ANNEX N
September 2023

GLOBAL POSITIONING SYSTEM DATA TRANSFER FORMAT (G-FILE)

This annex contains information about the Global Positioning System (GPS) Data Transfer Format (G-File) records. The G-File consists of eight 80-column record types that are used to document the results of the computation of relative vectors, expressed as components, from simultaneously observed GPS phase measurements. There may be only one G-file for a project. Each G-file must contain one Project Record (A) and one or more Session Header Records (B). A Session Header Record (B) is required for each individually processed vector or each simultaneously processed group of vectors (session) at three or more survey points. Each Session Header Record is followed by one or more Vector (C) and/or Long Vector (F) Records, Correlation (D) or Covariance (E) Records, optional Coordinate (G) Records, and optional and/or required Station Information (H) Records. Vector and Long Vector Records contain relative vector components between two survey points. Correlation Records contain the off-diagonal elements only of the correlation matrix for the vector components in a session. Covariance Records contain the off-diagonal elements only of the covariance matrix for the vector components in a session. The records for a simultaneously processed vector set may only contain correlation or covariance records but not a mix of the two. A Long Vector Record may only be used when a vector component is larger than +/- 999,999.9999 meters. The Coordinate (G) Records may be used to record, for informational purposes within the G-file, the coordinates of survey points held fixed during the vector computations or to provide location information regarding the G-file. Relative vectors are required even if coordinates are included. Station Information Records are used to document differing conditions or solution types for vectors within a session. The Station Information Record (H) is required only when an external time standard is used with a receiver, when a comment needs to be made about a station occupation, or when information about a station occupation or vector solution is not the same as for all other stations or vectors in a session. Multiple H records are allowed.

This annex documents the record formats, provides an explanation of the fields within each record, and gives G-file examples using the various record types.

CC-1 CODE	RECORD TYPE	
A	Project Record	(required)
B	Session Header Record	(required)
C	Vector Record	(either the C or F record is required)
D	Correlation Record	(either the D or E record is required)
E	Covariance Record	(either the D or E record is required)
F	Long Vector Record	(C and/or F record are required)
G	Coordinate/Absolute Position Record	(optional)
H	Station Information Record	
I	Session Models Record	(optional; follows the B record if used

Project Record

01-01	A		
02-03	Job Code (Chapter 1)		Alpha
04-07	Year, Start of Project (local)	(CCYY)	Integer
08-09	Month, Start of Project (local)	(MM)	Integer
10-11	Day, Start of Project (local)	(DD)	Integer
12-15	Year, End of Project (local)	(CCYY)	Integer
16-17	Month, End of Project (local)	(MM)	Integer
18-19	Day, End of Project (local)	(DD)	Integer
20-78	Title of project		Alpha
79-80	Reserved		

Session Header Record

01-01	B		
02-05	Year, First Actual Measurement (UTC)	(CCYY)	Integer
06-07	Month, First Actual Measurement (UTC)	(MM)	Integer
08-09	Day, First Actual Measurement (UTC)	(DD)	Integer
10-13	Time, First Actual Measurement (UTC)	(HHMM)	Integer
14-17	Year, Last Actual Measurement (UTC)	(CCYY)	Integer
18-19	Month, Last Actual Measurement (UTC)	(MM)	Integer
20-21	Day, Last Actual Measurement (UTC)	(DD)	Integer
22-25	Time, Last Actual Measurement (UTC)	(HHMM)	Integer
26-27	Number of Vectors in the Session		Integer
28-42	Software Name & Version		Alpha
43-47	Orbit Source (agency that computes orbit)		Alpha
48-51	Orbit accuracy estimate (XX.xx meters)		Implied Decimal
52-53	Solution coordinate system code	(see table)	Integer
54-55	Solution meteorological use code	(see table)	Integer
56-57	Solution ionosphere use code	(see table)	Integer
58-59	Solution time parameter use code	(see table)	Integer
60-60	Vector Nominal accuracy code	(see table)	Integer
61-66	Processing agency code	(see Annex C)	Alpha
67-70	Year of Processing	(CCYY)	Integer
71-72	Month of processing	(MM)	Integer
73-74	Day of processing	(DD)	Integer
75-80	Solution Type	(see table)	Alpha
81-90	Blank (Optional)		NULL
91-104	Project ID (Optional)		Alpha

