EDI IMPLEMENTATION GUIDE

856 ADVANCED SHIP NOTICE
RAW METAL ONLY VERSION

ANSI X12 V4010

856 Ship Notice/Manifest

Functional Group ID=SH

Introduction:

This Draft Standard for Trial Use contains the format and establishes the data contents of the Ship Notice/Manifest Transaction Set (856) for use within the context of an Electronic Data Interchange (EDI) environment. The transaction set can be used to list the contents of a shipment of goods as well as additional information relating to the shipment, such as order information, product description, physical characteristics, and type of packaging, marking, carrier information, and configuration of goods within the transportation equipment. The transaction set enables the sender to describe the contents and configuration of a shipment in various levels of detail and provides an ordered flexibility to convey information. The sender of this transaction is the organization responsible for detailing and communicating the contents of a shipment, or shipments, to one or more receivers of the transaction set. The receiver of this transaction set can be any organization having an interest in the contents of a shipment or information about the contents of a shipment.

Suppliers must have the capability of transmitting almost all of the segments and elements described below. There are many other loops, segments and elements that can be used in an AIAG v4010 856 but those are not described in this document. In general, Flex-N-Gate can successfully receive any AIAG-compliant data, but the Flex-N-Gate software will only process and use the entries described below.

The far-left column below describes Flex-N-Gate's requirements. Again, almost every segment and element in this 856 will be marked "Always", indicating that it must be sent in every 856, and that it must be sent in the specified loops. The few exceptions to these rules will be noted in the comments.

Please note that Flex-N-Gate will use the BSN02 (Shipment ID) as a packing slip number. REF*BM and REF*PK can be transmitted in the 856, but the Flex-N-Gate software will ignore these segments. Ideally, suppliers will use the same value for SID, BOL, and Packing Slip.

REVISIONS:

1. **11/25/2024**
    a. Updated the CLD at the Order level
    b. The Coil Serial number must be unique and only present at the item level
2. **01/29/2025**
    a. Reworded the CLD and SN1 quantities to read weight / CX(Coil)
    b. Removed CLD at the Item level
    c. Removed ref LS at the ORDER level
    d. Added REF LS at the ITEM level
3. **08/25/2025**
    a. Revision. CLD segments will be removed.
    b. Adding REF segment stating FE for Steel and AL Aluminum at order level.
    c. Add DTM at Item level for Manufacturing date and Shelf-life expiration.
    d. MEA segment at item level is changed to AD (Actual Dimensions).
4. **03/20/2026**
    a. Fixed wording of SN1, at the Order level, in regards to SN104 YTD Weight shipped in and changed usage from Conditional to Always.
    b. Removed REF102 at the Order level. Only need the REF01, FE or AL in that segment.
5. **04/20/2026**
    a. Fixed wording of SN1, at the Item level, in regards to SN102.
    b. SN1 should reference the UOM shipped per serial based on the UOM from 830.
6. **07/13/2026**
    a. Added the DTM 017 to the examples, since this is considered a mandatory field.
7. **09/25/2026**
    a. Removal of RFF*FE, AL.
    b. MEA segment at item level will change to FD (Finished Dimensions) to align with 863.
    c. Added the PID free form segment so that vendors can state material

Heading:

FNG USAGE	POS. NO.	SEG. ID	NAME	AIAG USAGE	MAX USE	LOOP REPEAT	NOTES AND COMMENTS
Always	010	ST	Transaction Set Header	M	l		
Always	020	BSN	Beginning Segment for Ship Notice	M			
Always	040	DTM	Date/Time Reference	M	10		

Shipment Level:

FNG USAGE	POS. NO.	SEG. ID	NAME	AIAG USAGE	MAX USE	LOOP REPEAT	NOTES AND COMMENTS
			LOOP ID-HL			200000	
Always	010	HL	Hierarchical Level	M	l		CL
Always	080	MEA	Measurements	O	40		
Always	110	TDI	Carrier Details (Quantity and Weight)	O	20		
Always	120	TD5	Carrier Details (Routing Sequence/Transit Time)	O	12		
Always	130	TD3	Carrier Details (Equipment)	O	12		
			LOOP ID-Nl			200	
Always	220	Nl	Name	O	1		

Order Level:

FNG USAGE	POS. NO.	SEG. ID	NAME	AIAG USAGE	MAX USE	LOOP REPEAT	NOTES AND COMMENTS
			LOOPID-HL			200000	
Always	010	HL	Hierarchical Level	M			CL
Always	020	LIN	Item Identification	M			
Always	030	SN1	Item Detail Shipment	M			
Always	050	PRF	Purchase Order Reference	M			
See comments	150	PID	Product Description	M	>1		

Item Level:

FNG USAGE	POS. NO.	SEG. ID	NAME	AIAG USAGE	MAX USE	LOOP REPEAT	NOTES AND COMMENTS
			LOOPID-HL			200000	
Always	010	HL	Hierarchical Level	M			CL
Always	030	SN1	Item Detail Shipment	M			
Always	080	MEA	Measurements (FD)	M	40		
See comments	150	REF	Reference Identification	M	>1		
See comments	200	DTM	Date Reference	O	10		

Summary:

FNG USAGE	POS. NO.	SEG. ID	NAME	AIAG USAGE	MAX USE	LOOP REPEAT	NOTES AND COMMENTS
Always	010	CTT	Transaction Totals	M	1		
Always	020	SE	Transaction Set Trailer	M			

Transaction Set Notes

1. Number of line items (CTT01) is the accumulation of the number of HL segments. If used, hash total (CTT02) is the sum of the value of units shipped (SN102) for each SN1 segment.

