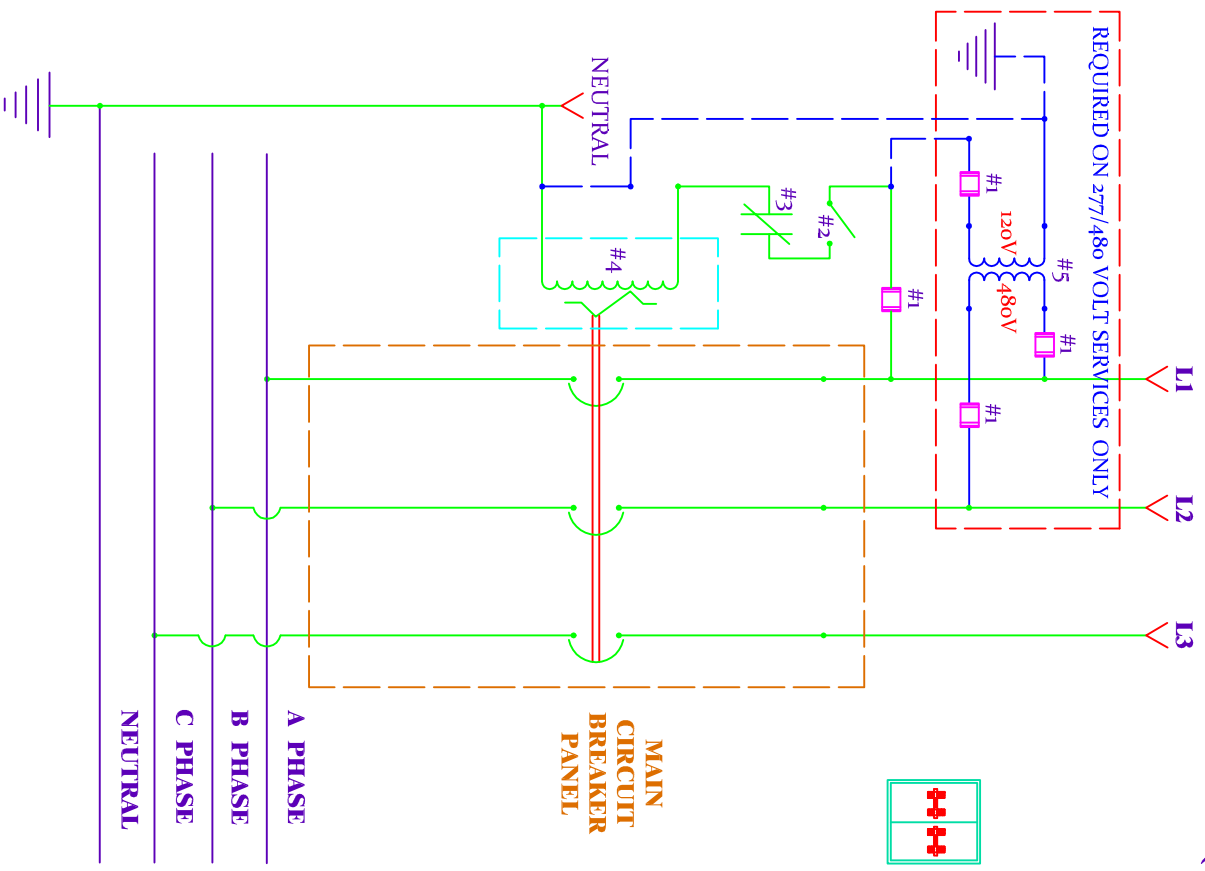


**SERVICE MAIN SHUNT TRIP WIRING DIAGRAM
120/208 VOLT OR 277/480 VOLT 3-PHASE 4-WIRE**



A 120 VOLT SOURCE IS NEEDED TO PROVIDE CONTROL POWER FOR THE SHUNT TRIP CIRCUIT. THIS 120V POWER MUST BE CONNECTED AHEAD OF THE MAIN CIRCUIT BREAKER AND TERMINATED WITH EITHER FACTORY-SUPPLIED LUGS OR TERMINALS, OR WITH A COMPRESSION RING TERMINAL THAT IS ATTACHED TO THE FACTORY BUS WITH A TAPPED SCREW HAVING A MINIMUM SIZE OF #10-24. NOTE: THE SHUNT TRIP KEYPED CONTROL SWITCH, OR ANY OTHER INITIATING DEVICE MUST BE DEEMED ACCEPTABLE BY THE ST. CHARLES FIRE DEPARTMENT. THE LOCATION OF THIS KEYPED CONTROL DEVICE IS DETERMINED BY THE ST. CHARLES FIRE DEPARTMENT.

