

Land Drainage As-Built Requirements

Revision 1

Revision : 1.01

Date : 14/12/2017

Table of Contents

LD01: Channel Bank Lining	3
LD02: Channel Invert Lining	4
LD03: Debris Rack	5
LD04: Debris Poles	6
LD05: Energy Dissipater	7
LD06: Flume	8
LD07: Ford	9
LD08: Ladder	10
LD09: Valve	11
LD10: Weir	12
LD11: Bridge	13
LD12: Instrumentation	14
LD13: Embankment	15
LD14: Storm Water Basin	16

LAND DRAINAGE ASSETS



Name	Channel Bank Lining (Line)
Line Type	LD01 "Line Asset Inputs"

LD01: Channel Bank Lining

CAT Column	SAG Description	Valid Values
A	Type of line feature	LD01
B	Bank (wall) lining type	Select from pick list: domLiningType
C	Existing or New Asset	Select from pick list: domExisitngOrNew
D	Differs from design (yes/no)	Select from pick list: domDiffersFromDesign
E	Unique identifier from drawing	data - text
F	Line Vertex Easting coordinate	data - decimal number
G	Line Vertex Northing coordinate	data - decimal number
H	Order of vertex/point along line	data - number
I	Location certainty - accuracy of data	Select from pick list: domLocationCertainty
J	Date of commission	data - date (dd/mm/yyyy)
K	Date of 'survey-start'	data - date (dd/mm/yyyy)
L	Guideline revision used for survey	Select from pick list: domSurveyGuidelineID
M	Long Description - Any important/unusual notes that otherwise would not be captured.	data - text (70 Characters)
N	File name of photo.	data - text (30 Characters)
O	Primary Construction Material - main substance the asset is made of	Select from pick list: domWLDConstructionMaterial
P	Construction Style	Select from pick list: domWLDConstructionStyle
Q	Bank width between the bed and top of lining, measured in metres	data - decimal number
R	Lining thickness - distance from the exposed face to the buried face.	data - decimal number
S	Is the lining, a Retaining Wall? 1.3m high and above with no vehicle/building surcharge, or 1.0m high and above with surcharge loading.	Select from pick list: domRetainingWall
T	Top Struts, Yes/No?	Select from pick list domTopStruts
U	Position in channel (true right/true left bank)	Select from pick list domPositionInChannel
V	Accessibility, ease of access?	Select from pick list domAccessibility
W	Ownership?	Select from pick list domOwnership

Additional Information

Channel Bank Lining
X Y



Timber lining true left and a retaining wall



Timber lining true left and true right with top struts

LAND DRAINAGE ASSETS

Name
Line Type
Channel Invert Lining (Line)
LD02 "Line Asset Inputs"



Channel Invert Lining
X Y



'Flat' Invert lining type



'U Profile' Invert lining type

LD02: Channel Invert Lining

CAT Column	SAG Description	Valid Values
A	Type of line feature	LD02
B	Invert (bed) lining type	Select from pick list: domInvertType
C	Existing or New Asset	Select from pick list: domExistingOrNew
D	Differs from design (yes/no)	Select from pick list: domDiffersFromDesign
E	Unique identifier from drawing	data - text
F	Line Vertex Easting coordinate	data - decimal number
G	Line Vertex Northing coordinate	data - decimal number
H	Order of vertex/point along line	data - number
I	Location certainty - accuracy of data	Select from pick list: domLocationCertainty
J	Date of commission	data - date (dd/mm/yyyy)
K	Date of 'survey-start'	data - date (dd/mm/yyyy)
L	Guideline revision used for survey	Select from pick list: domSurveyGuidelineID
M	Long Description - Any important/unusual notes that otherwise would not be captured.	data - text (70 Characters)
N	File name of photo.	data - text (30 Characters)
O	Primary Construction Material - main substance the asset is made of	Select from pick list: domWLDConstructionMaterial
P	Construction Style	Select from pick list: domWLDConstructionStyle
Q	Invert width - between left bank and right bank, measured in metres	data - decimal number
R	Position in channel (Channel Bed)	Select from pick list domPositionInChannel
S	Accessibility, ease of access?	Select from pick list domAccessibility
T	Ownership?	Select from pick list domOwnership

