GEOPAK STUFF

File TypeNaming ConventionExample
Database jobJN.gpk job92.gpk
Input nameJN.iOC align92.ilb
Output nameJN.oOC temp92.olb
Auto generated input jJNoOC.inp j92olb.inp
Journal jouJN.iOC jou92.ilb
DTM data file*.datsite.dat
DTM binary tin file *.tin site.tin
DTM binary lattice file *.lat site.lat
Survey reports *.gen, *.2sd, *.1d, *.2d, *.cor, *.mansur.gen, sur.2sd, sur.1d, sur.2d, sur.cor, sur.man
Survey control point file *.ctl sur.ctl
Survey observation file *.obs sur.obs

( )Denotes an optional item which may be included in the command line.

abcdef under bar denotes the required user input for a given command. In cases where the under bar does not underline an entire keyword, the portion of the keyword not underlined is optional.

P/M anglev the back sight direction plus or minus the given angle. P for clockwise and M for counterclockwise.

The asterisk (*) wild card character matches any string of characters within an element name. You can use asterisks to specify a full or partial element name.

Comments may be inserted by using the $ character (followed by one or more blanks) as the first character on the line.

CommandDescription
SET FIX nSets the number of decimal places for the display of distance and coordinate values.
SET ASEC nSets the number of decimals for the display of angle values.
SET AZEstablishes the direction to AZIMUTH.
SET BEAREstablishes the direction to BEARING.
SET PRINTER MIdentifies the printer or queue for hard copy output.
SET REDAllows redefinition of elements.
SET NORDoes not allow redefinition of elements.
SET XYSets coordinate readouts to XY format.
SET NESets coordinate readouts to NE format.
SET STA nSets the number of decimal places for station readouts.
SET METRICEstablishes the operating mode to the metric system of measurement.
SET ENGEstablishes the operating mode to the English system of measurement.
SET PLUS nSets the number of places after the plus in stationing, i.e, two places for English system, 3 places for
Metric kilometer stationing.
SET JOB NUMBER nAllows a switch to a different job number without exiting GEOPAK.

FILE COMMANDS

APPEND (FILE) file1 (OPERATOR op1) TO (FILE) file2 (OPERATOR op2)
CATALOG
DELETE FILE filename
LOAD (FILE) filename (OPERATOR number)
OUTPUT (FILE) filename begin-line TO end-line
PRINT INPUT (FILE) filename
PRINT OUTPUT (FILE) filename
RECOVERY
RESTORE
SAVE (FILE) filename (SUBJECT string)
EXIT
MAKE INPUT FILE file-name element-list
    ELEMENT-LIST= CHAIN name, CURVE name, point no. range, PARCEL name, PROFILE,
        LINE no. range, SPIRAL name, SURVEY CHAIN name, ALL
LOAD CEAL FILE filename.int
MAKE CEAL FILE filename element-list
    ELEMENT-LIST= CHAIN, CURVE, SPIRAL

EDIT COMMANDS

Clear
DELETE line1-line2
INSERT line-number statement
EDIT
MODIFY line-number / old-string / new-string /
READ
READ line-number
READ line1-line2
READ line1 THRU line2
TYPE line-number
TYPE begin-line (TO) end-line
TYPE begin-line (THRU) end-line

POINT COMMANDS

STORE (POINT) n X easting Y northing ((STATION station) (ELEVATION elevation) (FEATURE feature)
 (DESCRIPTION description))
PRINT POINTS pa (pc pe pk)
PRINT POINTS pa THRU pk
PRINT POINTS pa-pk
PRINT POINTS $sel
LIST POINTS pa THRU pk
LIST POINTS pa-pk
LIST POINTS $sel
DELETE POINTS pa (pc pe pk)
DELETE POINTS pa THRU pk

POINT COMMANDS (CON'T.)

