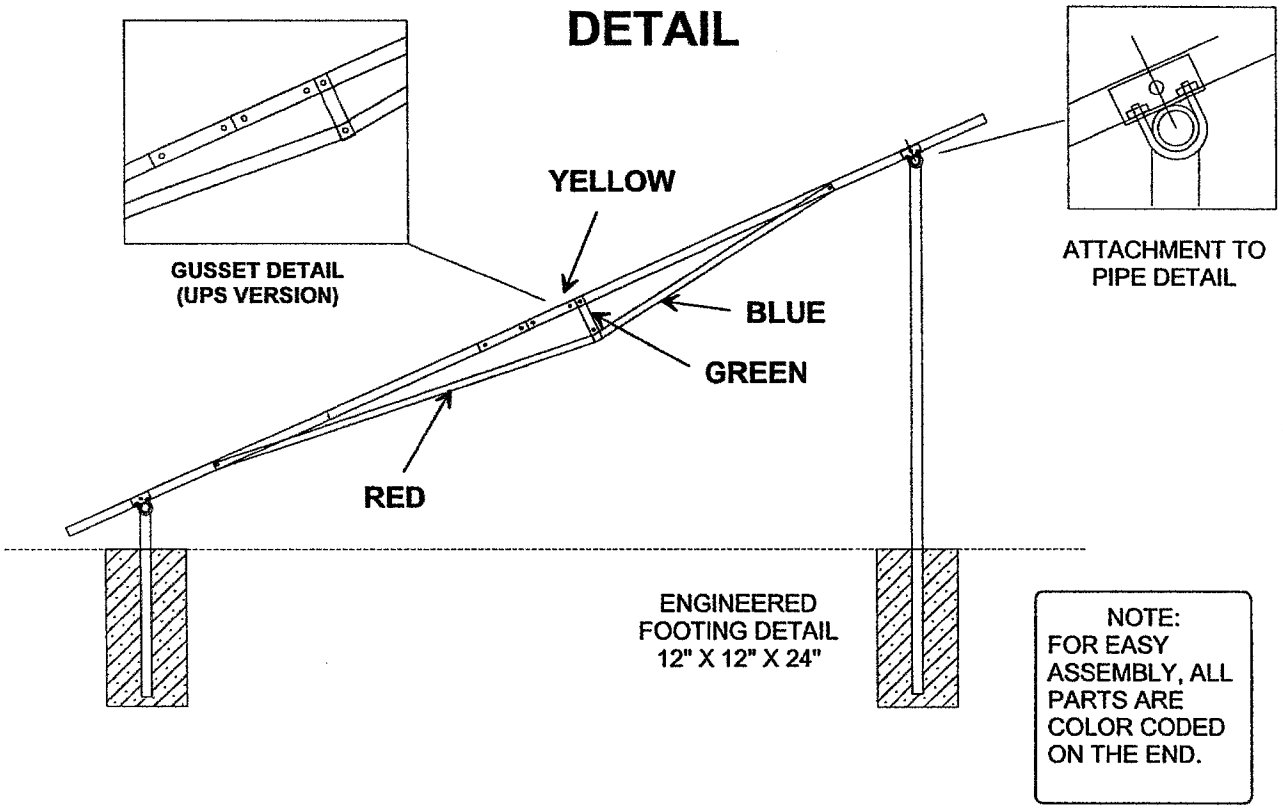
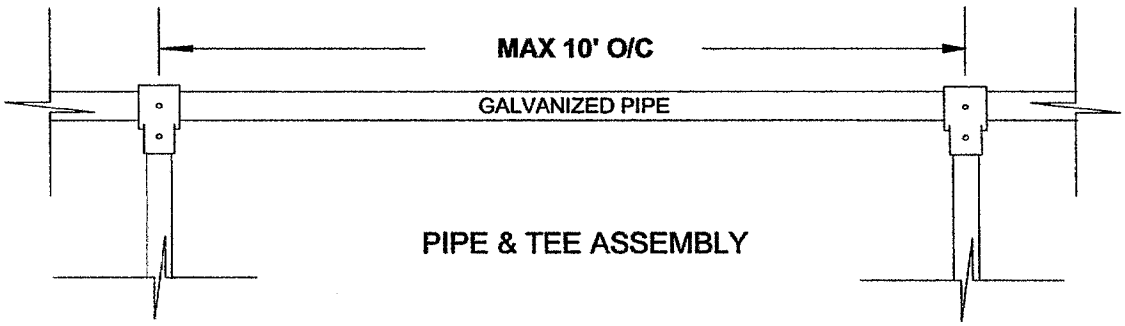
GROUND PRO

ASSEMBLY DETAIL





GROUND PRO RACK INSTALLATION DIRECTIONS:

THE ***GROUND PRO*** IS SHIPPED WITH THE ABOVE COMPONENTS. THESE WILL BE ASSEMBLED USING SIMPLE HAND TOOLS, A 3/8" SOCKET, OPEN END WRENCH AND A 1/4" DRILL.