Transaction Set Comments

1. The HL segment is the only mandatory segment within the HL loop, and by itself, the HL segment has no meaning.

Segment: **ST** **Transaction Set Header**
Loop:
Level: Heading
Usage: Mandatory
Max Use: 1
Purpose: To indicate the start of a transaction set and to assign a control number
Syntax Notes:
Semantic Notes: **1** the transaction set identifier (ST01) is used by the translation routines of the interchange partners to select the appropriate transaction set definition (e.g., 810 selects the Invoice Transaction Set).
Comments: The transaction Set Control Number (ST02) in this header must match the Transaction Set Control Number (SE02) in the Transaction Set Trailer (SE).

Data Element Summary

FNG USAGE	REF DESCR	DATA ELEMENT	NAME	ATTRIBUTES
Always	**ST01**	**143**	**Transaction Set Identifier Code** Code uniquely identifying a Transaction Set 856 Ship Notice/Manifest	**M ID 3/3**
Always	**ST02**	**329**	**Transaction Set Control Number** Identifying control number that must be unique within the Transaction set. Assigned by the originator of the 856.	**M AN 4/9**

Segment: **BSN** **Beginning Segment for Ship Notice**
Loop:
Level: Heading
Usage: Mandatory
Max Use: 1
Purpose: To transmit identifying numbers, dates, and other basic data relating to the transaction set.
Syntax Notes:
Semantic Notes: BSN03 is the date the shipment transaction set is created.
BSN04 is the time the shipment transaction set is created.
Comments:

Data Element Summary

FNG USAGE	REF DESCR	DATA ELEMENT	NAME	ATTRIBUTES
Always	**BSN01**	**353**	**Transaction Set Purpose Code** Code identifying purpose of transaction set 00 Original 01 Cancellation 05 Replace	**M ID 2/2**
Always	**BSN02**	**396**	**Shipment Identification** A unique control number assigned by the original Shipper to identify a specific shipment. The supplier Designated number cannot be repeated within a one year Period. This number will be treated as the Packing Slip Number in Flex-N-Gate's software.	**M AN 2/15**
NOTE:	**Any info after the 15th character will be truncated and may flag the Shipment Identification as being a duplicated entry.**			
Always	**BSN03**	**373**	**ASN Date** Date expressed as CCYYMMDD	**M DT 8/8**
Always	**BSN04**	**337**	**ASN Time** Time expressed in 24-hour clock time as follows: HHMM, where H = hours (00-23), M = minutes (00-59).	**M TM 4/8**

Segment: **DTM** **Date / Time Reference**
Loop:
Level: Heading
Usage: Mandatory
Max Use: 10
Purpose: To specify pertinent dates and times
Syntax Notes: At least one DTM02 DTM03 or DTM05 is required.
If DTM04 is present, then DTM03 is required.
Semantic Notes: For DTM04 use valid X12 codes such as ED, ET, CD, CT, etc.
Comments: Some of the facilities will monitor the DTM 017 Expected date. If you are unsure of this date please verify with the Receiving plant if it is a mandatory requirement.

Data Element Summary

FNG USAGE	REF DESCR	DATA ELEMENT	NAME	ATTRIBUTES
Always	**DTM01**	**374**	**Date/Time Qualifier** 011 Shipped Date 017 Expected Date	**M ID 3/3**
Always	**DTM02**	**373**	**Ship Date** Date expressed as CCYYMMDD	**X DT 8/8**
Always	**DTM03**	**337**	**Ship Time** Time expressed in 24-hour clock time as follows: HHMM, where H = hours (00-23), M = minutes (00-59).	**X TM 4/8**
Always	**DTM04**	**623**	**Shipper's Time Zone Code**	**O ID 2/2**

Segment: **HL** **Hierarchical Level**
Loop: HL Mandatory
Level: Detail Shipment
Usage: Mandatory
Max Use: 1
Purpose: To identify dependencies among the content of hierarchically related groups of data segments
Syntax Notes:
Semantic Notes:
Comments: The HL segment is used to identify levels of detail information using a hierarchical structure, Such as relating line-item data to shipment data and packaging data to line-item data. The HL segment defines a top-down / left-right ordered structure.

HL01 shall contain a unique alphanumeric number for each occurrence of the HL segment In the transaction set. For example, HL01 could be used to indicate the number of occurrences of The HL segment, in which case the value of HL01 would be "1" for the initial HL segment within The transactions.

HL02 identifies the hierarchical ID number of the HL segment to which the current HL segment Is subordinate.

HL03 indicates the context of the series of segments following the current HL segment up to the Next occurrence of an HL segment in the transaction. For example, HL03 is used to indicate that Subsequent segments I the HL loop form a logical grouping of data referring to shipment, order, or Item-level information.

