8.4.1.4 Toward Name Data List

name [Toward Name Data List]

No.	offset	Data length	Data type	Item name	Remarks	Classification
1	0	B1		Toward Name Data Record List		

8.4.1.4.1 Toward Name Data Record

Data is created according to the number of toward Name Data Records in the basic distribution header.

name [Toward Name Data Record]

No.	offset	Data length	Data type	Item name	Remarks	Classification
1	0	2	B::N:N	Toward Name Attribute Header	(1)	a
2	2	2	B:N:	Distance Information		a
3	4	B1		Guidance Point Management Record List		a

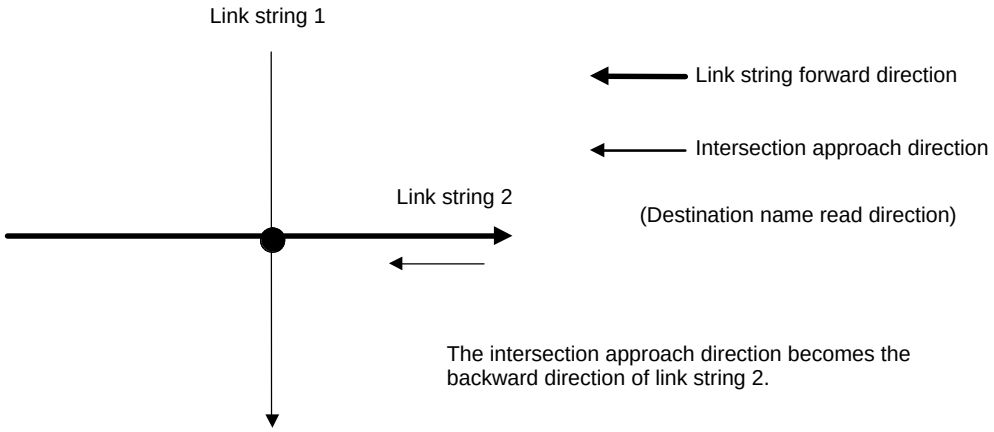
(2) Toward Name Attribute Header

No.	bit	Description			
1	15 to 14	Link Direction (2)	bit15	bit14	Meaning
			0	0	All directions
			0	1	Forward direction (same as the node record storage sequence)
			1	0	Backward direction (reversal of node record storage sequence)
			1	1	Bidirectional
2	13 to 11	Number of Guidance Point Management Records (3)			
3	10 to 0	(RESERVED)			

(2) Link Direction

In the link string data record directly specifying the relevant basic data, the link direction indicates the link direction corresponding to the approach direction to the intersection to be read as a destination name (signboard). The relevant basic data is specified according to the guidance data offset in the node additional record.

Example



(3) Number of Guidance Point Management Data Records

This field describes the number of guidance point management data records. The number of Name Data Records is the total number of names to be assigned in each exit direction, relative to one approach direction.

8.4.1.4.1.1 Distance Infromation

Represents the distance of the road on this side of the installed signboard, relative to the applicable node.

No.	bit	Description			
1	15 to 14	Distance Unit Flag	bit15	bit14	Meaning
			0	0	Unit per bit (type 1)
			0	1	Unit per bit (type 2)
			1	0	Unit per bit (type 3)
			1	1	Unit per bit (type 4)
2	13 to 7	Distance (1)			
3	6 to 0	(RESERVED)			

(1) Distance

Distance is handled as follows:

Distance unit flag (bit15,bit14)	(0,0) Type 1	(0,1) Type 2	(1,0) Type 3	(1,1) Type 4
Unit	5**m**	10**m**	50**m**	100**m**
Value range	0 to 630**m**	0 to 1260**m**	0 to 6300**m**	0 to 12600**m**

In distance, fractions less than the specified unit are rounded up or down. 7F(16) indicates that the distance is unknown.

