HYDRO-EXCAVATION FOR

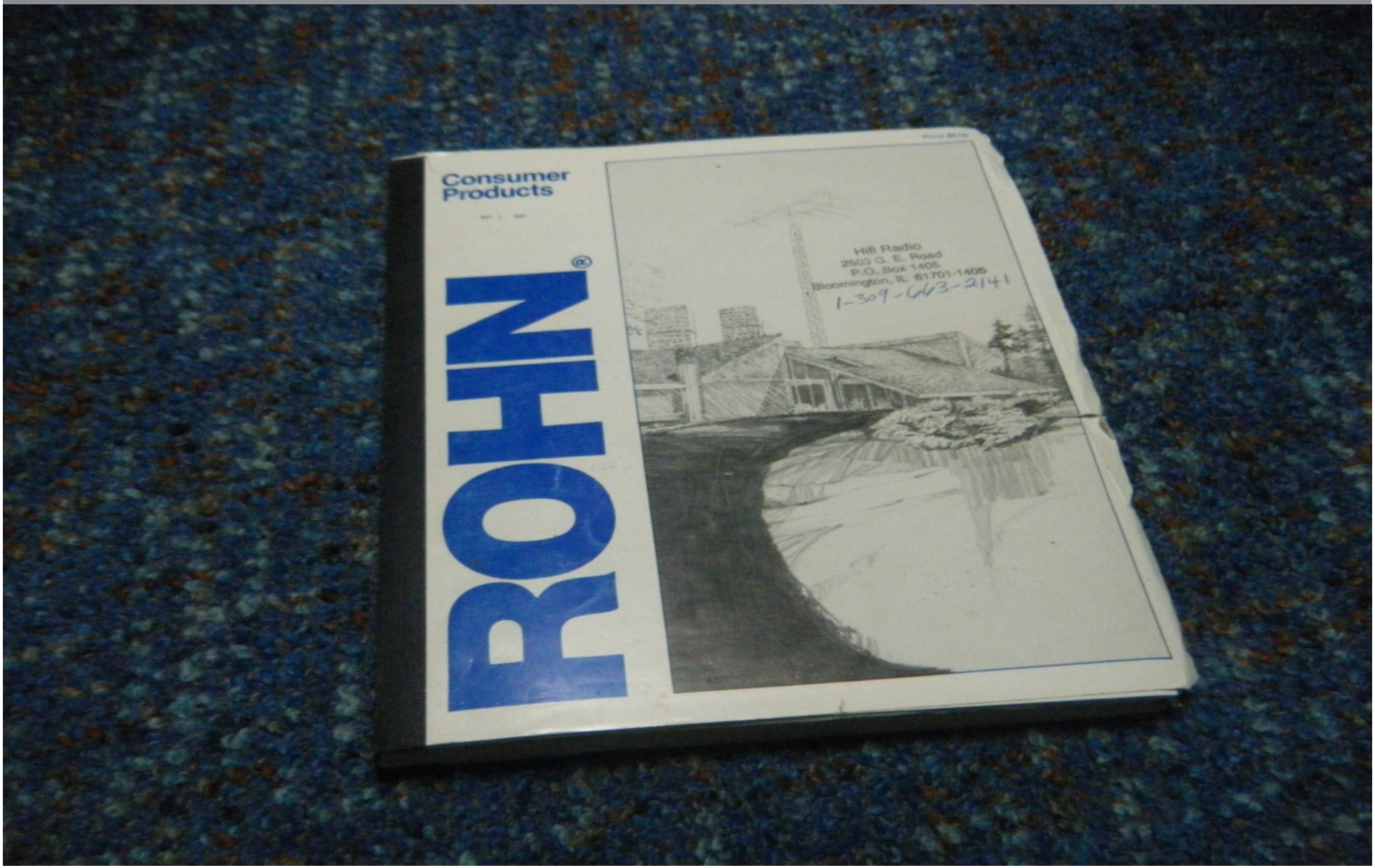
TOWER CONSTRUCTION

A NICE SPOT FOR A TOWER

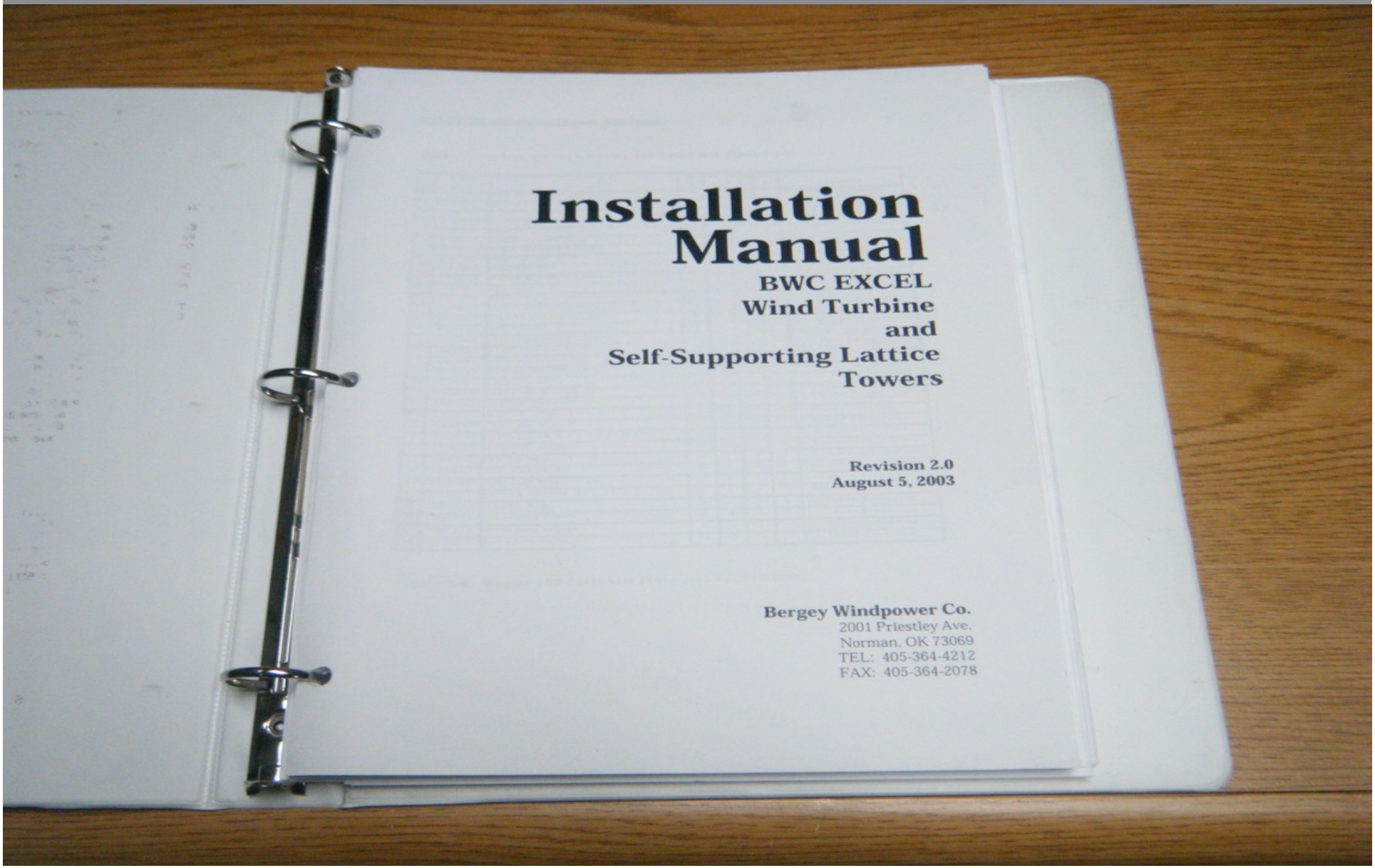
NO MORE GUY WIRES

10 FT. X 10 FT. X 4 FT. FOR SSV N-6 SECTION

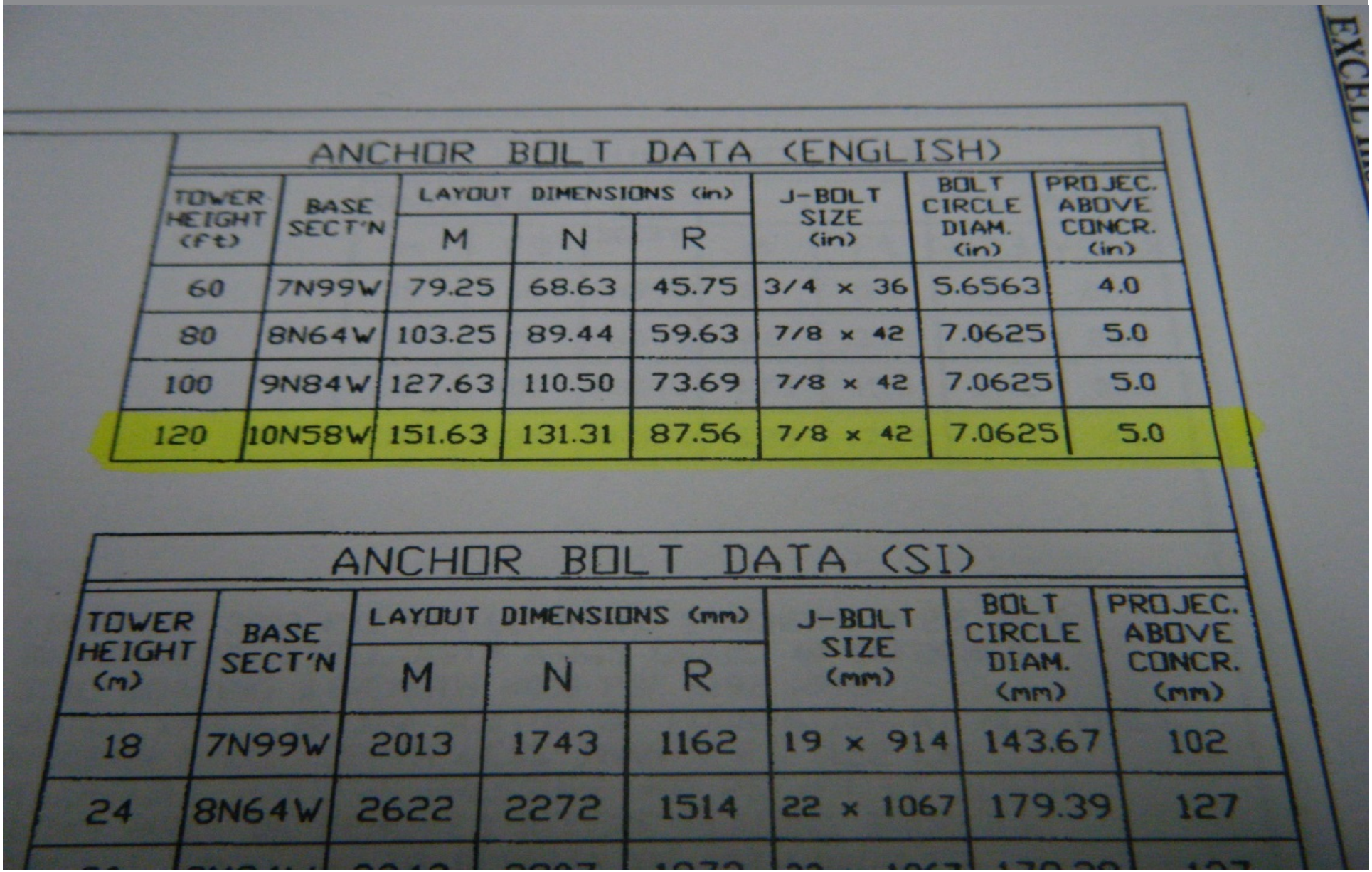
GO BY THE BOOK



INSTALLATION MANUAL FOR SSV TOWER



J-BOLT ANCHORS 5” ABOVE CONCRETE



ANCHOR BOLT DATA (ENGLISH)

TOWER HEIGHT (ft)	BASE SECT'N	LAYOUT DIMENSIONS (in)			J-BOLT SIZE (in)	BOLT CIRCLE DIAM. (in)	PROJEC. ABOVE CONCR. (in)
		M	N	R			
60	7N99W	79.25	68.63	45.75	3/4 x 36	5.6563	4.0
80	8N64W	103.25	89.44	59.63	7/8 x 42	7.0625	5.0
100	9N84W	127.63	110.50	73.69	7/8 x 42	7.0625	5.0
120	10N58W	151.63	131.31	87.56	7/8 x 42	7.0625	5.0

ANCHOR BOLT DATA (SI)

TOWER HEIGHT (m)	BASE SECT'N	LAYOUT DIMENSIONS (mm)			J-BOLT SIZE (mm)	BOLT CIRCLE DIAM. (mm)	PROJEC. ABOVE CONCR. (mm)
		M	N	R			
18	7N99W	2013	1743	1162	19 x 914	143.67	102
24	8N64W	2622	2272	1514	22 x 1067	179.39	127