Data Element Summary

FNG USAGE	REF DESCR	DATA ELEMENT	NAME	ATTRIBUTES
Always	**HL01**	**628**	**Hierarchical ID Number** A unique number assigned by the sender to identify A particular data segment in a hierarchical structure. Use "1" for this occurrence of the HL at the shipment Level, increment by 1 for each subsequent HL segment Within the transaction.	**M AN 1/12**
Always	**HL03**	**735**	**Hierarchical Level Code** Code defining the characteristic of a level in a Hierarchical structure. S Shipment	**M ID 1/2**

Segment: **MEA** **Measurements**
Loop: HL Mandatory
Level: Detail Shipment
Usage: Optional
Max Use: 40
Purpose: To specify physical measurements or counts, including dimensions, tolerances, variances and weights.
Syntax Notes:
Semantic Notes: MEA04 defines the unit of measure for MEA03
Comments:

Data Element Summary

FNG USAGE	REF DESCR	DATA ELEMENT	NAME	ATTRIBUTES
Always	**MEA01**	**737**	**Measurement Reference ID Code** Code identifying the broad category to which a Measurement applies. PD Physical Dimensions	**O ID 2/2**
Always	**MEA02**	**738**	**Measurement Qualifier** Code identifying a specific product or process Characteristic to which a measurement applies G Gross Weight N ACTUAL Net Weight	**O ID 1/3**
Always	**MEA03**	**739**	**Measurement Value** The value of the measurement	**X R 1/20**
Always	**MEA04**	**355**	**Unit or Basis for Measurement Code** To identify a composite unit of measure. Code Specifying the units in which a value is being Expressed, or manner in which a measurement Has been taken. Use any Valid X12 measurement code.	**M ID 2/2**

Segment: **TD1** **Carrier Details (Quantity and Weight)**
Loop: HL Mandatory
Level: Detail Shipment
Usage: Optional
Max Use: 20
Purpose: To specify the transportation details relative to commodity, weight, and quantity.
Syntax Notes: If TD101 is present then TD102 is required.
Semantic Notes:
Comments: This should equal the number of containers that is serialized, NOT including the masters / mixed serials. (I.E. Containers not Pallets).
Required at the Shipment level. The TD1 segment should match what is on the Bill of Lading. In case of mixed loads use 'MIX90' in TD101 and the total number of containers (returnable and non-returnable) in TD102.
Note: ***FNG can only accept one TD1 segment per ASN***
Examples:
TD1~COL52~2 COILS OF STEEL
OR
TD1~BDL58~3 BUNDLES OF TUBES, ETC.

Data Element Summary

FNG USAGE	REF DESCR	DATA ELEMENT	NAME	ATTRIBUTES
Always	**TD101**	**103**	**Packaging Code** Code identifying the type of Packaging Use any Valid X12 Packaging code.	**O AN 3/5**
Always	**TD102**	**80**	**Bill of Lading Quantity** Number of units (containers) on the BOL	**X NO 1/7**

Segment: **TD5** **Carrier Details (Routing Sequence / Transit Time)**
Loop: HL Mandatory
Level: Detail Shipment
Usage: Optional
Max Use: 12
Purpose: To specify carrier and sequence of routing and provide transit time information.
Syntax Notes: At least one of TD502, TD504 TD506 or TD512 is required.
If TD502 is present, then TD503 is required.
If TD507 is present, then DT508 is required.
Semantic Notes:
Comments: When specifying a routing sequence to be used for the shipment movement in lieu of specifying each carrier within the movement, use TD502 to identify the party responsible for defining the routing sequence, and use TD503 to identify the actual routing sequence, specified by the party identified in TD502

Data Element Summary

FNG USAGE	REF DESCR	DATA ELEMENT	NAME	ATTRIBUTES
Always	**TD501**	**133**	**Routing Sequence Code** Code describing the relationship of a carrier to a Specific movement. B Origin / Delivery carrier	**O ID 1/2**
Always	**TD502**	**66**	**Identification Code Qualifier** Code designating the system / method of code structure Used for Identification Code (67) 2 Standard Carrier Alpha SCAC code.	**X ID 1/2**
Always	**TD503**	**67**	**Identification Code** Use 4-digit SCAC code of trucking company.	**X AN 2/4**
Always	**TD504**	**91**	**Transportation Method / Type Code** Code specifying the method or type of transportation for the shipment. Any valid Xl2 code except mutually defined "ZZ".	**X ID ½**
Always	**TD507**	**309**	**Location Qualifier** Code identifying type of locations. IfTD504 = 'A', use code value "OR", meaning Origin (Shipping Point). OR Origin (Shipping Point) PP Pool Point	**O ID ½**
Always	**TD508**	**310**	**Location Qualifier** Code which identifies a specific location. Give pool code if TD507 is PP. Give Airport code identifier if TD507 is OR for an air Shipment (i.e. DTW = Detroit Metro Airport).	**X AN 1/30**

Segment: **TD3** **Carrier Details (Equipment)**
Loop: HL Mandatory
Level: Detail Shipment
Usage: Optional
Max Use: 12
Purpose: To specify transportation details relating to the equipment used by the carrier
Syntax Notes: Only one of TD301 or TD310 may be present.
If TD302 is present, then TD303 is required.
Semantic Notes:
Comments: **The Carrier Pro Tracking number is put in the REF CN segment.**

Data Element Summary

FNG USAGE	REF DESCR	DATA ELEMENT	NAME	ATTRIBUTES
Always	**TD301**	**40**	**Equipment Description Code** Code identifying type of equipment used for shipment Any valid Xl2 code except mutually defined.	**X ID 2/2**
Always	**TD302**	**206**	**Equipment Initial** Prefix or alphabetic part of an equipment unit's identifying Number.	**O AN 1/4**
Always	**TD303**	**207**	**Equipment Number** Sequencing or serial part of an equipment unit's identifying Number (pure numeric form for equipment number is preferred)	**X AN 1/10**

