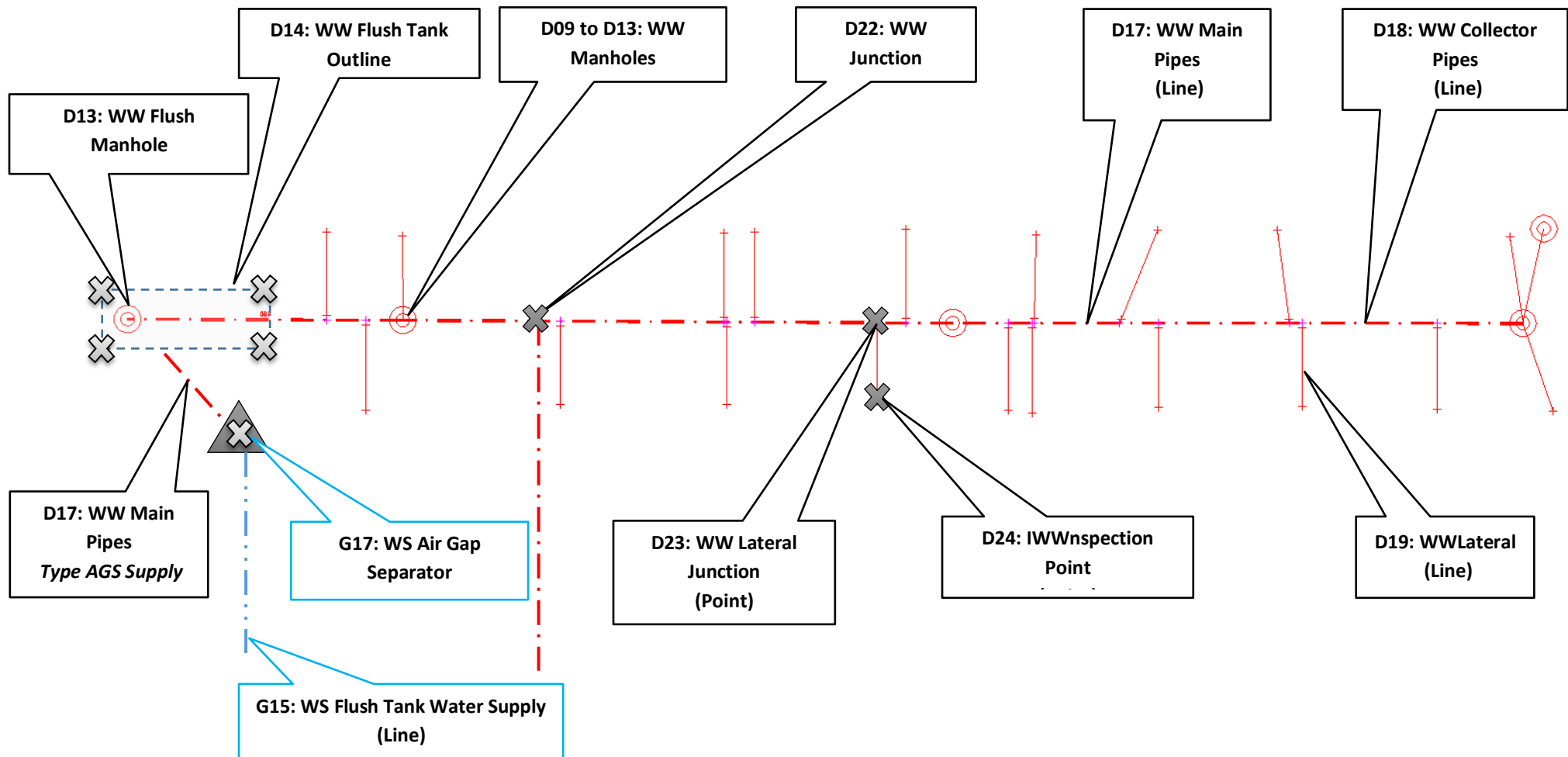


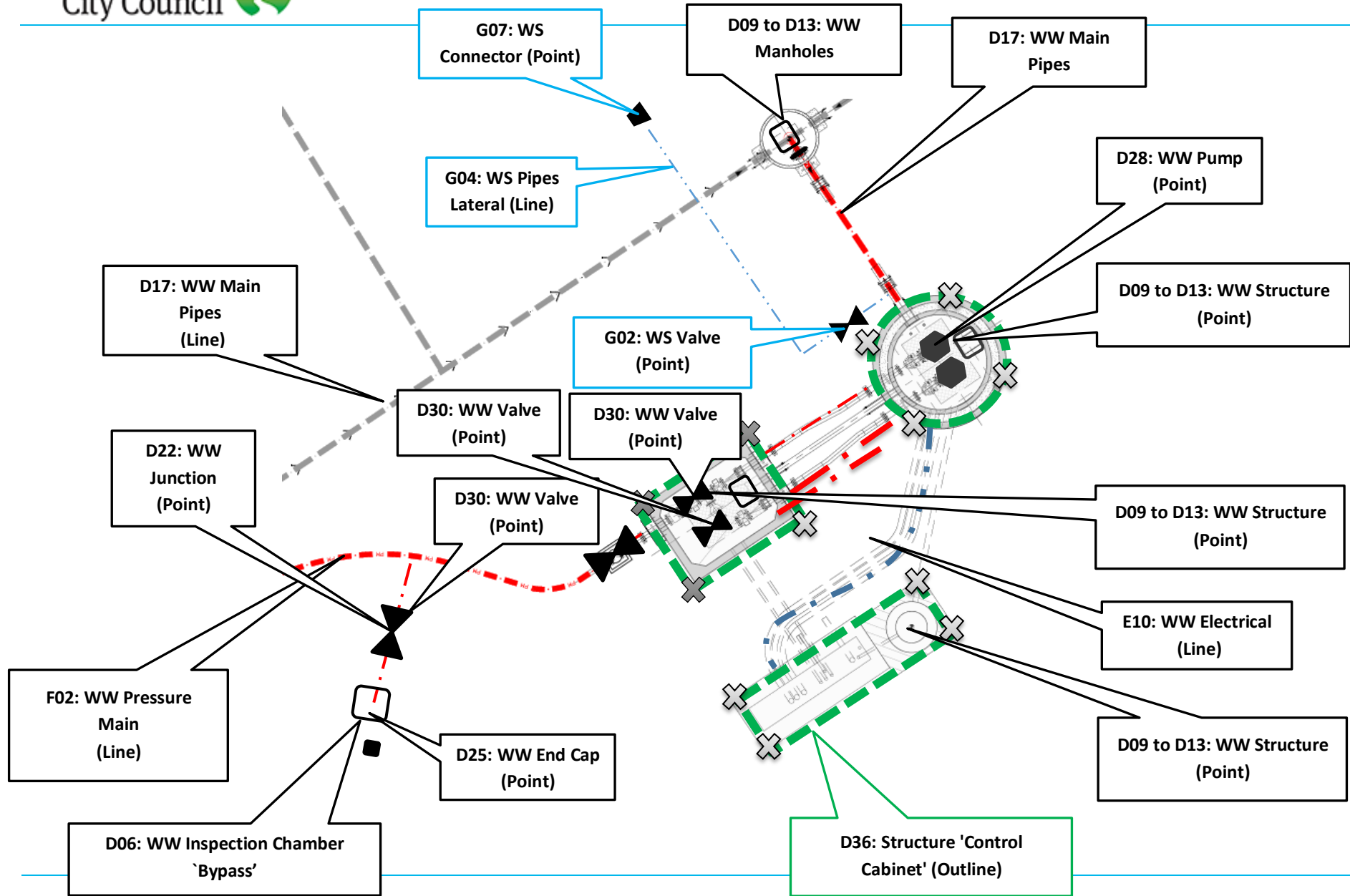
Appendix D As-built Requirements for Gravity Wastewater

Appendix D As-built Requirements for Gravity Wastewater.....	1
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D09: WW Square Manhole Vented.....	6
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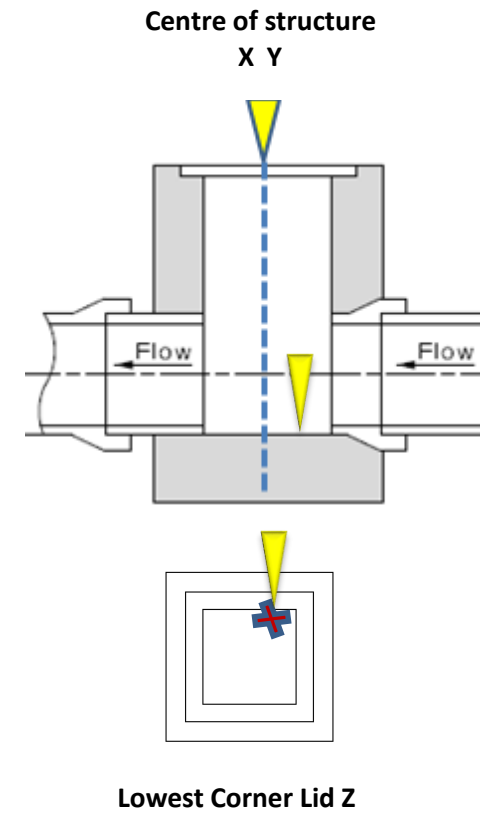


