

Horizontal and Vertical Geodetic Control Data for the United States.

Metadata also available as

Metadata:

- [Identification Information](#)
 - [Data Quality Information](#)
 - [Spatial Data Organization Information](#)
 - [Spatial Reference Information](#)
 - [Entity and Attribute Information](#)
 - [Distribution Information](#)
 - [Metadata Reference Information](#)
-

Identification Information:

Citation:

Citation Information:

Originator: NOAA, National Geodetic Survey

Publication Date: 20220607

Title:

Horizontal and Vertical Geodetic Control Data for the United States.

Edition: latest available

Geospatial Data Presentation Form: Diagram

Series Information:

Series Name: N/A

Issue Identification: N/A

Publication Information:

Publication Place: NOAA Campus, Silver Spring, MD

Publisher: NOAA, National Geodetic Survey

Other Citation Details:

Questions concerning this data may be addressed to NGS Information Services Branch EMail - ngs.software@noaa.gov Phone - 301-713-3242

Online Linkage: <<http://www.ngs.noaa.gov/cgi-bin/datasheet.prl>>

Description:

Abstract:

This data contains a set of geodetic control stations maintained by the National Geodetic Survey. Each geodetic control station in this dataset has either a precise Latitude/Longitude used for horizontal control or a precise Orthometric Height used for vertical control, or both.

The National Geodetic Survey (NGS) serves as the Nation's depository for geodetic data. The NGS

distributes geodetic data worldwide to a variety of users. These geodetic data include the final results of geodetic surveys, software programs to format, compute, verify, and adjust original survey observations or to convert values from one geodetic datum to another, and publications that describe how to obtain and use Geodetic Data products and services.

Purpose:

Provide a base of reference for latitude, longitude and height throughout the United States.

Time_Period_of_Content:

Time_Period_Information:

Single_Date/Time:

Calendar_Date: 20220607

Currentness_Reference: retrieval date

Status:

Progress: Complete

Maintenance_and_Update_Frequency: Continually

Spatial_Domain:

Bounding_Coordinates:

West_Bounding_Coordinate: -121.7

East_Bounding_Coordinate: -121.6

North_Bounding_Coordinate: 36.8

South_Bounding_Coordinate: 36.6

Keywords:

Theme:

Theme_Keyword_Thesaurus: geodesy

Theme_Keyword:

NSRS, geodetic, horizontal control, vertical control, ellipsoid height, benchmark, orthometric height, latitude, longitude

Place:

Place_Keyword_Thesaurus: None

Place_Keyword: The geographic limits of USA including trust Territories

Stratum:

Stratum_Keyword_Thesaurus: N/A

Stratum_Keyword: N/A

Temporal:

Temporal_Keyword_Thesaurus: N/A

Temporal_Keyword: N/A

Access_Constraints:

Geodetic Data are in the public domain, not restricted from access or distribution.

Use_Constraints:

Not restricted; Geodetic Data, including software were developed and compiled with U.S. Government funding; no proprietary rights may be attached to them nor may they be sold to the U.S. Government as part of any procurement of ADP products or services.

Point_of_Contact:

Contact_Information:

Contact_Person_Primary:

Contact_Person: NGS Information Services Branch

Contact_Organization: NOAA, National Geodetic Survey

Contact_Position: Information Specialist

Contact_Address:

Address_Type: Mailing and Physical Address

Address:

SSMC3/9202 1315 East-west Highway

City: Silver Spring

State_or_Province: MD

Postal_Code: 20910

Country: USA

Contact_Voice_Telephone: 301-713-3242

Contact_Facsimile_Telephone: 301-713-4172

Contact_Electronic_Mail_Address: ngs.infocenter@noaa.gov

Hours_of_Service: 7:00am to 4:30pm EST

Contact_Instructions: Prefer EMail

Data_Set_Credit:

NOAA, National Geodetic Survey and cooperating organizations

Security_Information:

Security_Classification_System: DOD

Security_Classification: unclassified

Security_Handling_Description: none

Native_Data_Set_Environment:

The data was extracted from NGS datasheets which are available at <<http://www.ngs.noaa.gov/cgi-bin/datasheet.pr1>> The NGS datasheet is a text document which summarizes key geodetic information stored in the NGS database.