Segment: **REF** **Reference Identification**
Loop: HL Mandatory
Level: Detail Shipment
Usage: Optional
Max Use: >1
Purpose: To specify identifying information
Syntax Notes: At least one of REF02 or REF03 is required.
Semantic Notes:
Comments: While it is very common for a Bill of Lading and Packing List to be sent in the REF02 at this level, The Flex-N-Gate software will not process this segment.
Please see the 830 introductory comments.
The CN is a mandatory REF segment for the Carrier Pro Tracking number, if you have one.
The PK is an optional REF segment for the Packing Slip if you do not map this info, then the ASN Number found in the **BSN02** segment will be used.

Data Element Summary

FNG USAGE	REF DESCR	DATA ELEMENT	NAME	ATTRIBUTES
See comments	**REF01**	**128**	**Reference Identification Qualifier** Code qualifying the Reference Identification AW Air Waybill Number FR Freight Bill PK Packing List Number CN Carrier Pro Tracking Number	**M ID 2/3**
See comments	**REF02**	**127**	**Reference Identification** Reference information as defined for a particular Transaction Set or as specified by the Reference Identification Qualifier.	**X AN 1/30**

Segment: **N1** **Name**
Loop: HL / N1 Repeat: 200
Level: Detail Shipment
Usage: Optional
Max Use: 1
Purpose: To identify a party by type of organization, name, and code.
Syntax Notes: At least one of N102 or N103 is required
If either N103 or N104 is present, then the other is required.
Semantic Notes:
Comments: This segment, used alone, provides the most efficient method of providing Organizational identification. To obtain this efficiency the "ID Code" (N104) Must provide a key to the table maintained by the transaction processing party. This means that what we send you on the 830, needs to be returned. N1 SU is a mandatory qualifier / ID and this should match your GS segment as well As your Label Supplier ID.

Data Element Summary

FNG USAGE	REF DESCR	DATA ELEMENT	NAME	ATTRIBUTES
Always	**N101**	**98**	**Entity Identifier Code** Code identifying an organizational entity, a Physical location, property or an individual ST Ship To SU Supplier / Manufacturer SF Ship From	**M ID 2/3**
Always	**N102**	**93**	**Name** Free Form name.	**X AN 1/60**
Always	**N103**	**66**	**Identification Code Qualifier** Code designation the system / method of code Structure used for Identification Code (67)	**X ID 1/2**
Always	**N104**	**67**	**Identification Code** Code identifying a party or other code. This should match your GS segment, unless Otherwise directed / required. This is the same Supplier ID found in the 830 and Used as the Supplier ID on the Label.	**X AN 2/80**

Segment: **HL** **Hierarchical Level**
Loop: HL Repeat: 200000
Level: Detail Order
Usage: Mandatory
Max Use: 1
Purpose: To identify dependencies among the content of hierarchically related groups of data segments
Syntax Notes:
Semantic Notes:
Comments: The HL segment is used to identify levels of detail information using a hierarchical structure, such as relating line-item data to shipment data, and packaging data to line-item data.

The HL segment defines a top-down/left-right ordered structure.

HL0l shall contain a unique alphanumeric number for each occurrence of the HL segment in the transaction set. For example, HL0l could be used to indicate the number of occurrences of the HL segment, in which case the value of HL01 would be "l" for the initial HL segment and would be incremented by one in each subsequent HL segment within the transaction.

HL02 identifies the hierarchical ID number of the HL segment to which the current HL segment is subordinate.

HL03 indicates the context of the series of segments following the current HL segment up to the next occurrence of an HL segment in the transaction. For example, HL03 is used to indicate that subsequent segments in the HL loop form a logical grouping of data referring to shipment, order, or item-level information.

Data Element Summary

FNG USAGE	REF DESCR	DATA ELEMENT	NAME	ATTRIBUTES
Always	**HL01**	**628**	**Hierarchical ID Number** A unique number assigned by the sender to identify a Particular data segment in a hierarchical structure. Use “1” for this occurrence of the HL at the shipment Level, increment by 1 for each subsequent HL segment Within the transaction.	**M AN 1/12**
Always	**HL02**	**734**	**Hierarchal Parent ID Number** Identification number of the next higher hierarchical data Segment that the data segment being described is Subordinate to.	**O AN 1/12**
Always	**HL03**	**735**	**Hierarchical Level Code** Code defining the characteristic of a level in a Hierarchical structure. O Order	**M ID 1/2**

Segment: **LIN** **Item Identification**
Loop: HL
Level: Detail Order
Usage: Mandatory
Max Use: 1
Purpose: To specify basic item identification data
Syntax Notes:
Semantic Notes:
Comments: See the Data Dictionary for a complete list of IDs.

LIN02 thought LIN31 provide for fifteen different product / service IDs for each item.
For example: Case, Color, Drawing No., U.P.C. No., ISBN No., Model No., or SKU No.

While it is very common for a Purchase Order Number to be sent in the LIN05, the Flex-N-Gate software will not use this element. Only the PO# in the PRF01 will be used.