8.4.1.4.1.2 Guidance Point Management Record

Data is created according to the number of guidance point management records in the toward name attribute header.

name [Guidance Point Management Record]

No.	offset	Data length	Data type	Item name	Remarks	Classification
1	0	2	B:B:N:B:	Name Attribute Header	(1)	a
2	2	2	N:	Number of Connected Nodes in the Exit Direction	(7)	a
3	4	2	D	Offset to Character String Data	(8)	a
4	6	B1		Connected Node Infromation Table		c

(1) Name Attribute Header

No.	bit	Description				
1	15 to 14	Name Type (2)	bit15	bit14	Meaning	
			0	0	Real signboard toward name	
			0	1	Virtual signboard toward name	
			1	0	POI name	
			1	1	Route information	
2	13 to 12	Destination Distance Code	bit13	bit12	Meaning	
			0	0	Unknown or uninvestigated	
			0	1	Narrow area/Branch (near place name)	
			1	0	Intermediate area	
			1	1	Wide area/Toward (far place name)	
3	11 to 8	Link String Data Record Identification Information (3)				
4	7 to 6	Link Direction (4)	bit7	bit6	Meaning	
			0	0	All directions	
			0	1	Forward direction (same as the node record storage sequence)	
			1	0	Backward direction (reversal of node record storage sequence)	
			1	1	Bidirectional	
5	5 to 3	Name Attribute (5)	bit5	bit4	bit3	Meaning
			0	0	0	Toward (place name)
			0	0	1	Interchange
			0	1	0	Ramp way
			0	1	1	Junction
			1	0	0	Service area
			1	0	1	Parking area
			1	1	0	Rest area
			1	1	1	No attribute (unknown, uninvestigated)
6	2 to 1	(RESERVED)				
7	0	Name Attribute Character String Existence(6)	bit0	Meaning		
			0	The character string represented by the name attribute is assigned.		
			1	The character string represented by the name attribute is not assigned.		

(2) Name Type

The name type, when 00(2), indicates that the applicable character data record is the toward name obtained from the actual signboard at that spot. When 01(2), the name type indicates the toward name to be set without reference to the signboard at that spot. When 10(2), it indicates the name of each POI (e.g., IC and SA).

Example:

Toward Osaka, Haneda:- Toward Name

Otsu SA, Nagoya IC: POI Name

The format of the route information is as follows:
<route number indicator field>-<prefix><route number>-<suffix>

Delimiters should be tabs.
In the route number indicator frame, the type code in the decimal notification is set. For details of type codes, see Chapter 32.

(3) Link String Data Record Identification Information

This field describes the number of the link string data record from the relevant link string data record (specification in the same node information) of this link string data record. The link string data record that directly specifies the relevant basic data according to the guidance data offset in the node additional record is assigned number 0. The next link string data record specified according to the same node information for the link string data record that directly specifies the relevant basic data is assigned number 1. Subsequent link string data records are sequentially assigned numbers 2 to 14.

(4) Link Direction

In the link string data that can be identified according to link string data record identification information, the link direction indicates the link direction corresponding to the exit direction from the node related to the exit link.

(5) Name Attribute

This field describes the attribute of the toward name represented by the character string data record.

(6) Name Attribute Character String Existence

The flag indicating whether character strings (e.g., "IC") were deleted from the data for the applicable character data record. When necessary, use the name attribute to supplement the name.

(7) Number of Connected Nodes in the Exit Direction

The link string data record identification information and the number of nodes to be linked to the exit link that can be identified according to the link direction are stored. The nodes to be linked include the node that directly specifies the relevant basic data according to the guidance data offset. This number of nodes is used to identify the exit direction for multiple nodes (e.g., multiple intersections). It is 0 when only the exit link for the node that directly specifies the relevant basic data according to the guidance data offset is identified.

No.	Bit	Description
1	15 to 8	Number of Connected Node Information Records
2	7 to 0	(RESERVED)

(8) Offset to Character String Data

The offset to character string data points to the storage position of the character string data record corresponding to the relevant data record. It represents the displacement from the beginning of the character string data frame to the beginning of the applicable character string data record.

8.4.1.4.1.2.1 Connected Node Information Table

name [Connected Node Information Table]

No.	offset	Data length	Data type	Item name	Remarks	Classification
1	0	B1		Connected Node Information Record List		

8.4.1.4.1.2.1.1 Connected Node Information Record

Data is created according to the "number of connected node information records."

name [Connected Node Information Record]

No.	offset	Data length	Data type	Item name	Remarks	Classification
1	0	4	:B:N:N	Node Information	(1)	a
2	4	2	B:B:	Direction Information	(2)	a

(1) Node Information

This information represents the storage position of the applicable node (node record position in the node link connection information of the road data list).

