

CHAPTER 3

GEODETIC CONTROL DESCRIPTIVE (GEOD DESC) DATA

INTRODUCTION

The purpose of the description of a survey point is to convey to the next user, in a concise and standard manner, information sufficient to locate and positively identify the survey point, and to record its suitability for various uses.

This chapter gives detailed instructions for the entry and interpretation of descriptive information for survey points of all types. A survey point (or station) may be a monumented control point, a reference mark or azimuth mark, a landmark, or a temporary, auxiliary, or eccentric point. A description must be submitted for every recoverable survey point which is observed in a project, and for each of its peripheral points (if it has any). A collection of these descriptions constitutes the GEOD DESC data set which must accompany any submitted project. Descriptions can also be submitted independently for miscellaneous recoveries of monumented points already present in the NGS data base.

NGS has begun the distribution of descriptions from the data base for use in the field. These descriptions can easily be modified to make them current, and can then be resubmitted as complete recovery descriptions. This practice will greatly improve the quality of descriptions available from the NGS data base, and will save work in the long run.

WRITING DESCRIPTIONS

A separate description is to be written for each monumented survey point, be it a "main" station, a reference mark, or azimuth mark. "Underground" marks are an exception. When a control point has reference marks which are included in the NGS data base, or are monumented well enough to carry geodetic control themselves, each is to have its own separate description. The descriptive text for each mark in such a group would include location references from the other marks in the group. Such a location reference to the described mark from a second mark would identify the second mark by agency and designation, and would not include a description of the second mark. Peripheral marks, points, or objects which are not included in the NGS data base and are not suitable for holding control need not be separately described. In this case a short descriptive phrase may be included in the location reference to the described mark from that object, if necessary.

When new text is submitted for a recovered mark, it must be complete in itself as if it were for an original description. **Text which merely amends a previous description will no longer be allowed for recovered marks used in a project.** Now that descriptions from the data base are being distributed in the same format in which they are collected, the previous description can simply be edited as necessary. If no editing is necessary (that is, if the description which was distributed from the data base is still current, is complete, and is a single report), the mark may be reported "recovered as described", and no new text need be submitted.

A six-character Permanent Identifier (PID, formerly known as ACRN) now serves as the primary means for matching recovery description data against the data base for marks known to NGS. Where the PID is known, it must be entered in the description. A mark newly set or new to NGS will not have a PID until it is loaded into the data base. Any description without a PID must be complete.

STRUCTURE OF THE GEOD DESC DATA SET

Descriptive data are organized into 80-column fixed-format records. The record type is identified by a code in columns 7-10 of each description record. Most descriptions must contain records coded *10*, *13*, *20*, *26*, and *30* and may also contain records coded *15*, *28*, and *29*. Specific locations within the records are reserved for the different data fields. Detailed explanations of the fields in each record type appear later in this chapter. All alphanumeric fields must be left-justified. All numeric data must be right-justified and zero filled. All alphabetic characters must be entered in upper case (capitals) only.

The first and last records of the data set (the Data Set Identification Record and the Data Set Termination Record) display the two-character alphanumeric job code preceded and followed by an asterisk in the field normally occupied by the first data code (columns 7-10). Unless a job code is specifically assigned to a project by NGS, this job code may be sequentially assigned (*A1*,*A2*,...*ZZ*) by the submitting agency. Other fields in the identification record include the name of the submitting agency and the date the data set was created. Detailed format definition of this record can be found on the first page of the format diagram section. In every record of the data set, columns 1 through 6 are reserved for a record sequence number.

Each description in a file is identified by its station serial number (SSN). The SSN is a unique four-digit number assigned to each mark in a project. It is given in the *10* record which begins the block of records for that station. Sample data sets appear at the end of the chapter, before the format diagrams.

RECORD DEFINITIONS

Each record type and the acceptable entries for each data field are explained in the following paragraphs. Diagrams of the formats are found at the end of the chapter.

TITLE AND COMMENT RECORDS

These records, if used, must appear immediately after the data set identification record.

CODE *00*, *01*, *02*, *03*, *04* (PROJECT AND TITLE INFORMATION RECORDS)

These records are optional, and each can occur only once. Usage may vary. They may correspond to the *10* and *11* records in the horizontal observation data set documented in chapter 2, or to the *10* through *14* records in the vertical observation data set documented in volume II, chapter 6. When data are exported from the NGS data base, these records may indicate this, and give information about what marks are included. Do not split words between these records.

CODE *05* (COMMENT RECORD) (optional)

Comment records may contain additional text describing the data set or the project. Up to 11 are allowed. Again, do not split words between records.

DESCRIPTION RECORDS

CODE *10* (STATION LOCATION RECORD)

This first record primarily contains information pertinent to station location. The individual entries made in this record are as follows:

Station Serial Number (SSN) [CC 11-14] - This four-digit numeric field is the project-specific link between descriptive and observational data. The field must be unique for each station residing in the descriptive and observational data sets. Recovery descriptions for stations not included in the observational data set may reside in the description data set, but in no case should their station serial numbers correspond to station serial numbers in the companion observation data set.

DR Code [CC 15] - This one-character code indicates whether this description is an original description or a recovery description. The allowable entries are "D" and "R".

ENTRY	DEFINITION
D	An original description of a newly set mark.
R	Everything else (includes recovered, not recovered, destroyed, and the first report to NGS of a pre-existing mark not in the NGS data base).