FOUNDATION 10N 3 FT X 18 FT = 44 YARDS

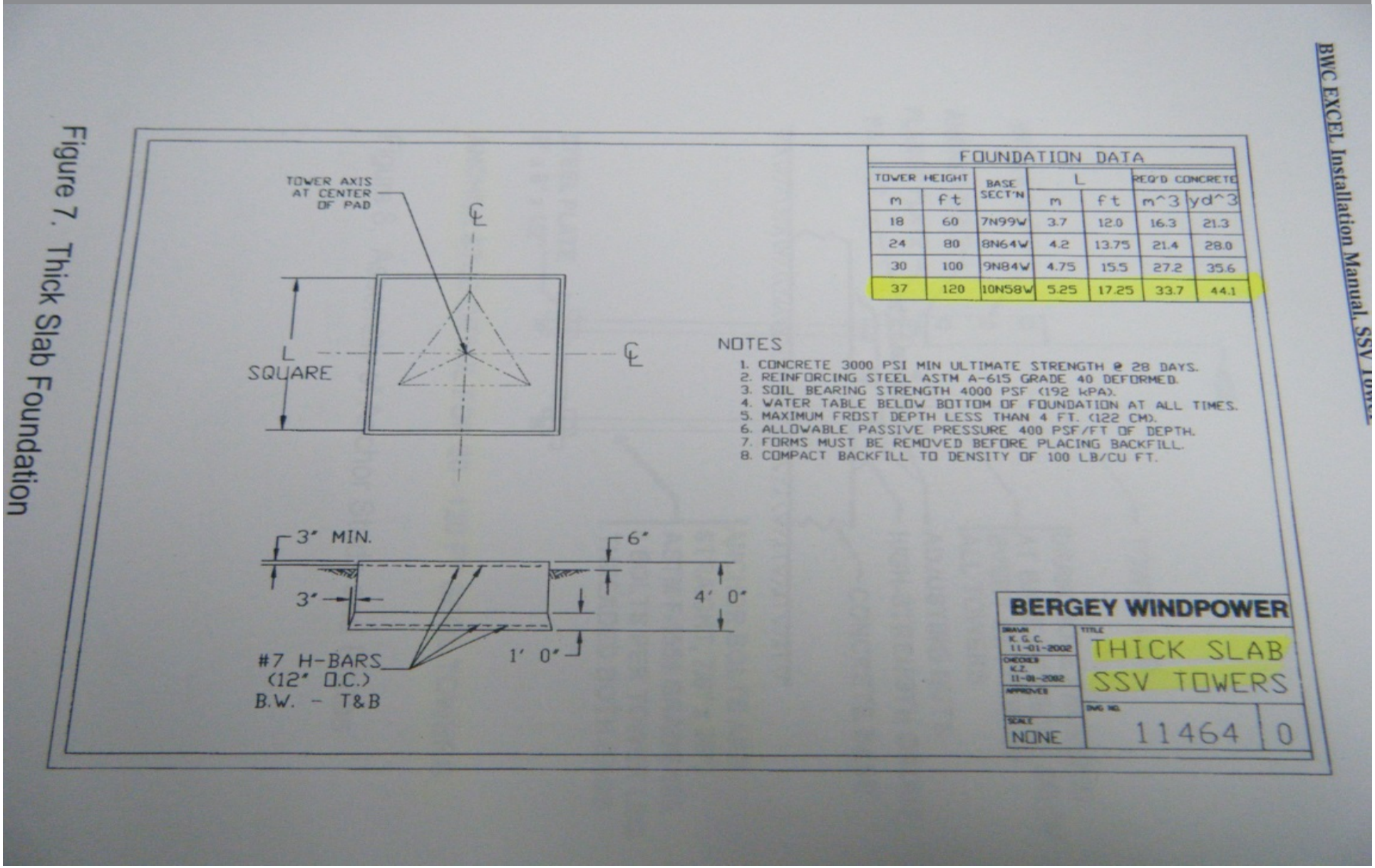
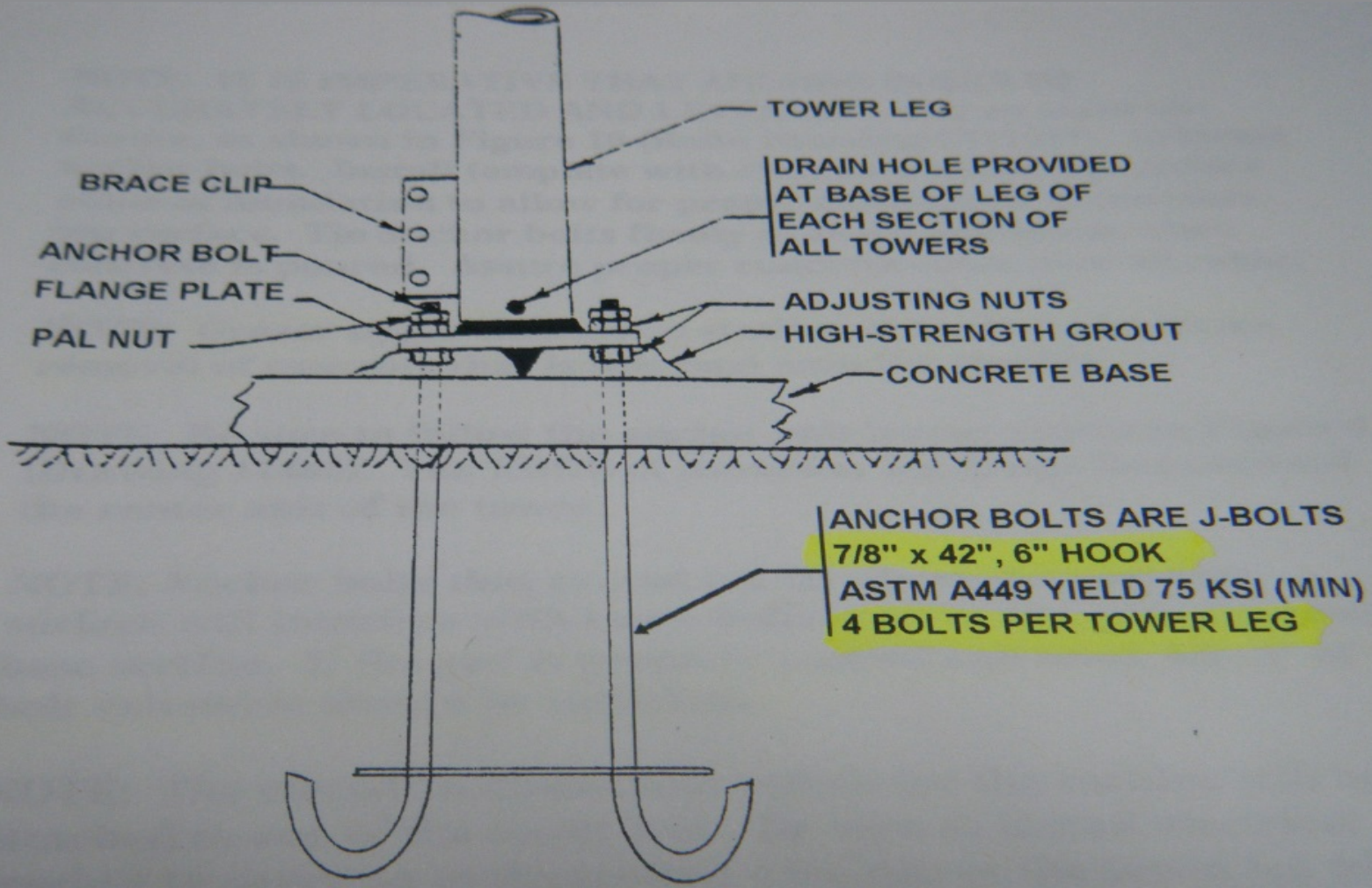