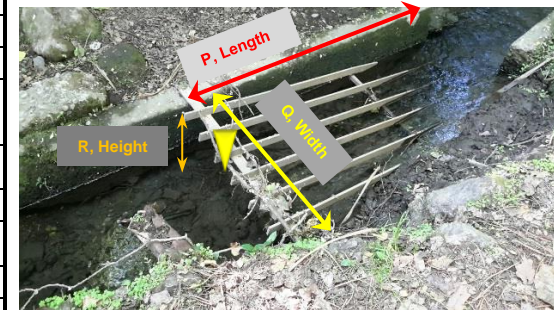
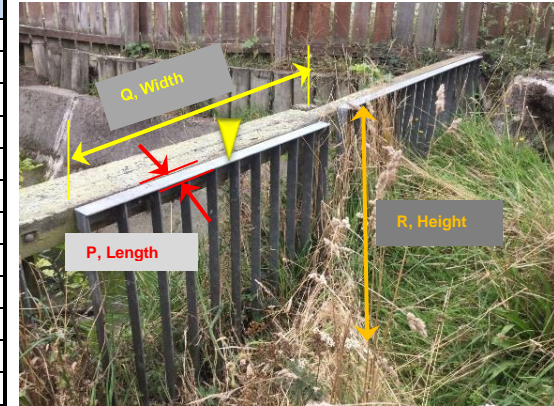
Additional Information

LAND DRAINAGE ASSETS

Name		Debris Rack (Point)
Point Type		LD03 "Point Asset Inputs"
CAT Column	SAG Description	Valid Values
A	Type of point feature	LD03
B	LEAVE BLANK	
C	Existing or New Asset	Select from pick list: domExisitngOrNew
D	Differs from design (yes/no)	Select from pick list: domDiffersFromDesign
E	Unique identifier from drawing	data - text
F	Centre of structure in Easting coordinate	data - decimal number
G	Centre of structure in Northing coordinate	data - decimal number
H	LEAVE BLANK	
I	Location certainty - accuracy of data	Select from pick list: domLocationCertainty
J	Date of commission	data - date (dd/mm/yyyy)
K	Date of 'survey-start'	data - date (dd/mm/yyyy)
L	Guideline revision used for survey	Select from pick list: domSurveyGuidelineID
M	Long Description - Any important/unusual notes that otherwise would not be captured.	data - text (70 Characters)
N	File name of photo.	data - text (30 Characters)
O	Primary construction material	Select from pick list: domWLDConstructionMaterial
P	Length of rack measured in metres, horizontal distance from highest to lowest part of rack (where the rack is vertical, this will be the maximum thickness of the rack bars/frame). See example	data - decimal number
Q	Width of Rack across the top, measured in metres. See examples right.	data - decimal number
R	Typical height above bed, measured in metres. See examples right.	data - decimal number
S	Typical spacing between bars, measured from centre of one bar to centre of next, measured in metres.	data - decimal number
T	Position in channel (true right/true left bank, channel bed etc)	Select from pick list domPositionInChannel
U	Accessibility, ease of access?	Select from pick list domAccessibility
V	Ownership?	Select from pick list domOwnership

LD03: Debris Rack

Debris Rack X Y



Additional Information
 Debris Racks, are free standing debris interceptors, generally in an open waterway a short distance upstream of a pipe entry.