Recovery Type Code (optional) [CC 16] - This one-character code provides additional information about the type of recovery description being included in the description data set. It is used only when the DR Code = "R". The allowable entries are:

ENTRY	DEFINITION
F	A full recovery description of a survey point which you think is not included in the NGS Data Base.
M	A recovery description which does not contain a complete textual description of the mark, but may contain updates or modifications to the most current description. This is used when a mark is destroyed or not recovered , or when the text of the previous description of this mark in the NGS data base requires no update (i.e., the text is in accord with current practice, and the situation at the mark has not changed).
T	A complete re-description of a mark which is included in the NGS data base.

Note: The practice of submitting recovery notes for stations used in a project which give only text modifications to a previous description is no longer permitted.

Approximate Position [CC 17-31] - The approximate geographic position in degrees, minutes, and the nearest whole seconds of latitude and longitude must be entered. The latitude [CC 17-23] must begin with a hemisphere code (N=NORTH, S=SOUTH) and the longitude [CC 24-31] must begin with the direction-letter "W" . Leading zeros must be entered where appropriate. If no other source is available, the point should be carefully plotted on the largest scale topographic map available and the respective latitude and longitude extracted therefrom. **Latitude and longitude are required under all circumstances.**

Approximate Height [CC 32-36] - An estimated height of the geodetic control point is entered here. If no other source is available, the height may be estimated by examining contour lines on the largest scale topographic map available on which the point is plotted. The entry should be made to the nearest whole unit of measurement used. The unit of measurement (M=METERS, F=FEET) is also recorded [CC 37].

Quad Identifier (Quadrangle or QID) (optional) [CC 39-45] - This was at one time part of the primary identification system adopted by the National Geodetic Survey Data Base for control points. The new Datum has rendered it obsolete. It will be phased out, but is still provided as a convenience in the interim. It is based on 1Ex 1E "quads" defined by integer-degree latitude and longitude gridlines (parallels and meridians) and on successive quadrangle subdivision of the basic 1Ex 1E quads into 30'x 30' quads, 15'x 15' quads, and 7½'x 7½' quads accomplished by successive halving of the latitude and longitude gridline intervals. For description purposes, only the 30' quad identifier will be recorded. This quad identifier is a seven-character symbol coded as HLLWWWA, where:

H=Hemisphere (N for Northern, S for Southern)
LL=Latitude of SE corner of the 1Ex 1E quad (00E-89EN, 01E-90ES)
WWW=Longitude of SE corner of the 1Ex 1E quad (000E-359EW)
A=30' subdivision indicator (1-NE,2-SE,3-SW,4-NW subquad)

Note that for some marks the Quad value based on the NAD 83 position will not be the same as the traditional Quad value based on the NAD 27 position. It is these latter values which were once published.

Figure 3-1 depicts this scheme in graphic format.

State or Country Code [CC 47-48] - This is a two-letter code which indicates the political unit and/or geographic area in which the control point is located. For points in the United States or Canada, enter the appropriate code for the respective state, commonwealth, province, or territory. For points outside the United States or Canada, enter the appropriate code for the respective country, island group, or geographic area. A complete list of the two-letter codes is given in ANNEX A.

County [CC 49-68] - For points in the United States or Puerto Rico, enter the name of the county or equivalent in which the control point is located. The name of an independent city must be preceded by the prefix "C OF" (i.e., C OF RICHMOND for RICHMOND, VA). For points in other countries, leave the field blank.

Special Application Codes [CC 69-72] - Up to four alpha characters, left justified, are allowed in this field. These characters represent certain specialized information about the control point. All entries must be selected from the following list:

ENTRY	DEFINITION
F	Fault monitoring site
P	Site determined suitable for receiving satellite signals in connection with geodetic surveys
O	Other (see descriptive text)
T	Tidal station
N	Site not suitable for receiving satellite signals

Permanent Identifier (PID) (optional) [CC 73-78] - The PID is now the primary identification system used by NGS for control points. For a mark that had an ACRN, the ACRN is now the PID. The PID is a unique six-character identifier assigned to every monumented, recoverable survey point residing in the National Geodetic Survey Data Base. For an existing point, the PID assigned by NGS must be entered if it is available. If it cannot be determined, the field should be left blank. For a new point, this field must be left blank, and a PID will be assigned when the mark is loaded into the NGS data base.

CODE *13* (STATION IDENTIFICATION RECORD)

The second record required for geodetic control stations contains the agency name for the point. The entries made are as follows:

Designation [CC 11-50] - Up to 40 characters of alphanumeric data may be entered into this field. In the case of existing marks already included in the NGS data base, the designation should precisely reflect the published designation of the station. This is the official designation. As control points are added to the geodetic network, station designations should be unique within a clearly defined geographic locale (e.g., state, province). Where station monuments have been stamped, the designation is an edited version of what is stamped on the marker. This practice should be followed as nearly as possible. ANNEX D supplies detailed instructions

concerning naming conventions for geodetic control points. Assistance concerning determination of unique designations can be obtained by contacting NGS.

Underground Marker Type and Magnetic Property Code (optional) [CC 52-53] and [CC 55] - These codes are similar to the codes used for surface marker type and magnetic code on the setting record. If an underground marker exists and these codes can be determined for it, they are entered here. Entries must be left-justified. A complete list of the codes is contained in ANNEX I.

Setting Code (Underground Marker) (optional) [CC 57-58] - The setting code is from a comprehensive set of two-digit numerical codes covering a wide variety of possible settings for a survey point marker. A complete list of the setting codes is found in ANNEX I.