Data Element Summary

FNG USAGE	REF DESCR	DATA ELEMENT	NAME	ATTRIBUTES
Always	**LIN02**	**235**	**Product / Service ID Qualifier** Code identifying the type / source of the descriptive Number used in Product / Service ID (234) BP Buyer's Part Number from 830	**M ID 2/2**
Always	**LIN03**	**234**	**Product / Service ID** Identifying number for a product or service	**M AN 1/48**
See comments	**LIN04**	**235**	**Product / Service ID Qualifier** Code identifying the type / source of the descriptive Number used in Product / Service ID (234) VP Vendor's Part Number (Must be BP# if BP is referencing A resale part number). PO Purchase Order (Must also be in the PRF Segment) EC Engineering Change	**X ID 2/2**
See comments	**LIN05**	**234**	**Product / Service ID** Identifying number for a product or service LIN06 through LIN31 provide for 13 additional pairs of data Elements 235 and 234.	**X AN 1/48**

Segment: **SN1** **Item Detail (Shipment)**
Loop: HL
Level: Detail Order
Usage: Mandatory
Max Use: 1
Purpose: To specify line-item detail relative to shipment
Syntax Notes: If either SN105 or SN106 is present, then the other is required.
Semantic Notes: SN101 is the ship notice line-item identification.
Comments: SN103 defines the unit of measurement for both SN102 and SN104.

Data Element Summary

FNG USAGE	REF DESCR	DATA ELEMENT	NAME	ATTRIBUTES
Always	**SN102**	**382**	**Quantity Shipped** Full weight of raw material based on the combined weight total of the Item loops Within the Part Order loop. Based on 830 UOM, EX: LB or KG Full footage of tubes, etc. of the item loops Within the part Orde loop. Based on the 830 UOM, EX: FT.	**M R 1/10**
Always	**SN103**	**355**	**Unit or Basis for Measurement Code** Code specifying the units in which a value is being expressed, Or manner in which measurement has been taken. This must be the same Unit of Measure sent in the Corresponding 830, in the UIT01 Segment. EX: UIT*LB or KG or FT	**M ID 2/2**
Always	**SN104**	**646**	**Quantity Shipped to Date** Full weight of raw material shipped to date, including this shipment.	**M R 1/15**
Always	**SN106**	**355**	**Unit or Basis for Measurement Code** Code specifying the units in which a value is being expressed, Or manner in which a measurement has been taken. This must be the same Unit of Measure sent in the Corresponding 830, in the UIT01 Segment. EX: UIT*LB or KG or FT	**X ID 2/2**

Segment: **PRF** **Purchase Order Reference**
Loop: HL
Level: Detail Order
Usage: Mandatory
Max Use: 1
Purpose: To provide reference to a specific purchase order (Should match the PO found on 830)
Syntax Notes:
Semantic Notes: PRF04 is the date assigned by the Purchaser to purchase order.
Comments:

Data Element Summary

FNG USAGE	REF DESCR	DATA ELEMENT	NAME	ATTRIBUTES
Always	**PRF01**	**324**	**Purchase Order Number** Identifying number for Purchase Order assigned by the Buyer / Purchaser The PO on 856 must be a match to the 830 Release PO.	**M AN 1/22**

Segment: **PID** **Product / Item Description**
Loop: HL Mandatory
Level: Detail Order
Usage: Mandatory
Max Use: 1
Purpose: To specify Material shipped
Syntax Notes: If PID01 equals "F", then PID05 is used
Semantic Notes:
Comments: Example: PID*F*08**STEEL

Data Element Summary

FNG USAGE	REF DESCR	DATA ELEMENT	NAME	ATTRIBUTES
Always	**PID01**	**349**	**Item Description Type** Code indicating the format of a description F Free Form	**M ID 2/3**
Always	**PID02**	**750**	**Product Characteristic Code** 08 Product	**M ID 2/3**
Always	**PID05**	**352**	**Description** Steel Aluminum	**M ID 1/20**

Segment: **HL** **Hierarchical Level**
Loop: HL Repeat: 200000
Level: Detail Item
Usage: Mandatory
Max Use: 1
Purpose: To identify dependencies among the content of hierarchically related groups of data segments
Syntax Notes:
Semantic Notes:
Comments: The HL segment is used to identify levels of detail information using a hierarchical structure, such as relating line-item data to shipment data, and packaging data to line-item data.

The HL segment defines a top-down/left-right ordered structure.

HL0l shall contain a unique alphanumeric number for each occurrence of the HL segment in the transaction set. For example, HL0l could be used to indicate the number of occurrences of the HL segment, in which case the value of HL01 would be "l" for the initial HL segment and would be incremented by one in each subsequent HL segment within the transaction.

HL02 identifies the hierarchical ID number of the HL segment to which the current HL segment is subordinate.

HL03 indicates the context of the series of segments following the current HL segment up to the next occurrence of an HL segment in the transaction. For example, HL03 is used to indicate that subsequent segments in the HL loop form a logical grouping of data referring to shipment, order, or item-level information.

