN THE METAL FENCING IS LOCATED WITHIN SIX FEET HORIZONTALLY.
6. BACKFILL AROUND AND OVER THE GROUND FIELD LEAD AND RODS WITH MINIMUM 12" OF VIRGIN SOIL, FREE OF DEBRIS, SAND, GRAVEL, OR OTHER MATERIAL THAT WOULD COMPROMISE THE EFFECTIVENESS OF THE THE GROUND SYSTEM. IF NECESSARY, DRIVE RODS DEEPER INTO THE GROUND TO ACCOMPLISH THIS.
7. MAKE ARRANGEMENTS TO HAVE THE T&P ADMINISTRATOR NOTIFIED AFTER THE CONTRACTOR COMPLETES THE GROUND FIELD INSTALLATION, EXCEPT FOR BACKFILLING IN ORDER THAT A GROUND FIELD INSPECTION CAN BE PERFORMED.

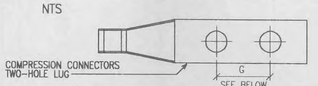
GROUNDING METHODS AND SPECIFICATIONS

1. PROVIDE GREEN GROUND WIRE IN EACH CIRCUITS. ALSO PROVIDE BUILDING SYSTEM GROUNDING, GROUND FIELD AS SHOWN ON DRAWINGS AND AS REQUIRED BY VERIZON.
2. THE CONTRACTOR SHALL NOTIFY THE BUILDING SERVICES ENGINEER AND T & P ADMINISTRATOR ONE WEEK PRIOR TO THE ESTIMATED GROUND FIELD COMPLETION DATE SO AN OPEN TRENCH INSPECTION OF THE GROUND FIELD CAN BE MADE. AT THAT TIME VERIZON PERSONNEL SHALL TEST THE GROUND FIELD FOR TOTAL SYSTEM RESISTANCE. UPON SUCCESSFUL COMPLETION OF TESTING, VERIZON SHALL INSTRUCT THE CONTRACTOR TO BACKFILL AND COMPACT THE TRENCH PER SPECIFICATIONS.
3. CONTRACTOR SHALL MARK EACH LEAD ON MASTER GROUND BUS WITH STAMPED BRASS TAG IDENTIFYING THE LEAD NUMBER AS CALLED OUT ON THE DRAWINGS, AND ATTACH TAG TO CABLE WITH PLASTIC TIE WRAP.
4. CONTRACTOR SHALL PROVIDE (2) GREEN GROUND WIRES ACROSS EACH FLEXIBLE CANVAS MECHANICAL DUCTWORK TO ENSURE GROUND CONTINUITY OF DUCTWORK.
5. USE NON-METALLIC CLIPS TO MOUNT OR STRAP CONDUCTORS TO WALL. DO NOT ENCIRCLE GROUND CONDUCTORS WITH METAL.
6. OBSERVE MINIMUM BEND RADII AS NOTED ON ONE-LINE DIAGRAM - GROUNDING & NEUTRAL.
7. CONTRACTOR SHALL REFER TO THE STANDARD LUG SCHEDULE FOR CORRECT WIRE TERMINATION.
8. GROUNDING CONDUCTORS TERMINATED AT THE GROUND BAR WILL NOT HAVE MORE THAN 1/16" GAP BETWEEN THE TERMINATION BARREL AND THE INSULATION OF THE CONDUCTOR EXPOSED. HEAT-SHRINK TUBING TO BE USED TO ACHIEVE THIS OBJECTIVE.



