

## 12 Parameters

name [Parameters] (1)

No.	offset	Data length	Data type	Item name	Remarks	Classification
1	0	B1		Parameters Distribution Header		a
2	O1	B2		Parameter Data Frame (Drawing Parameter)	(2)	a
3	O2	B3		Parameter Data Frame (3-D Symbol)	(2)	c
4	O3	B4		Parameter Data Frame (Route Number Display-frame)	(2)	c
				:		

### (1) Parameters

In the management header table of the all data management frame, the presence or absence of parameters is judged according to the management header record.

If the parameters are absent, the data entity is omitted (classification c).

If the parameters are present, No.1 and No.2 are mandatory.

The management header size of the management header record of the all data management frame describes the size of field No.1 above.

### (2) Parameter Data Frame

The top of each parameter data frame is aligned on a four-byte boundary.

A sequence begins with a drawing parameter, which is mandatory (classification a).

The order of the subsequent frames is not specified. These frames are put in classification c.

Parameters other than No.2 and No.3 above are not determined.

(External character font, audio guidance sample dictionary, geodetic table, and the like may be included.)

## 12.1 Parameters Distribution Header

name [Parameters Distribution Header]

No.	offset	Data length	Data type	Item name	Remarks	Classification
1	0	2	SWS	Header Size	(1)	a
2	2	2	N	Number of Parameters Management Information Records	(2)	a
3	4	B1		Parameters Management Information Pointer Table		a
4	O1	B2		Parameters Management Information List		a
5	O2	B3		(Expansion Field)	(3)	c

### (1) Header Size

This field describes the size of this parameters distribution header.

## (2) Number of Parameters Management Information Records

This field describes the number of management information records used to manage parameter data frames storing parameters.

If a management information record is provided, a corresponding parameter data frame entity is always present.

(Because a drawing parameter data frame is mandatory, the minimum setting of this field is 1.)

## (3) Expansion Field

The presence or absence of the expansion field is judged by the header size, item no.1.

**12.1.1 Parameters Management Information Pointer Table**

name [Parameters Management Information Pointer Table]

No.	offset	Data length	Data type	Item name	Remarks	Classification
1	0	20		A Sequence of Parameters Management Information Pointers	(1)	a

## (1) Parameters Management Information Pointer

Parameters management information pointers of the number of parameters management information records described in the parameters distribution header are arranged.

The order of pointers agrees with the order of parameter data frames.

**12.1.1.1 Parameters Management Information Pointer**

name [Parameters Management Information Pointer]

No.	offset	Data length	Data type	Item name	Remarks	Classification
1	0	12	MID	User Classification ID	(1)	a
2	12	4	N:	Data Classification Code	(2)	a
3	16	2	D	Offset to Parameters Management Information Record	(3)	a
4	18	2	SWS	Size of Parameters Management Information Record		a

## (1) User Classification ID

All bits are set to ff(16) in order to make the header open to all users.

## (2) Data Classification Code

No.	bit	Description
1	31 to 8	Data Classification Code
2	7 to 0	(RESERVED)

The structure of the parameters management information record is individually defined for each parameter.

The following data classification codes of parameters management information records are used:

001201(16): Drawing parameter management information record

001202(16): 3-D symbol management information record

001203(16): Route number display-frame record

## (3) Offset to Parameters Management Information Record

This field describes the displacement from the top of the parameters to the top of the corresponding parameters management information record.

**12.1.2 Parameters Management Information List**

name [Parameters Management Information List]

No.	offset	Data length	Data type	Item name	Remarks	Classification
1	0			A Sequence of Parameters Management Information Records	(1)	a

## (1) Parameters Management Information Record

Parameters management information records of the number of parameters management information records described in the parameters distribution header are arranged.

The order of the records agrees with the order of parameter data frames.

**12.1.2.1 Drawing Parameter Management Information Record**

name [Drawing Parameter Management Information Record]

No.	offset	Data length	Data type	Item name	Remarks	Classification
1	0	4	D	Offset to Drawing Parameter Data Frame	(1)	a
2	4	4	SWS	Size of Drawing Parameter Data Frame		a
3	8	1	B:B:	Data Existence Flag	(2)	a
4	9	3		(RESERVED)		a

## (1) Offset to Drawing Parameter Data Frame

This field describes the displacement from the top of the parameters to the top of the drawing parameter data frame.

## (2) Data Existence Flag

No.	bit	Description		
1	7	Line Style Palette Table existence Flag (2-1)	bit7	Meaning
			0	Line style palette table not provided
			1	Line style palette table provided
2	6	Existence Flag of Drawing Parameter Data Frame corresponding to the Map Element (2-2)	bit6	Meaning
			0	Drawing parameter data frame corresponding to the map element not provided
			1	Drawing parameter data frame corresponding to the map element provided
3	5 to 0	(RESERVED)		

## (2-1) Line Style Palette Table Existence Flag

This flag indicates the presence or absence of a line style palette table in the drawing parameter data frame.

If the flag indicates that no line style palette table is provided, the line style palette table is omitted.

If the flag indicates that a line style palette table is provided, the line style palette table is recorded.

(If a drawing parameter data frame corresponding to the map element is provided, a line style palette table is always provided.)

(2-2) Existence Flag of Drawing Parameter Data Frame corresponding to the Map Element

This flag indicates the presence or absence of a drawing parameter data frame corresponding to the map element in the drawing parameter data frame.

If the flag indicates that no drawing parameter data frame corresponding to the map element is provided, the drawing parameter data frame corresponding to the map element is omitted.

If the flag indicates that a drawing parameter data frame corresponding to the map element is provided, the drawing parameter data frame corresponding to the map element is recorded.

### 12.1.2.2 3-D Symbol Management Information Record

name [3-D Symbol Management Information Record]

No.	offset	Data length	Data type	Item name	Remarks	Classification
1	0	4	D	Offset to 3-D Symbol Data Frame	(1)	a
2	4	4	SWS	Size of 3-D Symbol Data Frame		a

(1) Offset to 3-D Symbol Data Frame

This field describes the displacement from the top of the parameters to the top of the 3-D symbol data frame.

### 12.1.2.3 Route Number Display-frame Management Information Record

name [Route Number Display-frame Management Information Record]

No.	Offset	Data length	Data type	Item name	Remarks	Classification
1	0	4	D	Offset to Route Number Display-frame Data Frame	(1)	a
2	4	4	SWS	Size of Route Number Display-frame Data Frame		a

(1) Offset to Route Number Display-frame Data Frame

This field describes the displacement from the top of the parameters to the top of the route number display-frame data frame.

## 12.2 Drawing Parameter Data Frame

name [Drawing Parameter Data Frame]

No.	offset	Data length	Data type	Item name	Remarks	Classification
1	0	B1		Drawing Parameter Distribution Header		a
2	O1	B2		Color Palette Table	(1)	a
3	O2	B3		Line Style Palette Table	(1) (2)	c
4	O3	B4		Drawing Parameter Data Frame corresponding to the Map Element	(1)	c
5	O4	B5		Landmark Data Frame corresponding to the Category Code	(1)	a

### (1) Tables and Data Frames of Drawing Parameters

The beginning of each table and each data frame is aligned on a four-byte boundary.

### (2) Line Style Palette Table

The table is always stored if a drawing parameter data frame corresponding to the map element, No. 4, is stored.

### 12.2.1 Drawing Parameter Distribution Header

name [Drawing Parameter Distribution Header]

No.	offset	Data length	Data type	Item name	Remarks	Classification
1	0	2	SWS	Header Size	(1)	a
2	2	2		(RESERVED)		a
3	4	2	D	Offset to Color Palette Table	(2)	b
4	6	2	N	Number of Colors on Color Palette	(3)	b
5	8	2	N	Number of Color Palettes		b
6	10	2	D	Offset to Line Style Palette Table	(4)	
7	12	2	SWS	Size of Line Style Palette	(5)	
8	14	2	N	Number of Line Style Palettes		
9	16	2	D	Offset to Drawing Parameter Data Frame corresponding to the Map Element	(6)	b
10	18	2	SWS	Size of Drawing Parameter Data Frame corresponding to the Map Element	(7)	b
11	20	4	D	Offset to Landmark Data Frame corresponding to the Category Code	(8)	a
12	24	4	SWS	Size of Landmark Data Frame corresponding to the Category Code		a
13	28			(Expansion Field)	(10)	c

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(1) Header Size

This field describes the size of the drawing parameter distribution header.

(2) Offset to Color Palette Table

This field describes the displacement from the top of the drawing parameter data frame to the top of the color palette table.

(3) Number of Colors on Color Palette

This field describes the number of colors on a single palette.

The size of a single palette can be calculated as follows:

$$\text{Size of color palette} = \text{Number of colors on color palette} \times 4 [\text{bytes}]$$

(4) Offset to Line Style Palette Table

This field describes the displacement from the top of the drawing parameter data frame to the top of the line style palette table.