Gravity Wastewater – Overview



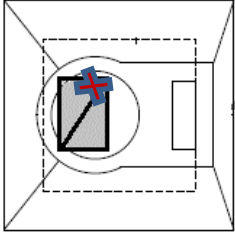
Pumping Station – Overview

As-Built requirements (WW)			
D06: WW Inspection Chamber	Name	WW Inspection Chamber (Point)	
	Point Type	D06 "Point Asset Inputs"	
	CAT Column	SAG Description	Valid Values
	A	Type of Point Feature	D06
	B	Type of Manhole or Access	Inspection Chamber
	C	Asset Record Capture Type	Select from pick list: domAssetRecordCaptureType
	D	Differs from design (yes/no)	Select from pick list: domDiffersFromDesign
	E	Asset Unique Identifier	data - Text (100 Characters)
	F	Centre of Structure in Easting coordinate - (m)	data - Decimal Number (12 Chars, 2 Decimals)
	G	Centre of Structure in Northing coordinate - (m)	data - Decimal Number (12 Chars, 2 Decimals)
	H	RL on lowest corner of lid - (m)	data - Decimal Number (6 Chars, 3 Decimals)
	I	RL at base of pit (lowest point) - (m)	data - Decimal Number (6 Chars, 3 Decimals)
	J	Width and length of pit (e.g. 600x800) or diameter of pit - (mm)	data - Number
	K	Date of commission	data - Date (dd/mm/yyyy)
	L	Location certainty - accuracy of data	Select from pick list: domLocationCertainty
	M	Name of main contractor who installed the asset	Select from pick list: domInstallationCompany
	N	Date of 'survey start'	data - Date (dd/mm/yyyy)
	O	Style of access lid	Select from pick list: domAccessLidStyle
	P	Shape of access lid	Select from pick list: domAccessLidShape
	Q	Manufacturer of asset	Select from pick list: domManufacturer
R	Construction material	Select from pick list: domAccessConstruction	
S	Type of security on access	Select from pick list: domAccessSecurity	
T	Pit angle - orientation of inner structure to nearest 5 degrees (rectangular pits only) - (degrees)	data - Number	
U	Treatment material for refurbished manholes	Select from pick list: domAccessTreatmentType	
V	Type of Flood Protection	Select from pick list: domWwAccessFloodProtectionType	
W	Construction material of Vent Plug	Select from pick list: domWwAccessVentPlugConstruction	
Additional Information			
*All other columns must be left "blank" or hold the value "LEAVE BLANK" as default in CAT Col T: leave blank/unchanged for circular chambers Col U: leave blank/unchanged if N/A See Appendix C.1.1 for a CAT example.			

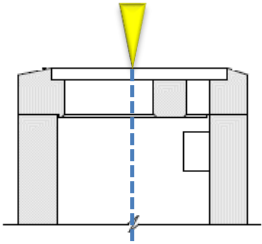


As-Built requirements (WW)			
D09: WW Square Manhole Vented	Name	WW Square Manhole Vented (Point)	
	Point Type	D09 "Point Asset Inputs"	
	CAT Column	SAG Description	Valid Values
	A	Type of Point Feature	D09
	B	Type of Manhole or Access	Select from pick list: domWwAccessType
	C	Asset Record Capture Type	Select from pick list: domAssetRecordCaptureType
	D	Differs from design (yes/no)	Select from pick list: domDiffersFromDesign
	E	Asset Unique Identifier	data - Text (100 Characters)
	F	Centre of Structure in Easting coordinate - (m)	data - Decimal Number (12 Chars, 2 Decimals)
	G	Centre of Structure in Northing coordinate - (m)	data - Decimal Number (12 Chars, 2 Decimals)
H	RL on lowest corner of lid - (m)	data - Decimal Number (6 Chars, 3 Decimals)	
I	RL at base of pit (lowest point) - (m)	data - Decimal Number (6 Chars, 3 Decimals)	
J	Width and length of pit (e.g. 600x800) or diameter of pit - (mm)	data - Number	
K	Date of commission	data - Date (dd/mm/yyyy)	
L	Location certainty - accuracy of data	Select from pick list: domLocationCertainty	
M	Name of main contractor who installed the asset	Select from pick list: domInstallationCompany	
N	Date of 'survey start'	data - Date (dd/mm/yyyy)	
O	Style of access lid	Select from pick list: domAccessLidStyle	
P	Shape of access lid	Select from pick list: domAccessLidShape	
Q	Manufacturer of asset	Select from pick list: domManufacturer	
R	Construction material	Select from pick list: domAccessConstruction	
S	Type of security on access	Select from pick list: domAccessSecurity	
T	Pit angle - orientation of inner structure to nearest 5 degrees (rectangular pits only) - (degrees)	data - Number	
U	Treatment material for refurbished manholes	Select from pick list: domAccessTreatmentType	
V	Type of Flood Protection	Select from pick list: domWwAccessFloodProtectionType	
W	Construction material of Vent Plug	Select from pick list: domWwAccessVentPlugConstruction	
Additional Information			
*All other columns must be left "blank" or hold the value "LEAVE BLANK" as default in CAT Col U: leave blank/unchanged if N/A See Appendix C.1.1 for a CAT example.			

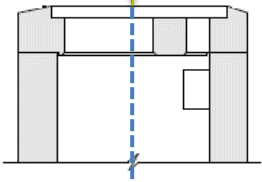
Lowest Corner Lid Z



Centre of structure X Y

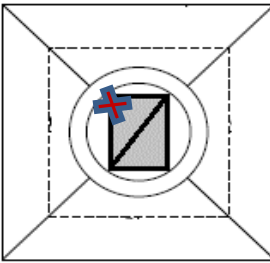


Manhole Base RL Z

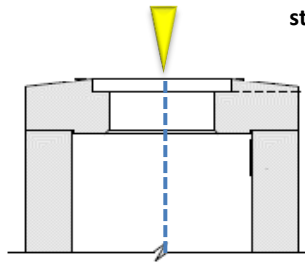


As-Built requirements (WW)			
D10: WW Square Manhole Non Vented	Name	WW Square Manhole Non Vented (Point)	
	Point Type	D10 "Point Asset Inputs"	
	CAT Column	SAG Description	Valid Values
	A	Type of Point Feature	D10
	B	Type of Manhole or Access	Select from pick list: domWwAccessType
	C	Asset Record Capture Type	Select from pick list: domAssetRecordCaptureType
	D	Differs from design (yes/no)	Select from pick list: domDiffersFromDesign
	E	Asset Unique Identifier	data - Text (100 Characters)
	F	Centre of Structure in Easting coordinate - (m)	data - Decimal Number (12 Chars, 2 Decimals)
	G	Centre of Structure in Northing coordinate - (m)	data - Decimal Number (12 Chars, 2 Decimals)
H	RL on lowest corner of lid - (m)	data - Decimal Number (6 Chars, 3 Decimals)	
I	RL at base of pit (lowest point) - (m)	data - Decimal Number (6 Chars, 3 Decimals)	
J	Width and length of pit (e.g. 600x800) or diameter of pit - (mm)	data - Number	
K	Date of commission	data - Date (dd/mm/yyyy)	
L	Location certainty - accuracy of data	Select from pick list: domLocationCertainty	
M	Name of main contractor who installed the asset	Select from pick list: domInstallationCompany	
N	Date of 'survey start'	data - Date (dd/mm/yyyy)	
O	Style of access lid	Select from pick list: domAccessLidStyle	
P	Shape of access lid	Select from pick list: domAccessLidShape	
Q	Manufacturer of asset	Select from pick list: domManufacturer	
R	Construction material	Select from pick list: domAccessConstruction	
S	Type of security on access	Select from pick list: domAccessSecurity	
T	Pit angle - orientation of inner structure to nearest 5 degrees (rectangular pits only) - (degrees)	data - Number	
U	Treatment material for refurbished manholes	Select from pick list: domAccessTreatmentType	
V	Type of Flood Protection	Select from pick list: domWwAccessFloodProtectionType	
W	Construction material of Vent Plug	Select from pick list: domWwAccessVentPlugConstruction	
Additional Information			
*All other columns must be left "blank" or hold the value "LEAVE BLANK" as default in CAT Col U: leave blank/unchanged if N/A See Appendix C.1.1 for a CAT example.			