DELETE POINTS pa - pk
DELETE POINTS $sel
COPY POINTS pa pc...pk FROM file
COPY POINTS pa pc...pk FROM file (TO pb pe...ph)
COPY POINTS pa THRU pi FROM file
EQUATE n TO pa
STORE pa STATION station
STORE pa (CELL celname) (SCALE value)
STORE pa-pi (CELL celname) (SCALE value)
STORE POINT $SEL (CELL celname) (SCALE value)

CURVE COMMANDS

STORE CURVE name *Back Tangent Reference* Element *Ahead Tangent Reference*
(STATION Station Label station)(CHORD)
Back Tangent ReferencePC pa DB direction
PI pb DB direction
PB pa DB direction TL distance
PB pa DB direction TTL distance
PB pa PI pb
ElementRADIUS radius
DEGREE angle (arc definition)
DEGREE angle (Chord definition)
TANGENT tangent (radius or degree not given)
LENGTH distance (radius or degree not given)
Ahead Tangent ReferenceDA direction
PA pe
(P/M) DEFLECTION angle
or (P/M) DELTA angle
or DELTA angle (LT or RT)
(P/M) TANGENT distance
(P/M) LENGTH distance
(P/M) LC distance
(P/M) EXTERNAL distance
STORE CURVE name CONCENTRIC CURVE name1 OFFSET offset
STORE CURVE name PC pa PT pb RADIUS value CC (STATION label station)
STORE CURVE name PC pa PT pb DEGREE angle CL (STATION label station)
STORE CURVE name PC pa PI pb PT pe (STATION label station)
STORE CURVE name THRU pc pe pt
TRANSPOSE CURVE name
TRANSPOSE CURVE name (CL)
TRANSPOSE CURVE name (CC)
LIST CURVE
PRINT CURVE name
PRINT ALL CURVES
DELETE CURVE list
COPY CURVE name1 name2...FROM "DRIVE:\PATH\"JOBnumber (TO q1 q2...qn)
COPY CURVE pa THRU ph FROM "DRIVE:\PATH\"JOBnumber (TO q1 THRU qn)

CURVE COMMANDS (CON'T.)

COPY CURVE pa-pi FROM "DRIVE:\PATH\"JOBnumber (TO q1-qn)
STORE CURVE name CENTER pa RADIUS distance
STORE CURVE name CENTER pa THRU pb
STORE CURVE name CENTER pa TAN TO LINE pi direction
STORE CURVE name CENTER pa TAN TO CURVE name2
STORE CURVE name RADIUS distance THRU pa TAN TO LINE pb TO pc NEAR pd
STORE CURVE name RADIUS distance THRU pa TAN TO CURVE name2 NEAR pd
SEGMENT (CURVE) name (OFFSET distance) name1 pc pt
SEGMENT (CURVE) name (OFFSET distance) name2 pc LENGTH length
SEGMENT (CURVE) name (OFFSET distance) name3 pc DELTA angle
STATION CURVE name PC station
STATION CURVE name PT station
STATION CURVE name PI station
STATION ON CURVE name pa pe pi...pj
CURVE DATA pa pb R value
CURVE DATA pa pb DEGREE angle