Figure 7. Thick Slab Foundation

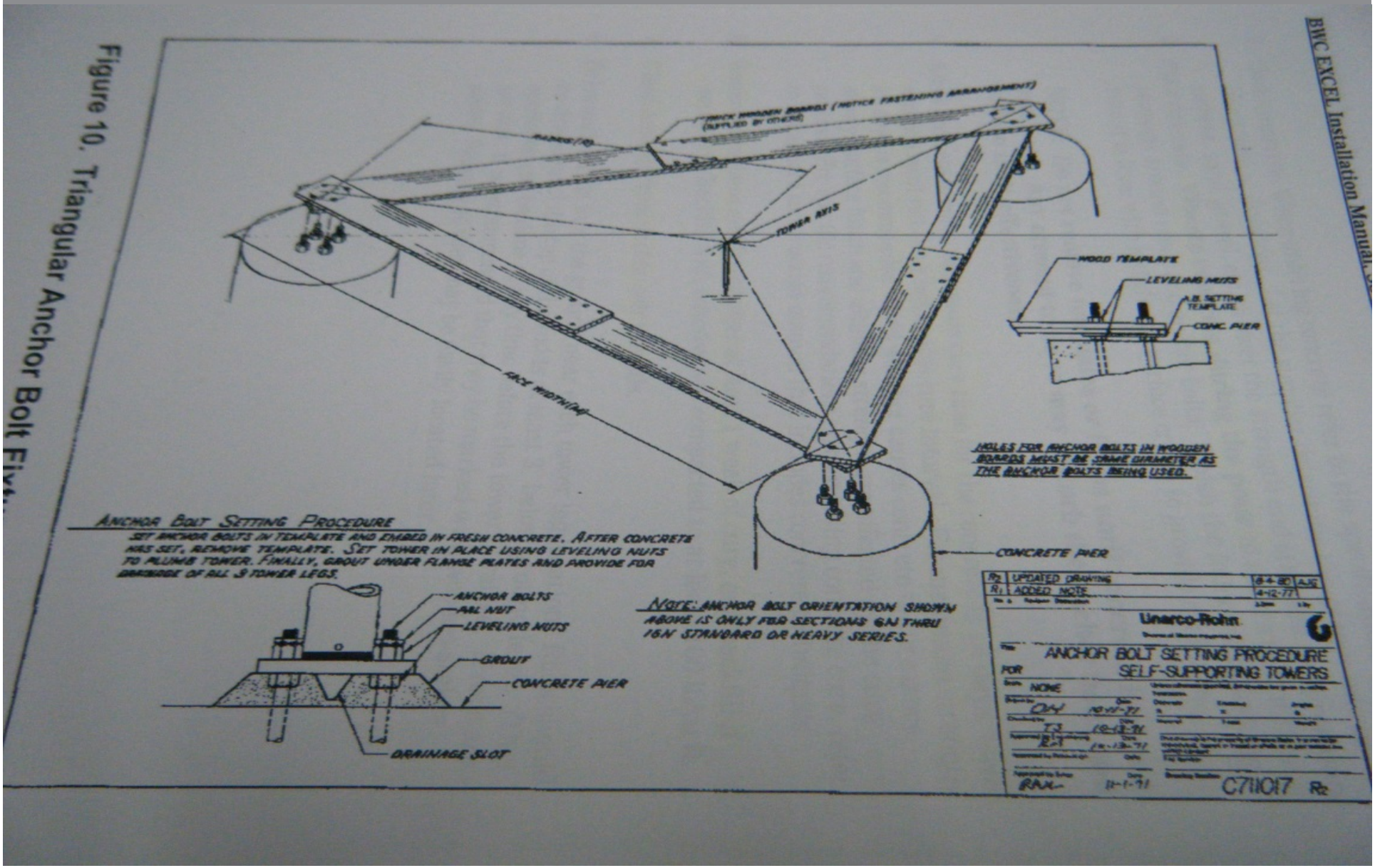
BWC EXCEL Installation Manual, SSV

ANCHOR BOLTS 7/8” X 42” 6” HOOK



ANCHOR J-BOLT DETAIL, 80 - 120 FT SSGL TOWERS

ANCHOR BOLT SETTING



VIBRATE CONCRETE 28 DAYS CURE

3. Order concrete. When ordering concrete refer to the specifications given on blueprints or drawings. Let the supplier determine the proper mix of cement, sand, gravel, etc. to meet the strength and stiffness requirements.
4. Pour concrete. **Vibrate concrete during the pour** to assure that it fills properly around rebar and anchor bolts. Finish the foundation making sure it is level with a slight top surface crown to provide drainage.

NOTE: Do not remove templates or forms until concrete is cured and hard. Any attempt to do so may disturb the anchor bolts and reduce their effectiveness.

5. Allow concrete to cure. Minimum cure time for the concrete is 14 days; tower erection must not occur before this cure interval. For maximum strength 28 days is recommended. Cold weather causes concrete to cure more slowly; surface finish and ultimate strength are affected by the cure process. For specific recommendations on controlling concrete cure, refer to a standard construction manual that includes concrete techniques.

6. Remove templates and forms after at least 1 week of cure, and backfill if necessary. Backfill with cohesive soil compacted to at least 100 lb/cu ft.

7. Clean concrete from anchor bolt threads.

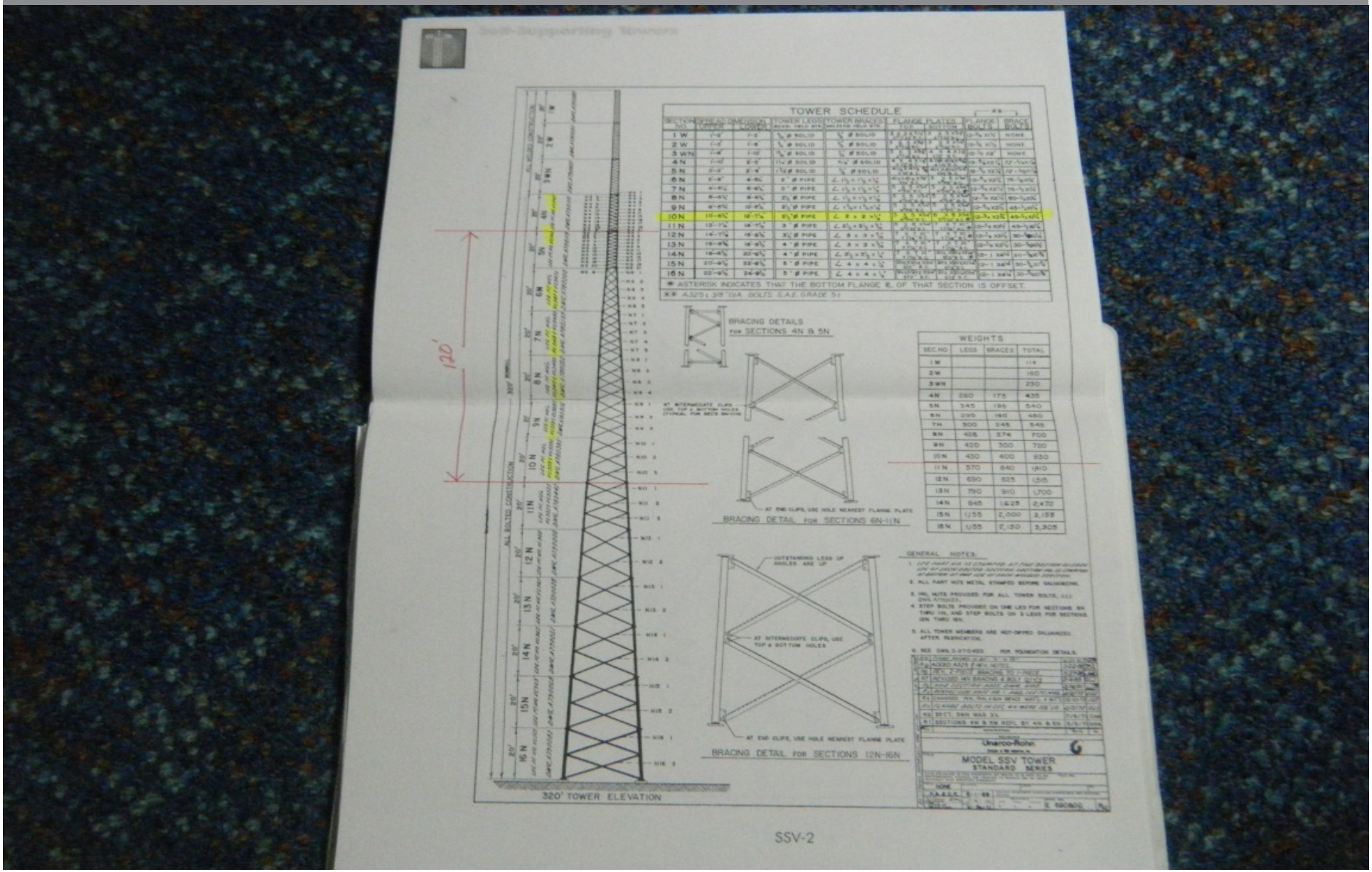
8. Drive anchor rods into the ground near each tower leg location. Rods shou be driven until the top of the rod is at least 3" below ground level. (Thi operation can be done at any time before the tower is raised. If rods a set now, it is recommended that they be marked with wooden stakes