Lowest Corner Lid Z



Centre of structure X Y

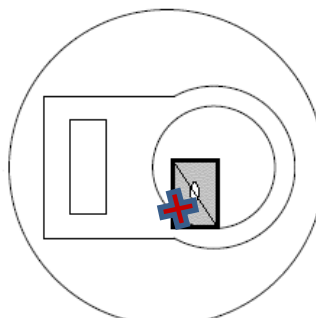


Manhole Base RL Z

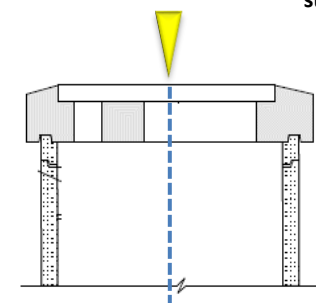
As-Built requirements (WW)		
Name	WW Circular Manhole Vented (Point)	
	Point Type	D11 "Point Asset Inputs"
CAT Column	SAG Description	Valid Values
A	Type of Point Feature	D11
B	Type of Manhole or Access	Select from pick list: domWwAccessType
C	Asset Record Capture Type	Select from pick list: domAssetRecordCaptureType
D	Differs from design (yes/no)	Select from pick list: domDiffersFromDesign
E	Asset Unique Identifier	data - Text (100 Characters)
F	Centre of Structure in Easting coordinate - (m)	data - Decimal Number (12 Chars, 2 Decimals)
G	Centre of Structure in Northing coordinate - (m)	data - Decimal Number (12 Chars, 2 Decimals)
H	RL on lowest corner of lid - (m)	data - Decimal Number (6 Chars, 3 Decimals)
I	RL at base of pit (lowest point) - (m)	data - Decimal Number (6 Chars, 3 Decimals)
J	Width and length of pit (e.g. 600x800) or diameter of pit - (mm)	data - Number
K	Date of commission	data - Date (dd/mm/yyyy)
L	Location certainty - accuracy of data	Select from pick list: domLocationCertainty
M	Name of main contractor who installed the asset	Select from pick list: domInstallationCompany
N	Date of 'survey start'	data - Date (dd/mm/yyyy)
O	Style of access lid	Select from pick list: domAccessLidStyle
P	Shape of access lid	Select from pick list: domAccessLidShape
Q	Manufacturer of asset	Select from pick list: domManufacturer
R	Construction material	Select from pick list: domAccessConstruction
S	Type of security on access	Select from pick list: domAccessSecurity
T	Leave Blank	Leave Blank
U	Treatment material for refurbished manholes	Select from pick list: domAccessTreatmentType
V	Type of Flood Protection	Select from pick list: domWwAccessFloodProtectionType
W	Construction material of Vent Plug	Select from pick list: domWwAccessVentPlugConstruction
Additional Information		
*All other columns must be left "blank" or hold the value "LEAVE BLANK" as default in CAT Col U: leave blank/unchanged if N/A See Appendix C.1.1 for a CAT example.		

D11: WW Circular Manhole Vented

Lowest Corner Lid Z



Centre of structure X Y



Manhole Base RL Z

As-Built requirements (WW)			
D12: WW Circular Manhole Non Vented	Name	WW Circular Manhole Non Vented (Point)	
	Point Type	D12 "Point Asset Inputs"	
	CAT Column	SAG Description	Valid Values
	A	Type of Point Feature	D12
	B	Type of Manhole or Access	Select from pick list: domWwAccessType
	C	Asset Record Capture Type	Select from pick list: domAssetRecordCaptureType
	D	Differs from design (yes/no)	Select from pick list: domDiffersFromDesign
	E	Asset Unique Identifier	data - Text (100 Characters)
	F	Centre of Structure in Easting coordinate - (m)	data - Decimal Number (12 Chars, 2 Decimals)
	G	Centre of Structure in Northing coordinate - (m)	data - Decimal Number (12 Chars, 2 Decimals)
H	RL on lowest corner of lid - (m)	data - Decimal Number (6 Chars, 3 Decimals)	
I	RL at base of pit (lowest point) - (m)	data - Decimal Number (6 Chars, 3 Decimals)	
J	Width and length of pit (e.g. 600x800) or diameter of pit - (mm)	data - Number	
K	Date of commission	data - Date (dd/mm/yyyy)	
L	Location certainty - accuracy of data	Select from pick list: domLocationCertainty	
M	Name of main contractor who installed the asset	Select from pick list: domInstallationCompany	
N	Date of 'survey start'	data - Date (dd/mm/yyyy)	
O	Style of access lid	Select from pick list: domAccessLidStyle	
P	Shape of access lid	Select from pick list: domAccessLidShape	
Q	Manufacturer of asset	Select from pick list: domManufacturer	
R	Construction material	Select from pick list: domAccessConstruction	
S	Type of security on access	Select from pick list: domAccessSecurity	
T	Leave Blank	Leave Blank	
U	Treatment material for refurbished manholes	Select from pick list: domAccessTreatmentType	
V	Type of Flood Protection	Select from pick list: domWwAccessFloodProtectionType	
W	Construction material of Vent Plug	Select from pick list: domWwAccessVentPlugConstruction	
Additional Information			
*All other columns must be left "blank" or hold the value "LEAVE BLANK" as default in CAT Col U: leave blank/unchanged if N/A See Appendix C.1.1 for a CAT example.			

Lowest Corner Lid Z

Centre of structure X Y

Manhole Base RL Z

As-Built requirements (WW)			
D13: WW Flush Manhole	Name	WW Flush Manhole (Point)	
	Point Type	D13 "Point Asset Inputs"	
	CAT Column	SAG Description	Valid Values
	A	Type of Point Feature	D13
	B	Type of Manhole or Access	Select from pick list: domWwAccessType
	C	Asset Record Capture Type	Select from pick list: domAssetRecordCaptureType
	D	Differs from design (yes/no)	Select from pick list: domDiffersFromDesign
	E	Asset Unique Identifier	data - Text (100 Characters)
	F	Centre of Structure in Easting coordinate - (m)	data - Decimal Number (12 Chars, 2 Decimals)
	G	Centre of Structure in Northing coordinate - (m)	data - Decimal Number (12 Chars, 2 Decimals)
H	RL on lowest corner of lid - (m)	data - Decimal Number (6 Chars, 3 Decimals)	
I	RL at base of pit (lowest point) - (m)	data - Decimal Number (6 Chars, 3 Decimals)	
J	Width and length of pit (e.g. 600x800) or diameter of pit - (mm)	data - Number	
K	Date of commission	data - Date (dd/mm/yyyy)	
L	Location certainty - accuracy of data	Select from pick list: domLocationCertainty	
M	Name of main contractor who installed the asset	Select from pick list: domInstallationCompany	
N	Date of 'survey start'	data - Date (dd/mm/yyyy)	
O	Style of access lid	Select from pick list: domAccessLidStyle	
P	Shape of access lid	Select from pick list: domAccessLidShape	
Q	Manufacturer of asset	Select from pick list: domManufacturer	
R	Construction material	Select from pick list: domAccessConstruction	
S	Type of security on access	Select from pick list: domAccessSecurity	
T	Pit angle - orientation of inner structure to nearest 5 degrees (rectangular pits only) - (degrees)	data - Number	
U	Treatment material for refurbished manholes	Select from pick list: domAccessTreatmentType	
V	Type of Flood Protection	Select from pick list: domWwAccessFloodProtectionType	
W	Construction material of Vent Plug	Select from pick list: domWwAccessVentPlugConstruction	
Additional Information			
*All other columns must be left "blank" or hold the value "LEAVE BLANK" as default in CAT Col T: leave blank/unchanged for circular manholes Col U: leave blank/unchanged if N/A See Appendix C.1.1 for a CAT example.			


Lowest Corner Lid Z

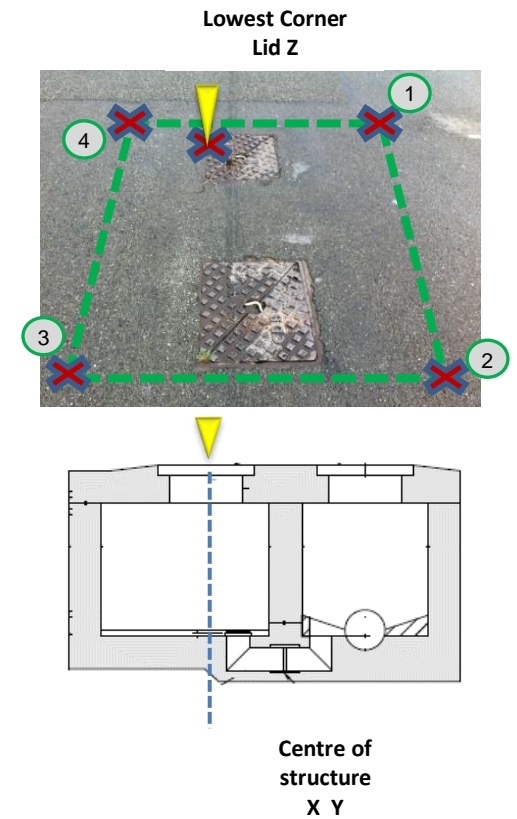
**Centre of structure
X Y**

**Manhole Base RL
Z**

As-Built requirements (WW)