If an attention node exists on the parcel boundary and the node information indicates the storage position of the node on the adjacent boundary, node information is stored in the same node record of the adjacent parcel. If no entity exists (is invalid), 4095(10) is stored as the intersection link string number.

No.	bit	Description				
1	31 to 29	(RESERVED)				
2	28	Node Inside/Outside the Parcel Flag	bit28	Meaning		
			0	The applicable node exists inside the parcel.		
			1	The applicable node exists outside the parcel.		
3	27 to 25	Connected Parcel Position (2)	bit27	bit26	bit25	Meaning
			0	0	0	Above
			0	0	1	Upper right
			0	1	0	Right
			0	1	1	Lower right
			1	0	0	Below
			1	0	1	Lower left
			1	1	0	Left
			1	1	1	Upper left
4	24 to 21	Intersection Link String Display Class (0-15)				
5	20 to 9	Intersection Link String Number (0-4095)				
6	8 to 0	Node Number in Intersection Link String (0-511)				

(2) Connected Parcel Position

Represents the direction of the connected parcel where the applicable node exists relative to the position of the immediately-preceding connected node. This direction is valid only when the parcel flag in node information is 1(2).

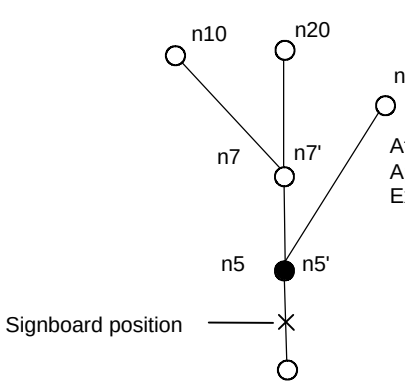
(3) Direction Information

No.	bit	Description			
1	15 to 14	Link Direction (4)	bit15	bit14	Meaning
			0	0	Undefined (logical link extending over the parcel boundary line)
			0	1	Forward direction (same as the node record storage sequence)
			1	0	Backward direction (reversal of the node record storage sequence)
			1	1	(RESERVED)
2	13 to 0	(RESERVED)			

(4) Link Direction

In the link string data that can be identified according to the node information, the link direction indicates the link direction corresponding to the exit direction from the node related to the exit link. When the node that can be identified according to node information on the parcel boundary is retaining a logical ring of distance 0 extending over the parcel boundary line, the link direction becomes 00(2). The link direction also becomes 00(2) when the node within the parcel is retaining a logical link of distance 0 to be connected to another link string.

Example 1: When the destination signboard is installed immediately beside the attention intersection



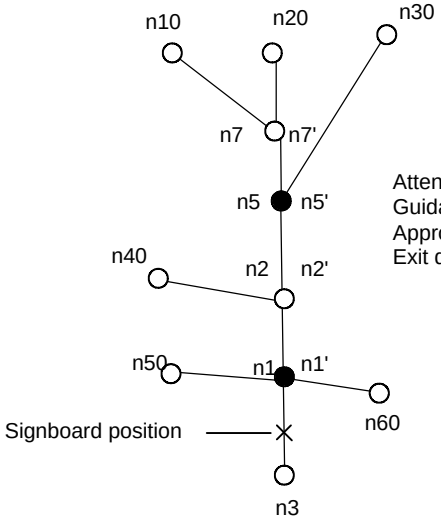
Link string A: n1 → n5 → n7 → n10
Link string B: n7' → n20
Link string C: n5' → n30

Attention intersection: n5
Approach direction: n1 → n5
Exit direction: 3 directions (for example, destination name determined from the approach direction and exit direction)

Exit direction 1: n5 → n7 → n10 (Toward [ABC] Toward [CCC]
Exit direction 2: n5 → n7 → n7' → n20 (Toward [DD]
Exit direction 3: n5' → n30 (Toward [EE]

