As-built Specifications

Standards Manual

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Contents

I. Acronyms List

The following lists of acronyms are referenced throughout this standards manual.

Acronym	Description
CAD	Computer Aided Drafting; refers to AutoCAD drawings
CCUA	Clay County Utility Authority
QA/QC	Quality Assurance / Quality Control
Engineer	Florida Licensed Professional Engineer
Surveyor	Florida Licensed Professional Surveyor
Contractor	Florida Licensed Underground Utility Contractor

II. Purpose

CCUA has released new specification standards for all submitted as-built drawings. The changes detailed below are effective immediately, so it's important to review this document and consult CCUA with any questions. All referenced material will be provided as an electronic download (e.g., AutoCAD templates), which can be retrieved from CCUA's website.

III. Specifications

A. General

1. Prior to completion of the final inspection, the Contractor shall provide to CCUA an electronic file and certified copies of as-built surveys with all required revisions included as the final as-built survey.

2. All changes requested by CCUA must be made to the electronic file, as well as the printed, signed and sealed copies. Neglecting to provide the required information will delay the final inspection.

3. All measurements are to be made by the Surveyor or Engineer who will be certifying the project as constructed.

4. The Contractor is responsible for coordinating with the Surveyor or Engineer during construction and shall provide access to all utilities prior to being buried; allowing accurate horizontal and vertical measurements to be acquired by the Surveyor or Engineer. In the event of any discrepancies identified by CCUA and at no cost to CCUA, the Contractor shall verify the location and measurements of any buried utilities.

5. Any and all utility information must be collected, regardless of "typical" alignments (including existing obstructing, conflicting, or crossing utility infrastructure). Refer to the information provided in the contract documents (construction plans, specifications, etc.).

6. The Surveyor or Engineer must provide CCUA with a certificate of its professional liability coverage that is no less than one million dollars ($1,000,000.00) and which names CCUA as an additional insured.

B. Configuration Standards

1. All electronic as-built utility information in the as-built survey must reference the State Plane Coordinate System, Florida East Zone, NAD 83 2011 (horizontal) and NAVD 88 (vertical) utilizing GEOID12A or GEOID12B; the units must be in feet, and be properly projected into its correct spatial location prior to submitting to CCUA. CCUA will not re-project or manipulate as-built surveys in an attempt to correct improperly spatially referenced as-built surveys. It's the certifying Surveyor or Engineer's responsibility to ensure all submitted information adheres to the specifications.

    a) The Surveyor performing the data collection will independently verify the positional accuracy relative to the referenced horizontal and vertical datum. Local, state or federal agencies vertical and horizontal control points will be used and are independent of checks to local project controls.

    b) The positional accuracy relative to the referenced published control points used shall not exceed 0.5' horizontally and 0.1' vertically for water and reclaimed water utilities and 0.01' vertically for sewer utilities.

    c) Coordinates on the utility mains will be required at all pipe dead ends, size changes, points of connection to existing system, fittings (bends, valves, tees, plugs, etc.), at intersections of pipe, at 100' intervals for water mains and 500' intervals for reclaimed and force mains, or to the nearest fitting/structure whichever is less.

d) Intended Display Scale: All maps or reports of surveys produced and delivered with digital coordinate files must contain a statement to the effect of: “Map is intended to be displayed at a scale of 1”=60’.

2. File format shall be AutoCAD (.dwg), saved as version 2007 or higher.

3. All polylines (water, wastewater and reclaimed utility mains, etc.) shall be connected with no broken segments; unless noted in item a) below.

   a) Polylines shall be broken at each of the following points (fittings / blocks in AutoCAD)

      (1) Valves (does **NOT** include Air Release Valves)

      (2) Reducers

      (3) Tees, Taps and Crosses (including Fire Hydrant Tees)

      (4) Caps (Tapped Caps)

      (5) Manholes

      (6) Clean-outs

      (7) R.P.Z. B.F.P. (Back-flow Preventer)

      (8) In-line Ball Valve

      (9) Point of service

      (10) Double Detector Check Valves & Check Valves

      (11) Adapters Couplings (including HDPE-to-PVC, HYMAX and Type of Material Transition Points, etc…)

****DO NOT BREAK at any fittings not listed above. ****

4. Gravity main lines shall be entered as a single line, digitized in the direction of the design flow and broken at manholes. The beginning point of the line would be the upstream end and the ending point would be the downstream end.

5. Force main lines shall be entered as a single line, digitized in the direction of the design flow and broken at items identified in item 3.a) above. The beginning point of the line would be the upstream end and the ending point would be the downstream end.