1. INSTALL 1 1/4" GALVANIZED PIPE AS PER ABOVE ILLUSTRATION (MAX. 10' O/C USING SPECIAL ALLOY TEES) INSTALL VERTICAL SUPPORTS INTO CONCRETE FOOTING. INSTALLING PRE ASSEMBLED PIPE SUPPORTS INSURE VERTICALS ARE STRAIGHT AND SAVES TIME.
2. ATTACH 2" MAIN SUPPORT TEE USING THE TWO 16" GUSSETS CODED ***YELLOW.***
3. ATTACH SUPPORT ***BLUE*** AND SUPPORT ***RED*** WERE SHOWN TO FLAT 8" LINK = ***GREEN***.
4. ASSEMBLE THE ATTACHMENT AND "U" BOLT AS ILLUSTRATED. IF ALIGNMENT IS OFF SIMPLY DRILL A 1/4" HOLE IN THE MAIN SUPPORT "T".
5. INSTALL PANEL AND HEADER SUPPORT TABS.

PROFESSIONAL SOLAR PRODUCTS
Camarillo, CA (805)383-7171

GROUND PRO INSTALLATION DIRECTIONS

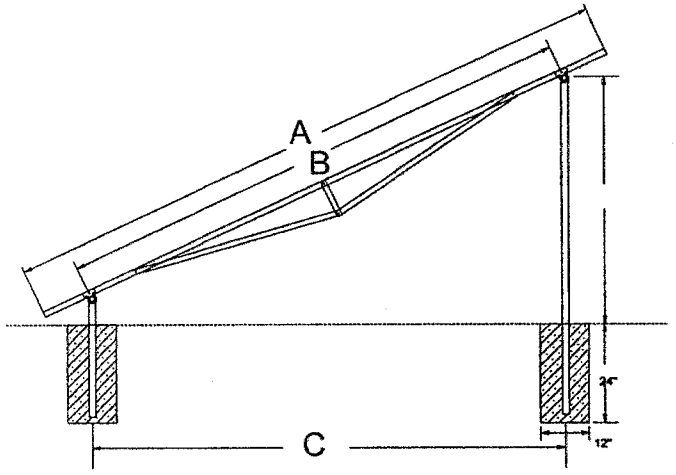
GROUND PRO racks consist of either one main section when shipped by common carrier or two sections with a gusset when shipped via UPS. The installation and assembly of the racks are similar with the UPS version requiring that the main TEE section be bolted together with the included gussets. When using the UPS version of the rack the parts are color coded for easy assembly (see assembly detail on page two).

Materials for installation: The ***GROUND PRO*** installation kits include all necessary extruded aluminum frames, all locking hardware and "U-BOLTS". The 1 1/4" cast TEE fittings are also available for additional charge. The materials to be purchased by the installation contractor are; 1 1/4" schedule #40 galvanized pipe (fence post is not recommended) and concrete. All necessary strapping or panel fastening materials should be provided by the panel manufacturer for installation of their product.

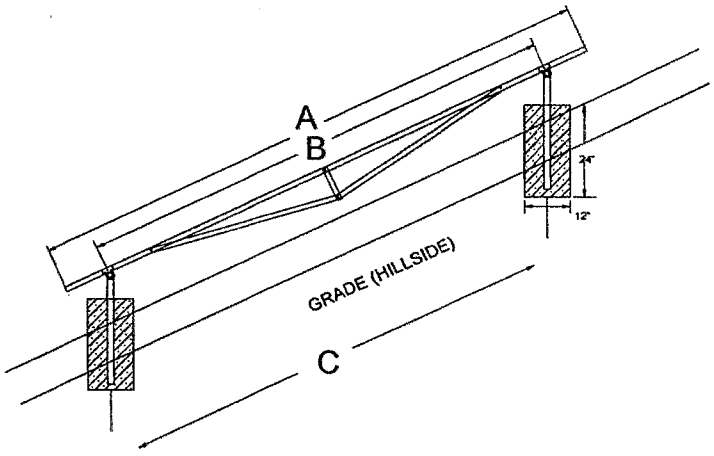
The installation of the ***GROUND PRO*** system consists of three steps:

1. Site layout and ordering of materials.
2. Assembly of the rack units.
3. Installation of the racks at the installation site.