Note: Columns 43 through 47 of Record B contain the symbol of the agency which computes and provides GPS satellite orbit information. Columns 61 through 66 contain the symbol of the agency that does the observation reduction processing. Columns 52 through 80 of Record B assume all stations use identical observing and computation procedures. If this is not the case, use Record H to record the differences for each station which varies from those conditions noted on the B record.

Note: If the number of vectors in a session exceeds 99, leave columns 26 through 27 blank. In such cases, the number of vectors can be determined by counting the "C" records or the "F" records.

Vector Record

01-01	C		
02-05	Origin Station Serial Number (ssn)	(vector tail)	Integer
06-09	Differential Station Serial Number	(vector head)	Integer
10-20	Delta X	(XXXXXXX.xxxx meters)	Implied Decimal
21-25	Standard Deviation	(X.xxxx meters)	Implied Decimal
26-36	Delta Y	(XXXXXXX.xxxx meters)	Implied Decimal
37-41	Standard Deviation	(X.xxxx meters)	Implied Decimal
42-52	Delta Z	(XXXXXXX.xxxx meters)	Implied Decimal
53-57	Standard Deviation	(X.xxxx meters)	Implied Decimal
58-58	Rejection Code (use upper case R to reject)		Alpha
59-68	Data Media Identifier-Origin Station	(see table)	
69-78	Data Media Identifier-Differential Station	(see table)	
79-80	Reserved		

Note: Standard deviation values must be positive, non-zero numbers.

Correlation Record

01-01	D		
02-04	Row Index Number		Integer
05-07	Column Index Number		Integer
08-16	Correlation	(XX.xxxxxxx)	Implied Decimal
17-19	Row Index Number		Integer
20-22	Column Index Number		Integer
23-31	Correlation	(XX.xxxxxxx)	Implied Decimal
32-34	Row Index Number		Integer
35-37	Column Index Number		Integer
38-46	Correlation	(XX.xxxxxxx)	Implied Decimal
47-49	Row Index Number		Integer
50-52	Column Index Number		Integer
53-61	Correlation	(XX.xxxxxxx)	Implied Decimal
62-64	Row Index Number		Integer
65-67	Column Index Number		Integer
68-76	Correlation	(XX.xxxxxxx)	Implied Decimal
77-80	Reserved		

Note: This record is to record the off-diagonal correlates only from the session (or vector) correlation matrix. Since the correlation matrix is symmetric about the diagonal, only the upper or the lower half should be recorded.

Covariance Record

01-01	E	
02-04	Row Index Number	Integer
05-07	Column Index Number	Integer
08-19	Covariance (XXXX.xxxxxxxx meters^2)	Implied Decimal
20-22	Row Index Number	Integer
23-25	Column Index Number	Integer
26-37	Covariance (XXXX.xxxxxxxx meters^2)	Implied Decimal
38-40	Row Index Number	Integer
41-43	Column Index Number	Integer
44-55	Covariance (XXXX.xxxxxxxx meters^2)	Implied Decimal
56-58	Row Index Number	Integer
59-61	Column Index Number	Integer
62-73	Covariance (XXXX.xxxxxxxx meters^2)	Implied Decimal
74-80	Reserved	

Note: This record is to record the off-diagonal covariances only from the vector variance-covariance matrix. The square root of the diagonal elements, the component standard deviations, are recorded on records C and F. Since the variance-covariance matrix is symmetric about the diagonal, only the upper or the lower half should be recorded.