Data_Quality_Information:

Attribute_Accuracy:

Attribute_Accuracy_Report:

Horizontal control stations (those with precise Latitude, Longitude) were established in accordance with FGDC publications "Standards and Specifications for Geodetic Accuracy Standards" and "Geometric Geodetic Accuracy Standards and Specifications for Using GPS Relative Positioning Techniques" The final Latitude, Longitude of these stations were determined by a least squares adjustments of the horizontal observations. Horizontal control station have Latitude, Longitudes

displayed to 5 places and are identified by attribute POS_SRCE = 'ADJUSTED'

Lesser quality Latitude, Longitudes may also be preset in the dataset. These are identified by a POS_SRCE attributes HD_HELD1, HD_HELD2, or SCALED. These lesser quality positions are described at: <http://www.ngs.noaa.gov/cgi-bin/ds_lookup.prl?Item=SCALED>

Vertical control stations (those with precise Orthometric Heights) were established in accordance with FGDC publications "Standards and Specifications for Geodetic Accuracy Standards" The final Orthometric Height of these stations were in most cases determined by a least squares adjustments of the vertical observations but in some cases may have been keyed from old survey documents.

Vertical control stations have Orthometric Heights displayed to 2 or 3 places and are identified by attribute ELEV_SRCE of ADJUSTED, ADJ UNCH, POSTED, READJUST, N HEIGHT, RESET, COMPUTED

Lesser quality Orthometric Heights may also be preset in the dataset. These are identified by a ELEV_SRCE attributes GPS_OBS, VERT_ANG, H_LEVEL, VERTCON, SCALED. These lesser quality orthometric heights are described at: <http://www.ngs.noaa.gov/cgi-bin/ds_lookup.prl?Item=SCALED>

IMPORTANT - Control stations do not always have both precise Latitude, Longitude AND precise Orthometric Height. A horizontal control station may have a orthometric height associated with it which is of non geodetic quality. These types of heights are displayed to 0, 1, or 2 decimal places. Worst case being off by +/- 1 meter. LIKEWISE - A Vertical control station may have a Latitude, Longitude associated with it which is of non geodetic quality. These types of Latitude, Longitudes are displayed to 0, 1 or 2 decimal places. Worst case being off by +/- 180 meter. Refer to

<http://www.ngs.noaa.gov/cgi-bin/ds_lookup.prl?Item=SCALED> for a description of the various type of methods used in determining the Latitude, Longitude, and Orthometric Height.

Attribute POS_CHECK and ELEV_CHECK indicate whether or not an observational check was made to the position and/or orthometric height. Care should be taken when using "No Check" coordinates.

If attribute ELEV_SRCE = 'VERTCON' then the Orthometric Height was determined by applying NGS program VERTCON to an Old NGVD 29 height. In most areas VERTCON gives results to +/- 2 cm. See <<http://www.ngs.noaa.gov/TOOLS/Vertcon/vertcon.html>> for a more detailed explanation of VERTCON accuracy.

Ellipsoid Heights are also present in the dataset. The ellipsoid heights consist of those determined using a precise geoid model, which are displayed to 2 decimal places and are considered good to +/- .005 meters, and those displayed to 1 decimal place and are considered only good to +/- .5 meters

Quantitative_Attribute_Accuracy_Assessment:

Attribute_Accuracy_Value: 95 percent confidence level for geodetic quality data.

Attribute_Accuracy_Explanation:

Geodetic Data are continuously being processed; their standards and specifications are being reviewed for next publication release. "Standards and Specifications for Geodetic Control Networks", 1984 and "Geometric Geodetic Accuracy Standards and Specifications for Using GPS Relative Positioning Techniques," FGCS (formally FGCC) publication version 5.0 1989, are most current published documents.

Logical_Consistency_Report:

FGCS sponsored testing in cooperation with equipment manufacturers and National Institutes of Standards and Technology, Gaithersburg, MD 20850

Completeness_Report:

This dataset DOES NOT include destroyed marks. All other non-publishable marks are NOT included.