LAND DRAINAGE ASSETS

Name: Debris Poles (Point) ●
 Point Type: LD04 "Point Asset Inputs"

LD04: Debris Poles


CAT Column	SAG Description	Valid Values
A	Type of point feature	LD04
B	LEAVE BLANK	
C	Existing or New Asset	Select from pick list: domExisitngOrNew
D	Differs from design (yes/no)	Select from pick list: domDiffersFromDesign
E	Unique identifier from drawing	data - text
F	Centre of structure in Easting coordinate	data - decimal number
G	Centre of structure in Northing coordinate	data - decimal number
H	LEAVE BLANK	
I	Location certainty - accuracy of data	Select from pick list: domLocationCertainty
J	Date of commission	data - date (dd/mm/yyyy)
K	Date of 'survey-start'	data - date (dd/mm/yyyy)
L	Guideline revision used for survey	Select from pick list: domSurveyGuidelineID
M	Long Description - Any important/unusual notes that otherwise would not be captured.	data - text (70 Characters)
N	File name of photo.	data - text (30 Characters)
O	Primary construction material	Select from pick list: domWLDConstructionMaterial
P	Typical diameter of pole, measured in metres	data - decimal number
Q	Number of poles	data - number
R	Typical Spacing, measured in metres from centre of one pole to centre of next.	data - decimal number
S	Maximum Height above bed, measured in metres	data - decimal number
T	Position in channel (true right/true left bank, channel bed etc)	Select from pick list domPositionInChannel
U	Accessibility, ease of access?	Select from pick list domAccessibility
V	Ownership?	Select from pick list domOwnership

Additional Information

Debris Poles
X Y



LAND DRAINAGE ASSETS

Name **Energy Dissipater (Point)** 
 Point Type **LD05 "Point Asset Inputs"**

CAT Column	SAG Description	Valid Values
A	Type of point feature	LD05
B	Type of Energy Dissipater	Select from pick list domEnergyDissipaterType
C	Existing or New Asset	Select from pick list: domExisitngOrNew
D	Differs from design (yes/no)	Select from pick list: domDiffersFromDesign
E	Unique identifier from drawing	data - text
F	Centre of structure in Easting coordinate	data - decimal number
G	Centre of structure in Northing coordinate	data - decimal number
H	LEAVE BLANK	
I	Location certainty - accuracy of data	Select from pick list: domLocationCertainty
J	Date of commission	data - date (dd/mm/yyyy)
K	Date of 'survey-start'	data - date (dd/mm/yyyy)
L	Guideline revision used for survey	Select from pick list: domSurveyGuidelineID
M	Long Description - Any important/unusual notes that otherwise would not be captured.	data - text (70 Characters)
N	File name of photo.	data - text (30 Characters)
O	Primary construction material	Select from pick list: domWLDConstructionMaterial
P	Length of Energy Dissipater, measured in metres	data - decimal number
Q	Width of Energy Dissipater, measured in metres	data - decimal number
R	Position in channel (true right/true left bank, channel bed)	Select from pick list domPositionInChannel
S	Accessibility, ease of access?	Select from pick list domAccessibility
T	Ownership?	Select from pick list domOwnership

LD05: Energy Dissipater

Additional Information

**Energy Dissipater
X Y**



Rough Bed



Manipulated Flow Path

LAND DRAINAGE ASSETS

Name	Flume (Point)
Point Type	LD06 "Point Asset Inputs"



**Flume
X Y**

CAT Column	SAG Description	Valid Values
A	Type of point feature	LD06
B	LEAVE BLANK	
C	Existing or New Asset	Select from pick list: domExistingOrNew
D	Differs from design (yes/no)	Select from pick list: domDiffersFromDesign
E	Unique identifier from drawing	data - text
F	Centre of structure in Easting coordinate	data - decimal number
G	Centre of structure in Northing coordinate	data - decimal number
H	LEAVE BLANK	
I	Location certainty - accuracy of data	Select from pick list: domLocationCertainty
J	Date of commission	data - date (dd/mm/yyyy)
K	Date of 'survey-start'	data - date (dd/mm/yyyy)
L	Guideline revision used for survey	Select from pick list: domSurveyGuidelineID
M	Long Description - Any important/unusual notes that otherwise would not be captured.	data - text (70 Characters)
N	File name of photo.	data - text (30 Characters)
O	Primary construction material	Select from pick list: domWLDConstructionMaterial
P	Length of Flume, measured in metres	data - decimal number
Q	Width of Flume, measured in metres	data - decimal number
R	Position in channel (true right/true left bank, channel bed)	Select from pick list domPositionInChannel
S	Accessibility, ease of access?	Select from pick list domAccessibility
T	Ownership?	Select from pick list domOwnership

