1.1 GIS DATA REQUIREMENTS

A. As part of the final acceptance package the following items shall be submitted in electronic format:

   1. An ESRI GIS Feature Class within a Geodatabase (preferred) or Shapefile, and an AutoCAD drawing file (version 2013 or later) of the following facilities:

   i. Water Utilities

   ii. Sanitary Sewer Utilities

   iii. Storm Sewer Utilities

   iv. Pavement

   v. Benchmarks / Control Point

   2. GPS Monument / Benchmark / Control Point

   i. Tied to City of Mont Belvieu monumentation

   3. Construction cost or bid tabulation for pavement, utilities and sidewalks

   i. Line item or simply total cost is appropriate

   4. Upon completion of all projects, the As-Built updates and revisions shall be incorporated into the delivered ESRI GIS Feature Class within a Geodatabase (preferred) or Shapefile, and AutoCAD drawing file (version 2013 or later).

   5. A copy of the engineer certified As-Built record drawings in a PDF format containing the As-Built revisions.

   6. Electronic files delivered on CD shall contain a text file of the CD contents and include the project name and number on the CD label.

1.2 ESRI GIS FEATURE CLASS WITHIN A GEODATABASE OR SHAPEFILE GENERAL GUIDELINES

A. The standards described in this chapter define the general requirements for the ESRI GIS Feature Class within a Geodatabase (preferred) or Shapefile.

B. The ESRI GIS Feature Class within a Geodatabase (preferred) or Shapefile shall include applicable point, line, and polygon features for all water utilities, sanitary sewer utilities, storm sewer utilities, paving, and benchmarks/control points as outlined in this chapter.

C. The ESRI GIS Feature Classes within a Geodatabase (preferred) or Shapefiles shall have the following spatial characteristics:

   1. NAD 83

   2. State Plane Texas South Central US Feet

   3. Grid Units

D. The ESRI GIS Feature Class within a Geodatabase (preferred) or Shapefile Attribute Field Name, Type, and Content shall meet the requirements outlined in this chapter.

1.3 WATER UTILITIES FEATURE REQUIREMENTS AND DATA DESCRIPTIONS

A. Water Lines - Attribute Field Naming Conventions and Data Descriptions

FIELD NAME	DATA DESCRIPTION	DATA TYPE
MATERIAL	Pipe Material Numeric Code Refer to CHART 1.01 WATER LINE RELATES	Text
DIAMETER	Pipe diameter in inches	Double
LINE_TYPE	Water Main or Lateral	Text
COMMENT	Additional information can be added here. This is an open text attribute. If "LINE TYPE" isn't listed in the list, it can be placed here.	Text

B. Water Points - Attribute Field Naming Conventions and Data Descriptions

FIELD NAME	DATA DESCRIPTION	DATA TYPE
POINT_TYPE	Type Numeric Code Refer to CHART 1.02 WATER POINT RELATES	Text
DIAMETER	Size indicated in inches as a whole number	Double
MANUFACTUR	Hydrant Manufacturer Numeric Code Refer to CHART 1.03 WATER POINT RELATES	Text
HYDRANT_ID	Hydrant unique identifier number	Text

CHART 1.01

Record: MATERIAL	
1	Asbestos Cement
2	Unknown
3	Ductile Iron
4	Reinforced Concrete
5	PVC C-900
6	Cast Iron
8	CASED
9	High Density Polyethylene

CHART 1.02

Record: POINT_TYPE	
1	TAPPING SLEEVE & VALVE
2	BLOW OFF
3	CONTROL VALVE
4	GATE VALVE
5	UNKNOWN
7	FLUSH VALVE
8	CHECK VALVE
9	FIRE HYDRANTS
10	BALL VALVE
11	BUTTERFLY VALVE
12	AIR RELEASE VALVE
13	N/A

CHART 1.03

Record: MANUFACTUR	
1	Mueller Company
2	EAST JORDAN
3	American Darling
4	N/A
5	Unknown

1.4 SANITARY SEWER UTILITIES FEATURE REQUIREMENTS AND DATA DESCRIPTIONS

A. Sanitary Sewer Lines - Attribute Field Naming Conventions and Data Descriptions

FIELD NAME	DATA DESCRIPTION	DATA TYPE
MATERIAL	Pipe Material Numeric Code Refer to CHART 1.04 SANITARY SEWER LINE RELATES	Short Integer
DIAMETER	Pipe diameter in inches	Short Integer
UPELEVE	Highest end of pipe in feet as indicated by the flow line (F/L)	Double
DOWNELEV	Lowest end of pipe in feet as indicated by the flow line (F/L)	Double
SLOPE	Slope of pipe as indicated by percentage. Display as a decimal without a percentage notation	Double
F_MAIN	Enter 1 if line is a force main; Enter 0 if it is not	Text

B. Sanitary Sewer Points - Attribute Field Naming Conventions and Data Descriptions

FIELD NAME	DATA DESCRIPTION	DATA TYPE
WALLMAT	Manhole Material Numeric Code Refer to CHART 1.05 SANITARY SEWER POINT RELATES	Short Integer
MH_RINGSIZ	Diameter of the manhole	Short Integer
LINED	Enter Y (yes) or N (no)	Text
FACILITYID	Manhole unique identifier number	Text
IN_ELEV IN_ELEV2 IN_ELEV3 IN_ELEV4	Elevation at which pipes flow in the manhole connect. Begin with highest elevation and enter all for mainline and leads. (unpopulated fields; Enter -9)	Double
RIMELEV	Elevation of the manhole cover	Double
OUT_ELEV	Elevation at which the outflow pipe is connected to the manhole	Double
VALVE_TYPE	Valve Type Numeric Code Refer to CHART 1.06 SANITARY SEWER POINT RELATES	Short Integer