6. All water, sewer and reclaimed water utility mains shall show a call out designating each size, material, pipe rating and class of pipe installed and include a leader line pointing to the pipe.

    a) Additionally, gravity sewer mains shall be identified with the length and slope information, matching the sewer schedule (see item D.4 below).

    b) Changes in material for water, sewer and reclaimed mains shall be identified with a call out (e.g., Ductile Iron to PVC).

7. All new and existing utilities (water, sewer, reclaimed, electrical, communications, etc…) and drainage located within lift station, treatment plant and well sites impacted by construction shall be located relative to property lines and/or right-of-way lines, using the specifications identified in this document.

8. The Surveyor or Engineer shall provide a Boundary Survey as defined in 5J-17.052(2) of the Standards of Practice of the site showing above and below ground improvements impacted by construction within lift station, treatment plant and well sites. All infrastructure, equipment and lines that are necessary for full operation of the site shall be included. Elevations shall be indicated at the finished floor and top of structures and at pipe inverts, wet well tops (rim elevation), wet well sumps and at ground level adjacent to wet wells.

9. Directional drill logs shall be provided and show profile details on the corresponding drawing(s).

10. Blocks inserted into a drawing shall be on the correct layer, identifying those features (including service type).

11. Pre-configured block tool palettes have been provided.

    a) Make sure to rename the block(s) using the XX or RENAME command, if the desired block is not available within the tool palette.

12. All text (DTEXT and MTEXT) must be masked; **CUT/BROKEN LINES BEHIND TEXT WILL NOT BE ACCEPTED**. Detail(s) also must be masked using the *wipeout* command. The dimensions will be created with masked text using a standard dimension style(s) located within the CCUA template.

13. All dimensioning, text and multileader lines must be drawn using CCUA's provided template (each template has been preconfigured).

    a) Set the 'Dimension Association' to 2 (exploded dimensions will not be accepted).

    b) The templates are set to use Arial font, and have been named as follows: CCUA Annotative Text, CCUA Standard Dimension and CCUA Annotative Leader.

14. All corresponding linetypes must be used.

15. Text identifying information about features shall be properly aligned. Text shall be visible on the drawing using the template font style provided and with the base set to the upper left-hand corner of the text which is clear of the linear or block features. For legibility, it may require that the label be moved and accompanied by a leader arrow. The labels shall be placed onto a separate layer and not to be placed on the feature layer itself. Labels must be properly rotated for easy legibility (horizontal alignment).

16. Features shall be placed on their appropriate layers and assigned colors by layer for consistency (see F below). Features shown in the AutoCAD files shall be in model space and be contained in the AutoCAD files as opposed to being linked through externally referenced files (binded layers MUST reflect the correct layers).

    a) Separate AutoCAD layout tabs are required for water, sewer, reclaimed water, and lift station as-builts.

17. The AutoCAD file shall be reviewed for duplicate objects.

18. Polylines shall be continuous from structure to structure (see item 3.a) above). End points of polylines must be snapped to the end points of connecting polylines, with a structure node being snapped to the end point.

19. The following list of section should be referenced when creating AutoCAD as-built surveys.

    a) Clean all unnecessary layers and blocks before submitting final as-built plans to CCUA

    b) Use only CCUA approved layers (see F below)

    c) Properly place features on the correct AutoCAD layers

    d) Do not break lines or trim behind text boxes; utilize the text masking feature (also applies to detail blow ups)

    e) Use reasonably scaled templates and blocks for all drawings

    f) Add continuations / match lines on all related as-builts

    g) Do not explode blocks, even if object is owned by others

    h) Snap all designated blocks at the base point of the object

    i) Properly connect all lines, blocks, etc.

    j) Create detail blow-ups to show information in close proximity (to maintain legibility)

20. Layer naming conventions shall follow the NCS (National CAD Standards) guidelines. CCUA's base layers (see F below) will be provided inside of the template AutoCAD file, any other layer(s) added must follow the NCS documentation. For more information on NCS, visit their website at http://www.nationalcadstandard.org/.

21. Each block (e.g., hydrant, valves, mains, etc.) shall have feature IDs assigned by the Surveyor or Engineer completing the as-builts, which reference a worksheet table. The worksheet table will contain an inventory of items installed. The entire table must be complete and refer to a corresponding feature on the as-builts (see item E.1 below)

    a) Pre-configured block tool palettes are available on CCUA's website, located on the development and permitting section.

b) As blocks are added from the provided tool palettes, a dialog window will prompt asking for the feature ID. For consistency add the sequential number at the end of the feature ID (e.g., WM_VALVE_1, WM_VALVE_2, WM_VALVE_3, etc… see G below for more examples).

