FEDERAL CLIMATE COMPLEX

DATA DOCUMENTATION

FOR

INTEGRATED SURFACE DATA

January 15, 2010

National Climatic Data Center
Air Force Combat Climatology Center
Fleet Numerical Meteorology and Oceanography Detachment
151 Patton Avenue
Asheville, NC 28801-5001 USA

1.   **Data Set ID:**

      DS3505

2.   **Data Set Name:**

      INTEGRATED SURFACE DATA (ISD)

3.   **Data Set Aliases:**

      N/A

4.   **Access Method and Sort for Archived Data:**

The data files are derived from surface observational data, and are stored in
ASCII character format. Data field definitions for elements transmitted are
provided after this preface, providing definition of data fields, position
number for mandatory data fields, field lengths for variable data fields,
minimum/maximum values of transmitted data, and values for missing data
fields. Data are accessible via NCDC's Climate Data Online system
(cdo.ncdc.noaa.gov), FTP (ftp://ftp.ncdc.noaa.gov/pub/data/noaa/), GIS
services (gis.ncdc.noaa.gov), and by calling NCDC for off-line servicing (see
section 12 below).

Data Sequence - Data will be sequenced using the following data item order:

   1. FIXED-WEATHER-STATION identifier
   2. GEOPHYSICAL-POINT-OBSERVATION date
   3. GEOPHYSICAL-POINT-OBSERVATION time
   4. GEOPHYSICAL-POINT-OBSERVATION latitude coordinate
   5. GEOPHYSICAL-POINT-OBSERVATION longitude coordinate
   6. GEOPHYSICAL-POINT-OBSERVATION type surface report code
   7. GEOPHYSICAL-REPORT-TYPE code

Record Structure - Each record is of variable length and is comprised of a
control and mandatory data section and may also contain additional, remarks,
and element quality data sections.

Maximum record size: 2,844 characters

Maximum block length: 8,192 characters for data provided on tape

Control Data Section - The beginning of each record provides information about
the report including date, time, and station location information. Data
fields will be in positions identified in the applicable data definition. The
control data section is fixed length and is 60 characters long.

Mandatory Data Section - The mandatory data section contains meteorological
information on the basic elements such as winds, visibility, and temperature.
These are the most commonly reported parameters and are available most of the
time. The mandatory data section is fixed length and is 45 characters long.

Additional Data Section - Variable length data are provided after the
mandatory data. These additional data contain information of significance

and/or which are received with varying degrees of frequency. Identifiers are used to note when data are present in the record. If all data fields in a group are missing, the entire group is usually not reported. If no groups are reported the section will be omitted. The additional data section is variable in length with a minimum of 0 characters and a maximum of 637 (634 characters plus a 3 character section identifier) characters.

Note: Specific information (where applicable) pertaining to each variable group of data elements is provided in the data item definition.

Remarks Data - The numeric and character (plain language) remarks are provided if they exist. The data will vary in length and are identified in the applicable data definition. The remarks section has a maximum length of 515 (512 characters plus a 3 character section identifier) characters.

Element Quality Data Section - The element quality data section contains information on data that have been determined erroneous or suspect during quality control procedures. Also, some of the original data source codes and flags are stored here. This section is variable in length and contains 16 characters for each erroneous or suspect parameter. The section has a minimum length of 0 characters and a maximum length of 1587 (1584 plus a 3 character section identifier) characters.

Missing Values - Missing values for any non-signed item are filled (i.e., 999). Missing values for any signed item are positive filled (i.e., +99999).

Longitude and Latitude Coordinates - Longitudes will be reported with negative values representing longitudes west of 0 degrees, and latitudes will be negative south of the equator. Although the data field allows for values to a thousandth of a degree, the values are often only computed to the hundredth of a degree with a 0 entered in the thousandth position.

5.   **Access Method and Sort for Supplied Data:** See #4 above.

6.   **Element Names and Definitions:** See documentation below.

Control Data Section

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POS: 1-4
> TOTAL-VARIABLE-CHARACTERS   (this includes remarks, additional data, and element quality section)
> The number of characters in the variable data section. The total record length = 105 + the value stored in this field.
> DOM: A general domain comprised of the characters in the ASCII character set.
> MIN: 0000   MAX: 9999

POS: 5-10
> FIXED-WEATHER-STATION USAF MASTER STATION CATALOG identifier
> The identifier that represents a FIXED-WEATHER-STATION.
> MIN: 000000   MAX: 999999
> DOM: A general domain comprised of the numeric characters (0-9).
> COMMENT: This field includes all surface reporting stations, including ships, buoys, etc.

POS: 11-15
> FIXED-WEATHER-STATION NCDC WBAN identifier
> The identifier that represents a FIXED-WEATHER-STATION.
> MIN: 00000   MAX: 99999
> DOM: A general domain comprised of the numeric characters (0-9).
> COMMENT: This field includes all surface reporting stations, including ships, buoys, etc.

NOTE:
1) For data files obtained via FTP or from NCDC's archive, the filename convention uses the USAF identifier and the WBAN identifier in the filename—eg, 723150-03812-year (such as 2006).
2) As additional data sources are integrated into ISD, the 2 station number fields will be used as an 11-digit ID field, with the first 2 digits representing the WMO block number (if applicable). For example, with NWS Cooperative Station data, the convention will be as follows:
xx999yyyyyy where xx = the WMO block number for the site, 999 = a fixed numeric, and yyyyyy = the cooperative station number used historically. However, Cooperative station data have not yet been integrated into ISD.

POS: 16-23
> GEOPHYSICAL-POINT-OBSERVATION date
> The date of a GEOPHYSICAL-POINT-OBSERVATION.
> MIN: 00000101   MAX: 99991231
> DOM: A general domain comprised of integer values 0-9 in the format YYYYMMDD.
> YYYY can be any positive integer value; MM is restricted to values 01-12; and DD is restricted
> to values 01-31.

POS: 24-27
> GEOPHYSICAL-POINT-OBSERVATION time
> The time of a GEOPHYSICAL-POINT-OBSERVATION based on
> Coordinated Universal Time Code (UTC).
> MIN: 0000   MAX: 2359
> DOM: A general domain comprised of integer values 0-9 in the format HHMM.
> HH is restricted to values 00-23; MM is restricted to values 00-59.

POS: 28-28
> GEOPHYSICAL-POINT-OBSERVATION data source flag
> The flag of a GEOPHYSICAL-POINT-OBSERVATION showing the source or
> combination of sources used in creating the observation.
> MIN: 1   MAX: Z
> DOM: A general domain comprised of values 1-9 and A-E.
> > 1 = DATSAV3 observation, candidate for merge with DSI-3280 (not yet merged, failed element cross-checks)
> > 2 = DSI-3280 observation, candidate for merge with DATSAV3 (not yet merged, failed element cross-checks)
> > 3 = DATSAV3/DSI-3280 merged observation

4 = DATSAV3 observation
5 = DSI-3280 observation
6 = ASOS/AWOS observation from NCDC
7 = ASOS/AWOS observation merged with DATSAV3 observation
8 = MAPSO observation (NCDC)
A = DATSAV3/DSI-3240 merged observation, candidate for merge with DSI-3280 (not yet merged, failed element cross-checks)
B = DSI-3280/DSI-3240 merged observation, candidate for merge with DATSAV3 (not yet merged, failed element cross-checks)
C = DATSAV3/DSI-3280/DSI-3240 merged observation
D = DATSAV3/DSI-3240 merged observation
E = DSI-3280/DSI-3240 merged observation
F = Form OMR/1001 – Weather Bureau city office (keyed data)
G = SAO surface airways observation, pre-1949 (keyed data)
H = SAO surface airways observation, 1965-1981 format/period (keyed data)
I = Climate Reference Network observation
J = Cooperative Network observation
K = Radiation Network observation
L = Data from Climate Data Modernization Program (CDMP) data source
N = NCAR / NCDC cooperative effort (various national datasets)
9 = Missing

Note: Latitude, longitude, elevation, and call letters for some locations with data from multiple sources (see data source flag above) will sometimes vary within a data file due to differences in the metadata from the originating source. This does not indicate that the station locations differ; only that the metadata have not yet been fully reflected in the data records.

POS: 29-34
GEOPHYSICAL-POINT-OBSERVATION latitude coordinate
The latitude coordinate of a GEOPHYSICAL-POINT-OBSERVATION where southern
 hemisphere is negative.
MIN: -90000   MAX: +90000
UNITS: Degrees
SCALING FACTOR: 1000
DOM: A general domain comprised of the numeric characters (0-9), a plus
      sign (+), and a minus sign (-).
      +99999 = Missing

POS: 35-41
GEOPHYSICAL-POINT-OBSERVATION longitude coordinate
The longitude coordinate of a GEOPHYSICAL-POINT-OBSERVATION where values west from
000000 to 179999 are signed negative.
MIN: -179999   MAX: +180000   UNITS: Degrees
SCALING FACTOR: 1000
DOM: A general domain comprised of the numeric characters (0-9), a plus
      sign (+), and a minus sign (-).
       +999999 = Missing

POS: 42-46
GEOPHYSICAL-REPORT-TYPE code
The code that denotes the type of geophysical surface observation.
DOM: A specific domain comprised of the characters in the ASCII character set.
      FM-12 = SYNOP Report of surface observation form a fixed land station
      FM-13 = SHIP Report of surface observation from a sea station
      FM-14 = SYNOP MOBIL Report of surface observation from a mobile land station
      FM-15 = METAR Aviation routine weather report
      FM-16 = SPECI Aviation selected special weather report
      FM-18 = BUOY Report of a buoy observation
      SAO = Airways report (includes record specials)
      SAOSP = Airways special report (excluding record specials)
      AERO = Aerological report
      AUTO = Report from an automatic station
      SY-AE = Synoptic and aero merged report
      SY-SA = Synoptic and airways merged report
      SY-MT = Synoptic and METAR merged report

SY-AU = Synoptic and auto merged report
SA-AU = Airways and auto merged report
S-S-A = Synoptic, airways, and auto merged report
BOGUS = Bogus report
SMARS = Supplementary airways station report
SOD = Summary of day report from U.S. ASOS or AWOS station
SOM = Summary of month report from U.S. ASOS or AWOS station
WBO = Weather Bureau Office
COOPD = US Cooperative Network summary of day report
COOPS = US Cooperative Network soil temperature report
PCP15 = US 15-minute precipitation network report
PCP60 = US 60-minute precipitation network report
CRN05 = Climate Reference Network report, with 5-minute reporting interval
CRN15 = Climate Reference Network report, with 15-minute reporting interval
SURF = Surface Radiation Network report
BRAZ = Dataset from Brazil
GREEN = Dataset from Greenland
AUST = Dataset from Australia
MEXIC = Dataset from Mexico
CRB = Climate Reference Book data from CDMP
WNO = Washington Naval Observatory
99999 = Missing

POS: 47-51

GEOPHYSICAL-POINT-OBSERVATION elevation dimension
The elevation of a GEOPHYSICAL-POINT-OBSERVATION relative to Mean Sea Level (MSL).
MIN: -0400   MAX: +8850   UNITS: Meters
SCALING FACTOR: 1
DOM: A general domain comprised of the numeric characters (0-9), a minus
        sign (-), and a plus sign (+).
        +9999 = Missing

POS: 52-56

FIXED-WEATHER-STATION call letter identifier
The identifier that represents the call letters assigned to a FIXED-WEATHER-STATION.
DOM: A general domain comprised of the characters in the ASCII character set.
        99999 = Missing.

POS: 57-60

METEOROLOGICAL-POINT-OBSERVATION quality control process name
The name of the quality control process applied to a weather observation.
DOM: A general domain comprised of the ASCII character set.

Mandatory Data Section

Bold type below indicates that the element may include data originating from NCDC's DSI-3280/ASOS/AWOS or from AFCCC's DATSAV3. Otherwise, data originated from DATSAV3.

POS: 61-63

WIND-OBSERVATION direction angle
The angle, measured in a clockwise direction, between true north and the direction from which the wind is blowing.
MIN: 001   MAX: 360   UNITS: Angular Degrees
SCALING FACTOR: 1
DOM: A general domain comprised of the numeric characters (0-9).
        999 = Missing. If type code (below) = V, then 999 indicates variable wind direction.

POS: 64-64

WIND-OBSERVATION direction quality code
The code that denotes a quality status of a reported WIND-OBSERVATION direction angle.
DOM: A specific domain comprised of the characters in the ASCII character set.
        0 = Passed gross limits check
        1 = Passed all quality control checks
        2 = Suspect
        3 = Erroneous
        4 = Passed gross limits check , data originate from an NCDC data source
        5 = Passed all quality control checks, data originate from an NCDC data source
        6 = Suspect, data originate from an NCDC data source
        7 = Erroneous, data originate from an NCDC data source
        9 = Passed gross limits check if element is present

POS: 65-65

WIND-OBSERVATION type code
The code that denotes the character of the WIND-OBSERVATION.
DOM: A specific domain comprised of the characters in the ASCII character set.
        A: Abridged Beaufort
        B: Beaufort
        C: Calm
        H: 5-Minute Average Speed
        N: Normal
        R: 60-Minute Average Speed
        Q: Squall
        T: 180 Minute Average Speed
        V: Variable
        9 = Missing
NOTE: If a value of 9 appears with a wind speed of 0000, this indicates calm winds.

POS: 66-69

WIND-OBSERVATION speed rate
The rate of horizontal travel of air past a fixed point.
MIN: 0000   MAX: 0900   UNITS: meters per second
SCALING FACTOR: 10
DOM: A general domain comprised of the numeric characters (0-9).
     9999 = Missing.

POS: 70-70

WIND-OBSERVATION speed quality code
The code that denotes a quality status of a reported WIND-OBSERVATION speed rate.
DOM: A specific domain comprised of the characters in the ASCII character set.
     0 = Passed gross limits check
     1 = Passed all quality control checks
     2 = Suspect
     3 = Erroneous
     4 = Passed gross limits check , data originate from an NCDC data source
     5 = Passed all quality control checks, data originate from an NCDC data source
     6 = Suspect, data originate from an NCDC data source
     7 = Erroneous, data originate from an NCDC data source
     9 = Passed gross limits check if element is present

POS: 71-75

SKY-CONDITION-OBSERVATION ceiling height dimension
The height above ground level (AGL) of the lowest cloud or obscuring phenomena layer aloft
with 5/8 or more summation total sky cover, which may be predominantly opaque, or the vertical
visibility into a surface-based obstruction. Unlimited = 22000.
MIN: 00000   MAX: 22000   UNITS: Meters
SCALING FACTOR: 1
DOM: A general domain comprised of the numeric characters (0-9).
     99999 = Missing.

POS: 76-76

SKY-CONDTION-OBSERVATION ceiling quality code
The code that denotes a quality status of a reported ceiling height
dimension.
DOM: A specific domain comprised of the characters in the ASCII character set.
     0 = Passed gross limits check
     1 = Passed all quality control checks
     2 = Suspect
     3 = Erroneous
     4 = Passed gross limits check , data originate from an NCDC data source
     5 = Passed all quality control checks, data originate from an NCDC data source
     6 = Suspect, data originate from an NCDC data source
     7 = Erroneous, data originate from an NCDC data source
     9 = Passed gross limits check if element is present

POS: 77-77

SKY-CONDITION-OBSERVATION ceiling determination code
The code that denotes the method used to determine the ceiling.
DOM: A specific domain comprised of the characters in the ASCII character set.
     A: Aircraft
     B: Balloon
     C: Statistically derived
     D: Persistent cirriform ceiling (pre-1950 data)
     E: Estimated
     M: Measured
     P: Precipitation ceiling (pre-1950 data)
     R: Radar
     S: ASOS augmented
     U: Unknown ceiling (pre-1950 data)

W: Obscured
9: Missing

POS: 78-78

SKY-CONDITION-OBSERVATION CAVOK code
The code that represents whether the 'Ceiling And Visibility Okay' (CAVOK) condition has been reported.
DOM: A specific domain comprised of the characters in the ASCII character set.
N: No
Y: Yes

POS: 79-84

VISIBILITY-OBSERVATION distance dimension
The horizontal distance at which an object can be seen and identified.
MIN: 000000   MAX: 160000   UNITS: Meters
DOM: A general domain comprised of the numeric characters (0-9).
Missing = 999999
NOTE: Values greater than 160000 are entered as 160000

POS: 85-85

VISIBILITY-OBSERVATION distance quality code
The code that denotes a quality status of a reported distance of a visibility observation.
DOM: A specific domain comprised of the characters in the ASCII character set.
0 = Passed gross limits check
1 = Passed all quality control checks
2 = Suspect
3 = Erroneous
4 = Passed gross limits check , data originate from an NCDC data source
5 = Passed all quality control checks, data originate from an NCDC data source
6 = Suspect, data originate from an NCDC data source
7 = Erroneous, data originate from an NCDC data source
9 = Passed gross limits check if element is present

POS: 86-86

VISIBILITY-OBSERVATION variability code
The code that denotes whether or not the reported visibility is variable.
DOM: A specific domain comprised of the characters in the ASCII character set.
N: Not variable
V: Variable
9 = Missing

POS: 87-87

VISIBILITY-OBSERVATION quality variability code
The code that denotes a quality status of a reported VISIBILITY-OBSERVATION variability code.
DOM: A specific domain comprised of the characters in the ASCII character set.
0 = Passed gross limits check
1 = Passed all quality control checks
2 = Suspect
3 = Erroneous
4 = Passed gross limits check , data originate from an NCDC data source
5 = Passed all quality control checks, data originate from an NCDC data source
6 = Suspect, data originate from an NCDC data source
7 = Erroneous, data originate from an NCDC data source
9 = Passed gross limits check if element is present

POS: 88-92

AIR-TEMPERATURE-OBSERVATION air temperature
The temperature of the air.

MIN: -0932   MAX: +0618   UNITS: Degrees Celsius
SCALING FACTOR: 10
DOM: A general domain comprised of the numeric characters (0-9), a plus sign (+), and a minus
      sign (-).
      +9999 = Missing.

POS: 93-93

    AIR-TEMPERATURE-OBSERVATION air temperature quality code
    The code that denotes a quality status of an AIR-TEMPERATURE-OBSERVATION.
    DOM: A specific domain comprised of the characters in the ASCII character set.
        0 = Passed gross limits check
        1 = Passed all quality control checks
        2 = Suspect
        3 = Erroneous
        4 = Passed gross limits check , data originate from an NCDC data source
        5 = Passed all quality control checks, data originate from an NCDC data source
        6 = Suspect, data originate from an NCDC data source
        7 = Erroneous, data originate from an NCDC data source
        9 = Passed gross limits check if element is present

POS: 94-98

    AIR-TEMPERATURE-OBSERVATION dew point temperature
    The temperature to which a given parcel of air must be cooled at constant pressure and water vapor
    content in order for saturation to occur.
    MIN: -0982   MAX: +0368   UNITS: Degrees Celsius
    SCALING FACTOR: 10
    DOM: A general domain comprised of the numeric characters (0-9), a plus
        sign (+), and a minus sign (-).
        +9999 = Missing.

POS: 99-99

    AIR-TEMPERATURE-OBSERVATION dew point quality code
    The code that denotes a quality status of the reported dew point temperature.
    DOM: A specific domain comprised of the characters in the ASCII character set.
        0 = Passed gross limits check
        1 = Passed all quality control checks
        2 = Suspect
        3 = Erroneous
        4 = Passed gross limits check , data originate from an NCDC data source
        5 = Passed all quality control checks, data originate from an NCDC data source
        6 = Suspect, data originate from an NCDC data source
        7 = Erroneous, data originate from an NCDC data source
        9 = Passed gross limits check if element is present

POS: 100-104

    ATMOSPHERIC-PRESSURE-OBSERVATION sea level pressure
    The air pressure relative to Mean Sea Level (MSL).
    MIN: 08600   MAX: 10900   UNITS: Hectopascals
    SCALING FACTOR: 10
    DOM: A general domain comprised of the numeric characters (0-9).
        99999 = Missing.

POS: 105-105

    ATMOSPHERIC-PRESSURE-OBSERVATION sea level pressure quality code
    The code that denotes a quality status of the sea level pressure of an
    ATMOSPHERIC-PRESSURE-OBSERVATION.
    DOM: A specific domain comprised of the characters in the ASCII character set.
        0 = Passed gross limits check
        1 = Passed all quality control checks

2 = Suspect
3 = Erroneous
4 = Passed gross limits check , data originate from an NCDC data source
5 = Passed all quality control checks, data originate from an NCDC data source
6 = Suspect, data originate from an NCDC data source
7 = Erroneous, data originate from an NCDC data source
9 = Passed gross limits check if element is present

Additional Data Section

Bold type below indicates that the element may include data originating from NCDC's DSI-3280/ASOS/AWOS, DSI-3240/Hourly Precip, or from AFCCC's DATSAV3. Otherwise, data originated from DATSAV3.

FLD LEN: 3
> GEOPHYSICAL-POINT-OBSERVATION additional data identifier
> The identifier that denotes the beginning of the additional data section.
> DOM: A specific domain comprised of the ASCII character set.
> > **ADD   Additional Data Section**

Precipitation Data

FLD LEN: 3
> **LIQUID-PRECIPITATION occurrence identifier**
> The identifier that represents an episode of LIQUID-PRECIPITATION.
> DOM: A specific domain comprised of the characters in the ASCII character set.
> > **AA1 - AA4**   An indicator of up to 4 repeating fields of the following items:
> > > LIQUID-PRECIPITATION period quantity
> > > LIQUID-PRECIPITATION depth dimension
> > > LIQUID-PRECIPITATION condition code
> > > LIQUID-PRECIPITATION quality code

FLD LEN: 2
> **LIQUID-PRECIPITATION period quantity in hours**
> The quantity of time over which the LIQUID-PRECIPITATION was measured.
> MIN: 00   MAX: 98   UNITS: Hours
> SCALING FACTOR: 1
> DOM: A specific domain comprised of the characters in the ASCII character set
> > 99 = Missing.

FLD LEN: 4
> **LIQUID-PRECIPITATION depth dimension**
> The depth of LIQUID-PRECIPITATION that is measured at the time of an observation.
> MIN: 0000   MAX: 9998   UNITS: millimeters
> SCALING FACTOR: 10
> DOM: A general domain comprised of the numeric characters (0-9).
> > 9999 = Missing.

FLD LEN: 1
> **LIQUID-PRECIPITATION condition code**

The code that denotes whether a LIQUID-PRECIPITATION depth dimension was a trace value.
DOM: A specific domain comprised of the characters in the ASCII character set.

      1: Measurement impossible or inaccurate
      2: Trace
      3: Begin accumulated period (precip amount missing until end of accumulated period)
      4: End accumulated period
      5: Begin deleted period (precip amount missing due to data problem)
      6: End deleted period
      7: Begin missing period
      8: End missing period
      E: Estimated data value (eg, from nearby station)
      I: Incomplete precipitation amount, excludes one or more missing reports, such as one or more 15-minute reports not included in the 1-hour precip total
      J: Incomplete precipitation amount, excludes one or more erroneous reports, such as one or more 1-hour precip amounts excluded from the 24-hour total
      9: Missing

FLD LEN: 1

LIQUID-PRECIPITATION quality code
The code that denotes a quality status of the reported LIQUID-PRECIPITATION data.
DOM: A specific domain comprised of the characters in the ASCII character set.

      0 = Passed gross limits check
      1 = Passed all quality control checks
      2 = Suspect
      3 = Erroneous
      4 = Passed gross limits check , data originate from an NCDC data source
      5 = Passed all quality control checks, data originate from an NCDC data source
      6 = Suspect, data originate from an NCDC data source
      7 = Erroneous, data originate from an NCDC data source
      9 = Passed gross limits check if element is present

FLD LEN: 3

LIQUID-PRECIPITATION MONTHLY TOTAL identifier
The identifier that represents LIQUID-PRECIPITATION MONTHLY TOTAL data.
DOM: A specific domain comprised of the characters in the ASCII character set.

      AB1 An indicator of the following items:
              LIQUID-PRECIPITATION depth dimension
              LIQUID-PRECIPITATION condition code
              LIQUID-PRECIPITATION quality code

FLD LEN: 5

LIQUID-PRECIPITATION MONTHLY TOTAL depth dimension
The depth of LIQUID-PRECIPITATION for the month.
MIN: 00000   MAX: 50000   UNITS: millimeters
SCALING FACTOR: 10
DOM: A general domain comprised of the numeric characters (0-9).
      99999 = Missing.

FLD LEN: 1

LIQUID-PRECIPITATION MONTHLY TOTAL condition code
The code that denotes whether a LIQUID-PRECIPITATION depth dimension was a trace value.
DOM: A specific domain comprised of the characters in the ASCII character set.

      1: Measurement impossible or inaccurate
      2: Trace
      9: Missing

FLD LEN: 1

LIQUID-PRECIPITATION MONTHLY TOTAL quality code
The code that denotes a quality status of the reported LIQUID-PRECIPITATION data.
DOM: A specific domain comprised of the characters in the ASCII character set.

      0 = Passed gross limits check
      1 = Passed all quality control checks

FLD LEN: 3
      PRECIPITATION-OBSERVATION-HISTORY identifier
      The identifier that indicates the occurrence of precipitation history information.
      DOM: A specific domain comprised of the characters in the ASCII character set.
           AC1 An indicator of the following items:
                 PRECIPITATION-OBSERVATION-HISTORY duration code
                 PRECIPITATION-OBSERVATION-HISTORY characteristic code
                 PRECIPITATION-OBSERVATION-HISTORY quality code

FLD LEN: 1
      PRECIPITATION-OBSERVATION-HISTORY duration code
      The code that denotes the duration of precipitation.
      DOM: A specific domain comprised of the characters in the ASCII character set.
           0 = Lasted less than 1 hour
           1 = Lasted 1 - 3 hours
           2 = Lasted 3 - 6 hours
           3 = Lasted more than 6 hours
           9 = Missing

FLD LEN: 1
      PRECIPITATION-OBSERVATION-HISTORY characteristic code
      The code that denotes whether precipitation is continuous or intermittent.
      DOM: A specific domain comprised of the characters in the ASCII character set.
           C = Continuous
           I = Intermittent
           9 = Missing

FLD LEN: 1
      PRECIPITATION duration/characteristic quality code
      The code that denotes a quality status of the reported PRECIPITATION duration/characteristic.
      DOM: A specific domain comprised of the characters in the ASCII character set.
           0 = Passed gross limits check
           1 = Passed all quality control checks
           2 = Suspect
           3 = Erroneous
           9 = Passed gross limits check if element is present

FLD LEN: 3
      LIQUID-PRECIPITATION GREATEST AMOUNT IN 24 HOURS, FOR THE MONTH identifier
      The identifier that represents LIQUID-PRECIPITATION, GREATEST IN 24 HOURS, data.
      DOM: A specific domain comprised of the characters in the ASCII character set.
           AD1   An indicator of the following items:
                 LIQUID-PRECIPITATION depth dimension
                 LIQUID-PRECIPITATION condition code
                 LIQUID-PRECIPITATION dates of occurrence (3 fields)
                 LIQUID-PRECIPITATION quality code

FLD LEN: 5
      LIQUID-PRECIPITATION GREATEST AMOUNT IN 24 HOURS, FOR THE MONTH depth dimension
      The depth of LIQUID-PRECIPITATION for the 24-hour period.
      MIN: 00000   MAX: 20000   UNITS: millimeters
      SCALING FACTOR: 10

DOM: A general domain comprised of the numeric characters (0-9).
99999 = Missing.

FLD LEN: 1

LIQUID-PRECIPITATION GREATEST AMOUNT IN 24 HOURS, FOR THE MONTH condition code
The code that denotes whether a LIQUID-PRECIPITATION depth dimension was a trace value.
DOM: A specific domain comprised of the characters in the ASCII character set.
1: Measurement impossible or inaccurate
2: Trace
3: The amount occurred on other dates in addition to those listed
4: Trace amount occurred on other dates in addition to those listed
9: Missing

FLD LEN: 4

LIQUID-PRECIPITATION GREATEST AMOUNT IN 24 HOURS, FOR THE MONTH dates of occurrence
The dates of occurrence of LIQUID-PRECIPITATION, given as the begin-end date for the 24-hour period, for up to 3 occurrences; e.g., 0405 indicates 24-hour period on days 04-05.
MIN: 0101   MAX: 3131
DOM: A general domain comprised of the numeric characters (0-9).
9999 = Missing.

FLD LEN: 4

LIQUID-PRECIPITATION GREATEST AMOUNT IN 24 HOURS, FOR THE MONTH dates of occurrence
The dates of occurrence of LIQUID-PRECIPITATION, given as the begin-end date for the 24-hour period, for up to 3 occurrences; e.g., 0405 indicates 24-hour period on days 04-05.
MIN: 0101   MAX: 3131
DOM: A general domain comprised of the numeric characters (0-9).
9999 = Missing.

FLD LEN: 4

LIQUID-PRECIPITATION GREATEST AMOUNT IN 24 HOURS, FOR THE MONTH dates of occurrence
The dates of occurrence of LIQUID-PRECIPITATION, given as the begin-end date for the 24-hour period, for up to 3 occurrences; e.g., 0405 indicates 24-hour period on days 04-05.
MIN: 0101   MAX: 3131
DOM: A general domain comprised of the numeric characters (0-9).
9999 = Missing.

FLD LEN: 1

LIQUID-PRECIPITATION GREATEST AMOUNT IN 24 HOURS, FOR THE MONTH quality code
The code that denotes a quality status of the reported LIQUID-PRECIPITATION data.
DOM: A specific domain comprised of the characters in the ASCII character set.
0 = Passed gross limits check
1 = Passed all quality control checks
2 = Suspect
3 = Erroneous
4 = Passed gross limits check , data originate from an NCDC data source
5 = Passed all quality control checks, data originate from an NCDC data source
6 = Suspect, data originate from an NCDC data source
7 = Erroneous, data originate from an NCDC data source
9 = Passed gross limits check if element is present

FLD LEN: 3

LIQUID-PRECIPITATION, NUMBER OF DAYS WITH SPECIFIC AMOUNTS, FOR THE MONTH identifier
The identifier that represents NUMBER OF DAYS WITH LIQUID-PRECIPITATION data.
DOM: A specific domain comprised of the characters in the ASCII character set.
AE1   An indicator of the following items:
LIQUID-PRECIPITATION number of days with .01 inch or more
LIQUID-PRECIPITATION quality code
LIQUID-PRECIPITATION number of days with .10 inch or more
LIQUID-PRECIPITATION quality code
LIQUID-PRECIPITATION number of days with .50 inch or more
LIQUID-PRECIPITATION quality code

LIQUID-PRECIPITATION number of days with 1.00 inch or more
LIQUID-PRECIPITATION quality code

FLD LEN: 2

LIQUID-PRECIPITATION, NUMBER OF DAYS WITH SPECIFIC AMOUNTS, FOR THE MONTH
The number of days with .01 inch (.25 mm) or more precipitation.
MIN: 00   MAX: 31
DOM: A general domain comprised of the numeric characters (0-9).
       99 = Missing.

FLD LEN: 1

LIQUID-PRECIPITATION, NUMBER OF DAYS WITH SPECIFIC AMOUNTS, FOR THE MONTH quality code
The code that denotes a quality status of the reported days with .01 or more.
DOM: A specific domain comprised of the characters in the ASCII character set.
       0 = Passed gross limits check
       1 = Passed all quality control checks
       2 = Suspect
       3 = Erroneous
       4 = Passed gross limits check , data originate from an NCDC data source
       5 = Passed all quality control checks, data originate from an NCDC data source
       6 = Suspect, data originate from an NCDC data source
       7 = Erroneous, data originate from an NCDC data source
       9 = Passed gross limits check if element is present

FLD LEN: 2

LIQUID-PRECIPITATION, NUMBER OF DAYS WITH SPECIFIC AMOUNTS, FOR THE MONTH
The number of days with .10 inch (2.5 mm) or more precipitation.
MIN: 00   MAX: 31
DOM: A general domain comprised of the numeric characters (0-9).
       99 = Missing.

FLD LEN: 1

LIQUID-PRECIPITATION, NUMBER OF DAYS WITH SPECIFIC AMOUNTS, FOR THE MONTH quality code
The code that denotes a quality status of the reported days with .10 or more.
DOM: A specific domain comprised of the characters in the ASCII character set.
       0 = Passed gross limits check
       1 = Passed all quality control checks
       2 = Suspect
       3 = Erroneous
       4 = Passed gross limits check , data originate from an NCDC data source
       5 = Passed all quality control checks, data originate from an NCDC data source
       6 = Suspect, data originate from an NCDC data source
       7 = Erroneous, data originate from an NCDC data source
       9 = Passed gross limits check if element is present

FLD LEN: 2

LIQUID-PRECIPITATION, NUMBER OF DAYS WITH SPECIFIC AMOUNTS, FOR THE MONTH
The number of days with .50 inch (12.7 mm) or more precipitation.
MIN: 00   MAX: 31
DOM: A general domain comprised of the numeric characters (0-9).
       99 = Missing.

FLD LEN: 1

LIQUID-PRECIPITATION, NUMBER OF DAYS WITH SPECIFIC AMOUNTS, FOR THE MONTH quality code
The code that denotes a quality status of the reported days with .50 or more.
DOM: A specific domain comprised of the characters in the ASCII character set.
       0 = Passed gross limits check
       1 = Passed all quality control checks
       2 = Suspect
       3 = Erroneous
       4 = Passed gross limits check , data originate from an NCDC data source
       5 = Passed all quality control checks, data originate from an NCDC data source
       6 = Suspect, data originate from an NCDC data source
       7 = Erroneous, data originate from an NCDC data source

FLD LEN: 2

LIQUID-PRECIPITATION, NUMBER OF DAYS WITH SPECIFIC AMOUNTS, FOR THE MONTH
The number of days with 1.00 inch (25 mm) or more precipitation.
MIN: 00   MAX: 31
DOM: A general domain comprised of the numeric characters (0-9).
        99 = Missing.

FLD LEN: 1

LIQUID-PRECIPITATION, NUMBER OF DAYS WITH SPECIFIC AMOUNTS, FOR THE MONTH quality code
The code that denotes a quality status of the reported days with 1.00 or more.
DOM: A specific domain comprised of the characters in the ASCII character set.
        0 = Passed gross limits check
        1 = Passed all quality control checks
        2 = Suspect
        3 = Erroneous
        4 = Passed gross limits check , data originate from an NCDC data source
        5 = Passed all quality control checks, data originate from an NCDC data source
        6 = Suspect, data originate from an NCDC data source
        7 = Erroneous, data originate from an NCDC data source
        9 = Passed gross limits check if element is present

FLD LEN: 3

PRECIPITATION-ESTIMATED-OBSERVATION identifier
The identifier that represents a PRECIPITATION-ESTIMATED-OBSERVATION, from AFCCC.
DOM: A specific domain comprised of the characters in the ASCII character set.
    AG1 An indicator of the occurrence of the following items:
        PRECIPITATION-OBSERVATION discrepancy code
        PRECIPITATION-OBSERVATION estimated water depth dimension

FLD LEN: 1

PRECIPITATION-ESTIMATED-OBSERVATION discrepancy code
The code that denotes the type of discrepancy between a PRECIPITATION-OBSERVATION and
other related observations at the same location.
DOM: A specific domain comprised of the characters in the ASCII character set.
0: Reported amount of precipitation and reported weather agree
1: Precipitation missing or not reported and none inferred by weather
2: Precipitation missing, but precipitation inferred by weather
3: Precipitation reported, but none inferred by weather
4: Zero precipitation reported, but precipitation inferred by weather
5: Zero precipitation reported, no precipitation inferred and precipitation not occurring at the reporting
    station
9: Missing

FLD LEN: 3

PRECIPITATION-ESTIMATED-OBSERVATION estimated water depth dimension
The estimated depth of precipitation in water depth for a 3-hour synoptic period.
MIN: 000   MAX: 998   UNITS: millimeters
SCALING FACTOR: 1
DOM: A general domain comprised of the numeric characters (0-9).
        999 = Missing.

FLD LEN: 3

LIQUID-PRECIPITATION MAXIMUM SHORT DURATION, FOR THE MONTH identifier
The identifier that represents MAXIMUM SHORT DURATION PRECIPITATION data.
DOM: A specific domain comprised of the characters in the ASCII character set.
    AH1-AH6: An indicator of up to 6 repeating fields for the following items:
        LIQUID-PRECIPITATION period quantity
        LIQUID-PRECIPITATION depth dimension

LIQUID-PRECIPITATION condition code
LIQUID-PRECIPITATION end date
LIQUID-PRECIPITATION end time
LIQUID-PRECIPITATION quality code

FLD LEN: 3

LIQUID-PRECIPITATION MAXIMUM SHORT DURATION, FOR THE MONTH period quantity
The quantity of time over which the LIQUID-PRECIPITATION was measured.
MIN: 005   MAX: 180   UNITS: Minutes
SCALING FACTOR: 1
DOM: A specific domain comprised of the characters in the ASCII character set
     999 = Missing.

FLD LEN: 4

LIQUID-PRECIPITATION MAXIMUM SHORT DURATION, FOR THE MONTH depth dimension
The depth of LIQUID-PRECIPITATION for the defined time period.
MIN: 0000   MAX: 3000   UNITS: millimeters
SCALING FACTOR: 10
DOM: A general domain comprised of the numeric characters (0-9).
     9999 = Missing.