START AT TOP, NUTS ON OUTSIDE OF TOWER

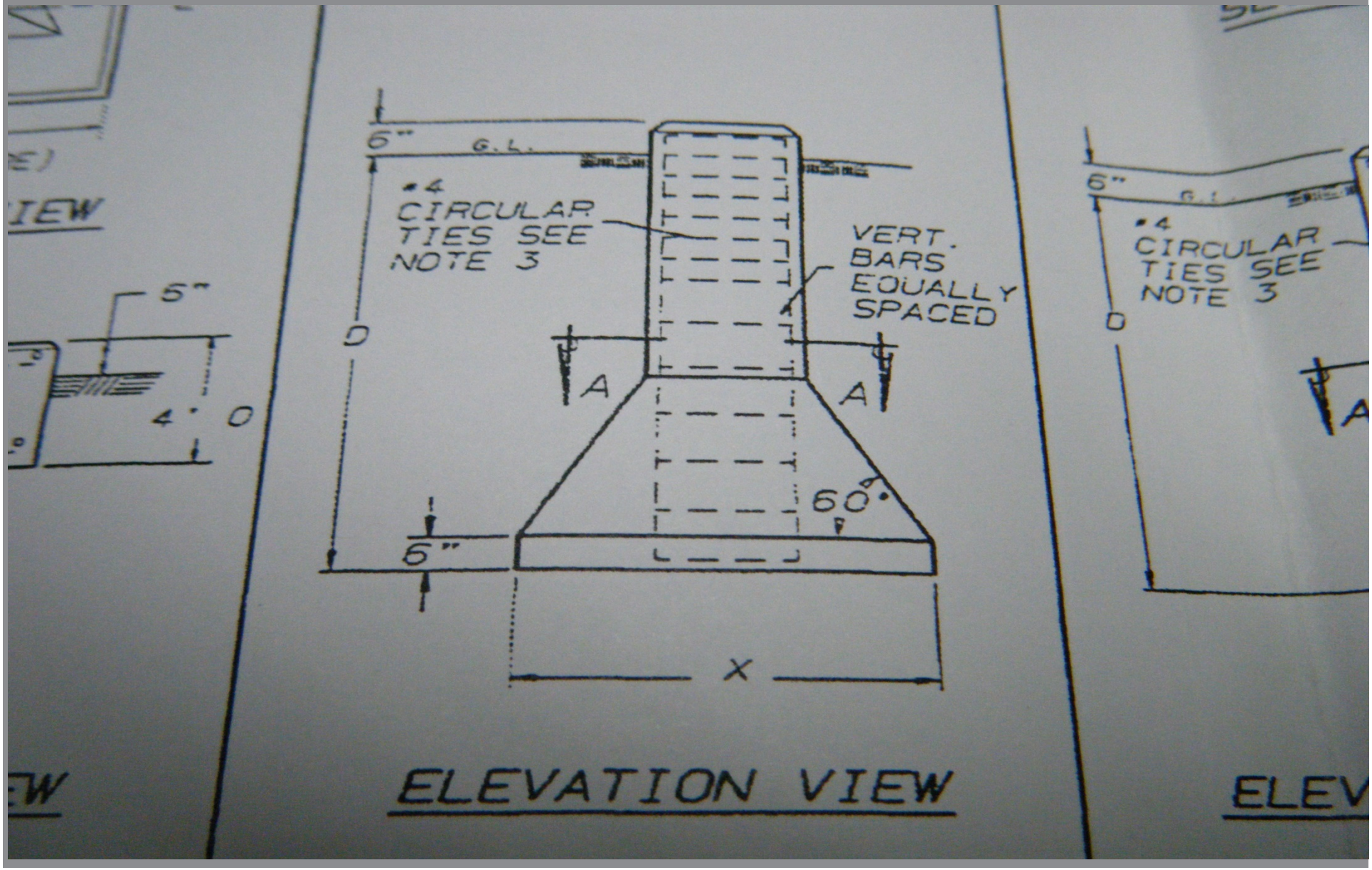
4. Assemble each section
   a. **Start with the top section!**
   b. Tower legs are usually bowed due to the manufacturing weld process. This bow will be pulled out as the section is assembled, but force will be required.
   c. Use of jacks, a scaffold or an A-frame to hold the upper leg in place will be required. This can require a support over 10 ft high for the bottom section of a 120 ft tower!
   d. Support the two lower legs with blocks at each end and in the middle to level them and keep them from bowing.
   e. Bolts used for all brace connections are ½" x 1 ¼" A325. These will require 7/8" wrenches.
   f. Install the braces. Insert the bolts for the braces so that **all nuts will go on the outside of the tower. The end of the brace stamped with a part number is oriented toward the top of the tower. (The hole is NOT in the middle!)**
   g. Do not tighten any of the hardware until the tower is erected and securely anchored.
   h. Leave all brace hardware finger-tight until the tower is erected.

5. Attach the sections to each other. Flange bolts should be tightened to final torque specification. We suggest that all PAL nuts be installed after the tower is installed on the foundations; **install PAL nuts only after a**

15N TO 1W= 320 FT. 10N TO 5N= 120 FT.