SPIRAL COMMANDS

STORE SCS name *back tangent reference* LS length element *ahead tangent reference*
Back Tangent ReferencePI pa DB direction
PB pa PI pb
TS pa DB direction
PB pa DB direction TL distance
PB pa DB direction TTL distance
ElementRADIUS radius
DEGREE angle
Ahead Tangent ReferenceDA direction
PA pa
DEF angle (RT or LT)
LIST SPIRAL
PRINT SPIRAL name
DELETE SPIRAL list
COPY SPIRAL name1 name2... FROM "DRIVE:\PATH\"JOB NUMBER (TO q1 q2...qn)
COPY SPIRAL pa THRU pi FROM "DRIVE:\PATH\"JOB NUMBER (TO q1 THRU qn)
COPY SPIRAL pa-pi FROM "DRIVE:\PATH\"JOB NUMBER (TO q1-qn)
STORE SPIRAL name DB direction TS pa LS length DEGREE angle (sta-label station) (CHORD)
STORE SPIRAL name DB direction TS pa LS length RADIUS radius (sta-label station) (CHORD)
STORE SPIRAL name DB direction TS pa LS length DA direction (sta-label station) (CHORD)
STORE SPIRAL name DB direction TS pa LS length ANGLE angle (sta-label station) (CHORD)
STORE SPIRAL name DA direction ST pb LS length DEGREE angle (sta-label station) (CHORD)
STORE SPIRAL name DA direction ST pb LS length RADIUS radius (sta-label station) (CHORD)
STORE SPIRAL name DA direction ST pb LS length ANGLE angle (sta-label station) (CHORD)
STORE SPIRAL name CS pa DB direction LS length DEGREE angle (sta-label station) (CHORD)
STORE SPIRAL name CS pa DB direction LS length RADIUS radius (sta-label station) (CHORD)
STORE SPIRAL name CS pa DB direction LS length DA direction (sta-label station) (CHORD)
STORE SPIRAL name CS pa DB direction LS length ANGLE angle (sta-label station) (CHORD)
STORE SPIRAL name D1 angle LS length D2 angle C1 pa C2 pb (sta-label station) (CHORD)

SPIRAL COMMANDS (CON'T.)

STORE SPIRAL name D1 angle CS pa DB direction LS length D2 angle (sta-label station) (CHORD)
STORE SPIRAL name D1 angle CS pa DB direction LS length DA direction (sta-label station) (CHORD)
STORE SPIRAL name R1 radius LS length R2 radius C1 pa C2 pb (sta-label station) (CHORD)
STORE SPIRAL name R1 radius CS pa DB direction LS length R2 radius (sta-label station) (CHORD)
STORE SPIRAL name R1 radius CS pa DB direction LS length DA direction (sta-label station) (CHORD)
STORE SPIRAL name D2 angle LS length D1 angle C2 pb C1 pa (sta-label station) (CHORD)
STORE SPIRAL name D2 angle CS pa DB direction LS length D1 angle (sta-label station) (CHORD)
STORE SPIRAL name D2 angle CS pa DB direction LS length DA direction (sta-label station) (CHORD)
STORE SPIRAL name R2 radius LS length R1 radius C2 pb C1 pa (sta-label station) (CHORD)
STORE SPIRAL name R2 radius CS pa DB direction LS length R1 radius (sta-label station) (CHORD)
SPIRAL name R1 radius LS length R2 radius
SPIRAL name D1 angle LS length D2 angle
OFF/SPI pa THRU px SPI name
OFF/SPI pa pb ...px SPI name
OFF/SPI pa-px SPI name

CHAIN COMMANDS

STORE CHAIN name list (STATION station)
STORE CHAIN name list AS IS
STORE CHAIN n2 PARALLEL CHAIN n1 OFFSET offset (BEG n cur) (STA station1 STA station2)
LIST CHAIN (name)
PRINT CHAIN (name)
DESCRIBE CHAIN (name)
DELETE CHAIN name
STATION CHAIN name BEGIN station object (AHEAD)(BK)
STATION ALIGNMENT name BEGIN station object (AHEAD)(BK)
AREA CHAIN name
LAYOUT OFFSET CHAIN name pa pb . . pj (NEAR px)
LAYOUT OFFSET CHAIN name pa pb . . pj ELEV (NEAR px)
LAYOUT OFFSET CHAIN name1 CHAIN name2
LAYOUT OFFSET CHAIN name1 CHAIN name2 STATION station1 station2
LAYOUT OFFSET CHAIN name1 CHAIN name2 EVEN v station1 (TO) station2
LAYOUT OFFSET CHAIN name1 CHAIN name2 INC v station1 (TO) station2
LAYOUT OFFSET TO CHAIN name1 CHAIN name2 STATION station1 station2 . . . (beg n1)
LAYOUT OFFSET TO CHAIN name1 CHAIN name2 STATION station1 (TO) station2 (beg n1)
LAYOUT OFFSET TO CHAIN name1 CHAIN name2 EVEN v station1 (TO) station2 (beg n1)
STORE EQN CHAIN name (STATION) bk-station (r___) = (STATION) ah-station (TO NEXT) (n)
STORE EQN CHAIN name label point = (STATION) ah-station (TO NEXT) (n)