22. All AutoCAD drawing text annotation, detail blow-ups, and dimensions shall be shown in Model Space. The Contractor, Surveyor or Engineer's title block shall be shown in the layout Viewport.

C. Cost

1. The as-built surveys shall be prepared at the Contractor's, or Developer's (applicant) expense.

2. The applicant's Contractor shall be responsible for paying in advance to CCUA, the cost for reviewing the final as-built surveys for each extension of the CCUA's utility system. The cost is based on the CCUA's initial estimate of the time needed to review the final as-built surveys.

3. Extra time required to review the as-built surveys, due to failure of meeting the as-built specifications or for other inadequate or inaccurate information required of applicant's Surveyor or Contractor to complete CCUA's as-built drawings or by any combination of such factors shall be charged to and paid by the applicant as an additional cost of completing CCUA's final CAD as-built plans, based on a rate of $35.00 per hour, plus plotting cost for any extra proof sets.

D. Submission of As-builts

1. As-built surveys shall be submitted using CCUA's AutoCAD template settings; with the Contractor, Surveyor or Engineer's title block. Sheets shall be 22"x34" and accompanied by all necessary electronic files delivered on CD/DVD or by e-mail.

    a) Scale shall range between 1"=10' to 1" = 60', unless approved by CCUA.

    b) Each sheet must be labeled "AS-BUILT" in one-inch high bold letters in the bottom right hand corner and include the following items:

        (1) Station numbers and with offsets

        (2) Dimension measurements

        (3) Lot numbers

        (4) Street names

        (5) Scale

        (6) Location, elevation and datum of the benchmark used

        (7) Easements as shown on approved plans

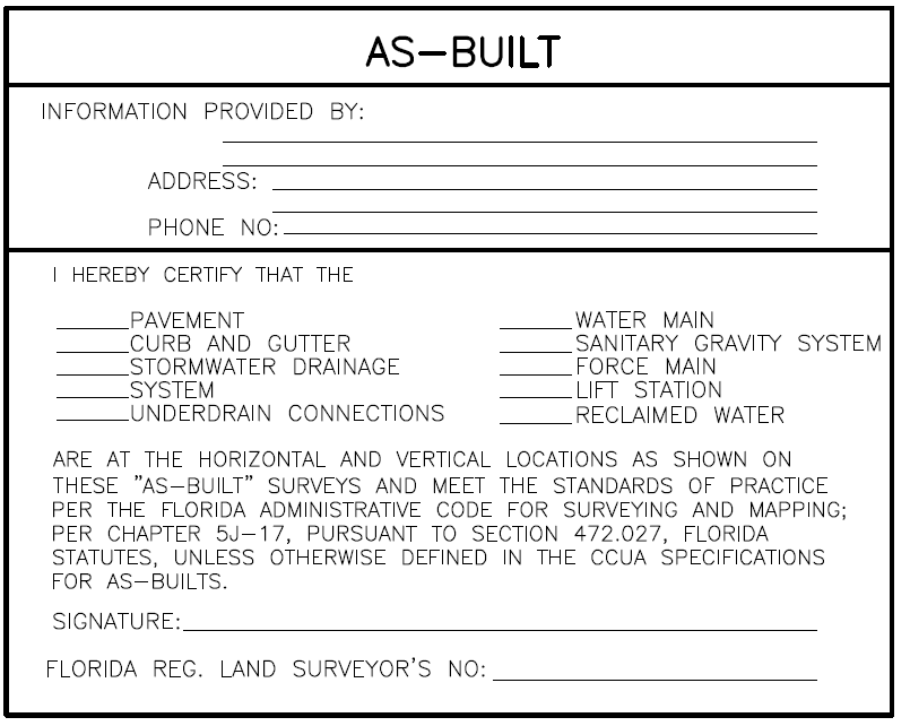
        (8) Certification block (see 3 below)

        (9) Any other additional requirements as outlined by the Standards of Practice per the Florida Administrative code for Surveying and Mapping

2. Once CCUA has completed its proposed final review of the CAD as-built plans for such extension, a proof set of the proposed plans will be provided to the Contractor for proofreading and verification of the accuracy of CCUA's proposed final CAD as-built drawings, based on the information provided to CCUA by the applicant, Contractor or Surveyor. When CCUA's proposed final CAD as-built drawing have been verified as accurate by the Contractor and CCUA, then a final set of "official" as-built drawing will be plotted by the CCUA and will be prepared and submitted for the signature of the Surveyor and/or Engineer.