FLD LEN: 1

LIQUID-PRECIPITATION MAXIMUM SHORT DURATION, FOR THE MONTH condition code
The code that denotes whether a LIQUID-PRECIPITATION depth dimension was a trace value.
DOM: A specific domain comprised of the characters in the ASCII character set.
     1: Measurement impossible or inaccurate
     2: Trace
     9: Missing

FLD LEN: 6

LIQUID-PRECIPITATION MAXIMUM SHORT DURATION, FOR THE MONTH ending date-time
The ending date of occurrence of the event , given as the date-time in GMT; e.g., 051010 indicates
1010 Z-time on day 05 of the month.
MIN: 010000   MAX: 312359
DOM: A general domain comprised of the numeric characters (0-9).
     999999 = Missing.

FLD LEN: 1

LIQUID-PRECIPITATION MAXIMUM SHORT DURATION, FOR THE MONTH quality code
The code that denotes a quality status of the reported LIQUID-PRECIPITATION data.
DOM: A specific domain comprised of the characters in the ASCII character set.
     0 = Passed gross limits check
     1 = Passed all quality control checks
     2 = Suspect
     3 = Erroneous
     4 = Passed gross limits check , data originate from an NCDC data source
     5 = Passed all quality control checks, data originate from an NCDC data source
     6 = Suspect, data originate from an NCDC data source
     7 = Erroneous, data originate from an NCDC data source
     9 = Passed gross limits check if element is present

FLD LEN: 3

LIQUID-PRECIPITATION MAXIMUM SHORT DURATION, FOR THE MONTH identifier
The identifier that represents MAXIMUM SHORT DURATION PRECIPITATION data.
DOM: A specific domain comprised of the characters in the ASCII character set.
NOTE: This data group is identical to the AH1-6 group above, for the purpose of allowing
     up to 12 occurrences of these reports.
     AI1-AI6: An indicator of up to 6 repeating fields for the following items:
          LIQUID-PRECIPITATION period quantity
          LIQUID-PRECIPITATION depth dimension
          LIQUID-PRECIPITATION condition code
          LIQUID-PRECIPITATION end date

FLD LEN: 3

LIQUID-PRECIPITATION MAXIMUM SHORT DURATION, FOR THE MONTH period quantity
The quantity of time over which the LIQUID-PRECIPITATION was measured.
MIN: 060   MAX: 180   UNITS: Minutes
SCALING FACTOR: 1
DOM: A specific domain comprised of the characters in the ASCII character set
        999 = Missing.

FLD LEN: 4

LIQUID-PRECIPITATION MAXIMUM SHORT DURATION, FOR THE MONTH depth dimension
The depth of LIQUID-PRECIPITATION for the defined time period.
MIN: 0000   MAX: 3000   UNITS: millimeters
SCALING FACTOR: 10
DOM: A general domain comprised of the numeric characters (0-9).
        9999 = Missing.

FLD LEN: 1

LIQUID-PRECIPITATION MAXIMUM SHORT DURATION, FOR THE MONTH condition code
The code that denotes whether a LIQUID-PRECIPITATION depth dimension was a trace value.
DOM: A specific domain comprised of the characters in the ASCII character set.
        1: Measurement impossible or inaccurate
        2: Trace
        9: Missing

FLD LEN: 6

LIQUID-PRECIPITATION MAXIMUM SHORT DURATION, FOR THE MONTH ending date-time
The ending date of occurrence of the event , given as the date-time in GMT; e.g., 051010 indicates
1010 Z-time on day 05 of the month.
MIN: 010000   MAX: 312359
DOM: A general domain comprised of the numeric characters (0-9).
        999999 = Missing.

FLD LEN: 1

LIQUID-PRECIPITATION MAXIMUM SHORT DURATION, FOR THE MONTH quality code
The code that denotes a quality status of the reported LIQUID-PRECIPITATION data.
DOM: A specific domain comprised of the characters in the ASCII character set.
        0 = Passed gross limits check
        1 = Passed all quality control checks
        2 = Suspect
        3 = Erroneous
        4 = Passed gross limits check , data originate from an NCDC data source
        5 = Passed all quality control checks, data originate from an NCDC data source
        6 = Suspect, data originate from an NCDC data source
        7 = Erroneous, data originate from an NCDC data source
        9 = Passed gross limits check if element is present

FLD LEN: 3
SNOW-DEPTH identifier
The identifier that denotes the start of a SNOW-DEPTH data section.
DOM: A specific domain comprised of the characters in the ASCII character set.
        AJ1 An indicator of the occurrence of the following items:
            SNOW-DEPTH dimension
            SNOW-DEPTH condition code
            SNOW-DEPTH quality code
            SNOW-DEPTH equivalent water depth dimension
            SNOW-DEPTH equivalent water condition code
            SNOW-DEPTH equivalent water condition quality code

FLD LEN: 4

SNOW-DEPTH dimension
The depth of snow and ice on the ground.
MIN: 0000   MAX: 1200   UNITS: centimeters
SCALING FACTOR: 1
DOM: A general domain comprised of the numeric characters (0-9).
        9999 = Missing.

FLD LEN: 1

SNOW-DEPTH condition code
The code that denotes specific conditions associated with the measurement of snow in a
PRECIPITATION-OBSERVATION.
DOM: A specific domain comprised of the characters in the ASCII character set.
        1: Measurement impossible or inaccurate
        2: Snow cover not continuous
        3: Trace
        4: End accumulated period (data include more than one day)
        5: End deleted period (data eliminated due to quality problems)
        6: End missing period
        E: Estimated data value (eg, from nearby station)
        9: Missing

FLD LEN: 1

SNOW-DEPTH quality code
The code that denotes a quality status of the reported SNOW-DEPTH data.
DOM: A specific domain comprised of the characters in the ASCII character set.
        0 = Passed gross limits check
        1 = Passed all quality control checks
        2 = Suspect
        3 = Erroneous
        4 = Passed gross limits check , data originate from an NCDC data source
        5 = Passed all quality control checks, data originate from an NCDC data source
        6 = Suspect, data originate from an NCDC data source
        7 = Erroneous, data originate from an NCDC data source
        9 = Passed gross limits check if element is present

FLD LEN: 6

SNOW-DEPTH equivalent water depth dimension
The depth of the liquid content of solid precipitation that has accumulated on the ground.
MIN: 000000   MAX: 120000   UNITS: millimeters
SCALING FACTOR: 10
DOM: A general domain comprised of the numeric characters (0-9).
        999999 = Missing.

FLD LEN: 1

SNOW-DEPTH equivalent water condition code
The code that denotes specific conditions associated with the measurement of the SNOW-DEPTH.
DOM: A specific domain comprised of the characters in the ASCII character set.
        1: Measurement impossible or inaccurate
        2: Trace
        9: Missing (no special code to report)

FLD LEN: 1

SNOW-DEPTH equivalent water condition quality code
The code that denotes a quality status of the reported SNOW-DEPTH equivalent water condition.
DOM: A specific domain comprised of the characters in the ASCII character set.
        0 = Passed gross limits check
        1 = Passed all quality control checks
        2 = Suspect
        3 = Erroneous
        4 = Passed gross limits check , data originate from an NCDC data source
        5 = Passed all quality control checks, data originate from an NCDC data source
        6 = Suspect, data originate from an NCDC data source
        7 = Erroneous, data originate from an NCDC data source

9 = Passed gross limits check if element is present

FLD LEN: 3

SNOW-DEPTH GREATEST DEPTH ON THE GROUND, FOR THE MONTH identifier
The identifier that represents SNOW-DEPTH GREATEST SNOW DEPTH ON THE GROUND, data.
DOM: A specific domain comprised of the characters in the ASCII character set.
AK1　An indicator of the following items:
SNOW-DEPTH depth dimension
SNOW-DEPTH condition code
SNOW-DEPTH dates of occurrence
SNOW-DEPTH quality code

FLD LEN: 4

SNOW-DEPTH GREATEST DEPTH ON THE GROUND, FOR THE MONTH depth dimension
The depth of GREATEST SNOW DEPTH FOR THE MONTH.
MIN: 0000　　　MAX: 1500　　　UNITS: centimeters
SCALING FACTOR: 1
DOM: A general domain comprised of the numeric characters (0-9).
9999 = Missing.

FLD LEN: 1

SNOW-DEPTH GREATEST DEPTH ON THE GROUND, FOR THE MONTH condition code
The code that denotes whether a SNOW-DEPTH dimension was a trace value.
DOM: A specific domain comprised of the characters in the ASCII character set.
1: Measurement impossible or inaccurate
2: Trace
3: The amount occurred on other dates in addition to those listed
4: Trace amount occurred on other dates in addition to those listed
9: Missing

FLD LEN: 6

SNOW-DEPTH GREATEST DEPTH ON THE GROUND, FOR THE MONTH dates of occurrence
The dates of occurrence of SNOW-DEPTH, given as the date for each occurrence, for up to 3 occurrences; e.g., 041016 indicates days 04, 10, and 16.
MIN: 01　　　MAX: 31
DOM: A general domain comprised of the numeric characters (0-9).
99 = missing for each of the 3 sub-fields.

FLD LEN: 1

SNOW-DEPTH GREATEST DEPTH ON THE GROUND, FOR THE MONTH quality code
The code that denotes a quality status of the reported SNOW-DEPTH data.
DOM: A specific domain comprised of the characters in the ASCII character set.
0 = Passed gross limits check
1 = Passed all quality control checks
2 = Suspect
3 = Erroneous
4 = Passed gross limits check , data originate from an NCDC data source
5 = Passed all quality control checks, data originate from an NCDC data source
6 = Suspect, data originate from an NCDC data source
7 = Erroneous, data originate from an NCDC data source
9 = Passed gross limits check if element is present

FLD LEN: 3

SNOW-ACCUMULATION occurrence identifier
The identifier that represents an episode of SNOW-ACCUMULATION.
DOM: A specific domain comprised of the characters in the ASCII character set.
AL1 - AL4　An indicator of up to 4 repeating fields of the following items:
SNOW-ACCUMULATION period quantity
SNOW-ACCUMULATION depth dimension
SNOW-ACCUMULATION condition code

SNOW-ACCUMULATION quality code

FLD LEN: 2
    SNOW-ACCUMULATION period quantity
    The quantity of time over which the SNOW-ACCUMULATION occurred.
    MIN: 00   MAX: 72   UNITS: Hours
    SCALING FACTOR: 1
    DOM: A general domain comprised of the characters in the ASCII character set.
        99 = Missing.

FLD LEN: 3
    SNOW-ACCUMULATION depth dimension
    The depth of a SNOW-ACCUMULATION.
    MIN: 000   MAX: 500   UNITS: centimeters
    SCALING FACTOR: 1
    DOM: A general domain comprised of the numeric characters (0-9).
        999 = Missing.

FLD LEN: 1
    SNOW-ACCUMULATION condition code
    The code that denotes specific conditions associated with the measurement of the
    depth of a SNOW-ACCUMULATION.
    DOM: A specific domain comprised of the characters in the ASCII character set.
        1: Measurement impossible or inaccurate
        2: Snow cover not continuous
        3: Trace
        4: End accumulated period (data include more than one day)
        5: End deleted period (data eliminated due to quality problems)
        6: End missing period
        E: Estimated data value (eg, from nearby station)
        9: Missing

FLD LEN: 1
    SNOW-ACCUMULATION quality code
    The code that denotes a quality status of the reported SNOW-ACCUMULATION.
    DOM: A specific domain comprised of the characters in the ASCII character set.
        0 = Passed gross limits check
        1 = Passed all quality control checks
        2 = Suspect
        3 = Erroneous
        4 = Passed gross limits check , data originate from an NCDC data source
        5 = Passed all quality control checks, data originate from an NCDC data source
        6 = Suspect, data originate from an NCDC data source
        7 = Erroneous, data originate from an NCDC data source
        9 = Passed gross limits check if element is present

FLD LEN: 3
    SNOW-ACCUMULATION GREATEST AMOUNT IN 24 HOURS, FOR THE MONTH identifier
    The identifier that represents SNOW-ACCUMULATION, GREATEST IN 24 HOURS, data.
    DOM: A specific domain comprised of the characters in the ASCII character set.
        AM1   An indicator of the following items:
            SNOW-ACCUMULATION depth dimension
            SNOW-ACCUMULATION condition code
            SNOW-ACCUMULATION dates of occurrence (3 fields)
            SNOW-ACCUMULATION quality code

FLD LEN: 4
    SNOW-ACCUMULATION GREATEST AMOUNT IN 24 HOURS, FOR THE MONTH depth dimension
    The depth of SNOW-ACCUMULATION for the 24-hour period.
    MIN: 0000   MAX: 2000   UNITS: centimeters
    SCALING FACTOR: 10
    DOM: A general domain comprised of the numeric characters (0-9).

9999 = Missing.

FLD LEN: 1

SNOW-ACCUMULATION GREATEST AMOUNT IN 24 HOURS, FOR THE MONTH condition code
The code that denotes whether a SNOW-ACCUMULATION depth dimension was a trace value.
DOM: A specific domain comprised of the characters in the ASCII character set.
1: Measurement impossible or inaccurate
2: Trace
3: The amount occurred on other dates in addition to those listed
4: Trace amount occurred on other dates in addition to those listed
9: Missing

FLD LEN: 4

SNOW-ACCUMULATION GREATEST AMOUNT IN 24 HOURS, FOR THE MONTH dates of occurrence
The dates of occurrence of SNOW-ACCUMULATION, given as the begin-end date for the 24-hour period, for up to 3 occurrences; e.g., 0405 indicates 24-hour period on days 04-05.
MIN: 0101   MAX: 3131
DOM: A general domain comprised of the numeric characters (0-9).
9999 = Missing.

FLD LEN: 4

SNOW-ACCUMULATION GREATEST AMOUNT IN 24 HOURS, FOR THE MONTH dates of occurrence
The dates of occurrence of SNOW-ACCUMULATION, given as the begin-end date for the 24-hour period, for up to 3 occurrences; e.g., 0405 indicates 24-hour period on days 04-05.
MIN: 0101   MAX: 3131
DOM: A general domain comprised of the numeric characters (0-9).
9999 = Missing.

FLD LEN: 4

SNOW-ACCUMULATION GREATEST AMOUNT IN 24 HOURS, FOR THE MONTH dates of occurrence
The dates of occurrence of SNOW-ACCUMULATION, given as the begin-end date for the 24-hour period, for up to 3 occurrences; e.g., 0405 indicates 24-hour period on days 04-05.
MIN: 0101   MAX: 3131
DOM: A general domain comprised of the numeric characters (0-9).
9999 = Missing.

FLD LEN: 1

SNOW-ACCUMULATION GREATEST AMOUNT IN 24 HOURS, FOR THE MONTH quality code
The code that denotes a quality status of the reported SNOW-ACCUMULATION data.
DOM: A specific domain comprised of the characters in the ASCII character set.
0 = Passed gross limits check
1 = Passed all quality control checks
2 = Suspect
3 = Erroneous
4 = Passed gross limits check , data originate from an NCDC data source
5 = Passed all quality control checks, data originate from an NCDC data source
6 = Suspect, data originate from an NCDC data source
7 = Erroneous, data originate from an NCDC data source
9 = Passed gross limits check if element is present

FLD LEN: 3

SNOW-ACCUMULATION FOR THE MONTH occurrence identifier
The identifier that represents SNOW-ACCUMULATION MONTHLY TOTAL.
DOM: A specific domain comprised of the characters in the ASCII character set.
AN1: An indicator for the occurrence of the following items:
SNOW-ACCUMULATION period quantity
SNOW-ACCUMULATION depth dimension
SNOW-ACCUMULATION condition code
SNOW-ACCUMULATION quality code

FLD LEN: 3
SNOW-ACCUMULATION period quantity

The quantity of time over which the SNOW-ACCUMULATION occurred.
MIN: 001   MAX: 744   UNITS: Hours
SCALING FACTOR: 1
DOM: A general domain comprised of the characters in the ASCII character set.
    999 = Missing.

FLD LEN: 4

    SNOW ACCUMULATION FOR THE MONTH depth dimension
The depth of a SNOW-ACCUMULATION.
MIN: 0000   MAX: 9998   UNITS: centimeters
SCALING FACTOR: 10
DOM: A general domain comprised of the numeric characters (0-9).
    9999 = Missing.

FLD LEN: 1

    SNOW-ACCUMULATION FOR THE MONTH condition code
The code that denotes specific conditions associated with the measurement of the
depth of a SNOW-ACCUMULATION.
DOM: A specific domain comprised of the characters in the ASCII character set.
    1: Measurement impossible or inaccurate
    2: Snow cover not continuous
    3: Trace
    4: End accumulated period (data may include more than one month)
    5: End deleted period (data eliminated due to quality problems)
    6: End missing period
    7: Data will be included in subsequent observation
    E: Estimated data value (eg, from nearby station)
    9: Missing

FLD LEN: 1

    SNOW-ACCUMULATION FOR THE MONTH quality code
The code that denotes a quality status of the reported SNOW-ACCUMULATION FOR THE MONTH.
DOM: A specific domain comprised of the characters in the ASCII character set.
    0 = Passed gross limits check
    1 = Passed all quality control checks
    2 = Suspect
    3 = Erroneous
    4 = Passed gross limits check , data originate from an NCDC data source
    5 = Passed all quality control checks, data originate from an NCDC data source
    6 = Suspect, data originate from an NCDC data source
    7 = Erroneous, data originate from an NCDC data source
    9 = Passed gross limits check if element is present

FLD LEN: 3

    LIQUID-PRECIPITATION occurrence identifier
The identifier that represents an episode of LIQUID-PRECIPITATION.
DOM: A specific domain comprised of the characters in the ASCII character set.
    AO1 - AO4   An indicator of up to 4 repeating fields of the following items:
        LIQUID-PRECIPITATION period quantity
        LIQUID-PRECIPITATION depth dimension
        LIQUID-PRECIPITATION condition code
        LIQUID-PRECIPITATION quality code

FLD LEN: 2

    LIQUID-PRECIPITATION period quantity in minutes
The quantity of time over which the LIQUID-PRECIPITATION was measured.
MIN: 00   MAX: 98   UNITS: Minutes
SCALING FACTOR: 1
DOM: A specific domain comprised of the characters in the ASCII character set
    99 = Missing.

FLD LEN: 4

LIQUID-PRECIPITATION depth dimension
The depth of LIQUID-PRECIPITATION that is measured at the time of an observation.
MIN: 0000   MAX: 9998   UNITS: millimeters
SCALING FACTOR: 10
DOM: A general domain comprised of the numeric characters (0-9).
    9999 = Missing.

FLD LEN: 1

LIQUID-PRECIPITATION condition code
The code that denotes whether a LIQUID-PRECIPITATION depth dimension was a trace value.
DOM: A specific domain comprised of the characters in the ASCII character set.
    1: Measurement impossible or inaccurate
    2: Trace
    3: Begin accumulated period (precip amount missing until end of accumulated period)
    4: End accumulated period
    5: Begin deleted period (precip amount missing due to data problem)
    6: End deleted period
    7: Begin missing period
    8: End missing period
    E: Estimated data value (eg, from nearby station)
    I: Incomplete precipitation amount, excludes one or more missing reports, such as one or more 15-minute
       reports not included in the 1-hour precip total
    J: Incomplete precipitation amount, excludes one or more erroneous reports, such as one or more 1-hour
       precip amounts excluded from the 24-hour total
    9: Missing

FLD LEN: 1

LIQUID-PRECIPITATION quality code
The code that denotes a quality status of the reported LIQUID-PRECIPITATION data.
DOM: A specific domain comprised of the characters in the ASCII character set.
    0 = Passed gross limits check
    1 = Passed all quality control checks
    2 = Suspect
    3 = Erroneous
    4 = Passed gross limits check , from DSI-3260 or NCDC ASOS/AWOS
    5 = Passed all quality control checks, from DSI-3260 or NCDC ASOS/AWOS
    6 = Suspect, from DSI-3260 or NCDC ASOS/AWOS
    7 = Erroneous, from DSI-3260 or NCDC ASOS/AWOS
    9 = Passed gross limits check if element is present

FLD LEN: 3

15 Minute LIQUID-PRECIPITATION occurrence identifier
The identifier that represents an episode of LIQUID-PRECIPITATION.
DOM: A specific domain comprised of the characters in the ASCII character set.
IMPORTANT NOTE: These data are also provided in the AAx section for typical use in applications. The APx data are mainly
intended for quality control processing.
   AP1 Indicates HPD gauge value 45 minutes prior to observation time
   AP2 Indicates HPD gauge value 30 minutes prior to observation time
   AP3 Indicates HPD gauge value 15 minutes prior to observation time
   AP4 Indicates HPD gauge value at observation time
      LIQUID-PRECIPITATION depth dimension
      LIQUID-PRECIPITATION condition code
      LIQUID-PRECIPITATION quality code

FLD LEN: 4

HPD (Hourly Precipitation Data network) gauge value
The HPD Gauge value that is measured at the time indicated.
MIN: 0000   MAX: 9998   UNITS: millimeters
SCALING FACTOR: 10
DOM: A general domain comprised of the numeric characters (0-9).
    9999 = Missing

FLD LEN: 1

HPD gauge value condition code
Not used at this time. Value set to missing.
DOM: A specific domain comprised of the characters in the ASCII character set.
  9=Missing

FLD LEN: 1

HPD gauge value quality code
The code that denotes a quality status of the reported gauge value.
DOM: A specific domain comprised of the characters in the ASCII character set.
  0 = Passed gross limits check
  1 = Passed all quality control checks
  2 = Suspect
  3 = Erroneous
  4 = Passed gross limits check, data originate from an NCDC data source
  5 = Passed all quality control checks, data originate from an NCDC data source
  6 = Suspect, data originate from an NCDC data source
  7 = Erroneous, data originate from an NCDC data source
  9 = Passed gross limits check if element is present

Weather Occurrence Data

FLD LEN: 3

PRESENT-WEATHER-OBSERVATION automated occurrence identifier for ASOS/AWOS data
The identifier that signifies the reporting of present weather.
DOM: A specific domain comprised of the ASCII characters.
AU1 – AU9   An indicator of up to 9 repeating fields of the following items:
  PRESENT-WEATHER-OBSERVATION intensity **code**
  PRESENT-WEATHER-OBSERVATION descriptor **code**
  PRESENT-WEATHER-OBSERVATION precipitation **code**
  PRESENT-WEATHER-OBSERVATION obscuration **code**
  PRESENT-WEATHER-OBSERVATION other weather phenomena **code**
  PRESENT-WEATHER-OBSERVATION combination indicator **code**
  PRESENT-WEATHER-OBSERVATION **quality code**

FLD LEN: 1

PRESENT-WEATHER-OBSERVATION intensity and proximity code
DOM: A specific domain comprised of the characters in the ASCII character set.
  0 = Not Reported
  1 = Light (-)
  2 = Moderate or Not Reported (no entry in original observation)
  3 = Heavy (+)
  4 = Vicinity (VC)
  9 = Missing

FLD LEN: 1

PRESENT-WEATHER-OBSERVATION descriptor code
DOM: A specific domain comprised of the characters in the ASCII character set.
  0 = No Descriptor
  1 = Shallow (MI)
  2 = Partial (PR)
  3 = Patches (BC)
  4 = Low Drifting (DR)
  5 = Blowing (BL)
  6 = Shower(s) (SH)
  7 = Thunderstorm (TS)
  8 = Freezing (FZ)
  9 = Missing

FLD LEN: 2

PRESENT-WEATHER-OBSERVATION precipitation code

DOM: A specific domain comprised of the characters in the ASCII character set.

00 = No Precipitation
01 = Drizzle (DZ)
02 = Rain (RA)
03 = Snow (SN)
04 = Snow Grains (SG)
05 = Ice Crystals (IC)
06 = Ice Pellets (PL)
07 = Hail (GR)
08 = Small Hail and/or Snow Pellets (GS)
09 = Unknown Precipitation (UP)
99 = Missing

FLD LEN: 1

PRESENT-WEATHER-OBSERVATION obscuration code

DOM: A specific domain comprised of the characters in the ASCII character set.

0 = No Obscuration
1 = Mist (BR)
2 = Fog (FG)
3 = Smoke (FU)
4 = Volcanic Ash (VA)
5 = Widespread Dust (DU)
6 = Sand (SA)
7 = Haze (HZ)
8 = Spray (PY)
9 = Missing

FLD LEN: 1

PRESENT-WEATHER-OBSERVATION other weather phenomena code

DOM: A specific domain comprised of the characters in the ASCII character set.

0 = None Reported
1 = Well-Developed Dust/Sand Whirls (PO)
2 = Squalls (SQ)
3 = Funnel Cloud, Tornado, Waterspout(FC)
4 = Sandstorm (SS)
5 = Duststorm (DS)
9 = Missing

FLD LEN: 1

PRESENT-WEATHER-OBSERVATION combination indicator code

DOM: A specific domain comprised of the characters in the ASCII character set.

1 = Not part of combined weather elements
2 = Beginning element of combined weather elements
3 = Combined with previous weather element to form a single weather report
9 = Missing

FLD LEN: 1

PRESENT-WEATHER-OBSERVATION quality code

The code that denotes a quality status of the reported PRESENT-WEATHER-OBSERVATION.

DOM: A specific domain comprised of the characters in the ASCII character set.

0 = Passed gross limits check
1 = Passed all quality control checks
2 = Suspect
3 = Erroneous
4 = Passed gross limits check , data originate from an NCDC data source
5 = Passed all quality control checks, data originate from an NCDC data source
6 = Suspect, data originate from an NCDC data source
7 = Erroneous, data originate from an NCDC data source
9 = Passed gross limits check if element is present

FLD LEN: 3

      PRESENT-WEATHER-OBSERVATION automated occurrence identifier
      The identifier that signifies the reporting of present weather.
      DOM: A specific domain comprised of the ASCII characters.
          AW1 First automated weather report
          AW2 Second automated weather report
          AW3 Third automated weather report
          AW4 Fourth automated weather report
        PRESENT-WEATHER-OBSERVATION automated atmospheric condition code
         PRESENT-WEATHER-OBSERVATION quality automated atmospheric condition code

FLD LEN: 2

      PRESENT-WEATHER-OBSERVATION automated atmospheric condition code
      The code that denotes a specific type of weather reported by an automated device.
      DOM: A specific domain comprised of the characters in the ASCII character set.
      00: No significant weather observed
      01: Clouds generally dissolving or becoming less developed
      02: State of sky on the whole unchanged during the past hour
      03: Clouds generally forming or developing during the past hour
      04: Haze, smoke, or dust in suspension in the air, visibility equal to or greater than 1km
      05: Smoke
      07: Dust or sand raised by wind at or near the station at the time of observation, but no
         well-developed dust whirl(s) or sand whirl(s), and no duststorm or sandstorm seen or, in the case
        of ships, blowing spray at the station
      10: Mist
      11: Diamond dust
      12: Distant lightning
      18: Squalls

      (Code figures 20-26 are used to report precipitation, fog, or thunderstorm at the station during
       the preceding hour, but not at the time of observation.)

      20: Fog
      21: Precipitation
      22: Drizzle (not freezing) or snow grains
      23: Rain (not freezing)
      24: Snow
      25: Freezing drizzle or freezing rain
      26: Thunderstorm (with or without precipitation)
      27: Blowing or drifting snow or sand
      28: Blowing or drifting snow or sand, visibility equal to or greater than 1 km
      29: Blowing or drifting snow or sand, visibility less than 1 km
      30: Fog
      31: Fog or ice fog in patches
      32: Fog or ice fog, has become thinner during the past hour
      33: Fog or ice fog, no appreciable change during the past hour
      34: Fog or ice fog, has begun or become thicker during the past hour
      35: Fog, depositing rime
      40: Precipitation
      41: Precipitation, slight or moderate
      42: Precipitation, heavy
      43: Liquid precipitation, slight or moderate
      44: Liquid precipitation, heavy
      45: Solid precipitation, slight or moderate
      46: Solid precipitation, heavy
      47: Freezing precipitation, slight or moderate
      48: Freezing precipitation, heavy
      50: Drizzle
      51: Drizzle, not freezing, slight
      52: Drizzle, not freezing, moderate
      53: Drizzle, not freezing, heavy
      54: Drizzle, freezing, slight
      55: Drizzle, freezing, moderate
      56: Drizzle, freezing, heavy

57: Drizzle and rain, slight
58: Drizzle and rain, moderate or heavy
60: Rain
61: Rain, not freezing, slight
62: Rain, not freezing, moderate
63: Rain, not freezing, heavy
64: Rain, freezing, slight
65: Rain, freezing, moderate
66: Rain, freezing, heavy
67: Rain or drizzle and snow, slight
68: Rain or drizzle and snow, moderate or heavy
70: Snow
71: Snow, slight
72: Snow, moderate
73: Snow, heavy
74: Ice pellets, slight
75: Ice pellets, moderate
76: Ice pellets, heavy
80: Showers or intermittent precipitation
81: Rain showers or intermittent rain, slight
82: Rain showers or intermittent rain, moderate
83: Rain showers or intermittent rain, heavy
84: Rain showers or intermittent rain, violent
85: Snow showers or intermittent rain, slight
86: Snow showers or intermittent rain, moderate
87: Snow showers or intermittent rain, heavy
90: Thunderstorm
91: Thunderstorm, slight or moderate, with no precipitation
92: Thunderstorm, slight or moderate, with rain showers and/or snow showers
93: Thunderstorm, slight or moderate, with hail
94: Thunderstorm, heavy, with no precipitation
95: Thunderstorm, heavy, with rain showers and/or snow
96: Thunderstorm, heavy, with hail
99: Tornado

FLD LEN: 1

PRESENT-WEATHER-OBSERVATION quality automated atmospheric condition code
The code that denotes a quality status of a reported present weather observation from an automated station.
DOM: A specific domain comprised of the characters in the ASCII character set.
0 = Passed gross limits check
1 = Passed all quality control checks
2 = Suspect
3 = Erroneous
4 = Passed gross limits check , data originate from an NCDC data source
5 = Passed all quality control checks, data originate from an NCDC data source
6 = Suspect, data originate from an NCDC data source
7 = Erroneous, data originate from an NCDC data source
9 = Passed gross limits check if element is present

FLD LEN: 3

PAST-WEATHER-OBSERVATION summary of day occurrence identifier
The identifier that signifies the reporting of past weather as summarized for the calendar day.
DOM: A specific domain comprised of the characters in the ASCII character set.
AX1 – AX6 An indicator of up to 6 repeating fields of the following item:
PAST-WEATHER-OBSERVATION atmospheric condition code
PAST-WEATHER-OBSERVATION quality atmospheric condition code
PAST-WEATHER-OBSERVATION period quantity
PAST-WEATHER-OBSERVATION period quality code

FLD LEN: 2

PAST-WEATHER-OBSERVATION atmospheric condition code

The code that denotes a specific type of past weather observed.
DOM: A specific domain comprised of the characters in the ASCII character set.
00: none to report
01: fog
02: fog reducing visibility to ¼ mile or less
03: thunder
04: ice pellets
05: hail
06: glaze or rime
07: blowing dust or sand, visibility ½ mile or less
08: smoke or haze
09: blowing snow
10: tornado
11: high or damaging winds
99: missing

FLD LEN: 1

PAST-WEATHER-OBSERVATION quality manual atmospheric condition code
The code that denotes a quality status of a reported past weather observation from a manual station.
DOM: A specific domain comprised of the characters in the ASCII character set.
    4 = Passed gross limits check, data originate from an NCDC data source
    5 = Passed all quality control checks, data originate from an NCDC data source
    6 = Suspect, data originate from an NCDC data source
    7 = Erroneous, data originate from an NCDC data source
    9 = Passed gross limits check if element is present

FLD LEN: 2

PAST-WEATHER-OBSERVATION period quantity
The quantity of time over which a PAST-WEATHER-OBSERVATION occurred.
MIN: 24   MAX: 24   UNITS: hours
DOM: A general domain comprised of the ASCII characters 0-9.
    99 = Missing

FLD LEN: 1

PAST-WEATHER-OBSERVATION period quality code
The code that denotes a quality status of a reported past weather period.
DOM: A specific domain comprised of the characters in the ASCII character set.
    4 = Passed gross limits check, data originate from an NCDC data source
    5 = Passed all quality control checks, data originate from an NCDC data source
    6 = Suspect, data originate from an NCDC data source
    7 = Erroneous, data originate from an NCDC data source
    9 = Passed gross limits check if element is present

FLD LEN: 3

PAST-WEATHER-OBSERVATION manual occurrence identifier
The identifier that signifies the reporting of past weather.
DOM: A specific domain comprised of the characters in the ASCII character set.
    AY1 - AY2 An indicator of up to 2 repeating fields of the following item:
        PAST-WEATHER-OBSERVATION manual atmospheric condition code
        PAST-WEATHER-OBSERVATION quality manual atmospheric condition code
        PAST-WEATHER-OBSERVATION period quantity
        PAST-WEATHER-OBSERVATION period quality code

FLD LEN: 1

PAST-WEATHER-OBSERVATION manual atmospheric condition code
The code that denotes a specific type of past weather observed manually.
DOM: A specific domain comprised of the characters in the ASCII character set.
Domain Value ID: Domain Value Definition Text
0: Cloud covering 1/2 or less of the sky throughout the appropriate period
1: Cloud covering more than 1/2 of the sky during part of the appropriate period and covering
  1/2 or less during part of the period

2: Cloud covering more than 1/2 of the sky throughout the appropriate period
3: Sandstorm, duststorm or blowing snow
4: Fog or ice fog or thick haze
5: Drizzle
6: Rain
7: Snow, or rain and snow mixed
8: Shower(s)
9: Thunderstorm(s) with or without precipitation

FLD LEN: 1
    PAST-WEATHER-OBSERVATION quality manual atmospheric condition code
    The code that denotes a quality status of a reported past weather observation from a manual
    station.
    DOM: A specific domain comprised of the characters in the ASCII character set.
        0 = Passed gross limits check
        1 = Passed all quality control checks
        2 = Suspect
        3 = Erroneous
        9 = Passed gross limits check if element is present

FLD LEN: 2
    PAST-WEATHER-OBSERVATION period quantity
    The quantity of time over which a PAST-WEATHER-OBSERVATION occurred.
    MIN: 01   MAX: 24   UNITS: hours
    DOM: A general domain comprised of the ASCII characters 0-9.
        99 = Missing

FLD LEN: 1
    PAST-WEATHER-OBSERVATION period quality code
    The code that denotes a quality status of a reported past weather period.
    DOM: A specific domain comprised of the characters in the ASCII character set.
        0 = Passed gross limits check
        1 = Passed all quality control checks
        2 = Suspect
        3 = Erroneous
        9 = Passed gross limits check if element is present

FLD LEN: 3
    PAST-WEATHER-OBSERVATION automated occurrence identifier
    The identifier that signifies the reporting of present weather.
    DOM: A specific domain comprised of the characters in the ASCII character set.
      AZ1- AZ2 An indicator of the following item: (this may occur 0 - 2 times)
            PAST-WEATHER-OBSERVATION automated atmospheric condition code
            PAST-WEATHER-OBSERVATION quality automated atmospheric condition code
            PAST-WEATHER-OBSERVATION period quantity
            PAST-WEATHER-OBSERVATION period quality code

FLD LEN: 1
    PAST-WEATHER-OBSERVATION automated atmospheric condition code
    The code that denotes a specific type of past weather reported by an automated device.
    DOM: A specific domain comprised of the characters in the ASCII character set.
        0: No significant weather observed
        1: Visibility reduced
        2: Blowing phenomena, visibility reduced
        3: Fog
        4: Precipitation
        5: Drizzle
        6: Rain
        7: Snow or ice pellets
        8: Showers or intermittent precipitation
        9: Thunderstorm

FLD LEN: 1
      PAST-WEATHER-OBSERVATION quality automated atmospheric condition code
     The code that denotes a quality status of a reported past weather observation from an
     automated station.
      DOM: A specific domain comprised of the characters in the ASCII character set.
           0 = Passed gross limits check
           1 = Passed all quality control checks
           2 = Suspect
           3 = Erroneous
           9 = Passed gross limits check if element is present

FLD LEN: 2
      PAST-WEATHER-OBSERVATION period quantity
     The quantity of time over which a PAST-WEATHER-OBSERVATION occurred.
     MIN: 01   MAX: 24   UNITS: hours
     DOM: A general domain comprised of the ASCII characters 0-9.
        99 = Missing

FLD LEN: 1
      PAST-WEATHER-OBSERVATION period quality code
     The code that denotes a quality status of a reported past weather period.
     DOM: A specific domain comprised of the characters in the ASCII character set.
           0 = Passed gross limits check
           1 = Passed all quality control checks
           2 = Suspect
           3 = Erroneous
           9 = Passed gross limits check if element is present

Climate Reference Network Unique Data

FLD LEN: 3
      Subhourly Observed Liquid Precipitation Section: Secondary Sensor identifier
     The identifier that indicates the presence of a liquid precipitation measurement made by a secondary
     precipitation sensor.
     DOM: A specific domain comprised of the characters in the ASCII character set.
          CB1, CB2 An indicator of the following items:
              PERIOD period quantity
              PRECIP liquid depth
              PRECIP_QC quality code
              PRECIP_FLAG quality code

FLD LEN: 2
      PRECIP period quantity
     The quantity of time for which the gauge depth was measured.
     MIN: 05   MAX: 60   UNITS: Minutes
     DOM: A specific domain comprised of the characters in the ASCII character set
        99 = Missing

FLD LEN: 6
      PRECIP liquid depth
     The observed liquid precipitation measurement from the secondary precipitation sensor.
     MIN: -99999   MAX: +99999   UNITS: millimeters
     SCALING FACTOR: 10
     DOM: A general domain comprised of the numeric characters (0-9), a plus sign (+), and a minus sign (-).
        +99999 = Missing.