CHART 1.04

Record: MATERIAL	
1	Vitrified Clay
2	UNKNOWN
3	PVC
4	Ductile Iron
5	Reinforced Concrete
6	Asbestos Cement
7	PVC C-900
8	CAST IRON
9	SERVICE CONNECTION
10	CASED
11	PVC SDR 26
12	STEEL
13	High Density Polyethylene

CHART 1.05

Record: WALLMAT	
1	N/A
2	CONCRETE
3	BRICK
4	FIBERGLASS
5	UNKNOWN
6	MANHOLE LIFTSTATION

CHART 1.06

Record: VALVE_TYPE	
1	GATE VALVE
2	CHECK VALVE
3	BALL VALVE
4	BUTTERFLY VALVE

1.5 STORM SEWER UTILITIES FEATURE REQUIREMENTS AND DATA DESCRIPTIONS

A. Storm Sewer Lines - Attribute Field Naming Conventions and Data Descriptions

FIELD NAME	DATA DESCRIPTION	DATA TYPE
MATERIAL	Pipe Material Numeric Code Refer to CHART 1.07 STORM SEWER LINE RELATES	Short Integer
DIAMETER	Pipe diameter in inches (If a box culvert; Enter -9)	Short Integer
UPELEV	Highest end of pipe in feet as indicated by the flow line (F/L)	Double
DOWNELEV	Lowest end of pipe in feet as indicated by the flow line (F/L)	Double
SLOPE	Slope of pipe as indicated by percentage. Display as a decimal without a percentage notation	Double
BC_SIZE	Box Culvert size (ex. 10 x 5) (If not a box culvert; Enter -9)	Text

B. Storm Sewer Points - Attribute Field Naming Conventions and Data Descriptions

FIELD NAME	DATA DESCRIPTION	DATA TYPE
MATERIAL	Manhole Material Type Numeric Code. Refer to CHART 1.08 STORM SEWER POINT RELATES (inlets and outfalls; Enter -9)	Long Integer
MH_RINGSIZ	Diameter of manhole lid in inches (inlets and outfalls; Enter -9)	Long Integer
INLET_TYPE	Inlet Material Type Numeric Code. Refer to CHART 1.09 STORM SEWER POINT RELATES (manholes and inlets; Enter -9) For manholes with inlet tops, enter the corresponding inlet number ensuring that the MH_MATERIA field indicates a manhole with inlet	Long Integer
OUTFALL_MA	Outfall Material Type Numeric Code Refer to CHART 1.10 STORM SEWER POINT RELATES (manholes and inlets; Enter -9)	Long Integer
OUTFALL_DE	Outfall Destination Numeric Code. Refer to CHART 1.11 STORM SEWER POINT RELATES (manholes and inlets; Enter -9)	Long Integer
MH_NUM	Manhole Number (inlets and outfalls; Enter -9)	Text
IN_ELEV IN_ELEV2 IN_ELEV3 IN_ELEV4	Elevation at which pipes flow in the manhole connect. Begin with highest elevation and enter all for mainline and leads. (unpopulated fields; Enter -9)	Double
RIM_ELEV	Elevation of the manhole cover	Double

FIELD NAME	DATA DESCRIPTION	DATA TYPE
OUT_ELEV	Elevation at which the outflow pipe is connected to the manhole	Double
DIAMETER	Diameter of manhole in inches	Long Integer

CHART 1.07

Record: MATERIAL	
1	VETRIFIED CLAY PIPE
2	CORRUGATED GALVANIZED METAL PIPE
3	UNKNOWN
4	PVC SDR-18
5	PVC
6	DUCTILE IRON PIPE
7	REINFORCED CONCRETE PIPE
8	OPEN DITCH
9	ASBESTOS-CEMENT
10	PRECAST CONCRETE BOX
11	PVC C-900
12	CAST IRON
13	PVC SDR-26
14	BORE & JACK
15	SWALE
16	WIER
17	ARCH PIPE
18	SIPHON
19	NATURAL FEATURE

CHART 1.08

Record: MATERIAL	
1	N/A
2	CONCRETE
3	BRICK
4	FIBERGLASS
5	UNKNOWN
6	MANHOLE WITH INLET TOP
7	SPECIAL MANHOLE
8	JUNCTION BOX WITH MANHOLE TOP

CHART 1.09

Record: INLET_TYPE	
1	N/A
2	A
3	B
4	B-B
5	C
6	C-1
7	C-2
8	D
9	E
10	JUNCTION BOX
11	CATCH BASIN
12	DROP
13	BACKSLOPE INLET
14	UNKNOWN

CHART 1.10

Record: OUTFALL_MA	
1	N/A
2	RCP OR RCB
3	UNKNOWN
4	CORRUTGATED METAL
5	PVC
6	RIP RAP
7	DITCH
8	NATURAL (SWALE /DITCH TO CREEK)

CHART 1.11

Record: OUTFALL_DE	
1	N/A
2	STORM SEWER
3	STREAM
4	DITCH
5	DETENTION POND
6	CHANNEL

1.6 SUBDIVISON FEATURE REQUIREMENTS AND DATA DESCRIPTIONS

A. Subdivision Polygon - Attribute Field Naming Conventions and Data Descriptions

FIELD NAME	DATA DESCRIPTION	DATA TYPE
NAME	Name of the subdivision	Text