CHAPTER 6

*Metes and Bounds SURVEYS

Chapter Contents

Sec. 6.01	***Metes and Bounds Surveys**

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Sec. 6.01 [*]**Metes and Bounds Surveys**

A metes and bounds survey will be required on parcels of land to be purchased for use as District or Residency offices or Maintenance Area Headquarters and may be requested by other State Agencies. When the acquisition of land involves *property owned by U.S. Government, State Agencies, National Forest Services, Railroad Companies, and Power Companies (Dominion VA Power), a metes and bounds survey is required. **See Section 4.08 and the Right of Way Manual of Instructions Sections 5.6.6-5.6.9**. These surveys will be prepared by computer-aided drafting techniques (CADD). Each sheet must contain a title block, filled out completely. The title block will contain the following information: county name, magisterial district, the name of the Survey Party Manager or Consultant, date of survey, scale bar, the proposed use of the parcel of land and the name of the person or persons from whom it is to be acquired.

The survey must be tied into the construction centerline or baseline of adjoining or nearby projects and the existing right-of-way, whether owned in fee or as an easement or dedication, *shall be shown. Directions and distances to nearby towns as well as the adjacent route and project should be shown. Measure the angles and compute the bearings to the nearest second and measure distances between transit points to the nearest one-hundredth foot **(0.01-ft)**. The survey plat shall show all pertinent features such as streams, wooded areas, swamps, roads, buildings, fences, etc. The owner names and property lines of all adjoining properties must be shown.

The bearing and length of each course should be shown on the inside of the 'lot' line and recorded bearings and length, if any, should be shown in parenthesis on the outside of the 'lot' line **(Figure 6-A)**. When a part of the boundary line is a curve, the central angle, length of chord, chord bearing, delta, length of curve and radius of the curve must be shown in the CADD file. Areas greater than or equal to 1 acre will be shown in acres to 3 decimal places (x.xxx). Areas less than 1 acre will be shown to square feet (x,xxx).

A closed-loop traverse shall be *completed in the field around the perimeter of the boundary. All angles and distances shall be entered, in sequence, into a Coordinate Geometry program. The "Compass rule" method of adjustment should be used and a least squares adjustment is acceptable. The output data from the computer will be in two sections. The first section will contain the data just as it was entered from the field book, or data collector, and will give the bearing of the error, the length of the error and the ratio of the error. The second section will show the closed, adjusted data with the area of the traverse in acres and square feet. The traverse must have a zero error of closure in order to receive the correct area from the computer. However, the metes and bounds shown on the CADD file should be that of the closed data provided the error of closure does not exceed one in ten thousand (1:10,000). Should the closure exceed one in ten thousand, sufficient field checks should be made to correct any discrepancies.

A copy of both sections of the output form must be sent to the Central Office (State Survey Program Manager), along with the CADD files and a legal description. Any legal description written will commence at the nearest offset point with the lowest stationing off the construction centerline thence clockwise around the parcel. If the construction centerline is not available, an easily identified, unique point will be chosen as a point of beginning and the courses will run in a clockwise direction.