FLD LEN: 1
      QC quality code
     The code that indicates ISD's evaluation of the quality status of the liquid precipitation measurement from the
     secondary precipitation sensor.

DOM: A specific domain comprised of the numeric characters (0-9).
      1 = Passed all quality control checks
      3 = Failed all quality control checks
      9 = Missing

FLD LEN: 1

PRECIP_FLAG quality code
The code that indicates the network's internal evaluation of the quality status of the reported LIQUID-PRECIPITATION data. Most users will find the preceding quality code DEPTH_QC to be the simplest and most useful quality indicator.
DOM: A specific domain comprised of the numeric characters (0-9)
      0 = Passed all quality control checks
      other – Did not pass all quality checks

FLD LEN: 3

Hourly Fan Speed Section identifier
The identifier that indicates an hourly observation of the fan speed from an aspirated shield housing the temperature sensor. Three instances of this section appear in the last ISD record of the hour.
DOM: A specific domain comprised of the characters in the ASCII character set.
    CF1,CF2,CF3 An indicator of the following items:
        FAN speed rate
        FAN _QC quality code
        FAN _FLAG quality code

FLD LEN: 4

FAN The average fan speed for the hour.
MIN: - 0000   MAX: 9999   UNITS: rotations per second
SCALING FACTOR: 10
DOM: A general domain comprised of the numeric characters (0-9).
    9999 = Missing.

FLD LEN: 1

FAN_QC quality code
The code that indicates ISD's evaluation of the quality status of the average fan speed for the hour.
DOM: A specific domain comprised of the numeric characters (0-9).
      1 = Passed all quality control checks
      3 = Failed all quality control checks
      9 = Missing

FLD LEN: 1

FAN_QC_FLAG quality code
A flag that indicates the network's internal evaluation of the quality status of the average fan speed for the hour. Most users will find the preceding quality code **FAN_QC** to be the simplest and most useful quality indicator.
DOM: A specific domain comprised of the numeric characters (0-9)
      0 = Passed all quality control checks
      other – Did not pass all quality checks

FLD LEN: 3

Subhourly Observed Liquid Precipitation Section: Primary Sensor identifier
The identifier that indicates the presence of three concurrent precipitation depth observations made by co-located sensors on the primary precipitation gauge. Three instances of this section (corresponding to the three precipitation sensors) appear in each of the twelve 5-minute data stream records.
DOM: A specific domain comprised of the characters in the ASCII character set.
    CG1, CG2, CG3 Three indicators preceding three copies of the following items:
      DEPTH liquid depth
      DEPTH_QC quality code
      DEPTH_FLAG quality code

FLD LEN: 6

DEPTH liquid depth
The observed gauge depth.
MIN: -99999   MAX: +99999   UNITS: millimeters
SCALING FACTOR: 10
DOM: A general domain comprised of the numeric characters (0-9), a plus sign (+), and a minus sign (-).
        +99999 = Missing.

FLD LEN: 1
    DEPTH_QC quality code
    The code that indicates ISD's evaluation of the quality status of the observed depth.
    DOM: A specific domain comprised of the numeric characters (0-9).
        1 = Passed all quality control checks
        3 = Failed all quality control checks
        9 = Missing

FLD LEN: 1
    DEPTH_FLAG quality code
    The code that indicates the network's internal evaluation of the quality status of the observed depth. Most users will find
    the preceding quality code **DEPTH_QC** to be the simplest and most useful quality indicator.
    DOM: A specific domain comprised of the numeric characters (0-9).
        0 = Passed all quality control checks
        other – Did not pass all quality checks

FLD LEN: 3
    Hourly/Sub-Hourly Relative Humidity/Temperature Section identifier
    The identifier that indicates an observation of relative humidity and temperature **measured at the relative humidity**
    instrument. This section appears one or more times per hour.
    DOM: A specific domain comprised of the characters in the ASCII character set.
        CH1, CH2 An indicator of the following items:
            RELATIVE HUMIDITY/TEMPERATURE period quantity
            AVG_RH_TEMP average air temperature
            AVG_ RH_TEMP_QC quality code
            AVG_ RH_TEMP_FLAG quality code
            AVG_RH average relative humidity
            AVG_RH_QC quality code
            AVG_RH_FLAG quality code

FLD LEN: 2
    RELATIVE HUMIDITY/TEMPERATURE period quantity in minutes
    The quantity of time over which the **RELATIVE HUMIDITY/TEMPERATURE** was measured.
    MIN: 00   MAX: 60   UNITS: Minutes
    SCALING FACTOR: 1
    DOM: A specific domain comprised of the characters in the ASCII character set
        99 = Missing.

FLD LEN: 5
    AVG_ RH_TEMP average air temperature
    The average air temperature measured at the relative humidity instrument.
    MIN: -9999   MAX: +9999   UNITS: degrees Celsius
    SCALING FACTOR: 10
    DOM: A general domain comprised of the numeric characters (0-9), a plus sign (+), and a minus sign (-)
        +9999 = Missing.

FLD LEN: 1
    AVG_ RH_TEMP_QC quality code
    The code that indicates ISD's evaluation of the quality status of the average air temperature measured at
    the relative humidity instrument.
    DOM: A specific domain comprised of the numeric characters (0-9).
        1 = Passed all quality control checks
        3 = Failed all quality control checks
        9 = Missing

FLD LEN: 1

AVG_ RH_TEMP_FLAG quality code
The code that indicates the network's internal evaluation of the quality status of the average air temperature measured at the relative humidity instrument. Most users will find the preceding quality code **AVG_RH_TEMP_QC** to be the simplest and most useful quality indicator.
DOM: A specific domain comprised of the numeric characters (0-9).
    0 = Passed all quality control checks
    other – Did not pass all quality checks

FLD LEN: 4

AVG_RH average relative humidity
The average relative humidity measured at the relative humidity instrument.
MIN: 0000   MAX: 1000   UNITS: percent
SCALING FACTOR: 10
DOM: A general domain comprised of the numeric characters (0-9).
    9999 = Missing.

FLD LEN: 1

AVG_RH_QC quality code
The code that indicates ISD's evaluation of the quality status of the average relative humidity.
DOM: A specific domain comprised of the numeric characters (0-9).
    1 = Passed all quality control checks
    3 = Failed all quality control checks
    9 = Missing

FLD LEN: 1

AVG_RH_FLAG quality code
The code that indicates the network's internal evaluation of the quality status of the average relative humidity. Most users will find the preceding quality code **AVG_RH_QC** to be the simplest and most useful quality indicator.
DOM: A specific domain comprised of the numeric characters (0-9).
    0 = Passed all quality control checks
    other – Did not pass all quality checks

FLD LEN: 3

Hourly Relative Humidity/Temperature Section identifier
The identifier that indicates an hourly observation of relative humidity and temperature **measured at the relative humidity instrument**. This section appears in the last ISD record of the hour.
DOM: A specific domain comprised of the characters in the ASCII character set.
    CI1 An indicator of the following items:
        MIN_RH_TEMP hourly air temperature
        MIN_ RH_TEMP_QC quality code
        MIN_ RH_TEMP_FLAG quality code
        MAX_ RH_TEMP hourly air temperature
        MAX_ RH_TEMP_QC quality code
        MAX_ RH_TEMP_FLAG quality code
        STD_RH_TEMP hourly air temperature standard deviation
        STD_RH_TEMP_QC quality code
        STD_RH_TEMP_FLAG quality code
        STD_RH hourly relative humidity standard deviation
        STD_RH_QC quality code
        STD_RH_FLAG quality code

FLD LEN: 5

MIN_ RH_TEMP hourly air temperature
The minimum air temperature measured at the relative humidity instrument.
MIN: -9999   MAX: +9999   UNITS: degrees Celsius
SCALING FACTOR: 10
DOM: A general domain comprised of the numeric characters (0-9), a plus sign (+), and a minus sign (-)
    +9999 = Missing.

FLD LEN: 1

MIN_ **RH_TEMP_QC** quality code
The code that indicates ISD's evaluation of the quality status of the minimum hourly air temperature measured at the relative humidity instrument.
DOM: A specific domain comprised of the numeric characters (0-9).
  1 = Passed all quality control checks
  3 = Failed all quality control checks
  9 = Missing

FLD LEN: 1

MIN_ **RH_TEMP_FLAG** quality code
The code that indicates the network's internal evaluation of the quality status of the minimum hourly air temperature measured at the relative humidity instrument. Most users will find the preceding quality code
AVG_RH_TEMP_QC to be the simplest and most useful quality indicator.
DOM: A specific domain comprised of the numeric characters (0-9).
   0 = Passed all quality control checks
  other – Did not pass all quality checks

FLD LEN: 5

MAX_ **RH_TEMP** hourly air temperature
The maximum air temperature measured at the relative humidity instrument.
MIN: -9999   MAX: +9999   UNITS: degrees Celsius
SCALING FACTOR: 10
DOM: A general domain comprised of the numeric characters (0-9), a plus sign (+), and a minus sign (-)
  +9999 = Missing.

FLD LEN: 1

MAX_ **RH_TEMP_QC** quality code
The code that indicates ISD's evaluation of the quality status of the maximum hourly air temperature measured at the relative humidity instrument.
DOM: A specific domain comprised of the numeric characters (0-9).
  1 = Passed all quality control checks
  3 = Failed all quality control checks
  9 = Missing

FLD LEN: 1

MAX_ **RH_TEMP_FLAG** quality code
The code that indicates the network's internal evaluation of the quality status of the maximum hourly air temperature measured at the relative humidity instrument. Most users will find the preceding quality code
AVG_RH_TEMP_QC to be the simplest and most useful quality indicator.
DOM: A specific domain comprised of the numeric characters (0-9).
   0 = Passed all quality control checks
  other – Did not pass all quality checks

FLD LEN: 5

STD_ **RH_TEMP** hourly air temperature standard deviation
The standard deviation for the hourly air temperature measured at the relative humidity instrument.
MIN: 00000   MAX: 99999
SCALING FACTOR: 10
DOM: A general domain comprised of the numeric characters (0-9).
  99999 = Missing.

FLD LEN: 1

STD_ **RH_TEMP_QC** quality code
The code that indicates ISD's evaluation of the quality status of the standard deviation for the air temperature measured at the relative humidity instrument.
DOM: A specific domain comprised of the numeric characters (0-9).
  1 = Passed all quality control checks
  3 = Failed all quality control checks
  9 = Missing

FLD LEN: 1

STD_ RH_TEMP_FLAG quality code
The code that indicates the network's internal evaluation of the quality status of the standard deviation for the air temperature measured at the relative humidity instrument. Most users will find the preceding quality code **STD_ RH_TEMP_QC** to be the simplest and most useful quality indicator.
DOM: A specific domain comprised of the numeric characters (0-9).
      0 = Passed all quality control checks
      other – Did not pass all quality checks

FLD LEN: 5
STD_RH hourly relative humidity standard deviation
The hourly relative humidity standard deviation.
MIN: 00000   MAX: 99999
SCALING FACTOR: 10
DOM: A general domain comprised of the numeric characters (0-9).
      99999 = Missing.

FLD LEN: 1
STD_RH_QC quality code
The code that indicates ISD's evaluation of the quality status of the hourly relative humidity standard deviation.
DOM: A specific domain comprised of the numeric characters (0-9).
      1 = Passed all quality control checks
      3 = Failed all quality control checks
      9 = Missing

FLD LEN: 1
STD_RH_FLAG quality code
The code that indicates the network's internal evaluation of the quality status of the hourly relative humidity standard deviation. Most users will find the preceding quality code **STD_RH_QC** to be the simplest and most useful quality indicator.
DOM: A specific domain comprised of the numeric characters (0-9).
      0 = Passed all quality control checks
      other – Did not pass all quality checks

FLD LEN: 3
Hourly Battery Voltage Section identifier
The identifier that indicates an hourly observation of battery voltages. This section appears in the last ISD record of the hour.
DOM: A specific domain comprised of the characters in the ASCII character set.
      CN1 An indicator of the following items:
         BATVOL average voltage
         BATVOL_QC quality code
         BATVOL_FLAG quality code
         BATVOL_FL average voltage
         BATVOL_FL_QC quality code
         BATVOL_FL_FLAG quality code
         BATVOL_DL average voltage
         BATVOL_DL_QC quality code
         BATVOL_DL_FLAG quality code

FLD LEN: 4
BATVOL average voltage
The hourly average voltage for the batteries powering the sensors and the transmitter.
MIN: 0000   MAX: 9999   UNITS: volts
SCALING FACTOR: 10
DOM: A general domain comprised of the numeric characters (0-9).
      9999 = Missing.

FLD LEN: 1
BATVOL_QC quality code
The code that indicates ISD's evaluation of the quality status of the hourly average station battery voltage.
DOM: A specific domain comprised of the numeric characters (0-9).

1 = Passed all quality control checks
3 = Failed all quality control checks
9 = Missing

FLD LEN: 1

BATVOL_QC_FLAG quality code
A flag that indicates the network's internal evaluation of the quality status of the hourly average station battery voltage. Most users will find the preceding quality code **BATVOL_QC** to be the simplest and most useful quality indicator.
DOM: A specific domain comprised of the numeric characters (0-9)
0 = Passed all quality control checks
other – Did not pass all quality checks

FLD LEN: 4

BATVOL_FL average voltage
The voltage for the batteries powering the observing station while the station is transmitting ("full load").
MIN: 0000   MAX: 9999   UNITS: volts
SCALING FACTOR: 10
DOM: A general domain comprised of the numeric characters (0-9).
9999 = Missing.

FLD LEN: 1

BATVOL_FL_QC quality code
The code that indicates ISD's evaluation of the quality status of the battery voltage under full load.
DOM: A specific domain comprised of the numeric characters (0-9).
1 = Passed all quality control checks
3 = Failed all quality control checks
9 = Missing

FLD LEN: 1

BATVOL_FL_QC_FLAG quality code
A flag that indicates the network's internal evaluation of the quality status of battery voltage under full load. Most users will find the preceding quality code **BATVOL_FL_QC** to be the simplest and most useful quality indicator.
DOM: A specific domain comprised of the numeric characters (0-9)
0 = Passed all quality control checks
other – Did not pass all quality checks

FLD LEN: 4

BATVOL_DL average voltage
The voltage for the batteries powering the datalogger.
MIN: 0000   MAX: 9999   UNITS: volts
SCALING FACTOR: 10
DOM: A general domain comprised of the numeric characters (0-9).
9999 = Missing.

FLD LEN: 1

BATVOL_DL_QC quality code
The code that indicates ISD's evaluation of the quality status of the datalogger battery voltage.
DOM: A specific domain comprised of the numeric characters (0-9).
1 = Passed all quality control checks
3 = Failed all quality control checks
9 = Missing

FLD LEN: 1

BATVOL_DL_QC_FLAG quality code
A flag that indicates the network's internal evaluation of the quality status of the datalogger battery voltage. Most users will find the preceding quality code **BATVOL_DL_QC** to be the simplest and most useful quality indicator.
DOM: A specific domain comprised of the numeric characters (0-9)
0 = Passed all quality control checks
other – Did not pass all quality checks

FLD LEN: 3

Hourly Diagnostic Section identifier
The identifier that indicates an hourly observation of miscellaneous diagnostic data. This section appears in the last ISD record of the hour
DOM: A specific domain comprised of the characters in the ASCII character set.

      CN2 An indicator of the following items:
         TPANEL equipment temperature
         TPANEL_QC quality code
         TPANEL_FLAG quality code
         TINLET_MAX equipment temperature
         TINLET_MAX_QC quality code
         TINLET_MAX_FLAG quality code
         OPENDOOR_TM equipment status
         OPENDOOR_TM_QC quality code
         OPENDOOR_TM_FLAG quality code

FLD LEN: 5
    TPANEL equipment temperature
    The temperature of the datalogger panel.
    MIN: -9999   MAX: +9999   UNITS: degrees Celsius
    SCALING FACTOR: 10
    DOM: A general domain comprised of the numeric characters (0-9), a plus sign (+), and a minus sign (-).
        +9999 = Missing.

FLD LEN: 1
    TPANEL_QC quality code
    The code that indicates ISD's evaluation of the quality status of the datalogger panel temperature.
    DOM: A specific domain comprised of the numeric characters (0-9).
        1 = Passed all quality control checks
        3 = Failed all quality control checks
        9 = Missing

FLD LEN: 1
    TPANEL_FLAG quality code
    A flag that indicates the network's internal evaluation of the quality status of the datalogger panel temperature. Most users will find the preceding quality code **TPANEL_QC** to be the simplest and most useful quality indicator.
    DOM: A specific domain comprised of the numeric characters (0-9)
        0 = Passed all quality control checks
        other – Did not pass all quality checks

FLD LEN: 5
    TINLET_MAX equipment temperature
    The maximum temperature of the Geonor inlet for the hour.
    MIN: -9999   MAX: +9999   UNITS: degrees Celsius
    SCALING FACTOR: 10
    DOM: A general domain comprised of the numeric characters (0-9), a plus sign (+), and a minus sign (-).
        +9999 = Missing.

FLD LEN: 1
    TINLET_MAX_QC quality code
    The code that indicates ISD's evaluation of the quality status of the maximum temperature of the Geonor inlet for the hour.
    DOM: A specific domain comprised of the numeric characters (0-9).
        1 = Passed all quality control checks
        3 = Failed all quality control checks
        9 = Missing

FLD LEN: 1
    TINLET_MAX_FLAG quality code
    A flag that indicates the network's internal evaluation of the quality status of the maximum temperature of the Geonor inlet for the hour. Most users will find the preceding quality code **TINLET_QC** to be the simplest and most useful quality indicator.
    DOM: A specific domain comprised of the numeric characters (0-9)
        0 = Passed all quality control checks
        other – Did not pass all quality checks

FLD LEN: 2

OPENDOOR_TM equipment status
The time in minutes the datalogger door was open during the hour.
MIN: 00   MAX: 60   UNITS: minutes
DOM: A general domain comprised of the numeric characters (0-9).
        99 = Missing.

FLD LEN: 1

OPENDOOR_TM_QC quality code
The code that indicates ISD's evaluation of the quality status of the time the datalogger door was open.
DOM: A specific domain comprised of the numeric characters (0-9).
        1 = Passed all quality control checks
        3 = Failed all quality control checks
        9 = Missing

FLD LEN: 1

OPENDOOR_TM_FLAG quality code
A flag that indicates the network's internal evaluation of the quality status of the time the datalogger door was open.
Most users will find the preceding quality code **OPENDOOR_TM_QC** to be the simplest and most useful quality indicator.
DOM: A specific domain comprised of the numeric characters (0-9)
        0 = Passed all quality control checks
        other – Did not pass all quality checks

FLD LEN: 3

Secondary Hourly Diagnostic Section identifier
The identifier that indicates an hourly observation of miscellaneous diagnostic data. This section appears in the last ISD record of the hour
DOM: A specific domain comprised of the characters in the ASCII character set.
        CN3 An indicator of the following items:
                REFRESAVG resistance
                REFRESAVG_QC quality code
                REFRESAVG_FLAG quality code
                DSIGNATURE identifier
                DSIGNATURE_QC quality code
                DSIGNATURE_FLAG quality code

FLD LEN: 6

REFRESAVG resistance
The reference resistor average.
MIN: 000000   MAX: 999999   UNITS: ohms
SCALING FACTOR: 10
DOM: A general domain comprised of the numeric characters (0-9).
        999999 = Missing.

FLD LEN: 1

REFRESAVG_QC quality code
The code that indicates ISD's evaluation of the quality status of the datalogger reference resistor average.
DOM: A specific domain comprised of the numeric characters (0-9).
        1 = Passed all quality control checks
        3 = Failed all quality control checks
        9 = Missing

FLD LEN: 1

REFRESAVG_FLAG quality code
A flag that indicates the network's internal evaluation of the quality status of the reference resistor average. Most users will find the preceding quality code **REFRESAVG_QC** to be the simplest and most useful quality indicator.
DOM: A specific domain comprised of the numeric characters (0-9)
        0 = Passed all quality control checks
        other – Did not pass all quality checks

FLD LEN: 6

DSIGNATURE identifier
A signature generated by the datalogger which changes if there is a content or sequence change in the datalogger programs.
MIN: 000000   MAX: 999999
SCALING FACTOR: 10
DOM: A general domain comprised of the numeric characters (0-9).
   999999 = Missing.

FLD LEN: 1

DSIGNATURE_QC quality code
The code that indicates ISD's evaluation of the quality status of the datalogger signature.
DOM: A specific domain comprised of the numeric characters (0-9).
   1 = Passed all quality control checks
   3 = Failed all quality control checks
   9 = Missing

FLD LEN: 1

DSIGNATURE_FLAG quality code
A flag that indicates the network's internal evaluation of the quality status of the datalogger signature. Most users will find the preceding quality code **DSIGNATURE_QC** to be the simplest and most useful quality indicator.
DOM: A specific domain comprised of the numeric characters (0-9)
   0 = Passed all quality control checks
   other – Did not pass all quality checks

FLD LEN: 3

Secondary Hourly Diagnostic Section identifier
The identifier that indicates another hourly observation of miscellaneous diagnostic data. This section appears in the last ISD record of the hour
DOM: A specific domain comprised of the characters in the ASCII character set.
   CN4 An indicator of the following items:
      LIQUID-PRECIPITATION gauge heater flag bit field
      LIQUID-PRECIPITATION gauge flag quality code
      LIQUID-PRECIPITATION gauge flag quality code
      DOORFLAG field
      DOORFLAG quality code
      DOORFLAG quality code
      FORTRANS wattage
      FORTRANS wattage quality code
      FORTRANS wattage quality code
      REFLTRANS wattage
      REFLTRANS wattage quality code
      REFLTRANS wattage quality code

FLD LEN: 1

LIQUID-PRECIPITATION gauge heater flag bit field
The code that indicates the gauge heater flag bit field setting.
DOM: A specific domain comprised of the numeric characters (0-1).
         0 = Off
         1 = On
         9 = Missing
         MIN: 0   MAX: 9

FLD LEN: 1

LIQUID-PRECIPITATION gauge heater flag quality code
The code that indicates ISD's evaluation of the quality status of the gauge heater flag code.
DOM: A specific domain comprised of the numeric characters (0-9).
   1 = Passed all quality control checks
   3 = Failed all quality control checks
   9 = Missing

FLD LEN: 1

LIQUID-PRECIPITATION gauge heater flag quality code
A flag that indicates the network's internal evaluation of the quality status of the gauge heater flag code. Most users
will find the preceding quality code to be the simplest and most useful quality indicator.
DOM: A specific domain comprised of the numeric characters (0-9)
　　　0 = Passed all quality control checks
　　　other – Did not pass all quality checks

FLD LEN: 1

DOORFLAG field
The code that indicates the datalogger door bit field setting.
DOM: A specific domain comprised of the numeric characters (0-1).
　　　　0 = Off
　　　　1 = On
　　　　9 = Missing
　　　　 MIN: 0   MAX: 9

FLD LEN: 1

DOORFLAG field quality code
The code that indicates ISD's evaluation of the quality status of the datalogger door bit field setting.
DOM: A specific domain comprised of the numeric characters (0-9).
　　　1 = Passed all quality control checks
　　　3 = Failed all quality control checks
　　　9 = Missing

FLD LEN: 1

DOORFLAG field quality code
A flag that indicates the network's internal evaluation of the quality status of the datalogger door bit field setting code. Most
users will find the preceding quality code to be the simplest and most useful quality indicator.
DOM: A specific domain comprised of the numeric characters (0-9)
　　　0 = Passed all quality control checks
　　　other – Did not pass all quality checks

FLD LEN: 3

FORTRANS wattage
Forward transmitter RF power in tenths of watts
MIN: 000   MAX: 500   UNITS: Watts
SCALING FACTOR: 10
DOM: A general domain comprised of the numeric characters (0-9).
　　　999 = Missing

FLD LEN: 1

FORTRANS wattage quality code
The code that indicates ISD's evaluation of the quality status of the forward transmitter RF power.
DOM: A specific domain comprised of the numeric characters (0-9).
　　　1 = Passed all quality control checks
　　　3 = Failed all quality control checks
　　　9 = Missing

FLD LEN: 1

FORTRANS wattage quality code
A flag that indicates the network's internal evaluation of the quality status of the forward transmitter RF power. Most users
will find the preceding quality code to be the simplest and most useful quality indicator.
DOM: A specific domain comprised of the numeric characters (0-9)
　　　0 = Passed all quality control checks
　　　other – Did not pass all quality checks

FLD LEN: 3

REFLTRANS wattage
Reflected transmitter RF power in tenths of watts
MIN: 000   MAX: 500   UNITS: Watts
SCALING FACTOR: 10
DOM: A general domain comprised of the numeric characters (0-9).
　　　999 = Missing

FLD LEN: 1

REFLTRANS wattage quality code
The code that indicates ISD's evaluation of the quality status of the reflected transmitter RF power.
DOM: A specific domain comprised of the numeric characters (0-9).
  1 = Passed all quality control checks
  3 = Failed all quality control checks
  9 = Missing

FLD LEN: 1

REFLTRANS wattage quality code
A flag that indicates the network's internal evaluation of the quality status of the reflected transmitter RF power. Most users will find the preceding quality code to be the simplest and most useful quality indicator.
DOM: A specific domain comprised of the numeric characters (0-9)
  0 = Passed all quality control checks
  other – Did not pass all quality checks

FLD LEN: 3

CRN Control Section identifier
The identifier that indicates an occurrence of datalogger program information.
DOM: A specific domain comprised of the characters in the ASCII character set.
  CR1 An indicator of the following items:
    DL_VN identifier
    DL_VN _QC quality code
    DL_VN_FLAG quality code

FLD LEN: 5

DL_VN identifier
The version number which uniquely identifies the datalogger program that produced the CRN observation for this hour. This section appears once in every ISD record.
MIN: 00000   MAX: 99999
SCALING FACTOR: 1000
DOM: A general domain comprised of the numeric characters (0-9).

FLD LEN: 1

DL_VN_QC quality code
The code that indicates ISD's evaluation of the quality status of the reported datalogger program version number.
DOM: A specific domain comprised of the numeric characters (0-9).
  1 = Passed all quality control checks
  3 = Failed all quality control checks
  9 = Missing

FLD LEN: 1

DL_VN_FLAG quality code
A flag that indicates the network's internal evaluation of the quality status of the reported datalogger program version number.   Most users will find the preceding quality code **DL_VN_QC** to be the simplest and most useful quality indicator.
DOM: A specific domain comprised of the numeric characters (0-9).
  0 = Passed all quality control checks
  other – Did not pass all quality checks

FLD LEN: 3

Subhourly Temperature Section identifier
The identifier that indicates one of three concurrent air temperature observations made by co-located sensors. Three instances of this section (corresponding to the three temperature sensors) appear in each of the twelve 5-minute data stream records. In the 15-minute data stream, the three instances of this section appear in the last record of the hour, and contain the average temperature for the last 5 minutes of the hour.
DOM: A specific domain comprised of the characters in the ASCII character set.
  CT1, CT2, CT3 Three indicators preceding three copies of the following items:

AVG_TEMP air temperature
AVG_TEMP_QC quality code
AVG_TEMP_FLAG quality code

FLD LEN: 5

AVG_TEMP air temperature
The average air temperature for a 5-minute period.
MIN: -9999   MAX: +9999   UNITS: degrees Celsius
SCALING FACTOR: 10
DOM: A general domain comprised of the numeric characters (0-9), a plus sign (+), and a minus
    sign (-).
    +9999 = Missing.

FLD LEN: 1

AVG_TEMP_QC quality code
The code that indicates ISD's evaluation of the quality status of the 5-minute air temperature average.
DOM: A specific domain comprised of the numeric characters (0-9).
    1 = Passed all quality control checks
    3 = Failed all quality control checks
    9 = Missing

FLD LEN: 1

AVG_TEMP_FLAG quality code
A flag that indicates the network's internal evaluation of the quality status of the 5-minute air temperature average.
Most users will find the preceding quality code **AVG_TEMP_QC** to be the simplest and most useful quality
indicator.
DOM: A specific domain comprised of the numeric characters (0-9)
0 = Passed all quality control checks
other – Did not pass all quality checks

FLD LEN: 3

Hourly Temperature Section identifier
The identifier that indicates one of three concurrent air temperature observations made by co-located sensors.
Three instances of this section (corresponding to the three temperature sensors) appear in the last ISD record
of the hour.
DOM: A specific domain comprised of the characters in the ASCII character set.
    CU1, CU2, CU3 Three indicators preceding three copies of the following items:
        TEMP_AVG air temperature
        TEMP_AVG_QC quality code
        TEMP_AVG_FLAG quality code
        TEMP_STD air temperature standard deviation
        TEMP_STD_QC quality code
        TEMP_STD_FLAG quality code

FLD LEN: 5

TEMP_AVG air temperature
The average air temperature for an hour.
MIN: -9999   MAX: +9999   UNITS: degrees Celsius
SCALING FACTOR: 10
DOM: A general domain comprised of the numeric characters (0-9), a plus sign (+), and a minus sign (-).
    +9999 = Missing.

FLD LEN: 1

TEMP_AVG_QC quality code
The code that indicates ISD's evaluation of the quality status of the hourly temperature average.
DOM: A specific domain comprised of the numeric characters (0-9).
    1 = Passed all quality control checks
    3 = Failed all quality control checks
    9 = Missing

FLD LEN: 1

TEMP_AVG_FLAG quality code

A flag that indicates the network's internal evaluation of the quality status the hourly temperature average. Most users will find the preceding quality code **TEMP_AVG_QC** to be the simplest and most useful quality indicator.
DOM: A specific domain comprised of the numeric characters (0-9)
  0 = Passed all quality control checks
  other – Did not pass all quality checks

FLD LEN: 4
 TEMP_STD air temperature standard deviation
 The temperature standard deviation.
 MIN: 0000 MAX: 9999
 SCALING FACTOR: 10
 DOM: A general domain comprised of the numeric characters (0-9).
  9999 = Missing.

FLD LEN: 1
 TEMP_STD_QC quality code
 The code that indicates ISD's evaluation of the quality status of the hourly temperature standard deviation.
 DOM: A specific domain comprised of the numeric characters (0-9).
  1 = Passed all quality control checks
  3 = Failed all quality control checks
  9 = Missing

FLD LEN: 1
 TEMP_STD_FLAG quality code
 A flag that indicates the network's internal evaluation of the quality status the hourly temperature standard deviation. Most users will find the preceding quality code **TEMP_STD_QC** to be the simplest and most useful quality indicator.
 DOM: A specific domain comprised of the numeric characters (0-9)
  0 = Passed all quality control checks
  other – Did not pass all quality checks

FLD LEN: 3
 Hourly Temperature Extreme Section identifier
 The identifier that indicates one of three concurrent air temperature observations made by co-located sensors. Three instances of this section (corresponding to the three temperature sensors) appear in the last ISD record of the hour.
 DOM: A specific domain comprised of the characters in the ASCII character set.
  CV1, CV2, CV3 Three indicators preceding three copies of the following items:
   TEMP_MIN minimum air temperature
   TEMP_MIN_QC quality code
   TEMP_MIN_FLAG quality code
   TEMP_MIN_TIME time of minimum air temperature
   TEMP_MIN_TIME_QC quality code
   TEMP_MIN_TIME_FLAG quality code
   TEMP_MAX maximum air temperature
   TEMP_MAX_QC quality code
   TEMP_MAX_FLAG quality code
   TEMP_MAX_TIME time of maximum air temperature
   TEMP_MAX_TIME_QC quality code
   TEMP_MAX_TIME_FLAG quality code

FLD LEN: 5
 TEMP_MIN minimum air temperature
 The minimum air temperature for the hour.
 MIN: -9999 MAX: +9999 UNITS: degrees Celsius
 SCALING FACTOR: 10
 DOM: A general domain comprised of the numeric characters (0-9), a plus sign (+), and a minus sign (-).
  +9999 = Missing.

FLD LEN: 1
 TEMP_MIN_QC quality code
 The code that indicates ISD's evaluation of the quality status of the minimum hourly temperature.

DOM: A specific domain comprised of the numeric characters (0-9).
> 1 = Passed all quality control checks
> 3 = Failed all quality control checks
> 9 = Missing

FLD LEN: 1

TEMP_MIN_FLAG quality code
A flag that indicates the network's internal evaluation of the quality status the minimum hourly. Most users will find the preceding quality code **TEMP_MIN_QC** to be the simplest and most useful quality indicator.
DOM: A specific domain comprised of the numeric characters (0-9)
> 0 = Passed all quality control checks
> other – Did not pass all quality checks

FLD LEN: 4

TEMP_MIN_TIME time of minimum air temperature
The time at which the minimum temperature occurred, in z-time HHMM format
MIN: 0000   MAX: 2359
DOM: A specific domain comprised of the numeric characters (0-9)
> 9999 = Missing.

FLD LEN: 1

TEMP_MIN_TIME_QC quality code
The code that indicates ISD's evaluation of the quality status of the time of minimum hourly temperature.
DOM: A specific domain comprised of the numeric characters (0-9).
> 1 = Passed all quality control checks
> 3 = Failed all quality control checks
> 9 = Missing

FLD LEN: 1

TEMP_MIN_TIME_FLAG quality code
A flag that indicates the network's internal evaluation of the quality status of the time of minimum hourly temperature. Most users will find the preceding quality code **TEMP_MIN_TIME_QC** to be the simplest and most useful quality indicator.
DOM: A specific domain comprised of the numeric characters (0-9)
> 0 = Passed all quality control checks
> other – Did not pass all quality checks

FLD LEN: 5

TEMP_MAX maximum air temperature
The maximum air temperature for an hour.
MIN: -9999   MAX: +9999   UNITS: degrees Celsius
SCALING FACTOR: 10
DOM: A general domain comprised of the numeric characters (0-9), a plus sign (+), and a minus
> sign (-).
> +9999 = Missing.

FLD LEN: 1

TEMP_MAX_QC quality code
The code that indicates ISD's evaluation of the quality status of the maximum hourly.
DOM: A specific domain comprised of the numeric characters (0-9).
> 1 = Passed all quality control checks
> 3 = Failed all quality control checks
> 9 = Missing

FLD LEN: 1

TEMP_MAX_FLAG quality code
A flag that indicates the network's internal evaluation of the quality status the maximum hourly. Most users will find the preceding quality code **TEMP_MAX_QC** to be the simplest and most useful quality indicator.
DOM: A specific domain comprised of the numeric characters (0-9)
> 0 = Passed all quality control checks
> other – Did not pass all quality checks

FLD LEN: 4

TEMP_MAX_TIME time of maximum air temperature
The time at which the maximum temperature occurred, in z-time HHMM format
MIN: 0000   MAX: 2359
DOM: A specific domain comprised of the numeric characters (0-9)
  9999 = Missing.

FLD LEN: 1
  TEMP_MAX_TIME_QC quality code
  The code that indicates ISD's evaluation of the quality status of the time of maximum hourly temperature.
  DOM: A specific domain comprised of the numeric characters (0-9).
    1 = Passed all quality control checks
    3 = Failed all quality control checks
    9 = Missing

FLD LEN: 1
  TEMP_MAX_TIME_FLAG quality code
  A flag that indicates the network's internal evaluation of the quality status of the time of maximum hourly temperature.
  Most users will find the preceding quality code **TEMP_MAX_TIME_QC** to be the simplest and most useful quality indicator.
  DOM: A specific domain comprised of the numeric characters (0-9)
    0 = Passed all quality control checks
    other – Did not pass all quality checks

FLD LEN: 3
  Subhourly Wetness Section identifier
  The identifier that indicates a subhourly wetness sensor observation.
  DOM: A specific domain comprised of the characters in the ASCII character set.
    CW1 An indicator of the following items:
      WET1 wetness indicator
      WET1_QC quality code
      WET1_FLAG quality code
      WET2 wetness indicator
      WET2_QC quality code
      WET2_FLAG quality code

FLD LEN: 5
  WET1 wetness indicator
  Wetness sensor channel 1 value indicating the existence or non-existence of moisture on the sensor.
. MIN: 00000   MAX: 99999
  SCALING FACTOR: 10
  DOM: A general domain comprised of the numeric characters (0-9).
    99999 = Missing.

FLD LEN: 1
  WET1_QC quality code
  The code that indicates ISD's evaluation of the quality status of the wetness sensor channel 1 value.
  DOM: A specific domain comprised of the numeric characters (0-9).
    1 = Passed all quality control checks
    3 = Failed all quality control checks
    9 = Missing

FLD LEN: 1
  WET1_FLAG quality code
  The code that indicates ISD's evaluation of the quality status of the wetness sensor channel 1 value.
  Most users will find the preceding quality code **WET1_QC** to be the simplest and most useful quality indicator.
  DOM: A specific domain comprised of the numeric characters (0-9)
    0 = Passed all quality control checks
    other – Did not pass all quality checks

FLD LEN: 5
  WET2 wetness indicator

Wetness sensor channel 2 value indicating the existence or non-existence of moisture on the sensor.
.   MIN: 00000   MAX: 99999
SCALING FACTOR: 10
DOM: A general domain comprised of the numeric characters (0-9).
        99999 = Missing.