Long Vector Record

01-01	F	
02-05	Origin Station Serial Number (ssn) (vector tail)	Integer
06-09	Differential Station Serial Number (vector head)	Integer
10-22	Delta X (XXXXXXXXX.xxxx meters)	Implied Decimal
23-27	Standard Deviation (X.xxxx meters)	Implied Decimal
28-40	Delta Y (XXXXXXXXX.xxxx meters)	Implied Decimal
41-45	Standard Deviation (X.xxxx meters)	Implied Decimal
46-58	Delta Z (XXXXXXXXX.xxxx meters)	Implied Decimal
59-63	Standard Deviation (X.xxxx meters)	Implied Decimal
64-64	Rejection Code (use upper case R to reject)	Alpha
65-65	Origin station manufacturer code	(N-6)
66-68	Origin station UTC day of year of occupation (DDD)	Integer
69-69	Origin station year of occupation (Y) UTC	Integer
70-70	Origin station session indicator	Alpha
71-71	Differential station manufacturer code	(N-6)
72-74	Differential station day of year (DDD) UTC	Integer
75-75	Differential station year of occupation (Y) UTC	Integer
76-76	Differential station session indicator	Alpha
77-80	Reserved	

Note: Standard deviation values must be positive, non-zero numbers.

Coordinate Record

```
01-01  G
02-02  Blank
03-03  Record usage code K - see below
04-05  Blank
06-09  Station Serial Number
10-10  Blank
11-14  Optional 4-character ID or "short" station name - see below
15-15  Blank
16-20  Coordinate frame designator (e.g. NAD 83, WGS 84, NAD 27,
       WGS 72, ITR 90, etc.; inquire for additions)
21-21  Blank
22-33  X coordinate (XXXXXXXX.xxxx meters)                Implied Decimal
34-34  Blank
35-46  Y coordinate (YYYYYYYY.yyyy meters)                Implied Decimal
47-47  Blank
48-59  Z coordinate (ZZZZZZZZ.zzzz meters)                Implied Decimal
60-60  Blank
61-64  Sigma X (SS.ss cm) blank if unknown or greater than 99.99 cm
65-65  Blank
66-69  Sigma Y (SS.ss cm) blank if unknown or greater than 99.99 cm
70-70  Blank
71-74  Sigma Z (SS.ss cm) blank if unknown or greater than 99.99 cm
75-80  Reserved
```

K = 0 or blank indicates that the position is approximate and has no particular interpretation.
K = 1 indicates that these are exact coordinates (to 0.1 mm) used during the processing of the G-file vectors.

The 4-character ID or "short" name, if used in cc 11-14, should be the same abbreviation used elsewhere in the G-file (Data Media Identifier) and in other related data files (for example, the *25* records of the B file).

Station Information Record

```
01-01  H
02-05  Station Serial Number (ssn)                        Integer
06-09  Four Character Identifier                          Alpha
10-11  External frequency standard code (see table)
12-13  Vector meteorological use code   (see table)
14-15  Vector time parameter use code   (see table)
16-17  Vector ionosphere use code       (see table)
18-23  Vector Solution type             (see table)
24-78  Comments                                           Alpha
79-80  Reserved
```

Use comment field to record clarifying information or instrument type if noted as "other" in Data Media Identifier.

Session Model Record

```
01-01  I
02-21  Name of Antenna Pattern File
22-27  Agency/Source of Antenna Pattern File (From Annex C)
28-35  Version/Date for Antenna Pattern File (YYYYMMDD)
36-80  Blank
```

Antenna Phase Pattern File: This file contains elevation-dependent phase patterns and offsets for different types of antennas. As this file is updated, the patterns and/or offsets may be changed, so it is important to record which antenna file was used for the GNSS processing. These Antenna Phase Pattern files will be modified as new antennas are added or as improved patterns are developed. For each antenna in the respective ant_info file, there are the test-developed patterns and North, East and Up offsets of the L1 and L2 phase centers.