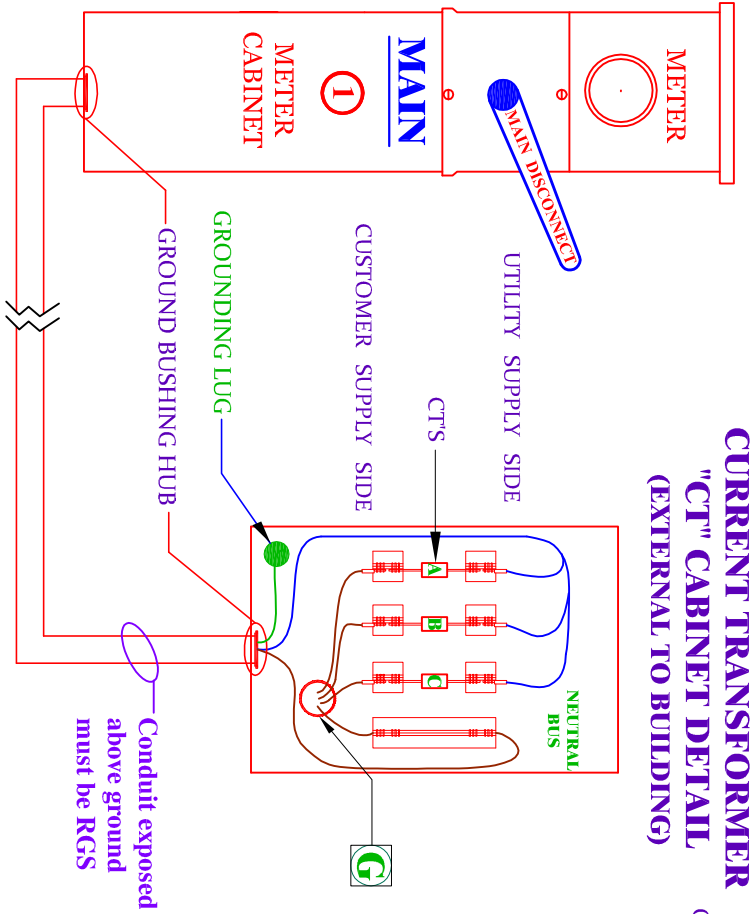
- MATERIALS NECESSARY FOR 120/208 VOLT SERVICE MAIN SHUNT TRIP:**
- #1 BUSSMAN KTK-1 FUSE, OR AN APPROVED EQUIVALENT FUSE
 - #2 SINGLE POLE, NORMALLY OPEN, MOMENTARY KEYPED SWITCH
 - #3 MAIN BREAKER NORMALLY CLOSED AUXILIARY CONTACT
 - #4 120 VOLT MANUFACTURERS SHUNT TRIP COIL
- ADDITIONAL MATERIALS FOR 277/480 VOLT SERVICE MAIN SHUNT TRIP:**
- #5 STEP DOWN TRANSFORMER 480 VOLTS TO 120 VOLTS SIZE BASED ON THE MANUFACTURERS REQUIREMENTS & PROPERLY FUSED.

NOTE:

FOR MULTI-TENANT BUILDINGS, ADDITIONAL REQUIREMENTS APPLY. PLEASE CONTACT THE ELECTRIC ENGINEERING OFFICE FOR INSTRUCTIONS/APPROVAL.