(5) Size of Line Style Palette

This field describes the size of a single palette.

If the size is 0, the data entity is omitted.

(6) Offset to Drawing Parameter Data Frame corresponding to the Map Element

This field describes the displacement from the top of the drawing parameter data frame to the top of the drawing parameter data frame corresponding to the map element.

(7) Size of Drawing Parameter Data Frame corresponding to the Map Element

If the size is 0, the data entity is omitted.

(8) Offset to Landmark Data Frame corresponding to the Category Code

This field describes the displacement from the top of the drawing parameter data frame to the top of the landmark data frame corresponding to the category code.

(10) Expansion Field

The presence or absence of the expansion field is judge from the header size, No. 1.

**12.2.2 Color Palette Table**

name [Color Palette Table]

No.	offset	Data length	Data type	Item name	Remarks	Classification
1	0	B1		A Sequence of Color Palettes	(1)	a

(1) This field represents a palette number by a sequence of color palettes.

**12.2.2.1 Color Palette**

A sample color palette having 16 colors is indicated below:

name [Color Palette]

No.	offset	Data length	Data type	Item name	Remarks	Classification
1	0	4	:B:B:B	RGB Value #0	(1)(2)	a
2	4	4	:B:B:B	RGB Value #1	(1)	a
3	8	4	:B:B:B	RGB Value #2	(1)	a
4	12	4	:B:B:B	RGB Value #3	(1)	a
5	16	4	:B:B:B	RGB Value #4	(1)	a
6	20	4	:B:B:B	RGB Value #5	(1)	a
7	24	4	:B:B:B	RGB Value #6	(1)	a
8	28	4	:B:B:B	RGB Value #7	(1)	a
9	32	4	:B:B:B	RGB Value #8	(1)	a
10	36	4	:B:B:B	RGB Value #9	(1)	a
11	40	4	:B:B:B	RGB Value #10	(1)	a
12	44	4	:B:B:B	RGB Value #11	(1)	a
13	48	4	:B:B:B	RGB Value #12	(1)	a
14	52	4	:B:B:B	RGB Value #13	(1)	a
15	56	4	:B:B:B	RGB Value #14	(1)	a
16	60	4	:B:B:B	RGB Value #15	(1)(3)	a

(1) RGB Value

In a four-byte RGB value, the R, G, and B values are assigned eight bits, as indicated below:

No.	bit	Description
1	31 to 24	(RESERVED)
2	23 to 16	R Value
3	15 to 8	G Value
4	7 to 0	B Value

In the four-bit color representation of eight-bit colors, the four high-order bits of the R, G, and B values are significant.

Positions in the sequence represent color codes.

RGB value #0      Color code 0

RGB value #1      Color code 1

RGB value #2      Color code 2

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(2) First RGB Value (RGB value #0)

The first RGB value defines a transparent color.

(3) Last RGB Value

If the color palette is used for the background data of a map element, the last RGB value defines the color of the background (used as the color of land on the map).

### 12.2.3 Line Style Palette Table

name [Line Style Palette Table]

No.	offset	Data length	Data type	Item name	Remarks	Classification
1	0	B1		A A Sequence of Line Style Palettes	(1)	a

(1) Positions in the sequence indicate palette numbers.

#### 12.2.3.1 Line Style Palette

A line style palette has 16 patterns and different line widths.

name [Line Style Palette]

No.	offset	Data length	Data type	Item name	Remarks	Classification
1	0	2	B	Line Style Pattern #0	(1)	a
2	2	2	B	Line Style Pattern #1	(1)	a
3	4	2	B	Line Style Pattern #2	(1)	a
4	6	2	B	Line Style Pattern #3	(1)	a
5	8	2	B	Line Style Pattern #4	(1)	a
6	10	2	B	Line Style Pattern #5	(1)	a
7	12	2	B	Line Style Pattern #6	(1)	a
8	14	2	B	Line Style Pattern #7	(1)	a
9	16	2	B	Line Style Pattern #8	(1)	a
10	18	2	B	Line Style Pattern #9	(1)	a
11	20	2	B	Line Style Pattern #10	(1)	a
12	22	2	B	Line Style Pattern #11	(1)	a
13	24	2	B	Line Style Pattern #12	(1)	a
14	26	2	B	Line Style Pattern #13	(1)	a
15	28	2	B	Line Style Pattern #14	(1)	a
16	30	2	B	Line Style Pattern #15	(1)	a
17	32	1	N:N	Line Width #0 - #1	(2)	a



No.	offset	Data length	Data type	Item name	Remarks	Classification
18	33	1	N:N	Line Width #2 - #3	(2)	a
19	34	1	N:N	Line Width #4 - #5	(2)	a
20	35	1	N:N	Line Width #6 - #7	(2)	a
21	36	1	N:N	Line Width #8 - #9	(2)	a
22	37	1	N:N	Line Width #10- #11	(2)	a
23	38	1	N:N	Line Width #12- #13	(2)	a
24	39	1	N:N	Line Width #14- #15	(2)	a

## (1) Line Style Pattern

Each line style pattern is a 16-dot longitudinal pattern (1: ON, 0: OFF).

Positions in the sequence indicate line style codes.

Line style pattern #0      Line style code 0

Line style pattern #1      Line style code 1

Line style pattern #2      Line style code 2

:

## (2) Line Width

A line width is represented by a group of four bits (0 means a width of a single dot, and a value of 1 to 16 dots can be specified).

	bit7-4	bit3-0
Line width #0 - #1	Width #0	Width #1
Line width #2 - #3	Width #2	Width #3
Line width #4 - #5	Width #4	Width #5
Line width #6 - #7	Width #6	Width #7
Line width #8 - #9	Width #8	Width #9
Line width #10 - #11	Width #10	Width #11
Line width #12 - #13	Width #12	Width #13
Line width #14 - #15	Width #14	Width #15

**12.2.4 Drawing Parameter Data Frame corresponding to the Map Element**

name [Drawing Parameter Data Frame corresponding to the Map Element]

No.	offset	Data length	Data type	Item name	Remarks	Classification
1	0	B1		Drawing Parameter Distribution Header corresponding to the Map Element		a
2	O1	B2		Palette Set Table corresponding to the Level		a
3	O2	B3		Line Drawing Parameter Table corresponding to the Category and Unit		a
4	O3	B4		Area Drawing Parameter Table corresponding to the Category and Unit		a
5	O4	B5		Character Drawing Parameter Table corresponding to the Category and Unit		a
6	O5	B6		Road Drawing Parameter Table corresponding to the Display Class		a

**12.2.4.1 Drawing Parameter Distribution Header corresponding to the Map Element**

name [Drawing Parameter Distribution Header corresponding to the Map Element]

No.	offset	Data length	Data type	Item name	Remarks	Classification
1	0	2	SWS	Header Size	(1)	a
2	2	2	D	Offset to Palette Set Table corresponding to the Level	(2)	a
3	4	2	SWS	Size of Palette Set Table corresponding to the Level		a
4	6	2	D	Offset to Line Drawing Parameter Table corresponding to the Category and Unit	(3)	a
5	8	2	SWS	Size of Line Drawing Parameter Table corresponding to the Category and Unit		a
6	10	2	D	Offset to area Drawing Parameter Table corresponding to the Category and Unit	(4)	a
7	12	2	SWS	Size of area Drawing Parameter Table corresponding to the Category and Unit		a
8	14	2	D	Offset to Character Drawing Parameter Table corresponding to the Category and Unit	(5)	a
9	16	2	SWS	Size of Character Drawing Parameter Table corresponding to the Category and Unit		a
10	18	2	D	Offset to Road Drawing Parameter Table corresponding to the Display Class	(6)	a
11	20	2	SWS	Size of Road Drawing Parameter Table corresponding to the Display Class		a
12	22			(Expansion Field)	(7)	c

(1) Header Size

This field describes the size of the drawing parameter distribution header corresponding to the map element.

(2) Offset to Palette Set Table corresponding to the Level

This field describes the displacement from the top of the drawing parameter data frame corresponding to the map element to the top of the palette set table corresponding to the level.

(3) Offset to Line Drawing Parameter Table corresponding to the Category and Unit

This field describes the displacement from the top of the drawing parameter data frame corresponding to the map element to the top of the line drawing parameter table corresponding to the category and unit.

(4) Offset to area Drawing Parameter Table corresponding to the Category and Unit

This field describes the displacement from the top of the drawing parameter data frame corresponding to the map element to the top of the area drawing parameter table corresponding to the category and unit.

(5) Offset to Character Drawing Parameter Table corresponding to the Category and Unit

This field describes the displacement from the top of the drawing parameter data frame corresponding to the map element to the top of the character drawing parameter table corresponding to the category and unit.

(6) Offset to Road Drawing Parameter Table corresponding to the Display Class

This field describes the displacement from the top of the drawing parameter data frame corresponding to the map element to the top of the road drawing parameter table corresponding to the display class.

(7) Expansion Field

The presence or absence of the expansion field is judged from the header size, No.1.