3. Each as-built survey sheet is required to have a certification block (as shown below) and bear the name, address, phone number and signature of the Contractor, and Surveyor or Engineer. The Surveyor will certify the horizontal and vertical dimensions and elevations of the project's as-built conditions. The Engineer shall certify the project has been constructed in substantial conformance with the permitted construction plans and specifications. The Contractor will certify that materials and quantities used were accurate and are in accordance with CCUA's approved plans and specifications. The signature(s) certify the as-built survey and information provided is accurate.

a) As-built certification block for the Surveyor:



AS–BUILT

INFORMATION PROVIDED BY: _____

_____

ADDRESS: _____

_____

PHONE NO: _____

I HEREBY CERTIFY THAT THE

_____PAVEMENT
_____CURB AND GUTTER
_____STORMWATER DRAINAGE
_____SYSTEM
_____UNDERDRAIN CONNECTIONS

_____WATER MAIN
_____SANITARY GRAVITY SYSTEM
_____FORCE MAIN
_____LIFT STATION
_____RECLAIMED WATER

ARE AT THE HORIZONTAL AND VERTICAL LOCATIONS AS SHOWN ON THESE "AS–BUILT" SURVEYS AND MEET THE STANDARDS OF PRACTICE PER THE FLORIDA ADMINISTRATIVE CODE FOR SURVEYING AND MAPPING; PER CHAPTER 5J–17, PURSUANT TO SECTION 472.027, FLORIDA STATUTES, UNLESS OTHERWISE DEFINED IN THE CCUA SPECIFICATIONS FOR AS–BUILTS.

SIGNATURE: _____

FLORIDA REG. LAND SURVEYOR'S NO: _____

b) As-built certification block for the Engineer:

AS-BUILT

INFORMATION PROVIDED BY: _____

_____

_____

ADDRESS: _____

_____

PHONE #: _____

I HEREBY CERTIFY IN ACCORDANCE WITH CHAPTERS 471 AND 472 OF FLORIDA STATUTES AND CHAPTER 61G15-23 OF THE FLORIDA BOARD OF PROFESSIONAL ENGINEERS THAT THE

_____ PAVEMENT	_____ WATER MAIN
_____ CURB AND GUTTER	_____ SANITARY GRAVITY SYSTEM
_____ STORMWATER DRAINAGE	_____ FORCE MAIN
_____ SYSTEM	_____ LIFT STATION
_____ UNDERDRAIN CONNECTIONS	_____ RECLAIMED WATER

ARE AT THE HORIZONTAL AND VERTICAL LOCATIONS AS SHOWN ON THESE "AS-BUILT" DRAWINGS AND MEET THE CCUA SPECIFICATIONS FOR AS-BUILTS.

SIGNATURE: _____

_____

FLORIDA REG. ENGINEER #: _____

c) As-built certification block for the Contractor:

AS-BUILT

INFORMATION PROVIDED BY: _____

_____

_____

ADDRESS: _____

_____

PHONE #: _____

I HEREBY CERTIFY THAT THE MATERIALS AND QUANTITIES USED IN THE CONSTRUCTION OF

_____ PAVEMENT	_____ WATER MAIN
_____ CURB AND GUTTER	_____ SANITARY GRAVITY SYSTEM
_____ STORMWATER DRAINAGE	_____ FORCE MAIN
_____ SYSTEM	_____ LIFT STATION
_____ UNDERDRAIN CONNECTIONS	_____ RECLAIMED WATER

ARE IN ACCORDANCE WITH THE APPROVED PLANS AND CCUA SPECIFICATIONS, UNLESS OTHERWISE APPORVED BY CCUA.

SIGNATURE: _____

_____

CONTRACTOR'S STATE UTILITIES LICENSE #: _____

4. A signed sealed written report in a format acceptable to CCUA (see item a) below) by the Surveyor or Engineer which identifies each manhole by reference number, identifies the inverts of all pipes entering and leaving the manhole, and provides the distance and grade of each pipe between manholes.

    a) In addition to any written report(s); report information shall be provided in an electronic Microsoft Excel file, which properly identifies columns (e.g., Reference ID, N. Invert, S. Invert, etc.). A template file can be found on CCUA's website.

E. Asset Table Worksheet

1. The following list of information shall be collected and turned in as an electronic Microsoft Excel file on CD/DVD, or sent by e-mail. A template file has already been created and is available on CCUA's website for download.