There are two types of ***GROUND PRO*** installations, one is installed on level ground and the other that will be installed on a hillside. The difference between the two installations is that the one of level ground requires that the front the rear footing distance be measured using distance "C" while the hillside installation is measured using distance "B".



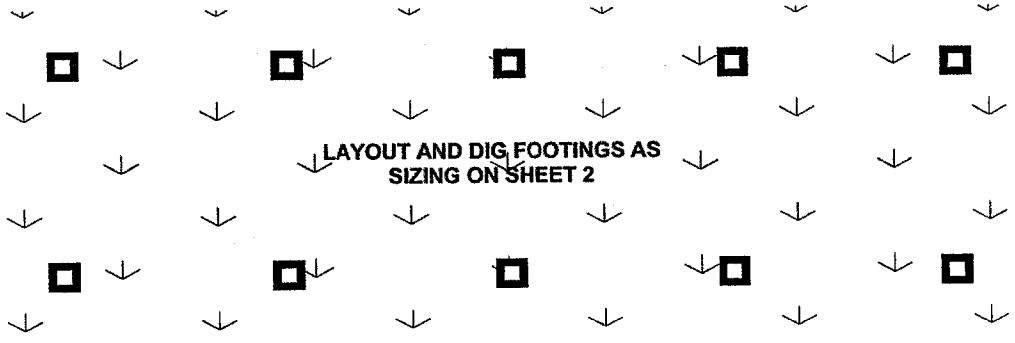
GROUND PRO INSTALLED ON FLAT GRADE
FRONT TO REAR FOOTING IS MEASURED
COMPENSATING FOR ELEVATION
(C DIMENSION).



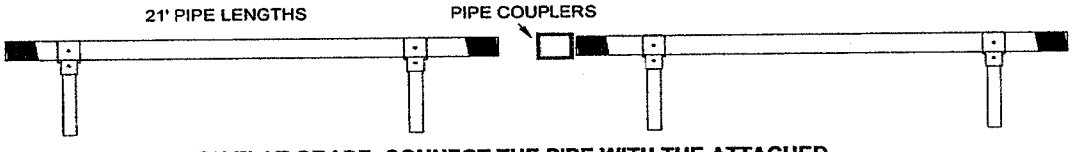
GROUND PRO INSTALLED A SLOPE:
FRONT TO REAR FOOTINGS ARE PLACED
USING THE "B" DIMENSION OF THE RACK.

SETTING SUPPORTS AND BEAMS

STEP 1

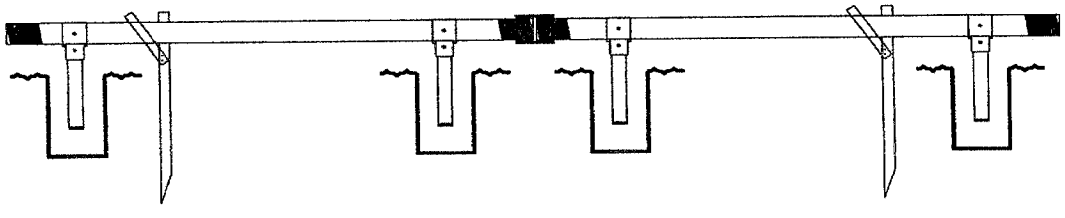


STEP 2



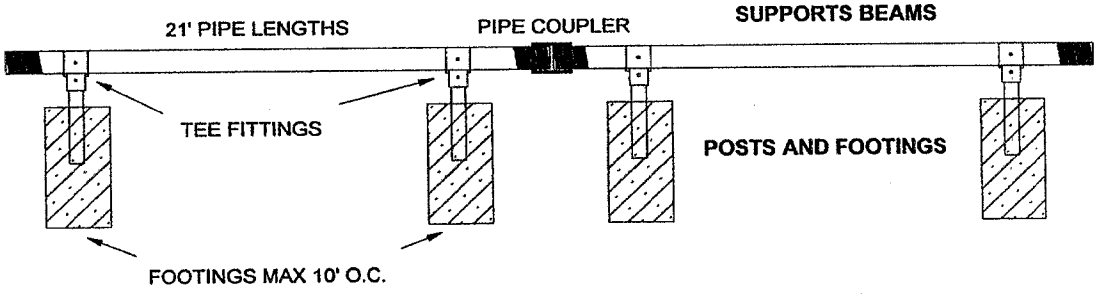
ON FLAT GRADE, CONNECT THE PIPE WITH THE ATTACHED THREADED COUPLER TO THE WIDTH OF THE PANELS. INSERT AND SPACE THE SPECIAL TEE FITTINGS AND CONNECT THE PIPE POSTS.