BASED ON 2014 N.E.C. NATIONAL ELECTRIC CODE

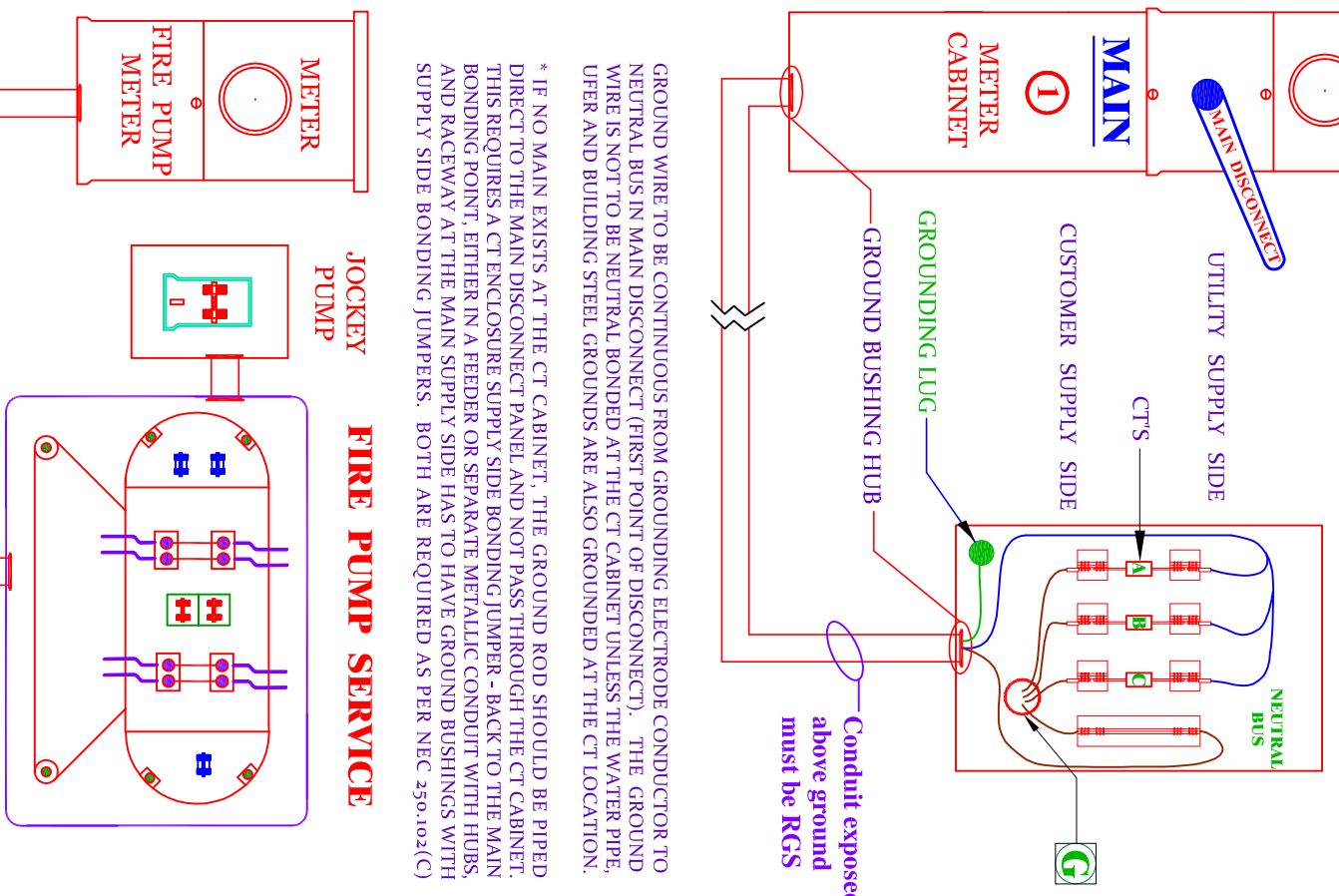
**METER CABINET WITH
MAIN DISCONNECT
(EXTERNAL TO BUILDING)**



* IF NO MAIN EXISTS AT THE CT CABINET, THE GROUND ROD SHOULD BE PIPED DIRECT TO THE MAIN DISCONNECT PANEL AND NOT PASS THROUGH THE CT CABINET. THIS REQUIRES A CT ENCLOSURE SUPPLY SIDE BONDING JUMPER - BACK TO THE MAIN BONDING POINT, EITHER IN A FEEDER OR SEPARATE METALLIC CONDUIT WITH HUBS, AND RACEWAY AT THE MAIN SUPPLY SIDE HAS TO HAVE GROUND BUSHINGS WITH SUPPLY SIDE BONDING JUMPERS. BOTH ARE REQUIRED AS PER NEC 250.102(C)