**12.2.4.2 Palette Set Table corresponding to the Level**

name [Palette Set Table corresponding to the Level]

No.	offset	Data length	Data type	Item name	Remarks	Classification
1	0	B1		A Sequence of Palette Sets corresponding to the Level	(1)	a

(1) A Sequence of Palette Sets corresponding to the Level

The order and number of palette sets correspond to the order and number of level management records of the parcel-related data management frame, which is described in Chapter 6.

**12.2.4.2.1 Palette Set corresponding to the Level**

name [Palette Set corresponding to the Level]

No.	offset	Data length	Data type	Item name	Remarks	Classification
1	0	1	I:	Level	(1)	a
2	1	1	N	Day/stop Color Palette Number		a
3	2	1	N	Day/run Color Palette Number		a
4	3	1	N	Night/stop Color Palette Number		a
5	4	1	N	Night/run Color Palette Number		a
6	5	1	N	Line Style Palette Number		a
7	6	2		(RESERVED)		a

(1) Level

No.	bit	Description
1	7 to 2	Level Number (1-1)
2	1 to 0	(RESERVED)

(1-1) Level Number

This field describes the level number of the parcel. The setting represents a value ranging from -31 to +31, and -32 is assigned to null.

**12.2.4.3 Line Drawing Parameter Table corresponding to the Category and Unit**

name [Line Drawing Parameter Table corresponding to the Category and Unit]

No.	offset	Data length	Data type	Item name	Remarks	Classification
1	0	B1		A Sequence of Line Drawing Parameter Records corresponding to the Category and Unit	(1)	a

(1) A Sequence of Line Drawing Parameter Records corresponding to the Category and Unit

The order and number of records correspond to the order and number of the item-unit background data items of the background data frame.

**12.2.4.3.1 Line Drawing Parameter Record corresponding to the Category and Unit**

name [Line Drawing Parameter Record corresponding to the Category and Unit]

No.	offset	Data length	Data type	Item name	Remarks	Classification
1	0	2	N	Color Code (Line)		a
2	2	2	N	Line Style Code		a

**12.2.4.4 Area Drawing Parameter Table corresponding to the Category and Unit**

name [Area Drawing Parameter Table corresponding to the Category and Unit]

No.	offset	Data length	Data type	Item name	Remarks	Classification
1	0	B1		A Sequence of Area Drawing Parameter Records corresponding to the Category and Unit	(1)	a

(1) A Sequence of area Drawing Parameter Records corresponding to the Category and Unit

The order and number of records correspond to the order and number of item-unit background data items of the background data frame.

**12.2.4.4.1 Area Drawing Parameter Record corresponding to the Category and Unit**

name [Area Drawing Parameter Record corresponding to the Category and Unit]

No.	offset	Data length	Data type	Item name	Remarks	Classification
1	0	2	N	Color Code (for area filling)		a
2	2	2	N	Color Code (for framing)		a

**12.2.4.5 Character Drawing Parameter Table corresponding to the Category and Unit**

name [Character Drawing Parameter Table corresponding to the Category and Unit]

No.	offset	Data length	Data type	Item name	Remarks	Classification
1	0	B1		A Sequence of Character Drawing Parameter Records corresponding to the Category and Unit	(1)	a

(1) A Sequence of Character Drawing Parameter Records corresponding to the Category and Unit

The order and number of records correspond to the order and number of name lists of the name data frame.

**12.2.4.5.1 Character Drawing Parameter Record corresponding to the Category and Unit**

name [Character Drawing Parameter Record corresponding to the Category and Unit]

No.	offset	Data length	Data type	Item name	Remarks	Classification
1	0	2	N	Color Code (Character, Symbol)		a

**12.2.4.6 Road Drawing Parameter Table corresponding to the Display Class**

name [Road Drawing Parameter Table corresponding to the Display Class]

No.	offset	Data length	Data type	Item name	Remarks	Classification
1	0	B1		A Sequence of Road Drawing Parameter Records corresponding to the Display Class	(1)	a

(1) A Sequence of Road Drawing Parameter Records corresponding to the Display Class

The order and number of records correspond to the order and number of display classes of the road data frame.

**12.2.4.6.1 Road Drawing Parameter Record corresponding to the Display Class**

name [Road Drawing Parameter Record corresponding to the Display Class]

No.	offset	Data length	Data type	Item name	Remarks	Classification
1	0	2	N	Color Code (Road)		a
2	2	2	N	Line Style Code		a

**12.2.5 Landmark Data Frame corresponding to the Category Code**

name [Landmark Data Frame corresponding to the Category Code]

No.	offset	Data length	Data type	Item name	Remarks	Classification
1	0	B1		Landmark Distribution Header corresponding to the Category Code		a
2	O1	B2		A Sequence of Landmark Pattern Tables		a
3	O2	B3		Name and Reading Information Data List		c

**12.2.5.1 Landmark Distribution Header corresponding to the Category Code**

name [Landmark Distribution Header corresponding to the Category Code]

No.	offset	Data length	Data type	Item name	Remarks	Classification
1	0	2	SWS	Header Size	(1)	a
2	2	2	N	Number of Category Codes	(2)	a
3	4	2	N	Number of Landmark Pattern Tables	(3)	a
4	6	B1		A Sequence of Landmark Pattern Table Management Information		a
5	O1	B2		Name and Reading Information Data List Management Information		a
6	O2	B3		(Expansion Field)	(4)	c

## (1) Header Size

This field describes the size of the landmark distribution header corresponding to the category code.

## (2) Number of Category Codes

This field describes the total number of category codes used in the medium (not the number defined in the format).

## (3) Number of Landmark Pattern Tables

If multiple pattern tables having different attributes, sizes, etc. are stored, this field describes the number of such tables.

The landmark pattern tables of the number stored here are arranged in the data entity. The landmark pattern table management information, No.4, is provided accordingly.

## (4) Expansion Field

The presence or absence of the expansion field is judged from the header size, No.1.

**12.2.5.2 Landmark Pattern Table Management Information**

name [Landmark Pattern Table Management Information]

No.	offset	Data length	Data type	Item name	Remarks	Classification
1	0	2	SWS	Size of Landmark Pattern Table Management Information	(1)	a
2	2	2	B::N:B	Landmark Pattern Attribute	(2)	a
3	4	2	N:N	Landmark Pattern Size	(3)	a
4	6	1	N	Color Palette Number (for day)	(4)	b
5	7	1	N	Color Palette Number (for night)	(4)	b
6	8	4	D	Offset to Landmark Pattern Table	(5)	a
7	12	4	SWS	Size of Landmark Pattern Table		a
8	16	2	N	Number of Landmark Patterns	(6)	a
9	18	B1	N	Landmark Pattern Pointer Table		a
10	O1	B2		(Expansion Field)	(7)	c

## (1) Size of Landmark Pattern Table Management Information

This field describes the size of the landmark pattern table management information.

## (2) Landmark Pattern Attribute

No.	bit	Description					
1	15 to 12	Format Flag	bit15	bit14	bit13	bit12	Meaning
			0	0	0	0	Monochrome bitmap pattern
			0	0	0	1	Color bitmap pattern
			0	0	1	0	TRUE type pattern
			0	0	1	1	0011(2) and after reserved
2	11 to 5	(RESERVED)					
3	4	Landmark Pattern Offset Flag (2-2)					
4	3 to 0	Number of bits per pixel (2-1)					

## (2-1) Number of bits per pixel

If the format flag is set to 0001(2), color bitmap pattern, the number of bits per pixel is represented by the n-th power of 2. This n is specified in this field (0 ≤ n ≤ 15, where n is an integer).

## (2-2) Landmark Pattern offset Flag

This field describes the presence or absence of an offset field to the landmark pattern in the landmark pattern pointer.

1: Provided, 0: Not provided

## (3) Landmark Pattern Size

No.	bit	Description
1	15 to 8	Number of Horizontal Dots
2	7 to 0	Number of Vertical Dots

## (4) Color Palette Number

This field describes the palette number of the color palette to be referenced if the format flag of the landmark pattern attribute is set to 0001(2), color bitmap pattern.

Otherwise, an invalid value ff(16) is set in this field.

## (5) Offset to Landmark Pattern Table

This field describes the displacement from the top of the landmark data frame corresponding to the category code to the top of the landmark pattern table.

## (6) Number of Landmark Patterns

This field describes the number of landmark patterns stored in the landmark pattern table.

If a single landmark pattern table is provided,

Number of landmark patterns = Number of category codes.

## (7) Expansion Field

The presence or absence of the expansion field is judged from the size of the landmark pattern table management information, No.1.



**12.2.5.2.1 Landmark Pattern Pointer Table**

name [Landmark Pattern Pointer Table]

No.	offset	Data length	Data type	Item name	Remarks	Classification
1	0	B1		A Sequence of Landmark Pattern Pointers	(1)	a

(1) A Sequence of Landmark Pattern Pointers

The landmark pointers of the number of landmark patterns are arranged in ascending order of category code.