Fire Hydrants	**Valves**	**RPZ**
Feature ID	Feature ID	Feature ID
Plan Sheet Number	Plan Sheet Number	Plan Sheet Number
Easting (X)	Easting (X)	Easting (X)
Northing (Y)	Northing (Y)	Northing (Y)
Model Number	Valve Type	Size of RPZ
Manufacturer	Direction to Open	Year of Installation
Direction to Open	Valve Size	Type of Joint Fitting
Fire Hydrant Size	Year of Installation	Material Transition
Year of Installation	Type of Joint Fitting	Owned By
Date of Installation	Main Type	
Main Size @ F.H. Connection	Model Number	
Manufacturer Year	Manufacturer	
Owned By	Turns to Open	
	Material Transition	
	Survey Elevation	
	Owned By	

Fittings	Locate Wire	Lift Station
Feature ID	Feature ID	Feature ID
Plan Sheet Number	Plan Sheet Number	Plan Sheet Number
Easting (X)	Easting (X)	Easting (X)
Northing (Y)	Northing (Y)	Northing (Y)
Main Type	Main Type	Inv. Elevation In
Fitting Type	Owned By	Inv. Elevation In
Fitting Size		Inv. Elevation In
Material Type		Inv. Elevation Out
Year of Installation		Top Elevation
Type of Joint Fitting		Bottom Elevation
Owned By		Lift Station Diameter
Survey Elevation		Owned By
Material Transition		

Manhole	Cleanout	Bends
Feature ID	Feature ID	Feature ID
Plan Sheet Number	Plan Sheet Number	Plan Sheet Number
Design Manhole Number	Easting (X)	Main Type
Easting (X)	Northing (Y)	Fitting Size
Northing (Y)	Cleanout Size	Material Type
Rim Elevation	Inv. Elevation	Year of Installation
Invert Elevation North	Top Elevation	Type of Joint Fitting
Invert El. Northeast	Year of Installation	Used to Avoid Conflict
Invert El. East		Degree (of bend)
Invert El. Southeast		Survey Elevation
Invert El. South		Material Transition
Invert El. Southwest		
Invert El. West		
Invert El. Northwest		
Year of Installation		

Casing

Feature ID
Plan Sheet Number
Casing Size
Year of Installation
Main Type
Material Type
Upstream Invert
Downstream Invert
Owned By
Survey Elevation

F. Layer Name Format

1. Discipline Designator Values:

   Discipline identifier (value), which is added to the layer name (e.g., **CU**-WATR-DOMC-PIPE-XXXX XXXX XXXX XXXX XX-ST) *the value must be four characters in length* (see table below).

Designator	Description
C	Civil
CU	Civil Utilities
V	Survey / Mapping
VU	Survey / Mapping Utilities

2. Layer:

   AutoCAD drawing layer name, which follow the National CAD Standards (e.g., CU-**WATR-DOMC-PIPE**-XXXX XXXX XXXX XXXX XX-ST) *the value must be four characters in length* (see table below).

Name	Color	Linetype	Description
C-ANNO-MATL	White	PHANTOM2	Match line annotation
C-ANNO-NOTE	Yellow	Continuous	Note annotation
C-ANNO-TTLB	White	Continuous	Title block annotation
C-BLDG-ANNO	White	Continuous	Building annotation
C-BLDG-STRC	15	Continuous	Building structure
C-ESMT-ANNO	White	Continuous	Easement annotation

C-ESMT-LINE	White	HIDDEN	Easement line
C-POND-ANNO	15	Continuous	Pond annotation
C-POND-LINE	15	HIDDEN	Pond line
C-PROP-ANNO	White	Continuous	Property annotation
C-PROP-LINE	53	DASHDOT2	Property line
C-ROAD-CNTR	10	CENTER2	Roadway center line
C-ROAD-CURB	251	Continuous	Roadway curb / edge
C-ROAD-RWAY	White	PHANTOM2	Roadway right-of-way
C-ROAD-SWLK	251	Continuous	Roadway sidewalk
C-STRM-ANNO	15	Continuous	Storm annotation
C-STRM-LINE	15	Continuous	Storm line
CU-ELEC-ANNO	Yellow	Continuous	Electrical annotation
CU-ELEC-JUNC	14	Continuous	Electrical junction
CU-ELEC-LINE	14	HIDDEN	Electrical line
CU-SSWR-FORC-ANNO	41	Continuous	Sewer forced annotation
CU-SSWR-FORC-DETL	41	Continuous	Sewer forced detail
CU-SSWR-FORC-INFS	30	Continuous	Sewer forced infrastructure
CU-SSWR-FORC-PIPE-XXXX XXXX XXXX XXXX XX-ST	30	Continuous	Sewer forced pipe
CU-SSWR-FORC-SRVC	34	Continuous	Sewer forced service
CU-SSWR-GRAV-ANNO	81	Continuous	Sewer gravity annotation
CU-SSWR-GRAV-DETL	81	Continuous	Sewer gravity detail
CU-SSWR-GRAV-INFS	GREEN	Continuous	Sewer gravity infrastructure
CU-SSWR-GRAV-PIPE-XXXX XXXX XXXX XXXX XX-ST	GREEN	Continuous	Sewer gravity pipe
CU-SSWR-GRAV-SRVC	106	Continuous	Sewer gravity service
CU-SSWR-STRC-LIFT	Yellow	Continuous	Sewer Lift Station structure
CU-WATR-DOMC-ANNO	143	Continuous	Water domestic annotation
CU-WATR-DOMC-DETL	143	Continuous	Water domestic detail
CU-WATR-DOMC-INFS	Cyan	Continuous	Water domestic infrastructure
CU-WATR-DOMC-PIPE-XXXX XXXX XXXX XXXX XX-ST	Cyan	Continuous	Water domestic pipe
CU-WATR-DOMC-SRVC	154	Continuous	Water domestic service
CU-WATR-RECL-ANNO	191	Continuous	Water reclaimed annotation
CU-WATR-RECL-DETL	191	Continuous	Water reclaimed detail
CU-WATR-RECL-INFS	190	Continuous	Water reclaimed infrastructure
CU-WATR-RECL-PIPE-XXXX XXXX XXXX XXXX XX-ST	190	Continuous	Water reclaimed pipe
CU-WATR-RECL-SRVC	185	Continuous	Water reclaimed service