FLD LEN: 1

    WET2_QC quality code
The code that indicates ISD's evaluation of the quality status of the wetness sensor channel 2 value.
DOM: A specific domain comprised of the numeric characters (0-9).
        1 = Passed all quality control checks
        3 = Failed all quality control checks
        9 = Missing

FLD LEN: 1

    WET2_FLAG quality code
The code that indicates ISD's evaluation of the quality status of the wetness sensor channel 2 value.
Most users will find the preceding quality code **WET2_QC** to be the simplest and most useful quality indicator.
DOM: A specific domain comprised of the numeric characters (0-9)
        0 = Passed all quality control checks
        other – Did not pass all quality checks

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FLD LEN: 3

    Hourly Geonor Vibrating Wire Summary Section identifier
The identifier that indicates the presence of summary data for three concurrent precipitation observations made
by co-located sensors. It appears in the last ISD record of the hour for the 15-minute data stream only. This
section is not present for the 5-minute data stream.
  Note: This section contains the frequencies which are the fundamental output from a vibrating wire transducer. They were
  transmitted as part of datastream versions which held 15 minute precipitation values. When the 5 minute datastream was
  defined, the decision was made to transmit engineering units such as millimeters which could be reversed to the
  fundamental output values using the formulas and coefficients found in the metadata.
DOM: A specific domain comprised of the characters in the ASCII character set.
        CX1, CX2, CX3 An indicator of the following items:
            PRECIP total hourly precipitation
            PRECIP_QC quality code
            PRECIP_FLAG quality code
            FREQ_AVG hourly average frequency
            FREQ_AVG_QC quality code
            FREQ_AVG_FLAG
            FREQ_MIN hourly minimum frequency
            FREQ_MIN_QC quality code
            FREQ_MIN_FLAG quality code
            FREQ_MAX hourly maximum frequency
            FREQ_MAX_QC quality code
            FREQ_MAX_FLAG quality code

FLD LEN: 6

    PRECIP total hourly precipitation
The total hourly precipitation amount for the sensor.
MIN: -99999   MAX: +99999   UNITS: millimeters
SCALING FACTOR: 10
DOM: A general domain comprised of the numeric characters (0-9), a plus sign (+), and a minus sign (-)
        +99999 = Missing.

FLD LEN: 1

    PRECIP_QC quality code
The code that indicates ISD's evaluation of the quality status of the hourly precipitation amount.
DOM: A specific domain comprised of the numeric characters (0-9).
        1 = Passed all quality control checks
        3 = Failed all quality control checks
        9 = Missing

FLD LEN: 1

    PRECIP_FLAG quality code

    The code that indicates the network's internal evaluation of the quality status of the hourly precipitation amount. Most users will find the preceding quality code **PRECIP_QC** to be the simplest and most useful quality indicator.

    DOM: A specific domain comprised of the numeric characters (0-9).

        0 = Passed all quality control checks

        other – Did not pass all quality checks

FLD LEN: 4

    FREQ_AVG hourly average frequency

    The hourly average frequency for the sensor.

    MIN: 0000   MAX: 9999   UNITS: Hertz

    DOM: A general domain comprised of the numeric characters (0-9).

        9999 = Missing.

FLD LEN: 1

    FREQ_AVG_QC quality code

    The code that indicates ISD's evaluation of the quality status of the hourly average frequency.

    DOM: A specific domain comprised of the numeric characters (0-9).

        1 = Passed all quality control checks

        3 = Failed all quality control checks

        9 = Missing

FLD LEN: 1

    FREQ_AVG_FLAG quality code

    The code that indicates the network's internal evaluation of the quality status of the hourly average frequency. Most users will find the preceding quality code **FREQ_AVG_QC** to be the simplest and most useful quality indicator.

    DOM: A specific domain comprised of the numeric characters (0-9).

        0 = Passed all quality control checks

        other – Did not pass all quality checks

FLD LEN: 4

    FREQ_MIN hourly minimum frequency

    The minimum frequency during the hour for the sensor.

    MIN: 0000   MAX: 9999   UNITS: Hertz

    DOM: A general domain comprised of the numeric characters (0-9).

        9999 = Missing.

FLD LEN: 1

    FREQ_MIN_QC quality code

    The code that indicates ISD's evaluation of the quality status of the hourly minimum frequency.

    DOM: A specific domain comprised of the numeric characters (0-9).

        1 = Passed all quality control checks

        3 = Failed all quality control checks

        9 = Missing

FLD LEN: 1

    FREQ_MIN_FLAG quality code

    The code that indicates the network's internal evaluation of the quality status of the hourly minimum frequency. Most users will find the preceding quality code **FREQ_MIN_QC** to be the simplest and most useful quality indicator.

    DOM: A specific domain comprised of the numeric characters (0-9).

        0 = Passed all quality control checks

        other – Did not pass all quality checks

FLD LEN: 4

    FREQ_MAX hourly maximum frequency

    The minimum frequency during the hour for the sensor.

    MIN: 0000   MAX: 9999   UNITS: Hertz

    DOM: A general domain comprised of the numeric characters (0-9).

        9999 = Missing.

FLD LEN: 1

FREQ_MAX_QC quality code
The code that indicates ISD's evaluation of the quality status of the hourly maximum frequency.
DOM: A specific domain comprised of the numeric characters (0-9).
      1 = Passed all quality control checks
      3 = Failed all quality control checks
      9 = Missing

FLD LEN: 1
      FREQ_MAX_FLAG quality code
      The code that indicates the network's internal evaluation of the quality status of the hourly maximum frequency. Most users will find the preceding quality code **FREQ_MAX_QC** to be the simplest and most useful quality indicator.
      DOM: A specific domain comprised of the numeric characters (0-9).
          0 = Passed all quality control checks
          other – Did not pass all quality checks

Network Metadata

FLD LEN: 3
      US-NETWORK-METADATA identifier
      The identifier that indicates the occurrence of US Network metadata, used in NCDC data processing.
      DOM: A specific domain comprised of the ASCII characters.
          CO1 An indicator of the following item:
             NETWORK-METADATA climate division number
             NETWORK-METADATA UTC-LST time conversion

FLD LEN: 2
      NETWORK-METADATA climate division number
      The climate division number, for this station, within the US state that it resides.
      MIN: 00   MAX: 09   UNITS: N/A
      SCALING FACTOR: 1
      DOM: A general domain comprised of the characters in the ASCII character set.
          99 = Missing

FLD LEN: 3
      NETWORK-METADATA UTC-LST time conversion
      The UTC to LST time conversion for this station.
      MIN: -12   MAX: +12   UNITS: N/A
      SCALING FACTOR: 1
      DOM: A general domain comprised of the characters in the ASCII character set.
          +99 = Missing

FLD LEN: 3
      US-COOPERATIVE-NETWORK-ELEMENT-TIME-OFFSET identifier
      The identifier that indicates a specified element's observation time differs from the time listed in "Control Section".
      DOM: A specific domain comprised of the ASCII characters.
          CO2 - CO9 An indicator of up to 8 repeating fields of the following item:
             COOPERATIVE-NETWORK-ELEMENT-ID
             COOPERATIVE-NETWORK-TIME-OFFSET

FLD LEN: 3
      COOPERATIVE-NETWORK-ELEMENT-ID
      The element identifier to be offset, based on the identifier as shown in this document.
      DOM: A general domain comprised of the characters in the ASCII character set.
          99 = Missing

FLD LEN: 5
      COOPERATIVE-NETWORK-TIME-OFFSET

The offset in hours. To obtain the actual observation time of the element/parameter indicated, add the value in this field to the date-time value in the "Control Section."
MIN: -9999   MAX: +9998   UNITS: Hours
SCALING FACTOR: 10
DOM: A general domain comprised of the characters in the ASCII character set.
        +9999 = Missing

Runway Visual Range Data

FLD LEN: 3
        RUNWAY-VISUAL-RANGE-OBSERVATION identifier
        The identifier that indicates the occurrence of a runway visibility report.
        DOM: A specific domain comprised of the ASCII characters.
                ED1 An indicator of the following items:
                        RUNWAY-VISUAL-RANGE-OBSERVATION direction angle
                        RUNWAY-VISUAL-RANGE-OBSERVATION runway designator code
                        RUNWAY-VISUAL-RANGE-OBSERVATION visibility dimension
                        RUNWAY-VISUAL-RANGE-OBSERVATION quality code

FLD LEN: 2
        RUNWAY-VISUAL-RANGE-OBSERVATION direction angle
        The angle as measured from magnetic north to the runway along which the
        visibility is observed.
        MIN: 01   MAX: 36   UNITS: Tens of degrees
        SCALING FACTOR: 1/10
        DOM: A general domain comprised of the characters in the ASCII character set.
                99 = Missing

FLD LEN: 1
        RUNWAY-VISUAL-RANGE-OBSERVATION runway designator code
        The code that denotes the left, right or center runway as the one to which the
        visibility applies.
        DOM: A specific domain comprised of the ASCII characters:
                L = left
                C = center
                R = right
                U = unknown
                9 = missing

FLD LEN: 4
        RUNWAY-VISUAL-RANGE-OBSERVATION visibility dimension
        The dimension of the horizontal distance that can be seen along the runway.
        MIN: 0000   MAX: 5000   UNITS: meters
        DOM: A general domain comprised of the ASCII characters 0-9.
                9999 = Missing

FLD LEN: 1
        RUNWAY-VISUAL-RANGE-OBSERVATION quality code
        The code that denotes a quality status of the reported RUNWAY-VISUAL-RANGE-OBSERVATION.
        DOM: A specific domain comprised of the characters in the ASCII character set.
                0 = Passed gross limits check
                1 = Passed all quality control checks
                2 = Suspect
                3 = Erroneous
                9 = Passed gross limits check if element is present

Cloud and Solar Data

FLD LEN: 3

    SKY-COVER-LAYER identifier
    The identifier that represents a SKY-COVER-LAYER.
    DOM: A specific domain comprised of the characters in the ASCII character set.
         GA1-GA6   An indicator of up to 6 repeating fields of the following items:
                SKY-COVER-LAYER coverage code
                SKY-COVER-LAYER coverage quality code
                SKY-COVER-LAYER base height dimension
                SKY-COVER-LAYER base height quality code
                SKY-COVER-LAYER cloud type code
                SKY-COVER-LAYER cloud type quality code

FLD LEN: 2

    SKY-COVER-LAYER coverage code
    The code that denotes the fraction of the total celestial dome covered by a SKY-COVER-LAYER.
    Note: This is for a discrete cloud layer, as opposed to the cloud later summation data in the GD1-GD6 section.
    DOM: A specific domain comprised of the characters in the ASCII character set.
        00: None, SKC or CLR
        01: One okta - 1/10 or less but not zero
        02: Two oktas - 2/10 - 3/10, or FEW
        03: Three oktas - 4/10
        04: Four oktas - 5/10, or SCT
        05: Five oktas - 6/10
        06: Six oktas - 7/10 - 8/10
        07: Seven oktas - 9/10 or more but not 10/10, or BKN
        08: Eight oktas - 10/10, or OVC
        09: Sky obscured, or cloud amount cannot be estimated
        10: Partial obscuration
        99: Missing

FLD LEN: 1

    SKY-COVER-LAYER coverage quality code
    The code that denotes a quality status of the reported SKY-COVER-LAYER coverage.
    DOM: A specific domain comprised of the characters in the ASCII character set.
        0 = Passed gross limits check
        1 = Passed all quality control checks
        2 = Suspect
        3 = Erroneous
        9 = Passed gross limits check if element is present

FLD LEN: 6

    SKY-COVER-LAYER base height dimension
    The height relative to a VERTICAL-REFERENCE-DATUM of the lowest surface of a cloud.
    MIN: -00400   MAX: +35000   UNITS: Meters
    SCALING FACTOR: 1
    DOM: A general domain comprised of the numeric characters (0-9).
        +99999 = Missing

FLD LEN: 1

    SKY-COVER-LAYER base height quality code
    The code that denotes a quality status of the reported SKY-COVER-LAYER base height.
    DOM: A specific domain comprised of the characters in the ASCII character set.
        0 = Passed gross limits check
        1 = Passed all quality control checks
        2 = Suspect
        3 = Erroneous
        4 = Passed gross limits check , from DSI-3280
        5 = Passed all quality control checks, from DSI-3280
        6 = Suspect, from DSI-3280
        7 = Erroneous, from DSI-3280
        9 = Passed gross limits check if element is present

FLD LEN: 2

SKY-COVER-LAYER cloud type code
The code that denotes the classification of the clouds that comprise a SKY-COVER-LAYER.
DOM: A specific domain comprised of the characters in the ASCII character set.
>00: Cirrus (Ci)
>01: Cirrocumulus (Cc)
>02: Cirrostratus (Cs)
>03: Altocumulus (Ac)
>04: Altostratus (As)
>05: Nimbostratus (Ns)
>06: Stratocumulus (Sc)
>07: Stratus (St)
>08: Cumulus (Cu)
>09: Cumulonimbus (Cb)
>10: Cloud not visible owing to darkness, fog, duststorm, sandstorm, or other analogous
>   phenomena / sky obscured
>11: Not used
>12: Towering Cumulus (Tcu)
>13: Stratus fractus (Stfra)
>14: Stratocumulus Lenticular (Scsl)
>15: Cumulus Fractus (Cufra)
>16: Cumulonimbus Mammatus (Cbmam)
>17: Altocumulus Lenticular (Acsl)
>18: Altocumulus Castellanus (Accas)
>19: Altocumulus Mammatus (Acmam)
>20: Cirrocumulus Lenticular (Ccsl)
>21: Cirrus and/or Cirrocumulus
>22: Stratus and/or Fracto-stratus
>23: Cumulus and/or Fracto-cumulus
>99: Missing

FLD LEN: 1

SKY-COVER-LAYER cloud type quality code
The code that denotes a quality status of the reported SKY-COVER-LAYER cloud type.
DOM: A specific domain comprised of the characters in the ASCII character set.
>0 = Passed gross limits check
>1 = Passed all quality control checks
>2 = Suspect
>3 = Erroneous
>4 = Passed gross limits check , from DSI-3280
>5 = Passed all quality control checks, from DSI-3280
>6 = Suspect, from DSI-3280
>7 = Erroneous, from DSI-3280
>9 = Passed gross limits check if element is present

FLD LEN: 3

SKY-COVER-SUMMATION-STATE identifier
The identifier that denotes the availability of a SKY-COVER-SUMMATION-STATE.
DOM: A specific domain comprised of the ASCII characters.
>**GD1 - GD6** An indicator of up to 6 repeating fields of the following items:
>>SKY-COVER-SUMMATION-STATE coverage code
>>SKY-COVER-SUMMATION-STATE coverage code #2
>>SKY-COVER-SUMMATION-STATE coverage quality code
>>SKY-COVER-SUMMATION-STATE height dimension
>>SKY-COVER-SUMMATION-STATE height dimension quality code
>>SKY-COVER-SUMMATION-STATE characteristic code

FLD LEN: 1

SKY-COVER-SUMMATION-STATE coverage code
The code that denotes the portion of the total celestial dome covered by all layers of clouds and other
obscuring phenomena at or below a given height.
DOM: A specific domain comprised of the ASCII characters
>0: Clear - No coverage

1: FEW - 2/8 or less coverage (not including zero)
2: SCATTERED - 3/8-4/8 coverage
3: BROKEN - 5/8-7/8 coverage
4: OVERCAST - 8/8 coverage
5: OBSCURED
6: PARTIALLY OBSCURED
9: MISSING

FLD LEN: 2

SKY-COVER-SUMMATION coverage code #2
The code that denotes the fraction of the total celestial dome covered by a by all layers of clouds and other obscuring phenomena at or below a given height, if reported by the station in octas.
DOM: A specific domain comprised of the characters in the ASCII character set.
00: None, SKC or CLR
01: One okta - 1/10 or less but not zero
02: Two oktas - 2/10 - 3/10, or FEW
03: Three oktas - 4/10
04: Four oktas - 5/10, or SCT
05: Five oktas - 6/10
06: Six oktas - 7/10 - 8/10
07: Seven oktas - 9/10 or more but not 10/10, or BKN
08: Eight oktas - 10/10, or OVC
09: Sky obscured, or cloud amount cannot be estimated
10: Partial Obscuration
11: Thin Scattered
12: Scattered
13: Dark Scattered
14: Thin Broken
15: Broken
16: Dark Broken
17: Thin Overcast
18: Overcast
19: Dark overcast
99: Missing

FLD LEN: 1

SKY-COVER-SUMMATION-STATE coverage quality code
The code that denotes a quality status of the reported SKY-COVER-SUMMATION-STATE coverage.
DOM: A specific domain comprised of the characters in the ASCII character set.
0 = Passed gross limits check
1 = Passed all quality control checks
2 = Suspect
3 = Erroneous
4 = Passed gross limits check , data originate from an NCDC data source
5 = Passed all quality control checks, data originate from an NCDC data source
6 = Suspect, data originate from an NCDC data source
7 = Erroneous, data originate from an NCDC data source
9 = Passed gross limits check if element is present

FLD LEN: 6

SKY-COVER-SUMMATION-STATE height dimension
The height above ground level (AGL) of the base of the cloud layer or obscuring phenomena.
MIN: -00400   MAX: +35000   UNITS: meters
DOM: A general domain compirsed of the ASCII characters 0-9, a plus (+) and a minus sign (-).
+99999 = Missing

FLD LEN: 1

SKY-COVER-SUMMATION-STATE height dimension quality code
The code that denotes a quality status of the reported SKY-COVER-SUMMATION-STATE height dimension.
DOM: A specific domain comprised of the characters in the ASCII character set.
0 = Passed gross limits check
1 = Passed all quality control checks
2 = Suspect
3 = Erroneous

4 = Passed gross limits check , data originate from an NCDC data source
5 = Passed all quality control checks, data originate from an NCDC data source
6 = Suspect, data originate from an NCDC data source
7 = Erroneous, data originate from an NCDC data source
9 = Passed gross limits check if element is present

FLD LEN: 1

SKY-COVER-SUMMATION-STATE characteristic code
The code that represents a characteristic of a specific cloud or other obscuring phenomena layer.
DOM: A specific domain comprised of the characters in the ASCII character set.
1: Variable height
2: Variable amount
3: Thin clouds
4: Dark layer (reported in data prior to 1950)
9: Missing

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FLD LEN: 3

SKY-CONDITION-OBSERVATION identifier
An indicator that denotes the start of a SKY-CONDITION-OBSERVATION data group.
DOM: A specific domain comprised of the characters in the ASCII character set.
GF1: An indicator of the occurrence of the following data items:
SKY-CONDITION-OBSERVATION total coverage code
SKY-CONDITION-OBSERVATION total opaque coverage code
SKY-CONDITION-OBSERVATION quality total coverage code
SKY-CONDITION-OBSERVATION total lowest cloud cover code
SKY-CONDITION-OBSERVATION quality total lowest cloud cover code
SKY-CONDITION-OBSERVATION low cloud genus code
SKY-CONDITION-OBSERVATION quality low cloud genus code
SKY-CONDITION-OBSERVATION lowest cloud base height dimension
SKY-CONDITION-OBSERVATION lowest cloud base height quality code
SKY-CONDITION-OBSERVATION mid cloud genus code
SKY-CONDITION-OBSERVATION quality mid cloud genus code
SKY-CONDITION-OBSERVATION high cloud genus code
SKY-CONDITION-OBSERVATION quality high cloud genus code

FLD LEN: 2

SKY-CONDITION-OBSERVATION total coverage code
The code that denotes the fraction of the total celestial dome covered by clouds or other obscuring phenomena.
DOM: A specific domain comprised of the characters in the ASCII character set.
00: None, SKC or CLR
01: One okta - 1/10 or less but not zero
02: Two oktas - 2/10 - 3/10, or FEW
03: Three oktas - 4/10
04: Four oktas - 5/10, or SCT
05: Five oktas - 6/10
06: Six oktas - 7/10 - 8/10
07: Seven oktas - 9/10 or more but not 10/10, or BKN
08: Eight oktas - 10/10, or OVC
09: Sky obscured, or cloud amount cannot be estimated
10: Partial obscuration
11: Thin scattered
12: Scattered
13: Dark scattered
14: Thin broken
15: Broken
16: Dark broken
17: Thin overcast
18: Overcast
19: Dark overcast
99: Missing

FLD LEN: 2

    SKY-CONDITION-OBSERVATION total opaque coverage code

    The code that denotes the fraction of the total celestial dome covered by opaque clouds or
    other obscuring phenomena. Only reported by selected U.S. stations during selected periods.
    DOM: A specific domain comprised of the characters in the ASCII character set.

        00: None, SKC or CLR
        01: One okta - 1/10 or less but not zero
        02: Two oktas - 2/10 - 3/10, or FEW
        03: Three oktas - 4/10
        04: Four oktas - 5/10, or SCT
        05: Five oktas - 6/10
        06: Six oktas - 7/10 - 8/10
        07: Seven oktas - 9/10 or more but not 10/10, or BKN
        08: Eight oktas - 10/10, or OVC
        09: Sky obscured, or cloud amount cannot be estimated
        10: Partial obscuration
        12: Scattered
        13: Dark scattered
        15: Broken
        16: Dark broken
        18: Overcast
        19: Dark overcast
        99: Missing

FLD LEN: 1

    SKY-CONDITION-OBSERVATION quality total coverage code

    The code that denotes a quality status of a reported total sky coverage code.
    DOM: A specific domain comprised of the characters in the ASCII character set.

        0 = Passed gross limits check
        1 = Passed all quality control checks
        2 = Suspect
        3 = Erroneous
        4 = Passed gross limits check , data originate from an NCDC data source
        5 = Passed all quality control checks, data originate from an NCDC data source
        6 = Suspect, data originate from an NCDC data source
        7 = Erroneous, data originate from an NCDC data source
        9 = Passed gross limits check if element is present

FLD LEN: 2

    SKY-CONDITION-OBSERVATION total lowest cloud cover code

    The code that represents the fraction of the celestial dome covered by all low clouds present. If
    no low clouds are present; the code denotes the fraction covered by all middle level clouds present.
    DOM: A specific domain comprised of the characters in the ASCII character set.

        00: None
        01: One okta or 1/10 or less but not zero
        02: Two oktas or 2/10 - 3/10
        03: Three oktas or 4/10
        04: Four oktas or 5/10
        05: Five oktas or 6/10
        06: Six oktas or 7/10 - 8/10
        07: Seven oktas or 9/10 or more but not 10/10
        08: Eight oktas or 10/10
        09: Sky obscured, or cloud amount cannot be estimated
        10: Partial obscuration
        11: Thin Scattered
        12: Scattered
        13: Dark Scattered
        14: Thin Broken
        15: Broken
        16: Dark Broken
        17: Thin Overcast
        18: Overcast
        19: Dark overcast
        99: Missing

FLD LEN: 1

    SKY-CONDITION-OBSERVATION quality total lowest cloud cover code

    The code that denotes a quality status of a reported total lowest cloud cover code.

    DOM: A specific domain comprised of the characters in the ASCII character set.

        0 = Passed gross limits check

        1 = Passed all quality control checks

        2 = Suspect

        3 = Erroneous

        4 = Passed gross limits check , data originate from an NCDC data source

        5 = Passed all quality control checks, data originate from an NCDC data source

        6 = Suspect, data originate from an NCDC data source

        7 = Erroneous, data originate from an NCDC data source

        9 = Passed gross limits check if element is present

FLD LEN: 2

    SKY-CONDITION-OBSERVATION low cloud genus code

    The code that denotes a type of low cloud.

    DOM: A specific domain comprised of the characters in the ASCII Character set.

        00: No low clouds

        01: Cumulus humulis or Cumulus fractus other than of bad weather or both

        02: Cumulus mediocris or congestus, with or without Cumulus of species fractus or humulis or

            Stratocumulus all having bases at the same level

        03: Cumulonimbus calvus, with or without Cumulus, Stratocumulus or Stratus

        04: Stratocumulus cumulogenitus

        05: Stratocumulus other than Stratocumulus cumulogenitus

        06: Stratus nebulosus or Stratus fractus other than of bad weather, or both

        07: Stratus fractus or Cumulus fractus of bad weather, or both (pannus) usually below

            Altostratus or Nimbostratus

        08: Cumulus and Stratocumulus other than Stratocumulus cumulogenitus, with bases at

            different levels

        09: Cumulonimbus capillatus (often with an anvil), with or without Cumulonimbus calvus,

            Cumulus, Stratocumulus, Stratus or pannus

        99: Missing

FLD LEN: 1

    SKY-CONDITION-OBSERVATION quality low cloud genus code

    The code that denotes a quality status of a reported low cloud type.

    DOM: A specific domain comprised of the characters in the ASCII character set.

        0 = Passed gross limits check

        1 = Passed all quality control checks

        2 = Suspect

        3 = Erroneous

        4 = Passed gross limits check , data originate from an NCDC data source

        5 = Passed all quality control checks, data originate from an NCDC data source

        6 = Suspect, data originate from an NCDC data source

        7 = Erroneous, data originate from an NCDC data source

        9 = Passed gross limits check if element is present

FLD LEN: 5

    SKY-CONDITION-OBSERVATION lowest cloud base height dimension

    The height, above ground level (AGL), of the base of the lowest cloud.

    MIN: 00000   MAX: 21000   UNITS: Meters

    SCALING FACTOR: 1

    DOM: A general domain comprised of the numeric characters (0-9).

        99999 = Missing.

FLD LEN: 1

    SKY-CONDITION-OBSERVATION lowest cloud base height quality code

    The code that denotes a quality status of a lowest cloud base height.

    DOM: A specific domain comprised of the characters in the ASCII character set.

        0 = Passed gross limits check

        1 = Passed all quality control checks

        2 = Suspect

3 = Erroneous
4 = Passed gross limits check , data originate from an NCDC data source
5 = Passed all quality control checks, data originate from an NCDC data source
6 = Suspect, data originate from an NCDC data source
7 = Erroneous, data originate from an NCDC data source
9 = Passed gross limits check if element is present

FLD LEN: 2
SKY-CONDITION-OBSERVATION mid cloud genus code
The code that denotes a type of middle level cloud.
DOM: A specific domain comprised of the characters in the ASCII character set.
00: No middle clouds
01: Altostratus translucidus
02: Altostratus opacus or Nimbostratus
03: Altocumulus translucidus at a single level
04: Patches (often lenticular) of Altocumulus translucidus, continually changing and occurring at one or more levels
05: Altocumulus translucidus in bands, or one or more layers of Altocumulus translucidus or opacus, progressively invading the sky; these Altocumulus clouds generally thicken as a whole
06: Altocumulus cumulogentis (or cumulonimbogentus)
07: Altocumulus translucidus or opacus in two or more layers, or Altocumulus opacus in a single layer, not progressively invading the sky, or Altocumulus with Altostratus or Nimbostratus
08: Altocumulus castellanus or floccus
09: Altocumulus of a chaotic sky; generally at several levels
99: Missing

FLD LEN: 1
SKY-CONDITION-OBSERVATION quality mid cloud genus code
The code that denotes a quality status of a reported mid cloud type.
DOM: A specific domain comprised of the characters in the ASCII character set.
0 = Passed gross limits check
1 = Passed all quality control checks
2 = Suspect
3 = Erroneous
4 = Passed gross limits check , data originate from an NCDC data source
5 = Passed all quality control checks, data originate from an NCDC data source
6 = Suspect, data originate from an NCDC data source
7 = Erroneous, data originate from an NCDC data source
9 = Passed gross limits check if element is present

FLD LEN: 2
SKY-CONDITION-OBSERVATION high cloud genus code
The code that denotes a type of high cloud.
DOM: A specific domain comprised of the characters in the ASCII character set.
00: No High Clouds
01: Cirrus fibratus, sometimes uncinus, not progressively invading the sky
02: Cirrus spissatus, in patches or entangled sheaves, which usually do not increase and sometimes seem to be the remains of the upper part of a Cumulonimbus; or Cirrus castellanus or floccus
03: Cirrus spissatus cumulonimbogenitus
04: Cirrus unicinus or fibratus, or both, progressively invading the sky; they generally thicken as a whole
05: Cirrus (often in bands) and Cirrostratus, or Cirrostratus alone, progressively invading the sky; they generally thicken as a whole, but the continuous veil does not reach 45 degrees above the horizon
06: Cirrus (often in bands) and Cirrostratus, or Cirrostratus alone, progressively invading the sky; they generally thicken as a whole; the continuous veil extends more than 45 degrees above the horizon, without the sky being totally covered.
07: Cirrostratus covering the whole sky
08: Cirrostratus not progressively invading the sky and not entirely covering it
09: Cirrocumulus alone, or Cirrocumulus predominant among the High clouds
99: Missing

FLD LEN: 1
   SKY-CONDITION-OBSERVATION quality high cloud genus code
   The code that denotes a quality status of a reported high cloud type.
   DOM: A specific domain comprised of the characters in the ASCII character set.
        0 = Passed gross limits check
        1 = Passed all quality control checks
        2 = Suspect
        3 = Erroneous
        4 = Passed gross limits check , data originate from an NCDC data source
        5 = Passed all quality control checks, data originate from an NCDC data source
        6 = Suspect, data originate from an NCDC data source
        7 = Erroneous, data originate from an NCDC data source
        9 = Passed gross limits check if element is present

███

FLD LEN: 3
   BELOW-STATION-CLOUD-LAYER identifier
   The identifier that represents a BELOW-STATION-CLOUD-LAYER.
   DOM: A specific domain comprised of the characters in the ASCII character set.
        GG1-GG6   An indicator of up to 6 repeating fields of the following items:
                BELOW-STATION-CLOUD-LAYER coverage code
                BELOW-STATION-CLOUD-LAYER coverage quality code
                BELOW-STATION-CLOUD-LAYER top height dimension
                BELOW-STATION-CLOUD-LAYER top height dimension quality code
                BELOW-STATION-CLOUD-LAYER type code
                BELOW-STATION-CLOUD-LAYER type quality code
                BELOW-STATION-CLOUD-LAYER top code
                BELOW-STATION-CLOUD-LAYER top quality code

FLD LEN: 2
   BELOW-STATION-CLOUD-LAYER coverage code
   The code that denotes the extent of coverage of a BELOW-STATION-CLOUD-LAYER.
   DOM: A specific domain comprised of the characters in the ASCII character set.
        00: None
        01: One okta - 1/10 or less but not zero
        02: Two oktas - 2/10 - 3/10
        03: Three oktas - 4/10
        04: Four oktas - 5/10
        05: Five oktas - 6/10
        06: Six oktas - 7/10 - 8/10
        07: Seven oktas - 9/10 or more but not 10/10
        08: Eight oktas - 10/10
        09: Sky obscured, or cloud amount cannot be estimated
        10: Partial obscuration
        99: Missing

FLD LEN: 1
   BELOW-STATION-CLOUD-LAYER coverage quality code
   The code that denotes a quality status of the reported BELOW-STATION-CLOUD-LAYER coverage.
   DOM: A specific domain comprised of the characters in the ASCII character set.
        0 = Passed gross limits check
        1 = Passed all quality control checks
        2 = Suspect
        3 = Erroneous
        9 = Passed gross limits check if element is present

FLD LEN: 5
   BELOW-STATION-CLOUD-LAYER top height dimension
   The height above mean sea level (MSL) of the top of a BELOW-STATION-CLOUD-LAYER.
   MIN: 00000   MAX: 35000   UNITS: Meters
   SCALING FACTOR: 1
   DOM: A general domain comprised of the numeric characters (0-9).

99999 = Missing

FLD LEN: 1

      BELOW-STATION-CLOUD-LAYER top height dimension quality code
      The code that denotes a quality status of the reported BELOW-STATION-CLOUD-LAYER top height dimension.
      DOM: A specific domain comprised of the characters in the ASCII character set.
          0 = Passed gross limits check
          1 = Passed all quality control checks
          2 = Suspect
          3 = Erroneous
          9 = Passed gross limits check if element is present

FLD LEN: 2

      BELOW-STATION-CLOUD-LAYER type code
      The code that denotes the classification of the clouds that comprise a BELOW-STATION-CLOUD-LAYER.
      DOM: A specific domain comprised of the characters in the ASCII character set.
          00: Cirrus (Ci)
          01: Cirrocumulus (Cc)
          02: Cirrostratus (Cs)
          03: Altocumulus (Ac)
          04: Altostratus (As)
          05: Nimbostratus (Ns)
          06: Stratocumulus (Sc)
          07: Stratus (St)
          08: Cumulus (Cu)
          09: Cumulonimbus (Cb)
          10: Cloud not visible owing to darkness, fog, dust storm, sandstorm, or other analogous phenomena
          99: Missing

FLD LEN: 1

      BELOW-STATION-CLOUD-LAYER type quality code
      The code that denotes a quality status of the reported BELOW-STATION-CLOUD-LAYER type.
      DOM: A specific domain comprised of the characters in the ASCII character set.
          0 = Passed gross limits check
          1 = Passed all quality control checks
          2 = Suspect
          3 = Erroneous
          9 = Passed gross limits check if element is present

FLD LEN: 2

      BELOW-STATION-CLOUD-LAYER top code
      The code that denotes the characteristics of the upper surface of a BELOW-STATION-CLOUD-LAYER
      DOM: A specific domain comprised of the characters in the ASCII character set.
          00: Isolated cloud or fragments of clouds
          01: Continuous flat tops
          02: Broken cloud - small breaks, flat tops
          03: Broken cloud - large breaks, flat tops
          04: Continuous cloud, undulation tops
          05: Broken cloud - small breaks, undulating tops
          06: Broken cloud - large breaks, undulating tops
          07: Continuous or almost continuous with towering clouds above the top of the layer
          08: Groups of waves with towering clouds above the top of the layer
          09: Two of more layers at different levels
          99: Missing

FLD LEN: 1

      BELOW-STATION-CLOUD-LAYER top quality code
      The code that denotes a quality status of the reported BELOW-STATION-CLOUD-LAYER top.
      DOM: A specific domain comprised of the characters in the ASCII character set.
          0 = Passed gross limits check
          1 = Passed all quality control checks

2 = Suspect
3 = Erroneous
9 = Passed gross limits check if element is present

FLD LEN: 3

Hourly Solar Radiation Section identifier
The identifier that indicates an hourly observation of solar radiation. This section appears in the last ISD record of the hour.
DOM: A specific domain comprised of the characters in the ASCII character set.

GH1 An indicator of the following items:
SOLARAD hourly average solar radiation
SOLARAD_QC quality code
SOLARAD_FLAG quality code
SOLARAD_MIN minimum solar radiation
SOLARAD_MIN_QC quality code
SOLARAD_MIN_FLAG quality code
SOLARAD_MAX maximum solar radiation
SOLARAD_MAX_QC quality code
SOLARAD_MAX_FLAG quality code
SOLARAD_STD solar radiation standard deviation
SOLARAD_STD_QC quality code
SOLARAD_STD_FLAG quality code

FLD LEN: 5

SOLARAD hourly average solar radiation
The hourly average solar radiation.
MIN: 0000   MAX: 99999   UNITS: watts per square meter
SCALING FACTOR: 10
DOM: A general domain comprised of the numeric characters (0-9).
99999 = Missing.

FLD LEN: 1

SOLARAD_QC quality code
The code that indicates ISD's evaluation of the quality status of the hourly average solar radiation.
DOM: A specific domain comprised of the numeric characters (0-9).
1 = Passed all quality control checks
3 = Failed all quality control checks
9 = Missing

FLD LEN: 1

SOLARAD_FLAG quality code
The code that indicates the network's internal evaluation of the quality status of the hourly average solar radiation. Most users will find the preceding quality code **SOLARAD_QC** to be the simplest and most useful quality indicator.
DOM: A specific domain comprised of the numeric characters (0-9).
0 = Passed all quality control checks
other – Did not pass all quality checks

FLD LEN: 5

SOLARAD_MIN minimum solar radiation
The minimum 10 second solar radiation for the hour.
MIN: 00000   MAX: 99999   UNITS: watts per square meter
SCALING FACTOR: 10
DOM: A general domain comprised of the numeric characters (0-9).
99999 = Missing.

FLD LEN: 1

SOLARAD_MIN_QC quality code
The code that indicates ISD's evaluation of the quality status of the hourly minimum solar radiation.
DOM: A specific domain comprised of the numeric characters (0-9).
1 = Passed all quality control checks
3 = Failed all quality control checks

9 = Missing

FLD LEN: 1

SOLARAD_MIN_FLAG quality code
The code that indicates the network's internal evaluation of the quality status of the hourly minimum solar radiation. Most users will find the preceding quality code **SOLARAD_MIN_QC** to be the simplest and most useful quality indicator.
DOM: A specific domain comprised of the numeric characters (0-9).
    0 = Passed all quality control checks
    other – Did not pass all quality checks

FLD LEN: 5

SOLARAD_MAX maximum solar radiation
The maximum 10 second solar radiation for the hour.
MIN: 00000   MAX: 99999   UNITS: watts per square meter
SCALING FACTOR: 10
DOM: A general domain comprised of the numeric characters (0-9).
    99999 = Missing.

FLD LEN: 1

SOLARAD_MAX_QC quality code
The code that indicates ISD's evaluation of the quality status of the hourly maximum solar radiation.
DOM: A specific domain comprised of the numeric characters (0-9).
    1 = Passed all quality control checks
    3 = Failed all quality control checks
    9 = Missing

FLD LEN: 1

SOLARAD_MAX_FLAG quality code
The code that indicates the network's internal evaluation of the quality status of the hourly maximum solar radiation. Most users will find the preceding quality code **SOLARAD_MAX_QC** to be the simplest and most useful quality indicator.
DOM: A specific domain comprised of the numeric characters (0-9).
    0 = Passed all quality control checks
    other – Did not pass all quality checks

FLD LEN: 5

SOLARAD_STD solar radiation standard deviation
The hourly 10 second hourly solar radiation standard deviation.
MIN: 00000   MAX: 99999
SCALING FACTOR: 10
DOM: A general domain comprised of the numeric characters (0-9).
    99999 = Missing.