**12.2.5.2.1.1 Landmark Pattern Pointer**

name [Landmark Pattern Pointer]

No.	offset	Data length	Data type	Item name	Remarks	Classification
1	0	2	N	Category Code		a
2	2	4	D	Offset to the Landmark Pattern	(1)	c

(1) Offset to the Landmark Pattern

This field describes the displacement from the top of the landmark pattern table to the top of the landmark pattern.

A single category code corresponds to at least one landmark pattern.

(At least one offset is required among multiple landmark pattern tables.)

This field is valid if the landmark pattern offset flag is set to 1.

If this field is omitted, the landmark pattern is referenced according to the sequential number of the landmark pattern pointer.

(The order of landmark pattern pointers should correspond to the order of landmark patterns. Because the landmark pattern has a fixed length, a landmark pattern can be identified by the sequential number of the landmark pattern pointer.)

**12.2.5.2.2 Landmark Pattern Table Management Information Expansion Field**

The structure of the landmark pattern table management information expansion field is defined as indicated below:

No.	offset	Data length	Data type	Item name	Remarks	Classification
1	0	2	N	Use Code	(1)	a

(1) Use Code

This field describes the use of the landmark.

Meaning of bit15 to bit0	Description
03(16) to FF(16)	(RESERVED)
02(16)	Logo
01(16)	Landmark
00(16)	(RESERVED)

**12.2.5.3 Name and Reading Information Data List Management Information**

name [Name and Reading Information Data List Management Information]

No.	offset	Data length	Data type	Item name	Remarks	Classification
1	0	2	SWS	Size of Name and Reading Information Data List Management Information	(1)	a
2	2	2	SWS	Size of Name and Reading Information Data List	(2)	a
3	4	4	D	Offset to Name and Reading Information Data List	(3)	a
4	8	B1	N	Name and Reading Information Data Pointer Table		c

**(1) Size of Name and Reading Information Data List Management Information**

This field describes the size of the name and reading information data list management information.

**(2) Size of Name and Reading Information Data List**

If the size is 0, the data entity (name and reading information data list) and the name and reading information data pointer table, No.4, are omitted.

**(3) Offset to Name and Reading Information Data List**

This field describes the displacement from the top of the landmark data frame corresponding to the category code to the top of the name and reading information data list.

**12.2.5.3.1 Name and Reading Information Data Pointer Table**

name [Name and Reading Information Data Pointer Table]

No.	offset	Data length	Data type	Item name	Remarks	Classification
1	0	B1		A Sequence of Name and Reading Information Data Pointers	(1)	a

**(1) A Sequence of Name and Reading Information Data Pointers**

The pointers of the number of category codes are arranged in ascending order of category code.

**12.2.5.3.1.1 Name and Reading Information Data Pointer**

name [Name and Reading Information Data Pointer]

No.	offset	Data length	Data type	Item name	Remarks	Classification
1	0	2	N	Category Code		a
2	2	2	D	Offset to the Name and Reading Information Data Record	(1)	a

**(1) Offset to the Name and Reading Information Data Record**

This field describes the displacement from the top of the name and reading information data list to the top of the name and reading information data record.

**12.2.5.4 Landmark Pattern Table**

name [Landmark Pattern Table]

No.	offset	Data length	Data type	Item name	Remarks	Classification
1	0	B1		A Sequence of Landmark Patterns	(1)	a

(1) A Sequence of Landmark Patterns

The landmark patterns of the specified number are arranged in ascending order of category code.

The order of landmark patterns corresponds to the order of landmark pattern pointers.

**12.2.5.4.1 Landmark Pattern**

The contents of a landmark pattern depend on the landmark pattern attribute and landmark size in the landmark pattern table management information.

In a bitmap pattern, the data is stored in dots from left to right and from top to bottom.

The data structures of the pattern shown below are described:

Note: Pattern data of 16 x 16 landmark pattern

**12.2.5.4.1.1 Monochrome Bitmap Pattern**

name [Monochrome Bitmap Pattern]

No.	offset	Data length	Data type	Item name	Remarks	Classification
1	0	B1	N	Bitmap Data	(1)	a

(1) A single pixel consists of a single bit (1: ON, 0: Off).

The data length is calculated from the landmark pattern size, as shown below. (integer type calculation)

Data length = ((Number of horizontal dots + 7) ÷ 8 × Number of vertical dots)[bytes]

If the pattern consists of 16 bits by 16 bits

Data length = (16 + 7) ÷ 8 × 16  
= 32 bytes

Pattern:	0000000000000000	0x00, 0x00
	1111111111111100	0xff, 0xfc
	1111111111111100	0xff, 0xfc
	0000000000000000	0x00, 0x00
	0000000000000000	0x00, 0x00
	1111111111111100	0xff, 0xfc
	1111111111111100	0xff, 0xfc
	0000001100000000	0x30, 0x00
	0000001100000000	0x30, 0x00
	0000001100000000	0x30, 0x00
	0000001100000000	0x30, 0x00
	0000001100000000	0x30, 0x00
	0000001100000000	0x30, 0x00
	0000001100000000	0x30, 0x00
	0000001100000000	0x30, 0x00
	0000001100000000	0x30, 0x00

Actual data: 0x00,0x00,0xff,0xfc,0xff,0xfc,0x00,0x00,0x00,0x00,0xff,0xfc,0xff,0xfc,0x30,0x00,  
0x30,0x00,0x30,0x00,0x30,0x00,0x30,0x00,0x30,0x00,0x30,0x00,0x30,0x00,0x30,0x00

**12.2.5.4.1.2 Color Bitmap Pattern**

name [Color Bitmap Pattern]

No.	offset	Data length	Data type	Item name	Remarks	Classification
1	0	B1	N	Bitmap Data	(1)	a

(1) The data depends on the number of bits per pixel.

The data length is calculated from the landmark pattern size, as indicated below. (integer-type calculation)

Data length = ((Number of horizontal dots × Number of bits per pixel + 7) ÷ 8 × Number of vertical dots) [bytes]

If the size is 16 bits by 16 bits and if a single pixel consists of four bits

Data length = (16 × 4 + 7) ÷ 8 × 16  
= 128 bytes

Pattern: 0000000000000000 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00  
 AAAAAAAAAAAAAA00 0xaa, 0xaa, 0xaa, 0xaa, 0xaa, 0xaa, 0xaa, 0x00  
 AAAAAAAAAAAAAA00 0xaa, 0xaa, 0xaa, 0xaa, 0xaa, 0xaa, 0xaa, 0x00  
 0000000000000000 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00  
 0000000000000000 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00  
 AAAAAAAAAAAAAA00 0xaa, 0xaa, 0xaa, 0xaa, 0xaa, 0xaa, 0xaa, 0x00  
 AAAAAAAAAAAAAA00 0xaa, 0xaa, 0xaa, 0xaa, 0xaa, 0xaa, 0xaa, 0x00  
 000000AA00000000 0x00, 0x00, 0x00, 0xaa, 0x00, 0x00, 0x00, 0x00  
 000000AA00000000 0x00, 0x00, 0x00, 0xaa, 0x00, 0x00, 0x00, 0x00  
 000000AA00000000 0x00, 0x00, 0x00, 0xaa, 0x00, 0x00, 0x00, 0x00  
 000000AA00000000 0x00, 0x00, 0x00, 0xaa, 0x00, 0x00, 0x00, 0x00  
 000000AA00000000 0x00, 0x00, 0x00, 0xaa, 0x00, 0x00, 0x00, 0x00  
 000000AA00000000 0x00, 0x00, 0x00, 0xaa, 0x00, 0x00, 0x00, 0x00  
 000000AA00000000 0x00, 0x00, 0x00, 0xaa, 0x00, 0x00, 0x00, 0x00  
 000000AA00000000 0x00, 0x00, 0x00, 0xaa, 0x00, 0x00, 0x00, 0x00  
 000000AA00000000 0x00, 0x00, 0x00, 0xaa, 0x00, 0x00, 0x00, 0x00

Actual data: 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0xaa, 0xaa, 0xaa, 0xaa, 0xaa, 0xaa, 0xaa, 0x00,  
 0xaa, 0xaa, 0xaa, 0xaa, 0xaa, 0xaa, 0xaa, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00,  
 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0xaa, 0xaa, 0xaa, 0xaa, 0xaa, 0xaa, 0xaa, 0x00,  
 0xaa, 0xaa, 0xaa, 0xaa, 0xaa, 0xaa, 0xaa, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00,  
 0x00, 0x00, 0x00, 0xaa, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00,  
 0x00, 0x00, 0x00, 0xaa, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00,  
 0x00, 0x00, 0x00, 0xaa, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00

**12.2.5.4.1.3 TRUE Type Pattern**

name [TRUE Type Pattern]

No.	offset	Data length	Data type	Item name	Remarks	Classification
1	0	2	B::N	Attribute bit15-14:Shape(00:Point 01:Line 10:Area 11:RESERVED) bit13-10:(RESERVED) bit 9- 0:Number of Offset coordinate Records		a
2	2	B1		Sequence of Offset coordinate Records	(1)	a

(1) A Sequence of Offset Coordinate Records

Offset coordinate records of the number in the attribute field, No.1, are arranged.