Transportation Code [CC 60] - This is a one-letter code that indicates the mode of transportation to reach the station. If backpacking is required to reach the station, the transportation code reflects the mode of travel used to reach the point where backpacking begins. A complete list of the specific transportation codes is given below. The possible entries are as follows:

CODE	TRANSPORTATION MODE
A	Light Airplane
B	Boat
C	Car (or Station Wagon)
F	Float Airplane
H	Helicopter
O	Other (See Descriptive Text)
P	Light Truck (Pickup, Carry-All, etc.)
T	Truck (larger than 3/4 ton)
W	Tracked Vehicle (Weasel, Snowcat, etc.)
X	Four-Wheel Drive Vehicle

Backpack-Time (optional) [CC 63-66] - Enter the time required to carry equipment on foot from the last point of transportation to the station, expressed in hours and minutes (HHMM). If the immediate vicinity of the station can be reached using the mode of transportation indicated by the preceding transportation code, enter zero in both the hours and minutes fields (0000).

CODE *15* (ALIAS RECORD) (optional) [CC 11-50] - Up to 40 characters of text which represent an alternate form of the name used to identify the control point. These alias entries arise due to non-standard naming conventions used by various agencies and individuals. **NGS strongly discourages the use of aliases.**

CODE *20* (MONUMENTED/RECOVERED RECORD) - Entries in this record primarily provide historical information concerning creation of and subsequent return visits to the control point. The first four fields are normally used only when the DR Code = "D" and the remaining five fields are used only when the DR Code = "R". Acceptable entries for each field are defined as follows:

Monumenting Agency Group Code [CC 11] - The code for the monumenting agency group is a one-character alpha entry used to subdivide specific monumenting organizations into distinct groups. These codes follow:

CODE	GROUP
A	National Agencies
B	Inter-State or Inter-Province Agencies
C	State, Province, Commonwealth, and Territorial Agencies
D	County Agencies
E	Municipal Agencies (Cities)
F	Inter-City and Inter-County Agencies
G	Railroads
H	Utility and Natural Resource Companies
I	Surveying, Engineering, and Construction Industry
J	Educational Institutions
K	Professional and Amateur Associations
L	Miscellaneous Commercial or Private Firms
M	Non-Specific Designators

Monumenting Agency Symbol [CC 13-18] - This is the NGS-defined symbol of up to six (6) characters for the organization which set the monument (disk). It is required when the DR Code is "D", and is optional if the DR Code is "R". The symbols are given in ANNEX C. If the organization is not listed in ANNEX C, contact NGS to have a symbol assigned to that organization.

Year Monumented [CC 33-36] - Enter the year the marker was monumented. It is required when the DR Code is "D", and is optional if the DR Code is "R".

Chief of Party [CC 37-39] - Enter up to three initials for the person who was in charge of the survey party which monumented the control point. If this information cannot be determined, as in the case of recovery stations, leave the field blank. This field is always optional.

Recovering Agency Group Code [CC 42] - In a manner similar to that described for the Monumenting Agency Code, enter the appropriate group code from the list above for the recovering organization.

Recovering Agency Symbol [CC 44-49] - This is the NGS-defined symbol of up to six (6) characters for the organization which recovered the mark. It is required when the DR Code is "R", and is not allowed if the DR Code is "D".

Date Recovered [CC 64-71] - The exact date the control point was recovered is to be recorded in this eight-character field. The year,

month, and day of the month are to be recorded in that sequence (e.g., 19850815 would indicate August 15, 1985). It is required when the DR Code is "R", and is not allowed if the DR Code is "D".

Chief of Party [CC 72-74] - If DR Code = "R", enter up to three initials for the person who was in charge of the survey party which recovered the control point. This field is optional when the DR Code is "R", and is not allowed if the DR Code is "D".

Recovery Condition Code [CC 77] - If DR Code = "R", enter the appropriate one-letter code to indicate the condition of the control point. It is required when the DR Code is "R", and is not allowed if the DR Code is "D". The allowed values are as follows:

CODE	CURRENT CONDITION OF SURVEY POINT
G	Good
N	Not Recovered, Not Found
O	Other (See descriptive text)
P	Poor, Disturbed, Mutilated, Requires Maintenance
X	Destroyed (See Note Below)

Note: The control point should be reported as destroyed only when the actual marker is found separated from its setting (e.g., disk recovered from highway department personnel). If the marker was not found, notes concerning evidence of possible destruction should be entered as text records, but the recovery condition entry should be coded as "N".

CODE *26* (SETTING RECORD) - This record contains information about the setting of the surface marker, its stability, and in some cases, what identifying features are inscribed or cast (as opposed to hand-stamped) on the marker. The definition of each field is as follows:

Setting Code [CC 11-12] - This two-digit code is used to indicate the setting characteristics of the monument or mark. These characteristics include the type of setting (shallow or deep), the type of design and material used for the monument, and/or the natural or man-made object which serves as the setting for the control point. A complete list of the possible entries is found in ANNEX I.

Specific Setting Phrase [CC 14-45] - For setting codes 30 through 41, enter a more specific phrase describing the setting, but corresponding to the respective setting code chosen from the list in Annex I. A maximum of 32 characters, including imbedded blanks, may be entered. For the other setting codes, leave this field blank. **If the setting code or specific setting phrase does not adequately represent the setting of the mark, additional explanation should be given in the text.**

Surface Marker Type [CC 46-47] - This field identifies the object used to monument the geodetic control point. Landmark stations are represented by two (2) digit codes and all other markers represented by one or two character alpha codes. Entries must be left-justified. The most common types of surface marks are listed on the next page:

CODE	DESCRIPTION
A	Aluminum marker (<u>other than a disk</u>)
B	Bolt
C	Cap-and-Bolt Pair
DB	Bench Mark Disk
DD	Survey Disk
DE	Traverse Station Disk
DH	Horizontal Control Disk
DJ	Tidal Station Disk
DO	Disk of Unspecified Type (See Text)
DQ	Calibration Base Line Disk
DR	Reference Mark Disk
DS	Triangulation Station Disk
DU	Boundary Marker Disk
DV	Vertical Control Disk
DZ	Azimuth Mark Disk
I	Metal Rod
N	Nail

A complete list of these codes is contained in ANNEX I.