FLD LEN: 1

SOLARAD_STD_QC quality code
The code that indicates ISD's evaluation of the quality status of the hourly solar radiation standard deviation.
DOM: A specific domain comprised of the numeric characters (0-9).
    1 = Passed all quality control checks
    3 = Failed all quality control checks
    9 = Missing

FLD LEN: 1

SOLARAD_STD_FLAG quality code
The code that indicates the network's internal evaluation of the quality status of hourly solar radiation standard deviation. Most users will find the preceding quality code **SOLARAD_STD_QC** to be the simplest and most useful quality indicator.
DOM: A specific domain comprised of the numeric characters (0-9).
    0 = Passed all quality control checks
    other – Did not pass all quality checks

FLD LEN: 3
      SUNSHINE-OBSERVATION identifier
      The identifier that denotes the availability of sunshine information.
      DOM: A specific domain comprised of the ASCII characters
      GJ1 An indicator of the occurrence of the following items:
          SUNSHINE-OBSERVATION sunshine duration quantity
          SUNSHINE-OBSERVATION sunshine duration quality code

FLD LEN: 4
      SUNSHINE-OBSERVATION sunshine duration quantity
      The quantity of time sunshine occurred over the reporting period.
      MIN: 0000   MAX: 6000   UNITS: minutes
      DOM: A general domain comprised of the ASCII characters 0-9.
          9999 = Missing

FLD LEN: 1
      SUNSHINE-OBSERVATION sunshine duration quality code
      The code that denotes a quality status of the reported SUNSHINE-OBSERVATION sunshine duration.
      DOM: A specific domain comprised of the characters in the ASCII character set.
          0 = Passed gross limits check
          1 = Passed all quality control checks
          2 = Suspect
          3 = Erroneous
          4 = Passed gross limits check , data originate from an NCDC data source
          5 = Passed all quality control checks, data originate from an NCDC data source
          6 = Suspect, data originate from an NCDC data source
          7 = Erroneous, data originate from an NCDC data source
          9 = Passed gross limits check if element is present

FLD LEN: 3
      SUNSHINE-OBSERVATION identifier
      The identifier that denotes the availability of percent of possible sunshine information.
      DOM: A specific domain comprised of the ASCII characters
      GK1 An indicator of the occurrence of the following items:
          SUNSHINE-OBSERVATION percent of possible sunshine quantity
          SUNSHINE-OBSERVATION percent of possible sunshine quality code

FLD LEN: 3
      SUNSHINE-OBSERVATION percent of possible sunshine quantity
      The percent of possible sunshine that occurred over the previous 24-hour period.
      MIN: 000   MAX: 100   UNITS: percentage
      DOM: A general domain comprised of the ASCII characters 0-9.
          999 = Missing.

FLD LEN: 1
      SUNSHINE-OBSERVATION percent of possible sunshine quality code
      The code that denotes a quality status of the reported SUNSHINE-OBSERVATION percent of possible sunshine.
      DOM: A specific domain comprised of the characters in the ASCII character set.
          4 = Passed gross limits check, data originate from an NCDC data source
          5 = Passed all quality control checks, data originate from an NCDC data source
          6 = Suspect, data originate from an NCDC data source
          7 = Erroneous, data originate from an NCDC data source
          9 = Passed gross limits check if element is present

FLD LEN: 3
      SUNSHINE-OBSERVATION FOR THE MONTH identifier
      The identifier that denotes the availability of sunshine information.

DOM: A specific domain comprised of the ASCII characters

GL1 An indicator of the occurrence of the following items:

SUNSHINE-OBSERVATION sunshine duration quantity

SUNSHINE-OBSERVATION sunshine duration quality code

FLD LEN: 5

SUNSHINE-OBSERVATION FOR THE MONTH sunshine duration quantity

The quantity of time sunshine occurred over the reporting period.

MIN: 00000   MAX: 30000   UNITS: minutes

DOM: A general domain comprised of the ASCII characters 0-9.

99999 = Missing

FLD LEN: 1

SUNSHINE-OBSERVATION FOR THE MONTH sunshine duration quality code

The code that denotes a quality status of the reported SUNSHINE-OBSERVATION sunshine duration.

DOM: A specific domain comprised of the characters in the ASCII character set.

0 = Passed gross limits check

1 = Passed all quality control checks

2 = Suspect

3 = Erroneous

4 = Passed gross limits check, data originate from an NCDC data source

5 = Passed all quality control checks, data originate from an NCDC data source

6 = Suspect, data originate from an NCDC data source

7 = Erroneous, data originate from an NCDC data source

9 = Passed gross limits check if element is present

FLD LEN: 3

Solar Irradiance Section identifier

The identifier that indicates an observation of solar irradiance data integrated over the specified time period.

DOM: A specific domain comprised of the characters in the ASCII character set.

GM1 An indicator of the following items:

Solar irradiance data time period

Global irradiance

Global irradiance data flag

Global irradiance quality code

Direct beam irradiance

Direct beam irradiance data flag

Direct beam irradiance quality code

Diffuse irradiance

Diffuse irradiance data flag

Diffuse irradiance quality code

UVB global irradiance

UVB global irradiance data flag

UVB global irradiance quality code

FLD LEN: 4

Time period in minutes, for which the data in this section (GM1) pertains—eg, 0060 = 60 minutes (1 hour).

MIN: 0001   MAX: 9998   UNITS: Minutes

DOM: A general domain comprised of the numeric characters (0-9).

9999 = Missing.

FLD LEN: 4

Global irradiance

Global horizontal irradiance measured using a pyranometer. Unit is watts per square meter (W/m2) in whole values. Waveband ranges from 0.4 - 2.3 micrometers.

MIN: 0000   MAX: 9998   UNITS: watts per square meter

SCALING FACTOR: 1

DOM: A general domain comprised of the numeric characters (0-9).

9999 = Missing.

FLD LEN: 2

Global irradiance data flag

The code that provides additional information regarding the global irradiance data.
DOM: A specific domain comprised of the numeric characters (00-99).
  00 = Untested (raw data)
  01 = Passed one-component test; data fall within max-min limits
  of Kt, Kn, or Kd
  02 = Passed two-component test; data fall within 0.03 of the
  Gompertz boundaries
  03 = Passed three-component test; data come within + 0.03 of
  satisfying Kt = Kn + Kd
  04 = Passed visual inspection: not used by SERI_QC1
  05 = Failed visual inspection: not used by SERI_QC1
  06 = Value estimated; passes all pertinent SERI_QC tests
  07 = Failed one-component test; lower than allowed minimum
  08 = Failed one-component test; higher than allowed maximum
  09 = Passed three-component test but failed two-component test by
  0.05
  10-93 = Failed two- or three- component tests in one of four ways.
  94-97 = Data fails into physically impossible region where Kn > Kt
  by K-space distances of 0.05 to 0.10 (94), 0.10 to 0.15
  (95), 0.15 to 0.20 (96), and > 0.20 (97).
  98 = Not used
  99 = Missing data

FLD LEN: 1
Global irradiance quality code
The code that denotes a quality status of the reported global irradiance value.
DOM: A specific domain comprised of the numeric characters (0-9).
        0 = Passed gross limits check
        1 = Passed all quality control checks
        2 = Suspect
        3 = Erroneous
        9 = Missing

FLD LEN: 4
Direct beam irradiance
Direct beam irradiance measured using a pyrheliometer or other instrument. Unit is watts per square meter (W/m2) in
whole values. Waveband ranges from 0.4 - 2.3 micrometers.
MIN: 0000   MAX: 9998   UNITS: watts per square meter
SCALING FACTOR: 1
DOM: A general domain comprised of the numeric characters (0-9).
        9999 = Missing.

FLD LEN: 2
Direct beam irradiance data flag
The code that provides additional information regarding the direct beam irradiance data.
DOM: A specific domain comprised of the numeric characters (00-99).
  00 = Untested (raw data)
  01 = Passed one-component test; data fall within max-min limits
  of Kt, Kn, or Kd
  02 = Passed two-component test; data fall within 0.03 of the
  Gompertz boundaries
  03 = Passed three-component test; data come within + 0.03 of
  satisfying Kt = Kn + Kd
  04 = Passed visual inspection: not used by SERI_QC1
  05 = Failed visual inspection: not used by SERI_QC1
  06 = Value estimated; passes all pertinent SERI_QC tests
  07 = Failed one-component test; lower than allowed minimum
  08 = Failed one-component test; higher than allowed maximum
  09 = Passed three-component test but failed two-component test by
  0.05
  10-93 = Failed two- or three- component tests in one of four ways.
  94-97 = Data fails into physically impossible region where Kn > Kt
  by K-space distances of 0.05 to 0.10 (94), 0.10 to 0.15
  (95), 0.15 to 0.20 (96), and > 0.20 (97).

98 = Not used
99 = Missing data

FLD LEN: 1

Direct beam irradiance quality code
The code that denotes a quality status of the reported direct beam irradiance value.
DOM: A specific domain comprised of the numeric characters (0-9).
0 = Passed gross limits check
1 = Passed all quality control checks
2 = Suspect
3 = Erroneous
9 = Missing

FLD LEN: 4

Diffuse irradiance
Diffuse irradiance measured using a pyranometer under a shading device. Unit is watts per square meter (W/m2) in whole values. Waveband ranges from 0.4 - 2.3 micrometers. Instrument is mounted under a shadowband.
MIN: 0000   MAX: 9998   UNITS: watts per square meter
SCALING FACTOR: 1
DOM: A general domain comprised of the numeric characters (0-9).
9999 = Missing.

FLD LEN: 2

Diffuse irradiance data flag
The code that provides additional information regarding the diffuse irradiance data.
DOM: A specific domain comprised of the numeric characters (00-99).
00 = Untested (raw data)
01 = Passed one-component test; data fall within max-min limits
of Kt, Kn, or Kd
02 = Passed two-component test; data fall within 0.03 of the
Gompertz boundaries
03 = Passed three-component test; data come within + 0.03 of
satisfying Kt = Kn + Kd
04 = Passed visual inspection: not used by SERI_QC1
05 = Failed visual inspection: not used by SERI_QC1
06 = Value estimated; passes all pertinent SERI_QC tests
07 = Failed one-component test; lower than allowed minimum
08 = Failed one-component test; higher than allowed maximum
09 = Passed three-component test but failed two-component test by
0.05
10-93 = Failed two- or three- component tests in one of four ways.
94-97 = Data fails into physically impossible region where Kn > Kt
by K-space distances of 0.05 to 0.10 (94), 0.10 to 0.15
(95), 0.15 to 0.20 (96), and > 0.20 (97).
98 = Not used
99 = Missing data

FLD LEN: 1

Diffuse irradiance quality code
The code that denotes a quality status of the reported diffuse irradiance value.
DOM: A specific domain comprised of the numeric characters (0-9).
0 = Passed gross limits check
1 = Passed all quality control checks
2 = Suspect
3 = Erroneous
9 = Missing

FLD LEN: 4

UVB global irradiance
Ultra-violet global irradiance measured using a Ultra-violet Biometer (Solar Light). Unit is milli-watts per square meter (mW/m2) of erythema effective irradiance in whole values. Waveband ranges from 290-320 nanometers.
MIN: 0000   MAX: 9998   UNITS: milli-watts per square meter
SCALING FACTOR: 1
DOM: A general domain comprised of the numeric characters (0-9).

9999 = Missing.

FLD LEN: 1
    UVB global irradiance quality code
    The code that denotes a quality status of the reported UVB global irradiance value.
    DOM: A specific domain comprised of the numeric characters (0-9).
        0 = Passed gross limits check
        1 = Passed all quality control checks
        2 = Suspect
        3 = Erroneous
        9 = Missing

FLD LEN: 3
    Solar Radiation Section identifier
    The identifier that indicates an observation of solar radiation data.
    DOM: A specific domain comprised of the characters in the ASCII character set.
        GN1 An indicator of the following items:
            Solar radiation data time period
            Upwelling global solar radiation
            Upwelling global solar radiation quality code
            Downwelling thermal infrared radiation
            Downwelling thermal infrared radiation quality code
            Upwelling thermal infrared radiation
            Upwelling thermal infrared radiation quality code
            Photosynthetically active radiation
            Photosynthetically active radiation quality code
            Solar zenith angle
            Solar zenith angle quality code

FLD LEN: 4
    Time period in minutes, for which the data in this section (GN1) pertains—eg, 0060 = 60 minutes (1 hour).
    MIN: 0001   MAX: 9999   UNITS: Minutes
    DOM: A general domain comprised of the numeric characters (0-9).
        9999 = Missing.

FLD LEN: 4
    Upwelling global solar radiation
    Global radiation measured using an Epply Precision Spectral Pyranometer mounted upside down ten meters above the surface on a meteorological tower. Unit is milli-watts per square meter (mW/m2). Waveband ranges from 270 to 3000 nanometers.
    MIN: 0000   MAX: 9999   UNITS: milli-watts per square meter
    SCALING FACTOR: 1
    DOM: A general domain comprised of the numeric characters (0-9).
        9999 = Missing.

FLD LEN: 1
    Upwelling global solar radiation quality code
    The code that denotes a quality status of the reported upwelling global solar radiation value.
    DOM: A specific domain comprised of the numeric characters (0-9).
        0 = Passed gross limits check
        1 = Passed all quality control checks
        2 = Suspect
        3 = Erroneous
        9 = Missing

FLD LEN: 4
    Downwelling thermal infrared radiation
    Infrared radiation measured using an Epply Precision Infrared Radiometer mounted upright ten meters above the surface on a meteorological tower. Unit is milli-watts per square meter (mW/m2). Waveband ranges from 3000 to 50,000 nanometers.
    MIN: 0000   MAX: 9999   UNITS: milli-watts per square meter

SCALING FACTOR: 1
DOM: A general domain comprised of the numeric characters (0-9).
     9999 = Missing.

FLD LEN: 1

    Downwelling thermal infrared radiation quality code
    The code that denotes a quality status of the reported downwelling thermal infrared radiation value.
    DOM: A specific domain comprised of the numeric characters (0-9).
        0 = Passed gross limits check
        1 = Passed all quality control checks
        2 = Suspect
        3 = Erroneous
        9 = Missing

FLD LEN: 4

    Upwelling thermal infrared radiation
    Infrared radiation measured using an Epply Precision Infrared Radiometer mounted upside-down ten meters above the surface on a meteorological tower. Unit is Watts per meter per meter (mW/m2). Waveband ranges from 3000 to 50,000 nanometers.
    MIN: 0000   MAX: 9999   UNITS: watts per square meter
    SCALING FACTOR: 1
    DOM: A general domain comprised of the numeric characters (0-9).
        9999 = Missing.

FLD LEN: 1

    Upwelling thermal infrared radiation quality code
    The code that denotes a quality status of the reported upwelling thermal infrared radiation value.
    DOM: A specific domain comprised of the numeric characters (0-9).
        0 = Passed gross limits check
        1 = Passed all quality control checks
        2 = Suspect
        3 = Erroneous
        9 = Missing

FLD LEN: 4

    Photosynthetically active radiation
    The PAR sensor measures global solar radiation from 400 to 700 nm in Watts per square meter (mW/m2), which approximates the spectral band active in photosynthesis.
    MIN: 0000   MAX: 9999   UNITS: watts per square meter
    SCALING FACTOR: 1
    DOM: A general domain comprised of the numeric characters (0-9).
        9999 = Missing.

FLD LEN: 1

    Photosynthetically active radiation quality code
    The code that denotes a quality status of the reported photosynthetically active radiation value.
    DOM: A specific domain comprised of the numeric characters (0-9).
        0 = Passed gross limits check
        1 = Passed all quality control checks
        2 = Suspect
        3 = Erroneous
        9 = Missing

FLD LEN: 3

    Solar zenith angle
    The Solar Zenith Angle is the angle in degrees between the sun and the perpendicular to the earth's surface. At sunrise it is 90 degrees, at noon it is a function of latitude, and at sunset it is again 90 degrees. Below the horizon value is 100. Values are reported to the nearest tens of degrees (eg, 090).
    MIN: 000   MAX: 999   UNITS: degrees
    SCALING FACTOR: 1
    DOM: A general domain comprised of the numeric characters (0-9).
        999 = Missing.

FLD LEN: 1

Solar zenith angle quality code
The code that denotes a quality status of the reported solar zenith angle value.
DOM: A specific domain comprised of the numeric characters (0-9).
      0 = Passed gross limits check
      1 = Passed all quality control checks
      2 = Suspect
      3 = Erroneous
      9 = Missing

FLD LEN: 3
    Net Solar Radiation Section identifier
The identifier that indicates an observation of net solar radiation data.
 DOM: A specific domain comprised of the characters in the ASCII character set.
      GO1 An indicator of the following items:
        Net solar radiation data time period
        Net solar radiation
        Net solar radiation quality code
        Net infrared radiation
        Net infrared radiation quality code
        Net radiation
        Net radiation quality code

FLD LEN: 4
Time period in minutes, for which the data in this section (GO1) pertains—eg, 0060 = 60 minutes (1 hour).
MIN: 0001   MAX: 9999   UNITS: Minutes
DOM: A general domain comprised of the numeric characters (0-9).
    9999 = Missing.

FLD LEN: 4
    Net solar radiation
The difference between global radiation and upwelling global radiation measured in Watts per square meter (W/m2). If
 negative, left most position contains a "-" sign.
MIN: -999   MAX: 9999   UNITS: watts per square meter
SCALING FACTOR: 1
DOM: A general domain comprised of the numeric characters (0-9).
    9999 = Missing.

FLD LEN: 1
    Net solar radiation quality code
The code that denotes a quality status of the reported net solar radiation value.
DOM: A specific domain comprised of the numeric characters (0-9).
      0 = Passed gross limits check
      1 = Passed all quality control checks
      2 = Suspect
      3 = Erroneous
      9 = Missing

FLD LEN: 4
    Net infrared radiation
The difference between downwelling infrared and upwelling infrared measured in Watts per square meter (W/m2). If
negative, left most position contains a "-" sign.
MIN: -999   MAX: 9999   UNITS: watts per square meter
SCALING FACTOR: 1
DOM: A general domain comprised of the numeric characters (0-9).
    9999 = Missing.

FLD LEN: 1
    Net infrared radiation quality code
The code that denotes a quality status of the reported net infrared radiation value.
DOM: A specific domain comprised of the numeric characters (0-9).
      0 = Passed gross limits check

1 = Passed all quality control checks
2 = Suspect
3 = Erroneous
9 = Missing

FLD LEN: 4

Net radiation
The total of Net Solar and Net Infrared radiation measured in Watts per square meter (W/m2).
MIN: -999   MAX: 9999   UNITS: watts per square meter
SCALING FACTOR: 1
DOM: A general domain comprised of the numeric characters (0-9).
        9999 = Missing.

FLD LEN: 1

Net radiation quality code
The code that denotes a quality status of the reported net radiation value.
DOM: A specific domain comprised of the numeric characters (0-9).
        0 = Passed gross limits check
        1 = Passed all quality control checks
        2 = Suspect
        3 = Erroneous
        9 = Missing

FLD LEN: 3

Modeled Solar Irradiance Section identifier
The identifier that indicates modeled broadband solar irradiance data integrated over the specified time period.
DOM: A specific domain comprised of the characters in the ASCII character set.
        GP1 An indicator of the following items:
                Modeled solar irradiance data time period
                Modeled global horizontal
                Modeled global horizontal source flag
                Modeled global horizontal uncertainty
                Modeled direct normal
                Modeled direct normal source flag
                Modeled direct normal uncertainty
                Modeled diffuse horizontal
                Modeled diffuse horizontal source flag
                Modeled diffuse horizontal uncertainty

FLD LEN: 4

Time period in minutes, for which the data in this section pertains—eg, 0060 = 60 minutes (1 hour).
MIN: 0001   MAX: 9998   UNITS: Minutes
DOM: A general domain comprised of the numeric characters (0-9).
        9999 = Missing.

FLD LEN: 4

Modeled global horizontal
Total amount of direct and diffuse solar radiation (modeled) received on a horizontal surface. Unit is watts per square meter (W/m2) in whole values.
MIN: 0000   MAX: 9998   UNITS: watts per square meter
SCALING FACTOR: 1
DOM: A general domain comprised of the numeric characters (0-9).
        9999 = Missing.

FLD LEN: 2

Modeled global horizontal source flag
The code that provides source information regarding the global horizontal data.
DOM: A specific domain comprised of the numeric characters (00-99).
 01 = Value modeled from METSTAT model
 02 = Value time-shifted from SUNY satellite model
 03 = Value time-shifted from SUNY satellite model, adjusted to a minimum low-diffuse envelope
 99 = Missing data

FLD LEN: 3
   Modeled global horizontal uncertainty
   The uncertainty values are based on model type and quality of input data.
   MIN: 000   MAX: 100   UNITS: Percent
   SCALING FACTOR: 1
   DOM: A general domain comprised of the numeric characters (0-9).
        999 = Missing data

FLD LEN: 4
   Modeled direct normal
   The amount of solar radiation (modeled) on a surface normal to the sun. Unit is watts per square meter (W/m2) in whole values.
   MIN: 0000   MAX: 9998   UNITS: watts per square meter
   SCALING FACTOR: 1
   DOM: A general domain comprised of the numeric characters (0-9).
        9999 = Missing.

FLD LEN: 2
   Modeled direct normal source flag
   The code that provides source information regarding the direct normal data.
   DOM: A specific domain comprised of the numeric characters (00-99).
    01 = Value modeled from METSTAT model
    02 = Value time-shifted from SUNY satellite model
    03 = Value time-shifted from SUNY satellite model, adjusted to a minimum low-diffuse envelope
    99 = Missing data

FLD LEN: 3
   Modeled direct normal uncertainty
   The uncertainty values are based on model type and quality of input data.
   MIN: 000   MAX: 100   UNITS: Percent
   SCALING FACTOR: 1
   DOM: A general domain comprised of the numeric characters (0-9).
        999 = Missing data

FLD LEN: 4
   Modeled diffuse horizontal
   The amount of solar radiation (modeled) received from the sky (excluding the solar disk) on a horizontal surface.
   Unit is watts per square meter (W/m2) in whole values. Waveband ranges from 0.4 - 2.3 micrometers.
   MIN: 0000   MAX: 9998   UNITS: watts per square meter
   SCALING FACTOR: 1
   DOM: A general domain comprised of the numeric characters (0-9).
        9999 = Missing.

FLD LEN: 2
   Modeled diffuse horizontal source flag
   The code that provides source information regarding the diffuse horizontal data.
   DOM: A specific domain comprised of the numeric characters (00-99).
    01 = Value modeled from METSTAT model
    02 = Value time-shifted from SUNY satellite model
    03 = Value time-shifted from SUNY satellite model, adjusted to a minimum low-diffuse envelope
    99 = Missing data

FLD LEN: 3
   Modeled diffuse horizontal uncertainty
   The uncertainty values are based on model type and quality of input data.
   MIN: 000   MAX: 100   UNITS: Percent
   SCALING FACTOR: 1
   DOM: A general domain comprised of the numeric characters (0-9)
        999 = Missing data

FLD LEN: 3

Hourly Solar Angle Section identifier
The identifier that denotes the start of the Hourly Solar angle data section.
DOM: A specific domain comprised of the characters in the ASCII character set.
GQ1 An indicator of the occurrence of the following items:
Hourly solar angle time period
Hourly mean zenith angle
Hourly mean zenith angle quality code
Hourly mean azimuth angle
Hourly mean azimuth angle quality code

FLD LEN: 4

Time period in minutes, for which the data in this section pertains—eg, 0060 = 60 minutes (1 hour).
MIN: 0001   MAX: 9998   UNITS: Minutes
DOM: A general domain comprised of the numeric characters (0-9).
9999 = Missing data

FLD LEN: 4

Hourly mean zenith angle (for sunup periods)
The angle between sun and the zenith as the mean of all 1-minute sunup zenith angle values.
MIN: 0000   MAX: 3600   UNITS: Degrees
SCALING FACTOR: 10
DOM: A general domain comprised of the numeric characters (0-9).
9999 = Missing data

FLD LEN: 1

Hourly mean zenith angle quality code
The code that denotes a quality status of the hourly mean zenith angle.
DOM: A specific domain comprised of the numeric characters (0-9).
0 = Passed gross limits check
1 = Passed all quality control checks
2 = Suspect
3 = Erroneous
9 = Missing

FLD LEN: 4

Hourly mean azimuth angle (for sunup periods)
The angle between sun and north as the mean of all 1-minute sunup azimuth angle values.
MIN: 0000   MAX: 3600   UNITS: Degrees
SCALING FACTOR: 10
DOM: A general domain comprised of the numeric characters (0-9).
9999 = Missing data

FLD LEN: 1

Hourly mean azimuth angle quality code
The code that denotes a quality status of the hourly mean azimuth angle.
DOM: A specific domain comprised of the numeric characters (0-9).
0 = Passed gross limits check
1 = Passed all quality control checks
2 = Suspect
3 = Erroneous
9 = Missing

FLD LEN: 3

Hourly Extraterrestrial Radiation Section identifier
The identifier that denotes the start of the Hourly Extraterrestrial radiation data section.
DOM: A specific domain comprised of the characters in the ASCII character set.
GR1 An indicator of the occurrence of the following items:
Hourly extraterrestrial radiation time period
Hourly extraterrestrial radiation on a horizontal surface
Hourly extraterrestrial radiation on a horizontal surface quality code
Hourly extraterrestrial radiation normal to the sun

Hourly extraterrestrial radiation normal to the sun quality code

FLD LEN: 4
Time period in minutes, for which the data in this section pertains—eg, 0060 = 60 minutes (1 hour).
MIN: 0001   MAX: 9998   UNITS: Minutes
DOM: A general domain comprised of the numeric characters (0-9).
    9999 = Missing data

FLD LEN: 4
Hourly extraterrestrial radiation on a horizontal surface
The amount of solar radiation received (modeled) on a horizontal surface at the top of the atmosphere. Unit is watts per square meter (W/m2) in whole values.
MIN: 0000   MAX: 9998   UNITS: watts per square meter
SCALING FACTOR: 1
DOM: A general domain comprised of the numeric characters (0-9).
    9999 = Missing data

FLD LEN: 1
Hourly extraterrestrial radiation on a horizontal surface quality code
The code that denotes a quality status of the hourly extraterrestrial radiation on a horizontal surface value .
DOM: A specific domain comprised of the numeric characters (0-9).
        0 = Passed gross limits check
        1 = Passed all quality control checks
        2 = Suspect
        3 = Erroneous
        9 = Missing

FLD LEN: 4
Hourly extraterrestrial radiation normal to the sun
The amount of solar radiation received (modeled) on a surface normal to the sun at the top of the atmosphere. Unit is watts per square meter (W/m2) in whole values.
MIN: 0000   MAX: 9998   UNITS: watts per square meter
SCALING FACTOR: 1
DOM: A general domain comprised of the numeric characters (0-9).
        9999 = Missing data

FLD LEN: 1
Hourly extraterrestrial radiation normal to the sun quality code
The code that denotes a quality status of the hourly extraterrestrial radiation normal to the sun value.
DOM: A specific domain comprised of the numeric characters (0-9).
        0 = Passed gross limits check
        1 = Passed all quality control checks
        2 = Suspect
        3 = Erroneous
        9 = Missing

Hail Data

FLD LEN: 3
HAIL identifier
The identifier that denotes the start of a HAIL data section.
DOM: A specific domain comprised of the characters in the ASCII character set.
HL1 An indicator of the occurrence of the following item:
    Hail size
    Hail size quality code

FLD LEN: 3
HAIL size
The diameter of the largest hailstone observed.

MIN: 000   MAX: 200   UNITS: Centimeters
SCALING FACTOR: 10
DOM: A general domain comprised of the numeric characters (0-9).

FLD LEN: 1
HAIL size quality code
The code that denotes a quality status of the reported HAIL size.
DOM: A specific domain comprised of the characters in the ASCII character set.
    0 = Passed gross limits check
    1 = Passed all quality control checks
    2 = Suspect
    3 = Erroneous
    9 = Passed gross limits check if element is present

Ground Surface Data

FLD LEN: 3
GROUND-SURFACE-OBSERVATION identifier
The identifier that denotes the availability of a GROUND-SURFACE-OBSERVATION.
DOM: A specific domain comprised of the characters in the ASCII character set.
    IA1: An indicator of the occurrence of the following data item:
        GROUND-SURFACE-OBSERVATION code
        GROUND-SURFACE-OBSERVATION quality code

FLD LEN: 2
GROUND-SURFACE-OBSERVATION code
The code that denotes the physical condition of the ground's surface.
DOM: A specific domain comprised of the characters in the ASCII character set.
NOTE: Code values 10-19 indicate the state of the ground without snow or measurable ice cover.
    00 : Surface of ground dry (no appreciable amount of dust or loose sand)
    01: Surface of ground dry (without cracks and no appreciable amount of dust or loose sand and without snow or measurable ice cover)
    02: Extremely dry with cracks (without snow or measurable ice cover)
    03: Loose dry dust or sand not covering ground completely (without snow or measurable ice cover)
    04: Loose dry dust or sand covering more than one-half of ground (but not completely)
    05: Loose dry dust or sand covering ground completely
    06: Thin cover of loose dry dust or sand covering ground completely (without snow or measurable ice cover)
    07: Moderate or thick cover of loose dry dust or sand covering ground completely (without snow or measurable ice cover)
    08: Surface of ground moist
    09: Surface of ground moist (without snow or measurable ice cover)
    10: Surface of ground wet (standing water in small or large pools on surface)
    11: Surface of ground wet (standing water in small or large pools on surface without snow or measurable ice cover)
    12: Flooded (without snow or measurable ice cover)
    13: Surface of ground frozen
    14: Surface of ground frozen (without snow or measurable ice cover)
    15: Glaze or ice on ground, but no snow or melting snow
    16: Glaze on ground (without snow or measurable ice cover)
    17: Ground predominantly covered by ice
    18: Snow or melting snow (with or without ice) covering less than one-half of the ground

19: Snow or melting snow (with or without ice) covering more than one-half of the ground but
    ground not completely covered

20: Snow or melting snow (with or without ice) covering ground completely

21: Loose dry snow covering less than one-half of the ground

22: Loose dry snow covering at least one half of the ground (but not completely)

23: Even layer of loose dry snow covering ground completely

24: Uneven layer of loose dry snow covering ground completely

25: Compact or wet snow (with or without ice) covering less than one-half of the ground

26: Compact or wet snow (with or without ice) covering at least one-half of the ground but
    ground not completely covered

27: Even layer of compact or wet snow covering ground completely

28: Uneven layer of compact or wet snow covering ground completely

29: Snow covering ground completely; deep drifts

30. Lose dry dust or sand covering one-half of the ground (but not completely)

31. Loose dry snow, dust or sand covering ground completely

99: Missing

FLD LEN: 1
    GROUND-SURFACE-OBSERVATION code quality code
    The code that denotes a quality status of the reported GROUND-SURFACE-OBSERVATION code.
    DOM: A specific domain comprised of the characters in the ASCII character set.
        0 = Passed gross limits check
        1 = Passed all quality control checks
        2 = Suspect
        3 = Erroneous
        9 = Passed gross limits check if element is present

FLD LEN: 3
    GROUND-SURFACE-OBSERVATION minimum-temperature identifier
    The identifier that denotes the availability of GROUND-SURFACE-OBSERVATION
    minimum temperature data.
    DOM: A specific domain comprised of the characters in the ASCII character set.
        IA2: An indicator of the occurrence of the following data item:
           GROUND-SURFACE-OBSERVATION minimum-temperature period quantity
           GROUND-SURFACE-OBSERVATION minimum temperature
           GROUND-SURFACE-OBSERVATION minimum temperature quality code

FLD LEN: 3
    GROUND-SURFACE-OBSERVATION minimum-temperature period quantity
    The quantity of time over which the ground temperature was sampled to determine the
        minimum temperature.
    MIN: 001   MAX: 480   UNITS: hours
    SCALING FACTOR: 10
    DOM: A general domain comprised of the numeric characters (0-9).
        999 = Missing

FLD LEN: 5
    GROUND-SURFACE-OBSERVATION minimum temperature
    The minimum temperature of the ground's surface recorded during the observation period.
    MIN: -1100   MAX: +1500   UNITS: Degrees Celsius
    SCALING FACTOR: 10
    DOM: A general domain comprised of the numeric characters (0-9), a plus sign (+), and a
        minus sign(-).
        +9999 = Missing

FLD LEN: 1
    GROUND-SURFACE-OBSERVATION minimum temperature quality code
    The code that denotes a quality status of the reported GROUND-SURFACE-OBSERVATION minimum temperature.

DOM: A specific domain comprised of the characters in the ASCII character set.
    0 = Passed gross limits check
    1 = Passed all quality control checks
    2 = Suspect
    3 = Erroneous
    9 = Passed gross limits check if element is present

FLD LEN: 3

Hourly Surface Temperature Section identifier
The identifier that indicates an hourly observation of surface temperature as measured by a radiation sensor for the ground surface. This section appears in the last ISD record of the hour.
DOM: A specific domain comprised of the characters in the ASCII character set.
  IB1 An indicator of the following items:
    SURFTEMP hourly average surface temperature
    SURFTEMP_QC quality code
    SURFTEMP_FLAG quality code
    SURFTEMP_MIN minimum surface temperature
    SURFTEMP_MIN_QC quality code
    SURFTEMP_MIN_FLAG quality code
    SURFTEMP_MAX maximum surface temperature
    SURFTEMP_MAX_QC quality code
    SURFTEMP_MAX_FLAG quality code
    SURFTEMP_STD surface temperature standard deviation for the hour
    SURFTEMP_STD_QC quality code
    SURFTEMP_STD_FLAG quality code

FLD LEN: 5

SURFTEMP hourly average surface temperature
The hourly average surface temperature.
MIN: -9999   MAX: +9999   UNITS: degrees Celsius
SCALING FACTOR: 10
DOM: A general domain comprised of the numeric characters (0-9) a plus sign (+), and a minus sign (-).
    +9999 = Missing.

FLD LEN: 1

SURFTEMP_QC quality code
The code that indicates ISD's evaluation of the quality status of the hourly average surface temperature.
DOM: A specific domain comprised of the numeric characters (0-9).
    1 = Passed all quality control checks
    3 = Failed all quality control checks
    9 = Missing

FLD LEN: 1

SURFTEMP_FLAG quality code
The code that indicates the network's internal evaluation of the quality status of the hourly average surface temperature. Most users will find the preceding quality code **SURFTEMP_QC** to be the simplest and most useful quality indicator.
DOM: A specific domain comprised of the numeric characters (0-9).
    0 = Passed all quality control checks
    other – Did not pass all quality checks

FLD LEN: 5

SURFTEMP_MIN hourly minimum surface temperature
The minimum 10 second surface temperature for the hour.
MIN: -9999   MAX: +9999   UNITS: degrees Celsius
SCALING FACTOR: 10
DOM: A general domain comprised of the numeric characters (0-9) a plus sign (+), and a minus sign (-)
    +9999 = Missing.

FLD LEN: 1

SURFTEMP_MIN_QC quality code

The code that indicates ISD's evaluation of the quality status of the hourly minimum surface temperature.
DOM: A specific domain comprised of the numeric characters (0-9).
  1 = Passed all quality control checks
  3 = Failed all quality control checks
  9 = Missing

FLD LEN: 1

SURFTEMP_MIN_FLAG quality code
The code that indicates the network's internal evaluation of the quality status of the hourly minimum surface temperature. Most users will find the preceding quality code **SURFTEMP_MIN_QC** to be the simplest and most useful quality indicator.
DOM: A specific domain comprised of the numeric characters (0-9).
  0 = Passed all quality control checks
  other – Did not pass all quality checks

FLD LEN: 5

SURFTEMP_MAX hourly maximum surface temperature
The maximum 10 second surface temperature for the hour.
MIN: -9999   MAX: +9999   UNITS: degrees Celsius
SCALING FACTOR: 10
DOM: A general domain comprised of the numeric characters (0-9), a plus sign (+), and a minus sign (-)
  +9999 = Missing.

FLD LEN: 1

SURFTEMP_MAX_QC quality code
The code that indicates ISD's evaluation of the quality status of the hourly maximum surface temperature.
DOM: A specific domain comprised of the numeric characters (0-9).
  1 = Passed all quality control checks
  3 = Failed all quality control checks
  9 = Missing

FLD LEN: 1

SURFTEMP_MAX_FLAG quality code
The code that indicates the network's internal evaluation of the quality status of the hourly maximum surface temperature. Most users will find the preceding quality code **SURFTEMP_MAX_QC** to be the simplest and most useful quality indicator.
DOM: A specific domain comprised of the numeric characters (0-9).
  0 = Passed all quality control checks
  other – Did not pass all quality checks

FLD LEN: 4

SURFTEMP_STD hourly surface temperature standard deviation
The hourly surface temperature standard deviation.
MIN: 0000   MAX: 9999
SCALING FACTOR: 10
DOM: A general domain comprised of the numeric characters (0-9).
  9999 = Missing.