Non-publishable criteria is available at <http://www.ngs.noaa.gov/cgi-bin/craigs_lib.prl?HELP_NONPUB=1>

Positional_Accuracy:

Horizontal_Positional_Accuracy:

Horizontal_Positional_Accuracy_Report:

The description of tests are explained in "Geometric Geodetic Accuracy Standards and Specifications For Using GPS Relative Positioning Techniques," FGCS (formally FGCC) publication version 5.0, 1989.

Quantitative_Horizontal_Positional_Accuracy_Assessment:

Horizontal_Positional_Accuracy_Value: .05 meters for highest order of accuracy

Horizontal_Positional_Accuracy_Explanation:

Horizontal positional accuracy statements pertain to horizontal control stations only.
i.e. Those with geodetic quality Latitude, Longitudes.
Positional Accuracy explanation contained in "Geometric Geodetic Accuracy Standards and Specifications For Using GPS Relative Positioning Techniques," FGCS (formally FGCC) publication version 5.0, 1989, (See table 1, p6).
with the exception of Order A and Order B which have an accuracy of as described at:
<http://www.ngs.noaa.gov/cgi-bin/ds_lookup.prl?Item=HORZ%20ORDER>

Vertical_Positional_Accuracy:

Vertical_Positional_Accuracy_Report:

The description of tests are explained in "Geometric Geodetic Accuracy Standards and Specifications for Using GPS Relative Positioning Techniques," FGCS (formally FGCC) publication version 5.0, 1989, (See table 1, p6).

Quantitative_Vertical_Positional_Accuracy_Assessment:

Vertical_Positional_Accuracy_Value: .05 meter for highest order of accuracy

Vertical_Positional_Accuracy_Explanation:

Vertical positional accuracy statements pertain to vertical control stations only.
i.e. Those with geodetic quality Orthometric Heights.
Orthometric Height accuracy explanation is contained in FGDC publication "Standards and Specifications for Geodetic Control Networks"
with the exception of vertical control of class 0 POSTED and READJUSTED Heights which are described at:
<http://www.ngs.noaa.gov/cgi-bin/ds_lookup.prl?Item=VERT%20ORDER>

Ellipsoid height accuracy explanation contained in "Geometric Geodetic Accuracy Standards and Specifications for Using GPS Relative Positioning Techniques," FGCS (formally FGCC) publication version 5.0, 1989. (see table 1, p6).
The accuracies for ellipsoid heights are described at:
<http://www.ngs.noaa.gov/cgi-bin/ds_lookup.prl?Item=ELLIP%20ORDER>

Lineage:

Source_Information:

Source_Citation:

Citation_Information:

Originator: NOAA, National Geodetic Survey

Publication_Date: 20220607

Title:

"Input Formats and Specifications of the National Geodetic Survey Data Base"
published by FGCS (formally FGCC)

Edition: latest available

Geospatial_Data_Presentation_Form: diagram

Series_Information:

Series_Name: N/A

Issue_Identification: N/A

Publication_Information:

Publication_Place: NOAA Campus, Silver Spring, MD

Publisher: NOAA, National Geodetic Survey

Other_Citation_Details: N/A

Online_Linkage: <<http://www.ngs.noaa.gov/FGCS/BlueBook/>>

Type_of_Source_Media: paper, Web

Source_Time_Period_of_Content:

Time_Period_Information:

Single_Date/Time:

Calendar_Date: 1994

Source_Currentness_Reference: publication date

Source_Citation_Abbreviation: Blue Book

Source_Contribution:

The geodetic data must be submitted in the digital formats specified in the FGCS (formally FGCC) publication "Input Formats and Specifications of the National Geodetic Survey Data Base" which describes the formats and procedures for submission of data for adjustment and assimilation into the National Geodetic Survey Data Base. Separate volumes of this publication refer to horizontal (volume 1), vertical (volume 2), and gravity (volume 3) control, and are available from NOAA, National Geodetic Survey, 1315 East-West Hwy, Code N/CGS1, Silver Spring, MD, 20910 (1-301-713-3242). Note guidelines for submission of three-dimensional Global Positioning System (GPS) relative positioning data are contained in annex L to volume 1.

Process_Step:

Process_Description:

The National Geodetic Survey produces geodetic data. Geodetic data comprise the results of geodetic surveys to determine, among other things, latitude, longitude, height, scale, and orientation control. The National Geodetic Survey original field survey project observations and final reports are accessioned into records system of the National Archives and Records Administration of the U.S.A. These surveys provide information valuable for a variety of uses in the mapping, charting and surveying community.

