

## **APPENDIX I**

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# **AutoCAD Digital Submission Standards**

## AutoCAD Digital Submission Standards

### Purpose

The City of Lathrop (CITY) maintains an ArcGIS 10.x enterprise Geographic Information System (GIS) database to manage all of its Public Works assets including storm, sewer and water lines. The CITY utilizes the local government model from ESRI. This document references the most current CITY requirements and provides technical details such as CAD layering standards. The purpose of this document is to ensure the utmost quality of data submitted to the CITY as it is converted into the CITY's GIS database.

### Format Requirements

Consulting Engineer(s) shall submit a hard copy and a digital copy of the "Record Drawings" to the CITY. The digital copy shall contain an AutoCAD (.dwg) and an Adobe Portable Document Format (.pdf) file(s). In addition to AutoCAD files, data may be submitted in ESRI Shapefiles (.shp). The Public Works Department will verify that the digital files are submitted properly and the IT department will perform the updates to GIS.

### CAD Layers

See Table 1 for a complete tabular list of CAD layers which includes the layer name, description and feature type (point, line, text, etc.). Include all XREFs with your submittal. There should not be any duplicate lines in the same layers. Correct capitalization and spelling of layer names must be consistent with the layer name in Table 1. Consistency in layer names is imperative in the GIS data conversion process as it will eliminate redundant processing steps and potential loss of valuable information.

If the consulting engineer is unable to utilize the recommended layering system, the CITY will need supplemental documentation matching the layer name used by the consulting engineer to Table 1 or GIS feature type.

### Sizes of Lines

It is required that the sizes of the lines for storm, sewer and water pipes be included in the AutoCAD file. For storing the sizes, note appropriately in the layer name. For example, a six-inch water pipe can be noted as EXWTPI-6. The notations must be consistent, or they will be noted as errors and be sent to the developer for further revision.

### Spatial Reference

The digital drawings must be spatially referenced to California State Plane Zone III Units Feet. The horizontal datum shall be NAD83 and the vertical datum shall be NAVD88.

**Three-Dimensional Information**

Currently it is not required that all contents of the as-built drawings be submitted with three-dimensional information. It is recommended but not yet required that sewer, storm and water points contain point elevations. Contour points and monuments shall have the elevation stored in the point, not as a text label. It is recommended that a feature linked table be attached to the points if elevations are not provided. Any issues regarding the procedures or technical constraints should be directed to the CITY.

**Digital Data Review**

All digital data will be reviewed by the CITY’s Public Works Department and the IT department under the following criteria:

- a. Correct layering naming conventions
- b. Verification that digital and hardcopy drawings are consistent
- c. Correct geographical position (i.e. correct geospatial reference)
- d. Review of points, lines and polygons and error checking

The developer will be notified if there are errors, and a request will be made to correct and resubmit the correct digital file. Failure to resubmit the corrected files will potentially delay approval of project.

**Table 1**

LAYER NAME	DESCRIPTION	FEATURE TYPE	Target GIS Layer
BLDG-EX	EXISTING BUILDING	Polyline	Building Footprints
BLDG-FU	FUTURE BUILDING	Polyline	Building Footprints
BM	BENCHMARK	Point	Benchmark
BND	BOUNDARY LINES	Continuous-Line	(various)
BND0FU	FUTURE BOUNDARY LINES	Continuous-Line	(various)
BND-EX	EXISTING BOUNDARY LINES	Dashed-Line	(various)
CANAL	CANAL	Continuous-Line	Canal
CTRLPT	CONTROL POINT	Point	Control Corners
DW-STR	STREET DRIVEWAY	Polyline	Driveway
ELEV	ELEVATION	Point	Elevations
LL-EX	EXISTING LOT LINES	Dashed-Line	Owner Parcels
LL-FU	FUTURE LOT LINES	Continuous-Line	Owner Parcels
LTPOLE	LIGHT POLE	Point	Poles