FLD LEN: 1

SURFTEMP_STD_QC quality code
The code that indicates ISD's evaluation of the quality status of the hourly surface temperature standard deviation.
DOM: A specific domain comprised of the numeric characters (0-9).
  1 = Passed all quality control checks
  3 = Failed all quality control checks
  9 = Missing

FLD LEN: 1

SURFTEMP_STD_FLAG quality code
The code that indicates the network's internal evaluation of the quality status of hourly surface temperature standard deviation. Most users will find the preceding quality code **SURFTEMP_STD_QC** to be the simplest and most useful quality indicator.

DOM: A specific domain comprised of the numeric characters (0-9).

0 = Passed all quality control checks
other – Did not pass all quality checks

FLD LEN: 3

Hourly Surface Temperature Sensor Section identifier
The identifier that indicates an hourly observation of the equipment temperature for the sensor used to measure ground surface temperature. This section appears in the last ISD record of the hour.
DOM: A specific domain comprised of the characters in the ASCII character set.
   IB2 An indicator of the following items:
        SURFTEMP_SB equipment temperature
        SURFTEMP_SB_QC quality code
        SURFTEMP_SB_FLAG quality code
        SURFTEMP_SB_STD equipment temperature standard deviation for the hour
        SURFTEMP_SB_STD _QC quality code
        SURFTEMP_SB_STD _FLAG quality code

FLD LEN: 5

SURFTEMP_SB equipment temperature
The average temperature of the surface temperature sensor housing (sensor body) for the hour.
MIN: -9999   MAX: +9999   UNITS: degrees Celsius
SCALING FACTOR: 10
DOM: A general domain comprised of the numeric characters (0-9), a plus sign (+), and a minus sign (-)
    +9999 = Missing.

FLD LEN: 1

SURFTEMP_SB_QC quality code
The code that indicates ISD's evaluation of the quality status of the surface temperature sensor housing temperature.
DOM: A specific domain comprised of the numeric characters (0-9).
    1 = Passed all quality control checks
    3 = Failed all quality control checks
    9 = Missing

FLD LEN: 1

SURFTEMP_SB_FLAG quality code
The code that indicates the network's internal evaluation of the quality status of the surface temperature sensor housing temperature. Most users will find the preceding quality code **SURFTEMP_SB_QC** to be the simplest and most useful quality indicator.
DOM: A specific domain comprised of the numeric characters (0-9).
    0 = Passed all quality control checks
    other – Did not pass all quality checks

FLD LEN: 4

SURFTEMP_SB_STD hourly sensor housing temperature standard deviation for the hour
The hourly 10 second hourly surface temperature standard deviation.
MIN: 0000   MAX: 9999
SCALING FACTOR: 10
DOM: A general domain comprised of the numeric characters (0-9).
    9999 = Missing.

FLD LEN: 1

SURFTEMP_SB_STD_QC quality code
The code that indicates ISD's evaluation of the quality status of the hourly sensor housing temperature standard deviation.
DOM: A specific domain comprised of the numeric characters (0-9).
    1 = Passed all quality control checks
    3 = Failed all quality control checks
    9 = Missing

FLD LEN: 1

SURFTEMP_SB_STD_FLAG quality code

The code that indicates the network's internal evaluation of the quality status of sensor housing temperature standard deviation.. Most users will find the preceding quality code **SURFTEMP_SB_STD_QC** to be the simplest and most useful quality indicator.
DOM: A specific domain comprised of the numeric characters (0-9).
     0 = Passed all quality control checks
     other – Did not pass all quality checks

FLD LEN: 3
GROUND-SURFACE-OBSERVATION pan evaporation data identifier
The identifier that denotes the availability of GROUND-SURFACE-OBSERVATION evaporation data.
DOM: A specific domain comprised of the characters in the ASCII character set.
    IC1: An indicator of the occurrence of the following data item:
       GROUND-SURFACE-OBSERVATION time period in hours
       GROUND-SURFACE-OBSERVATION wind movement
       GROUND-SURFACE-OBSERVATION wind movement condition code
       GROUND-SURFACE-OBSERVATION wind movement quality code
       GROUND-SURFACE-OBSERVATION evaporation data
       GROUND-SURFACE-OBSERVATION evaporation condition code
       GROUND-SURFACE-OBSERVATION evaporation quality code
       GROUND-SURFACE-OBSERVATION maximum pan water temperature
       GROUND-SURFACE-OBSERVATION maximum water temperature condition code
       GROUND-SURFACE-OBSERVATION maximum water temperature quality code
       GROUND-SURFACE-OBSERVATION minimum pan water temperature
       GROUND-SURFACE-OBSERVATION minimum water temperature condition code
       GROUND-SURFACE-OBSERVATION minimum water temperature quality code

FLD LEN: 2
GROUND-SURFACE-OBSERVATION time period in hours
The quantity of time over which the evaporation and related data were sampled.
MIN: 01   MAX: 98   UNITS: hours
SCALING FACTOR: 1
DOM: A general domain comprised of the numeric characters (0-9).
    99 = Missing

FLD LEN: 4
GROUND-SURFACE-OBSERVATION wind movement
The wind movement over the evaporation pan during the time period of the observation.
MIN: 0000   MAX: 9998   UNITS: Statute Miles
SCALING FACTOR: 1
DOM: A general domain comprised of the numeric characters (0-9).
    9999 = Missing

FLD LEN: 1
GROUND-SURFACE-OBSERVATION wind movement condition code
The code that denotes certain conditions or flags which describe the data.
DOM: A specific domain comprised of the characters in the ASCII character set.
    1: No special conditions
    2: Data will be included in subsequent observation
    3: Data are accumulated from previous observation(s), so cover a longer than typical time period
    9: Missing

FLD LEN: 1
GROUND-SURFACE-OBSERVATION wind movement quality code
The code that denotes a quality status of the reported wind movement data.
DOM: A specific domain comprised of the characters in the ASCII character set.
    4 = Passed gross limits check, from NCDC Data source
    5 = Passed all quality control checks, from NCDC Data source
    6 = Suspect, from NCDC Data source
    7 = Erroneous, from NCDC Data source
    9 = Passed gross limits check if element is present

FLD LEN: 3
    GROUND-SURFACE-OBSERVATION evaporation data
    The total evaporation which was measured during the time period of the observation.
    MIN: 000   MAX: 998   UNITS: Inches
    SCALING FACTOR: 100
    DOM: A general domain comprised of the numeric characters (0-9).
        999 = Missing

FLD LEN: 1
    GROUND-SURFACE-OBSERVATION evaporation condition code
    The code that denotes certain conditions or flags which describe the data.
    DOM: A specific domain comprised of the characters in the ASCII character set.
        1: No special conditions
        2: Data will be included in subsequent observation
        3: Data are accumulated from previous observation(s), so cover a longer than typical time period
        9: Missing

FLD LEN: 1
    GROUND-SURFACE-OBSERVATION evaporation quality code
    The code that denotes a quality status of the reported evaporation data.
    DOM: A specific domain comprised of the characters in the ASCII character set.
        4 = Passed gross limits check, from NCDC Data source
        5 = Passed all quality control checks, from NCDC Data source
        6 = Suspect, from NCDC Data source
        7 = Erroneous, from NCDC Data source
        9 = Passed gross limits check if element is present

FLD LEN: 4
    GROUND-SURFACE-OBSERVATION maximum pan water temperature
    The maximum temperature in the evaporation pan during the time period of the observation.
    MIN: -100   MAX: +500   UNITS: Degrees Celsius
    SCALING FACTOR: 10
    DOM: A general domain comprised of the numeric characters (0-9), as a signed field.
        +999 = Missing

FLD LEN: 1
    GROUND-SURFACE-OBSERVATION maximum pan water temperature condition code
    The code that denotes certain conditions or flags which describe the data.
    DOM: A specific domain comprised of the characters in the ASCII character set.
        1: No special conditions
        2: Data will be included in subsequent observation
        3: Data are accumulated from previous observation(s), so cover a longer than typical time period
        9: Missing

FLD LEN: 1
    GROUND-SURFACE-OBSERVATION maximum pan water temperature quality code
    The code that denotes a quality status of the reported maximum water temperature data.
    DOM: A specific domain comprised of the characters in the ASCII character set.
        4 = Passed gross limits check, from NCDC Data source
        5 = Passed all quality control checks, from NCDC Data source
        6 = Suspect, from NCDC Data source
        7 = Erroneous, from NCDC Data source
        9 = Passed gross limits check if element is present

FLD LEN: 4
    GROUND-SURFACE-OBSERVATION minimum pan water temperature
    The maximum temperature in the evaporation pan during the time period of the observation.
    MIN: -100   MAX: +500   UNITS: Degrees Celsius
    SCALING FACTOR: 10
    DOM: A general domain comprised of the numeric characters (0-9), as a signed field.
        +999 = Missing

FLD LEN: 1
    GROUND-SURFACE-OBSERVATION minimum pan water temperature condition code

Temperature Data

FLD LEN: 3
        EXTREME-AIR-TEMPERATURE identifier
        The identifier that denotes the start of an EXTREME-AIR-TEMPERATURE data section.
        DOM: A specific domain comprised of the characters in the ASCII character set.
                KA1-KA2   An indicator of up to 2 repeating fields of the following items:
                        EXTREME-AIR-TEMPERATURE period quantity
                        EXTREME-AIR-TEMPERATURE code
                        EXTREME-AIR-TEMPERATURE air temperature
                        EXTREME-AIR-TEMPERATURE temperature quality code

FLD LEN: 3
        EXTREME-AIR-TEMPERATURE period quantity
        The quantity of time over which temperatures were sampled to determine the
        EXTREME-AIR-TEMPERATURE.
        MIN: 001   MAX: 480   UNITS: Hours
        SCALING FACTOR: 10
        DOM: A general domain comprised of the ASCII character set
                999 = Missing

FLD LEN: 1
        EXTREME-AIR-TEMPERATURE code
        The code that denotes an EXTREME-AIR-TEMPERATURE as a maximum or a minimum.
        DOM: A specific domain comprised of the characters in the ASCII character set.
                N: Minimum temperature
                M: Maximum temperature
                O: Estimated minimum temperature
                P: Estimated maximum temperature
                9: Missing

FLD LEN: 5
        EXTREME-AIR-TEMPERATURE temperature
        The temperature of the high or low air temperature for a given period.
        MIN: -1100   MAX: +0630   UNITS: Degrees Celsius
        SCALING FACTOR: 10
        DOM: A general domain comprised of the numeric characters (0-9), a plus sign (+), and a minus
                sign (-).
                +9999 = Missing

FLD LEN: 1
        EXTREME-AIR-TEMPERATURE temperature quality code
        The code that denotes a quality status of the reported EXTREME-AIR-TEMPERATURE temperature.

DOM: A specific domain comprised of the characters in the ASCII character set.
      0 = Passed gross limits check
      1 = Passed all quality control checks
      2 = Suspect
      3 = Erroneous
      4 = Passed gross limits check , data originate from an NCDC data source
      5 = Passed all quality control checks, data originate from an NCDC data source
      6 = Suspect, data originate from an NCDC data source
      7 = Erroneous, data originate from an NCDC data source
      9 = Passed gross limits check if element is present

FLD LEN: 3

AVERAGE-AIR-TEMPERATURE identifier
The identifier that denotes the start of an AVERAGE-AIR-TEMPERATURE data section.
DOM: A specific domain comprised of the characters in the ASCII character set.
    KB1-KB3 An indicator of up to 3 repeating fields for the following items:
        AVERAGE-AIR-TEMPERATURE period quantity
        AVERAGE-AIR-TEMPERATURE type code
        AVERAGE-AIR-TEMPERATURE air temperature
        AVERAGE-AIR-TEMPERATURE temperature quality code

FLD LEN: 3

AVERAGE-AIR-TEMPERATURE period quantity
The quantity of time over which temperatures were sampled to determine the
AVERAGE-AIR-TEMPERATURE.
MIN: 001   MAX: 744   UNITS: Hours
SCALING FACTOR: 1
DOM: A general domain comprised of the ASCII character set
    999 = Missing

FLD LEN: 1

AVERAGE-AIR-TEMPERATURE code
The code that denotes an AVERAGE-AIR-TEMPERATURE as a mean, an average maximum, or an average minimum.
DOM: A specific domain comprised of the characters in the ASCII character set.
    N: Minimum temperature average
    M: Maximum temperature average
    A: Mean temperature
    9: Missing

FLD LEN: 5

AVERAGE-AIR-TEMPERATURE temperature
The mean air temperature for a given period, typically for the day or month, as reported by
the station (ie, not derived from other data fields).
MIN: -9900   MAX: +6300   UNITS: Degrees Celsius
SCALING FACTOR: 100
DOM: A general domain comprised of the numeric characters (0-9), a plus sign (+), and a minus
    sign (-).
    +9999 = Missing

FLD LEN: 1

AVERAGE-AIR-TEMPERATURE temperature quality code
The code that denotes a quality status of the reported AVERAGE-AIR-TEMPERATURE temperature.
DOM: A specific domain comprised of the characters in the ASCII character set.
    0 = Passed gross limits check
    1 = Passed all quality control checks
    2 = Suspect
    3 = Erroneous
    4 = Passed gross limits check, data originate from an NCDC data source
    5 = Passed all quality control checks, data originate from an NCDC data source
    6 = Suspect, data originate from an NCDC data source
    7 = Erroneous, data originate from an NCDC data source
    9 = Passed gross limits check if element is present

FLD LEN: 3

EXTREME AIR-TEMPERATURE FOR THE MONTH identifier
The identifier that denotes the start of an EXTREME AIR-TEMPERATURE data section.
DOM: A specific domain comprised of the characters in the ASCII character set.
KC1-KC2 An indicator of up to 2 repeating fields for the following items:
EXTREME AIR-TEMPERATURE type code
EXTREME AIR-TEMPERATURE maximum or minimum temperature
EXTREME AIR-TEMPERATURE temperature quality code

FLD LEN: 1

EXTREME AIR-TEMPERATURE FOR THE MONTH code
The code that denotes an EXTREME AIR-TEMPERATURE FOR THE MONTH as a maximum or a minimum.
DOM: A specific domain comprised of the characters in the ASCII character set.
N: Minimum temperature
M: Maximum temperature
9: Missing

FLD LEN: 1

EXTREME AIR-TEMPERATURE FOR THE MONTH condition code
The code for EXTREME AIR-TEMPERATURE FOR THE MONTH
DOM: A specific domain comprised of the characters in the ASCII character set.
1: The value occurred on other dates in addition to those listed
9: Missing (N/A)

FLD LEN: 5

EXTREME AIR-TEMPERATURE FOR THE MONTH temperature
The extremes air temperature for the month, as reported by the station (ie, not derived from other data fields).
MIN: -1100   MAX: +0630   UNITS: Degrees Celsius
SCALING FACTOR: 10
DOM: A general domain comprised of the numeric characters (0-9), a plus sign (+), and a minus
sign (-).
+9999 = Missing

FLD LEN: 6

EXTREME AIR-TEMPERATURE FOR THE MONTH dates of occurrence
The dates of occurrence of **EXTREME AIR-TEMPERATURE**, given as the date for each occurrence, for up to 3
occurrences; e.g., 041016 indicates days 04, 10, and 16.
MIN: 01   MAX: 31
DOM: A general domain comprised of the numeric characters (0-9).
99 = missing for each of the 3 sub-fields.

FLD LEN: 1

EXTREME AIR-TEMPERATURE FOR THE MONTH temperature quality code
The code that denotes a quality status of the reported EXTREME AIR-TEMPERATURE FOR THE MONTH.
DOM: A specific domain comprised of the characters in the ASCII character set.
0 = Passed gross limits check
1 = Passed all quality control checks
2 = Suspect
3 = Erroneous
4 = Passed gross limits check, data originate from an NCDC data source
5 = Passed all quality control checks, data originate from an NCDC data source
6 = Suspect, data originate from an NCDC data source
7 = Erroneous, data originate from an NCDC data source
9 = Passed gross limits check if element is present

FLD LEN: 3

HEATING-COOLING-DEGREE-DAYS identifier
The identifier that denotes the start of an HEATING-COOLING-DEGREE-DAYS data section.

DOM: A specific domain comprised of the characters in the ASCII character set.
KD1-KD2   An indicator of up to 2 repeating fields of the following items:
HEATING-COOLING-DEGREE-DAYS period quantity
HEATING-COOLING-DEGREE-DAYS code
HEATING-COOLING-DEGREE-DAYS value
HEATING-COOLING-DEGREE-DAYS quality code

FLD LEN: 3
HEATING-COOLING-DEGREE-DAYS period quantity
The quantity of time over which temperatures were sampled to determine the
HEATING-COOLING-DEGREE-DAYS.
MIN: 001   MAX: 744   UNITS: Hours
SCALING FACTOR: 1
DOM: A general domain comprised of the ASCII character set
999 = Missing

FLD LEN: 1
HEATING-COOLING-DEGREE-DAYS code
The code that denotes the value as being heating degree days or cooling degree days.
DOM: A specific domain comprised of the characters in the ASCII character set.
H: Heating Degree Days
C: Cooling Degree Days

FLD LEN: 4
HEATING-COOLING-DEGREE-DAYS value
The total heating or cooling degree days for a given period, typically for the day or month, as reported by
the station (ie, not derived from other data fields). These data use the 65-degree Fahrenheit base as
traditionally used for degree days.
MIN: 0000   MAX: 5000   UNITS: Heating or Cooling Degree Days
SCALING FACTOR: 1
DOM: A general domain comprised of the numeric characters (0-9).
9999 = Missing

FLD LEN: 1
HEATING-COOLING-DEGREE-DAYS quality code
The code that denotes a quality status of the reported HEATING-COOLING-DEGREE-DAYS data.
DOM: A specific domain comprised of the characters in the ASCII character set.
0 = Passed gross limits check
1 = Passed all quality control checks
2 = Suspect
3 = Erroneous
4 = Passed gross limits check , data originate from an NCDC data source
5 = Passed all quality control checks, data originate from an NCDC data source
6 = Suspect, data originate from an NCDC data source
7 = Erroneous, data originate from an NCDC data source
9 = Passed gross limits check if element is present

FLD LEN: 3
EXTREME TEMPERATURES, NUMBER OF DAYS EXCEEDING CRITERIA, FOR THE MONTH identifier
The identifier that represents NUMBER OF DAYS EXCEEDING CRITERIA data.
DOM: A specific domain comprised of the characters in the ASCII character set.
KE1   An indicator of the following items:
EXTREME TEMPERATURE, NUMBER OF DAYS with maximum temperature 32 F or lower
EXTREME TEMPERATURE, NUMBER OF DAYS quality code
EXTREME TEMPERATURE, NUMBER OF DAYS with maximum temperature 90 F or higher
EXTREME TEMPERATURE, NUMBER OF DAYS quality code
EXTREME TEMPERATURE, NUMBER OF DAYS with minimum temperature 32 F or lower
EXTREME TEMPERATURE, NUMBER OF DAYS quality code
EXTREME TEMPERATURE, NUMBER OF DAYS with minimum temperature 0 F or lower
EXTREME TEMPERATURE, NUMBER OF DAYS quality code

FLD LEN: 2

EXTREME TEMPERATURES, NUMBER OF DAYS EXCEEDING CRITERIA, FOR THE MONTH
The number of days with maximum temperature 32 F (0.0 C) or lower.
MIN: 00   MAX: 31
DOM: A general domain comprised of the numeric characters (0-9).
      99 = Missing.

FLD LEN: 1
EXTREME TEMPERATURES, NUMBER OF DAYS EXCEEDING CRITERIA, FOR THE MONTH quality code
The code that denotes a quality status of the reported days with max temperature 32 F (0.0 C) or lower.
DOM: A specific domain comprised of the characters in the ASCII character set.
      0 = Passed gross limits check
      1 = Passed all quality control checks
      2 = Suspect
      3 = Erroneous
      4 = Passed gross limits check, data originate from an NCDC data source
      5 = Passed all quality control checks, data originate from an NCDC data source
      6 = Suspect, data originate from an NCDC data source
      7 = Erroneous, data originate from an NCDC data source
      9 = Passed gross limits check if element is present

FLD LEN: 2
EXTREME TEMPERATURES, NUMBER OF DAYS EXCEEDING CRITERIA, FOR THE MONTH
The number of days with maximum temperature 90 F (32.2 C) or higher, except for Alaska—70 F (21.1 C) or higher.
MIN: 00   MAX: 31
DOM: A general domain comprised of the numeric characters (0-9).
      99 = Missing.

FLD LEN: 1
EXTREME TEMPERATURES, NUMBER OF DAYS EXCEEDING CRITERIA, FOR THE MONTH quality code
The code that denotes a quality status of the reported days with max temperature 90 F (32.2 C) or higher (70 F for Alaska).
DOM: A specific domain comprised of the characters in the ASCII character set.
      0 = Passed gross limits check
      1 = Passed all quality control checks
      2 = Suspect
      3 = Erroneous
      4 = Passed gross limits check, data originate from an NCDC data source
      5 = Passed all quality control checks, data originate from an NCDC data source
      6 = Suspect, data originate from an NCDC data source
      7 = Erroneous, data originate from an NCDC data source
      9 = Passed gross limits check if element is present

FLD LEN: 2
EXTREME TEMPERATURES, NUMBER OF DAYS EXCEEDING CRITERIA, FOR THE MONTH
The number of days with minimum temperature 32 F (0.0 C) or lower.
MIN: 00   MAX: 31
DOM: A general domain comprised of the numeric characters (0-9).
      99 = Missing.

FLD LEN: 1
EXTREME TEMPERATURES, NUMBER OF DAYS EXCEEDING CRITERIA, FOR THE MONTH quality code
The code that denotes a quality status of the reported days with min temperature 32 F (0.0 C) or lower.
DOM: A specific domain comprised of the characters in the ASCII character set.
      0 = Passed gross limits check
      1 = Passed all quality control checks
      2 = Suspect
      3 = Erroneous
      4 = Passed gross limits check, data originate from an NCDC data source
      5 = Passed all quality control checks, data originate from an NCDC data source
      6 = Suspect, data originate from an NCDC data source
      7 = Erroneous, data originate from an NCDC data source
      9 = Passed gross limits check if element is present

FLD LEN: 2

EXTREME TEMPERATURES, NUMBER OF DAYS EXCEEDING CRITERIA, FOR THE MONTH
The number of days with minimum temperature 0 F (-17.8 C) or lower.
MIN: 00   MAX: 31
DOM: A general domain comprised of the numeric characters (0-9).
      99 = Missing.

FLD LEN: 1
EXTREME TEMPERATURES, NUMBER OF DAYS EXCEEDING CRITERIA, FOR THE MONTH quality code
The code that denotes a quality status of the reported days with min temperature 0 F (-17.8 C) or lower.
DOM: A specific domain comprised of the characters in the ASCII character set.
      0 = Passed gross limits check
      1 = Passed all quality control checks
      2 = Suspect
      3 = Erroneous
      4 = Passed gross limits check, data originate from an NCDC data source
      5 = Passed all quality control checks, data originate from an NCDC data source
      6 = Suspect, data originate from an NCDC data source
      7 = Erroneous, data originate from an NCDC data source
      9 = Passed gross limits check if element is present

FLD LEN: 3
Hourly Calculated Temperature Section identifier
The identifier that indicates a calculated hourly average air temperature derived by an algorithm whose inputs are hourly temperature averages from each of the 3 co-located temperature sensors. This section appears in the last ISD record of the hour for the 15-minute data stream only. Unlike the temperature value found in the mandatory data section which is produced using 5-minute values, this value is calculated using an hourly average.
DOM: A specific domain comprised of the characters in the ASCII character set.
      KF1 An indicator of the following items:
         TEMP derived air temperature
         TEMP_QC quality code

FLD LEN: 5
TEMP derived air temperature
The calculated hourly average air temperature.
MIN: -9999   MAX: +9999   UNITS: degrees Celsius
SCALING FACTOR: 10
DOM: A general domain comprised of the numeric characters (0-9), a plus sign (+), and a minus sign (-).
      +9999 = Missing.

FLD LEN: 1
TEMP_QC quality code
The code that indicates ISD's evaluation of the quality status of the calculated hourly average air temperature.
DOM: A specific domain comprised of the numeric characters (0-9).
      1 = Passed all quality control checks
      3 = Failed all quality control checks

Pressure Data

FLD LEN: 3
ATMOSPHERIC-PRESSURE-OBSERVATION identifier
The identifier that denotes the start of an ATMOSPHERIC-PRESSURE-OBSERVATION data section.
DOM: A specific domain comprised of the characters in the ASCII character set.
      MA1 An indicator of the occurrence of the following items:
         ATMOSPHERIC-PRESSURE-OBSERVATION altimeter setting rate
         ATMOSPHERIC-PRESSURE-OBSERVATION altimeter quality code
         ATMOSPHERIC-PRESSURE-OBSERVATION station pressure rate
         ATMOSPHERIC-PRESSURE-OBSERVATION station pressure quality code

FLD LEN: 5

ATMOSPHERIC-PRESSURE-OBSERVATION altimeter setting rate
The pressure value to which an aircraft altimeter is set so that it will indicate the altitude relative
to mean sea level of an aircraft on the ground at the location for which the value was determined.
MIN: 08635   MAX: 10904   UNITS: Hectopascals
SCALING FACTOR: 10
DOM: A general domain comprised of the numeric characters (0-9).
      Missing = 99999

FLD LEN: 1

ATMOSPHERIC-PRESSURE-OBSERVATION altimeter quality code
The code that denotes a quality status of an altimeter setting rate.
DOM: A specific domain comprised of the characters in the ASCII character set.
      0 = Passed gross limits check
      1 = Passed all quality control checks
      2 = Suspect
      3 = Erroneous
      4 = Passed gross limits check , data originate from an NCDC data source
      5 = Passed all quality control checks, data originate from an NCDC data source
      6 = Suspect, data originate from an NCDC data source
      7 = Erroneous, data originate from an NCDC data source
      9 = Passed gross limits check if element is present

FLD LEN: 5

ATMOSPHERIC-PRESSURE-OBSERVATION station pressure rate
The atmospheric pressure at the observation point.
MIN: 04500   MAX: 10900   UNITS: Hectopascals
SCALING FACTOR: 10
DOM: A general domain comprised of the numeric characters (0-9).
      99999 = Missing.

FLD LEN: 1

ATMOSPHERIC-PRESSURE-OBSERVATION station pressure quality code
The code that denotes a quality status of the station pressure of an
ATMOSPHERIC-PRESSURE-OBSERVATION.
DOM: A specific domain comprised of the characters in the ASCII character set.
      0 = Passed gross limits check
      1 = Passed all quality control checks
      2 = Suspect
      3 = Erroneous
      4 = Passed gross limits check , data originate from an NCDC data source
      5 = Passed all quality control checks, data originate from an NCDC data source
      6 = Suspect, data originate from an NCDC data source
      7 = Erroneous, data originate from an NCDC data source
      9 = Passed gross limits check if element is present

FLD LEN: 3
      ATMOSPHERIC-PRESSURE-CHANGE identifier
      The identifier that denotes the start of an ATMOSPHERIC-PRESSURE-CHANGE data section.
      DOM: A specific domain comprised of the characters in the ASCII character set.
      Domain Value ID: Domain Value Definition Text
         MD1 An indicator of the occurrence of the following items:
               ATMOSPHERIC-PRESSURE-CHANGE tendency code
               ATMOSPHERIC-PRESSURE-CHANGE quality tendency code
               ATMOSPHERIC-PRESSURE-CHANGE three hour quantity
               ATMOSPHERIC-PRESSURE-CHANGE quality three hour code
               ATMOSPHERIC-PRESSURE-CHANGE twenty four hour quantity
               ATMOSPHERIC-PRESSURE-CHANGE quality twenty four hour code

FLD LEN: 1
      ATMOSPHERIC-PRESSURE-CHANGE tendency code

The code that denotes the characteristics of an ATMOSPHERIC-PRESSURE-CHANGE that occurs over a period of three hours.
DOM: A specific domain comprised of the characters in the ASCII character set.
Domain Value ID: Domain Value Definition Text
   0: Increasing, then decreasing; atmospheric pressure the same or higher than 3 hours ago
   1: Increasing then steady; or increasing, then increasing more slowly; atmospheric pressure now higher than 3 hours ago
   2: Increasing (steadily or unsteadily); atmospheric pressure now higher than 3 hours ago
   3: Decreasing or steady, then increasing; or increasing, then increasing more rapidly; atmospheric pressure now higher than 3 hours ago
   4: Steady; atmospheric pressure the same as 3 hours ago
   5: Decreasing, then increasing; atmospheric pressure the same or lower than 3 hours ago
   6: Decreasing, then steady; or decreasing, then decreasing more slowly; atmospheric pressure now lower than 3 hours ago
   7: Decreasing (steadily or unsteadily); atmospheric pressure now lower than 3 hours ago
   8: Steady or increasing, then decreasing; or decreasing, then decreasing more rapidly; atmospheric pressure now lower than 3 hours ago
   9: Missing

FLD LEN: 1
   ATMOSPHERIC-PRESSURE-CHANGE quality tendency code
   The code that denotes a quality status of the tendency of an ATMOSPHERIC-PRESSURE-CHANGE.
   DOM: A specific domain comprised of the characters in the ASCII character set.
      0 = Passed gross limits check
      1 = Passed all quality control checks
      2 = Suspect
      3 = Erroneous
      9 = Passed gross limits check if element is present

FLD LEN: 3
   ATMOSPHERIC-PRESSURE-CHANGE three hour quantity
   The absolute value of the quantity of change in atmospheric pressure measured at the beginning and end of a three hour period.
   MIN: 000   MAX: 500   UNITS: Hectopascals
   SCALING FACTOR: 10
   DOM: A general domain comprised of the numeric characters (0-9).
      Missing = 999

FLD LEN: 1
   ATMOSPHERIC-PRESSURE-CHANGE quality three hour code
   The code that denotes the quality status of the three hour quantity for an ATMOPSHERIC-PRESSURE-CHANGE.
   DOM: A specific domain comprised of the characters in the ASCII character set.
      0 = Passed gross limits check
      1 = Passed all quality control checks
      2 = Suspect
      3 = Erroneous
      9 = Passed gross limits check if element is present

FLD LEN: 4
   ATMOSPHERIC-PRESSURE-CHANGE twenty four hour quantity
   The quantity of change in atmospheric pressure measured at the beginning and end of a twenty four hour period.
   MIN: -800   MAX: +800   UNITS: Hectopascals
   SCALING FACTOR: 10
   DOM: A general domain comprised of the numeric characters(0-9), a plus sign (+), and a minus sign (-).
      +999 = Missing

FLD LEN: 1
   ATMOSPHERIC-PRESSURE-CHANGE quality twenty four hour code
   The code that denotes a quality status of a reported twenty four hour ATMOSPHERIC-PRESSURE-CHANGE.

DOM: A specific domain comprised of the characters in the ASCII character set.
  0 = Passed gross limits check
  1 = Passed all quality control checks
  2 = Suspect
  3 = Erroneous
  9 = Passed gross limits check if element is present

FLD LEN: 3
  GEOPOTENTIAL-HEIGHT-ISOBARIC-LEVEL identifier
  The identifier that denotes the availability of GEOPOTENTIAL-HEIGHT-ISOBARIC-LEVEL data.
  DOM: A specific domain comprised of the characters in the ASCII character set.
    ME1: An indicator of the occurrence of the following data items:
      GEOPOTENTIAL-HEIGHT-ISOBARIC-LEVEL code
      GEOPOTENTIAL-HEIGHT-ISOBARIC-LEVEL height dimension
      GEOPOTENTIAL-HEIGHT-ISOBARIC-LEVEL height dimension quality code

FLD LEN: 1
  GEOPOTENTIAL-HEIGHT-ISOBARIC-LEVEL code
  The code that denotes the isobaric surface used to represent geopotential height.
  DOM: A specific domain comprised of the characters in the ASCII character set.
  Domain Value ID: Domain Value Definition Text
        1: 1000 hectopascals
        2: 925 hectopascals
        3: 850 hectopascals
        4: 700 hectopascals
        5: 500 hectopascals
        9: Missing

FLD LEN: 4
  GEOPOTENTIAL-HEIGHT-ISOBARIC-LEVEL height dimension
  The height of a GEOPOTENTIAL-HEIGHT-ISOBARIC-LEVEL
  MIN: 0000   MAX: 9998   UNITS: Geopotential Meters
  SCALING FACTOR: 1
  DOM: A general domain comprised of the numeric characters (0-9).
      9999 = Missing

FLD LEN: 1
  GEOPOTENTIAL-HEIGHT-ISOBARIC-LEVEL height dimension quality code
  The code that denotes a quality status of the reported GEOPOTENTIAL-HEIGHT-ISOBARIC-LEVEL height dimension.
  DOM: A specific domain comprised of the characters in the ASCII character set.
      0 = Passed gross limits check
      1 = Passed all quality control checks
      2 = Suspect
      3 = Erroneous
      9 = Passed gross limits check if element is present

FLD LEN: 3
  ATMOSPHERIC-PRESSURE-OBSERVATION identifier
  The identifier that denotes the start of an ATMOSPHERIC-PRESSURE-OBSERVATION data section.
  DOM: A specific domain comprised of the characters in the ASCII character set.
    MG1   An indicator of the occurrence of the following items:
      ATMOSPHERIC-PRESSURE-OBSERVATION average station pressure for the day
      ATMOSPHERIC-PRESSURE-OBSERVATION average station pressure quality code
      ATMOSPHERIC-PRESSURE-OBSERVATION minimum sea level pressure for the day
      ATMOSPHERIC-PRESSURE-OBSERVATION minimum sea level pressure quality code

FLD LEN: 5
  ATMOSPHERIC-PRESSURE-OBSERVATION average station pressure for the day
  The average pressure at the observation point for the day.
  MIN: 04500   MAX: 10900   UNITS: Hectopascals

SCALING FACTOR: 10
DOM: A general domain comprised of the numeric characters (0-9).
      99999 = Missing.

FLD LEN: 1

ATMOSPHERIC-PRESSURE-OBSERVATION average station pressure quality code
The code that denotes the quality status of an average station pressure.
DOM: A specific domain comprised of the characters in the ASCII character set.
    4 = Passed gross limits check, data originate from an NCDC data source
    5 = Passed all quality control checks, data originate from an NCDC data source
    6 = Suspect, data originate from an NCDC data source
    7 = Erroneous, data originate from an NCDC data source
    9 = Passed gross limits check if element is present

FLD LEN: 5

ATMOSPHERIC-PRESSURE-OBSERVATION minimum sea level pressure for the day
The minimum sea level pressure for the day at the observation point.
MIN: 08600   MAX: 10900   UNITS: Hectopascals
SCALING FACTOR: 10
DOM: A general domain comprised of the numeric characters (0-9).
    99999 = Missing.

FLD LEN: 1

ATMOSPHERIC-PRESSURE-OBSERVATION minimum sea level pressure for the day quality code
The code that denotes the quality status of the minimum sea level pressure for the day.
DOM: A specific domain comprised of the characters in the ASCII character set.
    4 = Passed gross limits check, data originate from an NCDC data source
    5 = Passed all quality control checks, data originate from an NCDC data source
    6 = Suspect, data originate from an NCDC data source
    7 = Erroneous, data originate from an NCDC data source
    9 = Passed gross limits check if element is present

FLD LEN: 3

ATMOSPHERIC-PRESSURE-OBSERVATION FOR THE MONTH identifier
The identifier that denotes the start of an ATMOSPHERIC-PRESSURE-OBSERVATION data section.
DOM: A specific domain comprised of the characters in the ASCII character set.
MH1   An indicator of the occurrence of the following items:
    ATMOSPHERIC-PRESSURE-OBSERVATION average station pressure for the month
    ATMOSPHERIC-PRESSURE-OBSERVATION average station pressure quality code
    ATMOSPHERIC-PRESSURE-OBSERVATION average sea level pressure for the month
    ATMOSPHERIC-PRESSURE-OBSERVATION average sea level pressure quality code

FLD LEN: 5

ATMOSPHERIC-PRESSURE-OBSERVATION FOR THE MONTH average station pressure for the month
The average pressure at the observation point for the month.
MIN: 04500   MAX: 10900   UNITS: Hectopascals
SCALING FACTOR: 10
DOM: A general domain comprised of the numeric characters (0-9).
    99999 = Missing.

FLD LEN: 1

ATMOSPHERIC-PRESSURE-OBSERVATION FOR THE MONTH average station pressure quality code
The code that denotes the quality status of an average station pressure.
DOM: A specific domain comprised of the characters in the ASCII character set.
    0 = Passed gross limits check
    1 = Passed all quality control checks
    2 = Suspect
    3 = Erroneous
    4 = Passed gross limits check, data originate from an NCDC data source
    5 = Passed all quality control checks, data originate from an NCDC data source
    6 = Suspect, data originate from an NCDC data source
    7 = Erroneous, data originate from an NCDC data source

9 = Passed gross limits check if element is present

FLD LEN: 5

ATMOSPHERIC-PRESSURE-OBSERVATION FOR THE MONTH average sea level pressure for the month
The average sea level pressure for the month at the observation point.
MIN: 08600   MAX: 10900   UNITS: Hectopascals
SCALING FACTOR: 10
DOM: A general domain comprised of the numeric characters (0-9).
      99999 = Missing.