LD06: Flume



Additional Information

LAND DRAINAGE ASSETS

Name	Ford (Point)
Point Type	LD07 "Point Asset Inputs"



**Ford
X Y**



LD07: Ford

CAT Column	SAG Description	Valid Values
A	Type of point feature	LD07
B	LEAVE BLANK	
C	Existing or New Asset	Select from pick list: domExistingOrNew
D	Differs from design (yes/no)	Select from pick list: domDiffersFromDesign
E	Unique identifier from drawing	data - text
F	Centre of structure in Easting coordinate	data - decimal number
G	Centre of structure in Northing coordinate	data - decimal number
H	LEAVE BLANK	
I	Location certainty - accuracy of data	Select from pick list: domLocationCertainty
J	Date of commission	data - date (dd/mm/yyyy)
K	Date of 'survey-start'	data - date (dd/mm/yyyy)
L	Guideline revision used for survey	Select from pick list: domSurveyGuidelineID
M	Long Description - Any important/unusual notes that otherwise would not be captured.	data - text (70 Characters)
N	File name of photo.	data - text (30 Characters)
O	Primary construction material	Select from pick list: domWLDConstructionMaterial
P	Length of Ford, measured in metres	data - decimal number
Q	Width of Ford, measured in metres	data - decimal number
R	Position in channel (true right/true left bank, channel bed)	Select from pick list domPositionInChannel
S	Accessibility, ease of access?	Select from pick list domAccessibility
T	Ownership?	Select from pick list domOwnership



Additional Information

LAND DRAINAGE ASSETS

Name	Ladder (Point)
Point Type	LD08 "Point Asset Inputs"



**Ladder
X Y**




Cast in rungs

LD08: Ladder

CAT Column	SAG Description	Valid Values
A	Type of point feature	LD08
B	LEAVE BLANK	
C	Existing or New Asset	Select from pick list: domExisitngOrNew
D	Differs from design (yes/no)	Select from pick list: domDiffersFromDesign
E	Unique identifier from drawing	data - text
F	Centre of structure in Easting coordinate	data - decimal number
G	Centre of structure in Northing coordinate	data - decimal number
H	LEAVE BLANK	
I	Location certainty - accuracy of data	Select from pick list: domLocationCertainty
J	Date of commission	data - date (dd/mm/yyyy)
K	Date of 'survey-start'	data - date (dd/mm/yyyy)
L	Guideline revision used for survey	Select from pick list: domSurveyGuidelineID
M	Long Description - Any important/unusual notes that otherwise would not be captured.	data - text (70 Characters)
N	File name of photo.	data - text (30 Characters)
O	Primary construction material	Select from pick list: domWLDCConstructionMaterial
P	Position in channel (true right/true left bank, channel bed)	Select from pick list domPositionInChannel
Q	Accessibility, ease of access?	Select from pick list domAccessibility
R	Ownership?	Select from pick list domOwnership

Additional Information

LAND DRAINAGE ASSETS

Name		Valve (Point)	
Point Type		LD09 "Point Asset Inputs"	
CAT Column	SAG Description	Valid Values	
A	Type of point feature	LD09	
B	Type of Valve	Select from pick list: domValveType	
C	Existing or New Asset	Select from pick list: domExisitngOrNew	
D	Differs from design (yes/no)	Select from pick list: domDiffersFromDesign	
E	Unique identifier from drawing	data - text	
F	Centre of structure in Easting coordinate	data - decimal number	
G	Centre of structure in Northing coordinate	data - decimal number	
H	LEAVE BLANK		
I	Location certainty - accuracy of data	Select from pick list: domLocationCertainty	
J	Date of commission	data - date (dd/mm/yyyy)	
K	Date of 'survey-start'	data - date (dd/mm/yyyy)	
L	Guideline revision used for survey	Select from pick list: domSurveyGuidelineID	
M	Long Description - Any important/unusual notes that otherwise would not be captured.	data - text (70 Characters)	
N	File name of photo.	data - text (30 Characters)	
O	Primary construction material	Select from pick list: domWLDConstructionMaterial	
P	Fish pass? Does the valve/penstock allow fish to pass?	Select from pick list domFishPass	
Q	Valve normal operating position - open or closed	Select from pick list: domValveNormalOperating	
R	Main function of valve	Select from pick list: domValveFunction	
S	Valve Control Point	Select from pick list: domValveControlPoint	
T	Manual or motorised valve	Select from pick list: domValveActuation	
U	Position in channel (true right/true left bank, channel bed)	Select from pick list domPositionInChannel	
V	Accessibility, ease of access?	Select from pick list domAccessibility	
W	Ownership?	Select from pick list domOwnership	
Additional Information			