Source Organization: Use the six-character symbol of the organization that maintains the antenna phase pattern files that were used to process the data. This field is required if the antenna phase patterns used are different from those provided by NGS.

Solution Coordinate Reference System Codes: The following list gives all IGS and NAD 83 coordinate reference systems currently used in NGS products and services, as well as associated ITRF and WGS 84 systems. The NAD 83 codes are assigned by HTDP and used by ADJUST for G-files transformed from an orbit frame to a NAD 83 frame referenced to a specific tectonic plate. A list of earlier reference system codes is available in the superseded Annex N codes table. Note that the reference system used for a particular application does not necessarily correspond to the date ranges given below.

32 -- ITRF2014. Defined by IERS at epoch 2010.0. Not used as a frame for orbits.
33 -- IGS14. Used by NGS from 1/29/2017 through 5/16/2020. Aligned with ITRF2014 at epoch 2010.0.
34 -- NAD 83(2011) epoch 2010.00. Reserved for output of HTDP transformations to NAD 83 realizations referenced to the North America tectonic plate. Not used as a frame for orbits.
35 -- NAD 83(PA11) epoch 2010.00. Reserved for output of HTDP transformations to NAD 83 realizations referenced to the Pacific tectonic plate. Not used as a frame for orbits.
36 -- NAD 83(MA11) epoch 2010.00. Reserved for output of HTDP transformations to NAD 83 realizations referenced to the Mariana tectonic plate. Not used as a frame for orbits.
37 -- IGb14. Used by NGS from 5/17/2020 through 11/26/2022. Update of IGS14, also aligned with ITRF2014 at epoch 2010.0.
38 -- WGS 84 (G2139). Used by NGA from 1/3/2021 through present. Aligned to subset of IGb14 tracking stations at epoch 2016.0.
39 -- ITRF2020. Defined by IERS at epoch 2015.0. Not used as a frame for orbits.
40 -- IGS20. Used by NGS from 11/27/2022 until the present. Aligned with ITRF2020 at epoch 2015.0.

Abbreviations and terms:

HTDP -- Horizontal Time-Dependent Positioning (NGS transformation software)
IERS -- International Earth Rotation and Reference Systems Service
IGS -- International GNSS Service
ITRF -- International Terrestrial Reference Frame
MA11 -- 2011 realization of NAD 83 for Mariana tectonic plate (based on IGS08)
MARP00--HARN realization of NAD 83 for Mariana tectonic plate (based on ITRF2000)
NAD 83--North American Datum of 1983
NGA -- National Geospatial-Intelligence Agency
NGS -- National Geodetic Survey
PA11 -- 2011 realization of NAD 83 for Pacific tectonic plate (based on IGS08)
PACP00--HARN realization of NAD 83 for Pacific tectonic plate (based on ITRF2000)
WGS 84--World Geodetic System of 1984

Solution Meteorological Use Codes

01 -- Default values used (model used)
02 -- Observed meteorological data used
03 -- Water vapor radiometer used

Solution Ionosphere Use Code

01 -- None
02 -- Dual frequency ionospheric correction used
03 -- Ionospheric model used

Solution Time Parameter Use Codes

01 -- Observed time synchronization data used
02 -- Time parameters solved for in data reduction

Data Media Identifier

Required format: ADDDYSCCCC where

A is one of the following characters which indicates the manufacturer of the receiver used for the observation:

A = Ashtech, Inc

C = Topcon Corp

D = Del Norte Technology, Inc

E = Magellan

G = Allen Osborne

I = Istac

J = Javad Position Systems

K = Sokkia

L = MINI-MAC[R]

M = Macrometer[R]

N = Norstar Instruments O = Motorola, Inc

P = Spectra Precision

Q = 3S Navigation

R = Trimble Navigation Ltd.