D14: WW Flush Tank

Name		WW Flush Tank (Outline)
Polygon Type		D14 "Polygon Asset Inputs" 
CAT Column	SAG Description	Valid Values
A	Type of Polygon Feature	D14
B	Type of Flush Tank	Select from pick list: domWwFlushTankType
C	Asset Record Capture Type	Select from pick list: domAssetRecordCaptureType
D	Differs from design (yes/no)	Select from pick list: domDiffersFromDesign
E	Asset Unique Identifier	data - Text (100 Characters)
F	Polygon Vertex Easting coordinate - (m)	data - Decimal Number (12 Chars, 2 Decimals)
G	Polygon Vertex Northing coordinate - (m)	data - Decimal Number (12 Chars, 2 Decimals)
H	RL on lowest corner of lid - (m)	data - Decimal Number (6 Chars, 3 Decimals)
I	Number of Vertex (point along outline)	data - Number
J	Construction material	Select from pick list: domAccessConstruction
K	Manufacturer of asset	Select from pick list: domManufacturer
L	Name of main contractor who installed the asset	Select from pick list: domInstallationCompany
M	Date of commission	data - Date (dd/mm/yyyy)
N	Location certainty - accuracy of data	Select from pick list: domLocationCertainty
O	Date of 'survey start'	data - Date (dd/mm/yyyy)
P	Capacity of tank in litres - (Litres)	data - Number
Q	Shape of access lid	Select from pick list: domAccessLidShape
R	Type of security on access	Select from pick list: domAccessSecurity
S	Flushing interval of tank (pick closest)	Select from pick list: domWwFlushTankFrequency
T	How is the tank operated	Select from pick list: domWwFlushTankOperation
Additional Information		
<p>*All other columns must be left "blank" or hold the value "LEAVE BLANK" as default in CAT</p> <p>All corner points along outline to be surveyed. Create one CAT row per surveyed point. This feature requires at least three row entries.</p> <p>Col I: enter number of vertex along outline</p> <p>Col P: refers to the operational capacity of the tank</p> <p>See Appendix C.3.1 for a CAT example.</p>		

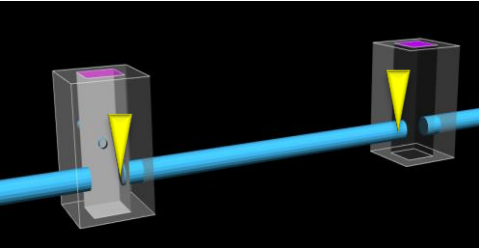


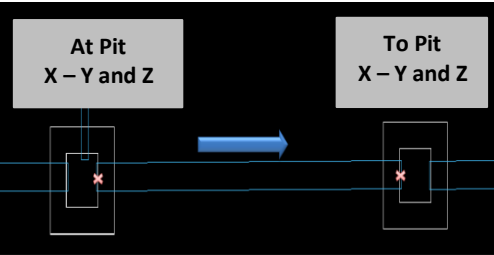
As-Built requirements (WW)			
D16: WW Air Gap Separator	Name	WW Air Gap Separator (Point)	
	Point Type	D16 "Point Asset Inputs"	
	CAT Column	SAG Description	Valid Values
	A	Type of Point Feature	D16
	B	Type of Air Gap Separator	Air Gap Separator
	C	Asset Record Capture Type	Select from pick list: domAssetRecordCaptureType
	D	Differs from design (yes/no)	Select from pick list: domDiffersFromDesign
	E	Asset Unique Identifier	data - Text (100 Characters)
	F	Centre of structure in Easting coordinate - (m)	data - Decimal Number (12 Chars, 2 Decimals)
	G	Centre of structure in Northing coordinate - (m)	data - Decimal Number (12 Chars, 2 Decimals)
	H	Leave Blank	Leave Blank
	I	Leave Blank	Leave Blank
	J	Nominal diameter in mm - (mm)	Select from pick list: domAirGapSeparatorNominalDiameter
	K	Date of commission	data - Date (dd/mm/yyyy)
	L	Location certainty - accuracy of data	Select from pick list: domLocationCertainty
	M	Name of main contractor who installed the asset	Select from pick list: domInstallationCompany
	N	Date of 'survey start'	data - Date (dd/mm/yyyy)
	O	Leave Blank	Leave Blank
	P	Leave Blank	Leave Blank
Q	Manufacturer of asset	Select from pick list: domManufacturer	
R	Leave Blank	Leave Blank	
S	Type of security on access	Select from pick list: domAccessSecurity	
Additional Information			
*All other columns must be left "blank" or hold the value "LEAVE BLANK" as default in CAT			



As-Built requirements (WW)			
D17: WW Main Pipes	Name	WW Main Pipes (Line)	
	Line Type	D17 "Line Asset Inputs" 	
	Line features require at least two row entries in the CAT.		
	CAT Column	SAG Description	Valid Values
	A	Type of Line Feature	D17
	B	Type of Pipe	Select from pick list: domWwPipeType
	C	Asset Record Capture Type	Select from pick list: domAssetRecordCaptureType
	D	Differs from design (yes/no)	Select from pick list: domDiffersFromDesign
	E	Asset Unique Identifier	data - Text (100 Characters)
	F	Line Vertex Easting coordinate - (m)	data - Decimal Number (12 Chars, 2 Decimals)
G	Line Vertex Northing coordinate - (m)	data - Decimal Number (12 Chars, 2 Decimals)	
H	Invert level at vertex - (m)	data - Decimal Number (6 Chars, 3 Decimals)	
I	Number of Vertex (point along line)	data - Number	
J	Material of pipe	Select from pick list: domPipeConstruction	
K	Nominal diameter in mm - (mm)	Select from pick list: domPipeNominalDiameter	
L	At Node - Asset Unique Identifier	data - Text (50 Characters)	
M	To Node - Asset Unique Identifier	data - Text (50 Characters)	
N	Manufacturer of asset	Select from pick list: domWwPipeManufacturer	
O	Name of main contractor who installed the asset	Select from pick list: domInstallationCompany	
P	Pressure class (PN)	Select from pick list: domWwPipePressureClass	
Q	Stiffness rating (SN)	Select from pick list: domPipeStiffnessClass	
R	Concrete Load Class	Select from pick list: domPipeLoadClass	
S	Date of commission	data - Date (dd/mm/yyyy)	
T	Location certainty - accuracy of data	Select from pick list: domLocationCertainty	
U	Date of 'survey start'	data - Date (dd/mm/yyyy)	
V	Shape of pipe	Select from pick list: domPipeShape	
W	Leave Blank	Leave Blank	
X	Method by which the pipe was installed	Select from pick list: domPipeInstallationMethod	
Additional Information			
*All other columns must be left "blank" or hold the value "LEAVE BLANK" as default in CAT Col I: enter number of vertex along line starting with the downstream end See Appendix C.2.1 for a CAT example.			


**Centre of structure
X Y and Z**



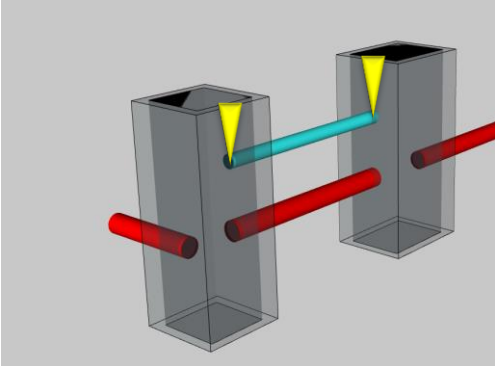
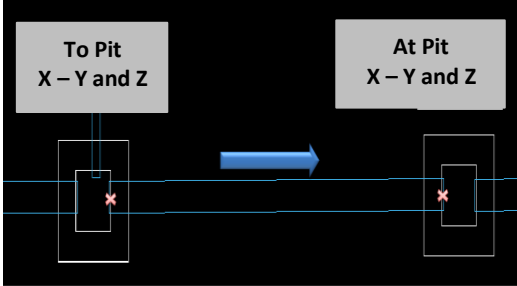


All bends, start/end points to be surveyed.
Create one CAT row per surveyed point.