INVERSE, OPEN & INCOMPLETE ALIGNMENTS

ALIGNMENT name OPEN
POT pa TD direction (STATION station)
POT n X easting Y northing TD direction (STATION station)
POT pi TL distance
POT pi (P/M (DEF) angle) TL distance
CURVE name TL distance RADIUS radius (P/M) DEFLECTION angle

INVERSE, OPEN & INCOMPLETE ALIGNMENTS cont.

CURVE name DB (P/M) angle TL distance RADIUS radius (P/M) DEFLECTION angle
CURVE name DB (P/M) DEFLECTION angle TL distance RADIUS radius (P/M) DEFLECTION angle
SPIRAL name TL distance LS length (DEGREE angle TYPE value)
SPIRAL name DB (P/M) (DEFLECTION) angle TL distance LS length (Degree angle TYPE value)
POT pa (P/M (DEF) angle) TL distance
POT pi X easting Y northing (P/M (DEF) angle) TL distance
END ALIGNMENT (name)(DESCRIBE)

ALIGNMENT name INCOMPLETE
POT pa TD direction (STATION station)
POT n X easting Y northing TD direction (STATION station)
POT pa TD ? (STATION station)
CURVE name TL distance RADIUS radius (P/M) DEFLECTION angle
CURVE name DB (P/M) angle TL distance RADIUS radius (P/M) DEFLECTION angle
CURVE name DB (P/M) DEFLECTION angle TL distance RADIUS radius (P/M) DEFLECTION angle
POT pi TL distance
POT pi (P/M (DEF) angle) TL distance
SPIRAL name TL distance LS length
POT pa (P/M (DEF) angle) TL distance TD distance
POT pi N northing E easting (P/M (DEF) angle) TL distance TD direction
END ALIGNMENT
END ALIGNMENT name
END ALIGNMENT name DESCRIBE

PARCEL COMMANDS

STORE PARCEL name list
TAKE list
TAKE PARCEL name list
EASEMENT list
EASEMENT PARCEL name list
BLD list
BLD PARCEL name list
OWNER owner-name
OWNER PARCEL name owner-name
IMPROVEMENTS string
IMPROVEMENTS PARCEL name string
ADD list
ADD PARCEL name list
LIST PARCEL
PRINT PARCEL name
DESCRIBE PARCEL name
DELETE PARCEL list
SUBDIVIDE PARCEL name area R/L H hinge_pt BEG a
STORE SECTION name list
STORE PARCEL name legal (LESS list) (EAS list) (AND legal..) (AND ..)
MAKE LEGAL (FOR) PARCEL name (IN) text_file (USING user-defined)

STORE LINE

STORE LINE n pa direction
PROJECT pa (THRU pe) ON LINE pb direction
PRINT LINE i j k . . .