**APPENDIX I**

<b>LAYER NAME</b>	<b>DESCRIPTION</b>	<b>FEATURE TYPE</b>	<b>Target GIS Layer</b>
MON	MONUMENTS	Monuments	Monuments
PUE	EASEMENTS	Polyline	Encumbrances
PWCTVA- (#)	POTABLE WATER CONTROL VALVES, (#) = DIAMETER	Point	Water Control Valves
PWFIT- CA(#)	POTABLE WATER FITTINGS-CAP, (#) = DIAMETER	Point	Water Fittings
PWFIT-EJ(#)	POTABLE WATER FITTINGS- EXPANSION JOINT, (#) = DIAMETER	Point	Water Fittings
PWFIT- RD(#)	POTABLE WATER FITTINGS- REDUCER, (#) = DIAMETER	Point	Water Fittings
PWFIT- UK(#)	POTABLE WATER FITTINGS- UNKNOWN, (#) = DIAMETER	Point	Water Fittings
PWHY	POTABLE WATER HYDRANTS	Point	Water Hydrants
PWLA-(#)	POTABLE WATER LATERALS, (#) = SIZE	Continuous - Line	Water Laterals
PWMA-(#)	POTABLE WATER MAIN, (#) = DIAMETER	Continuous - Line	Water Mains
PWMA-EX	EXISTING POTABLE WATER MAIN	Dashed - Line	Water Mains
PWMT	POTABLE WATER METER	Point	Water Service Connections
PWPU	POTABLE WATER PUMP STATION	Point	Water Network Structures
PWPW	POTABLE WATER PRODUCTION WELL	Point	Water Network Structures
PWSS	POTABLE WATER SAMPLING STATION	Point	Water Sampling Stations
PWTA	POTABLE WATER TANKS (ENCLOSED STORAGE FACILITY)	Point	Water Network Structures
PWVA-(#)	POTABLE WATER VALVE, (#) = DIAMETER	Point	Water System Valves
RDCL	ROAD CENTERLINES	Continuous-Line	Road Centerlines
RIVER	RIVER	Continuous-Line	River
RR	RAILROADS	Continuous-Line	Railroads
RWPU	RECLAIMED WATER PUMP	Point	Water Network Structures
RWPW	RECLAIMED WATER PRODUCTION WELL	Point	Water Network Structures
SD-EX	EXISTING STORM DRAIN	Dashed-Line	Storm Drain (Existing)
SDFIT-(#)	STORM DRAIN FITTING, (#) = DIAMETER	Point	Storm Fittings
SDIN	STORM INLETS - MAINLY CATCH BASINS	Point	Storm Inlets
SDLI	STORM DRAIN LIFT STATIONS	Point	Storm Network Structures
SDMAFM- (#)	STORM FORCE MAIN, (#) = DIAMETER	Continuous - Line	Storm Pressurized Main
SDMAGV- (#)	STORM DRAIN MAIN - GRAVITY FEED, (#) = DIAMETER	Continuous - Line	Storm Gravity Mains
SDMH	STORM DRAIN MANHOLE	Point	Storm Manholes
SDOU	STORM WATER OUTFALL	Point	Storm Discharge Points

**APPENDIX I**

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SDVA	STORM DRAIN VALVE	Point	Storm System Valves
SN	STREET NAMES	Annotation (Text)	Street Text (Anno)
SSARV	SEWER AIR RELEASE VALVES	Point	Sewer Control Valves
SSCL	SEWER CLEAN OUTS	Point	Sewer Clean Outs
SSFIT	SEWER FITTINGS	Point	Sewer Fittings
SSLA	SEWER LATERAL LINES	Continuous - Line	Sewer Lateral Lines
SSLI	SEWER LIFT STATION	Point	Sewer Network Structures
SSMAFM- (#)	SEWER FORCE MAINS, (#) = DIAMETER	Continuous - Line	Sewer Pressurized Lines
SSMAGV- (#)	SEWER GRAVITY LINES, (#) = DIAMETER	Continuous - Line	Sewer Gravity Lines
SSMH	SEWER MANHOLE	Point	Sewer Manhole
SSTP	SEWER TREATMENT PLANT	Point	Sewer Network Structures
SSVA	SEWER VALVES	Point	Sewer System Valves
SSW-EX	EXISTING STREET SIDEWALK	Continuous-Line	Sidewalks
SSW-FU	FUTURE STREET SIDEWALK	Continuous-Line	Sidewalks
CNTR-IND	CONTOUR INDEX	Continuous-Line	Contours
CNTR-IMD	CONTOUR INTERMEDIATE	Continuous-Line	Contours

(#) - INSERT NUMERIC VALUE FOR  
DIAMETER/SIZE