Magnetic Code (Surface Marker) [CC 49] - This one-character code indicates the magnetic property of the mark or monument. ANNEX I details acceptable entries for the magnetic property code.

Vertical Stability Override Code (optional) [CC 51] - This one-character entry allows the default vertical stability codes to be overridden when appropriate. The codes are from the following list:

CODE	DEFINITION
A	Monuments of the most reliable nature, expected to hold their elevations very well.
B	Monuments which generally hold their elevations fairly well.
C	Monuments which may be affected by surface ground movements.
D	Monuments of questionable or unknown vertical stability.

Marker Inscription [CC 54-59] - This field is the **symbol** from ANNEX C for the agency or organization whose identity is inscribed or precast on the disk/monument. This entry is not the same as the stamping which usually reflects the station designation. If the appropriate organization is not listed in ANNEX C, contact NGS to have a symbol assigned to that organization. If it is not possible to contact NGS, a longer entry (up to 26 characters) may be made. If there is no agency identification inscribed or precast on the marker (such as a chiseled square, nail, or unidentified disk), enter "**NONE**".

CODE *28* (STAMPING RECORD) (optional) - The stamping field [CC 11-60] should contain the exact stamping as it appears on the geodetic control marker. The entry must not exceed 50 characters, including embedded blanks. If there is no stamping, make no entry here; however, if the marker is a type that is normally stamped, enter a short note about its being unstamped in the accompanying descriptive text.

CODE *29* (ROD/PIPE RECORD) (optional) - Inclusion of this record as a separate entity allows users to access specific information about this class of survey point. This record would be used in lieu of the phrase STAINLESS STEEL (or other material as per Setting code) ROD (OR PIPE) SET TO THE DEPTH OF ____ METERS (or FEET, depending on the UNITS CODE), IN A SLEEVE EXTENDING TO THE DEPTH OF ____ METERS (or FEET), ENCASED IN A PIPE FLUSH (F) WITH THE GROUND [or PROJECTING (P)/RECESSED (R) XX in centimeters (or XX in inches)] or, for an unsleeved rod mark, in lieu of the same phrase without reference to sleeve depth (if the sleeve depth field is left blank). For first-time recovery descriptions of pre-existing rod- or pipe-type markers, all pertinent data must be entered. Otherwise, enter any known information in the text instead of using a *29* Rod/Pipe Record. For example, if the actual rod depth is unknown, enter the projection/recession reference and a note (e.g., ROD DEPTH IS UNKNOWN), in the text. Left-justify any values recorded on this record. **NGS prefers metric values.**

UNITS CODE [CC 11]	DEFINITION
E	English - The units are feet and inches.
M	Metric - The units are meters and centimeters.

CODE *30* (TEXT RECORDS) - Descriptive text provides information about the mark which is not captured in the coded fields. It is entered in multiple records with up to 70 characters per record. Words must not be split between records. In addition to the expected alphanumeric character set (A-Z and 0-9), the following special characters are allowed:

(*) asterisk	(+) plus sign
() blank or space	(-) minus sign
(,) comma	(=) equal sign
(\$) dollar sign	(() left parenthesis
(/) slash	()) right parenthesis
(.) period or decimal	

Every effort must be made to provide enough information for easy recovery of the point. A well written description should contain:

- (1) one or more references to some well known, readily available, location in terms of distances and directions. Intersections of prominent highways, landmarks, and public buildings in nearby towns are examples of such locations. In some cases, this location will require some description;
- (2) detailed directions concerning how one would proceed to the mark site from one or more of these prominent locations;
- (3) distance and direction to, inscription, and designation of any monumented reference marks which are in the NGS data base. Specific descriptions of these reference marks themselves are **not** to be included: **each reference mark must have a separate complete description of its own;**
- (4) distance and direction from one or more reference objects in the immediate locale should be noted. Examples of these reference objects are the centerlines of roads, fire plugs, telephone poles, chiseled marks in pavement, and survey marks which are not included in the NGS data base.

This item is more important when no monumented reference marks are associated with the geodetic control point;

- (5) distance and direction to any witness post that was set or if any witness post was set;
- (6) if applicable, a vertical reference to some nearby object (or the ground) stating the relationship to the object should be recorded. Distance above, below, or about flush with the object should be noted; and
- (7) any information about the specific setting or exact location of the mark if the coded values are not sufficient to describe it completely.

When distance estimates or measurements are given in metric units, English equivalencies must follow in parentheses. Property ownership and contact point telephone numbers are desirable when private property must be crossed or occupied.

Varying styles of descriptive text are used by some local and regional agencies. This will not present a problem as long as the content is as specified. Examples of descriptive text are included in the sample data sets which follow.

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000010*AA*GEODESCNGS    NATIONAL GEODETIC SURVEY                19910413
000020*00*GPS-301
000030*01*COLORADO HIGH PRECISION GEODETIC SURVEY, 1991
000040*05*THESE DESCRIPTIONS WERE TAKEN FROM THE ABOVE PROJECT AND MODIFIED TO
000050*05*SERVE AS EXAMPLES.
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This description represents a fairly typical situation.