STEP 3



PLACE GRADE STAKES INTO THE GROUND TO SUPPORT THE BEAM. PLACE THE ASSEMBLED BEAM SECTION ON THE SUPPORTS WITH THE VERTICAL SUPPORTS IN THE EXCAVATION.
POUR THE CONCRETE AND REMOVE THE SUPPORTS WHEN THE CONCRETE HAS SET.

STEP 4



THE FRONT AND REAR BEAM SUPPORTS ARE NOW SET AND READY FOR THE GROUND PRO RACKING TO BE INSTALLED.

GROUND PRO INSTALLATION DIRECTIONS

(ESTIMATING MATERIALS)

ESTIMATING AMOUNT OF PIPE AND CONCRETE:

1. To estimate the amount of galvanized pipe needed for the rack, count the total number of panels in a bank. Determine the width of the bank (exact panel width O.C. x the number of panels in the bank x 2) the total of this will give you the amount of pipe needed for the upper and lower beams.
2. To determine the number of posts (the maximum allowable span is 10') Take the total length of one of the beams less 4' (2' allowable overhang on each end) and divide this 10 (see figure 1) . This will give you the amount of posts required to support one of the beams, doubling this will give you the number of posts and TEE's required.
3. Example 10 panels that are 50 1/2" O.C. = (50 1/2" x 10 divided by 12" = 42 ft.). Subtract for the pipe overhang of 2' on each end for a net length of 38 ft. Dividing the net 38' by 10' determines that 4 posts plus an end post are required with an on center measurement of 9' 6". Double this number for the front and rear beams for a total of 10 posts and TEE fittings (see figure 2).
4. Estimating the amount of pipe required for the posts, can be determined by adding 24" (footing) plus the distance from the top of the footing to the beam. Add the total length of pipe for the beams and the footings and divide this number by 21' will give you the amount of pipe lengths required for the installation.
5. Concrete for the footings= approximately 2 cubic feet per post.

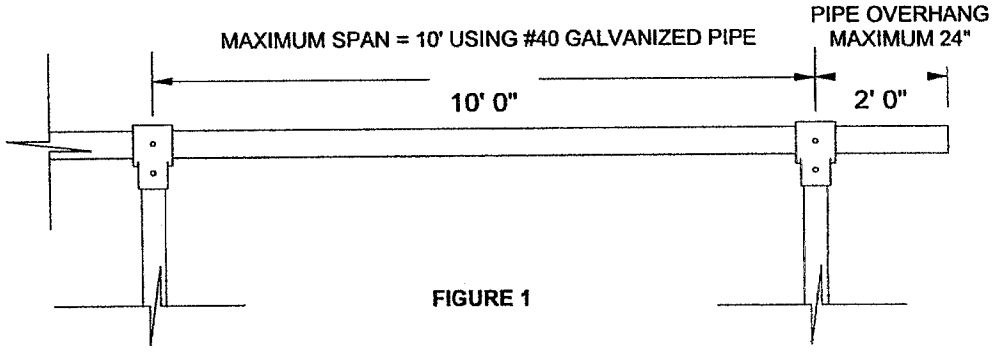


FIGURE 1

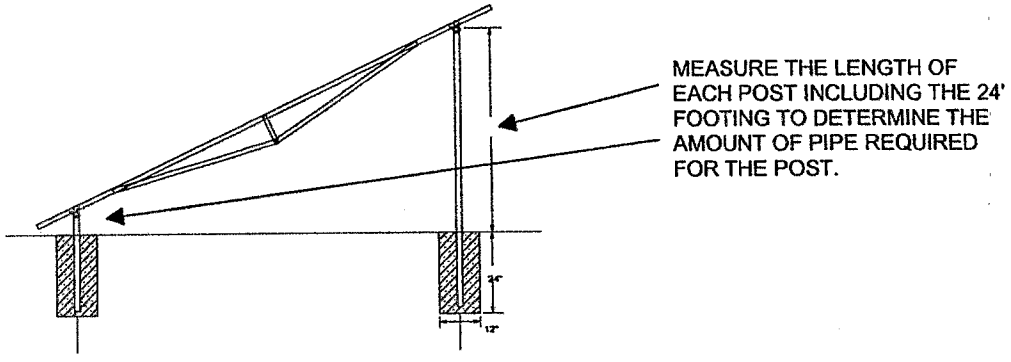


FIGURE 2