As-Built requirements (WW)			
D18: WW Collector Pipes	Name	WW Collector Pipes (Line)	
	Line Type	D18 "Line Asset Inputs"	
	Line features require at least two row entries in the CAT.		
	CAT Column	SAG Description	Valid Values
	A	Type of Line Feature	D18
	B	Type of Pipe	Select from pick list: domWwPipeType
	C	Asset Record Capture Type	Select from pick list: domAssetRecordCaptureType
	D	Differs from design (yes/no)	Select from pick list: domDiffersFromDesign
	E	Asset Unique Identifier	data - Text (100 Characters)
	F	Line Vertex Easting coordinate - (m)	data - Decimal Number (12 Chars, 2 Decimals)
G	Line Vertex Northing coordinate - (m)	data - Decimal Number (12 Chars, 2 Decimals)	
H	Invert level at vertex - (m)	data - Decimal Number (6 Chars, 3 Decimals)	
I	Number of Vertex (point along line)	data - Number	
J	Material of pipe	Select from pick list: domPipeConstruction	
K	Nominal diameter in mm - (mm)	Select from pick list: domPipeNominalDiameter	
L	At Node - Asset Unique Identifier	data - Text (50 Characters)	
M	To Node - Asset Unique Identifier	data - Text (50 Characters)	
N	Manufacturer of asset	Select from pick list: domWwPipeManufacturer	
O	Name of main contractor who installed the asset	Select from pick list: domInstallationCompany	
P	Pressure class (PN)	Select from pick list: domWwPipePressureClass	
Q	Stiffness rating (SN)	Select from pick list: domPipeStiffnessClass	
R	Concrete Load Class	Select from pick list: domPipeLoadClass	
S	Date of commission	data - Date (dd/mm/yyyy)	
T	Location certainty - accuracy of data	Select from pick list: domLocationCertainty	
U	Date of 'survey start'	data - Date (dd/mm/yyyy)	
V	Shape of pipe	Select from pick list: domPipeShape	
W	Leave Blank	Leave Blank	
X	Method by which the pipe was installed	Select from pick list: domPipeInstallationMethod	
Additional Information			
*All other columns must be left "blank" or hold the value "LEAVE BLANK" as default in CAT Col I: enter number of vertex along line starting with the downstream end See Appendix C.2.1 for a CAT example.			



**Centre of structure
X Y and Z**

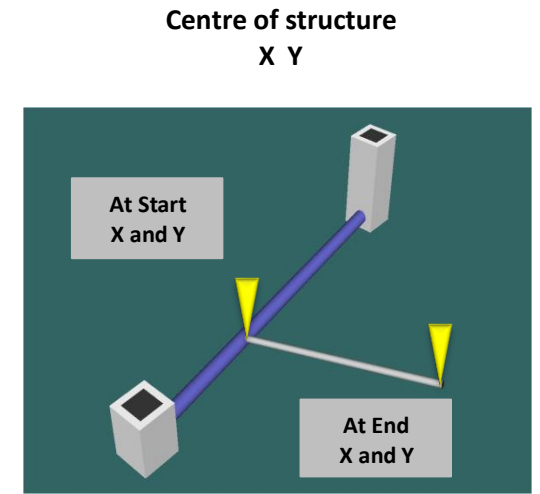



All bends, start/end points to be surveyed. Create one CAT row per surveyed point.


As-Built requirements (WW)

D19: WW Lateral

Name		WW Lateral (Line)
Line Type		D19 "Line Asset Inputs"
Line features require at least two row entries in the CAT.		
CAT Column	SAG Description	Valid Values
A	Type of Line Feature	D19
B	Type of Lateral	Select from pick list: domWwLateralType
C	Asset Record Capture Type	Select from pick list: domAssetRecordCaptureType
D	Differs from design (yes/no)	Select from pick list: domDiffersFromDesign
E	Asset Unique Identifier	data - Text (100 Characters)
F	Line Vertex Easting coordinate - (m)	data - Decimal Number (12 Chars, 2 Decimals)
G	Line Vertex Northing coordinate - (m)	data - Decimal Number (12 Chars, 2 Decimals)
H	Leave Blank	Leave Blank
I	Number of Vertex (point along line)	data - Number
J	Material of pipe	Select from pick list: domPipeConstruction
K	Nominal diameter in mm - (mm)	Select from pick list: domPipeNominalDiameter
L	Leave Blank	Leave Blank
M	Leave Blank	Leave Blank
N	Manufacturer of asset	Select from pick list: domManufacturer
O	Name of main contractor who installed the asset	Select from pick list: domInstallationCompany
P	Pressure class (PN)	Select from pick list: domPipePressureClass
Q	Stiffness rating (SN)	Select from pick list: domPipeStiffnessClass
R	Concrete Load Class	Select from pick list: domPipeLoadClass
S	Date of commission	data - Date (dd/mm/yyyy)
T	Location certainty - accuracy of data	Select from pick list: domLocationCertainty
U	Date of 'survey start'	data - Date (dd/mm/yyyy)
V	Shape of pipe	Select from pick list: domPipeShape
W	Leave Blank	Leave Blank
X	Method by which the pipe was installed	Select from pick list: domPipeInstallationMethod
Y	Leave Blank	Leave Blank
Z	Do several units share this lateral? (yes/no)	Select from pick list: domLateralSharedConnection
AA	Type of lateral junction	Select from pick list: domWwEyeType
AB	Distance of IP from lateral start (from connection to existing private lateral) - (mm)	data - Decimal Number (9 Chars, 3 Decimals)
Additional Information		
*All other columns must be left "blank" or hold the value "LEAVE BLANK" as default in CAT Col I: enter number of vertex along line starting with the downstream end See Appendix C.2.2 for a CAT example.		

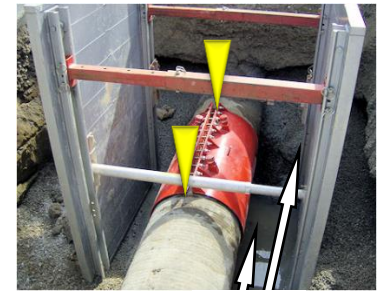
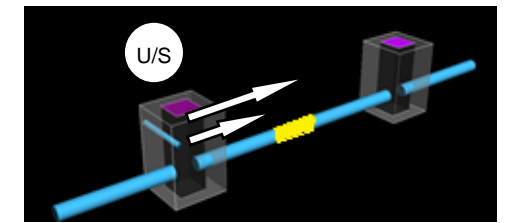


All bends, start/end points to be surveyed.
Create one CAT row per surveyed point.

As-Built requirements (WW)		
Name	WW Repair/Relay Dig (Line)	
Line Type	D20 "Line Asset Inputs" 	
If entered without coordinates, this feature requires only one row per repair.		
CAT Column	SAG Description	Valid Values
A	Type of Line Feature	D20
B	Type of Repair	Select from pick list: domRepairType
C	Asset Record Capture Type	Select from pick list: domAssetRecordCaptureType
D	Differs from design (yes/no)	Select from pick list: domDiffersFromDesign
E	Asset Unique Identifier	data - Text (100 Characters)
F	Line Vertex Easting coordinate - (m)	data - Decimal Number (12 Chars, 2 Decimals)
G	Line Vertex Northing coordinate - (m)	data - Decimal Number (12 Chars, 2 Decimals)
H	Leave Blank	Leave Blank
I	Number of Vertex (point along line)	data - Number
J	Material used for repair	Select from pick list: domRepairConstruction
K	Nominal diameter in mm - (mm)	Select from pick list: domPipeNominalDiameter
L	At Node - Asset Unique Identifier	data - Text (50 Characters)
M	To Node - Asset Unique Identifier	data - Text (50 Characters)
N	Manufacturer of asset	Select from pick list: domManufacturer
O	Name of main contractor who installed the asset	Select from pick list: domInstallationCompany
P	Leave Blank	Leave Blank
Q	Leave Blank	Leave Blank
R	Leave Blank	Leave Blank
S	Date of commission	data - Date (dd/mm/yyyy)
T	Location certainty - accuracy of data	Select from pick list: domLocationCertainty
U	Date of 'survey start'	data - Date (dd/mm/yyyy)
V	Distance from US MH to lining start (m) - (m)	data - Decimal Number (9 Chars, 3 Decimals)
W	Distance from US MH to lining end (m) - (m)	data - Decimal Number (9 Chars, 3 Decimals)
Additional Information		
<p>*All other columns must be left "blank" or hold the value "LEAVE BLANK" as default in CAT Use this feature for dig repairs only (new pipe sections or pipe clamps) – pipe lining is to be entered into D21 Col V&W: Make sure to measure distances from the inner wall of the upstream manhole structure. See Appendix C.2.8 for a CAT example.</p>		

D20: WW Repair/Relay Dig

Distance to start and end of repair from upstream MH



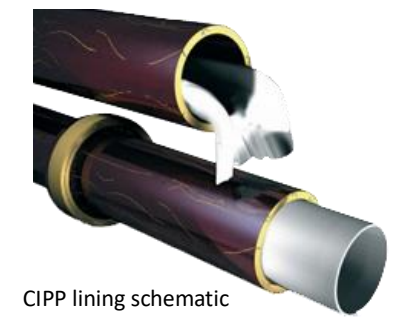
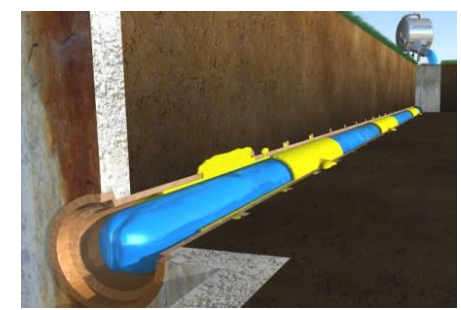
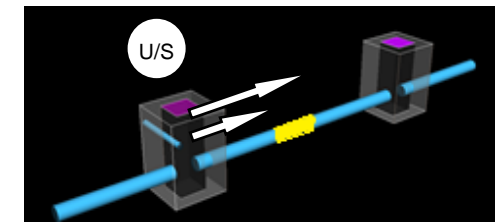
As-Built requirements (WW)