LD09: Valve

**Valve
X Y**




Radial Gate



Penstock

LAND DRAINAGE ASSETS

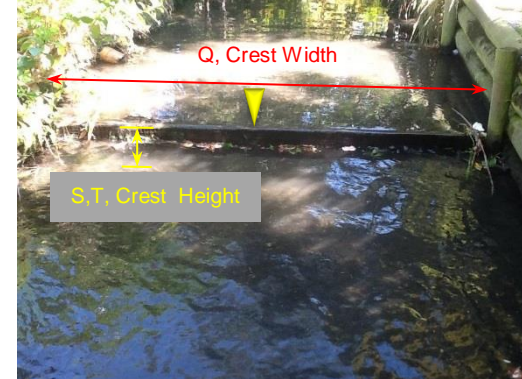
Name		Weir (Point)	
Point Type		LD10 "Point Asset Inputs"	
CAT Column	SAG Description	Valid Values	
A	Type of point feature	LD10	
B	Type of Weir	Select from Pick List domWeirType	
C	Existing or New Asset	Select from pick list: domExisitngOrNew	
D	Differs from design (yes/no)	Select from pick list: domDiffersFromDesign	
E	Unique identifier from drawing	data - text	
F	Centre of structure in Easting coordinate	data - decimal number	
G	Centre of structure in Northing coordinate	data - decimal number	
H	LEAVE BLANK		
I	Location certainty - accuracy of data	Select from pick list: domLocationCertainty	
J	Date of commission	data - date (dd/mm/yyyy)	
K	Date of 'survey-start'	data - date (dd/mm/yyyy)	
L	Guideline revision used for survey	Select from pick list: domSurveyGuidelinID	
M	Long Description - Any important/unusual notes that otherwise would not be captured.	data - text (70 Characters)	
N	File name of photo.	data - text (30 Characters)	
O	Primary construction material	Select from pick list: domWLDConstructionMaterial	
P	Fish pass? Does the weir allow fish to pass?	Select from pick list domFishPass	
Q	Crest width (normal overflow width), measured in metres	data - decimal number	
R	Full width of weir between banks	data - decimal number	
S	Minimum overflow crest height, from crest to downstream bed level, measured in metres	data - decimal number	
T	Maximum overflow crest height, from crest to downstream bed level, measured in metres	data - decimal number	
U	Position in channel (true right/true left bank, channel bed)	Select from pick list domPositionInChannel	
V	Accessibility, ease of access?	Select from pick list domAccessibility	
W	Ownership?	Select from pick list domOwnership	
Additional Information			