**Layers not included in list shall be added following the NCS guidelines. CCUA shall be provided a list of any new layers added.*

3. Size Values:

Size identifier (value), which is added to the layer name (e.g., CU-WATR-DOMC-PIPE-**XXXX** XXXX XXXX XXXX XX-ST) *the value must be four characters in length* (see table below).

Size*	Description
0.25	1/4"
0.50	1/2"
0.75	3/4"
1.25	1-1/4"
1.50	1-1/2"
1.75	1-3/4"
2.00	2"
2.25	2-1/4"
2.50	2-1/2"
3.00	3"
4.00	4"
6.00	6"
8.00	8"
10.0	10"
12.0	12"
14.0	14"
16.0	16"
18.0	18"
20.0	20"
24.0	24"
30.0	30"
36.0	36"

**Values not included in list shall be added and abbreviated with four (4) characters. CCUA shall be provided a list of any new values added.*

4. Material Values:

Material identifier (value), which is added to the layer name (e.g., CU-WATR-DOMC-PIPE-XXXX **XXXX** XXXX XXXX XX-ST) *the value must be four characters in length* (see table below).

Identifier*	Description
CIRN	Cast Iron
DIRN	Ductile Iron
FPVC	Fusible Polyvinyl Chloride

HDPE	High-Density Polyethylene
PVC~	Polyvinyl Chloride
SSTL	Stainless Steel
STEL	Steel

**Values not included in list shall be added and abbreviated with four (4) characters. CCUA shall be provided a list of any new values added.*

5. Class Values:

Class identifier (value), which is added to the layer name (e.g., CU-WATR-DOMC-PIPE-XXXX XXXX **XXXX** XXXX XX-ST) *the value must be four characters in length* (see table below).

Designator*	Description
0000	Not Applicable
0051	Class 51
0150	Class 150
0300	Class 300
0900	Class 900
0905	Class 905

**Values not included in list shall be added and abbreviated with four (4) characters. CCUA shall be provided a list of any new values added.*

6. Rating Values:

Rating identifier (value), which is added to the layer name (e.g., CU-WATR-DOMC-PIPE-XXXX XXXX XXXX **XXXX** XX-ST) *the value must be four characters in length* (see table below).

Identifier*	Description
0000	Not Applicable
DR09	Dimension Ratio (DR) is 9
DR11	Dimension Ratio (DR) is 11
DR18	Dimension Ratio (DR) is 18
DR21	Dimension Ratio (DR) is 21
DR25	Dimension Ratio (DR) is 25
DR26	Dimension Ratio (DR) is 26
DR35	Dimension Ratio (DR) is 35
SC40	Schedule 40
SC80	Schedule 80

**Values not included in list shall be added and abbreviated with four (4) characters. CCUA shall be provided a list of any new values added.*

7. Construction Values:

Construction identifier (value), which is added to the layer name (e.g., CU-WATR-DOMC-PIPE-XXXX XXXX XXXX XXXX **XX**-ST) *the value must be four characters in length* (see table below).