D21: WW Pipe Lining

Name		WW Pipe Lining (Line)
Line Type		D21 "Line Asset Inputs"
If entered without coordinates, this feature requires only one row per patch.		
CAT Column	SAG Description	Valid Values
A	Type of Line Feature	D21
B	Type of Repair	Select from pick list: domRepairType
C	Asset Record Capture Type	Select from pick list: domAssetRecordCaptureType
D	Differs from design (yes/no)	Select from pick list: domDiffersFromDesign
E	Asset Unique Identifier	data - Text (100 Characters)
F	Line Vertex Easting coordinate - (m)	data - Decimal Number (12 Chars, 2 Decimals)
G	Line Vertex Northing coordinate - (m)	data - Decimal Number (12 Chars, 2 Decimals)
H	Leave Blank	Leave Blank
I	Number of Vertex (point along line)	data - Number
J	Material used for repair	Select from pick list: domRepairConstruction
K	Nominal diameter in mm - (mm)	Select from pick list: domPipeNominalDiameter
L	At Node - Asset Unique Identifier	data - Text (50 Characters)
M	To Node - Asset Unique Identifier	data - Text (50 Characters)
N	Manufacturer of asset	Select from pick list: domManufacturer
O	Name of main contractor who installed the asset	Select from pick list: domInstallationCompany
P	Leave Blank	Leave Blank
Q	Leave Blank	Leave Blank
R	Leave Blank	Leave Blank
S	Date of commission	data - Date (dd/mm/yyyy)
T	Location certainty - accuracy of data	Select from pick list: domLocationCertainty
U	Date of 'survey start'	data - Date (dd/mm/yyyy)
V	Distance from US MH to lining start (m) - (m)	data - Decimal Number (9 Chars, 3 Decimals)
W	Distance from US MH to lining end (m) - (m)	data - Decimal Number (9 Chars, 3 Decimals)



Distance to start and end of lining from upstream MH



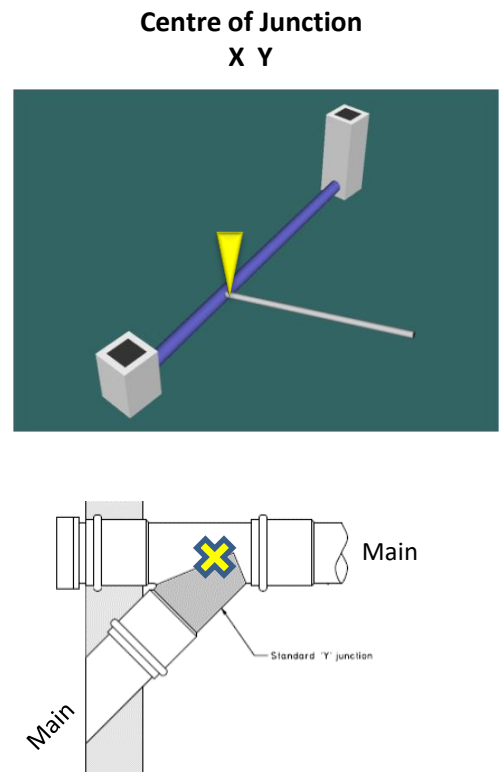
CIPP lining schematic

Additional Information

*All other columns must be left "blank" or hold the value "LEAVE BLANK" as default in CAT
 Use this feature for pipe lining only (lining patches or fully lined pipes) – pipe repairs are to be entered into D20
 Col V&W: Make sure to measure distances from the inner wall of the upstream manhole structure. See Appendix C.2.5 up to C.2.7 for CAT examples.

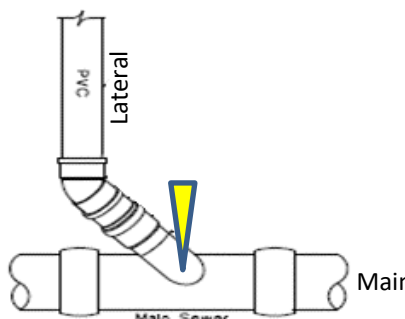
As-Built requirements (WW)		
Name		WW Junction (Point)
Point Type		D22 "Point Asset Inputs"
CAT Column	SAG Description	Valid Values
A	Type of Point Feature	D22
B	Type of Fitting	Select from pick list: domWwFittingType
C	Asset Record Capture Type	Select from pick list: domAssetRecordCaptureType
D	Differs from design (yes/no)	Select from pick list: domDiffersFromDesign
E	Asset Unique Identifier	data - Text (100 Characters)
F	Centre of structure in Easting coordinate - (m)	data - Decimal Number (12 Chars, 2 Decimals)
G	Centre of structure in Northing coordinate - (m)	data - Decimal Number (12 Chars, 2 Decimals)
H	Leave Blank	Leave Blank
I	Leave Blank	Leave Blank
J	Leave Blank	Leave Blank
K	Date of commission	data - Date (dd/mm/yyyy)
L	Location certainty - accuracy of data	Select from pick list: domLocationCertainty
M	Name of main contractor who installed the asset	Select from pick list: domInstallationCompany
N	Date of 'survey start'	data - Date (dd/mm/yyyy)
Additional Information		
*All other columns must be left "blank" or hold the value "LEAVE BLANK" as default in CAT		

D22: WW Junction



As-Built requirements (WW)			
D23: WW Lateral Junction	Name	WW Lateral Junction (Point)	
	Point Type	D23 "Point Asset Inputs"	
	CAT Column	SAG Description	Valid Values
	A	Type of Point Feature	D23
	B	Type of Lateral Junction	Select from pick list: domWwEyeType
	C	Asset Record Capture Type	Select from pick list: domAssetRecordCaptureType
	D	Differs from design (yes/no)	Select from pick list: domDiffersFromDesign
	E	Asset Unique Identifier	data - Text (100 Characters)
	F	Centre of structure in Easting coordinate - (m)	data - Decimal Number (12 Chars, 2 Decimals)
	G	Centre of structure in Northing coordinate - (m)	data - Decimal Number (12 Chars, 2 Decimals)
	H	Leave Blank	Leave Blank
	I	Leave Blank	Leave Blank
	J	Leave Blank	Leave Blank
	K	Date of commission	data - Date (dd/mm/yyyy)
	L	Location certainty - accuracy of data	Select from pick list: domLocationCertainty
M	Name of main contractor who installed the asset	Select from pick list: domInstallationCompany	
N	Date of 'survey start'	data - Date (dd/mm/yyyy)	
Additional Information			
*All other columns must be left "blank" or hold the value "LEAVE BLANK" as default in CAT See Appendix C.1.3 for a CAT example.			

**Centre of Lateral Junction
X Y**



This asset is located at the junction between a lateral and a main

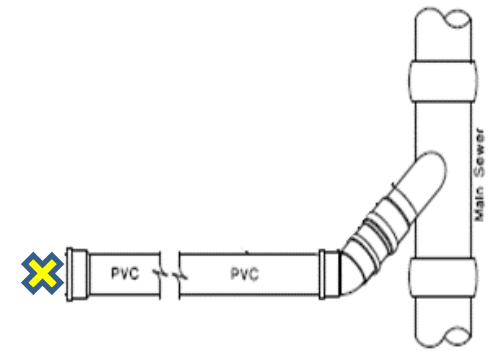
As-Built requirements (WW)		
Name		WW Inspection Point (Point)
Point Type		D24 "Point Asset Inputs"
D24: WW Inspection Point	CAT Column	SAG Description
	A	Type of Point Feature
	B	Type of Manhole or Access
	C	Asset Record Capture Type
	D	Differs from design (yes/no)
	E	Asset Unique Identifier
	F	Centre of Structure in Easting coordinate - (m)
	G	Centre of Structure in Northing coordinate - (m)
	H	RL on lowest corner of lid - (m)
	I	RL at base of pit (lowest point) - (m)
	J	Leave Blank
	K	Date of commission
	L	Location certainty - accuracy of data
	M	Name of main contractor who installed the asset
	N	Date of 'survey start'
	O	Leave Blank
	P	Leave Blank
	Q	Manufacturer of asset
R	Construction material	
Valid Values		
		D24
		Inspection Point
		Select from pick list: domAssetRecordCaptureType
		Select from pick list: domDiffersFromDesign
		data - Text (100 Characters)
		data - Decimal Number (12 Chars, 2 Decimals)
		data - Decimal Number (12 Chars, 2 Decimals)
		data - Decimal Number (6 Chars, 3 Decimals)
		data - Decimal Number (6 Chars, 3 Decimals)
		Leave Blank
		data - Date (dd/mm/yyyy)
		Select from pick list: domLocationCertainty
		Select from pick list: domInstallationCompany
		data - Date (dd/mm/yyyy)
		Leave Blank
		Leave Blank
		Select from pick list: domManufacturer
		Select from pick list: domAccessConstruction
Additional Information		
*All other columns must be left "blank" or hold the value "LEAVE BLANK" as default in CAT See Appendix C.1.4 for a CAT example.		

