

FURTHER DISCUSSION OF RECTANGULAR COORDINATES AND ILLUSTRATION
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BABEL

DESCRIPTION OF THE SEYBOLT FARM

"BEGINNING FOR THE SAME AT A BOUNDED WHITE OAK TREE NOW STANDING ON THE SOUTHWESTERLY BANK OF TURKEY RUN, AND RUNNING THENCE WITH 4° ALLOWANCE FOR WEST VARIATION, S 72° W, 128.5 PERCHES TO INTERSECT THE THIRD LINE OF THE KAPLAN FARM; THENCE, RUNNING WITH THE THIRD LINE OF THE KAPLAN FARM REVERSED, S $1\ 1/2^{\circ}$ E, 170.0 PERCHES TO A STAKE; THENCE LEAVING THE LINE OF THE KAPLAN FARM AND RUNNING PARALLEL TO THE FIRST LINE HEREOF, N 72° E, 199.0 PERCHES TO THE SOUTHWESTERLY BANK OF TURKEY RUN; THENCE, RUNNING DOWN AND BOUNDING ON THE SOUTHWESTERLY BANK OF TURKEY RUN TO THE POINT OF BEGINNING."

THE ABOVE DESCRIPTION IS ALMOST WORTHLESS. IT HAS NO POSITION ON THE EARTH'S SURFACE THAT CAN BE RECOVERED IN LATER YEARS WHEN THE WHITE OAK TREE HAS DIED AND ROTTED AWAY. IT IS REFERRED TO THE LINES OF THE KAPLAN FARM WHICH ARE IN ALL PROBABILITY TIED TO NOTHING MORE DEFINITE THAN THIS ONE. IT IS REFERRED TO A MERIDIAN THAT IS INDEFINITE, INCONSISTENT AND UNSTABLE. THE RELATIONSHIP OF THIS FARM TO OTHER FARMS IN THE VICINITY AND TO THE COUNTY LINE OR TO THE HIGHWAY RIGHT-OF-WAY CANNOT BE DETERMINED WITHOUT CONSIDERABLE ADDITIONAL AND PROBABLY DIFFICULT FIELD WORK WHICH IS EXPENSIVE.

THE USUAL METHOD OF STARTING A HIGHWAY LOCATION FROM A NAIL IN THE GROUND AND RUNNING FROM THAT BY MEANS OF DISTANCES AND ANGLES TO ANOTHER ARBITRARY TERMINUS IS ALMOST AS FUTILE AS THE ABOVE FARM SURVEY. TRUE, THE BEARINGS MAY BE REFERRED TO TRUE MERIDIAN DETERMINED BY SOLAR OBSERVATION BUT IF NO ABSOLUTE POSITION IS AVAILABLE, THE SURVEY IS VALUELESS EXCEPT FOR THE ACTUAL PURPOSE OF DETERMINING HORIZONTAL POSITION FOR CONSTRUCTION PURPOSES. THE SURVEY CANNOT BE PLOTTED WITH ANY ACCURACY ON A TOPOGRAPHIC MAP FOR THE PURPOSE OF STUDYING ALIGNMENT AND GRADES NOR IS IT OF ANY VALUE IN DETERMINING THE PROPERTY NECESSARILY ACQUIRED FOR RIGHT-OF-WAY.

COSMOS

THE ACCOMPANYING MAP SHOWS A TOPOGRAPHIC MAP DRAWN ON A POLYCONIC PROJECTION BUT HAVING PLOTTED THEREON A 2000' GRID OF THE STATE PLANE COORDINATE SYSTEM. IF COORDINATES ARE AVAILABLE FOR THE POINTS, THE CORNERS OF THE PROPERTY CAN BE PLOTTED THEREON AND ALSO THE COURSE OF THE HIGHWAY. THE LOCATION MAY BE STUDIED FOR LOCATION, GRADES, DRAINAGE FEATURES, ETC. THE AVAILABILITY OF COORDINATES FOR THESE POINTS MAKES IT POSSIBLE TO COMPUTE MANY THINGS; E. G., THE POINTS WHERE THE HIGHWAY RIGHT-OF-WAY CROSSES THE PROPERTY LINES OF FARMS, THE STATION OF THE HIGHWAY LINE WHERE IT IS CROSSED BY PROPERTY LINES, THE AREA TO BE ACQUIRED FOR RIGHT-OF-WAY, THE AREA OF THE SEYBOLT FARM ISOLATED TO THE WEST OF THE HIGHWAY, ETC. IF COORDINATES OF COUNTY LINE MONUMENTS ARE AVAILABLE (OR GEOGRAPHIC POSITIONS FROM WHICH THE COORDINATES MAY BE COMPUTED), IT IS AN EASY MATTER TO SET ADDITIONAL POINTS ON THE COUNTY LINE BY "TIES" FROM POINTS WHOSE POSITIONS ARE KNOWN. FROM THESE COORDINATES MAY BE COMPUTED THE POINTS WHERE THE COUNTY LINE CROSSES THE HIGHWAY AND THUS ELIMINATE QUESTIONS OF JURISDICTION AND MAINTENANCE RESPONSIBILITY. FOR TAXATION PURPOSES THE EXACT AMOUNT OF THE AREA OF THE SEYBOLT FARM IN EACH COUNTY CAN EASILY BE COMPUTED.

FOR THE COMPARATIVELY LITTLE ADDITIONAL COST OF USING THE STATE COORDINATE SYSTEMS ON ALL SURVEYS, THEIR UTILITY IS MULTIPLIED SEVERAL FOLD. IN THIS WAY EVERY SURVEY BECOMES AN ADDITIONAL CONTROL LINE TO AID THE STATE AND FEDERAL GOVERNMENT IN LARGE MAPPING PROJECTS.