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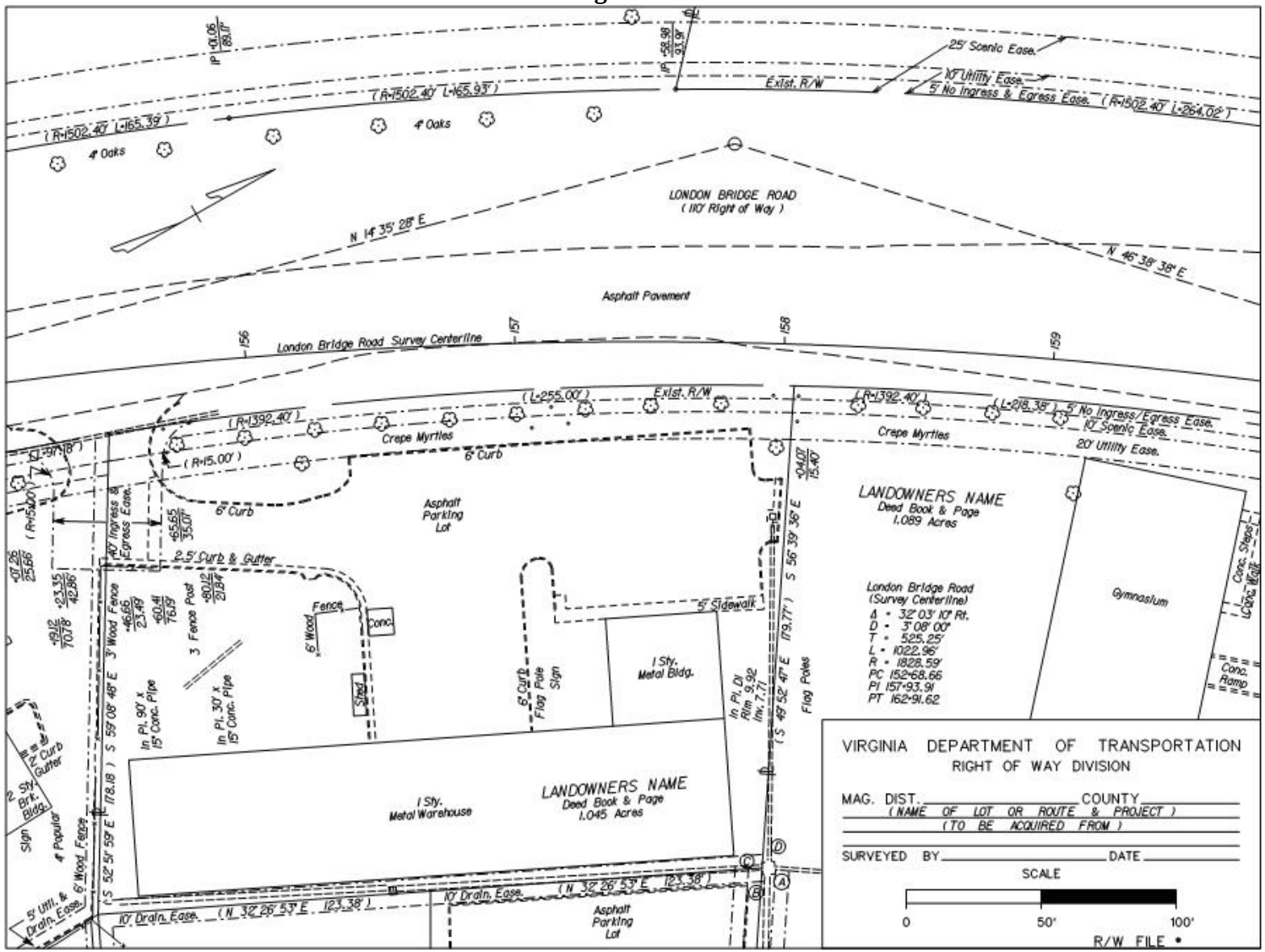
Figure 6-A


25' Scenic Ease.
10' Utility Ease.
5' No Ingress & Egress Ease.
Exist. R/W
4" Oaks
LONDON BRIDGE ROAD
(110' Right of Way)
N 14° 35' 28" E
N 46° 38' 38" E
Asphalt Pavement
London Bridge Road Survey Centerline
Crepe Myrtles
6" Curb
Asphalt Parking Lot
2.5' Curb & Gutter
5' Sidewalk
LANDOWNERS NAME
Deed Book & Page
1.089 Acres
London Bridge Road
(Survey Centerline)
Δ = 32° 03' 10" Rt.
D = 3° 08' 00"
T = 525.25'
L = 1022.96'
R = 1828.59'
PC 152+68.66
PI 157+93.91
PT 162+91.62
Gymnasium
20' Utility Ease.
10' Scenic Ease.
1 Sty. Metal Bldg.
1 Sty. Metal Warehouse
LANDOWNERS NAME
Deed Book & Page
1.045 Acres
10' Drain. Ease.
Flag Poles
VIRGINIA DEPARTMENT OF TRANSPORTATION
RIGHT OF WAY DIVISION
MAG. DIST. COUNTY
(NAME OF LOT OR ROUTE & PROJECT)
(TO BE ACQUIRED FROM)
SURVEYED BY DATE
SCALE
0 50' 100'
R/W FILE