LD10: Weir

**Weir
XY**



V Notch



Rectangular

LAND DRAINAGE ASSETS

Name: **Bridge (Outline)**
 Polygon Type: **LD11 "Polygon Asset Inputs "**



Bridge X Y

LD11: Bridge

CAT Column	SAG Description	Valid Values
A	Type of polygon feature	LD11
B	Specific type of bridge traffic	Select from pick list: domBridgeTrafficType
C	Existing or New Asset	Select from pick list: domExistingOrNew
D	Differs from design (yes/no)	Select from pick list: domDiffersFromDesign
E	Unique identifier from drawing	data - text
F	Polygon Vertex Easting coordinate	data - decimal number
G	Polygon Vertex Northing coordinate	data - decimal number
H	Order of vertex/point along polygon	data - number
I	Location certainty - accuracy of data	Select from pick list: domLocationCertainty
J	Date of commission	data - date (dd/mm/yyyy)
K	Date of 'survey-start'	data - date (dd/mm/yyyy)
L	Guideline revision used for survey	Select from pick list: domSurveyGuidelineID
M	Long Description - explanation, further details, or location within park	data - text (70 Characters)
N	File name of photo. Photo must be supplied.	data - text (30 Characters)
O	Beam Construction Material -	Select from pick list: domBeamConstructionMaterial
P	Abutment Construction Material	Select from pick list: domAbutmentConstructMaterial
Q	Support Construction Material	Select from pick list: domSupportConstructMaterial
R	Deck Wearing Surface	Select from pick list: domDeckWearingSurface
S	Number of Spans - spans = abutments + supports - 1	data - number
T	Design Loading	Select from pick list: domDesignLoading
U	Meets Accessibility Standard?	Select from pick list: domMeetsAccessibilityStandard
V	Length - measured in metres	data - decimal number
W	Width - measured in metres	data - decimal number
X	Fall Height - measured in metres	data - decimal number
Y	Safety Barrier - Is there a safety barrier installed?	Select from pick list domSafetyBarrier
Z	Ownership - who the bridge belongs to	Select from pick list: domOwnership



Deck Support Beam Abutment

This is a footbridge with concrete abutments, wooden supports, wooden beams and a wooden deck. Abutments are difficult to see in this photo.

All corner points along outline to be surveyed.
 Create one CAT row per surveyed point.

Additional Information
 If a bridge is primarily used to access waterway or storm water reticulation assets, and is not accessible by the public, then it is a land drainage asset, otherwise it is likely a park or transport asset.

LAND DRAINAGE ASSETS

Name	Instrumentation (Point)
Point Type	LD12 "Point Asset Inputs"



**Instrumentation
X Y**




Staff Gauge

LD12: Instrumentation

CAT Column	SAG Description	Valid Values
A	Type of point feature	LD12
B	Type of Instrumentation	Select from pick list domInstrumentation
C	Existing or New Asset	Select from pick list: domExistingOrNew
D	Differs from design (yes/no)	Select from pick list: domDiffersFromDesign
E	Unique identifier from drawing	data - text
F	Centre of structure in Easting coordinate	data - decimal number
G	Centre of structure in Northing coordinate	data - decimal number
H	LEAVE BLANK	
I	Location certainty - accuracy of data	Select from pick list: domLocationCertainty
J	Date of commission	data - date (dd/mm/yyyy)
K	Date of 'survey-start'	data - date (dd/mm/yyyy)
L	Guideline revision used for survey	Select from pick list: domSurveyGuidelineID
M	Long Description - Any important/unusual notes that otherwise would not be captured.	data - text (70 Characters)
N	File name of photo.	data - text (30 Characters)
O	Primary construction material	Select from pick list: domWLDConstructionMaterial
P	Position in channel (true right/true left bank, channel bed)	Select from pick list domPositionInChannel
Q	Accessibility, ease of access?	Select from pick list domAccessibility
R	Ownership?	Select from pick list domOwnership

