

Electrical

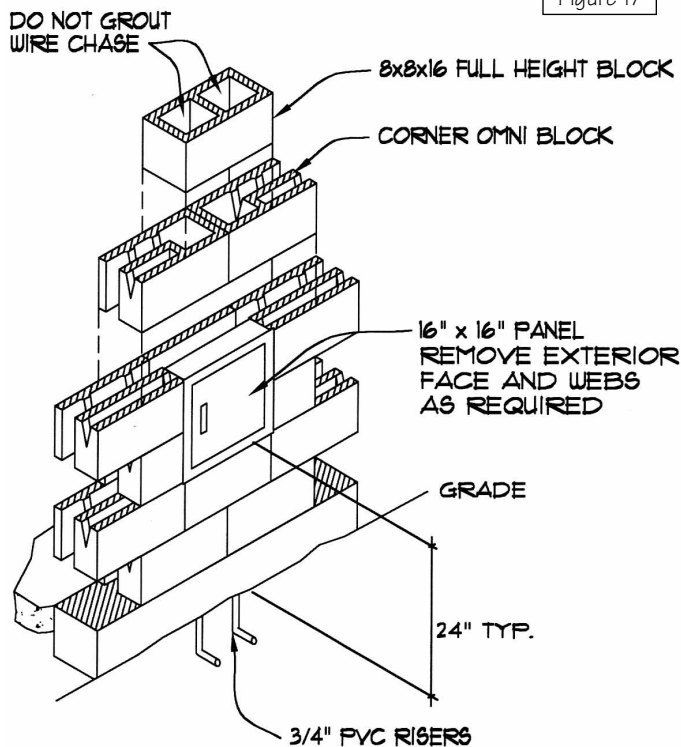
Omni Block system installation interfaces a great deal with electrical requirements of a structure. Typically, the mason installs all the electrical and low voltage boxes and conduit within the block. This section is intended to outline the many options and, if adhered to, advantages of utilizing the Omni Block insulated concrete block system. The electrical placement requires some timely planning but will facilitate a quality finished product.

Ufer Wire

The electrician installs the Ufer wire per local building code. The Ufer will run within the block to the electrical main. The electrical main is usually about 40" from finished floor and the electrician needs to allow enough (about 6') to accomplish this.

Cable television, telephone, and landscape wiring can all be run from below grade, through stem, and up through the block to an access panel utilizing 3/4" PVC (see Figure 17). 3/4" 90° PVC sweeps are recommended. The cable and telephone main boxes are then located within the wall and all 'home-runs' are dropped or 'fished' down from the top of the block wall.

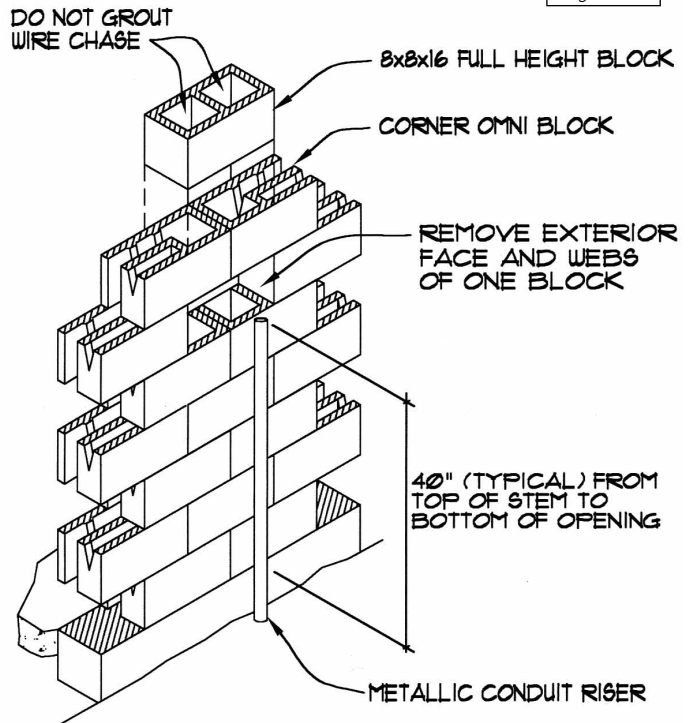
Figure 17



LOW VOLTAGE

Local code will dictate the height and location of the meter main panel or box. Figure 18 provides the typical electrical service riser block arrangement. Corner block are alternatively stacked with standard 8x8x16 CMU and left void of foam. A double chase is formed to accommodate electrical wiring running from above the top plate down the wall to the exterior opening created by removing the face and center web of a block.