**12.2.5.4.1.3.1 Offset Coordinate Record**

name [Offset Coordinate Record]

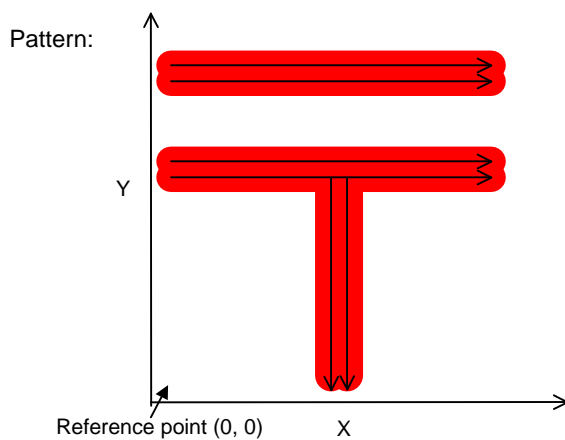
No.	offset	Data length	Data type	Item name	Remarks	Classification
1	0	1	I	X-axis Offset	(1)	a
2	1	1	I	Y-axis Offset	(2)	a

- (1) This field describes the offset from the X coordinate of the previous element point to the X coordinate of the element point.
- (2) This field describes the offset from the Y coordinate of the previous element point to the Y coordinate of the element point.

The X-axis and Y-axis offset values are represented by pixel coordinates (-128 to +127).

The offset of the first offset coordinate record is the offset from the bottom left corner (reference point).

A record with both X offset and Y offset set to 0 represents pen-up or pen-down.



Actual data: 0x40,0x18, /\* Attribute: Line/Number of offset coordinate records:24 \*/  
 0x00,0x00,0x00,0x0e,  
 0x00,0x00,0x0d,0x00,  
 0x00,0x00,0xf3,0xff,  
 0x00,0x00,0x0d,0x00,  
 0x00,0x00,0xf3,0xfd,  
 0x00,0x00,0x0d,0x00,  
 0x00,0x00,0xf3,0xff,  
 0x00,0x00,0x0d,0x00,  
 0x00,0x00,0xf9,0xff,  
 0x00,0x00,0x00,0xf8,  
 0x00,0x00,0x01,0x08,  
 0x00,0x00,0x00,0xf8

**12.2.5.5 Name and Reading Information Data List**

name [Name and Reading Information Data List]

No.	offset	Data length	Data type	Item name	Remarks	Classification
1	0	B1		A Sequence of Name and Reading Information Data Records	(1)	a

(1) A Sequence of Name and Reading Information Data Records

The records of the number of category codes are arranged in ascending order of category code.

**12.2.5.5.1 Name and Reading Information Data Record**

The name and reading information data record has the same data format as the string data record of the route guidance data frame, which is described in Chapter 8.

name [Name and Reading Information Data Record]

No.	offset	Data length	Data type	Item name	Remarks	Classification
1	0	2	SWS	Size of Name and Reading Information Data Record	(1)	c
2	2	B1	M	Language-specific Offset Pointer Table		c
3	O1	B2	M	Language-specific Character Information List		a

(1) Size of Name and Reading Information Data Record

This field describes the size of the whole name and reading information data record. If just a single type of language-specific character information is used (single language), this field is omitted.

**12.2.5.5.1.1 Language-specific Offset Pointer Table**

name [Language-specific Offset Pointer Table]

No.	offset	Data length	Data type	Item name	Remarks	Classification
1	0	2	D	Language-specific Offset Pointer (Language 1)	(1)	c
2	2	2	D	Language-specific Offset Pointer (Language 2)	(1)	c
3				.....		c
4		2	D	Language-specific Offset Pointer (Language n)	(1)	c

(1) Language-specific Offset Pointer

This field describes the displacement from the top of the name and reading information data record to the top of the language-specific character information.

The number of languages, their categories, and the order of arrangement are defined in a META file.

Note: If just a single language is stored (single language: Japanese only, for instance), the language-specific offset pointer table is deleted.

Note: Different language-specific offset pointers can point to identical language character information.

**12.2.5.5.1.2 Language-specific Character Information List**

name [Language-specific Character Information List]

No.	offset	Data length	Data type	Item name	Remarks	Classification
1	0	B1	M	Language-specific Character Information (Language 1)		c
2	O1	B2	M	Language-specific Character Information (Language 2)		c
3				.....		c
4	O2	B3	M	Language-specific Character Information (Language m)		c

**12.2.5.5.1.2.1 Language-specific Character Information**

See the description of the language-specific character information of the route guidance data frame in Chapter 8.



### 12.3 3-D Symbol Data Frame

name [3-D Symbol Data Frame]

No.	offset	Data length	Data type	Item name	Remarks	Classification
1	0	B1		3-D Symbol Distribution Header		a
2	O1	B2		Landmark Data Frame corresponding to the 3-D Code	(1)	a

(1) Landmark Data Frame corresponding to the 3-D Code

The top of the landmark data frame corresponding to a 3-D code is aligned on a four-byte boundary.

#### 12.3.1 3-D Symbol Distribution Header

name [3-D Symbol Distribution Header]

No.	offset	Data length	Data type	Item name	Remarks	Classification
1	0	2	SWS	Header Size	(1)	a
2	2	2		(RESERVED)		a
3	4	4	D	Offset to Landmark Data Frame corresponding to the 3-D Code	(2)	a
4	8	4	SWS	Size of Landmark Data Frame corresponding to the 3-D Code		a
5	12			(Expansion Field)	(3)	c

(1) Header Size

This field describes the size of the 3-D symbol distribution header.

(2) Offset to Landmark Data Frame corresponding to the 3-D Code

This field describes the displacement from the top of the 3-D symbol data frame to the top of the landmark data frame corresponding to the 3-D code.

(3) Expansion Field

The presence or absence of the expansion field is judged from the header size, No.1.

**12.3.2 Landmark Data Frame corresponding to the 3-D Code**

name [Landmark Data Frame corresponding to the 3-D Code]

No.	offset	Data length	Data type	Item name	Remarks	Classification
1	0	B1		Landmark Distribution Header corresponding to the 3-D Code		a
2	O1	B2		A Sequence of 3-D Landmark Pattern Tables		a
3	O2	B3		Name and Reading Information Data List		c

**12.3.2.1 Landmark Distribution Header corresponding to the 3-D Code**

name [Landmark Distribution Header corresponding to the 3-D Code]

No.	offset	Data length	Data type	Item name	Remarks	Classification
1	0	2	SWS	Header Size	(1)	a
2	2	2	N	Number of 3-D Codes	(2)	a
3	4	2	N	Number of 3-D Landmark Pattern Tables	(3)	a
4	6	B1		A Sequence of 3-D Landmark Pattern Table Management Information		a
5	O1	B2		Name and Reading Information Data List Management Information		a
6	O2	B3		(Expansion Field)	(4)	c

**(1) Header Size**

This field describes the size of the landmark distribution header corresponding to the 3-D code.

**(2) Number of 3-D Codes**

This field describes the total number of 3-D codes used in the medium.

**(3) Number of 3-D Landmark Pattern Tables**

This field describes the number of pattern tables if several pattern tables with different attributes are stored.

The 3-D landmark pattern tables of the number specified here are arranged in the data entity. The 3-D landmark pattern table management information, No.4, is stored accordingly.

**(4) Expansion Field**

The presence or absence of the expansion field is judged from the header size, No.1.

**12.3.2.2 3-D Landmark Pattern Table Management Information**

name [3-D Landmark Pattern Table Management Information]

No.	offset	Data length	Data type	Item name	Remarks	Classification
1	0	2	SWS	Size of 3-D Landmark Pattern Table Management Information	(1)	a
2	2	2	B:N:	3-D Landmark Pattern Attribute	(2)	a
3	4	1	N	Color Palette Number (for day)	(3)	b
4	5	1	N	Color Palette Number (for night)	(3)	b
5	6	2	N	Number of 3-D Landmark Pattern Groups	(4)	a
6	8	4	D	Offset to 3-D Landmark Pattern Table	(5)	a
7	12	4	SWS	Size of 3-D Landmark Pattern Table		a
8	16	B1		3-D Landmark Pattern Group Division Information		a
9	O1	B2		3-D Landmark Pattern Group Pointer Table		a
10	O2	B3		Expansion Field	(6)	c

**(1) Size of 3-D Landmark Pattern Table Management Information**

This field describes the size of the 3-D landmark pattern table management information.