INTERSECTION COMMANDS

LOCATE n INTERSECT LINE pa direction (OFFSET offset) LINE pb direction (OFFSET offset)
LOCATE n INTERSECT LINE pa direction (OFFSET offset) ARC cp RADIUS radius AHEAD
LOCATE n INTERSECT LINE pa direction (OFFSET offset) ARC cp RADIUS radius BACK
LOCATE n INTERSECT LINE pa direction (OFFSET offset) ARC cp RADIUS radius NEAR px
LOCATE na THRU nn INTERSECT LINE pa THRU pn direction ARC cp RADIUS radius AHEAD
LOCATE na THRU nn INTERSECT LINE pa THRU pn direction ARC cp RADIUS radius BACK
LOCATE na THRU nn INTERSECT LINE pa THRU pn direction ARC cp RADIUS radius NEAR px
LOCATE n INTERSECT LINE pa direction (OFFSET offset) CURVE name (OFFSET offset) AHEAD
LOCATE n INTERSECT LINE pa direction (OFFSET offset) CURVE name (OFFSET offset) BACK
LOCATE n INTERSECT LINE pa direction (OFFSET offset) CURVE name (OFFSET offset) NEAR px
LOCATE n INTERSECT LINE pa direction (OFFSET offset) SPIRAL name (OFFSET offset) (Ahead)
LOCATE n INTERSECT LINE pa direction (OFFSET offset) SPIRAL name (OFFSET offset) (Back)
LOCATE n INTERSECT LINE pa direction (OFFSET offset) SPIRAL name (OFFSET offset) (NEAR px)
LOCATE n INTERSECT ARC ca RADIUS radius ARC cb RADIUS radius LT
LOCATE n INTERSECT ARC ca RADIUS radius ARC cb RADIUS radius RT
LOCATE n INTERSECT ARC ca RADIUS radius ARC cb RADIUS radius NEAR px
LOCATE n INTERSECT ARC cp RADIUS radius SPIRAL name (OFFSET offset) (NEAR px)
LOCATE n INTERSECT CURVE name1 (OFFSET offset) CURVE name2 (OFFSET offset) (NEAR px)
LOCATE n INTERSECT CURVE name1 (OFFSET offset) SPIRAL name2 (OFFSET offset) (NEAR px
LOCATE n INTERSECT LINE pa direction (OFFSET offset) CHAIN name (OFFSET offset) (NEAR px)
LOCATE n INTERSECT CURVE name1 (OFFSET offset) CHAIN name2 (OFFSET offset) (NEAR px)
LOCATE n INTERSECT SPIRAL name1 (OFFSET offset) CHAIN name2 (OFFSET offset) (NEAR px)
LOCATE n INTERSECT CHAIN name1 (OFFSET offset) CHAIN name2 (OFFSET offset) (NEAR px)

LOCATE COMMANDS

LOCATE n (TRAVERSE) pa (DISTANCE) distance direction (OFFSET offset)
LOCATE ANGLE b.s.point sta.point f.s.point (P/M) angle length (vertical angle)
LOCATE n POC pb CC pa (P/M) LENGTH arc (OFFSET offset)
LOCATE n POC pb CC pa (P/M) LENGTH CHORD chord (OFFSET offset)
LOCATE n POC pb CC pa (P/M) TANGENT tangent (OFFSET offset)
LOCATE n POC pb CC pa (P/M) DELTA angle (OFFSET offset)
LOCATE na ON ca RADIUS radius CL TANGENT cb RADIUS radius EXTERIOR nb
LOCATE na ON ca RADIUS radius CL TANGENT cb RADIUS radius INTERIOR nb
LOCATE na ON ca RADIUS radius CCL TANGENT cb RADIUS radius EXTERIOR nb
LOCATE na ON ca RADIUS radius CCL TANGENT cb RADIUS radius INTERIOR nb
LOCATE n ON CURVE name distance (FROM) pa (OFFSET offset)
LOCATE n ON CURVE name STATION station (OFFSET offset)
LOCATE n ON SPIRAL name LENGTH length (OFFSET offset)
LOCATE n (ON) CHAIN name STATION station (REGION region) (OFFSET offset)
LOCATE n (ON) CHAIN name STATION station (NEAR px) (OFFSET offset)
LOCATE n PROJECT pa ON CHAIN name (NEAR px) (OFFSET offset)

LOCATE COMMANDS cont.

DIV/LINE pa TO pb BY n (BEGIN pi)
DIV/LINE pa TO pb PROJECT dist1(f) dist2(f) . . . distx(f) (BEGIN pi)
DIV/ARC pa TO pb CC cp BY n (BEGIN pi)
DIV/CHA name EVEN v STATION station1 (r a) STATION station2 (r b) (OFFSET offset) BEGIN pi (STEP n)
DIV/CHA name INCREMENT v STATION station1 (r a) STATION station2 (r b) (OFFSET offset) BEGIN pi (STEP n)
LOCATE n (FROM) pa CURVE name (NEAR px)
LOCATE n CIRCLE THRU pa pb pc

