NOTE FOR CONDUIT BOND BUSHINGS:
METAL ELBOWS ARE NOT REQUIRED TO BE GROUNDED WHEN THEY ARE INSTALLED SUCH THAT ALL OF THE ELBOW IS AT LEAST 18-INCHES BELOW GRADE. NO PART OF THE ELBOW CAN BE CLOSER THAN 18" TO THE SURFACE OF GROUND COVER. PVC CONDUIT MUST BE USED FROM THE ELBOW TO WHERE IT EXTENDS ABOVE THE SURFACE.

ATTACH TO BUILDING STEEL
MAIN JOIST GIRDER
#400 COPPER GROUNDING CONDUCTOR TO STRUCTURAL MEMBER.
#3/0 COPPER GROUNDING CONDUCTOR TO STRUCTURAL MEMBER.
#1/0 COPPER GROUNDING CONDUCTOR TO STRUCTURAL MEMBER.
#4 COPPER GROUNDING CONDUCTOR TO STRUCTURAL MEMBER.

PAD MOUNTED SERVICE TRANSFORMER (BY UTILITY COMPANY)
MAIN BREAKER
"MDPA" MAIN SWITCHBOARD
BREAKER FOR 480/277V PANELS (TYPICAL)
TYPICAL FOR 480/277V PANELS
600 AMP, 4-POLE AUTOMATIC TRANSFER SWITCH WITH OVERLAPPING 100% RATED NEUTRAL CONTACTS.
"MDPB" MAIN SWITCHBOARD
GRND FAULT RELAY
BOND JUMPER
NEUTRAL COND
NEUTRAL BAR
BONDING BUSHING
GROUNDING CONDUCTOR (SEE SHEETS E9.00 AND E9.01 FOR SIZE)
BONDING JUMPER (SAME SIZE AS GROUNDING CONDUCTOR)
EQUIPMENT GROUNDING BAR IN MSB.
BROWN
ORANGE
YELLOW
GRND BUS
BONDING STRAP
EQUIPMENT GROUNDING BAR
FINISH FLOOR
2" MIN
ELECTRODE GROUNDING CONDUCTOR (BY UTILITY COMPANY)
RIGID GALVANIZED ELBOW
SCHEDULE 40 PVC
BOND NEUTRAL TO GROUND AT THIS LOCATION ONLY FOR 480 VOLT EQUIPMENT. (#400 COPPER)
BONDING BUSHING
BOND TO CABINET
#3/0 COPPER GROUNDING ELECTRODE CONDUCTOR
COPPER MAIN GROUNDING BUSBAR (MGB) LOCATED IN ELECTRICAL ROOM #1. 1/4" X 4" X 12" SECURELY FASTENED WITH INSULATING BUSHINGS. B-LINE SBTGB
NON-METALLIC PROTECTIVE SLEEVE. COORDINATE WITH CONCRETE CONSTRUCTION AND PROTECT FROM DAMAGE.
CONCRETE SLAB
SEE RISER DIAGRAM ON SHEETS E9.00 AND E9.01 FOR CONDUCTOR AND CONDUIT SIZES.
NON-METALLIC PROTECTIVE SLEEVE. COORDINATE WITH CONCRETE CONSTRUCTION AND PROTECT FROM DAMAGE.
PLACE A MINIMUM OF 20 FT. OF BARE #4 COPPER GROUNDING CONDUCTOR HORIZONTALLY NEAR THE BOTTOM OF FOOTING.
2" MINIMUM CONCRETE COVERAGE AROUND ENTIRE GROUNDING CONDUCTOR.
CONNECT TO REBARS AT TWO SEPARATED, CLEANED LOCATIONS (MINIMUM) WITH EXOTHERMIC CONNECTION APPROVED BY THE N.E.C.

NOTES:
1. ALL GROUNDING ELECTRODE CONDUCTORS SHALL BE COPPER. ALL MATERIALS AND INSTALLATION SHALL BE IN ACCORDANCE WITH THE N.E.C., ARTICLE 250.
2. GROUNDING CONDUCTORS SHALL BE PROTECTED WHEN EXITING CONCRETE SLAB OR WHERE IN CONTACT WITH CONCRETE AT BUILDING STEEL BY UTILIZING NON-METALLIC SLEEVES OR CONDUIT.