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000060*10*0049RTN370756W103530801778M          COLAS ANIMAS          P    HJ0138
000070*13*D 85                                  P    0000
000080*20* /                                  A/NGS                19910415GRH  G
000090*26*07/                                  DB N C  CGS
000100*28*D 85 1935
000110*30*STATION IS LOCATED ABOUT 55 KM (34.2 MI) EAST OF TRINIDAD, 14 KM
000120*30*(8.7 MI) NORTH OF BRANSON, 4 KM (2.5 MI) SOUTH OF WALTS CORNER
000130*30*(JUNCTION OF US HIGHWAY 160 AND STATE HIGHWAY 389), ALONG HIGHWAY
000140*30*389, AT MILE 10.1, IN A PASTURE, IN THE NORTHEAST CORNER OF SECTION
000150*30*34, T 33 S, R 58 W. OWNERSHIP--WALDROUP RANCH, INC, BRANSON, CO
000160*30*81027.
000170*30*NOTE--IT IS NECESSARY TO PARK IN ROAD SO APPROPRIATE WARNING EQUIPMENT
000180*30*IS NEEDED.
000190*30*TO REACH FROM THE VEE FORMED BY HIGHWAY 389 SPLITTING TO JOIN HIGHWAY
000200*30*160, ABOUT 0.1 KM (0.1 MI) SOUTH OF HIGHWAY 160, GO SOUTH ON HIGHWAY
000210*30*389 FOR 3.39 KM (2.11 MI) TO A TRACK ROAD LEFT LEADING TO A WINDMILL.
000220*30*CONTINUE AHEAD FOR 0.64 KM (0.40 MI) TO THE STATION ON THE RIGHT.
000230*30*STATION MARK IS SET IN THE TOP OF A 20-CM SQUARE CONCRETE POST
000240*30*PROJECTING 15 CM. IT IS 9.9 M (32.5 FT) WEST OF, AND 1 M (3.3 FT)
000250*30*LOWER THAN THE HIGHWAY CENTER, 1.3 M (4.3 FT) WEST OF A FIBERGLASS
000260*30*WITNESS POST IN THE RIGHT-OF-WAY FENCE, AND 161 M (528.2 FT) NORTH OF
000270*30*MILEPOST 10 (MEASURED ALONG THE ROAD).
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More text is required under other circumstances.

000280*10*0216RFN350230W106365201619M NMBERNALILLO
000290*13*NM BASE 1 P 0000
000300*20* / A/NGS 19910531EAR G
000310*26*00/ Z N B
000320*30*THE STATION IS LOCATED ABOUT 4.8 KM (3.0 MI) SOUTHEAST OF ALBUQUERQUE,
000330*30*AT THE ALBUQUERQUE INTERNATIONAL AIRPORT, ABOUT 1.2 KM (0.7 MI)
000340*30*WEST-NORTHWEST OF THE AIRPORT CONTROL TOWER, ON THE NORTHEAST SIDE OF
000350*30*RUNWAY 12-30, NEAR A TAN BRICK BUILDING. OWNERSHIP--CITY OF
000360*30*ALBUQUERQUE, ROBERT E. GILL, AVIATION SUPERVISOR, P.O. BOX 9022,
000370*30*ALBUQUERQUE, NM 87119. PHONE IS 505-842-4366.
000380*30*NOTE--ESCORT TO STATION BY AIRPORT POLICE IS MANDATORY. AIRPORT
000390*30*SECURITY MAY BE REACHED BY PHONE AT WEST SECURITY ENTRANCE GATE BY
000400*30*DIALING 4380.
000410*30*TO REACH THE STATION FROM THE WEST SECURITY ENTRANCE GATE AT THE AIR
000420*30*FREIGHT LOADING DOCKS AT THE ALBUQUERQUE INTERNATIONAL AIRPORT, PASS
000430*30*THROUGH GATE AND GO SOUTH FOR 6 M (19.7 FT) ON ASPHALT SURFACE TO A
000440*30*FENCE. TURN LEFT AND GO EAST FOR 0.1 KM (0.1 MI) ON ASPHALT SURFACE
000450*30*TO THE EAST END OF THE FENCE. TURN RIGHT AND GO SOUTHWESTERLY FOR
000460*30*0.2 KM (0.1 MI) ON ASPHALT SURFACE TO SERVICE ROAD C. TURN LEFT AND
000470*30*GO SOUTH FOR 0.9 KM (0.6 MI) ON SERVICE ROAD C TO A PAVED ROAD LEFT
000480*30*AND SIGN (T-16). TURN LEFT AND GO EAST FOR 0.5 KM (0.3 MI) ON THE
000490*30*PAVED ROAD, PASSING CUTTER AVIATION, TO A DIRT ROAD LEFT AND SIGN
000500*30*(T-13). TURN LEFT AND GO NORTH FOR 0.2 KM (0.1 MI) ON THE DIRT ROAD,
000510*30*CROSSING TWO RAMPS TO A TAN BRICK BUILDING (RUNWAY LIGHTING VAULT)
000520*30*WITH TWO GREEN ELECTRICAL BOXES AND THE STATION ON THE SOUTH SIDE OF
000530*30*BUILDING.
000540*30*THE STATION IS THE TOP CENTER OF A ROUND METAL PLATE THAT IS
000550*30*UNSTAMPED, AFFIXED TO THE TOP OF A 15.24 M (50.00 FT) LONG STEEL
000560*30*H-BEAM DRIVEN TO A DEPTH OF 14.0 M (45.9 FT) , PROJECTING 1.2 M
000570*30*(3.9 FT) ABOVE GROUND, ENCASED IN A 2.1 M (6.9 FT) LONG
000580*30*INSULATION-FILLED PVC PIPE 45 CM IN DIAMETER SET AT A DEPTH OF 0.9 M
000590*30*(3.0 FT) PROJECTING 1.2 M (3.9 FT) ABOVE GROUND, SURROUNDED BY A
000600*30*SQUARE CONCRETE SLAB 1.2 M (3.9 FT) ON SIDE FLUSH WITH GROUND.
000610*30*LOCATED 45.4 M (148.9 FT) WEST FROM THE SIXTH BLUE TAXIWAY LIGHT
000620*30*ALONG TAXIWAY 14 (SOUTH OF TAXIWAY 2), 32.3 M (106.0 FT)
000630*30*EAST-NORTHEAST FROM THE APPROXIMATE CENTER OF THE DIRT ROAD, 21.8 M
000640*30*(71.5 FT) SOUTH FROM THE SOUTHEAST CORNER OF THE RUNWAY LIGHTING
000650*30*VAULT AND 21.5 M (70.5 FT) SOUTHEAST FROM THE SOUTHWEST CORNER OF THE
000660*30*RUNWAY LIGHTING VAULT.
000670*30*NOTE--THERE IS AN INVERTED THREADED BOLT AFFIXED TO THE TOP CENTER OF
000680*30*ROUND METAL PLATE. FOR GPS OCCUPATION, ANTENNA TRIBRACH WAS SCREWED
000690*30*ON THE BOLT AND ANTENNA MEASUREMENT WAS REFERENCED TO TOP OF ROUND
000700*30*METAL PLATE.