Centre of Inspection Point
X Y

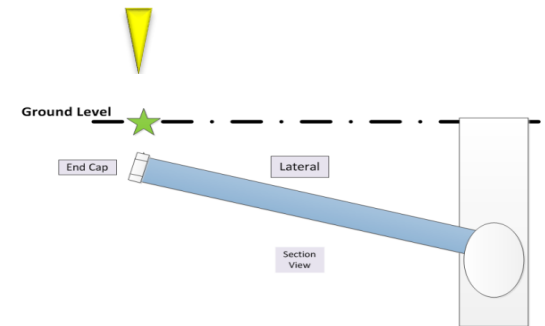
As-Built requirements (WW)


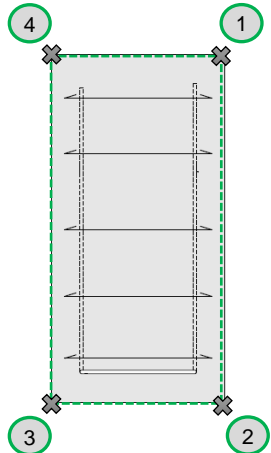
D25: WW End Cap

Name		WW End Cap (Point)
Point Type		D25 "Point Asset Inputs"
CAT Column	SAG Description	Valid Values
A	Type of Point Feature	D25
B	Type of Fitting	Select from pick list: domWwFittingType
C	Asset Record Capture Type	Select from pick list: domAssetRecordCaptureType
D	Differs from design (yes/no)	Select from pick list: domDiffersFromDesign
E	Asset Unique Identifier	data - Text (100 Characters)
F	Centre of structure in Easting coordinate - (m)	data - Decimal Number (12 Chars, 2 Decimals)
G	Centre of structure in Northing coordinate - (m)	data - Decimal Number (12 Chars, 2 Decimals)
H	Leave Blank	Leave Blank
I	Leave Blank	Leave Blank
J	Leave Blank	Leave Blank
K	Date of commission	data - Date (dd/mm/yyyy)
L	Location certainty - accuracy of data	Select from pick list: domLocationCertainty
M	Name of main contractor who installed the asset	Select from pick list: domInstallationCompany
N	Date of 'survey start'	data - Date (dd/mm/yyyy)
Additional Information		
*All other columns must be left "blank" or hold the value "LEAVE BLANK" as default in CAT		



Centre of End Cap
X Y



As-Built requirements (WW)			
D26: WW Thrust Block – Non Standard	Name	WW Thrust Block – Non Standard (Outline) 	
	Polygon Type	D26 "Polygon Asset Inputs"	
	CAT Column	SAG Description	Valid Values
	A	Type of Polygon Feature	D26
	B	Type of Thrust Block	Select from pick list: domWwPipeRestraintType
	C	Asset Record Capture Type	Select from pick list: domAssetRecordCaptureType
	D	Differs from design (yes/no)	Select from pick list: domDiffersFromDesign
	E	Asset Unique Identifier	data - Text (100 Characters)
	F	Polygon Vertex Easting coordinate - (m)	data - Decimal Number (12 Chars, 2 Decimals)
	G	Polygon Vertex Northing coordinate - (m)	data - Decimal Number (12 Chars, 2 Decimals)
	H	Leave Blank	Leave Blank
	I	Number of Vertex (point along outline)	data - Number
	J	Predominant material of structure	Select from pick list: domWwStructureConstruction
	K	Leave Blank	Leave Blank
	L	Name of main contractor who installed the asset	Select from pick list: domInstallationCompany
M	Date of commission	data - Date (dd/mm/yyyy)	
N	Location certainty - accuracy of data	Select from pick list: domLocationCertainty	
O	Date of 'survey start'	data - Date (dd/mm/yyyy)	
Additional Information			
<p>*All other columns must be left "blank" or hold the value "LEAVE BLANK" as default in CAT For non-standard thrust blocks, all corner points along outline are to be surveyed. This feature requires at least three row entries. Col I: enter number of vertex along outline See Appendix C.3.1 for a CAT example.</p>			
<p>Thrust Block Outline or Centre of Structure X Y</p> 			

As-Built requirements (WW)		
Name		WW Pump (Point)
Point Type		D28 "Point Asset Inputs"
CAT Column	SAG Description	Valid Values
A	Type of Point Feature	D28
B	Type of Pump	Select from pick list: domWwPumpType
C	Asset Record Capture Type	Select from pick list: domAssetRecordCaptureType
D	Differs from design (yes/no)	Select from pick list: domDiffersFromDesign
E	Asset Unique Identifier	data - Text (100 Characters)
F	Centre of Structure in Easting coordinate - (m)	data - Decimal Number (12 Chars, 2 Decimals)
G	Centre of Structure in Northing coordinate - (m)	data - Decimal Number (12 Chars, 2 Decimals)
H	Height above datum - (m)	data - Decimal Number (6 Chars, 3 Decimals)
I	Leave Blank	Leave Blank
J	Leave Blank	Leave Blank
K	Date of commission	data - Date (dd/mm/yyyy)
L	Location certainty - accuracy of data	Select from pick list: domLocationCertainty
M	Name of main contractor who installed the asset	Select from pick list: domInstallationCompany
N	Date of 'survey start'	data - Date (dd/mm/yyyy)
O	Name and/or number of pump station	data - Text (50 Characters)
P	Leave Blank	Leave Blank
Q	Manufacturer of asset	Select from pick list: domManufacturer
R	Serial number of asset	data - Text (50 Characters)
S	Backup energy source	Select from pick list: domBackupEnergySource
T	Situation of Pump	Select from pick list: domPumpSituation
U	Maximum capacity of pump in litres per hour	data - Number
V	Manufacturer warranty reference	data - Text (50 Characters)
W	Manufacturer warranty term in years	data - Number
Additional Information		
*All other columns must be left "blank" or hold the value "LEAVE BLANK" as default in CAT		

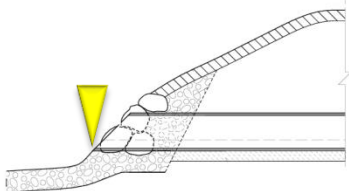
D28: WW Pump

**Centre of Pump
X Y and Z (on pump)**



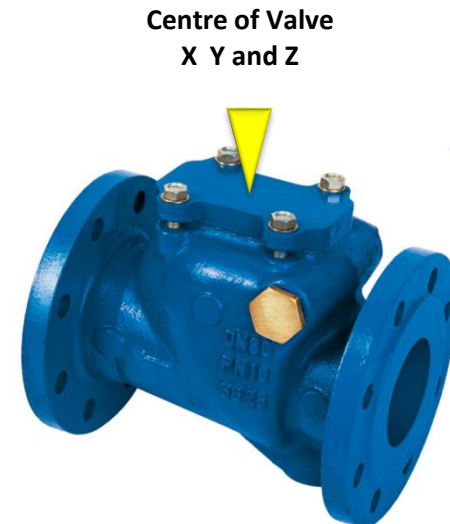
As-Built requirements (WW)			
Name		WW Outlet/Outfall (Point)	
Point Type		D29 "Point Asset Inputs"	
D29: WW Outfall/Outlet	CAT Column	SAG Description	Valid Values
	A	Type of Point Feature	D29
	B	Type of Outfall/Outlet	Select from pick list: domWwOutfallType
	C	Asset Record Capture Type	Select from pick list: domAssetRecordCaptureType
	D	Differs from design (yes/no)	Select from pick list: domDiffersFromDesign
	E	Asset Unique Identifier	data - Text (100 Characters)
	F	Centre of Structure in Easting coordinate - (m)	data - Decimal Number (12 Chars, 2 Decimals)
	G	Centre of Structure in Northing coordinate - (m)	data - Decimal Number (12 Chars, 2 Decimals)
	H	Height above datum - (m)	data - Decimal Number (6 Chars, 3 Decimals)
	I	Leave Blank	Leave Blank
	J	Leave Blank	Leave Blank
	K	Date of commission	data - Date (dd/mm/yyyy)
	L	Location certainty - accuracy of data	Select from pick list: domLocationCertainty
	M	Name of main contractor who installed the asset	Select from pick list: domInstallationCompany
	N	Date of 'survey start'	data - Date (dd/mm/yyyy)
	O	Leave Blank	Leave Blank
	P	Leave Blank	Leave Blank
	Q	Manufacturer of asset	Select from pick list: domManufacturer
R	Leave Blank	Leave Blank	
S	Type of security on outlet access	Select from pick list: domAccessSecurity	
Additional Information			
*All other columns must be left "blank" or hold the value "LEAVE BLANK" as default in CAT			