The NGS' final product is the geodetic data sheet. Geodetic data sheets are comprehensive summaries of all published information for a given geodetic reference point, including: the geographic position and/or height based on the current reference datum, condition of the survey mark when it was last visited, a description of where the point is located and how to reach it,

and an explanation of the terms used in the data sheet. In support of these geodetic data, the NGS provides software, publications, and various user services, including geodetic advisor program, instrument calibration, surveying standards, and technical workshops.

This dataset contains certain information extracted from the above mentioned data sheet.

Source_Used_Citation_Abbreviation: Geodetic Data

Process_Date: Not complete

Source_Produced_Citation_Abbreviation: NOAA, National Geodetic Survey and cooperating organizations.

Process_Contact:

Contact_Information:

Contact_Person_Primary:

Contact_Person: NGS Information Services Branch

Contact_Position: Information Specialist

Contact_Address:

Address_Type: Mailing and Physical Address

Address:

SSMC3/9202 1315 East-west Highway

City: Silver Spring

State_or_Province: MD

Postal_Code: 20910

Country: USA

Contact_Voice_Telephone: 301-713-3242

Contact_Facsimile_Telephone: 301-713-4172

Contact_Electronic_Mail_Address: ngs.infocenter@noaa.gov

Hours_of_Service: 9:00am to 4:30pm EST

Contact_Instructions: Prefer EMail

Spatial_Data_Organization_Information:

Indirect_Spatial_Reference:

Geodetic Data- horizontal positional datum conversion, use program NADCON (version 2.1)

Geodetic Data - vertical positional datum conversion, use program VERTCON (version 2.0)

These programs provide indirect spatial reference data and are available from NOAA, National Geodetic Survey at <http://www.ngs.noaa.gov/PC_PROD/pc_prod.shtml>

Direct_Spatial_Reference_Method: point

Point_and_Vector_Object_Information:

SDTS_Terms_Description:

SDTS_Point_and_Vector_Object_Type: point

Point_and_Vector_Object_Count: 1,500,000

Spatial_Reference_Information:

Horizontal_Coordinate_System_Definition:

Geographic:

Latitude_Resolution: 0.00001
Longitude_Resolution: 0.00001
Geographic_Coordinate_Units: degrees, minutes, and decimal seconds

Geodetic_Model:

Horizontal_Datum_Name: North American Datum of 1983 (NAD 83)
Ellipsoid_Name: Geodetic Reference System 80 (GRS80)
Semi-major_Axis: 6378137
Denominator_of_Flattening_Ratio: 298.26

Vertical_Coordinate_System_Definition:

Altitude_System_Definition:

Altitude_Datum_Name:
North American Vertical Datum of 1988 (NAVD 88), including Ellipsoidal and Orthometric Heights.
Altitude_Resolution: .01
Altitude_Distance_Units: meters
Altitude_Encoding_Method: implicit coordinate

Depth_System_Definition:

Depth_Datum_Name: the local surface
Depth_Resolution: .01
Depth_Distance_Units: meters
Depth_Encoding_Method: implicit coordinate

Entity_and_Attribute_Information:

Overview_Description:

Entity_and_Attribute_Overview:

The current attributes and their meaning are shown below.

#FeatureId
Temporary unique ID assigned to this station.

DATA_DATE-
The date when this information was retrieved from the NGS database.

DATA_SRCE-
Data Source where the information for the mark came from.
You should use this link to obtain a full datasheet for the mark
or obtain the datasheets from <http://www.ngs.noaa.gov/cgi-bin/datasheet.prl>
if you intend to use the data for survey control.

DEC_LONG-
Decimal equivalent of the LONGITUDE
Always displayed to 10 decimal places, but you should
see POS_SRCE and POS_ORDER to determine the true accuracy.