**(2) 3-D Landmark Pattern Attribute**

No.	bit	Description				
1	15 - 12	Format Flag	bit15	bit14	bit13	bit12
						Meaning
			0	0	0	0
			0	0	0	1
			0	0	1	0
			0	0	1	1
2	11 - 4	(RESERVED)				
3	3 - 0	Number of bits per pixel (2-1)				

**(2-1) Number of bits per pixel**

If the format flag is set to 0001(2), color bitmap pattern, the number of bits per pixel is represented by the n-th power of 2.

This n value is specified (0 ≤ n ≤ 15, where n is an integer).

**(3) Color Palette Number**

This field describes the color palette number to be referenced if the format flag of the 3-D landmark pattern attribute is set to 0001(2), color bitmap pattern.

Otherwise, an invalid value ff(16) is assigned to this field.

## (4) Number of 3-D Landmark Pattern Groups

This field describes the number of 3-D landmark pattern groups stored in the 3-D landmark pattern table.

If just a single 3-D landmark pattern table is provided,

Number of 3-D landmark pattern groups = Number of 3-D codes

A single 3-D landmark pattern group consists of one or more landmark patterns according to the 3-D landmark pattern group division information, No.8.

## (5) Offset to 3-D Landmark Pattern Table

This field describes the displacement from the top of the landmark data frame corresponding to the 3-D code to the top of the 3-D landmark pattern table.

## (6) Expansion Field

The presence or absence of the expansion field is judged from the size of 3-D landmark pattern table management information, No.1.

**12.3.2.2.1 3-D Landmark Pattern group division Information**

name [3-D Landmark Pattern group division Information]

No.	offset	Data length	Data type	Item name	Remarks	Classification
1	0	2	N:N:N	Division Information	(1)	a
2	2	B1		A Sequence of Size Information	(2)	a

## (1) Division Information

No.	bit	Description
1	15 - 12	Number of Sizes (1-1)
2	11 - 7	Depression Angle Division Number (1-2)
3	6 - 0	Azimuth Division Number (1-3)

Different combinations of size, depression angle, and azimuth of a single 3-D code correspond to different landmark patterns.

The number of patterns that a single code can correspond to is calculated as follows:

Number of sizes × Depression angle division number × Azimuth division number

## (1-1) Number of Sizes

If a single code corresponds to multiple patterns of different sizes, this field describes the number of different sizes.

The value of this field can range from 0 to 15, and the value means its value plus 1, within the range of 1 to 16.

## (1-2) Depression Angle Division Number

This field describes the division number of the depression angle range (-89° to 90°).

A value ranging from 0 to 31 can be specified, and each value means its value plus 1, within the range of 1 to 32.

The division unit is calculated as follows:

$$180^\circ \div \text{Division number}$$

If the value of this field is 8, the division number is 9, and the division unit is calculated as follows:

$$180^\circ \div 9 = 20^\circ$$

## (1-3) Azimuth Division Number

This field describes the division number of the azimuth range (0 to 359°).

A value ranging from 0 to 127 can be specified, and each value means its value plus 1, within the range of 1 to 128.

The division unit is calculated as follows:

$$360^\circ \div \text{Division number}$$

If the value of this field is 7, the division number is 8, and the division unit is calculated as follows:

$$360^\circ \div 8 = 45^\circ$$

## (2) A Sequence of Size Information

The size information items of the number of sizes in the division information are arranged.

**12.3.2.2.1.1 Size Information**

name [Size Information]

No.	offset	Data length	Data type	Item name	Remarks	Classification
1	0	2	N:N	Size of 3-D Landmark Pattern	(1)	a

## (1) Size of 3-D Landmark Pattern

No.	bit	Description
1	15 - 8	Number of Horizontal dots
2	7 - 0	Number of Vertical dots

**12.3.2.2.2 3-D Landmark Pattern group Pointer Table**

name [3-D Landmark Pattern group Pointer Table]

No.	offset	Data length	Data type	Item name	Remarks	Classification
1	0	B1		A Sequence of 3-D Landmark Pattern group Pointers	(1)	a

## (1) A Sequence of 3-D Landmark Pattern group Pointers

The pointers of the number of 3-D landmark pattern groups are arranged in ascending order of 3-D code.

**12.3.2.2.2.1 3-D Landmark Pattern group Pointer**

name [3-D Landmark Pattern group Pointer]

No.	offset	Data length	Data type	Item name	Remarks	Classification
1	0	2	N	3-D Code		a
2	2	B1		A Sequence of Offsets to the Landmark Pattern	(1)	a

A single 3-D code should correspond to at least one 3-D landmark pattern group.

(At least one 3-D landmark pattern group is required among multiple 3-D landmark pattern tables.)

**(1) A Sequence of Offsets to the Landmark Pattern**

The offsets to the 3-D landmark pattern of number of sizes x depression angle division number x azimuth division number are arranged according to the 3-D landmark pattern group division information, which is described in 12.3.2.2.1.

The order of arrangement agrees with the order of three-dimensional arrangement of [Number of sizes][Depression angle division number][Azimuth division number].

For instance, if the number of sizes is 2, the depression angle division number is 3, and the azimuth division number is 4,  $2 \times 3 \times 4 = 24$  offsets are arranged as shown below:

Order	Size	Depression	Azimuth	
1	#0	#0	#0	Offset to the corresponding landmark pattern
2	#0	#0	#1	Offset to the corresponding landmark pattern
3	#0	#0	#2	Offset to the corresponding landmark pattern
4	#0	#0	#3	Offset to the corresponding landmark pattern
5	#0	#1	#0	Offset to the corresponding landmark pattern
6	#0	#1	#1	Offset to the corresponding landmark pattern
7	#0	#1	#2	Offset to the corresponding landmark pattern
8	#0	#1	#3	Offset to the corresponding landmark pattern
9	#0	#2	#0	Offset to the corresponding landmark pattern
10	#0	#2	#1	Offset to the corresponding landmark pattern
11	#0	#2	#2	Offset to the corresponding landmark pattern
12	#0	#2	#3	Offset to the corresponding landmark pattern
13	#1	#0	#0	Offset to the corresponding landmark pattern
14	#1	#0	#1	Offset to the corresponding landmark pattern
15	#1	#0	#2	Offset to the corresponding landmark pattern
16	#1	#0	#3	Offset to the corresponding landmark pattern
17	#1	#1	#0	Offset to the corresponding landmark pattern
18	#1	#1	#1	Offset to the corresponding landmark pattern
19	#1	#1	#2	Offset to the corresponding landmark pattern
20	#1	#1	#3	Offset to the corresponding landmark pattern
21	#1	#2	#0	Offset to the corresponding landmark pattern
22	#1	#2	#1	Offset to the corresponding landmark pattern
23	#1	#2	#2	Offset to the corresponding landmark pattern
24	#1	#2	#3	Offset to the corresponding landmark pattern

**12.3.2.2.1.1 Offset to the Landmark Pattern**

name [Offset to the Landmark Pattern]

No.	offset	Data length	Data type	Item name	Remarks	Classification
1	0	4	D	Offset to the Landmark Pattern	(1)	a

**(1) Offset to the Landmark Pattern**

This field describes the displacement from the top of the 3-D landmark pattern table to the top of the landmark pattern.

A pattern can be shared by setting offsets to an identical destination.

If ffffffff(16) is assigned to the field, no corresponding landmark pattern is provided.

**12.3.2.3 Name and Reading Information Data List Management Information**

name [Name and Reading Information Data List Management Information]

No.	offset	Data length	Data type	Item name	Remarks	Classification
1	0	2	SWS	Size of Name and Reading Information Data List Management Information	(1)	a
2	2	2	SWS	Size of Name and Reading Information Data List	(2)	a
3	4	4	D	Offset to Name and Reading Information Data List	(3)	a
4	8	B1	N	Name and Reading Information Data Pointer Table		c

**(1) Size of Name and Reading Information Data List Management Information**

This field describes the size of the name and reading information data list management information.

**(2) Size of Name and Reading Information Data List**

If the size is 0, the data entity (name and reading information data list) and the name and reading information data pointer table, No.4, are omitted.

**(3) Offset to Name and Reading Information Data List**

This field describes the displacement from the top of the landmark data frame corresponding to the 3-D code to the top of the name and reading information data list.

**12.3.2.3.1 Name and Reading Information Data Pointer Table**

name [Name and Reading Information Data Pointer Table]

No.	offset	Data length	Data type	Item name	Remarks	Classification
1	0	B1		A Sequence of Name and Reading Information Data Pointers	(1)	a

**(1) A Sequence of Name and Reading Information Data Pointers**

The pointers of the number of 3-D codes are arranged in ascending order of 3-D code.

**12.3.2.3.1.1 Name and Reading Information Data Pointer**

name [Name and Reading Information Data Pointer]

No.	offset	Data length	Data type	Item name	Remarks	Classification
1	0	2	N	3-D Code		a
2	2	2	D	Offset to the Name and Reading Information Data Record	(1)	a

(1) Offset to the Name and Reading Information Data Record

This field describes the displacement from the top of the name and reading information data list to the top of the name and reading information data record.