**Outlet/Outfall
X Y and Z**




As-Built requirements (WW)		
Name		WW Valve (Point)
Point Type		D30 "Point Asset Inputs"
CAT Column	SAG Description	Valid Values
A	Type of Point Feature	D30
B	Type of Valve	Select from pick list: domWwValveType
C	Asset Record Capture Type	Select from pick list: domAssetRecordCaptureType
D	Differs from design (yes/no)	Select from pick list: domDiffersFromDesign
E	Asset Unique Identifier	data - Text (100 Characters)
F	Centre of Structure in Easting coordinate - (m)	data - Decimal Number (12 Chars, 2 Decimals)
G	Centre of Structure in Northing coordinate - (m)	data - Decimal Number (12 Chars, 2 Decimals)
H	RL on lowest corner of lid - (m)	data - Decimal Number (6 Chars, 3 Decimals)
I	Leave Blank	Leave Blank
J	Nominal diameter in mm - (mm)	Select from pick list: domValveNominalDiameter
K	Date of commission	data - Date (dd/mm/yyyy)
L	Location certainty - accuracy of data	Select from pick list: domLocationCertainty
M	Name of main contractor who installed the asset	Select from pick list: domInstallationCompany
N	Date of 'survey start'	data - Date (dd/mm/yyyy)
O	Valve normal operating position - open or closed	Select from pick list: domValveNormalPosition
P	Manual or motorised valve	Select from pick list: domValveActuation
Q	Manufacturer of asset	Select from pick list: domManufacturer
R	Valve closure rotation direction	Select from pick list: domValveClosureRotation
S	Situation of Valve	Select from pick list: domValveSituation
T	Main function of valve	Select from pick list: domWwValveFunction
U	Valve control point	Select from pick list: domValveControlPoint
V	Manufacturer warranty reference	data - Text (50 Characters)
W	Manufacturer warranty term in years	data - Number
Additional Information		
*All other columns must be left "blank" or hold the value "LEAVE BLANK" as default in CAT		

D30: WW Valve

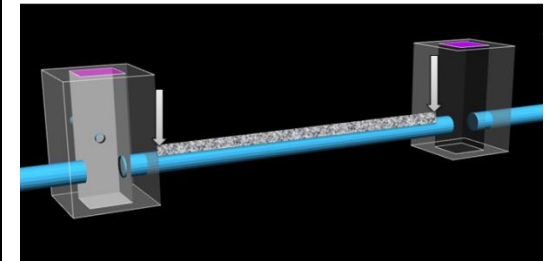


As-Built requirements (WW)

D34: WW Structural Pipe Protection

Name		WW Structural Pipe Protection (Line)
Line Type		D34 "Line Asset Inputs" 
Line features require at least two row entries in the CAT.		
CAT Column	SAG Description	Valid Values
A	Type of Line Feature	D34
B	Type of Structural Pipe Protection	Select from pick list: domWwPipeProtectionType
C	Asset Record Capture Type	Select from pick list: domAssetRecordCaptureType
D	Differs from design (yes/no)	Select from pick list: domDiffersFromDesign
E	Asset Unique Identifier	data - Text (100 Characters)
F	Line Vertex Easting coordinate - (m)	data - Decimal Number (12 Chars, 2 Decimals)
G	Line Vertex Northing coordinate - (m)	data - Decimal Number (12 Chars, 2 Decimals)
H	Leave Blank	Leave Blank
I	Number of Vertex (point along line)	data - Number
J	Leave Blank	Leave Blank
K	Leave Blank	Leave Blank
L	Leave Blank	Leave Blank
M	Leave Blank	Leave Blank
N	Leave Blank	Leave Blank
O	Name of main contractor who installed the asset	Select from pick list: domInstallationCompany
P	Leave Blank	Leave Blank
Q	Leave Blank	Leave Blank
R	Leave Blank	Leave Blank
S	Date of commission	data - Date (dd/mm/yyyy)
T	Location certainty - accuracy of data	Select from pick list: domLocationCertainty
U	Date of 'survey start'	data - Date (dd/mm/yyyy)
Additional Information		
*All other columns must be left "blank" or hold the value "LEAVE BLANK" as default in CAT		
Create one CAT row per surveyed point		
Col I: enter number of vertex along line starting with the downstream end		

**Pipe Protection
X Y**



As-Built requirements (WW)			
D35: WW Vent	Name	WW Vent (Point)	
	Point Type	D35 "Point Asset Inputs"	
	CAT Column	SAG Description	Valid Values
	A	Type of Point Feature	D35
	B	Type of Vent	Select from pick list: domWwVentType
	C	Asset Record Capture Type	Select from pick list: domAssetRecordCaptureType
	D	Differs from design (yes/no)	Select from pick list: domDiffersFromDesign
	E	Asset Unique Identifier	data - Text (100 Characters)
	F	Centre of Structure in Easting coordinate - (m)	data - Decimal Number (12 Chars, 2 Decimals)
	G	Centre of Structure in Northing coordinate - (m)	data - Decimal Number (12 Chars, 2 Decimals)
	H	Leave Blank	Leave Blank
	I	Leave Blank	Leave Blank
	J	Leave Blank	Leave Blank
	K	Date of commission	data - Date (dd/mm/yyyy)
	L	Location certainty - accuracy of data	Select from pick list: domLocationCertainty
M	Name of main contractor who installed the asset	Select from pick list: domInstallationCompany	
N	Date of 'survey start'	data - Date (dd/mm/yyyy)	
O	Type of Telemetry	Select from pick list: domTelemetryType	
Additional Information			
*All other columns must be left "blank" or hold the value "LEAVE BLANK" as default in CAT			

Centre of Vent
X Y



As-Built requirements (WW)			
D36: WW Structure	Name	WW Structure (Outline)	
	Polygon Type	D36 "Polygon Asset Inputs"	
	CAT Column	SAG Description	Valid Values
	A	Type of Polygon Feature	D36
	B	Type of Structure	Select from pick list: domWwStructureType
	C	Asset Record Capture Type	Select from pick list: domAssetRecordCaptureType
	D	Differs from design (yes/no)	Select from pick list: domDiffersFromDesign
	E	Asset Unique Identifier	data - Text (100 Characters)
	F	Polygon Vertex Easting coordinate - (m)	data - Decimal Number (12 Chars, 2 Decimals)
	G	Polygon Vertex Northing coordinate - (m)	data - Decimal Number (12 Chars, 2 Decimals)
	H	Leave Blank	Leave Blank
	I	Number of Vertex (point along outline)	data - Number
	J	Predominant material of structure	Select from pick list: domWwStructureConstruction
	K	Leave Blank	Leave Blank
	L	Name of main contractor who installed the asset	Select from pick list: domInstallationCompany
M	Date of commission	data - Date (dd/mm/yyyy)	
N	Location certainty - accuracy of data	Select from pick list: domLocationCertainty	
O	Date of 'survey start'	data - Date (dd/mm/yyyy)	
Additional Information			
<p>*All other columns must be left "blank" or hold the value "LEAVE BLANK" as default in CAT</p> <p>Use this feature for all structures or other larger manholes which do not fit into any of the other structure categories, populate Column B accordingly.</p> <p>All corner points along outline to be surveyed. Create one CAT row survey point. This feature requires at least three row entries.</p> <p>Col I: enter number of vertex along outline</p> <p>See Appendix C.1.5 and C.3.1 for a CAT example and beginning of Appendix D for more information.</p>			
		<p>The diagram, titled 'Structure Outline X Y', shows a plan view of a sewer structure. It features a central rectangular structure with a dashed green outline. Surrounding the structure are various annotations: 'CAST IN-SITU CONCRETE WALLS' at the top, 'EXISTING DN750 SEWER PIPE' on the left and right, and 'PROVISION FOR FUTURE STOP PLATE APPARATUS TO BE INSTALLED: CONSTRUCT STOP PLATE FRAME ONLY' at the bottom left. Numbered survey points (1-5) are marked around the structure. Point 1 is at the top left corner, point 2 at the top right, point 3 at the bottom right, point 4 at the bottom left, and point 5 at the center of the structure. Other annotations include 'ACTUAL JOINT POSITION TO BE CONFIRMED PRIOR TO CONSTRUCTION' at points 1 and 2, '100x100 CHAMBERS' at points 3 and 4, and 'DN750 REGRU SEWER STARTER PIPE LAD TO 80M11' at the bottom left. A note at the bottom right says 'SET FOR EMBEDDED INVERTING OF WATERGATE'. A red polygon icon is also present in the top right of the table header area.</p>	