S = SERCEL, Inc

T = Texas Instruments

V = NovAtel Communications Ltd

W = Wild, Leica, Magnavox

DDD is the day of the year of the first data epoch (UTC)
Y is the last digit of the year of the first data epoch (UTC)
S is an alphanumeric designation of the session
CCCC is the project-unique, four-character ID or abbreviation of a station designation used to cross-reference station occupations between the B and G file

Solution Type Use Codes

+ L1TD--	L1SDFL	L1DDFL	IFDDFL	OTDDFL	K1DDFX
+ L2TD--	L1SDFX	L1DDFX	IFDDFX	OTDDFX	K2DDFX
+ IFTD--	L1SDPF	L1DDPF	IFDDPF	OTDDPF	KIDDFX
+ WLTD--					KWDDFX
		L2DDFL	WLDDFL		P1DDFX
		L2DDFX	WLDDFX		P2DDFX
		L2DDPF	WLDDPF		PIDDFX
					PWDDFX

Where: L1 = Frequency 1
L2 = Frequency 2
IF = Ionosphere Free Combination (Static) *
WL = Wide Lane Combination (Static or Rapid Static)**
K1 = L1 Kinematic Observation (Single visit, continuous lock - also known as Continuous Kinematic, Stop and Go Kinematic, or On-the-Fly Kinematic)
K2 = L2 Kinematic
KI = Ionosphere Free Combination Kinematic *
KW = Wide Lane Combination Kinematic **

P1 = L1 Pseudo-kinematic (Two or more visits, intermittent lock - also known as Pseudo-static, Intermittent Static or Reoccupation techniques)
P2 = L2 Pseudo-kinematic
PI = Ionosphere Free Combination Pseudo-kinematic *
PW = Wide Lane Combination Pseudo-kinematic **

TD = Triple Difference Solution
DD = Double Difference Solution
SD = Single Difference Solution

FL = Float (real number) estimate of biases
FX = Fixed integer estimate of biases
PF = Partial, fixed integer estimate of biases (Not all integer biases determinable).

\+ Triple Difference Solutions have no integer ambiguities, leave trailing columns blank.

* IF = ionosphere free = $\{f^2_1/(f^2_1 - f^2_2)\}L_1 - \{f_1f_2/(f^2_1 - f^2_2)\}L_2$

** WL = wide lane = L1 - L2

Where f_1 = 1575.42 mHz, f_2 = 1227.60 mHz, and L_1 and L_2 are phase measurements in units of cycles.

CODE TABLES (continued)

External Frequency Standard

01 -- No external frequency standard used
02 -- Rubidium frequency standard used
03 -- Cesium frequency standard used
04 -- Hydrogen Maser frequency standard used
05 -- External crystal frequency standard used
06 -- Other (Comment in Station Information Record)

Vector Nominal Accuracy Codes

		Order/Class
4 -- Intended accuracy	100 ppm plus 5.0 cm	3
3 -- Intended accuracy	50 ppm plus 3.0 cm	2-II
2 -- Intended accuracy	20 ppm plus 2.0 cm	2-I
5 -- Intended accuracy	10 ppm plus 1.0 cm	1
6 -- Intended accuracy	1 ppm plus 0.8 cm	B
7 -- Intended accuracy	0.1 ppm plus 0.5 cm	A
8 -- Intended accuracy	0.01 ppm plus 0.3 cm	AA

G-FILE EXAMPLES

Below are fragments from six independent, simulated GPS Data Transfer Format files (G-FILEs). There is one Project record (A) per G-file. Each session vector set, or individually computed vector in a multi-receiver session, requires a Session Record (B). Each vector requires at least one Vector Record (C) or Long Vector Record (F). Vector Records with Coordinate Records must follow the same Session Record. Station Information (H) Records are required as circumstances dictate and may be optionally added where not required. These records must be followed by sufficient Correlation (D) or Covariance Records (E) to express all off-diagonal correlation or covariance terms in the matrix half provided from the session computation. Correlation and Covariance Records may not be intermixed.