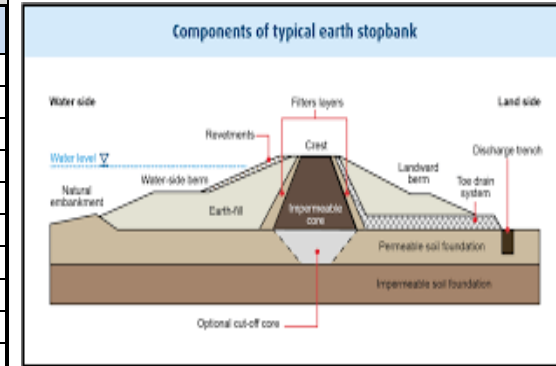
Additional Information

LAND DRAINAGE ASSETS

Name		Embankment (Polygon)
Polygon Type		LD13 "Polygon Asset Inputs" 
CAT Column	SAG Description	Valid Values
A	Type of Polygon feature	LD13
B	Type of Embankment	Select from picklist : domEmbankmentType
C	Existing or New Asset	Select from pick list: domExistingOrNew
D	Differs from design (yes/no)	Select from pick list: domDiffersFromDesign
E	Unique identifier from drawing	data - text
F	Polygon vertex Easting coordinate	data - decimal number
G	Polygon vertex Northing coordinate	data - decimal number
H	Order of vertex / point along polygon	data - number
I	Location certainty - approximate, within 1m is sufficient	Select from pick list: domLocationCertainty
J	Date of commission	data - date (dd/mm/yyyy)
K	Date of 'survey-start'	data - date (dd/mm/yyyy)
L	Guideline revision used for survey	Select from pick list: domSurveyGuidelineID
M	Long Description - Any important/unusual notes that otherwise would not be captured.	data - text (70 Characters)
N	File name of photo.	data - text (30 Characters)
O	Primary construction material	Select from pick list: domWLDCConstructionMaterial
P	Embankment Purpose	Select from pick list: domEmbankmentPurpose
Q	Crest Width – average width measured in metres	data - decimal number
R	Base Width – average width measured in metres	data - decimal number
S	Maximum crest level – height(RL) of the highest crest point along the stopbank section	data - decimal number
T	Minimum crest level – height(RL) of the lowest crest point along the stopbank section	data - decimal number
U	Design return period, storm event it was designed to accommodate	Select from pick list domReturnPeriod
V	Position in channel (true right/true left bank, channel bed)	Select from pick list domPositionInChannel
W	Accessibility, ease of access?	Select from pick list domAccessibility
X	Ownership?	Select from pick list domOwnership

LD13: Embankment


**Embankment
XY**



All corner points along line to be surveyed.
Create one CAT row per surveyed point.

Additional Information

LAND DRAINAGE ASSETS

Name	Storm Water Basin (Polygon)	
Polygon Type	LD14 "Polygon Asset Inputs"	

Storm Water Basin
X Y



LD14: Storm Water Basin

CAT Column	SAG Description	Valid Values
A	Type of polygon feature	LD14
B	Type of Basin	Select from pick list: domBasinType
C	Existing or New Asset	Select from pick list: domExisitngOrNew
D	Differs from design (yes/no)	Select from pick list: domDiffersFromDesign
E	Unique identifier from drawing	data - text
F	Polygon vertex Easting coordinate at feature's breach point	data - decimal number
G	Polygon vertex Northing coordinate at feature's breach point	data - decimal number
H	Order of vertex / point along polygon	data - number
I	Location certainty - accuracy of data	Select from pick list: domLocationCertainty
J	Date of commission	data - date (dd/mm/yyyy)
K	Date of 'survey-start'	data - date (dd/mm/yyyy)
L	Guideline revision used for survey	Select from pick list: domSurveyGuidelineID
M	Long Description - Any important/unusual notes that otherwise would not be captured.	data - text (70 Characters)
N	File name of photo.	data - text (30 Characters)
O	Basin Liner type	Select from pick list: domBasinLinerType
P	Foundation material of the bank	Select from pick list: domWLDCConstructionMaterial
Q	Lining material of the structure	Select from pick list: domWLDCConstructionMaterial
R	Base area of the storage system in square metres(m2)	data - number
S	Level of base of asset, measured in metres (m)	data – decimal number
T	Volume of storage system when full, measured in cubic metres(m3)	data - number
U	Level of water at full capacity of system in metres (m)	data – decimal number
V	Water area of the storage system at full capacity in square metres(m2)	data - number
W	Maximum depth of the structure in metres(m)	data – decimal number
X	RL of the water when the asset is in its normal sate in metres(m)	data – decimal number
Y	RL of the structures breach point in metres(m)	data – decimal number
Z	Ownership?	Select from pick list domOwnership

Additional Information

All corner points along outline to be surveyed.
Create one CAT row per surveyed point.