SurvCE Raw Data File Format (*.RW5)

Carlson

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Introduction

This document outlines the Carlson SurvCE RW5 format in detail. The format is a comma separated ASCII file containing record types, headers, recorded data and comments and is based on the RW5 raw data specification with the exception of angle sets. Angle sets are recorded as BD, BR, FD and FR records to allow reduction of all possible data that can be recorded by Carlson SurvCE using the "Set Collection" routine. Essentially, these records are identical to a Sideshot record.

With the exception of the aforementioned angle set records, if the RW5 specification is modified to provide enhanced functionality, the added or modified data will reside in comment records to avoid incompatibility with existing software.

Format Structure

Backsight Record
Record type: BK
Field headers:

OP	Occupy Point
BP	Back Point
BS	Backsight
BC	Back Circle

Sample(s):

BK,OP1,BP2,BS315.0000,BC0.0044

Job Record
Record type: JB
Field headers:

NM	Job Name
DT	Date
TM	Time

Sample(s):

JB,NMSAMPLE,DT06-27-2003,TM14:21:53

Line of Sight Record
Record type: LS
Field headers:

HI	Height of Instrument
HR	Height of Rod

*GPS heights may be recorded to phase center or ARP depending on GPS make.

Sample(s):

LS,HI5.000000,HR6.000000
LS,HR4.000000

Format Structure (Continued)

Mode Setup Record
The mode setup will be recorded at the beginning of the raw data file.
Record type: MO
Field headers:

AD	Azimuth Direction (0 for North, 1 for South)
UN	Distance Unit (0 for feet, 1 for meter)
SF	Scale Factor
EC	Earth Curvature (0 for off, 1 for on)
EO	EDM Offset (inch)

Sample(s):

       MO,AD0,UN0,SF1.00000000,EC1,EO0.0,AU0

Occupy Record
Record type: OC
Field headers:

OP	Occupy Point
N	Northing (the header is N space)
E	Easting (the header is E space)
EL	Elevation
--	Note

Sample(s):

       OC,OP1,N 5000.00000,E 5000.00000,EL100.000,--CP

Off Center Shot Record
Record type: OF
Field headers:

AR	Angle right
ZE	Zenith (actual)
SD	Slope Distance

Sample(s):

       OF,AR90.3333,ZE90.0000,SD25.550000
       OF,ZE90.3333,--Vert Angle Offset

Store Point Record
Record type: SP
Field headers:

PN	Point Name
N	Northing
E	Easting
EL	Elevation
--	Note

Sample(s):

       SP,PN100,N 5002.0000,E 5000.0000,EL100.0000,--PP

Format Structure (Continued)

Traverse / Sideshot Record / Backsight Direct / Backsight Reverse / Foresight Direct / Foresight Reverse

Record type: TR / SS / BD / BR / FD / FR
Field headers:

OP	Occupy Point
FP	Foresight Point

(one of the following)

AZ	Azimuth
BR	Bearing
AR	Angle-Right
AL	Angle-Left
DR	Deflection-Right
DL	Deflection-Left

(one of the following)

ZE	Zenith
VA	Vertical angle
CE	Change Elevation

(one of the following)

SD	Slope Distance
HD	Horizontal Distance
--	Note

Sample(s):

TR,OP1,FP4,AR90.3333,ZE90.3333,SD25.550000,--CP
SS,OP1,FP2,AR0.0044,ZE86.0133,SD10.313750,--CP
BD,OP1,FP2,AR0.0055,ZE86.0126,SD10.320000,--CP
BR,OP1,FP2,AR180.0037,ZE273.5826,SD10.315000,--CP
FD,OP1,FP3,AR57.1630,ZE89.4305,SD7.393000,--CP
FR,OP1,FP3,AR237.1612,ZE270.1548,SD7.395000,--CP

GPS

Record type: GPS
Field headers:

PN	Point Name
LA	Latitude (WGS84)
LN	Longitude (WGS84, negative for West)
EL	Ellipsoid Elevation (meters)
--	Note

*GPS heights may be recorded to phase center or ARP depending on GPS make.

Sample(s):

GPS,PN701,LA42.214630920,LN-71.081409184,EL-21.8459,--CP /Brass Disk

Alphabetical Listing of Record Types

BD   Backsight Direct
BK   Backsight
BR   Backsight Reverse
FD   Foresight Direct
FR   Foresight Reverse
GPS   GPS Position in Lat(dd.mmss) Lon(dd.mmss - Negative for West) and WGS84 Ellipsoid Elv(meters)
JB   Job
LS   Line of Sight
MO   Mode Setup
OC   Occupy
OF   Off Center Shot
SP   Store Point
SS   Side Shot
TR   Traverse
--   Note Record

Alphabetical Listing of Field Headers

AD   Azimuth Direction (0 for North, 1 for South)
AL   Angle-Left
AR   Angle-Right
AZ   Azimuth
BC   Back Circle
BP   Back Point
BR   Bearing (this field will be recorded as N123.4500W)
BS   Backsight (when back point is not defined)
CE   Change Elevation
DL   Deflection-Left
DR   Deflection-Right
DT   Local Date (MM-DD-YYYY)
E   Easting (the header is E space)
EC   Earth Curvature (0 for off, 1 for on)
EL   Elevation (GPS value is ellipsoid elevation in meters)
EO   EDM Offset
FE   Foresight Elevation
FP   Foresight Point
HD   Horizontal Distance
HI   Height of Instrument
HR   Height of Rod
LA   Latitude
LN   Longitude
N   Northing (the header is N space)
OC   Occupy
OP   Occupy Point
PN   Point Name
SD   Slope Distance
SF   Scale Factor
TM   Local Time (HH:MM:SS)
UN   Distance Unit (0 for feet, 1 for meter, 2 for US feet)
VA   Vertical Angle
ZE   Zenith

-- Note