DRILL AND BELL



SAVING SSV TOWER FOR 10 YEARS

WORK AREA

J BOLTS FROM DAYTON $ 100.00

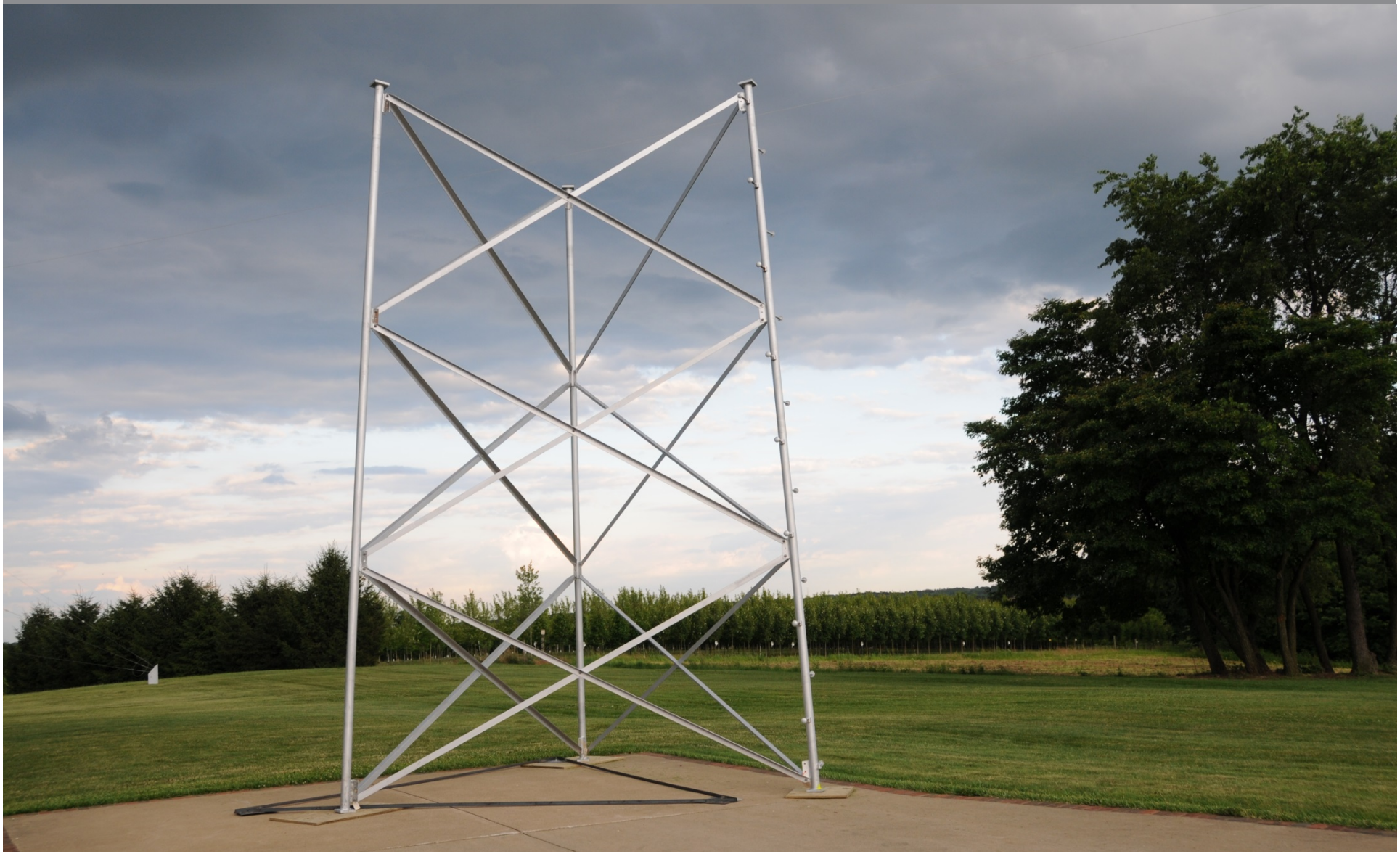
ORIGINAL VS REFINISHED TOWER

WATCHING THE PAINT DRY

MORE DRYING

CONSTRUCTION DAY

10N SET UP IN DRIVE WAY WITH BOLT LAYOUT



REBAR CAGES

QUALITY CONTROL MARKING

MATCHING TEMPLATE TO TOWER LEG

LOCATING THE TOWER

HYDRO-EXCAVATION TRUCK

READY TO START THE FIRST HOLE

DIG WITHIN THE LINES

HIGH PRESSURE HOSE TO CUT THE EARTH

GETTING DEEPER

INSIDE VIEW

TAKING SHAPE

TOP IS OPENED UP FOR THE CONCRETE

ON TO THE NEXT HOLE

NEED MORE WATER

ADDING A FIVE FOOT SECTION

GOING DEEPER

YARD STICK AND STRING FOR MEASURING

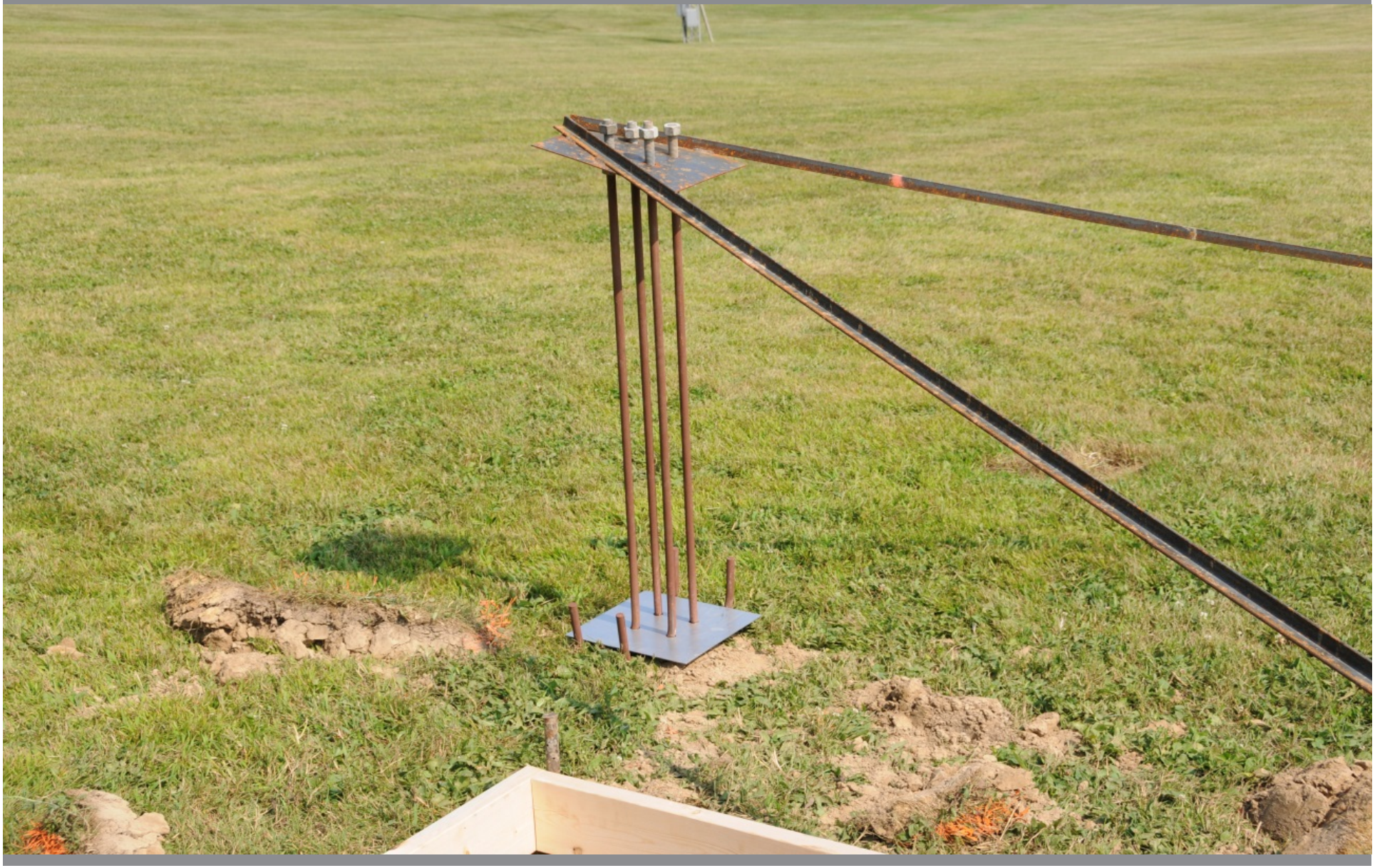