The following several descriptions illustrate how a cluster of related marks should be described. Note that NCMN is not an agency, but a usage, like TIDAL.

000730*10*6614RTN401058W104433501520M COWELD P LL1438
000740*13*PLATTEVILLE NCMN P 0000
000750*20* / A/NGS 19910515GRH G
000760*26*07/ DH N C NGS
000770*28*PLATTEVILLE NCMN 1981

000780*30*STATION IS LOCATED ABOUT 9.5 KM (5.9 MI) SOUTHEAST OF PLATTEVILLE, AT
000790*30*THE PLATTEVILLE RADAR SITE, ABOUT 75 M (246.1 FT) NORTHWEST OF THE
000800*30*MAIN BUILDING, IN THE MIDDLE OF THREE 1.7 M (5.6 FT) X 2.7 M
000810*30*(8.9 FT) CONCRETE PADS, IN THE CENTER OF SECTION 36, T 3 N, R 66 W.
000820*30*OWNERSHIP--US DEPARTMENT OF COMMERCE, NATIONAL COMMUNICATIONS AND
000830*30*INFORMATION ADMINISTRATION, NOAA, WPL, REWP 4, 325 BROADWAY, BOULDER,
000840*30*CO 80303. PHONE IS 303-497-6385 FOR COMBINATION TO GATE LOCK.
000850*30*TO REACH FROM THE JUNCTION OF US HIGHWAY 85 AND STATE HIGHWAY 66 AT
000860*30*THE SOUTH END OF PLATTEVILLE, GO SOUTH ON HIGHWAY 85 FOR 2.05 KM
000870*30*(1.27 MI) TO A CROSSROAD. TURN LEFT, EAST, ON GRAVEL ROAD (ROAD 28)
000880*30*FOR 7.20 KM (4.47 MI) TO ROAD END AT A THREE-WAY FORK AND A LOCKED
000890*30*GATE ON MIDDLE ROAD. PASS THROUGH GATE AND GO SOUTHEAST ON GRADED
000900*30*ROAD FOR 1.21 KM (0.75 MI) TO A GRAVEL DRIVEWAY LEFT ABOUT 200 FT
000910*30*(61.0 M) BEFORE REACHING MAIN BUILDING. TURN LEFT, NORTHEAST, FOR 25
000920*30*M (82.0 FT) TO THE STATION ON THE LEFT.
000930*30*STATION MARK IS SET IN THE TOP OF A 30-CM ROUND CONCRETE POST IN THE
000940*30*MIDDLE OF A 1.2 M (3.9 FT) SQUARE CONCRETE PAD FLUSH WITH THE GROUND.
000950*30*IT IS 26.7 M (87.6 FT) NORTHEAST OF THE ROAD CENTER, 9.6 M (31.5 FT)
000960*30*SOUTHWEST OF A FIBERGLASS WITNESS POST, 12.2 M (40.0 FT)
000970*30*WEST-SOUTHWEST OF A FENCE CORNER, 34.7 M (113.8 FT) WEST-NORTHWEST OF
000980*30*A UTILITY POLE WITH LIGHT, APPROXIMATELY 90 M (295.3 FT) SOUTH OF NGS
000990*30*MARK PLATTEVILLE NCMN RM 1, 86.5 M (283.8 FT) WEST-NORTHWEST OF NGS
001000*30*MARK PLATTEVILLE NCMN RM 2, 62 M (203.4 FT) NORTHEAST OF NGS MARK
001010*30*PLATTEVILLE NCMN RM 3, AND 49.4 M (162.1 FT) NORTHWEST OF PLATTEVILLE
001020*30*NCMN RM 5.