Data Element Summary

FNG USAGE	REF DESCR	DATA ELEMENT	NAME	ATTRIBUTES
Always	**HL01**	**628**	**Hierarchical ID Number** A unique number assigned by the sender to identify a Particular data segment in a hierarchical structure. Use “1” for this occurrence of the HL at the shipment Level, increment by 1 for each subsequent HL segment Within the transaction.	**M AN 1/12**
Always	**HL02**	**734**	**Hierarchal Parent ID Number** Identification number of the next higher hierarchical data Segment that the data segment being described is Subordinate to.	**O AN 1/12**
Always	**HL03**	**735**	**Hierarchical Level Code** Code defining the characteristic of a level in a Hierarchical structure. I Item	**M ID 1/2**

Segment: **SN1** **Item Detail (Shipment)**
Loop: HL Mandatory
Level: Detail Item
Usage: Mandatory
Max Use: 1
Purpose: To specify line-item detail relative to shipment.
Syntax Notes:
Semantic Notes:
Comments: SN102 and SN103 will be transmitted at the Item detail level to identify the quantity of RAW METAL coils being shipped for each label or the amount of Footage of Tubes for each label.

Example: SN1**42950*LB~
SN1**455.62 FT~

Data Element Summary

FNG USAGE	REF DESCR	DATA ELEMENT	NAME	ATTRIBUTES
See comments	**SN102**	**382**	**Weight or footage of Units shipped** Weight of raw material associated to a serial Footage of raw material associated to a serial Based on 830 UOM, EX: LB or KG or FT etc.	**M R 1/10**
See comments	**SN103**	**355**	**Unit or basis for Measurement Code** Code identifying the units in which a value is being expressed, or manner in which a measurement has been taken. Must match the incoming PO / 830 Release UOM	**M ID 2/2**

Segment: **MEA** **Measurements Actual Dimensions**
Loop: HL Mandatory
Level: Detail Item
Usage: Mandatory
Max Use: 40
Purpose: To specify Actual measurements or counts, including dimensions, tolerances, variances, and weights.
Syntax Notes:
S**emantic Notes:** MEA04 defines the unit of measure for MEA03.
Comments: This segment is required at item level to identify RAW Metal coils.
At least one iteration of "WT" Weight required identifying total weight of all Raw Metal coils shipped Preceding Item level SN1.
.
Example: MEA*AD*LN*4440*LF~
MEA*AD*TH*.0470*IN~
MEA*AD*WD*62.1250*IN~
MEA*AD*WT*42950*LB~

Data Element Summary

FNG USAGE	REF DESCR	DATA ELEMENT	NAME	ATTRIBUTES
Always	**MEA01**	**737**	**Measurement Reference ID Code** Code identifying the broad category to which a Measurement applies. FD FINISHED DIMENSIONS	**M ID 2/2**
Always	**MEA02**	**738**	**Measurement Qualifier** Code identifying a specific product or process Characteristic to which a measurement applies LN Length TH Thickness WD Width WT Weight	**M ID 1/3**
Always	**MEA03**	**739**	**Measurement value** The value of the measurement	**X R 1/20**
Always	**MEA04**	**355**	**Unit or Basis for Measurement Code** To identify a composite unit of measure. Code specifying the units in which a value is Being expressed, or manner in which a Measurement has been taken. Use any valid X12 measurement code.	**M ID 2/2**

Segment: REF Reference Identification
Loop: HL Mandatory
Level: Detail Item
Usage: Mandatory
Max Use: 12
Purpose: To specify identifying information
Syntax Notes: At least one of REF02 and REF03 is required.
S**emantic Notes:** MEA04 defines the unit of measure for MEA03.
Comments: This segment is required at item level to identify RAW Metal coils as applicable.

Example: REF*HC*D513573~
REF*LS*17473203~
REF*LT*566666 This is something the plant would specifically ask for.

Data Element Summary

FNG USAGE	REF DESCR	DATA ELEMENT	NAME	ATTRIBUTES
Always	**REF01**	**128**	**Reference Identification Qualifier** Code Qualifying the Reference Identification HC Heat Code LS Bar-Coded Serial Number LT Lot number SE Master Coil ID/Serial number	**M ID 2/3**
Always	**REF02**	**127**	**Reference Identification** Reference information as defined for a particular Transaction Set or as specified by the Reference Identification Qualifier.	**X AN 1/30**

Segment: **DTM** **Date / Time Reference**
Loop: HL Mandatory
Level: Detail Item
Usage: Mandatory
Max Use: 1
Purpose: To specify pertinent dates and times
Syntax Notes:
Semantic Notes:
Comments: This segment is required for all products at item level per serial that has a shelf life.
The Manufacturing Date is not a requirement at this time.

Data Element Summary

FNG USAGE	REF DESCR	DATA ELEMENT	NAME	ATTRIBUTES
See comments	**DTM01**	**374**	**Date / Time Qualifier** Code specifying type of date or time or both date and time. 094 Manufacturing Date 511 Shelf-Life Expiration Date	**M ID 3/3**
See comments	**DTM02**	**373**	**Ship Date** Date expressed as CCYYMMDD	**X DT 8/8**

Segment: **CTT** **Transaction Totals**
Loop:
Level: Summary
Usage: Mandatory
Max Use: 1
Purpose: To transmit a hash total for a specific element in the transaction set.
Syntax Notes: If either CTT03 or CTT04 is present, the other is required.
Semantic Notes:
Comments: This segment is intended to provide hash totals to validate transaction completeness and correctness.