LUNCH TIME

GETTING ORGANIZED

SHOOTING ELEVATION

ROUGH PLACEMENT

PREPARING J BOLTS

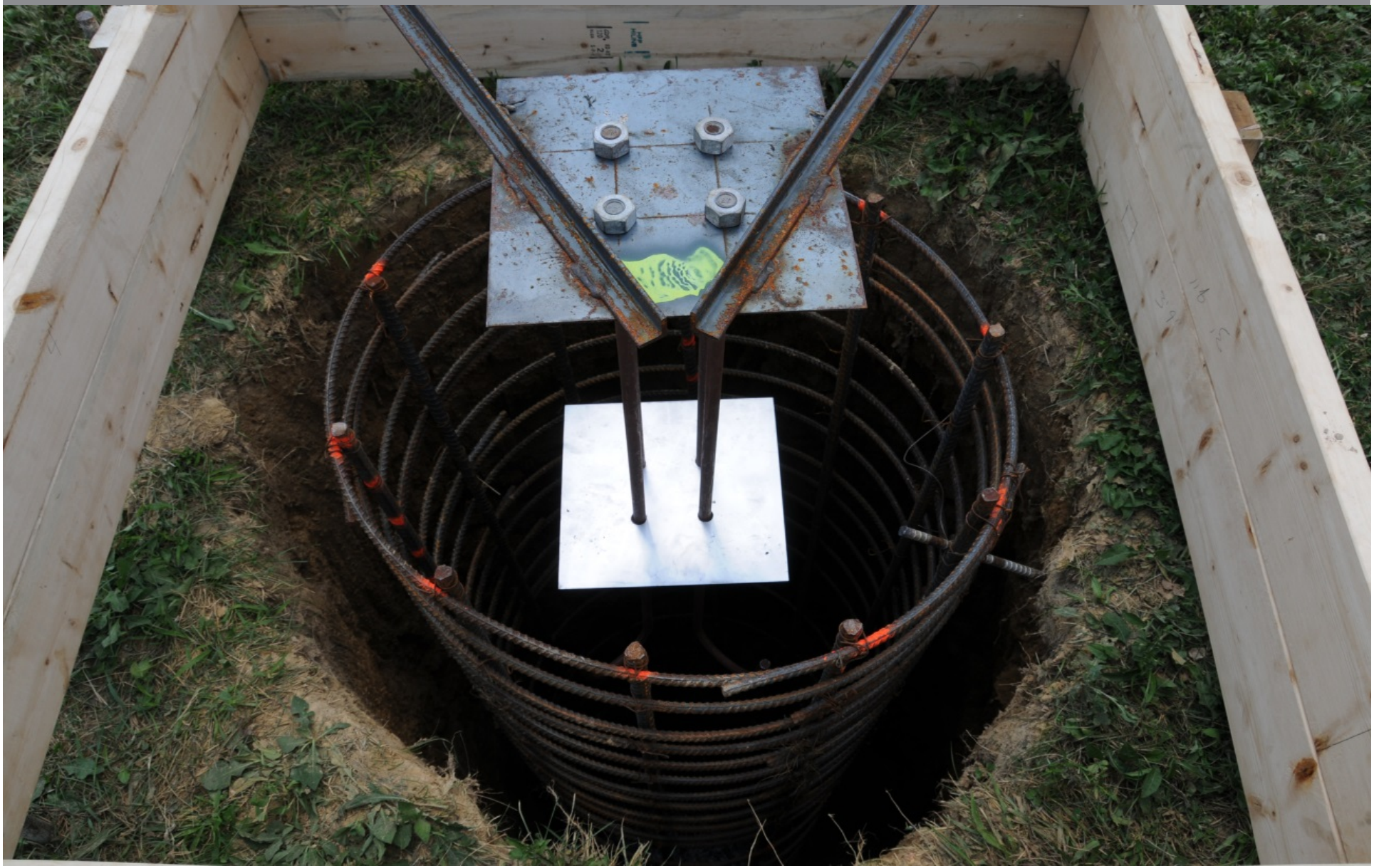


PRELIMINARY FORM FOR CONCRETE

FORMS FOR CONCRETE

THIRD AND FINAL CONCRETE FORM

READY FOR THE CONCRETE POUR



REBAR CAGE IS STABILIZED

TEMPLATE IS STABILIZED

READY FOR THE POUR WITH VIBRATOR

VIBRATING AROUND THE REBAR CAGE

LEVELING THE CAGE

HOLDING CAGE IN PLACE AND VIBRATING

MINIMUM SOIL DISTURBANCE

ONE ALMOST FINISHED AND TWO TO GO

MORE CONCRETE

ALMOST FULL

FINISHING TO SMOOTH FINISH

NEEDS TO BE HIGHER IN THE CENTER

FINISHED

DUCT TAPE ON THE THREADS

28 DAYS TO GO

COVERED DAY AND NIGHT

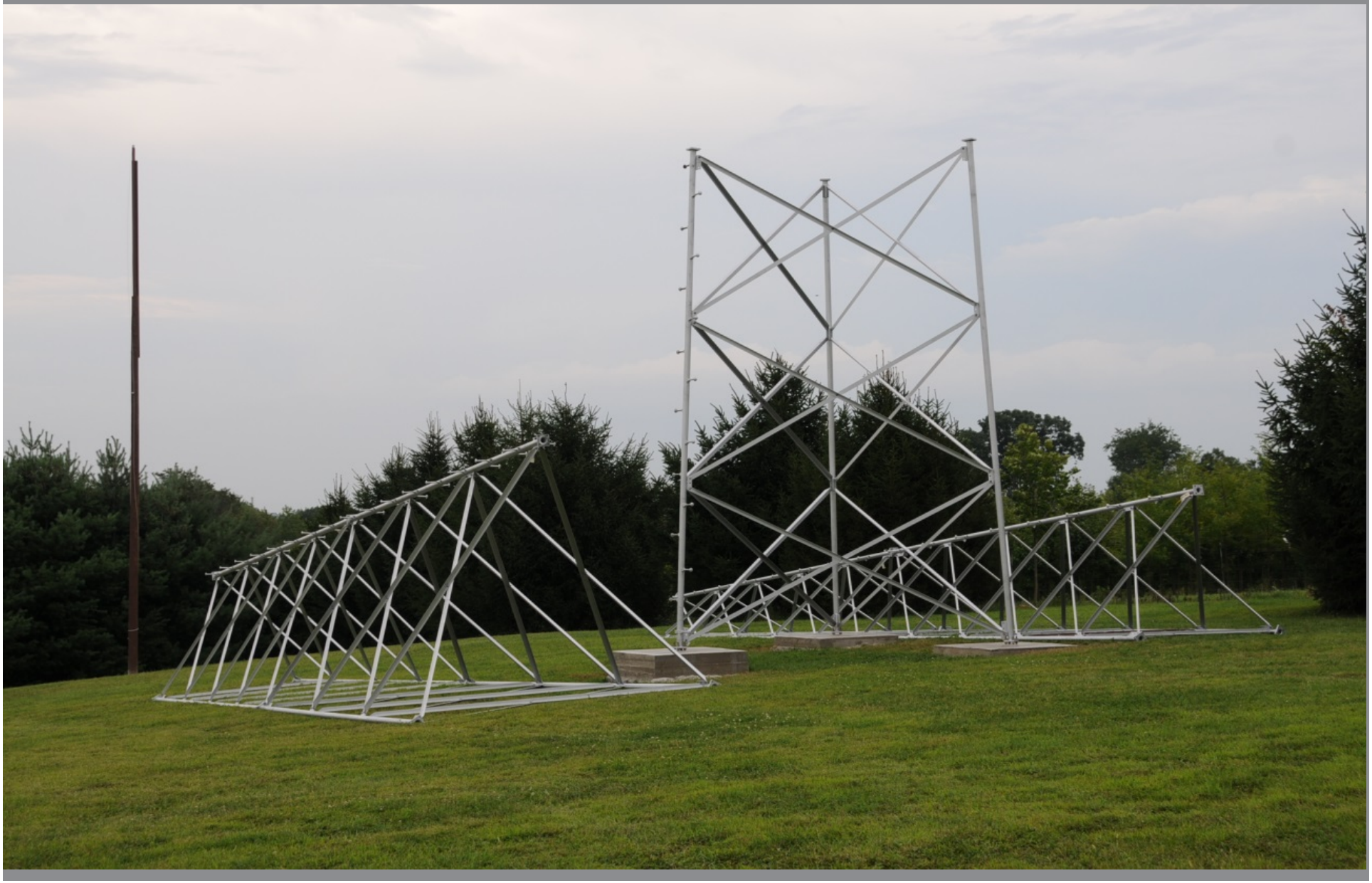
CONSTRUCTION DAY