DEC_LAT-
Decimal equivalent of the LATITUDE

PID-
Permanent Identifier assigned by NGS to each mark

NAME-
Station Name (a.k.a. Designation)

STATE-
State Code

COUNTY-
County Name

QUAD-
USGS Topographic Quad Map Name

LATITUDE-
Latitude in Deg-Min-Sec format

LONGITUDE-
Longitude in Deg-Min-Sec format

POS DATUM-
Datum of the LATITUDE, LONGITUDE
Should always be NAD83

DATUM_TAG-
Datum Tag of the LATITUDE, LONGITUDE
NAD83 (1986) indicates positions on the NAD83 datum for the
North American Adjustment, completed in 1986.
NAD83 (nnnn) indicates positions on the NAD83 datum for the
North American Adjustment, but readjusted to a State High
Accuracy Reference Network (HARN) on the date shown in (nnnn).
NAD83 (CORS) indicates positions which are part of the CORS
network.

POS_SRCE-
Position Source for the LATITUDE, LONGITUDE

ADJUSTED = Least squares adjustment.
(Lat, Lon Rounded to 5 decimal places.)

HD_HELD1 = Differentially corrected hand held GPS observations.
(Lat, Lon Rounded to 2 decimal places.)

HD_HELD2 = Autonomous hand held GPS observations.
(Lat, Lon Rounded to 1 decimal places.)

SCALED = Scaled from a topographic map.
(Lat, Lon Rounded to 0 decimal places.)

ORTHO_HT-
Present if available.
The Orthometric Height in METERS indicating the height above the Geoid.

VERT_DATUM-
Datum of the ORTHO_HT

VERT_SRCE-
Vertical Source for the ORTHO_HT

ADJUSTED = Direct Digital Output from Least Squares Adjustment
of Precise Leveling.
(Rounded to 3 decimal places.)

ADJ UNCH = Manually Entered (and NOT verified) Output of
Least Squares Adjustment of Precise Leveling.
(Rounded to 3 decimal places.)

POSTED = Pre-1991 Precise Leveling Adjusted to
the NAVD 88 Network After Completion of
the NAVD 88 General Adjustment of 1991.
(Rounded to 3 decimal places.)

READJUST = Precise Leveling Readjusted as Required
by Crustal Motion or Other Cause.
(Rounded to 2 decimal places.)

N HEIGHT = Computed from Precise Leveling Connected
at Only One Published Bench Mark.
(Rounded to 2 decimal places.)

RESET = Reset Computation of Precise Leveling.
(Rounded to 2 decimal places.)

COMPUTED = Computed from Precise Leveling Using
Non-rigorous Adjustment Technique.
(Rounded to 2 decimal places.)

LEVELING = Precise Leveling Performed by Horizontal
Field Party.
(Rounded to 2 decimal places.)

H LEVEL = Level between control points not connected
to bench mark.
(Rounded to 1 decimal places.)

GPS OBS = Computed from GPS Observations.
(Rounded to 1 decimal places.)

VERT ANG = Computed from Vertical Angle Observations.
(Rounded to 1 decimal place;
If No Check, to 0 decimal places.)

SCALED = Scaled from a Topographic Map.
(Rounded to 0 decimal places.)

U HEIGHT = Unvalidated height from precise leveling
connected at only one NSRS point.
(Rounded to 2 decimal places.)

VERTCON = The NAVD 88 height was computed by applying the
VERTCON shift value to the NGVD 29 height.
(Rounded to 0 decimal places.)

ELLIP HT-
Present if available.
The ellipsoid height in METERS referenced to GRS80 ellipsoid.

POS_ORDER-
Order of accuracy for the LATITUDE, LONGITUDE
Should be one of the following-
A, B, 1, 2, 3

Order and class for Orders 1, 2, and 3
are defined in the Federal Geodetic Control Committee publication
"Standards and Specifications for Geodetic Control Networks".

In addition-
Order A stations have a relative accuracy of
5 mm +/- 1-10,000,000 relative to other A-order stations.

Order B stations have a relative accuracy of
8 mm +/- 1- 1,000,000 relative to other A- and B-order stations.

VERT ORDER-
Order of accuracy for the ORTHO HT
Should be 1,2, or 3 for Vertical Control Stations.
Will be blank for stations used for Horizontal Control only.

Also see attribute DIST_RATE which is used for some
vertical control stations.