Figure 18



ELECTRICAL SERVICE RISER

Notes

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Figure 19 aids in determining the actual height of the opening in the block and ultimately the height of the meter. The local building code should be consulted to verify proper height location.

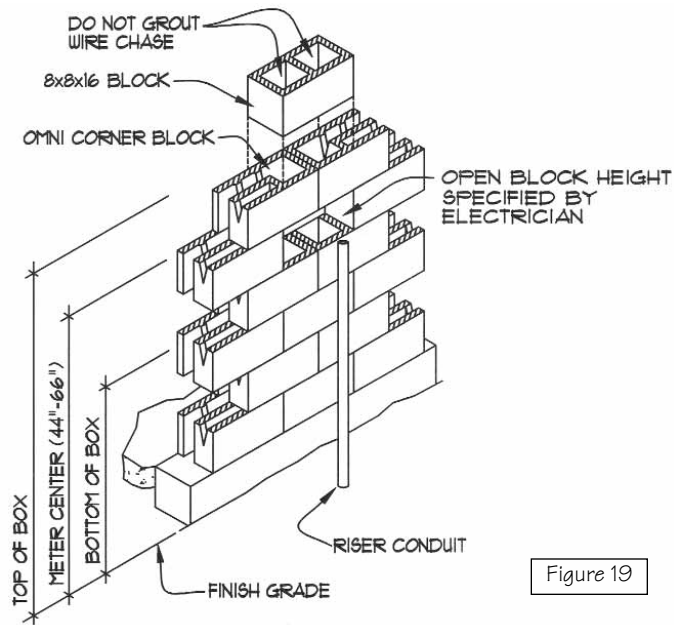


Figure 19

○ ELECTRICAL CHASE SCHEMATIC |

The illustrations and details included in this manual detail a surface mounted service panel. A recessed panel is certainly feasible by adapting Figure 10 and allowing for the service riser to be housed within the block and stem wall. This option is more attractive from a security standpoint because the circuit breakers are normally on the interior of the structure rather than the exterior.

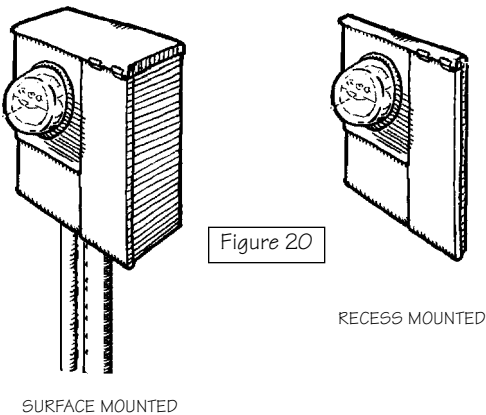


Figure 20

○ MAIN METER OPTIONS |

The illustration shown in Figure 21 is a single gang box with a single vertical 3/4" PVC conduit. This is the typical installation for single gang electrical and low voltage boxes that are required on the interior side of the masonry wall. Numerous options are available but include:

- a) Double conduit for 'in and out' switched wiring.
- b) Double, triple or four-gang boxes.
- c) Horizontal conduit running from box-to-box; minimizing 'home-run' requirements.

The electrician should 'circuit' the electrical that occurs on the exterior walls.

Note that the interior box placement must occur in the center of the block, or when two block are butted together, centered on the joint. This is because if the box is placed at a cross web, the above subsequent cross webs interfere with the vertical conduit.