**12.3.2.4 3-D Landmark Pattern Table**

name [3-D Landmark Pattern Table]

No.	offset	Data length	Data type	Item name	Remarks	Classification
1	0	B1		A Sequence of 3-D Landmark Pattern groups	(1)	a

(1) A Sequence of 3-D Landmark Pattern groups

The 3-D landmark pattern groups of the specified number are arranged in ascending order of 3-D code.

The order of groups corresponds to the order of 3-D landmark pattern group pointers.

**12.3.2.4.1 3-D Landmark Pattern group**

name [3-D Landmark Pattern group]

No.	offset	Data length	Data type	Item name	Remarks	Classification
1	0	B1		A Sequence of Landmark Patterns	(1)	a

(1) A Sequence of Landmark Patterns

Landmark patterns are arranged in the order of three-dimensional positions determined by the combinations of [number of sizes], [depression angle division number], and [azimuth division number], according to the 3-D landmark pattern group division information, which is described in Section 12.3.2.2.1.

The maximum number of landmark patterns that can be arranged in the sequence is [number of sizes] × [depression angle division number] × [azimuth division number].

A pattern may be shared if the shape appears to be the same regardless of the division of the depression angle or azimuth.

If the characteristics of a shape can be viewed from an angle only, a pattern may not be provided.

If a landmark pattern is referenced, a necessary landmark pattern should be referenced according to the offset to the landmark pattern, which is described in Section 12.3.2.2.1.1.

For details of the landmark pattern, see Section 12.2.5.4.1, "Landmark pattern."



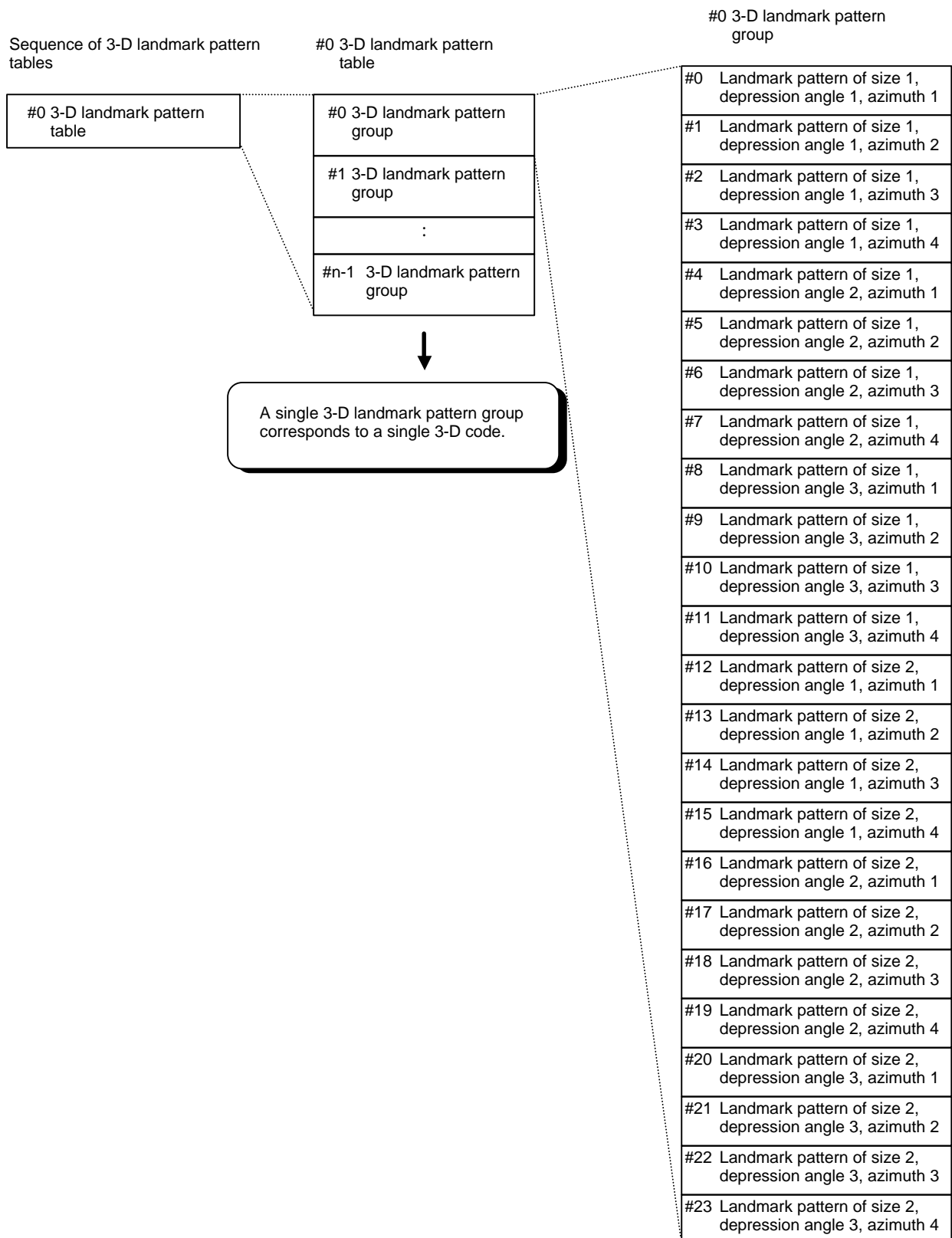
#### 12.3.2.4.2 Sample Configuration of 3-D Landmark Pattern Table

A sample configuration is shown below:

3-D landmark pattern table attribute

- Format: Color bitmap, 4 bits/pixel
- Number of 3-D landmark pattern groups: n
- Division information: Number of sizes = 2, Depression angle division number = 3, Azimuth division number = 4  
(Size 1: 32 × 32 dots   Size 2: 24 × 24 dots)

## 3-D landmark Pattern Table Configuration



**12.3.2.5 Name and Reading Information Data List**

name [Name and Reading Information Data List]

No.	offset	Data length	Data type	Item name	Remarks	Classification
1	0	B1		A Sequence of Name and Reading Information Data Records	(1)	a

(1) A Sequence of Name and Reading Information Data Records

The records of the number of 3-D codes are arranged in ascending order of 3-D code.

For the name and reading information data record, see Section 12.2.5.5.1, "Name and reading information data record."

## 12.4 Route Number Display-frame Data Frame

name [Route Number Display-frame Data Frame]

No.	Offset	Data length	Data type	Item name	Remarks	Classification
1	0	B1		Route Number Display-frame Data Frame Distribution Header		a
2	O1	B2		Landmark Data Frame corresponding to the Route Number Display-frame Code	(1)	a

(1) Landmark Data Frame corresponding to the Route Number Display-frame Code

The beginning of the landmark data frame corresponding to the route number display-frame code is aligned to a four-byte boundary.

### 12.4.1 Route Number Display-frame Distribution Header

name [Route Number Display-frame Distribution Header]

No.	Offset	Data length	Data type	Item name	Remarks	Classification
1	0	2	SWS	Header Size	(1)	a
2	2	2		(RESERVED)		a
3	4	4	D	Offset to the Landmark Data Frame corresponding to the Route Number Display-frame Code	(2)	a
4	8	4	SWS	Size of the Landmark Data Frame corresponding to the Route Number Display-frame Code		a
5	12			(Expansion Field)	(3)	c

(1) Header Size

This field describes the size of the route number display-frame distribution header.

(2) Offset to the Landmark Data Frame corresponding to the Route Number Display-frame Code

This field describes the displacement from the top of the route number display-frame data frame to the top of the landmark data frame corresponding to the route number display-frame code.

(3) Expansion Field

The presence or not of the extension field is determined by the header size described in the item no. 1.

**12.4.2 Landmark Data Frame corresponding to the Route Number Display-frame Code**

name [Landmark Data Frame corresponding to the Route Number Display-frame Code]

No.	Offset	Data length	Data type	Item name	Remarks	Classification
1	0	B1		Landmark Distribution Header corresponding to the Route Number Display-frame Code		a
2	O1	B2		A Sequence of Landmark Pattern Tables		a
3	O2	B3		Name and Reading Information Data List		c

**12.4.2.1 Landmark Distribution Header corresponding to the Route Number Display-frame Code**

name [Landmark Distribution Header corresponding to the Route Number Display-frame Code]

No.	Offset	Data length	Data type	Item name	Remarks	Classification
1	0	2	SWS	Header Size	(1)	a
2	2	2	N	Number of corresponding Route Number Display-frame Codes	(2)	a
3	4	2	N	Number of Landmark Pattern Tables	(3)	a
4	6	B1		A Sequence of Landmark Pattern Table Management Information		a
5	O1	B2		Name and Reading Information Data List Management Information		a
6	O2	B3		(Expansion Field)	(4)	c

**(1) Header Size**

This field describes the size of the landmark distribution header corresponding to the route number display-frame code.