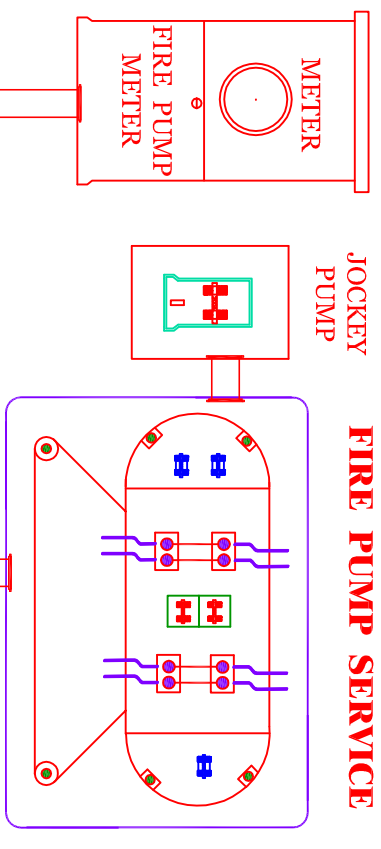
COMMERCIAL AND INDUSTRIAL INSTALLATIONS

**CURRENT TRANSFORMER
"CT" CABINET DETAIL
(EXTERNAL TO BUILDING)**

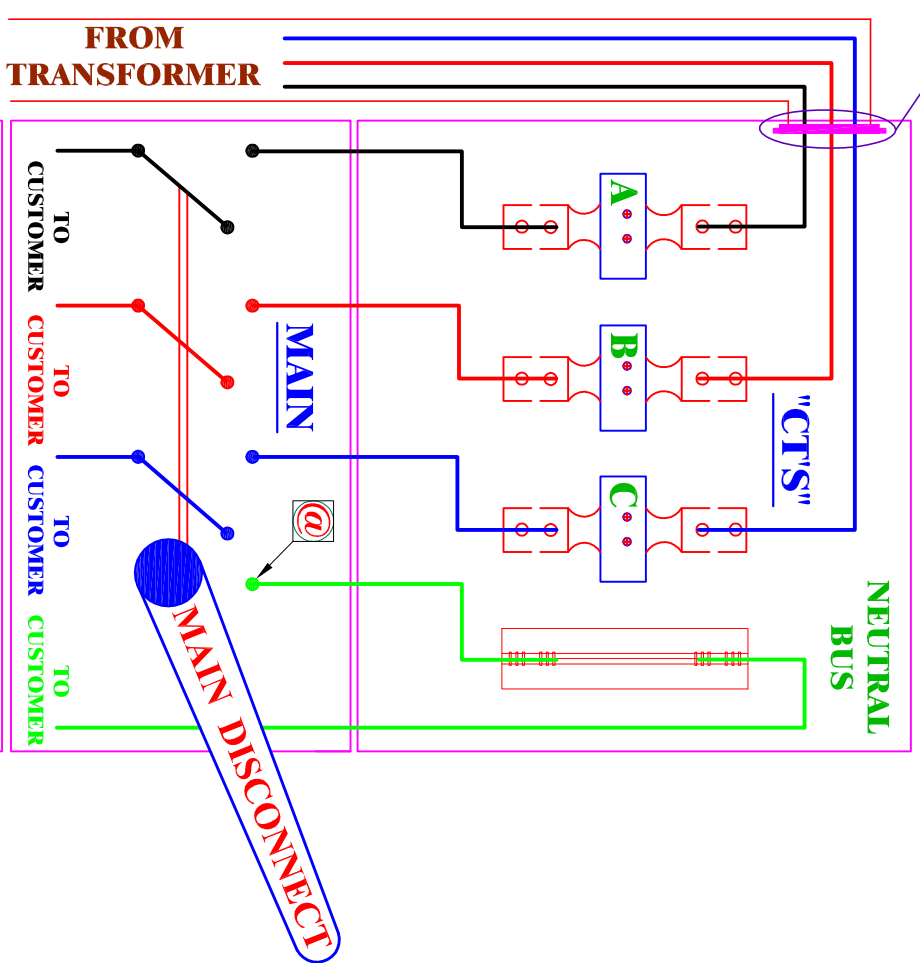


FIRE PUMP SERVICE - NEC SECTION 695

THE FIRE PUMP SERVICE MUST BE SEPARATELY METERED APART FROM THE MAIN DISCONNECT WITH AN APPROPRIATELY SIZED SERVICE FROM THE TRANSFORMER. THIS SHALL BE LOCATED AHEAD OF AND NOT WITHIN THE SAME CABINET, ENCLOSURE, VERTICAL SWITCHGEAR SECTION, OR VERTICAL SWITCHBOARD SECTION AS THE SERVICE DISCONNECTING MAIN. THE SERVICE DISCONNECTING MEANS FOR A SEPARATE SERVICE DISCONNECTING MEANS AND OVERCURRENT PROTECTION.



**CURRENT TRANSFORMER
& MAIN CABINET DETAIL
"BOTTOM-FED CT'S" MUST BE
LABELLED ON THE CABINET**



**CUSTOMER 3-PHASE
LOAD CENTER**

GROUNDING REQUIREMENTS INCLUDE: (2) DRIVEN GROUND RODS, WATER PIPE GROUND, BONDING TO STRUCTURAL STEEL AND UFER GROUND IN THE CONCRETE FOOTER OF THE FOUNDATION. ALL GROUNDS AND THE NEUTRAL ARE BONDED AT THE FIRST POINT OF DISCONNECT AT THE MAIN ONLY. REGARDLESS OF WHETHER AN EXTERNAL MAIN OR SHUNT TRIP IS CHOSEN, THERE MUST BE A MAIN DISCONNECT LOCATED INSIDE THE BUILDING AND READILY ACCESSIBLE.

COPPER EQUIPMENT GROUNDING CONDUCTORS			
200 AMP	#6	1200 AMP	3/0
400 AMP	#3	1600 AMP	4/0
600 AMP	#1	2000 AMP	250
800 AMP	1/0	2500 AMP	350
1000 AMP	2/0	3000 AMP	400

COPPER SERVICE WIRE CONDUCTOR SIZES & NUMBER	
SERVICE CONDUCTORS SIZED PER NEC 310.15	
CONCRETE ENCASED PVC & RIGID STEEL CONDUIT ELBOWS	
SERVICE CONDUITS SIZED PER NEC INFORMATIVE ANNEX C	

REVISION DATE: 5/17/2016