GENERATOR
BONDING JUMPER
#6 COPPER GROUNDING ELECTRODE CONDUCTOR.
PANEL BW
TRANSFORMER BW
BLUE RED BLK
WHITE
GREEN
NEUTRAL BAR
EQUIPMENT GROUNDING BAR
BONDING STRAP
TO TRANSFORMER BW
BOND EQUIPMENT GROUND'S TO TRANSFORMER CASE
NOTE:
DO NOT BOND NEUTRAL TO GROUND AT PANEL. BOND TO BE MADE AT TRANSFORMER.
NOTE:
TRANSFORMER SHALL BE GROUNDED IN ACCORDANCE WITH ARTICLE 250 OF THE N.E.C.

TRANSFORMER RP2
BONDING BUSHING
FLEX
BROWN
BLACK
ORANGE
WHITE
RED
YELLOW
BLUE
GREEN
TO TRANSFORMER RP2
BOND EQUIPMENT GND'S TO TRANSFORMER CASE
NOTE:
DO NOT BOND NEUTRAL TO GROUND AT PANEL. BOND TO BE MADE AT TRANSFORMER.
NOTE:
TRANSFORMER SHALL BE GROUNDED IN ACCORDANCE WITH ARTICLE 250 OF THE N.E.C.

PANEL RP2
PANEL CP2
BLK RED BLUE
CIRCUIT BREAKER FEEDING PANEL "CP2"
NEUTRAL BAR
WHITE (NEUTRAL)
NO BONDING STRAP
TYPICAL BRANCH CIRCUIT BREAKER
CIRCUIT BREAKER FEEDING PANEL "CP1"
EQUIPMENT GROUNDING BAR
BONDING STRAP
RIGID GALVANIZED ELBOW
SCHEDULE 40 PVC
UPS PROVIDED BY LOWE'S
SEE WIRING DETAILS FOR UPS POWER CONNECTIONS ON RISER DIAGRAM SHEETS E9.00 AND E9.01.
#6 COPPER THW GROUND CONDUCTOR TO TELEPHONE BACKBOARD. SEE 2-E3.03 FOR CONTINUATION.
CONCRETE SLAB
NON-METALLIC PROTECTIVE SLEEVE. COORDINATE WITH CONCRETE CONSTRUCTION AND PROTECT FROM DAMAGE.
COPPER INTERSYSTEM GROUNDING BUSBAR (IGB) LOCATED IN TELE/DATA ROOM ADJACENT TO TELEPHONE BACKBOARD. 1/4" X 4" X 12" SECURELY FASTENED WITH INSULATING BUSHINGS. B-LINE SBTGB

ALL CONNECTIONS TO GROUNDING ELECTRODE CONDUCTOR SHALL BE AN EXOTHERMIC TYPE AS APPROVED BY THE N.E.C.
WATER SERVICE GROUND LOCATED IN SPRINKLER ROOM. CONNECTION SHALL BE U-BOLT GROUND CLAMP TYPE.
#3/0 COPPER GROUNDING ELECTRODE CONDUCTOR IN 1-1/4" SCHEDULE 40 PVC CONDUIT TO MAIN GROUNDING BAR IN ELECTRICAL ROOM #1. (SEE SHEETS E3.00 AND E3.01 FOR CONTINUATION)
COORDINATE WITH CONCRETE CONSTRUCTION AND PROTECT FROM DAMAGE.
COPPER WATER LINE

PANEL RP1
PANEL CP1
TRANSFORMER RP1
TO TRANSFORMER RP1
BOND EQUIPMENT GROUND'S TO TRANSFORMER CASE
NOTE:
DO NOT BOND NEUTRAL TO GROUND AT PANEL. BOND TO BE MADE AT TRANSFORMER.
NOTE:
TRANSFORMER SHALL BE GROUNDED IN ACCORDANCE WITH ARTICLE 250 OF THE N.E.C.

REVISIONS
PRE-BID SET ISSUE DATE | POST BID SET ISSUE DATE

DATE		DESCRIPTION
10.07.2026	1	CRITERIA UPDATES

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ELECTRICAL DETAILS

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PCN: 77-40-43-01-29-000.0010
PROJECT No: 24209 | DRAWN BY: JBM | CHECKED BY: CARP

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ORIGINAL
SECOND
FINAL

ELECTRICAL SYSTEM-GROUNDING AND BONDING DETAILS
01
SCALE: NTS