**(2) Number of Corresponding Route Number Display-frame Codes**

This field describes the number of all route number display-frame codes used in the media (not the number of those defined in the format).

**(3) Number of Landmark Pattern Tables**

When this data frame stores multiple pattern tables that are different in attribute and size, this field describes the number of the pattern tables.

The landmark pattern table providing the data entity and landmark pattern table management information described in the item no.4, are placed in this distribution header as many as the number described in this field.

**(4) Expansion Field**

Whether or not expansion field exists is determined according to the header size described in the item no. 1.

**12.4.2.2 Landmark Pattern Table Management Information**

name [Landmark Pattern Table Management Information]

No.	Offset	Data length	Data type	Item name	Remarks	Classification
1	0	2	SWS	Size of Landmark Pattern Table Management Information	(1)	a
2	2	2	B::N:B	Landmark Pattern Attributes	(2)	a
3	4	2	N:N	Landmark Pattern Size	(3)	a
4	6	1	N	Color Palette Number (for days)	(4)	b
5	7	1	N	Color Palette Number (for nights)	(4)	b
6	8	2	N	Intra-display-frame Character Display Code	(8)	a
7	10	2	N	Intra-display-frame Character Display Code	(8)	b
8	12	2	N	Intra-display-frame Character Starting Position x	(9)	b
9	14	2	N	Intra-display-frame Character Starting Position y	(9)	b
10	16	2	N	Intra-display-frame Character Display Width	(10)	b
11	18	2	N	Intra-display-frame Character Display Height	(10)	b
12	20	4	D	Offset to the Landmark Pattern Table	(5)	a
13	24	4	SWS	Landmark Pattern Size		a
14	28	2	N	Number of Landmark Patterns	(6)	a
15	30	B1	N	Landmark Pattern Pointer Table		a
16	O1	B2		(Expansion Field)	(7)	c

**(1) Size of Landmark Pattern Table Management Information**

This field describes the size of the present landmark pattern table management information.

**(2) Landmark Pattern Attributes**

No.	Bit	Description				
1	15 to 12	Type Flag	Bit 15	Bit 14	Bit 13	Bit 12
						Meaning
			0	0	0	0
			0	0	0	1
			0	0	1	0
			0	0	1	1
2	11 to 5	(RESERVED)				
3	4	Offset-to-the Landmark Pattern existence Flag (2-2)				
4	3 to 0	Number of bits per pixel (2-1)				

## (2-1) Number of bits per pixel

If the type flag is 0001(2), which means a color bit map pattern, the number of bits per pixel for a color bit map pattern is represented in a form of 2 raised to the power of n. This item is set with n ( $0 \leq n \leq 15$  where n is an integer).

## (2-2) Offset-to-the Landmark Pattern existence Flag

This flag indicates whether there is a field for an offset to the landmark pattern in the landmark pattern pointer.

1: Yes. 0: No.

## (3) Landmark Pattern Size

No.	Bit	Description
1	15 to 8	Number of Horizontal dots
2	7 to 0	Number of Vertical dots

## (4) Color Palette Number

These fields describe the color palette number to be referenced if the landmark pattern attribute type flag = 0001(2), which means the color bit map pattern.

Otherwise, the item is loaded with an invalid value of ff(16).

The color palette of the drawing parameter data frame is used here.

## (5) Offset to the Landmark Pattern Table

This field describes the displacement from the beginning of the landmark data frame corresponding to the route number: Display-frame code to the beginning of the present landmark pattern table.

## (6) Number of Landmark Patterns

This field describes the number of landmark patterns held in the present landmark pattern table.

If there is only one landmark pattern table: The number of landmark patterns = the number of corresponding route number display-frame codes

## (7) Expansion Field

Whether to use an expansion field is determined according to the size of landmark pattern table management information at No. 1.

## (8) Character Display Color Code

An invalid value for this item shall be ffff(16).

## (9) Intra-field Character Starting Position

These fields describe the coordinates of the character write start position in reference to the lower left corner (0, 0). An invalid value for this item shall be ffff(16).

## (10) Intra-field Character Display Width and Height

An invalid value for these items shall be ffff(16).

**12.4.2.2.1 Landmark Pattern Pointer Table**

name [Landmark Pattern Pointer Table]

No.	Offset	Data length	Data type	Item name	Remarks	Classification
1	0	B1		A Sequence of Landmark Pattern Pointers	(1)	a

**(1) A Sequence of Landmark Pattern Pointers**

This table stores a sequence of as many landmark pattern pointers, arranged in ascending order of route number display-frame code, as the number of the landmark patterns.

**12.4.2.2.1.1 Landmark Pattern Pointer**

name [Landmark Pattern Pointer]

No.	Offset	Data length	Data type	Item name	Remarks	Classification
1	0	2	N	Route Number Display-frame Code		a
2	2	4	D	Offset to the present Landmark Pattern	(1)	c

**(1) Offset to the present Landmark Pattern**

This field describes the displacement from the beginning of the present landmark pattern table to the beginning of the present landmark pattern.

At least one landmark pattern shall be made corresponding to one route number display-frame code.

(It is all right if there is at least one landmark pattern pointer in more than one landmark pattern table.)

This field becomes valid if the offset-to-the landmark pattern existence flag is 1.

If this field is omitted, the present landmark pattern is referenced according to the landmark pattern pointer sequence number.

(The sequence of landmark pattern pointers shall be made corresponding to the sequence of landmark patterns. Because the landmark pattern has a fixed length, the present landmark pattern can be identified according to the landmark pattern pointer sequence number.)

**12.4.2.2.2 Landmark Pattern Table Management Information Expansion Field**

The structure of the landmark pattern table management information expansion field is defined as follows:

No.	Offset	Data length	Data type	Item name	Remarks	Classification
1	0	2	N	Usage Code	(1)	a

**(1) Usage Code**

This field describes the usage of the landmark.

Meaning of bit 15 to bit 0	Description
04(16) to FF(16)	(RESERVED)
03(16)	Route Number Display-frame
02(16)	Logo
01(16)	Landmark
00(16)	(RESERVED)



**12.4.2.3 Name and Reading Information Data List Management Information**

name [Name and Reading Information Data List Management Information]

No.	Offset	Data length	Data type	Item name	Remarks	Classification
1	0	2	SWS	Size of Name and Reading Information Data List Management Information	(1)	a
2	2	2	SWS	Size of Name and Reading Information Data List	(2)	a
3	4	4	D	Offset to the Name and Reading Information Data List	(3)	a
4	8	B1	N	Name and Reading Information Data Pointer Table		c

**(1) Size of Name and Reading Information Data List Management Information**

This field describes the size of the present name and reading information data list management information.

**(2) Size of Name and Reading Information Data List**

If this size is 0, the data entity (of name and reading information data list) and the name and reading information data pointer table at No. 4 are omitted.

**(3) Offset to the Name and Reading Information Data List**

This field describes the displacement from the beginning of the landmark data frame corresponding to the route number display-frame code to the beginning of name and reading information data list.

**12.4.2.3.1 Name and Reading Information Data Pointer Table**

name [Name and Reading Information Data Pointer Table]

No.	Offset	Data length	Data type	Item name	Remarks	Classification
1	0	B1		A Sequence of Name and Reading Information Data Pointers	(1)	a

**(1) A Sequence of Name and Reading Information Data Pointers**

This table stores a sequence of as many name and reading information data pointers, arranged in ascending order of route number display-frame code, as the number of corresponding route number display-frame codes.

**12.4.2.3.1.1 Name and Reading Information Data Pointer**

name [Name and Reading Information Data Pointer]

No.	Offset	Data length	Data type	Item name	Remarks	Classification
1	0	2	N	Route Number Display-frame Code		a
2	2	2	D	Offset to the Present Name and Reading Information Data Record	(1)	a

**(1) Offset to the Present Name and Reading Information Data Record**

This field describes the displacement from the beginning of the name and reading information data list to the beginning of the present name and reading information data record.

**12.4.2.4 Landmark Pattern Table**

name [Landmark Pattern Table]

No.	Offset	Data length	Data type	Item name	Remarks	Classification
1	0	B1		A Sequence of Landmark Patterns	(1)	a

(1) A Sequence of Landmark Patterns

This table stores a sequence of landmark patterns arranged in ascending order of route number display-frame code. This sequence corresponds to the sequence of the landmark pattern pointers.

See Section 12.2.5.4.1 for explanations about the landmark pattern.

**12.4.2.5 Name and Reading Information Data List**

name [Name and Reading Information Data List]

No.	Offset	Data length	Data type	Item name	Remarks	Classification
1	0	B1		A Sequence of Name and Reading Information Data Records	(1)	a

(1) A Sequence of Name and Reading Information Data Records

This list stores a sequence of as many name and reading information data records, arranged in ascending order of route number display-frame code, as the number of corresponding route number display-frame codes.

See Section 12.2.5.5.1, "Name and reading information data records," for explanations about the name and reading information data record.