001030*10*8887RTN401058W104433401519M COWELD P
001040*13*PLATTEVILLE NCMN RM 1 DR N 07 X 0005
001050*20*A/NGS 1981 A/NGS 19911119EAR G
001060*26*07/ DR N C NGS
001070*28*PLATTEVILLE NCMN NO 1 1981
001080*30*THE STATION IS LOCATED ABOUT 9.5 KM (5.9 MI) SOUTHEAST OF PLATTEVILLE,
001090*30*AT THE PLATTEVILLE RADAR SITE, IN THE CENTER OF SECTION 36, T 3 N, R
001100*30*66 W. OWNERSHIP--US DEPARTMENT OF COMMERCE, NATIONAL COMMUNICATIONS
001110*30*AND INFORMATION ADMINISTRATION, NOAA, WPL, REWP 4, 325 BROADWAY,
001120*30*BOULDER, CO 80303. PHONE IS 303-497-6385 FOR COMBINATION TO GATE
001130*30*LOCK.
001140*30*TO REACH FROM THE JUNCTION OF US HIGHWAY 85 AND STATE HIGHWAY 66 AT
001150*30*THE SOUTH END OF PLATTEVILLE, GO SOUTH ON HIGHWAY 85 FOR 2.05 KM
001160*30*(1.27 MI) TO A CROSSROAD. TURN LEFT, EAST, ON GRAVEL ROAD (ROAD 28)
001170*30*FOR 7.20 KM (4.47 MI) TO THE ROAD END AT A THREE-WAY FORK AND A
001180*30*LOCKED GATE ON THE MIDDLE ROAD. PASS THROUGH GATE AND GO SOUTHEAST
001190*30*ON GRADED ROAD FOR 0.50 MI (0.80 KM) TO A GRAVELED CROSSROAD. TURN
001200*30*LEFT AND GO EAST FOR 90 M (295.3 FT) TO THE STATION ON THE RIGHT
001210*30*INSIDE A METAL FENCE.
001220*30*THE STATION IS AN REFERENCE MARK DISC SET IN THE TOP OF A 30-CM ROUND
001230*30*CONCRETE POST PROJECTING 10 CM, WITH A WOODEN STAND. LOCATED 91.5 M
001240*30*(300.2 FT) NORTHEAST OF THE ROAD CENTER, 54.9 M (180.1 FT) NORTHEAST
001250*30*OF AN ELECTRIC FENCE, 8.5 M (27.9 FT) SOUTH-SOUTHEAST OF A METAL
001260*30*FENCE, AND 90 M (295.3 FT) NORTH OF NGS MARK PLATTEVILLE NCMN.

001270*10*8888RTN401058W10443340 1519M COWELD
001280*13*PLATTEVILLE NCMN RM 2 C 0000
001290*20*A/NGS 1981 A/NGS 19911119EAR G
001300*26*07/ DR N C NGS
001310*28*PLATTEVILLE NCMN NO 2 1981
001320*30*THE STATION IS LOCATED ABOUT 9.5 KM (5.9 MI) SOUTHEAST OF PLATTEVILLE,
001330*30*AT THE PLATTEVILLE RADAR SITE, IN THE CENTER OF SECTION 36, T 3 N, R
001340*30*66 W. OWNERSHIP--US DEPARTMENT OF COMMERCE, NATIONAL COMMUNICATIONS
001350*30*AND INFORMATION ADMINISTRATION, NOAA, WPL, REWP 4, 325 BROADWAY,
001360*30*BOULDER, CO.80303. CALL 303-497-6385 FOR COMBINATION TO GATE LOCK.
001370*30*TO REACH FROM THE JUNCTION OF US HIGHWAY 85 AND STATE HIGHWAY 66 AT
001380*30*THE SOUTH END OF PLATTEVILLE, GO SOUTH ON HIGHWAY 85 FOR 2.05 KM
001390*30*(1.27 MI) TO A CROSSROAD. TURN LEFT, EAST, ON GRAVEL ROAD (ROAD 28)
001400*30*FOR 7.20 KM (4.47 MI) TO THE ROAD END AT A THREE-WAY FORK AND A
001410*30*LOCKED GATE ON THE MIDDLE ROAD. PASS THROUGH GATE AND GO SOUTHEAST
001420*30*ON GRADED ROAD FOR 1.01 KM (0.63 MI) TO A GRAVEL ROAD LEFT JUST
001430*30*BEFORE REACHING MAIN BUILDING. TURN LEFT FOR 36.6 M (120.1 FT) TO A
001440*30*LIGHT POLE AND TWO NASA TRAILERS. THE STATION IS ABOUT 55 M
001450*30*(180.4 FT) EAST IN A FENCED FIELD.
001460*30*THE STATION IS A REFERENCE MARK DISK SET IN THE TOP OF A 30 CM ROUND
001470*30*CONCRETE POST PROJECTING 15 CM. LOCATED 55 M (180.4 FT) EAST OF A
001480*30*LIGHT POLE, 22.6 M (74.1 FT) EAST-NORTHEAST OF AN 8-INCH SQUARE WIRE
001490*30*GATE POST UNDER POWER LINES, 17.4 M (57.1 FT) EAST-SOUTHEAST OF AN
001500*30*8-INCH ROUND CORNER FENCE POST, 1.2 M (3.9 FT) SOUTHWEST OF A LONE
001510*30*METAL FENCE POST, 86 M (282.2 FT) EAST-SOUTHEAST OF NGS MARK
001520*30*PLATTEVILLE NCMN, AND 46 M (150.9 FT) EAST-NORTHEAST OF NGS MARK
001530*30*PLATTEVILLE NCMN RM 5.