1. Project (A), Session (B), Vector (C), and Correlation (D) records for a single vector between two stations in a two receiver session or individually computed vector in a multi-receiver session.

```
AKS1989061619890810
B1989062221041989062300320 1OMNI21JUL89    BDCST200040101025NGS    19890919L1DDFX
C02860255   22818804  691  517712752 1665  621497962 1259 M1739APACIM1739AK60A
D  1  2 -1507832  1  3 -1653265  2  3 -9400487
```

2. Project (A), Session (B), Vector (C), and Correlation (D) records for a three-receiver (two vector) session computed simultaneously in session mode.

```
AA219890616198908 10
B1989071919201989071920220 20MNI21JUL89    NSWC  200020202026NGS   19891010IFDDFL
C02520251    2090836   21    3595939   80    5412122   45 T1735BTOLPT1735BIO35
C02520250  -42878920   42  -19024426   93  -28455946   69 T1735BTOLP71735BIO17
D  1  2 -3449463  1  3  -169254  1  4 -7443040  1  5 -3452654  1  6  1753975 D
2  3 -7698120  2  4 -6329835  2  5  1258498  2  6  8573493  3  4 -6485385 D  3
5 -6084380  3  6  -477478  4  5 -6124087  4  6 -3864367  5  6  8630812
```

Note: If a multi-receiver session is computed as if all possible vectors are independent, then there would be Session, Vector, and Correlation records for each vector in the session. Thus, the record sequence would be A, B, C, D, B, C, D, B, C, D, etc. The Session records would be nearly identical to the multi-receiver example except that start and stop times could vary with each vector. The number of vectors indicated on each Session Record would be one, i.e., there would be a Session Record for each vector and the cross correlation terms between vectors would not exist.

3. Project (A), Session (B), Vector (C), and Correlation (D) Records for a fivereceiver (four vector) session computed simultaneously in session mode.

```
AW11989061619890810
B19890718192419890718225204OMNI21JUL89    BDCST 200020202025NGS   19891003L1DDFL
C03000287    5764741   77    1459095   44    2345097   54 R1765ASMILR1765ANEOP
C03000223  -52521873   47    -229406  101   -1142670   75 R1765ASMILR1765ACESZ
C03000305  -42878920   42  -19024426   93  -28455945   69 R1765ASMILR1765AX042
C03000240    7097171   69   -1171456   40   -1443438   46 R1765ASMILR1765AG042
D  1  2 -7621157  1  3 -6268111  1  4  1032188  1  5 -7397468  1  6  2749723 D
1  7 -7716473  1  8 -6339150  1  9  1294594  1 10 -2396473  1 11 -2753742 D  1
12 -5804898  2  3  -791184  2  4 -6108347  2  5 -1739462  2  6  9010327
D  2  7 -7729301  2  8 -6463718  2  9  1526641  2 10 -3826492  2 11  3610736 D
2 12 -6449538  3  4   170894  3  5 -6299216  3  6 -1003847  3  7 -5307149
D  3  8 -7680811  3  9 -6477668  3 10  1506536  3 11 -9537262  3 12 -1836426 D
4  5 -6154878  4  6  -248020  4  7 -6087715  4  8 -1633847  4  9  6354725 D
4 10 -7804602  4 11 -6047825  4 12  1262026  5  6  3746287  5  7 -7243634 D
5  8 -6110139  5  9  -321344  5 10 -6165227  5 11  8362528  5 12  9162533 D
6  7 -5971690  6  8  -516393  6  9 -6136978  6 10 -9354622  6 11  1535474 D
6 12 -5920223  7  8  -559594  7  9 -6153794  7 10  2645373  7 11 -5373742
D  7 12 -5527744  8  9 -7793107  8 10  1043462  8 11  5378213  8 12 -2564522
D  9 10 -5371777  9 11 -7908942  9 12  1046883 10 11  8354256 10 12 -3372634
D 11 12  7153372
```