FLD LEN: 1

ATMOSPHERIC-PRESSURE-OBSERVATION FOR THE MONTH average sea level pressure for the month quality code
The code that denotes the quality status of the average sea level pressure for the month.
DOM: A specific domain comprised of the characters in the ASCII character set.
      0 = Passed gross limits check
      1 = Passed all quality control checks
      2 = Suspect
      3 = Erroneous
      4 = Passed gross limits check, data originate from an NCDC data source
      5 = Passed all quality control checks, data originate from an NCDC data source
      6 = Suspect, data originate from an NCDC data source
      7 = Erroneous, data originate from an NCDC data source
      9 = Passed gross limits check if element is present

FLD LEN: 3

ATMOSPHERIC-PRESSURE-OBSERVATION FOR THE MONTH identifier
The identifier that denotes the start of an ATMOSPHERIC-PRESSURE-OBSERVATION data section.
DOM: A specific domain comprised of the characters in the ASCII character set.
      MK1   An indicator of the occurrence of the following items:
           ATMOSPHERIC-PRESSURE-OBSERVATION maximum sea level pressure for the month
           ATMOSPHERIC-PRESSURE-OBSERVATION maximum sea level pressure date-time
           ATMOSPHERIC-PRESSURE-OBSERVATION maximum sea level pressure quality code
           ATMOSPHERIC-PRESSURE-OBSERVATION minimum sea level pressure for the month
           ATMOSPHERIC-PRESSURE-OBSERVATION minimum sea level pressure date-time
           ATMOSPHERIC-PRESSURE-OBSERVATION minimum sea level pressure quality code

FLD LEN: 5

ATMOSPHERIC-PRESSURE-OBSERVATION FOR THE MONTH maximum sea level pressure for the month
The maximum sea level pressure at the observation point for the month.
MIN: 08600   MAX: 10900   UNITS: Hectopascals
SCALING FACTOR: 10
DOM: A general domain comprised of the numeric characters (0-9).
      99999 = Missing

FLD LEN: 6

ATMOSPHERIC-PRESSURE-OBSERVATION FOR THE MONTH maximum sea level pressure, date-time
The date-time of occurrence of the pressure value, given as the date-time; e.g., 051500 indicates
day 05, time 1500.
MIN: 010000   MAX: 312359
DOM: A general domain comprised of the numeric characters (0-9).
      999999 = Missing

FLD LEN: 1

ATMOSPHERIC-PRESSURE-OBSERVATION FOR THE MONTH maximum sea level pressure quality code
The code that denotes the quality status of an maximum sea level pressure.
DOM: A specific domain comprised of the characters in the ASCII character set.
      0 = Passed gross limits check
      1 = Passed all quality control checks
      2 = Suspect
      3 = Erroneous
      4 = Passed gross limits check, data originate from an NCDC data source

FLD LEN: 5

ATMOSPHERIC-PRESSURE-OBSERVATION FOR THE MONTH minimum sea level pressure for the month
The minimum sea level pressure at the observation point for the month.
MIN: 08600   MAX: 10900   UNITS: Hectopascals
SCALING FACTOR: 10
DOM: A general domain comprised of the numeric characters (0-9).
     99999 = Missing

FLD LEN: 6

ATMOSPHERIC-PRESSURE-OBSERVATION FOR THE MONTH minimum sea level pressure, date-time
The date-time of occurrence of the pressure value, given as the date-time; e.g., 051500 indicates
day 05, time 1500.
MIN: 010000   MAX: 312359
DOM: A general domain comprised of the numeric characters (0-9).
     999999 = Missing

FLD LEN: 1

ATMOSPHERIC-PRESSURE-OBSERVATION FOR THE MONTH minimum sea level pressure quality code
The code that denotes the quality status of a minimum sea level pressure.
DOM: A specific domain comprised of the characters in the ASCII character set.
     0 = Passed gross limits check
     1 = Passed all quality control checks
     2 = Suspect
     3 = Erroneous
     4 = Passed gross limits check, data originate from an NCDC data source
     5 = Passed all quality control checks, data originate from an NCDC data source
     6 = Suspect, data originate from an NCDC data source
     7 = Erroneous, data originate from an NCDC data source
     9 = Passed gross limits check if element is present

Weather Occurrence Data

FLD LEN: 3

PRESENT-WEATHER-IN-VICINITY-OBSERVATION occurrence identifier
The identifier that signifies the reporting of present weather.
DOM: A specific domain comprised of the ASCII characters.
     MV1 = first weather reported
     MV2 = second weather reported
     MV3 = third weather reported
     MV4 = fourth weather reported
     MV5 = fifth weather reported
     MV6 = sixth weather reported
     MV7 = seventh weather reported
     An indicator of up to 7 repeating fields of the following items:
     PRESENT-WEATHER-OBSERVATION atmospheric condition code.
     PRESENT-WEATHER-OBSERVATION quality manual atmospheric condition code

FLD LEN: 2

PRESENT-WEATHER-IN-VICINITY-OBSERVATION atmospheric condition code
The code that denotes a specific type of weather observed between 5 and 10 statute miles of the
station at the time of observation. Observed at selected stations from July 1, 1996 to present.
DOM: A specific domain comprised of the characters in the ASCII character set.

00: No observation
01: Thunderstorm in vicinity

02: Showers in vicinity
03: Sandstorm in vicinity
04: Sand / dust whirls in vicinity
05: Duststorm in vicinity
06: Blowing snow in vicinity
07: Blowing sand in vicinity
08: Blowing dust in vicinity
09: Fog in vicinity
99: Missing

FLD LEN: 1

PRESENT-WEATHER-IN-VICINITY-OBSERVATION quality atmospheric condition code
The code that denotes a quality status of a reported present weather in vicinity observation from a
station.
DOM: A specific domain comprised of the characters in the ASCII character set.
    4 = Passed gross limits check , data originate from an NCDC data source
    5 = Passed all quality control checks, data originate from an NCDC data source
    6 = Suspect, data originate from an NCDC data source
    7 = Erroneous, data originate from an NCDC data source
    9 = Passed gross limits check if element is present

FLD LEN: 3

PRESENT-WEATHER-OBSERVATION manual occurrence identifier
The identifier that signifies the reporting of present weather.
DOM: A specific domain comprised of the ASCII characters.
    MW1 = first weather reported
    MW2 = second weather reported
    MW3 = third weather reported
    MW4 = fourth weather reported
    MW5 = fifth weather reported
    MW6 = sixth weather reported
    MW7 = seventh weather reported
    An indicator of up to 7 repeating fields of the following items:
    PRESENT-WEATHER-OBSERVATION manual atmospheric condition code.
    PRESENT-WEATHER-OBSERVATION quality manual atmospheric condition code

FLD LEN: 2

PRESENT-WEATHER-OBSERVATION manual atmospheric condition code
The code that denotes a specific type of weather observed manually.
DOM: A specific domain comprised of the characters in the ASCII character set.
Note: Lack of an MW1 report normally indicates that the station did not report any present weather data.

00-49 No precipitation at the station at the time of observation
----
00-19 No precipitation, fog, ice fog (except for 11 and 12), duststorm, sandstorm, drifting or blowing
     snow at the station at the time of observation or, except for 09 and 17, during the preceding
     hour.

00: Cloud development not observed or not observable
01: Clouds generally dissolving or becoming less developed
02: State of sky on the whole unchanged
03: Clouds generally forming or developing
04: Visibility reduced by smoke, e.g. veldt or forest fires, industrial smoke or volcanic ashes
05: Haze
06: Widespread dust in suspension in the air, not raised by wind at or near the station at the time
    of observation
07: Dust or sand raised by wind at or near the station at the time of observation, but no
    well-developed dust whirl(s) or sand whirl(s), and no duststorm or sandstorm seen or, in the case
    of ships, blowing spray at the station
08: Well developed dust whirl(s) or sand whirl(s) seen at or near the station during the preceding
    hour or at the time of observation, but no duststorm or sandstorm
09: Duststorm or sandstorm within sight at the time of observation, or at the station during the

preceding hour
10: Mist
11: Patches of shallow fog or ice fog at the station, whether on land or sea, not deeper than about
    2 meters on land or 10 meters at sea
12: More or less continuous shallow fog or ice fog at the station, whether on land or sea, not
    deeper than about 2 meters on land or 10 meters at sea
13: Lightning visible, no thunder heard
14: Precipitation within sight, not reaching the ground or the surface of the sea
15: Precipitation within sight, reaching the ground or the surface of the sea, but distant, i.e., estimated
    to be more than 5 km from the station
16: Precipitation within sight, reaching the ground or the surface of the sea, near to, but not at
    the station
17: Thunderstorm, but no precipitation at the time of observation
18: Squalls at or within sight of the station during the preceding hour or at the time of observation
19: Funnel cloud(s) (Tornado cloud or waterspout) at or within sight of the station during the preceding
    hour or at the time of observation

20-29 Precipitation, fog, ice fog or thunderstorm at the station during the preceding hour,
       but not at the time of observation.

20: Drizzle (not freezing) or snow grains not falling as shower(s)
21: Rain (not freezing) not falling as shower(s)
22: Snow not falling as shower(s)
23: Rain and snow or ice pellets not falling as shower(s)
24: Freezing drizzle or freezing rain not falling as shower(s)
25: Shower(s) of rain
26: Shower(s) of snow or of rain and snow
27: Shower(s) of hail (Hail, small hail, snow pellets), or rain and hail
28: Fog or ice fog
29: Thunderstorm (with or without precipitation)

30-39 Dust, sand, or blowing snow in the air, but no precipitation at the time of observation.

30: Slight or moderate duststorm or sandstorm has decreased during the preceding hour
31: Slight or moderate duststorm or sandstorm no appreciable change during the preceding hour
32: Slight or moderate duststorm or sandstorm has begun or has increased during the preceding hour
33: Severe duststorm or sandstorm has decreased during the preceding hour
34: Severe duststorm or sandstorm no appreciable change during the preceding hour
35: Severe duststorm or sandstorm has begun or has increased during the preceding hour
36: Slight or moderate drifting snow generally low (below eye level)
37: Heavy drifting snow generally low (below eye level)
38: Slight or moderate blowing snow generally high (above eye level)
39: Heavy blowing snow generally high (above eye level)

40-49 Fog or ice fog at the time of observation

40: Fog or ice fog at a distance at the time of observation, but not at the station during the preceding
    hour, the fog or ice fog extending to a level above that of the observer
41: Fog or ice fog in patches
42: Fog or ice fog, sky visible, has become thinner during the preceding hour
43: Fog or ice fog, sky invisible, has become thinner during the preceding hour
44: Fog or ice fog, sky visible, no appreciable change during the preceding hour
45: Fog or ice fog, sky invisible, no appreciable change during the preceding hour
46: Fog or ice fog, sky visible, has begun or has become thicker during the preceding hour
47: Fog or ice fog, sky invisible, has begun or has become thicker during the preceding hour
48: Fog, depositing rime, sky visible
49: Fog, depositing rime, sky invisible

50-99 Precipitation at the station at the time of observation
----
50-59 Drizzle

50: Drizzle, not freezing, intermittent, slight at time of observation
51: Drizzle, not freezing, continuous, slight at time of observation

52: Drizzle, not freezing, intermittent, moderate at time of observation
53: Drizzle, not freezing, continuous, moderate at time of observation
54: Drizzle, not freezing, intermittent, heavy (dense) at time of observation
55: Drizzle, not freezing, continuous, heavy (dense) at time of observation
56: Drizzle, freezing, slight
57: Drizzle, freezing, moderate or heavy (dense)
58: Drizzle and rain, slight
59: Drizzle and rain, moderate or heavy

60-69: Rain

60: Rain, not freezing, intermittent, slight at time of observation
61: Rain, not freezing, continuous, slight at time of observation
62: Rain, not freezing, intermittent, moderate at time of observation
63: Rain, not freezing, continuous, moderate at time of observation
64: Rain, not freezing, intermittent, heavy at time of observation
65: Rain, not freezing, continuous, heavy at time of observation
66: Rain, freezing, slight
67: Rain, freezing, moderate or heavy
68: Rain or drizzle and snow, slight
69: Rain or drizzle and snow, moderate or heavy

70-79 Solid precipitation not in showers

70: Intermittent fall of snowflakes, slight at time of observation
71: Continuous fall of snowflakes, slight at time of observation
72: Intermittent fall of snowflakes, moderate at time of observation
73: Continuous fall of snowflakes, moderate at time of observation
74: Intermittent fall of snowflakes, heavy at time of observation
75: Continuous fall of snowflakes, heavy at time of observation
76: Diamond dust (with or without fog)
77: Snow grains (with or without fog)
78: Isolated star-like snow crystals (with or without fog)
79: Ice pellets

80-99 Showery precipitation, or precipitation with current or recent thunderstorm
----
80: Rain shower(s), slight
81: Rain shower(s), moderate or heavy
82: Rain shower(s), violent
83: Shower(s) of rain and snow mixed, slight
84: Shower(s) of rain and snow mixed, moderate or heavy
85: Show shower(s), slight
86: Snow shower(s), moderate or heavy
87: Shower(s) of snow pellets or small hail, with or without rain or rain and snow mixed, slight
88: Shower(s) of snow pellets or small hail, with or without rain or rain and snow mixed,
    moderate or heavy
89: Shower(s) of hail (hail, small hail, snow pellets) , with or without rain or rain and snow
    mixed, not associated with thunder, slight
90: Shower(s) of hail (hail, small hail, snow pellets), with or without rain or rain and snow
    mixed, not associated with thunder, moderate or heavy
91: Slight rain at time of observation, thunderstorm during the preceding hour but not at time of
    observation
92: Moderate or heavy rain at time of observation, thunderstorm during the preceding hour but
    not at time of observation
93: Slight snow, or rain and snow mixed or hail (Hail, small hail, snow pellets), at time of
    observation, thunderstorm during the preceding hour but not at time of observation
94: Moderate or heavy snow, or rain and snow mixed or hail(Hail, small hail, snow pellets) at
    time of observation, thunderstorm during the preceding hour but not at time of observation
95: Thunderstorm, slight or moderate, without hail (Hail, small hail, snow pellets),
    but with rain and/or snow at time of observation, thunderstorm at time of observation
96: Thunderstorm, slight or moderate, with hail (hail, small hail, snow pellets) at time of
    observation, thunderstorm at time of observation
97: Thunderstorm, heavy, without hail (Hail, small hail, snow pellets),

but with rain and/or snow at time of observation, thunderstorm at time of observation
98: Thunderstorm combined with duststorm or sandstorm at time of observation,
thunderstorm at time of observation
99: Thunderstorm, heavy, with hail (Hail, small hail, snow pellets) at time of observation,
thunderstorm at time of observation

FLD LEN: 1
PRESENT-WEATHER-OBSERVATION quality manual atmospheric condition code
The code that denotes a quality status of a reported present weather observation from a manual
station.
DOM: A specific domain comprised of the characters in the ASCII character set.
    0 = Passed gross limits check
    1 = Passed all quality control checks
    2 = Suspect
    3 = Erroneous
    4 = Passed gross limits check , data originate from an NCDC data source
    5 = Passed all quality control checks, data originate from an NCDC data source
    6 = Suspect, data originate from an NCDC data source
    7 = Erroneous, data originate from an NCDC data source
    9 = Passed gross limits check if element is present

Wind Data

FLD LEN: 3
SUPPLEMENTARY-WIND-OBSERVATION identifier
The identifier that denotes the start of a SUPPLEMENTARY-WIND-OBSERVATION data section.
DOM: A specific domain comprised of the characters in the ASCII character set.
    OA1 - OA3: An indicator of up to 3 occurrences of the following item:
      SUPPLEMENTARY-WIND-OBSERVATION type code
      SUPPLEMENTARY-WIND-OBSERVATION period quantity
      SUPPLEMENTARY-WIND-OBSERVATION speed rate
      SUPPLEMENTARY-WIND-OBSERVATION speed rate quality code

FLD LEN: 1
SUPPLEMENTARY-WIND-OBSERVATION type code
The code that denotes a type of SUPPLEMENTARY-WIND-OBSERVATION.
DOM: A specific domain comprised of the ASCII characters.
    1 = Average speed of prevailing wind
    2 = Mean wind speed
    3 = Maximum instantaneous wind speed
    4 = Maximum gust speed
    5 = Maximum mean wind speed
    6 = Maximum 1-minute mean wind speed
    9 = Missing

FLD LEN: 2
SUPPLEMENTARY-WIND-OBSERVATION period quantity
The quantity of time over which a SUPPLEMENTARY-WIND-OBSERVATION occurred.
MIN: 01   MAX: 48   UNITS: Hours
DOM: A general domain comprised of the ASCII characters.
    99 = Missing

FLD LEN: 4
SUPPLEMENTARY-WIND-OBSERVATION speed rate
The rate of horizontal speed of air reported in the SUPPLEMENTARY-WIND-OBSERVATION.
MIN: 0000   MAX: 2000   UNITS: Meters per Second
SCALING FACTOR: 10
DOM: A general domain comprised of the numeric characters (0-9).
    9999 = Missing

FLD LEN: 1
SUPPLEMENTARY-WIND-OBSERVATION speed rate quality code
The code that denotes a quality status of the reported SUPPLEMENTARY-WIND-OBSERVATION speed rate.
DOM: A specific domain comprised of the characters in the ASCII character set.
0 = Passed gross limits check
1 = Passed all quality control checks
2 = Suspect
3 = Erroneous
9 = Passed gross limits check if element is present

FLD LEN: 3

Hourly/Sub-Hourly Wind Section identifier
The identifier that indicates an observation of wind speed at a height of 1.5 meters from the ground, typically used by Climate Reference Network stations.
This section appears one or more time per hour. The wind average value in this section is a duplicate of the wind average value in the mandatory data section. It is included in this section so that all wind values are conveniently available in a single section.
DOM: A specific domain comprised of the characters in the ASCII character set.
  OB1, OB2 An indicator of the following items:
WIND_AVG time period
WIND_MAX maximum gust
WIND_MAX_QC quality code
WIND_MAX_FLAG quality code
WIND_MAX direction
WIND_MAX_QC direction quality code
WIND_MAX_FLAG direction quality code
WIND_STD wind speed standard deviation
WIND_STD_QC quality code
WIND_STD_FLAG quality code
WIND_DIR_STD wind direction standard deviation
WIND_DIR_STD_QC quality code
WIND_DIR_STD_FLAG quality code

FLD LEN: 3

WIND_AVG Time period in minutes, for which the data in this section (OB1) pertains—eg, 060 = 60 minutes (1 hour).
MIN: 001   MAX: 999   UNITS: Minutes
DOM: A general domain comprised of the numeric characters (0-9).
999 = Missing.

FLD LEN: 4

WIND_MAX maximum gust
The maximum 10 second wind speed.
MIN: 0000   MAX: 9999   UNITS: meters per second
SCALING FACTOR: 10
DOM: A general domain comprised of the numeric characters (0-9).
9999 = Missing.

FLD LEN: 1

WIND_MAX_QC quality code
The code that indicates ISD's evaluation of the quality status of the maximum gust.
DOM: A specific domain comprised of the numeric characters (0-9).
1 = Passed all quality control checks
3 = Failed all quality control checks
9 = Missing

FLD LEN: 1

WIND_MAX_FLAG quality code
A flag that indicates the network's internal evaluation of the quality status of the maximum gust. Most users will find the preceding quality code **WIND_MAX_QC** to be the simplest and most useful quality indicator.
DOM: A specific domain comprised of the numeric characters (0-9).
0 = Passed all quality control checks
other – Did not pass all quality checks

FLD LEN: 3

WIND_MAX direction of the maximum gust
The direction measured in clockwise angular degrees from which the maximum 10 second wind speed occurred.
MIN: 001   MAX: 360   UNITS: Angular degrees
SCALING FACTOR: 1
DOM: A general domain comprised of the numeric characters (0-9).
      999 = Missing.

FLD LEN: 1

WIND_MAX_QC direction quality code
The code that indicates ISD's evaluation of the quality status of the maximum gust direction.
DOM: A specific domain comprised of the numeric characters (0-9).
      1 = Passed all quality control checks
      3 = Failed all quality control checks
      9 = Missing

FLD LEN: 1

WIND_MAX_FLAG direction quality code
A flag that indicates the network's internal evaluation of the quality status of the maximum gust direction. Most users will find the preceding quality code **WIND_MAX_QC** to be the simplest and most useful quality indicator.
DOM: A specific domain comprised of the numeric characters (0-9)
      0 = Passed all quality control checks
      other – Did not pass all quality checks
      9 = Missing

FLD LEN: 5

WIND_STD wind speed standard deviation
The wind speed standard deviation.
MIN: 00000   MAX: 99999
SCALING FACTOR: 100
DOM: A general domain comprised of the numeric characters (0-9).
      99999 = Missing.

FLD LEN: 1

WIND_STD_QC quality code
The code that indicates ISD's evaluation of the quality status of the wind speed standard deviation.
DOM: A specific domain comprised of the numeric characters (0-9).
      1 = Passed all quality control checks
      3 = Failed all quality control checks
      9 = Missing

FLD LEN: 1

WIND_STD_FLAG quality code
A flag that indicates the network's internal evaluation of the quality status of the wind speed standard deviation. Most users will find the preceding quality code **WIND_STD_QC** to be the simplest and most useful quality indicator.
DOM: A specific domain comprised of the numeric characters (0-9)
      0 = Passed all quality control checks
      other – Did not pass all quality checks
      9 = Missing

FLD LEN: 5

WIND_DIR_STD wind direction standard deviation
The wind direction standard deviation.
MIN: 00000   MAX: 99999
SCALING FACTOR: 100
DOM: A general domain comprised of the numeric characters (0-9).
      99999 = Missing.

FLD LEN: 1

WIND_DIR_STD_QC quality code
The code that indicates ISD's evaluation of the quality status of the wind direction standard deviation.

          1 = Passed all quality control checks
          3 = Failed all quality control checks
          9 = Missing

FLD LEN: 1
          WIND_DIR_STD_FLAG quality code
          A flag that indicates the network's internal evaluation of the quality status of the wind direction standard deviation. Most
          users will find the preceding quality code **WIND_STD_QC** to be the simplest and most useful quality indicator.
          DOM: A specific domain comprised of the numeric characters (0-9)
              0 = Passed all quality control checks
              other – Did not pass all quality checks
              9 = Missing

FLD LEN: 3
          WIND-GUST-OBSERVATION identifier
          The identifier that denotes the start of a WIND-GUST-OBSERVATION data section.
          DOM: A specific domain comprised of the characters in the ASCII character set.
              OC1: An indicator of the occurrence of the following item:
                  WIND-GUST-OBSERVATION speed rate
                  WIND-GUST-OBSERVATION quality code

FLD LEN: 4
          WIND-GUST-OBSERVATION speed rate
          The rate of speed of a wind gust.
          MIN: 0050   MAX: 1100   UNITS: Meters per second
          SCALING FACTOR: 10
          DOM: A general domain comprised of the numeric characters (0-9).
              9999 = Missing

FLD LEN: 1
          WIND-GUST-OBSERVATION quality code
          The code that denotes a quality status of a reported WIND-GUST-OBSERVATION speed rate.
          DOM: A specific domain comprised of the characters in the ASCII character set.
              0 = Passed gross limits check
              1 = Passed all quality control checks
              2 = Suspect
              3 = Erroneous
              4 = Passed gross limits check , data originate from an NCDC data source
              5 = Passed all quality control checks, data originate from an NCDC data source
              6 = Suspect, data originate from an NCDC data source
              7 = Erroneous, data originate from an NCDC data source
              9 = Passed gross limits check if element is present

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FLD LEN: 3
          SUMMARY-OF-DAY-WIND-OBSERVATION identifier
          The identifier that denotes the start of a SUMMARY-OF-DAY-WIND-OBSERVATION data section.
          DOM: A specific domain comprised of the characters in the ASCII character set.
              OE1 - OE3: An indicator of up to 3 occurrences of the following item:
                  SUMMARY-OF-DAY-WIND-OBSERVATION type code
                  SUMMARY-OF-DAY-WIND-OBSERVATION period quantity
                  SUMMARY-OF-DAY-WIND-OBSERVATION speed rate
                  SUMMARY-OF-DAY-WIND-OBSERVATION direction
                  SUMMARY-OF-DAY-WIND-OBSERVATION time of occurrence
                  SUMMARY-OF-DAY-WIND-OBSERVATION quality code

FLD LEN: 1
          SUMMARY-OF-DAY-WIND-OBSERVATION type code
          The code that denotes a type of SUMMARY-OF-DAY-WIND-OBSERVATION.

DOM: A specific domain comprised of the ASCII characters.
1 = Peak wind speed for the day
2 = Fastest 2-minute wind speed for the day
3 = Average wind speed for the day
4 = Fastest 5-minute wind speed for the day
5 = Fastest mile wind speed for the day

FLD LEN: 2

SUMMARY-OF-DAY-WIND-OBSERVATION period quantity
The quantity of time over which a SUMMARY-OF-DAY-WIND-OBSERVATION occurred.
MIN: 24 　　　 MAX: 24 　　　 UNITS: Hours
DOM: A general domain comprised of the ASCII characters.
99 = Missing

FLD LEN: 5

SUMMARY-OF-DAY-WIND-OBSERVATION speed
The rate of horizontal wind speed of air reported in the SUMMARY-OF-DAY-WIND-OBSERVATION.
MIN: 00000 　　　 MAX: 20000 　　　 UNITS: Meters per Second
SCALING FACTOR: 100
DOM: A general domain comprised of the numeric characters (0-9).
99999 = Missing

FLD LEN: 3

SUMMARY-OF-DAY-WIND-OBSERVATION direction of wind
The angle, measured in a clockwise direction, between true north and the direction from which
the wind is blowing, for the summary of day wind report.
MIN: 001 　　　 MAX: 360 　　　 UNITS: Angular Degrees
SCALING FACTOR: 1
DOM: A general domain comprised of the numeric characters (0-9).
999 = Missing
Note: A direction of 999 with a speed of 00000 indicates calm conditions (0 wind speed).

FLD LEN: 4

SUMMARY-OF-DAY-WIND-OBSERVATION time of occurrence in Z-time (UTC)
The time of occurrence of the wind reported in the SUMMARY-OF-DAY-WIND-OBSERVATION.
MIN: 0000 　　　 MAX: 2359 　　　 UNITS: hours-minutes
SCALING FACTOR: 10
DOM: A general domain comprised of the numeric characters (0-9).
9999 = Missing

FLD LEN: 1

SUMMARY-OF-DAY-WIND-OBSERVATION quality code
The code that denotes a quality status of the reported SUMMARY-OF-DAY-WIND-OBSERVATION.
DOM: A specific domain comprised of the characters in the ASCII character set.
4 = Passed gross limits check , data originate from an NCDC data source
5 = Passed all quality control checks, data originate from an NCDC data source
6 = Suspect, data originate from an NCDC data source
7 = Erroneous, data originate from an NCDC data source
9 = Passed gross limits check if element is present

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Sea Surface Temperature Data

FLD LEN: 3
SEA-SURFACE-TEMPERATURE-OBSERVATION identifier
The identifier that denotes the start of a SEA-SURFACE-TEMPERATURE-OBSERVATION
temperature data section.
DOM: A specific domain comprised of the characters in the ASCII character.
SA1: An indicator of the occurrence of the following item:
SEA-SURFACE-TEMPERATURE-OBSERVATION temperature
SEA-SURFACE-TEMPERATURE-OBSERVATION temperature quality code

FLD LEN: 4

        SEA-SURFACE-TEMPERATURE-OBSERVATION temperature
        The temperature of the water at the surface.
        MIN: -050   MAX: +450   UNITS: Degrees Celsius
        SCALING FACTOR: 10
        DOM: A general domain comprised of the numeric characters(0-9), a plus sign (+), and a minus
            sign (-).
            +999 = Missing

FLD LEN: 1

        SEA-SURFACE-TEMPERATURE-OBSERVATION temperature quality code
        The code that denotes a quality status of the reported SEA-SURFACE-TEMPERATURE-OBSERVATION temperature.
            DOM: A specific domain comprised of the characters in the ASCII character set.
                0 = Passed gross limits check
                1 = Passed all quality control checks
                2 = Suspect
                3 = Erroneous
                9 = Passed gross limits check if element is present

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Soil Temperature Data

FLD LEN: 3

        SOIL-TEMPERATURE identifier
        The identifier that denotes the start of a SOIL TEMPERATURE data section.
        DOM: A specific domain comprised of the characters in the ASCII character set.
        ST1: An indicator of fields of the following items:
            SOIL-TEMPERATURE Temperature Type
            SOIL-TEMPERATURE Soil Temperature
            SOIL-TEMPERATURE Depth
            SOIL-TEMPERATURE Soil Cover
            SOIL-TEMPERATURE Sub Plot

FLD LEN: 1

        SOIL-TEMPERATURE temperature type
        The type of temperature reported.
        MIN: 1   MAX: 9
        1 = Maximum Temperature
        2 = Minimum Temperature
        3 = AM or Noon Temperature
        4 = PM or Midnight Temperature
        9 = Missing

FLD LEN: 5

        SOIL-TEMPERATURE soil temperature
        The temperature of the soil for the previous 24 hours.
        MIN: -1100   MAX: +0630   UNITS: Degrees Celsius
        SCALING FACTOR: 10
        DOM: A general domain comprised of the numeric characters (0-9), a plus sign (+), and a minus
            sign (-).
            +9999 = Missing

FLD LEN: 1

        SOIL-TEMPERATURE quality code
        The code that denotes a quality status of the reported temperature data.
        DOM: A specific domain comprised of the characters in the ASCII character set.
                4 = Passed gross limits check, from NCDC Data source
                5 = Passed all quality control checks, from NCDC Data source
                6 = Suspect, from NCDC Data source
                7 = Erroneous, from NCDC Data source

<span style="color:red">

9 = Passed gross limits check if element is present

FLD LEN: 4

    SOIL-TEMPERATURE temperature depth
    The depth below ground level of the temperature reported.
    MIN: 0000   MAX: 9999   UNITS: Centimeters
    SCALING FACTOR: 10
      9999 = Missing

FLD LEN: 1

    SOIL-TEMPERATURE depth quality code
    The code that denotes a quality status of the reported temperature depth data.
    DOM: A specific domain comprised of the characters in the ASCII character set.
        4 = Passed gross limits check, from NCDC Data source
        5 = Passed all quality control checks, from NCDC Data source
        6 = Suspect, from NCDC Data source
        7 = Erroneous, from NCDC Data source
        9 = Passed gross limits check if element is present

FLD LEN: 2

    SOIL-TEMPERATURE soil cover
    The type of soil cover.
    MIN: 01   MAX: 99
    01 = Grass
    02 = Fallow
    03 = Bare Ground
    04 = Brome Grass
    05 = Sod
    06 = Straw Mulch
    07 = Grass Muck
    08 = Bare Muck
    99 = Missing

FLD LEN: 1

    SOIL-TEMPERATURE soil cover quality code
    The code that denotes a quality status of the reported soil cover data.
    DOM: A specific domain comprised of the characters in the ASCII character set.
        4 = Passed gross limits check, from NCDC Data source
        5 = Passed all quality control checks, from NCDC Data source
        6 = Suspect, from NCDC Data source
        7 = Erroneous, from NCDC Data source
        9 = Passed gross limits check if element is present

FLD LEN: 1

    SOIL-TEMPERATURE sub plot
    The sub plot number for the reported temperature.
    MIN: 0   MAX: 9
    9=Missing

FLD LEN: 1

    SOIL-TEMPERATURE sub plot quality code
    The code that denotes a quality status of the reported sub plot data.
    DOM: A specific domain comprised of the characters in the ASCII character set.
        4 = Passed gross limits check, from NCDC Data source
        5 = Passed all quality control checks, from NCDC Data source
        6 = Suspect, from NCDC Data source
        7 = Erroneous, from NCDC Data source
        9 = Passed gross limits check if element is present

Marine Data

FLD LEN: 3

      WAVE-MEASUREMENT identifier
      The identifier that represents the availability of a WAVE-MEASUREMENT.
      DOM: A specific domain comprised of the characters in the ASCII character set.
            UA1: An indicator of the occurrence of the following data items:
                 WAVE-MEASUREMENT method code
                 WAVE-MEASUREMENT wave period quantity
                 WAVE-MEASUREMENT wave height dimension
                 WAVE-MEASUREMENT quality code
                 WAVE-MEASUREMENT sea state code
                 WAVE-MEASUREMENT sea state code quality code

FLD LEN: 1

      WAVE-MEASUREMENT method code
      A code that represents the method used to obtain a WAVE-MEASUREMENT.
      DOM: A specific domain comprised of the ASCII characters
            M: Manual
            I: Instrumental
            9: Missing

FLD LEN: 2

      WAVE-MEASUREMENT wave period quantity
      The quantity of time required for two successive wave crests to pass a fixed point.
      MIN: 00   MAX: 30   UNITS: Seconds
      SCALING FACTOR: 1
      DOM: A general domain comprised of the numeric characters (0-9).
           99 = Missing.

FLD LEN: 3

      WAVE-MEASUREMENT wave height dimension
      The height of a wave measured from trough to crest.
      MIN: 000   MAX: 500   UNITS: Meters
      SCALING FACTOR: 10
      DOM: A general domain comprised of the numeric characters (0-9).
           999 = Missing.