Vertical order and class for 1, 2, and 3
are defined in the Federal Geodetic Control
Committee publication "Standards and Specifications for Geodetic
Control Networks". In addition-

Vertical control which were determined only for the purpose of
supplying a height for Horizontal Distance Reductions are
assigned an order of 3.

Class 0 is used for special cases of
orthometric vertical control as follows-

Vertical Order/Class		Tolerance Factor
-----		-----
1	class 0	2.0 mm or less
2	class 0	8.4 mm or less
3	class 0	12.0 mm or less

VERT CLASS-
Should be 0, 1, or 2
See details under ELEV_ORDER

DIST RATE-
Distribution rate for POSTED and READJUSTED benchmarks
which do not have an Order and Class are as follows
"Posted bench marks" are vertical control points in the NGS data
base which were excluded from the NAVD 88 general adjustment.
Some of the bench marks were excluded due to large adjustment
residuals, possibly caused by vertical movement of the bench marks
during the time interval between different leveling epochs.
Adjusted NAVD 88 are computed for posted bench marks by
supplemental adjustments.

A range of mean distribution rate corrections is listed for each
posted bench mark in the data portion of the publication.
A summary table of the mean distribution rates and their codes is
listed below. The mean distribution rate corrections which were
applied to the original leveling observations is a good
indication of the usefulness of the posted bench marks' adjusted
NAVD 88 heights.

Distribution Rate Code	Distribution Rate Correction
-----	-----
"a"	0.0 thru 1.0 mm/km
"b"	1.1 thru 2.0 "
"c"	2.1 thru 3.0 "

"d"	3.1 thru 4.0	"
"e"	4.1 thru 8.0	"
"f"	greater than 8.0	mm/km

POSTED BENCH MARKS SHOULD BE USED WITH CAUTION. As is the case for all leveling projects, the mandatory FGCS check leveling two-mark or three-mark tie procedure will usually detect any isolated movement (or other problem) at an individual bench mark. Of course, regional movement affecting all the marks equally is not detected by the two- or three-mark tie procedure.

FIRST RECV-
Date when the station was first monumented
or in the case of landmarks, first observed.

LAST RECV-
Date when the station was last recovered.

LAST COND-
Last recovered condition of the mark.
Should be one of the following-
MONUMENTED
FIRST OBSERVED
GOOD
POOR
MARK NOT FOUND
SEE DESCRIPTION
DESTROYED

LAST RECBY-
Agency who reported the last condition of the mark.

STABILITY-
The stability of the mark may have 1 of 4 codes as indicated below-
A = MOST RELIABLE AND EXPECTED TO HOLD POSITION/ELEVATION WELL
B = PROBABLY HOLD POSITION/ELEVATION WELL
C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO SURFACE MOTION
- E.G. FROST HEAVE, ETC
D = MARK OF QUESTIONABLE OR UNKNOWN STABILITY

HT MOD-
Designates if this site is a Height Modernization site. Y - Yes.

CORS ID-
Continuously Operating Reference Stations (CORS) site ID.

PACS SACS-
Designates whether this is a Primary Airport Control
Station (PACS) or Secondary Airport Control Station (SACS).

GEOID HT-
Present if available. The geoid height in METERS referenced
to the geoid model attribute.

N ACC HZ-
Horizontal network accuracy at the 95 percent confidence level (cm).

N ACC EL-
Ellipsoid height network accuracy at the 95 percent confidence level (cm).

N ACC STD N-
North component of coordinate standard deviation (latitude), used to compute

horizontal network accuracy (cm).

N_ACC_STD_E-
East component of coordinate standard deviation (longitude), used to compute horizontal network accuracy (cm).

N_ACC_STD_H-
Up component of coordinate standard deviation (ellipsoid height), used to compute ellipsoid height network accuracy (cm).

N_ACC_CORR-
Correlation coefficient between north and east components of coordinate standard deviation (latitude and longitude), used to compute horizontal network accuracy (unitless).

ECEF_X-
The computed Earth-Centered, Earth-Fixed X position.

ECEF_Y-
The computed Earth-Centered, Earth-Fixed Y position.

ECEF_Z-
The computed Earth-Centered, Earth-Fixed Z position.

SPC_ZONE-
The State Plane Coordinate Zone.

SPC_NORTH-
The State Plane Coordinate Northing.