4. Project (A), Session (B), Vector (C), and Covariance (E) Records for a three-receiver (two vector) session computed simultaneously in session mode.

```
AC51989061619890810
B19890719192019890719202202OMNI21JUL89    NSWC  200020202026NGS   19891010WLDDPF
C02520251    2090836   21    3595939   80    5412122   45 T1735BTOLPT1735BIO35
C02520250  -42878920   42  -19024426   93  -28455946   69 T1735BTOLPT1735BIO17
E  1  2    -3449231  1  3      169013  1  4    -7443219  1  5    -3452017 E
1  6    -1753648  2  3     7698884  2  4    -6329438  2  5     1258689 E
2  6     8573027  3  4    -6485903  3  5    -6084227  3  6     -477369
E  4  5     6124824  4  6    -3864711  5  6     8630682
```

5. Project (A), Session (B), Long Vector (F), and Correlation (D) Records for a three-receiver (two vector) session computed simultaneously in session mode.

```
AM31989061619890810
B19900312192019900312202203OMNI21JUL89    NSWC  200050202027NGS  19900605IFDDPF
F02520251  -7398138095   62   -611028070  140   -759539795   81 R0710AR0710A
F02520210 -28097365450    2   6537703840    2   1612488880    2 R0710AR0710A
D  1  2 -3449463  1  3  -169254  1  4 -7443040  1  5 -3452654  1  6  1753975
D  2  3 -7698120  2  4 -6329835  2  5  1258498  2  6  8573493  3  4 -6485385
D  3  5 -6084380  3  6  -477478  4  5 -6124087  4  6 -3864367  5  6  8630812
```

6. Project (A), Session (B), Vector (C), Coordinate (G), Station Information (H), and Correlation (D) Records for a five-receiver session computed simultaneously.

```
AG41989061619890810
B199210191620199210192022O4OMNI06JAN93    NGS    50090202027NGS   19930115IFDDFX
C02520251 -121666909    30  157350726    56  117976050    41 R2932ANORDR2932ASECO
C02520250 -418472429    32  247232117    60    8372071    44 R2932ANORDR2932ABURR
C02520253 -553950607    35  500052515    64  221106176    48 R2932ANORDR2932AFIGU
C02520254 -289152973    31  300310186    55  183697838    42 R2932ANORDR2932APINE
G 1  0252 NORD SIO92 -25711011350 -45925184360  35928923390  010  010  010
H0252NORD01020202IFDDFXREFERENCE STATION
D  1  2 -7621157  1  3 -6268111  1  4  1032188  1  5 -7397468  1  6  2749723 D
1  7 -7716473  1  8 -6339150  1  9  1294594  1 10 -2396473  1 11 -2753742 D
1 12 -5804898  2  3  -791184  2  4 -6108347  2  5 -1739462  2  6  9010327
D  2  7 -7729301  2  8 -6463718  2  9  1526641  2 10 -3826492  2 11  3610736 D
2 12 -6449538  3  4   170894  3  5 -6299216  3  6 -1003847  3  7 -5307149
D  3  8 -7680811  3  9 -6477668  3 10  1506536  3 11 -9537262  3 12 -1836426 D
4  5 -6154878  4  6  -248020  4  7 -6087715  4  8 -1633847  4  9  6354725 D
4 10 -7804602  4 11 -6047825  4 12  1262026  5  6  3746287  5  7 -7243634 D
5  8 -6110139  5  9  -321344  5 10 -6165227  5 11  8362528  5 12  9162533 D
6  7 -5971690  6  8  -516393  6  9 -6136978  6 10 -9354622  6 11  1535474 D
6 12 -5920223  7  8  -559594  7  9 -6153794  7 10  2645373  7 11 -5373742
D  7 12 -5527744  8  9 -7793107  8 10  1043462  8 11  5378213  8 12 -2564522
D  9 10 -5371777  9 11 -7908942  9 12  1046883 10 11  8354256 10 12 -3372634
D 11 12  7153372
```