FLD LEN: 1

      WAVE-MEASUREMENT quality code
      The code that denotes a quality status of the reported WAVE-MEASUREMENT.
      DOM: A specific domain comprised of the characters in the ASCII character set.
             0 = Passed gross limits check
             1 = Passed all quality control checks
             2 = Suspect
             3 = Erroneous
             9 = Passed gross limits check if element is present

FLD LEN: 2

      WAVE-MEASUREMENT sea state code
      The code that denotes the roughness of the surface of the sea in terms of average wave height.
      DOM: A specific domain comprised of the ASCII character set.
             00: Calm, glassy - wave height = 0 meters
             01: Calm, rippled - wave height = 0-0.1 meters
             02: Smooth, wavelets - wave height = 0.1-0.5 meters
             03: Slight, wave height = 0.5-1.25 meters
             04: Moderate - wave height 1.25-2.5 meters
             05: Rough - wave height = 2.5-4.0 meters
             06: Very rough - wave height = 4.0-6.0 meters
             07: High - wave height = 6.0-9.0 meters
             08: Very high - wave height 9.0-14.0 meters
             09: Phenomenal - wave height = over 14.0 meters
             99: Missing

FLD LEN: 1

WAVE-MEASUREMENT sea state code quality code
The code that denotes a quality status of the reported WAVE-MEASUREMENT sea state code.
DOM: A specific domain comprised of the characters in the ASCII character set.
    0 = Passed gross limits check
    1 = Passed all quality control checks
    2 = Suspect
    3 = Erroneous
    9 = Passed gross limits check if element is present

FLD LEN: 3
    WAVE-MEASUREMENT primary swell identifier
    The identifier that denotes the availability of primary swell data.
    DOM: A specific domain comprised of the characters in the ASCII character set.
        UG1: An indicator of the occurrence of the following data items:
            WAVE-MEASUREMENT primary swell period quantity
            WAVE-MEASUREMENT primary swell height dimension
            WAVE-MEASUREMENT primary swell direction angle
            WAVE-MEASUREMENT primary swell quality code

FLD LEN: 2
    WAVE-MEASUREMENT primary swell period quantity
    The quantity of time required for two successive primary swell wave crests to pass a fixed point.
    MIN: 00   MAX: 14   UNITS: Seconds
    SCALING FACTOR: 1
    DOM: A general domain comprised of the numeric characters (0-9).
        99 = Missing

FLD LEN: 3
    WAVE-MEASUREMENT primary swell height dimension
    The height of a primary swell wave measured from the trough to the crest.
    MIN: 000   MAX: 500   UNITS: Meters
    SCALING FACTOR: 10
    DOM: A general domain comprised of the numeric characters (0-9).
        999 = Missing

FLD LEN: 3
    WAVE-MEASUREMENT primary swell direction angle
    The angle measured clockwise from true north to the direction from which primary swell waves
    are coming.
    MIN: 001   MAX: 360   UNITS: Angular Degrees
    SCALING FACTOR: 1
    DOM: A general domain comprised of the numeric characters (0-9).
        999 = Missing

FLD LEN: 1
    WAVE-MEASUREMENT primary swell quality code
    The code that denotes a quality status of the reported WAVE-MEASUREMENT primary swell.
    DOM: A specific domain comprised of the characters in the ASCII character set.
        0 = Passed gross limits check
        1 = Passed all quality control checks
        2 = Suspect
        3 = Erroneous
        9 = Passed gross limits check if element is present

FLD LEN: 3
    WAVE-MEASUREMENT secondary swell identifier
    An indicator that denotes the start of a WAVE-MEASUREMENT secondary swell group.
    DOM: A specific domain comprised of the characters in the ASCII character set.
    Domain Value ID: Domain Value Definition Text
        UG2: An indicator of the occurrence of the following data items:

WAVE-MEASUREMENT secondary swell period quantity
WAVE-MEASUREMENT secondary swell height dimension
WAVE-MEASUREMENT secondary swell direction angle
WAVE-MEASUREMENT secondary swell quality code

FLD LEN: 2
WAVE-MEASUREMENT secondary swell period quantity
The quantity of time required for two successive secondary swell wave crests to pass a fixed point.
MIN: 00   MAX: 14   UNITS: Seconds
SCALING FACTOR: 1
DOM: A general domain comprised of the numeric characters (0-9).
        99 = Missing

FLD LEN: 3
WAVE-MEASUREMENT secondary swell height dimension
The height of a secondary swell wave measured from the trough to the crest.
MIN: 000   MAX: 500   UNITS: Meters
SCALING FACTOR: 10
DOM: A general domain comprised of the numeric characters (0-9).
        999 = Missing

FLD LEN: 3
WAVE-MEASUREMENT secondary swell direction angle
The angle measured clockwise from true north to the direction from which secondary swell
waves are coming.
MIN: 001   MAX: 360   UNITS: Angular Degrees
SCALING FACTOR: 1
DOM: A general domain comprised of the numeric characters (0-9).
        999 = Missing
FLD LEN: 1
WAVE-MEASUREMENT secondary swell quality code
The code that denotes a quality status of the reported WAVE-MEASUREMENT secondary swell.
DOM: A specific domain comprised of the characters in the ASCII character set.
        0 = Passed gross limits check
        1 = Passed all quality control checks
        2 = Suspect
        3 = Erroneous
        9 = Passed gross limits check if element is present

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FLD LEN: 3
PLATFORM-ICE-ACCRETION identifier
The identifier that denotes the availability of PLATFORM-ICE-ACCRETION data.
DOM: A specific domain comprised of the characters in the ASCII character set.
        WA1: An indicator of the occurrence of the following data items:
            PLATFORM-ICE-ACCRETION source code
            PLATFORM-ICE-ACCRETION thickness dimension
            PLATFORM-ICE-ACCRETION tendency code
            PLATFORM-ICE-ACCRETION quality code

FLD LEN: 1
PLATFORM-ICE-ACCRETION source code
The code that denotes the source of the ice that builds up on a marine platform=s structure.
DOM: A specific domain composed of the following qualitative data values:
Domain Value ID: Domain Value Definition Text
                1: Icing from ocean spray
                2: Icing from fog
                3: Icing from spray and fog
                4: Icing from rain
                5: Icing from spray and rain
                9: Missing

FLD LEN: 3

PLATFORM-ICE-ACCRETION thickness dimension
The thickness of the ice that has accumulated on a marine platform.
MIN: 000   MAX: 998   UNITS: centimeters
SCALING FACTOR: 10
DOM: A specific domain composed of the integer values (0 - 9).
        999 = Missing

FLD LEN: 1
PLATFORM-ICE-ACCRETION tendency code
The code that denotes the rate of change of ice thickness on a marine platform.
DOM: A specific domain composed of the following qualitative data values:
Domain Value ID: Domain Value Definition Text
                0: Ice not building up
                1: Ice building up slowly
                2: Ice building up rapidly
                3: Ice melting or breaking up slowly
                4: Ice melting or breaking up rapidly
                9: Missing

FLD LEN: 1
PLATFORM-ICE-ACCRETION quality code
The code that denotes a quality status of the reported PLATFORM-ICE-ACCRETION.
DOM: A specific domain comprised of the characters in the ASCII character set.
        0 = Passed gross limits check
        1 = Passed all quality control checks
        2 = Suspect
        3 = Erroneous
        9 = Passed gross limits check if element is present

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FLD LEN: 3
WATER-SURFACE-ICE-OBSERVATION identifier.
The identifier that denotes the availability of a WATER-SURFACE-ICE-OBSERVATION.
DOM: A specific domain comprised of the characters in the ASCII character set.
        WD1: An indicator of the occurrence of the following data item:
        OCEAN-ICE-OBSERVATION edge bearing code
        WATER-SURFACE-ICE-OBSERVATION uniform concentration rate
        WATER-SURFACE-ICE-OBSERVATION non-uniform concentration code
        WATER-SURFACE-ICE-OBSERVATION ship relative position code
        WATER-SURFACE-ICE-OBSERVATION ship penetrability code
        WATER-SURFACE-ICE-OBSERVATION ice trend code
        WATER-SURFACE-ICE-OBSERVATION development code
        WATER-SURFACE-ICE-OBSERVATION growler-bergy-bit presence code
        WATER-SURFACE-ICE-OBSERVATION growler-bergy-bit quantity
        WATER-SURFACE-ICE-OBSERVATION iceberg quantity
        WATER-SURFACE-ICE-OBSERVATION quality code

FLD LEN: 2
OCEAN-ICE-OBSERVATION edge bearing code
The code that denotes the true bearing, measured from the reporting platform to the closest
point of the principal ice edge.
DOM: A specific domain composed of the following qualitative data values:
        00: Ship in shore or flaw lead
        01: Principal ice edge towards NE
        02: Principal ice edge towards E
        03: Principal ice edge towards SE
        04: Principal ice edge towards S
        05: Principal ice edge towards SW
        06: Principal ice edge towards W
        07: Principal ice edge towards NW
        08: Principal ice edge towards N
        09: Not determined (ship in ice)
        10: Unable to report, because of darkness, lack of visibility or because only ice of land origin is

visible

99: Missing

COM: 1. If more than one ice edge can be stated, the nearest or most important shall be reported
2. The bearing shall refer to the true and not to the magnetic north

FLD LEN: 3

WATER-SURFACE-ICE-OBSERVATION uniform concentration rate
The percent concentration (surface coverage) of ice on the water surface.
MIN: 000   MAX: 100   UNITS: percent
DOM: A general domain comprised of the ASCII characters 0-9.
999 = Missing

FLD LEN: 2

WATER-SURFACE-ICE-OBSERVATION non-uniform concentration code
The code that denotes the coverage arrangement of non-uniformly distributed ice.
DOM: A specific domain comprised of the characters in the ASCII character set.
06: Strips and patches of pack ice with open water between
07: Strips and patches of close or very close pack ice with areas of lesser concentration
between
08: Fast ice with open water, very open or open pack ice to seaward of the ice boundary
09: Fast ice with close or very close pack ice to seaward of the ice boundary
99: Unable to report, because of darkness, lack of visibility, or because ship is more than 0.5
nautical mile away from ice edge

FLD LEN: 1

WATER-SURFACE-ICE-OBSERVATION ship relative position code
The code that denotes the relative position of the reporting ship to the ice formation.
DOM: A specific domain comprised of the ASCII characters
0: Ship in open water with floating ice in sight
1: In open lead or fast ice
2: In ice or within 0.5 nautical miles of ice edge
9: Missing

FLD LEN: 1

WATER-SURFACE-ICE-OBSERVATION ship penetrability code
The code that denotes the degree of ease with which the reporting ship can proceed through the ice.
DOM: A specific domain comprised of the ASCII characters.
1: Easy
2: Difficult
3: Beset (Surrounded so closely by sea ice that steering control is lost.)
9: Missing

FLD LEN: 1

WATER-SURFACE-ICE-OBSERVATION ice trend code
The code that denotes the trend of ice conditions.
DOM: A specific domain comprised of the ASCII characters.
1: Conditions improving
2: Conditions static
3: Conditions worsening
4: Conditions worsening; ice forming and floes freezing together
5: Conditions worsening; ice under slight pressure
6: Conditions worsening; ice under moderate or severe pressure
9: Missing

FLD LEN: 2

WATER-SURFACE-ICE-OBSERVATION development code
The code that denotes the development stage of the ice.
DOM: A specific domain comprised of the ASCII characters
00: New ice only (frazil ice, grease ice, slush, slugs)
01: Nilas or ice rind, less than 10 cm thick
02: Young ice (grey ice, grey-white ice), 10 - 30 cm thick
03: Predominantly new and/or young ice with some first year ice
04: Predominantly thin first year ice with some new and/or young ice

05: All thin first year ice (30 - 70 cm thick)
06: Predominantly medium first year ice (70 - 120 cm thick) and thick first
    year ice (> 120 cm thick) with some thinner (younger) first year ice
07: All medium and thick first year ice
08: Predominantly medium and thick first year ice with some old ice
    (usually more than 2 m thick)
09: Predominantly old ice
99: Unable to report, because of darkness, lack of visibility or because only ice of land origin
    is visible or because ship is more than .5 NM away from ice

FLD LEN: 1

    WATER-SURFACE-ICE-OBSERVATION growler-bergy-bit presence code
   The code that denotes the existence of growler and/or bergy bits.
      DOM: A specific domain comprised of the ASCII characters
      0: Not present
      1: Present
      2: Unknown
      9: Missing

FLD LEN: 3

    WATER-SURFACE-ICE-OBSERVATION growler-bergy-bit quantity
   The quantity of growler and bergy bits observed in the area.
   MIN: 000   MAX: 998
     DOM: A general domain comprised of the ASCII characters 0-9.
     999 = Missing

FLD LEN: 3

    WATER-SURFACE-ICE-OBSERVATION iceberg quantity
   The quantity of icebergs observed in the area.
   MIN: 000   MAX: 998
     DOM: A general domain comprised of the ASCII characters 0-9.
     999 = Missing

FLD LEN: 1

    WATER-SURFACE-ICE-OBSERVATION quality code
   The code that denotes a quality status of the reported WATER-SURFACE-ICE-OBSERVATION.
   DOM: A specific domain comprised of the characters in the ASCII character set.
       0 = Passed gross limits check
       1 = Passed all quality control checks
       2 = Suspect
       3 = Erroneous
       9 = Passed gross limits check if element is present

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FLD LEN: 3

    WATER-SURFACE-ICE-HISTORICAL-OBSERVATION identifier.
   The identifier that denotes the availability of a WATER-SURFACE-ICE-HISTORICAL-OBSERVATION.
   DOM: A specific domain comprised of the characters in the ASCII character set.
     WG1: An indicator of the occurrence of the following data item:
       OCEAN-ICE-OBSERVATION edge bearing code
        WATER-SURFACE-ICE-HISTORICAL-OBSERVATION edge distance dimension
        WATER-SURFACE-ICE-HISTORICAL-OBSERVATION edge orientation code
        WATER-SURFACE-ICE-HISTORICAL-OBSERVATION formation type code
        WATER-SURFACE-ICE-HISTORICAL-OBSERVATION navigation effect code
        WATER-SURFACE-ICE-HISTORICAL-OBSERVATION quality code

FLD LEN: 2

    OCEAN-ICE-OBSERVATION edge bearing code
   The code that denotes the true bearing, measured from the reporting platform to the closest
   point of the principle ice edge.
   DOM: A specific domain composed of the following qualitative data values:
      00: Ship in shore or flaw lead
      01: Principal ice edge towards NE

02: Principal ice edge towards E
03: Principal ice edge towards SE
04: Principal ice edge towards S
05: Principal ice edge towards SW
06: Principal ice edge towards W
07: Principal ice edge towards NW
08: Principal ice edge towards N
09: Not determined (ship in ice)
10: Unable to report, because of darkness, lack of visibility or because only ice of land origin is visible
99: Missing

COM: 1. If more than one ice edge can be stated, the nearest or most important shall be reported
2. The bearing shall refer to the true and not to the magnetic north

FLD LEN: 2
WATER-SURFACE-ICE-HISTORICAL-OBSERVATION edge distance dimension
The distance from the reporting ship=s location to the nearest point on the ice edge.
MIN: 00   MAX: 98   UNITS: Kilometers
DOM: A general domain comprised of the ASCII characters 0-9
99 = Missing

FLD LEN: 2
WATER-SURFACE-ICE-HISTORICAL-OBSERVATION edge orientation code
The code that denotes the orientation of the principal ice edge and the direction relative to which the ice lies.
DOM: A specific domain comprised of the ASCII characters
00: Orientation of ice edge impossible to estimate--ship outside the ice
01: Ice edge lying in a direction NE to SW with ice situated to the NW
02: Ice edge lying in a direction E to W with ice situated to the N
03: Ice edge lying in a direction SE to NW with ice situated to the NE
04: Ice edge lying in a direction S to N with ice situated to the E
05: Ice edge lying in a direction SW to NE with ice situated to the SE
06: Ice edge lying in a direction W to E with ice situated to the S
07: Ice edge lying in a direction NW to SE with ice situated to the SW
08: Ice edge lying in a direction N to S with ice situated to the W
09: Orientation of ice edge impossible to estimate--ship inside the ice
99: Missing

FLD LEN: 2
WATER-SURFACE-ICE-HISTORICAL-OBSERVATION formation type code
The code that denotes the type of ice formation reported in the WATER-SURFACE-ICE-HISTORICAL-OBSERVATION.
DOM: A specific domain comprised of the ASCII characters
00: No ice (0 may be used to report ice blink and then a direction must be reported)
01: New ice
02: Fast ice
03: Pack-ice/drift-ice
04: Packed (compact) slush or sludge
05: Shore lead
06: Heavy fast ice
07: Heavy pack-ice/drift-ice
08: Hummocked ice
09: Icebergs-icebergs can be reported in plain language
99: Missing

FLD LEN: 2
WATER-SURFACE-ICE-HISTORICAL-OBSERVATION navigation effect code
The code that denotes the effect of ice on navigation.
DOM: A specific domain comprised of the ASCII characters
00: Navigation unobstructed
01: Navigation unobstructed for steamers, difficult for sailing ships
02: Navigation difficult for low-powered steamers, closed to sailing ships

03: Navigation possible only for powerful steamers
04: Navigation possible only for steamers constructed to withstand ice pressure
05: Navigation possible with the assistance of ice-breakers
06: Channel open in the solid ice
07: Navigation temporarily closed
08: Navigation closed
09: Navigation conditions unknown, e.g., owing to bad weather
99: Missing

FLD LEN: 1

WATER-SURFACE-ICE-HISTORICAL-OBSERVATION quality code
The code that denotes a quality status of the reported WATER-SURFACE-ICE-HISTORICAL-OBSERVATION.
DOM: A specific domain comprised of the characters in the ASCII character set.
0 = Passed gross limits check
1 = Passed all quality control checks
2 = Suspect
3 = Erroneous
9 = Passed gross limits check if element is present

Remarks Data Section

FLD LEN 3

> GEOPHYSICAL-POINT-OBSERVATION remarks identifier
> The identifier that denotes the beginning of the remarks data section.
> DOM: A specific domain comprised of the ASCII character set.
>> **REM** = Remarks Data Section

FLD LEN: 3

> GEOPHYSICAL-POINT-OBSERVATION remark identifier
> An indicator of the type of surface remarks data contained in the GEOPHYSICAL-POINT-OBSERVATION-REMARK text
> DOM: A specific domain composed of the following qualitative data values.
> Domain Value ID: Domain Value Definition Text
> SYN: Synoptic Remarks
> AWY: Airways Remarks
> MET: METAR Remarks
> SOD: Summary of Day Remarks
> SOM: Summary of Month Remarks
> HPD: Hourly Precipitation Data Remarks
> Indicate the occurrence of the following data items:
> GEOPHYSICAL-POINT-OBSERVATION remark length quantity
> GEOPHYSICAL-POINT-OBSERVATION remark text

FLD LEN: 3

> GEOPHYSICAL-POINT-OBSERVATION remark length quantity
> A quantity that indicates the length of a individual GEOPHYSICAL-POINT-OBSERVATION-REMARK text.
> MIN: 001   MAX: 999
> DOM: A general domain composed of the ASCII characters (0-9).

FLD LEN: 999 (maximum)

> GEOPHYSICAL-POINT-OBSERVATION remark text
> The text of a GEOPHYSICAL-POINT-OBSERVATION-REMARK.
> DOM: A general domain comprised of the characters in the ASCII character set.

Element Quality Data Section

FLD LEN: 3
> GEOPHYSICAL-POINT-OBSERVATION quality data identifier
> The identifier that denotes the beginning of the element quality data section.
> DOM: A specific domain comprised of the ASCII character set.
>> **EQD** = Element Quality Data

FLD LEN: 3
> ORIGINAL-OBSERVATION-ELEMENT-QUALITY identifier
> The identifier that denotes the existence of ORIGINAL-OBSERVATION-ELEMENT-QUALITY data.
> DOM: A specific domain comprised of the ASCII character set.
>> **Q01 - Q99: The following may be occur from 0 to 99 times, for AFCCC DATSAV3 and for ISH Version 2, and**
>> **P01 - P99: The following may be occur from 0 to 99 times, for ISH Version 2 (P denotes data originated from historical DSI-3240 or DSI-3280 data), and**
>> **R01 – R99: The following may be occur from 0 to 99 times, for ISH Version 2 and 3 (R denotes data originated from an NCDC data source from 2006 forward):**

>> ORIGINAL-OBSERVATION-ELEMENT-QUALITY original value text
>> ORIGINAL-OBSERVATION-ELEMENT-QUALITY reason code
>> ORIGINAL-OBSERVATION-ELEMENT-QUALITY parameter code

FLD LEN: 6
> ORIGINAL-OBSERVATION-ELEMENT-QUALITY original value text
> The original value text for elements which were rejected or recomputed during validation.
> DOM: A general domain comprised of the characters in the ASCII character set

FLD LEN: 1
> ORIGINAL-OBSERVATION-ELEMENT-QUALITY reason code
> The code that denotes the reason an element was identified as suspect, erroneous or recomputed,
> or in the case of data originating from DSI-3280, the units code for the data are stored in this position,
> and the data quality flag is stored with the parameter code (see N01-N99 below).
> DOM: A specific domain comprised of the characters in the ASCII character set.
>> 0 = Original value missing or corrupted
>> 1 = Gross error checks (range and/or domain check)
>> 2 = Geophysical checks (checking the validity against other parameters)
>> 3 = Consistency checks (checking the validity against the same type of parameter)
>> 4 = Gross error checks and geophysical checks
>> 5 = Gross error checks and consistency checks
>> 6 = Geophysical checks and consistency checks
>> 7 = Gross error checks and geophysical checks and consistency checks

FLD LEN: 6
> ORIGINAL-OBSERVATION-ELEMENT-QUALITY parameter code
> The code that denotes the type of parameter that the supplemental-level-element-quality applies to.
> DOM: A specific domain comprised of the characters in the ASCII character set.
>> Comment Text:
>> APC3: ATMOSPHERIC-PRESSURE-CHANGE THREE HOUR CHANGE QUANTITY
>> ATOLD: AIR-TEMPERATURE-OBSERVATION-LEVEL DEWPOINT TEMPERATURE
>> WOSPD: WIND-OBSERVATION SPEED RATE
>> WOLSPD: WIND-OBSERVATION-LEVEL SPEED RATE
>> WOLDIR: WIND-OBSERVATION-LEVEL DIRECTION ANGLE
>> WODIR: WIND-OBSERVATION DIRECTION ANGLE
>> ATOLDS: AIR-TEMPERATURE-OBSERVATION-LEVEL DENSITY RATE

ATOLT: AIR-TEMPERATURE-OBSERVATION-LEVEL AIR TEMPERATURE
ATOD: AIR-TEMPERATURE-OBSERVATION DEW POINT TEMPERATURE
ATOT: AIR-TEMPERATURE-OBSERVATION AIR TEMPERATURE
APOSP: ATMOSPHERIC-PRESSURE-OBSERVATION STATION PRESSURE RATE
APOSLP: ATMOSPHERIC-PRESSURE-OBSERVATION SEA LEVEL PRESSURE
APOLP: ATMOSPHERIC-PRESSURE-OBSERVATION-LEVEL PRESSURE RATE
APOLH: ATMOSPHERIC-PRESSURE-OBSERVATION-LEVEL HEIGHT DIMENSION
APOA: ATMOSPHERIC-PRESSURE-OBSERVATION ALTIMETER RATE
WGOSPD: WIND-GUST-OBSERVATION SPEED RATE
APCQ24: ATMOSPHERIC-PRESSURE-CHANGE TWENTY FOUR HOUR QUANTITY
APCTEN: ATMOSPHERIC-PRESSURE-CHANGE TENDENCY CODE
PRSWOA: PRESENT-WEATHER-OBSERVATION AUTOMATED ATMOSPHERIC
         CONDITION CODE
PRSWM1: PRESENT-WEATHER-OBSERVATION MANUAL ATMOSPHERIC CONDITION
         CODE
PRSWM2: PRESENT-WEATHER-OBSERVATION MANUAL ATMOSPHERIC CONDITION
         CODE
PRSWM3: PRESENT-WEATHER-OBSERVATION MANUAL ATMOSPHERIC CONDITION
         CODE
PRSWM4: PRESENT-WEATHER-OBSERVATION MANUAL ATMOSPHERIC CONDITION
         CODE
PRSWM5: PRESENT-WEATHER-OBSERVATION MANUAL ATMOSPHERIC CONDITION
         CODE
PRSWM6: PRESENT-WEATHER-OBSERVATION MANUAL ATMOSPHERIC CONDITION
         CODE
PRSWM7: PRESENT-WEATHER-OBSERVATION MANUAL ATMOSPHERIC CONDITION
         CODE
PRSWA1: PRESENT-WEATHER-OBSERVATION AUTOMATED ATMOSPHERIC CONDITION
         CODE
PRSWA2: PRESENT-WEATHER-OBSERVATION AUTOMATED ATMOSPHERIC CONDITION
         CODE
PRSWA3: PRESENT-WEATHER-OBSERVATION AUTOMATED ATMOSPHERIC CONDITION
         CODE
PRSWA4: PRESENT-WEATHER-OBSERVATION AUTOMATED ATMOSPHERIC CONDITION
         CODE
PSTWA1: PAST-WEATHER-OBSERVATION AUTOMATED ATMOSPHERIC CONDITION
         CODE
PSTWA2: PAST-WEATHER-OBSERVATION AUTOMATED ATMOSPHERIC CONDITION
         CODE
PSTWM1: PAST-WEATHER-OBSERVATION MANUAL ATMOSPHERIC CONDITION
         CODE
PSTWM2: PAST-WEATHER-OBSERVATION MANUAL ATMOSPHERIC CONDITION
         CODE
PSTWOP: PAST-WEATHER-OBSERVATION PERIOD QUANTITY
SCOCIG: SKY-CONDITION-OBSERVATION CEILING HEIGHT DIMENSION
SCOHCG: SKY-CONDITION-OBSERVATION HIGH CLOUD GENUS CODE
SCOLCB: SKY-CONDITION-OBSERVATION LOWEST CLOUD BASE HEIGHT DIMENSION
SCOLCG: SKY-CONDITION-OBSERVATION LOW CLOUD GENUS CODE
SCOMCG: SKY-CONDITION-OBSERVATION MID CLOUD GENUS CODE
SCOTCV: SKY-CONDITION-OBSERVATION TOTAL COVERAGE CODE
SCOTLC: SKY-CONDITION-OBSERVATION TOTAL LOWEST CLOUD COVER CODE
VODIS: VISIBILITY-OBSERVATION DISTANCE DIMENSION
VOVAR: VISIBILITY-OBSERVATION VARIABILITY CODE
PRCP: LIQUID PRECIPITATION DEPTH DIMENSION
ATMM: EXTREME AIR TEMPERATURE, MAXIMUM AND MINIMUM
ATMN: EXTREME AIR TEMPERATURE, MINIMUM
ATMX: EXTREME AIR TEMPERATURE, MAXIMUM
SNDP: SNOW DEPTH DIMENSION
SNWF: SNOW ACCUMULATION DEPTH DIMENSION

The following parameter codes may occur with the R01 – R99 identifier. They pertain to QC of the Max Short Duration Precip fields AH1 - AH6 and AI1 – AI6. The 6 character field will be represented as follows:

First 3 characters:

A01 – A12 -- indicates this pertains to a precipitation amount, which is stored as the EQD original value
D01 – D12 -- indicates this pertains to the ending day field, which is stored as the EQD original value
T01 – T12 -- indicates this pertains to the ending time field, which is stored as the EQD original value
Note: Values of 01-06 indicate that AH1 – AH6, respectively, are flagged. Values of 07-12 indicate that AI1 – AI6, respectively, are flagged.
These codes will be followed by the 3 character flag description number to complete the 6 character definition. These codes are as follows:

```
001    INVALID MSDP 5 MIN AMT
002    MSDP 5 MIN AMT OUT OF RANGE
003    INVALID MSDP 5 MIN DATE
004    MSDP 5 MIN DATE OUT OF RANGE
005    INVALID MSDP 5 MIN TIME
006    MSDP 5 MIN TIME OUT OF RANGE
007    INVALID MSDP 10 MIN AMT
008    MSDP 10 MIN AMT > 2 X 5 MIN AMT
009    INVALID MSDP 10 MIN DATE
010    MSDP 10 MIN DATE OUT OF RANGE
011    INVALID MSDP 10 MIN TIME
012    MSDP 10 MIN TIME OUT OF RANGE
013    INVALID MSDP 15 MIN AMT
014    MSDP 15 MIN AMT > 5 + 10 MIN AMT
015    INVALID MSDP 15 MIN DATE
016    MDSP 15 MIN DATE OUT OF RANGE
017    INVALID MSDP 15 MIN TIME
018    MSDP 15 MIN TIME OUT OF RANGE
019    INVALID MSDP 20 MIN AMT
020    MSDP 20 MIN AMT > 5 + 15 MIN AMT
021    MSDP 20 MIN AMT > 2 X 10 MIN AMT
022    INVALID MSDP 20 MIN DATE
023    MSDP 20 MIN DATE OUT OF RANGE
024    INVALID MSDP 20 MIN TIME
025    MSDP 20 MIN TIME OUT OF RANGE
026    INVALID MSDP 30 MIN AMT
027    MSDP 30 MIN AMT > 10 + 20 MIN AMT
028    MSDP 30 MIN AMT > 2 X 15 MIN AMT
029    INVALID MSDP 30 MIN DATE
030    MSDP 30 MIN DATE OUT OF RANGE
031    INVALID MSDP 30 MIN TIME
032    MSDP 30 MIN TIME OUT OF RANGE
033    INVALID MSDP 45 MIN AMT
034    MSDP 45 MIN AMT > 15 + 30 MIN AMT
035    INVALID MSDP 45 MIN DATE
036    MSDP 45 MIN DATE OUT OF RANGE
037    INVALID MSDP 45 MIN TIME
038    MSDP 45 MIN TIME OUT OF RANGE
039    INVALID MSDP 60 MIN AMT
040    MSDP 60 MIN AMT > 15 + 45 MIN AMT
041    MSDP 60 MIN AMT > 2 X 30 MIN AMT
042    INVALID MSDP 60 MIN DATE
043    MSDP 60 MIN DATE OUT OF RANGE
044    INVALID MSDP 60 MIN TIME
045    MSDP 60 MIN TIME OUT OF RANGE
046    INVALID MSDP 80 MIN AMT
047    MSDP 80 MIN AMT > 20 + 60 MIN AMT
048    INVALID MSDP 80 MIN DATE
049    MSDP 80 MIN DATE OUT OF RANGE
050    INVALID MSDP 80 MIN TIME
051    MSDP 80 MIN TIME OUT OF RANGE
052    INVALID MSDP 100 MIN AMT
053    MSDP 100 MIN AMT > 20 + 80 MIN AMT
054    INVALID MSDP 100 MIN DATE
055    MSDP 100 MIN DATE OUT OF RANGE
056    INVALID MSDP 100 MIN TIME
057    MSDP 100 MIN TIME OUT OF RANGE
```

FLD LEN: 3

ORIGINAL-OBSERVATION-ELEMENT-QUALITY identifier
The identifier that denotes the existence of ORIGINAL-OBSERVATION-ELEMENT-QUALITY data. These data will appear after the Q## data described above.
DOM: A specific domain comprised of the ASCII character set.
   N01 - N99: The following may be occur from 0 to 99 times, for NCDC DSI-3280:
      ORIGINAL-OBSERVATION-ELEMENT-QUALITY original value text
      ORIGINAL-OBSERVATION-ELEMENT-QUALITY units code
      ORIGINAL-OBSERVATION-ELEMENT-QUALITY parameter code

FLD LEN: 6

ORIGINAL-OBSERVATION-ELEMENT-QUALITY original value text
The original value text for elements which were rejected or recomputed during validation.
DOM: A general domain comprised of the characters in the ASCII character set

FLD LEN: 1

ORIGINAL-OBSERVATION-ELEMENT-QUALITY units code
The code that denotes the units code for the data are stored in this position,
and the data quality flag is stored with the parameter code below.
DOM: A specific domain comprised of the characters in the ASCII character set.

ELEMENT-UNITS TABLE

Value	Equates to this value from original DSI-3280	
A	DT	Wind direction in tens of degrees
B	F	Whole degrees Fahrenheit
C	HF	Hundreds of feet
D	HM	Miles and hundredths
E	IH	Inches and hundredths of mercury
F	IT	Inches and thousandths of mercury
G	KD	knots and direction in tens of degrees
H	KS	Knots and direction in 16 point WBAN Code
I	MT	Millibars and tenths
J	NA	No units applicable (non-dimensional)
K	N1	No units applicable - element to tenths
L	N2	No units applicable - element to hundredths
M	P	Whole percent
O	TC	Degrees Celsius in tenths
P	TF	Degrees Fahrenheit in tenths

Q	IS	Miles per hour and sixteen-point wind compass
R	MS	Meters per second and sixteen-point wind compass

FLD LEN: 6

ORIGINAL-OBSERVATION-ELEMENT-QUALITY parameter code
The code that denotes the type of parameter that the supplemental-level-element-quality applies to.
DOM: A specific domain comprised of the characters in the ASCII character set.

First 4 characters = the element name as defined below.
Position 5 = the Flag 1 value as defined below.
Position 6 = Flag 2 value as defined below.

Element names and definitions:

ALC   Sky condition in tenths from ASOS
ALM   Sky condition in eighths from ASOS
ALTP   Altimeter setting
CC51   Sky condition prior to 1951
CLC   Sky condition in tenths
CLM   Sky condition in eighths
CLHT   Ceiling height
CLT   Cloud type and height by layer
C2C3   Total cloud cover by first 2 and first 3 layers
DPTC   Dew point temperature in celsius
DPTP   Dew point temperature in fahrenheit
HZVS   Horizontal visibility
PRES   Station pressure
PWTH   Present weather
PWVC   Present weather in vicinity
RHUM   Relative humidity
SCH   Sky condition (amount and modifier, e.g., thin broken) and height by layer
SLVP   Sea level pressure
TMCD   Dry bulb temperature in celsius
TMPD   Dry bulb temperature in fahrenheit
TMPW   Wet bulb temperature in fahrenheit
TSCE   Total sky cover in eighths
TSKC   Total sky cover in tenths
TSKY   Same as TSKC but expressed in terms of amount and modifier, e.g., thin broken.
WD16   Wind direction and speed in 16 point code
WIND   Wind direction and speed
WND2   Wind direction and speed from ASOS

FLAG-1 (Measurement Value):

A	Wind speed expressed in Beaufort scale, different from the day's given units
C	Ceiling of cirroform clouds at unknown height (Sep 56 - Mar 70)
D	Derived value
E	Estimated value
G	Visibility > or = 100 miles (data value = 10000)
H	Hundredths precision only is indicated in the original observation (except as when found in SLVP with units code MT, this flag means original value is expressed in inches to hundredths, not hundredths of millibars)
I	Wind speed in miles per hour, different from the day's given units
K	Wind speed in knots, different from the day's given units
M	Visibility missing (data value = 99999)
N	Unlimited visibility (data value = 99999)
P	Wind speed in pounds per square foot perpendicular to the wind
R	Dew Point and/or Relative Humidity, originally calculated with respect to ice have been recomputed with respect to water. (DPTP, RHUM)
S	Wind speed in meters per second, different from the day's given units
W	Whole precision only is indicated in the original observation
U	Unlimited ceiling height (DATA-VALUE = 99999). (CLHT)
b	(blank) Flag not needed. (All elements except CC51)

FLAG-2 (Data Quality Flag Value):

0	Observed data has passed all internal consistency checks.
1	Validity indeterminable (primarily for pre-1984 data).
2	Observed data has failed an internal consistency check - subsequent edited value follows observed value.
3	Data beginning January 1,1984 - observed data has failed a consistency check - No edited value follows. Data prior to 1 Jan 84 - observed data exceeded preselected climatological limits during conversion from historic TD-1440 files. No edited value follows.
4	Observed data value invalid - no edited value follows.
5	Data converted from historic TD-1440 exceeded known climatological extremes - no edited value follows.
6	Complex QA indicates data are erroneous, and an edited value follows.
E	Edited data value passes all system checks - no observed value present.
M	Manually edited data value added to data set after original archival. Automated edit not performed on this item.
S	Manually edited data passes all system checks.

Original Observation Data Section

FLD LEN: 3

ORIGINAL-OBSERVATION-DSI-3280 identifier
The identifier that denotes the existence of ORIGINAL-OBSERVATION-DSI-3280 information. This is used in specific
 instances where the original data from a previous format is stored for quality control purposes. In most cases, this section
 is not included, since original input data sources are always maintained/archived at NCDC.
 DOM: A specific domain comprised of the ASCII character set.
   QNN: The following may be occur from 0 to 99 times, for NCDC DSI-3280:
      ORIGINAL-OBSERVATION-DSI-3280 original source codes and flags

FLD LEN: 5

ORIGINAL-OBSERVATION-DSI-3280 source codes and flags
The original source codes and flags from DSI-3280, for possible future use in ISH database quality control.
DOM: A specific domain comprised of the ASCII character set.
For each original DSI-3280 data record, the source code 1 and 2, and flag 1 and 2 original values are stored as follows:

QNN@1234@1234@1234 where:
   QNN = indicator for section
   @ = element identifier (see below)
   1234 = source code 1, source code 2, flag 1, and flag 2 sequentially, for each element as defined in original DSI-
   3280.

   Element Identifiers (@) as mentioned above, with the original DS3280 element that it refers to (eg, A = element ALC):

   A   ALC
   B   ALM
   C   ALTP
   D   CC51
   E   CLC
   F   CLM
   G   CLHT
   H   CLT
   I   C2C3
   J   DPTC
   K   DPTP
   L   HZVS
   M   PRES
   N   PWTH
   O   PWVC
   P   RHUM
   Q   SLVP
   R   TMCD
   S   TMPD
   T   TMPW
   U   TSCE
   V   TSKC
   W   WD16
   X   WIND
   Y   WND2

FLD LEN: 6

ORIGINAL-OBSERVATION-DSI-3280 data value
The original data value from DSI-3280, as defined for the element above, for possible future use in ISH database quality
 control.
DOM: A specific domain comprised of the ASCII character set.

7. **Start Date:**

    1900, but the date will vary greatly by station.

8. **Stop Date:** Present

9. **Coverage:**

    a. Southernmost Latitude: 9000S
    b. Northernmost Latitude: 9000N
    c. Westernmost Longitude: 18000W
    d. Easternmost Longitude: 18000E

10. **Location:** Global

11. **Keywords:**

      a. Temperature
        b. Dew Point
        c. Wind Speed
        d. Wind Gust
        e. Wind Direction
        f. Ceiling
        g. Sky Cover
        h. Cloud Layer Data
        i. Visibility
        j. Present Weather
        k. Past Weather
        l. Sea Level Pressure
        m. Altimeter Setting
        n. Station Pressure
        o. 3-hour Pressure Change
        p. Precipitation Amount
        q. Snowfall
        r. Snow Depth
        s. Maximum Temperature
        t. Minimum Temperature
        u. US Air Force
        v. Clouds
        w. Surface

12. **How to Order Data:**

    Order from:
    National Climatic Data Center
    Climate Services Branch
    Federal Building
    151 Patton Avenue
    Asheville, NC 28801-5001
    phone: (828) 271-4800
    email: ncdc.orders@noaa.gov

13. **Archiving Data Centers:**

Air Force Combat Climatology Center (AFCCC)
National Climatic Data Center
Federal Building
151 Patton Avenue
Asheville, NC 28801-5001

14. **Technical Contact:**

National Climatic Data Center
Climate Services Branch
Federal Building
151 Patton Avenue
Asheville, NC 28801-5001
phone: (828) 271-4800
email: ncdc.info@noaa.gov

15. **Known Uncorrected Problems:**

Minimal number of random errors, decode errors, and reporting
errors (by station)--less than .1% of observations affected overall.
Most errors corrected/eliminated by quality control software.

16. **Quality Statement:**

Data have undergone extensive automated quality control, and additional
manual quality control for US Air Force stations, US Navy stations, and
US National Weather Service stations.

17. **Revision Date:** N/A

18. **Source Data Sets:**

AFCCC DATSAV3 Surface Hourly, NCDC DS3280 Surface Hourly, NCDC DS3240
Hourly Precipitation. AFCCC DATSAV3 includes over 100 source
datasets, while NCDC DS3280 includes several original input sources; so
over 100 original input sources are included in the current ISD archive.
Beginning in 2006, additional data sources are being added, and will be
documented here as they become available online.

19. **Essential Companion Data Sets:** N/A

20. **Derived Data Sets:** Global summary of day for 1929-present

21. **References:** N/A

22. **Summary:**

The Integrated Surface Database is composed of worldwide surface weather
observations from about 20,000 stations, collected and stored from
sources such as the Automated Weather Network (AWN), the Global
Telecommunications System (GTS), the Automated Surface Observing System
(ASOS), and data keyed from paper forms. Most digital observations are
decoded either at operational centers and forwarded to the Federal
Climate Complex (FCC) in Asheville, NC, or decoded at the FCC. The US
Air Force Combat Climatology Center (AFCCC), the National Climatic Data
Center (NCDC), and the US Navy's Fleet Numerical Meteorological and
Oceanographical Command Detachment (FNMOD), make up the FCC in
Asheville, NC. Each agency is responsible for data ingest, quality
control, and customer support for surface climatological data. All data
are now stored in a single ASCII format. The database is used in
climatological applications by numerous DoD and civilian customers.

ISD (identical to ISH) refers to the digital database and format in which hourly, synoptic (3-hourly), and various other weather/climate observations are stored. The format conforms to Federal Information Processing Standards (FIPS). The database includes data originating from various codes such as synoptic, airways, METAR (Meteorological Routine Weather Report), and SMARS (Supplementary Marine Reporting Station), as well as observations from automatic weather stations. The data are sorted by station-year-month-day-hour-minute. This document provides complete documentation for the database and its format.