EXAMPLE: **CTT*3~**

Data Element Summary

FNG USAGE	REF DESCR	DATA ELEMENT	NAME	ATTRIBUTES
Always	**CTT01**	**354**	**Number of Line Items** Total number of line items in the transaction set Total number of HL segments.	**M N0 1/6**
Always	**CTT02**	**347**	**Hash Total** Sum of values of the specified data element. Hash total of quantity shipped (SN102). Not used by Flex-N-Gate	**O R 1/10**

Segment: **SE** **Transaction Set Trailer**
Loop:
Level: Summary
Usage: Mandatory
Max Use: 1
Purpose: To indicate the end of the transaction set and provide the count of the transmitted Segments (including the beginning (ST) and ending (SE) segments).
Syntax Notes:
Semantic Notes:
Comments: SE is the last segment of each transaction set.

EXAMPLE: SE*35*0001~

Data Element Summary

FNG USAGE	REF DESCR	DATA ELEMENT	NAME	ATTRIBUTES
Always	**SE01**	**96**	**Number of Included Segments** Total number of segments included in a transaction set Including ST and SE segments.	**M N0 1/10**
Always	**SE02**	**329**	**Transaction Set Control Number** Identifying control number that must be unique within transaction set functional group assigned by the originator For a transaction set.	**M AN 4/9**

SAMPLE 856 (RAW METAL Coil) :

1st Part at Order level for 3 RAW METAL coils at Item level

```
ISA*00*          *00*          *01*VENDDUNS#      *01*011298072      *020719*0904*U*00401*000000005*0P*@~
GS*SH*VENDDUNS*011298072*20020719*0904*6*X*004010~
ST*856*0004~                                  X12 Transaction Set = 856 (ASN)
                                              Transaction Set Control Number = 0004
BSN*00*111111*20031223*0922~                  Status = 00 (Original)
                                              Document Number = 111111
                                              Date created = Dec 23, 2003
                                              Time created = 09:22 am

DTM*011*20031223*0922~                        Date Shipped = Dec 23, 2003
                                              Time Shipped = 09:22 am
DTM*017*20260606*1000~                        Expected date and time of goods arrival to the plant
HL*1**S~                                      Hierarchical Level = Shipment
MEA*PD*G*72420*LB~                            Type of Measurement = Physical Dimension
                                              Gross Weight = 72,420 LB

MEA*PD*N*72420*LB~                            Type of Measurement = Physical Dimension
                                              Net Weight = 72,420 LB
TD1*COL*3~                                    Shipping Container = 3 RAW METAL Coils
TD5*B*02*TPKE*M~                              Originating Carrier SCAC Code = TPKE
                                              Method = Motor
TD3*TL**181005~                               Trailer Number = 181005
REF*PK*111111~                                Packing Slip Number = 111111
N1*ST**1*011298072~                           Ship to DUNS = 011298072
N1*SU**1*002222222~                           Supplier DUNS = 002222222
HL*2*1*O~                                     Hierarchical Level = Order
LIN**BP*COILPART1*VP*VENDORPART~              Buyer's Part Number = COILPART1 Vendors' part number= VENDORPART
SN1**72420*LB*92420~                          Total Units Shipped for Part in Order Loop
                                              Number of units Shipped to Date = 92420
PRF*650248~                                   Purchase Order Number = 650248
PID*F*08**STEEL~                              Free form of Product ie Steel or Aluminum
HL*3*2*I~                                     Hierarchical Level = Item
SN1**18430*LB~                                Units Shipped = Weight of the Coil
                                              Type of Measurement = FINISHED Dimension
MEA*FD*LN*3641*LF~                            Length
```

MEA*FD*TH*0.0394*IN~	Thickness measured in inches
MEA*FD*WD*41.7323*IN~	Width measured in inches = TO SN1 within the Item loop.
MEA*FD*WT*18430*LB~	Weight measured in pounds
REF*HC*0115525~	Heat Code = 0115525
REF*LS*221589-P11A~	Label Serial Number = 221589-P11A
REF*LT*2076300B~	Lot information
DTM*094*20250819~	Manufacturing date
DTM*511*20270915~	Shelf-Life expiration date
HL*4*2*I~	Hierarchical Level = Item
SN1**18430*LB~	Units Shipped = weight of the Coil
	Type of Measurement = Actual Dimension
MEA*FD*LN*3641*LF~	Length
MEA*FD*TH*0.0394*IN~	Thickness measured in inches
MEA*FD*WD*41.7323*IN~	Width measured in inches
MEA*FD*WT*18430*LB~	Weight measured in pounds
REF*HC*0115525~	Heat Code = 0115525
REF*LS*221589-P11B~	Label Serial Number = 221589-P11B
REF*LT*2076301B~	Lot information
DTM*094*20250819~	Manufacturing date
DTM*511*20270915~	Shelf-Life expiration date
HL*5*2*I~	Hierarchical Level = Item
SN1**35560*LB~	Units Shipped = 35,560 LBS
MEA*FD*LN*3642*LF~	Length
MEA*FD*TH*0.0384*IN~	Thickness measured in inches
MEA*FD*WD*41.7313*IN~	Width measured in inches
MEA*FD*WT*35560*LB~	Weight measured in pounds
REF*HC*57597~	Heat Code = 57597
REF*LS*692425911~	Label Serial Number
REF*LT*2076300B~	Lot information
DTM*094*20250819~	Manufacturing date
DTM*511*20270915~	Shelf-Life expiration date
CTT*5~	Number of Hierarchical Levels=5
SE*45*000000635~	Total Number of Segments=45
GE*1*62000152~	
IEA*1*000000635~	

SAMPLE 856 (RAW METAL Coil) :