MOVING THE 10N TO THE BASE

FIRST TRY !

PERFECT FIT

10N IN PLACE - 9N AND 8N READY TO GO UP



120 FT SSV TOWER FINISHED (ALL MOST)

40 METER 3 EL BEAM @ 120 FT.

SOUTH AMERICA 40 METER 3 EL @ 40 FT.

FEED LINE IS NEEDED

360FT. FROM TOWER TO STATION

4 - 2 INCH PVC PIPE

NO BACKHOE NEEDED

NICE AND STRAIGHT

UNDER THE SIDEWALK

THROUGH THE BRICK AND BLOCK

CONCRETE AND SEALED

NO SIGN OF DIGGING

INSIDE VIEW

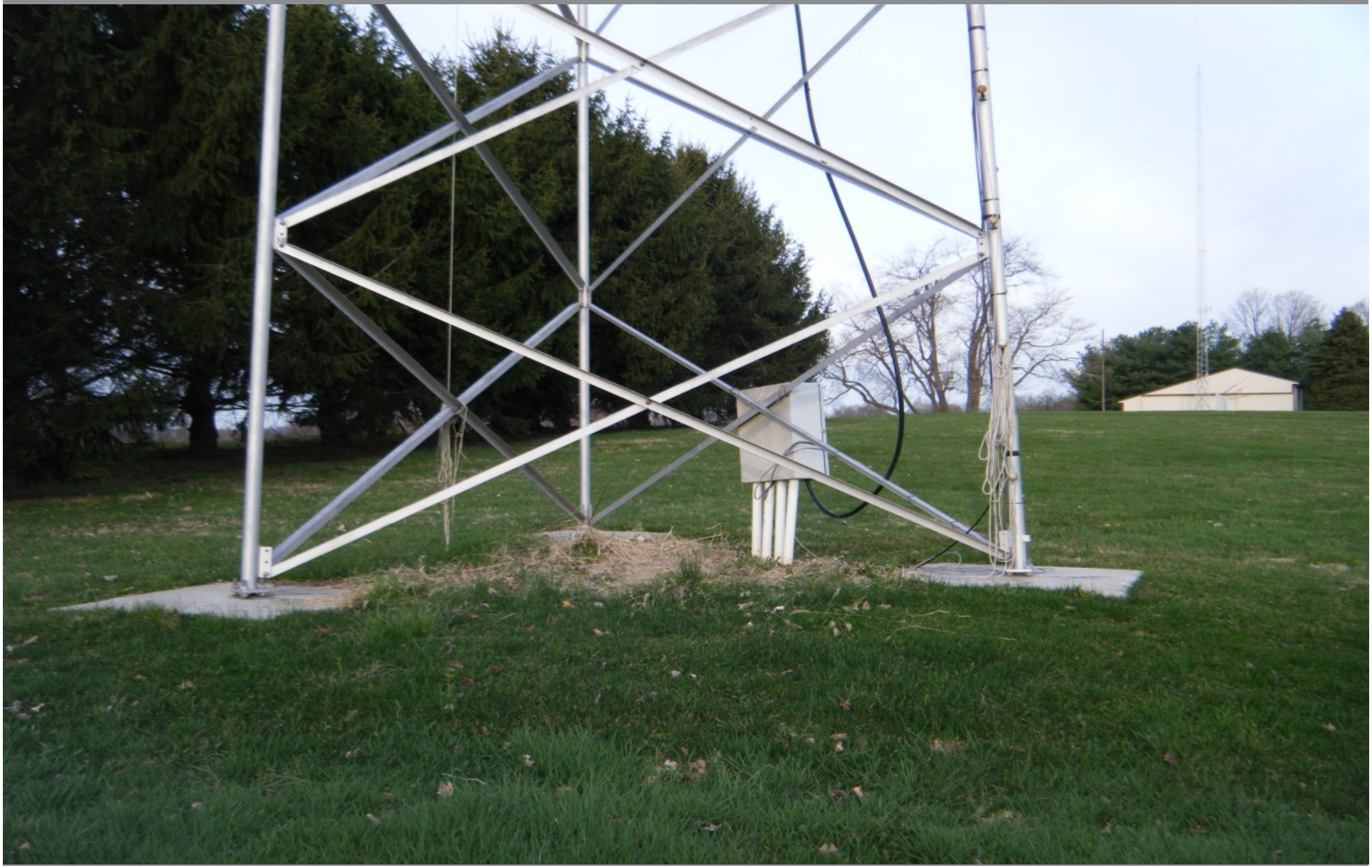
WORKS BETTER WITH 7/8” HARD LINE

WEATHER RESISTANT BOX NEEDED

ONE DAY TO PUT UNDERGROUND IN

GRASS LOOKS GREAT AFTER RESEEDING

WEATHER RESISTANT BOX AND BACK FILL



TWO 40 METER BEAMS ON ONE TOWER

120 FT. ROHN SSV TOWER COMPLETED