D / E2 GROUND LEAD TAG DETAIL

NTS



GAUGE	T&B	G	BOLT SIZE	BURNDY	G	BOLT SIZE
NO.6 AWG STR.*	54852BE	5/8"	1/4" ON 5/8" CENTER	YA6C-2N	1-3/4"	1/4"
NO.4 AWG STR.	54854BE	5/8"	1/4" ON 5/8" CENTER	YA4C-2N	1-3/4"	1/4"
NO.2 AWG STR.**	54856BE	3/4"	5/16" ON 7/8" CENTER	YA2C-2N	1-3/4"	5/16"
NO.1 AWG STR.	54858BE	7/8"	5/16" ON 7/8" CENTER	YA1C-2N	1-3/4"	1/2"
1/0 AWG STR.	54860BE	7/8"	5/16" ON 7/8" CENTER	YA25-2N	1-3/4"	1/2"
2/0 AWG STR.	54862BE	1-3/4"	1/2" ON 1-3/4" CENTER	YA26-2N	1-3/4"	1/2"
3/0 AWG STR.	54864BE	1-3/4"	1/2" ON 1-3/4" CENTER	YA27-2N	1-3/4"	1/2"
4/0 AWG STR.	54866BE	1-3/4"	1/2" ON 1-3/4" CENTER	YA28-2N	1-3/4"	1/2"
250 MCM	54868BE	1-3/4"	1/2" ON 1-3/4" CENTER	YA29-2N	1-3/4"	1/2"
350 MCM	54872BE	1-3/4"	1/2" ON 1-3/4" CENTER	YA31-2N	1-3/4"	1/2"
500 MCM	54876BE	1-3/4"	1/2" ON 1-3/4" CENTER	YA34-2N	1-3/4"	1/2"
750 MCM	54880BE	1-3/4"	1/2" ON 1-3/4" CENTER	YA39-2N	1-3/4"	1/2"

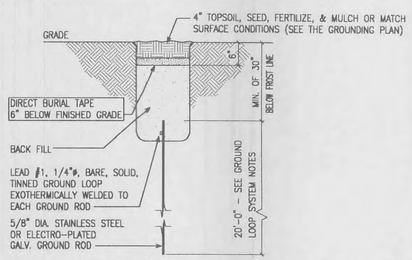
* FOR SOLID COPPER NO.6 AWG, USE STANDARD TWO-HOLE LUGS, T&B LOCKTITE 32005, OR EQUIVALENT.

NOTE: USE MECH. TYPE LUGS FOR LEAD #5.

** FOR SOLID COPPER NO.2 AWG, USE STANDARD TWO-HOLE LUGS, T&B LOCKTITE 32007, OR EQUIVALENT.

E / E3 STANDARD LUG SCHEDULE

NTS



F / E2 GROUND ROD CONNECTION DTL.

NTS

Revision	Date	No.

Notice

NO PART OF THESE PLANS AND/OR PROJECT MANUAL MAY BE REPRODUCED, COPIED, STORED IN A RETRIEVAL SYSTEM OR TRANSMITTED IN ANY FORM BY ANY MEANS WITHOUT PRIOR WRITTEN PERMISSION OF MITZEL + SCROGGS ARCHITECTS, INC.

DRAWINGS SHALL NOT BE SCALED.

QUESTIONS ON DIMENSIONS SHALL BE REFERRED TO THE ARCHITECT'S OFFICE.

CONTRACTORS SHALL VERIFY AND COORDINATE ALL DIMENSIONS, DETAILS, AND JOB CONDITIONS.

NOTE:

1. BASE BID ON GROUNDING FIELD AS SHOWN. PLANS MAY CHANGE & BE MODIFIED BASED ON RESISTIVITY MEASURMENTS. CONTRACTOR SHALL VERIFY W/ VERIZON PRIOR TO BEGINNING.
2. CONTRACTOR SHALL PROVIDE AN INTERIOR CLEAR, NO BUILD ZONE BETWEEN 8'-0" & 9'-0" A.F.F. (I.E. NO DUCTS, DIFFUSERS, HANGERS OR FIXT. ETC.)

verizon inc.

Addition to R.S.U. Building
Hillman Remote

1235 Bryan Lane
O'Fallon, Missouri 63366

mitzel + scroggs
architects designers planners

2401 East Broadway Bldg A
Columbia, MO 65201-6118
Telephone (573) 449-0951
Fax (573) 449-0921

GROUNDING SYSTEM

Scale	AS NOTED
Date	04-23-01
Comm No.	001998
In Charge	DCM
Drawn By	RLC
Checked By	SSS

E2