Identifier*	Description
DD	Directional Drill
JB	Jack and Bore
OC	Open-cut
PB	Pipe Burst
PP	Pipe Push

**Values not included in list shall be added and abbreviated with two (2) characters. CCUA shall be provided a list of any new values added.*

8. Status Field Codes:

Status identifier (code), which is added to the end of the layer name (e.g., CU-WATR-DOMC-PIPE-XXXX XXXX XXXX XXXX XX-**ST**)

Code	Description
A	Abandoned
D	Existing to demolish
E	Existing to remain
F	Future work
M	Items to be moved
N	New work
O	Owned by others

9. Examples:

Layer Name
CU-SSWR-GRAV-PIPE-4.00 PVC~ 0000 DR26 OC
CU-SSWR-FORC-PIPE-4.00 PVC~ 0900 DR18 OC
CU-SSWR-FORC-PIPE-8.00 DIRN 0051 DR18 OC
CU-WATR-DOMC-PIPE-2.00 PVC~ 0000 SC80 OC
CU-WATR-DOMC-PIPE-36.0 PVC~ 0900 DR21 OC
CU-WATR-RECL-PIPE-4.00 PVC~ 0900 DR21 OC

G. **Block Naming**

Block Name	Feature ID	Layer	Description
WM_RPZ	WM_RPZ_*	CU-WATR-DOMC-INFS	Water Reduced Pressure Zone
WM_CV	WM_CV_*	CU-WATR-DOMC-INFS	Water Check Valve
WM_DBLCV	WM_DBLCV_*	CU-WATR-DOMC-INFS	Water Double Detector Check Valve
WM_DIA_APT_COUPLING	WM_DIA_APT_COUPLING_*	CU-WATR-DOMC-INFS	Water Coupling
WM_SLEEVE	WM_SLEEVE_*	CU-WATR-DOMC-INFS	Water Sleeve
WM_FLUSHHYD	WM_FLUSHHYD_*	CU-WATR-DOMC-INFS	Water Flushing Hydrant
WM_LWBOX	WM_LWBOX_*	CU-WATR-DOMC-INFS	Water Locate Wire Box
WM_METER	WM_METER_*	CU-WATR-DOMC-INFS	Water Meter
WM_TAP_CAP_wFLHYD	WM_TAP_CAP_wFLHYD_*	CU-WATR-DOMC-INFS	Water Tap Cap
WM_FIREHYD	WM_FIREHYD_*	CU-WATR-DOMC-INFS	Water Fire Hydrant
WM_PLUG	WM_PLUG_*	CU-WATR-DOMC-INFS	Water Plug/Cap
WM_VALVE	WM_VALVE_*	CU-WATR-DOMC-INFS	Water Valve
WM_ARV	WM_ARV_*	CU-WATR-DOMC-INFS	Water Air Release Valve
WM_REDUCER	WM_REDUCER_*	CU-WATR-DOMC-INFS	Water Reducer
WM_CROSS	WM_CROSS_*	CU-WATR-DOMC-INFS	Water Cross
WM_11.25BEND	WM_11.25BEND_*	CU-WATR-DOMC-INFS	Water 11.25˚ Bend
WM_22.5BEND	WM_22.5BEND_*	CU-WATR-DOMC-INFS	Water 22.5˚ Bend
WM_45BEND	WM_45BEND_*	CU-WATR-DOMC-INFS	Water 45˚ Bend
WM_90BEND	WM_90BEND_*	CU-WATR-DOMC-INFS	Water 90˚ Bend
WM_BEND_TURNED	WM_BEND_TURNED_*	CU-WATR-DOMC-INFS	Water Bend Turned
WM_CASING	WM_CASING_*	CU-WATR-DOMC-INFS	Water Main Casing
RE_CV	RE_CV_*	CU-WATR-RECL-INFS	Reuse Check Valve
RE_DBLCV	RE_DBLCV_*	CU-WATR-RECL-INFS	Reuse Double Detector Check Valve
RE_DIA_APT_COUPLING	RE_DIA_APT_COUPLING_*	CU-WATR-RECL-INFS	Reuse Coupling
RE_SLEEVE	RE_SLEEVE_*	CU-WATR-RECL-INFS	Reuse Sleeve
RE_FLUSHHYD	RE_FLUSHHYD_*	CU-WATR-RECL-INFS	Reuse Flushing Hydrant
RE_LWBOX	RE_LWBOX_*	CU-WATR-RECL-INFS	Reuse Locate Wire Box
RE_METER	RE_METER_*	CU-WATR-RECL-INFS	Reuse Meter
RE_TAP_CAP_wFLHYD	RE_TAP_CAP_wFLHYD_*	CU-WATR-RECL-INFS	Reuse Tap Cap
RE_FIREHYD	RE_FIREHYD_*	CU-WATR-RECL-INFS	Reuse Fire Hydrant
RE_PLUG	RE_PLUG_*	CU-WATR-RECL-INFS	Reuse Plug/Cap
RE_VALVE	RE_VALVE_*	CU-WATR-RECL-INFS	Reuse Valve
RE_ARV	RE_ARV_*	CU-WATR-RECL-INFS	Reuse Air Release Valve
RE_REDUCER	RE_REDUCER_*	CU-WATR-RECL-INFS	Reuse Reducer
RE_CROSS	RE_CROSS_*	CU-WATR-RECL-INFS	Reuse Cross
RE_11.25BEND	RE_11.25BEND_*	CU-WATR-RECL-INFS	Reuse 11.25˚ Bend
RE_22.5BEND	RE_22.5BEND_*	CU-WATR-RECL-INFS	Reuse 22.5˚ Bend