2 Parts at Order level for 3 RAW METAL coils at Item level

```
ISA*00*          *00*          *ZZ*VENDOR    *01*205644524      *250915*1309*U*00401*000000685*0*P*@~
GS*SH*VENDOR*205644524*20250915*1309*63872803*X*004010~
ST*856*000000685~
BSN*00*3612073864*20250915*0709~
DTM*011*20250915*1309~
DTM*017*20251006*1000~
HL*1**S~
MEA*PD*G*7080*LB~
MEA*PD*N*7080*LB~
TD1*COL5*1~
TD5*B*2*TPKE*M~
TD3*TL~
REF*MB*108023~
N1*ST**1*0050054743~
N1*SU**1*VENDORDUNS~
HL*2*1*O~
LIN**BP*RA9G926RL*VP*RM2024-206830-ERMA* ~
SN1**7030*LB*23030~
PRF*58400~
PID*F*08**STEEL~
HL*3*2*I~
SN1**7030*LB~
MEA*FD*WT*7030*LB~
MEA*FD*LN*45*LF~
MEA*FD*TH*0.25*IN~
MEA*FD*WD*42.64*IN~
REF*LS*1021563837~
REF*LT*1045261~
REF*HC*0552982~
REF*SE*5862013~
DTM*094*20250912~
DTM*511*20251205~
HL*4*2*O~
LIN**BP*RA16684N1*VP*RM2023-201631-ERMA* ~
SN1**9070*LB*9070~
```



```
PRF*58400~
PID*F*08**STEEL~
HL*5*3*I~
SN1**4535*LB~
MEA*FD*WT*4535*LB~
MEA*FD*LN*45*LF~
MEA*FD*TH*0.25*IN~
MEA*FD*WD*42.64*IN~
REF*LS*1021643071~
REF*LT*6054401~
REF*HC*M44251-1~
REF*SE*84515L~
DTM*094*20250904~
DTM*511*20251215~
HL*6*3*I~
SN1**4535*LB~
MEA*FD*WT*4535*LB~
MEA*FD*LN*45*LF~
MEA*FD*TH*0.25*IN~
MEA*FD*WD*42.64*IN~
REF*LS*1021643072~
REF*LT*6054401~
REF*HC*M44251-1~
REF*SE*84515L~
DTM*094*20250904~
DTM*511*20251215~
CTT*6~
SE*60*000000685~
GE*1*63872803~
IEA*1*000000685~
```

SAMPLE 856 (RAW METAL TUBES) :

2 Product numbers at Order level for 3 Bundles of Steel Tubes at Item level
Based on 1 serial label covering the total footage of 1 bundle.
So, if 10 bundles are on the truck, there would be 10 labels at the Item level.

```
ISA*00*          *00*          *ZZ*VENDOR   *01*205644524      *250915*1309*U*00401*000000685*0*P*@~
GS*SH*VENDOR*205644524*20250915*1309*63872803*X*004010~
ST*856*000000685~
BSN*00*3612073864*20250915*0709~
DTM*011*20250915*1309~
DTM*017*20250920*0700~
HL*1**S~
MEA*PD*G*7080*LB~
MEA*PD*N*7080*LB~
TD1*BDL58*3~
TD5*B*2*TPKE*M~
TD3*TL~
REF*MB*108023~
N1*ST**1*0050054743~
N1*SU**1*VENDORDUNS~
HL*2*1*O~
LIN**BP*MT0012*PO*200030~
SN1**1833.7410*FT~      At Order level, it is the total footage of all of the bundles in the Item level
PRF*200030~
PID*F*08**STEEL~
HL*3*2*I~
SN1**1833.7410*FT~      Total footage of each bundle / serial in the item level.
MEA*FD*WT*7030*LB~      Full weight of the bundle
MEA*FD*LN*45*LF~        Combined measurement of whole bundle
MEA*FD*TH*0.25*IN~      Actual thickness of steel
MEA*FD*WD*42.64*IN~     Actual Width of tube
REF~LS~T6737820         This serial is a container serial for the whole bundle, which means it references
                        the combined feet of all of the tubes existing in the bundle.

REF*LT*1045261~         This info is based on the Flex N Gate / Ventra Plant needs
REF*HC*0552982~
DTM*094*20250912~       Please provide this information
```



```
DTM*511*20251205~       This can be left blank if there is no expiry date on the product.
HL*4*2*O~
LIN**BP*MT0012*PO*200030~
SN1**5501.22*FT~
PRF*200030~
PID*F*08**STEEL~
HL*5*3*I~
SN1**2750.61*FT~
MEA*FD*WT*4535*LB~
MEA*FD*LN*45*LF~
MEA*FD*TH*0.25*IN~
MEA*FD*WD*42.64*IN~
REF*LS*T6737820~
REF*LT*6054401~
REF*HC*M44251-1~
DTM*094*20250904~
DTM*511*20251215~
HL*6*3*I~
SN1**2750.61*FT~
MEA*FD*WT*4535*LB~
MEA*FD*LN*45*LF~
MEA*FD*TH*0.25*IN~
MEA*FD*WD*42.64*IN~
REF*LS*T6737847~
REF*LT*6054401~
REF*HC*M44251-1~
DTM*094*20250904~
DTM*511*20251215~
CTT*6~
SE*60*000000685~
GE*1*63872803~
IEA*1*000000685~
```