

Preliminary Step by Step Leveling Instrument Procedures

NOTE: Instrument settings used are taken directly from NGS sheet.

USER=CODE

Beginning of Leveling Day:

- ❖ Erase data:
 - Press <DATA>
 - scroll to “2 Delete Jobs” <return>
 - scroll to “<DEL-ALL>” <return>
 - YES to “Delete all Job and code lists...”

- ❖ Perform collimation check (using Forstner method):
 - At the “Meas & Rec” screen, press <PROG>
 - From “PROGRAMS”, select “4 CHECK & ADJUST”
 - From “CHECK & ADJUST” screen, select “1 Job”
 - From “SELECT JOB” screen, select “NEW”

Job: XXXXXXXX (station number)

Oper: NNN (Observer initials)

Cmt1: blank

Cmt2: blank

 - Select “SET”
 - From “CHECK & ADJUST” screen, select “2 Meth”
 - From “SELECT METHOD” screen, select “AXXB”, using arrows.
 - Follow on prompts and arrow position at top of screen.
 - Write down coll. Error in field book/back up sheet.
 - Toggle over to <END> (DO NOT set new coll.)

Setup Instrument for Leveling:

- ❖ SET instrument for line leveling
 - At “Programs”(main), select “2 line leveling”
 - Set up new line: (first line of the day)

Name: “10111012” (firstlast SPSN of line)

Meth: BF

PtID: 1011 (starting SPSN)

H0: 0.0000 m (zeroed ground height)

Staf1: blank

Staf2: blank

- Scroll to <SET>
- ❖ Check/Set tolerances
 - Enter tolerances:

TDistBal:	5.00 m
MaxDist:	60.00 m
STafHigh:	2.90 m
StaLow:	0.50 m
 - Set tolerances:

Precise:	On
DistBal:	On
MaxDist:	On
StaEnds:	On
 - <SET>
- ❖ From “Line Leveling-Start” screen
 - Select “4 START/CONT, <enter>
 - Verify settings in the “Check List”
- ❖ Enter Codes for Start of Leveling:
 - Press USER, (“CODE & ATTR ENTRY”)

Code :	1
Info1:	mmddyy
Info2:	NNN (observer)
Info3:	“DNA03” (inst. type)
Info4:	“0” (temp. scale in C)
 - Hit <REC>
 - Press USER, (“CODE & ATTR. ENTRY”)

Code:	2
Info1:	XXXXXXXX (inst. s/n)
Info2:	+ - coll.error
Info3:	XXXXXXXX (rod1 s/n)
Info4:	XXXXXXXX (rod2 s/n)
 - Hit <REC>

Begin of Measurements:

- ❖ Enter Code for start of Section:
 - Press USER

Code:	11
Info1:	hhmm (time)
Info2:	rod # on starting mark
Info3:	Starting temp
Info 4:	blank

- Hit <REC>

❖ Measure Backsight

NOTE: If Foresight is a bench mark, BEFORE measurement:

- SET Ending SPSN:
Go to FUNC (shift+user) select, "PtID & INCREMENT"
Running PtID
PtID: ending SPSN
Incr: 1 (always leave "1")

- Hit <SET>

❖ Measure Foresight

❖ Enter Code 33

- Press USER
Code: 33
Info1: lower temp.
Info2: upper temp.
Info3: blank
Info4: blank

- Hit <REC>

❖ Enter Code 99

- Press USER
Code: 99
Info1: hhmm
Info2: rod 3 on ending mark
Info3: ending temp.
Info4: XX (wind/sun)

❖ Record Height difference in field book/ backup recording sheet

END of LEVEL SECTION

*****For Level sections with turns/TBMs between setups:**

Setup Instrument for Leveling:

- ❖ SET instrument for line leveling
 - At “Programs”(main), select “2 line leveling”
 - Set up new line:

Name: “10111012” (firstlast SPSN of line)
Meth: BF
PtID: 1011 (starting SPSN)
H0: 0.0000 m (zeroed ground height)
Staf1: blank
Staf2: blank

Begin of Measurements:

- ❖ Enter Code for start of Section:
 - Press USER
Code: 11
Info1: hhmm (time)
Info2: rod # on starting mark
Info3: Starting temp
- Measure Backsight
- ❖ Set/change PtID to “1”
 - Press FUNC (shift+user), select “4 PtID & INCREMENT”
 - Enter “1” for PtID
 - Leave Incr. to “1”
 - Highlight <SET>
- Measure Foresight
- ❖ Enter Code 33
 - Press USER
Code: 33
Info1: lower temp.
Info2: upper temp.
Info3: blank
Info4: blank
 - Hit <REC>

- ❖ Move to next setup
 - Continue leveling to turns as necessary
 - Follow every foresight with a “Code 33”
 - Before foresight to a BM, go to “Ptid & Increment” screen and change Ptid to Ending BM’s SPSN
- ❖ Enter Code 99
 - Press USER
Code: 99
Info1: hhmm
Info2: rod # on ending mark
Info3: ending temp.
Info4: XX (wind/sun)
 - Hit <REC>

Repeat from “LINE-LEVELING-START” for each additional section, until end of Level Run

End of Level Run:

- ❖ Enter Code 9999
 - Press USER
Code: 9999
Leave all info blocks blank
 - Hit <REC> enter