		Name Data Record			
		1	2	3	4
Name Attribute Header	Link string data record identification information	0 (16) n5 → n7	0 (16) n5 → n7	0 (16) n5 → n7	1 (16) n5' → n30
	Link direction	01 (2) "Forward direction"	01 (2) "Forward direction"	01 (2) "Forward direction"	01 (2) "Forward direction"
Number of Connected Nodes in the Exit Direction		1	1	2	0
Connected Node Information Record 1	Node information	n7 position	n7 position	n7 position	(Not set)
	Link direction	01 (2) "Forward direction"	01 (2) "Forward direction"	01 (2) "Forward direction"	(Not set)
	Flag inside or outside parcel	0 (2) "Inside parcel"	0 (2) "Inside parcel"	0 (2) "Inside parcel"	(Not set)
Connected Node Information Record 2	Node information	(Not set)	(Not set)	n7' position	(Not set)
	Link direction	(Not set)	(Not set)	01 (2) "Forward direction"	(Not set)
	Flag inside or outside parcel	(Not set)	(Not set)	0 (2) "Inside parcel"	(Not set)
Character String Data (example)		Destination name of n5 → n7 → n10 [ABC]	Destination name of n5 → n7 → n10 [CCC]	Destination name of n5 → n7 → n7' → n20 [DD]	Destination name of n5' → n30 [EE]

Example 2: When several intersections exit between the destination signboard and guidance intersection



Link string A: n3 → n1 → n2 → n5 → n7 → n10
Link string B: n7' → n20
Link string C: n5' → n30
Link string D: n40 → n2'
Link string E: n50 → n1' → n60

Attention intersection: n1
Guidance intersection: n5
Approach direction: n3 → n1
Exit direction: 3 directions (for example, destination name determined from the approach direction and exit direction)

Exit direction 1: n1 → n2 → n5 → n7 → n10 (Toward [ABC] Toward [CCC])
Exit direction 2: n1 → n2 → n5 → n7 → n7' → n20 (Toward [DD])
Exit direction 3: n1 → n2 → n5 → n5' → n30 (Toward [EE])

		Name Data Record			
		1	2	3	4
Name attribute header	Link string data record identification information	0 (16) n1 → n2	0 (16) n1 → n2	0 (16) n1 → n2	0 (16) n1 → n2
	Link direction	01 (2) "Forward direction"	01 (2) "Forward direction"	01 (2) "Forward direction"	01 (2) "Forward direction"
Number of nodes connected in the exit direction		3	3	4	3
Connected node information record 1	Node information	n2 position	n2 position	n2 position	n2 position
	Link direction	01 (2) "Forward direction"	01 (2) "Forward direction"	01 (2) "Forward direction"	01 (2) "Forward direction"
	Flag inside or outside parcel	0 (2) "Inside parcel"	0 (2) "Inside parcel"	0 (2) "Inside parcel"	0 (2) "Inside parcel"
Connected node information record 2	Node information	n5 position	n5 position	n5 position	n5 position
	Link direction	01 (2) "Forward direction"	01 (2) "Forward direction"	01 (2) "Forward direction"	01 (2) "Forward direction"
	Flag inside or outside parcel	0 (2) "Inside parcel"	0 (2) "Inside parcel"	0 (2) "Inside parcel"	0 (2) "Inside parcel"
Connected node information record 3	Node information	n7 position	n7 position	n7 position	n5' position
	Link direction	01 (2) "Forward direction"	01 (2) "Forward direction"	00 (2) "Undefined"	01 (2) "Forward direction"
	Flag inside or outside parcel	0 (2) "Inside parcel"	0 (2) "Inside parcel"	0 (2) "Inside parcel"	0 (2) "Inside parcel"
Connected node information record 4	Node information	(Not set)	(Not set)	n7' position	(Not set)
	Link direction	(Not set)	(Not set)	01 (2) "Forward direction"	(Not set)
	Flag inside or outside parcel	(Not set)	(Not set)	0 (2) "Inside parcel"	(Not set)
Character string data (example)		Destination name of n5 → n7 → n10 [ABC]	Destination name of n5 → n7 → n10 [CCC]	Destination name of n5 → n7 → n7' → n20 [DD]	Destination name of n5' → n30 [EE]