TRANSLATION AND ROTATION

TRANSFORM p1-px n1-nx pa pb
TRANSFORM p1-px n1-nx pa pb (ROTATE (ABOUT) pd (P/M) angle (SC value))
ROTATE p1-px n1-nx (ABOUT) pd (P/M) angle (SC value)

INVERSE & MEASUREMENT COMMANDS

INVERSE pa pb
INVERSE pa pb px
INVERSE pa THRU px
INVERSE pa-px
PRINT DIRECTION CURVE name STATION station
PRINT DIRECTION SPIRAL name STATION station
PRINT DIRECTION CHAIN name STATION station
ANGLE AT pa pb TO pc
ANGLE pa pb pi-pk
AREA (/DESCRIBE) pa pb pc pd pe pa
AREA (/DESCRIBE) pa-pc (R value) pd-pa
AREA (/DESCRIBE) pe pa pb pe pc (R value) pd pe

PROFILE COMMANDS

STORE PROFILE name
VPI pa
VPI n STATION station (REGION region) ELEVATION elevation
VPI n STATION station (ELEVATION elevation) GRADE grade
VPI n STATION station ELEVATION elevation K value
VPI n STATION station ELEVATION elevation LENGTH length
VPI n STATION station ELEVATION elevation L1 length1 L2 length2
VPI n STATION station ELEVATION elevation THRU station x elevation y
VPI n STATION station ELEVATION elevation SL station x slope
VPI n K value S1 station E1 elevation1 S2 station2 E2 elevation2
VPI n K value S1 station E1 elevation
EQN (BK) station-bk (AH) station-ahd
VPI n STATION station ELEVATION ?
VPI n STATION ? ELEVATION elevation
END PROFILE (name)
LIST PROFILES
PRINT PROFILE name

PROFILE COMMANDS cont.

ELEVATION (PROFILE) name station-a (station-b station-c ...)
ELEVATION (PROFILE) name EVEN value station-a (TO) station-b
ELEVATION (PROFILE) name INCREMENT value station-a (TO) station-b
DELETE (PROFILE) name
STORE PROFILE name FROM (PROFILE) namex (+/-) incr-value
STORE PROFILE name pa-pi
STORE PROFILE name pa pe pb . . . px
VC K value S1 station E1 elevation STATION station ELEVATION elevation GRADE grade
VC K value S1 station E1 elevation S2 station E2 elevation
VC K value S1 station E1 elevation SL slope
VC K value HP station HP elevation STATION station ELEVATION elevation

PROFILE COMMANDS (CON'T)

VC K1 value HP station HP elevation G grade
VC K1 value HP station HP elevation K2 value LP station LP elevation
VC S1 station E1 elevation S2 station E2 elevation S3 station E3 elevation
VC S1 station E1 elevation G1 grade S2 station E2 elevation
VC S1 station E1 elevation G1 grade K2 value HP station HP elevation

TRAVERSE ADJUSTMENT COMMANDS

TRAVERSE name (OPEN)
COMPASS*Closed Traverse, without OPEN option*
LEAST (weight distance weight angle).*Least Squares Adjustment*
CLOSURE v angle (seconds)
BACK REFERENCE direction
LINE (a TO) n (FIX) length direction
AHEAD REFERENCE direction ANG fangle
END TRAVERSE

COORDINATE GEOMETRY MACROS

STORE DISTANCE name value (P/M/MUL/DIV value)
STORE DISTANCE name pa TO pb (P/M/MUL/DIV value)
STORE DISTANCE name R curve_name
STORE BEARING name value
STORE BEARING name TANGENT CURVE curve_name STATION station
STORE BEARING name TANGENT SPIRAL spiral_name STATION station
STORE BEARING name TANGENT CHAIN chain_name STATION station
STORE ANGLE name angle (P/M angle)
STORE ANGLE name AT pa pb TO pc
PRINT DISTANCE name
PRINT BEARING name
PRINT ANGLE name
DEFINE "name" character_string
INCLUDE file_name