RE_45BEND	RE_45BEND_*	CU-WATR-RECL-INFS	Reuse 45˚ Bend
RE_90BEND	RE_90BEND_*	CU-WATR-RECL-INFS	Reuse 90˚ Bend
RE_BEND_TURNED	RE_BEND_TURNED_*	CU-WATR-RECL-INFS	Reuse Bend Turned
RE_CASING	RE_CASING_*	CU-WATR-RECL-INFS	Reuse Main Casing
FM_CV	FM_CV_*	CU-SSWR-FORC-INFS	Force Main Check Valve
FM_DBLCV	FM_DBLCV_*	CU-SSWR-FORC-INFS	Force Main Double Detector Check Valve
FM_DIA_APT_COUPLING	FM_DIA_APT_COUPLING_*	CU-SSWR-FORC-INFS	Force Main Coupling
FM_SLEEVE	FM_SLEEVE_*	CU-SSWR-FORC-INFS	Force Main Sleeve
FM_FLUSHHYD	FM_FLUSHHYD_*	CU-SSWR-FORC-INFS	Force Main Flushing Hydrant
FM_LWBOX	FM_LWBOX_*	CU-SSWR-FORC-INFS	Force Main Locate Wire Box
FM_TAP_CAP_wFLHYD	FM_TAP_CAP_wFLHYD_*	CU-SSWR-FORC-INFS	Force Main Tap Cap
FM_PLUG	FM_PLUG_*	CU-SSWR-FORC-INFS	Force Main Plug/Cap
FM_VALVE	FM_VALVE_*	CU-SSWR-FORC-INFS	Force Main Valve
FM_ARV	FM_ARV_*	CU-SSWR-FORC-INFS	Force Main Air Release Valve
FM_FMDUCER	FM_FMDUCER_*	CU-SSWR-FORC-INFS	Force Main Reducer
FM_CROSS	FM_CROSS_*	CU-SSWR-FORC-INFS	Force Main Cross
FM_11.25BEND	FM_11.25BEND_*	CU-SSWR-FORC-INFS	Force Main 11.25˚ Bend
FM_22.5BEND	FM_22.5BEND_*	CU-SSWR-FORC-INFS	Force Main 22.5˚ Bend
FM_45BEND	FM_45BEND_*	CU-SSWR-FORC-INFS	Force Main 45˚ Bend
FM_90BEND	FM_90BEND_*	CU-SSWR-FORC-INFS	Force Main 90˚ Bend
FM_BEND_TURNED	FM_BEND_TURNED_*	CU-SSWR-FORC-INFS	Force Main Bend Turned
FM_CASING	FM_CASING_*	CU-SSWR-FORC-INFS	Force Main Casing
SS_PLUG	SS_PLUG_*	CU-SSWR-GRAV-INFS	Gravity Sewer Plug
SS_MANHOLE	SS_MANHOLE_*	CU-SSWR-GRAV-INFS	Gravity Sewer Plug
SS_CLEANOUT	SS_CLEANOUT_*	CU-SSWR-GRAV-INFS	Gravity Sewer Plug

IV. Revision History

Revision	Date	Employee	Description
1	12/09/2013	Daniel Johns	Clarification of III.B.8
2	02/26/2014	Daniel Johns	Q1 of 2014: Revisions to III.B.1.a); III.B.16; III.B.19.b); III.B.20; III.D.3 and addition of III.F
3	10/30/2014	Daniel Johns	Q4 of 2014: Revisions to B.1, B.21, D.1, E.1 and added section G
4	04/27/2016	Daniel Johns	Q2 of 2016: Revisions to B.1, B.21, D.1, D.3.a, E and added B.22, D.1.b.9, and G
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