SPC_EAST-
The State Plane Coordinate Easting.

SPC_CONV-
The State Plane Coordinate Convergence Angle.

SPC_CSF-
The State Plane Coordinate Combined Scale Factor.

UTM_ZONE-
The Universal Transverse Mercator Zone.

UTM_NORTH-
The Universal Transverse Mercator Northing.

UTM_EAST-
The Universal Transverse Mercator Easting.

UTM_CONV-
The Universal Transverse Mercator Convergence Angle.

UTM_CSF-
The Universal Transverse Mercator Combined Scale Factor.

DYNAMIC_HT-
The computed dynamic height at a bench mark using the orthometric height referenced the NAVD 88 and a gravity value.

MODELEDGRAV-
The interpolated gravity value which was used in the NAVD 88 general adjustment.

MARKER-
Identifies the type of marker.

SETTING-
Identifies the type of setting.

STAMPING-
Identifies the stamping on the disk.

Entity_and_Attribute_Detail_Citation:

All values were obtained from the NGA Datasheet available at <<http://www.ngs.noaa.gov/cgi-bin/datasheet.prl>>

Distribution_Information:

Distributor:

Contact_Information:

Contact_Person_Primary:

Contact_Person: NGS Information Services Branch

Contact_Organization: NOAA, National Geodetic Survey

Contact_Position: Information Specialist

Contact_Address:

Address_Type: Mailing and Physical Address

Address:

SSMC3/9202 1315 East-west Highway

City: Silver Spring

State_or_Province: MD

Postal_Code: 20910

Country: USA

Contact_Voice_Telephone: 301-713-3242

Contact_Facsimile_Telephone: 301-713-4172

Contact_Electronic_Mail_Address: ngs.infocenter@noaa.gov

Hours_of_Service: 9:00am to 4:30pm EST

Contact_Instructions: Prefer EMail

Resource_Description: Datasheet Shapefile

Distribution_Liability: The distributor does not assume liability

Standard_Order_Process:

Digital_Form:

Digital_Transfer_Information:

Format_Name: ShapeFile

Format_Version_Number: 1.0

Format_Version_Date: 2013

File-Decompression_Technique: Download options include PC Zip and Unix compressed tar

Digital_Transfer_Option:

Online_Option:

Computer_Contact_Information:

Network_Address:

Network_Resource_Name:

<<http://www.ngs.noaa.gov/cgi-bin/datasheet.prl?Explain=ShapeFiles>>

Access_Instructions:

Distributed through <<http://www.ngs.noaa.gov/cgi-bin/datasheet.prl>>

Online_Computer_and_Operating_System: SUN Solaris

Fees: free if you retrieve it yourself

Metadata_Reference_Information:

Metadata_Date: 20130513

Metadata_Contact:

Contact_Information:

Contact_Person_Primary:

Contact_Person: NGS Information Services Branch

Contact_Organization: NOAA, National Geodetic Survey

Contact_Position: Information Specialist

Contact_Address:

Address_Type: Mailing and Physical Address

Address:

SSMC3/9202 1315 East-west Highway

City: Silver Spring

State_or_Province: MD

Postal_Code: 20910

Country: USA

Contact_Voice_Telephone: 301-713-3242

Contact_Facsimile_Telephone: 301-713-4172

Contact_Electronic_Mail_Address: ngs.software@noaa.gov

Hours_of_Service: 9:00am to 4:30pm EST

Contact_Instructions: Prefer EMail

Metadata_Standard_Name: FGDC Content Standards for Digital Geospatial Metadata

Metadata_Standard_Version: FGDC-STD-001-1998

Metadata_Time_Convention: local time

Metadata_Access_Constraints:

Geodetic Data are in the public domain, not restricted from access or distribution.

Metadata_Use_Constraints:

not restricted; Geodetic Data, including software were developed and compiled with U.S. Government funding; no proprietary rights may be attached to them nor may they be sold to the U.S. Government as part

of any procurement of ADP products or services.
Metadata_Security_Information:

Metadata_Security_Classification_System: DOD
Metadata_Security_Classification: unclassified
Metadata_Security_Handling_Description: none

Metadata_Extensions:

Online_Linkage: N/A
Profile_Name: N/A