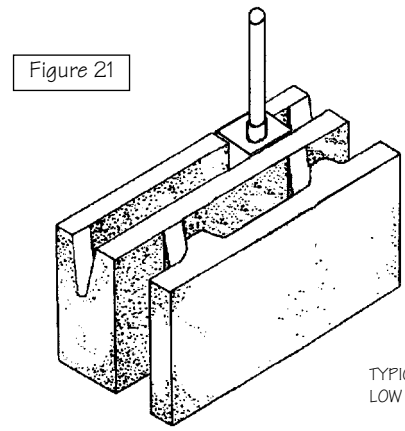


Figure 21

TYPICAL INTERIOR ELECTRICAL OR LOW VOLTAGE BOX PLACEMENT

○ INTERIOR ELECTRICAL BOX |

The illustration shown in Figure 22 is a single gang box with a single vertical 3/4" PVC conduit. This is the typical installation for single gang electrical and low voltage boxes that are required on the exterior side of the masonry wall. Note that the exterior box placement must occur at either end of the block in order to avoid the conduit from hitting the webs in the block above.

TYPICAL EXTERIOR ELECTRICAL OR LOW VOLTAGE BOX PLACEMENT

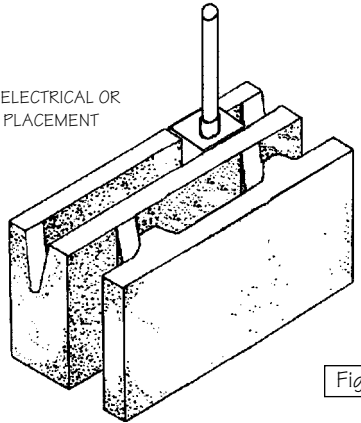
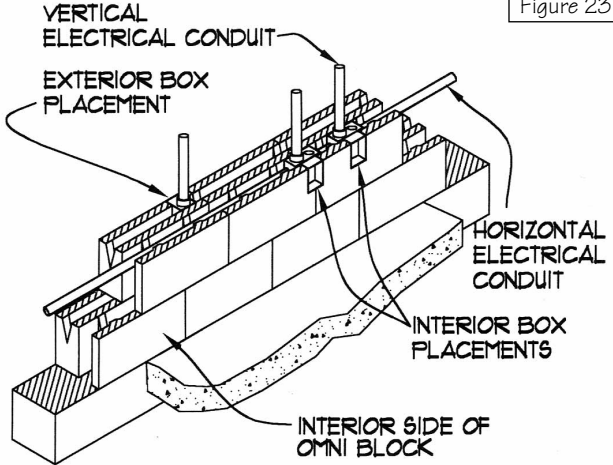


Figure 22

EXTERIOR ELECTRICAL BOX

The illustration shown in Figure 23 depicts a typical 110 voltage box along side a low voltage box and an exterior GFI box. Note the horizontal 3/4" PVC pipe as well as the vertical. The ideal situation is for the horizontal pipe to be 'swept' out of the block at interior partition wall locations utilizing 90° PVC sweeps thus eliminating the need for vertical PVC.

Figure 23



INTERIOR AND EXTERIOR ELECTRICAL ISOMETRIC

Thermostat Wire

The thermostat wire is usually ran with the AC Freon line and does not need special consideration. Check with the HVAC contractor to verify this requirement. A separate electrical box and conduit can be installed, if requested.

Air Conditioner 220 Volt Line

A 1" PVC conduit with a 90° sweep is provided for the quick disconnect box. The HVAC or electrical contractor determines (per local code) height and location of this conduit. Most local codes also require a GFI 110 volt outlet within a specified distance of the air conditioner. The ideal situation is to locate exterior boxes where interior partition walls are to be erected. This allows for the horizontal conduits to be run into these walls which provides for easy electrician access and also eliminates the need for the mason to run vertical conduit.

Garage Electric Eye

Most codes require an electric eye for automatic garage door openers. A 90° sweep is attached to 3/4" PVC conduit and stubbed out both interior sides of the garage door at 6 inches above finished garage floor. Low voltage wiring is 'fished' through the conduit by the electrician.

Surround Sound

All low voltage box requirements are placed into the block wall as depicted in Figures 21, 22, and 23.

Security

The pre-wire for the alarm system is best accomplished prior to any interior surface application. The mason 'scores' the block for the alarm/security subcontractor to run the security wire which is either caulked or glued into place. Magnets are then installed to windows and the other end is left coiled above the top of the wall for future connection.

Door Bell

A 3/4" PVC conduit is run vertically and swept out of the wall utilizing a 90° sweep. An electrical box is not necessary for a surface mount door bell.