001540*10*8889RTN401058W1044334 1519M COWELD
001550*13*PLATTEVILLE NCMN RM 3 C 0000
001560*20*A/NGS 1981 A/NGS 19911119EAR G
001570*26*07/ DR N C NGS
001580*28*PLATTEVILLE NCMN NO 3 1981
001590*30*THE STATION IS LOCATED ABOUT 9.5 KM (5.9 MI) SOUTHEAST OF PLATTEVILLE,
001600*30*AT THE PLATTEVILLE RADAR SITE, IN THE CENTER OF SECTION 36, T 3 N, R
001610*30*66 W. OWNERSHIP--US DEPARTMENT OF COMMERCE, NATIONAL COMMUNICATIONS
001620*30*AND INFORMATION ADMINISTRATION, NOAA, WPL, REWP 4, 325 BROADWAY,
001630*30*BOULDER, CO 80303. PHONE IS 303-497-6385 FOR COMBINATION TO GATE
001640*30*LOCK.
001650*30*TO REACH FROM THE JUNCTION OF US HIGHWAY 85 AND STATE HIGHWAY 66 AT
001660*30*THE SOUTH END OF PLATTEVILLE, GO SOUTH ON HIGHWAY 85 FOR 2.05 KM
001670*30*(1.27 MI) TO A CROSSROAD. TURN LEFT, EAST, ON GRAVEL ROAD (ROAD 28)
001680*30*FOR 7.20 KM (4.47 MI) TO THE ROAD END AT A THREE-WAY FORK AND A
001690*30*LOCKED GATE ON THE MIDDLE ROAD. PASS THROUGH GATE AND GO SOUTHEAST
001700*30*ON GRADED ROAD FOR 1.01 KM (0.63 MI) TO A GRAVEL ROAD LEFT JUST
001710*30*BEFORE REACHING MAIN BUILDING AND THE STATION ON THE RIGHT.
001720*30*THE STATION IS A REFERENCE MARK DISK SET IN THE TOP OF A 30-CM
001730*30*CONCRETE POST PROJECTING 5 CM, AND WITH A WOODEN STAND. LOCATED 53.4
001740*30*M (175.2 FT) SOUTH-SOUTHWEST OF THE ROAD CENTER, 5.8 M (19.0 FT) WEST
001750*30*OF A WIRE FENCE LINE, 1.2 M (3.9 FT) NORTH OF A LONE METAL FENCE
001760*30*POST, 1.05 M (3.44 FT) EAST-SOUTHEAST OF A FIBERGLASS WITNESS POST,
001770*30*AND 62 M (203.4 FT) SOUTHEAST OF NGS MARK PLATTEVILLE NCMN.

001780*10*8890D N401058W104433101522M COWELD P
 001790*13*PLATTEVILLE NCMN RM 5 P 0000
 001800*20*A/NGS 1991RSC /
 001820*26*07/ DH N B NGS
 001820*28*PLATTEVILLE NCMN NO 5 1991
 001830*30*STATION IS LOCATED ABOUT 9.5 KM (5.9 MI) SOUTHEAST OF PLATTEVILLE, AT
 001840*30*THE NOAA PLATTEVILLE RADAR SITE, ABOUT 75 M (246.1 FT) NORTHWEST OF
 001850*30*THE MAIN BUILDING, ON THE EAST SIDE OF A GRADED AREA WITH SEVERAL
 001860*30*CONCRETE PADS USED FOR PLATE TECTONICS SURVEY VEHICLES, IN THE CENTER
 001870*30*OF SECTION 36, T 3 N, R 66 W. OWNERSHIP--US DEPARTMENT OF COMMERCE,
 001880*30*NATIONAL COMMUNICATIONS AND INFORMATION ADMINISTRATION, NOAA, WPL,
 001890*30*REWP 4, 325 BROADWAY, BOULDER, CO 80303. CALL 303-497-6385 FOR
 001900*30*COMBINATION TO LOCKED GATE.
 001910*30*TO REACH FROM THE JUNCTION OF US HIGHWAY 85 AND STATE HIGHWAY 66 AT
 001920*30*THE SOUTH END OF PLATTEVILLE, GO SOUTH ON HIGHWAY 85 FOR 2.05 KM
 001930*30*(1.27 MI) TO A CROSSROAD. TURN LEFT, WEST, ON GRAVEL ROAD (ROAD 28)
 001940*30*FOR 7.20 KM (4.47 MI) TO ROAD END AT THREE-WAY FORK AND A LOCKED GATE
 001950*30*ON THE MIDDLE ROAD. PASS THROUGH GATE, SOUTHEAST, ON GRADED ROAD FOR
 001960*30*1.01 KM (0.63 MI) TO A GRAVEL ROAD LEFT JUST BEFORE REACHING THE MAIN
 001970*30*BUILDING. TURN LEFT, NORTHEAST, FOR 25 M (82.0 FT) TO THE STATION ON
 001980*30*THE RIGHT.
 001990*30*STATION MARK IS SET IN THE TOP OF A 0.5 M (1.6 FT) ROUND CONCRETE POST
 002000*30*ENCASED IN A PVC PIPE PROJECTING 1.6 M (5.2 FT) ABOVE GROUND FROM A 1
 002010*30*M (3.3 FT) CONCRETE BASE SET 3.4 M (11.2 FT) INTO THE GROUND. A
 002020*30*PERMANENT ROUND TRIBRACH WITH THREADBOLT IS CENTERED ON THE POST. IT
 002030*30*IS 29.6 M (97.1 FT) NORTHEAST OF THE ROAD CENTER, 22.9 M (75.1 FT)
 002040*30*NORTH-NORTHEAST OF A TELEPHONE PEDESTAL, 19.5 M (64.0 FT) WEST OF THE
 002050*30*WEST CORNER OF A FENCE AROUND AN ELECTRIC SUBSTATION, 15.0 M
 002060*30*(49.2 FT) SOUTHEAST OF THE SOUTHEAST CORNER OF ELECTRIC BOX 75, 49.4
 002070*30*M (162.1 FT) SOUTHEAST OF NGS MARK PLATTEVILLE NCMN.
 002080*AA*

If you need more information regarding the writing or use of descriptions, or need
 clarification of code sets or practices, contact the National Geodetic Information
 Branch by calling (301) 713-3242, or at the following address:

NOAA
National Geodetic Survey, N/NGS12
 1315 East-West Highway
 Silver Spring, Maryland
 20910-3282

**THE FOLLOWING PAGES INCLUDE DETAILED EXAMPLES (FORMAT DIAGRAMS) FOR EACH CHARACTER
 FIELD AND THE PROPER LOCATION AND LENGTH OF THE FIELD WITHIN A GIVEN RECORD.**

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